

CIVIL ENGINEERING SERVICES

13 Park Road, Wallacia Development Application Report



DOCUMENT CONTROL

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APPROVALS

2	N. Meo <i>Civil Engineer</i>	Current	L. Shaughnessy <i>Project Manager – Civil & Water Engineering</i>	Michael Cahalane <i>Director – Civil & Water Engineering</i>
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Rev #	Author	Status	Reviewer	Approval

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CIVIL ENGINEERING SERVICES

1. INTRODUCTION

Warren Smith & Partners (WS+P) has been engaged by the Catholic Metropolitan Memorial Trust (CMMT) to prepare a development application (DA) report for the proposed works located at 13 Park Road, Wallacia. This report outlines the stormwater strategy plan and road design associated with the proposed development and aims to address the following: -

- Stormwater drainage works;
- Proposed road design and;
- Sediment and erosion control.

1.1 BACKGROUND

The existing site is located at 13 Park Road, Wallacia, approximately 13km south of Penrith City Centre. The site is currently utilised as an 18-hole golf course. It is proposed that the site is developed into a cemetery to ensure the continued availability of burial space for the increasing population of greater Sydney. The site is bound by Park Road and Mulgoa Road to the south and west respectively, and residential farmland to the north and east. The development will include the construction of the following three (3) buildings and will repurpose the existing golf house as a function room: -

- Chapel;
- Administration and Gatehouse building, and;
- Ground staff facilities building.

The development will also see the construction of approximately 3.4km of road to facilitate movement across the site.

Please refer to Figure 1 for an aerial view of the development site.



Figure 1: Aerial View of Development Area (Source: GoogleMaps)

2. EXISTING STORMWATER INFRASTRUCTURE

A desktop review and site inspection was undertaken in order to determine the existing drainage infrastructure within the development site. The inspection revealed the following: -

- Jerry's Creek runs in a north-west direction through the western half of the site.
- There are three (3) approximately 2m wide x 2.3m high culverts which reticulates flow from Jerry's creek under Park Road.
- The site grades approximately 6-10% towards Jerry's creek.
- There are two (2) streams located in the north-east corner of site. These have been classified as a Class 3 and a Class 2 stream as per the Office of Water Guidelines.
- There are two (2) existing ponds in the north-eastern corner of site and a third pond located partially on site along the northern boundary.
- There is a DN750 headwall located on the southern boundary which reticulates surface water from the golf course under Park Road.
- There are a number of valleys which drain water off site.

Please refer to Figure 2 below for an illustration of the site characteristics.

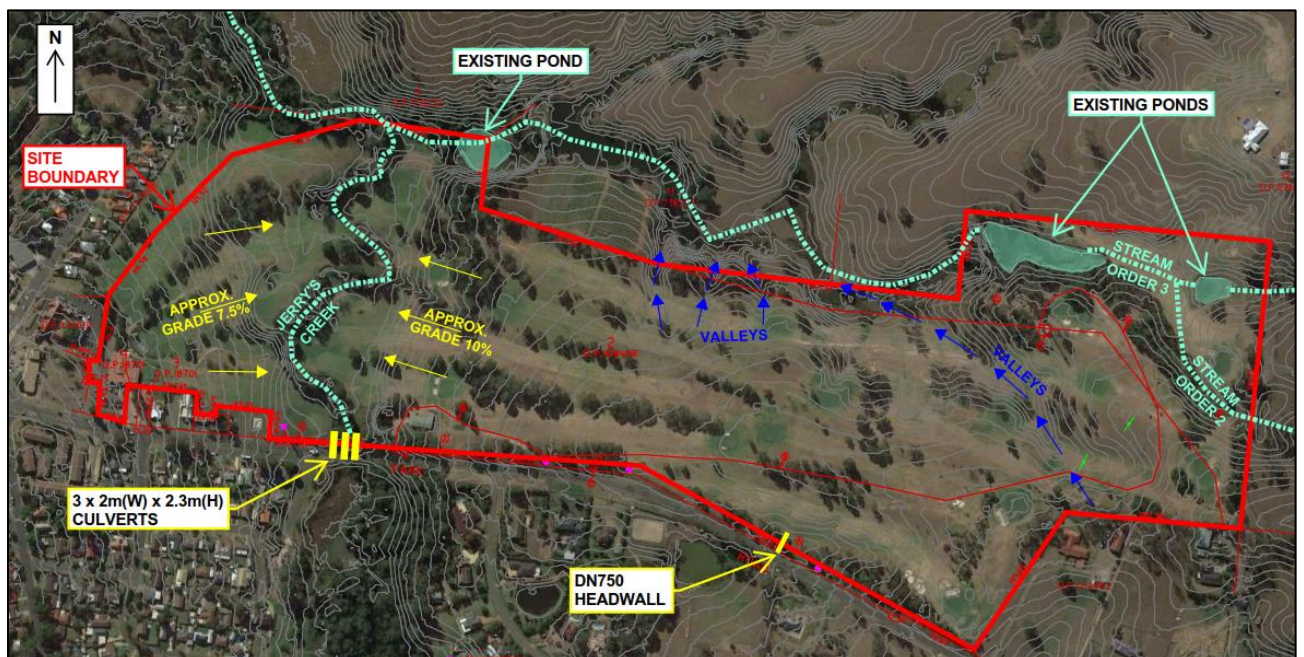


Figure 2: Aerial View of Existing Site Conditions

3. AUTHORITY AND REGULATORY REQUIREMENTS

Penrith City Council's (PCC) regulatory requirements have been referenced from the documents below:-

- PCC Development Control Plan (DCP) 2014;
- PCC Stormwater Drainage for Building Developments – Working Draft (2013), and;
- PCC Design Guidelines for Engineering Works for Subdivisions and Developments (2013)

The stormwater requirements are as follows:-

- All piped stormwater systems shall be designed to cater for storm events up to and including the 5% AEP event;
- Overland flow must be designed to cater for storm events up to and including the 1% AEP storm event.
- Runoff cannot be discharged into bushland areas, including threatened ecological communities;
- The new development must not increase stormwater peak flows in any downstream areas for all rainwater events up to and including the 1% AEP storm;
- Onsite detention storage is to be located at a level that is above the 20% AEP flood level;
- All pipes draining to the OSD system shall convey the 100yr ARI flow from their respective sub-catchments when the basin is at top water level, and;
- DRAINS results should be presented in a spreadsheet and models put on a CD/USB for submission.

4. PROPOSED ROAD DESIGN

4.1 ALIGNMENT AND LAYOUT

The road alignment was developed to promote ease of access throughout the site. In order to minimise the batter extents from the roads and minimise earthworks required during construction, the longitudinal grade of the roads aim to match the existing topography of the land as much as possible. In all achievable areas, batters from the road grading to the existing landscape were maintained at 1:6. Retaining walls will also be used to further to minimise earthworks across the site.

Additional considerations to the layout include the movement of hearses across the site. To ensure that there are no issues in vehicle movement, the maximum longitudinal grade for all roads has been set at 10%.

The road layout has also been adjusted in response to various ecological concerns on site. The two main locations this has occurred is for the alignment of Road 6 leading into the Crematorium and Road 3. It was determined that the original proposed locations of both these roads impact heavily on existing sensitive vegetation on site. Please refer to Figure 3 for details on the original proposed road locations and location of sensitive native vegetation.

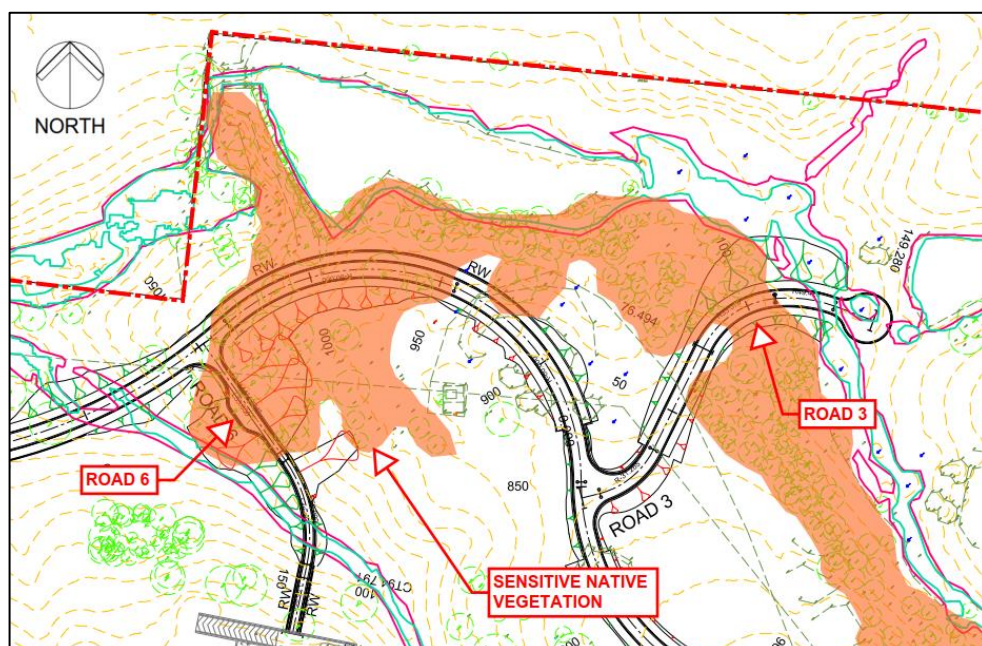


Figure 3: Location of Sensitive Native Vegetation

To maintain access to the Crematorium, and also access to the north-east corner of the property Roads 3 and 6 are proposed in the locations outlined in Figure 4.

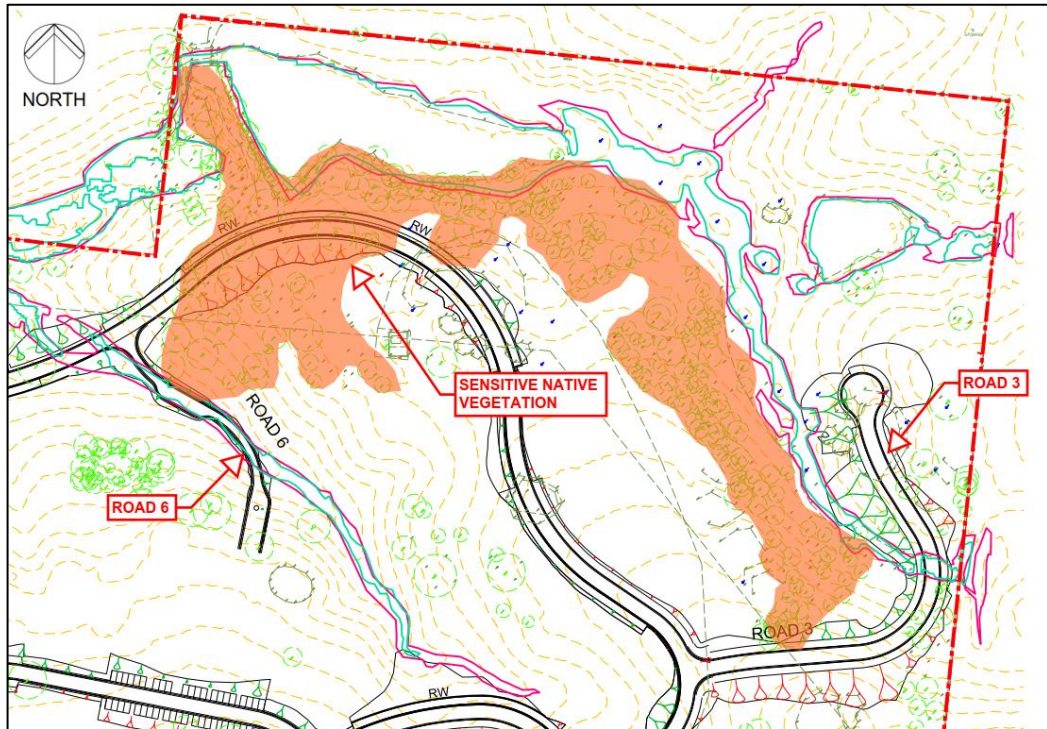


Figure 4: Proposed Location of Road 3 and 6

The impacts to native vegetation from Road 1 will be offset elsewhere on site.

4.2 ROAD WIDTH

The road widths have been determined in consultation with the Rural Fire Service (RFS) and their *Planning for Bushfire Protection* specification. The specification outlines the following requirements for public roads: -

- Roads must be two-wheel drive, all weather roads.
- Perimeter roads are classified as roads which separate bushland from urban areas. These roads must be two-way with a minimum 8m width kerb-to-kerb.
- All other roads are classified as internal roads and their widths are to comply with *Table 4.1* of the specification. An extract is shown in Figure 5 below.

Table 4.1 provides the minimum widths for public roads that are not perimeter roads for the safe access of fire fighting vehicles in urban areas.

Curve radius (inside edge) (metres)	Swept Path (metres width)	Single lane (metres width)	Two way (metres width)
<40	3.5	4.5	8.0
40-69	3.0	3.9	7.5
70-100	2.7	3.6	6.9
>100	2.5	3.5	6.5

Source: AS 2890.2 – 2002.

Table 4.1 – Road widths for Category 1 Tanker (Medium Rigid Vehicle)

Figure 5: Extract from NSW RFS Specification

- Dead end roads are not recommended. However, if unavoidable they must not be greater than 200m in length and incorporate a minimum 12m outer radius turning circle.
- The maximum grade for sealed roads should not exceed 15 degrees (26.8%) and an average grade of not more than 10 degrees (17.6%).
- Public roads directly interfacing the bush fire hazard vegetation are to provide roll top kerbing to the hazard side of the road.

In consultation with Traver’s Bushfire and Ecology, no roads on site have been classified as perimeter roads, therefore in accordance with Table 4.1 of the Planning for Bushfire Protection specification, the remaining road widths are to be determined as per their curve radii. To comply with this specification, the minimum road width requirement varied on site between 6.5m and 8.0m. However, in order to maximise burial space and minimise the cut and fill balance throughout the site, a swept path analysis was run for two (2) 8.0m long medium rigid vehicles (MRV) passing each other at 10km/hr for all two-way road networks. This was undertaken to reduce the width of the roads to as low as reasonably practicable and within acceptable standards of the NSW RFS.

It was concluded and accepted by the RFS that the minimum two-way road width required to achieve these requirements is 6.5m plus 2.1m on each side for parking. Road 7 is proposed as one-way only with a minimum carriage width of 3.5m and parallel parking on both sides. Road 6 will function as a single land service vehicle access to the crematorium and will not have parallel parking facilities. A 3m turning bay will be provided on Road 6 in accordance with NSW RFS specification for the unlikely scenario of two (2) vehicles travelling in opposite directions along the road. Please refer to Figure 6 for an illustration of the single lane roads within the site.

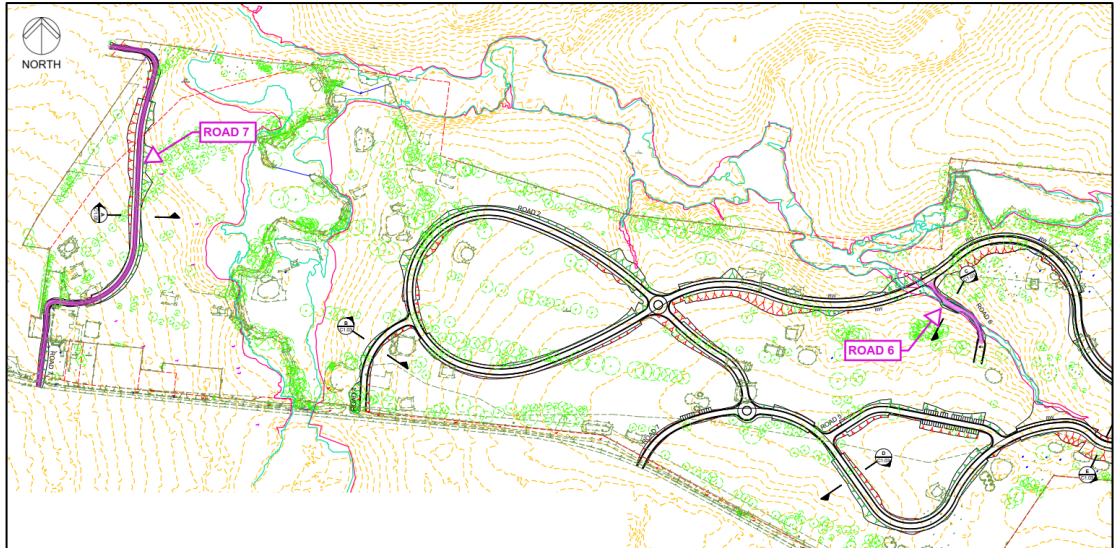


Figure 6: Proposed Single Lane Roads

5. PROPOSED STORMWATER DRAINAGE SYSTEM

The stormwater drainage network has been designed to capture and reticulate the majority of the site's catchment to a number of proposed basins on site. These basins will act as on-site detention, ensuring the post development flow rates of the development do not increase when compared with the pre-development state. The required volume of these tanks has been calculated using a RORBS model and is outlined in the Stormwater Management Plan (SWMP) by Stormy Water Solutions. The location of these basins is outside of the 5% AEP flood extents as per PCC requirements. Please refer to Figure 7 for location of the basins.

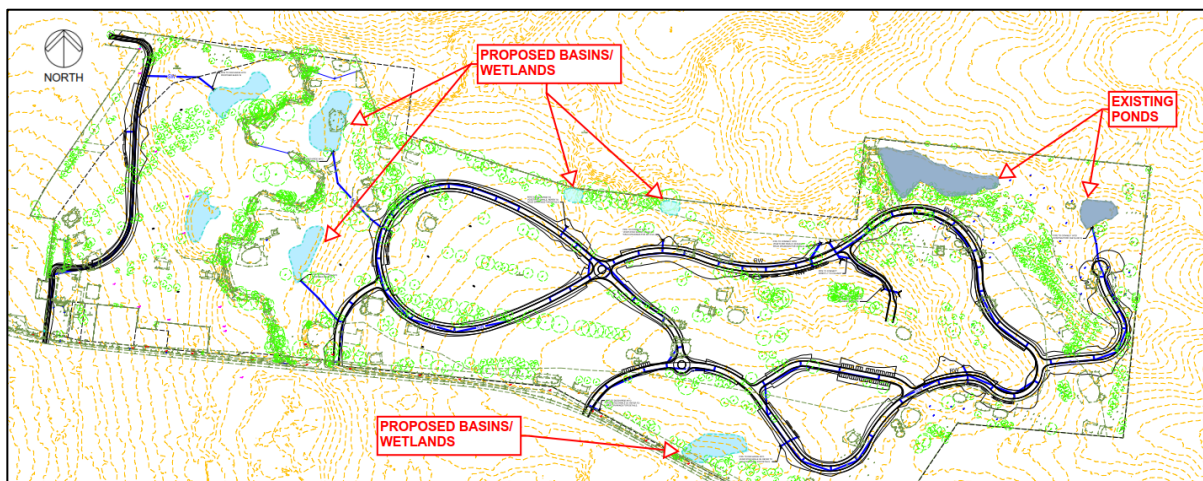


Figure 7: Proposed Basins on Site

As per PCC specification, the road stormwater network has been design to accommodate the 5% AEP storm event and allow for safe overland flow during the 1% AEP storm event. Water captured in the system will discharge directly to a proposed retarding basin or a vegetated swale upstream of a basin. In four (4) locations, the piped network will discharge directly to a proposed basin. Please refer to Figure 8 and Figure 9 for an illustration of these locations.

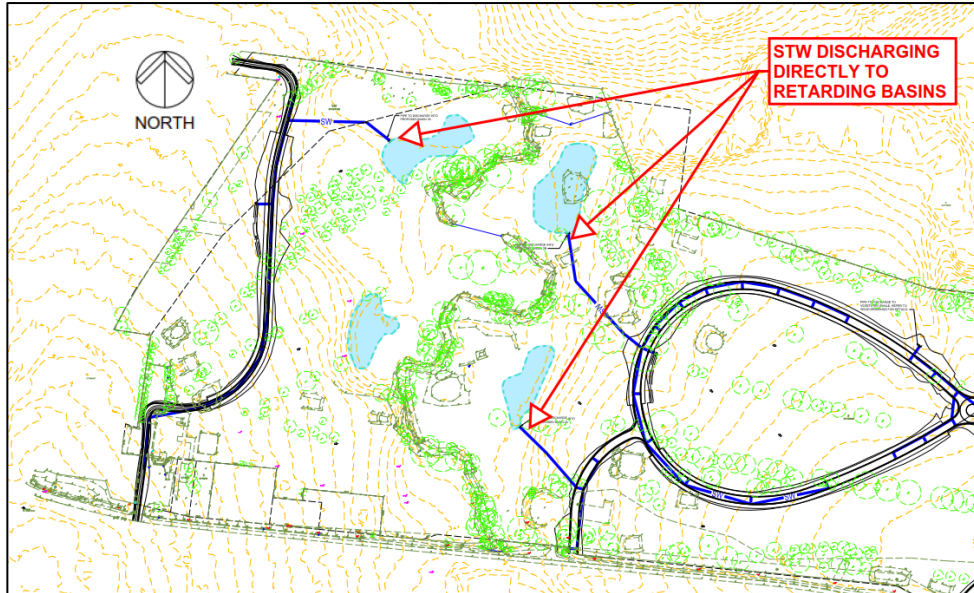


Figure 8: Location of Stormwater Discharge to Basins

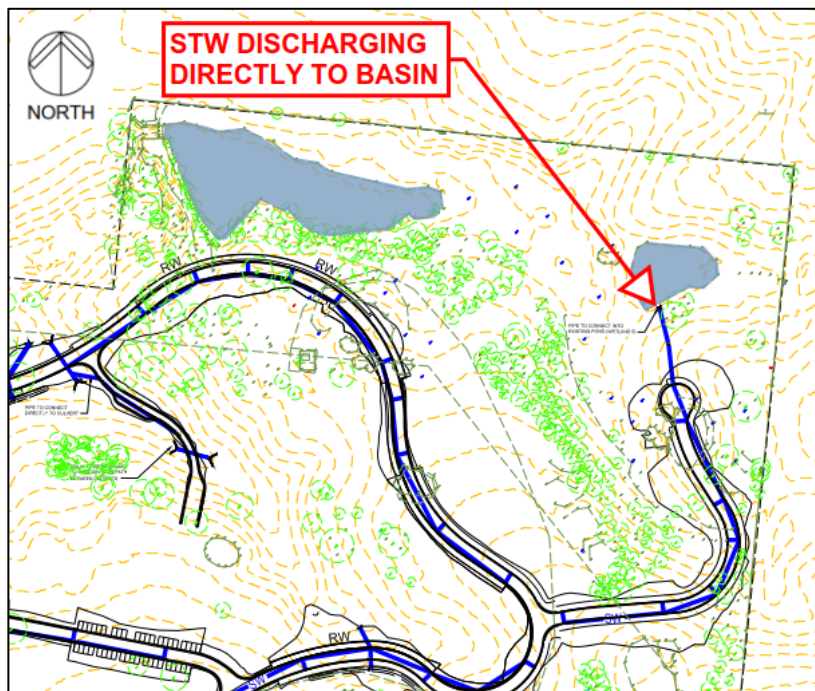


Figure 9: Location of Stormwater Discharge to Basin

In five (5) locations on site, the stormwater network will discharge to a vegetated swale which will reticulate into a retarding basin. The swales will serve the dual purpose of retarding flow and providing treatment to the water before entering the Council network. Please refer to Figure 10 for an illustration of these locations.

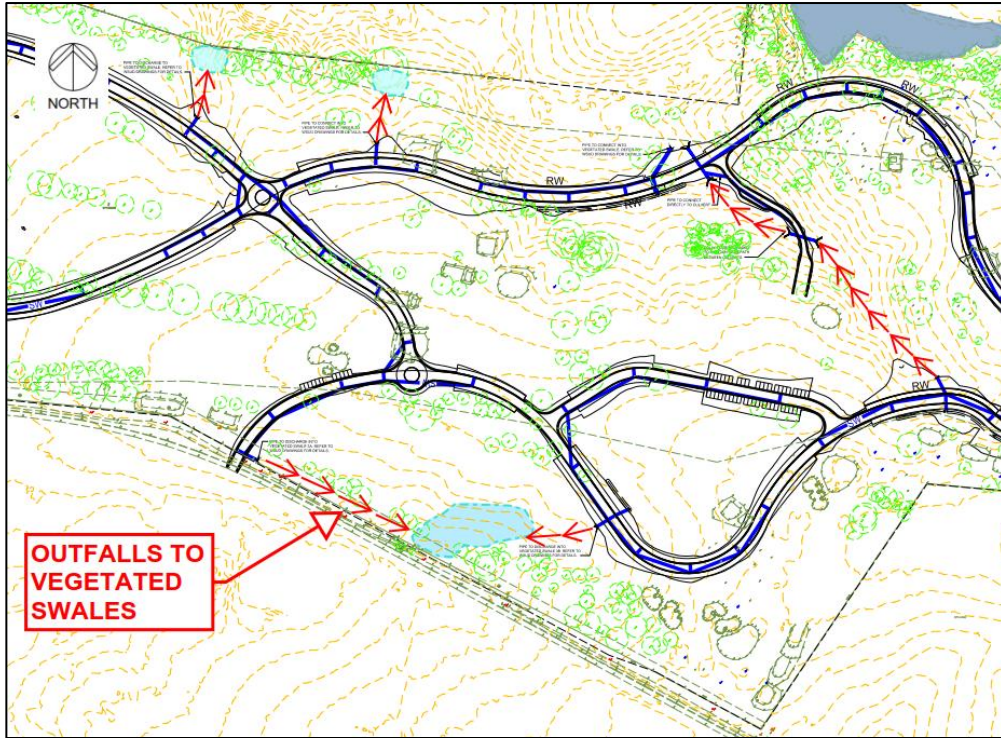


Figure 10: Location 1 of Stormwater Discharging to Dam

Regrading of the existing topography is proposed for the gully which currently runs under the alignment of Road 6. As detailed in Stormy Water Solution’s SWMP this gully is to be transformed into a vegetated swale (Vegetated Swale 5A) for flow retardation and water treatment. It will also be used as provision for ecological offsets elsewhere on site. It is proposed that the gully is realigned to be west of Road 6 to maintain the flow path for the upstream catchment. Please refer to Figure 11 for details.

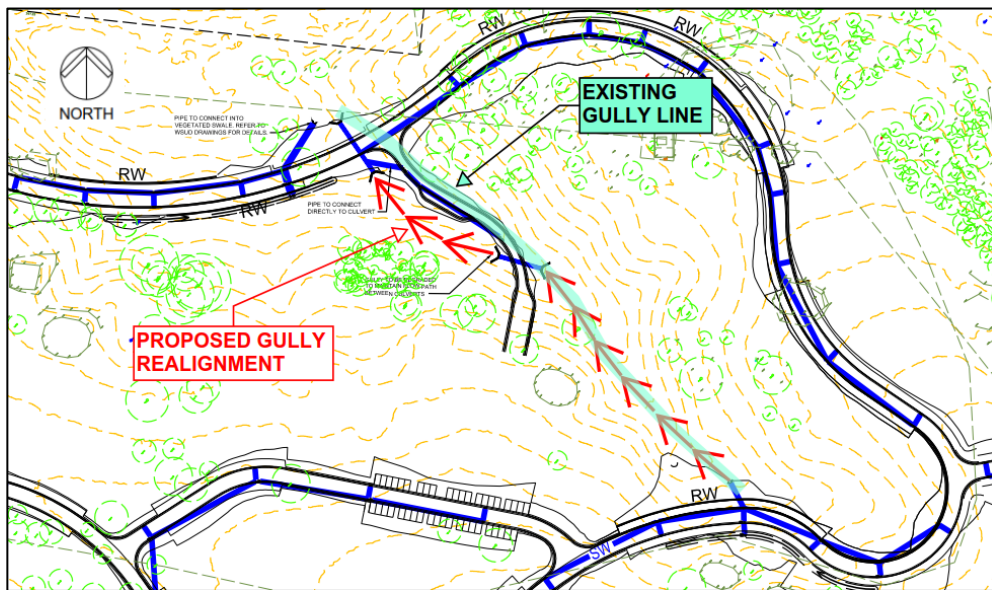


Figure 11: Proposed Culverts and Catchment Areas

5.1 DRAINS MODEL INPUT PARAMETERS

Stormwater flows in the system were calculated using an ILSAX model in DRAINS in order to size the pipe network on site. DRAINS is a stormwater drainage design and analysis program which performs hydraulic grade line analysis and generates flows that occur in a drainage system for a particular AEP storm event.

The catchment characteristic factor values used in the DRAINS model are listed below: -

- | | |
|--|-----|
| • Soil Type – Normal | 3.0 |
| • Paved (Impervious) Area Depression Storage | 1mm |
| • Supplementary Area Depression Storage | 1mm |
| • Grassed (Pervious) Area Depression Storage | 5mm |
| • Antecedent Moisture Condition | 3.0 |
| • Blockage Factor for On-Grade Pits | 20% |
| • Blockage Factor for Sag Pits | 50% |

The rainfall data has been taken from the ARR Data Hub and the Bureau of Meteorology Rainfall IFD Data System using local coordinates. Due to the size of DRAINS data and results, this can be provided to Council upon request.

6. SEDIMENT AND EROSION CONTROL

The Contractor for the works is required to provide Sedimentation and Erosion Control in accordance with the general requirements outlined below.

6.1 SITE PROTECTION MEASURES

It is proposed to provide the following in order to inhibit the movement of sediment off the site during the demolition and construction phases.

6.1.1 SITE ACCESS

Construction vehicles leaving the site shall be required to pass over a Temporary Construction Vehicle Entry consisting of a 1.5m long by 3m wide 'cattle rack'.

6.1.2 SEDIMENT CONTROL

All exposed earth areas where it may be possible for runoff to transport silt down slope shall be protected with a sediment and erosion control silt fence generally installed along the boundaries of the site.

The fence will be constructed in accordance with details provided by the Department of Conservation and Land Management incorporating geotextile fabric which will not allow suspended particles greater than 50mg/L non-filterable solids to pass through, and as such comply with the appropriate provisions of the Clean Waters Act 1970.

The construction of the silt fence will include the following:-

- Geotextile fabric buried to a maximum of 100mm below the surface;
- Overlapping any joins in the fabric;
- Turning up on the ends for a length of 1 metre in order to prevent volumes of suspended solids escaping in a storm event;
- Any Council owned road kerb entry and or gully pits will be protected by Atlantis Filter Bales and EcoSock. Additional protection will be provided by inserting Water Clean Filter Cartridges into the gully opening, and;
- Internal site drainage pits shall be protected by Sediment Traps consisting of hay bales.

6.2 TEMPORARY STORMWATER SYSTEM (WHERE REQUIRED)

Site runoff within the zones of the excavation will be drained into a central holding well within the excavation. Runoff will be allowed to settle out suspended particles and debris, and an acceptable water of 50mg per litre of Non Filterable Residues (NFR) is required to be achieved prior to discharge.

6.2.1 DUST CONTROL

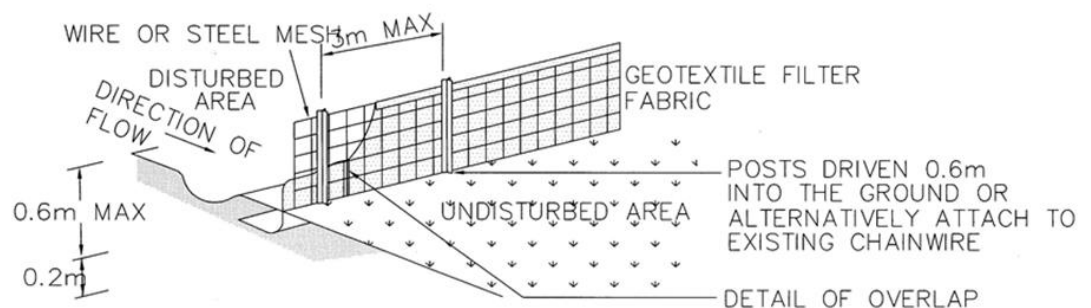
The following dust control procedures will be adhered to:

- Loose loads entering or leaving the site will be securely covered by a tarpaulin or like material in accordance with RMS and local Council Guidelines.
- Soil transport vehicles will use the single main access to the site.
- There will be no burning of any materials on site.
- Water sprays will be used across the site to suppress dust. The water will be applied either by water sprinklers or water carts across ground surfaces whenever the surface has dried out and has the potential to generate visible levels of dust either by the operation of equipment over the surface or by wind. The watercraft will be equipped with a pump and sprays.
- Spraying water at the rate of not less than three (3) L/s and not less than 700kPa pressure. The area covered will be small enough that surfaces are maintained in a damp condition and large enough that runoff is not generated. The water spray equipment will be kept on site during the construction of the works.
- During excavation all trucks/machinery leaving the site will have their wheels washed and/or agitated prior to travelling on Council Roads.
- Fences will have shade cloth or similar fabric fixed to the inside of the fence.

6.2.2 MAINTENANCE

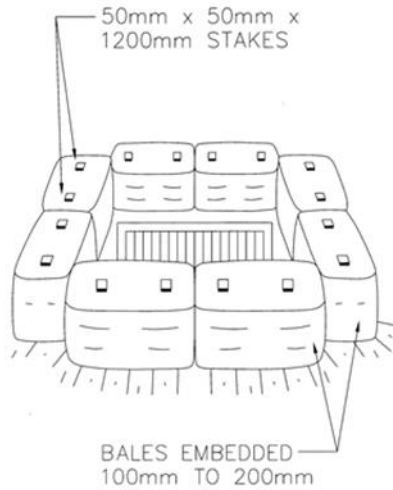
- It will be the responsibility of the site foreman for the building contractor to ensure sediment and erosion control devices on site are maintained. The devices shall be checked daily and the appropriate maintenance undertaken as necessary.
- Prior to the closing of the site each day, the road shall be swept and materials deposited back onto the site.
- Gutters and roadways will be kept clean regularly to maintain them free of sediment.
- Appropriate covering techniques, such as the use of plastic sheeting will be used to cover excavation faces, stockpiles and any unsealed surfaces;
- If dust is being generated from a given surface, and water sprays fail;
- If fugitive emissions have the potential to cause the ambient air quality to foul the ambient air quality;
- The area of soils exposed at any one time will be minimised wherever possible by excavating in a localised progressive manner over the site; and,
- Materials processing equipment suitable comply with regulatory requirements. The protection will include the covering of feed openings with rubber curtains or socks.

It is considered that by complying with the above, appropriate levels of protection are afforded to the site and the adjacent public roads, footpaths and environment.



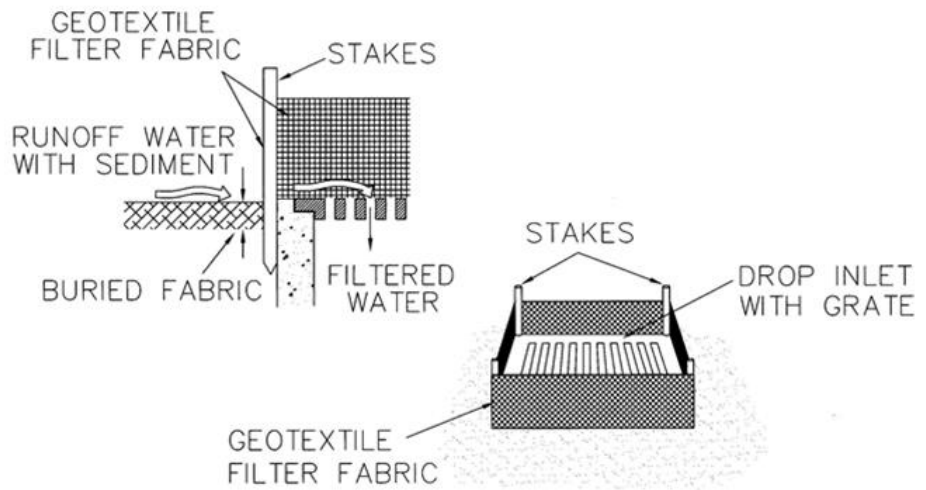
SEDIMENT CONTROL FENCE

NTS



STORMWATER PIT
SEDIMENT TRAP

NTS



GEOTEXTILE FILTER FABRIC DROP INLET
SEDIMENT TRAP

NTS

Atlantis Sediment Control Filter Bales



What are FilterBales?

Water Clean FilterBales are a unique new patented 7 stage sediment filter device developed to substantially reduce the migration of sediment and contaminants into drainage systems while allowing filtered water to easily pass through. FilterBales reduce customers' time and money by providing solutions to comply with environmental and regulatory requirements.

Durable, Dependable, Reusable.

Replacing hay bales and other inadequate attempts to stop sediment run-off, FilterBales are durable and re-useable, effectively stopping your money from "pouring down the drain". They are also lightweight and easy to handle. Replaceable Water Clean Filter Cartridges guarantee peak performance is maintained.

Ask your local FilterBales stockist about replacement frequencies in your area. Cartridges and filter covers should be changed when the infiltration rate decreases. Water Clean FilterBales are suitable for a wide range of sediment and water management situations and can be easily secured in place for long term use. The unique multi-directional filter system allows you to position Water Clean FilterBales in any direction without reducing performance.




Water Clean FilterBales can be fixed to concrete or bitumen surfaces using an epoxy mortar-binder or fixed to earth surfaces using 6-10 mm pegs or stakes. When positioning, the side with the red reflective marker should be facing traffic.





www.atlantiscorp.com.au 

1. **FilterBales frames** are a perforated plastic structure made from recycled wheelie bins, battery cases, milk bottles etc.
2. **Filter medium** (bio engineered soil media) used in the filter cartridges is made from a special blend of recycled organic (RO) materials from kerbside and vegetation drop off centres. The RO hosts enhanced naturally occurring micro-organisms. The blend also contains natural minerals to capture nutrients. The filter medium is as safe as normal soil.
3. **FilterBales** have a seven (7) stage filtration system:
 1. In through the filter bag
 2. Through the perforated plastic structure wall
 3. In through the filter cartridge bag
 4. Through the bio engineered filter medium
 5. Out through the filter cartridge bag
 6. Out through the perforated plastic structure wall
 7. Out through the filter bag
4. **The filter bag** is made from 300-micron (one third of a millimetre) pore size geotextile. This is the first stage that filters much of the sediment and other suspended solids from the run-off water. The geotextile is designed to stop sediment and reduce clogging but allow water to pass through easily. The filter cartridge bags are made from a similar geotextile.
5. **FilterBales** work effectively up to "a one-in-one-year 48 hours, 100 mm "storm events". This is the largest storm event experienced since the commercialisation of FilterBales. Having handled this easily, Filter Bales are considered capable of handling much greater "storm events". During these storm events FilterBales were used inside gully pits in one application and on the ground surrounding the gully pit in another application.
6. **EcoSocks** are made from a similar geotextile to the filter cartridge bags and contain the same bio engineered soil media as the FilterBales. They appear able to stand up to as much wear and tear as a sandbag.
7. **FilterBales** are much lighter (at around 15 kgs dry weight) than hay bales. This reduces exposure to Occupational Health and Safety problems

Product Range

Item No.	Description	
HFB001	High FilterBale , suitable for high flow situations and higher retention time applications. Contains two standard size WaterClean Filter Cartridges in upright formation to treat contaminated waters. (605mm x 485mm x 460mm)	
LFB002	Low FilterBale , suitable for low flow situations and kerb & gutter applications. Multi-directional module containing two standard size WaterClean Filter Cartridges. (605mm x 485mm x 220mm)	
ESF004	Directional EcoSock , can be used in conjunction with FilterBales to direct water. Will also provide some sediment filtration from seepage through bio-remediating media contained within the EcoSock (1135mm x 160mm x 30mm)	

Accessories

Item No.	Description	
FCR004	WaterClean Filter Cartridges contain a unique blend of fixating and bio-remediating products that treat common pollutants. To achieve maximum performance, each FilterBale uses two WaterClean Filter Cartridges. (440mm x 400mm x 100mm)	
HBC005 (High bale)	Replaceable FilterBale covers , made from specially designed geotextile. FilterBale covers have a standard aperture of 300 microns.	
HBC006 (Low bale)	Replaceable FilterBale covers , made from specially designed geotextile. FilterBale covers have a standard aperture of 300 microns.	

Atlantis Water Management Rebirth Pty Ltd trading as Atlantis Water Management

Suite 402/781 Pacific Highway Chatswood NSW, 2067 Australia

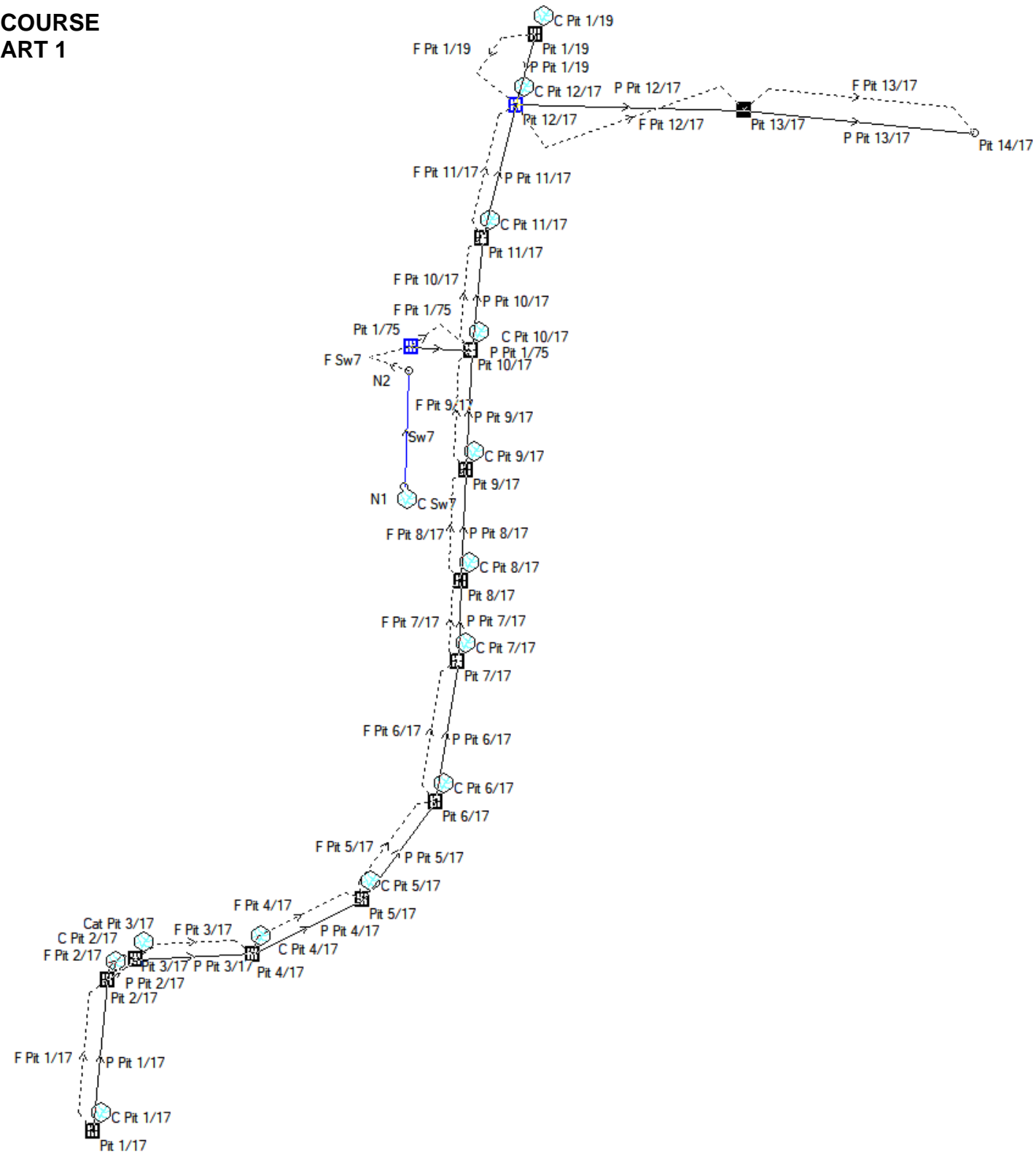
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V3-20/06/01

SCHEDULE 1 DRAINS RESULTS



Proposed DRAINS Model 1 - Data Information

PIT / NODE DETAILS

Version 13

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	Part Full Shock Loss	Inflow Hydrograph	Pit is
Pit 1/17	OnGrade	WSP Standard Pits	600 x 900 PIT		5.9	53.01		0	0.2	281856.5	6250244	No	36 1 x Ku	No	New
Pit 2/17	OnGrade	WSP Standard Pits	600 x 900 PIT		5.9	52.069		0	0.2	281860.5	6250286	No	37 1 x Ku	No	New
Pit 3/17	OnGrade	WSP Standard Pits	600 x 900 PIT		5.9	51.469		0	0.2	281868.5	6250292	No	304106 1 x Ku	No	New
Pit 4/17	OnGrade	WSP Standard Pits	600 x 900 PIT		5.9	49.999		0	0.2	281900.8	6250293	No	38 1 x Ku	No	New
Pit 5/17	OnGrade	WSP Standard Pits	600 x 900 PIT		1.7	47.869		0	0.2	281931.1	6250308	No	39 1 x Ku	No	New
Pit 6/17	OnGrade	WSP Standard Pits	600 x 900 PIT		1.7	46.352		0	0.2	281951.1	6250335	No	40 1 x Ku	No	New
Pit 7/17	OnGrade	WSP Standard Pits	2 x 600x900		1.1	45.055		0	0.2	281957.3	6250374	No	41 1 x Ku	No	New
Pit 8/17	OnGrade	WSP Standard Pits	2 x 600x900		1.6	44.377		0	0.2	281958.3	6250396	No	42 1 x Ku	No	New
Pit 9/17	OnGrade	WSP Standard Pits	2 x 600x900		1.4	42.657		0	0.2	281959.6	6250426	No	43 1 x Ku	No	New
Pit 10/17	OnGrade	WSP Standard Pits	600 x 900 PIT		0.9	41.554		0	0.2	281961	6250459	No	44 1 x Ku	No	New
Pit 11/17	OnGrade	WSP Standard Pits	2 x 600x900		0.5	40.471		0	0.2	281964.1	6250491	No	45 1 x Ku	No	New
Pit 12/17	Sag	WSP Standard Pits	3 x 600x900	0.5	4	39.211	0.15	0	0.5	281973.4	6250527	No	46 1 x Ku	No	New
Pit 13/17	OnGrade	WSP Standard Pits	900SQ		0.2	34.799		0	0.2	282036.4	6250526	Yes	47 1 x Ku	No	New
Pit 14/17	Node					33.052		0		282099.9	6250519		48	No	
Pit 1/19	OnGrade	WSP Standard Pits	2 x 600x900		5.9	39.514		0	0.2	281978.8	6250547	No	50 1 x Ku	No	New
N1	Node					43.826		0		281942.6	6250422		40519	No	
N2	Node					42.834		0		281943.7	6250454		40523	No	
Pit 1/75	Sag	WSP Standard Pits	900SQ in Swale	1	1.5	42.61	0.2	0	0.5	281944.3	6250461	No	40526 1 x Ku	No	New

DETENTION BASIN DETAILS

Name	Elev	Surf. Area	Not Used	Outlet Type	K	Dia(mm)	Centre RL	Pit Family	Pit Type	x	y	HED	Crest RL	Crest Length	id
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SUB-CATCHMENT DETAILS

Name	Pit or Node	Total Area (ha)	Paved Area %	Grass Area %	Supp Area %	Paved Time (min)	Grass Time (min)	Supp Time (min)	Paved Length (m)	Grass Length (m)	Supp Length (m)	Paved Slope(%)	Grass Slope %	Supp Slope %	Paved Rough	Grass Rough	Supp Rough	Lag Time or Factor	Gutter Length (m)	Gutter Slope %	Gutter FlowFactor	Rainfall Multiplier
C Pit 1/17	Pit 1/17	0.0209	25	75	0	2	5	0														1
C Pit 2/17	Pit 2/17	0.0577	25	75	0	2	5	0														1
Cat Pit 3/17	Pit 3/17	0.0124	66	33	0	2	5	0														1
C Pit 4/17	Pit 4/17	0.0435	36	64	0	2	5	0														1
C Pit 5/17	Pit 5/17	0.0253	25	75	0	2	5	0														1
C Pit 6/17	Pit 6/17	0.0343	25	75	0	2	5	0														1
C Pit 7/17	Pit 7/17	0.233	25	75	0	0	0	0	25	120		-1	5.3	5.4	-1	0.013	0.3	-1	0			1
C Pit 8/17	Pit 8/17	0.2688	25	75	0	0	0	0	23	152		-1	5.3	5.1	-1	0.013	0.3	-1	0			1
C Pit 9/17	Pit 9/17	0.2548	25	75	0	0	0	0	30	164		-1	5.3	5.4	-1	0.013	0.3	-1	0			1
C Pit 10/17	Pit 10/17	0.0508	50	50	0	0	0	0	32	32		-1	5.3	5.3	-1	0.013	0.3	-1	0			1
C Pit 11/17	Pit 11/17	0.2195	25	75	0	0	0	0	30	158		-1	4	5.3	-1	0.013	0.3	-1	0			1
C Pit 12/17	Pit 12/17	0.4102	25	75	0	0	0	0	30	158		-1	4	2.5	-1	0.013	0.3	-1	0			1
C Pit 1/19	Pit 1/19	0.0762	25	75	0	2	5	0														1
C Sw7	N1	0.47	0	100	0	0	0	0	30	164		-1	5.3	5	-1	0.013	0.3	-1	0			1

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	Chg (m)	RI (m)	Chg (m)	RL (m)	etc (m)
P Pit 1/17	Pit 1/17	Pit 2/17	41.902	52.105	51.163	2.25	Concrete, u	300	300	0.013	New	1							
P Pit 2/17	Pit 2/17	Pit 3/17	10.789	50.592	50.06	4.93	Concrete, u	300	300	0.013	New	1							
P Pit 3/17	Pit 3/17	Pit 4/17	30.648	50.03	48.522	4.92	Concrete, u	300	300	0.013	New	1							
P Pit 4/17	Pit 4/17	Pit 5/17	33.833	48.492	46.96	4.53	Concrete, u	300	300	0.013	New	1							
P Pit 5/17	Pit 5/17	Pit 6/17	33.527	46.914	45.397	4.52	Concrete, u	300	300	0.013	New	1							
P Pit 6/17	Pit 6/17	Pit 7/17	39.36	45.367	44.154	3.08	Concrete, u	300	300	0.013	New	1							
P Pit 7/17	Pit 7/17	Pit 8/17	22.358	44.044	43.373	3	Concrete, u	375	375	0.013	New	1							
P Pit 8/17	Pit 8/17	Pit 9/17	30.37	43.209	41.356	6.1	Concrete, u	375	375	0.013	New	1							
P Pit 9/17	Pit 9/17	Pit 10/17	33.037	41.326	40.543	2.37	Concrete, u	375	375	0.013	New	1							

P Pit 10/17	Pit 10/17	Pit 11/17	31.283	40.473	39.398	3.44	Concrete, u	450	450	0.013	New	1
P Pit 11/17	Pit 11/17	Pit 12/17	37.924	39.21	37.465	4.6	Concrete, u	525	525	0.013	New	1
P Pit 12/17	Pit 12/17	Pit 13/17	63.039	36.489	33.337	5	Concrete, u	525	525	0.013	New	1
P Pit 13/17	Pit 13/17	Pit 14/17	63.817	33.307	33.052	0.4	Concrete, u	525	525	0.013	New	1
P Pit 1/19	Pit 1/19	Pit 12/17	20.23	38.516	38.212	1.5	Concrete, u	300	300	0.013	New	1
P Pit 1/75	Pit 1/75	Pit 10/17	12.665	40.67	40.543	1	Concrete, u	375	375	0.013	New	1

DETAILS of SERVICES CROSSING PIPES

Pipe	Chg (m)	Bottom Elev (m)	Height of S Chg (m)	Bottom Elev (m)	Height of S Chg (m)	Bottom Elev (m)	Height of S etc (m)	etc
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CHANNEL DETAILS

Name	From	To	Type	Length (m)	U/S IL (m)	D/S IL (m)	Slope (%)	Base Width (m)	L.B. Slope (1:?)	R.B. Slope (1:?)	Manning n	Depth (m)	Roofed
Sw7	N1	N2	Prismatic	41.5	43.63	42.634	2.4	0.5	3	3	0.045	0.2	No

OVERFLOW ROUTE DETAILS

Name	From	To	Travel Time (min)	Spill Level (m)	Crest Length (m)	Weir Coeff. C	Cross Section	Safe Depth Major (m)	SafeDepth Minor (m)	Safe DxV (sq.m/sec)	Bed Slope (%)	D/S Area Contributing %	id	U/S IL	D/S IL	Length (m)
F Pit 1/17	Pit 1/17	Pit 2/17	1				8 m wide r	0.14	0.14	0.6	2.25	0	532	53.01	52.069	41.909
F Pit 2/17	Pit 2/17	Pit 3/17	1				8 m wide r	0.14	0.14	0.6	5.39	0	304190	52.069	51.469	11.129
F Pit 3/17	Pit 3/17	Pit 4/17	1				8 m wide r	0.14	0.14	0.6	4.8	0	533	51.469	49.999	30.644
F Pit 4/17	Pit 4/17	Pit 5/17	1				8 m wide r	0.14	0.14	0.6	6.24	0	534	49.999	47.869	34.157
F Pit 5/17	Pit 5/17	Pit 6/17	1				8 m wide r	0.14	0.14	0.6	4.48	0	535	47.869	46.352	33.843
F Pit 6/17	Pit 6/17	Pit 7/17	1				8 m wide r	0.14	0.14	0.6	3.27	0	536	46.352	45.055	39.645
F Pit 7/17	Pit 7/17	Pit 8/17	1				8 m wide r	0.14	0.14	0.6	3.03	0	537	45.055	44.377	22.358
F Pit 8/17	Pit 8/17	Pit 9/17	1				8 m wide r	0.14	0.14	0.6	5.66	0	538	44.377	42.657	30.37
F Pit 9/17	Pit 9/17	Pit 10/17	1				8 m wide r	0.14	0.14	0.6	3.34	0	539	42.657	41.554	33.037
F Pit 10/17	Pit 10/17	Pit 11/17	1				8 m wide r	0.14	0.14	0.6	3.46	0	540	41.554	40.471	31.312
F Pit 11/17	Pit 11/17	Pit 12/17	1				8 m wide r	0.14	0.14	0.6	3.32	0	541	40.471	39.211	37.927
F Pit 12/17	Pit 12/17	Pit 13/17	1				Pathway 4	0.3	0.15	0.6	7	0	542	39.211	34.799	63.039
F Pit 13/17	Pit 13/17	Pit 14/17	1				Pathway 4	0.3	0.15	0.6	0.34	0	543	34.799	34.585	63.817
F Pit 1/19	Pit 1/19	Pit 12/17	1				8 m wide r	0.14	0.14	0.6	1.5	0	545	39.514	39.211	20.23
F Sw7	N2	Pit 1/75	0.1				Swale 1:3 S	0.3	0.3	0.4	2.4	0	40528	42.634	42.61	1
F Pit 1/75	Pit 1/75	Pit 10/17	0.1				Pathway 4	0.3	0.15	0.6	10.47	0	40546	42.81	41.554	12

PIPE COVER DETAILS

Name	Type	Dia (mm)	Safe Cover	Cover (m)	Unsafe
P Pit 1/17	Concrete, u	300	0.6	0.57	Unsafe
P Pit 2/17	Concrete, u	300	0.6	0.56	Unsafe
P Pit 3/17	Concrete, u	300	0.6	1.11	
P Pit 4/17	Concrete, u	300	0.6	0.58	Unsafe
P Pit 5/17	Concrete, u	300	0.6	0.57	Unsafe
P Pit 6/17	Concrete, u	300	0.6	0.57	Unsafe
P Pit 7/17	Concrete, u	375	0.6	0.59	Unsafe
P Pit 8/17	Concrete, u	375	0.6	0.59	Unsafe
P Pit 9/17	Concrete, u	375	0.6	0.6	
P Pit 10/17	Concrete, u	450	0.6	0.58	Unsafe
P Pit 11/17	Concrete, u	525	0.6	0.52	Unsafe
P Pit 12/17	Concrete, u	525	0.6	0.52	Unsafe
P Pit 13/17	Concrete, u	525	0.6	-0.57	Unsafe
P Pit 1/19	Concrete, u	300	0.6	0.57	Unsafe
P Pit 1/75	Concrete, u	375	0.6	0.6	

This model has no pipes with non-return valves

Proposed DRAINS Model 1 - 1% AEP Storm Event Results

DRAINS results prepared from Version 2018.01

PIT / NODE DETAILS

Version 8

Name	Max HGL	Max Pond HGL	Max Surface Flow (cu.m/s)	Max Pond Volume (cu.m)	Min Freeboard (m)	Overflow (cu.m/s)	Constraint
Pit 1/17	52.22		0.014		0.79	0	None
Pit 2/17	50.79		0.038		1.28	0.007	Inlet Capacity
Pit 3/17	50.27		0.02		1.19	0.001	Inlet Capacity
Pit 4/17	48.84		0.032		1.16	0.004	Inlet Capacity
Pit 5/17	47.17		0.025		0.7	0.002	Inlet Capacity
Pit 6/17	45.66		0.026		0.69	0.002	Inlet Capacity
Pit 7/17	44.36		0.083		0.69	0.012	Inlet Capacity
Pit 8/17	43.72		0.098		0.65	0.015	Inlet Capacity
Pit 9/17	42.35		0.099		0.31	0.011	Inlet Capacity
Pit 10/17	40.92		0.072		0.63	0.006	Inlet Capacity
Pit 11/17	39.63		0.087		0.84	0.01	Inlet Capacity
Pit 12/17	38.39	39.29	0.136	0.2	0.82	0	Inlet Capacity
Pit 13/17	34.85		0		0	0	Outlet System
Pit 14/17	33.54		0				
Pit 1/19	38.7		0.05		0.82	0.004	Inlet Capacity
N1	43.78		0.105				
N2	42.76		0.105				
Pit 1/75	41.03	42.72	0.104	0.3	1.58	0	Inlet Capacity

SUB-CATCHMENT DETAILS

Name	Max Flow Q (cu.m/s)	Paved Max Q (cu.m/s)	Grassed Max Q (cu.m/s)	Paved Tc (min)	Grassed Tc (min)	Supp. Tc (min)	Due to Storm
C Pit 1/17	0.01	0.003	0.007	2	5	5	0 1% AEP, 10 min burst, Storm 4
C Pit 2/17	0.028	0.008	0.02	2	5	5	0 1% AEP, 10 min burst, Storm 4
Cat Pit 3/17	0.007	0.005	0.002	2	5	5	0 1% AEP, 5 min burst, Storm 1
C Pit 4/17	0.022	0.01	0.011	2	5	5	0 1% AEP, 5 min burst, Storm 1
C Pit 5/17	0.012	0.003	0.009	2	5	5	0 1% AEP, 10 min burst, Storm 4
C Pit 6/17	0.017	0.005	0.012	2	5	5	0 1% AEP, 10 min burst, Storm 4
C Pit 7/17	0.068	0.032	0.036	1.04	17.38	17.38	0 1% AEP, 10 min burst, Storm 7
C Pit 8/17	0.073	0.037	0.036	0.99	20.37	20.37	0 1% AEP, 10 min burst, Storm 7
C Pit 9/17	0.069	0.035	0.034	1.16	20.96	20.96	0 1% AEP, 10 min burst, Storm 7
C Pit 10/17	0.026	0.014	0.012	1.2	7.91	7.91	0 1% AEP, 10 min burst, Storm 7
C Pit 11/17	0.059	0.03	0.029	1.26	20.61	20.61	0 1% AEP, 10 min burst, Storm 7
C Pit 12/17	0.1	0.056	0.044	1.26	25.82	25.82	0 1% AEP, 10 min burst, Storm 7
C Pit 1/19	0.037	0.01	0.027	2	5	5	0 1% AEP, 10 min burst, Storm 4
C Sw7	0.105	0	0.105	1.46	27.09	27.09	0 1% AEP, 30 min burst, Storm 2

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
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P Pit 1/17	0.01	1.18	52.158	51.217	1% AEP, 10 min burst, Storm 7
P Pit 2/17	0.032	2.17	50.67	50.275	1% AEP, 10 min burst, Storm 4
P Pit 3/17	0.044	2.39	50.122	48.839	1% AEP, 10 min burst, Storm 4
P Pit 4/17	0.062	2.55	48.605	47.167	1% AEP, 10 min burst, Storm 7
P Pit 5/17	0.077	3.54	47.018	45.659	1% AEP, 10 min burst, Storm 7
P Pit 6/17	0.094	2.74	45.513	44.357	1% AEP, 10 min burst, Storm 3
P Pit 7/17	0.151	3.37	44.204	43.724	1% AEP, 10 min burst, Storm 7
P Pit 8/17	0.221	3.94	43.399	42.348	1% AEP, 10 min burst, Storm 7
P Pit 9/17	0.293	2.66	41.844	40.925	1% AEP, 10 min burst, Storm 7
P Pit 10/17	0.406	4.46	40.723	39.694	1% AEP, 10 min burst, Storm 3
P Pit 11/17	0.458	4.77	39.449	38.396	1% AEP, 10 min burst, Storm 7
P Pit 12/17	0.594	4.65	36.789	34.854	1% AEP, 10 min burst, Storm 4
P Pit 13/17	0.595	2.83	34.775	33.541	1% AEP, 10 min burst, Storm 7
P Pit 1/19	0.035	18.92	38.535	38.396	1% AEP, 10 min burst, Storm 7
P Pit 1/75	0.104	1.18	40.95	40.926	1% AEP, 30 min burst, Storm 1

CHANNEL DETAILS

Name	Max Q (cu.m/s)	Max V (m/s)	Due to Storm
Sw7	0.104	0.98	1% AEP, 30 min burst, Storm 4

OVERFLOW ROUTE DETAILS

Name	Max Q U/S	Max Q D/S	Safe Q	Max D	Max DxV	Max Width	Max V	Due to Storm
F Pit 1/17	0	0	0.285	0	0	0	0	
F Pit 2/17	0.007	0.007	0.44	0.043	0.04	0.36	1.22	1% AEP, 10 min burst, Storm 4
F Pit 3/17	0.001	0.001	0.416	0.032	0	0.27	0	1% AEP, 10 min burst, Storm 7
F Pit 4/17	0.004	0.004	0.474	0.032	0.03	0.27	1.14	1% AEP, 10 min burst, Storm 4
F Pit 5/17	0.002	0.002	0.402	0.027	0.02	0.22	0.8	1% AEP, 10 min burst, Storm 7
F Pit 6/17	0.002	0.002	0.343	0.051	0.02	0.42	0.78	1% AEP, 10 min burst, Storm 7
F Pit 7/17	0.012	0.012	0.33	0.051	0.06	0.42	1.15	1% AEP, 10 min burst, Storm 7
F Pit 8/17	0.015	0.015	0.451	0.051	0.07	0.42	1.45	1% AEP, 10 min burst, Storm 7
F Pit 9/17	0.011	0.011	0.347	0.051	0.05	0.42	1.15	1% AEP, 10 min burst, Storm 7
F Pit 10/17	0.006	0.006	0.353	0.048	0.04	0.39	0.88	1% AEP, 10 min burst, Storm 7
F Pit 11/17	0.01	0.01	0.346	0.075	0.05	1.16	1.05	1% AEP, 10 min burst, Storm 7
F Pit 12/17	0	0	0.527	0	0	0	0	
F Pit 13/17	0	0	0.487	0	0	0	0	
F Pit 1/19	0.004	0.004	0.232	0.075	0.02	1.16	0.57	1% AEP, 10 min burst, Storm 8
F Sw7	0.104	0.104	0.451	0.127	0.12	1.26	0.97	1% AEP, 30 min burst, Storm 2
F Pit 1/75	0	0	0.467	0	0	0	0	

DETENTION BASIN DETAILS

Name	Max WL	MaxVol	Max Q Total	Max Q Low Level	Max Q High Level
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Run Log for 5936000 run at 11:36:10 on 7/3/2018

No water upwelling from any pit. Freeboard was adequate at all pits.

Flows were safe in all overflow routes.

Proposed DRAINS Model 1 - 5% AEP Storm Event Results

DRAINS results prepared from Version 2018.01

PIT / NODE DETAILS

Version 8

Name	Max HGL	Max Pond HGL	Max Surface Flow (cu.m/s)	Max Pond Volume (cu.m)	Min Freeboard (m)	Overflow (cu.m/s)	Constraint
Pit 1/17	52.2		0.008		0.81	0	None
Pit 2/17	50.76		0.023		1.31	0.003	Inlet Capacity
Pit 3/17	50.23		0.009		1.24	0	None
Pit 4/17	48.74		0.018		1.26	0.001	Inlet Capacity
Pit 5/17	47.12		0.012		0.75	0	None
Pit 6/17	45.6		0.014		0.75	0	Inlet Capacity
Pit 7/17	44.29		0.047		0.76	0.005	Inlet Capacity
Pit 8/17	43.53		0.055		0.84	0.006	Inlet Capacity
Pit 9/17	41.7		0.055		0.96	0.004	Inlet Capacity
Pit 10/17	40.83		0.023		0.72	0.003	Inlet Capacity
Pit 11/17	39.52		0.044		0.95	0.004	Inlet Capacity
Pit 12/17	37.33	39.27	0.078	0.1	1.88	0	Inlet Capacity
Pit 13/17	34.85		0		0	0	Outlet System
Pit 14/17	34.35		0				
Pit 1/19	38.65		0.03		0.87	0.002	Inlet Capacity
N1	43.74		0.058				
N2	42.73		0.058				
Pit 1/75	40.88	42.68	0.058	0.2	1.73	0	Inlet Capacity

SUB-CATCHMENT DETAILS

Name	Max Flow Q (cu.m/s)	Paved Max Q (cu.m/s)	Grassed Max Q (cu.m/s)	Paved Tc (min)	Grassed Tc (min)	Supp. Tc (min)	Due to Storm
C Pit 1/17	0.007	0.002	0.005	2	5	5	0 5% AEP, 10 min burst, Storm 7
C Pit 2/17	0.02	0.006	0.014	2	5	5	0 5% AEP, 10 min burst, Storm 7
Cat Pit 3/17	0.005	0.004	0.001	2	5	5	0 5% AEP, 5 min burst, Storm 1
C Pit 4/17	0.015	0.006	0.009	2	5	5	0 5% AEP, 10 min burst, Storm 7
C Pit 5/17	0.009	0.003	0.006	2	5	5	0 5% AEP, 10 min burst, Storm 7
C Pit 6/17	0.012	0.003	0.008	2	5	5	0 5% AEP, 10 min burst, Storm 7
C Pit 7/17	0.044	0.023	0.02	1.17	19.66	5	0 5% AEP, 10 min burst, Storm 7
C Pit 8/17	0.046	0.027	0.019	1.12	23.04	5	0 5% AEP, 10 min burst, Storm 7
C Pit 9/17	0.044	0.026	0.018	1.31	23.71	5	0 5% AEP, 10 min burst, Storm 7
C Pit 10/17	0.017	0.01	0.007	1.36	8.94	5	0 5% AEP, 10 min burst, Storm 7
C Pit 11/17	0.038	0.022	0.016	1.42	23.32	5	0 5% AEP, 10 min burst, Storm 7
C Pit 12/17	0.065	0.052	0.024	1.42	29.21	5	0 5% AEP, 10 min burst, Storm 2
C Pit 1/19	0.026	0.008	0.019	2	5	5	0 5% AEP, 10 min burst, Storm 7
C Sw7	0.058	0	0.058	1.65	30.65	5	0 5% AEP, 30 min burst, Storm 8

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
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P Pit 1/17	0.007	1.07	52.15	51.208	5% AEP, 10 min burst, Storm 7
P Pit 2/17	0.024	2.01	50.66	50.229	5% AEP, 10 min burst, Storm 7
P Pit 3/17	0.032	2.17	50.108	48.744	5% AEP, 10 min burst, Storm 7
P Pit 4/17	0.046	2.34	48.588	47.117	5% AEP, 10 min burst, Storm 7
P Pit 5/17	0.054	2.59	47.015	45.6	5% AEP, 10 min burst, Storm 7
P Pit 6/17	0.065	2.69	45.479	44.293	5% AEP, 10 min burst, Storm 7
P Pit 7/17	0.103	2.48	44.195	43.533	5% AEP, 10 min burst, Storm 7
P Pit 8/17	0.147	3.55	43.36	41.702	5% AEP, 10 min burst, Storm 7
P Pit 9/17	0.192	3.33	41.52	40.833	5% AEP, 10 min burst, Storm 7
P Pit 10/17	0.243	3.72	40.666	39.612	5% AEP, 10 min burst, Storm 7
P Pit 11/17	0.274	3.72	39.406	37.663	5% AEP, 10 min burst, Storm 7
P Pit 12/17	0.365	4.1	36.715	34.85	5% AEP, 10 min burst, Storm 7
P Pit 13/17	0.363	1.67	34.821	34.35	5% AEP, 10 min burst, Storm 7
P Pit 1/19	0.025	11.39	38.537	38.305	5% AEP, 10 min burst, Storm 8
P Pit 1/75	0.058	1.15	40.845	40.836	5% AEP, 30 min burst, Storm 4

CHANNEL DETAILS

Name	Max Q (cu.m/s)	Max V (m/s)	Due to Storm
Sw7	0.058	0.8	5% AEP, 30 min burst, Storm 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
F Pit 1/17	0	0	0.285	0	0	0	0	
F Pit 2/17	0.003	0.003	0.44	0.034	0.03	0.28	1.01	5% AEP, 10 min burst, Storm 7
F Pit 3/17	0	0	0.416	0	0	0	0	
F Pit 4/17	0.001	0.001	0.474	0.023	0.02	0.19	0.9	5% AEP, 10 min burst, Storm 7
F Pit 5/17	0	0	0.402	0	0	0	0	
F Pit 6/17	0	0	0.343	0	0	0	0	
F Pit 7/17	0.005	0.005	0.33	0.038	0.03	0.32	0.78	5% AEP, 10 min burst, Storm 7
F Pit 8/17	0.006	0.006	0.451	0.038	0.04	0.32	1.11	5% AEP, 10 min burst, Storm 7
F Pit 9/17	0.004	0.004	0.347	0.037	0.03	0.31	0.94	5% AEP, 10 min burst, Storm 7
F Pit 10/17	0.003	0.003	0.353	0.035	0.02	0.29	0.81	5% AEP, 10 min burst, Storm 7
F Pit 11/17	0.004	0.004	0.346	0.055	0.03	0.48	0.78	5% AEP, 10 min burst, Storm 7
F Pit 12/17	0	0	0.348	0	0	0	0	
F Pit 13/17	0	0	0.077	0	0	0	0	
F Pit 1/19	0.002	0.002	0.232	0.055	0.02	0.48	0.52	5% AEP, 10 min burst, Storm 7
F Sw7	0.058	0.058	0.451	0.093	0.07	1.06	0.81	5% AEP, 30 min burst, Storm 1
F Pit 1/75	0	0	0.426	0	0	0	0	

DETENTION BASIN DETAILS

Name	Max WL	MaxVol	Max Q Total	Max Q Low Level	Max Q High Level
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Run Log for 5936000 run at 11:39:52 on 7/3/2018

No water upwelling from any pit. Freeboard was adequate at all pits.

Flows were safe in all overflow routes.

Proposed DRAINS Model 1 - 10% AEP Storm Event Results

DRAINS results prepared from Version 2018.01

PIT / NODE DETAILS

Version 8

Name	Max HGL	Max Pond HGL	Max Surface Flow (cu.m/s)	Max Pond Volume (cu.m)	Min Freeboard (m)	Overflow (cu.m/s)	Constraint
Pit 1/17	52.19		0.007		0.82	0	None
Pit 2/17	50.75		0.019		1.32	0.002	Inlet Capacity
Pit 3/17	50.21		0.007		1.26	0	None
Pit 4/17	48.72		0.015		1.28	0	Inlet Capacity
Pit 5/17	47.09		0.009		0.78	0	None
Pit 6/17	45.57		0.011		0.78	0	None
Pit 7/17	44.26		0.037		0.8	0.003	Inlet Capacity
Pit 8/17	43.49		0.043		0.89	0.004	Inlet Capacity
Pit 9/17	41.67		0.042		0.99	0.003	Inlet Capacity
Pit 10/17	40.77		0.017		0.78	0.001	Inlet Capacity
Pit 11/17	39.47		0.034		1	0.003	Inlet Capacity
Pit 12/17	37.04	39.26	0.061	0.1	2.17	0	Inlet Capacity
Pit 13/17	33.73		0		1.07	0	None
Pit 14/17	33.4		0				
Pit 1/19	38.63		0.025		0.88	0.001	Inlet Capacity
N1	43.72		0.041				
N2	42.71		0.041				
Pit 1/75	40.84	42.67	0.04	0.1	1.77	0	Inlet Capacity

SUB-CATCHMENT DETAILS

Name	Max Flow Q (cu.m/s)	Paved Max Q (cu.m/s)	Grassed Max Q (cu.m/s)	Paved Tc (min)	Grassed Tc (min)	Supp. Tc (min)	Due to Storm
C Pit 1/17	0.006	0.002	0.004	2	5	5	0 10% AEP, 10 min burst, Storm 7
C Pit 2/17	0.016	0.005	0.011	2	5	5	0 10% AEP, 10 min burst, Storm 7
Cat Pit 3/17	0.004	0.003	0.001	2	5	5	0 10% AEP, 5 min burst, Storm 1
C Pit 4/17	0.013	0.005	0.007	2	5	5	0 10% AEP, 10 min burst, Storm 7
C Pit 5/17	0.007	0.002	0.005	2	5	5	0 10% AEP, 10 min burst, Storm 7
C Pit 6/17	0.01	0.003	0.007	2	5	5	0 10% AEP, 10 min burst, Storm 7
C Pit 7/17	0.034	0.02	0.014	1.25	20.99	20.99	0 10% AEP, 10 min burst, Storm 7
C Pit 8/17	0.037	0.023	0.014	1.19	24.61	24.61	0 10% AEP, 10 min burst, Storm 7
C Pit 9/17	0.034	0.022	0.013	1.4	25.32	25.32	0 10% AEP, 10 min burst, Storm 7
C Pit 10/17	0.013	0.009	0.004	1.45	9.55	9.55	0 10% AEP, 10 min burst, Storm 6
C Pit 11/17	0.03	0.019	0.011	1.52	24.9	24.9	0 10% AEP, 10 min burst, Storm 7
C Pit 12/17	0.052	0.035	0.016	1.52	31.19	31.19	0 10% AEP, 10 min burst, Storm 6
C Pit 1/19	0.022	0.006	0.015	2	5	5	0 10% AEP, 10 min burst, Storm 7
C Sw7	0.041	0	0.041	1.76	32.69	32.69	0 10% AEP, 30 min burst, Storm 4

PIPE DETAILS

Name	Max Q (cu.m/s)	Max V (m/s)	Max U/S HGL (m)	Max D/S HGL (m)	Due to Storm
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P Pit 1/17	0.006	1.01	52.146	51.204	10% AEP, 10 min burst, Storm 7
P Pit 2/17	0.021	1.92	50.655	50.208	10% AEP, 10 min burst, Storm 7
P Pit 3/17	0.026	2.05	50.101	48.717	10% AEP, 10 min burst, Storm 7
P Pit 4/17	0.038	2.23	48.58	47.085	10% AEP, 10 min burst, Storm 7
P Pit 5/17	0.043	2.51	47.002	45.568	10% AEP, 10 min burst, Storm 7
P Pit 6/17	0.051	2.1	45.479	44.268	10% AEP, 10 min burst, Storm 7
P Pit 7/17	0.08	2.32	44.176	43.505	10% AEP, 10 min burst, Storm 7
P Pit 8/17	0.116	3.32	43.342	41.666	10% AEP, 10 min burst, Storm 7
P Pit 9/17	0.15	2.95	41.502	40.774	10% AEP, 10 min burst, Storm 6
P Pit 10/17	0.182	3.01	40.655	39.581	10% AEP, 10 min burst, Storm 7
P Pit 11/17	0.204	3.42	39.378	37.633	10% AEP, 10 min burst, Storm 7
P Pit 12/17	0.276	3.79	36.683	33.732	10% AEP, 10 min burst, Storm 7
P Pit 13/17	0.263	1.7	33.712	33.404	10% AEP, 10 min burst, Storm 7
P Pit 1/19	0.02	8.92	38.538	38.296	10% AEP, 10 min burst, Storm 6
P Pit 1/75	0.041	1.31	40.792	40.777	10% AEP, 30 min burst, Storm 7

CHANNEL DETAILS

Name	Max Q (cu.m/s)	Max V (m/s)	Due to Storm
Sw7	0.04	0.7	10% AEP, 30 min burst, Storm 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
F Pit 1/17	0	0	0.285	0	0	0	0	
F Pit 2/17	0.002	0.002	0.44	0.026	0.02	0.22	0.86	10% AEP, 10 min burst, Storm 7
F Pit 3/17	0	0	0.416	0	0	0	0	
F Pit 4/17	0	0	0.474	0	0	0	0	
F Pit 5/17	0	0	0.402	0	0	0	0	
F Pit 6/17	0	0	0.343	0	0	0	0	
F Pit 7/17	0.003	0.003	0.33	0.034	0.03	0.28	0.83	10% AEP, 10 min burst, Storm 7
F Pit 8/17	0.004	0.004	0.451	0.031	0.03	0.26	1	10% AEP, 10 min burst, Storm 7
F Pit 9/17	0.003	0.003	0.347	0.031	0.02	0.26	0.82	10% AEP, 10 min burst, Storm 7
F Pit 10/17	0.001	0.001	0.353	0.03	0.02	0.25	0.7	10% AEP, 10 min burst, Storm 7
F Pit 11/17	0.003	0.003	0.346	0.047	0.02	0.39	0.77	10% AEP, 10 min burst, Storm 7
F Pit 12/17	0	0	0.348	0	0	0	0	
F Pit 13/17	0	0	0.077	0	0	0	0	
F Pit 1/19	0.001	0.001	0.232	0.047	0.01	0.39	0.5	10% AEP, 10 min burst, Storm 7
F Sw7	0.04	0.04	0.451	0.078	0.06	0.97	0.75	10% AEP, 30 min burst, Storm 1
F Pit 1/75	0	0	0.426	0	0	0	0	

DETENTION BASIN DETAILS

Name	Max WL	MaxVol	Max Q Total	Max Q Low Level	Max Q High Level
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Run Log for 5936000 run at 11:41:33 on 7/3/2018

No water upwelling from any pit. Freeboard was adequate at all pits.

Flows were safe in all overflow routes.

Proposed DRAINS Model 1 - 20% AEP Storm Event Results

DRAINS results prepared from Version 2018.01

PIT / NODE DETAILS

Version 8

Name	Max HGL	Max Pond HGL	Max Surface Flow (cu.m/s)	Max Pond Volume (cu.m)	Min Freeboard (m)	Overflow (cu.m/s)	Constraint
Pit 1/17	52.18		0.006		0.83	0	None
Pit 2/17	50.73		0.016		1.34	0.001	Inlet Capacity
Pit 3/17	50.19		0.005		1.28	0	None
Pit 4/17	48.69		0.012		1.31	0	None
Pit 5/17	47.05		0.007		0.82	0	None
Pit 6/17	45.54		0.01		0.82	0	None
Pit 7/17	44.23		0.031		0.83	0.002	Inlet Capacity
Pit 8/17	43.44		0.038		0.93	0.003	Inlet Capacity
Pit 9/17	41.6		0.036		1.05	0.001	Inlet Capacity
Pit 10/17	40.72		0.015		0.84	0	None
Pit 11/17	39.42		0.029		1.05	0.001	Inlet Capacity
Pit 12/17	36.91	39.25	0.054	0.1	2.3	0	Inlet Capacity
Pit 13/17	33.64		0		1.16	0	None
Pit 14/17	33.35		0				
Pit 1/19	38.62		0.021		0.89	0.001	Inlet Capacity
N1	43.7		0.027				
N2	42.7		0.027				
Pit 1/75	40.8	42.65	0.026	0.1	1.81	0	Inlet Capacity

SUB-CATCHMENT DETAILS

Name	Max Flow Q (cu.m/s)	Paved Max Q (cu.m/s)	Grassed Max Q (cu.m/s)	Paved Tc (min)	Grassed Tc (min)	Supp. Tc (min)	Due to Storm
C Pit 1/17	0.005	0.001	0.003	2	5	5	0 20% AEP, 10 min burst, Storm 8
C Pit 2/17	0.013	0.004	0.009	2	5	5	0 20% AEP, 10 min burst, Storm 8
Cat Pit 3/17	0.003	0.003	0	2	5	5	0 20% AEP, 5 min burst, Storm 1
C Pit 4/17	0.01	0.004	0.006	2	5	5	0 20% AEP, 10 min burst, Storm 8
C Pit 5/17	0.006	0.002	0.004	2	5	5	0 20% AEP, 10 min burst, Storm 8
C Pit 6/17	0.008	0.002	0.005	2	5	5	0 20% AEP, 10 min burst, Storm 8
C Pit 7/17	0.025	0.016	0.009	1.35	22.6	22.6	0 20% AEP, 10 min burst, Storm 8
C Pit 8/17	0.028	0.019	0.009	1.28	26.49	26.49	0 20% AEP, 10 min burst, Storm 8
C Pit 9/17	0.026	0.018	0.008	1.5	27.25	27.25	0 20% AEP, 10 min burst, Storm 8
C Pit 10/17	0.01	0.009	0.001	1.44	9.44	9.44	0 20% AEP, 5 min burst, Storm 1
C Pit 11/17	0.022	0.016	0.007	1.64	26.8	26.8	0 20% AEP, 10 min burst, Storm 8
C Pit 12/17	0.04	0.036	0.005	1.5	30.83	30.83	0 20% AEP, 5 min burst, Storm 1
C Pit 1/19	0.017	0.005	0.012	2	5	5	0 20% AEP, 10 min burst, Storm 8
C Sw7	0.025	0	0.025	1.9	35.23	35.23	0 20% AEP, 30 min burst, Storm 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
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P Pit 1/17	0.005	0.94	52.142	51.199	20% AEP, 10 min burst, Storm 8
P Pit 2/17	0.017	1.81	50.649	50.187	20% AEP, 10 min burst, Storm 8
P Pit 3/17	0.02	1.91	50.093	48.688	20% AEP, 10 min burst, Storm 8
P Pit 4/17	0.03	2.07	48.569	47.054	20% AEP, 10 min burst, Storm 8
P Pit 5/17	0.034	2.75	46.983	45.541	20% AEP, 10 min burst, Storm 7
P Pit 6/17	0.038	1.94	45.463	44.25	20% AEP, 10 min burst, Storm 8
P Pit 7/17	0.06	2.15	44.157	43.486	20% AEP, 10 min burst, Storm 8
P Pit 8/17	0.086	3.06	43.322	41.605	20% AEP, 10 min burst, Storm 8
P Pit 9/17	0.11	2.51	41.483	40.718	20% AEP, 10 min burst, Storm 8
P Pit 10/17	0.127	2.73	40.623	39.548	20% AEP, 10 min burst, Storm 8
P Pit 11/17	0.143	3.1	39.349	37.604	20% AEP, 10 min burst, Storm 8
P Pit 12/17	0.197	3.45	36.652	33.641	20% AEP, 10 min burst, Storm 8
P Pit 13/17	0.185	1.47	33.625	33.348	20% AEP, 10 min burst, Storm 8
P Pit 1/19	0.017	7.89	38.537	38.288	20% AEP, 10 min burst, Storm 8
P Pit 1/75	0.025	1.17	40.763	40.717	20% AEP, 30 min burst, Storm 8

CHANNEL DETAILS

Name	Max Q (cu.m/s)	Max V (m/s)	Due to Storm
Sw7	0.024	0.58	20% AEP, 30 min burst, Storm 5

OVERFLOW ROUTE DETAILS

Name	Max Q U/S	Max Q D/S	Safe Q	Max D	Max DxV	Max Width	Max V	Due to Storm
F Pit 1/17	0	0	0.285	0	0	0	0	0
F Pit 2/17	0.001	0.001	0.44	0.017	0	0.14	0	0 20% AEP, 10 min burst, Storm 8
F Pit 3/17	0	0	0.416	0	0	0	0	0
F Pit 4/17	0	0	0.474	0	0	0	0	0
F Pit 5/17	0	0	0.402	0	0	0	0	0
F Pit 6/17	0	0	0.343	0	0	0	0	0
F Pit 7/17	0.002	0.002	0.33	0.026	0.02	0.21	0.71	0.71 20% AEP, 10 min burst, Storm 8
F Pit 8/17	0.003	0.003	0.451	0.026	0.03	0.22	1	1 20% AEP, 10 min burst, Storm 8
F Pit 9/17	0.001	0.001	0.347	0.026	0.02	0.22	0.72	0.72 20% AEP, 10 min burst, Storm 8
F Pit 10/17	0	0	0.353	0	0	0	0	0
F Pit 11/17	0.001	0.001	0.346	0.038	0.01	0.32	0.69	0.69 20% AEP, 10 min burst, Storm 8
F Pit 12/17	0	0	0.348	0	0	0	0	0
F Pit 13/17	0	0	0.077	0	0	0	0	0
F Pit 1/19	0.001	0.001	0.232	0.038	0	0.32	0	0 20% AEP, 10 min burst, Storm 8
F Sw7	0.024	0.024	0.451	0.061	0.04	0.87	0.66	0.66 20% AEP, 30 min burst, Storm 5
F Pit 1/75	0	0	0.426	0	0	0	0	0

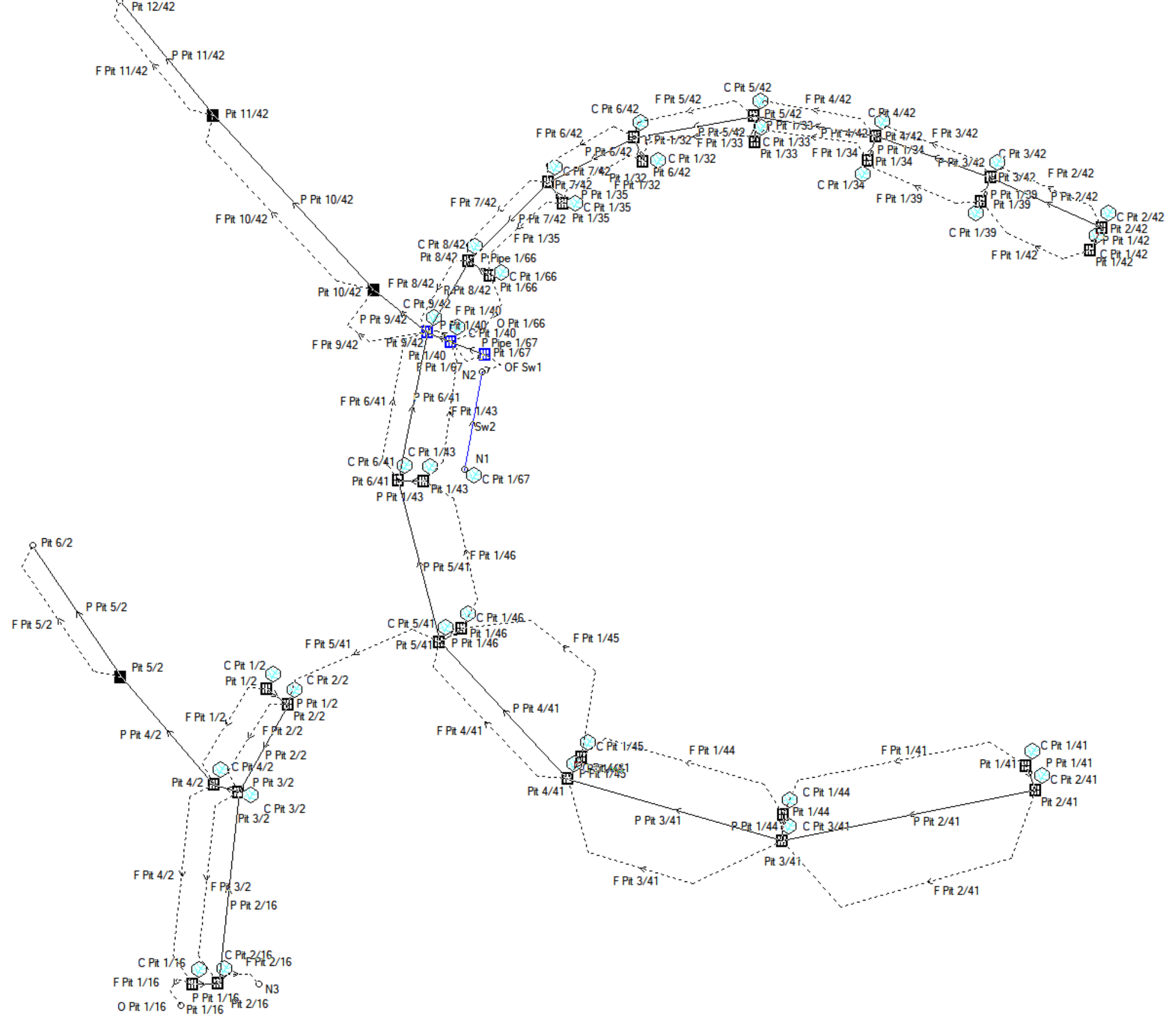
DETENTION BASIN DETAILS

Name	Max WL	MaxVol	Max Q Total	Max Q Low Level	Max Q High Level
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Run Log for 5936000 run at 11:42:36 on 7/3/2018

No water upwelling from any pit. Freeboard was adequate at all pits.

Flows were safe in all overflow routes.



Proposed DRAINS Model 2 - Data Information

PIT / NODE DETAILS

Version 13

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	Part Full Shock Loss	Inflow Hydrograph	Pit is
Pit 1/2	OnGrade	WSP Standard Pits	600 x 900 PIT		5.9	44.562		0	0.2	282220.8	6250253	No	3 1 x Ku	No	New
Pit 2/2	OnGrade	WSP Standard Pits	600 x 900 PIT		5.9	44.57		0	0.2	282226	6250249	No	4 1 x Ku	No	New
Pit 3/2	OnGrade	WSP Standard Pits	600 x 900 PIT		2.5	44.002		0	0.2	282213.6	6250227	No	5 1 x Ku	No	New
Pit 4/2	OnGrade	WSP Standard Pits	600 x 900 PIT		1.6	43.992		0	0.2	282207.4	6250229	No	6 1 x Ku	No	New
Pit 5/2	OnGrade	WSP Standard Pits	900SQ		0.2	41.338		0	0.2	282184.2	6250256	Yes	7 1 x Ku	No	New
Pit 6/2	Node					37.033		0		282162	6250289		8	No	
Pit 1/16	OnGrade	WSP Standard Pits	600 x 900 PIT		5.9	43.331		0	0.2	282202	6250179	No	34 1 x Ku	No	New
Pit 2/16	OnGrade	WSP Standard Pits	3 x 600x900		5.9	43.282		0	0.2	282208.5	6250180	No	35 1 x Ku	No	New
Pit 1/32	OnGrade	WSP Standard Pits	2 x 600x900		5.9	45.146		0	0.2	282314.8	6250385	No	75 1 x Ku	No	New
Pit 6/42	OnGrade	WSP Standard Pits	600 x 900 PIT		1.6	45.143		0	0.2	282312.5	6250391	No	100 1 x Ku	No	New
Pit 7/42	OnGrade	WSP Standard Pits	600 x 900 PIT		1.2	44.488		0	0.2	282291.1	6250380	No	101 1 x Ku	No	New
Pit 8/42	OnGrade	WSP Standard Pits	600 x 900 PIT		0.6	43.672		0	0.2	282271.2	6250360	No	102 1 x Ku	No	New
Pit 9/42	Sag	WSP Standard Pits	3 x 600x900	0.5	2	43.414	0.15	0	0.5	282260.8	6250342	No	103 1 x Ku	No	New
Pit 10/42	OnGrade	WSP Standard Pits	900SQ		0.2	41.838		0	0.2	282247.4	6250353	Yes	104 1 x Ku	No	New
Pit 11/42	OnGrade	WSP Standard Pits	900SQ		0.2	37.638		0	0.2	282207.3	6250397	Yes	105 1 x Ku	No	New
Pit 12/42	Node					35.999		0		282183.9	6250425		106	No	
Pit 1/33	OnGrade	WSP Standard Pits	600 x 900 PIT		5.9	46.027		0	0.2	282342.8	6250390	No	76 1 x Ku	No	New
Pit 5/42	OnGrade	WSP Standard Pits	600 x 900 PIT		0.8	46.008		0	0.2	282342.6	6250397	No	99 1 x Ku	No	New
Pit 1/34	OnGrade	WSP Standard Pits	600 x 900 PIT		5.9	46.874		0	0.2	282371.1	6250385	No	77 1 x Ku	No	New
Pit 4/42	OnGrade	WSP Standard Pits	600 x 900 PIT		1.4	46.873		0	0.2	282373	6250392	No	98 1 x Ku	No	New
Pit 1/35	OnGrade	WSP Standard Pits	2 x 600x900		5.9	44.459		0	0.2	282294.9	6250375	No	78 1 x Ku	No	New
Pit 1/39	OnGrade	WSP Standard Pits	600 x 900 PIT		5.9	47.669		0	0.2	282399.3	6250375	No	87 1 x Ku	No	New
Pit 3/42	OnGrade	WSP Standard Pits	600 x 900 PIT		2.2	47.668		0	0.2	282401.7	6250381	No	97 1 x Ku	No	New
Pit 1/41	OnGrade	WSP Standard Pits	600 x 900 PIT		5.9	52.362		0	0.2	282410.6	6250234	No	89 1 x Ku	No	New
Pit 2/41	OnGrade	WSP Standard Pits	600 x 900 PIT		5.9	52.338		0	0.2	282413	6250228	No	90 1 x Ku	No	New
Pit 3/41	OnGrade	WSP Standard Pits	2 x 600x900		4.2	50.784		0	0.2	282349.6	6250215	No	91 1 x Ku	No	New
Pit 4/41	OnGrade	WSP Standard Pits	600 x 900 PIT		1.3	48.549		0	0.2	282296	6250231	No	92 1 x Ku	No	New
Pit 5/41	OnGrade	WSP Standard Pits	600 x 900 PIT		1.3	46.303		0	0.2	282263.9	6250265	No	93 1 x Ku	No	New
Pit 6/41	OnGrade	WSP Standard Pits	600 x 900 PIT		0.4	44.304		0	0.2	282253.5	6250305	No	94 1 x Ku	No	New
Pit 1/42	OnGrade	WSP Standard Pits	600 x 900 PIT		5.9	48.464		0	0.2	282426.6	6250363	No	95 1 x Ku	No	New
Pit 2/42	OnGrade	WSP Standard Pits	600 x 900 PIT		2.8	48.465		0	0.2	282429.6	6250369	No	96 1 x Ku	No	New
Pit 1/43	OnGrade	WSP Standard Pits	600 x 900 PIT		5.9	44.314		0	0.2	282260	6250305	No	107 1 x Ku	No	New
Pit 1/44	OnGrade	WSP Standard Pits	600 x 900 PIT		4.9	50.811		0	0.2	282349.8	6250222	No	108 1 x Ku	No	New
Pit 1/45	OnGrade	WSP Standard Pits	600 x 900 PIT		5.9	48.549		0	0.2	282299.4	6250236	No	109 1 x Ku	No	New
Pit 1/46	OnGrade	WSP Standard Pits	600 x 900 PIT		5.9	46.286		0	0.2	282269.5	6250268	No	110 1 x Ku	No	New
Pit 1/66	OnGrade	WSP Standard Pits	2 x 600x900		4.8	43.677		0	0.2	282276.4	6250357	No	168 1 x Ku	No	New
O Pit 1/16	Node					43.331		0		282207	6250184		176	No	
N1	Node					44.7		0		282270	6250308		1796169	No	
N2	Node					43.651		0		282274.5	6250333		1796171	No	
Pit 1/67	Sag	WSP Standard Pits	2 x 900SQ in Swale	0.5	3.8	43.3	0.2	0	0.5	282275.3	6250337	No	1796175 1 x Ku	No	New
Pit 1/40	Sag	WSP Standard Pits	3 x 600x900	0.5	1	43.444	0.15	0	0.5	282266.9	6250340	No	88 1 x Ku	No	New
N3	Node					43.35		0		282218.8	6250179		3152333	No	

DETENTION BASIN DETAILS

Name	Elev	Surf. Area	Not Used	Outlet Type	K	Dia(mm)	Centre RL	Pit Family	Pit Type	x	y	HED	Crest RL	Crest Length	id
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SUB-CATCHMENT DETAILS

Name	Pit or Node	Total Area	Paved Area	Grass Area	Supp Area	Paved Time	Grass Time	Supp Time	Paved Length	Grass Length	Supp Length	Paved Slope(%)	Grass Slope	Supp Slope	Paved Rough	Grass Rough	Supp Rough	Lag Time or Factor	Gutter Length	Gutter Slope	Gutter FlowFactor	Rainfall Multiplier
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		(ha)	%	%	%	(min)	(min)	(min)	(m)	(m)	(m)	%	%	%				(m)	%
C Pit 1/2	Pit 1/2	0.016	50	50	0	0	0	0	47	47	-1	3.7	3.7	-1	0.013	0.3	-1	-1	1
C Pit 2/2	Pit 2/2	0.0852	25	75	0	0	0	0	47	51	-1	3.7	4.76	-1	0.013	0.3	-1	-1	1
C Pit 3/2	Pit 3/2	0.1229	25	75	0	0	0	0	25	72	-1	2.25	4.16	-1	0.013	0.3	-1	-1	1
C Pit 4/2	Pit 4/2	0.0091	25	75	0	50	50	0	25	25	-1	2.25	2.25	-1	0.013	0.3	-1	-1	1
C Pit 1/16	Pit 1/16	0.0164	50	50	0	0	0	0	50	50	-1	1.3	1.3	-1	0.013	0.3	-1	-1	1
C Pit 2/16	Pit 2/16	0.6907	25	75	0	0	0	0	48	338	-1	1.5	3.32	-1	0.013	0.3	-1	-1	1
C Pit 1/32	Pit 1/32	0.3357	25	75	0	0	0	0	30	190	-1	2.5	3.7	-1	0.013	0.3	-1	-1	1
C Pit 6/42	Pit 6/42	0.02	50	50	0	0	0	0	30	30	-1	2.8	2.8	-1	0.013	0.3	-1	-1	1
C Pit 7/42	Pit 7/42	0.0161	50	50	0	0	0	0	25	25	-1	2.7	2.7	-1	0.013	0.3	-1	-1	1
C Pit 8/42	Pit 8/42	0.0182	25	75	0	2	5	0											1
C Pit 9/42	Pit 9/42	0.0399	25	75	0	2	5	0											1
C Pit 1/33	Pit 1/33	0.1308	25	75	0	0	0	0	28	140	-1	3	4.3	-1	0.013	0.3	-1	-1	1
C Pit 5/42	Pit 5/42	0.0202	50	50	0	0	0	0	31	31	-1	2.8	2.8	-1	0.013	0.3	-1	-1	1
C Pit 1/34	Pit 1/34	0.0517	25	75	0	0	0	0	30	70	-1	2.65	3.61	-1	0.013	0.3	-1	-1	1
C Pit 4/42	Pit 4/42	0.0197	25	75	0	0	0	0	30	30	-1	2.6	2.6	-1	0.013	0.3	-1	-1	1
C Pit 1/35	Pit 1/35	0.2316	25	75	0	0	0	0	22	209	-1	3	3.85	-1	0.013	0.3	-1	-1	1
C Pit 1/39	Pit 1/39	0.1651	25	75	0	0	0	0	30	140	-1	2.65	3.5	-1	0.013	0.3	-1	-1	1
C Pit 3/42	Pit 3/42	0.0198	50	50	0	0	0	0	30	30	-1	2.6	2.6	-1	0.013	0.3	-1	-1	1
C Pit 1/41	Pit 1/41	0.013	25	75	0	2	5	0											1
C Pit 2/41	Pit 2/41	0.1903	25	75	0	0	0	0	30	180	-1	2	2.5	-1	0.013	0.3	-1	-1	1
C Pit 3/41	Pit 3/41	0.4104	25	75	0	0	0	0	60	220	-1	2.1	2.1	-1	0.013	0.3	-1	-1	1
C Pit 4/41	Pit 4/41	0.1036	25	75	0	0	0	0	55	151	-1	4.5	3.3	-1	0.013	0.3	-1	-1	1
C Pit 5/41	Pit 5/41	0.0276	25	75	0	2	5	0											1
C Pit 6/41	Pit 6/41	0.0118	25	75	0	2	5	0											1
C Pit 1/42	Pit 1/42	0.0454	25	75	0	2	5	0											1
C Pit 2/42	Pit 2/42	0.0142	50	50	0	0	0	0	30	30	-1	2.6	2.6	-1	0.013	0.3	-1	-1	1
C Pit 1/43	Pit 1/43	0.0979	25	75	0	0	0	0	38	125	-1	5	5	-1	0.013	0.3	-1	-1	1
C Pit 1/44	Pit 1/44	0.0398	25	75	0	2	5	0											1
C Pit 1/45	Pit 1/45	0.0346	25	75	0	2	5	0											1
C Pit 1/46	Pit 1/46	0.0702	25	75	0	2	5	0											1
C Pit 1/66	Pit 1/66	0.2709	25	75	0	0	0	0	20	216	-1	4	4.08	-1	0.013	0.3	-1	-1	1
C Pit 1/67	N1	1.0086	25	75	0	0	0	0	35	154	-1	2.4	4.9	-1	0.013	0.3	-1	-1	1
C Pit 1/40	Pit 1/40	0.178	50	50	0	0	0	0	35	70	-1	2.4	2.4	-1	0.013	0.3	-1	-1	1

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	Chg (m)	RI (m)	Chg (m)	RL (m)	etc (m)
P Pit 1/2	Pit 1/2	Pit 2/2	6.511	43.662	43.597		1 Concrete, u	300	300	0.013	New	1							
P Pit 2/2	Pit 2/2	Pit 3/2	25.125	43.567	43.102		1.85 Concrete, u	300	300	0.013	New	1							
P Pit 3/2	Pit 3/2	Pit 4/2	6.502	41.729	41.664		1 Concrete, u	375	375	0.013	New	1							
P Pit 4/2	Pit 4/2	Pit 5/2	35.528	41.634	39.5		6.01 Concrete, u	375	375	0.013	New	1							
P Pit 5/2	Pit 5/2	Pit 6/2	39.589	39.2	36		8.08 Concrete, u	375	375	0.013	New	1							
P Pit 1/16	Pit 1/16	Pit 2/16	6.516	42.336	42.271		1 Concrete, u	375	375	0.013	New	1							
P Pit 2/16	Pit 2/16	Pit 3/2	48.181	42.241	41.759		1 Concrete, u	375	375	0.013	New	1							
P Pit 1/32	Pit 1/32	Pit 6/42	6.5	44.246	44.181		1 Concrete, u	300	300	0.013	New	1							
P Pit 6/42	Pit 6/42	Pit 7/42	24.206	44.113	43.48		2.62 Concrete, u	375	375	0.013	New	1							
P Pit 7/42	Pit 7/42	Pit 8/42	27.959	43.45	42.659		2.83 Concrete, u	375	375	0.013	New	1							
P Pit 8/42	Pit 8/42	Pit 9/42	20.68	42.559	42.302		1.24 Concrete, u	450	450	0.013	New	1							
P Pit 9/42	Pit 9/42	Pit 10/42	17.084	41.826	40.63		7 Concrete, u	525	525	0.013	New	1							
P Pit 10/42	Pit 10/42	Pit 11/42	59.315	40.6	36.62		6.71 Concrete, u	525	525	0.013	New	1							
P Pit 11/42	Pit 11/42	Pit 12/42	38.39	36.59	35.2		3.62 Concrete, u	525	525	0.013	New	1							
P Pit 1/33	Pit 1/33	Pit 5/42	6.501	45.111	45.046		1 Concrete, u	300	300	0.013	New	1							
P Pit 5/42	Pit 5/42	Pit 6/42	30.554	44.926	44.143		2.56 Concrete, u	375	375	0.013	New	1							
P Pit 1/34	Pit 1/34	Pit 4/42	6.5	45.974	45.909		1 Concrete, u	300	300	0.013	New	1							

P Pit 4/42	Pit 4/42	Pit 5/42	30.863	45.879	45.108	2.5 Concrete, u	300	300	0.013 New	1
P Pit 1/35	Pit 1/35	Pit 7/42	6.5	43.559	43.494	1 Concrete, u	300	300	0.013 New	1
P Pit 1/39	Pit 1/39	Pit 3/42	6.5	46.769	46.704	1 Concrete, u	300	300	0.013 New	1
P Pit 3/42	Pit 3/42	Pit 4/42	30.48	46.674	45.973	2.3 Concrete, u	300	300	0.013 New	1
P Pit 1/41	Pit 1/41	Pit 2/41	6.5	51.437	51.372	1 Concrete, u	300	300	0.013 New	1
P Pit 2/41	Pit 2/41	Pit 3/41	64.587	51.342	49.884	2.26 Concrete, u	300	300	0.013 New	1
P Pit 3/41	Pit 3/41	Pit 4/41	55.839	49.785	47.649	3.83 Concrete, u	300	300	0.013 New	1
P Pit 4/41	Pit 4/41	Pit 5/41	46.856	47.504	45.3	4.7 Concrete, u	375	375	0.013 New	1
P Pit 5/41	Pit 5/41	Pit 6/41	41.671	45.27	43.302	4.72 Concrete, u	375	375	0.013 New	1
P Pit 6/41	Pit 6/41	Pit 9/42	37.851	43.002	42.394	1.61 Concrete, u	450	450	0.013 New	1
P Pit 1/42	Pit 1/42	Pit 2/42	6.5	47.564	47.499	1 Concrete, u	300	300	0.013 New	1
P Pit 2/42	Pit 2/42	Pit 3/42	30.547	47.469	46.768	2.29 Concrete, u	300	300	0.013 New	1
P Pit 1/43	Pit 1/43	Pit 6/41	6.501	43.414	43.349	1 Concrete, u	300	300	0.013 New	1
P Pit 1/44	Pit 1/44	Pit 3/41	6.5	49.88	49.815	1 Concrete, u	300	300	0.013 New	1
P Pit 1/45	Pit 1/45	Pit 4/41	6.5	47.649	47.584	1 Concrete, u	300	300	0.013 New	1
P Pit 1/46	Pit 1/46	Pit 5/41	6.539	45.386	45.32	1.01 Concrete, u	300	300	0.013 New	1
P Pipe 1/66	Pit 1/66	Pit 8/42	6.495	42.747	42.682	1 Concrete, u	300	300	0.013 New	1
P Pipe 1/67	Pit 1/67	Pit 1/40	5.866	42.01	41.951	1.01 Concrete, u	525	525	0.013 New	1
P Pit 1/40	Pit 1/40	Pit 9/42	6.501	41.921	41.856	1 Concrete, u	525	525	0.013 New	1

DETAILS of SERVICES CROSSING PIPES

Pipe	Chg (m)	Bottom Elev (m)	Height of S (m)	Chg (m)	Bottom Elev (m)	Height of S (m)	Chg (m)	Bottom Elev (m)	Height of S (m)	etc
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CHANNEL DETAILS

Name	From	To	Type	Length (m)	U/S IL (m)	D/S IL (m)	Slope (%)	Base Width (m)	L.B. Slope (1:?)	R.B. Slope (1:?)	Manning n	Depth (m)	Roofed
Sw2	N1	N2	Prismatic	38.55	45.2	43.35	4.8	0.6	3	3	0.045	0.3	No

OVERFLOW ROUTE DETAILS

Name	From	To	Travel Time (min)	Spill Level (m)	Crest Length (m)	Weir Coeff. C	Cross Section	Safe Depth Major (m)	SafeDepth Minor (m)	Safe DxV (sq.m/sec)	Bed Slope (%)	D/S Area Contributing %	id	U/S IL	D/S IL	Length (m)
F Pit 1/2	Pit 1/2	Pit 4/2	1				8 m wide rc	0.14	0.14	0.6	2.07	0	502	44.562	43.992	27.546
F Pit 2/2	Pit 2/2	Pit 3/2	1				8 m wide rc	0.14	0.14	0.6	2.25	0	503	44.57	44.002	25.263
F Pit 3/2	Pit 3/2	Pit 2/16	1				8 m wide rc	0.14	0.14	0.6	1.49	0	504	44.002	43.282	48.369
F Pit 4/2	Pit 4/2	Pit 1/16	1				8 m wide rc	0.14	0.14	0.6	1.31	0	505	43.992	43.331	50.366
F Pit 5/2	Pit 5/2	Pit 6/2	1				Pathway 4	0.3	0.15	0.6	10.87	0	506	41.338	37.033	39.589
F Pit 1/16	Pit 1/16	O Pit 1/16	1				Pathway 4	0.3	0.15	0.6	0.31	0	530	43.331	43.3	10
F Pit 2/16	Pit 2/16	N3	1				8 m wide rc	0.3	0.15	0.4	0.82	0	531	43.282	43.2	10
F Pit 1/32	Pit 1/32	Pit 1/35	1				8 m wide rc	0.14	0.14	0.6	3.04	0	569	45.146	44.459	22.627
F Pit 6/42	Pit 6/42	Pit 7/42	1				8 m wide rc	0.14	0.14	0.6	2.7	0	593	45.143	44.488	24.28
F Pit 7/42	Pit 7/42	Pit 8/42	1				8 m wide rc	0.14	0.14	0.6	2.91	0	594	44.488	43.672	28.074
F Pit 8/42	Pit 8/42	Pit 9/42	1				8 m wide rc	0.14	0.14	0.6	1.25	0	595	43.672	43.414	20.68
F Pit 9/42	Pit 9/42	Pit 10/42	1				Pathway 4	0.3	0.15	0.6	9.23	0	596	43.414	41.838	17.084
F Pit 10/42	Pit 10/42	Pit 11/42	1				Pathway 4	0.3	0.15	0.6	7.08	0	597	41.838	37.638	59.315
F Pit 11/42	Pit 11/42	Pit 12/42	1				Pathway 4	0.3	0.15	0.6	4.43	0	598	37.638	35.999	37.029
F Pit 1/33	Pit 1/33	Pit 1/32	1				8 m wide rc	0.14	0.14	0.6	3.09	0	570	46.027	45.146	28.489
F Pit 5/42	Pit 5/42	Pit 6/42	1				8 m wide rc	0.14	0.14	0.6	2.82	0	592	46.008	45.143	30.705
F Pit 1/34	Pit 1/34	Pit 1/33	1				8 m wide rc	0.14	0.14	0.6	2.93	0	571	46.874	46.027	28.887
F Pit 4/42	Pit 4/42	Pit 5/42	1				8 m wide rc	0.14	0.14	0.6	2.79	0	591	46.873	46.008	31.008
F Pit 1/35	Pit 1/35	Pit 1/66	1				8 m wide rc	0.14	0.14	0.6	4.1	0	572	44.459	43.677	19.08
F Pit 1/39	Pit 1/39	Pit 1/34	1				8 m wide rc	0.14	0.14	0.6	2.65	0	580	47.669	46.874	29.981
F Pit 3/42	Pit 3/42	Pit 4/42	1				8 m wide rc	0.14	0.14	0.6	2.61	0	590	47.668	46.873	30.488
F Pit 1/41	Pit 1/41	Pit 1/44	1				8 m wide rc	0.14	0.14	0.6	2.48	0	582	52.362	50.811	62.475

F Pit 2/41	Pit 2/41	Pit 3/41	1	8 m wide r	0.14	0.14	0.6	2.39	0	583	52.338	50.784	65.149
F Pit 3/41	Pit 3/41	Pit 4/41	1	8 m wide r	0.14	0.14	0.6	3.96	0	584	50.784	48.549	56.414
F Pit 4/41	Pit 4/41	Pit 5/41	1	8 m wide r	0.14	0.14	0.6	4.74	0	585	48.549	46.303	47.401
F Pit 5/41	Pit 5/41	Pit 2/2	1	8 m wide r	0.14	0.14	0.6	3.74	0	586	46.303	44.57	46.35
F Pit 6/41	Pit 6/41	Pit 9/42	1	8 m wide r	0.14	0.14	0.6	2.33	0	587	44.304	43.414	38.139
F Pit 1/42	Pit 1/42	Pit 1/39	1	8 m wide r	0.14	0.14	0.6	2.65	0	588	48.464	47.669	29.968
F Pit 2/42	Pit 2/42	Pit 3/42	1	8 m wide r	0.14	0.14	0.6	2.61	0	589	48.465	47.668	30.555
F Pit 1/43	Pit 1/43	Pit 1/40	1	8 m wide r	0.14	0.14	0.6	2.44	0	599	44.314	43.444	35.718
F Pit 1/44	Pit 1/44	Pit 1/45	1	8 m wide r	0.14	0.14	0.6	4.26	0	600	50.811	48.549	53.044
F Pit 1/45	Pit 1/45	Pit 1/46	1	8 m wide r	0.14	0.14	0.6	5.1	0	601	48.549	46.286	44.348
F Pit 1/46	Pit 1/46	Pit 1/43	1	8 m wide r	0.14	0.14	0.6	5.13	0	602	46.286	44.314	38.416
O Pit 1/66	Pit 1/66	Pit 1/40	1	8 m wide r	0.14	0.14	0.6	1.25	0	709	43.672	43.414	20.68
OF Sw1	N2	Pit 1/67	0.1	Swale 1:3 S	0.3	0.2	0.4	4.1	0	1796239	43.35	43.3	1
F Pit 1/67	Pit 1/67	Pit 1/40	0.1	Pathway 4	0.3	0.15	0.6	1.94	0	1796311	43.55	43.44	5.66
F Pit 1/40	Pit 1/40	Pit 9/42	1	8 m wide r	0.14	0.14	0.6	0.01	0	581	43.444	43.444	6.5

PIPE COVER DETAILS

Name	Type	Dia (mm)	Safe Cover	Cover (m)	
P Pit 1/2	Concrete, u	300	0.6	0.57	Unsafe
P Pit 2/2	Concrete, u	300	0.6	0.57	Unsafe
P Pit 3/2	Concrete, u	375	0.6	1.86	
P Pit 4/2	Concrete, u	375	0.6	1.21	
P Pit 5/2	Concrete, u	375	0.6	0.24	Unsafe
P Pit 1/16	Concrete, u	375	0.6	0.53	Unsafe
P Pit 2/16	Concrete, u	375	0.6	0.63	
P Pit 1/32	Concrete, u	300	0.6	0.57	Unsafe
P Pit 6/42	Concrete, u	375	0.6	0.57	Unsafe
P Pit 7/42	Concrete, u	375	0.6	0.6	
P Pit 8/42	Concrete, u	450	0.6	0.6	
P Pit 9/42	Concrete, u	525	0.6	0.53	Unsafe
P Pit 10/42	Concrete, u	525	0.6	0.45	Unsafe
P Pit 11/42	Concrete, u	525	0.6	0.14	Unsafe
P Pit 1/33	Concrete, u	300	0.6	0.57	Unsafe
P Pit 5/42	Concrete, u	375	0.6	0.59	Unsafe
P Pit 1/34	Concrete, u	300	0.6	0.57	Unsafe
P Pit 4/42	Concrete, u	300	0.6	0.57	Unsafe
P Pit 1/35	Concrete, u	300	0.6	0.57	Unsafe
P Pit 1/39	Concrete, u	300	0.6	0.57	Unsafe
P Pit 3/42	Concrete, u	300	0.6	0.57	Unsafe
P Pit 1/41	Concrete, u	300	0.6	0.57	Unsafe
P Pit 2/41	Concrete, u	300	0.6	0.57	Unsafe
P Pit 3/41	Concrete, u	300	0.6	0.57	Unsafe
P Pit 4/41	Concrete, u	375	0.6	0.59	Unsafe
P Pit 5/41	Concrete, u	375	0.6	0.59	Unsafe
P Pit 6/41	Concrete, u	450	0.6	0.5	Unsafe
P Pit 1/42	Concrete, u	300	0.6	0.57	Unsafe
P Pit 2/42	Concrete, u	300	0.6	0.57	Unsafe
P Pit 1/43	Concrete, u	300	0.6	0.57	Unsafe
P Pit 1/44	Concrete, u	300	0.6	0.57	Unsafe
P Pit 1/45	Concrete, u	300	0.6	0.57	Unsafe
P Pit 1/46	Concrete, u	300	0.6	0.57	Unsafe
P Pipe 1/66	Concrete, u	300	0.6	0.6	
P Pipe 1/67	Concrete, u	525	0.6	0.72	
P Pit 1/40	Concrete, u	525	0.6	0.92	

This model has no pipes with non-return valves

Proposed DRAINS Model 2 - 1% AEP Storm Event Results

DRAINS results prepared from Version 2018.01

PIT / NODE DETAILS

Version 8

Name	Max HGL	Max Pond HGL	Max Surface Flow (cu.m/s)	Max Pond Volume (cu.m)	Min Freeboard (m)	Overflow (cu.m/s)	Constraint
Pit 1/2	43.79		0.008		0.77	0	None
Pit 2/2	43.78		0.043		0.79	0.011	Inlet Capacity
Pit 3/2	42.54		0.061		1.46	0.02	Inlet Capacity
Pit 4/2	42.01		0.001		1.98	0	None
Pit 5/2	39.44		0		1.89	0	None
Pit 6/2	36.17		0				
Pit 1/16	43.34		0.008		0	0.001	Outlet System
Pit 2/16	43.34		0.198		0	0.028	Outlet System
Pit 1/32	45.21		0.113		0	0.045	Outlet System
Pit 6/42	45.05		0.011		0.09	0	None
Pit 7/42	44.49		0.01		0	0.001	Outlet System
Pit 8/42	43.74		0.017		0	0.017	Outlet System
Pit 9/42	43.52	43.56	0.161	0.4	0	0	Outlet System
Pit 10/42	41.07		0.038		0.76	0	None
Pit 11/42	37.12		0.041		0.52	0	None
Pit 12/42	35.61		0.04				
Pit 1/33	45.36		0.048		0.67	0.013	Inlet Capacity
Pit 5/42	45.3		0.011		0.71	0	None
Pit 1/34	46.24		0.042		0.63	0.005	Inlet Capacity
Pit 4/42	46.18		0.009		0.69	0	None
Pit 1/35	44.54		0.142		0	0.072	Outlet System
Pit 1/39	46.98		0.058		0.68	0.017	Inlet Capacity
Pit 3/42	46.88		0.011		0.79	0	None
Pit 1/41	51.58		0.008		0.79	0	None
Pit 2/41	51.57		0.053		0.77	0.016	Inlet Capacity
Pit 3/41	50.77		0.127		0.01	0.022	Inlet Capacity
Pit 4/41	47.85		0.071		0.7	0.009	Inlet Capacity
Pit 5/41	45.65		0.037		0.66	0.003	Inlet Capacity
Pit 6/41	43.9		0.008		0.4	0	None
Pit 1/42	47.7		0.03		0.76	0.004	Inlet Capacity
Pit 2/42	47.59		0.008		0.87	0	None
Pit 1/43	43.95		0.052		0.37	0.01	Inlet Capacity
Pit 1/44	50.79		0.026		0.02	0.003	Inlet Capacity
Pit 1/45	47.88		0.034		0.67	0.003	Inlet Capacity
Pit 1/46	45.69		0.052		0.6	0.011	Inlet Capacity
Pit 1/66	43.78		0.197		0	0.106	Outlet System
N1	45.39		0.314				
N2	43.77		0.314				
Pit 1/67	43.67	43.77	0.309	0.7	0	0.128	Outlet System
Pit 1/40	43.6	43.69	0.409	0.4	0	0.053	Outlet System

SUB-CATCHMENT DETAILS

Name	Max Flow Q (cu.m/s)	Paved Max Q (cu.m/s)	Grassed Max Q (cu.m/s)	Paved Tc (min)	Grassed Tc (min)	Supp. Tc (min)	Due to Storm
C Pit 1/2	0.007	0.004	0.002	1.69	11.09		0 1% AEP, 10 min burst, Storm 7
C Pit 2/2	0.033	0.012	0.022	1.69	10.8		0 1% AEP, 10 min burst, Storm 7
C Pit 3/2	0.041	0.017	0.025	1.34	13.83		0 1% AEP, 10 min burst, Storm 7
C Pit 4/2	0.001	0	0.001	52.05	63.51		0 1% AEP, 1 hour burst, Storm 7
C Pit 1/16	0.007	0.005	0.001	2.21	14.54		0 1% AEP, 5 min burst, Storm 1
C Pit 2/16	0.145	0.094	0.051	2.24	37.43		0 1% AEP, 10 min burst, Storm 7
C Pit 1/32	0.082	0.046	0.036	1.45	25.64		0 1% AEP, 10 min burst, Storm 7
C Pit 6/42	0.009	0.005	0.004	1.4	9.21		0 1% AEP, 10 min burst, Storm 7
C Pit 7/42	0.008	0.004	0.003	1.27	8.35		0 1% AEP, 10 min burst, Storm 7
C Pit 8/42	0.009	0.002	0.006	2	5		0 1% AEP, 10 min burst, Storm 4
C Pit 9/42	0.019	0.005	0.014	2	5		0 1% AEP, 10 min burst, Storm 4
C Pit 1/33	0.035	0.018	0.017	1.32	20.41		0 1% AEP, 10 min burst, Storm 7
C Pit 5/42	0.009	0.006	0.004	1.43	9.39		0 1% AEP, 10 min burst, Storm 7
C Pit 1/34	0.017	0.007	0.01	1.42	14.19		0 1% AEP, 10 min burst, Storm 7
C Pit 4/42	0.008	0.003	0.006	1.43	9.42		0 1% AEP, 10 min burst, Storm 7
C Pit 1/35	0.056	0.032	0.024	1.14	26.83		0 1% AEP, 10 min burst, Storm 7
C Pit 1/39	0.044	0.023	0.021	1.42	21.71		0 1% AEP, 10 min burst, Storm 7
C Pit 3/42	0.009	0.005	0.004	1.43	9.42		0 1% AEP, 10 min burst, Storm 7
C Pit 1/41	0.006	0.002	0.005	2	5		0 1% AEP, 10 min burst, Storm 4
C Pit 2/41	0.045	0.026	0.019	1.55	27.92		0 1% AEP, 10 min burst, Storm 7
C Pit 3/41	0.09	0.056	0.034	2.31	33.18		0 1% AEP, 10 min burst, Storm 7
C Pit 4/41	0.026	0.014	0.012	1.75	23.12		0 1% AEP, 10 min burst, Storm 7
C Pit 5/41	0.013	0.004	0.01	2	5		0 1% AEP, 10 min burst, Storm 4
C Pit 6/41	0.006	0.002	0.004	2	5		0 1% AEP, 10 min burst, Storm 4
C Pit 1/42	0.022	0.006	0.016	2	5		0 1% AEP, 10 min burst, Storm 4
C Pit 2/42	0.007	0.004	0.003	1.43	9.42		0 1% AEP, 10 min burst, Storm 7
C Pit 1/43	0.028	0.013	0.014	1.36	18.22		0 1% AEP, 10 min burst, Storm 7
C Pit 1/44	0.019	0.005	0.014	2	5		0 1% AEP, 10 min burst, Storm 4
C Pit 1/45	0.017	0.005	0.012	2	5		0 1% AEP, 10 min burst, Storm 4
C Pit 1/46	0.034	0.01	0.025	2	5		0 1% AEP, 10 min burst, Storm 4
C Pit 1/66	0.065	0.037	0.028	0.99	26.89		0 1% AEP, 10 min burst, Storm 7
C Pit 1/67	0.272	0.137	0.135	1.61	20.78		0 1% AEP, 10 min burst, Storm 7
C Pit 1/40	0.071	0.059	0.012	1.49	14.8		0 1% AEP, 5 min burst, Storm 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
P Pit 1/2	0.007	0.27	43.779	43.78	1% AEP, 10 min burst, Storm 7
P Pit 2/2	0.033	1.54	43.669	43.204	1% AEP, 10 min burst, Storm 7
P Pit 3/2	0.206	1.94	42.103	42.01	1% AEP, 10 min burst, Storm 7
P Pit 4/2	0.209	4.7	41.793	39.692	1% AEP, 5 min burst, Storm 1
P Pit 5/2	0.207	4.3	39.368	36.168	1% AEP, 10 min burst, Storm 4
P Pit 1/16	0.006	0.06	43.31	43.311	1% AEP, 5 min burst, Storm 1
P Pit 2/16	0.142	1.29	42.848	42.538	1% AEP, 5 min burst, Storm 1
P Pit 1/32	0.065	0.92	45.064	45.048	1% AEP, 30 min burst, Storm 5
P Pit 6/42	0.196	1.77	44.786	44.488	1% AEP, 10 min burst, Storm 7

P Pit 7/42	0.232	2.1	44.185	43.72	1% AEP, 10 min burst, Storm 8
P Pit 8/42	0.284	1.79	43.647	43.483	1% AEP, 5 min burst, Storm 1
P Pit 9/42	0.785	5.67	42.147	41.073	1% AEP, 10 min burst, Storm 7
P Pit 10/42	0.784	6.44	40.888	37.117	1% AEP, 10 min burst, Storm 7
P Pit 11/42	0.783	4.47	36.986	35.615	1% AEP, 10 min burst, Storm 4
P Pit 1/33	0.027	0.72	45.269	45.3	1% AEP, 10 min burst, Storm 4
P Pit 5/42	0.137	1.43	45.231	45.048	1% AEP, 10 min burst, Storm 7
P Pit 1/34	0.029	0.6	46.169	46.179	1% AEP, 10 min burst, Storm 7
P Pit 4/42	0.102	2.49	46.048	45.299	1% AEP, 10 min burst, Storm 7
P Pit 1/35	0.052	0.73	44.524	44.525	1% AEP, 30 min burst, Storm 3
P Pit 1/39	0.03	1.19	46.886	46.881	1% AEP, 10 min burst, Storm 7
P Pit 3/42	0.066	3.61	46.765	46.163	1% AEP, 10 min burst, Storm 2
P Pit 1/41	0.006	0.23	51.564	51.565	1% AEP, 10 min burst, Storm 7
P Pit 2/41	0.036	1.7	51.443	50.771	1% AEP, 10 min burst, Storm 7
P Pit 3/41	0.136	2.9	49.974	47.85	1% AEP, 10 min burst, Storm 7
P Pit 4/41	0.193	4.41	47.661	45.645	1% AEP, 10 min burst, Storm 4
P Pit 5/41	0.24	4.61	45.449	43.906	1% AEP, 10 min burst, Storm 4
P Pit 6/41	0.268	1.68	43.849	43.515	1% AEP, 10 min burst, Storm 7
P Pit 1/42	0.018	2.26	47.616	47.593	1% AEP, 10 min burst, Storm 4
P Pit 2/42	0.026	3.43	47.519	46.881	1% AEP, 10 min burst, Storm 7
P Pit 1/43	0.033	0.47	43.903	43.904	1% AEP, 10 min burst, Storm 7
P Pit 1/44	0.017	0.24	50.775	50.773	1% AEP, 10 min burst, Storm 4
P Pit 1/45	0.017	0.33	47.851	47.85	1% AEP, 10 min burst, Storm 7
P Pit 1/46	0.026	0.39	45.654	45.645	1% AEP, 10 min burst, Storm 7
P Pipe 1/66	0.051	0.72	43.749	43.749	1% AEP, 30 min burst, Storm 3
P Pipe 1/67	0.259	1.2	43.585	43.581	1% AEP, 30 min burst, Storm 5
P Pit 1/40	0.357	1.65	43.538	43.516	1% AEP, 10 min burst, Storm 4

CHANNEL DETAILS

Name	Max Q (cu.m/s)	Max V (m/s)	Due to Storm
Sw2	0.272	1.21	1% AEP, 10 min burst, Storm 7

OVERFLOW ROUTE DETAILS

Name	Max Q U/S	Max Q D/S	Safe Q	Max D	Max DxV	Max Width	Max V	Due to Storm
F Pit 1/2	0	0	0.273	0	0	0	0	
F Pit 2/2	0.011	0.011	0.285	0.064	0.05	0.78	0.98	1% AEP, 10 min burst, Storm 7
F Pit 3/2	0.02	0.02	0.232	0.08	0.07	1.32	1.07	1% AEP, 10 min burst, Storm 7
F Pit 4/2	0	0	0.217	0	0	0	0	
F Pit 5/2	0	0	0.457	0	0	0	0	
F Pit 1/16	0.001	0.001	0.465	0.025	0	0.25	0	1% AEP, 10 min burst, Storm 7
F Pit 2/16	0.028	0.028	1.243	0.112	0.06	2.37	0.78	1% AEP, 10 min burst, Storm 7
F Pit 1/32	0.045	0.045	0.331	0.085	0.12	1.47	1.55	1% AEP, 10 min burst, Storm 7
F Pit 6/42	0	0	0.312	0	0	0	0	
F Pit 7/42	0.001	0.001	0.324	0.063	0	0.75	0	1% AEP, 10 min burst, Storm 7
F Pit 8/42	0.017	0.017	0.212	0.145	0.06	3.48	0.96	1% AEP, 10 min burst, Storm 7
F Pit 9/42	0	0	0.484	0	0	0	0	
F Pit 10/42	0	0	0.521	0	0	0	0	
F Pit 11/42	0	0	0.605	0	0	0	0	
F Pit 1/33	0.013	0.013	0.333	0.075	0.06	1.14	1.16	1% AEP, 10 min burst, Storm 7

F Pit 5/42	0	0	0.319	0	0	0	0	
F Pit 1/34	0.005	0.005	0.325	0.052	0.03	0.43	0.78	1% AEP, 10 min burst, Storm 7
F Pit 4/42	0	0	0.317	0	0	0	0	
F Pit 1/35	0.072	0.072	0.384	0.109	0.15	2.26	1.75	1% AEP, 10 min burst, Storm 7
F Pit 1/39	0.017	0.017	0.309	0.062	0.07	0.71	1.21	1% AEP, 10 min burst, Storm 7
F Pit 3/42	0	0	0.307	0	0	0	0	
F Pit 1/41	0	0	0.299	0	0	0	0	
F Pit 2/41	0.016	0.016	0.293	0.058	0.07	0.57	1.17	1% AEP, 10 min burst, Storm 7
F Pit 3/41	0.022	0.022	0.378	0.061	0.09	0.67	1.55	1% AEP, 10 min burst, Storm 7
F Pit 4/41	0.009	0.009	0.413	0.047	0.05	0.39	1.25	1% AEP, 10 min burst, Storm 7
F Pit 5/41	0.003	0.003	0.367	0.052	0.02	0.43	0.82	1% AEP, 10 min burst, Storm 7
F Pit 6/41	0	0	0.29	0	0	0	0	
F Pit 1/42	0.004	0.004	0.309	0.061	0.03	0.69	0.71	1% AEP, 10 min burst, Storm 4
F Pit 2/42	0	0	0.307	0	0	0	0	
F Pit 1/43	0.01	0.01	0.296	0.244	0.05	6.4	0.97	1% AEP, 10 min burst, Storm 7
F Pit 1/44	0.003	0.003	0.392	0.028	0.03	0.23	0.95	1% AEP, 10 min burst, Storm 4
F Pit 1/45	0.003	0.003	0.428	0.047	0.03	0.39	0.97	1% AEP, 10 min burst, Storm 7
F Pit 1/46	0.011	0.011	0.43	0.05	0.06	0.41	1.23	1% AEP, 10 min burst, Storm 7
O Pit 1/66	0.106	0.106	0.212	0.274	0.12	6.4	1.09	1% AEP, 10 min burst, Storm 7
OF Sw1	0.265	0.265	0.943	0.468	0.09	6.19	0.2	1% AEP, 10 min burst, Storm 7
F Pit 1/67	0.128	0.128	0.773	0.248	0.17	2.48	1.15	1% AEP, 10 min burst, Storm 7
F Pit 1/40	0.053	0.053	0.03	0.121	0.03	5.34	0.26	1% AEP, 10 min burst, Storm 7

DETENTION BASIN DETAILS

Name	Max WL	MaxVol	Max Q Total	Max Q Low Level	Max Q High Level
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Run Log for 5936000 run at 11:45:12 on 7/3/2018

Upwelling occurred at: Pit 8/42

Freeboard was less than 0.15m at Pit 1/67, Pit 1/66, Pit 1/44, Pit 9/42, Pit 7/42, Pit 6/42, Pit 3/41, Pit 1/40, Pit 1/35, Pit 1/32, Pit 2/16, Pit 1/16

The maximum pond depth in these sag pits is unsafe: Pit 1/67, Pit 1/40

Channels Sw2 spilled. You cannot rely on these results. You really MUST specify data for higher levels at the cross sections.

Peak water levels spilled in these Overflow Routes: OF Sw1 spilled. You cannot rely on these results. You really MUST specify data for higher levels for these cross sections.

IGNORE THESE WARNINGS AT YOUR OWN PERIL.\cf1

Proposed DRAINS Model 2 - 5% AEP Storm Event Results

DRAINS results prepared from Version 2018.01

PIT / NODE DETAILS

Version 8

Name	Max HGL	Max Pond HGL	Max Surface Flow (cu.m/s)	Max Pond Volume (cu.m)	Min Freeboard (m)	Overflow (cu.m/s)	Constraint
Pit 1/2	43.75		0.005		0.81	0	None
Pit 2/2	43.74		0.022		0.83	0.003	Inlet Capacity
Pit 3/2	42.19		0.032		1.81	0.007	Inlet Capacity
Pit 4/2	41.95		0.001		2.05	0	None
Pit 5/2	39.39		0		1.94	0	None
Pit 6/2	36.14		0				
Pit 1/16	42.62		0.005		0.71	0	None
Pit 2/16	42.62		0.114		0.67	0.011	Inlet Capacity
Pit 1/32	44.62		0.063		0.52	0.008	Inlet Capacity
Pit 6/42	44.46		0.007		0.68	0	None
Pit 7/42	43.83		0.006		0.66	0	None
Pit 8/42	43.29		0.007		0.38	0	None
Pit 9/42	43.08	43.43	0.016	0	0.34	0	Inlet Capacity
Pit 10/42	41.02		0		0.82	0	None
Pit 11/42	37.05		0		0.59	0	None
Pit 12/42	35.2		0				
Pit 1/33	45.26		0.027		0.77	0.005	Inlet Capacity
Pit 5/42	45.15		0.007		0.86	0	None
Pit 1/34	46.15		0.02		0.72	0.002	Inlet Capacity
Pit 4/42	46.11		0.005		0.76	0	None
Pit 1/35	43.94		0.049		0.52	0.004	Inlet Capacity
Pit 1/39	46.95		0.032		0.72	0.007	Inlet Capacity
Pit 3/42	46.86		0.007		0.8	0	None
Pit 1/41	51.54		0.005		0.82	0	None
Pit 2/41	51.53		0.032		0.81	0.007	Inlet Capacity
Pit 3/41	50.34		0.074		0.44	0.01	Inlet Capacity
Pit 4/41	47.79		0.031		0.76	0.003	Inlet Capacity
Pit 5/41	45.59		0.015		0.71	0	Inlet Capacity
Pit 6/41	43.29		0.005		1.02	0	None
Pit 1/42	47.68		0.018		0.78	0.001	Inlet Capacity
Pit 2/42	47.58		0.005		0.89	0	None
Pit 1/43	43.56		0.026		0.75	0.003	Inlet Capacity
Pit 1/44	50.35		0.016		0.46	0	Inlet Capacity
Pit 1/45	47.81		0.015		0.74	0	Inlet Capacity
Pit 1/46	45.63		0.028		0.66	0.005	Inlet Capacity
Pit 1/66	43.38		0.051		0.3	0.005	Inlet Capacity
N1	45.36		0.187				
N2	43.46		0.191				
Pit 1/67	43.28	43.41	0.18	0.3	0.02	0	Inlet Capacity
Pit 1/40	43.15	43.49	0.061	0.1	0.3	0	Inlet Capacity

SUB-CATCHMENT DETAILS

Name	Max Flow Q (cu.m/s)	Paved Max Q (cu.m/s)	Grassed Max Q (cu.m/s)	Paved Tc (min)	Grassed Tc (min)	Supp. Tc (min)	Due to Storm
C Pit 1/2	0.005	0.004	0.001	1.76	11.56		0 5% AEP, 5 min burst, Storm 1
C Pit 2/2	0.02	0.009	0.011	1.91	12.22		0 5% AEP, 10 min burst, Storm 7
C Pit 3/2	0.026	0.012	0.013	1.52	15.65		0 5% AEP, 10 min burst, Storm 7
C Pit 4/2	0.001	0	0	52.32	65.27		0 5% AEP, 1 hour burst, Storm 1
C Pit 1/16	0.005	0.004	0.001	2.5	16.42		0 5% AEP, 5 min burst, Storm 1
C Pit 2/16	0.099	0.084	0.015	2.33	39.01		0 5% AEP, 5 min burst, Storm 1
C Pit 1/32	0.053	0.043	0.019	1.64	29.01		0 5% AEP, 10 min burst, Storm 2
C Pit 6/42	0.006	0.004	0.002	1.58	10.42		0 5% AEP, 10 min burst, Storm 6
C Pit 7/42	0.005	0.004	0.002	1.44	9.44		0 5% AEP, 10 min burst, Storm 2
C Pit 8/42	0.006	0.002	0.004	2	5		0 5% AEP, 10 min burst, Storm 7
C Pit 9/42	0.014	0.004	0.01	2	5		0 5% AEP, 10 min burst, Storm 7
C Pit 1/33	0.023	0.013	0.009	1.49	23.09		0 5% AEP, 10 min burst, Storm 7
C Pit 5/42	0.006	0.004	0.002	1.62	10.63		0 5% AEP, 10 min burst, Storm 6
C Pit 1/34	0.01	0.005	0.005	1.61	16.05		0 5% AEP, 10 min burst, Storm 7
C Pit 4/42	0.005	0.002	0.003	1.62	10.65		0 5% AEP, 10 min burst, Storm 7
C Pit 1/35	0.036	0.023	0.013	1.29	30.35		0 5% AEP, 10 min burst, Storm 6
C Pit 1/39	0.028	0.017	0.011	1.61	24.56		0 5% AEP, 10 min burst, Storm 7
C Pit 3/42	0.006	0.004	0.002	1.62	10.65		0 5% AEP, 10 min burst, Storm 6
C Pit 1/41	0.004	0.001	0.003	2	5		0 5% AEP, 10 min burst, Storm 7
C Pit 2/41	0.03	0.019	0.01	1.75	31.59		0 5% AEP, 10 min burst, Storm 6
C Pit 3/41	0.06	0.042	0.019	2.62	37.54		0 5% AEP, 10 min burst, Storm 6
C Pit 4/41	0.017	0.01	0.007	1.98	26.16		0 5% AEP, 10 min burst, Storm 7
C Pit 5/41	0.009	0.003	0.007	2	5		0 5% AEP, 10 min burst, Storm 7
C Pit 6/41	0.004	0.001	0.003	2	5		0 5% AEP, 10 min burst, Storm 7
C Pit 1/42	0.016	0.005	0.011	2	5		0 5% AEP, 10 min burst, Storm 7
C Pit 2/42	0.004	0.003	0.001	1.62	10.65		0 5% AEP, 10 min burst, Storm 6
C Pit 1/43	0.018	0.01	0.008	1.53	20.62		0 5% AEP, 10 min burst, Storm 7
C Pit 1/44	0.014	0.004	0.01	2	5		0 5% AEP, 10 min burst, Storm 7
C Pit 1/45	0.012	0.003	0.008	2	5		0 5% AEP, 10 min burst, Storm 7
C Pit 1/46	0.024	0.007	0.017	2	5		0 5% AEP, 10 min burst, Storm 7
C Pit 1/66	0.043	0.027	0.015	1.12	30.42		0 5% AEP, 10 min burst, Storm 6
C Pit 1/67	0.174	0.101	0.073	1.82	23.51		0 5% AEP, 10 min burst, Storm 7
C Pit 1/40	0.049	0.043	0.006	1.68	16.72		0 5% AEP, 5 min burst, Storm 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
P Pit 1/2	0.005	0.36	43.734	43.737	5% AEP, 5 min burst, Storm 1
P Pit 2/2	0.022	1.38	43.65	43.185	5% AEP, 10 min burst, Storm 7
P Pit 3/2	0.141	1.58	42.081	41.946	5% AEP, 10 min burst, Storm 7
P Pit 4/2	0.139	4.48	41.756	39.648	5% AEP, 10 min burst, Storm 7
P Pit 5/2	0.138	3.87	39.335	36.136	5% AEP, 10 min burst, Storm 7
P Pit 1/16	0.005	0.06	42.618	42.616	5% AEP, 10 min burst, Storm 3
P Pit 2/16	0.099	1.88	42.422	42.2	5% AEP, 10 min burst, Storm 6
P Pit 1/32	0.049	0.8	44.49	44.459	5% AEP, 10 min burst, Storm 7
P Pit 6/42	0.147	3.08	44.281	43.826	5% AEP, 10 min burst, Storm 7

P Pit 7/42	0.192	3.09	43.656	43.309	5% AEP, 10 min burst, Storm 5
P Pit 8/42	0.239	1.5	43.227	43.076	5% AEP, 10 min burst, Storm 7
P Pit 9/42	0.658	5.45	42.112	41.019	5% AEP, 10 min burst, Storm 7
P Pit 10/42	0.657	5.79	40.872	37.049	5% AEP, 10 min burst, Storm 7
P Pit 11/42	0.648	4.61	36.915	35.554	5% AEP, 10 min burst, Storm 7
P Pit 1/33	0.02	2.02	45.169	45.15	5% AEP, 10 min burst, Storm 7
P Pit 5/42	0.092	2.27	45.073	44.459	5% AEP, 10 min burst, Storm 7
P Pit 1/34	0.016	0.48	46.113	46.111	5% AEP, 10 min burst, Storm 7
P Pit 4/42	0.067	2.37	46.005	45.247	5% AEP, 10 min burst, Storm 7
P Pit 1/35	0.041	0.57	43.903	43.896	5% AEP, 10 min burst, Storm 8
P Pit 1/39	0.022	1.04	46.871	46.863	5% AEP, 10 min burst, Storm 7
P Pit 3/42	0.048	2.55	46.767	46.109	5% AEP, 10 min burst, Storm 3
P Pit 1/41	0.005	0.25	51.528	51.53	5% AEP, 10 min burst, Storm 7
P Pit 2/41	0.027	1.56	51.429	50.339	5% AEP, 10 min burst, Storm 6
P Pit 3/41	0.096	2.69	49.938	47.8	5% AEP, 10 min burst, Storm 2
P Pit 4/41	0.13	3.57	47.641	45.595	5% AEP, 10 min burst, Storm 7
P Pit 5/41	0.157	4.12	45.412	43.47	5% AEP, 10 min burst, Storm 7
P Pit 6/41	0.179	2.04	43.245	43.087	5% AEP, 10 min burst, Storm 6
P Pit 1/42	0.014	2.59	47.603	47.577	5% AEP, 10 min burst, Storm 7
P Pit 2/42	0.019	2.46	47.519	46.861	5% AEP, 10 min burst, Storm 2
P Pit 1/43	0.02	2.45	43.466	43.442	5% AEP, 10 min burst, Storm 7
P Pit 1/44	0.013	0.18	50.334	50.333	5% AEP, 10 min burst, Storm 7
P Pit 1/45	0.011	0.36	47.788	47.788	5% AEP, 10 min burst, Storm 7
P Pit 1/46	0.019	0.37	45.596	45.595	5% AEP, 10 min burst, Storm 7
P Pipe 1/66	0.041	0.58	43.297	43.29	5% AEP, 10 min burst, Storm 7
P Pipe 1/67	0.171	0.79	43.199	43.19	5% AEP, 10 min burst, Storm 8
P Pit 1/40	0.227	1.05	43.093	43.076	5% AEP, 10 min burst, Storm 7

CHANNEL DETAILS

Name	Max Q (cu.m/s)	Max V (m/s)	Due to Storm
Sw2	0.174	1.67	5% AEP, 10 min burst, Storm 7

OVERFLOW ROUTE DETAILS

Name	Max Q U/S	Max Q D/S	Safe Q	Max D	Max DxV	Max Width	Max V	Due to Storm
F Pit 1/2	0	0	0.273	0	0	0	0	
F Pit 2/2	0.003	0.003	0.285	0.048	0.02	0.39	0.63	5% AEP, 10 min burst, Storm 7
F Pit 3/2	0.007	0.007	0.232	0.059	0.03	0.63	0.7	5% AEP, 10 min burst, Storm 7
F Pit 4/2	0	0	0.217	0	0	0	0	
F Pit 5/2	0	0	0.434	0	0	0	0	
F Pit 1/16	0	0	0.073	0	0	0	0	
F Pit 2/16	0.011	0.011	0.215	0.065	0.04	0.81	0.73	5% AEP, 10 min burst, Storm 6
F Pit 1/32	0.008	0.008	0.331	0.049	0.05	0.4	1.06	5% AEP, 10 min burst, Storm 7
F Pit 6/42	0	0	0.312	0	0	0	0	
F Pit 7/42	0	0	0.324	0	0	0	0	
F Pit 8/42	0	0	0.212	0	0	0	0	
F Pit 9/42	0	0	0.4	0	0	0	0	
F Pit 10/42	0	0	0.35	0	0	0	0	
F Pit 11/42	0	0	0.277	0	0	0	0	
F Pit 1/33	0.005	0.005	0.333	0.049	0.03	0.4	0.79	5% AEP, 10 min burst, Storm 7

F Pit 5/42	0	0	0.319	0	0	0	0
F Pit 1/34	0.002	0.002	0.325	0.038	0.02	0.32	0.72 5% AEP, 10 min burst, Storm 7
F Pit 4/42	0	0	0.317	0	0	0	0
F Pit 1/35	0.004	0.004	0.384	0.041	0.03	0.34	0.85 5% AEP, 10 min burst, Storm 2
F Pit 1/39	0.007	0.007	0.309	0.049	0.04	0.4	0.97 5% AEP, 10 min burst, Storm 7
F Pit 3/42	0	0	0.307	0	0	0	0
F Pit 1/41	0	0	0.299	0	0	0	0
F Pit 2/41	0.007	0.007	0.293	0.047	0.04	0.39	0.86 5% AEP, 10 min burst, Storm 6
F Pit 3/41	0.01	0.01	0.378	0.05	0.06	0.41	1.23 5% AEP, 10 min burst, Storm 6
F Pit 4/41	0.003	0.003	0.413	0.034	0.03	0.28	1 5% AEP, 10 min burst, Storm 7
F Pit 5/41	0	0	0.367	0	0	0	0
F Pit 6/41	0	0	0.29	0	0	0	0
F Pit 1/42	0.001	0.001	0.309	0.049	0.01	0.4	0.63 5% AEP, 10 min burst, Storm 7
F Pit 2/42	0	0	0.307	0	0	0	0
F Pit 1/43	0.003	0.003	0.296	0.047	0.02	0.39	0.66 5% AEP, 10 min burst, Storm 7
F Pit 1/44	0	0	0.392	0	0	0	0
F Pit 1/45	0	0	0.428	0	0	0	0
F Pit 1/46	0.005	0.005	0.43	0.036	0.04	0.29	1.11 5% AEP, 10 min burst, Storm 7
O Pit 1/66	0.005	0.005	0.212	0.077	0.03	1.21	0.61 5% AEP, 10 min burst, Storm 6
OF Sw1	0.174	0.174	0.391	0.174	0.12	2.69	0.91 5% AEP, 10 min burst, Storm 4
F Pit 1/67	0	0	0.183	0	0	0	0
F Pit 1/40	0	0	0.03	0	0	0	0

DETENTION BASIN DETAILS

Name	Max WL	MaxVol	Max Q Total	Max Q Low Level	Max Q High Level
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Run Log for 5936000 run at 11:47:16 on 7/3/2018

No water upwelling from any pit.

Freeboard was less than 0.15m at Pit 1/67

Flows were safe in all overflow routes.

Proposed DRAINS Model 2 - 10% AEP Storm Event Results

DRAINS results prepared from Version 2018.01

PIT / NODE DETAILS

Version 8

Name	Max HGL	Max Pond HGL	Max Surface Flow (cu.m/s)	Max Pond Volume (cu.m)	Min Freeboard (m)	Overflow (cu.m/s)	Constraint
Pit 1/2	43.74		0.004		0.83	0	None
Pit 2/2	43.72		0.017		0.85	0.001	Inlet Capacity
Pit 3/2	42.06		0.023		1.94	0.003	Inlet Capacity
Pit 4/2	41.9		0.001		2.1	0	None
Pit 5/2	39.37		0		1.97	0	None
Pit 6/2	36.12		0				
Pit 1/16	42.54		0.004		0.79	0	None
Pit 2/16	42.54		0.089		0.74	0.008	Inlet Capacity
Pit 1/32	44.52		0.049		0.63	0.005	Inlet Capacity
Pit 6/42	44.4		0.005		0.74	0	None
Pit 7/42	43.77		0.004		0.72	0	None
Pit 8/42	42.87		0.006		0.8	0	None
Pit 9/42	42.61	43.43	0.013	0	0.8	0	Inlet Capacity
Pit 10/42	40.95		0		0.89	0	None
Pit 11/42	36.97		0		0.67	0	None
Pit 12/42	35.49		0				
Pit 1/33	45.24		0.02		0.79	0.002	Inlet Capacity
Pit 5/42	45.12		0.005		0.89	0	None
Pit 1/34	46.12		0.014		0.76	0	None
Pit 4/42	46.08		0.004		0.8	0	None
Pit 1/35	43.84		0.037		0.62	0.003	Inlet Capacity
Pit 1/39	46.93		0.025		0.74	0.004	Inlet Capacity
Pit 3/42	46.85		0.005		0.82	0	None
Pit 1/41	51.53		0.004		0.84	0	None
Pit 2/41	51.52		0.026		0.82	0.004	Inlet Capacity
Pit 3/41	50.19		0.058		0.59	0.007	Inlet Capacity
Pit 4/41	47.75		0.023		0.8	0.002	Inlet Capacity
Pit 5/41	45.55		0.011		0.76	0	None
Pit 6/41	43.25		0.004		1.06	0	None
Pit 1/42	47.67		0.015		0.79	0	Inlet Capacity
Pit 2/42	47.57		0.004		0.89	0	None
Pit 1/43	43.54		0.019		0.78	0.001	Inlet Capacity
Pit 1/44	50.2		0.013		0.61	0	None
Pit 1/45	47.78		0.011		0.77	0	None
Pit 1/46	45.58		0.023		0.7	0.003	Inlet Capacity
Pit 1/66	42.96		0.04		0.71	0.004	Inlet Capacity
N1	45.34		0.147				
N2	43.45		0.147				
Pit 1/67	42.74	43.4	0.146	0.1	0.56	0	Inlet Capacity
Pit 1/40	42.66	43.48	0.048	0.1	0.79	0	Inlet Capacity

SUB-CATCHMENT DETAILS

Name	Max Flow Q (cu.m/s)	Paved Max Q (cu.m/s)	Grassed Max Q (cu.m/s)	Paved Tc (min)	Grassed Tc (min)	Supp. Tc (min)	Due to Storm
C Pit 1/2	0.004	0.003	0	1.87	12.3		0 10% AEP, 5 min burst, Storm 1
C Pit 2/2	0.015	0.007	0.008	2.04	13.05		0 10% AEP, 10 min burst, Storm 7
C Pit 3/2	0.02	0.01	0.009	1.62	16.71		0 10% AEP, 10 min burst, Storm 7
C Pit 4/2	0.001	0	0	52.47	66.27		0 10% AEP, 1 hour burst, Storm 7
C Pit 1/16	0.004	0.003	0	2.66	17.47		0 10% AEP, 5 min burst, Storm 1
C Pit 2/16	0.082	0.072	0.01	2.48	41.51		0 10% AEP, 5 min burst, Storm 1
C Pit 1/32	0.043	0.029	0.014	1.75	30.98		0 10% AEP, 10 min burst, Storm 6
C Pit 6/42	0.005	0.004	0.001	1.55	10.22		0 10% AEP, 5 min burst, Storm 1
C Pit 7/42	0.004	0.003	0.001	1.53	10.08		0 10% AEP, 10 min burst, Storm 6
C Pit 8/42	0.005	0.002	0.004	2	5		0 10% AEP, 10 min burst, Storm 7
C Pit 9/42	0.011	0.003	0.008	2	5		0 10% AEP, 10 min burst, Storm 7
C Pit 1/33	0.018	0.011	0.007	1.59	24.65		0 10% AEP, 10 min burst, Storm 7
C Pit 5/42	0.005	0.004	0.001	1.58	10.42		0 10% AEP, 5 min burst, Storm 1
C Pit 1/34	0.008	0.004	0.004	1.72	17.14		0 10% AEP, 10 min burst, Storm 7
C Pit 4/42	0.004	0.002	0.002	1.73	11.38		0 10% AEP, 10 min burst, Storm 7
C Pit 1/35	0.029	0.02	0.009	1.38	32.41		0 10% AEP, 10 min burst, Storm 6
C Pit 1/39	0.022	0.014	0.008	1.72	26.22		0 10% AEP, 10 min burst, Storm 7
C Pit 3/42	0.005	0.004	0.001	1.59	10.45		0 10% AEP, 5 min burst, Storm 1
C Pit 1/41	0.004	0.001	0.003	2	5		0 10% AEP, 10 min burst, Storm 7
C Pit 2/41	0.024	0.02	0.004	1.72	30.97		0 10% AEP, 5 min burst, Storm 1
C Pit 3/41	0.05	0.043	0.007	2.57	36.81		0 10% AEP, 5 min burst, Storm 1
C Pit 4/41	0.014	0.011	0.005	2.11	27.93		0 10% AEP, 10 min burst, Storm 2
C Pit 5/41	0.008	0.002	0.005	2	5		0 10% AEP, 10 min burst, Storm 7
C Pit 6/41	0.003	0.001	0.002	2	5		0 10% AEP, 10 min burst, Storm 7
C Pit 1/42	0.013	0.004	0.009	2	5		0 10% AEP, 10 min burst, Storm 7
C Pit 2/42	0.003	0.003	0.001	1.59	10.45		0 10% AEP, 5 min burst, Storm 1
C Pit 1/43	0.014	0.008	0.005	1.64	22.01		0 10% AEP, 10 min burst, Storm 7
C Pit 1/44	0.011	0.003	0.008	2	5		0 10% AEP, 10 min burst, Storm 7
C Pit 1/45	0.01	0.003	0.007	2	5		0 10% AEP, 10 min burst, Storm 7
C Pit 1/46	0.02	0.006	0.014	2	5		0 10% AEP, 10 min burst, Storm 7
C Pit 1/66	0.034	0.023	0.011	1.19	32.49		0 10% AEP, 10 min burst, Storm 6
C Pit 1/67	0.136	0.086	0.05	1.94	25.1		0 10% AEP, 10 min burst, Storm 7
C Pit 1/40	0.041	0.037	0.004	1.79	17.79		0 10% AEP, 5 min burst, Storm 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
P Pit 1/2	0.004	0.46	43.715	43.719	10% AEP, 5 min burst, Storm 1
P Pit 2/2	0.018	1.29	43.641	43.176	10% AEP, 10 min burst, Storm 7
P Pit 3/2	0.108	2.28	41.895	41.896	10% AEP, 10 min burst, Storm 7
P Pit 4/2	0.106	3.42	41.755	39.627	10% AEP, 10 min burst, Storm 7
P Pit 5/2	0.105	3.58	39.317	36.117	10% AEP, 10 min burst, Storm 7
P Pit 1/16	0.003	0.06	42.534	42.534	10% AEP, 10 min burst, Storm 2
P Pit 2/16	0.077	2.74	42.354	42.059	10% AEP, 10 min burst, Storm 7
P Pit 1/32	0.04	1.12	44.397	44.404	10% AEP, 10 min burst, Storm 6
P Pit 6/42	0.113	2.98	44.254	43.77	10% AEP, 10 min burst, Storm 7

P Pit 7/42	0.146	3.29	43.608	42.867	10% AEP, 10 min burst, Storm 7
P Pit 8/42	0.181	2.06	42.802	42.618	10% AEP, 10 min burst, Storm 6
P Pit 9/42	0.494	5.07	42.068	40.95	10% AEP, 10 min burst, Storm 7
P Pit 10/42	0.491	4.98	40.844	36.968	10% AEP, 10 min burst, Storm 7
P Pit 11/42	0.487	3.95	36.882	35.492	10% AEP, 10 min burst, Storm 7
P Pit 1/33	0.016	2.54	45.154	45.128	10% AEP, 10 min burst, Storm 7
P Pit 5/42	0.071	2.13	45.055	44.403	10% AEP, 10 min burst, Storm 7
P Pit 1/34	0.011	0.52	46.079	46.077	10% AEP, 10 min burst, Storm 7
P Pit 4/42	0.051	1.95	45.999	45.229	10% AEP, 10 min burst, Storm 7
P Pit 1/35	0.031	0.61	43.759	43.771	10% AEP, 10 min burst, Storm 6
P Pit 1/39	0.018	1.08	46.855	46.847	10% AEP, 10 min burst, Storm 7
P Pit 3/42	0.039	2.47	46.756	46.078	10% AEP, 10 min burst, Storm 7
P Pit 1/41	0.004	0.26	51.513	51.516	10% AEP, 10 min burst, Storm 7
P Pit 2/41	0.023	1.49	51.422	50.19	10% AEP, 10 min burst, Storm 7
P Pit 3/41	0.078	2.55	49.92	47.783	10% AEP, 10 min burst, Storm 7
P Pit 4/41	0.104	3.11	47.632	45.542	10% AEP, 10 min burst, Storm 2
P Pit 5/41	0.124	3.47	45.405	43.45	10% AEP, 10 min burst, Storm 7
P Pit 6/41	0.141	2.13	43.197	42.613	10% AEP, 10 min burst, Storm 7
P Pit 1/42	0.012	2.51	47.6	47.574	10% AEP, 10 min burst, Storm 7
P Pit 2/42	0.016	2.25	47.517	46.855	10% AEP, 10 min burst, Storm 4
P Pit 1/43	0.015	2.56	43.455	43.429	10% AEP, 10 min burst, Storm 7
P Pit 1/44	0.011	0.16	50.191	50.19	10% AEP, 10 min burst, Storm 7
P Pit 1/45	0.01	0.45	47.751	47.751	10% AEP, 10 min burst, Storm 7
P Pit 1/46	0.017	0.43	45.549	45.548	10% AEP, 10 min burst, Storm 7
P Pipe 1/66	0.033	1.22	42.869	42.869	10% AEP, 10 min burst, Storm 6
P Pipe 1/67	0.134	0.62	42.663	42.658	10% AEP, 10 min burst, Storm 7
P Pit 1/40	0.178	0.82	42.629	42.618	10% AEP, 10 min burst, Storm 6

CHANNEL DETAILS

Name	Max Q (cu.m/s)	Max V (m/s)	Due to Storm
Sw2	0.135	44.46	10% AEP, 10 min burst, Storm 7

OVERFLOW ROUTE DETAILS

Name	Max Q U/S	Max Q D/S	Safe Q	Max D	Max DxV	Max Width	Max V	Due to Storm
F Pit 1/2	0	0	0.273	0	0	0	0	
F Pit 2/2	0.001	0.001	0.285	0.035	0.01	0.29	0.55	10% AEP, 10 min burst, Storm 7
F Pit 3/2	0.003	0.003	0.232	0.054	0.02	0.45	0.52	10% AEP, 10 min burst, Storm 7
F Pit 4/2	0	0	0.217	0	0	0	0	
F Pit 5/2	0	0	0.434	0	0	0	0	
F Pit 1/16	0	0	0.073	0	0	0	0	
F Pit 2/16	0.008	0.008	0.215	0.055	0.03	0.47	0.64	10% AEP, 5 min burst, Storm 1
F Pit 1/32	0.005	0.005	0.331	0.04	0.03	0.33	0.92	10% AEP, 10 min burst, Storm 6
F Pit 6/42	0	0	0.312	0	0	0	0	
F Pit 7/42	0	0	0.324	0	0	0	0	
F Pit 8/42	0	0	0.212	0	0	0	0	
F Pit 9/42	0	0	0.4	0	0	0	0	
F Pit 10/42	0	0	0.35	0	0	0	0	
F Pit 11/42	0	0	0.277	0	0	0	0	
F Pit 1/33	0.002	0.002	0.333	0.04	0.02	0.33	0.75	10% AEP, 10 min burst, Storm 7

F Pit 5/42	0	0	0.319	0	0	0	0
F Pit 1/34	0	0	0.325	0	0	0	0
F Pit 4/42	0	0	0.317	0	0	0	0
F Pit 1/35	0.003	0.003	0.384	0.035	0.03	0.29	0.89 10% AEP, 10 min burst, Storm 6
F Pit 1/39	0.004	0.004	0.309	0.042	0.03	0.35	0.84 10% AEP, 10 min burst, Storm 7
F Pit 3/42	0	0	0.307	0	0	0	0
F Pit 1/41	0	0	0.299	0	0	0	0
F Pit 2/41	0.004	0.004	0.293	0.041	0.03	0.34	0.99 10% AEP, 5 min burst, Storm 1
F Pit 3/41	0.007	0.007	0.378	0.043	0.04	0.35	1.1 10% AEP, 10 min burst, Storm 6
F Pit 4/41	0.002	0.002	0.413	0.029	0.02	0.24	0.84 10% AEP, 10 min burst, Storm 7
F Pit 5/41	0	0	0.367	0	0	0	0
F Pit 6/41	0	0	0.29	0	0	0	0
F Pit 1/42	0	0	0.309	0	0	0	0
F Pit 2/42	0	0	0.307	0	0	0	0
F Pit 1/43	0.001	0.001	0.296	0.04	0.01	0.33	0.62 10% AEP, 10 min burst, Storm 7
F Pit 1/44	0	0	0.392	0	0	0	0
F Pit 1/45	0	0	0.428	0	0	0	0
F Pit 1/46	0.003	0.003	0.43	0.028	0.03	0.24	1.01 10% AEP, 10 min burst, Storm 7
O Pit 1/66	0.004	0.004	0.212	0.07	0.02	0.99	0.53 10% AEP, 10 min burst, Storm 6
OF Sw1	0.135	0.135	0.391	0.117	0.11	2	1.15 10% AEP, 10 min burst, Storm 7
F Pit 1/67	0	0	0.183	0	0	0	0
F Pit 1/40	0	0	0.03	0	0	0	0

DETENTION BASIN DETAILS

Name	Max WL	MaxVol	Max Q Total	Max Q Low Level	Max Q High Level
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Run Log for 5936000 run at 11:49:29 on 7/3/2018

No water upwelling from any pit. Freeboard was adequate at all pits.

Flows were safe in all overflow routes.

Proposed DRAINS Model 2 - 20% AEP Storm Event Results

DRAINS results prepared from Version 2018.01

PIT / NODE DETAILS

Version 8

Name	Max HGL	Max Pond HGL	Max Surface Flow (cu.m/s)	Max Pond Volume (cu.m)	Min Freeboard (m)	Overflow (cu.m/s)	Constraint
Pit 1/2	43.72		0.004		0.84	0	None
Pit 2/2	43.7		0.013		0.87	0	None
Pit 3/2	42		0.018		2	0	Inlet Capacity
Pit 4/2	41.86		0		2.13	0	None
Pit 5/2	39.34		0		1.99	0	None
Pit 6/2	36.1		0				
Pit 1/16	42.48		0.004		0.85	0	None
Pit 2/16	42.48		0.081		0.8	0.005	Inlet Capacity
Pit 1/32	44.45		0.043		0.69	0.003	Inlet Capacity
Pit 6/42	44.35		0.005		0.79	0	None
Pit 7/42	43.72		0.004		0.77	0	None
Pit 8/42	42.82		0.005		0.85	0	None
Pit 9/42	42.36	43.43	0.011	0	1.06	0	Inlet Capacity
Pit 10/42	40.9		0		0.94	0	None
Pit 11/42	36.91		0		0.73	0	None
Pit 12/42	35.45		0				
Pit 1/33	45.22		0.017		0.81	0.001	Inlet Capacity
Pit 5/42	45.09		0.005		0.92	0	None
Pit 1/34	46.08		0.011		0.79	0	None
Pit 4/42	46.05		0.003		0.83	0	None
Pit 1/35	43.78		0.033		0.68	0.002	Inlet Capacity
Pit 1/39	46.9		0.021		0.77	0.002	Inlet Capacity
Pit 3/42	46.82		0.005		0.85	0	None
Pit 1/41	51.52		0.004		0.84	0	None
Pit 2/41	51.51		0.023		0.83	0.002	Inlet Capacity
Pit 3/41	50.07		0.052		0.71	0.004	Inlet Capacity
Pit 4/41	47.71		0.019		0.84	0	Inlet Capacity
Pit 5/41	45.51		0.009		0.8	0	None
Pit 6/41	43.21		0.003		1.09	0	None
Pit 1/42	47.66		0.013		0.8	0	None
Pit 2/42	47.56		0.003		0.9	0	None
Pit 1/43	43.52		0.015		0.8	0	None
Pit 1/44	50.08		0.011		0.73	0	None
Pit 1/45	47.75		0.01		0.8	0	None
Pit 1/46	45.55		0.02		0.74	0.001	Inlet Capacity
Pit 1/66	42.92		0.036		0.76	0.002	Inlet Capacity
N1	45.32		0.129				
N2	43.44		0.129				
Pit 1/67	42.44	43.38	0.128	0.1	0.86	0	Inlet Capacity
Pit 1/40	42.38	43.48	0.044	0.1	1.06	0	Inlet Capacity

SUB-CATCHMENT DETAILS

Name	Max Flow Q (cu.m/s)	Paved Max Q (cu.m/s)	Grassed Max Q (cu.m/s)	Paved Tc (min)	Grassed Tc (min)	Supp. Tc (min)	Due to Storm
C Pit 1/2	0.003	0.003	0	2.01	13.24		0 20% AEP, 5 min burst, Storm 1
C Pit 2/2	0.011	0.006	0.005	2.19	14.04		0 20% AEP, 10 min burst, Storm 8
C Pit 3/2	0.015	0.009	0.006	1.74	17.99		0 20% AEP, 10 min burst, Storm 8
C Pit 4/2	0	0	0	52.66	67.5		0 20% AEP, 1 hour burst, Storm 6
C Pit 1/16	0.003	0.003	0	2.86	18.81		0 20% AEP, 5 min burst, Storm 1
C Pit 2/16	0.065	0.06	0.005	2.67	44.68		0 20% AEP, 5 min burst, Storm 1
C Pit 1/32	0.033	0.029	0.004	1.73	30.62		0 20% AEP, 5 min burst, Storm 1
C Pit 6/42	0.004	0.003	0	1.67	11		0 20% AEP, 5 min burst, Storm 1
C Pit 7/42	0.003	0.003	0	1.52	9.97		0 20% AEP, 5 min burst, Storm 1
C Pit 8/42	0.004	0.001	0.003	2	5		0 20% AEP, 10 min burst, Storm 8
C Pit 9/42	0.009	0.003	0.006	2	5		0 20% AEP, 10 min burst, Storm 8
C Pit 1/33	0.013	0.009	0.004	1.71	26.54		0 20% AEP, 10 min burst, Storm 8
C Pit 5/42	0.004	0.004	0	1.71	11.22		0 20% AEP, 5 min burst, Storm 1
C Pit 1/34	0.006	0.004	0.002	1.85	18.45		0 20% AEP, 10 min burst, Storm 8
C Pit 4/42	0.003	0.001	0.001	1.86	12.25		0 20% AEP, 10 min burst, Storm 8
C Pit 1/35	0.023	0.02	0.002	1.36	32.03		0 20% AEP, 5 min burst, Storm 1
C Pit 1/39	0.017	0.012	0.005	1.85	28.23		0 20% AEP, 10 min burst, Storm 8
C Pit 3/42	0.004	0.003	0	1.71	11.24		0 20% AEP, 5 min burst, Storm 1
C Pit 1/41	0.003	0.001	0.002	2	5		0 20% AEP, 10 min burst, Storm 8
C Pit 2/41	0.018	0.016	0.002	1.85	33.34		0 20% AEP, 5 min burst, Storm 1
C Pit 3/41	0.039	0.036	0.004	2.76	39.62		0 20% AEP, 5 min burst, Storm 1
C Pit 4/41	0.01	0.009	0.001	2.09	27.6		0 20% AEP, 5 min burst, Storm 1
C Pit 5/41	0.006	0.002	0.004	2	5		0 20% AEP, 10 min burst, Storm 8
C Pit 6/41	0.003	0.001	0.002	2	5		0 20% AEP, 10 min burst, Storm 8
C Pit 1/42	0.01	0.003	0.007	2	5		0 20% AEP, 10 min burst, Storm 8
C Pit 2/42	0.003	0.002	0	1.71	11.24		0 20% AEP, 5 min burst, Storm 1
C Pit 1/43	0.01	0.007	0.004	1.76	23.7		0 20% AEP, 10 min burst, Storm 8
C Pit 1/44	0.009	0.003	0.006	2	5		0 20% AEP, 10 min burst, Storm 8
C Pit 1/45	0.008	0.002	0.005	2	5		0 20% AEP, 10 min burst, Storm 8
C Pit 1/46	0.016	0.005	0.011	2	5		0 20% AEP, 10 min burst, Storm 8
C Pit 1/66	0.026	0.023	0.003	1.18	32.11		0 20% AEP, 5 min burst, Storm 1
C Pit 1/67	0.102	0.071	0.031	2.09	27.02		0 20% AEP, 10 min burst, Storm 8
C Pit 1/40	0.033	0.031	0.002	1.92	19.15		0 20% AEP, 5 min burst, Storm 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
P Pit 1/2	0.003	0.62	43.699	43.696	20% AEP, 5 min burst, Storm 1
P Pit 2/2	0.014	1.2	43.632	43.167	20% AEP, 10 min burst, Storm 8
P Pit 3/2	0.083	2.23	41.868	41.859	20% AEP, 10 min burst, Storm 8
P Pit 4/2	0.082	2.99	41.746	39.611	20% AEP, 10 min burst, Storm 8
P Pit 5/2	0.081	3.33	39.302	36.102	20% AEP, 10 min burst, Storm 8
P Pit 1/16	0.003	0.06	42.494	42.493	20% AEP, 10 min burst, Storm 10
P Pit 2/16	0.06	2.37	42.346	42.011	20% AEP, 10 min burst, Storm 7
P Pit 1/32	0.03	1.41	44.348	44.349	20% AEP, 5 min burst, Storm 1
P Pit 6/42	0.086	2.35	44.25	43.724	20% AEP, 10 min burst, Storm 7

P Pit 7/42	0.109	2.47	43.608	42.82	20% AEP, 10 min burst, Storm 8
P Pit 8/42	0.136	1.92	42.764	42.507	20% AEP, 10 min burst, Storm 8
P Pit 9/42	0.379	4.73	42.035	40.899	20% AEP, 10 min burst, Storm 8
P Pit 10/42	0.375	4.62	40.811	36.91	20% AEP, 10 min burst, Storm 8
P Pit 11/42	0.369	3.68	36.837	35.447	20% AEP, 10 min burst, Storm 8
P Pit 1/33	0.013	2.65	45.147	45.119	20% AEP, 10 min burst, Storm 8
P Pit 5/42	0.054	1.97	45.037	44.349	20% AEP, 10 min burst, Storm 8
P Pit 1/34	0.007	0.56	46.047	46.046	20% AEP, 10 min burst, Storm 8
P Pit 4/42	0.038	1.8	45.981	45.21	20% AEP, 10 min burst, Storm 8
P Pit 1/35	0.024	0.61	43.721	43.716	20% AEP, 5 min burst, Storm 1
P Pit 1/39	0.015	1.29	46.835	46.823	20% AEP, 10 min burst, Storm 8
P Pit 3/42	0.03	2.35	46.745	46.064	20% AEP, 10 min burst, Storm 8
P Pit 1/41	0.003	0.21	51.514	51.513	20% AEP, 10 min burst, Storm 8
P Pit 2/41	0.019	1.41	51.415	50.074	20% AEP, 10 min burst, Storm 8
P Pit 3/41	0.061	2.36	49.902	47.767	20% AEP, 10 min burst, Storm 8
P Pit 4/41	0.079	3	47.612	45.503	20% AEP, 10 min burst, Storm 2
P Pit 5/41	0.095	2.86	45.398	43.429	20% AEP, 10 min burst, Storm 8
P Pit 6/41	0.105	1.97	43.168	42.562	20% AEP, 10 min burst, Storm 8
P Pit 1/42	0.01	2.78	47.594	47.564	20% AEP, 10 min burst, Storm 8
P Pit 2/42	0.012	1.71	47.517	46.83	20% AEP, 10 min burst, Storm 10
P Pit 1/43	0.011	2.7	43.446	43.417	20% AEP, 10 min burst, Storm 8
P Pit 1/44	0.009	0.18	50.073	50.074	20% AEP, 10 min burst, Storm 8
P Pit 1/45	0.008	0.7	47.713	47.71	20% AEP, 10 min burst, Storm 8
P Pit 1/46	0.014	0.52	45.509	45.506	20% AEP, 10 min burst, Storm 8
P Pipe 1/66	0.026	1.5	42.834	42.82	20% AEP, 5 min burst, Storm 1
P Pipe 1/67	0.1	0.6	42.386	42.383	20% AEP, 10 min burst, Storm 8
P Pit 1/40	0.131	0.67	42.362	42.357	20% AEP, 5 min burst, Storm 1

CHANNEL DETAILS

Name	Max Q (cu.m/s)	Max V (m/s)	Due to Storm
Sw2	0.102	1.37	20% AEP, 10 min burst, Storm 8

OVERFLOW ROUTE DETAILS

Name	Max Q U/S	Max Q D/S	Safe Q	Max D	Max DxV	Max Width	Max V	Due to Storm
F Pit 1/2	0	0	0.273	0	0	0	0	
F Pit 2/2	0	0	0.285	0	0	0	0	
F Pit 3/2	0	0	0.232	0	0	0	0	
F Pit 4/2	0	0	0.217	0	0	0	0	
F Pit 5/2	0	0	0.434	0	0	0	0	
F Pit 1/16	0	0	0.073	0	0	0	0	
F Pit 2/16	0.005	0.005	0.215	0.048	0.03	0.4	0.56	20% AEP, 5 min burst, Storm 1
F Pit 1/32	0.003	0.003	0.331	0.035	0.03	0.29	0.84	20% AEP, 5 min burst, Storm 1
F Pit 6/42	0	0	0.312	0	0	0	0	
F Pit 7/42	0	0	0.324	0	0	0	0	
F Pit 8/42	0	0	0.212	0	0	0	0	
F Pit 9/42	0	0	0.4	0	0	0	0	
F Pit 10/42	0	0	0.35	0	0	0	0	
F Pit 11/42	0	0	0.277	0	0	0	0	
F Pit 1/33	0.001	0.001	0.333	0.034	0	0.28	0	20% AEP, 10 min burst, Storm 8

F Pit 5/42	0	0	0.319	0	0	0	0
F Pit 1/34	0	0	0.325	0	0	0	0
F Pit 4/42	0	0	0.317	0	0	0	0
F Pit 1/35	0.002	0.002	0.384	0.029	0.02	0.24	0.8 20% AEP, 5 min burst, Storm 1
F Pit 1/39	0.002	0.002	0.309	0.03	0.02	0.25	0.67 20% AEP, 10 min burst, Storm 8
F Pit 3/42	0	0	0.307	0	0	0	0
F Pit 1/41	0	0	0.299	0	0	0	0
F Pit 2/41	0.002	0.002	0.293	0.033	0.02	0.27	0.83 20% AEP, 10 min burst, Storm 8
F Pit 3/41	0.004	0.004	0.378	0.036	0.03	0.3	0.97 20% AEP, 5 min burst, Storm 1
F Pit 4/41	0	0	0.413	0	0	0	0
F Pit 5/41	0	0	0.367	0	0	0	0
F Pit 6/41	0	0	0.29	0	0	0	0
F Pit 1/42	0	0	0.309	0	0	0	0
F Pit 2/42	0	0	0.307	0	0	0	0
F Pit 1/43	0	0	0.296	0	0	0	0
F Pit 1/44	0	0	0.392	0	0	0	0
F Pit 1/45	0	0	0.428	0	0	0	0
F Pit 1/46	0.001	0.001	0.43	0.021	0	0.17	0 20% AEP, 10 min burst, Storm 8
O Pit 1/66	0.002	0.002	0.212	0.064	0.02	0.79	0.47 20% AEP, 5 min burst, Storm 1
OF Sw1	0.101	0.101	0.391	0.102	0.09	1.83	1.05 20% AEP, 10 min burst, Storm 8
F Pit 1/67	0	0	0.183	0	0	0	0
F Pit 1/40	0	0	0.03	0	0	0	0

DETENTION BASIN DETAILS

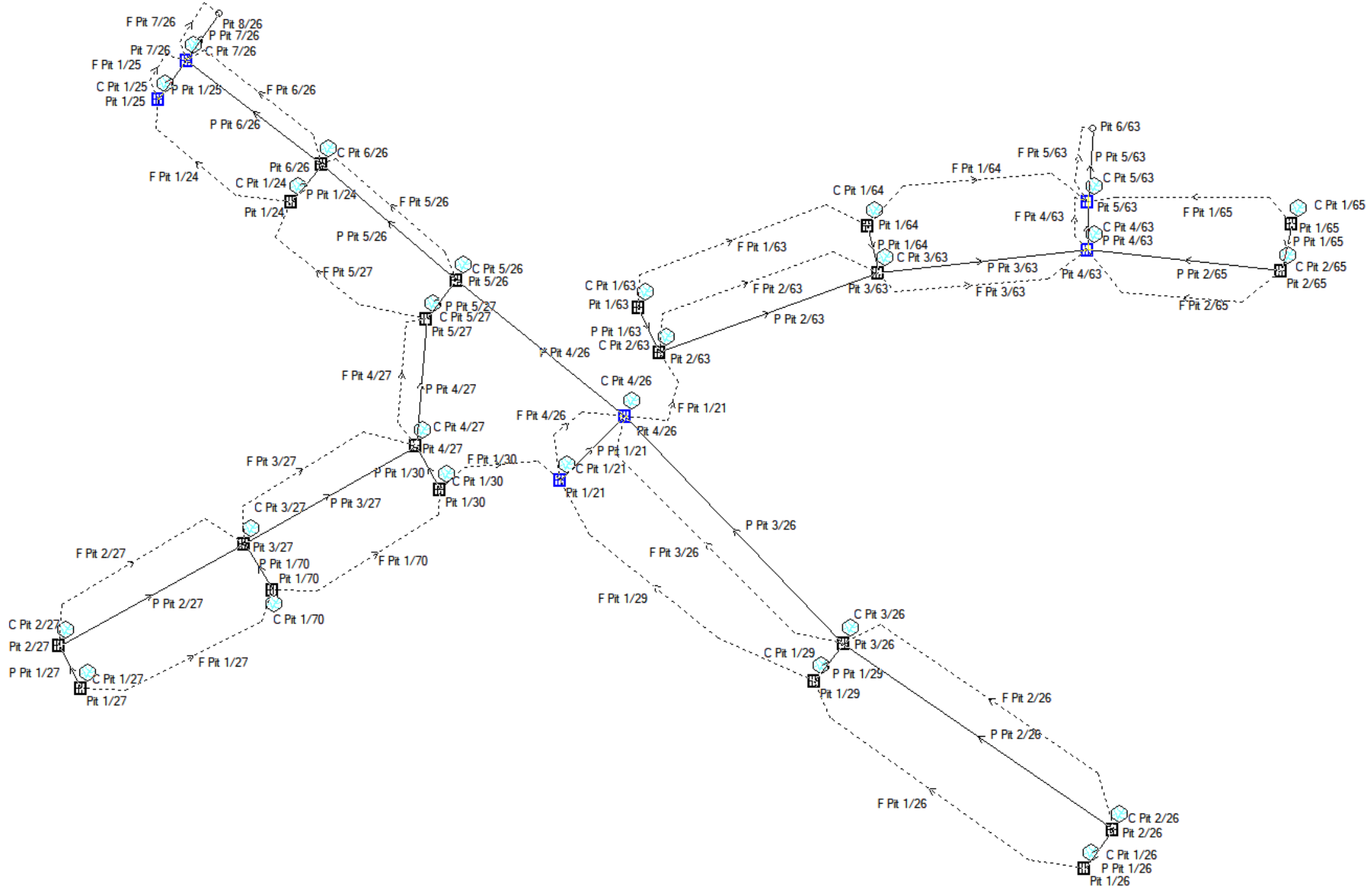
Name	Max WL	MaxVol	Max Q Total	Max Q Low Level	Max Q High Level
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Run Log for 5936000 run at 11:51:02 on 7/3/2018

No water upwelling from any pit. Freeboard was adequate at all pits.

Flows were safe in all overflow routes.

5936000
WALLACIA GOLF COURSE
DRAINS MODEL PART 3



Proposed DRAINS Model 3 - Data Information

PIT / NODE DETAILS

Version 13

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 is
Pit 1/21	Sag	WSP Stand 3 x 600x900		0.5	4.6	51.197	0.15	0	0.5	282532.6	6250280	No	52 1 x Ku	No	New
Pit 4/26	Sag	WSP Stand 2 x 600x900		0.5	2.3	51.156	0.15	0	0.5	282541.3	6250289	No	62 1 x Ku	No	New
Pit 5/26	OnGrade	WSP Stand 600 x 900 PIT			1.2	50.578		0	0.2	282518.6	6250307	No	63 1 x Ku	No	New
Pit 6/26	OnGrade	WSP Stand 600 x 900 PIT			0.7	48.929		0	0.2	282500.5	6250323	No	64 1 x Ku	No	New
Pit 7/26	Sag	WSP Stand 2 x 600x900		0.5	2.2	48.082	0.15	0	0.5	282482.2	6250337	No	65 1 x Ku	No	New
Pit 8/26	Node					47.474		0		282486.6	6250343		66	No	
Pit 1/24	OnGrade	WSP Stand 600 x 900 PIT			5.9	48.929		0	0.2	282496.4	6250318	No	57 1 x Ku	No	New
Pit 1/25	Sag	WSP Stand 2 x 600x900		0.5	5.5	48.028	0.15	0	0.5	282478.4	6250332	No	58 1 x Ku	No	New
Pit 1/26	OnGrade	WSP Stand 600 x 900 PIT			5.9	55.496		0	0.2	282603.3	6250228	No	59 1 x Ku	No	New
Pit 2/26	OnGrade	WSP Stand 600 x 900 PIT			3.6	55.476		0	0.2	282607.2	6250233	No	60 1 x Ku	No	New
Pit 3/26	OnGrade	WSP Stand 600 x 900 PIT			2.2	53.259		0	0.2	282570.8	6250258	No	61 1 x Ku	No	New
Pit 1/27	OnGrade	WSP Stand 2 x 600x900			5.9	52.136		0	0.2	282468	6250252	No	67 1 x Ku	No	New
Pit 2/27	OnGrade	WSP Stand 600 x 900 PIT			2.6	52.144		0	0.2	282465	6250258	No	68 1 x Ku	No	New
Pit 3/27	OnGrade	WSP Stand 600 x 900 PIT			5.9	51.966		0	0.2	282490	6250272	No	1563494 1 x Ku	No	New
Pit 4/27	OnGrade	WSP Stand 600 x 900 PIT			5.3	51.548		0	0.2	282513.1	6250285	No	69 1 x Ku	No	New
Pit 5/27	OnGrade	WSP Stand 2 x 600x900			1.6	50.632		0	0.2	282514.6	6250302	No	70 1 x Ku	No	New
Pit 1/29	OnGrade	WSP Stand 600 x 900 PIT			5.9	53.266		0	0.2	282566.8	6250253	No	72 1 x Ku	No	New
Pit 1/30	OnGrade	WSP Stand 2 x 600x900			5.9	51.545		0	0.2	282516.4	6250279	No	73 1 x Ku	No	New
Pit 1/63	OnGrade	WSP Stand 600 x 900 PIT			5.4	51.177		0	0.2	282543.1	6250304	No	159 1 x Ku	No	New
Pit 2/63	OnGrade	WSP Stand 2 x 600x900			5	51.178		0	0.2	282546	6250298	No	160 1 x Ku	No	New
Pit 3/63	OnGrade	WSP Stand 2 x 600x900			3.2	50.836		0	0.2	282575.5	6250308	No	161 1 x Ku	No	New
Pit 4/63	Sag	WSP Stand 3 x 600x900		0.5	2.8	50.627	0.15	0	0.5	282603.7	6250311	No	162 1 x Ku	No	New
Pit 5/63	Sag	WSP Stand 2 x 600x900		0.5	0.7	50.602	0.15	0	0.5	282603.7	6250318	No	163 1 x Ku	No	New
Pit 6/63	Node					49.723		0		282604.5	6250328		164	No	
Pit 1/64	OnGrade	WSP Stand 600 x 900 PIT			3.6	50.866		0	0.2	282574.1	6250315	No	165 1 x Ku	No	New
Pit 1/65	OnGrade	WSP Stand 600 x 900 PIT			4.7	50.877		0	0.2	282631.3	6250315	No	166 1 x Ku	No	New
Pit 2/65	OnGrade	WSP Stand 600 x 900 PIT			3.6	50.902		0	0.2	282629.9	6250309	No	167 1 x Ku	No	New
Pit 1/70	OnGrade	WSP Stand 2 x 600x900			5.9	51.966		0	0.2	282493.8	6250265	No	1563479 1 x Ku	No	New

DETENTION BASIN DETAILS

Name	Elev	Surf. Area	Not Used	Outlet Type	K	Dia(mm)	Centre RL	Pit Family	Pit Type	x	y	HED	Crest RL	Crest Length	id
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SUB-CATCHMENT DETAILS

Name	Pit or Node	Total Area (ha)	Paved Area %	Grass Area %	Supp Area %	Paved Time (min)	Grass Time (min)	Supp Time (min)	Paved Length (m)	Grass Length (m)	Supp Length (m)	Paved Slope(%)	Grass Slope %	Supp Slope %	Paved Rough	Grass Rough	Supp Rough	Lag Time or Factor	Gutter Length (m)	Gutter Slope %	Gutter FlowFactor
C Pit 1/21	Pit 1/21	0.2815	33	67	0	0	0	0	44	158	-1	4.9	4	-1	0.013	0.3	-1	-1	-1		
C Pit 4/26	Pit 4/26	0.0251	50	50	0	0	0	0	42	42	-1	4.9	4.9	-1	0.013	0.3	-1	-1	-1		
C Pit 5/26	Pit 5/26	0.0083	100	0	0	0	0	0	20	-1	-1	1	-1	-1	0.013	-1	-1	-1	-1		
C Pit 6/26	Pit 6/26	0.0114	50	50	0	0	0	0	23	23	-1	6.9	6.9	-1	0.013	0.3	-1	-1	-1		
C Pit 7/26	Pit 7/26	0.0414	25	75	0	2	5	0													
C Pit 1/24	Pit 1/24	0.1067	31	69	0	0	0	0	25	50	-1	7	6.1	-1	0.013	0.3	-1	-1	-1		
C Pit 1/25	Pit 1/25	0.3851	29	61	0	0	0	0	23	142	-1	3.9	3.15	-1	0.013	0.3	-1	-1	-1		
C Pit 1/26	Pit 1/26	0.0172	50	50	0	0	0	0	30	30	-1	5	5	-1	0.013	0.3	-1	-1	-1		
C Pit 2/26	Pit 2/26	0.0164	50	50	0	0	0	0	30	30	-1	5	5	-1	0.013	0.3	-1	-1	-1		
C Pit 3/26	Pit 3/26	0.0286	50	50	0	0	0	0	44	44	-1	5	5	-1	0.013	0.3	-1	-1	-1		
C Pit 1/27	Pit 1/27	0.2072	29	71	0	0	0	0	30	217	-1	1	1.96	-1	0.013	0.3	-1	-1	-1		
C Pit 2/27	Pit 2/27	0.0253	50	50	0	0	0	0	30	30	-1	1	1	-1	0.013	0.3	-1	-1	-1		
C Pit 3/27	Pit 3/27	0.018	50	50	0	0	0	0	26	26	-1	1	1	-1	0.013	0.3	-1	-1	-1		

C Pit 4/27	Pit 4/27	0.0156	50	50	0	0	0	0	27	27	-1	1	1	-1	0.013	0.3	-1	-1
C Pit 5/27	Pit 5/27	0.0134	100	0	0	0	0	0	20	-1	-1	4	-1	-1	0.013	-1	-1	-1
C Pit 1/29	Pit 1/29	0.0285	50	50	0	0	0	0	44	44	-1	5	5	-1	0.013	0.3	-1	-1
C Pit 1/30	Pit 1/30	0.4003	27	73	0	0	0	0	55	212	-1	1	2	-1	0.013	0.3	-1	-1
C Pit 1/63	Pit 1/63	0.0078	100	0	0	0	0	0	20	-1	-1	1	-1	-1	0.013	-1	-1	-1
C Pit 2/63	Pit 2/63	0.023	40	60	0	0	0	0	27	27	-1	2	2	-1	0.013	0.3	-1	-1
C Pit 3/63	Pit 3/63	0.1433	31	69	0	0	0	0	31	118	-1	1	3.53	-1	0.013	0.3	-1	-1
C Pit 4/63	Pit 4/63	0.4255	28	62	0	0	0	0	28	167	-1	0.7	3.52	-1	0.013	0.3	-1	-1
C Pit 5/63	Pit 5/63	0.0384	50	50	0	0	0	0	29	29	-1	0.9	0.9	-1	0.013	0.3	-1	-1
C Pit 1/64	Pit 1/64	0.0175	50	50	0	0	0	0	31	31	-1	0.9	0.9	-1	0.013	0.3	-1	-1
C Pit 1/65	Pit 1/65	0.0146	50	50	0	0	0	0	24	24	-1	1	1	-1	0.013	0.3	-1	-1
C Pit 2/65	Pit 2/65	0.0949	31	69	0	0	0	0	24	142	-1	1	3.94	-1	0.013	0.3	-1	-1
C Pit 1/70	Pit 1/70	0.2197	27	73	0	0	0	0	55	212	-1	1	2	-1	0.013	0.3	-1	-1

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	Chg (m)	RI (m)	Chg (m)	RL (m)	etc (m)
P Pit 1/21	Pit 1/21	Pit 4/26	12.24	50.297	50.175		1 Concrete, u	300	300	0.013	New	1							
P Pit 4/26	Pit 4/26	Pit 5/26	29.22	50.145	49.1	3.58	Concrete, u	300	300	0.013	New	1							
P Pit 5/26	Pit 5/26	Pit 6/26	23.912	49.016	47.854	4.86	Concrete, u	450	450	0.013	New	1							
P Pit 6/26	Pit 6/26	Pit 7/26	23.061	47.824	46.44	6	Concrete, u	450	450	0.013	New	1							
P Pit 7/26	Pit 7/26	Pit 8/26	7.735	46.41	46.371	0.5	Concrete, u	450	450	0.013	New	1							
P Pit 1/24	Pit 1/24	Pit 6/26	6.5	48.029	47.964		1 Concrete, u	300	300	0.013	New	1							
P Pit 1/25	Pit 1/25	Pit 7/26	6.517	47.003	46.751	3.87	Concrete, u	375	375	0.013	New	1							
P Pit 1/26	Pit 1/26	Pit 2/26	6.51	54.584	54.519		1 Concrete, u	225	225	0.013	New	1							
P Pit 2/26	Pit 2/26	Pit 3/26	44.159	54.489	52.359	4.82	Concrete, u	225	225	0.013	New	1							
P Pit 3/26	Pit 3/26	Pit 4/26	42.557	52.271	50.256	4.73	Concrete, u	300	300	0.013	New	1							
P Pit 1/27	Pit 1/27	Pit 2/27	6.5	51.161	51.096		1 Concrete, u	375	375	0.013	New	1							
P Pit 2/27	Pit 2/27	Pit 3/27	26.615	51.066	50.795	1.02	Concrete, u	375	375	0.013	New	1							
P Pit 3/27	Pit 3/27	Pit 4/27	26.625	50.765	50.503	0.98	Concrete, u	375	375	0.013	New	1							
P Pit 4/27	Pit 4/27	Pit 5/27	17.228	49.95	49.222	4.23	Concrete, u	375	375	0.013	New	1							
P Pit 5/27	Pit 5/27	Pit 5/26	6.582	49.112	49.046		1 Concrete, u	450	450	0.013	New	1							
P Pit 1/29	Pit 1/29	Pit 3/26	6.5	52.366	52.301		1 Concrete, u	300	300	0.013	New	1							
P Pit 1/30	Pit 1/30	Pit 4/27	6.744	50.57	50.503	0.99	Concrete, u	300	300	0.013	New	1							
P Pit 1/63	Pit 1/63	Pit 2/63	6.61	50.277	50.211		1 Concrete, u	300	300	0.013	New	1							
P Pit 2/63	Pit 2/63	Pit 3/63	31.393	50.181	49.867		1 Concrete, u	300	300	0.013	New	1							
P Pit 3/63	Pit 3/63	Pit 4/63	28.382	49.837	49.553		1 Concrete, u	300	300	0.013	New	1							
P Pit 4/63	Pit 4/63	Pit 5/63	6.5	49.523	49.458		1 Concrete, u	300	300	0.013	New	1							
P Pit 5/63	Pit 5/63	Pit 6/63	9.822	49.428	49.29	1.41	Concrete, u	300	300	0.013	New	1							
P Pit 1/64	Pit 1/64	Pit 3/63	6.5	49.936	49.871		1 Concrete, u	300	300	0.013	New	1							
P Pit 1/65	Pit 1/65	Pit 2/65	6.5	49.977	49.912		1 Concrete, u	300	300	0.013	New	1							
P Pit 2/65	Pit 2/65	Pit 4/63	26.303	49.882	49.619		1 Concrete, u	300	300	0.013	New	1							
P Pit 1/70	Pit 1/70	Pit 3/27	6.5	51.066	51.001		1 Concrete, u	300	300	0.013	New	1							

DETAILS of SERVICES CROSSING PIPES

Pipe	Chg (m)	Bottom Elev (m)	Height of S Chg (m)	Bottom Elev (m)	Height of S Chg (m)	Bottom Elev (m)	Height of S etc (m)
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CHANNEL DETAILS

Name	From	To	Type	Length (m)	U/S IL (m)	D/S IL (m)	Slope (%)	Base Width (m)	L.B. Slope (1:?)	R.B. Slope (1:?)	Manning n	Depth (m)	Roofed
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OVERFLOW ROUTE DETAILS

Name	From	To	Travel Time	Spill Level	Crest Length	Weir Coeff. C	Cross Section	Safe Depth Major Stori	SafeDepth Minor Stori	Safe DxV	Bed Slope	D/S Area Contributing	id	U/S IL	D/S IL	Length (m)
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			(min)	(m)	(m)	(m)	(m)	(sq.m/sec)	(%)	%					
F Pit 4/26	Pit 1/21	Pit 4/26	1			8 m wide r	0.14	0.14	0.6	0.01	0	557	51.156	51.156	6.5
F Pit 1/21	Pit 4/26	Pit 2/63	1			8 m wide r	0.14	0.14	0.6	0.01	0	547	51.197	51.178	15
F Pit 5/26	Pit 5/26	Pit 6/26	1			8 m wide r	0.14	0.14	0.6	6.9	0	558	50.578	48.929	23.915
F Pit 6/26	Pit 6/26	Pit 7/26	1			8 m wide r	0.14	0.14	0.6	3.91	0	559	48.929	48.028	23.061
F Pit 7/26	Pit 7/26	Pit 8/26	1			Pathway 4	0.3	0.15	0.6	7.86	0	560	48.082	47.474	7.735
F Pit 1/24	Pit 1/24	Pit 1/25	1			8 m wide r	0.14	0.14	0.6	3.91	0	552	48.929	48.028	23.061
F Pit 1/25	Pit 1/25	Pit 7/26	1			8 m wide r	0.14	0.14	0.6	0.01	0	553	48.028	48.028	6.5
F Pit 1/26	Pit 1/26	Pit 1/29	1			8 m wide r	0.14	0.14	0.6	5.02	0	554	55.496	53.266	44.394
F Pit 2/26	Pit 2/26	Pit 3/26	1			8 m wide r	0.14	0.14	0.6	5.02	0	555	55.476	53.259	44.197
F Pit 3/26	Pit 3/26	Pit 4/26	1			8 m wide r	0.14	0.14	0.6	4.94	0	556	53.259	51.156	42.557
F Pit 1/27	Pit 1/27	Pit 1/70	1			8 m wide r	0.14	0.14	0.4	0.61	0	561	52.136	51.966	27.86
F Pit 2/27	Pit 2/27	Pit 3/27	1			8 m wide r	0.14	0.14	0.6	0.67	0	562	52.144	51.966	26.615
F Pit 3/27	Pit 3/27	Pit 4/27	0.2			8 m wide r	0.3	0.15	0.4	1.57	0	1563519	51.966	51.548	26.625
F Pit 4/27	Pit 4/27	Pit 5/27	1			8 m wide r	0.14	0.14	0.6	4.38	0	563	51.548	50.632	20.922
F Pit 5/27	Pit 5/27	Pit 1/24	1			8 m wide r	0.14	0.14	0.6	7.07	0	564	50.632	48.929	24.094
F Pit 1/29	Pit 1/29	Pit 1/21	1			8 m wide r	0.14	0.14	0.6	4.86	0	566	53.266	51.197	42.557
F Pit 1/30	Pit 1/30	Pit 1/21	1			8 m wide r	0.14	0.14	0.6	2.1	0	567	51.545	51.197	16.589
F Pit 1/63	Pit 1/63	Pit 1/64	1			8 m wide r	0.14	0.14	0.6	0.94	0	647	51.177	50.866	32.956
F Pit 2/63	Pit 2/63	Pit 3/63	1			8 m wide r	0.14	0.14	0.6	1.09	0	648	51.178	50.836	31.477
F Pit 3/63	Pit 3/63	Pit 4/63	1			8 m wide r	0.14	0.14	0.6	0.73	0	649	50.836	50.627	28.441
F Pit 4/63	Pit 4/63	Pit 5/63	1			8 m wide r	0.14	0.14	0.6	0.38	0	650	50.627	50.602	6.5
F Pit 5/63	Pit 5/63	Pit 6/63	1			Pathway 4	0.3	0.15	0.6	10.41	0	651	50.752	49.723	9.882
F Pit 1/64	Pit 1/64	Pit 5/63	1			8 m wide r	0.14	0.14	0.6	0.88	0	652	50.866	50.602	29.904
F Pit 1/65	Pit 1/65	Pit 5/63	1			8 m wide r	0.14	0.14	0.6	1.05	0	653	50.877	50.602	26.303
F Pit 2/65	Pit 2/65	Pit 4/63	1			8 m wide r	0.14	0.14	0.6	1.05	0	654	50.902	50.627	26.303
F Pit 1/70	Pit 1/70	Pit 1/30	0.2			8 m wide r	0.3	0.15	0.4	1.58	0	1563521	51.966	51.545	26.625

PIPE COVER DETAILS

Name	Type	Dia (mm)	Safe Cover	Cover (m)	
P Pit 1/21	Concrete, u	300	0.6	0.57	Unsafe
P Pit 4/26	Concrete, u	300	0.6	0.68	
P Pit 5/26	Concrete, u	450	0.6	0.58	Unsafe
P Pit 6/26	Concrete, u	450	0.6	0.58	Unsafe
P Pit 7/26	Concrete, u	450	0.6	0.61	
P Pit 1/24	Concrete, u	300	0.6	0.57	Unsafe
P Pit 1/25	Concrete, u	375	0.6	0.6	
P Pit 1/26	Concrete, u	225	0.6	0.64	
P Pit 2/26	Concrete, u	225	0.6	0.64	
P Pit 3/26	Concrete, u	300	0.6	0.57	Unsafe
P Pit 1/27	Concrete, u	375	0.6	0.57	Unsafe
P Pit 2/27	Concrete, u	375	0.6	0.63	
P Pit 3/27	Concrete, u	375	0.6	0.64	
P Pit 4/27	Concrete, u	375	0.6	0.57	Unsafe
P Pit 5/27	Concrete, u	450	0.6	1.01	
P Pit 1/29	Concrete, u	300	0.6	0.57	Unsafe
P Pit 1/30	Concrete, u	300	0.6	0.64	
P Pit 1/63	Concrete, u	300	0.6	0.57	Unsafe
P Pit 2/63	Concrete, u	300	0.6	0.64	
P Pit 3/63	Concrete, u	300	0.6	0.67	
P Pit 4/63	Concrete, u	300	0.6	0.75	
P Pit 5/63	Concrete, u	300	0.6	0.1	Unsafe
P Pit 1/64	Concrete, u	300	0.6	0.57	Unsafe
P Pit 1/65	Concrete, u	300	0.6	0.57	Unsafe

P Pit 2/65	Concrete, u	300	0.6	0.68
P Pit 1/70	Concrete, u	300	0.6	0.57 Unsafe

This model has no pipes with non-return valves

Proposed DRAINS Model 3 - Data Information

PIT / NODE DETAILS

Version 13

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 is
Pit 1/21	Sag	WSP Stand 3 x 600x900		0.5	4.6	51.197	0.15	0	0.5	282532.6	6250280	No	52 1 x Ku	No	New
Pit 4/26	Sag	WSP Stand 2 x 600x900		0.5	2.3	51.156	0.15	0	0.5	282541.3	6250289	No	62 1 x Ku	No	New
Pit 5/26	OnGrade	WSP Stand 600 x 900 PIT			1.2	50.578		0	0.2	282518.6	6250307	No	63 1 x Ku	No	New
Pit 6/26	OnGrade	WSP Stand 600 x 900 PIT			0.7	48.929		0	0.2	282500.5	6250323	No	64 1 x Ku	No	New
Pit 7/26	Sag	WSP Stand 2 x 600x900		0.5	2.2	48.082	0.15	0	0.5	282482.2	6250337	No	65 1 x Ku	No	New
Pit 8/26	Node					47.474		0		282486.6	6250343		66	No	
Pit 1/24	OnGrade	WSP Stand 600 x 900 PIT			5.9	48.929		0	0.2	282496.4	6250318	No	57 1 x Ku	No	New
Pit 1/25	Sag	WSP Stand 2 x 600x900		0.5	5.5	48.028	0.15	0	0.5	282478.4	6250332	No	58 1 x Ku	No	New
Pit 1/26	OnGrade	WSP Stand 600 x 900 PIT			5.9	55.496		0	0.2	282603.3	6250228	No	59 1 x Ku	No	New
Pit 2/26	OnGrade	WSP Stand 600 x 900 PIT			3.6	55.476		0	0.2	282607.2	6250233	No	60 1 x Ku	No	New
Pit 3/26	OnGrade	WSP Stand 600 x 900 PIT			2.2	53.259		0	0.2	282570.8	6250258	No	61 1 x Ku	No	New
Pit 1/27	OnGrade	WSP Stand 2 x 600x900			5.9	52.136		0	0.2	282468	6250252	No	67 1 x Ku	No	New
Pit 2/27	OnGrade	WSP Stand 600 x 900 PIT			2.6	52.144		0	0.2	282465	6250258	No	68 1 x Ku	No	New
Pit 3/27	OnGrade	WSP Stand 600 x 900 PIT			5.9	51.966		0	0.2	282490	6250272	No	1563494 1 x Ku	No	New
Pit 4/27	OnGrade	WSP Stand 600 x 900 PIT			5.3	51.548		0	0.2	282513.1	6250285	No	69 1 x Ku	No	New
Pit 5/27	OnGrade	WSP Stand 2 x 600x900			1.6	50.632		0	0.2	282514.6	6250302	No	70 1 x Ku	No	New
Pit 1/29	OnGrade	WSP Stand 600 x 900 PIT			5.9	53.266		0	0.2	282566.8	6250253	No	72 1 x Ku	No	New
Pit 1/30	OnGrade	WSP Stand 2 x 600x900			5.9	51.545		0	0.2	282516.4	6250279	No	73 1 x Ku	No	New
Pit 1/63	OnGrade	WSP Stand 600 x 900 PIT			5.4	51.177		0	0.2	282543.1	6250304	No	159 1 x Ku	No	New
Pit 2/63	OnGrade	WSP Stand 2 x 600x900			5	51.178		0	0.2	282546	6250298	No	160 1 x Ku	No	New
Pit 3/63	OnGrade	WSP Stand 2 x 600x900			3.2	50.836		0	0.2	282575.5	6250308	No	161 1 x Ku	No	New
Pit 4/63	Sag	WSP Stand 3 x 600x900		0.5	2.8	50.627	0.15	0	0.5	282603.7	6250311	No	162 1 x Ku	No	New
Pit 5/63	Sag	WSP Stand 2 x 600x900		0.5	0.7	50.602	0.15	0	0.5	282603.7	6250318	No	163 1 x Ku	No	New
Pit 6/63	Node					49.723		0		282604.5	6250328		164	No	
Pit 1/64	OnGrade	WSP Stand 600 x 900 PIT			3.6	50.866		0	0.2	282574.1	6250315	No	165 1 x Ku	No	New
Pit 1/65	OnGrade	WSP Stand 600 x 900 PIT			4.7	50.877		0	0.2	282631.3	6250315	No	166 1 x Ku	No	New
Pit 2/65	OnGrade	WSP Stand 600 x 900 PIT			3.6	50.902		0	0.2	282629.9	6250309	No	167 1 x Ku	No	New
Pit 1/70	OnGrade	WSP Stand 2 x 600x900			5.9	51.966		0	0.2	282493.8	6250265	No	1563479 1 x Ku	No	New

DETENTION BASIN DETAILS

Name	Elev	Surf. Area	Not Used	Outlet Type	K	Dia(mm)	Centre RL	Pit Family	Pit Type	x	y	HED	Crest RL	Crest Length	id
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SUB-CATCHMENT DETAILS

Name	Pit or Node	Total Area (ha)	Paved Area %	Grass Area %	Supp Area %	Paved Time (min)	Grass Time (min)	Supp Time (min)	Paved Length (m)	Grass Length (m)	Supp Length (m)	Paved Slope(%)	Grass Slope %	Supp Slope %	Paved Rough	Grass Rough	Supp Rough	Lag Time or Factor	Gutter Length (m)	Gutter Slope %	Gutter FlowFactor
C Pit 1/21	Pit 1/21	0.2815	33	67	0	0	0	0	44	158	-1	4.9	4	-1	0.013	0.3	-1	-1	-1		
C Pit 4/26	Pit 4/26	0.0251	50	50	0	0	0	0	42	42	-1	4.9	4.9	-1	0.013	0.3	-1	-1	-1		
C Pit 5/26	Pit 5/26	0.0083	100	0	0	0	0	0	20	-1	-1	1	-1	-1	0.013	-1	-1	-1	-1		
C Pit 6/26	Pit 6/26	0.0114	50	50	0	0	0	0	23	23	-1	6.9	6.9	-1	0.013	0.3	-1	-1	-1		
C Pit 7/26	Pit 7/26	0.0414	25	75	0	2	5	0													
C Pit 1/24	Pit 1/24	0.1067	31	69	0	0	0	0	25	50	-1	7	6.1	-1	0.013	0.3	-1	-1	-1		
C Pit 1/25	Pit 1/25	0.3851	29	61	0	0	0	0	23	142	-1	3.9	3.15	-1	0.013	0.3	-1	-1	-1		
C Pit 1/26	Pit 1/26	0.0172	50	50	0	0	0	0	30	30	-1	5	5	-1	0.013	0.3	-1	-1	-1		
C Pit 2/26	Pit 2/26	0.0164	50	50	0	0	0	0	30	30	-1	5	5	-1	0.013	0.3	-1	-1	-1		
C Pit 3/26	Pit 3/26	0.0286	50	50	0	0	0	0	44	44	-1	5	5	-1	0.013	0.3	-1	-1	-1		
C Pit 1/27	Pit 1/27	0.2072	29	71	0	0	0	0	30	217	-1	1	1.96	-1	0.013	0.3	-1	-1	-1		
C Pit 2/27	Pit 2/27	0.0253	50	50	0	0	0	0	30	30	-1	1	1	-1	0.013	0.3	-1	-1	-1		
C Pit 3/27	Pit 3/27	0.018	50	50	0	0	0	0	26	26	-1	1	1	-1	0.013	0.3	-1	-1	-1		

C Pit 4/27	Pit 4/27	0.0156	50	50	0	0	0	0	27	27	-1	1	1	-1	0.013	0.3	-1	-1
C Pit 5/27	Pit 5/27	0.0134	100	0	0	0	0	0	20	-1	-1	4	-1	-1	0.013	-1	-1	-1
C Pit 1/29	Pit 1/29	0.0285	50	50	0	0	0	0	44	44	-1	5	5	-1	0.013	0.3	-1	-1
C Pit 1/30	Pit 1/30	0.4003	27	73	0	0	0	0	55	212	-1	1	2	-1	0.013	0.3	-1	-1
C Pit 1/63	Pit 1/63	0.0078	100	0	0	0	0	0	20	-1	-1	1	-1	-1	0.013	-1	-1	-1
C Pit 2/63	Pit 2/63	0.023	40	60	0	0	0	0	27	27	-1	2	2	-1	0.013	0.3	-1	-1
C Pit 3/63	Pit 3/63	0.1433	31	69	0	0	0	0	31	118	-1	1	3.53	-1	0.013	0.3	-1	-1
C Pit 4/63	Pit 4/63	0.4255	28	62	0	0	0	0	28	167	-1	0.7	3.52	-1	0.013	0.3	-1	-1
C Pit 5/63	Pit 5/63	0.0384	50	50	0	0	0	0	29	29	-1	0.9	0.9	-1	0.013	0.3	-1	-1
C Pit 1/64	Pit 1/64	0.0175	50	50	0	0	0	0	31	31	-1	0.9	0.9	-1	0.013	0.3	-1	-1
C Pit 1/65	Pit 1/65	0.0146	50	50	0	0	0	0	24	24	-1	1	1	-1	0.013	0.3	-1	-1
C Pit 2/65	Pit 2/65	0.0949	31	69	0	0	0	0	24	142	-1	1	3.94	-1	0.013	0.3	-1	-1
C Pit 1/70	Pit 1/70	0.2197	27	73	0	0	0	0	55	212	-1	1	2	-1	0.013	0.3	-1	-1

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	Chg (m)	RI (m)	Chg (m)	RL (m)	etc (m)
P Pit 1/21	Pit 1/21	Pit 4/26	12.24	50.297	50.175		1 Concrete, u	300	300	0.013	New	1							
P Pit 4/26	Pit 4/26	Pit 5/26	29.22	50.145	49.1	3.58	Concrete, u	300	300	0.013	New	1							
P Pit 5/26	Pit 5/26	Pit 6/26	23.912	49.016	47.854	4.86	Concrete, u	450	450	0.013	New	1							
P Pit 6/26	Pit 6/26	Pit 7/26	23.061	47.824	46.44	6	Concrete, u	450	450	0.013	New	1							
P Pit 7/26	Pit 7/26	Pit 8/26	7.735	46.41	46.371	0.5	Concrete, u	450	450	0.013	New	1							
P Pit 1/24	Pit 1/24	Pit 6/26	6.5	48.029	47.964	1	Concrete, u	300	300	0.013	New	1							
P Pit 1/25	Pit 1/25	Pit 7/26	6.517	47.003	46.751	3.87	Concrete, u	375	375	0.013	New	1							
P Pit 1/26	Pit 1/26	Pit 2/26	6.51	54.584	54.519	1	Concrete, u	225	225	0.013	New	1							
P Pit 2/26	Pit 2/26	Pit 3/26	44.159	54.489	52.359	4.82	Concrete, u	225	225	0.013	New	1							
P Pit 3/26	Pit 3/26	Pit 4/26	42.557	52.271	50.256	4.73	Concrete, u	300	300	0.013	New	1							
P Pit 1/27	Pit 1/27	Pit 2/27	6.5	51.161	51.096	1	Concrete, u	375	375	0.013	New	1							
P Pit 2/27	Pit 2/27	Pit 3/27	26.615	51.066	50.795	1.02	Concrete, u	375	375	0.013	New	1							
P Pit 3/27	Pit 3/27	Pit 4/27	26.625	50.765	50.503	0.98	Concrete, u	375	375	0.013	New	1							
P Pit 4/27	Pit 4/27	Pit 5/27	17.228	49.95	49.222	4.23	Concrete, u	375	375	0.013	New	1							
P Pit 5/27	Pit 5/27	Pit 5/26	6.582	49.112	49.046	1	Concrete, u	450	450	0.013	New	1							
P Pit 1/29	Pit 1/29	Pit 3/26	6.5	52.366	52.301	1	Concrete, u	300	300	0.013	New	1							
P Pit 1/30	Pit 1/30	Pit 4/27	6.744	50.57	50.503	0.99	Concrete, u	300	300	0.013	New	1							
P Pit 1/63	Pit 1/63	Pit 2/63	6.61	50.277	50.211	1	Concrete, u	300	300	0.013	New	1							
P Pit 2/63	Pit 2/63	Pit 3/63	31.393	50.181	49.867	1	Concrete, u	300	300	0.013	New	1							
P Pit 3/63	Pit 3/63	Pit 4/63	28.382	49.837	49.553	1	Concrete, u	300	300	0.013	New	1							
P Pit 4/63	Pit 4/63	Pit 5/63	6.5	49.523	49.458	1	Concrete, u	300	300	0.013	New	1							
P Pit 5/63	Pit 5/63	Pit 6/63	9.822	49.428	49.29	1.41	Concrete, u	300	300	0.013	New	1							
P Pit 1/64	Pit 1/64	Pit 3/63	6.5	49.936	49.871	1	Concrete, u	300	300	0.013	New	1							
P Pit 1/65	Pit 1/65	Pit 2/65	6.5	49.977	49.912	1	Concrete, u	300	300	0.013	New	1							
P Pit 2/65	Pit 2/65	Pit 4/63	26.303	49.882	49.619	1	Concrete, u	300	300	0.013	New	1							
P Pit 1/70	Pit 1/70	Pit 3/27	6.5	51.066	51.001	1	Concrete, u	300	300	0.013	New	1							

DETAILS of SERVICES CROSSING PIPES

Pipe	Chg (m)	Bottom Elev (m)	Height of S Chg (m)	Bottom Elev (m)	Height of S Chg (m)	Bottom Elev (m)	Height of S etc (m)
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CHANNEL DETAILS

Name	From	To	Type	Length (m)	U/S IL (m)	D/S IL (m)	Slope (%)	Base Width (m)	L.B. Slope (1:?)	R.B. Slope (1:?)	Manning n	Depth (m)	Roofed
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OVERFLOW ROUTE DETAILS

Name	From	To	Travel Time	Spill Level	Crest Length	Weir Coeff. C	Cross Section	Safe Depth Major Stori	SafeDepth Minor Stori	Safe DxV	Bed Slope	D/S Area Contributing	id	U/S IL	D/S IL	Length (m)
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			(min)	(m)	(m)	(m)	(m)	(sq.m/sec)	(%)	%					
F Pit 4/26	Pit 1/21	Pit 4/26	1			8 m wide r	0.14	0.14	0.6	0.01	0	557	51.156	51.156	6.5
F Pit 1/21	Pit 4/26	Pit 2/63	1			8 m wide r	0.14	0.14	0.6	0.01	0	547	51.197	51.178	15
F Pit 5/26	Pit 5/26	Pit 6/26	1			8 m wide r	0.14	0.14	0.6	6.9	0	558	50.578	48.929	23.915
F Pit 6/26	Pit 6/26	Pit 7/26	1			8 m wide r	0.14	0.14	0.6	3.91	0	559	48.929	48.028	23.061
F Pit 7/26	Pit 7/26	Pit 8/26	1			Pathway 4	0.3	0.15	0.6	7.86	0	560	48.082	47.474	7.735
F Pit 1/24	Pit 1/24	Pit 1/25	1			8 m wide r	0.14	0.14	0.6	3.91	0	552	48.929	48.028	23.061
F Pit 1/25	Pit 1/25	Pit 7/26	1			8 m wide r	0.14	0.14	0.6	0.01	0	553	48.028	48.028	6.5
F Pit 1/26	Pit 1/26	Pit 1/29	1			8 m wide r	0.14	0.14	0.6	5.02	0	554	55.496	53.266	44.394
F Pit 2/26	Pit 2/26	Pit 3/26	1			8 m wide r	0.14	0.14	0.6	5.02	0	555	55.476	53.259	44.197
F Pit 3/26	Pit 3/26	Pit 4/26	1			8 m wide r	0.14	0.14	0.6	4.94	0	556	53.259	51.156	42.557
F Pit 1/27	Pit 1/27	Pit 1/70	1			8 m wide r	0.14	0.14	0.4	0.61	0	561	52.136	51.966	27.86
F Pit 2/27	Pit 2/27	Pit 3/27	1			8 m wide r	0.14	0.14	0.6	0.67	0	562	52.144	51.966	26.615
F Pit 3/27	Pit 3/27	Pit 4/27	0.2			8 m wide r	0.3	0.15	0.4	1.57	0	1563519	51.966	51.548	26.625
F Pit 4/27	Pit 4/27	Pit 5/27	1			8 m wide r	0.14	0.14	0.6	4.38	0	563	51.548	50.632	20.922
F Pit 5/27	Pit 5/27	Pit 1/24	1			8 m wide r	0.14	0.14	0.6	7.07	0	564	50.632	48.929	24.094
F Pit 1/29	Pit 1/29	Pit 1/21	1			8 m wide r	0.14	0.14	0.6	4.86	0	566	53.266	51.197	42.557
F Pit 1/30	Pit 1/30	Pit 1/21	1			8 m wide r	0.14	0.14	0.6	2.1	0	567	51.545	51.197	16.589
F Pit 1/63	Pit 1/63	Pit 1/64	1			8 m wide r	0.14	0.14	0.6	0.94	0	647	51.177	50.866	32.956
F Pit 2/63	Pit 2/63	Pit 3/63	1			8 m wide r	0.14	0.14	0.6	1.09	0	648	51.178	50.836	31.477
F Pit 3/63	Pit 3/63	Pit 4/63	1			8 m wide r	0.14	0.14	0.6	0.73	0	649	50.836	50.627	28.441
F Pit 4/63	Pit 4/63	Pit 5/63	1			8 m wide r	0.14	0.14	0.6	0.38	0	650	50.627	50.602	6.5
F Pit 5/63	Pit 5/63	Pit 6/63	1			Pathway 4	0.3	0.15	0.6	10.41	0	651	50.752	49.723	9.882
F Pit 1/64	Pit 1/64	Pit 5/63	1			8 m wide r	0.14	0.14	0.6	0.88	0	652	50.866	50.602	29.904
F Pit 1/65	Pit 1/65	Pit 5/63	1			8 m wide r	0.14	0.14	0.6	1.05	0	653	50.877	50.602	26.303
F Pit 2/65	Pit 2/65	Pit 4/63	1			8 m wide r	0.14	0.14	0.6	1.05	0	654	50.902	50.627	26.303
F Pit 1/70	Pit 1/70	Pit 1/30	0.2			8 m wide r	0.3	0.15	0.4	1.58	0	1563521	51.966	51.545	26.625

PIPE COVER DETAILS

Name	Type	Dia (mm)	Safe Cover	Cover (m)	
P Pit 1/21	Concrete, u	300	0.6	0.57	Unsafe
P Pit 4/26	Concrete, u	300	0.6	0.68	
P Pit 5/26	Concrete, u	450	0.6	0.58	Unsafe
P Pit 6/26	Concrete, u	450	0.6	0.58	Unsafe
P Pit 7/26	Concrete, u	450	0.6	0.61	
P Pit 1/24	Concrete, u	300	0.6	0.57	Unsafe
P Pit 1/25	Concrete, u	375	0.6	0.6	
P Pit 1/26	Concrete, u	225	0.6	0.64	
P Pit 2/26	Concrete, u	225	0.6	0.64	
P Pit 3/26	Concrete, u	300	0.6	0.57	Unsafe
P Pit 1/27	Concrete, u	375	0.6	0.57	Unsafe
P Pit 2/27	Concrete, u	375	0.6	0.63	
P Pit 3/27	Concrete, u	375	0.6	0.64	
P Pit 4/27	Concrete, u	375	0.6	0.57	Unsafe
P Pit 5/27	Concrete, u	450	0.6	1.01	
P Pit 1/29	Concrete, u	300	0.6	0.57	Unsafe
P Pit 1/30	Concrete, u	300	0.6	0.64	
P Pit 1/63	Concrete, u	300	0.6	0.57	Unsafe
P Pit 2/63	Concrete, u	300	0.6	0.64	
P Pit 3/63	Concrete, u	300	0.6	0.67	
P Pit 4/63	Concrete, u	300	0.6	0.75	
P Pit 5/63	Concrete, u	300	0.6	0.1	Unsafe
P Pit 1/64	Concrete, u	300	0.6	0.57	Unsafe
P Pit 1/65	Concrete, u	300	0.6	0.57	Unsafe

P Pit 2/65	Concrete, u	300	0.6	0.68
P Pit 1/70	Concrete, u	300	0.6	0.57 Unsafe

This model has no pipes with non-return valves

Proposed DRAINS Model 3 - 1% AEP Storm Event Results

DRAINS results prepared from Version 2018.01

PIT / NODE DETAILS

Version 8

Name	Max HGL	Max Pond HGL	Max Surface Flow (cu.m/s)	Max Pond Volume (cu.m)	Min Freeboard (m)	Overflow (cu.m/s)	Constraint
Pit 1/21	51.21	51.27	0.14	0.4	0	0	Outlet System
Pit 4/26	50.66	51.18	0.015	0	0.49	0	Inlet Capacity
Pit 5/26	49.47		0.006		1.11	0	None
Pit 6/26	48.63		0.007		0.3	0	None
Pit 7/26	48.02	48.12	0.06	0.2	0.06	0	Inlet Capacity
Pit 8/26	46.8		0				
Pit 1/24	48.69		0.051		0.24	0.016	Inlet Capacity
Pit 1/25	48.15	48.22	0.137	0.4	0	0.012	Outlet System
Pit 1/26	54.7		0.01		0.8	0	None
Pit 2/26	54.63		0.01		0.85	0	None
Pit 3/26	52.46		0.016		0.8	0.001	Inlet Capacity
Pit 1/27	51.42		0.059		0.71	0.006	Inlet Capacity
Pit 2/27	51.34		0.013		0.8	0	None
Pit 3/27	51.29		0.009		0.67	0	None
Pit 4/27	50.94		0.008		0.61	0	None
Pit 5/27	49.62		0.01		1.01	0	None
Pit 1/29	52.51		0.015		0.76	0	Inlet Capacity
Pit 1/30	51.37		0.121		0.17	0.02	Inlet Capacity
Pit 1/63	51.05		0.006		0.12	0	None
Pit 2/63	51.07		0.012		0.11	0	None
Pit 3/63	50.89		0.05		0	0.015	Outlet System
Pit 4/63	50.77	50.82	0.157	0.4	0	0.017	Outlet System
Pit 5/63	50.09	50.64	0.055	0.1	0.51	0	Inlet Capacity
Pit 6/63	49.58		0				
Pit 1/64	50.89		0.009		0	0.002	Outlet System
Pit 1/65	50.82		0.008		0.05	0	None
Pit 2/65	50.82		0.032		0.08	0.006	Inlet Capacity
Pit 1/70	51.45		0.069		0.52	0.008	Inlet Capacity

SUB-CATCHMENT DETAILS

Name	Max Flow Q (cu.m/s)	Paved Max Q (cu.m/s)	Grassed Max Q (cu.m/s)	Paved Tc (min)	Grassed Tc (min)	Supp. Tc (min)	Due to Storm
C Pit 1/21	0.081	0.051	0.031	1.49	22.42		0 1% AEP, 10 min burst, Storm 7
C Pit 4/26	0.012	0.007	0.005	1.45	9.53		0 1% AEP, 10 min burst, Storm 7
C Pit 5/26	0.005	0.005	0	1.38	0		0 1% AEP, 5 min burst, Storm 1
C Pit 6/26	0.006	0.003	0.003	0.91	5.99		0 1% AEP, 10 min burst, Storm 7
C Pit 7/26	0.02	0.006	0.015	2	5		0 1% AEP, 10 min burst, Storm 4
C Pit 1/24	0.046	0.018	0.028	0.95	9.91		0 1% AEP, 10 min burst, Storm 7
C Pit 1/25	0.099	0.061	0.038	1.08	22.6		0 1% AEP, 10 min burst, Storm 7
C Pit 1/26	0.009	0.005	0.004	1.18	7.74		0 1% AEP, 10 min burst, Storm 7
C Pit 2/26	0.008	0.004	0.004	1.18	7.74		0 1% AEP, 10 min burst, Storm 7

C Pit 3/26	0.013	0.008	0.005	1.48	9.74	0 1% AEP, 10 min burst, Storm 7
C Pit 1/27	0.049	0.04	0.009	1.76	31.01	0 1% AEP, 5 min burst, Storm 1
C Pit 2/27	0.011	0.007	0.004	1.91	12.54	0 1% AEP, 10 min burst, Storm 7
C Pit 3/27	0.008	0.005	0.003	1.75	11.51	0 1% AEP, 10 min burst, Storm 7
C Pit 4/27	0.007	0.004	0.002	1.79	11.78	0 1% AEP, 10 min burst, Storm 7
C Pit 5/27	0.009	0.009	0	0.91	0	0 1% AEP, 5 min burst, Storm 1
C Pit 1/29	0.013	0.008	0.005	1.48	9.74	0 1% AEP, 10 min burst, Storm 7
C Pit 1/30	0.092	0.059	0.033	2.74	32.93	0 1% AEP, 10 min burst, Storm 7
C Pit 1/63	0.005	0.005	0	1.38	0	0 1% AEP, 5 min burst, Storm 1
C Pit 2/63	0.01	0.005	0.005	1.45	9.56	0 1% AEP, 10 min burst, Storm 7
C Pit 3/63	0.043	0.024	0.019	1.95	19.54	0 1% AEP, 10 min burst, Storm 7
C Pit 4/63	0.104	0.065	0.04	2.04	24.09	0 1% AEP, 10 min burst, Storm 7
C Pit 5/63	0.016	0.01	0.006	1.93	12.69	0 1% AEP, 10 min burst, Storm 7
C Pit 1/64	0.007	0.006	0.001	1.85	12.19	0 1% AEP, 5 min burst, Storm 1
C Pit 1/65	0.006	0.004	0.002	1.67	10.97	0 1% AEP, 10 min burst, Storm 7
C Pit 2/65	0.027	0.016	0.011	1.67	21.13	0 1% AEP, 10 min burst, Storm 7
C Pit 1/70	0.051	0.032	0.018	2.74	32.93	0 1% AEP, 10 min burst, Storm 7

PIPE DETAILS

Name	Max Q (cu.m/s)	Max V (m/s)	Max U/S HGL (m)	Max D/S HGL (m)	Due to Storm
P Pit 1/21	0.099	1.4	50.76	50.643	1% AEP, 5 min burst, Storm 1
P Pit 4/26	0.147	2.7	50.361	49.467	1% AEP, 10 min burst, Storm 7
P Pit 5/26	0.34	4.7	49.225	48.585	1% AEP, 10 min burst, Storm 3
P Pit 6/26	0.382	2.4	48.432	48.019	1% AEP, 10 min burst, Storm 7
P Pit 7/26	0.481	3.06	47.016	46.804	1% AEP, 10 min burst, Storm 7
P Pit 1/24	0.029	0.42	48.642	48.64	1% AEP, 10 min burst, Storm 4
P Pit 1/25	0.099	0.89	48.135	48.128	1% AEP, 10 min burst, Storm 9
P Pit 1/26	0.009	1.12	54.64	54.629	1% AEP, 10 min burst, Storm 7
P Pit 2/26	0.017	1.85	54.552	52.456	1% AEP, 10 min burst, Storm 7
P Pit 3/26	0.042	2.32	52.362	50.662	1% AEP, 10 min burst, Storm 7
P Pit 1/27	0.043	1.14	51.301	51.293	1% AEP, 5 min burst, Storm 1
P Pit 2/27	0.051	1.1	51.23	51.238	1% AEP, 10 min burst, Storm 2
P Pit 3/27	0.102	1	51.091	50.94	1% AEP, 10 min burst, Storm 7
P Pit 4/27	0.188	3.3	50.143	49.621	1% AEP, 10 min burst, Storm 7
P Pit 5/27	0.196	1.26	49.558	49.467	1% AEP, 10 min burst, Storm 7
P Pit 1/29	0.012	0.65	52.46	52.456	1% AEP, 10 min burst, Storm 7
P Pit 1/30	0.08	1.13	50.984	50.94	1% AEP, 10 min burst, Storm 7
P Pit 1/63	0.008	0.11	51.053	51.072	1% AEP, 5 min burst, Storm 1
P Pit 2/63	0.038	0.54	51.071	50.881	1% AEP, 5 min burst, Storm 1
P Pit 3/63	0.052	0.73	50.837	50.782	1% AEP, 5 min burst, Storm 1
P Pit 4/63	0.144	2.03	50.201	50.072	1% AEP, 30 min burst, Storm 1
P Pit 5/63	0.171	2.46	49.888	49.578	1% AEP, 10 min burst, Storm 7
P Pit 1/64	0.006	0.09	50.878	50.878	1% AEP, 10 min burst, Storm 2
P Pit 1/65	0.007	0.1	50.841	50.84	1% AEP, 10 min burst, Storm 10
P Pit 2/65	0.028	0.4	50.783	50.763	1% AEP, 10 min burst, Storm 6
P Pit 1/70	0.048	0.78	51.309	51.292	1% AEP, 10 min burst, Storm 7

CHANNEL DETAILS

Name	Max Q (cu.m/s)	Max V (m/s)	Due to Storm
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OVERFLOW ROUTE DETAILS

Name	Max Q U/S	Max Q D/S	Safe Q	Max D	Max DxV	Max Width	Max V	Due to Storm
F Pit 4/26	0	0	0.03	0	0	0	0	
F Pit 1/21	0	0	0.019	0	0	0	0	
F Pit 5/26	0	0	0.498	0	0	0	0	
F Pit 6/26	0	0	0.375	0	0	0	0	
F Pit 7/26	0	0	0.51	0	0	0	0	
F Pit 1/24	0.016	0.016	0.375	0.191	0.07	6.03	1.35	1% AEP, 10 min burst, Storm 7
F Pit 1/25	0.012	0.012	0.03	0.094	0.01	3.53	0.12	1% AEP, 10 min burst, Storm 7
F Pit 1/26	0	0	0.425	0	0	0	0	
F Pit 2/26	0	0	0.425	0	0	0	0	
F Pit 3/26	0.001	0.001	0.422	0.021	0	0.17	0	1% AEP, 10 min burst, Storm 7
F Pit 1/27	0.006	0.006	0.148	0.053	0.03	0.44	0.52	1% AEP, 5 min burst, Storm 1
F Pit 2/27	0	0	0.155	0	0	0	0	
F Pit 3/27	0	0	1.041	0	0	0	0	
F Pit 4/27	0	0	0.397	0	0	0	0	
F Pit 5/27	0	0	0.504	0	0	0	0	
F Pit 1/29	0	0	0.418	0	0	0	0	
F Pit 1/30	0.02	0.02	0.275	0.075	0.08	1.16	1.22	1% AEP, 10 min burst, Storm 7
F Pit 1/63	0	0	0.184	0	0	0	0	
F Pit 2/63	0	0	0.198	0	0	0	0	
F Pit 3/63	0.015	0.015	0.162	0.197	0.05	6.35	0.76	1% AEP, 10 min burst, Storm 7
F Pit 4/63	0.017	0.017	0.187	0.069	0.03	1.86	0.47	1% AEP, 10 min burst, Storm 7
F Pit 5/63	0	0	0.466	0	0	0	0	
F Pit 1/64	0.002	0.002	0.178	0.041	0.01	0.34	0.41	1% AEP, 10 min burst, Storm 7
F Pit 1/65	0	0	0.194	0	0	0	0	
F Pit 2/65	0.006	0.006	0.194	0.197	0.03	6.35	0.6	1% AEP, 10 min burst, Storm 7
F Pit 1/70	0.008	0.008	1.044	0.062	0.04	0.7	0.78	1% AEP, 10 min burst, Storm 7

DETENTION BASIN DETAILS

Name	Max WL	MaxVol	Max Q Total	Max Q Low Level	Max Q High Level
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Run Log for 5936000 run at 11:52:58 on 7/3/2018

No water upwelling from any pit.

Freeboard was less than 0.15m at Pit 2/65, Pit 1/65, Pit 1/64, Pit 4/63, Pit 3/63, Pit 2/63, Pit 1/63, Pit 7/26, Pit 1/25, Pit 1/21

The maximum flow in these overflow routes is unsafe: F Pit 1/24, F Pit 3/63, F Pit 2/65

Proposed DRAINS Model 3 - 5% AEP Storm Event Results

DRAINS results prepared from Version 2018.01

PIT / NODE DETAILS

Version 8

Name	Max HGL	Max Pond HGL	Max Surface Flow (cu.m/s)	Max Pond Volume (cu.m)	Min Freeboard (m)	Overflow (cu.m/s)	Constraint
Pit 1/21	50.68	51.25	0.071	0.1	0.52	0	Inlet Capacity
Pit 4/26	50.43	51.17	0.008	0	0.72	0	Inlet Capacity
Pit 5/26	49.39		0.004		1.19	0	None
Pit 6/26	48.16		0.004		0.77	0	None
Pit 7/26	47.42	48.11	0.017	0	0.66	0	Inlet Capacity
Pit 8/26	46.77		0				
Pit 1/24	48.22		0.029		0.71	0.006	Inlet Capacity
Pit 1/25	47.55	48.1	0.079	0.1	0.48	0.001	Inlet Capacity
Pit 1/26	54.67		0.006		0.83	0	None
Pit 2/26	54.6		0.006		0.88	0	None
Pit 3/26	52.42		0.009		0.84	0	None
Pit 1/27	51.35		0.036		0.79	0.003	Inlet Capacity
Pit 2/27	51.25		0.008		0.9	0	None
Pit 3/27	51.02		0.006		0.94	0	None
Pit 4/27	50.51		0.005		1.03	0	None
Pit 5/27	49.48		0.007		1.15	0	None
Pit 1/29	52.47		0.009		0.8	0	None
Pit 1/30	50.87		0.071		0.67	0.01	Inlet Capacity
Pit 1/63	50.65		0.004		0.53	0	None
Pit 2/63	50.64		0.007		0.54	0	None
Pit 3/63	50.63		0.03		0.21	0.002	Inlet Capacity
Pit 4/63	50.54	50.68	0.081	0.1	0.09	0	Inlet Capacity
Pit 5/63	49.92	50.62	0.012	0	0.68	0	Inlet Capacity
Pit 6/63	49.57		0				
Pit 1/64	50.63		0.005		0.24	0	None
Pit 1/65	50.58		0.005		0.3	0	None
Pit 2/65	50.58		0.02		0.32	0.002	Inlet Capacity
Pit 1/70	51.28		0.04		0.69	0.004	Inlet Capacity

SUB-CATCHMENT DETAILS

Name	Max Flow Q (cu.m/s)	Paved Max Q (cu.m/s)	Grassed Max Q (cu.m/s)	Paved Tc (min)	Grassed Tc (min)	Supp. Tc (min)	Due to Storm
C Pit 1/21	0.054	0.038	0.017	1.69	25.37		0 5% AEP, 10 min burst, Storm 6
C Pit 4/26	0.008	0.005	0.003	1.64	10.78		0 5% AEP, 10 min burst, Storm 6
C Pit 5/26	0.004	0.004	0	1.56	0		0 5% AEP, 5 min burst, Storm 1
C Pit 6/26	0.004	0.002	0.002	1.03	6.78		0 5% AEP, 10 min burst, Storm 7
C Pit 7/26	0.014	0.004	0.01	2	5		0 5% AEP, 10 min burst, Storm 7
C Pit 1/24	0.027	0.013	0.014	1.08	11.21		0 5% AEP, 10 min burst, Storm 7
C Pit 1/25	0.066	0.045	0.021	1.22	25.56		0 5% AEP, 10 min burst, Storm 6
C Pit 1/26	0.006	0.003	0.002	1.33	8.76		0 5% AEP, 10 min burst, Storm 7
C Pit 2/26	0.005	0.003	0.002	1.33	8.76		0 5% AEP, 10 min burst, Storm 7

C Pit 3/26	0.009	0.006	0.003	1.68	11.02	0 5% AEP, 10 min burst, Storm 6
C Pit 1/27	0.034	0.029	0.005	1.99	35.03	0 5% AEP, 5 min burst, Storm 1
C Pit 2/27	0.007	0.006	0.001	1.99	13.08	0 5% AEP, 5 min burst, Storm 1
C Pit 3/27	0.005	0.004	0.001	1.83	12	0 5% AEP, 5 min burst, Storm 1
C Pit 4/27	0.004	0.004	0.001	1.87	12.28	0 5% AEP, 5 min burst, Storm 1
C Pit 5/27	0.007	0.007	0	1.03	0	0 5% AEP, 5 min burst, Storm 1
C Pit 1/29	0.009	0.006	0.003	1.68	11.02	0 5% AEP, 10 min burst, Storm 6
C Pit 1/30	0.062	0.053	0.01	2.86	34.33	0 5% AEP, 5 min burst, Storm 1
C Pit 1/63	0.004	0.004	0	1.56	0	0 5% AEP, 5 min burst, Storm 1
C Pit 2/63	0.007	0.004	0.003	1.65	10.82	0 5% AEP, 10 min burst, Storm 7
C Pit 3/63	0.028	0.018	0.01	2.2	22.11	0 5% AEP, 10 min burst, Storm 6
C Pit 4/63	0.07	0.048	0.022	2.3	27.25	0 5% AEP, 10 min burst, Storm 6
C Pit 5/63	0.011	0.009	0.002	2.01	13.22	0 5% AEP, 5 min burst, Storm 1
C Pit 1/64	0.005	0.004	0.001	2.09	13.76	0 5% AEP, 5 min burst, Storm 1
C Pit 1/65	0.004	0.004	0.001	1.74	11.44	0 5% AEP, 5 min burst, Storm 1
C Pit 2/65	0.018	0.012	0.006	1.89	23.9	0 5% AEP, 10 min burst, Storm 6
C Pit 1/70	0.034	0.029	0.005	2.86	34.33	0 5% AEP, 5 min burst, Storm 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
P Pit 1/21	0.064	1	50.569	50.432	5% AEP, 10 min burst, Storm 6
P Pit 4/26	0.104	6.64	50.227	49.411	5% AEP, 10 min burst, Storm 4
P Pit 5/26	0.239	4.63	49.178	48.162	5% AEP, 10 min burst, Storm 6
P Pit 6/26	0.263	4.49	48.002	47.419	5% AEP, 10 min burst, Storm 6
P Pit 7/26	0.35	2.33	46.889	46.774	5% AEP, 10 min burst, Storm 6
P Pit 1/24	0.021	0.67	48.166	48.16	5% AEP, 10 min burst, Storm 7
P Pit 1/25	0.072	0.65	47.43	47.419	5% AEP, 10 min burst, Storm 6
P Pit 1/26	0.006	1.5	54.618	54.6	5% AEP, 10 min burst, Storm 7
P Pit 2/26	0.011	1.64	54.54	52.419	5% AEP, 10 min burst, Storm 7
P Pit 3/26	0.028	2.07	52.345	50.432	5% AEP, 10 min burst, Storm 6
P Pit 1/27	0.031	1.34	51.259	51.249	5% AEP, 5 min burst, Storm 1
P Pit 2/27	0.038	1.27	51.183	51.025	5% AEP, 5 min burst, Storm 1
P Pit 3/27	0.075	27.92	50.787	50.675	5% AEP, 5 min burst, Storm 1
P Pit 4/27	0.134	3.02	50.108	49.482	5% AEP, 5 min burst, Storm 1
P Pit 5/27	0.139	1.28	49.402	49.387	5% AEP, 5 min burst, Storm 1
P Pit 1/29	0.008	0.84	52.426	52.42	5% AEP, 10 min burst, Storm 6
P Pit 1/30	0.055	1.95	50.696	50.665	5% AEP, 10 min burst, Storm 6
P Pit 1/63	0.004	0.05	50.712	50.713	5% AEP, 5 min burst, Storm 1
P Pit 2/63	0.017	0.24	50.635	50.631	5% AEP, 10 min burst, Storm 7
P Pit 3/63	0.041	0.57	50.651	50.597	5% AEP, 10 min burst, Storm 5
P Pit 4/63	0.131	1.86	50.043	49.924	5% AEP, 10 min burst, Storm 7
P Pit 5/63	0.142	2.08	49.782	49.568	5% AEP, 10 min burst, Storm 7
P Pit 1/64	0.005	0.08	50.489	50.484	5% AEP, 5 min burst, Storm 1
P Pit 1/65	0.004	0.06	50.676	50.676	5% AEP, 10 min burst, Storm 4
P Pit 2/65	0.02	0.28	50.422	50.418	5% AEP, 10 min burst, Storm 2
P Pit 1/70	0.036	2.98	51.134	51.128	5% AEP, 5 min burst, Storm 1

CHANNEL DETAILS

Name	Max Q (cu.m/s)	Max V (m/s)	Due to Storm				
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OVERFLOW ROUTE DETAILS

Name	Max Q U/S	Max Q D/S	Safe Q	Max D	Max DxV	Max Width	Max V	Due to Storm
F Pit 4/26	0	0	0.03	0	0	0	0	0
F Pit 1/21	0	0	0.019	0	0	0	0	0
F Pit 5/26	0	0	0.498	0	0	0	0	0
F Pit 6/26	0	0	0.375	0	0	0	0	0
F Pit 7/26	0	0	0.369	0	0	0	0	0
F Pit 1/24	0.006	0.006	0.375	0.069	0.04	0.95	0.93	5% AEP, 10 min burst, Storm 7
F Pit 1/25	0.001	0.001	0.03	0.077	0	2.43	0.02	5% AEP, 2 hour burst, Storm 8
F Pit 1/26	0	0	0.425	0	0	0	0	0
F Pit 2/26	0	0	0.425	0	0	0	0	0
F Pit 3/26	0	0	0.422	0	0	0	0	0
F Pit 1/27	0.003	0.003	0.148	0.047	0.02	0.38	0.46	5% AEP, 5 min burst, Storm 1
F Pit 2/27	0	0	0.155	0	0	0	0	0
F Pit 3/27	0	0	0.298	0	0	0	0	0
F Pit 4/27	0	0	0.397	0	0	0	0	0
F Pit 5/27	0	0	0.504	0	0	0	0	0
F Pit 1/29	0	0	0.418	0	0	0	0	0
F Pit 1/30	0.01	0.01	0.275	0.052	0.05	0.43	0.92	5% AEP, 10 min burst, Storm 6
F Pit 1/63	0	0	0.184	0	0	0	0	0
F Pit 2/63	0	0	0.198	0	0	0	0	0
F Pit 3/63	0.002	0.002	0.162	0.057	0.01	0.54	0.38	5% AEP, 10 min burst, Storm 6
F Pit 4/63	0	0	0.187	0	0	0	0	0
F Pit 5/63	0	0	0.425	0	0	0	0	0
F Pit 1/64	0	0	0.178	0	0	0	0	0
F Pit 1/65	0	0	0.194	0	0	0	0	0
F Pit 2/65	0.002	0.002	0.194	0.057	0.02	0.54	0.43	5% AEP, 10 min burst, Storm 6
F Pit 1/70	0.004	0.004	0.299	0.051	0.02	0.42	0.57	5% AEP, 10 min burst, Storm 7

DETENTION BASIN DETAILS

Name	Max WL	MaxVol	Max Q Total	Max Q Low Level	Max Q High Level
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Run Log for 5936000 run at 11:54:27 on 7/3/2018

No water upwelling from any pit.

Freeboard was less than 0.15m at Pit 4/63

Flows were safe in all overflow routes.

Proposed DRAINS Model 3 - 10% AEP Storm Event Results

DRAINS results prepared from Version 2018.01

PIT / NODE DETAILS

Version 8

Name	Max HGL	Max Pond HGL	Max Surface Flow (cu.m/s)	Max Pond Volume (cu.m)	Min Freeboard (m)	Overflow (cu.m/s)	Constraint
Pit 1/21	50.56	51.24	0.056	0.1	0.63	0	Inlet Capacity
Pit 4/26	50.38	51.17	0.007	0	0.77	0	Inlet Capacity
Pit 5/26	49.34		0.004		1.24	0	None
Pit 6/26	48.12		0.003		0.81	0	None
Pit 7/26	47.15	48.1	0.014	0	0.94	0	Inlet Capacity
Pit 8/26	46.74		0				
Pit 1/24	48.19		0.023		0.74	0.004	Inlet Capacity
Pit 1/25	47.28	48.09	0.062	0.1	0.75	0.001	Inlet Capacity
Pit 1/26	54.65		0.005		0.84	0	None
Pit 2/26	54.59		0.005		0.89	0	None
Pit 3/26	52.41		0.008		0.85	0	None
Pit 1/27	51.33		0.029		0.81	0.002	Inlet Capacity
Pit 2/27	51.23		0.006		0.91	0	None
Pit 3/27	50.98		0.005		0.98	0	None
Pit 4/27	50.36		0.004		1.18	0	None
Pit 5/27	49.43		0.006		1.21	0	None
Pit 1/29	52.46		0.008		0.81	0	None
Pit 1/30	50.83		0.057		0.72	0.007	Inlet Capacity
Pit 1/63	50.34		0.003		0.84	0	None
Pit 2/63	50.28		0.006		0.9	0	None
Pit 3/63	50.12		0.024		0.72	0.001	Inlet Capacity
Pit 4/63	50.07	50.68	0.064	0.1	0.55	0	Inlet Capacity
Pit 5/63	49.73	50.62	0.009	0	0.87	0	Inlet Capacity
Pit 6/63	49.52		0				
Pit 1/64	50.12		0.004		0.74	0	None
Pit 1/65	50.09		0.004		0.78	0	None
Pit 2/65	50.09		0.016		0.81	0.001	Inlet Capacity
Pit 1/70	51.24		0.032		0.72	0.003	Inlet Capacity

SUB-CATCHMENT DETAILS

Name	Max Flow Q (cu.m/s)	Paved Max Q (cu.m/s)	Grassed Max Q (cu.m/s)	Paved Tc (min)	Grassed Tc (min)	Supp. Tc (min)	Due to Storm
C Pit 1/21	0.045	0.039	0.006	1.65	24.88		0 10% AEP, 5 min burst, Storm 1
C Pit 4/26	0.006	0.005	0.001	1.61	10.57		0 10% AEP, 5 min burst, Storm 1
C Pit 5/26	0.003	0.003	0	1.66	0		0 10% AEP, 5 min burst, Storm 1
C Pit 6/26	0.003	0.002	0.001	1.1	7.24		0 10% AEP, 10 min burst, Storm 7
C Pit 7/26	0.012	0.004	0.008	2	5		0 10% AEP, 10 min burst, Storm 7
C Pit 1/24	0.022	0.011	0.011	1.15	11.97		0 10% AEP, 10 min burst, Storm 7
C Pit 1/25	0.054	0.047	0.007	1.2	25.07		0 10% AEP, 5 min burst, Storm 1
C Pit 1/26	0.004	0.003	0.001	1.42	9.35		0 10% AEP, 10 min burst, Storm 6
C Pit 2/26	0.004	0.003	0.001	1.42	9.35		0 10% AEP, 10 min burst, Storm 6

C Pit 3/26	0.007	0.006	0.001	1.64	10.8	0 10% AEP, 5 min burst, Storm 1
C Pit 1/27	0.028	0.025	0.003	2.12	37.27	0 10% AEP, 5 min burst, Storm 1
C Pit 2/27	0.006	0.005	0.001	2.12	13.91	0 10% AEP, 5 min burst, Storm 1
C Pit 3/27	0.004	0.004	0.001	1.94	12.77	0 10% AEP, 5 min burst, Storm 1
C Pit 4/27	0.004	0.003	0	1.99	13.06	0 10% AEP, 5 min burst, Storm 1
C Pit 5/27	0.006	0.006	0	1.09	0	0 10% AEP, 5 min burst, Storm 1
C Pit 1/29	0.007	0.006	0.001	1.64	10.8	0 10% AEP, 5 min burst, Storm 1
C Pit 1/30	0.051	0.045	0.006	3.04	36.53	0 10% AEP, 5 min burst, Storm 1
C Pit 1/63	0.003	0.003	0	1.66	0	0 10% AEP, 5 min burst, Storm 1
C Pit 2/63	0.005	0.003	0.002	1.76	11.55	0 10% AEP, 10 min burst, Storm 7
C Pit 3/63	0.022	0.015	0.007	2.35	23.61	0 10% AEP, 10 min burst, Storm 6
C Pit 4/63	0.058	0.05	0.008	2.26	26.72	0 10% AEP, 5 min burst, Storm 1
C Pit 5/63	0.009	0.008	0.001	2.14	14.07	0 10% AEP, 5 min burst, Storm 1
C Pit 1/64	0.004	0.004	0	2.23	14.65	0 10% AEP, 5 min burst, Storm 1
C Pit 1/65	0.003	0.003	0	1.85	12.17	0 10% AEP, 5 min burst, Storm 1
C Pit 2/65	0.014	0.012	0.002	1.85	23.44	0 10% AEP, 5 min burst, Storm 1
C Pit 1/70	0.028	0.025	0.004	3.04	36.53	0 10% AEP, 5 min burst, Storm 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
P Pit 1/21	0.052	2.39	50.401	50.382	10% AEP, 5 min burst, Storm 1
P Pit 4/26	0.087	5.41	50.229	49.343	10% AEP, 5 min burst, Storm 1
P Pit 5/26	0.191	3.69	49.178	48.119	10% AEP, 5 min burst, Storm 1
P Pit 6/26	0.21	3.85	47.993	47.146	10% AEP, 10 min burst, Storm 6
P Pit 7/26	0.277	1.98	46.845	46.741	10% AEP, 10 min burst, Storm 6
P Pit 1/24	0.018	0.92	48.125	48.118	10% AEP, 10 min burst, Storm 7
P Pit 1/25	0.055	1.3	47.156	47.146	10% AEP, 10 min burst, Storm 6
P Pit 1/26	0.004	1.47	54.613	54.588	10% AEP, 10 min burst, Storm 6
P Pit 2/26	0.009	1.52	54.534	52.409	10% AEP, 10 min burst, Storm 6
P Pit 3/26	0.022	1.94	52.337	50.382	10% AEP, 10 min burst, Storm 6
P Pit 1/27	0.026	1.42	51.243	51.232	10% AEP, 5 min burst, Storm 1
P Pit 2/27	0.031	1.21	51.173	50.985	10% AEP, 5 min burst, Storm 1
P Pit 3/27	0.06	22.72	50.787	50.655	10% AEP, 10 min burst, Storm 6
P Pit 4/27	0.109	2.86	50.092	49.427	10% AEP, 5 min burst, Storm 1
P Pit 5/27	0.113	1.31	49.353	49.337	10% AEP, 5 min burst, Storm 1
P Pit 1/29	0.007	0.79	52.421	52.409	10% AEP, 5 min burst, Storm 1
P Pit 1/30	0.047	2.96	50.652	50.65	10% AEP, 5 min burst, Storm 1
P Pit 1/63	0.003	0.64	50.315	50.279	10% AEP, 5 min burst, Storm 1
P Pit 2/63	0.008	0.82	50.239	50.124	10% AEP, 5 min burst, Storm 1
P Pit 3/63	0.032	0.53	50.079	50.074	10% AEP, 10 min burst, Storm 7
P Pit 4/63	0.098	1.46	49.802	49.73	10% AEP, 10 min burst, Storm 7
P Pit 5/63	0.106	1.89	49.651	49.521	10% AEP, 10 min burst, Storm 7
P Pit 1/64	0.004	0.08	50.12	50.119	10% AEP, 5 min burst, Storm 1
P Pit 1/65	0.003	0.22	50.056	50.058	10% AEP, 5 min burst, Storm 1
P Pit 2/65	0.016	0.32	50.078	50.074	10% AEP, 10 min burst, Storm 7
P Pit 1/70	0.028	2.38	51.132	51.111	10% AEP, 5 min burst, Storm 1

CHANNEL DETAILS

Name	Max Q (cu.m/s)	Max V (m/s)	Due to Storm				
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OVERFLOW ROUTE DETAILS

Name	Max Q U/S	Max Q D/S	Safe Q	Max D	Max DxV	Max Width	Max V	Due to Storm
F Pit 4/26	0	0	0.03	0	0	0	0	0
F Pit 1/21	0	0	0.019	0	0	0	0	0
F Pit 5/26	0	0	0.498	0	0	0	0	0
F Pit 6/26	0	0	0.375	0	0	0	0	0
F Pit 7/26	0	0	0.369	0	0	0	0	0
F Pit 1/24	0.004	0.004	0.375	0.059	0.03	0.6	0.83	10% AEP, 10 min burst, Storm 7
F Pit 1/25	0.001	0.001	0.03	0.074	0	2.23	0.02	10% AEP, 5 min burst, Storm 1
F Pit 1/26	0	0	0.425	0	0	0	0	0
F Pit 2/26	0	0	0.425	0	0	0	0	0
F Pit 3/26	0	0	0.422	0	0	0	0	0
F Pit 1/27	0.002	0.002	0.148	0.041	0.02	0.34	0.42	10% AEP, 5 min burst, Storm 1
F Pit 2/27	0	0	0.155	0	0	0	0	0
F Pit 3/27	0	0	0.298	0	0	0	0	0
F Pit 4/27	0	0	0.397	0	0	0	0	0
F Pit 5/27	0	0	0.504	0	0	0	0	0
F Pit 1/29	0	0	0.418	0	0	0	0	0
F Pit 1/30	0.007	0.007	0.275	0.047	0.04	0.39	0.88	10% AEP, 5 min burst, Storm 1
F Pit 1/63	0	0	0.184	0	0	0	0	0
F Pit 2/63	0	0	0.198	0	0	0	0	0
F Pit 3/63	0.001	0.001	0.162	0.049	0.01	0.41	0.37	10% AEP, 10 min burst, Storm 6
F Pit 4/63	0	0	0.187	0	0	0	0	0
F Pit 5/63	0	0	0.425	0	0	0	0	0
F Pit 1/64	0	0	0.178	0	0	0	0	0
F Pit 1/65	0	0	0.194	0	0	0	0	0
F Pit 2/65	0.001	0.001	0.194	0.049	0	0.41	0	10% AEP, 10 min burst, Storm 7
F Pit 1/70	0.003	0.003	0.299	0.047	0.02	0.39	0.53	10% AEP, 5 min burst, Storm 1

DETENTION BASIN DETAILS

Name	Max WL	MaxVol	Max Q Total	Max Q Low Level	Max Q High Level
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Run Log for 5936000 run at 11:55:28 on 7/3/2018

No water upwelling from any pit. Freeboard was adequate at all pits.

Flows were safe in all overflow routes.

Proposed DRAINS Model 3 - 20% AEP Storm Event Results

DRAINS results prepared from Version 2018.01

PIT / NODE DETAILS

Version 8

Name	Max HGL	Max Pond HGL	Max Surface Flow (cu.m/s)	Max Pond Volume (cu.m)	Min Freeboard (m)	Overflow (cu.m/s)	Constraint
Pit 1/21	50.51	51.23	0.05	0.1	0.69	0	Inlet Capacity
Pit 4/26	50.34	51.17	0.006	0	0.81	0	Inlet Capacity
Pit 5/26	49.3		0.003		1.28	0	None
Pit 6/26	48.08		0.003		0.85	0	None
Pit 7/26	46.93	48.1	0.012	0	1.15	0	Inlet Capacity
Pit 8/26	46.7		0				
Pit 1/24	48.16		0.019		0.77	0.001	Inlet Capacity
Pit 1/25	47.22	48.08	0.055	0.1	0.81	0.001	Inlet Capacity
Pit 1/26	54.64		0.004		0.85	0	None
Pit 2/26	54.58		0.004		0.9	0	None
Pit 3/26	52.39		0.007		0.86	0	None
Pit 1/27	51.31		0.027		0.83	0.001	Inlet Capacity
Pit 2/27	51.21		0.006		0.93	0	None
Pit 3/27	50.95		0.004		1.01	0	None
Pit 4/27	50.28		0.004		1.27	0	None
Pit 5/27	49.38		0.005		1.25	0	None
Pit 1/29	52.45		0.007		0.82	0	None
Pit 1/30	50.79		0.052		0.76	0.004	Inlet Capacity
Pit 1/63	50.33		0.003		0.84	0	None
Pit 2/63	50.27		0.005		0.91	0	None
Pit 3/63	50		0.022		0.83	0.001	Inlet Capacity
Pit 4/63	49.91	50.67	0.058	0.1	0.72	0	Inlet Capacity
Pit 5/63	49.68	50.62	0.009	0	0.92	0	Inlet Capacity
Pit 6/63	49.48		0				
Pit 1/64	50.01		0.004		0.86	0	None
Pit 1/65	50.03		0.003		0.84	0	None
Pit 2/65	50		0.014		0.9	0	None
Pit 1/70	51.22		0.029		0.74	0.001	Inlet Capacity

SUB-CATCHMENT DETAILS

Name	Max Flow Q (cu.m/s)	Paved Max Q (cu.m/s)	Grassed Max Q (cu.m/s)	Paved Tc (min)	Grassed Tc (min)	Supp. Tc (min)	Due to Storm
C Pit 1/21	0.035	0.032	0.003	1.78	26.77		0 20% AEP, 5 min burst, Storm 1
C Pit 4/26	0.005	0.004	0	1.73	11.38		0 20% AEP, 5 min burst, Storm 1
C Pit 5/26	0.003	0.003	0	1.79	0		0 20% AEP, 5 min burst, Storm 1
C Pit 6/26	0.002	0.002	0.001	1.19	7.79		0 20% AEP, 10 min burst, Storm 8
C Pit 7/26	0.009	0.003	0.006	2	5		0 20% AEP, 10 min burst, Storm 8
C Pit 1/24	0.016	0.009	0.006	1.24	12.88		0 20% AEP, 10 min burst, Storm 8
C Pit 1/25	0.043	0.039	0.004	1.29	26.98		0 20% AEP, 5 min burst, Storm 1
C Pit 1/26	0.003	0.003	0	1.41	9.24		0 20% AEP, 5 min burst, Storm 1
C Pit 2/26	0.003	0.003	0	1.41	9.24		0 20% AEP, 5 min burst, Storm 1

C Pit 3/26	0.006	0.005	0.001	1.77	11.63	0 20% AEP, 5 min burst, Storm 1
C Pit 1/27	0.022	0.021	0.002	2.28	40.12	0 20% AEP, 5 min burst, Storm 1
C Pit 2/27	0.005	0.004	0	2.28	14.98	0 20% AEP, 5 min burst, Storm 1
C Pit 3/27	0.003	0.003	0	2.09	13.74	0 20% AEP, 5 min burst, Storm 1
C Pit 4/27	0.003	0.003	0	2.14	14.06	0 20% AEP, 5 min burst, Storm 1
C Pit 5/27	0.005	0.005	0	1.18	0	0 20% AEP, 5 min burst, Storm 1
C Pit 1/29	0.005	0.005	0.001	1.77	11.63	0 20% AEP, 5 min burst, Storm 1
C Pit 1/30	0.041	0.037	0.003	3.28	39.32	0 20% AEP, 5 min burst, Storm 1
C Pit 1/63	0.003	0.003	0	1.79	0	0 20% AEP, 5 min burst, Storm 1
C Pit 2/63	0.004	0.003	0.001	1.89	12.44	0 20% AEP, 10 min burst, Storm 8
C Pit 3/63	0.017	0.015	0.002	2.32	23.33	0 20% AEP, 5 min burst, Storm 1
C Pit 4/63	0.046	0.041	0.004	2.43	28.76	0 20% AEP, 5 min burst, Storm 1
C Pit 5/63	0.007	0.007	0.001	2.3	15.15	0 20% AEP, 5 min burst, Storm 1
C Pit 1/64	0.003	0.003	0	2.4	15.76	0 20% AEP, 5 min burst, Storm 1
C Pit 1/65	0.003	0.003	0	1.99	13.1	0 20% AEP, 5 min burst, Storm 1
C Pit 2/65	0.011	0.01	0.001	1.99	25.23	0 20% AEP, 5 min burst, Storm 1
C Pit 1/70	0.022	0.021	0.002	3.28	39.32	0 20% AEP, 5 min burst, Storm 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
P Pit 1/21	0.04	3.01	50.37	50.343	20% AEP, 5 min burst, Storm 1
P Pit 4/26	0.062	4.1	50.225	49.302	20% AEP, 10 min burst, Storm 7
P Pit 5/26	0.152	3.25	49.167	48.079	20% AEP, 5 min burst, Storm 1
P Pit 6/26	0.164	3.58	47.972	46.935	20% AEP, 5 min burst, Storm 1
P Pit 7/26	0.212	1.73	46.815	46.695	20% AEP, 10 min burst, Storm 8
P Pit 1/24	0.014	1.36	48.091	48.079	20% AEP, 10 min burst, Storm 8
P Pit 1/25	0.043	2.14	47.093	46.935	20% AEP, 5 min burst, Storm 1
P Pit 1/26	0.003	1	54.615	54.577	20% AEP, 5 min burst, Storm 1
P Pit 2/26	0.006	1.4	54.528	52.398	20% AEP, 5 min burst, Storm 1
P Pit 3/26	0.017	1.8	52.329	50.343	20% AEP, 5 min burst, Storm 1
P Pit 1/27	0.021	1.57	51.228	51.214	20% AEP, 5 min burst, Storm 1
P Pit 2/27	0.025	1.14	51.162	50.951	20% AEP, 5 min burst, Storm 1
P Pit 3/27	0.047	18.96	50.786	50.637	20% AEP, 10 min burst, Storm 8
P Pit 4/27	0.087	2.68	50.075	49.38	20% AEP, 5 min burst, Storm 1
P Pit 5/27	0.089	1.3	49.313	49.296	20% AEP, 5 min burst, Storm 1
P Pit 1/29	0.006	0.75	52.415	52.395	20% AEP, 5 min burst, Storm 1
P Pit 1/30	0.038	3.18	50.637	50.633	20% AEP, 5 min burst, Storm 1
P Pit 1/63	0.003	0.65	50.31	50.268	20% AEP, 5 min burst, Storm 1
P Pit 2/63	0.006	0.76	50.232	50.001	20% AEP, 5 min burst, Storm 1
P Pit 3/63	0.024	1.14	49.94	49.91	20% AEP, 10 min burst, Storm 8
P Pit 4/63	0.079	1.39	49.816	49.684	20% AEP, 10 min burst, Storm 8
P Pit 5/63	0.086	1.93	49.608	49.483	20% AEP, 10 min burst, Storm 8
P Pit 1/64	0.003	0.3	49.998	50.001	20% AEP, 5 min burst, Storm 1
P Pit 1/65	0.003	0.61	50.012	50.005	20% AEP, 5 min burst, Storm 1
P Pit 2/65	0.014	0.97	49.958	49.901	20% AEP, 5 min burst, Storm 1
P Pit 1/70	0.022	2.42	51.122	51.098	20% AEP, 5 min burst, Storm 1

CHANNEL DETAILS

Name	Max Q (cu.m/s)	Max V (m/s)	Due to Storm				
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OVERFLOW ROUTE DETAILS

Name	Max Q U/S	Max Q D/S	Safe Q	Max D	Max DxV	Max Width	Max V	Due to Storm
F Pit 4/26	0	0	0.03	0	0	0	0	0
F Pit 1/21	0	0	0.019	0	0	0	0	0
F Pit 5/26	0	0	0.498	0	0	0	0	0
F Pit 6/26	0	0	0.375	0	0	0	0	0
F Pit 7/26	0	0	0.369	0	0	0	0	0
F Pit 1/24	0.001	0.001	0.375	0.049	0.02	0.41	0.74	20% AEP, 10 min burst, Storm 8
F Pit 1/25	0.001	0.001	0.03	0.071	0	2	0.03	20% AEP, 6 hour burst, Storm 4
F Pit 1/26	0	0	0.425	0	0	0	0	0
F Pit 2/26	0	0	0.425	0	0	0	0	0
F Pit 3/26	0	0	0.422	0	0	0	0	0
F Pit 1/27	0.001	0.001	0.148	0.032	0.01	0.26	0.37	20% AEP, 10 min burst, Storm 2
F Pit 2/27	0	0	0.155	0	0	0	0	0
F Pit 3/27	0	0	0.298	0	0	0	0	0
F Pit 4/27	0	0	0.397	0	0	0	0	0
F Pit 5/27	0	0	0.504	0	0	0	0	0
F Pit 1/29	0	0	0.418	0	0	0	0	0
F Pit 1/30	0.004	0.004	0.275	0.04	0.03	0.33	0.75	20% AEP, 5 min burst, Storm 1
F Pit 1/63	0	0	0.184	0	0	0	0	0
F Pit 2/63	0	0	0.198	0	0	0	0	0
F Pit 3/63	0.001	0.001	0.162	0.041	0	0.34	0	20% AEP, 10 min burst, Storm 8
F Pit 4/63	0	0	0.187	0	0	0	0	0
F Pit 5/63	0	0	0.425	0	0	0	0	0
F Pit 1/64	0	0	0.178	0	0	0	0	0
F Pit 1/65	0	0	0.194	0	0	0	0	0
F Pit 2/65	0	0	0.194	0	0	0	0	0
F Pit 1/70	0.001	0.001	0.299	0.038	0.01	0.31	0.52	20% AEP, 10 min burst, Storm 5

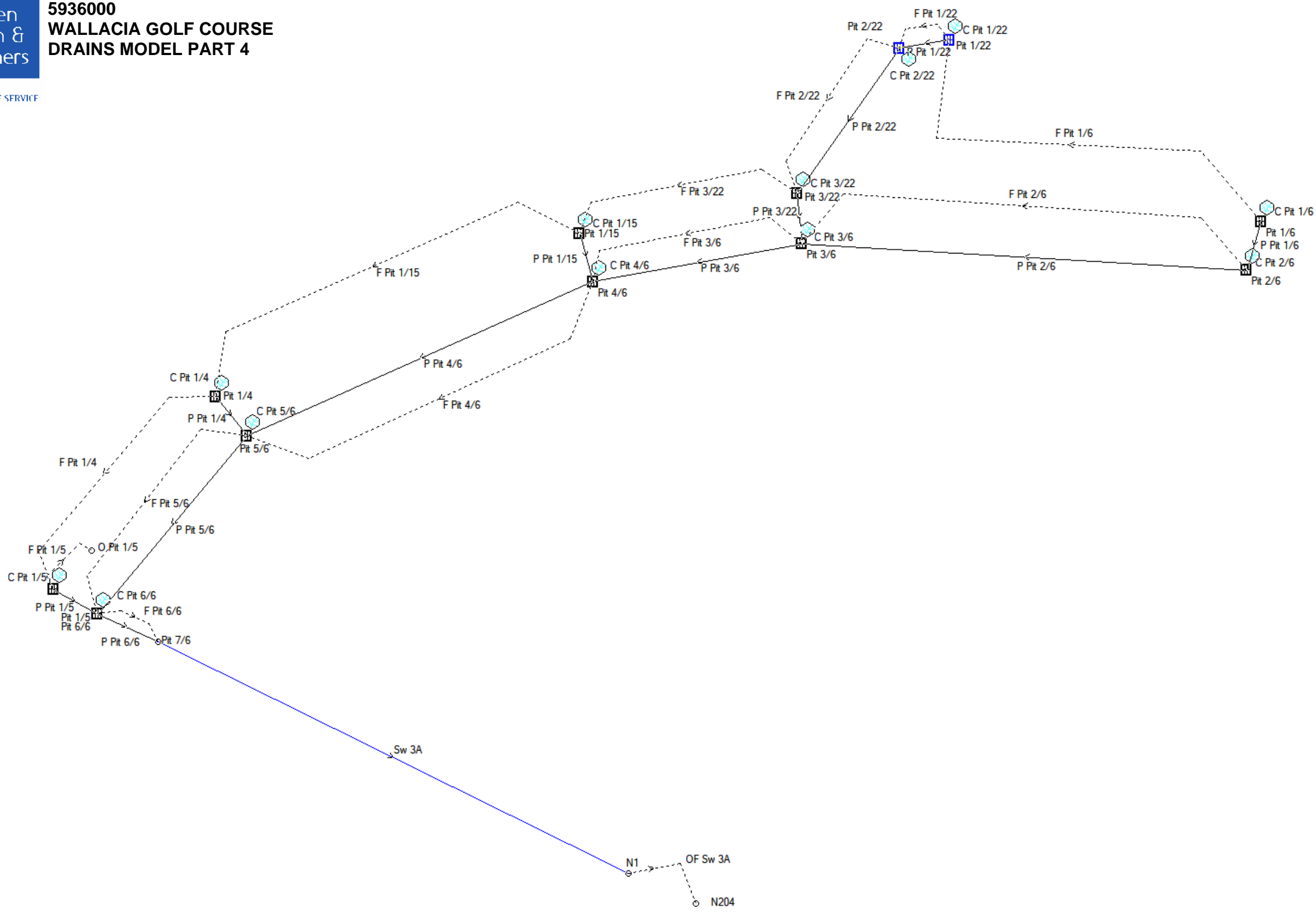
DETENTION BASIN DETAILS

Name	Max WL	MaxVol	Max Q Total	Max Q Low Level	Max Q High Level
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Run Log for 5936000 run at 11:57:08 on 7/3/2018

No water upwelling from any pit. Freeboard was adequate at all pits.

Flows were safe in all overflow routes.



Proposed DRAINS Model 4 - Data Information

PIT / NODE DETAILS

Version 13

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	Part Full Shock Loss	Inflow Hydrograph	Pit is	
Pit 1/4	OnGrade	WSP Stand	600 x 900 PIT		2.7	53.988		0	0.2	282533.6	6250152	No	10	1 x Ku	No	New
Pit 5/6	OnGrade	WSP Stand	600 x 900 PIT		1.4	53.989		0	0.2	282537.6	6250147	No	16	1 x Ku	No	New
Pit 6/6	OnGrade	WSP Stand	600 x 900 PIT		2.5	52.853		0	0.2	282518.3	6250124	No	17	1 x Ku	No	New
Pit 7/6	Node					52.999		0		282526.1	6250120		18		No	
N1	Node					50.618		0		282586.8	6250090		734		No	
Pit 1/5	OnGrade	WSP Stand	2 x 600x900		2.5	52.853		0	0.2	282512.6	6250127	No	11	1 x Ku	No	New
Pit 1/6	OnGrade	WSP Stand	600 x 900 PIT		5.9	56.594		0	0.2	282668.5	6250174	No	12	1 x Ku	No	New
Pit 2/6	OnGrade	WSP Stand	600 x 900 PIT		5.9	56.63		0	0.2	282666.6	6250168	No	13	1 x Ku	No	New
Pit 3/6	OnGrade	WSP Stand	600 x 900 PIT		2.4	56.007		0	0.2	282609.2	6250171	No	14	1 x Ku	No	New
Pit 4/6	OnGrade	WSP Stand	600 x 900 PIT		0.8	55.511		0	0.2	282582.3	6250167	No	15	1 x Ku	No	New
Pit 1/15	OnGrade	WSP Stand	600 x 900 PIT		5.9	55.499		0	0.2	282580.6	6250173	No	33	1 x Ku	No	New
Pit 1/22	Sag	WSP Stand	2 x 600x900	0.5	4.8	55.819	0.15	0	0.5	282628.3	6250198	No	53	1 x Ku	No	New
Pit 2/22	Sag	WSP Stand	600 x 900 F	0.5	1.7	55.841	0.15	0	0.5	282621.8	6250197	No	54	1 x Ku	No	New
Pit 3/22	OnGrade	WSP Stand	600 x 900 PIT		0.9	55.99		0	0.2	282608.6	6250178	No	55	1 x Ku	No	New
O Pit 1/5	Node					52.853		0		282517.6	6250132		171		No	
N204	Node					50.618		0		282595.6	6250086		743		No	

DETENTION BASIN DETAILS

Name	Elev	Surf. Area	Not Used	Outlet Type	K	Dia(mm)	Centre RL	Pit Family	Pit Type	x	y	HED	Crest RL	Crest Length	id
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SUB-CATCHMENT DETAILS

Name	Pit or Node	Total Area (ha)	Paved Area (%)	Grass Area (%)	Supp Area (%)	Paved Time (min)	Grass Time (min)	Supp Time (min)	Paved Length (m)	Grass Length (m)	Supp Length (m)	Paved Slope(%)	Grass Slope (%)	Supp Slope (%)	Paved Rough	Grass Rough	Supp Rough	Lag Time or Factor	Gutter Length (m)	Gutter Slope %	Gutter FlowFactor	Rainfall Multiplier
C Pit 1/4	Pit 1/4	0.0499	50	50	0	0	0	0	48	55	-1	3	3	-1	0.013	0.3	-1	-1	-1			1
C Pit 5/6	Pit 5/6	0.0158	100	0	0	0	0	0	48	-1	-1	3	-1	-1	0.013	-1	-1	-1	-1			1
C Pit 6/6	Pit 6/6	0.01	100	0	0	0	0	0	30	-1	-1	1	-1	-1	0.013	-1	-1	-1	-1			1
C Pit 1/5	Pit 1/5	0.1132	32	68	0	0	0	0	30	103	-1	3.8	3.35	-1	0.013	0.3	-1	-1	-1			1
C Pit 1/6	Pit 1/6	0.0109	100	0	0	0	0	0	34	-1	-1	1	-1	-1	0.013	-1	-1	-1	-1			1
C Pit 2/6	Pit 2/6	0.021	50	50	0	0	0	0	35	35	-1	1	1	-1	0.013	0.3	-1	-1	-1			1
C Pit 3/6	Pit 3/6	0.0346	100	0	0	0	0	0	57	-1	-1	1	-1	-1	0.013	-1	-1	-1	-1			1
C Pit 4/6	Pit 4/6	0.0094	25	75	0	2	5	0														1
C Pit 1/15	Pit 1/15	0.0095	25	75	0	2	5	0														1
C Pit 1/22	Pit 1/22	0.0304	100	0	0	0	0	0	50	-1	-1	1	-1	-1	0.013	-1	-1	-1	-1			1
C Pit 2/22	Pit 2/22	0.0169	100	0	0	0	0	0	16	-1	-1	1	-1	-1	0.013	-1	-1	-1	-1			1
C Pit 3/22	Pit 3/22	0.0043	100	0	0	0	0	0	13	-1	-1	1	-1	-1	0.013	-1	-1	-1	-1			1

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	Chg (m)	RI (m)	Chg (m)	RL (m)	etc (m)
P Pit 1/4	Pit 1/4	Pit 5/6	6.5	53.163	53.098		1 Concrete, u	225	225	0.013	New	1							
P Pit 5/6	Pit 5/6	Pit 6/6	30.007	53.054	51.943		3.7 Concrete, u	300	300	0.013	New	1							
P Pit 6/6	Pit 6/6	Pit 7/6	8.62	51.803	51.76		0.5 Concrete, u	300	300	0.013	New	1							
P Pit 1/5	Pit 1/5	Pit 6/6	6.5	51.948	51.883		1 Concrete, u	300	300	0.013	New	1							
P Pit 1/6	Pit 1/6	Pit 2/6	6.5	55.694	55.629		1 Concrete, u	225	225	0.013	New	1							
P Pit 2/6	Pit 2/6	Pit 3/6	57.517	55.567	54.944		1.08 Concrete, u	225	225	0.013	New	1							
P Pit 3/6	Pit 3/6	Pit 4/6	27.396	54.47	54.196		1 Concrete, u	225	225	0.013	New	1							
P Pit 4/6	Pit 4/6	Pit 5/6	48.844	54.166	53.164		2.05 Concrete, u	225	225	0.013	New	1							
P Pit 1/15	Pit 1/15	Pit 4/6	6.5	54.599	54.534		1 Concrete, u	225	225	0.013	New	1							

P Pit 1/22	Pit 1/22	Pit 2/22	6.501	54.919	54.854	1 Concrete, u	225	225	0.013 New	1
P Pit 2/22	Pit 2/22	Pit 3/22	22.95	54.824	54.595	1 Concrete, u	225	225	0.013 New	1
P Pit 3/22	Pit 3/22	Pit 3/6	6.5	54.565	54.5	1 Concrete, u	225	225	0.013 New	1

DETAILS of SERVICES CROSSING PIPES

Pipe	Chg (m)	Bottom Elev (m)	Height of S (m)	Chg (m)	Bottom Elev (m)	Height of S (m)	Chg (m)	Bottom Elev (m)	Height of S (m)	etc
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CHANNEL DETAILS

Name	From	To	Type	Length (m)	U/S IL (m)	D/S IL (m)	Slope (%)	Base Width (m)	L.B. Slope (1:?)	R.B. Slope (1:?)	Manning n	Depth (m)	Roofed
Sw 3A	Pit 7/6	N1	Prismatic	125	51.76	50.115	1.32	1	5	5	0.045	0.5	No

OVERFLOW ROUTE DETAILS

Name	From	To	Travel Time (min)	Spill Level (m)	Crest Length (m)	Weir Coeff. C	Cross Section	Safe Depth Major (m)	SafeDepth Minor (m)	Safe DxV (sq.m/sec)	Bed Slope (%)	D/S Area Contributing %	id	U/S IL	D/S IL	Length (m)
F Pit 1/4	Pit 1/4	Pit 1/5	1				8 m wide r	0.14	0.14	0.6	3.78	0	508	53.988	52.853	30.007
F Pit 5/6	Pit 5/6	Pit 6/6	1				8 m wide r	0.14	0.14	0.6	3.79	0	514	53.989	52.853	30.007
F Pit 6/6	Pit 6/6	Pit 7/6	1				Pathway 4	0.3	0.15	0.6	2.94	0	515	52.853	52.6	8.62
OF Sw 3A	N1	N204	0.1				Swale 1:5 S	0.5	0.3	0.4	1.5	0	737	50.115	50.1	1
F Pit 1/5	Pit 1/5	O Pit 1/5	1				8 m wide r	0.14	0.14	0.6	10.66	0	509	52.853	52	8
F Pit 1/6	Pit 1/6	Pit 1/22	1				8 m wide r	0.14	0.14	0.6	1.55	0	510	56.594	55.819	50
F Pit 2/6	Pit 2/6	Pit 3/6	1				8 m wide r	0.14	0.14	0.6	1.08	0	511	56.63	56.007	57.517
F Pit 3/6	Pit 3/6	Pit 4/6	1				8 m wide r	0.14	0.14	0.6	1.81	0	512	56.007	55.511	27.421
F Pit 4/6	Pit 4/6	Pit 5/6	1				8 m wide r	0.14	0.14	0.6	3.12	0	513	55.511	53.989	48.844
F Pit 1/15	Pit 1/15	Pit 1/4	1				8 m wide r	0.14	0.14	0.6	3.09	0	529	55.499	53.988	48.844
F Pit 1/22	Pit 1/22	Pit 2/22	1				8 m wide r	0.14	0.14	0.6	0.01	0	548	55.819	55.819	6.5
F Pit 2/22	Pit 2/22	Pit 3/22	1				8 m wide r	0.14	0.14	0.6	0.01	0	549	55.841	55.99	24.7
F Pit 3/22	Pit 3/22	Pit 1/15	1				8 m wide r	0.14	0.14	0.6	1.72	0	550	55.99	55.499	28.512

PIPE COVER DETAILS

Name	Type	Dia (mm)	Safe Cover	Cover (m)	
P Pit 1/4	Concrete, u	225	0.6	0.57	Unsafe
P Pit 5/6	Concrete, u	300	0.6	0.58	Unsafe
P Pit 6/6	Concrete, u	300	0.6	0.72	
P Pit 1/5	Concrete, u	300	0.6	0.57	Unsafe
P Pit 1/6	Concrete, u	225	0.6	0.64	
P Pit 2/6	Concrete, u	225	0.6	0.65	
P Pit 3/6	Concrete, u	225	0.6	1.06	
P Pit 4/6	Concrete, u	225	0.6	0.57	Unsafe
P Pit 1/15	Concrete, u	225	0.6	0.64	
P Pit 1/22	Concrete, u	225	0.6	0.64	
P Pit 2/22	Concrete, u	225	0.6	0.76	
P Pit 3/22	Concrete, u	225	0.6	1.17	

This model has no pipes with non-return valves

Proposed DRAINS Model 4 - 1% AEP Storm Event Results

DRAINS results prepared from Version 2018.01

PIT / NODE DETAILS

Version 8

Name	Max HGL	Max Pond HGL	Max Surface Flow (cu.m/s)	Max Pond Volume (cu.m)	Min Freeboard (m)	Overflow (cu.m/s)	Constraint
Pit 1/4	53.39		0.025		0.6	0.003	Inlet Capacity
Pit 5/6	53.35		0.011		0.64	0	None
Pit 6/6	52.6		0.007		0.25	0	None
Pit 7/6	51.91		0				
N1	50.25		0.148				
Pit 1/5	52.64		0.046		0.22	0.004	Inlet Capacity
Pit 1/6	55.78		0.008		0.81	0	None
Pit 2/6	55.71		0.01		0.92	0	None
Pit 3/6	55.49		0.025		0.52	0.004	Inlet Capacity
Pit 4/6	54.77		0.011		0.74	0	None
Pit 1/15	54.78		0.006		0.72	0	None
Pit 1/22	55.8	55.85	0.022	0.3	0.02	0.001	Inlet Capacity
Pit 2/22	55.73	55.87	0.012	0.1	0.12	0	Inlet Capacity
Pit 3/22	55.57		0.003		0.42	0	None

SUB-CATCHMENT DETAILS

Name	Max Flow Q (cu.m/s)	Paved Max Q (cu.m/s)	Grassed Max Q (cu.m/s)	Paved Tc (min)	Grassed Tc (min)	Supp. Tc (min)	Due to Storm
C Pit 1/4	0.021	0.014	0.007	1.82	12.98		0 1% AEP, 10 min burst, Storm 7
C Pit 5/6	0.01	0.01	0	1.68	0		0 1% AEP, 5 min burst, Storm 1
C Pit 6/6	0.007	0.007	0	1.76	0		0 1% AEP, 5 min burst, Storm 1
C Pit 1/5	0.035	0.02	0.015	1.28	18.3		0 1% AEP, 10 min burst, Storm 7
C Pit 1/6	0.007	0.007	0	1.9	0		0 1% AEP, 5 min burst, Storm 1
C Pit 2/6	0.009	0.007	0.002	1.93	12.7		0 1% AEP, 5 min burst, Storm 1
C Pit 3/6	0.023	0.023	0	2.59	0		0 1% AEP, 5 min burst, Storm 1
C Pit 4/6	0.005	0.001	0.003	2	5		0 1% AEP, 10 min burst, Storm 4
C Pit 1/15	0.005	0.001	0.003	2	5		0 1% AEP, 10 min burst, Storm 4
C Pit 1/22	0.02	0.02	0	2.39	0		0 1% AEP, 5 min burst, Storm 1
C Pit 2/22	0.011	0.011	0	1.21	0		0 1% AEP, 5 min burst, Storm 1
C Pit 3/22	0.003	0.003	0	1.07	0		0 1% AEP, 5 min burst, Storm 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
P Pit 1/4	0.017	0.46	53.367	53.354	1% AEP, 10 min burst, Storm 7
P Pit 5/6	0.1	2.69	53.21	52.601	1% AEP, 5 min burst, Storm 1
P Pit 6/6	0.139	2.07	52.099	52.031	1% AEP, 5 min burst, Storm 1
P Pit 1/5	0.034	0.49	52.61	52.601	1% AEP, 10 min burst, Storm 7
P Pit 1/6	0.007	2.18	55.725	55.704	1% AEP, 5 min burst, Storm 1
P Pit 2/6	0.015	0.68	55.692	55.521	1% AEP, 5 min burst, Storm 1

P Pit 3/6	0.058	1.46	55.222	54.77	1% AEP, 5 min burst, Storm 1
P Pit 4/6	0.072	1.87	54.654	53.374	1% AEP, 5 min burst, Storm 1
P Pit 1/15	0.006	0.17	54.775	54.775	1% AEP, 5 min burst, Storm 1
P Pit 1/22	0.021	0.52	55.736	55.726	1% AEP, 5 min burst, Storm 1
P Pit 2/22	0.033	0.82	55.671	55.567	1% AEP, 5 min burst, Storm 1
P Pit 3/22	0.035	0.88	55.665	55.641	1% AEP, 5 min burst, Storm 1

CHANNEL DETAILS

Name	Max Q (cu.m/s)	Max V (m/s)	Due to Storm
Sw 3A	0.127	0.61	1% AEP, 10 min burst, Storm 7

OVERFLOW ROUTE DETAILS

Name	Max Q U/S	Max Q D/S	Safe Q	Max D	Max DxV	Max Width	Max V	Due to Storm
F Pit 1/4	0.003	0.003	0.369	0.032	0.03	0.26	0.89	1% AEP, 10 min burst, Storm 7
F Pit 5/6	0	0	0.369	0	0	0	0	
F Pit 6/6	0	0	0.679	0	0	0	0	
OF Sw 3A	0.12	0.12	1.177	0.131	0.07	2.31	0.56	1% AEP, 10 min burst, Storm 7
F Pit 1/5	0.004	0.004	0.619	0.026	0.04	0.22	1.38	1% AEP, 10 min burst, Storm 7
F Pit 1/6	0	0	0.236	0	0	0	0	
F Pit 2/6	0	0	0.197	0	0	0	0	
F Pit 3/6	0.004	0.004	0.255	0.046	0.03	0.38	0.74	1% AEP, 5 min burst, Storm 1
F Pit 4/6	0	0	0.335	0	0	0	0	
F Pit 1/15	0	0	0.333	0	0	0	0	
F Pit 1/22	0.001	0.001	0.03	0.051	0	0.84	0	1% AEP, 5 min burst, Storm 1
F Pit 2/22	0	0	0.019	0	0	0	0	
F Pit 3/22	0	0	0.249	0	0	0	0	

DETENTION BASIN DETAILS

Name	Max WL	MaxVol	Max Q Total	Max Q Low Level	Max Q High Level
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Run Log for 5936000 run at 11:58:54 on 7/3/2018

No water upwelling from any pit.

Freeboard was less than 0.15m at Pit 2/22, Pit 1/22

Flows were safe in all overflow routes.

Proposed DRAINS Model 4 - 5% AEP Storm Event Results

DRAINS results prepared from Version 2018.01

PIT / NODE DETAILS

Version 8

Name	Max HGL	Max Pond HGL	Max Surface Flow (cu.m/s)	Max Pond Volume (cu.m)	Min Freeboard (m)	Overflow (cu.m/s)	Constraint
Pit 1/4	53.32		0.015		0.67	0.001	Inlet Capacity
Pit 5/6	53.28		0.008		0.7	0	None
Pit 6/6	52.21		0.005		0.64	0	None
Pit 7/6	51.88		0				
N1	50.22		0.096				
Pit 1/5	52.23		0.026		0.62	0.002	Inlet Capacity
Pit 1/6	55.77		0.006		0.83	0	None
Pit 2/6	55.66		0.006		0.97	0	None
Pit 3/6	54.91		0.018		1.1	0.002	Inlet Capacity
Pit 4/6	54.38		0.005		1.13	0	None
Pit 1/15	54.65		0.004		0.84	0	None
Pit 1/22	55.08	55.84	0.015	0	0.74	0.001	Inlet Capacity
Pit 2/22	55.01	55.86	0.009	0	0.83	0	Inlet Capacity
Pit 3/22	54.94		0.002		1.05	0	None

SUB-CATCHMENT DETAILS

Name	Max Flow Q (cu.m/s)	Paved Max Q (cu.m/s)	Grassed Max Q (cu.m/s)	Paved Tc (min)	Grassed Tc (min)	Supp. Tc (min)	Due to Storm
C Pit 1/4	0.014	0.012	0.002	1.9	13.53		0 5% AEP, 5 min burst, Storm 1
C Pit 5/6	0.008	0.008	0	1.9	0		0 5% AEP, 5 min burst, Storm 1
C Pit 6/6	0.005	0.005	0	1.99	0		0 5% AEP, 5 min burst, Storm 1
C Pit 1/5	0.023	0.018	0.008	1.45	20.7		0 5% AEP, 10 min burst, Storm 2
C Pit 1/6	0.005	0.005	0	2.14	0		0 5% AEP, 5 min burst, Storm 1
C Pit 2/6	0.006	0.005	0.001	2.18	14.34		0 5% AEP, 5 min burst, Storm 1
C Pit 3/6	0.017	0.017	0	2.92	0		0 5% AEP, 5 min burst, Storm 1
C Pit 4/6	0.003	0.001	0.002	2	5		0 5% AEP, 10 min burst, Storm 7
C Pit 1/15	0.003	0.001	0.002	2	5		0 5% AEP, 10 min burst, Storm 7
C Pit 1/22	0.015	0.015	0	2.7	0		0 5% AEP, 5 min burst, Storm 1
C Pit 2/22	0.008	0.008	0	1.36	0		0 5% AEP, 5 min burst, Storm 1
C Pit 3/22	0.002	0.002	0	1.2	0		0 5% AEP, 5 min burst, Storm 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
P Pit 1/4	0.013	0.56	53.29	53.285	5% AEP, 10 min burst, Storm 6
P Pit 5/6	0.07	3.52	53.151	52.212	5% AEP, 10 min burst, Storm 6
P Pit 6/6	0.095	1.57	52.086	51.999	5% AEP, 10 min burst, Storm 6
P Pit 1/5	0.022	0.34	52.211	52.208	5% AEP, 10 min burst, Storm 7
P Pit 1/6	0.005	3.19	55.713	55.681	5% AEP, 5 min burst, Storm 1
P Pit 2/6	0.011	1.59	55.619	55.019	5% AEP, 5 min burst, Storm 1

P Pit 3/6	0.049	1.38	54.723	54.383	5% AEP, 5 min burst, Storm 1
P Pit 4/6	0.051	1.89	54.312	53.317	5% AEP, 10 min burst, Storm 5
P Pit 1/15	0.003	2.41	54.616	54.575	5% AEP, 10 min burst, Storm 7
P Pit 1/22	0.015	0.86	55.018	55.008	5% AEP, 5 min burst, Storm 1
P Pit 2/22	0.021	0.72	54.977	54.94	5% AEP, 5 min burst, Storm 1
P Pit 3/22	0.023	0.57	54.925	54.91	5% AEP, 5 min burst, Storm 1

CHANNEL DETAILS

Name	Max Q (cu.m/s)	Max V (m/s)	Due to Storm
Sw 3A	0.09	0.56	5% AEP, 10 min burst, Storm 7

OVERFLOW ROUTE DETAILS

Name	Max Q U/S	Max Q D/S	Safe Q	Max D	Max DxV	Max Width	Max V	Due to Storm
F Pit 1/4	0.001	0.001	0.369	0.02	0	0.16	0	5% AEP, 10 min burst, Storm 6
F Pit 5/6	0	0	0.369	0	0	0	0	
F Pit 6/6	0	0	0.226	0	0	0	0	
OF Sw 3A	0.084	0.084	0.662	0.109	0.05	2.09	0.5	5% AEP, 10 min burst, Storm 7
F Pit 1/5	0.002	0.002	0.619	0.02	0.02	0.16	1.09	5% AEP, 10 min burst, Storm 6
F Pit 1/6	0	0	0.236	0	0	0	0	
F Pit 2/6	0	0	0.197	0	0	0	0	
F Pit 3/6	0.002	0.002	0.255	0.033	0.01	0.27	0.57	5% AEP, 5 min burst, Storm 1
F Pit 4/6	0	0	0.335	0	0	0	0	
F Pit 1/15	0	0	0.333	0	0	0	0	
F Pit 1/22	0.001	0.001	0.03	0.046	0	0.76	0	5% AEP, 5 min burst, Storm 1
F Pit 2/22	0	0	0.019	0	0	0	0	
F Pit 3/22	0	0	0.249	0	0	0	0	

DETENTION BASIN DETAILS

Name	Max WL	MaxVol	Max Q Total	Max Q Low Level	Max Q High Level
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Run Log for 5936000 run at 11:59:56 on 7/3/2018

No water upwelling from any pit. Freeboard was adequate at all pits.

Flows were safe in all overflow routes.

Proposed DRAINS Model 4 - 10% AEP Storm Event Results

DRAINS results prepared from Version 2018.01

PIT / NODE DETAILS

Version 8

Name	Max HGL	Max Pond HGL	Max Surface Flow (cu.m/s)	Max Pond Volume (cu.m)	Min Freeboard (m)	Overflow (cu.m/s)	Constraint
Pit 1/4	53.29		0.012		0.7	0	Inlet Capacity
Pit 5/6	53.26		0.007		0.73	0	None
Pit 6/6	52.15		0.004		0.71	0	None
Pit 7/6	51.87		0				
N1	50.21		0.077				
Pit 1/5	52.16		0.02		0.69	0.001	Inlet Capacity
Pit 1/6	55.76		0.005		0.83	0	None
Pit 2/6	55.65		0.005		0.98	0	None
Pit 3/6	54.7		0.015		1.3	0.001	Inlet Capacity
Pit 4/6	54.36		0.004		1.16	0	None
Pit 1/15	54.65		0.003		0.85	0	None
Pit 1/22	55.05	55.84	0.013	0	0.77	0.001	Inlet Capacity
Pit 2/22	54.96	55.86	0.007	0	0.88	0	Inlet Capacity
Pit 3/22	54.73		0.002		1.26	0	None

SUB-CATCHMENT DETAILS

Name	Max Flow Q (cu.m/s)	Paved Max Q (cu.m/s)	Grassed Max Q (cu.m/s)	Paved Tc (min)	Grassed Tc (min)	Supp. Tc (min)	Due to Storm
C Pit 1/4	0.012	0.01	0.001	2.02	14.4		0 10% AEP, 5 min burst, Storm 1
C Pit 5/6	0.007	0.007	0	2.02	0		0 10% AEP, 5 min burst, Storm 1
C Pit 6/6	0.004	0.004	0	2.12	0		0 10% AEP, 5 min burst, Storm 1
C Pit 1/5	0.018	0.012	0.006	1.54	22.1		0 10% AEP, 10 min burst, Storm 6
C Pit 1/6	0.005	0.005	0	2.28	0		0 10% AEP, 5 min burst, Storm 1
C Pit 2/6	0.005	0.004	0.001	2.32	15.26		0 10% AEP, 5 min burst, Storm 1
C Pit 3/6	0.014	0.014	0	3.11	0		0 10% AEP, 5 min burst, Storm 1
C Pit 4/6	0.003	0.001	0.002	2	5		0 10% AEP, 10 min burst, Storm 7
C Pit 1/15	0.003	0.001	0.002	2	5		0 10% AEP, 10 min burst, Storm 7
C Pit 1/22	0.013	0.013	0	2.88	0		0 10% AEP, 5 min burst, Storm 1
C Pit 2/22	0.007	0.007	0	1.45	0		0 10% AEP, 5 min burst, Storm 1
C Pit 3/22	0.002	0.002	0	1.28	0		0 10% AEP, 5 min burst, Storm 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
P Pit 1/4	0.011	0.66	53.264	53.258	10% AEP, 5 min burst, Storm 1
P Pit 5/6	0.059	2.36	53.17	52.151	10% AEP, 10 min burst, Storm 5
P Pit 6/6	0.076	1.41	52.03	51.974	10% AEP, 10 min burst, Storm 3
P Pit 1/5	0.017	0.34	52.148	52.147	10% AEP, 10 min burst, Storm 6
P Pit 1/6	0.005	3.34	55.711	55.677	10% AEP, 5 min burst, Storm 1
P Pit 2/6	0.009	1.64	55.612	55.012	10% AEP, 5 min burst, Storm 1

P Pit 3/6	0.039	1.77	54.592	54.359	10% AEP, 5 min burst, Storm 1
P Pit 4/6	0.043	1.91	54.29	53.299	10% AEP, 10 min burst, Storm 10
P Pit 1/15	0.003	1.97	54.616	54.571	10% AEP, 10 min burst, Storm 7
P Pit 1/22	0.013	1.64	54.975	54.958	10% AEP, 5 min burst, Storm 1
P Pit 2/22	0.019	1.27	54.914	54.728	10% AEP, 5 min burst, Storm 1
P Pit 3/22	0.02	0.72	54.711	54.702	10% AEP, 5 min burst, Storm 1

CHANNEL DETAILS

Name	Max Q (cu.m/s)	Max V (m/s)	Due to Storm
Sw 3A	0.074	0.53	10% AEP, 10 min burst, Storm 7

OVERFLOW ROUTE DETAILS

Name	Max Q U/S	Max Q D/S	Safe Q	Max D	Max DxV	Max Width	Max V	Due to Storm
F Pit 1/4	0	0	0.369	0	0	0	0	
F Pit 5/6	0	0	0.369	0	0	0	0	
F Pit 6/6	0	0	0.226	0	0	0	0	
OF Sw 3A	0.069	0.069	0.662	0.097	0.05	1.97	0.47	10% AEP, 10 min burst, Storm 7
F Pit 1/5	0.001	0.001	0.619	0.018	0.02	0.15	0.99	10% AEP, 10 min burst, Storm 6
F Pit 1/6	0	0	0.236	0	0	0	0	
F Pit 2/6	0	0	0.197	0	0	0	0	
F Pit 3/6	0.001	0.001	0.255	0.022	0	0.18	0	10% AEP, 5 min burst, Storm 1
F Pit 4/6	0	0	0.335	0	0	0	0	
F Pit 1/15	0	0	0.333	0	0	0	0	
F Pit 1/22	0.001	0.001	0.03	0.043	0	0.72	0	10% AEP, 5 min burst, Storm 1
F Pit 2/22	0	0	0.019	0	0	0	0	
F Pit 3/22	0	0	0.249	0	0	0	0	

DETENTION BASIN DETAILS

Name	Max WL	MaxVol	Max Q Total	Max Q Low Level	Max Q High Level
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Run Log for 5936000 run at 12:01:40 on 7/3/2018

No water upwelling from any pit. Freeboard was adequate at all pits.

Flows were safe in all overflow routes.

Proposed DRAINS Model 4 - 20% AEP Storm Event Results

DRAINS results prepared from Version 2018.01

PIT / NODE DETAILS

Version 8

Name	Max HGL	Max Pond HGL	Max Surface Flow (cu.m/s)	Max Pond Volume (cu.m)	Min Freeboard (m)	Overflow (cu.m/s)	Constraint
Pit 1/4	53.27		0.011		0.72	0	None
Pit 5/6	53.23		0.006		0.76	0	None
Pit 6/6	52.09		0.004		0.76	0	None
Pit 7/6	51.86		0				
N1	50.2		0.068				
Pit 1/5	52.11		0.018		0.74	0	Inlet Capacity
Pit 1/6	55.75		0.004		0.84	0	None
Pit 2/6	55.64		0.005		0.99	0	None
Pit 3/6	54.66		0.013		1.35	0	None
Pit 4/6	54.33		0.003		1.18	0	None
Pit 1/15	54.64		0.003		0.86	0	None
Pit 1/22	55.03	55.84	0.012	0	0.79	0.001	Inlet Capacity
Pit 2/22	54.93	55.86	0.007	0	0.91	0	Inlet Capacity
Pit 3/22	54.7		0.002		1.29	0	None

SUB-CATCHMENT DETAILS

Name	Max Flow Q (cu.m/s)	Paved Max Q (cu.m/s)	Grassed Max Q (cu.m/s)	Paved Tc (min)	Grassed Tc (min)	Supp. Tc (min)	Due to Storm
C Pit 1/4	0.009	0.009	0.001	2.17	15.5		0 20% AEP, 5 min burst, Storm 1
C Pit 5/6	0.005	0.005	0	2.17	0		0 20% AEP, 5 min burst, Storm 1
C Pit 6/6	0.003	0.003	0	2.28	0		0 20% AEP, 5 min burst, Storm 1
C Pit 1/5	0.014	0.013	0.002	1.53	21.84		0 20% AEP, 5 min burst, Storm 1
C Pit 1/6	0.004	0.004	0	2.46	0		0 20% AEP, 5 min burst, Storm 1
C Pit 2/6	0.004	0.004	0	2.5	16.43		0 20% AEP, 5 min burst, Storm 1
C Pit 3/6	0.012	0.012	0	3.35	0		0 20% AEP, 5 min burst, Storm 1
C Pit 4/6	0.002	0.001	0.001	2	5		0 20% AEP, 10 min burst, Storm 8
C Pit 1/15	0.002	0.001	0.001	2	5		0 20% AEP, 10 min burst, Storm 8
C Pit 1/22	0.011	0.011	0	3.09	0		0 20% AEP, 5 min burst, Storm 1
C Pit 2/22	0.006	0.006	0	1.56	0		0 20% AEP, 5 min burst, Storm 1
C Pit 3/22	0.001	0.001	0	1.38	0		0 20% AEP, 5 min burst, Storm 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
P Pit 1/4	0.009	0.76	53.24	53.233	20% AEP, 5 min burst, Storm 1
P Pit 5/6	0.048	2.39	53.153	52.093	20% AEP, 10 min burst, Storm 8
P Pit 6/6	0.064	1.44	51.984	51.956	20% AEP, 10 min burst, Storm 4
P Pit 1/5	0.014	0.4	52.093	52.093	20% AEP, 10 min burst, Storm 8
P Pit 1/6	0.004	2.77	55.711	55.673	20% AEP, 5 min burst, Storm 1
P Pit 2/6	0.008	1.31	55.613	55.005	20% AEP, 5 min burst, Storm 1

P Pit 3/6	0.035	5.39	54.519	54.346	20% AEP, 5 min burst, Storm 1
P Pit 4/6	0.036	1.67	54.286	53.284	20% AEP, 10 min burst, Storm 3
P Pit 1/15	0.002	1.57	54.616	54.567	20% AEP, 10 min burst, Storm 8
P Pit 1/22	0.011	2.46	54.956	54.928	20% AEP, 5 min burst, Storm 1
P Pit 2/22	0.016	3.38	54.864	54.697	20% AEP, 5 min burst, Storm 1
P Pit 3/22	0.017	0.91	54.674	54.655	20% AEP, 5 min burst, Storm 1

CHANNEL DETAILS

Name	Max Q (cu.m/s)	Max V (m/s)	Due to Storm
Sw 3A	0.061	0.5	20% AEP, 10 min burst, Storm 8

OVERFLOW ROUTE DETAILS

Name	Max Q U/S	Max Q D/S	Safe Q	Max D	Max DxV	Max Width	Max V	Due to Storm
F Pit 1/4	0	0	0.369	0	0	0	0	
F Pit 5/6	0	0	0.369	0	0	0	0	
F Pit 6/6	0	0	0.226	0	0	0	0	
OF Sw 3A	0.054	0.054	0.662	0.085	0.04	1.85	0.44	20% AEP, 10 min burst, Storm 8
F Pit 1/5	0	0	0.619	0	0	0	0	
F Pit 1/6	0	0	0.236	0	0	0	0	
F Pit 2/6	0	0	0.197	0	0	0	0	
F Pit 3/6	0	0	0.255	0	0	0	0	
F Pit 4/6	0	0	0.335	0	0	0	0	
F Pit 1/15	0	0	0.333	0	0	0	0	
F Pit 1/22	0.001	0.001	0.03	0.043	0	0.72	0	20% AEP, 10 min burst, Storm 9
F Pit 2/22	0	0	0.019	0	0	0	0	
F Pit 3/22	0	0	0.249	0	0	0	0	

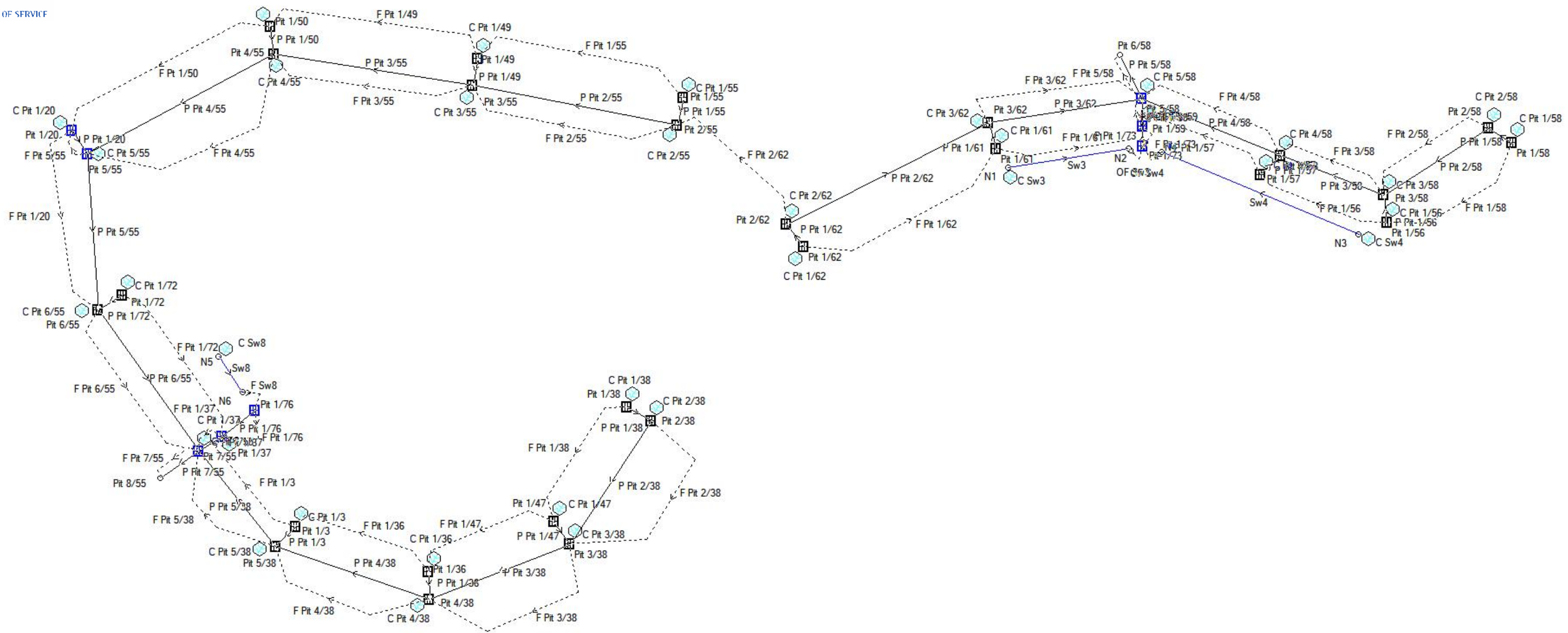
DETENTION BASIN DETAILS

Name	Max WL	MaxVol	Max Q Total	Max Q Low Level	Max Q High Level
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Run Log for 5936000 run at 12:02:40 on 7/3/2018

No water upwelling from any pit. Freeboard was adequate at all pits.

Flows were safe in all overflow routes.



Proposed DRAINS Model 5 - Data Information

PIT / NODE DETAILS

Version 13

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 is
Pit 1/3	OnGrade	WSP Stand	600 x 900 PIT		2	56.397		0	0.2	282777.9	6250063	No	9 1 x Ku	No	New
Pit 5/38	OnGrade	WSP Stand	600 x 900 PIT		2	56.349		0	0.2	282773.2	6250058	No	85 1 x Ku	No	New
Pit 7/55	Sag	WSP Stand	600 x 900 F	0.5	2	55.895	0.15	0	0.5	282755.2	6250081	No	137 1 x Ku	No	New
Pit 8/55	Node					55.163		0		282746.3	6250074		138	No	
Pit 1/20	Sag	WSP Stand	600 x 900 F	0.5	2	56.364	0.15	0	0.5	282725.6	6250156	No	51 1 x Ku	No	New
Pit 5/55	Sag	WSP Stand	2 x 600x900	0.5	2	56.365	0.15	0	0.5	282729.1	6250150	No	135 1 x Ku	No	New
Pit 6/55	OnGrade	WSP Stand	600 x 900 PIT		2	56.382		0	0.2	282731.6	6250114	No	136 1 x Ku	No	New
Pit 1/36	OnGrade	WSP Stand	600 x 900 PIT		2	58.26		0	0.2	282809.1	6250053	No	79 1 x Ku	No	New
Pit 4/38	OnGrade	WSP Stand	600 x 900 PIT		2	58.26		0	0.2	282809.3	6250046	No	84 1 x Ku	No	New
Pit 1/38	OnGrade	WSP Stand	600 x 900 PIT		2	60.993		0	0.2	282855.7	6250091	No	81 1 x Ku	No	New
Pit 2/38	OnGrade	WSP Stand	600 x 900 PIT		2	61.014		0	0.2	282861.4	6250088	No	82 1 x Ku	No	New
Pit 3/38	OnGrade	WSP Stand	600 x 900 PIT		2	59.978		0	0.2	282842.2	6250059	No	83 1 x Ku	No	New
Pit 1/47	OnGrade	WSP Stand	600 x 900 PIT		2	60.004		0	0.2	282838.4	6250064	No	111 1 x Ku	No	New
Pit 1/49	OnGrade	WSP Stand	600 x 900 PIT		2	57.704		0	0.2	282820.7	6250173	No	125 1 x Ku	No	New
Pit 3/55	OnGrade	WSP Stand	2 x 600x900		2	57.703		0	0.2	282819.4	6250166	No	133 1 x Ku	No	New
Pit 4/55	OnGrade	WSP Stand	2 x 600x900		2	56.957		0	0.2	282772.9	6250174	No	134 1 x Ku	No	New
Pit 1/50	OnGrade	WSP Stand	600 x 900 PIT		2	56.955		0	0.2	282772	6250180	No	126 1 x Ku	No	New
Pit 1/55	OnGrade	WSP Stand	600 x 900 PIT		2	58.591		0	0.2	282868.8	6250164	No	131 1 x Ku	No	New
Pit 2/55	OnGrade	WSP Stand	600 x 900 PIT		2	58.589		0	0.2	282867.5	6250157	No	132 1 x Ku	No	New
Pit 1/56	OnGrade	WSP Stand	2 x 600x900		2	58.855		0	0.2	283033.7	6250134	No	139 1 x Ku	No	New
Pit 3/58	OnGrade	WSP Stand	600 x 900 PIT		2	58.843		0	0.2	283033.1	6250141	No	143 1 x Ku	No	New
Pit 4/58	OnGrade	WSP Stand	600 x 900 PIT		2	57.025		0	0.2	283008.9	6250150	No	144 1 x Ku	No	New
Pit 5/58	Sag	WSP Stand	600 x 900 F	0.5	2	56.123	0.15	0	0.5	282976.4	6250163	No	145 1 x Ku	No	New
Pit 6/58	Node					55.16		0		282971.2	6250174		146	No	
Pit 1/57	OnGrade	WSP Stand	600 x 900 PIT		2	57.018		0	0.2	283004.1	6250146	No	140 1 x Ku	No	New
Pit 1/58	OnGrade	WSP Stand	600 x 900 PIT		2	60.765		0	0.2	283063.1	6250153	No	141 1 x Ku	No	New
Pit 2/58	OnGrade	WSP Stand	600 x 900 PIT		2	60.798		0	0.2	283057.6	6250156	No	142 1 x Ku	No	New
Pit 1/61	OnGrade	WSP Stand	600 x 900 PIT		2	57.172		0	0.2	282942.2	6250152	No	155 1 x Ku	No	New
Pit 3/62	OnGrade	WSP Stand	600 x 900 PIT		2	57.148		0	0.2	282940.4	6250158	No	158 1 x Ku	No	New
Pit 1/62	OnGrade	WSP Stand	2 x 600x900		2	60.506		0	0.2	282897	6250129	No	156 1 x Ku	No	New
Pit 2/62	OnGrade	WSP Stand	600 x 900 PIT		2	60.484		0	0.2	282893.1	6250134	No	157 1 x Ku	No	New
Pit 1/72	OnGrade	WSP Stand	600 x 900 PIT		2	56.382		0	0.2	282737.4	6250117	No	342044 1 x Ku	No	New
Pit 1/73	Sag	WSP Stand	2 x 900SQ i	1	2	56.307	0.15	0	0.5	282976.5	6250152	No	561123 1 x Ku	No	New
Pit 1/59	Sag	WSP Stand	2 x 600x900	0.5	2	56.131	0.15	0	0.5	282976.5	6250157	No	147 1 x Ku	No	New
N1	Node					56.744		0		282945	6250147		561189	No	
N2	Node					56.613		0		282973.3	6250152		561196	No	
N3	Node					56.778		0		283027.1	6250132		561191	No	
N4	Node					56.614		0		282980.9	6250151		561203	No	
N5	Node					57.076		0		282759.9	6250103		2558030	No	
N6	Node					56.966		0		282765.5	6250095		2558034	No	
Pit 1/76	Sag	WSP Stand	900SQ in S	1	2	56.761	0.2	0	0.5	282768.4	6250090	No	2558037 1 x Ku	No	New
Pit 1/37	Sag	WSP Stand	3 x 600x900	0.5	2	55.894	0.15	0	0.2	282760.7	6250084	No	80 1 x Ku	No	New

DETENTION BASIN DETAILS

Name	Elev	Surf. Area	Not Used	Outlet Type	K	Dia(mm)	Centre RL	Pit Family	Pit Type	x	y	HED	Crest RL	Crest Length	id
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SUB-CATCHMENT DETAILS

Name	Pit or Node	Total Area	Paved Area	Grass Area	Supp Area	Paved Time	Grass Time	Supp Time	Paved Length	Grass Length	Supp Length	Paved Slope(%)	Grass Slope	Supp Slope	Paved Rough	Grass Rough	Supp Rough	Lag Time or Factor	Gutter Length	Gutter Slope	Gutter FlowFactor	Rainfall Multiplier
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		(ha)	%	%	%	(min)	(min)	(min)	(m)	(m)	(m)	%	%	%			(m)	%	
C Pit 1/3	Pit 1/3	0.0959	34	66	0	0	0	0	33	86	-1	5.5	4.65	-1	0.013	0.3	-1	-1	1
C Pit 5/38	Pit 5/38	0.0264	50	50	0	0	0	0	39	39	-1	4.9	4.9	-1	0.013	0.3	-1	-1	1
C Pit 7/55	Pit 7/55	0.0626	50	50	0	0	0	0	40	40	-1	1.2	1.2	-1	0.013	0.3	-1	-1	1
C Pit 1/20	Pit 1/20	0.0448	66	33	0	0	0	0	60	50	-1	1.8	1.8	-1	0.013	0.3	-1	-1	1
C Pit 5/55	Pit 5/55	0.1116	40	60	0	0	0	0	50	85	-1	1.8	2.6	-1	0.013	0.3	-1	-1	1
C Pit 6/55	Pit 6/55	0.0219	80	20	0	0	0	0	50	10	-1	1.8	1.8	-1	0.013	0.3	-1	-1	1
C Pit 1/36	Pit 1/36	0.0281	50	50	0	0	0	0	32	32	-1	5.4	5.4	-1	0.013	0.3	-1	-1	1
C Pit 4/38	Pit 4/38	0.0325	50	50	0	0	0	0	36	36	-1	4.8	4.8	-1	0.013	0.3	-1	-1	1
C Pit 1/38	Pit 1/38	0.0157	50	50	0	0	0	0	24	24	-1	3	3	-1	0.013	0.3	-1	-1	1
C Pit 2/38	Pit 2/38	0.0148	50	50	0	0	0	0	24	24	-1	3	3	-1	0.013	0.3	-1	-1	1
C Pit 3/38	Pit 3/38	0.0223	50	50	0	0	0	0	35	35	-1	3	3	-1	0.013	0.3	-1	-1	1
C Pit 1/47	Pit 1/47	0.0206	50	50	0	0	0	0	32	32	-1	3.1	3.1	-1	0.013	0.3	-1	-1	1
C Pit 1/49	Pit 1/49	0.0468	100	0	0	0	0	0	48	-1	-1	1.8	-1	-1	0.013	-1	-1	-1	1
C Pit 3/55	Pit 3/55	0.1792	33	67	0	0	0	0	48	85	-1	1.8	3.3	-1	0.013	0.3	-1	-1	1
C Pit 4/55	Pit 4/55	0.1952	31	69	0	0	0	0	47	122	-1	1.6	2.9	-1	0.013	0.3	-1	-1	1
C Pit 1/50	Pit 1/50	0.0197	100	0	0	0	0	0	47	-1	-1	1.6	-1	-1	0.013	-1	-1	-1	1
C Pit 1/55	Pit 1/55	0.0236	100	0	0	0	0	0	46	-1	-1	4	-1	-1	0.013	-1	-1	-1	1
C Pit 2/55	Pit 2/55	0.0888	45	55	0	0	0	0	46	43	-1	4	3.3	-1	0.013	0.3	-1	-1	1
C Pit 1/56	Pit 1/56	0.331	28	72	0	0	0	0	36	152	-1	5.3	5.88	-1	0.013	0.3	-1	-1	1
C Pit 3/58	Pit 3/58	0.0103	100	0	0	0	0	0	30	-1	-1	6.5	-1	-1	0.013	-1	-1	-1	1
C Pit 4/58	Pit 4/58	0.0095	100	0	0	0	0	0	25	-1	-1	6.8	-1	-1	0.013	-1	-1	-1	1
C Pit 5/58	Pit 5/58	0.0486	50	50	0	0	0	0	36	36	-1	2.5	2.8	-1	0.013	0.013	-1	-1	1
C Pit 1/57	Pit 1/57	0.0282	45	55	0	0	0	0	32	40	-1	5.6	5.6	-1	0.013	0.3	-1	-1	1
C Pit 1/58	Pit 1/58	0.1164	32	68	0	0	0	0	30	80	-1	5	6.3	-1	0.013	0.3	-1	-1	1
C Pit 2/58	Pit 2/58	0.0094	100	0	0	0	0	0	30	-1	-1	6.5	-1	-1	0.013	-1	-1	-1	1
C Pit 1/61	Pit 1/61	0.1142	32	68	0	0	0	0	50	90	-1	6.55	4.25	-1	0.013	0.3	-1	-1	1
C Pit 3/62	Pit 3/62	0.0158	70	30	0	0	0	0	25	10	-1	5	5	-1	0.013	0.3	-1	-1	1
C Pit 1/62	Pit 1/62	0.1923	29	71	0	0	0	0	30	88	-1	3	1.7	-1	0.013	0.3	-1	-1	1
C Pit 2/62	Pit 2/62	0.0179	60	40	0	0	0	0	32	32	-1	5	5	-1	0.013	0.3	-1	-1	1
C Pit 1/72	Pit 1/72	0.1694	31	69	0	0	0	0	30	180	-1	1	2.3	-1	0.013	0.3	-1	-1	1
C Pit 1/59	Pit 1/59	0.1143	40	60	0	0	0	0	35	108	-1	3	5.9	-1	0.013	0.3	-1	-1	1
C Sw3	N1	0.4401	25	75	0	0	0	0	114	114	-1	5	5	-1	0.013	0.3	-1	-1	1
C Sw4	N3	0.9302	25	75	0	0	0	0	169	169	-1	5.9	5.9	-1	0.013	0.3	-1	-1	1
C Sw8	N5	0.2722	25	75	0	0	0	0	175	175	-1	1.2	1.2	-1	0.013	0.3	-1	-1	1
C Pit 1/37	Pit 1/37	0.3134	28	72	0	0	0	0	40	175	-1	1.2	1.2	-1	0.013	0.3	-1	-1	1

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	Chg (m)	RI (m)	Chg (m)	RL (m)	etc (m)
P Pit 1/3	Pit 1/3	Pit 5/38	6.545	55.475	55.409	1.01	Concrete, u	300	300	0.013	New	1							
P Pit 5/38	Pit 5/38	Pit 7/55	37.1	55.377	54.411	2.6	Concrete, u	300	300	0.013	New	1							
P Pit 7/55	Pit 7/55	Pit 8/55	10.909	54.381	54.272	1	Concrete, u	450	450	0.013	New	1							
P Pit 1/20	Pit 1/20	Pit 5/55	6.501	55.389	55.324	1	Concrete, u	375	375	0.013	New	1							
P Pit 5/55	Pit 5/55	Pit 6/55	36.63	55.214	54.848	1	Concrete, u	450	450	0.013	New	1							
P Pit 6/55	Pit 6/55	Pit 7/55	40.732	54.818	54.411	1	Concrete, u	450	450	0.013	New	1							
P Pit 1/36	Pit 1/36	Pit 4/38	6.5	57.36	57.295	1	Concrete, u	300	300	0.013	New	1							
P Pit 4/38	Pit 4/38	Pit 5/38	38.18	57.265	55.444	4.77	Concrete, u	300	300	0.013	New	1							
P Pit 1/38	Pit 1/38	Pit 2/38	6.5	60.093	60.028	1	Concrete, u	300	300	0.013	New	1							
P Pit 2/38	Pit 2/38	Pit 3/38	34.684	59.998	59.059	2.71	Concrete, u	300	300	0.013	New	1							
P Pit 3/38	Pit 3/38	Pit 4/38	35.343	59.008	57.36	4.66	Concrete, u	300	300	0.013	New	1							
P Pit 1/47	Pit 1/47	Pit 3/38	6.524	59.104	59.038	1.01	Concrete, u	300	300	0.013	New	1							
P Pit 1/49	Pit 1/49	Pit 3/55	6.5	56.804	56.739	1	Concrete, u	300	300	0.013	New	1							
P Pit 3/55	Pit 3/55	Pit 4/55	47.157	56.693	55.952	1.57	Concrete, u	375	375	0.013	New	1							
P Pit 4/55	Pit 4/55	Pit 5/55	49.569	55.922	55.376	1.1	Concrete, u	375	375	0.013	New	1							

P Pit 1/50	Pit 1/50	Pit 4/55	6.504	56.055	55.99	1 Concrete, u	300	300	0.013 New	1
P Pit 1/55	Pit 1/55	Pit 2/55	6.501	57.691	57.626	1 Concrete, u	300	300	0.013 New	1
P Pit 2/55	Pit 2/55	Pit 3/55	48.939	57.596	56.803	1.62 Concrete, u	300	300	0.013 New	1
P Pit 1/56	Pit 1/56	Pit 3/58	6.499	57.955	57.89	1 Concrete, u	300	300	0.013 New	1
P Pit 3/58	Pit 3/58	Pit 4/58	25.903	57.654	56.125	5.9 Concrete, u	300	300	0.013 New	1
P Pit 4/58	Pit 4/58	Pit 5/58	35.131	55.808	55.105	2 Concrete, u	450	450	0.013 New	1
P Pit 5/58	Pit 5/58	Pit 6/58	11.434	54.99	54.876	1 Concrete, u	375	375	0.013 New	2
P Pit 1/57	Pit 1/57	Pit 4/58	6.501	56.118	56.053	1 Concrete, u	300	300	0.013 New	1
P Pit 1/58	Pit 1/58	Pit 2/58	6.505	59.865	59.8	1 Concrete, u	300	300	0.013 New	1
P Pit 2/58	Pit 2/58	Pit 3/58	29.077	59.639	57.684	6.72 Concrete, u	300	300	0.013 New	1
P Pit 1/61	Pit 1/61	Pit 3/62	6.5	56.246	56.181	1 Concrete, u	300	300	0.013 New	1
P Pit 3/62	Pit 3/62	Pit 5/58	36.405	55.9	55	2.47 Concrete, u	450	450	0.013 New	1
P Pit 1/62	Pit 1/62	Pit 2/62	6.5	59.585	59.52	1 Concrete, u	300	300	0.013 New	1
P Pit 2/62	Pit 2/62	Pit 3/62	52.98	59.49	56.248	6.12 Concrete, u	300	300	0.013 New	1
P Pit 1/72	Pit 1/72	Pit 6/55	5.115	55.482	55.431	1 Concrete, u	300	300	0.013 New	1
P Pit 1/73	Pit 1/73	Pit 1/59	4.604	55.152	55.106	1 Concrete, u	375	375	0.013 New	1
P Pit 1/59	Pit 1/59	Pit 5/58	6.5	55.076	55.011	1 Concrete, u	375	375	0.013 New	2
P Pit 1/76	Pit 1/76	Pit 1/37	9.2	54.73	54.638	1 Concrete, u	300	300	0.013 New	1
P Pit 1/37	Pit 1/37	Pit 7/55	6.509	54.608	54.543	1 Concrete, u	450	450	0.013 New	1

DETAILS of SERVICES CROSSING PIPES

Pipe	Chg (m)	Bottom Elev (m)	Height of S (m)	Chg (m)	Bottom Elev (m)	Height of S (m)	Chg (m)	Bottom Elev (m)	Height of S (m)	etc
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CHANNEL DETAILS

Name	From	To	Type	Length (m)	U/S IL (m)	D/S IL (m)	Slope (%)	Base Width (m)	L.B. Slope (1:?)	R.B. Slope (1:?)	Manning n	Depth (m)	Roofed
Sw3	N1	N2	Prismatic	29.14	56.444	56.313	0.45	0.5	3	3	0.045	0.3	No
Sw4	N3	N4	Prismatic	59.734	58.897	56.352	4.26	0.5	3	3	0.045	0.3	No
Sw8	N5	N6	Prismatic	22.05	56.876	56.766	0.5	0.5	3	3	0.045	0.2	No

OVERFLOW ROUTE DETAILS

Name	From	To	Travel Time (min)	Spill Level (m)	Crest Length (m)	Weir Coeff. C	Cross Section	Safe Depth (m)	SafeDepth Major Stori (m)	SafeDepth Minor Stori (m)	Safe DxV (sq.m/sec)	Bed Slope (%)	D/S Area Contributing %	id	U/S IL	D/S IL	Length (m)
F Pit 1/3	Pit 1/3	Pit 1/37	1				8 m wide r	0.14	0.14	0.6	1.83	0	0	507	56.397	55.894	27.419
F Pit 5/38	Pit 5/38	Pit 7/55	1				8 m wide r	0.14	0.14	0.6	1.58	0	0	579	56.349	55.895	28.769
F Pit 7/55	Pit 7/55	Pit 8/55	1				Pathway 4	0.3	0.15	0.6	6.71	0	0	628	55.895	55.163	10.909
F Pit 1/20	Pit 1/20	Pit 6/55	1				8 m wide r	0.14	0.14	0.6	0.01	0	0	546	56.364	56.382	39.4
F Pit 5/55	Pit 5/55	Pit 1/20	1				8 m wide r	0.14	0.14	0.6	0.01	0	0	626	56.365	56.365	6.5
F Pit 6/55	Pit 6/55	Pit 7/55	1				8 m wide r	0.14	0.14	0.6	1.2	0	0	627	56.382	55.895	40.732
F Pit 1/36	Pit 1/36	Pit 1/3	1				8 m wide r	0.14	0.14	0.6	5.54	0	0	573	58.26	56.397	33.621
F Pit 4/38	Pit 4/38	Pit 5/38	1				8 m wide r	0.14	0.14	0.6	4.89	0	0	578	58.26	56.349	39.046
F Pit 1/38	Pit 1/38	Pit 1/47	1				8 m wide r	0.14	0.14	0.6	3.08	0	0	575	60.993	60.004	32.156
F Pit 2/38	Pit 2/38	Pit 3/38	1				8 m wide r	0.14	0.14	0.6	2.96	0	0	576	61.014	59.978	34.986
F Pit 3/38	Pit 3/38	Pit 4/38	1				8 m wide r	0.14	0.14	0.6	4.77	0	0	577	59.978	58.26	36.026
F Pit 1/47	Pit 1/47	Pit 1/36	1				8 m wide r	0.14	0.14	0.6	5.41	0	0	603	60.004	58.26	32.227
F Pit 1/49	Pit 1/49	Pit 1/50	0.4				8 m wide r	0.3	0.15	0.4	1.59	0	0	76903	57.704	56.955	47
F Pit 3/55	Pit 3/55	Pit 4/55	1				8 m wide r	0.14	0.14	0.6	1.58	0	0	624	57.703	56.957	47.29
F Pit 4/55	Pit 4/55	Pit 5/55	1				8 m wide r	0.14	0.14	0.6	1.18	0	0	625	56.957	56.365	50.015
F Pt 1/50	Pit 1/50	Pit 1/20	0.5				8 m wide r	0.3	0.15	0.4	1.18	0	0	76905	56.955	56.364	50
F Pit 1/55	Pit 1/55	Pit 1/49	1				8 m wide r	0.14	0.14	0.6	1.81	0	0	622	58.591	57.704	48.979
F Pit 2/55	Pit 2/55	Pit 3/55	1				8 m wide r	0.14	0.14	0.6	1.81	0	0	623	58.589	57.703	48.939
F Pit 1/56	Pit 1/56	Pit 1/57	1				8 m wide r	0.14	0.14	0.6	5.61	0	0	629	58.855	57.018	32.717
F Pit 3/58	Pit 3/58	Pit 4/58	1				8 m wide r	0.14	0.14	0.6	6.8	0	0	633	58.843	57.025	26.745

F Pit 4/58	Pit 4/58	Pit 5/58	1	8 m wide r	0.14	0.14	0.6	2.57	0	634	57.025	56.123	35.131
F Pit 5/58	Pit 5/58	Pit 6/58	1	8 m wide r	0.14	0.14	0.6	8.42	0	635	56.123	55.16	11.434
F Pit 1/57	Pit 1/57	Pit 1/59	1	8 m wide r	0.3	0.15	0.4	2.98	0	630	57.018	56.131	29.8
F Pit 1/58	Pit 1/58	Pit 1/56	1	8 m wide r	0.14	0.14	0.6	5.27	0	631	60.765	58.855	36.248
F Pit 2/58	Pit 2/58	Pit 3/58	1	8 m wide r	0.14	0.14	0.6	6.45	0	632	60.798	58.843	30.302
F Pit 1/61	Pit 1/61	Pit 1/59	1	8 m wide r	0.14	0.14	0.6	2.99	0	643	57.172	56.131	34.792
F Pit 3/62	Pit 3/62	Pit 5/58	1	8 m wide r	0.14	0.14	0.6	2.81	0	646	57.148	56.123	36.504
F Pit 1/62	Pit 1/62	Pit 1/61	1	8 m wide r	0.14	0.14	0.6	6.55	0	644	60.506	57.172	50.927
F Pit 2/62	Pit 2/62	Pit 2/55	1	8 m wide r	0.14	0.14	0.6	4.11	0	645	60.484	58.589	46.085
F Pit 1/72	Pit 1/72	Pit 1/37	0.4	8 m wide r	0.3	0.15	0.4	1.22	0	342254	56.382	55.894	40
F Pit 1/73	Pit 1/73	Pit 1/59	0.1	Pathway 4	0.3	0.15	0.6	11.61	0	561248	56.607	56.131	4.1
F Pit 1/59	Pit 1/59	Pit 5/58	1	8 m wide r	0.14	0.14	0.6	0.01	0	636	56.131	56.131	6.5
OF Sw3	N2	Pit 1/73	0.1	Swale 1:3 S	0.3	0.3	0.4	0.6	0	561199	56.313	56.307	1
OF Sw4	N4	Pit 1/73	0.1	Swale 1:3 S	0.3	0.3	0.4	4.5	0	561206	56.352	56.307	1
F Sw8	N6	Pit 1/76	0.1	Swale 1:3 S	0.3	0.3	0.4	0.5	0	2558102	56.766	56.761	1
F Pit 1/76	Pit 1/76	Pit 1/37	0.1	Pathway 4	0.3	0.15	0.6	12.36	0	2558252	56.961	55.849	9
F Pit 1/37	Pit 1/37	Pit 7/55	1	8 m wide r	0.3	0.15	0.4	0.01	0	574	55.894	55.894	6.5

PIPE COVER DETAILS

Name	Type	Dia (mm)	Safe Cover	Cover (m)	
P Pit 1/3	Concrete, u	300	0.6	0.57	Unsafe
P Pit 5/38	Concrete, u	300	0.6	-0.43	Unsafe
P Pit 7/55	Concrete, u	450	0.6	0.4	Unsafe
P Pit 1/20	Concrete, u	375	0.6	0.56	Unsafe
P Pit 5/55	Concrete, u	450	0.6	0.66	
P Pit 6/55	Concrete, u	450	0.6	0.97	
P Pit 1/36	Concrete, u	300	0.6	0.57	Unsafe
P Pit 4/38	Concrete, u	300	0.6	0.57	Unsafe
P Pit 1/38	Concrete, u	300	0.6	0.57	Unsafe
P Pit 2/38	Concrete, u	300	0.6	0.59	Unsafe
P Pit 3/38	Concrete, u	300	0.6	0.57	Unsafe
P Pit 1/47	Concrete, u	300	0.6	0.57	Unsafe
P Pit 1/49	Concrete, u	300	0.6	0.57	Unsafe
P Pit 3/55	Concrete, u	375	0.6	0.6	
P Pit 4/55	Concrete, u	375	0.6	0.58	Unsafe
P Pit 1/50	Concrete, u	300	0.6	0.57	Unsafe
P Pit 1/55	Concrete, u	300	0.6	0.57	Unsafe
P Pit 2/55	Concrete, u	300	0.6	0.57	Unsafe
P Pit 1/56	Concrete, u	300	0.6	0.57	Unsafe
P Pit 3/58	Concrete, u	300	0.6	0.57	Unsafe
P Pit 4/58	Concrete, u	450	0.6	0.5	Unsafe
P Pit 5/58	Concrete, u	375	0.6	-0.13	Unsafe
P Pit 1/57	Concrete, u	300	0.6	0.57	Unsafe
P Pit 1/58	Concrete, u	300	0.6	0.57	Unsafe
P Pit 2/58	Concrete, u	300	0.6	0.57	Unsafe
P Pit 1/61	Concrete, u	300	0.6	0.57	Unsafe
P Pit 3/62	Concrete, u	450	0.6	0.49	Unsafe
P Pit 1/62	Concrete, u	300	0.6	0.57	Unsafe
P Pit 2/62	Concrete, u	300	0.6	0.57	Unsafe
P Pit 1/72	Concrete, u	300	0.6	0.08	Unsafe
P Pit 1/73	Concrete, u	375	0.6	0.56	Unsafe
P Pit 1/59	Concrete, u	375	0.6	0.64	
P Pit 1/76	Concrete, u	300	0.6	0.83	
P Pit 1/37	Concrete, u	450	0.6	0.79	

This model has no pipes with non-return valves

Proposed DRAINS Model 5 - 1% AEP Storm Event Results

DRAINS results prepared from Version 2018.01

PIT / NODE DETAILS		Version 8					
Name	Max HGL	Max Pond HGL	Max Surface Flow (cu.m/s)	Max Pond Volume (cu.m)	Min Freeboard (m)	Overflow (cu.m/s)	Constraint
Pit 1/3	56.4		0.041		0	0.01	Outlet System
Pit 5/38	56.38		0.017		0	0.005	Outlet System
Pit 7/55	55.86	55.95	0.048	0.1	0.03	0	Inlet Capacity
Pit 8/55	54.7		0				
Pit 1/20	56.53	56.55	0.079	0.4	0	0.01	Outlet System
Pit 5/55	56.53	56.57	0.109	0.4	0	0.018	Outlet System
Pit 6/55	56.27		0.037		0.11	0	Inlet Capacity
Pit 1/36	57.51		0.017		0.75	0.001	Inlet Capacity
Pit 4/38	57.49		0.019		0.77	0.001	Inlet Capacity
Pit 1/38	60.17		0.009		0.82	0	None
Pit 2/38	60.11		0.009		0.91	0	None
Pit 3/38	59.17		0.012		0.81	0	None
Pit 1/47	59.2		0.011		0.8	0	None
Pit 1/49	57.4		0.035		0.3	0.009	Inlet Capacity
Pit 3/55	57.39		0.084		0.31	0.007	Inlet Capacity
Pit 4/55	57.03		0.075		0	0.033	Outlet System
Pit 1/50	57.03		0.024		0	0.023	Outlet System
Pit 1/55	57.82		0.017		0.78	0.001	Inlet Capacity
Pit 2/55	57.78		0.045		0.81	0.012	Inlet Capacity
Pit 1/56	58.34		0.128		0.52	0.023	Inlet Capacity
Pit 3/58	58.13		0.007		0.71	0	None
Pit 4/58	56.28		0.007		0.74	0	None
Pit 5/58	56.07	56.18	0.089	0.4	0.05	0	Inlet Capacity
Pit 6/58	55.23		0.003				
Pit 1/57	56.33		0.045		0.69	0.006	Inlet Capacity
Pit 1/58	60.01		0.048		0.76	0.014	Inlet Capacity
Pit 2/58	59.79		0.007		1	0	None
Pit 1/61	56.4		0.054		0.78	0.016	Inlet Capacity
Pit 3/62	56.17		0.011		0.98	0	None
Pit 1/62	59.8		0.064		0.71	0.008	Inlet Capacity
Pit 2/62	59.7		0.011		0.78	0	None
Pit 1/72	56.3		0.052		0.09	0.016	Inlet Capacity
Pit 1/73	56.66	56.79	0.434	4.3	0	0.113	Outlet System
Pit 1/59	56.25	56.34	0.227	0.4	0	0.024	Outlet System
N1	56.81		0.147				
N2	56.79		0.15				
N3	59.1		0.29				
N4	56.79		0.29				
N5	57.04		0.069				
N6	56.88		0.069				
Pit 1/76	56.05	56.83	0.066	0.2	0.71	0	Inlet Capacity
Pit 1/37	55.95	55.99	0.121	0.4	0	0	Outlet System

SUB-CATCHMENT DETAILS

Name	Max Flow Q (cu.m/s)	Paved Max Q (cu.m/s)	Grassed Max Q (cu.m/s)	Paved Tc (min)	Grassed Tc (min)	Supp. Tc (min)	Due to Storm
C Pit 1/3	0.034	0.018	0.016	1.21	14.88		0 1% AEP, 10 min burst, Storm 7
C Pit 5/38	0.012	0.007	0.005	1.39	9.11		0 1% AEP, 10 min burst, Storm 7
C Pit 7/55	0.025	0.021	0.005	1.98	13.02		0 1% AEP, 5 min burst, Storm 1
C Pit 1/20	0.022	0.02	0.002	2.24	13.19		0 1% AEP, 5 min burst, Storm 1
C Pit 5/55	0.038	0.024	0.014	2.17	17.59		0 1% AEP, 10 min burst, Storm 7
C Pit 6/55	0.013	0.012	0.001	2.01	5.02		0 1% AEP, 5 min burst, Storm 1
C Pit 1/36	0.014	0.008	0.006	1.2	7.86		0 1% AEP, 10 min burst, Storm 7
C Pit 4/38	0.016	0.009	0.007	1.33	8.74		0 1% AEP, 10 min burst, Storm 7
C Pit 1/38	0.008	0.004	0.004	1.2	7.89		0 1% AEP, 10 min burst, Storm 7
C Pit 2/38	0.007	0.004	0.003	1.2	7.89		0 1% AEP, 10 min burst, Storm 7
C Pit 3/38	0.01	0.006	0.004	1.51	9.9		0 1% AEP, 10 min burst, Storm 7
C Pit 1/47	0.009	0.006	0.004	1.41	9.29		0 1% AEP, 10 min burst, Storm 7
C Pit 1/49	0.031	0.031	0	1.96	0		0 1% AEP, 5 min burst, Storm 1
C Pit 3/55	0.059	0.032	0.026	2.12	16.38		0 1% AEP, 10 min burst, Storm 7
C Pit 4/55	0.056	0.033	0.023	2.17	21.15		0 1% AEP, 10 min burst, Storm 7
C Pit 1/50	0.013	0.013	0	2	0		0 1% AEP, 5 min burst, Storm 1
C Pit 1/55	0.016	0.016	0	1.5	0		0 1% AEP, 5 min burst, Storm 1
C Pit 2/55	0.038	0.022	0.017	1.63	10.88		0 1% AEP, 10 min burst, Storm 7
C Pit 1/56	0.095	0.051	0.045	1.29	19.52		0 1% AEP, 10 min burst, Storm 7
C Pit 3/58	0.007	0.007	0	1	0		0 1% AEP, 5 min burst, Storm 1
C Pit 4/58	0.006	0.006	0	0.89	0		0 1% AEP, 5 min burst, Storm 1
C Pit 5/58	0.03	0.016	0.014	1.49	1.44		0 1% AEP, 5 min burst, Storm 1
C Pit 1/57	0.013	0.007	0.006	1.18	8.89		0 1% AEP, 10 min burst, Storm 7
C Pit 1/58	0.041	0.02	0.021	1.18	13.01		0 1% AEP, 10 min burst, Storm 7
C Pit 2/58	0.006	0.006	0	1	0		0 1% AEP, 5 min burst, Storm 1
C Pit 1/61	0.038	0.02	0.018	1.47	15.71		0 1% AEP, 10 min burst, Storm 7
C Pit 3/62	0.01	0.007	0.002	0.97	3.69		0 1% AEP, 5 min burst, Storm 1
C Pit 1/62	0.055	0.03	0.024	1.37	20.4		0 1% AEP, 10 min burst, Storm 7
C Pit 2/62	0.009	0.007	0.002	1.13	7.42		0 1% AEP, 5 min burst, Storm 1
C Pit 1/72	0.044	0.029	0.015	1.91	28.63		0 1% AEP, 10 min burst, Storm 7
C Pit 1/59	0.041	0.025	0.016	1.51	15.88		0 1% AEP, 10 min burst, Storm 7
C Sw3	0.129	0.06	0.069	2.62	17.24		0 1% AEP, 10 min burst, Storm 7
C Sw4	0.251	0.127	0.124	3.16	20.78		0 1% AEP, 10 min burst, Storm 7
C Sw8	0.059	0.037	0.022	5.2	34.22		0 1% AEP, 10 min burst, Storm 7
C Pit 1/37	0.072	0.058	0.014	1.98	31.58		0 1% AEP, 5 min burst, Storm 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
P Pit 1/3	0.025	0.35	56.386	56.382	1% AEP, 10 min burst, Storm 7
P Pit 5/38	0.093	1.32	56.205	55.864	1% AEP, 10 min burst, Storm 7
P Pit 7/55	0.466	2.97	54.989	54.704	1% AEP, 10 min burst, Storm 7
P Pit 1/20	0.06	0.55	56.551	56.55	1% AEP, 10 min burst, Storm 10
P Pit 5/55	0.218	1.37	56.41	56.275	1% AEP, 10 min burst, Storm 4

P Pit 6/55	0.244	1.53	56.09	55.864	1% AEP, 10 min burst, Storm 7
P Pit 1/36	0.013	0.43	57.493	57.492	1% AEP, 10 min burst, Storm 7
P Pit 4/38	0.061	2.59	57.376	56.382	1% AEP, 10 min burst, Storm 7
P Pit 1/38	0.008	1.04	60.142	60.106	1% AEP, 10 min burst, Storm 4
P Pit 2/38	0.015	1.41	60.061	59.171	1% AEP, 10 min burst, Storm 7
P Pit 3/38	0.034	2.18	59.09	57.492	1% AEP, 10 min burst, Storm 7
P Pit 1/47	0.009	0.73	59.175	59.171	1% AEP, 10 min burst, Storm 7
P Pit 1/49	0.024	0.34	57.471	57.45	1% AEP, 5 min burst, Storm 1
P Pit 3/55	0.123	1.12	57.264	57.032	1% AEP, 10 min burst, Storm 7
P Pit 4/55	0.151	1.37	56.842	56.519	1% AEP, 10 min burst, Storm 1
P Pit 1/50	0.019	0.27	57.04	57.044	1% AEP, 5 min burst, Storm 1
P Pit 1/55	0.014	0.71	57.789	57.784	1% AEP, 5 min burst, Storm 1
P Pit 2/55	0.041	1.61	57.712	57.372	1% AEP, 10 min burst, Storm 6
P Pit 1/56	0.086	1.47	58.186	58.134	1% AEP, 10 min burst, Storm 7
P Pit 3/58	0.125	3.37	57.81	56.281	1% AEP, 10 min burst, Storm 7
P Pit 4/58	0.158	1.07	56.204	56.069	1% AEP, 10 min burst, Storm 7
P Pit 5/58	0.528	2.46	55.485	55.228	1% AEP, 10 min burst, Storm 7
P Pit 1/57	0.03	0.7	56.292	56.281	1% AEP, 10 min burst, Storm 7
P Pit 1/58	0.028	2.01	59.94	59.911	1% AEP, 10 min burst, Storm 7
P Pit 2/58	0.033	2.45	59.712	58.134	1% AEP, 10 min burst, Storm 7
P Pit 1/61	0.029	2	56.324	56.296	1% AEP, 10 min burst, Storm 7
P Pit 3/62	0.092	1.49	56.085	56.069	1% AEP, 5 min burst, Storm 1
P Pit 1/62	0.047	1.5	59.722	59.699	1% AEP, 10 min burst, Storm 7
P Pit 2/62	0.056	2.77	59.589	56.347	1% AEP, 10 min burst, Storm 7
P Pit 1/72	0.029	0.4	56.279	56.275	1% AEP, 10 min burst, Storm 4
P Pit 1/73	0.265	2.4	56.31	56.251	1% AEP, 5 min burst, Storm 1
P Pit 1/59	0.348	1.58	56.079	56.041	1% AEP, 10 min burst, Storm 8
P Pit 1/76	0.058	0.82	55.98	55.948	1% AEP, 10 min burst, Storm 4
P Pit 1/37	0.149	0.94	55.878	55.864	1% AEP, 10 min burst, Storm 7

CHANNEL DETAILS

Name	Max Q (cu.m/s)	Max V (m/s)	Due to Storm
Sw3	0.127	0.35	1% AEP, 10 min burst, Storm 7
Sw4	0.251	1.14	1% AEP, 10 min burst, Storm 7
Sw8	0.059	0.58	1% AEP, 10 min burst, Storm 7

OVERFLOW ROUTE DETAILS

Name	Max Q U/S	Max Q D/S	Safe Q	Max D	Max DxV	Max Width	Max V	Due to Storm
F Pit 1/3	0.01	0.01	0.257	0.095	0.05	1.81	0.88	1% AEP, 10 min burst, Storm 7
F Pit 5/38	0.005	0.005	0.238	0.051	0.03	0.42	0.62	1% AEP, 10 min burst, Storm 7
F Pit 7/55	0	0	0.535	0	0	0	0	
F Pit 1/20	0.01	0.01	0.019	0.09	0.03	1.66	0.48	1% AEP, 10 min burst, Storm 7
F Pit 5/55	0.018	0.018	0.03	0.188	0	11.82	0.02	1% AEP, 10 min burst, Storm 1
F Pit 6/55	0	0	0.208	0	0	0	0	
F Pit 1/36	0.001	0.001	0.447	0.052	0	0.43	0	1% AEP, 10 min burst, Storm 7
F Pit 4/38	0.001	0.001	0.42	0.042	0.02	0.35	0.8	1% AEP, 10 min burst, Storm 7
F Pit 1/38	0	0	0.333	0	0	0	0	
F Pit 2/38	0	0	0.326	0	0	0	0	
F Pit 3/38	0	0	0.414	0	0	0	0	

F Pit 1/47	0	0	0.441	0	0	0	0
F Pit 1/49	0.009	0.009	1.048	0.07	0.04	0.96	0.73 1% AEP, 5 min burst, Storm 1
F Pit 3/55	0.007	0.007	0.238	0.053	0.03	0.44	0.73 1% AEP, 30 min burst, Storm 6
F Pit 4/55	0.033	0.033	0.206	0.205	0.08	6.4	1.07 1% AEP, 10 min burst, Storm 7
F Pt 1/50	0.023	0.023	1.128	0.189	0.07	5.96	1.07 1% AEP, 10 min burst, Storm 7
F Pit 1/55	0.001	0.001	0.255	0.054	0.01	0.45	0.54 1% AEP, 5 min burst, Storm 1
F Pit 2/55	0.012	0.012	0.255	0.057	0.05	0.55	0.96 1% AEP, 10 min burst, Storm 7
F Pit 1/56	0.023	0.023	0.449	0.06	0.1	0.64	1.74 1% AEP, 10 min burst, Storm 7
F Pit 3/58	0	0	0.495	0	0	0	0
F Pit 4/58	0	0	0.304	0	0	0	0
F Pit 5/58	0	0	0.551	0	0	0	0
F Pit 1/57	0.006	0.006	0.828	0.207	0.03	6.4	0.82 1% AEP, 10 min burst, Storm 7
F Pit 1/58	0.014	0.014	0.436	0.06	0.07	0.64	1.38 1% AEP, 10 min burst, Storm 7
F Pit 2/58	0	0	0.482	0	0	0	0
F Pit 1/61	0.016	0.016	0.328	0.207	0.07	6.4	1.23 1% AEP, 10 min burst, Storm 7
F Pit 3/62	0	0	0.318	0	0	0	0
F Pit 1/62	0.008	0.008	0.486	0.056	0.05	0.5	1.2 1% AEP, 10 min burst, Storm 7
F Pit 2/62	0	0	0.385	0	0	0	0
F Pit 1/72	0.016	0.016	1.125	0.095	0.06	1.81	0.91 1% AEP, 5 min burst, Storm 1
F Pit 1/73	0.113	0.113	0.453	0.207	0.25	2.07	2.67 1% AEP, 10 min burst, Storm 7
F Pit 1/59	0.024	0.024	0.03	0.086	0.03	3	0.48 1% AEP, 30 min burst, Storm 5
OF Sw3	0.129	0.129	0.226	0.478	0.07	3.38	0.14 1% AEP, 10 min burst, Storm 4
OF Sw4	0.251	0.251	0.535	0.478	0.14	3.38	0.32 1% AEP, 10 min burst, Storm 7
F Sw8	0.061	0.061	0.206	0.118	0.08	1.21	0.82 1% AEP, 10 min burst, Storm 3
F Pit 1/76	0	0	0.439	0	0	0	0
F Pit 1/37	0	0	0.431	0	0	0	0

DETENTION BASIN DETAILS

Name	Max WL	MaxVol	Max Q Total	Max Q Low Level	Max Q High Level
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Run Log for 5936000 run at 12:05:36 on 7/3/2018

Upwelling occurred at: Pit 1/50, Pit 1/20

Freeboard was less than 0.15m at Pit 1/73, Pit 1/72, Pit 1/59, Pit 5/58, Pit 7/55, Pit 6/55, Pit 5/55, Pit 4/55, Pit 5/38, Pit 1/37, Pit 1/3

The maximum pond depth in these sag pits is unsafe: Pit 1/73, Pit 1/59, Pit 5/55

Channels Sw4, Sw3 spilled. You cannot rely on these results. You really MUST specify data for higher levels at the cross sections.

Peak water levels spilled in these Overflow Routes: OF Sw4, OF Sw3 spilled. You cannot rely on these results. You really MUST specify data for higher levels for these cross sections.

IGNORE THESE WARNINGS AT YOUR OWN PERIL.\cf1

Proposed DRAINS Model 5 - 5% AEP Storm Event Results

DRAINS results prepared from Version 2018.01

PIT / NODE DETAILS		Version 8					
Name	Max HGL	Max Pond HGL	Max Surface Flow (cu.m/s)	Max Pond Volume (cu.m)	Min Freeboard (m)	Overflow (cu.m/s)	Constraint
Pit 1/3	55.65		0.023		0.75	0.004	Inlet Capacity
Pit 5/38	55.63		0.009		0.72	0	None
Pit 7/55	55.41	55.93	0.019	0.1	0.49	0	Inlet Capacity
Pit 8/55	54.68		0				
Pit 1/20	55.97	56.4	0.016	0.1	0.39	0	Inlet Capacity
Pit 5/55	55.97	56.4	0.033	0.1	0.4	0	Inlet Capacity
Pit 6/55	55.75		0.01		0.63	0	None
Pit 1/36	57.46		0.01		0.8	0	None
Pit 4/38	57.45		0.011		0.81	0	None
Pit 1/38	60.15		0.006		0.84	0	None
Pit 2/38	60.08		0.005		0.94	0	None
Pit 3/38	59.14		0.007		0.84	0	None
Pit 1/47	59.18		0.007		0.83	0	None
Pit 1/49	56.97		0.024		0.73	0.004	Inlet Capacity
Pit 3/55	56.96		0.047		0.75	0.003	Inlet Capacity
Pit 4/55	56.29		0.043		0.67	0.004	Inlet Capacity
Pit 1/50	56.29		0.015		0.67	0	None
Pit 1/55	57.79		0.012		0.8	0	None
Pit 2/55	57.75		0.027		0.84	0.005	Inlet Capacity
Pit 1/56	58.18		0.073		0.67	0.01	Inlet Capacity
Pit 3/58	57.94		0.005		0.9	0	None
Pit 4/58	56.08		0.005		0.94	0	None
Pit 5/58	55.78	56.17	0.023	0.1	0.35	0	Inlet Capacity
Pit 6/58	55.21		0				
Pit 1/57	56.22		0.021		0.79	0.002	Inlet Capacity
Pit 1/58	59.99		0.029		0.78	0.006	Inlet Capacity
Pit 2/58	59.77		0.005		1.03	0	None
Pit 1/61	56.37		0.03		0.8	0.007	Inlet Capacity
Pit 3/62	56.11		0.007		1.04	0	None
Pit 1/62	59.75		0.038		0.76	0.004	Inlet Capacity
Pit 2/62	59.66		0.007		0.83	0	None
Pit 1/72	55.76		0.032		0.62	0.008	Inlet Capacity
Pit 1/73	56.35	56.48	0.235	2.7	0	0	Outlet System
Pit 1/59	55.93	56.17	0.04	0.1	0.2	0	Inlet Capacity
N1	56.64		0.089				
N2	56.48		0.086				
N3	59.06		0.173				
N4	56.5		0.173				
N5	57.01		0.042				
N6	56.86		0.042				
Pit 1/76	55.5	56.82	0.042	0.1	1.26	0	Inlet Capacity
Pit 1/37	55.45	55.93	0.066	0.1	0.44	0	Inlet Capacity

SUB-CATCHMENT DETAILS

Name	Max Flow Q (cu.m/s)	Paved Max Q (cu.m/s)	Grassed Max Q (cu.m/s)	Paved Tc (min)	Grassed Tc (min)	Supp. Tc (min)	Due to Storm
C Pit 1/3	0.022	0.013	0.009	1.37	16.83		0 5% AEP, 10 min burst, Storm 7
C Pit 5/38	0.008	0.005	0.003	1.57	10.31		0 5% AEP, 10 min burst, Storm 6
C Pit 7/55	0.018	0.015	0.002	2.24	14.71		0 5% AEP, 5 min burst, Storm 1
C Pit 1/20	0.016	0.014	0.001	2.53	14.89		0 5% AEP, 5 min burst, Storm 1
C Pit 5/55	0.026	0.018	0.008	2.46	19.9		0 5% AEP, 10 min burst, Storm 6
C Pit 6/55	0.009	0.009	0.001	2.27	5.67		0 5% AEP, 5 min burst, Storm 1
C Pit 1/36	0.009	0.006	0.004	1.35	8.89		0 5% AEP, 10 min burst, Storm 7
C Pit 4/38	0.01	0.008	0.004	1.5	9.89		0 5% AEP, 10 min burst, Storm 2
C Pit 1/38	0.005	0.003	0.002	1.36	8.93		0 5% AEP, 10 min burst, Storm 7
C Pit 2/38	0.005	0.003	0.002	1.36	8.93		0 5% AEP, 10 min burst, Storm 7
C Pit 3/38	0.007	0.005	0.002	1.7	11.2		0 5% AEP, 10 min burst, Storm 6
C Pit 1/47	0.006	0.004	0.002	1.6	10.51		0 5% AEP, 10 min burst, Storm 6
C Pit 1/49	0.023	0.023	0	2.21	0		0 5% AEP, 5 min burst, Storm 1
C Pit 3/55	0.038	0.024	0.015	2.4	18.53		0 5% AEP, 10 min burst, Storm 7
C Pit 4/55	0.037	0.025	0.013	2.45	23.92		0 5% AEP, 10 min burst, Storm 6
C Pit 1/50	0.01	0.01	0	2.26	0		0 5% AEP, 5 min burst, Storm 1
C Pit 1/55	0.011	0.011	0	1.7	0		0 5% AEP, 5 min burst, Storm 1
C Pit 2/55	0.025	0.016	0.009	1.84	12.31		0 5% AEP, 10 min burst, Storm 6
C Pit 1/56	0.061	0.037	0.024	1.46	22.08		0 5% AEP, 10 min burst, Storm 7
C Pit 3/58	0.005	0.005	0	1.13	0		0 5% AEP, 5 min burst, Storm 1
C Pit 4/58	0.005	0.005	0	1	0		0 5% AEP, 5 min burst, Storm 1
C Pit 5/58	0.022	0.012	0.01	1.69	1.63		0 5% AEP, 5 min burst, Storm 1
C Pit 1/57	0.008	0.005	0.003	1.34	10.06		0 5% AEP, 10 min burst, Storm 7
C Pit 1/58	0.027	0.015	0.012	1.33	14.72		0 5% AEP, 10 min burst, Storm 7
C Pit 2/58	0.005	0.005	0	1.13	0		0 5% AEP, 5 min burst, Storm 1
C Pit 1/61	0.025	0.015	0.01	1.67	17.77		0 5% AEP, 10 min burst, Storm 7
C Pit 3/62	0.006	0.005	0.001	1.1	4.17		0 5% AEP, 5 min burst, Storm 1
C Pit 1/62	0.036	0.028	0.013	1.55	23.08		0 5% AEP, 10 min burst, Storm 2
C Pit 2/62	0.006	0.005	0.001	1.28	8.39		0 5% AEP, 5 min burst, Storm 1
C Pit 1/72	0.03	0.026	0.005	1.99	29.84		0 5% AEP, 5 min burst, Storm 1
C Pit 1/59	0.027	0.019	0.009	1.7	17.97		0 5% AEP, 10 min burst, Storm 6
C Sw3	0.082	0.044	0.038	2.97	19.51		0 5% AEP, 10 min burst, Storm 7
C Sw4	0.161	0.093	0.067	3.58	23.51		0 5% AEP, 10 min burst, Storm 7
C Sw8	0.039	0.027	0.012	5.89	38.71		0 5% AEP, 10 min burst, Storm 7
C Pit 1/37	0.05	0.043	0.007	2.24	35.67		0 5% AEP, 5 min burst, Storm 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
P Pit 1/3	0.018	0.47	55.631	55.63	5% AEP, 10 min burst, Storm 7
P Pit 5/38	0.064	2.51	55.493	55.305	5% AEP, 10 min burst, Storm 9
P Pit 7/55	0.367	2.42	54.863	54.681	5% AEP, 10 min burst, Storm 7
P Pit 1/20	0.014	0.13	55.984	55.977	5% AEP, 10 min burst, Storm 7
P Pit 5/55	0.162	1.02	55.871	55.752	5% AEP, 10 min burst, Storm 7

P Pit 6/55	0.192	1.2	55.604	55.408	5% AEP, 10 min burst, Storm 7
P Pit 1/36	0.009	0.54	57.447	57.446	5% AEP, 10 min burst, Storm 7
P Pit 4/38	0.041	2.32	57.355	55.627	5% AEP, 10 min burst, Storm 2
P Pit 1/38	0.005	1.96	60.117	60.077	5% AEP, 10 min burst, Storm 7
P Pit 2/38	0.01	1.64	60.04	59.139	5% AEP, 5 min burst, Storm 1
P Pit 3/38	0.023	1.93	59.075	57.447	5% AEP, 10 min burst, Storm 6
P Pit 1/47	0.006	0.78	59.156	59.138	5% AEP, 10 min burst, Storm 6
P Pit 1/49	0.019	0.48	56.965	56.963	5% AEP, 5 min burst, Storm 1
P Pit 3/55	0.083	1.85	56.853	56.287	5% AEP, 10 min burst, Storm 7
P Pit 4/55	0.12	3.97	56.041	55.676	5% AEP, 10 min burst, Storm 10
P Pit 1/50	0.013	0.18	56.409	56.405	5% AEP, 5 min burst, Storm 1
P Pit 1/55	0.011	0.89	57.761	57.756	5% AEP, 5 min burst, Storm 1
P Pit 2/55	0.031	1.98	57.678	56.954	5% AEP, 5 min burst, Storm 1
P Pit 1/56	0.057	2.25	58.071	58.055	5% AEP, 10 min burst, Storm 7
P Pit 3/58	0.086	3.07	57.78	56.251	5% AEP, 10 min burst, Storm 6
P Pit 4/58	0.107	2.14	55.966	55.777	5% AEP, 10 min burst, Storm 6
P Pit 5/58	0.433	2.09	55.385	55.209	5% AEP, 10 min burst, Storm 6
P Pit 1/57	0.017	2.02	56.17	56.137	5% AEP, 10 min burst, Storm 7
P Pit 1/58	0.021	2.02	59.926	59.895	5% AEP, 10 min burst, Storm 7
P Pit 2/58	0.025	2.26	59.703	57.94	5% AEP, 10 min burst, Storm 6
P Pit 1/61	0.022	2.02	56.309	56.277	5% AEP, 10 min burst, Storm 7
P Pit 3/62	0.066	2.01	56.017	55.777	5% AEP, 10 min burst, Storm 6
P Pit 1/62	0.032	1.64	59.681	59.658	5% AEP, 10 min burst, Storm 2
P Pit 2/62	0.038	2.49	59.571	56.329	5% AEP, 10 min burst, Storm 6
P Pit 1/72	0.022	0.32	55.793	55.791	5% AEP, 5 min burst, Storm 1
P Pit 1/73	0.234	2.12	55.989	55.927	5% AEP, 10 min burst, Storm 7
P Pit 1/59	0.254	1.15	55.804	55.773	5% AEP, 10 min burst, Storm 7
P Pit 1/76	0.039	0.55	55.47	55.454	5% AEP, 10 min burst, Storm 7
P Pit 1/37	0.097	0.61	55.416	55.408	5% AEP, 10 min burst, Storm 7

CHANNEL DETAILS

Name	Max Q (cu.m/s)	Max V (m/s)	Due to Storm
Sw3	0.081	0.59	5% AEP, 10 min burst, Storm 7
Sw4	0.16	1.28	5% AEP, 10 min burst, Storm 7
Sw8	0.039	0.5	5% AEP, 10 min burst, Storm 7

OVERFLOW ROUTE DETAILS

Name	Max Q U/S	Max Q D/S	Safe Q	Max D	Max DxV	Max Width	Max V	Due to Storm
F Pit 1/3	0.004	0.004	0.257	0.039	0.02	0.32	0.68	5% AEP, 10 min burst, Storm 7
F Pit 5/38	0	0	0.238	0	0	0	0	
F Pit 7/55	0	0	0.341	0	0	0	0	
F Pit 1/20	0	0	0.019	0	0	0	0	
F Pit 5/55	0	0	0.03	0	0	0	0	
F Pit 6/55	0	0	0.208	0	0	0	0	
F Pit 1/36	0	0	0.447	0	0	0	0	
F Pit 4/38	0	0	0.42	0	0	0	0	
F Pit 1/38	0	0	0.333	0	0	0	0	
F Pit 2/38	0	0	0.326	0	0	0	0	
F Pit 3/38	0	0	0.414	0	0	0	0	

F Pit 1/47	0	0	0.441	0	0	0	0
F Pit 1/49	0.004	0.004	0.3	0.045	0.03	0.37	0.7 5% AEP, 5 min burst, Storm 1
F Pit 3/55	0.003	0.003	0.238	0.043	0.02	0.36	0.55 5% AEP, 10 min burst, Storm 8
F Pit 4/55	0.004	0.004	0.206	0.043	0.03	0.36	0.65 5% AEP, 5 min burst, Storm 1
F Pt 1/50	0	0	0.258	0	0	0	0
F Pit 1/55	0	0	0.255	0	0	0	0
F Pit 2/55	0.005	0.005	0.255	0.044	0.03	0.37	0.76 5% AEP, 10 min burst, Storm 6
F Pit 1/56	0.01	0.01	0.449	0.048	0.06	0.4	1.4 5% AEP, 10 min burst, Storm 7
F Pit 3/58	0	0	0.495	0	0	0	0
F Pit 4/58	0	0	0.304	0	0	0	0
F Pit 5/58	0	0	0.551	0	0	0	0
F Pit 1/57	0.002	0.002	0.411	0.043	0.02	0.36	0.75 5% AEP, 10 min burst, Storm 7
F Pit 1/58	0.006	0.006	0.436	0.048	0.04	0.4	1.03 5% AEP, 10 min burst, Storm 7
F Pit 2/58	0	0	0.482	0	0	0	0
F Pit 1/61	0.007	0.007	0.328	0.043	0.04	0.36	0.88 5% AEP, 10 min burst, Storm 7
F Pit 3/62	0	0	0.318	0	0	0	0
F Pit 1/62	0.004	0.004	0.486	0.042	0.03	0.35	1.15 5% AEP, 10 min burst, Storm 3
F Pit 2/62	0	0	0.385	0	0	0	0
F Pit 1/72	0.008	0.008	0.263	0.054	0.04	0.46	0.73 5% AEP, 5 min burst, Storm 1
F Pit 1/73	0	0	0.449	0	0	0	0
F Pit 1/59	0	0	0.03	0	0	0	0
OF Sw3	0.08	0.08	0.226	0.171	0.08	1.53	0.47 5% AEP, 10 min burst, Storm 7
OF Sw4	0.153	0.153	0.535	0.171	0.16	1.53	1.1 5% AEP, 10 min burst, Storm 7
F Sw8	0.039	0.039	0.206	0.095	0.05	1.07	0.74 5% AEP, 10 min burst, Storm 1
F Pit 1/76	0	0	0.439	0	0	0	0
F Pit 1/37	0	0	0.039	0	0	0	0

DETENTION BASIN DETAILS

Name	Max WL	MaxVol	Max Q Total	Max Q Low Level	Max Q High Level
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Run Log for 5936000 run at 12:06:53 on 7/3/2018

No water upwelling from any pit.

Freeboard was less than 0.15m at Pit 1/73

Flows were safe in all overflow routes.

Proposed DRAINS Model 5 - 10% AEP Storm Event Results

DRAINS results prepared from Version 2018.01

PIT / NODE DETAILS		Version 8				
Name	Max HGL	Max Pond HGL	Max Surface Flow (cu.m/s)	Max Pond Volume (cu.m)	Min Freeboard (m)	Overflow (cu.m/s) Constraint
Pit 1/3	55.62		0.019		0.78	0.002 Inlet Capacity
Pit 5/38	55.6		0.007		0.75	0 None
Pit 7/55	55.11	55.93	0.015	0.1	0.78	0 Inlet Capacity
Pit 8/55	54.65		0			
Pit 1/20	55.56	56.4	0.014	0	0.81	0 Inlet Capacity
Pit 5/55	55.55	56.4	0.025	0.1	0.81	0 Inlet Capacity
Pit 6/55	55.33		0.008		1.05	0 None
Pit 1/36	57.44		0.008		0.82	0 None
Pit 4/38	57.42		0.009		0.84	0 None
Pit 1/38	60.14		0.004		0.85	0 None
Pit 2/38	60.06		0.004		0.95	0 None
Pit 3/38	59.12		0.006		0.86	0 None
Pit 1/47	59.17		0.005		0.83	0 None
Pit 1/49	56.94		0.02		0.76	0.002 Inlet Capacity
Pit 3/55	56.92		0.036		0.78	0.003 Inlet Capacity
Pit 4/55	56.18		0.034		0.78	0.003 Inlet Capacity
Pit 1/50	56.19		0.011		0.77	0 None
Pit 1/55	57.78		0.01		0.81	0 None
Pit 2/55	57.73		0.021		0.86	0.003 Inlet Capacity
Pit 1/56	58.15		0.057		0.7	0.007 Inlet Capacity
Pit 3/58	57.9		0.004		0.94	0 None
Pit 4/58	56.05		0.004		0.98	0 None
Pit 5/58	55.55	56.16	0.018	0.1	0.57	0 Inlet Capacity
Pit 6/58	55.18		0			
Pit 1/57	56.21		0.016		0.81	0 Inlet Capacity
Pit 1/58	59.98		0.023		0.79	0.003 Inlet Capacity
Pit 2/58	59.76		0.004		1.04	0 None
Pit 1/61	56.36		0.024		0.81	0.004 Inlet Capacity
Pit 3/62	56.08		0.006		1.06	0 None
Pit 1/62	59.73		0.031		0.78	0.003 Inlet Capacity
Pit 2/62	59.64		0.005		0.84	0 None
Pit 1/72	55.6		0.026		0.78	0.005 Inlet Capacity
Pit 1/73	55.99	56.43	0.199	0.6	0.32	0 Inlet Capacity
Pit 1/59	55.66	56.17	0.029	0.1	0.47	0 Inlet Capacity
N1	56.62		0.069			
N2	56.44		0.069			
N3	59.04		0.136			
N4	56.47		0.135			
N5	57		0.033			
N6	56.85		0.033			
Pit 1/76	55.17	56.81	0.033	0.1	1.59	0 Inlet Capacity
Pit 1/37	55.14	55.92	0.051	0	0.76	0 Inlet Capacity

SUB-CATCHMENT DETAILS

Name	Max Flow Q (cu.m/s)	Paved Max Q (cu.m/s)	Grassed Max Q (cu.m/s)	Paved Tc (min)	Grassed Tc (min)	Supp. Tc (min)	Due to Storm
C Pit 1/3	0.017	0.014	0.006	1.46	17.98		0 10% AEP, 10 min burst, Storm 2
C Pit 5/38	0.006	0.005	0.001	1.54	10.11		0 10% AEP, 5 min burst, Storm 1
C Pit 7/55	0.015	0.013	0.002	2.38	15.66		0 10% AEP, 5 min burst, Storm 1
C Pit 1/20	0.013	0.012	0.001	2.69	15.85		0 10% AEP, 5 min burst, Storm 1
C Pit 5/55	0.021	0.019	0.003	2.41	19.51		0 10% AEP, 5 min burst, Storm 1
C Pit 6/55	0.008	0.007	0.001	2.41	6.03		0 10% AEP, 5 min burst, Storm 1
C Pit 1/36	0.007	0.005	0.002	1.44	9.5		0 10% AEP, 10 min burst, Storm 6
C Pit 4/38	0.008	0.006	0.003	1.61	10.56		0 10% AEP, 10 min burst, Storm 6
C Pit 1/38	0.004	0.003	0.001	1.45	9.53		0 10% AEP, 10 min burst, Storm 6
C Pit 2/38	0.004	0.003	0.001	1.45	9.53		0 10% AEP, 10 min burst, Storm 6
C Pit 3/38	0.005	0.005	0.001	1.67	10.98		0 10% AEP, 5 min burst, Storm 1
C Pit 1/47	0.005	0.004	0.001	1.57	10.3		0 10% AEP, 5 min burst, Storm 1
C Pit 1/49	0.019	0.019	0	2.35	0		0 10% AEP, 5 min burst, Storm 1
C Pit 3/55	0.031	0.02	0.01	2.56	19.78		0 10% AEP, 10 min burst, Storm 6
C Pit 4/55	0.03	0.025	0.005	2.41	23.46		0 10% AEP, 5 min burst, Storm 1
C Pit 1/50	0.008	0.008	0	2.41	0		0 10% AEP, 5 min burst, Storm 1
C Pit 1/55	0.01	0.01	0	1.8	0		0 10% AEP, 5 min burst, Storm 1
C Pit 2/55	0.02	0.014	0.006	1.96	13.14		0 10% AEP, 10 min burst, Storm 6
C Pit 1/56	0.049	0.04	0.017	1.56	23.58		0 10% AEP, 10 min burst, Storm 2
C Pit 3/58	0.004	0.004	0	1.21	0		0 10% AEP, 5 min burst, Storm 1
C Pit 4/58	0.004	0.004	0	1.07	0		0 10% AEP, 5 min burst, Storm 1
C Pit 5/58	0.018	0.01	0.008	1.79	1.73		0 10% AEP, 5 min burst, Storm 1
C Pit 1/57	0.007	0.004	0.002	1.43	10.74		0 10% AEP, 10 min burst, Storm 7
C Pit 1/58	0.021	0.013	0.008	1.42	15.71		0 10% AEP, 10 min burst, Storm 7
C Pit 2/58	0.004	0.004	0	1.21	0		0 10% AEP, 5 min burst, Storm 1
C Pit 1/61	0.019	0.012	0.007	1.78	18.98		0 10% AEP, 10 min burst, Storm 7
C Pit 3/62	0.005	0.005	0.001	1.17	4.44		0 10% AEP, 5 min burst, Storm 1
C Pit 1/62	0.029	0.019	0.009	1.66	24.65		0 10% AEP, 10 min burst, Storm 6
C Pit 2/62	0.005	0.004	0.001	1.36	8.92		0 10% AEP, 5 min burst, Storm 1
C Pit 1/72	0.025	0.022	0.003	2.12	31.76		0 10% AEP, 5 min burst, Storm 1
C Pit 1/59	0.022	0.019	0.003	1.67	17.62		0 10% AEP, 5 min burst, Storm 1
C Sw3	0.064	0.037	0.027	3.17	20.83		0 10% AEP, 10 min burst, Storm 7
C Sw4	0.125	0.079	0.046	3.82	25.1		0 10% AEP, 10 min burst, Storm 7
C Sw8	0.031	0.023	0.008	6.29	41.33		0 10% AEP, 10 min burst, Storm 7
C Pit 1/37	0.041	0.037	0.005	2.38	37.95		0 10% AEP, 5 min burst, Storm 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
P Pit 1/3	0.015	0.55	55.599	55.597	10% AEP, 10 min burst, Storm 2
P Pit 5/38	0.054	2.17	55.491	55.121	10% AEP, 10 min burst, Storm 6
P Pit 7/55	0.291	2.05	54.783	54.649	10% AEP, 10 min burst, Storm 7
P Pit 1/20	0.012	0.23	55.568	55.568	10% AEP, 5 min burst, Storm 1
P Pit 5/55	0.135	1.77	55.431	55.245	10% AEP, 10 min burst, Storm 2

P Pit 6/55	0.157	1.01	55.242	55.111	10% AEP, 10 min burst, Storm 7
P Pit 1/36	0.007	0.63	57.425	57.424	10% AEP, 10 min burst, Storm 6
P Pit 4/38	0.033	2.17	57.345	55.595	10% AEP, 10 min burst, Storm 6
P Pit 1/38	0.004	1.98	60.113	60.07	10% AEP, 10 min burst, Storm 6
P Pit 2/38	0.008	1.87	60.03	59.125	10% AEP, 10 min burst, Storm 2
P Pit 3/38	0.018	1.81	59.067	57.424	10% AEP, 10 min burst, Storm 6
P Pit 1/47	0.005	0.72	59.151	59.123	10% AEP, 5 min burst, Storm 1
P Pit 1/49	0.017	0.6	56.929	56.926	10% AEP, 5 min burst, Storm 1
P Pit 3/55	0.069	2.11	56.819	56.169	10% AEP, 10 min burst, Storm 10
P Pit 4/55	0.106	3.68	56.037	55.579	10% AEP, 10 min burst, Storm 5
P Pit 1/50	0.01	0.35	56.183	56.184	10% AEP, 5 min burst, Storm 1
P Pit 1/55	0.01	0.88	57.755	57.73	10% AEP, 5 min burst, Storm 1
P Pit 2/55	0.027	2.27	57.663	56.92	10% AEP, 5 min burst, Storm 1
P Pit 1/56	0.045	1.97	58.063	58.034	10% AEP, 10 min burst, Storm 2
P Pit 3/58	0.07	2.89	57.766	56.238	10% AEP, 10 min burst, Storm 6
P Pit 4/58	0.085	2.01	55.948	55.555	10% AEP, 10 min burst, Storm 6
P Pit 5/58	0.347	1.8	55.342	55.181	10% AEP, 10 min burst, Storm 7
P Pit 1/57	0.013	2.02	56.161	56.127	10% AEP, 10 min burst, Storm 2
P Pit 1/58	0.018	2.02	59.919	59.887	10% AEP, 10 min burst, Storm 7
P Pit 2/58	0.021	2.15	59.698	57.899	10% AEP, 10 min burst, Storm 6
P Pit 1/61	0.018	2.01	56.301	56.269	10% AEP, 10 min burst, Storm 7
P Pit 3/62	0.054	1.89	56.006	55.555	10% AEP, 10 min burst, Storm 6
P Pit 1/62	0.026	1.72	59.665	59.64	10% AEP, 10 min burst, Storm 6
P Pit 2/62	0.031	2.34	59.563	56.321	10% AEP, 10 min burst, Storm 6
P Pit 1/72	0.02	1.79	55.546	55.523	10% AEP, 5 min burst, Storm 1
P Pit 1/73	0.182	1.64	55.709	55.66	10% AEP, 10 min burst, Storm 7
P Pit 1/59	0.206	0.93	55.571	55.548	10% AEP, 10 min burst, Storm 7
P Pit 1/76	0.03	0.42	55.183	55.173	10% AEP, 10 min burst, Storm 5
P Pit 1/37	0.073	0.46	55.126	55.121	10% AEP, 10 min burst, Storm 6

CHANNEL DETAILS

Name	Max Q (cu.m/s)	Max V (m/s)	Due to Storm
Sw3	0.063	0.6	10% AEP, 10 min burst, Storm 7
Sw4	0.124	1.23	10% AEP, 10 min burst, Storm 7
Sw8	0.031	0.48	10% AEP, 10 min burst, Storm 7

OVERFLOW ROUTE DETAILS

Name	Max Q U/S	Max Q D/S	Safe Q	Max D	Max DxV	Max Width	Max V	Due to Storm
F Pit 1/3	0.002	0.002	0.257	0.031	0.02	0.26	0.59	10% AEP, 10 min burst, Storm 7
F Pit 5/38	0	0	0.238	0	0	0	0	
F Pit 7/55	0	0	0.341	0	0	0	0	
F Pit 1/20	0	0	0.019	0	0	0	0	
F Pit 5/55	0	0	0.03	0	0	0	0	
F Pit 6/55	0	0	0.208	0	0	0	0	
F Pit 1/36	0	0	0.447	0	0	0	0	
F Pit 4/38	0	0	0.42	0	0	0	0	
F Pit 1/38	0	0	0.333	0	0	0	0	
F Pit 2/38	0	0	0.326	0	0	0	0	
F Pit 3/38	0	0	0.414	0	0	0	0	

F Pit 1/47	0	0	0.441	0	0	0	0
F Pit 1/49	0.002	0.002	0.3	0.039	0.02	0.32	0.59 10% AEP, 5 min burst, Storm 1
F Pit 3/55	0.003	0.003	0.238	0.038	0.02	0.31	0.54 10% AEP, 10 min burst, Storm 7
F Pit 4/55	0.003	0.003	0.206	0.038	0.02	0.31	0.55 10% AEP, 10 min burst, Storm 6
F Pt 1/50	0	0	0.258	0	0	0	0
F Pit 1/55	0	0	0.255	0	0	0	0
F Pit 2/55	0.003	0.003	0.255	0.038	0.02	0.32	0.56 10% AEP, 10 min burst, Storm 6
F Pit 1/56	0.007	0.007	0.449	0.044	0.05	0.36	1.24 10% AEP, 10 min burst, Storm 2
F Pit 3/58	0	0	0.495	0	0	0	0
F Pit 4/58	0	0	0.304	0	0	0	0
F Pit 5/58	0	0	0.551	0	0	0	0
F Pit 1/57	0	0	0.411	0	0	0	0
F Pit 1/58	0.003	0.003	0.436	0.043	0.03	0.36	1 10% AEP, 10 min burst, Storm 7
F Pit 2/58	0	0	0.482	0	0	0	0
F Pit 1/61	0.004	0.004	0.328	0.034	0.03	0.28	0.74 10% AEP, 10 min burst, Storm 7
F Pit 3/62	0	0	0.318	0	0	0	0
F Pit 1/62	0.003	0.003	0.486	0.029	0.03	0.24	1.49 10% AEP, 5 min burst, Storm 1
F Pit 2/62	0	0	0.385	0	0	0	0
F Pit 1/72	0.005	0.005	0.263	0.048	0.03	0.4	0.66 10% AEP, 5 min burst, Storm 1
F Pit 1/73	0	0	0.449	0	0	0	0
F Pit 1/59	0	0	0.03	0	0	0	0
OF Sw3	0.062	0.062	0.226	0.123	0.07	1.24	0.61 10% AEP, 10 min burst, Storm 7
OF Sw4	0.122	0.122	0.535	0.138	0.14	1.33	1.19 10% AEP, 10 min burst, Storm 7
F Sw8	0.032	0.032	0.206	0.087	0.05	1.02	0.7 10% AEP, 10 min burst, Storm 8
F Pit 1/76	0	0	0.439	0	0	0	0
F Pit 1/37	0	0	0.039	0	0	0	0

DETENTION BASIN DETAILS

Name	Max WL	MaxVol	Max Q Total	Max Q Low Level	Max Q High Level
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Run Log for 5936000 run at 12:08:26 on 7/3/2018

No water upwelling from any pit. Freeboard was adequate at all pits.

Flows were safe in all overflow routes.

Proposed DRAINS Model 5 - 20% AEP Storm Event Results

DRAINS results prepared from Version 2018.01

PIT / NODE DETAILS		Version 8				
Name	Max HGL	Max Pond HGL	Max Surface Flow (cu.m/s)	Max Pond Volume (cu.m)	Min Freeboard (m)	Overflow (cu.m/s) Constraint
Pit 1/3	55.59		0.016		0.81	0 Inlet Capacity
Pit 5/38	55.56		0.006		0.78	0 None
Pit 7/55	54.84	55.92	0.014	0	1.05	0 Inlet Capacity
Pit 8/55	54.57		0			
Pit 1/20	55.51	56.39	0.012	0	0.86	0 Inlet Capacity
Pit 5/55	55.5	56.39	0.024	0	0.87	0 Inlet Capacity
Pit 6/55	55.13		0.007		1.25	0 None
Pit 1/36	57.43		0.007		0.83	0 None
Pit 4/38	57.4		0.008		0.86	0 None
Pit 1/38	60.13		0.004		0.86	0 None
Pit 2/38	60.06		0.004		0.96	0 None
Pit 3/38	59.11		0.005		0.87	0 None
Pit 1/47	59.16		0.005		0.84	0 None
Pit 1/49	56.92		0.018		0.78	0.001 Inlet Capacity
Pit 3/55	56.89		0.032		0.82	0.001 Inlet Capacity
Pit 4/55	56.15		0.032		0.81	0.001 Inlet Capacity
Pit 1/50	56.15		0.01		0.8	0 None
Pit 1/55	57.78		0.009		0.82	0 None
Pit 2/55	57.72		0.019		0.87	0.001 Inlet Capacity
Pit 1/56	58.12		0.049		0.74	0.004 Inlet Capacity
Pit 3/58	57.87		0.004		0.98	0 None
Pit 4/58	56.01		0.004		1.01	0 None
Pit 5/58	55.34	56.15	0.017	0.1	0.79	0 Inlet Capacity
Pit 6/58	55.12		0			
Pit 1/57	56.19		0.012		0.83	0 None
Pit 1/58	59.96		0.02		0.8	0.001 Inlet Capacity
Pit 2/58	59.75		0.004		1.05	0 None
Pit 1/61	56.34		0.021		0.83	0.001 Inlet Capacity
Pit 3/62	56.06		0.005		1.09	0 None
Pit 1/62	59.71		0.028		0.8	0.001 Inlet Capacity
Pit 2/62	59.62		0.005		0.86	0 None
Pit 1/72	55.59		0.024		0.79	0.002 Inlet Capacity
Pit 1/73	55.58	56.4	0.17	0.5	0.72	0 Inlet Capacity
Pit 1/59	55.4	56.16	0.024	0	0.73	0 Inlet Capacity
N1	56.59		0.059			
N2	56.42		0.058			
N3	59.02		0.119			
N4	56.46		0.118			
N5	56.98		0.028			
N6	56.84		0.027			
Pit 1/76	54.91	56.8	0.029	0.1	1.85	0 Inlet Capacity
Pit 1/37	54.88	55.92	0.046	0	1.02	0 Inlet Capacity

SUB-CATCHMENT DETAILS

Name	Max Flow Q (cu.m/s)	Paved Max Q (cu.m/s)	Grassed Max Q (cu.m/s)	Paved Tc (min)	Grassed Tc (min)	Supp. Tc (min)	Due to Storm
C Pit 1/3	0.013	0.011	0.002	1.45	17.77		0 20% AEP, 5 min burst, Storm 1
C Pit 5/38	0.005	0.005	0.001	1.66	10.88		0 20% AEP, 5 min burst, Storm 1
C Pit 7/55	0.012	0.011	0.001	2.56	16.85		0 20% AEP, 5 min burst, Storm 1
C Pit 1/20	0.011	0.01	0	2.89	17.06		0 20% AEP, 5 min burst, Storm 1
C Pit 5/55	0.017	0.015	0.001	2.59	21		0 20% AEP, 5 min burst, Storm 1
C Pit 6/55	0.006	0.006	0	2.59	6.49		0 20% AEP, 5 min burst, Storm 1
C Pit 1/36	0.006	0.005	0.001	1.43	9.39		0 20% AEP, 5 min burst, Storm 1
C Pit 4/38	0.006	0.006	0.001	1.59	10.44		0 20% AEP, 5 min burst, Storm 1
C Pit 1/38	0.003	0.003	0	1.43	9.42		0 20% AEP, 5 min burst, Storm 1
C Pit 2/38	0.003	0.003	0	1.43	9.42		0 20% AEP, 5 min burst, Storm 1
C Pit 3/38	0.004	0.004	0	1.8	11.82		0 20% AEP, 5 min burst, Storm 1
C Pit 1/47	0.004	0.004	0	1.69	11.09		0 20% AEP, 5 min burst, Storm 1
C Pit 1/49	0.016	0.016	0	2.53	0		0 20% AEP, 5 min burst, Storm 1
C Pit 3/55	0.023	0.021	0.003	2.53	19.55		0 20% AEP, 5 min burst, Storm 1
C Pit 4/55	0.023	0.021	0.002	2.59	25.25		0 20% AEP, 5 min burst, Storm 1
C Pit 1/50	0.007	0.007	0	2.59	0		0 20% AEP, 5 min burst, Storm 1
C Pit 1/55	0.008	0.008	0	1.94	0		0 20% AEP, 5 min burst, Storm 1
C Pit 2/55	0.016	0.014	0.002	1.94	12.99		0 20% AEP, 5 min burst, Storm 1
C Pit 1/56	0.037	0.032	0.005	1.54	23.3		0 20% AEP, 5 min burst, Storm 1
C Pit 3/58	0.004	0.004	0	1.3	0		0 20% AEP, 5 min burst, Storm 1
C Pit 4/58	0.003	0.003	0	1.15	0		0 20% AEP, 5 min burst, Storm 1
C Pit 5/58	0.014	0.008	0.006	1.93	1.87		0 20% AEP, 5 min burst, Storm 1
C Pit 1/57	0.005	0.004	0.001	1.54	11.56		0 20% AEP, 10 min burst, Storm 8
C Pit 1/58	0.016	0.011	0.005	1.53	16.92		0 20% AEP, 10 min burst, Storm 8
C Pit 2/58	0.003	0.003	0	1.3	0		0 20% AEP, 5 min burst, Storm 1
C Pit 1/61	0.015	0.013	0.002	1.76	18.76		0 20% AEP, 5 min burst, Storm 1
C Pit 3/62	0.004	0.004	0	1.26	4.78		0 20% AEP, 5 min burst, Storm 1
C Pit 1/62	0.022	0.019	0.003	1.64	24.36		0 20% AEP, 5 min burst, Storm 1
C Pit 2/62	0.004	0.004	0	1.46	9.61		0 20% AEP, 5 min burst, Storm 1
C Pit 1/72	0.02	0.018	0.002	2.28	34.18		0 20% AEP, 5 min burst, Storm 1
C Pit 1/59	0.018	0.016	0.002	1.8	18.96		0 20% AEP, 5 min burst, Storm 1
C Sw3	0.048	0.031	0.016	3.41	22.42		0 20% AEP, 10 min burst, Storm 8
C Sw4	0.094	0.066	0.029	4.11	27.02		0 20% AEP, 10 min burst, Storm 8
C Sw8	0.024	0.019	0.005	6.77	44.5		0 20% AEP, 10 min burst, Storm 8
C Pit 1/37	0.033	0.03	0.003	2.56	40.85		0 20% AEP, 5 min burst, Storm 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
P Pit 1/3	0.012	0.65	55.568	55.564	20% AEP, 5 min burst, Storm 1
P Pit 5/38	0.042	1.87	55.483	54.845	20% AEP, 5 min burst, Storm 1
P Pit 7/55	0.222	2.14	54.661	54.571	20% AEP, 10 min burst, Storm 8
P Pit 1/20	0.01	0.44	55.485	55.486	20% AEP, 5 min burst, Storm 1
P Pit 5/55	0.106	1.73	55.398	55.134	20% AEP, 10 min burst, Storm 8

P Pit 6/55	0.123	1.73	55.025	54.845	20% AEP, 10 min burst, Storm 8
P Pit 1/36	0.006	0.74	57.409	57.403	20% AEP, 5 min burst, Storm 1
P Pit 4/38	0.026	2.03	57.336	55.564	20% AEP, 5 min burst, Storm 1
P Pit 1/38	0.003	1.56	60.113	60.065	20% AEP, 5 min burst, Storm 1
P Pit 2/38	0.006	1.8	60.027	59.112	20% AEP, 10 min burst, Storm 7
P Pit 3/38	0.014	1.68	59.061	57.413	20% AEP, 5 min burst, Storm 1
P Pit 1/47	0.004	0.67	59.146	59.113	20% AEP, 5 min burst, Storm 1
P Pit 1/49	0.015	0.77	56.898	56.893	20% AEP, 5 min burst, Storm 1
P Pit 3/55	0.06	2.06	56.809	56.152	20% AEP, 5 min burst, Storm 1
P Pit 4/55	0.084	3.28	56.028	55.553	20% AEP, 10 min burst, Storm 8
P Pit 1/50	0.007	0.37	56.151	56.152	20% AEP, 5 min burst, Storm 1
P Pit 1/55	0.008	0.83	57.75	57.718	20% AEP, 5 min burst, Storm 1
P Pit 2/55	0.021	1.92	57.659	56.886	20% AEP, 5 min burst, Storm 1
P Pit 1/56	0.034	2	58.043	58.014	20% AEP, 10 min burst, Storm 8
P Pit 3/58	0.054	2.7	57.752	56.223	20% AEP, 5 min burst, Storm 1
P Pit 4/58	0.065	1.87	55.93	55.336	20% AEP, 5 min burst, Storm 1
P Pit 5/58	0.261	2.61	55.164	55.117	20% AEP, 10 min burst, Storm 8
P Pit 1/57	0.009	2.02	56.151	56.114	20% AEP, 10 min burst, Storm 8
P Pit 1/58	0.014	2.02	59.912	59.878	20% AEP, 10 min burst, Storm 8
P Pit 2/58	0.017	2.03	59.692	57.866	20% AEP, 5 min burst, Storm 1
P Pit 1/61	0.014	2.02	56.293	56.259	20% AEP, 10 min burst, Storm 8
P Pit 3/62	0.042	1.76	55.993	55.336	20% AEP, 10 min burst, Storm 8
P Pit 1/62	0.021	1.82	59.65	59.623	20% AEP, 5 min burst, Storm 1
P Pit 2/62	0.025	2.2	59.555	56.313	20% AEP, 5 min burst, Storm 1
P Pit 1/72	0.017	1.78	55.54	55.516	20% AEP, 5 min burst, Storm 1
P Pit 1/73	0.135	1.44	55.49	55.403	20% AEP, 10 min burst, Storm 8
P Pit 1/59	0.152	0.96	55.328	55.336	20% AEP, 10 min burst, Storm 8
P Pit 1/76	0.023	0.64	54.883	54.878	20% AEP, 10 min burst, Storm 8
P Pit 1/37	0.054	0.62	54.849	54.845	20% AEP, 10 min burst, Storm 8

CHANNEL DETAILS

Name	Max Q (cu.m/s)	Max V (m/s)	Due to Storm
Sw3	0.047	0.58	20% AEP, 10 min burst, Storm 8
Sw4	0.093	1.16	20% AEP, 10 min burst, Storm 8
Sw8	0.024	0.45	20% AEP, 10 min burst, Storm 8

OVERFLOW ROUTE DETAILS

Name	Max Q U/S	Max Q D/S	Safe Q	Max D	Max DxV	Max Width	Max V	Due to Storm
F Pit 1/3	0	0	0.257	0	0	0	0	0
F Pit 5/38	0	0	0.238	0	0	0	0	0
F Pit 7/55	0	0	0.341	0	0	0	0	0
F Pit 1/20	0	0	0.019	0	0	0	0	0
F Pit 5/55	0	0	0.03	0	0	0	0	0
F Pit 6/55	0	0	0.208	0	0	0	0	0
F Pit 1/36	0	0	0.447	0	0	0	0	0
F Pit 4/38	0	0	0.42	0	0	0	0	0
F Pit 1/38	0	0	0.333	0	0	0	0	0
F Pit 2/38	0	0	0.326	0	0	0	0	0
F Pit 3/38	0	0	0.414	0	0	0	0	0

F Pit 1/47	0	0	0.441	0	0	0	0
F Pit 1/49	0.001	0.001	0.3	0.025	0	0.21	0 20% AEP, 5 min burst, Storm 1
F Pit 3/55	0.001	0.001	0.238	0.028	0.01	0.23	0.5 20% AEP, 10 min burst, Storm 8
F Pit 4/55	0.001	0.001	0.206	0.028	0.01	0.23	0.55 20% AEP, 10 min burst, Storm 8
F Pt 1/50	0	0	0.258	0	0	0	0
F Pit 1/55	0	0	0.255	0	0	0	0
F Pit 2/55	0.001	0.001	0.255	0.026	0	0.21	0 20% AEP, 10 min burst, Storm 8
F Pit 1/56	0.004	0.004	0.449	0.037	0.03	0.31	1.07 20% AEP, 10 min burst, Storm 8
F Pit 3/58	0	0	0.495	0	0	0	0
F Pit 4/58	0	0	0.304	0	0	0	0
F Pit 5/58	0	0	0.551	0	0	0	0
F Pit 1/57	0	0	0.411	0	0	0	0
F Pit 1/58	0.001	0.001	0.436	0.037	0.02	0.31	0.82 20% AEP, 10 min burst, Storm 8
F Pit 2/58	0	0	0.482	0	0	0	0
F Pit 1/61	0.001	0.001	0.328	0.027	0.01	0.23	0.65 20% AEP, 10 min burst, Storm 8
F Pit 3/62	0	0	0.318	0	0	0	0
F Pit 1/62	0.001	0.001	0.486	0.021	0.02	0.18	0.9 20% AEP, 10 min burst, Storm 4
F Pit 2/62	0	0	0.385	0	0	0	0
F Pit 1/72	0.002	0.002	0.263	0.036	0.02	0.3	0.55 20% AEP, 5 min burst, Storm 1
F Pit 1/73	0	0	0.449	0	0	0	0
F Pit 1/59	0	0	0.03	0	0	0	0
OF Sw3	0.045	0.045	0.226	0.103	0.06	1.12	0.59 20% AEP, 10 min burst, Storm 8
OF Sw4	0.091	0.091	0.535	0.118	0.11	1.21	1.08 20% AEP, 10 min burst, Storm 8
F Sw8	0.025	0.025	0.206	0.073	0.04	0.94	0.66 20% AEP, 10 min burst, Storm 1
F Pit 1/76	0	0	0.439	0	0	0	0
F Pit 1/37	0	0	0.039	0	0	0	0

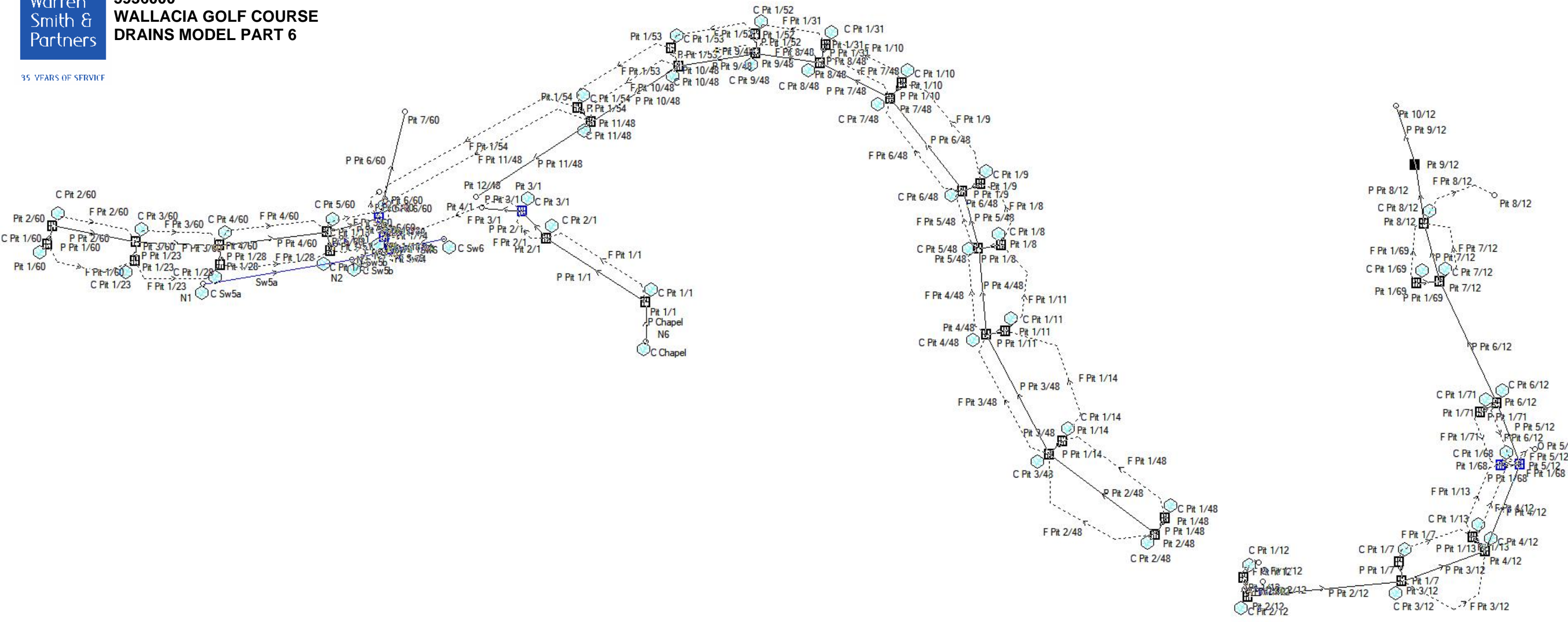
DETENTION BASIN DETAILS

Name	Max WL	MaxVol	Max Q Total	Max Q Low Level	Max Q High Level
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Run Log for 5936000 run at 12:10:31 on 7/3/2018

No water upwelling from any pit. Freeboard was adequate at all pits.

Flows were safe in all overflow routes.



Proposed DRAINS Model 6 - Data Information

PIT / NODE DETAILS		Version 13														
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 is	
O Pit 10/17	Node					40.186		0		281969.1	6250496	891	No			
O Pit 11/17	Node					39.195		0		281978.4	6250532	892	No			
Pit 1/23	OnGrade	WSP Stand	2 x 600x900		5.9	49.514		0	0.2	282701.1	6250290	No	1110	1 x Ku	No	New
Pit 3/60	OnGrade	WSP Stand	600 x 900 PIT		1.9	49.56		0	0.2	282701.5	6250296	No	1115	1 x Ku	No	New
Pit 4/60	OnGrade	WSP Stand	600 x 900 PIT		1.2	47.766		0	0.2	282729.9	6250295	No	1116	1 x Ku	No	New
Pit 5/60	OnGrade	WSP Stand	600 x 900 PIT		0.2	45.72		0	0.2	282766.3	6250300	No	1117	1 x Ku	No	New
Pit 6/60	Sag	WSP Stand	2 x 600x900	0.5	2	45.427	0.15	0	0.5	282783.9	6250304	No	1118	1 x Ku	No	New
Pit 7/60	Node					44.508		0		282796.8	6250324	1119	No			
Pit 1/28	OnGrade	WSP Stand	600 x 900 PIT		5.9	47.768		0	0.2	282730.1	6250289	No	1111	1 x Ku	No	New
Pit 1/51	OnGrade	WSP Stand	600 x 900 PIT		5.9	45.713		0	0.2	282767.4	6250293	No	1112	1 x Ku	No	New
Pit 1/60	OnGrade	WSP Stand	2 x 600x900		5.9	50.907		0	0.2	282671.4	6250295	No	1113	1 x Ku	No	New
Pit 2/60	OnGrade	WSP Stand	600 x 900 PIT		0.3	50.939		0	0.2	282673.1	6250302	No	1114	1 x Ku	No	New
O Pit 6/60	Node					45.427		0		282784	6250313	1123	No			
Pit 1/9	OnGrade	WSP Stand	600 x 900 PIT		5.9	56.544		0	0.2	282988	6250316	No	1128	1 x Ku	No	New
Pit 6/48	OnGrade	WSP Stand	600 x 900 PIT		0.9	56.528		0	0.2	282981.9	6250314	No	1138	1 x Ku	No	New
Pit 7/48	OnGrade	WSP Stand	600 x 900 PIT		1.6	55.14		0	0.2	282957.4	6250345	No	1139	1 x Ku	No	New
Pit 8/48	OnGrade	WSP Stand	600 x 900 PIT		1.7	54.215		0	0.2	282933.6	6250357	No	1140	1 x Ku	No	New
Pit 9/48	OnGrade	WSP Stand	600 x 900 PIT		1.1	53.476		0	0.2	282911.8	6250360	No	1141	1 x Ku	No	New
Pit 10/48	OnGrade	WSP Stand	600 x 900 PIT		1.1	52.55		0	0.2	282885.5	6250356	No	1142	1 x Ku	No	New
Pit 11/48	OnGrade	WSP Stand	600 x 900 PIT		0.8	50.386		0	0.2	282855.8	6250337	No	1143	1 x Ku	No	New
Pit 12/48	Node					46.448		0		282816.9	6250312	1144	No			
Pit 1/10	OnGrade	WSP Stand	600 x 900 PIT		5.9	55.164		0	0.2	282961.3	6250350	No	1129	1 x Ku	No	New
Pit 1/11	OnGrade	WSP Stand	600 x 900 PIT		5.9	58.191		0	0.2	282996.4	6250266	No	1130	1 x Ku	No	New
Pit 4/48	OnGrade	WSP Stand	600 x 900 PIT		1.6	58.207		0	0.2	282990	6250265	No	1136	1 x Ku	No	New
Pit 5/48	OnGrade	WSP Stand	600 x 900 PIT		0.8	57.241		0	0.2	282987.3	6250294	No	1137	1 x Ku	No	New
Pit 1/14	OnGrade	WSP Stand	600 x 900 PIT		5.9	59.667		0	0.2	283015.9	6250229	No	1131	1 x Ku	No	New
Pit 3/48	OnGrade	WSP Stand	600 x 900 PIT		2.3	59.66		0	0.2	283011.2	6250224	No	1135	1 x Ku	No	New
Pit 1/31	OnGrade	WSP Stand	600 x 900 PIT		5.9	54.246		0	0.2	282935.5	6250363	No	1132	1 x Ku	No	New
Pit 1/48	OnGrade	WSP Stand	600 x 900 PIT		5.9	61.115		0	0.2	283050.7	6250203	No	1133	1 x Ku	No	New
Pit 2/48	OnGrade	WSP Stand	600 x 900 PIT		0.3	61.124		0	0.2	283047.3	6250197	No	1134	1 x Ku	No	New
Pit 1/52	OnGrade	WSP Stand	600 x 900 PIT		5.9	53.452		0	0.2	282911.8	6250367	No	1145	1 x Ku	No	New
Pit 1/53	OnGrade	WSP Stand	600 x 900 PIT		5.9	52.516		0	0.2	282883.2	6250362	No	1146	1 x Ku	No	New
Pit 1/54	OnGrade	WSP Stand	600 x 900 PIT		5.9	50.409		0	0.2	282851.5	6250342	No	1147	1 x Ku	No	New
Pit 1/7	OnGrade	WSP Stand	600 x 900 PIT		5.9	62.287		0	0.2	283130.2	6250188	No	1148	1 x Ku	No	New
Pit 3/12	OnGrade	WSP Stand	600 x 900 PIT		1.6	62.265		0	0.2	283131	6250181	No	1151	1 x Ku	No	New
Pit 4/12	OnGrade	WSP Stand	600 x 900 PIT		3.2	59.728		0	0.2	283159.2	6250191	No	1152	1 x Ku	No	New
Pit 5/12	Sag	WSP Stand	600 x 900 F	0.5	1.5	58.133	0.15	0	0.5	283171	6250221	No	1153	1 x Ku	No	New
Pit 6/12	OnGrade	WSP Stand	600 x 900 PIT		1	58.905		0	0.2	283163.1	6250242	No	1154	1 x Ku	No	New
Pit 7/12	OnGrade	WSP Stand	600 x 900 PIT		1.2	57.831		0	0.2	283143.7	6250283	No	1155	1 x Ku	No	New
Pit 8/12	OnGrade	WSP Stand	2 x 600x900		1.5	56.499		0	0.2	283138.5	6250303	No	1156	1 x Ku	No	New
Pit 9/12	OnGrade	WSP Stand	900SQ		0.2	57.247		0	0.2	283135.5	6250322	Yes	1322	1 x Ku	No	New
Pit 10/12	Node					55.07		0		283128.8	6250342	1157	No			
Pit 1/12	OnGrade	WSP Stand	600 x 900 PIT		5.9	61.228		0	0.2	283077.4	6250182	No	1149	1 x Ku	No	New
Pit 2/12	OnGrade	WSP Stand	600 x 900 PIT		5.9	61.232		0	0.2	283078.7	6250176	No	1150	1 x Ku	No	New
Pit 1/13	OnGrade	WSP Stand	600 x 900 PIT		5.9	59.709		0	0.2	283154.9	6250196	No	1158	1 x Ku	No	New
Pit 1/68	Sag	WSP Stand	600 x 900 F	0.5	5.9	58.143	0.15	0	0.2	283164.5	6250221	No	1159	1 x Ku	No	New
Pit 1/69	OnGrade	WSP Stand	600 x 900 PIT		5.9	57.798		0	0.2	283136.1	6250282	No	1160	1 x Ku	No	New
Pit 1/71	OnGrade	WSP Stand	600 x 900 PIT		5.9	58.916		0	0.2	283157.5	6250238	No	1161	1 x Ku	No	New
O Pit 1/12	Node					61.228		0		283082.4	6250187	1162	No			

O Pit 2/12	Node				61.232		0	283083.7	6250181		1163	No		
O Pit 5/12	Node				58.133		0	283176	6250226		1164	No		
Pit 1/8	OnGrade	WSP Stand 600 x 900 PIT		5.9	57.336		0	0.2	282995.1	6250295	No	1301 1 x Ku	No	New
Pit 8/12	Node				56.2		0	283162.3	6250312		1353	No		
N1	Node				47.9		0	282724.3	6250282		355829	No		
N2	Node				46.483		0	282774.7	6250290		355837	No		
N3	Node				45.934		0	282784.4	6250293		355842	No		
Pit 1/74	Sag	WSP Stand 2 x 900SQ i	1	5.9	45.6	0.2	0	0.5	282787.5	6250294	No	355851 1 x Ku	No	New
Pit 1/18	Sag	WSP Stand 3 x 600x900	0.5	1.2	45.395	0.15	0	0.5	282785.7	6250298	No	1109 1 x Ku	No	New
N4	Node				46		0	282806	6250297		355855	No		
N5	Node				45.905		0	282790.3	6250294		355869	No		
N6	Node				49		0	282874.4	6250262		2310722	No		
Pit 1/1	OnGrade	WSP Stand 2 x 600x900		1.9	48.258		0	0.2	282874.4	6250276	No	1124 1 x Ku	No	New
Pit 2/1	OnGrade	WSP Stand 600 x 900 PIT		1.6	47.222		0	0.2	282840.8	6250297	No	1125 1 x Ku	No	New
Pit 3/1	Sag	WSP Stand 2 x 600x900	0.5	1.1	47.078	0.15	0	0.5	282832.5	6250307	No	1126 1 x Ku	No	New
Pit 4/1	Node				46.502		0	282818.9	6250308		1127	No		

DETENTION BASIN DETAILS

Name	Elev	Surf. Area	Not Used	Outlet Type	K	Dia(mm)	Centre RL	Pit Family	Pit Type	x	y	HED	Crest RL	Crest Length	id
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SUB-CATCHMENT DETAILS

Name	Pit or Node	Total Area (ha)	Paved Area (%)	Grass Area (%)	Supp Area (%)	Paved Time (min)	Grass Time (min)	Supp Time (min)	Paved Length (m)	Grass Length (m)	Supp Length (m)	Paved Slope(%)	Grass Slope (%)	Supp Slope (%)	Paved Rough	Grass Rough	Supp Rough	Lag Time or Factor	Gutter Length (m)	Gutter Slope %	Gutter FlowFactor	Rainfall Multiplier
C Pit 1/23	Pit 1/23	0.249	28	72	0	0	0	0	30.199	150	-1	4.612	4.7	-1	0.013	0.3	-1	-1	-1			1
C Pit 3/60	Pit 3/60	0.0184	50	50	0	0	0	0	28.912	28.912	-1	4.808	4.808	-1	0.013	0.3	-1	-1	-1			1
C Pit 4/60	Pit 4/60	0.0181	50	50	0	0	0	0	28.465	28.465	-1	6.105	6.105	-1	0.013	0.3	-1	-1	-1			1
C Pit 5/60	Pit 5/60	0.0246	50	50	0	0	0	0	36.666	36.666	-1	5.661	5.661	-1	0.013	0.3	-1	-1	-1			1
C Pit 6/60	Pit 6/60	0.0642	50	50	0	0	0	0	77.87	77.87	-1	6.375	6.375	-1	0.013	0.3	-1	-1	-1			1
C Pit 1/28	Pit 1/28	0.0342	50	50	0	0	0	0	29.111	29.111	-1	6	6	-1	0.013	0.3	-1	-1	-1			1
C Pit 1/51	Pit 1/51	0.0267	50	50	0	0	0	0	37.588	37.588	-1	5.464	5.464	-1	0.013	0.3	-1	-1	-1			1
C Pit 1/60	Pit 1/60	0.0917	31	69	0	0	0	0	19.908	142	-1	1.408	3.9	-1	0.013	0.3	-1	-1	-1			1
C Pit 2/60	Pit 2/60	0.0127	50	50	0	0	0	0	19.307	19.307	-1	1.362	1.362	-1	0.013	0.3	-1	-1	-1			1
C Pit 1/9	Pit 1/9	0.0102	50	50	0	0	0	0	50.777	50.777	-1	3.266	3.266	-1	0.013	0.3	-1	-1	-1			1
C Pit 6/48	Pit 6/48	0.0128	65	35	0	0	0	0	20.26	20.26	-1	3.387	3.387	-1	0.013	0.3	-1	-1	-1			1
C Pit 7/48	Pit 7/48	0.0518	45	55	0	0	0	0	40.308	48	-1	3.457	4.3	-1	0.013	0.3	-1	-1	-1			1
C Pit 8/48	Pit 8/48	0.1043	32	68	0	0	0	0	26.846	65	-1	3.469	4.6	-1	0.013	0.3	-1	-1	-1			1
C Pit 9/48	Pit 9/48	0.0452	38	62	0	0	0	0	22.098	55	-1	3.438	4.2	-1	0.013	0.3	-1	-1	-1			1
C Pit 10/48	Pit 10/48	0.0679	35	65	0	0	0	0	26.826	86	-1	3.459	2.7	-1	0.013	0.3	-1	-1	-1			1
C Pit 11/48	Pit 11/48	0.083	36	64	0	0	0	0	35.446	77	-1	6.041	6	-1	0.013	0.3	-1	-1	-1			1
C Pit 1/10	Pit 1/10	0.0283	50	50	0	0	0	0	43.865	43.865	-1	3.176	3.176	-1	0.013	0.3	-1	-1	-1			1
C Pit 1/11	Pit 1/11	0.0248	50	50	0	0	0	0	42.62	42.62	-1	3.45	3.45	-1	0.013	0.3	-1	-1	-1			1
C Pit 4/48	Pit 4/48	0.0268	50	50	0	0	0	0	46.283	46.283	-1	3.181	3.181	-1	0.013	0.3	-1	-1	-1			1
C Pit 5/48	Pit 5/48	0.0098	100	0	0	0	0	0	29.373	-1	-1	3.275	-1	-1	0.013	0.3	-1	-1	-1			1
C Pit 1/14	Pit 1/14	0.0281	50	50	0	0	0	0	43.656	43.656	-1	3.33	3.33	-1	0.013	0.3	-1	-1	-1			1
C Pit 3/48	Pit 3/48	0.0291	50	50	0	0	0	0	45.325	45.325	-1	3.23	3.23	-1	0.013	0.3	-1	-1	-1			1
C Pit 1/31	Pit 1/31	0.019	50	50	0	0	0	0	29.137	29.137	-1	3.176	3.176	-1	0.013	0.3	-1	-1	-1			1
C Pit 1/48	Pit 1/48	0.064	50	50	0	0	0	0	20.91	20.91	-1	1.409	1.409	-1	0.013	0.3	-1	-1	-1			1
C Pit 2/48	Pit 2/48	0.0066	50	50	0	0	0	0	18.388	18.388	-1	1.562	1.562	-1	0.013	0.3	-1	-1	-1			1
C Pit 1/52	Pit 1/52	0.0157	50	50	0	0	0	0	23.999	23.999	-1	3.175	3.175	-1	0.013	0.3	-1	-1	-1			1
C Pit 1/53	Pit 1/53	0.0186	50	50	0	0	0	0	29.203	29.203	-1	3.204	3.204	-1	0.013	0.3	-1	-1	-1			1
C Pit 1/54	Pit 1/54	0.0244	50	50	0	0	0	0	37.752	37.752	-1	5.627	5.627	-1	0.013	0.3	-1	-1	-1			1
C Pit 1/7	Pit 1/7	0.0087	50	50	0	0	0	0	16.644	16.644	-1	2.86	2.86	-1	0.013	0.3	-1	-1	-1			1
C Pit 3/12	Pit 3/12	0.0293	35	65	0	0	0	0	17.013	45	-1	2.931	7.8	-1	0.013	0.3	-1	-1	-1			1
C Pit 4/12	Pit 4/12	0.11	31	69	0	0	0	0	30.664	61	-1	8.274	9.95	-1	0.013	0.3	-1	-1	-1			1

C Pit 6/12	Pit 6/12	0.0378	35	65	0	0	0	0	13.592	75	-1	2.6	5.8	-1	0.013	0.3	-1	-1	1
C Pit 7/12	Pit 7/12	0.1377	31	69	0	0	0	0	4.672	141	-1	6.168	6	-1	0.013	0.3	-1	-1	1
C Pit 8/12	Pit 8/12	0.2144	31	69	0	0	0	0	27.919	140	-1	4.653	7	-1	0.013	0.3	-1	-1	1
C Pit 1/12	Pit 1/12	0.0237	50	50	0	0	0	0	36.372	36.372	-1	4.221	4.221	-1	0.013	0.3	-1	-1	1
C Pit 2/12	Pit 2/12																		
C Pit 1/13	Pit 1/13	0.0177	50	50	0	0	0	0	26.881	26.881	-1	9.593	9.593	-1	0.013	0.3	-1	-1	1
C Pit 1/68	Pit 1/68	0.0319	50	50	0	0	0	0	26.919	26.919	-1	5.817	5.817	-1	0.013	0.3	-1	-1	1
C Pit 1/69	Pit 1/69	0.0219	50	50	0	0	0	0	2.895	2.895	-1	5.719	5.719	-1	0.013	0.3	-1	-1	1
C Pit 1/71	Pit 1/71	0.0081	50	50	0	0	0	0	13.37	13.37	-1	2.56	2.56	-1	0.013	0.3	-1	-1	1
C Pit 1/8	Pit 1/8	0.0098	100	0	0	0	0	0	28	-1	-1	3.3	-1	-1	0.013	0.3	-1	-1	1
C Sw5a	N1	1.1479	0	100	0	0	0	0	-1	160	-1	-1	3	-1	-1	0.3	-1	0	1
C Sw5b	N2	0.3781	0	100	0	0	0	0	-1	160	-1	-1	3	-1	-1	0.3	-1	0	1
C Pit 1/18	Pit 1/18	0.2677	28	72	0	0	0	0	52.382	160	-1	3	3	-1	0.013	0.3	-1	-1	1
C Sw6	N4	0.0752	0	100	0	0	0	0	-1	160	-1	-1	3	-1	-1	0.3	-1	0	1
C Chapel	N6	0.3672	90	10	0	0	0	0	20	20	-1	1	1	-1	0.013	0.3	-1	-1	1
C Pit 1/1	Pit 1/1	0.1825	25	75	0	0	0	0	31.726	118	-1	9.455	7.6	-1	0.013	0.3	-1	-1	1
C Pit 2/1	Pit 2/1	0.1384	25	75	0	0	0	0	41.919	122	-1	2.146	6	-1	0.013	0.3	-1	-1	1
C Pit 3/1	Pit 3/1	0.2724	25	75	0	0	0	0	12.492	125	-1	1.148	5	-1	0.013	0.3	-1	-1	1

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	Chg (m)	RI (m)	Chg (m)	RL (m)	etc (m)
P Pit 1/23	Pit 1/23	Pit 3/60	6.506	48.614	48.549		1 Concrete, u	300	300	0.013	New	1							
P Pit 3/60	Pit 3/60	Pit 4/60	28.44	48.519	46.866		5.81 Concrete, u	300	300	0.013	New	1							
P Pit 4/60	Pit 4/60	Pit 5/60	36.613	46.771	44.82		5.33 Concrete, u	300	300	0.013	New	1							
P Pit 5/60	Pit 5/60	Pit 6/60	18.223	44.718	44.408		1.7 Concrete, u	375	375	0.013	New	1							
P Pit 6/60	Pit 6/60	Pit 7/60	23.272	44.27	44.037		1 Concrete, u	375	375	0.013	New	2							
P Pit 1/28	Pit 1/28	Pit 4/60	6.5	46.866	46.801		1 Concrete, u	300	300	0.013	New	1							
P Pit 1/51	Pit 1/51	Pit 5/60	6.505	44.813	44.748		1 Concrete, u	300	300	0.013	New	1							
P Pit 1/60	Pit 1/60	Pit 2/60	6.5	50.007	49.942		1 Concrete, u	300	300	0.013	New	1							
P Pit 2/60	Pit 2/60	Pit 3/60	28.886	49.912	48.66		4.33 Concrete, u	300	300	0.013	New	1							
P Pit 1/9	Pit 1/9	Pit 6/48	6.502	55.632	55.567		1 Concrete, u	300	300	0.013	New	1							
P Pit 6/48	Pit 6/48	Pit 7/48	39.847	55.537	54.239		3.26 Concrete, u	300	300	0.013	New	1							
P Pit 7/48	Pit 7/48	Pit 8/48	26.71	54.144	53.314		3.11 Concrete, u	300	300	0.013	New	1							
P Pit 8/48	Pit 8/48	Pit 9/48	22.021	53.219	52.576		2.92 Concrete, u	300	300	0.013	New	1							
P Pit 9/48	Pit 9/48	Pit 10/48	26.688	52.457	51.65		3.02 Concrete, u	300	300	0.013	New	1							
P Pit 10/48	Pit 10/48	Pit 11/48	35.18	51.521	49.412		5.99 Concrete, u	300	300	0.013	New	1							
P Pit 11/48	Pit 11/48	Pit 12/48	46.461	49.337	45.2		8.9 Concrete, u	300	300	0.013	New	1							
P Pit 1/10	Pit 1/10	Pit 7/48	6.5	54.239	54.174		1 Concrete, u	300	300	0.013	New	1							
P Pit 1/11	Pit 1/11	Pit 4/48	6.499	57.291	57.226		1 Concrete, u	300	300	0.013	New	1							
P Pit 4/48	Pit 4/48	Pit 5/48	29.323	57.196	56.321		2.98 Concrete, u	300	300	0.013	New	1							
P Pit 5/48	Pit 5/48	Pit 6/48	20.201	56.164	55.628		2.65 Concrete, u	300	300	0.013	New	1							
P Pit 1/14	Pit 1/14	Pit 3/48	6.5	58.756	58.691		1 Concrete, u	300	300	0.013	New	1							
P Pit 3/48	Pit 3/48	Pit 4/48	45.733	58.661	57.288		3 Concrete, u	300	300	0.013	New	1							
P Pit 1/31	Pit 1/31	Pit 8/48	6.5	53.314	53.249		1 Concrete, u	300	300	0.013	New	1							
P Pit 1/48	Pit 1/48	Pit 2/48	6.508	60.215	60.15		1 Concrete, u	300	300	0.013	New	1							
P Pit 2/48	Pit 2/48	Pit 3/48	45.214	60.12	58.76		3.01 Concrete, u	300	300	0.013	New	1							
P Pit 1/52	Pit 1/52	Pit 9/48	6.5	52.552	52.487		1 Concrete, u	300	300	0.013	New	1							
P Pit 1/53	Pit 1/53	Pit 10/48	6.501	51.616	51.551		1 Concrete, u	300	300	0.013	New	1							
P Pit 1/54	Pit 1/54	Pit 11/48	6.501	49.477	49.412		1 Concrete, u	300	300	0.013	New	1							
P Pit 1/7	Pit 1/7	Pit 3/12	6.51	61.387	61.322		1 Concrete, u	300	300	0.013	New	1							
P Pit 3/12	Pit 3/12	Pit 4/12	29.942	59.677	58.828		2.84 Concrete, u	300	300	0.013	New	1							
P Pit 4/12	Pit 4/12	Pit 5/12	31.801	58.536	56.941		5.02 Concrete, u	300	300	0.013	New	1							
P Pit 5/12	Pit 5/12	Pit 6/12	22.24	56.911	56.689		1 Concrete, u	300	300	0.013	New	1							
P Pit 6/12	Pit 6/12	Pit 7/12	45.559	56.659	56.203		1 Concrete, u	300	300	0.013	New	1							

P Pit 7/12	Pit 7/12	Pit 8/12	20.301	56.173	55.509	3.27	Concrete, u	375	375	0.013	New	1
P Pit 8/12	Pit 8/12	Pit 9/12	21.002	55.479	55.269	1	Concrete, u	375	375	0.013	New	1
P Pit 9/12	Pit 9/12	Pit 10/12	19.994	55.233	55.07	0.82	Concrete, u	375	375	0.013	New	1
P Pit 1/12	Pit 1/12	Pit 2/12	6.5	60.328	60.263	1	Concrete, u	300	300	0.013	New	1
P Pit 2/12	Pit 2/12	Pit 3/12	52.624	60.233	59.707	1	Concrete, u	300	300	0.013	New	1
P Pit 1/13	Pit 1/13	Pit 4/12	6.499	58.809	58.744	1	Concrete, u	300	300	0.013	New	1
P Pit 1/68	Pit 1/68	Pit 5/12	6.499	57.233	57.168	1	Concrete, u	300	300	0.013	New	1
P Pit 1/69	Pit 1/69	Pit 7/12	7.663	56.898	56.821	1	Concrete, u	300	300	0.013	New	1
P Pit 1/71	Pit 1/71	Pit 6/12	6.504	58.016	57.951	1	Concrete, u	300	300	0.013	New	1
P Pit 1/8	Pit 1/8	Pit 5/48	7.077	56.319	56.194	1.77	Concrete, u	300	300	0.013	New	1
P Pit 1/74	Pit 1/74	Pit 1/18	4.67	44.625	44.578	1.01	Concrete, u	375	375	0.013	New	2
P Pit 1/18	Pit 1/18	Pit 6/60	6.501	44.395	44.33	1	Concrete, u	375	375	0.013	New	2
P Chapel	N6	Pit 1/1	30	47.583	47.283	1	Concrete, u	375	375	0.013	New	1
P Pit 1/1	Pit 1/1	Pit 2/1	39.984	47.026	46.15	2.19	Concrete, u	375	375	0.013	New	1
P Pit 2/1	Pit 2/1	Pit 3/1	12.462	46.12	45.299	6.59	Concrete, u	375	375	0.013	New	1
P Pit 3/1	Pit 3/1	Pit 4/1	13.714	45.269	45.2	0.5	Concrete, u	375	375	0.013	New	1

DETAILS of SERVICES CROSSING PIPES

Pipe	Chg (m)	Bottom Elev (m)	Height of S Chg (m)	Bottom Elev (m)	Height of S Chg (m)	Bottom Elev (m)	Height of S etc
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CHANNEL DETAILS

Name	From	To	Type	Length (m)	U/S IL (m)	D/S IL (m)	Slope (%)	Base Width (m)	L.B. Slope (1:?)	R.B. Slope (1:?)	Manning n	Depth (m)	Roofed
Sw5a	N1	N2	Prismatic	78	48.662	46.283	3.05	0.5	3	3	0.045	0.2	No
Sw5b	N2	N3	Prismatic	18	46.283	45.734	3.05	0.5	3	3	0.045	0.2	No
Sw6	N4	N5	Prismatic	18.2	45.8	45.705	0.52	0.5	3	3	0.045	0.2	No

OVERFLOW ROUTE DETAILS

Name	From	To	Travel Time (min)	Spill Level (m)	Crest Length (m)	Weir Coeff. C	Cross Section	Safe Depth Major (m)	SafeDepth Minor (m)	Safe DxV (sq.m/sec)	Bed Slope (%)	D/S Area Contributing %	id	U/S IL	D/S IL	Length (m)
F Pit 1/23	Pit 1/23	Pit 1/28	1				8 m wide rc	0.14	0.14	0.4	6	0	1254	49.514	47.768	29.111
F Pit 3/60	Pit 3/60	Pit 4/60	1				8 m wide rc	0.14	0.14	0.4	6.3	0	1259	49.56	47.766	28.465
F Pit 4/60	Pit 4/60	Pit 5/60	1				8 m wide rc	0.14	0.14	0.4	5.58	0	1260	47.766	45.72	36.666
F Pit 5/60	Pit 5/60	Pit 6/60	1				8 m wide rc	0.14	0.14	0.4	1.72	0	1261	45.72	45.395	18.912
F Pit 6/60	Pit 6/60	O Pit 6/60	1				8 m wide rc	0.14	0.14	0.4	2.27	0	1262	45.427	45.2	10
F Pit 1/28	Pit 1/28	Pit 1/51	1				8 m wide rc	0.14	0.14	0.4	5.47	0	1255	47.768	45.713	37.588
F Pit 1/51	Pit 1/51	Pit 1/18	1				8 m wide rc	0.14	0.14	0.4	1.68	0	1256	45.713	45.395	18.912
F Pit 1/60	Pit 1/60	Pit 1/23	1				8 m wide rc	0.14	0.14	0.4	4.61	0	1257	50.907	49.514	30.199
F Pit 2/60	Pit 2/60	Pit 3/60	1				8 m wide rc	0.14	0.14	0.4	4.77	0	1258	50.939	49.56	28.912
F Pit 1/9	Pit 1/9	Pit 1/10	1				8 m wide rc	0.14	0.14	0.4	3.15	0	1266	56.544	55.164	43.865
F Pit 6/48	Pit 6/48	Pit 7/48	1				8 m wide rc	0.14	0.14	0.4	3.44	0	1276	56.528	55.14	40.308
F Pit 7/48	Pit 7/48	Pit 8/48	1				8 m wide rc	0.14	0.14	0.4	3.45	0	1277	55.14	54.215	26.846
F Pit 8/48	Pit 8/48	Pit 9/48	1				8 m wide rc	0.14	0.14	0.4	3.34	0	1278	54.215	53.476	22.098
F Pit 9/48	Pit 9/48	Pit 10/48	1				8 m wide rc	0.14	0.14	0.4	3.45	0	1279	53.476	52.55	26.826
F Pit 10/48	Pit 10/48	Pit 11/48	1				8 m wide rc	0.14	0.14	0.4	6.11	0	1280	52.55	50.386	35.446
F Pit 11/48	Pit 11/48	Pit 1/18	1				8 m wide rc	0.14	0.14	0.4	6.05	0	1281	50.386	45.395	82.47
F Pit 1/10	Pit 1/10	Pit 1/31	1				8 m wide rc	0.14	0.14	0.4	3.15	0	1267	55.164	54.246	29.137
F Pit 1/11	Pit 1/11	Pit 1/8	1				8 m wide rc	0.14	0.14	0.4	2.92	0	1268	58.191	57.336	29.3
F Pit 4/48	Pit 4/48	Pit 5/48	1				8 m wide rc	0.14	0.14	0.4	3.29	0	1274	58.207	57.241	29.373
F Pit 5/48	Pit 5/48	Pit 6/48	1				8 m wide rc	0.14	0.14	0.4	3.52	0	1275	57.241	56.528	20.26
F Pit 1/14	Pit 1/14	Pit 1/11	1				8 m wide rc	0.14	0.14	0.4	3.46	0	1269	59.667	58.191	42.62
F Pit 3/48	Pit 3/48	Pit 4/48	1				8 m wide rc	0.14	0.14	0.4	3.14	0	1273	59.66	58.207	46.283
F Pit 1/31	Pit 1/31	Pit 1/52	1				8 m wide rc	0.14	0.14	0.4	3.31	0	1270	54.246	53.452	23.999

F Pit 1/48	Pit 1/48	Pit 1/14	1	8 m wide r	0.14	0.14	0.4	3.32	0	1271	61.115	59.667	43.656
F Pit 2/48	Pit 2/48	Pit 3/48	1	8 m wide r	0.14	0.14	0.4	3.23	0	1272	61.124	59.66	45.325
F Pit 1/52	Pit 1/52	Pit 1/53	1	8 m wide r	0.14	0.14	0.4	3.21	0	1282	53.452	52.516	29.203
F Pit 1/53	Pit 1/53	Pit 1/54	1	8 m wide r	0.14	0.14	0.4	5.58	0	1283	52.516	50.409	37.752
F Pit 1/54	Pit 1/54	Pit 6/60	1	8 m wide r	0.14	0.14	0.4	6.4	0	1284	50.409	45.427	77.87
F Pit 1/7	Pit 1/7	Pit 1/13	1	8 m wide r	0.14	0.14	0.4	9.59	0	1285	62.287	59.709	26.881
F Pit 3/12	Pit 3/12	Pit 4/12	1	8 m wide r	0.14	0.14	0.4	8.27	0	1288	62.265	59.728	30.664
F Pit 4/12	Pit 4/12	Pit 5/12	1	8 m wide r	0.14	0.14	0.4	4.85	0	1289	59.728	58.133	32.884
F Pit 5/12	Pit 5/12	O Pit 5/12	1	Pathway 4	0.14	0.14	0.4	1.33	0	1290	58.133	58	10
F Pit 6/12	Pit 6/12	Pit 5/12	1	8 m wide r	0.14	0.14	0.4	3.36	0	1291	58.905	58.133	23
F Pit 7/12	Pit 7/12	Pit 8/12	1	8 m wide r	0.14	0.14	0.4	5.27	0	1292	57.831	56.499	25.264
F Pit 8/12	Pit 8/12	Pit 8/12	0.1	Pathway 4	0.3	0.15	0.6	2.99	0	1347	56.499	56.2	10
F Pit 1/12	Pit 1/12	O Pit 1/12	1	8 m wide r	0.14	0.14	0.4	1.28	0	1286	61.228	61.1	10
F Pit 2/12	Pit 2/12	Pit 1/12	1	8 m wide r	0.14	0.14	0.4	0	0	1287	61.232	61.232	6.5
F Pit 1/13	Pit 1/13	Pit 1/68	1	8 m wide r	0.14	0.14	0.4	5.82	0	1293	59.709	58.143	26.919
F Pit 1/68	Pit 1/68	Pit 5/12	1	8 m wide r	0.14	0.14	0.4	0.01	0	1294	58.143	58.143	10
F Pit 1/69	Pit 1/69	Pit 8/12	1	8 m wide r	0.14	0.14	0.4	4.65	0	1295	57.798	56.499	27.919
F Pit 1/71	Pit 1/71	Pit 1/68	1	8 m wide r	0.14	0.14	0.4	4.07	0	1296	58.916	58.143	19
F Pit 1/8	Pit 1/8	Pit 1/9	0.2	8 m wide r	0.3	0.15	0.4	3.62	0	1320	57.336	56.544	21.898
F Sw5	N3	Pit 1/74	0.1	Swale 1:3 S	0.3	0.3	0.4	3.4	0	355850	45.734	45.7	1
F Pit 1/74	Pit 1/74	Pit 1/18	0.1	Pathway 4	0.3	0.15	0.6	8.62	0	355959	45.8	45.395	4.7
F Pit 1/18	Pit 1/18	Pit 6/60	1	8 m wide r	0.14	0.14	0.4	0.01	0	1253	45.395	45.395	6.5
F Sw6	N5	Pit 1/74	0.1	Swale 1:3 S	0.3	0.3	0.4	0.5	0	355872	45.705	45.7	1
F Pit 1/1	Pit 1/1	Pit 2/1	1	8 m wide r	0.14	0.14	0.4	2.47	0	1263	48.258	47.222	41.919
F Pit 2/1	Pit 2/1	Pit 3/1	1	8 m wide r	0.14	0.14	0.4	1.15	0	1264	47.222	47.078	12.492
F Pit 3/1	Pit 3/1	Pit 1/18	1	8 m wide r	0.14	0.14	0.4	3.21	0	1265	47.078	45.395	52.382

PIPE COVER DETAILS

Name	Type	Dia (mm)	Safe Cover	Cover (m)	
P Pit 1/23	Concrete, u	300	0.6	0.57	Unsafe
P Pit 3/60	Concrete, u	300	0.6	0.57	Unsafe
P Pit 4/60	Concrete, u	300	0.6	0.57	Unsafe
P Pit 5/60	Concrete, u	375	0.6	0.59	Unsafe
P Pit 6/60	Concrete, u	375	0.6	-0.07	Unsafe
P Pit 1/28	Concrete, u	300	0.6	0.57	Unsafe
P Pit 1/51	Concrete, u	300	0.6	0.57	Unsafe
P Pit 1/60	Concrete, u	300	0.6	0.57	Unsafe
P Pit 2/60	Concrete, u	300	0.6	0.57	Unsafe
P Pit 1/9	Concrete, u	300	0.6	0.57	Unsafe
P Pit 6/48	Concrete, u	300	0.6	0.57	Unsafe
P Pit 7/48	Concrete, u	300	0.6	0.57	Unsafe
P Pit 8/48	Concrete, u	300	0.6	0.57	Unsafe
P Pit 9/48	Concrete, u	300	0.6	0.57	Unsafe
P Pit 10/48	Concrete, u	300	0.6	0.64	
P Pit 11/48	Concrete, u	300	0.6	0.71	
P Pit 1/10	Concrete, u	300	0.6	0.57	Unsafe
P Pit 1/11	Concrete, u	300	0.6	0.57	Unsafe
P Pit 4/48	Concrete, u	300	0.6	0.59	Unsafe
P Pit 5/48	Concrete, u	300	0.6	0.57	Unsafe
P Pit 1/14	Concrete, u	300	0.6	0.57	Unsafe
P Pit 3/48	Concrete, u	300	0.6	0.57	Unsafe
P Pit 1/31	Concrete, u	300	0.6	0.57	Unsafe
P Pit 1/48	Concrete, u	300	0.6	0.57	Unsafe
P Pit 2/48	Concrete, u	300	0.6	0.57	Unsafe

P Pit 1/52	Concrete, u	300	0.6	0.57 Unsafe
P Pit 1/53	Concrete, u	300	0.6	0.57 Unsafe
P Pit 1/54	Concrete, u	300	0.6	0.57 Unsafe
P Pit 1/7	Concrete, u	300	0.6	0.57 Unsafe
P Pit 3/12	Concrete, u	300	0.6	0.57 Unsafe
P Pit 4/12	Concrete, u	300	0.6	0.57 Unsafe
P Pit 5/12	Concrete, u	300	0.6	0.89
P Pit 6/12	Concrete, u	300	0.6	1.3
P Pit 7/12	Concrete, u	375	0.6	0.58 Unsafe
P Pit 8/12	Concrete, u	375	0.6	0.61
P Pit 9/12	Concrete, u	375	0.6	-0.41 Unsafe
P Pit 1/12	Concrete, u	300	0.6	0.57 Unsafe
P Pit 2/12	Concrete, u	300	0.6	0.67
P Pit 1/13	Concrete, u	300	0.6	0.57 Unsafe
P Pit 1/68	Concrete, u	300	0.6	0.57 Unsafe
P Pit 1/69	Concrete, u	300	0.6	0.57 Unsafe
P Pit 1/71	Concrete, u	300	0.6	0.57 Unsafe
P Pit 1/8	Concrete, u	300	0.6	0.69
P Pit 1/74	Concrete, u	375	0.6	0.36 Unsafe
P Pit 1/18	Concrete, u	375	0.6	0.59 Unsafe
P Chapel	Concrete, u	375	0.6	-0.37 Unsafe
P Pit 1/1	Concrete, u	375	0.6	0.59 Unsafe
P Pit 2/1	Concrete, u	375	0.6	0.69
P Pit 3/1	Concrete, u	375	0.6	0.34 Unsafe

This model has no pipes with non-return valves

Proposed DRAINS Model 6 - 1% AEP Storm Event Results

DRAINS results prepared from Version 2018.01

PIT / NODE DETAILS		Version 8					
Name	Max HGL	Max Pond HGL	Max Surface Flow (cu.m/s)	Max Pond Volume (cu.m)	Min Freeboard (m)	Overflow (cu.m/s)	Constraint
Pit 1/23	49.09		0.085		0.42	0.012	Inlet Capacity
Pit 3/60	48.85		0.011		0.71	0	None
Pit 4/60	47.07		0.011		0.69	0	None
Pit 5/60	45.43		0.014		0.29	0	Inlet Capacity
Pit 6/60	45.26	45.46	0.035	0.1	0.17	0	Inlet Capacity
Pit 7/60	44.38		0				
Pit 1/28	47.12		0.035		0.65	0.005	Inlet Capacity
Pit 1/51	45.45		0.021		0.26	0.002	Inlet Capacity
Pit 1/60	50.17		0.031		0.73	0.002	Inlet Capacity
Pit 2/60	50.02		0.007		0.92	0	None
Pit 1/9	55.8		0.005		0.74	0	None
Pit 6/48	55.8		0.008		0.73	0	None
Pit 7/48	55.01		0.026		0.13	0.004	Inlet Capacity
Pit 8/48	54.28		0.055		0	0.032	Outlet System
Pit 9/48	53.48		0.079		0	0.009	Outlet System
Pit 10/48	52.09		0.073		0.46	0.006	Inlet Capacity
Pit 11/48	49.65		0.064		0.74	0.011	Inlet Capacity
Pit 12/48	45.42		0				
Pit 1/10	55.01		0.014		0.15	0	Inlet Capacity
Pit 1/11	57.48		0.016		0.72	0	Inlet Capacity
Pit 4/48	57.45		0.015		0.75	0	Inlet Capacity
Pit 5/48	56.4		0.008		0.84	0	None
Pit 1/14	58.92		0.025		0.75	0.002	Inlet Capacity
Pit 3/48	58.86		0.015		0.8	0	Inlet Capacity
Pit 1/31	54.28		0.014		0	0.006	Outlet System
Pit 1/48	60.37		0.035		0.74	0.007	Inlet Capacity
Pit 2/48	60.22		0.004		0.9	0	None
Pit 1/52	53.48		0.023		0	0.002	Outlet System
Pit 1/53	52.1		0.046		0.41	0	None
Pit 1/54	49.66		0.043		0.75	0	None
Pit 1/7	61.45		0.005		0.84	0	None
Pit 3/12	59.89		0.015		2.38	0.001	Inlet Capacity
Pit 4/12	58.97		0.054		0.76	0.017	Inlet Capacity
Pit 5/12	58.21	58.22	0.016	0.2	0	0	Outlet System
Pit 6/12	57.81		0.016		1.09	0.001	Inlet Capacity
Pit 7/12	56.77		0.049		1.06	0.014	Inlet Capacity
Pit 8/12	56.47		0.097		0.03	0.01	Inlet Capacity
Pit 9/12	55.8		0		1.45		None
Pit 10/12	55.41		0				
Pit 1/12	60.5		0.024		0.73	0.002	Inlet Capacity
Pit 2/12	60.44		0.036		0.79	0.009	Inlet Capacity
Pit 1/13	58.98		0.011		0.73	0	None

Pit 1/68	58.22	58.23	0.02	0.3	0	0.004	Outlet System
Pit 1/69	57.01		0.015		0.79	0.001	Inlet Capacity
Pit 1/71	58.07		0.005		0.84	0	None
Pit 1/8	56.44		0.008		0.9	0	None
N1	48.87		0.224				
N2	46.52		0.299				
N3	45.95		0.302				
Pit 1/74	45.79	45.94	0.333	0.9	0	0.071	Outlet System
Pit 1/18	45.44	45.51	0.14	0.4	0	0.001	Outlet System
N4	45.94		0.015				
N5	45.94		0.019				
N6	48.84		0.248				
Pit 1/1	48.34		0.065		0	0.053	Outlet System
Pit 2/1	47.32		0.143		0	0.086	Outlet System
Pit 3/1	46.81	47.19	0.278	0.4	0.27	0	Inlet Capacity
Pit 4/1	45.56		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
C Pit 1/23	0.07	0.038	0.032	1.21	20.71		0 1% AEP, 10 min burst, Storm 7
C Pit 3/60	0.009	0.005	0.004	1.16	7.66		0 1% AEP, 10 min burst, Storm 7
C Pit 4/60	0.009	0.005	0.004	1.07	7.06		0 1% AEP, 10 min burst, Storm 7
C Pit 5/60	0.012	0.007	0.005	1.28	8.41		0 1% AEP, 10 min burst, Storm 7
C Pit 6/60	0.027	0.018	0.009	1.94	12.75		0 1% AEP, 10 min burst, Storm 7
C Pit 1/28	0.017	0.009	0.008	1.09	7.2		0 1% AEP, 10 min burst, Storm 7
C Pit 1/51	0.013	0.007	0.006	1.31	8.63		0 1% AEP, 10 min burst, Storm 7
C Pit 1/60	0.026	0.016	0.011	1.35	21.19		0 1% AEP, 10 min burst, Storm 7
C Pit 2/60	0.006	0.003	0.003	1.33	8.78		0 1% AEP, 10 min burst, Storm 7
C Pit 1/9	0.004	0.003	0.001	1.83	12.06		0 1% AEP, 10 min burst, Storm 7
C Pit 6/48	0.007	0.005	0.001	0.96	6.34		0 1% AEP, 5 min burst, Storm 1
C Pit 7/48	0.022	0.013	0.01	1.57	10.74		0 1% AEP, 10 min burst, Storm 7
C Pit 8/48	0.039	0.018	0.02	1.23	12.62		0 1% AEP, 10 min burst, Storm 7
C Pit 9/48	0.018	0.009	0.009	1.1	11.73		0 1% AEP, 10 min burst, Storm 7
C Pit 10/48	0.022	0.013	0.009	1.23	17.52		0 1% AEP, 10 min burst, Storm 7
C Pit 11/48	0.032	0.016	0.015	1.23	12.9		0 1% AEP, 10 min burst, Storm 7
C Pit 1/10	0.012	0.008	0.004	1.69	11.14		0 1% AEP, 10 min burst, Storm 7
C Pit 1/11	0.011	0.007	0.004	1.62	10.68		0 1% AEP, 10 min burst, Storm 7
C Pit 4/48	0.011	0.007	0.004	1.75	11.5		0 1% AEP, 10 min burst, Storm 7
C Pit 5/48	0.006	0.006	0	1.22	0		0 1% AEP, 5 min burst, Storm 1
C Pit 1/14	0.012	0.008	0.005	1.67	10.95		0 1% AEP, 10 min burst, Storm 7
C Pit 3/48	0.012	0.008	0.005	1.72	11.3		0 1% AEP, 10 min burst, Storm 7
C Pit 1/31	0.009	0.005	0.004	1.33	8.71		0 1% AEP, 10 min burst, Storm 7
C Pit 1/48	0.029	0.017	0.012	1.39	9.11		0 1% AEP, 10 min burst, Storm 7
C Pit 2/48	0.003	0.002	0.001	1.24	8.18		0 1% AEP, 10 min burst, Storm 7
C Pit 1/52	0.008	0.004	0.004	1.18	7.76		0 1% AEP, 10 min burst, Storm 7
C Pit 1/53	0.009	0.005	0.004	1.32	8.7		0 1% AEP, 10 min burst, Storm 7
C Pit 1/54	0.012	0.007	0.005	1.3	8.58		0 1% AEP, 10 min burst, Storm 7
C Pit 1/7	0.004	0.002	0.002	0.98	6.43		0 1% AEP, 10 min burst, Storm 7

C Pit 3/12	0.014	0.006	0.008	0.98	8.64	0 1% AEP, 10 min burst, Storm 7
C Pit 4/12	0.047	0.019	0.028	1.03	9.64	0 1% AEP, 10 min burst, Storm 7
C Pit 6/12	0.014	0.007	0.007	0.89	12.83	0 1% AEP, 10 min burst, Storm 7
C Pit 7/12	0.042	0.023	0.019	0.36	18.55	0 1% AEP, 10 min burst, Storm 7
C Pit 8/12	0.067	0.036	0.031	1.15	17.63	0 1% AEP, 10 min burst, Storm 7
C Pit 1/12	0.011	0.006	0.004	1.39	9.14	0 1% AEP, 10 min burst, Storm 7
C Pit 2/12	0.032	0.012	0.02	1.98	7.79	0 1% AEP, 10 min burst, Storm 7
C Pit 1/13	0.009	0.005	0.004	0.91	5.96	0 1% AEP, 10 min burst, Storm 7
C Pit 1/68	0.016	0.009	0.007	1.05	6.93	0 1% AEP, 10 min burst, Storm 7
C Pit 1/69	0.014	0.007	0.006	0.26	1.69	0 1% AEP, 5 min burst, Storm 1
C Pit 1/71	0.004	0.002	0.002	0.89	5.83	0 1% AEP, 10 min burst, Storm 7
C Pit 1/8	0.006	0.006	0	1.18	0	0 1% AEP, 5 min burst, Storm 1
C Sw5a	0.224	0	0.224	0	31.11	0 1% AEP, 30 min burst, Storm 7
C Sw5b	0.074	0	0.074	0	31.11	0 1% AEP, 30 min burst, Storm 6
C Pit 1/18	0.07	0.041	0.029	1.92	24.63	0 1% AEP, 10 min burst, Storm 7
C Sw6	0.015	0	0.015	0	31.11	0 1% AEP, 30 min burst, Storm 9
C Chapel	0.226	0.218	0.007	1.38	9.08	0 1% AEP, 5 min burst, Storm 1
C Pit 1/1	0.057	0.025	0.032	1.01	15.53	0 1% AEP, 10 min burst, Storm 7
C Pit 2/1	0.04	0.019	0.022	1.85	17	0 1% AEP, 10 min burst, Storm 7
C Pit 3/1	0.077	0.037	0.04	1.08	18.22	0 1% AEP, 10 min burst, Storm 7

PIPE DETAILS

Name	Max Q (cu.m/s)	Max V (m/s)	Max U/S HGL (m)	Max D/S HGL (m)	Due to Storm
P Pit 1/23	0.06	0.89	48.887	48.85	1% AEP, 10 min burst, Storm 7
P Pit 3/60	0.099	3.16	48.656	47.071	1% AEP, 10 min burst, Storm 7
P Pit 4/60	0.133	3.86	46.918	45.431	1% AEP, 10 min burst, Storm 4
P Pit 5/60	0.16	1.45	45.409	45.263	1% AEP, 10 min burst, Storm 7
P Pit 6/60	0.467	2.21	44.792	44.378	1% AEP, 10 min burst, Storm 7
P Pit 1/28	0.025	0.47	47.075	47.071	1% AEP, 10 min burst, Storm 7
P Pit 1/51	0.016	0.22	45.436	45.432	1% AEP, 10 min burst, Storm 7
P Pit 1/60	0.024	2.4	50.067	50.044	1% AEP, 10 min burst, Storm 7
P Pit 2/60	0.03	2.05	49.991	48.85	1% AEP, 10 min burst, Storm 7
P Pit 1/9	0.004	0.09	55.816	55.817	1% AEP, 10 min burst, Storm 5
P Pit 6/48	0.097	3.08	55.675	55.005	1% AEP, 10 min burst, Storm 7
P Pit 7/48	0.127	1.8	54.742	54.282	1% AEP, 10 min burst, Storm 7
P Pit 8/48	0.147	2.08	53.975	53.523	1% AEP, 10 min burst, Storm 10
P Pit 9/48	0.186	2.64	53.197	52.426	1% AEP, 10 min burst, Storm 10
P Pit 10/48	0.222	6.32	51.67	49.647	1% AEP, 10 min burst, Storm 7
P Pit 11/48	0.26	7.67	49.482	45.425	1% AEP, 10 min burst, Storm 3
P Pit 1/10	0.012	0.16	55.009	55.008	1% AEP, 10 min burst, Storm 4
P Pit 1/11	0.012	0.32	57.453	57.453	1% AEP, 10 min burst, Storm 7
P Pit 4/48	0.076	2.94	57.315	56.463	1% AEP, 10 min burst, Storm 7
P Pit 5/48	0.087	2.45	56.314	55.801	1% AEP, 10 min burst, Storm 7
P Pit 1/14	0.018	0.77	58.864	58.858	1% AEP, 10 min burst, Storm 7
P Pit 3/48	0.056	3.15	58.75	57.451	1% AEP, 5 min burst, Storm 1
P Pit 1/31	0.009	0.12	54.291	54.294	1% AEP, 10 min burst, Storm 1
P Pit 1/48	0.022	2.42	60.271	60.248	1% AEP, 10 min burst, Storm 7
P Pit 2/48	0.025	1.72	60.198	58.858	1% AEP, 10 min burst, Storm 7

P Pit 1/52	0.008	0.12	53.479	53.477	1% AEP, 5 min burst, Storm 1
P Pit 1/53	0.01	0.15	52.096	52.092	1% AEP, 10 min burst, Storm 7
P Pit 1/54	0.011	0.26	49.65	49.646	1% AEP, 5 min burst, Storm 1
P Pit 1/7	0.004	1.98	61.408	61.365	1% AEP, 10 min burst, Storm 7
P Pit 3/12	0.057	2.23	59.794	58.965	1% AEP, 10 min burst, Storm 7
P Pit 4/12	0.094	2.95	58.674	58.212	1% AEP, 10 min burst, Storm 7
P Pit 5/12	0.109	1.54	58.054	57.818	1% AEP, 10 min burst, Storm 4
P Pit 6/12	0.121	1.71	57.723	56.818	1% AEP, 10 min burst, Storm 10
P Pit 7/12	0.16	1.45	56.636	56.456	1% AEP, 5 min burst, Storm 1
P Pit 8/12	0.229	2.07	56.152	55.795	1% AEP, 10 min burst, Storm 7
P Pit 9/12	0.229	2.18	55.752	55.409	1% AEP, 10 min burst, Storm 7
P Pit 1/12	0.018	0.69	60.447	60.441	1% AEP, 10 min burst, Storm 7
P Pit 2/12	0.041	4.86	60.286	59.891	1% AEP, 10 min burst, Storm 7
P Pit 1/13	0.009	0.41	58.911	58.913	1% AEP, 10 min burst, Storm 2
P Pit 1/68	0.016	0.22	58.213	58.214	1% AEP, 10 min burst, Storm 4
P Pit 1/69	0.013	3.26	56.929	56.894	1% AEP, 5 min burst, Storm 1
P Pit 1/71	0.004	1.85	58.037	57.993	1% AEP, 10 min burst, Storm 7
P Pit 1/8	0.007	0.42	56.402	56.398	1% AEP, 10 min burst, Storm 6
P Pit 1/74	0.291	1.32	45.461	45.425	1% AEP, 30 min burst, Storm 2
P Pit 1/18	0.369	1.67	45.298	45.257	1% AEP, 30 min burst, Storm 8
P Chapel	0.226	2.04	48.835	48.344	1% AEP, 5 min burst, Storm 1
P Pit 1/1	0.234	2.12	47.953	47.323	1% AEP, 5 min burst, Storm 1
P Pit 2/1	0.258	2.33	46.997	46.806	1% AEP, 10 min burst, Storm 2
P Pit 3/1	0.374	3.39	46.179	45.575	1% AEP, 5 min burst, Storm 1

CHANNEL DETAILS

Name	Max Q (cu.m/s)	Max V (m/s)	Due to Storm
Sw5a	0.223	0.98	1% AEP, 30 min burst, Storm 1
Sw5b	0.298	1.33	1% AEP, 30 min burst, Storm 7
Sw6	0.018	0.29	1% AEP, 30 min burst, Storm 2

OVERFLOW ROUTE DETAILS

Name	Max Q U/S	Max Q D/S	Safe Q	Max D	Max DxV	Max Width	Max V	Due to Storm
F Pit 1/23	0.012	0.012	0.465	0.049	0.07	0.4	1.5	1% AEP, 10 min burst, Storm 7
F Pit 3/60	0	0	0.476	0	0	0	0	
F Pit 4/60	0	0	0.448	0	0	0	0	
F Pit 5/60	0	0	0.249	0	0	0	0	
F Pit 6/60	0	0	0.286	0	0	0	0	
F Pit 1/28	0.005	0.005	0.444	0.035	0.04	0.29	1.11	1% AEP, 10 min burst, Storm 7
F Pit 1/51	0.002	0.002	0.246	0.111	0.01	2.33	0.56	1% AEP, 10 min burst, Storm 7
F Pit 1/60	0.002	0.002	0.407	0.049	0.02	0.4	0.85	1% AEP, 10 min burst, Storm 7
F Pit 2/60	0	0	0.414	0	0	0	0	
F Pit 1/9	0	0	0.337	0	0	0	0	
F Pit 6/48	0	0	0.352	0	0	0	0	
F Pit 7/48	0.004	0.004	0.352	0.07	0.03	0.99	0.79	1% AEP, 10 min burst, Storm 7
F Pit 8/48	0.032	0.032	0.347	0.071	0.1	1.01	1.48	1% AEP, 10 min burst, Storm 7
F Pit 9/48	0.009	0.009	0.352	0.048	0.05	0.4	1.11	1% AEP, 10 min burst, Storm 7
F Pit 10/48	0.006	0.006	0.469	0.045	0.04	0.38	1.06	1% AEP, 10 min burst, Storm 7
F Pit 11/48	0.011	0.011	0.467	0.111	0.06	2.33	1.35	1% AEP, 10 min burst, Storm 7

F Pit 1/10	0	0	0.337	0	0	0	0
F Pit 1/11	0	0	0.324	0	0	0	0
F Pit 4/48	0	0	0.344	0	0	0	0
F Pit 5/48	0	0	0.356	0	0	0	0
F Pit 1/14	0.002	0.002	0.353	0.028	0.02	0.23	0.81 1% AEP, 10 min burst, Storm 7
F Pit 3/48	0	0	0.336	0	0	0	0
F Pit 1/31	0.006	0.006	0.345	0.042	0.04	0.34	0.97 1% AEP, 10 min burst, Storm 7
F Pit 1/48	0.007	0.007	0.346	0.047	0.04	0.39	1.04 1% AEP, 10 min burst, Storm 7
F Pit 2/48	0	0	0.341	0	0	0	0
F Pit 1/52	0.002	0.002	0.34	0.034	0.02	0.28	0.77 1% AEP, 10 min burst, Storm 7
F Pit 1/53	0	0	0.448	0	0	0	0
F Pit 1/54	0	0	0.48	0	0	0	0
F Pit 1/7	0	0	0.418	0	0	0	0
F Pit 3/12	0.001	0.001	0.447	0.053	0	0.44	0 1% AEP, 10 min burst, Storm 7
F Pit 4/12	0.017	0.017	0.418	0.086	0.08	1.51	1.48 1% AEP, 10 min burst, Storm 7
F Pit 5/12	0	0	0.126	0	0	0	0
F Pit 6/12	0.001	0.001	0.348	0.086	0	1.51	0 1% AEP, 10 min burst, Storm 7
F Pit 7/12	0.014	0.014	0.436	0.05	0.07	0.41	1.4 1% AEP, 10 min burst, Storm 7
F Pit 8/12	0.01	0.01	0.676	0.05	0.04	0.5	0.94 1% AEP, 10 min burst, Storm 7
F Pit 1/12	0.002	0.002	0.215	0.029	0.01	0.24	0.51 1% AEP, 10 min burst, Storm 7
F Pit 2/12	0.009	0.009	0	0.064	0.02	1.56	0.48 1% AEP, 10 min burst, Storm 7
F Pit 1/13	0	0	0.458	0	0	0	0
F Pit 1/68	0.004	0.004	0.03	0.088	0	3.16	0.05 1% AEP, 10 min burst, Storm 5
F Pit 1/69	0.001	0.001	0.409	0.047	0	0.39	0 1% AEP, 5 min burst, Storm 1
F Pit 1/71	0	0	0.383	0	0	0	0
F Pit 1/8	0	0	0.763	0	0	0	0
F Sw5	0.307	0.307	0.537	0.235	0.27	1.91	1.23 1% AEP, 30 min burst, Storm 4
F Pit 1/74	0.071	0.071	0.496	0.111	0.18	1.11	2.24 1% AEP, 30 min burst, Storm 7
F Pit 1/18	0.001	0.001	0.03	0.068	0	1.8	0.03 1% AEP, 6 hour burst, Storm 2
F Sw6	0.025	0.025	0.206	0.235	0.02	1.91	0.09 1% AEP, 30 min burst, Storm 8
F Pit 1/1	0.053	0.053	0.298	0.107	0.11	2.22	1.34 1% AEP, 5 min burst, Storm 1
F Pit 2/1	0.086	0.086	0.203	0.113	0.11	2.41	1.03 1% AEP, 5 min burst, Storm 1
F Pit 3/1	0	0	0.34	0	0	0	0

DETENTION BASIN DETAILS

Name	Max WL	MaxVol	Max Q Total	Max Q Low Level	Max Q High Level
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Run Log for 5936000 run at 12:16:17 on 7/3/2018

Upwelling occurred at: Pit 1/1

Freeboard was less than 0.15m at Pit 1/74, Pit 1/68, Pit 8/12, Pit 5/12, Pit 1/52, Pit 9/48, Pit 8/48, Pit 7/48, Pit 1/31, Pit 2/1, Pit 1/18

The maximum pond depth in these sag pits is unsafe: Pit 1/74

Channels Sw6, Sw5b, Sw5a spilled. You cannot rely on these results. You really MUST specify data for higher levels at the cross sections.

Flows were safe in all overflow routes.

IGNORE THESE WARNINGS AT YOUR OWN PERIL.\cf1

Proposed DRAINS Model 6 - 5% AEP Storm Event Results

DRAINS results prepared from Version 2018.01

PIT / NODE DETAILS		Version 8				
Name	Max HGL	Max Pond HGL	Max Surface Flow (cu.m/s)	Max Pond Volume (cu.m)	Min Freeboard (m)	Overflow (cu.m/s) Constraint
Pit 1/23	48.88		0.05		0.63	0.005 Inlet Capacity
Pit 3/60	48.76		0.007		0.8	0 None
Pit 4/60	47.02		0.007		0.75	0 None
Pit 5/60	44.93		0.008		0.79	0 None
Pit 6/60	44.61	45.45	0.019	0	0.82	0 Inlet Capacity
Pit 7/60	44.29		0			
Pit 1/28	47.05		0.018		0.72	0.002 Inlet Capacity
Pit 1/51	44.95		0.011		0.76	0 None
Pit 1/60	50.14		0.019		0.77	0.001 Inlet Capacity
Pit 2/60	50		0.004		0.94	0 None
Pit 1/9	55.74		0.003		0.8	0 None
Pit 6/48	55.74		0.005		0.79	0 None
Pit 7/48	54.4		0.016		0.74	0.001 Inlet Capacity
Pit 8/48	53.52		0.027		0.7	0.005 Inlet Capacity
Pit 9/48	52.76		0.019		0.72	0.002 Inlet Capacity
Pit 10/48	51.82		0.018		0.73	0.002 Inlet Capacity
Pit 11/48	49.64		0.024		0.75	0.004 Inlet Capacity
Pit 12/48	45.94		0			
Pit 1/10	54.41		0.009		0.76	0 None
Pit 1/11	57.41		0.008		0.78	0 None
Pit 4/48	57.39		0.008		0.81	0 None
Pit 5/48	56.35		0.005		0.89	0 None
Pit 1/14	58.88		0.012		0.78	0 None
Pit 3/48	58.84		0.009		0.82	0 None
Pit 1/31	53.52		0.007		0.72	0 None
Pit 1/48	60.35		0.021		0.77	0.003 Inlet Capacity
Pit 2/48	60.21		0.002		0.92	0 None
Pit 1/52	52.77		0.006		0.68	0 None
Pit 1/53	51.83		0.006		0.69	0 None
Pit 1/54	49.65		0.008		0.76	0 None
Pit 1/7	61.43		0.003		0.85	0 None
Pit 3/12	59.84		0.009		2.42	0 None
Pit 4/12	58.81		0.031		0.92	0.007 Inlet Capacity
Pit 5/12	57.18	58.15	0.008	0	0.95	0 Inlet Capacity
Pit 6/12	56.92		0.01		1.99	0 None
Pit 7/12	56.45		0.03		1.38	0.006 Inlet Capacity
Pit 8/12	55.91		0.055		0.59	0.004 Inlet Capacity
Pit 9/12	55.57		0		1.68	None
Pit 10/12	55.2		0			
Pit 1/12	60.44		0.011		0.79	0 None
Pit 2/12	60.39		0.021		0.84	0.003 Inlet Capacity
Pit 1/13	58.88		0.007		0.82	0 None

Pit 1/68	57.34	58.16	0.012	0	0.81	0 Inlet Capacity
Pit 1/69	56.99		0.01		0.81	0 None
Pit 1/71	58.06		0.003		0.85	0 None
Pit 1/8	56.39		0.005		0.94	0 None
N1	48.81		0.122			
N2	46.46		0.162			
N3	45.88		0.161			
Pit 1/74	44.99	45.71	0.169	0.3	0.61	0 Inlet Capacity
Pit 1/18	44.7	45.44	0.054	0.1	0.7	0.001 Inlet Capacity
N4	45.86		0.008			
N5	45.75		0.008			
N6	47.88		0.172			
Pit 1/1	47.62		0.039		0.64	0.004 Inlet Capacity
Pit 2/1	46.87		0.032		0.35	0.007 Inlet Capacity
Pit 3/1	46.4	47.13	0.062	0.1	0.67	0 Inlet Capacity
Pit 4/1	45.8		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
C Pit 1/23	0.045	0.028	0.017	1.37	23.43		0 5% AEP, 10 min burst, Storm 7
C Pit 3/60	0.006	0.004	0.002	1.32	8.67		0 5% AEP, 10 min burst, Storm 7
C Pit 4/60	0.006	0.004	0.003	1.22	7.99		0 5% AEP, 10 min burst, Storm 7
C Pit 5/60	0.008	0.006	0.003	1.45	9.52		0 5% AEP, 10 min burst, Storm 2
C Pit 6/60	0.018	0.016	0.003	2.02	13.3		0 5% AEP, 5 min burst, Storm 1
C Pit 1/28	0.011	0.007	0.004	1.24	8.14		0 5% AEP, 10 min burst, Storm 7
C Pit 1/51	0.008	0.007	0.003	1.48	9.76		0 5% AEP, 10 min burst, Storm 2
C Pit 1/60	0.018	0.012	0.006	1.52	23.98		0 5% AEP, 10 min burst, Storm 6
C Pit 2/60	0.004	0.003	0.001	1.51	9.93		0 5% AEP, 10 min burst, Storm 2
C Pit 1/9	0.003	0.002	0	1.91	12.57		0 5% AEP, 5 min burst, Storm 1
C Pit 6/48	0.005	0.004	0.001	1.09	7.17		0 5% AEP, 5 min burst, Storm 1
C Pit 7/48	0.015	0.009	0.005	1.78	12.15		0 5% AEP, 10 min burst, Storm 6
C Pit 8/48	0.024	0.013	0.011	1.39	14.28		0 5% AEP, 10 min burst, Storm 7
C Pit 9/48	0.012	0.007	0.005	1.24	13.27		0 5% AEP, 10 min burst, Storm 7
C Pit 10/48	0.015	0.01	0.005	1.39	19.82		0 5% AEP, 10 min burst, Storm 6
C Pit 11/48	0.02	0.012	0.008	1.39	14.59		0 5% AEP, 10 min burst, Storm 7
C Pit 1/10	0.008	0.007	0.001	1.77	11.61		0 5% AEP, 5 min burst, Storm 1
C Pit 1/11	0.007	0.006	0.001	1.69	11.13		0 5% AEP, 5 min burst, Storm 1
C Pit 4/48	0.008	0.007	0.001	1.82	11.99		0 5% AEP, 5 min burst, Storm 1
C Pit 5/48	0.005	0.005	0	1.38	0		0 5% AEP, 5 min burst, Storm 1
C Pit 1/14	0.008	0.007	0.001	1.74	11.42		0 5% AEP, 5 min burst, Storm 1
C Pit 3/48	0.008	0.007	0.001	1.79	11.78		0 5% AEP, 5 min burst, Storm 1
C Pit 1/31	0.006	0.005	0.002	1.5	9.86		0 5% AEP, 10 min burst, Storm 2
C Pit 1/48	0.02	0.013	0.007	1.57	10.31		0 5% AEP, 10 min burst, Storm 6
C Pit 2/48	0.002	0.002	0.001	1.41	9.25		0 5% AEP, 10 min burst, Storm 2
C Pit 1/52	0.005	0.003	0.002	1.33	8.78		0 5% AEP, 10 min burst, Storm 7
C Pit 1/53	0.006	0.005	0.002	1.5	9.85		0 5% AEP, 10 min burst, Storm 2
C Pit 1/54	0.008	0.006	0.003	1.48	9.7		0 5% AEP, 10 min burst, Storm 2
C Pit 1/7	0.003	0.002	0.001	1.11	7.27		0 5% AEP, 10 min burst, Storm 7

C Pit 3/12	0.009	0.004	0.004	1.11	9.77	0 5% AEP, 10 min burst, Storm 7
C Pit 4/12	0.03	0.014	0.016	1.16	10.9	0 5% AEP, 10 min burst, Storm 7
C Pit 6/12	0.009	0.005	0.004	1.01	14.51	0 5% AEP, 10 min burst, Storm 7
C Pit 7/12	0.028	0.017	0.01	0.41	20.98	0 5% AEP, 10 min burst, Storm 7
C Pit 8/12	0.044	0.027	0.017	1.3	19.95	0 5% AEP, 10 min burst, Storm 7
C Pit 1/12	0.007	0.005	0.002	1.57	10.34	0 5% AEP, 10 min burst, Storm 6
C Pit 2/12	0.02	0.009	0.011	2.24	8.82	0 5% AEP, 10 min burst, Storm 7
C Pit 1/13	0.006	0.004	0.003	1.03	6.74	0 5% AEP, 10 min burst, Storm 7
C Pit 1/68	0.011	0.006	0.005	1.19	7.84	0 5% AEP, 10 min burst, Storm 7
C Pit 1/69	0.01	0.005	0.004	0.29	1.91	0 5% AEP, 5 min burst, Storm 1
C Pit 1/71	0.003	0.002	0.001	1	6.59	0 5% AEP, 10 min burst, Storm 7
C Pit 1/8	0.005	0.005	0	1.33	0	0 5% AEP, 5 min burst, Storm 1
C Sw5a	0.122	0	0.122	0	35.2	0 5% AEP, 30 min burst, Storm 9
C Sw5b	0.04	0	0.04	0	35.2	0 5% AEP, 30 min burst, Storm 9
C Pit 1/18	0.046	0.03	0.016	2.17	27.87	0 5% AEP, 10 min burst, Storm 6
C Sw6	0.008	0	0.008	0	35.2	0 5% AEP, 30 min burst, Storm 7
C Chapel	0.165	0.161	0.004	1.56	10.25	0 5% AEP, 5 min burst, Storm 1
C Pit 1/1	0.036	0.018	0.018	1.14	17.56	0 5% AEP, 10 min burst, Storm 7
C Pit 2/1	0.026	0.014	0.012	2.1	19.24	0 5% AEP, 10 min burst, Storm 7
C Pit 3/1	0.05	0.027	0.022	1.22	20.62	0 5% AEP, 10 min burst, Storm 7

PIPE DETAILS

Name	Max Q (cu.m/s)	Max V (m/s)	Max U/S HGL (m)	Max D/S HGL (m)	Due to Storm
P Pit 1/23	0.041	1.35	48.748	48.756	5% AEP, 10 min burst, Storm 7
P Pit 3/60	0.068	2.86	48.63	47.02	5% AEP, 10 min burst, Storm 7
P Pit 4/60	0.087	3.76	46.88	44.95	5% AEP, 10 min burst, Storm 7
P Pit 5/60	0.104	2.02	44.895	44.617	5% AEP, 10 min burst, Storm 7
P Pit 6/60	0.276	3.56	44.413	44.288	5% AEP, 30 min burst, Storm 5
P Pit 1/28	0.015	0.4	47.021	47.02	5% AEP, 10 min burst, Storm 7
P Pit 1/51	0.01	0.4	44.926	44.926	5% AEP, 10 min burst, Storm 7
P Pit 1/60	0.017	2.51	50.052	50.026	5% AEP, 10 min burst, Storm 6
P Pit 2/60	0.021	1.84	49.977	48.757	5% AEP, 10 min burst, Storm 6
P Pit 1/9	0.003	0.12	55.739	55.74	5% AEP, 10 min burst, Storm 7
P Pit 6/48	0.065	2.28	55.663	54.396	5% AEP, 10 min burst, Storm 7
P Pit 7/48	0.083	3.55	54.254	53.52	5% AEP, 10 min burst, Storm 8
P Pit 8/48	0.114	3.04	53.376	52.759	5% AEP, 10 min burst, Storm 8
P Pit 9/48	0.132	3.17	52.629	51.851	5% AEP, 10 min burst, Storm 7
P Pit 10/48	0.151	4.42	51.667	49.639	5% AEP, 10 min burst, Storm 9
P Pit 11/48	0.176	5.17	49.482	45.939	5% AEP, 10 min burst, Storm 8
P Pit 1/10	0.008	0.22	54.395	54.396	5% AEP, 5 min burst, Storm 1
P Pit 1/11	0.007	0.34	57.392	57.394	5% AEP, 10 min burst, Storm 6
P Pit 4/48	0.05	2.06	57.309	56.435	5% AEP, 10 min burst, Storm 7
P Pit 5/48	0.058	2.06	56.29	55.754	5% AEP, 10 min burst, Storm 7
P Pit 1/14	0.011	0.66	58.839	58.836	5% AEP, 10 min burst, Storm 6
P Pit 3/48	0.037	2.14	58.749	57.394	5% AEP, 10 min burst, Storm 6
P Pit 1/31	0.007	0.13	53.52	53.52	5% AEP, 5 min burst, Storm 1
P Pit 1/48	0.017	2.5	60.26	60.235	5% AEP, 10 min burst, Storm 6
P Pit 2/48	0.019	1.58	60.188	58.836	5% AEP, 10 min burst, Storm 6

P Pit 1/52	0.005	0.1	52.768	52.758	5% AEP, 10 min burst, Storm 6
P Pit 1/53	0.006	0.11	51.826	51.823	5% AEP, 10 min burst, Storm 3
P Pit 1/54	0.008	0.2	49.637	49.638	5% AEP, 10 min burst, Storm 5
P Pit 1/7	0.003	1.38	61.408	61.358	5% AEP, 10 min burst, Storm 7
P Pit 3/12	0.036	1.86	59.773	58.924	5% AEP, 10 min burst, Storm 6
P Pit 4/12	0.065	2.68	58.649	57.18	5% AEP, 10 min burst, Storm 6
P Pit 5/12	0.081	2.55	57.048	56.919	5% AEP, 10 min burst, Storm 6
P Pit 6/12	0.09	2.72	56.801	56.447	5% AEP, 10 min burst, Storm 6
P Pit 7/12	0.118	2.91	56.321	55.914	5% AEP, 10 min burst, Storm 6
P Pit 8/12	0.162	1.72	55.814	55.567	5% AEP, 10 min burst, Storm 6
P Pit 9/12	0.159	1.72	55.543	55.363	5% AEP, 10 min burst, Storm 6
P Pit 1/12	0.01	0.86	60.394	60.388	5% AEP, 10 min burst, Storm 7
P Pit 2/12	0.027	3	60.288	59.842	5% AEP, 10 min burst, Storm 6
P Pit 1/13	0.006	2.48	58.832	58.806	5% AEP, 10 min burst, Storm 7
P Pit 1/68	0.011	2.72	57.265	57.236	5% AEP, 10 min burst, Storm 7
P Pit 1/69	0.01	3.6	56.922	56.885	5% AEP, 5 min burst, Storm 1
P Pit 1/71	0.003	1.32	58.037	57.987	5% AEP, 10 min burst, Storm 7
P Pit 1/8	0.005	0.87	56.358	56.354	5% AEP, 5 min burst, Storm 1
P Pit 1/74	0.169	1.58	44.808	44.761	5% AEP, 30 min burst, Storm 3
P Pit 1/18	0.198	1.37	44.628	44.609	5% AEP, 30 min burst, Storm 2
P Chapel	0.164	1.75	47.88	47.617	5% AEP, 5 min burst, Storm 1
P Pit 1/1	0.189	1.96	47.332	46.868	5% AEP, 5 min burst, Storm 1
P Pit 2/1	0.209	1.89	46.581	46.404	5% AEP, 5 min burst, Storm 1
P Pit 3/1	0.26	2.36	46.1	45.8	5% AEP, 5 min burst, Storm 1

CHANNEL DETAILS

Name	Max Q (cu.m/s)	Max V (m/s)	Due to Storm
Sw5a	0.121	0.83	5% AEP, 30 min burst, Storm 1
Sw5b	0.161	1.19	5% AEP, 30 min burst, Storm 1
Sw6	0.008	0.32	5% AEP, 30 min burst, Storm 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
F Pit 1/23	0.005	0.005	0.465	0.036	0.04	0.3	1.2	5% AEP, 10 min burst, Storm 7
F Pit 3/60	0	0	0.476	0	0	0	0	
F Pit 4/60	0	0	0.448	0	0	0	0	
F Pit 5/60	0	0	0.249	0	0	0	0	
F Pit 6/60	0	0	0.286	0	0	0	0	
F Pit 1/28	0.002	0.002	0.444	0.025	0.02	0.21	0.88	5% AEP, 10 min burst, Storm 7
F Pit 1/51	0	0	0.246	0	0	0	0	
F Pit 1/60	0.001	0.001	0.407	0.036	0	0.3	0	5% AEP, 10 min burst, Storm 7
F Pit 2/60	0	0	0.414	0	0	0	0	
F Pit 1/9	0	0	0.337	0	0	0	0	
F Pit 6/48	0	0	0.352	0	0	0	0	
F Pit 7/48	0.001	0.001	0.352	0.042	0.01	0.35	0.64	5% AEP, 10 min burst, Storm 7
F Pit 8/48	0.005	0.005	0.347	0.042	0.04	0.35	0.96	5% AEP, 10 min burst, Storm 7
F Pit 9/48	0.002	0.002	0.352	0.024	0.02	0.2	0.75	5% AEP, 10 min burst, Storm 7
F Pit 10/48	0.002	0.002	0.469	0.029	0.02	0.24	0.89	5% AEP, 10 min burst, Storm 7
F Pit 11/48	0.004	0.004	0.467	0.044	0.03	0.36	1.17	5% AEP, 10 min burst, Storm 7

F Pit 1/10	0	0	0.337	0	0	0	0
F Pit 1/11	0	0	0.324	0	0	0	0
F Pit 4/48	0	0	0.344	0	0	0	0
F Pit 5/48	0	0	0.356	0	0	0	0
F Pit 1/14	0	0	0.353	0	0	0	0
F Pit 3/48	0	0	0.336	0	0	0	0
F Pit 1/31	0	0	0.345	0	0	0	0
F Pit 1/48	0.003	0.003	0.346	0.036	0.02	0.3	0.83 5% AEP, 10 min burst, Storm 7
F Pit 2/48	0	0	0.341	0	0	0	0
F Pit 1/52	0	0	0.34	0	0	0	0
F Pit 1/53	0	0	0.448	0	0	0	0
F Pit 1/54	0	0	0.48	0	0	0	0
F Pit 1/7	0	0	0.418	0	0	0	0
F Pit 3/12	0	0	0.447	0	0	0	0
F Pit 4/12	0.007	0.007	0.418	0.045	0.05	0.37	1.21 5% AEP, 10 min burst, Storm 7
F Pit 5/12	0	0	0.126	0	0	0	0
F Pit 6/12	0	0	0.348	0	0	0	0
F Pit 7/12	0.006	0.006	0.436	0.039	0.04	0.32	1.12 5% AEP, 10 min burst, Storm 7
F Pit 8/12	0.004	0.004	0.228	0.037	0.03	0.37	0.78 5% AEP, 10 min burst, Storm 7
F Pit 1/12	0	0	0.215	0	0	0	0
F Pit 2/12	0.003	0.003	0	0.047	0.01	0.78	0.38 5% AEP, 10 min burst, Storm 6
F Pit 1/13	0	0	0.458	0	0	0	0
F Pit 1/68	0	0	0.03	0	0	0	0
F Pit 1/69	0	0	0.409	0	0	0	0
F Pit 1/71	0	0	0.383	0	0	0	0
F Pit 1/8	0	0	0.453	0	0	0	0
F Sw5	0.161	0.161	0.537	0.16	0.17	1.46	1.19 5% AEP, 30 min burst, Storm 1
F Pit 1/74	0	0	0.387	0	0	0	0
F Pit 1/18	0.001	0.001	0.03	0.059	0	1.25	0.04 5% AEP, 6 hour burst, Storm 8
F Sw6	0.008	0.008	0.206	0.04	0.01	0.74	0.49 5% AEP, 30 min burst, Storm 1
F Pit 1/1	0.004	0.004	0.298	0.05	0.02	0.41	0.67 5% AEP, 10 min burst, Storm 9
F Pit 2/1	0.007	0.007	0.203	0.059	0.03	0.62	0.68 5% AEP, 10 min burst, Storm 6
F Pit 3/1	0	0	0.34	0	0	0	0

DETENTION BASIN DETAILS

Name	Max WL	MaxVol	Max Q Total	Max Q Low Level	Max Q High Level
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Run Log for 5936000 run at 12:20:21 on 7/3/2018

No water upwelling from any pit. Freeboard was adequate at all pits.

Flows were safe in all overflow routes.

Proposed DRAINS Model 6 - 10% AEP Storm Event Results

DRAINS results prepared from Version 2018.01

PIT / NODE DETAILS		Version 8				
Name	Max HGL	Max Pond HGL	Max Surface Flow (cu.m/s)	Max Pond Volume (cu.m)	Min Freeboard (m)	Overflow (cu.m/s) Constraint
Pit 1/23	48.83		0.039		0.68	0.004 Inlet Capacity
Pit 3/60	48.72		0.005		0.84	0 None
Pit 4/60	46.99		0.005		0.78	0 None
Pit 5/60	44.9		0.007		0.82	0 None
Pit 6/60	44.53	45.45	0.016	0	0.9	0 Inlet Capacity
Pit 7/60	44.24		0			
Pit 1/28	47.02		0.014		0.75	0 Inlet Capacity
Pit 1/51	44.92		0.008		0.79	0 None
Pit 1/60	50.12		0.015		0.78	0 None
Pit 2/60	49.99		0.003		0.95	0 None
Pit 1/9	55.72		0.003		0.83	0 None
Pit 6/48	55.71		0.004		0.81	0 None
Pit 7/48	54.36		0.013		0.78	0 Inlet Capacity
Pit 8/48	53.51		0.021		0.7	0.003 Inlet Capacity
Pit 9/48	52.75		0.013		0.73	0 None
Pit 10/48	51.82		0.013		0.73	0 Inlet Capacity
Pit 11/48	49.63		0.018		0.76	0.001 Inlet Capacity
Pit 12/48	45.34		0			
Pit 1/10	54.37		0.007		0.79	0 None
Pit 1/11	57.39		0.006		0.8	0 None
Pit 4/48	57.37		0.007		0.84	0 None
Pit 5/48	56.33		0.004		0.91	0 None
Pit 1/14	58.86		0.009		0.81	0 None
Pit 3/48	58.82		0.007		0.84	0 None
Pit 1/31	53.51		0.005		0.73	0 None
Pit 1/48	60.33		0.017		0.78	0.001 Inlet Capacity
Pit 2/48	60.2		0.002		0.93	0 None
Pit 1/52	52.75		0.004		0.7	0 None
Pit 1/53	51.82		0.005		0.7	0 None
Pit 1/54	49.63		0.007		0.77	0 None
Pit 1/7	61.43		0.003		0.86	0 None
Pit 3/12	59.82		0.007		2.45	0 None
Pit 4/12	58.76		0.024		0.96	0.004 Inlet Capacity
Pit 5/12	57.12	58.15	0.005	0	1.02	0 Inlet Capacity
Pit 6/12	56.87		0.008		2.04	0 None
Pit 7/12	56.41		0.024		1.42	0.004 Inlet Capacity
Pit 8/12	55.77		0.042		0.73	0.004 Inlet Capacity
Pit 9/12	55.49		0		1.75	None
Pit 10/12	55.32		0			
Pit 1/12	60.42		0.007		0.81	0 None
Pit 2/12	60.36		0.017		0.87	0.001 Inlet Capacity
Pit 1/13	58.87		0.005		0.84	0 None

Pit 1/68	57.32	58.16	0.009	0	0.82	0 Inlet Capacity
Pit 1/69	56.98		0.008		0.82	0 None
Pit 1/71	58.06		0.002		0.86	0 None
Pit 1/8	56.39		0.004		0.95	0 None
N1	48.79		0.086			
N2	46.43		0.114			
N3	45.86		0.114			
Pit 1/74	44.91	45.69	0.119	0.2	0.69	0 Inlet Capacity
Pit 1/18	44.62	45.43	0.041	0.1	0.78	0.001 Inlet Capacity
N4	45.85		0.006			
N5	45.74		0.006			
N6	47.84		0.145			
Pit 1/1	47.38		0.03		0.88	0.002 Inlet Capacity
Pit 2/1	46.5		0.024		0.72	0.004 Inlet Capacity
Pit 3/1	45.97	47.12	0.046	0.1	1.11	0 Inlet Capacity
Pit 4/1	45.53		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
C Pit 1/23	0.036	0.024	0.012	1.46	25.02		0 10% AEP, 10 min burst, Storm 6
C Pit 3/60	0.005	0.003	0.002	1.41	9.25		0 10% AEP, 10 min burst, Storm 6
C Pit 4/60	0.005	0.003	0.002	1.3	8.53		0 10% AEP, 10 min burst, Storm 7
C Pit 5/60	0.006	0.004	0.002	1.55	10.16		0 10% AEP, 10 min burst, Storm 6
C Pit 6/60	0.015	0.013	0.002	2.15	14.15		0 10% AEP, 5 min burst, Storm 1
C Pit 1/28	0.009	0.006	0.003	1.32	8.69		0 10% AEP, 10 min burst, Storm 7
C Pit 1/51	0.007	0.005	0.002	1.59	10.42		0 10% AEP, 10 min burst, Storm 6
C Pit 1/60	0.014	0.012	0.002	1.49	23.51		0 10% AEP, 5 min burst, Storm 1
C Pit 2/60	0.003	0.002	0.001	1.61	10.6		0 10% AEP, 10 min burst, Storm 6
C Pit 1/9	0.002	0.002	0	2.03	13.38		0 10% AEP, 5 min burst, Storm 1
C Pit 6/48	0.004	0.003	0	1.16	7.62		0 10% AEP, 5 min burst, Storm 1
C Pit 7/48	0.012	0.008	0.004	1.9	12.97		0 10% AEP, 10 min burst, Storm 6
C Pit 8/48	0.019	0.011	0.008	1.48	15.25		0 10% AEP, 10 min burst, Storm 7
C Pit 9/48	0.009	0.007	0.003	1.32	14.17		0 10% AEP, 10 min burst, Storm 2
C Pit 10/48	0.012	0.01	0.002	1.36	19.43		0 10% AEP, 5 min burst, Storm 1
C Pit 11/48	0.016	0.01	0.006	1.49	15.58		0 10% AEP, 10 min burst, Storm 7
C Pit 1/10	0.007	0.006	0.001	1.88	12.36		0 10% AEP, 5 min burst, Storm 1
C Pit 1/11	0.006	0.005	0.001	1.8	11.85		0 10% AEP, 5 min burst, Storm 1
C Pit 4/48	0.006	0.006	0.001	1.94	12.75		0 10% AEP, 5 min burst, Storm 1
C Pit 5/48	0.004	0.004	0	1.46	0		0 10% AEP, 5 min burst, Storm 1
C Pit 1/14	0.007	0.006	0.001	1.85	12.15		0 10% AEP, 5 min burst, Storm 1
C Pit 3/48	0.007	0.006	0.001	1.91	12.54		0 10% AEP, 5 min burst, Storm 1
C Pit 1/31	0.005	0.003	0.001	1.6	10.53		0 10% AEP, 10 min burst, Storm 6
C Pit 1/48	0.016	0.013	0.002	1.54	10.11		0 10% AEP, 5 min burst, Storm 1
C Pit 2/48	0.002	0.001	0.001	1.5	9.88		0 10% AEP, 10 min burst, Storm 6
C Pit 1/52	0.004	0.003	0.001	1.43	9.37		0 10% AEP, 10 min burst, Storm 6
C Pit 1/53	0.005	0.003	0.001	1.6	10.51		0 10% AEP, 10 min burst, Storm 6
C Pit 1/54	0.006	0.004	0.002	1.58	10.36		0 10% AEP, 10 min burst, Storm 6
C Pit 1/7	0.002	0.001	0.001	1.18	7.76		0 10% AEP, 10 min burst, Storm 7

C Pit 3/12	0.006	0.003	0.003	1.19	10.44	0 10% AEP, 10 min burst, Storm 7
C Pit 4/12	0.022	0.012	0.011	1.24	11.64	0 10% AEP, 10 min burst, Storm 7
C Pit 6/12	0.007	0.005	0.003	1.08	15.5	0 10% AEP, 10 min burst, Storm 7
C Pit 7/12	0.022	0.015	0.007	0.44	22.4	0 10% AEP, 10 min burst, Storm 6
C Pit 8/12	0.034	0.023	0.012	1.39	21.3	0 10% AEP, 10 min burst, Storm 6
C Pit 1/12	0.006	0.005	0.001	1.54	10.14	0 10% AEP, 5 min burst, Storm 1
C Pit 2/12	0.015	0.007	0.008	2.39	9.41	0 10% AEP, 10 min burst, Storm 7
C Pit 1/13	0.005	0.003	0.002	1.09	7.2	0 10% AEP, 10 min burst, Storm 7
C Pit 1/68	0.008	0.005	0.003	1.27	8.37	0 10% AEP, 10 min burst, Storm 7
C Pit 1/69	0.008	0.005	0.003	0.31	2.03	0 10% AEP, 5 min burst, Storm 1
C Pit 1/71	0.002	0.001	0.001	1.07	7.04	0 10% AEP, 10 min burst, Storm 7
C Pit 1/8	0.004	0.004	0	1.42	0	0 10% AEP, 5 min burst, Storm 1
C Sw5a	0.086	0	0.086	0	37.54	0 10% AEP, 30 min burst, Storm 6
C Sw5b	0.028	0	0.028	0	37.54	0 10% AEP, 30 min burst, Storm 7
C Pit 1/18	0.037	0.031	0.006	2.13	27.32	0 10% AEP, 5 min burst, Storm 1
C Sw6	0.006	0	0.006	0	37.54	0 10% AEP, 30 min burst, Storm 5
C Chapel	0.14	0.138	0.003	1.66	10.91	0 10% AEP, 5 min burst, Storm 1
C Pit 1/1	0.028	0.016	0.012	1.21	18.75	0 10% AEP, 10 min burst, Storm 7
C Pit 2/1	0.02	0.012	0.008	2.24	20.54	0 10% AEP, 10 min burst, Storm 7
C Pit 3/1	0.038	0.023	0.015	1.31	22.01	0 10% AEP, 10 min burst, Storm 7

PIPE DETAILS

Name	Max Q (cu.m/s)	Max V (m/s)	Max U/S HGL (m)	Max D/S HGL (m)	Due to Storm
P Pit 1/23	0.032	1.45	48.72	48.724	10% AEP, 10 min burst, Storm 6
P Pit 3/60	0.054	2.68	48.617	46.986	10% AEP, 10 min burst, Storm 6
P Pit 4/60	0.069	3	46.879	44.935	10% AEP, 10 min burst, Storm 6
P Pit 5/60	0.081	1.89	44.872	44.563	10% AEP, 10 min burst, Storm 6
P Pit 6/60	0.201	5.51	44.353	44.241	10% AEP, 30 min burst, Storm 5
P Pit 1/28	0.012	0.46	46.986	46.985	10% AEP, 10 min burst, Storm 7
P Pit 1/51	0.007	0.42	44.897	44.899	10% AEP, 10 min burst, Storm 6
P Pit 1/60	0.014	2.6	50.045	50.018	10% AEP, 5 min burst, Storm 1
P Pit 2/60	0.017	1.73	49.97	48.724	10% AEP, 5 min burst, Storm 1
P Pit 1/9	0.002	0.15	55.712	55.714	10% AEP, 10 min burst, Storm 7
P Pit 6/48	0.051	2.14	55.648	54.357	10% AEP, 10 min burst, Storm 7
P Pit 7/48	0.068	3	54.251	53.508	10% AEP, 10 min burst, Storm 3
P Pit 8/48	0.088	2.51	53.368	52.746	10% AEP, 10 min burst, Storm 7
P Pit 9/48	0.101	2.65	52.616	51.818	10% AEP, 10 min burst, Storm 7
P Pit 10/48	0.116	3.45	51.665	49.629	10% AEP, 10 min burst, Storm 7
P Pit 11/48	0.133	4.23	49.474	45.343	10% AEP, 10 min burst, Storm 7
P Pit 1/10	0.007	0.26	54.356	54.357	10% AEP, 10 min burst, Storm 6
P Pit 1/11	0.006	0.42	57.367	57.369	10% AEP, 5 min burst, Storm 1
P Pit 4/48	0.04	1.94	57.296	56.421	10% AEP, 10 min burst, Storm 7
P Pit 5/48	0.046	1.93	56.275	55.74	10% AEP, 10 min burst, Storm 7
P Pit 1/14	0.008	0.7	58.819	58.816	10% AEP, 10 min burst, Storm 6
P Pit 3/48	0.029	1.77	58.745	57.372	10% AEP, 10 min burst, Storm 7
P Pit 1/31	0.005	0.09	53.508	53.508	10% AEP, 10 min burst, Storm 3
P Pit 1/48	0.014	2.58	60.255	60.228	10% AEP, 5 min burst, Storm 1
P Pit 2/48	0.016	1.5	60.182	58.822	10% AEP, 10 min burst, Storm 6

P Pit 1/52	0.004	0.08	52.743	52.743	10% AEP, 10 min burst, Storm 3
P Pit 1/53	0.004	0.09	51.816	51.816	10% AEP, 10 min burst, Storm 7
P Pit 1/54	0.006	0.16	49.628	49.629	10% AEP, 10 min burst, Storm 7
P Pit 1/7	0.002	1.09	61.408	61.356	10% AEP, 10 min burst, Storm 7
P Pit 3/12	0.027	1.7	59.76	58.911	10% AEP, 10 min burst, Storm 7
P Pit 4/12	0.05	2.49	58.634	57.117	10% AEP, 10 min burst, Storm 7
P Pit 5/12	0.061	3.23	57.004	56.868	10% AEP, 10 min burst, Storm 7
P Pit 6/12	0.07	2.43	56.786	56.407	10% AEP, 10 min burst, Storm 7
P Pit 7/12	0.091	2.48	56.31	55.77	10% AEP, 10 min burst, Storm 6
P Pit 8/12	0.123	3.83	55.604	55.501	10% AEP, 10 min burst, Storm 7
P Pit 9/12	0.123	1.68	55.469	55.319	10% AEP, 10 min burst, Storm 7
P Pit 1/12	0.006	0.77	60.38	60.361	10% AEP, 10 min burst, Storm 7
P Pit 2/12	0.02	2.2	60.288	59.817	10% AEP, 10 min burst, Storm 7
P Pit 1/13	0.005	2.24	58.83	58.79	10% AEP, 10 min burst, Storm 7
P Pit 1/68	0.008	2.93	57.258	57.228	10% AEP, 10 min burst, Storm 7
P Pit 1/69	0.008	3.48	56.919	56.877	10% AEP, 5 min burst, Storm 1
P Pit 1/71	0.002	1.02	58.037	57.984	10% AEP, 10 min burst, Storm 7
P Pit 1/8	0.004	0.83	56.356	56.331	10% AEP, 5 min burst, Storm 1
P Pit 1/74	0.118	1.44	44.775	44.729	10% AEP, 30 min burst, Storm 1
P Pit 1/18	0.14	1.6	44.552	44.525	10% AEP, 30 min burst, Storm 7
P Chapel	0.14	1.76	47.837	47.538	10% AEP, 5 min burst, Storm 1
P Pit 1/1	0.164	3.79	47.181	46.5	10% AEP, 5 min burst, Storm 1
P Pit 2/1	0.18	3.85	46.285	45.968	10% AEP, 5 min burst, Storm 1
P Pit 3/1	0.219	2.11	45.753	45.535	10% AEP, 5 min burst, Storm 1

CHANNEL DETAILS

Name	Max Q (cu.m/s)	Max V (m/s)	Due to Storm
Sw5a	0.085	0.75	10% AEP, 30 min burst, Storm 1
Sw5b	0.113	1.06	10% AEP, 30 min burst, Storm 1
Sw6	0.006	0.27	10% AEP, 30 min burst, Storm 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
F Pit 1/23	0.004	0.004	0.465	0.035	0.03	0.29	1.12	10% AEP, 5 min burst, Storm 1
F Pit 3/60	0	0	0.476	0	0	0	0	
F Pit 4/60	0	0	0.448	0	0	0	0	
F Pit 5/60	0	0	0.249	0	0	0	0	
F Pit 6/60	0	0	0.286	0	0	0	0	
F Pit 1/28	0	0	0.444	0	0	0	0	
F Pit 1/51	0	0	0.246	0	0	0	0	
F Pit 1/60	0	0	0.407	0	0	0	0	
F Pit 2/60	0	0	0.414	0	0	0	0	
F Pit 1/9	0	0	0.337	0	0	0	0	
F Pit 6/48	0	0	0.352	0	0	0	0	
F Pit 7/48	0	0	0.352	0	0	0	0	
F Pit 8/48	0.003	0.003	0.347	0.034	0.02	0.28	0.82	10% AEP, 10 min burst, Storm 7
F Pit 9/48	0	0	0.352	0	0	0	0	
F Pit 10/48	0	0	0.469	0	0	0	0	
F Pit 11/48	0.001	0.001	0.467	0.035	0	0.29	0	10% AEP, 30 min burst, Storm 2

F Pit 1/10	0	0	0.337	0	0	0	0
F Pit 1/11	0	0	0.324	0	0	0	0
F Pit 4/48	0	0	0.344	0	0	0	0
F Pit 5/48	0	0	0.356	0	0	0	0
F Pit 1/14	0	0	0.353	0	0	0	0
F Pit 3/48	0	0	0.336	0	0	0	0
F Pit 1/31	0	0	0.345	0	0	0	0
F Pit 1/48	0.001	0.001	0.346	0.025	0.01	0.21	0.67 10% AEP, 10 min burst, Storm 7
F Pit 2/48	0	0	0.341	0	0	0	0
F Pit 1/52	0	0	0.34	0	0	0	0
F Pit 1/53	0	0	0.448	0	0	0	0
F Pit 1/54	0	0	0.48	0	0	0	0
F Pit 1/7	0	0	0.418	0	0	0	0
F Pit 3/12	0	0	0.447	0	0	0	0
F Pit 4/12	0.004	0.004	0.418	0.036	0.03	0.3	1.05 10% AEP, 10 min burst, Storm 7
F Pit 5/12	0	0	0.126	0	0	0	0
F Pit 6/12	0	0	0.348	0	0	0	0
F Pit 7/12	0.004	0.004	0.436	0.035	0.03	0.29	0.97 10% AEP, 10 min burst, Storm 6
F Pit 8/12	0.004	0.004	0.228	0.034	0.02	0.34	0.7 10% AEP, 10 min burst, Storm 8
F Pit 1/12	0	0	0.215	0	0	0	0
F Pit 2/12	0.001	0.001	0	0.028	0	0.46	0 10% AEP, 10 min burst, Storm 7
F Pit 1/13	0	0	0.458	0	0	0	0
F Pit 1/68	0	0	0.03	0	0	0	0
F Pit 1/69	0	0	0.409	0	0	0	0
F Pit 1/71	0	0	0.383	0	0	0	0
F Pit 1/8	0	0	0.453	0	0	0	0
F Sw5	0.113	0.113	0.537	0.132	0.13	1.29	1.06 10% AEP, 30 min burst, Storm 1
F Pit 1/74	0	0	0.387	0	0	0	0
F Pit 1/18	0.001	0.001	0.03	0.056	0	1.02	0.04 10% AEP, 6 hour burst, Storm 9
F Sw6	0.006	0.006	0.206	0.034	0.01	0.7	0.44 10% AEP, 30 min burst, Storm 1
F Pit 1/1	0.002	0.002	0.298	0.042	0.02	0.35	0.69 10% AEP, 10 min burst, Storm 7
F Pit 2/1	0.004	0.004	0.203	0.048	0.02	0.4	0.54 10% AEP, 10 min burst, Storm 7
F Pit 3/1	0	0	0.34	0	0	0	0

DETENTION BASIN DETAILS

Name	Max WL	MaxVol	Max Q Total	Max Q Low Level	Max Q High Level
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Run Log for 5936000 run at 12:18:11 on 7/3/2018

No water upwelling from any pit. Freeboard was adequate at all pits.

Flows were safe in all overflow routes.

Proposed DRAINS Model 6 - 20% AEP Storm Event Results

DRAINS results prepared from Version 2018.01

PIT / NODE DETAILS		Version 8					Constraint
Name	Max HGL	Max Pond HGL	Max Surface Flow (cu.m/s)	Max Pond Volume (cu.m)	Min Freeboard (m)	Overflow (cu.m/s)	Constraint
Pit 1/23	48.8		0.035		0.71	0.002	Inlet Capacity
Pit 3/60	48.7		0.005		0.86	0	None
Pit 4/60	46.95		0.005		0.81	0	None
Pit 5/60	44.87		0.006		0.85	0	None
Pit 6/60	44.46	45.45	0.015	0	0.96	0	Inlet Capacity
Pit 7/60	44.2		0				
Pit 1/28	46.99		0.012		0.78	0	None
Pit 1/51	44.9		0.007		0.81	0	None
Pit 1/60	50.11		0.014		0.8	0	None
Pit 2/60	49.98		0.003		0.96	0	None
Pit 1/9	55.7		0.002		0.85	0	None
Pit 6/48	55.69		0.004		0.84	0	None
Pit 7/48	54.34		0.011		0.8	0	None
Pit 8/48	53.46		0.018		0.75	0.001	Inlet Capacity
Pit 9/48	52.7		0.011		0.78	0	None
Pit 10/48	51.76		0.011		0.79	0	None
Pit 11/48	49.58		0.015		0.81	0	None
Pit 12/48	45.32		0				
Pit 1/10	54.35		0.007		0.81	0	None
Pit 1/11	57.37		0.006		0.82	0	None
Pit 4/48	57.34		0.006		0.86	0	None
Pit 5/48	56.31		0.004		0.93	0	None
Pit 1/14	58.84		0.007		0.83	0	None
Pit 3/48	58.79		0.007		0.87	0	None
Pit 1/31	53.46		0.005		0.78	0	None
Pit 1/48	60.32		0.016		0.79	0	Inlet Capacity
Pit 2/48	60.19		0.002		0.93	0	None
Pit 1/52	52.7		0.004		0.76	0	None
Pit 1/53	51.77		0.005		0.75	0	None
Pit 1/54	49.59		0.006		0.82	0	None
Pit 1/7	61.42		0.002		0.86	0	None
Pit 3/12	59.8		0.006		2.47	0	None
Pit 4/12	58.73		0.02		1	0.001	Inlet Capacity
Pit 5/12	57.08	58.14	0.003	0	1.06	0	Inlet Capacity
Pit 6/12	56.83		0.007		2.07	0	None
Pit 7/12	56.37		0.021		1.46	0.002	Inlet Capacity
Pit 8/12	55.71		0.037		0.79	0.002	Inlet Capacity
Pit 9/12	55.45		0		1.8		None
Pit 10/12	55.28		0				
Pit 1/12	60.4		0.006		0.82	0	None
Pit 2/12	60.34		0.013		0.89	0	None
Pit 1/13	58.86		0.005		0.85	0	None

Pit 1/68	57.31	58.16	0.008	0	0.84	0 Inlet Capacity
Pit 1/69	56.96		0.008		0.83	0 None
Pit 1/71	58.05		0.002		0.87	0 None
Pit 1/8	56.38		0.004		0.95	0 None
N1	48.76		0.057			
N2	46.4		0.075			
N3	45.83		0.074			
Pit 1/74	44.84	45.66	0.078	0.2	0.76	0 Inlet Capacity
Pit 1/18	44.55	45.43	0.036	0.1	0.84	0.001 Inlet Capacity
N4	45.84		0.004			
N5	45.73		0.004			
N6	47.81		0.132			
Pit 1/1	47.32		0.025		0.94	0.001 Inlet Capacity
Pit 2/1	46.44		0.02		0.78	0.001 Inlet Capacity
Pit 3/1	45.79	47.12	0.039	0.1	1.29	0 Inlet Capacity
Pit 4/1	45.51		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
C Pit 1/23	0.027	0.024	0.003	1.45	24.73		0 20% AEP, 5 min burst, Storm 1
C Pit 3/60	0.004	0.003	0.001	1.51	9.96		0 20% AEP, 10 min burst, Storm 8
C Pit 4/60	0.004	0.003	0	1.28	8.43		0 20% AEP, 5 min burst, Storm 1
C Pit 5/60	0.005	0.004	0.001	1.53	10.04		0 20% AEP, 5 min burst, Storm 1
C Pit 6/60	0.012	0.011	0.001	2.32	15.23		0 20% AEP, 5 min burst, Storm 1
C Pit 1/28	0.007	0.006	0.001	1.31	8.59		0 20% AEP, 5 min burst, Storm 1
C Pit 1/51	0.005	0.005	0.001	1.57	10.3		0 20% AEP, 5 min burst, Storm 1
C Pit 1/60	0.011	0.01	0.001	1.61	25.3		0 20% AEP, 5 min burst, Storm 1
C Pit 2/60	0.002	0.002	0	1.59	10.48		0 20% AEP, 5 min burst, Storm 1
C Pit 1/9	0.002	0.002	0	2.19	14.4		0 20% AEP, 5 min burst, Storm 1
C Pit 6/48	0.003	0.003	0	1.25	8.21		0 20% AEP, 5 min burst, Storm 1
C Pit 7/48	0.009	0.008	0.001	1.87	12.82		0 20% AEP, 5 min burst, Storm 1
C Pit 8/48	0.014	0.009	0.005	1.6	16.41		0 20% AEP, 10 min burst, Storm 8
C Pit 9/48	0.007	0.005	0.002	1.43	15.26		0 20% AEP, 10 min burst, Storm 8
C Pit 10/48	0.009	0.008	0.001	1.47	20.91		0 20% AEP, 5 min burst, Storm 1
C Pit 11/48	0.012	0.008	0.004	1.6	16.78		0 20% AEP, 10 min burst, Storm 8
C Pit 1/10	0.005	0.005	0	2.02	13.3		0 20% AEP, 5 min burst, Storm 1
C Pit 1/11	0.005	0.004	0	1.94	12.75		0 20% AEP, 5 min burst, Storm 1
C Pit 4/48	0.005	0.005	0	2.09	13.73		0 20% AEP, 5 min burst, Storm 1
C Pit 5/48	0.003	0.003	0	1.58	0		0 20% AEP, 5 min burst, Storm 1
C Pit 1/14	0.005	0.005	0	1.99	13.07		0 20% AEP, 5 min burst, Storm 1
C Pit 3/48	0.006	0.005	0	2.05	13.5		0 20% AEP, 5 min burst, Storm 1
C Pit 1/31	0.004	0.003	0	1.58	10.41		0 20% AEP, 5 min burst, Storm 1
C Pit 1/48	0.012	0.011	0.001	1.65	10.88		0 20% AEP, 5 min burst, Storm 1
C Pit 2/48	0.001	0.001	0	1.49	9.77		0 20% AEP, 5 min burst, Storm 1
C Pit 1/52	0.003	0.003	0	1.41	9.26		0 20% AEP, 5 min burst, Storm 1
C Pit 1/53	0.004	0.003	0	1.58	10.39		0 20% AEP, 5 min burst, Storm 1
C Pit 1/54	0.005	0.004	0.001	1.56	10.24		0 20% AEP, 5 min burst, Storm 1
C Pit 1/7	0.002	0.001	0.001	1.27	8.36		0 20% AEP, 10 min burst, Storm 8

C Pit 3/12	0.005	0.003	0.002	1.28	11.23	0 20% AEP, 10 min burst, Storm 8
C Pit 4/12	0.016	0.01	0.007	1.33	12.53	0 20% AEP, 10 min burst, Storm 8
C Pit 6/12	0.005	0.004	0.002	1.16	16.68	0 20% AEP, 10 min burst, Storm 8
C Pit 7/12	0.017	0.015	0.002	0.43	22.14	0 20% AEP, 5 min burst, Storm 1
C Pit 8/12	0.026	0.023	0.003	1.38	21.05	0 20% AEP, 5 min burst, Storm 1
C Pit 1/12	0.005	0.004	0	1.66	10.91	0 20% AEP, 5 min burst, Storm 1
C Pit 2/12	0.011	0.006	0.005	2.57	10.13	0 20% AEP, 10 min burst, Storm 8
C Pit 1/13	0.004	0.002	0.001	1.18	7.75	0 20% AEP, 10 min burst, Storm 8
C Pit 1/68	0.006	0.006	0.001	1.26	8.28	0 20% AEP, 5 min burst, Storm 1
C Pit 1/69	0.005	0.004	0.002	0.33	2.18	0 20% AEP, 5 min burst, Storm 1
C Pit 1/71	0.002	0.001	0.001	1.15	7.58	0 20% AEP, 10 min burst, Storm 8
C Pit 1/8	0.003	0.003	0	1.53	0	0 20% AEP, 5 min burst, Storm 1
C Sw5a	0.053	0	0.053	0	40.46	0 20% AEP, 30 min burst, Storm 5
C Sw5b	0.017	0	0.017	0	40.46	0 20% AEP, 30 min burst, Storm 7
C Pit 1/18	0.029	0.026	0.003	2.29	29.41	0 20% AEP, 5 min burst, Storm 1
C Sw6	0.003	0	0.003	0	40.46	0 20% AEP, 30 min burst, Storm 5
C Chapel	0.116	0.115	0.001	1.79	11.74	0 20% AEP, 5 min burst, Storm 1
C Pit 1/1	0.02	0.013	0.007	1.31	20.19	0 20% AEP, 10 min burst, Storm 8
C Pit 2/1	0.015	0.01	0.005	2.41	22.11	0 20% AEP, 10 min burst, Storm 8
C Pit 3/1	0.029	0.019	0.01	1.41	23.7	0 20% AEP, 10 min burst, Storm 8

PIPE DETAILS

Name	Max Q (cu.m/s)	Max V (m/s)	Max U/S HGL (m)	Max D/S HGL (m)	Due to Storm
P Pit 1/23	0.025	1.35	48.708	48.697	20% AEP, 5 min burst, Storm 1
P Pit 3/60	0.042	2.51	48.606	46.955	20% AEP, 5 min burst, Storm 1
P Pit 4/60	0.053	2.58	46.87	44.919	20% AEP, 10 min burst, Storm 8
P Pit 5/60	0.062	1.76	44.851	44.542	20% AEP, 10 min burst, Storm 8
P Pit 6/60	0.132	3.96	44.348	44.197	20% AEP, 30 min burst, Storm 3
P Pit 1/28	0.009	0.5	46.955	46.955	20% AEP, 10 min burst, Storm 8
P Pit 1/51	0.005	0.53	44.872	44.874	20% AEP, 5 min burst, Storm 1
P Pit 1/60	0.011	2.72	50.039	50.01	20% AEP, 5 min burst, Storm 1
P Pit 2/60	0.013	1.62	49.964	48.713	20% AEP, 5 min burst, Storm 1
P Pit 1/9	0.002	0.25	55.681	55.684	20% AEP, 5 min burst, Storm 1
P Pit 6/48	0.04	1.99	55.635	54.341	20% AEP, 10 min burst, Storm 8
P Pit 7/48	0.057	2.49	54.252	53.461	20% AEP, 10 min burst, Storm 8
P Pit 8/48	0.068	2.65	53.337	52.711	20% AEP, 10 min burst, Storm 8
P Pit 9/48	0.077	2.66	52.586	51.793	20% AEP, 10 min burst, Storm 8
P Pit 10/48	0.089	3.77	51.631	49.577	20% AEP, 10 min burst, Storm 8
P Pit 11/48	0.102	4.59	49.443	45.324	20% AEP, 10 min burst, Storm 8
P Pit 1/10	0.005	0.24	54.339	54.341	20% AEP, 10 min burst, Storm 8
P Pit 1/11	0.005	0.68	57.337	57.34	20% AEP, 5 min burst, Storm 1
P Pit 4/48	0.031	1.8	57.283	56.408	20% AEP, 10 min burst, Storm 8
P Pit 5/48	0.036	1.81	56.261	55.725	20% AEP, 10 min burst, Storm 8
P Pit 1/14	0.005	0.74	58.804	58.79	20% AEP, 5 min burst, Storm 1
P Pit 3/48	0.022	1.64	58.735	57.361	20% AEP, 10 min burst, Storm 8
P Pit 1/31	0.003	0.1	53.456	53.457	20% AEP, 10 min burst, Storm 4
P Pit 1/48	0.012	2.68	60.249	60.221	20% AEP, 5 min burst, Storm 1
P Pit 2/48	0.013	1.41	60.176	58.816	20% AEP, 5 min burst, Storm 1

P Pit 1/52	0.003	0.09	52.695	52.695	20% AEP, 10 min burst, Storm 8
P Pit 1/53	0.003	0.1	51.762	51.763	20% AEP, 10 min burst, Storm 8
P Pit 1/54	0.004	0.22	49.575	49.577	20% AEP, 5 min burst, Storm 1
P Pit 1/7	0.002	0.8	61.408	61.353	20% AEP, 10 min burst, Storm 8
P Pit 3/12	0.02	1.56	59.748	58.899	20% AEP, 10 min burst, Storm 8
P Pit 4/12	0.038	2.31	58.621	57.076	20% AEP, 10 min burst, Storm 8
P Pit 5/12	0.044	2.6	56.998	56.831	20% AEP, 10 min burst, Storm 8
P Pit 6/12	0.051	2.18	56.769	56.378	20% AEP, 10 min burst, Storm 10
P Pit 7/12	0.069	2.29	56.292	55.713	20% AEP, 10 min burst, Storm 8
P Pit 8/12	0.092	3.22	55.594	55.462	20% AEP, 10 min burst, Storm 8
P Pit 9/12	0.092	1.56	55.431	55.275	20% AEP, 10 min burst, Storm 8
P Pit 1/12	0.005	0.83	60.367	60.335	20% AEP, 10 min burst, Storm 3
P Pit 2/12	0.015	2	60.282	59.796	20% AEP, 10 min burst, Storm 8
P Pit 1/13	0.004	1.73	58.83	58.784	20% AEP, 10 min burst, Storm 8
P Pit 1/68	0.006	2.91	57.254	57.22	20% AEP, 5 min burst, Storm 1
P Pit 1/69	0.005	2.54	56.919	56.869	20% AEP, 5 min burst, Storm 1
P Pit 1/71	0.002	0.78	58.037	57.982	20% AEP, 10 min burst, Storm 8
P Pit 1/8	0.003	0.78	56.353	56.311	20% AEP, 5 min burst, Storm 1
P Pit 1/74	0.072	1.25	44.74	44.693	20% AEP, 30 min burst, Storm 5
P Pit 1/18	0.087	1.75	44.499	44.467	20% AEP, 30 min burst, Storm 6
P Chapel	0.116	1.7	47.806	47.506	20% AEP, 5 min burst, Storm 1
P Pit 1/1	0.141	6.52	47.12	46.441	20% AEP, 5 min burst, Storm 1
P Pit 2/1	0.147	3.65	46.268	45.786	20% AEP, 5 min burst, Storm 1
P Pit 3/1	0.176	1.81	45.648	45.508	20% AEP, 5 min burst, Storm 1

CHANNEL DETAILS

Name	Max Q (cu.m/s)	Max V (m/s)	Due to Storm
Sw5a	0.052	0.65	20% AEP, 30 min burst, Storm 5
Sw5b	0.069	44.29	20% AEP, 30 min burst, Storm 5
Sw6	0.003	54.4	20% AEP, 30 min burst, Storm 5

OVERFLOW ROUTE DETAILS

Name	Max Q U/S	Max Q D/S	Safe Q	Max D	Max DxV	Max Width	Max V	Due to Storm
F Pit 1/23	0.002	0.002	0.465	0.028	0.02	0.23	0.98	20% AEP, 5 min burst, Storm 1
F Pit 3/60	0	0	0.476	0	0	0	0	
F Pit 4/60	0	0	0.448	0	0	0	0	
F Pit 5/60	0	0	0.249	0	0	0	0	
F Pit 6/60	0	0	0.286	0	0	0	0	
F Pit 1/28	0	0	0.444	0	0	0	0	
F Pit 1/51	0	0	0.246	0	0	0	0	
F Pit 1/60	0	0	0.407	0	0	0	0	
F Pit 2/60	0	0	0.414	0	0	0	0	
F Pit 1/9	0	0	0.337	0	0	0	0	
F Pit 6/48	0	0	0.352	0	0	0	0	
F Pit 7/48	0	0	0.352	0	0	0	0	
F Pit 8/48	0.001	0.001	0.347	0.022	0	0.18	0	20% AEP, 10 min burst, Storm 8
F Pit 9/48	0	0	0.352	0	0	0	0	
F Pit 10/48	0	0	0.469	0	0	0	0	
F Pit 11/48	0	0	0.467	0	0	0	0	

F Pit 1/10	0	0	0.337	0	0	0	0
F Pit 1/11	0	0	0.324	0	0	0	0
F Pit 4/48	0	0	0.344	0	0	0	0
F Pit 5/48	0	0	0.356	0	0	0	0
F Pit 1/14	0	0	0.353	0	0	0	0
F Pit 3/48	0	0	0.336	0	0	0	0
F Pit 1/31	0	0	0.345	0	0	0	0
F Pit 1/48	0	0	0.346	0	0	0	0
F Pit 2/48	0	0	0.341	0	0	0	0
F Pit 1/52	0	0	0.34	0	0	0	0
F Pit 1/53	0	0	0.448	0	0	0	0
F Pit 1/54	0	0	0.48	0	0	0	0
F Pit 1/7	0	0	0.418	0	0	0	0
F Pit 3/12	0	0	0.447	0	0	0	0
F Pit 4/12	0.001	0.001	0.418	0.024	0.02	0.2	0.84 20% AEP, 10 min burst, Storm 8
F Pit 5/12	0	0	0.126	0	0	0	0
F Pit 6/12	0	0	0.348	0	0	0	0
F Pit 7/12	0.002	0.002	0.436	0.029	0.02	0.24	0.87 20% AEP, 5 min burst, Storm 1
F Pit 8/12	0.002	0.002	0.228	0.029	0.02	0.29	0.65 20% AEP, 10 min burst, Storm 8
F Pit 1/12	0	0	0.215	0	0	0	0
F Pit 2/12	0	0	0	0	0	0	0
F Pit 1/13	0	0	0.458	0	0	0	0
F Pit 1/68	0	0	0.03	0	0	0	0
F Pit 1/69	0	0	0.409	0	0	0	0
F Pit 1/71	0	0	0.383	0	0	0	0
F Pit 1/8	0	0	0.453	0	0	0	0
F Sw5	0.069	0.069	0.537	0.101	0.09	1.11	0.9 20% AEP, 30 min burst, Storm 5
F Pit 1/74	0	0	0.387	0	0	0	0
F Pit 1/18	0.001	0.001	0.03	0.053	0	0.87	0.05 20% AEP, 5 min burst, Storm 1
F Sw6	0.003	0.003	0.206	0.027	0.01	0.66	0.38 20% AEP, 30 min burst, Storm 5
F Pit 1/1	0.001	0.001	0.298	0.027	0.01	0.22	0.59 20% AEP, 10 min burst, Storm 2
F Pit 2/1	0.001	0.001	0.203	0.039	0.01	0.32	0.47 20% AEP, 10 min burst, Storm 8
F Pit 3/1	0	0	0.34	0	0	0	0

DETENTION BASIN DETAILS

Name	Max WL	MaxVol	Max Q Total	Max Q Low Level	Max Q High Level
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Run Log for 5936000 run at 12:22:34 on 7/3/2018

No water upwelling from any pit. Freeboard was adequate at all pits.

Flows were safe in all overflow routes.