KING + CAMPBELL

Stormwater Management Plan
Proposed Place of Public Worship
Lot 22 DP 1296583,
171 John Oxley Drive, Port Macquarie.

Prepared for:

The Point Community Church

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Executive Summary

This Stormwater Management and Servicing Plan has been prepared in support of a development application for a place of public worship, including on site carparking within Lot 22 DP 1296583.

The subject land forms part of the South Lindfield Urban Release Area and is comprised of a single lot, being of Lot 22 DP 1296583, and is known as 171 John Oxley Drive, Port Macquarie.

The subject land contains a total site area of approximately 1.85 ha with the proposed development component consisting of approximately 8595m² and the remaining 9905m² being utilised for road dedication and vegetation retention purposes.

The site was assessed for its suitability for the proposed development in terms of the stormwater servicing requirements and confirm that the capacity of existing infrastructure constructed as part of subdivision works approved under DA2019/400 and DA2019/401 to mitigate the impact of urbanisation on the existing stormwater regime.

The assessment considered the stormwater requirements of the proposed development, including legal point of discharge, soils and the capacity of the land to manage the stormwater water treatment for the proposed development.

The assessment determined the necessary mitigation measures required to be implemented to ensure the development can be adequately serviced with the design constraints and recommendations made within the relevant sections of this report.

The impact of the proposed development on stormwater quantity and stormwater quality was modelled in the 12d Model and MUSIC programs, comparing existing conditions to proposed conditions, and the change to water quality from source to outlet against Port Macquarie-Hastings Council's AUS-SPEC requirements.

The results of the modelling demonstrated that the infrastructure constructed as part of development approved under DA2019/400 and DA2019/401 have sufficient capacity to mitigate the post-development impacts on the downstream catchment.

Appropriate measures to the requirements of Port Macquarie-Hastings Council's AUS-SPEC are recommended for the construction period to protect downstream infrastructure and receiving waters from temporary higher sediment loading caused by construction works.

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Tables

Section 1
Introduction

This Stormwater Management Plan has been prepared in support of a Development Application development of Lot 22 DP1296583 as a place of public worship.

The Development intends to provide a 500-seat church and ancillary buildings containing:

- 200m2 foyer
- office and administration space
- a church hall of 257m2
- seven (7) multi-purpose rooms,
- kitchen
- amenities
- 106 space car park
- extension of Annabella Drive
- replacement Koala Food Trees in accordance with South Lindfield Koala Plan of Management (South Lindfield KPoM),

The subject land forms part of the South Lindfield Urban Release Area and is comprised of a single lot, being of Lot 22 DP 1296583 and is known as 171 John Oxley Drive, Port Macquarie.

The subject land contains a total site area of approximately 1.85 ha with the proposed place of public worship and associated parking component consisting of approximately 8595m² and the remaining 9905m² being utilised for road dedication and vegetation retention purposes.

The site was assessed for its suitability for the proposed development in terms of servicing requirements and confirming the capacity of existing infrastructure constructed as part of subdivision works approved under DA2019/400 and DA2019/401 to mitigate the impact of urbanisation on the existing stormwater regime.

Section 2
Stormwater Concept Plan

The subject land contains two catchments separated by a ridge line in the East – West direction and draining to the northern & southern boundaries respectively. Drainage is primarily directed by overland means to the proposed pit and pipe stormwater network for the northern catchment. The southern catchment is to remain undisturbed in a vegetated state, and as such has not been further considered in this report.

The impact of the proposed development on stormwater quantity and stormwater quality for the northern catchment was modelled in the 12d Model and MUSIC software programs, to compare existing to proposed conditions, and determine the capacity of infrastructure constructed as part of the residential developments located to the east of the subject land to cater for the proposed development.

The proposed stormwater concept plan has been formulated and modelled in accordance with the procedures contained within the Australian Rainfall and Runoff 2016 using the Dynamic Drainage module within the 12d Model software, with the results revealing that peak flow post-development will not exceed existing peak flows in the 1% AEP storm event for the northern catchment due to the additional storage capacity provided by the stormwater bio-retention basin constructed within Lot 20 DP1280506, to the east of the subject land.

The proposed stormwater concept plan has been developed and tested for water quality management using MUSIC, and it has been confirmed that the existing bio-retention basin and other stormwater treatment measures within the site have the capability to meet the water quality objectives of the Council's AUS-SPEC D7 document and relevant Australian Standards.

Appropriate measures are recommended for the construction period to protect downstream infrastructure and receiving waters from temporary higher sediment loading caused by construction works.

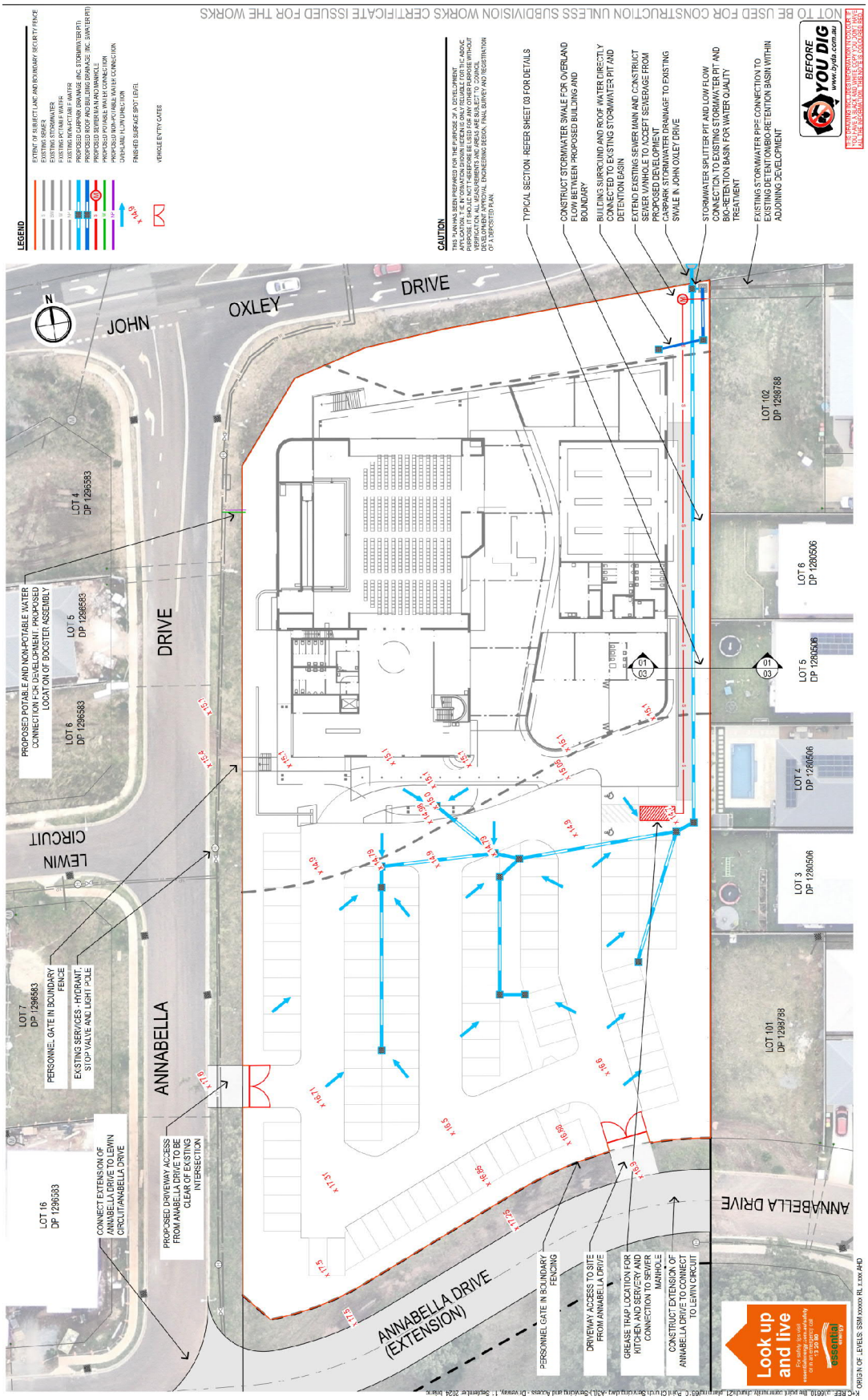

Figure 1 - STORMWATER MANAGEMENT PLAN

Section 3
Site Conditions

3.1 Location

The subject land is located within the Port Macquarie Hastings (PMH) Local Government Area (LGA), within the rapidly developing South Lindfield Urban Release Area on the western fringe of Port Macquarie and within the catchment of both the Hastings River (northern catchment) and Lake Innes (southern catchment) on the north coast of New South Wales.

The subject land is bound by residential development to the east and west, special purpose (crematorium) zoned land to the south, and a combination of residential, Industrial and rural zoned land to the north. The subject land is also bound by John Oxley Drive & the Oxley Highway to the north, and Annabella Drive to the west.

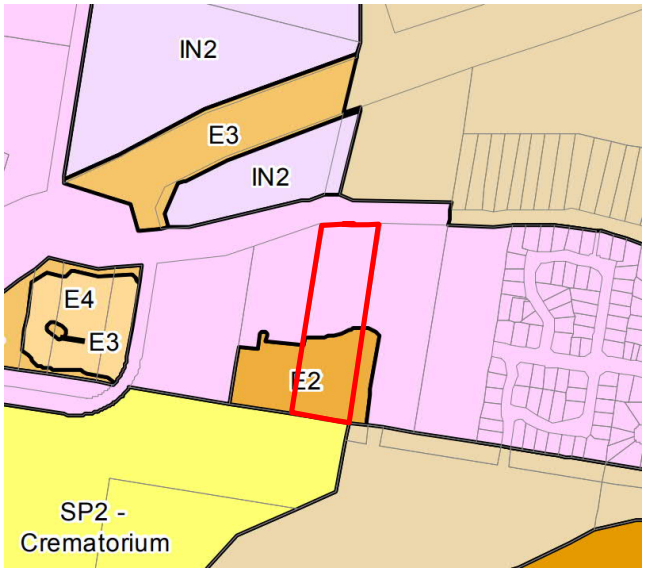

Figure 2 - Extract from PMH LEP 2011

3.2 Legal Point of Discharge

In accordance with established conventions in determining the lawful point of discharge, a point of discharge in considered "lawful" if it satisfies the following two-point test[1]:

a) That the location of the discharge is under the lawful control of the local government or other statutory authority from whom permission to discharge has been received. This will include a park, drainage or road reserve, and stormwater drainage easement.

[1] Queensland Urban Drainage Manual – volume 1 second edition 2007 – pp 3-3 - http://www.derm.qld.gov.au/water/regulation/pdf/guidelines/flood_risk_management/qudm_3.pdf (Accessed 24 February 2012)

b) That in discharging in that location, the discharge will not cause an actionable nuisance (i.e. a nuisance for which the current or some future neighbouring proprietor may bring an action or claim for damages arising out of the nuisance). In general terms, this implies no worsening as a result of the discharge.

All drainage from the site is directed to the tributary of the Hastings River (northern catchment) and Lake Innes floodplain (southern catchment) near the site. The northern catchment ultimately discharges to an existing culvert under John Oxley Drive via existing stormwater infrastructure located within the subject land, and on adjacent land to the east. John Oxley Drive is a road under the care and control of Port Macquarie Hastings Council and the existing stormwater infrastructure is similarly contained within drainage easements or reserves with interest and ownership in favour of Port Macquarie-Hastings Council. The tributaries and Lake Innes are shown on the topographic mapping series as being a permanent watercourse, and as such satisfy the requirement to be the lawful points of discharge for the subject land.

3.3 Topography

The subject land is located in gently sloping terrain, dominated by a slight ridge line that traverses the site from west to east and separates the catchment areas of the Hastings River and Lake Innes.

Topographic mapping reveals two watercourses near the subject land as shown in the extract from the 1:10,000 topographic map series (Figure 3).

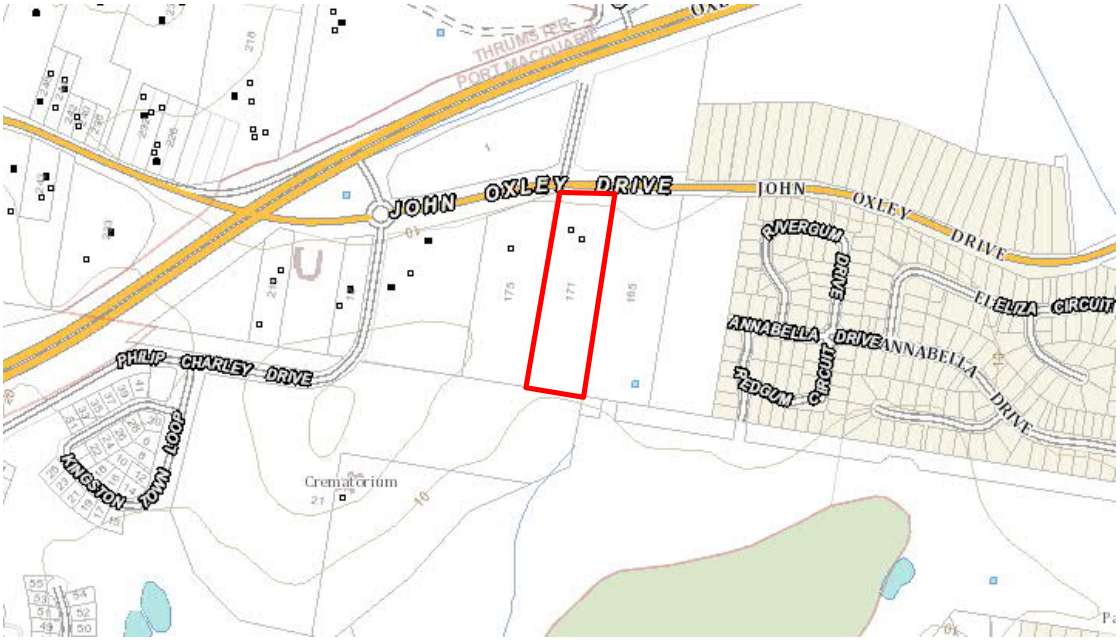

Figure 3 - Extract from 1:10,000 Topographic Mapping showing the terrain and extent of watercourses adjacent to the subject land.

The overall site catchment is composed of two catchments, with both being of a roughly rectangular shape. The northern catchment drains northwards, crossing the John Oxley Drive & Oxley Highway via existing stormwater culverts and drainage swales to the Hastings River Floodplain and ultimately

the Hastings River itself. The southern catchment drains southwards over land and via a series of small creeks and swales to enter the Lake Innes Floodplain and ultimately Lake Innes itself.

3.4 Soils

Acid Sulfate Soil mapping contained within the PMH Local Environmental Plan (LEP) 2011 classifies the subject land as being free of Acid Sulfate Soils.

An extract from PMH LEP 2011 Acid Sulfate Soils mapping is presented in Figure 4 for the subject land, where light pink represents Class 2 lands and yellow represents Class 5 lands.

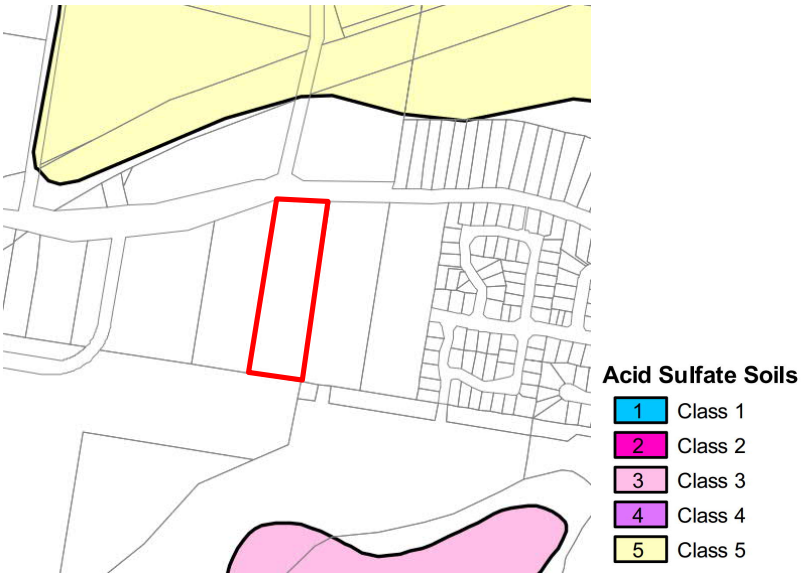

Figure 4 - Extract from PMH Council's Acid Sulphate Soils Mapping with subject Land highlighted.

Section 4
Catchment Context and Land Capacity

The proposed development is located at the boundary of two adjacent watersheds. The subject land's northern catchment (approximately 2.7 ha) forms part of the Hastings River floodplain watershed and the southern catchment (approximately 2.2 ha) forms part of the Lake Innes floodplain watershed.

The northern catchment drains northwards, crossing the John Oxley Drive & Oxley Highway via existing stormwater culverts and drainage swales to the Hastings River Floodplain and ultimately the Hastings River itself. The southern catchment drains southwards over land and via a series of small creeks and swales to enter the Lake Innes Floodplain and ultimately Lake Innes itself.

In both cases, the receiving waters have been considered in stormwater quality calculations as being a pristine environment, due to the existence of significant portions of coastal wetlands within the drainage path of both watersheds.

The regions of Coastal Wetlands and Proximity Areas for Coastal Wetlands as defined by the State Environmental Planning Policy (Coastal Management) 2018 are presented in Figure 5, with the approximate extent of the subject site highlighted.

Figure 5 - Extents of Coastal Wetlands and Proximity Areas for Coastal Wetlands from State Environmental Planning Policy (Coastal Management) 2018

The subject land therefore can adequately cater for the proposed development, via the provision and utilisation of existing stormwater quality and quantity measures to mitigate the impact of the proposed development on the respective downstream catchments.

Section 5
Site and Receiving Water Quality

5.1 Site and Receiving Water Quality

All stormwater quality modelling for the development was undertaken in accordance with recommended procedures within Chapter 13 – Modelling Urban Stormwater Management Systems within the Australian Runoff Quality (ARQ) Guide (Engineers Australia National Committee for Water Engineering, 2007). Given the "highly non-linear" and "highly stochastic" characteristics involved in stormwater management systems, there is an obvious requirement for the use of sophisticated computer modelling packages to estimate the likely pollutant export from the development.

The computer software MUSIC Version 6.3 (Build 0.1908) developed by eWater was utilised to determine the likely stormwater runoff quality for pre- and post-development scenarios.

Design parameters for the software were obtained and adopted from the NSW MUSIC Modelling Guidelines (BMT WBM Pty Ltd, August 2015) along with local rainfall and evaporation parameters for the PMH area (Port Macquarie Hastings Council, 2004).

The catchments containing the subject land discharge to the Hastings River Floodplain to the North and the Lake Innes Floodplain to the South.

A large proportion of the site has been substantially modified, including clearing trees and vegetation, with only scattered areas remaining vegetated. Small areas of the site have been developed for rural residential style use, although in recent years, the existing dwelling and associated buildings have been removed from the site.

5.2 Water Quality of the Receiving Waters

For the purposes of water quality modelling, and notwithstanding the urbanisation and development that has occurred in the area of the receiving waters, the catchment of the proposed development has been considered to be pristine or unmodified ecosystems.

5.3 Pre Development Modelled Pollutant Loads

The northern catchment of the subject land was modelled as part of a larger model considering all land draining to the John Oxley Drive as a single discrete catchment, the southern boundary of which was determined according to the existing landform and topography as well as considering the ultimate built form of the development on the subject land and the lands adjoining. The existing soils are generally considered to be sandy clay or better, allowing for small amounts of infiltration.

Results of the pre-development modelling are presented in Table 1.

Table 1 - Existing Condition Annual Export Loads

Flow (ML/yr)	Total Suspended Solids (kg/year)	Total Phosphorous (kg/yr)	Total Nitrogen (kg/yr	Gross Pollutants (kg/yr)
90.4	15400	28	197	1460

5.4 Post Development Modelled Pollutant Loads

PMH Council specifies water quality objectives (Port Macquarie Hastings Council, 2004) sourced from the ARQ Guide (Engineers Australia National Committee for Water Engineering, 2007).

For an "unmodified ecosystem" the water quality objectives for median outflow concentrations are contained within Table D7.4 of AUS SPEC (Port Macquarie Hastings Council, 2004) and reproduced in Table 2:

Table 2 - Extract Table D7.4 - Unmodified Ecosystem Median Trigger Values (Port Macquarie Hastings Council, 2004)

Receiving Water	Total Phosphorous (ug/L)	Total Nitrogen (ug/L)	Dissolved Oxygen % Sr	PH Units	SS mg/L
Estuaries	10-20	150-300	80-90	6.5-8.0	6

In the absence of detailed data on existing median values for water quality within the Hastings River & Lake Innes (and associated floodplains), the precautionary principle was adopted where the developed stormwater concentrations should be no worse than existing.

Consideration was given to the amount of change in land use proposed for the subject land for both the pre- and post- development land uses, with conservative selection of land use type informing which of the PMH Council AUS SPEC recommended values were adopted.

The percentage of impervious land adopted for both the pre- and post-developed cases is presented in Table 3.

Table 3 - Comparison of Percentage Impervious (%) for the Pre- and Post- Development land uses

Pre- Development		Post- Development	
Catchment Type	Percentage Impervious (%)	Catchment Type	Percentage Impervious (%)
Rural & Rural Residential	40	Place of Public Worship and associated Car Parking	70

It is proposed to utilise the existing end-of-line bio-retention basin prior to discharge at the existing John Oxley Drive culvert to provide stormwater

quality treatment for runoff from the development. The properties for the bio-retention basin for modelling purposes are as follows:-

Parameter	Quantity
Basin Surface Area	600m²
Bio-retention Filter Area	120m²
Filter Depth	0.4m
Submerged Zone	0.3m

A model was created within the MUSIC software to reflect the proposed treatment train.

Results of stormwater quality modelling revealed that the change in land use resulting from the proposed development and proposed stormwater treatment measures results in minimal change to outflow concentration. These results are presented in Table 4.

Table 4 - Comparison of Pre- and Post- Development Annual Loads

Parameter	Pre-Development	Post-Development	Percentage Reduction	Reduction Target	Compliance?
Total Suspended Solids (kg/yr)	17800	2420	86.4%	80%	✓
Total Phosphorus (kg/yr)	33.3	11.6	65.2%	45%	✓
Total Nitrogen (kg/yr)	286	156	45.5%	45%	✓
Gross Pollutants (kg/yr)	2920	0	100%	100%	✓

It should be noted that the pollutant generation profile within MUSIC is stochastically generated from median and standard deviation values. The results above are consistent with the limits of accuracy of the model (~10% variation of results).

Therefore, the pollutant outflow concentrations as reported by MUSIC modelling software indicate that the land use modification will result in minimal change to the outflow concentrations from the subject land.

Appendix SWMSP_2 of this report contains the graphical and numerical parameters and output from the software.

The proposed management plan identifies treatment measures using a treatment train approach to meet the stated Water Quality Objectives. A graphical summary produced within the MUSIC modelling software is presented in Figure 6.

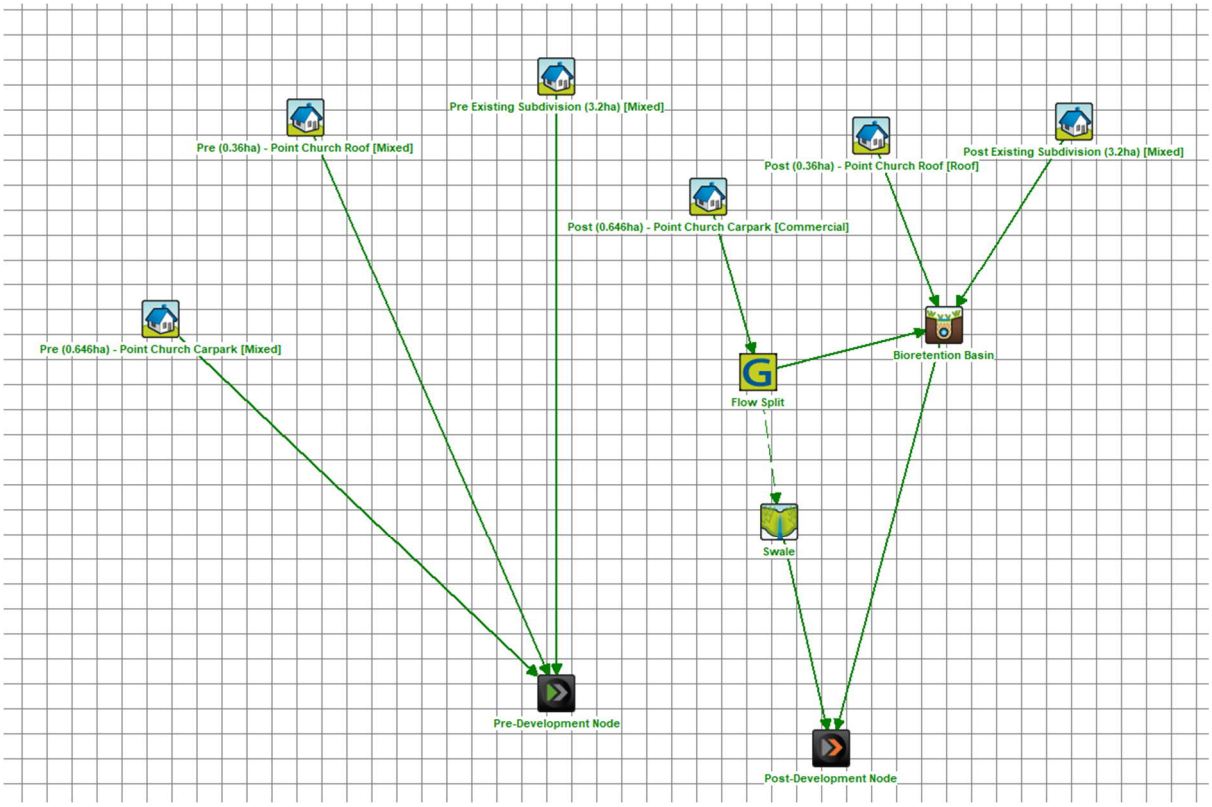

Figure 6 - Screenshot from MUSIC Software illustrating the proposed treatment train for the Northern Catchment.

The treatment train includes primary treatment measures consisting of the following water sensitive urban design:

Sediment Controls

- Bio-Retention Basin
- Vegetated Swale
- Stormwater Flow "Splitter Pit"

Section 7

Site Hydrology

7.1 Site Hydrology

For the catchment of the proposed development, it is required that the peak outflow from the catchment for the developed 1% AEP (1 in 100 year ARI) storm be less than the pre-developed peak flow for the critical duration storm (Port Macquarie Hastings Council, 2004), to negate any impacts on existing downstream properties and infrastructure.

For the purposes of modelling the changes to stormwater flows from the site, a model was formulated using 12d to determine the runoff from the existing site.

Soil infiltration capacity along with site specific rainfall parameters were used in the model, with design storm ensembles to the method described in AR&R 2016 (Engineers Australia National Committee for Water Engineering, 2016).

Runoff and peak flow modelling was completed using the 12d computer software (12d Solutions Pty. Ltd.).

The stormwater conveyance requirements will be developed in consideration and intent to take advantage of the existing stormwater infrastructure constructed within Lot 20 DP1280506 as part of the works approved under DA2019/400 and DA2019/401 to ensure sufficient capacity is provided to cater for the expected stormwater flow.

7.2 Pre-Development Hydrology

The pre-development “greenfield nature” of the catchment draining to the John Oxley Drive culvert was modelled within the 12d Model using the Dynamic Drainage Analysis module.

The existing soils being of a sandy clay nature were modelled as being of low permeability, generating medium to high runoff from the site.

The 12D dynamic drainage model was constructed per the parameters as specified by the PMH Council, utilising the Australian Rainfall and Runoff 2016 methodology. The soil type was selected to reflect the existing soils as described above, along with antecedent moisture content suitable for “rather wet/saturated” soil conditions of up to 25mm of rainfall in the preceding 5 days.

The hydrologic and rainfall parameters presented in Table 5 were used for the western catchments for both pre and post-development models.

Table 5 - Table of Model Parameters within 12D Model ILSAX software.

Parameter	Value
Soil type	3 - Slow Infiltration
Impervious area depression storage (mm)	1
Pervious area depression storage (mm)	5
Rainfall Data Parameters	Localised AR&R 2016 IFD & Storm Ensembles
Antecedent moisture condition	3.5 ("Rather wet / Saturated")
Annual Recurrence Interval (major)	100 years

7.2 Pre-Development Hydraulics

In accordance with site hydrology requirements, analysis of the volume and rate of flow was undertaken for the existing John Oxley Drive culvert catchment and the Northern catchment of the subject land. The design constraint for flows under Oxley Highway was to ensure flows do not increase beyond existing, to ensure the existing performance of the John Oxley Drive culvert is not impacted by the development.

The existing catchment for the John Oxley Drive culvert catchment was modelled in 12d, with existing the stormwater culvert determined to be adequate in catering for the pre-developed 1% AEP storm.

The catchment of the subject land was also modelled in 12d and the peak median outflow was determined per AR&R 2016 requirements.

The box-plot results of the 1% AEP storm ensemble modelling for the pre-developed catchment are presented in Figure 7.

The outflow hydrograph corresponding to the peak median outflow storm for the pre-developed catchment is presented in Figure 8.

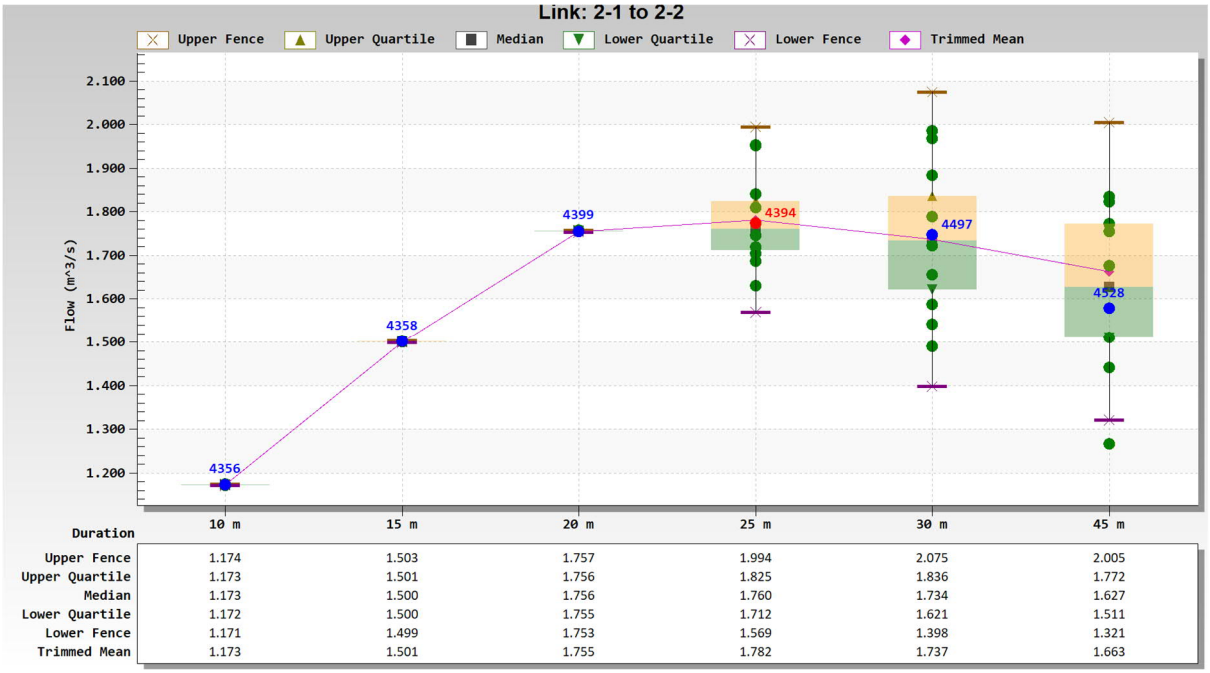

Figure 7 – Box-Plot Results of peak outflow for the Pre-Developed Catchment

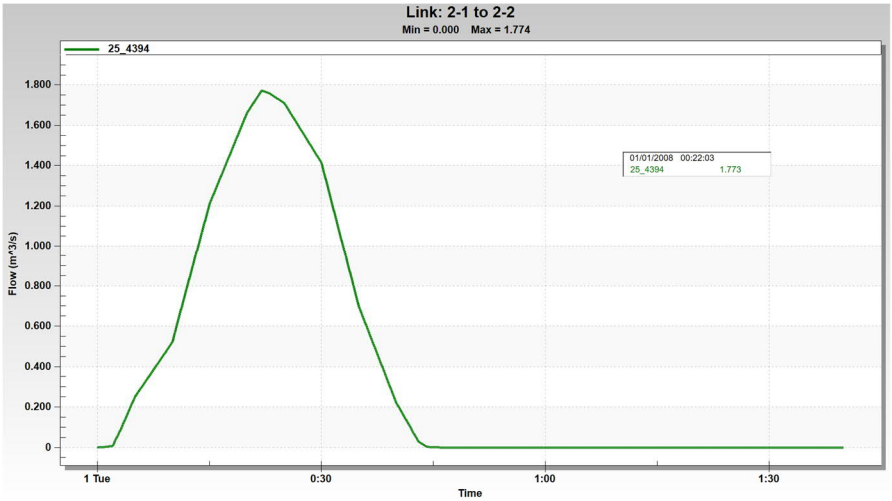

Figure 8 - Outflow Hydrograph of the peak median storm (25 Min, 1% AEP) for the Pre-Developed Catchment

Results of 12d modelling for the Pre-Development Catchment are reproduced in Table 6. Refer to Appendix 1 for complete calculation results.

Table 6 – Pre-Development 12d modelling results.

Analysis Model	Critical AR&R 2016 Storm Duration	Peak Median Outflow (m^3/s)
Catchment (Pre-Development)	25 Min	1.774

7.3 Post Development Hydrology

The influence of the proposed development on the Catchment was modelled within 12d to determine the impact on downstream lands and infrastructure in accordance with AR&R 2016 requirements.

Similarly to the water quality investigations above, the change to the impervious area within the catchment was considered and modelled to determine the effect.

The modelling indicates that a detention facility is required to attenuate the change in peak flow resulting from the proposed development. A bio-retention basin was modelled at the point of discharge of the Catchment, to delay and reduce the peak outflow with the following parameters:-

Parameter	Quantity
Basin Surface Area	1000m^2
Maximum Depth	1.76m

The outflow hydrograph corresponding to the peak median outflow storm for the post-developed Catchment (including bio-basin) is presented in Figure 9.

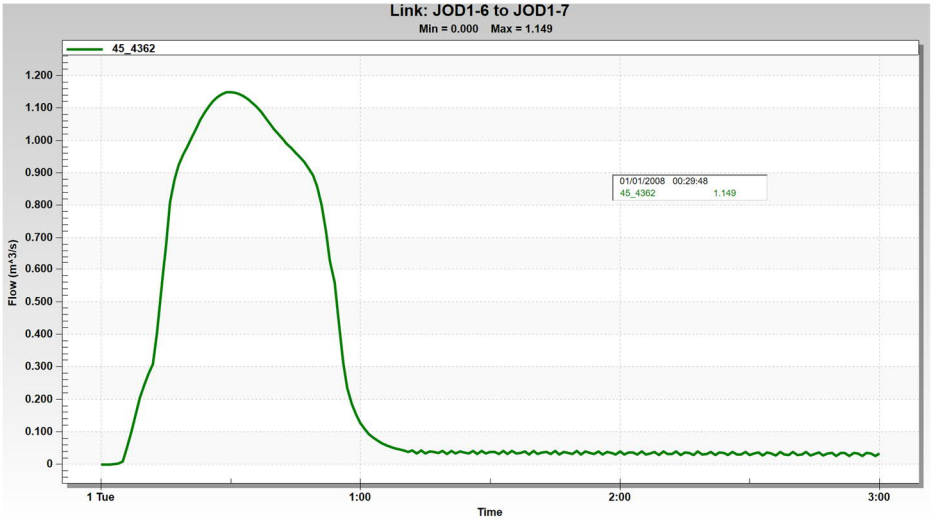

Figure 9 - Outflow Hydrograph of the peak median storm (45 Min, 1% AEP) for the Post-Developed Catchment

The box-plot results of the 1% AEP storm ensemble modelling for the post-developed Catchment are presented in Figure 10.

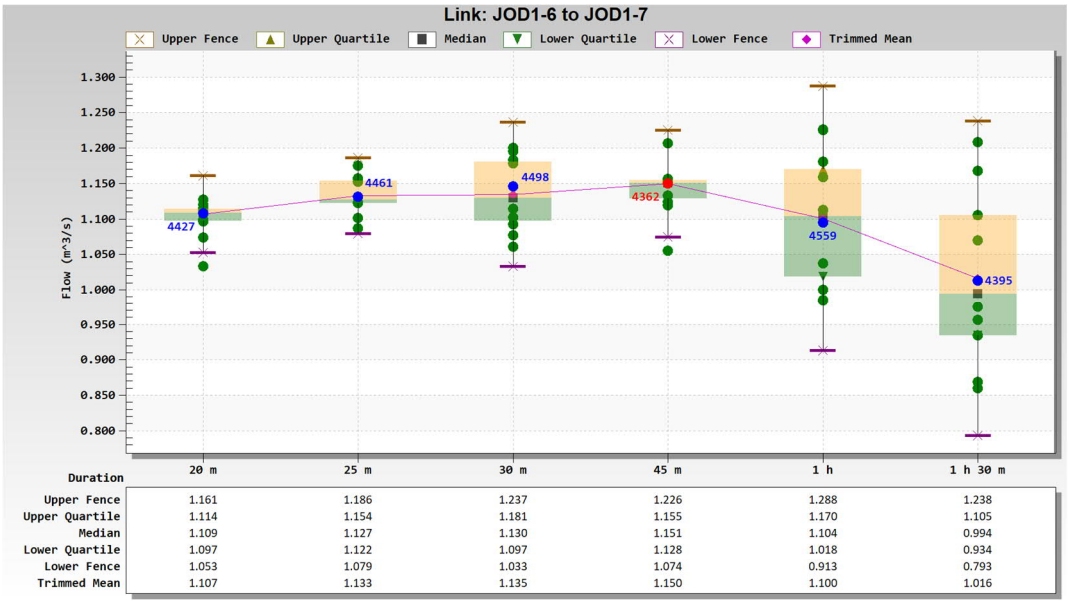

Figure 10 – Box-Plot Results of peak outflow for the Post-Developed Catchment

Results of 12d modelling for the Post-Development Catchment are reproduced in Table 7.

Table 7 – Catchment Post-Development 12d results

Critical AR&R Storm Duration	Modelled Peak Outflow (Post-Development)	Maximum Peak Outflow (Pre-Development)	Compliance?
10 Min	1.150 m³/s	1.774 m³/s	✓

The complete output from the 12d investigation including input data is included as Appendix 1 to this document.

7.4 Carpark Runoff, Overland Flow and Treatment of Eastern Boundary.

Stormwater runoff from the proposed carpark is to be collected within pits and conveyed via the pit and pipe network parallel to the eastern boundary of the site to the existing stormwater pit located in the northeastern corner of the site.

To protect existing residences adjoining to the east of the site, it is proposed that the stormwater pipe parallel to the site's eastern lot boundary be sized to cater for 1% AEP flows.

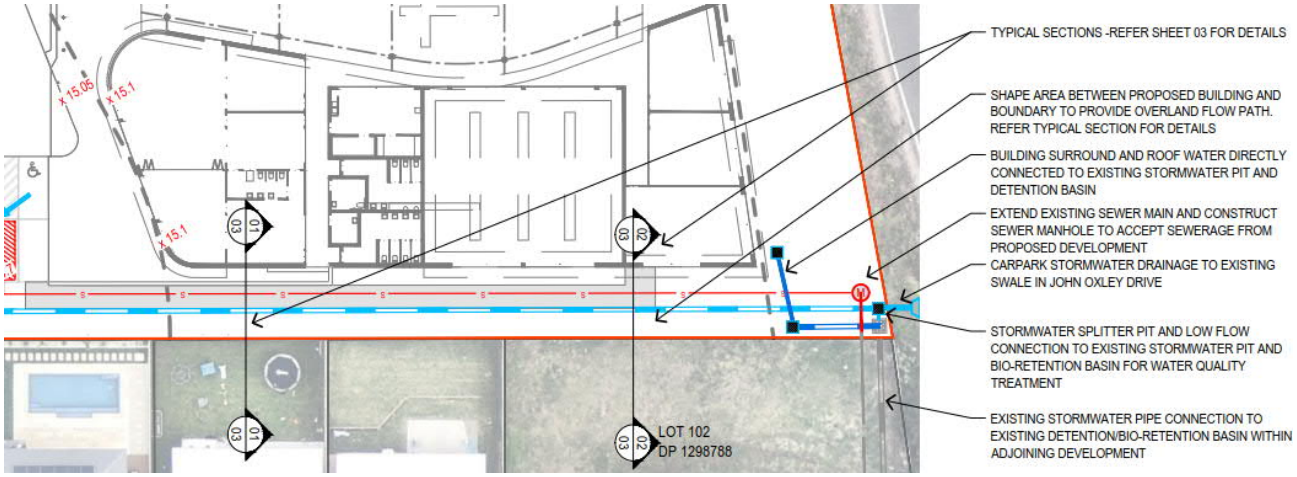

Figure 11 - Extract from Stormwater Management, Servicing and Access Plan - Eastern Boundary treatment

Localised surface flows along the eastern boundary between the proposed building and adjoining lots are proposed to be contained within an overland flow path as shown in the typical sections within Figure 12 below.

The provision of the overland flow path will also provide additional protection against stormwater flows entering the lots to the east of the site.

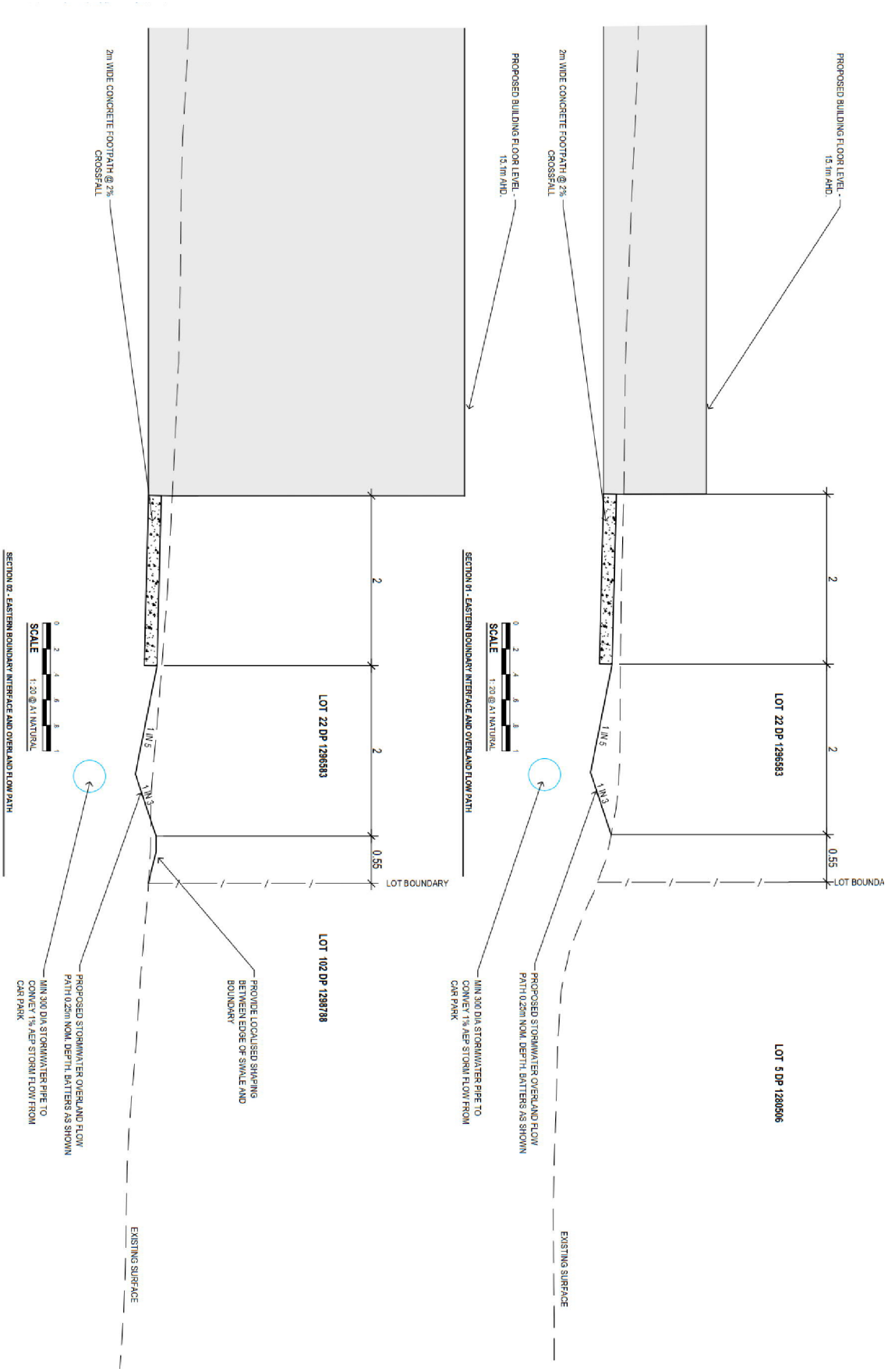

Figure 12 - Typical Sections showing proposed treatment between proposed buildings and existing lots to the east of the site

Section 8
Conclusion

The proposed place of public worship and associated development of the subject property was assessed for suitability in terms of the ability of the land and existing downstream infrastructure to mitigate the impact of urbanisation on the pre-development stormwater regime.

The assessment considered the stormwater management of the proposed development, including legal point of discharge, soils, and the capacity of the land & existing infrastructure to manage the stormwater treatment of the proposed development.

The assessment determined that the required mitigation measures for the catchment may be readily provided within or adjacent to the subject land, and the development can be adequately serviced within the design constraints and recommendations made within the relevant sections of this report.

The impact of the proposed development on stormwater quantity and stormwater quality for the catchment was modelled in the 12d Model and MUSIC programs respectively, comparing existing pre-development conditions to proposed post-development conditions, and the change to water quality from source to outlet.

The modelling has clearly demonstrated that the subject land and existing downstream infrastructure has the capability to provide the necessary mitigation measures to ensure the protection of the downstream environment and hydrology.

Appropriate measures to the requirements of Port Macquarie Hastings Council's AUS-SPEC are recommended for the construction period to protect downstream infrastructure and receiving waters from temporary higher sediment loading caused by construction works.

Bibliography

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LOT 16
DP 1296583

LOT 7
DP 1296583

PERSONNEL GATE IN BOUNDARY FENCE

EXISTING SERVICES - HYDRANT, STOP VALVE AND LIGHT POLE

CONNECT EXTENSION OF ANNABELLA DRIVE TO LEWIN CIRCUIT/ANABELLA DRIVE

PROPOSED DRIVEWAY ACCESS FROM ANABELLA DRIVE TO BE CLEAR OF EXISTING INTERSECTION

PROPOSED POTABLE AND NON-POTABLE WATER CONNECTION FOR DEVELOPMENT. PROPOSED LOCATION OF BOOSTER ASSEMBLY

LEWIN CIRCUIT

LOT 6
DP 1296583

LOT 5
DP 1296583

LOT 4
DP 1296583

ANNABELLA DRIVE

JOHN OXLEY DRIVE

ANNABELLA DRIVE (EXTENSION)

PERSONNEL GATE IN BOUNDARY FENCING

DRIVEWAY ACCESS TO SITE FROM ANNABELLA DRIVE

GREASE TRAP LOCATION FOR KITCHEN AND SERVERY AND CONNECTION TO SEWER MANHOLE

CONSTRUCT EXTENSION OF ANNABELLA DRIVE TO CONNECT TO LEWIN CIRCUIT

LOT 101
DP 1298788

LOT 3
DP 1280506

LOT 4
DP 1280506

LOT 5
DP 1280506

LOT 6
DP 1280506

LOT 102
DP 1298788

LEGEND

- EXTENT OF SUBJECT LAND AND BOUNDARY SECURITY FENCE
- EXISTING SEWER
- EXISTING STORMWATER
- EXISTING POTABLE WATER
- EXISTING NON-POTABLE WATER
- PROPOSED CARPARK DRAINAGE (INC. STORMWATER PIT)
- PROPOSED ROOF AND BUILDING DRAINAGE (INC. S/WATER PIT)
- PROPOSED SEWER MAIN AND MANHOLE
- PROPOSED POTABLE WATER CONNECTION
- PROPOSCD NON-POTADLE WATER CONNECTION
- OVERLAND FLOW DIRECTION
- x 14.9 FINISHED SURFACE SPOT LEVEL
- VEHICLE ENTRY GATES

CAUTION

THIS PLAN HAS BEEN PREPARED FOR THE PURPOSE OF A DEVELOPMENT APPLICATION. THE INFORMATION SHOWN HEREIN IS ONLY RELIABLE FOR THE ABOVE PURPOSE. IT SHOULD NOT THEREFORE BE USED FOR ANY OTHER PURPOSE WITHOUT VERIFICATION. ALL MEASUREMENTS AND AREAS ARE SUBJECT TO COUNCIL DEVELOPMENT APPROVAL, ENGINEERING DESIGN, FINAL SURVEY AND REGISTRATION OF A DEPOSITED PLAN.

- TYPICAL SECTION -REFER SHEET 03 FOR DETAILS
- CONSTRUCT STORMWATER SWALE FOR OVERLAND FLOW BETWEEN PROPOSED BUILDING AND BOUNDARY
- BUILDING SURROUND AND ROOF WATER DIRECTLY CONNECTED TO EXISTING STORMWATER PIT AND DETENTION BASIN
- EXTEND EXISTING SEWER MAIN AND CONSTRUCT SEWER MANHOLE TO ACCEPT SEWERAGE FROM PROPOSED DEVELOPMENT
- CARPARK STORMWATER DRAINAGE TO EXISTING SWALE IN JOHN OXLEY DRIVE
- STORMWATER SPLITTER PIT AND LOW FLOW CONNECTION TO EXISTING STORMWATER PIT AND BIO-RETENTION BASIN FOR WATER QUALITY TREATMENT
- EXISTING STORMWATER PIPE CONNECTION TO EXISTING DETENTION/BIO-RETENTION BASIN WITHIN ADJOINING DEVELOPMENT

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K:\C REF\..o\6610_the point community church\21_planning\6610_Point Church Servicing.dwg -A3(L)-Servicing and Access - Driveway, 11 September 2024, brianc

ORIGIN OF LEVELS: SSM xxxxxx RL x.xxx AHD

KING + CAMPBELL

King & Campbell Pty Ltd
www.kingcampbell.com.au
A: PO Box 243 Port Macquarie NSW 2444
T: 02 6586 2555
F: 02 6583 4064
E: info@kingcampbell.com.au

REV.	DATE	DESCRIPTION	BY
A	29.08.2024	ISSUE FOR CONSULTANTS	BC
B	10.09.2024	ISSUE FOR APPROVAL	BC

DATUM: AHD SCALE: 1:500 @ A3

0 12.5

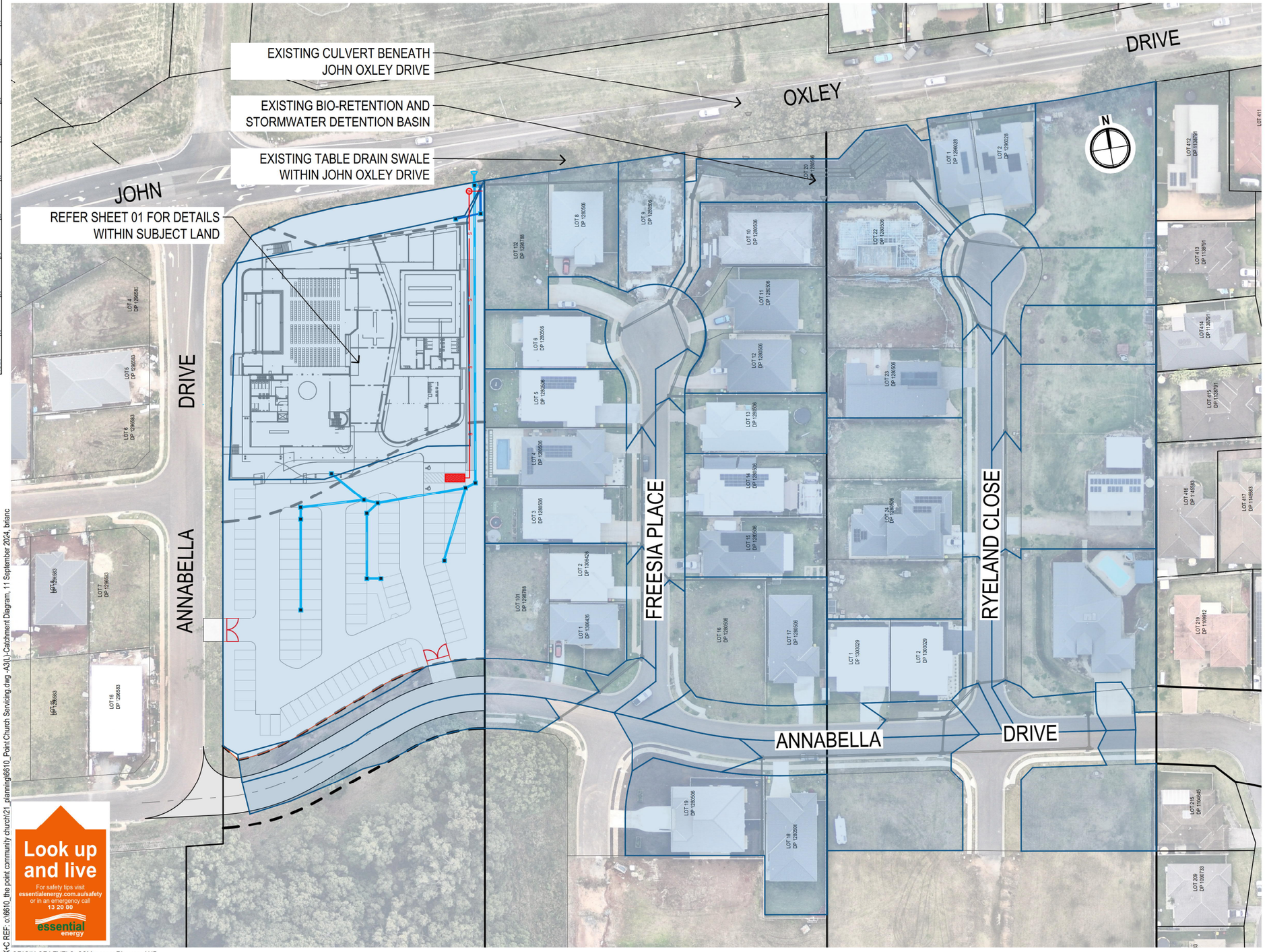
PROJECT NO:	6610
DA NO.:	-
DESIGNED BY:	BC
DRAWN BY:	-
CHECKED BY:	-
DATE CREATED:	JULY 2024

DRAWING TITLE: STORMWATER MANAGEMENT, SERVICING AND ACCESS — A3

PROJECT: THE POINT COMMUNITY CHURCH
171 JOHN OXLEY DRIVE, PORT MACQUARIE LOT 22 DP 1296583

CLIENT: THE POINT COMMUNITY CHURCH

DRAWING NO:	SHEET:	REVISION:
6610_Point Church Servicing	01 OF -	B



LEGEND

- EXTENT OF SUBJECT LAND
- SW — EXISTING STORMWATER

CAUTION

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Look up and live
For safety tips visit essentialenergy.com.au/safety or in an emergency call 13 20 00
essential energy

K+C REF: o:\6610_the point community church\21_planning\6610_Point Church Servicing.dwg -A3(L)-Catchment Diagram, 11 September 2024, brianc

ORIGIN OF LEVELS: SSM xxxxxx RL x.xxx AHD

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E: info@kingcampbell.com.au

REV.	DATE	DESCRIPTION	BY
A	29.08.2024	ISSUE FOR CONSULTANTS	BC
B	10.09.2024	ISSUE FOR APPROVALS	BC

DATUM: AHD SCALE: 1:1000 @ A3

0 25

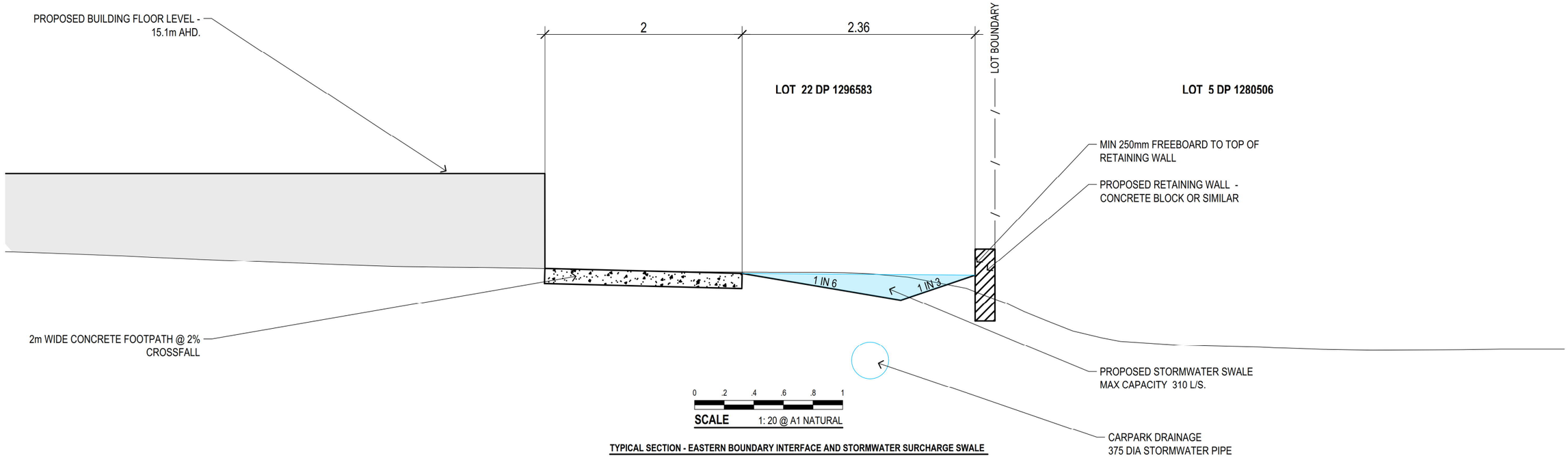
PROJECT NO:	6610
DA NO.:	-
DESIGNED BY:	BC
DRAWN BY:	-
CHECKED BY:	-
DATE CREATED:	JULY 2024

DRAWING TITLE: STORMWATER CATCHMENT DIAGRAM — A3

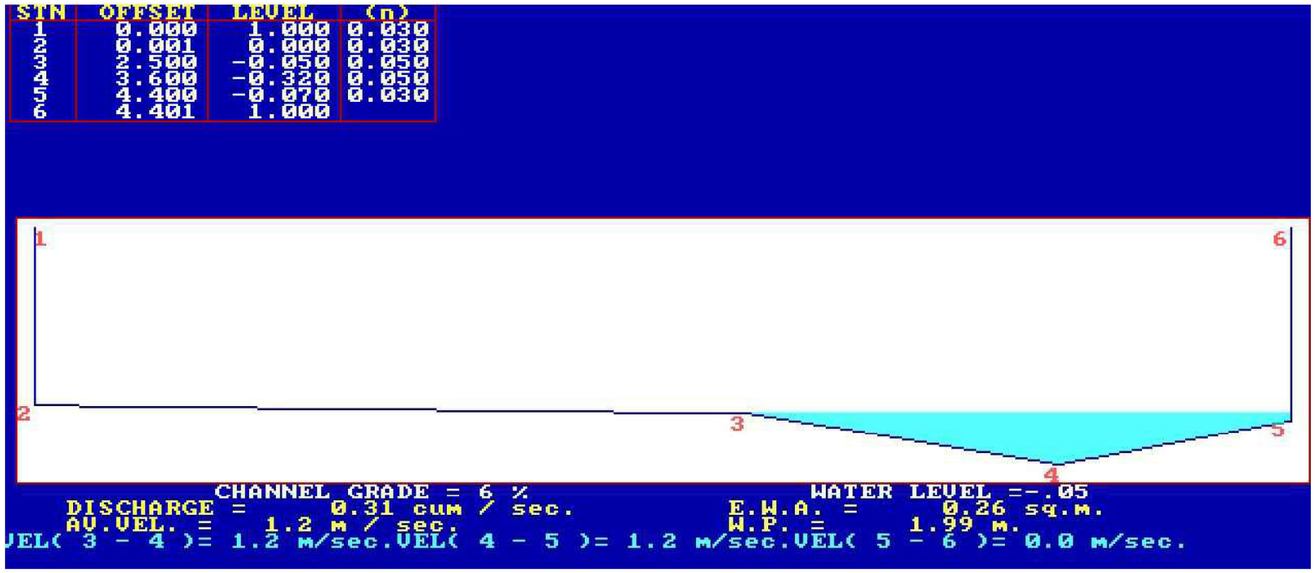
PROJECT: THE POINT COMMUNITY CHURCH
171 JOHN OXLEY DRIVE, PORT MACQUARIE LOT 22 DP 1296583

CLIENT: THE POINT COMMUNITY CHURCH

DRAWING NO:	SHEET:	REVISION:
6610_Point Church Servicing	02 OF -	B



TYPICAL SECTION - EASTERN BOUNDARY INTERFACE AND STORMWATER SURCHARGE SWALE



STORMWATER SWALE CAPACITY CALCULATION

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REV.	DATE	DESCRIPTION	
-	DD.MM.YYYY	ISSUED FOR INFORMATION	XX

DATUM: AHD SCALE: AS SHOWN

PROJECT NO:	6610
DA NO.:	-
DESIGNED BY:	BC
DRAWN BY:	-
CHECKED BY:	-
DATE CREATED:	JULY 2024

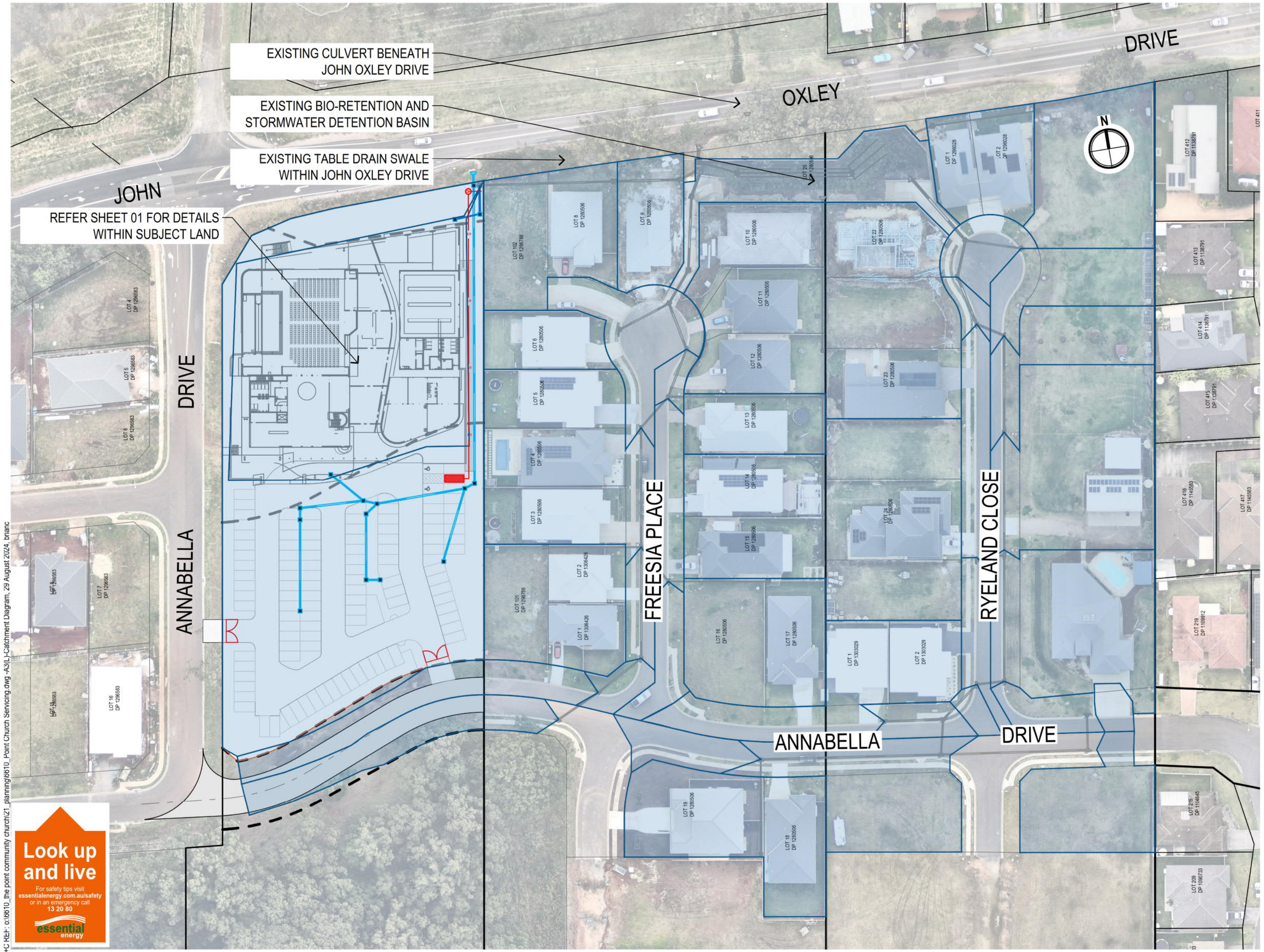
DRAWING TITLE:	TYPICAL SECTION - EASTERN BOUNDARY INTERFACE
PROJECT:	THE POINT COMMUNITY CHURCH 171 JOHN OXLEY DRIVE, PORT MACQUARIE LOT 22 DP 1296583
CLIENT:	THE POINT COMMUNITY CHURCH

A1

DRAWING NO:	SHEET:	REVISION:
Typical Section	03 OF -	-

APPENDIX SMP_1 – 12d MODEL AND OUTPUTS – MAJOR STORMS

Pre and Post Developed Catchment Model Layout



K+C REF: o:\6610_the point community church\21_planning\6610_Point Church Servicing.dwg -A3(L)-Catchment Diagram, 29 August 2024, brianc

ORIGIN OF LEVELS: SSM xxxxxx RL x.xxx AHD

LEGEND

EXTENT OF SUBJECT LAND
EXISTING STORMWATER

CAUTION

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Pre Developed Catchment Data & Major Storm Results – 1 in 100 year ARI

12d Model 1D Dynamic Drainage Analysis Report

Project: 5630 Mann Ramm DA

Directory: O:\5630_Mann- Pye\20_12d_Files\5630_Mann_Ramm_DA

User: brianc

Created: Tue Sep 10 11:59:40 2024

12d Dynamic Drainage Analysis V15 (Build 15.1.032)
12dModel 1D Dynamic Drainage Analysis 15.0C1p (Macro Version 240)
Storm Id: 4394 Duration: 25 mins AEP: 1 % (major)
ID: 3N2LPRE-N-1PRE-N-3

NOTE: The summary statistics displayed in this report are based on results found at every computational time step, not just on results from each reporting time step.

CONTENTS

ANALYSIS OPTIONS

Parameters	
Flow Units	m³/s
PROCESS MODELS:	
Rainfall/Runoff	YES
Snowmelt	NO
Groundwater	NO
Flow Routing	YES
Ponding Allowed	NO

Parameters	
Water Quality	NO
Hydrology Method	TIME-AREA (DRAINS)
Infiltration Method	HORTON (DRAINS)
Flow Routing Method	DYNWAVE
Starting Date	JAN-01-2008 00:00:00
Ending Date	JAN-01-2008 01:40:00
Antecedent Dry Days	0.0
Report Time Step	00:00:02
Wet Time Step	00:01:00
Dry Time Step	00:01:00

ELEMENT COUNT

Element Count	
Number of rain gages	1
Number of subcatchments	1
Number of nodes	3
Number of links	2
Number of pollutants	0
Number of land uses	0

RAINGAGE SUMMARY

Name	Data Source	Data Type	Recording Interval
RG1	Zone East Coast (South) 25min 1yr	VOLUME	5 min.

SUBCATCHMENT SUMMARY

Name	Area	Width	%Imperv	%Slope	Rain Gage	Outlet
PRE-N-1(1)	4.2520	0.00	5.00	2.5000	RG1	PRE-N-1

NODE SUMMARY

Name	Type	Invert Elev.	Max. Depth	Ponded Area	External Inflow
PRE-N-1	JUNCTION	7.144	1.512	0.00	-
PRE-N-2	JUNCTION	6.810	1.521	0.00	-
PRE-N-3	OUTFALL	6.760	0.610	0.00	-

LINK SUMMARY

Name	From Node	To Node	Type	Length	%Slope	Roughness
PRE-N-1_to_PRE-N-2	PRE-N-1	PRE-N-2	CONDUIT	8.1	3.6301	0.0130
PRE-N-2 to PRE-N-3	PRE-N-2	PRE-N-3	CONDUIT	11.0	0.4543	0.0130

CROSS SECTION SUMMARY

Conduit	Shape	Full Depth	Full Area	Hyd. Rad.	Max. Width	No. of Barrels	Full Flow
PRE-N-1 to PRE-N-2	CIRCULAR	0.45	0.16	0.11	0.45	5	0.54
PRE-N-2_to_PRE-N-3	CIRCULAR	0.61	0.29	0.15	0.61	2	0.43

CONTROL ACTIONS TAKEN

RUNOFF QUANTITY CONTINUITY

Quantity	Volume hectare-m	Depth mm
Total Precipitation	0.276380	65.000000
Evaporation Loss	0.000000	0.000000
Infiltration Loss	0.026423	6.214197
Surface Runoff	0.229548	53.985803
Final Surface Storage	0.020410	4.800000
Continuity Error (%)	0.000	

FLOW ROUTING CONTINUITY

Routing	Volume hectare-m	Volume 10^6 ltr
Dry Weather Inflow	0.000000	0.000000
Wet Weather Inflow	0.229551	2.295534
Groundwater Inflow	0.000000	0.000000
RDII Inflow	0.000000	0.000000
External Inflow	0.000000	0.000000
Inflow from Tuflow	0.000000	0.000000
External Outflow	0.229548	2.295501
Outflow to Tuflow	0.000000	0.000000
Internal Outflow	0.000000	0.000000
Storage Losses	0.000000	0.000000
Initial Stored Volume	0.000000	0.000000
Final Stored Volume	0.000000	0.000001
Continuity Error (%)	0.001	

TIME-STEP CRITICAL ELEMENTS

- Link PRE-N-2_to_PRE-N-3 (78.59%)
- Link PRE-N-1_to_PRE-N-2 (5.84%)

HIGHEST FLOW INSTABILITY INDEXES

- All links are stable.

ROUTING TIME STEP SUMMARY

Minimum Time Step	: 0.05 sec
Average Time Step	: 0.52 sec
Maximum Time Step	: 2.00 sec
Percent in Steady State	: 0.00
Average Iterations per Step	: 2.00

SUBCATCHMENT RUNOFF SUMMARY

Subcatchment	Total Precip mm	Total Runon mm	Total Evap mm	Total Infil mm	Total Runoff mm	Total Runoff 10^6 ltr	Peak Runoff m^3/s	Runoff Coeff
PRE-N-1(1)	65.000	0.000	0.000	6.214	53.986	2.295	1.773	0.831

NODE DEPTH SUMMARY

Node	Type	Average Depth (m)	Maximum Depth (m)	Maximum HGL (m)	Time of Max Occurrence		Minimum Freeboard (m)	Maximum Grate Depth (m)	Maximum Grate HGL (m)	Time of Max Occurrence		Time Not Converged (%)
					days	hr:min				days	hr:min	
PRE-N-1	JUNCTION	0.638	1.201	8.345	0	00:22	0.309	0.000	8.654	0	00:00	0.00
PRE-N-2	JUNCTION	0.450	0.731	7.541	0	00:22	0.789	0.000	8.329	0	00:00	0.00
PRE-N-3	OUTFALL	0.390	0.571	7.331	0	00:22	-0.571	0.000	6.760	0	00:00	0.00

NODE INFLOW SUMMARY

Node	Type	Maximum Catchment Inflow m^3/s	Maximum Lateral Inflow m^3/s	Maximum Total Inflow m^3/s	Time of Max Occurrence		Lateral Inflow Volume 10^6 ltr	Total Inflow Volume 10^6 ltr	Maximum Approach Flow m^3/s	Maximum Bypass FLow m^3/s	Maximum Captured Flow m^3/s	Maximum Uncaptured Flow m^3/s
					days	hr:min						
PRE-N-1	JUNCTION	1.773	1.773	1.773	0	00:22	2.296	2.295	1.773	0.000	1.773	0.000
PRE-N-2	JUNCTION	0.000	0.000	1.773	0	00:22	0.000	2.295	0.000	0.000	0.000	0.000
PRE-N-3	OUTFALL	0.000	0.000	1.774	0	00:22	0.000	2.295	0.000	0.000	0.000	0.000

NODE SURCHARGE SUMMARY

Surcharging occurs when water rises above the top of the highest conduit.

Node	Type	Hours Surcharged	Max. Height above Crown (m)	Min. Depth below Rim (m)
PRE-N-1	JUNCTION	0.39	0.753	0.311
PRE-N-2	JUNCTION	0.23	0.121	0.791

NODE FLOODING SUMMARY

No nodes were flooded.

STORAGE VOLUME SUMMARY

Storage Node	Average Volume $1000m^3$	Average % Full	E & I % Loss	Full Volume $1000m^3$	Max Node Volume $1000m^3$	Max Pit Volume $1000m^3$	Max Grate Volume $1000m^3$	Max % Full	Time of Max Occurence		Maximum Outflow m^3/s	Basin
									days	hr:min		
PRE-N-1	0.0037	57	0	0.0065	0.0058	0.0052	0.0000	89	0	00:22	1.773	-

Storage Node	Average Volume 1000m³	Average % Full	E & I % Loss	Full Volume 1000m³	Max Node Volume 1000m³	Max Pit Volume 1000m³	Max Grate Volume 1000m³	Max % Full	Time of Max Occurence		Maximum Outflow m³/s	Basin
									days	hr:min		
PRE-N-2	0.0052	61	0	0.0085	0.0074	0.0041	0.0000	87	0	00:22	1.774	-

OUTFALL LOADING SUMMARY

Outfall Node	Flow Frequency %	Average Flow m³/s	Max. Flow m³/s	Volume Total 10⁶ ltr
PRE-N-3	87.05	1.119	1.774	2.295
SYSTEM	87.05	1.119	1.774	2.295

LINK FLOW SUMMARY

Link	Type	Maximum Flow m³/s	Time of Max Occurence		Maximum Velocity m/s	Max/Full Flow	Max/Full Depth	Upstream		Downstream		Maximum		Max Head Loss		Max Velocity		Link Flooded
			days	hr:min				Max HGL Elev	Ku Loss m	Max HGL Elev	Ku Loss m	Ku	Kw	Ku m	Kw m	US m/s	DS m/s	
PRE-N-1_to_PRE-N-2	CONDUIT	1.773	0	00:22	2.25	0.66	1.00	7.916	0.429	7.541	0.000	2.62	0.00	0.429	0.000	2.25	2.25	0
PRE-N-2_to_PRE-N-3	CONDUIT	1.774	0	00:22	3.07	2.05	0.97	7.541	0.000	7.331	0.000	0.00	0.00	0.000	0.000	3.03	3.12	0

FLOW CLASSIFICATION SUMMARY

Conduit	Adjusted/ Actual Length	Fraction of time in Flow Class							Avg. Froude Number	Avg. Flow Change	Velocity x Depth			Max Top Width	
		Dry	Up Dry	Down Dry	Sub Crit	Sup Crit	Up Crit	Down Crit			US m²/s	Centre m²/s	DS m²/s	US m	DS m
PRE-N-1 to PRE-N-2	1.36	0.00	0.00	0.00	0.80	0.05	0.00	0.15	0.23	0.0006	2.70	1.01	1.55	0.448	0.448
PRE-N-2_to_PRE-N-3	1.00	0.00	0.00	0.00	0.95	0.05	0.00	0.00	0.78	0.0007	2.22	1.81	1.78	0.610	0.610

CONDUIT SURCHARGE SUMMARY

Conduit	Hours Full			Hours Above Full Normal Flow	Hours Capacity Limited
	Both Ends	Upstream	Downstream		
PRE-N-1_to_PRE-N-2	0.32	0.32	0.32	0.44	0.32
PRE-N-2_to_PRE-N-3	0.01	0.01	0.01	0.49	0.01

LINK RESULTS AT MAX FLOW

Link	Type	Area m²	Wetted Perimeter m	Top Width m	Critical Depth m	Normal Depth m	Critical Slope %	Velocity m/s	Velocity Head m	Specific Energy m	Froude No. (or Cd)	Ku	Flow Profile	Inlet Control
PRE-N-1_to_PRE-N-2	CONDUIT	0.158	1.407	0.176	0.404	0.266	1.02	2.250	0.258	0.706	0.000	2.62	S1	0
PRE-N-2_to_PRE-N-3	CONDUIT	0.288	1.694	0.239	0.571	0.610	1.77	3.065	0.479	1.069	0.835	0.00	M2	0

Analysis begun on: Tue Sep 10 11:59:04 2024
Analysis ended on: Tue Sep 10 11:59:39 2024
Total elapsed time: 00:00:35

Post Developed Catchment Data & Major Storm Results – 1 in 100 year ARI

12d Model 1D Dynamic Drainage Analysis Report

Project: 6610 Point Community Church

Directory: O:\6610_The Point Community Church\20_12d_Files\6610_Point_Community_Church

User: brianc

Created: Wed Aug 21 11:54:46 2024

12d Dynamic Drainage Analysis V15 (Build 15.1.032)
12dModel 1D Dynamic Drainage Analysis 15.0C1p (Macro Version 240)
Storm Id: 4362 Duration: 45 mins AEP: 1 % (major)
ID: 72N79L1-1WEIR-2

NOTE: The summary statistics displayed in this report are based on results found at every computational time step, not just on results from each reporting time step.

CONTENTS

ANALYSIS OPTIONS

Parameters	
Flow Units	m^3/s
PROCESS MODELS:	
Rainfall/Runoff	YES
Snowmelt	NO
Groundwater	NO
Flow Routing	YES
Ponding Allowed	NO

Parameters	
Water Quality	NO
Hydrology Method	TIME-AREA (DRAINS)
Infiltration Method	HORTON (DRAINS)
Flow Routing Method	DYNWAVE
Starting Date	JAN-01-2008 00:00:00
Ending Date	JAN-01-2008 03:00:00
Antecedent Dry Days	0.0
Report Time Step	00:01:00
Wet Time Step	00:01:00
Dry Time Step	00:01:00

ELEMENT COUNT

Element Count	
Number of rain gages	1
Number of subcatchments	39
Number of nodes	77
Number of links	119
Number of pollutants	0
Number of land uses	0

RAINGAGE SUMMARY

Name	Data Source	Data Type	Recording Interval
RG1	Zone East Coast (South) 45min 1yr	VOLUME	5 min.

SUBCATCHMENT SUMMARY

Name	Area	Width	%Imperv	%Slope	Rain Gage	Outlet
1-1(1)	0.0440	0.00	70.00	2.5000	RG1	1-1
1-2(1)	0.0103	0.00	70.00	2.5000	RG1	1-2
1-3(1)	0.0318	0.00	70.00	2.5000	RG1	1-3
1-5(1)	0.0987	0.00	70.00	2.5000	RG1	1-5

Name	Area	Width	%Imperv	%Slope	Rain Gage	Outlet
2-1(1)	0.0108	0.00	70.00	2.5000	RG1	2-1
2-2(1)	0.0835	0.00	70.00	2.5000	RG1	2-2
3-1(1)	0.0286	0.00	70.00	2.5000	RG1	3-1
4-1(1)	0.1375	0.00	70.00	2.5000	RG1	4-1
4-2(1)	0.0297	0.00	70.00	2.5000	RG1	4-2
4-3(1)	0.1195	0.00	70.00	2.5000	RG1	4-3
4-4(1)	0.0208	0.00	70.00	2.5000	RG1	4-4
4-5(1)	0.0091	0.00	70.00	2.5000	RG1	4-5
4-6(1)	0.0252	0.00	70.00	2.5000	RG1	4-6
4-7(1)	0.1558	0.00	70.00	2.5000	RG1	4-7
4-8(1)	0.1874	0.00	70.00	2.5000	RG1	4-8
4-9(1)	0.0712	0.00	70.00	2.5000	RG1	4-9
5-1(1)	0.0671	0.00	70.00	2.5000	RG1	5-1
6-1(1)	0.1248	0.00	70.00	2.5000	RG1	6-1
6-2(1)	0.0720	0.00	70.00	2.5000	RG1	6-2
7-1(1)	0.0699	0.00	70.00	2.5000	RG1	7-1
7-2(1)	0.0760	0.00	70.00	2.5000	RG1	7-2
7-3(1)	0.0154	0.00	70.00	2.5000	RG1	7-3
7-4(1)	0.0204	0.00	70.00	2.5000	RG1	7-4
7-5(1)	0.1867	0.00	70.00	2.5000	RG1	7-5
7-6(1)	0.0354	0.00	70.00	2.5000	RG1	7-6
7-7(1)	0.0103	0.00	70.00	2.5000	RG1	7-7
7-8(1)	0.0735	0.00	70.00	2.5000	RG1	7-8
8-1(1)	0.1143	0.00	70.00	2.5000	RG1	8-1
9-1(1)	0.1177	0.00	70.00	2.5000	RG1	9-1
9-2(1)	0.0280	0.00	70.00	2.5000	RG1	9-2
10-1(1)	0.0474	0.00	70.00	2.5000	RG1	10-1
11-1(1)	0.3441	0.00	70.00	2.5000	RG1	11-1
12-1(1)	0.3601	0.00	100.00	7.9400	RG1	12-1
12-2(1)	0.1092	0.00	70.00	2.5000	RG1	12-2
12-3(1)	0.0560	0.00	70.00	2.5000	RG1	12-3
13-1(1)	0.2979	0.00	70.00	2.5000	RG1	13-1
13-2(1)	0.0565	0.00	60.00	2.5000	RG1	13-2
14-1(1)	0.1237	0.00	70.00	2.5000	RG1	14-1
JOD1-1(1)	0.6462	0.00	80.00	4.3200	RG1	JOD1-1

NODE SUMMARY

Name	Type	Invert Elev.	Max. Depth	Ponded Area	External Inflow
1-1	JUNCTION	9.275	1.588	0.00	-
1-2	JUNCTION	8.523	1.694	0.00	-
1-3	JUNCTION	8.292	2.126	0.00	-
1-4	JUNCTION	7.555	1.420	0.00	-
1-6	JUNCTION	6.933	2.069	0.00	-
1-7	JUNCTION	6.933	2.069	0.00	-
1-8	JUNCTION	6.933	2.069	0.00	-
1-9	JUNCTION	6.924	6.078	0.00	-
1-10	JUNCTION	6.890	1.811	0.00	-
2-1	JUNCTION	12.590	1.330	0.00	-
2-2	JUNCTION	12.427	1.493	0.00	-
3-1	JUNCTION	11.589	1.480	0.00	-
4-1	JUNCTION	13.122	0.903	0.00	-
4-2	JUNCTION	12.513	1.720	0.00	-
4-3	JUNCTION	11.999	1.626	0.00	-
4-4	JUNCTION	11.800	1.825	0.00	-
4-5	JUNCTION	11.530	1.868	0.00	-
4-6	JUNCTION	11.410	1.977	0.00	-
4-7	JUNCTION	11.035	2.022	0.00	-
4-8	JUNCTION	10.668	1.669	0.00	-
4-9	JUNCTION	9.404	1.609	0.00	-
5-1	JUNCTION	8.673	1.520	0.00	-
6-1	JUNCTION	7.953	2.321	0.00	-
6-2	JUNCTION	7.628	4.374	0.00	-
6-3	JUNCTION	7.600	1.402	0.00	-
7-1	JUNCTION	14.682	1.495	0.00	-
7-2	JUNCTION	14.034	1.813	0.00	-
7-3	JUNCTION	13.430	1.520	0.00	-
7-4	JUNCTION	11.983	2.718	0.00	-
7-5	JUNCTION	10.571	1.524	0.00	-
7-6	JUNCTION	10.108	1.508	0.00	-
7-7	JUNCTION	9.294	1.590	0.00	-

Name	Type	Invert Elev.	Max. Depth	Ponded Area	External Inflow
7-8	JUNCTION	8.811	1.902	0.00	-
7-9	JUNCTION	8.480	1.397	0.00	-
7-10	JUNCTION	7.618	1.514	0.00	-
7-11	JUNCTION	7.555	1.272	0.00	-
8-1	JUNCTION	14.491	2.346	0.00	-
9-1	JUNCTION	12.505	2.116	0.00	-
9-2	JUNCTION	12.146	2.239	0.00	-
10-1	JUNCTION	9.313	1.540	0.00	-
11-1	JUNCTION	10.452	1.628	0.00	-
11-2	JUNCTION	7.578	2.127	0.00	-
12-1	JUNCTION	7.959	3.391	0.00	-
12-2	JUNCTION	7.736	2.754	0.00	-
12-3	JUNCTION	7.601	2.349	0.00	-
12-4	JUNCTION	7.555	1.425	0.00	-
13-1	JUNCTION	12.500	1.854	0.00	-
13-2	JUNCTION	10.668	1.850	0.00	-
14-1	JUNCTION	12.175	1.517	0.00	-
B3-1	JUNCTION	6.933	2.069	0.00	-
B3-2	JUNCTION	6.933	2.069	0.00	-
B4-1	JUNCTION	6.933	2.069	0.00	-
B4-2	JUNCTION	6.933	2.069	0.00	-
B4-3	JUNCTION	6.933	2.069	0.00	-
B5-1	JUNCTION	6.933	2.069	0.00	-
B6-1	JUNCTION	6.933	2.069	0.00	-
B7-1	JUNCTION	6.933	2.069	0.00	-
B8-1	JUNCTION	6.933	2.069	0.00	-
B8-2	JUNCTION	6.933	2.069	0.00	-
B8-3	JUNCTION	6.933	2.069	0.00	-
B9-1	JUNCTION	6.933	2.069	0.00	-
JOD1-1	JUNCTION	10.280	1.580	0.00	-
JOD1-2	JUNCTION	8.475	1.580	0.00	-
JOD1-3	JUNCTION	7.503	3.159	0.00	-
JOD1-4	JUNCTION	6.850	2.580	0.00	-
JOD1-5	JUNCTION	6.800	2.580	0.00	-
JOD1-6	JUNCTION	6.790	3.322	0.00	-

Name	Type	Invert Elev.	Max. Depth	Ponded Area	External Inflow
JOD1-7	JUNCTION	6.750	2.808	0.00	-
WEIR-1	JUNCTION	7.500	1.252	0.00	-
WEIR-2	JUNCTION	6.841	1.811	0.00	-
SW	OUTFALL	6.541	2.335	0.00	-
LOST	OUTFALL	13.586	0.232	0.00	-
LOST1	OUTFALL	13.691	0.232	0.00	-
LOST2	OUTFALL	13.291	0.232	0.00	-
LOST3	OUTFALL	15.743	0.232	0.00	-
LOST4	OUTFALL	8.945	0.396	0.00	-
1-5	STORAGE	6.933	6.069	0.00	-

LINK SUMMARY

Name	From Node	To Node	Type	Length	%Slope	Roughness
1-1 to 1-2	1-1	1-2	CONDUIT	13.2	5.3247	0.0130
1-2_to_1-3	1-2	1-3	CONDUIT	9.6	1.8835	0.0130
1-3 to 1-4	1-3	1-4	CONDUIT	21.0	3.5135	0.0130
1-6_to_1-7	1-6	1-7	CONDUIT	13.7	0.0036	0.0130
1-7 to 1-8	1-7	1-8	CONDUIT	1.0	0.0500	0.0130
1-8 to 1-9	1-8	1-9	CONDUIT	10.4	0.0048	0.0130
1-9_to_1-10	1-9	1-10	CONDUIT	3.4	1.0012	0.0130
1-10_to_JOD1-4	1-10	JOD1-4	CONDUIT	4.2	0.9461	0.0130
2-1_to_2-2	2-1	2-2	CONDUIT	9.0	1.0001	0.0130
2-2_to_4-3	2-2	4-3	CONDUIT	37.8	1.0000	0.0130
3-1 to 4-7	3-1	4-7	CONDUIT	7.1	7.1057	0.0130
4-1_to_4-2	4-1	4-2	CONDUIT	24.4	2.2951	0.0130
4-2_to_4-3	4-2	4-3	CONDUIT	46.4	1.0002	0.0130
4-3_to_4-4	4-3	4-4	CONDUIT	9.0	1.6438	0.0130
4-4_to_4-5	4-4	4-5	CONDUIT	12.5	1.7561	0.0130
4-5 to 4-6	4-5	4-6	CONDUIT	7.0	1.0008	0.0130
4-6_to_4-7	4-6	4-7	CONDUIT	32.5	1.0001	0.0130
4-7_to_4-8	4-7	4-8	CONDUIT	31.6	1.0001	0.0130
4-8_to_4-9	4-8	4-9	CONDUIT	24.8	4.9016	0.0130
4-9_to_1-1	4-9	1-1	CONDUIT	7.6	1.0485	0.0130

Name	From Node	To Node	Type	Length	%Slope	Roughness
5-1_to_1-3	5-1	1-3	CONDUIT	14.5	2.2378	0.0130
6-1_to_6-2	6-1	6-2	CONDUIT	27.4	1.0002	0.0130
6-2_to_6-3	6-2	6-3	CONDUIT	5.7	0.4996	0.0130
7-1 to 7-2	7-1	7-2	CONDUIT	12.3	4.8687	0.0130
7-2_to_7-3	7-2	7-3	CONDUIT	14.1	3.7447	0.0130
7-3_to_7-4	7-3	7-4	CONDUIT	28.7	4.8781	0.0130
7-4_to_7-5	7-4	7-5	CONDUIT	30.8	4.4333	0.0130
7-5_to_7-6	7-5	7-6	CONDUIT	10.6	3.9040	0.0130
7-6 to 7-7	7-6	7-7	CONDUIT	13.1	4.8335	0.0130
7-7 to 7-8	7-7	7-8	CONDUIT	12.7	3.4072	0.0130
7-8 to 7-9	7-8	7-9	CONDUIT	9.9	2.0859	0.0130
7-9 to 7-10	7-9	7-10	CONDUIT	18.9	3.9682	0.0130
7-10_to_7-11	7-10	7-11	CONDUIT	6.2	1.0142	0.0130
8-1 to 7-4	8-1	7-4	CONDUIT	24.8	8.9962	0.0130
9-1 to 9-2	9-1	9-2	CONDUIT	25.7	1.2001	0.0130
9-2 to 7-4	9-2	7-4	CONDUIT	11.3	1.0001	0.0130
10-1_to_7-8	10-1	7-8	CONDUIT	14.3	2.6200	0.0130
11-1_to_11-2	11-1	11-2	CONDUIT	39.0	7.3808	0.0130
12-1_to_12-2	12-1	12-2	CONDUIT	34.5	0.5008	0.0130
12-2 to 12-3	12-2	12-3	CONDUIT	17.1	0.4997	0.0130
12-3_to_12-4	12-3	12-4	CONDUIT	4.7	0.9806	0.0130
13-1_to_13-2	13-1	13-2	CONDUIT	42.8	3.6523	0.0130
13-2_to_7-6	13-2	7-6	CONDUIT	39.7	1.0002	0.0130
14-1_to_4-4	14-1	4-4	CONDUIT	15.1	2.1495	0.0130
B3-1 to B3-2	B3-1	B3-2	CONDUIT	13.7	0.0036	0.0130
B3-2 to 1-8	B3-2	1-8	CONDUIT	1.0	0.0500	0.0130
B4-1 to B4-2	B4-1	B4-2	CONDUIT	0.8	0.0651	0.0130
B4-2 to B4-3	B4-2	B4-3	CONDUIT	1.1	0.0473	0.0130
B4-3_to_1-8	B4-3	1-8	CONDUIT	29.4	0.0017	0.0130
B5-1 to B4-2	B5-1	B4-2	CONDUIT	14.1	0.0035	0.0130
B6-1 to B8-3	B6-1	B8-3	CONDUIT	13.3	0.0038	0.0130
1-5 to B7-1	1-5	B7-1	CONDUIT	17.5	0.0029	0.0130
B7-1_to_B4-1	B7-1	B4-1	CONDUIT	10.4	0.0048	0.0130
1-5_to_B8-1	1-5	B8-1	CONDUIT	17.0	0.0029	0.0130
B8-1_to_B8-2	B8-1	B8-2	CONDUIT	10.1	0.0050	0.0130

Name	From Node	To Node	Type	Length	%Slope	Roughness
B8-2_to_B8-3	B8-2	B8-3	CONDUIT	0.8	0.0619	0.0130
B8-3_to_B4-3	B8-3	B4-3	CONDUIT	1.1	0.0454	0.0130
1-5_to_B9-1	1-5	B9-1	CONDUIT	18.2	0.0028	0.0130
B9-1 to B4-3	B9-1	B4-3	CONDUIT	11.3	0.0044	0.0130
JOD1-1_to_JOD1-2	JOD1-1	JOD1-2	CONDUIT	37.4	4.8308	0.0400
JOD1-2_to_JOD1-3	JOD1-2	JOD1-3	CONDUIT	35.5	2.7361	0.0400
JOD1-3_to_JOD1-4	JOD1-3	JOD1-4	CONDUIT	22.8	2.8690	0.0400
JOD1-4_to_JOD1-5	JOD1-4	JOD1-5	CONDUIT	9.2	0.5435	0.0400
JOD1-5 to JOD1-6	JOD1-5	JOD1-6	CONDUIT	2.6	0.3858	0.0400
JOD1-6 to JOD1-7	JOD1-6	JOD1-7	CONDUIT	10.8	0.4627	0.0400
A	JOD1-7	SW	CONDUIT	13.9	1.5008	0.0130
WEIR-1 to WEIR-2	WEIR-1	WEIR-2	CONDUIT	5.8	1.7349	0.0400
WEIR-2_to_WEIR-3	WEIR-2	JOD1-6	CONDUIT	3.7	0.3323	0.0400
1-1 to 1-2(S)	1-1	1-2	CONDUIT	13.4	4.8026	0.0150
1-2 to 1-3(S)	1-2	1-3	CONDUIT	10.1	2.2714	0.0150
1-3 to 1-5(S)	1-3	1-5	CONDUIT	42.9	2.1879	0.0150
1-9_to_JOD1-5(S)	1-9	JOD1-5	CONDUIT	13.6	27.6272	0.0150
2-1_to_4-6(S)	2-1	4-6	CONDUIT	26.4	2.0180	0.0150
2-2_to_LOST(S)	2-2	LOST	CONDUIT	10.0	1.0001	0.0150
3-1 to 1-1(S)	3-1	1-1	CONDUIT	60.0	3.6814	0.0150
4-1_to_LOST1(S)	4-1	LOST1	CONDUIT	10.0	1.0001	0.0150
4-2_to_4-3(S)	4-2	4-3	CONDUIT	46.4	1.3107	0.0150
4-3_to_LOST2(S)	4-3	LOST2	CONDUIT	10.0	1.0001	0.0150
4-4_to_4-5(S)	4-4	4-5	CONDUIT	13.9	1.6441	0.0150
4-5 to 3-1(S)	4-5	3-1	CONDUIT	32.0	1.0250	0.0150
4-6 to 4-7(S)	4-6	4-7	CONDUIT	32.5	1.0136	0.0150
4-7 to 4-8(S)	4-7	4-8	CONDUIT	31.6	2.2755	0.0150
4-8 to 4-9(S)	4-8	4-9	CONDUIT	24.8	5.3470	0.0150
4-9_to_5-1(S)	4-9	5-1	CONDUIT	24.0	3.4206	0.0150
5-1 to 1-3(S)	5-1	1-3	CONDUIT	16.8	1.2304	0.0150
6-1 to JOD1-6(S)	6-1	JOD1-6	CONDUIT	78.3	1.1548	0.0150
6-2 to JOD1-6(S)	6-2	JOD1-6	CONDUIT	47.7	3.9621	0.0150
7-1_to_LOST3(S)	7-1	LOST3	CONDUIT	10.0	2.0004	0.0150
7-2_to_7-3(S)	7-2	7-3	CONDUIT	16.2	5.5353	0.0150
7-3_to_7-4(S)	7-3	7-4	CONDUIT	28.7	3.5459	0.0150

Name	From Node	To Node	Type	Length	%Slope	Roughness
7-4_to_7-5(S)	7-4	7-5	CONDUIT	30.8	5.9892	0.0150
7-5_to_10-1(S)	7-5	10-1	CONDUIT	26.5	4.6874	0.0150
7-6_to_7-7(S)	7-6	7-7	CONDUIT	13.4	5.4866	0.0150
7-7 to 7-8(S)	7-7	7-8	CONDUIT	14.1	3.0996	0.0150
7-8_to_LOST4(S)	7-8	LOST4	CONDUIT	10.0	13.8304	0.0150
8-1_to_7-4(S)	8-1	7-4	CONDUIT	24.8	8.6490	0.0150
9-1_to_13-1(S)	9-1	13-1	CONDUIT	14.8	1.8083	0.0150
9-2_to_7-6(S)	9-2	7-6	CONDUIT	47.5	5.8396	0.0150
10-1 to 7-8(S)	10-1	7-8	CONDUIT	16.5	2.4637	0.0150
11-1 to 11-2(S)	11-1	11-2	CONDUIT	39.0	6.0932	0.0150
12-1 to JOD1-2(S)	12-1	JOD1-2	CONDUIT	4.0	33.9619	0.0150
12-2 to JOD1-3(S)	12-2	JOD1-3	CONDUIT	9.0	-1.9111	0.0150
12-3_to_JOD1-4(S)	12-3	JOD1-4	CONDUIT	13.1	3.9769	0.0150
13-1 to 13-2(S)	13-1	13-2	CONDUIT	42.3	4.2212	0.0150
13-2 to 11-1(S)	13-2	11-1	CONDUIT	11.7	6.0219	0.0150
14-1 to 4-4(S)	14-1	4-4	CONDUIT	15.1	0.4408	0.0150
JOD1-5_to_JOD1-6(S)	JOD1-5	JOD1-6	CONDUIT	2.6	0.3860	0.0150
JOD1-6_to_JOD1-7(S)	JOD1-6	JOD1-7	CONDUIT	10.8	-9.7668	0.0150
1-4_to_1-5	1-4	1-5	CONDUIT	23.3	0.2358	0.0110
1-5 to 1-6	1-5	1-6	CONDUIT	7.9	0.0063	0.0110
6-3_to_1-5	6-3	1-5	CONDUIT	25.6	0.3900	0.0110
7-11_to_1-5	7-11	1-5	CONDUIT	31.3	0.1756	0.0110
11-2_to_1-5	11-2	1-5	CONDUIT	6.4	1.2034	0.0110
12-4_to_1-5	12-4	1-5	CONDUIT	32.3	0.1705	0.0110
1-5 to 1-9	1-5	1-9	CONDUIT	31.8	-3.6708	0.0110
1-5 to B3-1	1-5	B3-1	CONDUIT	8.0	0.0062	0.0110
1-5 to B5-1	1-5	B5-1	CONDUIT	5.9	0.0084	0.0110
1-5 to B6-1	1-5	B6-1	CONDUIT	6.1	0.0082	0.0110
1-5_to_WEIR-1	1-5	WEIR-1	CONDUIT	20.1	0.0025	0.0110

CROSS SECTION SUMMARY

Conduit	Shape	Full Depth	Full Area	Hyd. Rad.	Max. Width	No. of Barrels	Full Flow
1-1_to_1-2	CIRCULAR	0.53	0.22	0.13	0.53	1	0.99

Conduit	Shape	Full Depth	Full Area	Hyd. Rad.	Max. Width	No. of Barrels	Full Flow
1-2_to_1-3	CIRCULAR	0.53	0.22	0.13	0.53	1	0.59
1-3_to_1-4	CIRCULAR	0.60	0.28	0.15	0.60	1	1.15
1-6_to_1-7	CIRCULAR	0.09	0.01	0.02	0.09	1	0.00
1-7 to 1-8	CIRCULAR	0.23	0.04	0.06	0.23	1	0.01
1-8_to_1-9	CIRCULAR	0.30	0.07	0.07	0.30	1	0.01
1-9_to_1-10	CIRCULAR	0.75	0.44	0.19	0.75	1	1.11
1-10_to_JOD1-4	SW_ST1_Drainage->1->1-10_to_JOD1-4	1.58	8.06	0.71	10.71	1	48.22
2-1_to_2-2	CIRCULAR	0.38	0.11	0.09	0.38	1	0.18
2-2 to 4-3	CIRCULAR	0.38	0.11	0.09	0.38	1	0.18
3-1 to 4-7	CIRCULAR	0.38	0.11	0.09	0.38	1	0.47
4-1 to 4-2	CIRCULAR	0.23	0.04	0.06	0.23	1	0.07
4-2 to 4-3	CIRCULAR	0.38	0.11	0.09	0.38	1	0.18
4-3_to_4-4	CIRCULAR	0.38	0.11	0.09	0.38	1	0.22
4-4 to 4-5	CIRCULAR	0.38	0.11	0.09	0.38	1	0.23
4-5 to 4-6	CIRCULAR	0.38	0.11	0.09	0.38	1	0.18
4-6 to 4-7	CIRCULAR	0.38	0.11	0.09	0.38	1	0.18
4-7_to_4-8	CIRCULAR	0.38	0.11	0.09	0.38	1	0.18
4-8_to_4-9	CIRCULAR	0.45	0.16	0.11	0.45	1	0.63
4-9_to_1-1	CIRCULAR	0.45	0.16	0.11	0.45	1	0.29
5-1 to 1-3	CIRCULAR	0.38	0.11	0.09	0.38	1	0.26
6-1_to_6-2	CIRCULAR	0.23	0.04	0.06	0.23	1	0.04
6-2_to_6-3	CIRCULAR	0.38	0.11	0.09	0.38	1	0.12
7-1_to_7-2	CIRCULAR	0.38	0.11	0.09	0.38	1	0.39
7-2_to_7-3	CIRCULAR	0.38	0.11	0.09	0.38	1	0.34
7-3 to 7-4	CIRCULAR	0.38	0.11	0.09	0.38	1	0.39
7-4 to 7-5	CIRCULAR	0.38	0.11	0.09	0.38	1	0.37
7-5 to 7-6	CIRCULAR	0.38	0.11	0.09	0.38	1	0.35
7-6 to 7-7	CIRCULAR	0.38	0.11	0.09	0.38	1	0.39
7-7_to_7-8	CIRCULAR	0.45	0.16	0.11	0.45	1	0.53
7-8 to 7-9	CIRCULAR	0.45	0.16	0.11	0.45	1	0.41
7-9 to 7-10	CIRCULAR	0.45	0.16	0.11	0.45	1	0.57
7-10 to 7-11	CIRCULAR	0.60	0.28	0.15	0.60	1	0.62
8-1_to_7-4	CIRCULAR	0.23	0.04	0.06	0.23	1	0.13
9-1_to_9-2	CIRCULAR	0.23	0.04	0.06	0.23	1	0.05
9-2_to_7-4	CIRCULAR	0.38	0.11	0.09	0.38	1	0.18

Conduit	Shape	Full Depth	Full Area	Hyd. Rad.	Max. Width	No. of Barrels	Full Flow
10-1_to_7-8	CIRCULAR	0.38	0.11	0.09	0.38	1	0.28
11-1_to_11-2	CIRCULAR	0.30	0.07	0.07	0.30	1	0.26
12-1_to_12-2	CIRCULAR	0.38	0.11	0.09	0.38	1	0.12
12-2 to 12-3	CIRCULAR	0.45	0.16	0.11	0.45	1	0.20
12-3_to_12-4	CIRCULAR	0.53	0.22	0.13	0.53	1	0.43
13-1_to_13-2	CIRCULAR	0.23	0.04	0.06	0.23	1	0.09
13-2_to_7-6	CIRCULAR	0.38	0.11	0.09	0.38	1	0.18
14-1_to_4-4	CIRCULAR	0.38	0.11	0.09	0.38	1	0.26
B3-1 to B3-2	CIRCULAR	0.09	0.01	0.02	0.09	1	0.00
B3-2 to 1-8	CIRCULAR	0.09	0.01	0.02	0.09	1	0.00
B4-1 to B4-2	CIRCULAR	0.23	0.04	0.06	0.23	1	0.01
B4-2 to B4-3	CIRCULAR	0.23	0.04	0.06	0.23	1	0.01
B4-3_to_1-8	CIRCULAR	0.23	0.04	0.06	0.23	1	0.00
B5-1 to B4-2	CIRCULAR	0.09	0.01	0.02	0.09	1	0.00
B6-1 to B8-3	CIRCULAR	0.09	0.01	0.02	0.09	1	0.00
1-5 to B7-1	CIRCULAR	0.01	0.00	0.00	0.01	1	0.00
B7-1_to_B4-1	CIRCULAR	0.09	0.01	0.02	0.09	1	0.00
1-5_to_B8-1	CIRCULAR	0.01	0.00	0.00	0.01	1	0.00
B8-1_to_B8-2	CIRCULAR	0.09	0.01	0.02	0.09	1	0.00
B8-2 to B8-3	CIRCULAR	0.23	0.04	0.06	0.23	1	0.01
B8-3_to_B4-3	CIRCULAR	0.23	0.04	0.06	0.23	1	0.01
1-5_to_B9-1	CIRCULAR	0.01	0.00	0.00	0.01	1	0.00
B9-1_to_B4-3	CIRCULAR	0.09	0.01	0.02	0.09	1	0.00
JOD1-1_to_JOD1-2	SW_ST1_Drainage->JOD1->JOD1-1_to_JOD1-2	1.58	8.06	0.71	10.71	1	35.41
JOD1-2 to JOD1-3	SW ST1 Drainage->JOD1->JOD1-2 to JOD1-3	1.58	8.06	0.71	10.71	1	26.65
JOD1-3 to JOD1-4	SW ST1 Drainage->JOD1->JOD1-3 to JOD1-4	1.58	8.06	0.71	10.71	1	27.29
JOD1-4 to JOD1-5	SW ST1 Drainage->JOD1->JOD1-4 to JOD1-5	1.58	8.06	0.71	10.71	1	11.88
JOD1-5 to JOD1-6	SW ST1 Drainage->JOD1->JOD1-5 to JOD1-6	1.58	8.06	0.71	10.71	1	10.01
JOD1-6_to_JOD1-7	CIRCULAR	0.60	0.28	0.15	0.60	2	0.14
A	SW ST1 Drainage->JOD1->A	2.34	50.35	1.52	31.29	1	626.78
WEIR-1 to WEIR-2	TRAPEZOIDAL	0.25	0.75	0.18	4.00	1	0.80
WEIR-2 to WEIR-3	RECT CLOSED	1.00	10.00	0.45	10.00	1	8.52
1-1_to_1-2(S)	SW_ST1_Drainage->default_shape	0.23	0.79	0.10	7.50	1	2.55
1-2_to_1-3(S)	SW_ST1_Drainage->default_shape	0.23	0.79	0.10	7.50	1	1.76
1-3_to_1-5(S)	SW_ST1_Drainage->1->1-3_to_1-5(S)	0.53	2.43	0.33	7.08	1	11.47

Conduit	Shape	Full Depth	Full Area	Hyd. Rad.	Max. Width	No. of Barrels	Full Flow
1-9_to_JOD1-5(S)	SW_ST1_Drainage->1->1-9_to_JOD1-5(S)	1.00	3.99	0.66	4.00	1	106.58
2-1_to_4-6(S)	SW_ST1_Drainage->default_shape	0.23	0.79	0.10	7.50	1	1.66
2-2_to_LOST(S)	SW_ST1_Drainage->default_shape	0.23	0.79	0.10	7.50	1	1.17
3-1 to 1-1(S)	SW ST1 Drainage->default shape	0.23	0.79	0.10	7.50	1	2.24
4-1_to_LOST1(S)	SW_ST1_Drainage->default_shape	0.23	0.79	0.10	7.50	1	1.17
4-2_to_4-3(S)	SW_ST1_Drainage->default_shape	0.23	0.79	0.10	7.50	1	1.33
4-3_to_LOST2(S)	SW_ST1_Drainage->default_shape	0.23	0.79	0.10	7.50	1	1.17
4-4_to_4-5(S)	SW_ST1_Drainage->default_shape	0.23	0.79	0.10	7.50	1	1.49
4-5 to 3-1(S)	SW ST1 Drainage->default shape	0.23	0.79	0.10	7.50	1	1.18
4-6 to 4-7(S)	SW ST1 Drainage->default shape	0.23	0.79	0.10	7.50	1	1.17
4-7 to 4-8(S)	SW ST1 Drainage->default shape	0.23	0.79	0.10	7.50	1	1.76
4-8 to 4-9(S)	SW ST1 Drainage->default shape	0.23	0.79	0.10	7.50	1	2.69
4-9_to_5-1(S)	SW_ST1_Drainage->default_shape	0.23	0.79	0.10	7.50	1	2.15
5-1 to 1-3(S)	SW ST1 Drainage->default shape	0.23	0.79	0.10	7.50	1	1.29
6-1 to JOD1-6(S)	SW ST1 Drainage->6->6-1 to JOD1-6(S)	1.00	3.99	0.66	4.00	1	21.79
6-2 to JOD1-6(S)	SW ST1 Drainage->6->6-2 to JOD1-6(S)	3.25	12.98	1.23	4.00	1	198.10
7-1_to_LOST3(S)	SW_ST1_Drainage->default_shape	0.23	0.79	0.10	7.50	1	1.65
7-2_to_7-3(S)	SW_ST1_Drainage->default_shape	0.23	0.79	0.10	7.50	1	2.74
7-3_to_7-4(S)	SW_ST1_Drainage->default_shape	0.23	0.79	0.10	7.50	1	2.19
7-4 to 7-5(S)	SW ST1 Drainage->default shape	0.23	0.79	0.10	7.50	1	2.85
7-5_to_10-1(S)	SW_ST1_Drainage->default_shape	0.23	0.79	0.10	7.50	1	2.52
7-6_to_7-7(S)	SW_ST1_Drainage->default_shape	0.23	0.79	0.10	7.50	1	2.73
7-7_to_7-8(S)	SW_ST1_Drainage->default_shape	0.23	0.79	0.10	7.50	1	2.05
7-8_to_LOST4(S)	SW_ST1_Drainage->7->7-8_to_LOST4(S)	0.40	1.67	0.25	6.47	1	16.30
8-1 to 7-4(S)	SW ST1 Drainage->8->8-1 to 7-4(S)	1.00	3.99	0.66	4.00	1	59.63
9-1 to 13-1(S)	SW ST1 Drainage->9->9-1 to 13-1(S)	1.00	3.99	0.66	4.00	1	27.27
9-2 to 7-6(S)	SW ST1 Drainage->default shape	0.23	0.79	0.10	7.50	1	2.82
10-1 to 7-8(S)	SW ST1 Drainage->default shape	0.23	0.79	0.10	7.50	1	1.83
11-1_to_11-2(S)	SW_ST1_Drainage->11->11-1_to_11-2(S)	0.70	5.22	0.27	18.74	1	36.09
12-1 to JOD1-2(S)	SW ST1 Drainage->12->12-1 to JOD1-2(S)	1.58	8.06	0.71	10.71	1	250.39
12-2 to JOD1-3(S)	SW ST1 Drainage->12->12-2 to JOD1-3(S)	1.58	8.06	0.71	10.71	1	59.40
12-3 to JOD1-4(S)	SW ST1 Drainage->12->12-3 to JOD1-4(S)	1.00	3.99	0.66	4.00	1	40.44
13-1_to_13-2(S)	SW_ST1_Drainage->13->13-1_to_13-2(S)	0.57	23.69	0.35	66.94	1	161.66
13-2_to_11-1(S)	SW_ST1_Drainage->13->13-2_to_11-1(S)	0.57	23.69	0.35	66.94	1	193.08
14-1_to_4-4(S)	SW_ST1_Drainage->default_shape	0.23	0.79	0.10	7.50	1	0.77

Conduit	Shape	Full Depth	Full Area	Hyd. Rad.	Max. Width	No. of Barrels	Full Flow
JOD1-5_to_JOD1-6(S)	SW_ST1_Drainage->default_shape	0.23	0.79	0.10	7.50	1	0.72
JOD1-6_to_JOD1-7(S)	SW_ST1_Drainage->JOD1->JOD1-6_to_JOD1-7(S)	0.47	35.47	0.31	113.10	1	340.21
1-4_to_1-5	BASIN_LINK	0.00	0.00	0.00	0.00	1	0.00
1-5 to 1-6	BASIN LINK	0.00	0.00	0.00	0.00	1	0.00
6-3_to_1-5	BASIN_LINK	0.00	0.00	0.00	0.00	1	0.00
7-11_to_1-5	BASIN_LINK	0.00	0.00	0.00	0.00	1	0.00
11-2_to_1-5	BASIN_LINK	0.00	0.00	0.00	0.00	1	0.00
12-4_to_1-5	BASIN_LINK	0.00	0.00	0.00	0.00	1	0.00
1-5 to 1-9	BASIN LINK	0.00	0.00	0.00	0.00	1	0.00
1-5 to B3-1	BASIN LINK	0.00	0.00	0.00	0.00	1	0.00
1-5 to B5-1	BASIN LINK	0.00	0.00	0.00	0.00	1	0.00
1-5 to B6-1	BASIN LINK	0.00	0.00	0.00	0.00	1	0.00
1-5_to_WEIR-1	BASIN_LINK	0.00	0.00	0.00	0.00	1	0.00

CONTROL ACTIONS TAKEN

RUNOFF QUANTITY CONTINUITY

Quantity	Volume hectare-m	Depth mm
Total Precipitation	0.348881	84.750000
Evaporation Loss	0.000000	0.000000
Infiltration Loss	0.025791	6.265101
Surface Runoff	0.314701	76.447160
Final Surface Storage	0.008389	2.037739
Continuity Error (%)	0.000	

FLOW ROUTING CONTINUITY

Routing	Volume hectare-m	Volume 10^6 ltr
Dry Weather Inflow	0.000000	0.000000
Wet Weather Inflow	0.314715	3.147184
Groundwater Inflow	0.000000	0.000000

Routing	Volume hectare-m	Volume 10^6 ltr
RDII Inflow	0.000000	0.000000
External Inflow	0.000000	0.000000
Inflow from Tuflow	0.000000	0.000000
External Outflow	0.295371	2.953737
Outflow to Tuflow	0.000000	0.000000
Internal Outflow	0.000000	0.000000
Storage Losses	0.000000	0.000000
Initial Stored Volume	0.000000	0.000000
Final Stored Volume	0.020077	0.200770
Continuity Error (%)	-0.233	

HIGHEST CONTINUITY ERRORS

NOTE:

- 1) Nodes are ranked by continuity error with a maximum of 500 nodes shown
- 2) Only nodes with > .001% continuity error are shown
- 3) Network storage, if any, is included in Outflow

Node	Continuity Error (%)	Outflow 10^6 ltr	Inflow 10^6 ltr	Error 10^6 ltr
B3-1	-1.518	0.068569	0.067544	0.001025
B5-1	-1.421	0.073217	0.072191	0.001025
B6-1	-1.380	0.075344	0.074318	0.001025
11-2	-0.380	0.260260	0.259275	0.000985
WEIR-1	-0.136	0.245865	0.245531	0.000334
12-4	-0.077	0.365162	0.364880	0.000282

TIME-STEP CRITICAL ELEMENTS

- Link 1-7_to_1-8 (69.59%)
- Link 4-9_to_1-1 (11.62%)
- Link JOD1-6_to_JOD1-7 (9.97%)
- Link 1-8_to_1-9 (1.73%)

- Link 1-9_to_1-10 (1.22%)
- Link 12-3_to_12-4 (1.17%)
- Link 7-8_to_7-9 (1.05%)

HIGHEST FLOW INSTABILITY INDEXES

- Link 6-2_to_6-3 (1)
- Link 6-3_to_1-5 (1)
- Link WEIR-2_to_WEIR-3 (1)

ROUTING TIME STEP SUMMARY

Minimum Time Step	: 0.05 sec
Average Time Step	: 0.18 sec
Maximum Time Step	: 2.00 sec
Percent in Steady State	: 0.00
Average Iterations per Step	: 2.00

SUBCATCHMENT RUNOFF SUMMARY

Subcatchment	Total Precip mm	Total Runon mm	Total Evap mm	Total Infil mm	Total Runoff mm	Total Runoff 10^6 ltr	Peak Runoff m^3/s	Runoff Coeff
1-1(1)	84.750	0.000	0.000	7.205	75.345	0.033	0.024	0.889
1-2(1)	84.750	0.000	0.000	7.205	75.345	0.008	0.005	0.889
1-3(1)	84.750	0.000	0.000	7.205	75.345	0.024	0.017	0.889
1-5(1)	84.750	0.000	0.000	7.205	75.345	0.074	0.053	0.889
2-1(1)	84.750	0.000	0.000	7.205	75.345	0.008	0.006	0.889
2-2(1)	84.750	0.000	0.000	7.205	75.345	0.063	0.045	0.889
3-1(1)	84.750	0.000	0.000	7.205	75.345	0.022	0.015	0.889
4-1(1)	84.750	0.000	0.000	7.205	75.345	0.104	0.074	0.889
4-2(1)	84.750	0.000	0.000	7.205	75.345	0.022	0.016	0.889
4-3(1)	84.750	0.000	0.000	7.205	75.345	0.090	0.064	0.889
4-4(1)	84.750	0.000	0.000	7.205	75.345	0.016	0.011	0.889
4-5(1)	84.750	0.000	0.000	7.205	75.345	0.007	0.005	0.889
4-6(1)	84.750	0.000	0.000	7.205	75.345	0.019	0.013	0.889
4-7(1)	84.750	0.000	0.000	7.205	75.345	0.117	0.083	0.889
4-8(1)	84.750	0.000	0.000	7.205	75.345	0.141	0.100	0.889
4-9(1)	84.750	0.000	0.000	7.205	75.345	0.054	0.038	0.889
5-1(1)	84.750	0.000	0.000	7.205	75.345	0.051	0.036	0.889
6-1(1)	84.750	0.000	0.000	7.205	75.345	0.094	0.067	0.889
6-2(1)	84.750	0.000	0.000	7.205	75.345	0.054	0.039	0.889

Subcatchment	Total Precip mm	Total Runon mm	Total Evap mm	Total Infil mm	Total Runoff mm	Total Runoff 10^6 ltr	Peak Runoff m^3/s	Runoff Coeff
7-1(1)	84.750	0.000	0.000	7.205	75.345	0.053	0.037	0.889
7-2(1)	84.750	0.000	0.000	7.205	75.345	0.057	0.041	0.889
7-3(1)	84.750	0.000	0.000	7.205	75.345	0.012	0.008	0.889
7-4(1)	84.750	0.000	0.000	7.205	75.345	0.015	0.011	0.889
7-5(1)	84.750	0.000	0.000	7.205	75.345	0.141	0.100	0.889
7-6(1)	84.750	0.000	0.000	7.205	75.345	0.027	0.019	0.889
7-7(1)	84.750	0.000	0.000	7.205	75.345	0.008	0.006	0.889
7-8(1)	84.750	0.000	0.000	7.205	75.345	0.055	0.039	0.889
8-1(1)	84.750	0.000	0.000	7.205	75.345	0.086	0.061	0.889
9-1(1)	84.750	0.000	0.000	7.205	75.345	0.089	0.063	0.889
9-2(1)	84.750	0.000	0.000	7.205	75.345	0.021	0.015	0.889
10-1(1)	84.750	0.000	0.000	7.205	75.345	0.036	0.025	0.889
11-1(1)	84.750	0.000	0.000	7.205	75.345	0.259	0.184	0.889
12-1(1)	84.750	0.000	0.000	-0.000	83.750	0.302	0.211	0.988
12-2(1)	84.750	0.000	0.000	7.205	75.345	0.082	0.058	0.889
12-3(1)	84.750	0.000	0.000	7.205	75.345	0.042	0.030	0.889
13-1(1)	84.750	0.000	0.000	7.205	75.345	0.224	0.159	0.889
13-2(1)	84.750	0.000	0.000	9.607	72.543	0.041	0.029	0.856
14-1(1)	84.750	0.000	0.000	7.205	75.345	0.093	0.066	0.889
JOD1-1(1)	84.750	0.000	0.000	5.020	77.930	0.504	0.330	0.920

NODE DEPTH SUMMARY

Node	Type	Average Depth (m)	Maximum Depth (m)	Maximum HGL (m)	Time of Max Occurrence		Minimum Freeboard (m)	Maximum Grate Depth (m)	Maximum Grate HGL (m)	Time of Max Occurrence		Time Not Converged (%)
					days	hr:min				days	hr:min	
1-1	JUNCTION	0.049	0.241	9.516	0	00:15	1.113	0.038	10.667	0	00:15	0.00
1-2	JUNCTION	0.082	0.500	9.023	0	00:25	0.960	0.028	10.012	0	00:15	0.00
1-3	JUNCTION	0.092	0.605	8.898	0	00:25	0.856	0.063	9.816	0	00:15	0.00
1-4	JUNCTION	0.512	1.135	8.690	0	00:26	0.283	0.000	8.973	0	00:00	0.00
1-6	JUNCTION	1.132	1.757	8.690	0	00:26	0.310	0.000	9.000	0	00:00	0.00
1-7	JUNCTION	0.505	1.757	8.690	0	00:26	0.310	0.000	9.000	0	00:00	0.00
1-8	JUNCTION	0.501	1.757	8.690	0	00:26	0.310	0.000	9.000	0	00:00	0.00
1-9	JUNCTION	0.450	1.766	8.690	0	00:26	-0.590	0.590	8.690	0	00:26	0.00

Node	Type	Average Depth (m)	Maximum Depth (m)	Maximum HGL (m)	Time of Max Occurrence		Minimum Freeboard (m)	Maximum Grate Depth (m)	Maximum Grate HGL (m)	Time of Max Occurrence		Time Not Converged (%)
					days	hr:min				days	hr:min	
1-10	JUNCTION	0.359	1.269	8.159	0	00:29	0.540	0.000	8.699	0	00:00	0.00
2-1	JUNCTION	0.025	0.408	12.998	0	00:18	0.688	0.021	13.707	0	00:15	0.00
2-2	JUNCTION	0.048	0.571	12.998	0	00:18	0.688	0.060	13.745	0	00:15	0.00
3-1	JUNCTION	0.020	0.246	11.835	0	00:18	1.000	0.031	12.867	0	00:16	0.00
4-1	JUNCTION	0.037	0.333	13.455	0	00:17	0.336	0.070	13.861	0	00:15	0.00
4-2	JUNCTION	0.046	0.510	13.022	0	00:18	0.976	0.035	14.034	0	00:15	0.00
4-3	JUNCTION	0.104	0.964	12.963	0	00:18	0.428	0.070	13.461	0	00:15	0.00
4-4	JUNCTION	0.118	1.038	12.839	0	00:18	0.553	0.052	13.444	0	00:15	0.00
4-5	JUNCTION	0.133	1.082	12.612	0	00:18	0.552	0.039	13.203	0	00:15	0.00
4-6	JUNCTION	0.131	1.025	12.434	0	00:18	0.718	0.034	13.187	0	00:16	0.00
4-7	JUNCTION	0.118	0.793	11.828	0	00:18	0.995	0.069	12.892	0	00:15	0.00
4-8	JUNCTION	0.048	0.251	10.920	0	00:15	1.183	0.073	12.176	0	00:15	0.00
4-9	JUNCTION	0.135	0.808	10.212	0	00:15	0.567	0.072	10.851	0	00:15	0.00
5-1	JUNCTION	0.037	0.301	8.974	0	00:25	0.985	0.067	10.027	0	00:15	0.00
6-1	JUNCTION	0.210	0.984	8.937	0	00:25	0.335	0.012	9.284	0	00:15	0.00
6-2	JUNCTION	0.444	1.065	8.693	0	00:26	0.057	0.006	8.756	0	00:15	0.00
6-3	JUNCTION	0.467	1.090	8.690	0	00:26	0.310	0.000	9.000	0	00:00	0.00
7-1	JUNCTION	0.014	0.072	14.754	0	00:15	1.189	0.050	15.993	0	00:15	0.00
7-2	JUNCTION	0.021	0.106	14.140	0	00:15	1.473	0.045	15.658	0	00:15	0.00
7-3	JUNCTION	0.021	0.107	13.537	0	00:15	1.179	0.035	14.751	0	00:15	0.00
7-4	JUNCTION	0.040	0.274	12.258	0	00:17	1.442	0.038	13.737	0	00:17	0.00
7-5	JUNCTION	0.118	1.238	11.809	0	00:17	0.052	0.065	11.927	0	00:15	0.00
7-6	JUNCTION	0.140	1.304	11.413	0	00:16	-0.031	0.032	11.414	0	00:15	0.00
7-7	JUNCTION	0.126	1.060	10.354	0	00:17	0.296	0.025	10.674	0	00:15	0.00
7-8	JUNCTION	0.172	1.252	10.063	0	00:18	0.149	0.082	10.295	0	00:15	0.00
7-9	JUNCTION	0.119	0.828	9.308	0	00:19	0.567	0.000	9.875	0	00:00	0.00
7-10	JUNCTION	0.460	1.100	8.718	0	00:26	0.412	0.000	9.130	0	00:00	0.00
7-11	JUNCTION	0.512	1.135	8.690	0	00:26	0.135	0.000	8.825	0	00:00	0.00
8-1	JUNCTION	0.018	0.101	14.592	0	00:15	1.243	0.006	15.840	0	00:15	0.00
9-1	JUNCTION	0.044	0.353	12.858	0	00:15	0.761	0.011	13.630	0	00:15	0.00
9-2	JUNCTION	0.029	0.158	12.303	0	00:15	1.848	0.025	14.176	0	00:15	0.00
10-1	JUNCTION	0.079	0.797	10.111	0	00:17	0.509	0.061	10.681	0	00:15	0.00
11-1	JUNCTION	0.038	0.208	10.660	0	00:17	0.583	0.181	11.424	0	00:16	0.00

Node	Type	Average Depth (m)	Maximum Depth (m)	Maximum HGL (m)	Time of Max Occurrence		Minimum Freeboard (m)	Maximum Grate Depth (m)	Maximum Grate HGL (m)	Time of Max Occurrence		Time Not Converged (%)
					days	hr:min				days	hr:min	
11-2	JUNCTION	0.489	1.112	8.690	0	00:26	0.310	0.120	9.120	0	00:29	0.00
12-1	JUNCTION	0.259	1.242	9.201	0	00:15	0.489	0.150	9.840	0	00:14	0.00
12-2	JUNCTION	0.363	1.043	8.779	0	00:25	0.131	0.072	8.982	0	00:15	0.00
12-3	JUNCTION	0.473	1.091	8.692	0	00:26	0.256	0.011	8.959	0	00:15	0.00
12-4	JUNCTION	0.512	1.135	8.690	0	00:26	0.288	0.000	8.978	0	00:00	0.00
13-1	JUNCTION	0.173	1.046	13.546	0	00:15	-0.194	0.194	13.546	0	00:15	0.00
13-2	JUNCTION	0.123	1.166	11.834	0	00:20	-0.090	0.091	11.835	0	00:22	0.00
14-1	JUNCTION	0.061	0.694	12.868	0	00:18	0.590	0.080	13.538	0	00:15	0.00
B3-1	JUNCTION	1.132	1.757	8.690	0	00:26	0.310	0.000	9.000	0	00:00	0.00
B3-2	JUNCTION	0.630	1.757	8.690	0	00:26	0.310	0.000	9.000	0	00:00	0.00
B4-1	JUNCTION	0.547	1.758	8.691	0	00:26	0.309	0.000	9.000	0	00:00	0.00
B4-2	JUNCTION	0.547	1.758	8.691	0	00:26	0.309	0.000	9.000	0	00:00	0.00
B4-3	JUNCTION	0.544	1.758	8.691	0	00:26	0.309	0.000	9.000	0	00:00	0.00
B5-1	JUNCTION	1.132	1.757	8.690	0	00:26	0.310	0.000	9.000	0	00:00	0.00
B6-1	JUNCTION	1.132	1.757	8.690	0	00:26	0.310	0.000	9.000	0	00:00	0.00
B7-1	JUNCTION	0.543	1.759	8.692	0	00:26	0.308	0.000	9.000	0	00:00	0.00
B8-1	JUNCTION	0.543	1.759	8.692	0	00:26	0.308	0.000	9.000	0	00:00	0.00
B8-2	JUNCTION	0.547	1.758	8.692	0	00:26	0.308	0.000	9.000	0	00:00	0.00
B8-3	JUNCTION	0.547	1.758	8.691	0	00:26	0.309	0.000	9.000	0	00:00	0.00
B9-1	JUNCTION	0.539	1.759	8.692	0	00:26	0.308	0.000	9.000	0	00:00	0.00
JOD1-1	JUNCTION	0.072	0.323	10.603	0	00:15	1.255	0.000	11.858	0	00:00	0.00
JOD1-2	JUNCTION	0.084	0.372	8.847	0	00:15	1.206	0.000	10.053	0	00:00	0.00
JOD1-3	JUNCTION	0.119	0.659	8.162	0	00:29	0.920	0.000	9.082	0	00:00	0.00
JOD1-4	JUNCTION	0.404	1.309	8.159	0	00:29	0.269	0.268	8.696	0	00:52	0.00
JOD1-5	JUNCTION	0.394	1.358	8.158	0	00:29	0.220	0.000	8.378	0	00:00	0.00
JOD1-6	JUNCTION	0.361	1.368	8.158	0	00:29	0.210	0.007	8.375	0	01:38	0.00
JOD1-7	JUNCTION	0.099	0.336	7.086	0	00:29	1.999	0.000	9.085	0	00:00	0.00
WEIR-1	JUNCTION	0.566	1.190	8.690	0	00:26	0.060	0.000	8.750	0	00:00	0.00
WEIR-2	JUNCTION	0.310	1.317	8.159	0	00:29	0.491	0.000	8.650	0	00:00	0.00
SW	OUTFALL	0.073	0.227	6.768	0	00:29	-0.227	0.000	6.541	0	00:00	0.00
LOST	OUTFALL	0.012	0.060	13.645	0	00:15	-0.060	0.000	13.586	0	00:00	0.00
LOST1	OUTFALL	0.015	0.070	13.761	0	00:15	-0.070	0.000	13.691	0	00:00	0.00
LOST2	OUTFALL	0.015	0.070	13.361	0	00:15	-0.070	0.000	13.291	0	00:00	0.00

Node	Type	Average Depth (m)	Maximum Depth (m)	Maximum HGL (m)	Time of Max Occurrence		Minimum Freeboard (m)	Maximum Grate Depth (m)	Maximum Grate HGL (m)	Time of Max Occurrence		Time Not Converged (%)
					days	hr:min				days	hr:min	
LOST3	OUTFALL	0.010	0.050	15.793	0	00:15	-0.050	0.000	15.743	0	00:00	0.00
LOST4	OUTFALL	0.000	0.000	8.945	0	00:00	0.000	0.000	8.945	0	00:00	0.00
1-5	STORAGE	1.132	1.757	8.690	0	00:26	0.310	0.001	9.001	0	00:15	0.11

NODE INFLOW SUMMARY

Node	Type	Maximum Catchment Inflow m^3/s	Maximum Lateral Inflow m^3/s	Maximum Total Inflow m^3/s	Time of Max Occurrence		Lateral Inflow Volume 10^6 ltr	Total Inflow Volume 10^6 ltr	Maximum Approach Flow m^3/s	Maximum Bypass FLow m^3/s	Maximum Captured Flow m^3/s	Maximum Uncaptured Flow m^3/s
					days	hr:min						
1-1	JUNCTION	0.024	0.024	0.371	0	00:15	0.033	0.650	0.027	0.008	0.020	0.008
1-2	JUNCTION	0.005	0.005	0.382	0	00:15	0.008	0.657	0.013	0.003	0.010	0.003
1-3	JUNCTION	0.017	0.017	0.488	0	00:15	0.024	0.787	0.045	0.000	0.045	0.000
1-4	JUNCTION	0.000	0.000	0.483	0	00:16	0.000	0.787	0.000	0.000	0.000	0.000
1-6	JUNCTION	0.000	0.000	0.010	0	01:04	0.000	0.075	0.000	0.000	0.000	0.000
1-7	JUNCTION	0.000	0.000	0.010	0	00:13	0.000	0.076	0.000	0.000	0.000	0.000
1-8	JUNCTION	0.000	0.000	0.053	0	00:54	0.000	0.307	0.000	0.000	0.000	0.000
1-9	JUNCTION	0.000	0.000	0.889	0	00:15	0.000	2.050	0.889	0.000	0.889	0.000
1-10	JUNCTION	0.000	0.000	0.861	0	00:19	0.000	2.038	0.000	0.000	0.000	0.000
2-1	JUNCTION	0.006	0.006	0.013	0	00:16	0.008	0.009	0.006	0.001	0.005	0.001
2-2	JUNCTION	0.045	0.045	0.035	0	00:14	0.063	0.070	0.045	0.016	0.029	0.016
3-1	JUNCTION	0.015	0.015	0.014	0	00:15	0.022	0.025	0.019	0.004	0.014	0.004
4-1	JUNCTION	0.074	0.074	0.046	0	00:15	0.104	0.104	0.074	0.028	0.046	0.028
4-2	JUNCTION	0.016	0.016	0.058	0	00:15	0.022	0.091	0.016	0.003	0.013	0.003
4-3	JUNCTION	0.064	0.064	0.114	0	00:12	0.090	0.233	0.067	0.028	0.039	0.028
4-4	JUNCTION	0.011	0.011	0.169	0	00:17	0.016	0.310	0.039	0.013	0.026	0.013
4-5	JUNCTION	0.005	0.005	0.180	0	00:17	0.007	0.317	0.018	0.004	0.014	0.004
4-6	JUNCTION	0.013	0.013	0.190	0	00:18	0.019	0.334	0.015	0.003	0.012	0.003
4-7	JUNCTION	0.083	0.083	0.243	0	00:18	0.117	0.471	0.086	0.039	0.046	0.040
4-8	JUNCTION	0.100	0.100	0.301	0	00:17	0.141	0.613	0.139	0.074	0.064	0.074
4-9	JUNCTION	0.038	0.038	0.352	0	00:16	0.054	0.666	0.111	0.056	0.055	0.056
5-1	JUNCTION	0.036	0.036	0.065	0	00:15	0.051	0.106	0.091	0.026	0.065	0.026
6-1	JUNCTION	0.067	0.067	0.049	0	00:15	0.094	0.094	0.067	0.017	0.049	0.018
6-2	JUNCTION	0.039	0.039	0.078	0	00:15	0.054	0.125	0.039	0.009	0.029	0.009

Node	Type	Maximum Catchment Inflow m^3/s	Maximum Lateral Inflow m^3/s	Maximum Total Inflow m^3/s	Time of Max Occurrence		Lateral Inflow Volume 10^6 ltr	Total Inflow Volume 10^6 ltr	Maximum Approach Flow m^3/s	Maximum Bypass FLow m^3/s	Maximum Captured Flow m^3/s	Maximum Uncaptured Flow m^3/s
					days	hr:min						
6-3	JUNCTION	0.000	0.000	0.098	0	00:15	0.000	0.113	0.000	0.000	0.000	0.000
7-1	JUNCTION	0.037	0.037	0.025	0	00:15	0.053	0.053	0.037	0.012	0.025	0.012
7-2	JUNCTION	0.041	0.041	0.052	0	00:15	0.057	0.096	0.041	0.014	0.027	0.014
7-3	JUNCTION	0.008	0.008	0.068	0	00:15	0.012	0.108	0.022	0.005	0.017	0.006
7-4	JUNCTION	0.011	0.011	0.190	0	00:15	0.015	0.291	0.031	0.008	0.022	0.010
7-5	JUNCTION	0.100	0.100	0.240	0	00:14	0.141	0.432	0.107	0.047	0.059	0.047
7-6	JUNCTION	0.019	0.019	0.384	0	00:17	0.027	0.699	0.022	0.005	0.016	0.005
7-7	JUNCTION	0.006	0.006	0.390	0	00:17	0.008	0.706	0.011	0.002	0.009	0.002
7-8	JUNCTION	0.039	0.039	0.493	0	00:17	0.055	0.851	0.068	0.000	0.067	0.000
7-9	JUNCTION	0.000	0.000	0.492	0	00:17	0.000	0.851	0.000	0.000	0.000	0.000
7-10	JUNCTION	0.000	0.000	0.490	0	00:17	0.000	0.851	0.000	0.000	0.000	0.000
7-11	JUNCTION	0.000	0.000	0.489	0	00:17	0.000	0.850	0.000	0.000	0.000	0.000
8-1	JUNCTION	0.061	0.061	0.046	0	00:15	0.086	0.086	0.061	0.016	0.046	0.016
9-1	JUNCTION	0.063	0.063	0.044	0	00:15	0.089	0.089	0.063	0.019	0.044	0.019
9-2	JUNCTION	0.015	0.015	0.056	0	00:15	0.021	0.086	0.015	0.003	0.012	0.003
10-1	JUNCTION	0.025	0.025	0.045	0	00:15	0.036	0.089	0.072	0.027	0.045	0.027
11-1	JUNCTION	0.184	0.184	0.153	0	00:16	0.259	0.259	0.184	0.016	0.153	0.016
11-2	JUNCTION	0.000	0.000	0.165	0	00:16	0.000	0.259	0.016	0.000	0.013	0.003
12-1	JUNCTION	0.211	0.211	0.175	0	00:14	0.302	0.302	0.211	0.037	0.175	0.037
12-2	JUNCTION	0.058	0.058	0.232	0	00:15	0.082	0.361	0.058	0.000	0.058	0.000
12-3	JUNCTION	0.030	0.030	0.234	0	00:15	0.042	0.403	0.030	0.027	0.003	0.027
12-4	JUNCTION	0.000	0.000	0.233	0	00:15	0.000	0.365	0.000	0.000	0.000	0.000
13-1	JUNCTION	0.159	0.159	0.102	0	00:08	0.224	0.248	0.178	0.085	0.102	0.088
13-2	JUNCTION	0.029	0.029	0.154	0	00:27	0.041	0.289	0.114	0.000	0.068	0.000
14-1	JUNCTION	0.066	0.066	0.038	0	00:15	0.093	0.093	0.066	0.028	0.038	0.028
B3-1	JUNCTION	0.000	0.000	0.009	0	01:05	0.000	0.068	0.000	0.000	0.000	0.000
B3-2	JUNCTION	0.000	0.000	0.010	0	00:13	0.000	0.068	0.000	0.000	0.000	0.000
B4-1	JUNCTION	0.000	0.000	0.012	0	00:13	0.000	0.006	0.000	0.000	0.000	0.000
B4-2	JUNCTION	0.000	0.000	0.019	0	00:13	0.000	0.079	0.000	0.000	0.000	0.000
B4-3	JUNCTION	0.000	0.000	0.037	0	00:14	0.000	0.161	0.000	0.000	0.000	0.000
B5-1	JUNCTION	0.000	0.000	0.009	0	01:06	0.000	0.072	0.000	0.000	0.000	0.000
B6-1	JUNCTION	0.000	0.000	0.010	0	01:06	0.000	0.074	0.000	0.000	0.000	0.000
B7-1	JUNCTION	0.000	0.000	0.006	0	00:14	0.000	0.002	0.000	0.000	0.000	0.000

Node	Type	Maximum Catchment Inflow m^3/s	Maximum Lateral Inflow m^3/s	Maximum Total Inflow m^3/s	Time of Max Occurrence		Lateral Inflow Volume 10^6 ltr	Total Inflow Volume 10^6 ltr	Maximum Approach Flow m^3/s	Maximum Bypass FLow m^3/s	Maximum Captured Flow m^3/s	Maximum Uncaptured Flow m^3/s
					days	hr:min						
B8-1	JUNCTION	0.000	0.000	0.006	0	00:14	0.000	0.002	0.000	0.000	0.000	0.000
B8-2	JUNCTION	0.000	0.000	0.012	0	00:13	0.000	0.006	0.000	0.000	0.000	0.000
B8-3	JUNCTION	0.000	0.000	0.019	0	00:13	0.000	0.081	0.000	0.000	0.000	0.000
B9-1	JUNCTION	0.000	0.000	0.005	0	00:14	0.000	0.002	0.000	0.000	0.000	0.000
JOD1-1	JUNCTION	0.330	0.330	0.330	0	00:15	0.504	0.504	0.330	0.000	0.330	0.000
JOD1-2	JUNCTION	0.000	0.000	0.365	0	00:15	0.000	0.527	0.000	0.000	0.000	0.000
JOD1-3	JUNCTION	0.000	0.000	0.362	0	00:15	0.000	0.527	0.000	0.000	0.000	0.000
JOD1-4	JUNCTION	0.000	0.000	1.228	0	00:15	0.000	2.601	0.027	0.000	0.021	0.005
JOD1-5	JUNCTION	0.000	0.000	1.135	0	00:15	0.000	2.591	0.000	0.000	0.000	0.000
JOD1-6	JUNCTION	0.000	0.000	1.344	0	00:25	0.000	2.892	0.017	0.000	0.014	0.003
JOD1-7	JUNCTION	0.000	0.000	1.150	0	00:29	0.000	2.856	0.000	0.000	0.000	0.000
WEIR-1	JUNCTION	0.000	0.000	0.368	0	00:26	0.000	0.246	0.000	0.000	0.000	0.000
WEIR-2	JUNCTION	0.000	0.000	0.368	0	00:26	0.000	0.268	0.000	0.000	0.000	0.000
SW	OUTFALL	0.000	0.000	1.150	0	00:29	0.000	2.856	0.000	0.000	0.000	0.000
LOST	OUTFALL	0.000	0.000	0.016	0	00:15	0.000	0.018	0.000	0.000	0.000	0.000
LOST1	OUTFALL	0.000	0.000	0.028	0	00:15	0.000	0.034	0.000	0.000	0.000	0.000
LOST2	OUTFALL	0.000	0.000	0.028	0	00:15	0.000	0.032	0.000	0.000	0.000	0.000
LOST3	OUTFALL	0.000	0.000	0.012	0	00:15	0.000	0.014	0.000	0.000	0.000	0.000
LOST4	OUTFALL	0.000	0.000	0.000	0	00:00	0.000	0.000	0.000	0.000	0.000	0.000
1-5	STORAGE	0.053	0.053	1.491	0	00:15	0.074	2.448	0.053	0.000	0.053	0.003

NODE SURCHARGE SUMMARY

Surcharging occurs when water rises above the top of the highest conduit.

Node	Type	Hours Surcharged	Max. Height above Crown (m)	Min. Depth below Rim (m)
1-4	JUNCTION	0.74	0.535	0.285
1-6	JUNCTION	2.98	1.666	0.312
1-7	JUNCTION	0.99	1.531	0.312
1-8	JUNCTION	0.86	1.456	0.312
6-3	JUNCTION	1.64	0.715	0.312

Node	Type	Hours Surcharged	Max. Height above Crown (m)	Min. Depth below Rim (m)
7-9	JUNCTION	0.25	0.255	0.569
7-10	JUNCTION	0.66	0.500	0.414
7-11	JUNCTION	0.74	0.535	0.137
12-4	JUNCTION	1.04	0.610	0.290
B3-1	JUNCTION	2.98	1.666	0.312
B3-2	JUNCTION	2.97	1.666	0.312
B4-1	JUNCTION	2.92	1.533	0.311
B4-2	JUNCTION	2.92	1.533	0.311
B4-3	JUNCTION	2.92	1.533	0.311
B5-1	JUNCTION	2.98	1.666	0.312
B6-1	JUNCTION	2.98	1.666	0.312
B7-1	JUNCTION	2.95	1.668	0.310
B8-1	JUNCTION	2.95	1.668	0.310
B8-2	JUNCTION	2.92	1.533	0.310
B8-3	JUNCTION	2.92	1.533	0.311
B9-1	JUNCTION	2.95	1.668	0.310

NODE FLOODING SUMMARY

No nodes were flooded.

STORAGE VOLUME SUMMARY

Storage Node	Average Volume 1000m³	Average % Full	E & I % Loss	Full Volume 1000m³	Max Node Volume 1000m³	Max Pit Volume 1000m³	Max Grate Volume 1000m³	Max % Full	Time of Max Occurence		Maximum Outflow m³/s	Basin
									days	hr:min		
1-1	0.0003	1	0	0.0334	0.0017	0.0051	0.0005	5	0	00:15	0.371	-
1-2	0.0005	4	0	0.0134	0.0031	0.0040	0.0001	23	0	00:25	0.380	-
1-3	0.0009	1	0	0.0685	0.0060	0.0195	0.0006	9	0	00:25	0.483	-
1-4	0.0000	0	0	0.0000	0.0000	0.0033	0.0000	0	0	00:00	0.483	-
1-6	0.0000	0	0	0.0000	0.0000	0.0021	0.0000	0	0	00:00	0.010	-
1-7	0.0006	24	0	0.0025	0.0021	0.0021	0.0000	85	0	00:26	0.011	-
1-8	0.0016	40	0	0.0039	0.0035	0.0033	0.0000	89	0	00:26	0.056	-
1-9	0.0013	0	0	0.0000	0.0038	0.0081	0.0000	0	0	00:15	0.889	-

Storage Node	Average Volume 1000m³	Average % Full	E & I % Loss	Full Volume 1000m³	Max Node Volume 1000m³	Max Pit Volume 1000m³	Max Grate Volume 1000m³	Max % Full	Time of Max Occurence		Maximum Outflow m³/s	Basin
									days	hr:min		
1-10	0.0019	10	0	0.0182	0.0119	0.0127	0.0000	65	0	00:29	0.851	-
2-1	0.0001	1	0	0.0119	0.0012	0.0036	0.0001	10	0	00:18	0.008	-
2-2	0.0004	4	0	0.0081	0.0036	0.0031	0.0003	45	0	00:18	0.041	-
3-1	0.0001	0	0	0.0358	0.0009	0.0060	0.0003	3	0	00:17	0.013	-
4-1	0.0002	3	0	0.0050	0.0011	0.0018	0.0003	21	0	00:17	0.045	-
4-2	0.0004	2	0	0.0227	0.0040	0.0067	0.0003	18	0	00:18	0.053	-
4-3	0.0011	4	0	0.0288	0.0078	0.0171	0.0014	27	0	00:17	0.114	-
4-4	0.0006	4	0	0.0145	0.0039	0.0082	0.0004	27	0	00:18	0.169	-
4-5	0.0004	2	0	0.0214	0.0029	0.0124	0.0003	14	0	00:18	0.180	-
4-6	0.0007	3	0	0.0252	0.0040	0.0130	0.0003	16	0	00:18	0.190	-
4-7	0.0012	4	0	0.0310	0.0065	0.0122	0.0016	21	0	00:15	0.243	-
4-8	0.0006	2	0	0.0258	0.0041	0.0039	0.0016	16	0	00:15	0.302	-
4-9	0.0009	4	0	0.0218	0.0051	0.0110	0.0014	23	0	00:15	0.352	-
5-1	0.0003	2	0	0.0169	0.0018	0.0033	0.0010	11	0	00:16	0.063	-
6-1	0.0006	0	0	0.1583	0.0025	0.0671	0.0007	2	0	00:15	0.049	-
6-2	0.0014	0	0	0.3168	0.0025	0.0772	0.0002	1	0	00:25	0.098	-
6-3	0.0000	0	0	0.0000	0.0000	0.0013	0.0000	0	0	00:00	0.098	-
7-1	0.0001	1	0	0.0061	0.0004	0.0003	0.0002	6	0	00:15	0.025	-
7-2	0.0001	1	0	0.0101	0.0006	0.0006	0.0002	6	0	00:15	0.052	-
7-3	0.0001	1	0	0.0199	0.0008	0.0014	0.0003	4	0	00:15	0.068	-
7-4	0.0006	1	0	0.0775	0.0047	0.0078	0.0017	6	0	00:17	0.181	-
7-5	0.0007	3	0	0.0235	0.0053	0.0191	0.0013	22	0	00:17	0.234	-
7-6	0.0008	3	0	0.0281	0.0056	0.0236	0.0003	20	0	00:17	0.383	-
7-7	0.0005	3	0	0.0148	0.0033	0.0098	0.0001	23	0	00:17	0.390	-
7-8	0.0009	4	0	0.0250	0.0055	0.0164	0.0012	22	0	00:16	0.492	-
7-9	0.0006	13	0	0.0043	0.0035	0.0025	0.0000	81	0	00:19	0.490	-
7-10	0.0021	47	0	0.0046	0.0040	0.0033	0.0000	87	0	00:26	0.489	-
7-11	0.0000	0	0	0.0000	0.0000	0.0017	0.0000	0	0	00:00	0.489	-
8-1	0.0001	0	0	0.0517	0.0005	0.0022	0.0001	1	0	00:15	0.045	-
9-1	0.0002	0	0	0.0322	0.0010	0.0054	0.0001	3	0	00:15	0.044	-
9-2	0.0001	1	0	0.0219	0.0009	0.0015	0.0002	4	0	00:15	0.056	-
10-1	0.0003	2	0	0.0187	0.0027	0.0097	0.0008	14	0	00:17	0.042	-
11-1	0.0042	2	0	0.2372	0.0274	0.0304	0.0262	12	0	00:16	0.152	-

Storage Node	Average Volume 1000m³	Average % Full	E & I % Loss	Full Volume 1000m³	Max Node Volume 1000m³	Max Pit Volume 1000m³	Max Grate Volume 1000m³	Max % Full	Time of Max Occurence		Maximum Outflow m³/s	Basin
									days	hr:min		
11-2	0.0001	0	0	0.0000	0.0015	0.0523	0.0015	0	0	00:29	0.165	-
12-1	0.0010	5	0	0.0229	0.0039	0.0084	0.0002	17	0	00:15	0.173	-
12-2	0.0025	6	0	0.0433	0.0048	0.0164	0.0002	11	0	00:25	0.231	-
12-3	0.0021	7	0	0.0311	0.0035	0.0144	0.0001	11	0	00:25	0.233	-
12-4	0.0000	0	0	0.0000	0.0000	0.0014	0.0000	0	0	00:00	0.233	-
13-1	0.0020	0	0	0.5303	0.0126	0.2437	0.0105	2	0	00:15	0.093	-
13-2	0.0046	1	0	0.6560	0.0351	0.3786	0.0310	5	0	00:21	0.159	-
14-1	0.0003	3	0	0.0083	0.0024	0.0038	0.0006	29	0	00:17	0.041	-
B3-1	0.0000	0	0	0.0000	0.0000	0.0021	0.0000	0	0	00:00	0.009	-
B3-2	0.0008	30	0	0.0025	0.0021	0.0021	0.0000	85	0	00:26	0.009	-
B4-1	0.0007	26	0	0.0025	0.0021	0.0021	0.0000	85	0	00:26	0.006	-
B4-2	0.0007	26	0	0.0025	0.0021	0.0021	0.0000	85	0	00:26	0.014	-
B4-3	0.0014	39	0	0.0036	0.0032	0.0031	0.0000	88	0	00:26	0.034	-
B5-1	0.0000	0	0	0.0000	0.0000	0.0021	0.0000	0	0	00:00	0.009	-
B6-1	0.0000	0	0	0.0000	0.0000	0.0021	0.0000	0	0	00:00	0.010	-
B7-1	0.0007	26	0	0.0025	0.0021	0.0021	0.0000	85	0	00:26	0.003	-
B8-1	0.0007	26	0	0.0025	0.0021	0.0021	0.0000	85	0	00:26	0.003	-
B8-2	0.0007	26	0	0.0025	0.0021	0.0021	0.0000	85	0	00:26	0.006	-
B8-3	0.0007	26	0	0.0025	0.0021	0.0021	0.0000	85	0	00:26	0.014	-
B9-1	0.0007	26	0	0.0025	0.0021	0.0021	0.0000	85	0	00:26	0.003	-
JOD1-1	0.0007	0	0	0.1479	0.0041	0.0303	0.0000	3	0	00:15	0.329	-
JOD1-2	0.0019	1	0	0.3041	0.0114	0.0717	0.0000	4	0	00:15	0.362	-
JOD1-3	0.0033	1	0	0.2664	0.0277	0.0556	0.0000	10	0	00:29	0.360	-
JOD1-4	0.0214	13	0	0.1700	0.1049	0.0862	0.0075	62	0	00:30	1.135	-
JOD1-5	0.0052	7	0	0.0752	0.0349	0.0396	0.0000	46	0	00:29	1.115	-
JOD1-6	0.0397	6	0	0.6931	0.1814	0.2855	0.0046	26	0	00:29	1.150	-
JOD1-7	0.0017	0	0	0.5441	0.0068	0.0651	0.0000	1	0	00:29	1.150	-
WEIR-1	0.0000	0	0	0.0000	0.0000	0.0033	0.0000	0	0	00:00	0.368	-
WEIR-2	0.0053	25	0	0.0210	0.0187	0.0153	0.0000	89	0	00:29	0.368	-
1-5	0.3592	6	0	5.6879	0.7956	0.7957	0.0004	14	0	00:26	1.129	Yes

OUTFALL LOADING SUMMARY

Outfall Node	Flow Frequency %	Average Flow m^3/s	Max. Flow m^3/s	Volume Total 10^6 ltr
SW	98.88	0.253	1.150	2.856
LOST	28.33	0.006	0.016	0.018
LOST1	28.41	0.012	0.028	0.034
LOST2	30.79	0.010	0.028	0.032
LOST3	28.14	0.005	0.012	0.014
LOST4	0.00	0.000	0.000	0.000
SYSTEM	35.76	0.287	1.175	2.954

LINK FLOW SUMMARY

Link	Type	Maximum Flow m^3/s	Time of Max Occurence		Maximum Velocity m/s	Max/Full Flow	Max/Full Depth	Upstream		Downstream		Maximum		Max Head Loss		Max Velocity		Link Flooded
			days	hr:min				Max HGL Elev	Ku Loss m	Max HGL Elev	Ku Loss m	Ku	Kw	Ku m	Kw m	US m/s	DS m/s	
1-1 to 1-2	CONDUIT	0.371	0	00:16	3.21	0.37	0.64	9.497	0.018	9.023	0.000	0.55	0.00	0.018	0.000	3.90	3.17	0
1-2_to_1-3	CONDUIT	0.380	0	00:15	2.54	0.64	0.98	8.992	0.032	8.898	0.000	0.60	0.00	0.060	0.000	2.29	2.85	0
1-3_to_1-4	CONDUIT	0.483	0	00:16	3.09	0.42	1.00	8.773	0.124	8.690	0.000	1.24	0.00	0.223	0.000	3.24	3.27	0
1-6_to_1-7	CONDUIT	0.010	0	01:04	1.54	41.51	1.00	8.690	0.000	8.690	0.000	0.74	0.00	0.090	0.000	1.54	1.54	0
1-7 to 1-8	CONDUIT	0.011	0	00:54	0.59	1.06	1.00	8.690	0.000	8.690	0.000	2.09	0.00	0.014	0.000	0.51	0.70	0
1-8 to 1-9	CONDUIT	0.056	0	00:53	0.86	8.40	1.00	8.690	0.000	8.690	0.000	0.73	0.00	0.019	0.000	0.80	1.09	0
1-9 to 1-10	CONDUIT	0.861	0	00:19	1.96	0.77	1.00	8.174	0.516	8.159	0.000	3.95	0.00	0.739	0.000	1.95	1.99	0
1-10_to_JOD1-4	CHANNEL	0.851	0	00:19	0.78	0.02	0.82	8.159	0.000	8.159	0.000	0.00	0.00	0.000	0.000	0.84	0.73	0
2-1 to 2-2	CONDUIT	-0.008	0	00:16	0.62	-0.05	1.00	12.998	0.000	12.998	0.000	2.01	0.00	0.019	0.000	0.70	0.61	0
2-2_to_4-3	CONDUIT	0.041	0	00:27	0.85	0.24	1.00	12.979	0.019	12.963	0.000	7.00	0.00	0.061	0.000	1.30	0.87	0
3-1 to 4-7	CONDUIT	0.013	0	00:15	0.93	0.03	0.83	11.822	0.013	11.828	0.000	8.85	0.00	0.070	0.000	1.82	0.40	0
4-1 to 4-2	CONDUIT	0.045	0	00:15	1.44	0.66	1.00	13.385	0.070	13.022	0.000	5.80	0.00	0.085	0.000	1.34	1.82	0
4-2_to_4-3	CONDUIT	0.053	0	00:13	1.08	0.30	1.00	13.000	0.022	12.963	0.000	2.09	0.00	0.068	0.000	1.39	1.10	0
4-3_to_4-4	CONDUIT	0.114	0	00:18	1.56	0.51	1.00	12.946	0.017	12.839	0.000	2.21	0.00	0.065	0.000	1.41	1.74	0
4-4_to_4-5	CONDUIT	0.169	0	00:18	1.79	0.73	1.00	12.835	0.003	12.612	0.000	1.21	0.00	0.061	0.000	1.74	1.91	0
4-5_to_4-6	CONDUIT	0.180	0	00:18	1.63	1.03	1.00	12.549	0.062	12.434	0.000	0.77	0.00	0.063	0.000	1.63	1.68	0
4-6 to 4-7	CONDUIT	0.190	0	00:18	1.72	1.08	1.00	12.330	0.105	11.828	0.000	1.50	0.00	0.105	0.000	1.72	1.72	0
4-7_to_4-8	CONDUIT	0.243	0	00:18	2.23	1.39	0.96	11.719	0.109	11.064	0.000	0.77	0.00	0.110	0.000	2.20	2.29	0
4-8_to_4-9	CONDUIT	0.302	0	00:17	2.28	0.48	0.78	10.886	0.034	10.212	0.000	0.63	0.00	0.034	0.000	3.78	2.18	0
4-9_to_1-1	CONDUIT	0.352	0	00:16	2.26	1.21	0.95	9.900	0.312	9.729	0.000	1.45	0.00	0.313	0.000	2.22	2.34	0

Link	Type	Maximum Flow m^3/s	Time of Max Occurence		Maximum Velocity m/s	Max/Full Flow	Max/Full Depth	Upstream		Downstream		Maximum		Max Head Loss		Max Velocity		Link Flooded
			days	hr:min				Max HGL Elev	Ku Loss m	Max HGL Elev	Ku Loss m	Ku	Kw	Ku m	Kw m	US m/s	DS m/s	
5-1_to_1-3	CONDUIT	0.063	0	00:15	0.93	0.24	0.90	8.881	0.094	8.898	0.000	9.70	0.00	0.152	0.000	1.36	0.92	0
6-1_to_6-2	CONDUIT	0.049	0	00:15	1.23	1.09	1.00	8.928	0.008	8.693	0.000	2.20	0.00	0.081	0.000	1.23	1.23	0
6-2 to 6-3	CONDUIT	0.098	0	00:15	1.04	0.79	1.00	8.693	0.000	8.690	0.000	1.25	0.00	0.015	0.000	1.05	1.04	0
7-1_to_7-2	CONDUIT	0.025	0	00:15	1.82	0.06	0.18	14.752	0.002	14.149	0.000	9.70	0.00	0.002	0.000	1.69	1.95	0
7-2 to 7-3	CONDUIT	0.052	0	00:15	2.12	0.15	0.27	14.139	0.001	13.605	0.000	2.35	0.00	0.002	0.000	2.03	2.22	0
7-3_to_7-4	CONDUIT	0.068	0	00:15	2.14	0.18	0.43	13.537	-0.000	12.258	0.000	1.53	0.00	0.000	0.000	2.64	2.08	0
7-4_to_7-5	CONDUIT	0.181	0	00:15	2.60	0.49	0.87	12.165	0.093	11.809	0.000	1.03	0.00	0.093	0.000	3.28	2.65	0
7-5 to 7-6	CONDUIT	0.234	0	00:16	2.44	0.68	1.00	11.808	0.001	11.398	0.000	1.46	0.00	0.130	0.000	2.24	2.73	0
7-6 to 7-7	CONDUIT	0.383	0	00:17	3.47	0.99	1.00	11.230	0.168	10.354	0.000	0.69	0.00	0.168	0.000	3.47	3.90	0
7-7 to 7-8	CONDUIT	0.390	0	00:17	2.54	0.74	1.00	10.327	0.026	10.063	0.000	0.21	0.00	0.059	0.000	3.12	2.54	0
7-8 to 7-9	CONDUIT	0.492	0	00:17	3.09	1.19	1.00	9.709	0.354	9.308	0.000	1.02	0.00	0.366	0.000	3.09	3.09	0
7-9_to_7-10	CONDUIT	0.490	0	00:17	3.58	0.86	1.00	9.294	0.015	8.718	0.000	0.38	0.00	0.095	0.000	3.46	3.75	0
7-10 to 7-11	CONDUIT	0.489	0	00:17	2.20	0.79	1.00	8.718	0.000	8.690	0.000	0.00	0.00	0.000	0.000	2.20	2.20	0
8-1 to 7-4	CONDUIT	0.045	0	00:15	2.82	0.34	0.43	14.588	0.003	12.361	0.000	4.26	0.00	0.003	0.000	2.63	3.06	0
9-1 to 9-2	CONDUIT	0.044	0	00:15	1.20	0.89	0.87	12.766	0.092	12.362	0.000	3.65	0.00	0.092	0.000	1.11	1.40	0
9-2_to_7-4	CONDUIT	0.056	0	00:15	1.36	0.32	0.50	12.299	0.005	12.258	0.000	0.28	0.00	0.009	0.000	1.33	1.38	0
10-1_to_7-8	CONDUIT	0.042	0	00:14	1.08	0.15	1.00	10.071	0.040	10.063	0.000	9.70	0.00	0.120	0.000	1.85	1.11	0
11-1_to_11-2	CONDUIT	0.152	0	00:16	2.65	0.58	0.85	10.616	0.045	8.690	0.000	3.28	0.00	0.045	0.000	3.38	2.86	0
12-1 to 12-2	CONDUIT	0.173	0	00:15	1.57	1.40	1.00	8.980	0.220	8.779	0.000	3.53	0.00	0.240	0.000	1.57	1.57	0
12-2_to_12-3	CONDUIT	0.231	0	00:15	1.47	1.15	1.00	8.778	0.002	8.692	0.000	0.63	0.00	0.036	0.000	1.45	1.62	0
12-3 to 12-4	CONDUIT	0.233	0	00:15	1.87	0.55	1.00	8.692	0.000	8.690	0.000	0.20	0.00	0.000	0.000	2.03	1.87	0
13-1_to_13-2	CONDUIT	0.093	0	00:14	2.35	1.09	1.00	13.440	0.106	11.786	0.000	1.87	0.00	0.182	0.000	2.35	2.46	0
13-2_to_7-6	CONDUIT	0.159	0	00:28	1.58	0.91	1.00	11.780	0.005	11.398	0.000	2.22	0.00	0.089	0.000	1.47	1.79	0
14-1 to 4-4	CONDUIT	0.041	0	00:28	1.11	0.16	1.00	12.844	0.025	12.839	0.000	7.00	0.00	0.090	0.000	1.62	1.15	0
B3-1_to_B3-2	CONDUIT	0.009	0	01:05	1.37	37.07	1.00	8.690	0.000	8.690	0.000	0.74	0.00	0.071	0.000	1.37	1.37	0
B3-2 to 1-8	CONDUIT	0.009	0	00:57	1.44	10.49	1.00	8.690	0.000	8.690	0.000	1.52	0.00	0.160	0.000	1.44	1.44	0
B4-1_to_B4-2	CONDUIT	-0.012	0	00:13	0.46	-1.05	1.00	8.691	0.000	8.691	0.000	2.09	0.00	0.006	0.000	0.54	0.40	0
B4-2_to_B4-3	CONDUIT	0.014	0	00:54	0.54	1.45	1.00	8.691	0.000	8.691	0.000	2.09	0.00	0.006	0.000	0.52	0.57	0
B4-3_to_1-8	CONDUIT	-0.037	0	00:14	0.92	-19.77	1.00	8.691	0.000	8.690	0.000	1.10	0.00	0.041	0.000	0.92	0.92	0
B5-1 to B4-2	CONDUIT	0.009	0	01:06	1.46	39.97	1.00	8.690	0.000	8.691	0.000	0.75	0.00	0.081	0.000	1.46	1.46	0
B6-1 to B8-3	CONDUIT	0.010	0	01:06	1.50	39.85	1.00	8.690	0.000	8.691	0.000	0.75	0.00	0.085	0.000	1.50	1.50	0
1-5 to B7-1	CONDUIT	0.000	0	01:06	0.00	41.71	1.00	8.690	0.000	8.692	0.000	2.00	0.00	0.010	0.000	0.00	0.00	0

Link	Type	Maximum Flow m^3/s	Time of Max Occurence		Maximum Velocity m/s	Max/Full Flow	Max/Full Depth	Upstream		Downstream		Maximum		Max Head Loss		Max Velocity		Link Flooded
			days	hr:min				Max HGL Elev	Ku Loss m	Max HGL Elev	Ku Loss m	Ku	Kw	Ku m	Kw m	US m/s	DS m/s	
B7-1_to_B4-1	CONDUIT	-0.006	0	00:14	0.88	-20.69	1.00	8.692	0.000	8.691	0.000	0.00	0.00	0.000	0.000	0.88	0.88	0
1-5_to_B8-1	CONDUIT	0.000	0	01:06	0.00	41.70	1.00	8.690	0.000	8.692	0.000	2.00	0.00	0.010	0.000	0.00	0.00	0
B8-1 to B8-2	CONDUIT	-0.006	0	00:14	0.88	-20.46	1.00	8.692	0.000	8.692	0.000	0.00	0.00	0.000	0.000	0.88	0.88	0
B8-2_to_B8-3	CONDUIT	-0.012	0	00:13	0.46	-1.10	1.00	8.692	0.000	8.691	0.000	2.09	0.00	0.006	0.000	0.54	0.40	0
B8-3 to B4-3	CONDUIT	0.014	0	00:54	0.55	1.50	1.00	8.691	0.000	8.691	0.000	2.09	0.00	0.006	0.000	0.54	0.58	0
1-5_to_B9-1	CONDUIT	0.000	0	01:06	0.00	41.83	1.00	8.690	0.000	8.692	0.000	2.00	0.00	0.010	0.000	0.00	0.00	0
B9-1_to_B4-3	CONDUIT	-0.005	0	00:14	0.86	-21.08	1.00	8.692	0.000	8.691	0.000	2.09	0.00	0.014	0.000	0.86	0.86	0
JOD1-1_to_JOD1-2	CHANNEL	0.329	0	00:15	1.28	0.01	0.22	10.603	-0.000	8.847	0.000	0.00	0.00	0.000	0.000	1.49	1.12	0
JOD1-2_to_JOD1-3	CHANNEL	0.362	0	00:15	1.25	0.01	0.30	8.847	0.000	8.162	0.000	0.00	0.00	0.000	0.000	1.23	1.27	0
JOD1-3_to_JOD1-4	CHANNEL	0.360	0	00:15	0.85	0.01	0.62	8.162	0.000	8.159	0.000	0.00	0.00	0.000	0.000	1.25	0.69	0
JOD1-4_to_JOD1-5	CHANNEL	1.135	0	00:15	1.11	0.10	0.84	8.159	0.000	8.158	0.000	0.00	0.00	0.000	0.000	1.00	1.27	0
JOD1-5_to_JOD1-6	CHANNEL	1.115	0	00:15	1.36	0.11	0.86	8.158	0.000	8.158	0.000	0.00	0.00	0.000	0.000	1.23	1.52	0
JOD1-6_to_JOD1-7	CONDUIT	1.150	0	00:29	2.13	4.24	0.78	8.158	0.000	7.243	0.000	0.00	0.00	0.000	0.000	2.03	2.31	0
A	CHANNEL	1.150	0	00:29	2.06	0.00	0.12	6.997	0.089	6.768	0.000	2.00	0.00	0.089	0.000	1.60	2.78	0
WEIR-1_to_WEIR-2	CONDUIT	0.368	0	00:26	0.85	0.46	0.65	8.669	0.021	8.537	0.000	2.00	0.00	0.021	0.000	0.70	1.05	0
WEIR-2_to_WEIR-3	CONDUIT	0.368	0	00:26	0.06	0.04	1.00	8.158	0.000	8.158	0.000	2.00	0.00	0.000	0.000	0.04	0.04	0
1-1 to 1-2(S)	CHANNEL	0.008	0	00:15	0.86	0.00	0.16	10.667	0.000	10.022	0.000	0.00	0.00	0.000	0.000	0.86	0.86	0
1-2 to 1-3(S)	CHANNEL	0.003	0	00:15	0.29	0.00	0.20	10.012	-0.000	9.816	0.000	0.00	0.00	0.000	0.000	0.00	0.20	0
1-3 to 1-5(S)	CHANNEL	0.000	0	00:00	0.00	0.00	0.00	9.883	0.000	8.945	0.000	0.00	0.00	0.000	0.000	0.00	0.00	0
1-9_to_JOD1-5(S)	CHANNEL	0.000	0	00:00	0.00	0.00	0.00	12.000	0.000	8.378	0.000	0.00	0.00	0.000	0.000	0.00	0.00	0
2-1 to 4-6(S)	CHANNEL	0.001	0	00:15	0.27	0.00	0.12	13.707	-0.000	13.187	0.000	0.00	0.00	0.000	0.000	0.00	0.18	0
2-2 to LOST(S)	CHANNEL	0.016	0	00:15	0.52	0.01	0.26	13.745	0.000	13.645	0.000	0.00	0.00	0.000	0.000	0.52	0.52	0
3-1 to 1-1(S)	CHANNEL	0.004	0	00:16	0.60	0.00	0.15	12.867	-0.000	10.667	0.000	0.00	0.00	0.000	0.000	0.75	0.49	0
4-1_to_LOST1(S)	CHANNEL	0.028	0	00:15	0.59	0.02	0.30	13.861	0.000	13.761	0.000	0.00	0.00	0.000	0.000	0.59	0.59	0
4-2_to_4-3(S)	CHANNEL	0.003	0	00:15	0.16	0.00	0.23	14.034	-0.000	13.461	0.000	0.00	0.00	0.000	0.000	0.45	0.08	0
4-3_to_LOST2(S)	CHANNEL	0.028	0	00:15	0.59	0.02	0.30	13.461	0.000	13.361	0.000	0.00	0.00	0.000	0.000	0.59	0.59	0
4-4 to 4-5(S)	CHANNEL	0.013	0	00:15	0.60	0.01	0.22	13.444	0.000	13.216	0.000	0.00	0.00	0.000	0.000	0.60	0.60	0
4-5_to_3-1(S)	CHANNEL	0.004	0	00:15	0.40	0.00	0.17	13.203	-0.000	12.874	0.000	0.00	0.00	0.000	0.000	0.40	0.40	0

Link	Type	Maximum Flow m^3/s	Time of Max Occurence		Maximum Velocity m/s	Max/Full Flow	Max/Full Depth	Upstream		Downstream		Maximum		Max Head Loss		Max Velocity		Link Flooded
			days	hr:min				Max HGL Elev	Ku Loss m	Max HGL Elev	Ku Loss m	Ku	Kw	Ku m	Kw m	US m/s	DS m/s	
4-6_to_4-7(S)	CHANNEL	0.003	0	00:16	0.18	0.00	0.22	13.187	0.000	12.892	0.000	0.00	0.00	0.000	0.000	0.39	0.09	0
4-7_to_4-8(S)	CHANNEL	0.039	0	00:15	0.81	0.02	0.31	12.892	0.000	12.176	0.000	0.00	0.00	0.000	0.000	0.88	0.75	0
4-8 to 4-9(S)	CHANNEL	0.074	0	00:15	1.42	0.03	0.32	12.176	0.000	10.852	0.000	0.00	0.00	0.000	0.000	1.42	1.42	0
4-9_to_5-1(S)	CHANNEL	0.056	0	00:15	1.12	0.03	0.31	10.851	0.000	10.032	0.000	0.00	0.00	0.000	0.000	1.12	1.12	0
5-1 to 1-3(S)	CHANNEL	0.026	0	00:15	0.63	0.02	0.29	10.027	0.000	9.820	0.000	0.00	0.00	0.000	0.000	0.63	0.63	0
6-1_to_JOD1-6(S)	CHANNEL	0.017	0	00:15	0.37	0.00	0.01	9.284	0.000	8.380	0.000	0.00	0.00	0.000	0.000	0.00	0.00	0
6-2_to_JOD1-6(S)	CHANNEL	0.009	0	00:15	0.19	0.00	0.20	8.756	0.000	8.158	0.000	0.00	0.00	0.000	0.000	0.00	0.02	0
7-1 to LOST3(S)	CHANNEL	0.012	0	00:15	0.64	0.01	0.22	15.993	-0.000	15.793	0.000	0.00	0.00	0.000	0.000	0.64	0.64	0
7-2 to 7-3(S)	CHANNEL	0.014	0	00:15	0.99	0.01	0.19	15.658	0.000	14.760	0.000	0.00	0.00	0.000	0.000	0.99	0.99	0
7-3 to 7-4(S)	CHANNEL	0.005	0	00:15	0.73	0.00	0.16	14.751	-0.000	13.737	0.000	0.00	0.00	0.000	0.000	0.74	0.71	0
7-4 to 7-5(S)	CHANNEL	0.008	0	00:17	0.51	0.00	0.22	13.737	-0.000	11.927	0.000	0.00	0.00	0.000	0.000	0.96	0.30	0
7-5_to_10-1(S)	CHANNEL	0.047	0	00:15	1.21	0.02	0.28	11.927	0.000	10.685	0.000	0.00	0.00	0.000	0.000	1.21	1.21	0
7-6 to 7-7(S)	CHANNEL	0.005	0	00:15	0.92	0.00	0.14	11.414	0.000	10.682	0.000	0.00	0.00	0.000	0.000	0.92	0.92	0
7-7 to 7-8(S)	CHANNEL	0.002	0	00:15	0.18	0.00	0.23	10.674	-0.000	10.295	0.000	0.00	0.00	0.000	0.000	0.00	0.08	0
7-8 to LOST4(S)	CHANNEL	0.000	0	00:00	0.00	0.00	0.00	10.315	0.000	8.945	0.000	0.00	0.00	0.000	0.000	0.00	0.00	0
8-1_to_7-4(S)	CHANNEL	0.016	0	00:15	0.23	0.00	0.02	15.840	-0.000	13.737	0.000	0.00	0.00	0.000	0.000	0.00	0.11	0
9-1_to_13-1(S)	CHANNEL	0.019	0	00:15	0.05	0.00	0.10	13.630	-0.000	13.546	0.000	0.00	0.00	0.000	0.000	0.00	0.02	0
9-2_to_7-6(S)	CHANNEL	0.003	0	00:15	0.65	0.00	0.12	14.176	-0.000	11.414	0.000	0.00	0.00	0.000	0.000	0.00	0.52	0
10-1 to 7-8(S)	CHANNEL	0.027	0	00:15	0.61	0.01	0.31	10.681	0.000	10.295	0.000	0.00	0.00	0.000	0.000	0.83	0.61	0
11-1_to_11-2(S)	CHANNEL	0.016	0	00:16	1.20	0.00	0.10	11.424	0.000	9.120	0.000	0.00	0.00	0.000	0.000	1.32	1.19	0
12-1_to_JOD1-2(S)	CHANNEL	0.037	0	00:14	0.39	0.00	0.14	9.840	-0.000	8.847	0.000	0.00	0.00	0.000	0.000	3.84	0.13	0
12-2_to_JOD1-3(S)	CHANNEL	0.000	0	00:00	0.00	0.00	0.02	8.982	0.000	9.082	0.000	0.00	0.00	0.000	0.000	0.00	0.00	0
12-3_to_JOD1-4(S)	CHANNEL	0.027	0	00:15	0.50	0.00	0.13	8.959	-0.000	8.696	0.000	0.00	0.00	0.000	0.000	0.00	0.16	0
13-1_to_13-2(S)	CHANNEL	0.085	0	00:15	0.21	0.00	0.09	13.546	-0.000	11.835	0.000	0.00	0.00	0.000	0.000	0.00	0.12	0
13-2_to_11-1(S)	CHANNEL	0.000	0	00:00	0.00	0.00	0.16	11.945	0.000	11.424	0.000	0.00	0.00	0.000	0.000	0.00	0.00	0
14-1 to 4-4(S)	CHANNEL	0.028	0	00:15	0.47	0.04	0.33	13.538	0.000	13.465	0.000	0.00	0.00	0.000	0.000	0.42	0.53	0
JOD1-5_to_JOD1-6(S)	CHANNEL	0.000	0	00:00	0.00	0.00	0.01	8.378	0.000	8.375	0.000	0.00	0.00	0.000	0.000	0.00	0.00	0
JOD1-6_to_JOD1-7(S)	CHANNEL	0.000	0	00:00	0.00	0.00	0.36	8.375	0.000	9.085	0.000	0.00	0.00	0.000	0.000	0.00	0.00	0
1-4_to_1-5	BASIN_LINK	0.483	0	00:16	--	--	100.00	8.690	0.000	8.690	0.000	0.00	0.00	0.000	0.000	0.00	0.00	0

Link	Type	Maximum Flow m^3/s	Time of Max Occurence		Maximum Velocity m/s	Max/Full Flow	Max/Full Depth	Upstream		Downstream		Maximum		Max Head Loss		Max Velocity		Link Flooded
			days	hr:min				Max HGL Elev	Ku Loss m	Max HGL Elev	Ku Loss m	Ku	Kw	Ku m	Kw m	US m/s	DS m/s	
1-5_to_1-6	BASIN_LINK	0.010	0	01:04	--	--	100.00	8.690	0.000	8.690	0.000	0.00	0.00	0.000	0.000	0.00	0.00	0
6-3_to_1-5	BASIN_LINK	0.098	0	00:15	--	--	100.00	8.690	0.000	8.690	0.000	0.00	0.00	0.000	0.000	0.00	0.00	0
7-11 to 1-5	BASIN LINK	0.489	0	00:17	--	--	100.00	8.690	0.000	8.690	0.000	0.00	0.00	0.000	0.000	0.00	0.00	0
11-2_to_1-5	BASIN_LINK	0.165	0	00:16	--	--	100.00	8.690	0.000	8.690	0.000	0.00	0.00	0.000	0.000	0.00	0.00	0
12-4 to 1-5	BASIN LINK	0.233	0	00:15	--	--	100.00	8.690	0.000	8.690	0.000	0.00	0.00	0.000	0.000	0.00	0.00	0
1-5_to_1-9	BASIN_LINK	0.889	0	00:15	--	--	100.00	8.690	0.000	8.690	0.000	0.00	0.00	0.000	0.000	0.00	0.00	0
1-5_to_B3-1	BASIN_LINK	0.009	0	01:05	--	--	100.00	8.690	0.000	8.690	0.000	0.00	0.00	0.000	0.000	0.00	0.00	0
1-5 to B5-1	BASIN LINK	0.009	0	01:06	--	--	100.00	8.690	0.000	8.690	0.000	0.00	0.00	0.000	0.000	0.00	0.00	0
1-5 to B6-1	BASIN LINK	0.010	0	01:06	--	--	100.00	8.690	0.000	8.690	0.000	0.00	0.00	0.000	0.000	0.00	0.00	0
1-5 to WEIR-1	BASIN LINK	0.368	0	00:26	--	--	100.00	8.690	0.000	8.690	0.000	0.00	0.00	0.000	0.000	0.00	0.00	0

FLOW CLASSIFICATION SUMMARY

Conduit	Adjusted/ Actual Length	Fraction of time in Flow Class							Avg. Froude Number	Avg. Flow Change	Velocity x Depth			Max Top Width	
		Dry	Up Dry	Down Dry	Sub Crit	Sup Crit	Up Crit	Down Crit			US m^2/s	Centre m^2/s	DS m^2/s	US m	DS m
1-1 to 1-2	1.04	0.00	0.00	0.00	0.00	0.22	0.00	0.78	1.62	0.0000	0.92	0.87	0.85	0.523	0.525
1-2 to 1-3	1.04	0.00	0.00	0.00	0.09	0.06	0.00	0.85	0.99	0.0000	0.86	0.86	0.86	0.525	0.525
1-3 to 1-4	1.00	0.00	0.00	0.00	0.94	0.06	0.00	0.00	0.31	0.0000	0.96	0.96	1.61	0.600	0.600
1-6_to_1-7	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.01	0.0024	1.81	0.14	0.95	0.090	0.090
1-7 to 1-8	3.48	0.00	0.00	0.00	0.99	0.00	0.00	0.01	0.10	0.0004	0.24	0.06	0.24	0.225	0.225
1-8_to_1-9	1.00	0.00	0.00	0.00	0.31	0.00	0.00	0.69	0.49	0.0010	0.88	0.24	0.90	0.300	0.300
1-9 to 1-10	3.09	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.43	0.0000	3.27	1.46	2.11	0.750	0.750
1-10 to JOD1-4	4.12	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.40	0.0000	0.55	0.53	0.51	8.879	8.957
2-1_to_2-2	1.00	0.00	0.00	0.00	0.10	0.00	0.00	0.90	0.28	0.0000	0.03	0.03	0.03	0.375	0.375
2-2_to_4-3	1.00	0.00	0.00	0.00	0.16	0.08	0.00	0.76	0.32	0.0000	0.16	0.13	0.25	0.375	0.375
3-1_to_4-7	1.73	0.00	0.00	0.00	0.26	0.01	0.00	0.73	0.45	0.0000	0.08	0.04	0.09	0.375	0.375
4-1_to_4-2	1.00	0.00	0.00	0.00	0.07	0.01	0.00	0.92	0.43	0.0000	0.33	0.24	0.46	0.225	0.225
4-2 to 4-3	1.00	0.00	0.00	0.00	0.14	0.02	0.00	0.84	0.38	0.0000	0.23	0.18	0.42	0.375	0.375
4-3_to_4-4	1.00	0.00	0.00	0.00	0.13	0.02	0.00	0.85	0.54	0.0000	0.99	0.39	1.02	0.375	0.375
4-4_to_4-5	1.00	0.00	0.00	0.00	0.14	0.02	0.00	0.84	0.66	0.0000	1.59	0.57	1.58	0.375	0.375

Conduit	Adjusted/ Actual Length	Fraction of time in Flow Class							Avg. Froude Number	Avg. Flow Change	Velocity x Depth			Max Top Width	
		Dry	Up Dry	Down Dry	Sub Crit	Sup Crit	Up Crit	Down Crit			US m^2/s	Centre m^2/s	DS m^2/s	US m	DS m
4-5_to_4-6	1.00	0.00	0.00	0.00	0.14	0.00	0.00	0.85	0.55	0.0000	1.76	0.61	1.59	0.375	0.375
4-6 to 4-7	1.00	0.00	0.00	0.00	0.15	0.01	0.00	0.84	0.60	0.0000	1.76	0.64	1.28	0.375	0.375
4-7_to_4-8	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.75	0.0000	1.75	0.80	0.79	0.375	0.375
4-8_to_4-9	1.00	0.00	0.00	0.00	0.00	0.26	0.00	0.74	1.35	0.0000	0.83	0.79	1.43	0.450	0.450
4-9_to_1-1	1.04	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.75	0.0000	1.79	0.96	0.95	0.450	0.450
5-1 to 1-3	1.00	0.00	0.00	0.00	0.21	0.04	0.00	0.74	0.56	0.0000	0.20	0.20	0.21	0.375	0.375
6-1 to 6-2	1.00	0.00	0.00	0.00	0.96	0.00	0.00	0.04	0.04	0.0001	1.13	0.28	0.92	0.225	0.225
6-2 to 6-3	1.07	0.00	0.00	0.00	0.97	0.03	0.00	0.00	0.12	0.0003	0.68	0.33	0.69	0.375	0.375
7-1_to_7-2	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.77	0.0000	0.12	0.12	0.13	0.295	0.284
7-2 to 7-3	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.75	0.0000	0.21	0.22	0.22	0.338	0.331
7-3_to_7-4	1.00	0.00	0.00	0.00	0.00	0.15	0.00	0.85	0.83	0.0000	0.28	0.25	0.24	0.338	0.375
7-4 to 7-5	1.00	0.00	0.00	0.00	0.05	0.10	0.00	0.85	1.32	0.0000	0.59	0.58	1.87	0.375	0.375
7-5 to 7-6	1.00	0.00	0.00	0.00	0.11	0.11	0.00	0.78	1.20	0.0000	2.56	0.80	2.56	0.375	0.375
7-6_to_7-7	1.00	0.00	0.00	0.00	0.10	0.01	0.00	0.89	1.49	0.0000	4.47	1.30	3.03	0.375	0.375
7-7_to_7-8	1.00	0.00	0.00	0.00	0.13	0.11	0.00	0.76	1.20	0.0000	2.60	1.10	2.94	0.450	0.450
7-8_to_7-9	1.00	0.00	0.00	0.00	0.10	0.00	0.00	0.89	1.01	0.0001	3.86	1.39	2.12	0.450	0.450
7-9_to_7-10	1.00	0.00	0.00	0.00	0.93	0.03	0.00	0.05	0.24	0.0000	2.49	1.39	2.69	0.450	0.450
7-10 to 7-11	1.48	0.00	0.00	0.00	0.95	0.05	0.00	0.00	0.17	0.0000	1.69	1.04	1.74	0.600	0.600
8-1_to_7-4	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.02	0.0000	0.27	0.27	0.28	0.224	0.220
9-1_to_9-2	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.40	0.0000	0.39	0.23	0.23	0.225	0.225
9-2_to_7-4	1.00	0.00	0.00	0.00	0.03	0.04	0.00	0.92	0.47	0.0000	0.20	0.19	0.19	0.370	0.375
10-1_to_7-8	1.00	0.00	0.00	0.00	0.23	0.01	0.00	0.75	0.67	0.0000	0.29	0.14	0.41	0.375	0.375
11-1 to 11-2	1.00	0.00	0.55	0.00	0.26	0.19	0.00	0.00	0.49	0.0000	0.61	0.61	2.05	0.300	0.300
12-1_to_12-2	1.00	0.00	0.03	0.00	0.92	0.00	0.00	0.06	0.04	0.0001	1.95	0.59	1.22	0.375	0.375
12-2_to_12-3	1.00	0.00	0.00	0.00	0.95	0.00	0.00	0.05	0.05	0.0001	1.20	0.65	1.13	0.450	0.450
12-3_to_12-4	1.81	0.00	0.00	0.00	0.96	0.04	0.00	0.00	0.17	0.0000	0.88	0.57	0.91	0.525	0.525
13-1_to_13-2	1.00	0.00	0.00	0.00	0.09	0.00	0.00	0.91	0.50	0.0000	2.46	0.53	1.70	0.225	0.225
13-2 to 7-6	1.00	0.00	0.00	0.00	0.11	0.00	0.00	0.89	0.58	0.0000	1.51	0.54	1.45	0.375	0.375
14-1 to 4-4	1.00	0.00	0.00	0.00	0.16	0.09	0.00	0.75	0.25	0.0000	0.21	0.12	0.30	0.375	0.375
B3-1_to_B3-2	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.0021	1.62	0.12	0.95	0.090	0.090
B3-2 to 1-8	2.15	0.00	0.00	0.00	0.99	0.00	0.00	0.01	0.01	0.0011	1.25	0.13	1.07	0.090	0.090
B4-1_to_B4-2	4.62	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.01	0.0001	0.34	0.07	0.34	0.225	0.225
B4-2 to B4-3	3.28	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.01	0.0002	0.35	0.08	0.36	0.225	0.225

Conduit	Adjusted/ Actual Length	Fraction of time in Flow Class							Avg. Froude Number	Avg. Flow Change	Velocity x Depth			Max Top Width	
		Dry	Up Dry	Down Dry	Sub Crit	Sup Crit	Up Crit	Down Crit			US m^2/s	Centre m^2/s	DS m^2/s	US m	DS m
B4-3_to_1-8	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.15	0.0016	1.06	0.21	1.22	0.225	0.225
B5-1 to B4-2	1.00	0.00	0.00	0.00	0.99	0.01	0.00	0.00	0.01	0.0024	1.74	0.13	0.98	0.090	0.090
B6-1_to_B8-3	1.00	0.00	0.00	0.00	0.99	0.01	0.00	0.00	0.01	0.0024	1.79	0.13	1.01	0.090	0.090
1-5_to_B7-1	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.01	0.0027	0.00	0.00	0.00	0.000	0.010
B7-1_to_B4-1	1.00	0.00	0.00	0.00	0.99	0.00	0.01	0.00	0.00	0.0014	0.96	0.08	1.11	0.090	0.090
1-5 to B8-1	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.01	0.0027	0.00	0.00	0.00	0.000	0.010
B8-1 to B8-2	1.00	0.00	0.00	0.00	0.99	0.00	0.01	0.00	0.00	0.0014	0.96	0.08	1.12	0.090	0.090
B8-2 to B8-3	4.37	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.01	0.0001	0.33	0.07	0.33	0.225	0.225
B8-3_to_B4-3	3.13	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.01	0.0002	0.35	0.08	0.35	0.225	0.225
1-5 to B9-1	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.01	0.0027	0.00	0.00	0.00	0.000	0.010
B9-1_to_B4-3	1.00	0.00	0.00	0.00	0.99	0.00	0.01	0.00	0.00	0.0014	0.93	0.08	1.10	0.090	0.090
JOD1-1 to JOD1-2	1.00	0.00	0.00	0.00	0.93	0.07	0.00	0.00	0.42	0.0000	0.48	0.45	0.41	1.410	1.633
JOD1-2 to JOD1-3	1.00	0.00	0.00	0.00	0.98	0.00	0.00	0.02	0.48	0.0000	0.46	0.46	0.46	1.633	2.932
JOD1-3_to_JOD1-4	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.07	0.0000	0.46	0.34	0.29	2.938	8.957
JOD1-4_to_JOD1-5	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.38	0.0000	0.70	0.72	0.75	8.957	9.053
JOD1-5_to_JOD1-6	3.06	0.00	0.00	0.00	0.97	0.03	0.00	0.00	0.58	0.0000	0.72	0.74	0.76	9.053	9.073
JOD1-6_to_JOD1-7	1.00	0.00	0.00	0.00	0.62	0.37	0.00	0.00	0.92	0.0007	2.76	1.00	1.14	0.600	0.600
A	2.36	0.01	0.00	0.00	0.00	0.99	0.00	0.00	1.48	0.0000	0.54	0.58	0.63	3.141	2.495
WEIR-1_to_WEIR-2	1.00	0.87	0.00	0.00	0.00	0.00	0.00	0.13	0.09	0.0000	0.13	0.14	0.14	3.520	3.097
WEIR-2_to_WEIR-3	2.15	0.01	0.00	0.00	0.99	0.00	0.00	0.00	0.00	0.0000	0.05	0.04	0.05	10.000	10.000
1-1_to_1-2(S)	1.00	0.00	0.00	0.00	0.33	0.36	0.00	0.31	1.32	0.0000	0.03	0.03	0.03	0.616	0.615
1-2_to_1-3(S)	1.00	0.00	0.00	0.00	0.28	0.02	0.00	0.69	0.63	0.0000	0.02	0.01	0.01	0.320	1.491
1-3 to 1-5(S)	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.00	0.00	0.00	0.000	0.000
1-9_to_JOD1-5(S)	4.38	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.00	0.00	0.00	0.000	0.000
2-1_to_4-6(S)	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.45	0.0000	0.01	0.01	0.01	0.241	0.492
2-2_to_LOST(S)	1.00	0.00	0.00	0.00	0.60	0.40	0.00	0.00	0.54	0.0000	0.03	0.03	0.03	1.373	1.373
3-1_to_1-1(S)	1.00	0.00	0.00	0.00	0.42	0.38	0.00	0.20	0.94	0.0000	0.02	0.02	0.02	0.386	0.616
4-1 to LOST1(S)	1.00	0.00	0.00	0.00	0.59	0.41	0.00	0.00	0.54	0.0000	0.04	0.04	0.04	1.736	1.736
4-2 to 4-3(S)	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.36	0.0000	0.02	0.01	0.00	0.515	1.734
4-3_to_LOST2(S)	1.00	0.00	0.00	0.00	0.48	0.52	0.00	0.00	0.74	0.0000	0.04	0.04	0.04	1.734	1.733
4-4 to 4-5(S)	1.00	0.00	0.00	0.00	0.73	0.00	0.00	0.27	0.76	0.0000	0.03	0.03	0.03	1.110	1.110
4-5_to_3-1(S)	1.00	0.00	0.00	0.00	0.75	0.00	0.00	0.25	0.66	0.0000	0.02	0.02	0.02	0.642	0.643
4-6 to 4-7(S)	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.66	0.0000	0.01	0.01	0.00	0.492	1.683

Conduit	Adjusted/ Actual Length	Fraction of time in Flow Class							Avg. Froude Number	Avg. Flow Change	Velocity x Depth			Max Top Width	
		Dry	Up Dry	Down Dry	Sub Crit	Sup Crit	Up Crit	Down Crit			US m^2/s	Centre m^2/s	DS m^2/s	US m	DS m
4-7_to_4-8(S)	1.00	0.00	0.00	0.00	0.47	0.48	0.00	0.05	0.97	0.0000	0.06	0.06	0.05	1.683	1.838
4-8 to 4-9(S)	1.00	0.00	0.00	0.00	0.22	0.44	0.00	0.33	1.36	0.0000	0.10	0.10	0.10	1.838	1.838
4-9_to_5-1(S)	1.00	0.00	0.00	0.00	0.65	0.19	0.00	0.17	1.08	0.0000	0.08	0.08	0.08	1.796	1.796
5-1_to_1-3(S)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.93	0.0000	0.04	0.04	0.04	1.621	1.620
6-1_to_JOD1-6(S)	1.00	0.00	0.45	0.00	0.37	0.00	0.00	0.19	0.26	0.0000	0.00	0.00	0.00	3.990	3.990
6-2 to JOD1-6(S)	1.00	0.00	0.66	0.00	0.32	0.00	0.00	0.02	0.04	0.0000	0.00	0.00	0.00	3.990	3.994
7-1 to LOST3(S)	1.00	0.00	0.00	0.00	0.56	0.44	0.00	0.00	0.61	0.0000	0.03	0.03	0.03	1.035	1.036
7-2 to 7-3(S)	1.00	0.00	0.00	0.00	0.71	0.02	0.00	0.27	0.79	0.0000	0.04	0.04	0.04	0.853	0.853
7-3_to_7-4(S)	1.00	0.00	0.00	0.00	0.73	0.21	0.00	0.05	0.70	0.0000	0.03	0.02	0.02	0.516	0.609
7-4 to 7-5(S)	1.00	0.00	0.00	0.00	0.14	0.14	0.00	0.73	1.57	0.0000	0.04	0.02	0.01	0.609	1.564
7-5_to_10-1(S)	1.00	0.00	0.00	0.00	0.18	0.51	0.00	0.31	1.60	0.0000	0.08	0.08	0.08	1.564	1.563
7-6 to 7-7(S)	1.00	0.00	0.00	0.00	0.55	0.15	0.00	0.30	0.99	0.0000	0.03	0.03	0.03	0.413	0.413
7-7 to 7-8(S)	1.00	0.00	0.00	0.00	0.29	0.01	0.00	0.70	0.48	0.0000	0.02	0.01	0.00	0.281	2.157
7-8_to_LOST4(S)	2.27	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.00	0.00	0.00	0.000	0.000
8-1_to_7-4(S)	1.46	0.00	0.71	0.00	0.27	0.01	0.00	0.01	0.11	0.0000	0.00	0.00	0.00	3.990	3.990
9-1_to_13-1(S)	1.35	0.64	0.06	0.00	0.30	0.00	0.00	0.00	0.01	0.0000	0.00	0.00	0.00	3.990	3.992
9-2_to_7-6(S)	1.00	0.00	0.00	0.00	0.55	0.45	0.00	0.00	0.71	0.0000	0.02	0.02	0.02	0.282	0.413
10-1 to 7-8(S)	1.00	0.00	0.00	0.00	0.01	0.23	0.00	0.76	0.89	0.0000	0.05	0.04	0.03	1.413	2.157
11-1_to_11-2(S)	1.00	0.05	0.82	0.00	0.07	0.03	0.00	0.03	0.14	0.0000	0.06	0.06	0.05	0.489	1.331
12-1_to_JOD1-2(S)	16.78	0.00	0.84	0.00	0.16	0.00	0.00	0.00	0.03	0.0000	0.27	0.08	0.05	0.270	1.631
12-2_to_JOD1-3(S)	2.24	0.72	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.00	0.00	0.00	0.000	0.000
12-3_to_JOD1-4(S)	2.03	0.00	0.72	0.00	0.24	0.01	0.00	0.04	0.10	0.0000	0.01	0.01	0.01	3.990	3.993
13-1 to 13-2(S)	1.00	0.46	0.42	0.00	0.12	0.00	0.00	0.00	0.03	0.0000	0.01	0.01	0.01	11.205	28.714
13-2_to_11-1(S)	1.72	0.66	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.00	0.00	0.00	0.000	0.000
14-1_to_4-4(S)	1.00	0.00	0.00	0.00	0.72	0.00	0.00	0.28	0.54	0.0000	0.03	0.04	0.04	2.077	1.839
JOD1-5_to_JOD1-6(S)	1.49	0.01	0.99	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.00	0.00	0.00	0.000	0.000
JOD1-6_to_JOD1-7(S)	2.10	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.00	0.00	0.00	0.000	0.000

CONDUIT SURCHARGE SUMMARY

Conduit	Hours Full			Hours Above Full Normal Flow	Hours Capacity Limited
	Both Ends	Upstream	Downstream		
1-3_to_1-4	0.03	0.03	0.03	0.01	0.01
1-6_to_1-7	2.96	2.96	2.96	2.50	2.44
1-7 to 1-8	0.97	0.97	0.97	0.12	0.36
1-8_to_1-9	0.83	0.83	0.84	2.44	0.80
1-9_to_1-10	0.58	0.58	0.58	0.01	0.39
2-1_to_2-2	0.04	0.04	0.04	0.01	0.01
2-2_to_4-3	0.11	0.11	0.11	0.01	0.01
4-1 to 4-2	0.08	0.08	0.08	0.01	0.01
4-2 to 4-3	0.08	0.08	0.08	0.01	0.01
4-3 to 4-4	0.27	0.27	0.27	0.01	0.01
4-4 to 4-5	0.30	0.30	0.30	0.01	0.05
4-5_to_4-6	0.33	0.33	0.33	0.06	0.33
4-6 to 4-7	0.32	0.32	0.32	0.15	0.32
4-7 to 4-8	0.01	0.01	0.01	0.33	0.01
4-9 to 1-1	0.01	0.01	0.01	0.25	0.01
6-1_to_6-2	0.75	0.75	0.75	0.04	0.20
6-2_to_6-3	1.48	1.48	1.48	0.01	0.04
7-5_to_7-6	0.25	0.25	0.25	0.01	0.09
7-6 to 7-7	0.24	0.24	0.24	0.01	0.24
7-7_to_7-8	0.28	0.28	0.28	0.01	0.01
7-8_to_7-9	0.25	0.25	0.25	0.23	0.25
7-9_to_7-10	0.28	0.28	0.28	0.01	0.01
7-10_to_7-11	0.66	0.66	0.66	0.01	0.01
10-1 to 7-8	0.24	0.24	0.24	0.01	0.01
12-1 to 12-2	0.63	0.63	0.63	0.32	0.27
12-2 to 12-3	0.71	0.71	0.71	0.09	0.23
12-3 to 12-4	0.81	0.81	0.81	0.01	0.01
13-1_to_13-2	0.40	0.40	0.40	0.23	0.40
13-2 to 7-6	0.23	0.23	0.23	0.01	0.14
14-1 to 4-4	0.21	0.21	0.21	0.01	0.01
B3-1 to B3-2	2.97	2.97	2.97	2.52	2.46
B3-2_to_1-8	2.96	2.96	2.96	2.41	2.38
B4-1_to_B4-2	2.92	2.92	2.92	0.02	0.08

Conduit	Hours Full			Hours Above Full Normal Flow	Hours Capacity Limited
	Both Ends	Upstream	Downstream		
B4-2_to_B4-3	2.92	2.92	2.92	0.26	2.30
B4-3_to_1-8	0.97	0.97	0.97	2.72	0.68
B5-1 to B4-2	2.96	2.96	2.96	2.82	2.48
B6-1_to_B8-3	2.96	2.96	2.96	2.82	2.48
1-5_to_B7-1	2.96	2.96	2.96	2.94	2.53
B7-1_to_B4-1	2.95	2.95	2.95	0.83	0.46
1-5_to_B8-1	2.96	2.96	2.96	2.94	2.53
B8-1 to B8-2	2.95	2.95	2.95	0.82	0.45
B8-2 to B8-3	2.92	2.92	2.92	0.02	0.02
B8-3 to B4-3	2.92	2.92	2.92	0.37	2.30
1-5 to B9-1	2.96	2.96	2.96	2.95	2.53
B9-1_to_B4-3	2.95	2.95	2.95	0.89	0.50
JOD1-6 to JOD1-7	0.01	0.01	0.01	0.87	0.01
WEIR-2 to WEIR-3	0.42	0.42	0.42	0.01	0.01
1-4 to 1-5	3.00	3.00	3.00	3.00	0.04
1-5_to_1-6	3.00	3.00	3.00	3.00	0.01
6-3_to_1-5	3.00	3.00	3.00	3.00	0.04
7-11_to_1-5	3.00	3.00	3.00	3.00	0.04
11-2 to 1-5	3.00	3.00	3.00	3.00	0.04
12-4_to_1-5	3.00	3.00	3.00	3.00	0.04
1-5_to_1-9	3.00	3.00	3.00	3.00	0.01
1-5_to_B3-1	3.00	3.00	3.00	3.00	0.01
1-5_to_B5-1	3.00	3.00	3.00	3.00	0.01
1-5 to B6-1	3.00	3.00	3.00	3.00	0.01
1-5 to WEIR-1	3.00	3.00	3.00	3.00	0.01

LINK RESULTS AT MAX FLOW

Link	Type	Area m^2	Wetted Perimeter m	Top Width m	Critical Depth m	Normal Depth m	Critical Slope %	Velocity m/s	Velocity Head m	Specific Energy m	Froude No. (or Cd)	Ku	Flow Profile	Inlet Control
1-1_to_1-2	CONDUIT	0.127	0.895	0.520	0.412	0.223	0.76	2.918	0.434	0.733	1.883	0.55	S2	0
1-2_to_1-3	CONDUIT	0.173	1.095	0.457	0.417	0.307	0.77	2.193	0.245	0.637	1.136	0.64	S2	0
1-3_to_1-4	CONDUIT	0.250	1.379	0.416	0.455	0.271	0.80	1.867	0.178	0.694	0.756	1.25	S1	0

Link	Type	Area m^2	Wetted Perimeter m	Top Width m	Critical Depth m	Normal Depth m	Critical Slope %	Velocity m/s	Velocity Head m	Specific Energy m	Froude No. (or Cd)	Ku	Flow Profile	Inlet Control
1-6_to_1-7	CONDUIT	0.006	0.283	0.035	0.090	0.090	0.43	1.537	0.120	0.210	0.000	0.74	--	0
1-7_to_1-8	CONDUIT	0.040	0.707	0.088	0.084	0.225	0.11	0.266	0.004	0.229	0.000	1.25	--	0
1-8 to 1-9	CONDUIT	0.071	0.942	0.118	0.184	0.300	0.28	0.796	0.032	0.332	0.000	0.58	--	0
1-9_to_1-10	CONDUIT	0.442	2.356	0.294	0.575	0.495	1.02	1.948	0.193	0.943	0.000	3.63	--	0
1-10_to_JOD1-4	CONDUIT	2.735	8.805	8.360	0.503	0.409	0.44	0.311	0.005	0.997	0.174	0.00	S1	0
2-1_to_2-2	CONDUIT	0.089	0.787	0.318	0.063	0.055	0.08	0.090	0.000	0.287	0.054	0.20	S1	0
2-2 to 4-3	CONDUIT	0.071	0.653	0.354	0.147	0.124	0.20	0.531	0.014	0.264	0.361	2.26	S1	0
3-1 to 4-7	CONDUIT	0.086	0.756	0.314	0.081	0.043	0.10	0.144	0.001	0.291	0.085	9.70	S1	0
4-1 to 4-2	CONDUIT	0.038	0.565	0.132	0.177	0.134	0.33	1.194	0.073	0.276	0.713	5.03	S1	0
4-2_to_4-3	CONDUIT	0.074	0.672	0.347	0.166	0.141	0.23	0.650	0.022	0.280	0.430	2.13	S1	0
4-3 to 4-4	CONDUIT	0.110	1.178	0.147	0.248	0.189	0.39	1.029	0.054	0.429	0.000	1.61	S1	0
4-4_to_4-5	CONDUIT	0.110	1.178	0.147	0.302	0.237	0.57	1.529	0.119	0.494	0.000	0.92	S1	0
4-5 to 4-6	CONDUIT	0.110	1.178	0.147	0.310	0.375	0.62	1.630	0.135	0.510	0.000	0.76	--	0
4-6 to 4-7	CONDUIT	0.110	1.178	0.147	0.317	0.375	0.66	1.719	0.151	0.526	0.000	1.50	--	0
4-7_to_4-8	CONDUIT	0.108	1.024	0.147	0.346	0.375	0.95	2.233	0.254	0.614	0.822	0.74	--	0
4-8_to_4-9	CONDUIT	0.124	0.912	0.375	0.382	0.219	0.80	2.278	0.264	0.613	1.225	0.51	S2	0
4-9_to_1-1	CONDUIT	0.155	1.200	0.197	0.404	0.450	1.00	2.260	0.260	0.687	0.811	1.45	--	0
5-1_to_1-3	CONDUIT	0.090	0.787	0.307	0.182	0.125	0.25	0.672	0.023	0.318	0.389	9.70	S1	0
6-1 to 6-2	CONDUIT	0.040	0.707	0.088	0.184	0.225	0.36	1.234	0.078	0.303	0.000	2.14	--	0
6-2_to_6-3	CONDUIT	0.110	1.178	0.147	0.229	0.251	0.35	0.883	0.040	0.415	0.000	0.00	--	0
7-1_to_7-2	CONDUIT	0.014	0.332	0.290	0.113	0.065	0.15	1.815	0.168	0.236	2.651	9.66	S2	0
7-2_to_7-3	CONDUIT	0.024	0.413	0.334	0.165	0.099	0.22	2.119	0.229	0.331	2.498	2.25	S2	0
7-3_to_7-4	CONDUIT	0.040	0.507	0.365	0.190	0.107	0.27	1.736	0.154	0.298	1.688	1.64	S2	0
7-4 to 7-5	CONDUIT	0.095	0.838	0.274	0.311	0.185	0.62	1.821	0.169	0.485	0.965	1.04	S1	0
7-5_to_7-6	CONDUIT	0.110	1.178	0.147	0.342	0.226	0.89	2.121	0.229	0.604	0.000	1.10	S1	0
7-6_to_7-7	CONDUIT	0.110	1.178	0.147	0.375	0.305	2.18	3.465	0.612	0.987	0.000	0.69	--	0
7-7_to_7-8	CONDUIT	0.159	1.414	0.176	0.416	0.288	1.17	2.451	0.306	0.756	0.000	0.18	S1	0
7-8_to_7-9	CONDUIT	0.159	1.414	0.176	0.450	0.450	1.74	3.092	0.487	0.937	0.000	1.01	--	0
7-9 to 7-10	CONDUIT	0.159	1.414	0.176	0.450	0.323	1.73	3.084	0.485	0.935	0.000	0.38	--	0
7-10 to 7-11	CONDUIT	0.283	1.885	0.235	0.458	0.403	0.81	1.731	0.153	0.753	0.000	0.00	S1	0
8-1_to_7-4	CONDUIT	0.016	0.320	0.222	0.178	0.090	0.33	2.823	0.406	0.502	3.349	4.25	S2	0
9-1 to 9-2	CONDUIT	0.036	0.525	0.152	0.175	0.166	0.32	1.199	0.073	0.269	0.778	3.63	S1	0
9-2_to_7-4	CONDUIT	0.052	0.572	0.375	0.171	0.145	0.23	1.072	0.059	0.237	0.919	0.29	S1	0
10-1 to 7-8	CONDUIT	0.110	1.178	0.147	0.148	0.098	0.20	0.382	0.007	0.382	0.000	9.41	S1	0

Link	Type	Area m^2	Wetted Perimeter m	Top Width m	Critical Depth m	Normal Depth m	Critical Slope %	Velocity m/s	Velocity Head m	Specific Energy m	Froude No. (or Cd)	Ku	Flow Profile	Inlet Control
11-1_to_11-2	CONDUIT	0.061	0.674	0.217	0.282	0.164	0.89	2.392	0.292	0.545	1.408	3.22	S2	0
12-1_to_12-2	CONDUIT	0.110	1.178	0.147	0.305	0.375	0.59	1.570	0.126	0.501	0.000	2.41	--	0
12-2 to 12-3	CONDUIT	0.159	1.414	0.176	0.338	0.450	0.59	1.451	0.107	0.557	0.000	0.62	--	0
12-3_to_12-4	CONDUIT	0.216	1.649	0.206	0.326	0.277	0.50	1.077	0.059	0.584	0.000	0.00	S1	0
13-1_to_13-2	CONDUIT	0.040	0.707	0.088	0.225	0.225	1.01	2.351	0.282	0.507	0.000	1.87	--	0
13-2_to_7-6	CONDUIT	0.103	0.918	0.225	0.293	0.280	0.54	1.520	0.118	0.455	0.711	1.96	S1	0
14-1 to 4-4	CONDUIT	0.078	0.697	0.339	0.145	0.101	0.19	0.481	0.012	0.280	0.308	2.25	S1	0
B3-1 to B3-2	CONDUIT	0.006	0.283	0.035	0.090	0.090	0.34	1.372	0.096	0.186	0.000	0.74	--	0
B3-2 to 1-8	CONDUIT	0.006	0.283	0.035	0.090	0.090	0.38	1.438	0.105	0.195	0.000	1.52	--	0
B4-1_to_B4-2	CONDUIT	0.040	0.707	0.088	0.090	0.225	0.12	0.303	0.005	0.230	0.000	0.20	--	0
B4-2 to B4-3	CONDUIT	0.040	0.707	0.088	0.098	0.225	0.13	0.355	0.006	0.231	0.000	0.62	--	0
B4-3_to_1-8	CONDUIT	0.040	0.707	0.088	0.160	0.225	0.27	0.920	0.043	0.268	0.000	0.20	--	0
B5-1 to B4-2	CONDUIT	0.006	0.283	0.035	0.090	0.090	0.39	1.457	0.108	0.198	0.000	0.75	--	0
B6-1 to B8-3	CONDUIT	0.006	0.283	0.035	0.090	0.090	0.41	1.500	0.115	0.205	0.000	0.75	--	0
1-5_to_B7-1	CONDUIT	0.000	0.031	0.004	0.009	0.010	0.02	0.000	0.000	0.010	0.000	2.00	--	0
B7-1_to_B4-1	CONDUIT	0.006	0.283	0.035	0.077	0.090	0.17	0.879	0.039	0.129	0.000	0.00	--	0
1-5_to_B8-1	CONDUIT	0.000	0.031	0.004	0.009	0.010	0.02	0.000	0.000	0.010	0.000	2.00	--	0
B8-1_to_B8-2	CONDUIT	0.006	0.283	0.035	0.078	0.090	0.17	0.884	0.040	0.130	0.000	0.00	--	0
B8-2 to B8-3	CONDUIT	0.040	0.707	0.088	0.091	0.225	0.12	0.309	0.005	0.230	0.000	0.20	--	0
B8-3_to_B4-3	CONDUIT	0.040	0.707	0.088	0.098	0.225	0.13	0.360	0.007	0.232	0.000	0.63	--	0
1-5_to_B9-1	CONDUIT	0.000	0.031	0.004	0.009	0.010	0.02	0.000	0.000	0.010	0.000	2.00	--	0
B9-1_to_B4-3	CONDUIT	0.006	0.283	0.035	0.077	0.090	0.16	0.859	0.038	0.128	0.000	0.20	--	0
JOD1-1_to_JOD1-2	CONDUIT	0.258	1.697	1.521	0.347	0.323	2.85	1.281	0.084	0.431	0.996	0.00	S1	0
JOD1-2 to JOD1-3	CONDUIT	0.290	1.795	1.618	0.360	0.371	2.96	1.247	0.079	0.448	0.940	0.00	M2	0
JOD1-3_to_JOD1-4	CONDUIT	0.820	3.243	2.538	0.360	0.368	2.95	0.507	0.013	0.585	0.306	0.00	M1	0
JOD1-4_to_JOD1-5	CONDUIT	1.524	4.685	4.308	0.563	0.772	4.66	0.745	0.028	0.845	0.400	0.00	M1	0
JOD1-5_to_JOD1-6	CONDUIT	1.403	4.434	4.070	0.559	0.816	4.63	0.795	0.032	0.820	0.432	0.00	M2	0
JOD1-6_to_JOD1-7	CONDUIT	0.223	1.223	0.497	0.493	0.600	9.20	2.127	0.231	0.699	1.124	0.00	M3	0
A	CONDUIT	0.567	2.973	2.818	0.347	0.227	0.42	2.059	0.216	0.498	1.476	2.00	S2	0
WEIR-1 to WEIR-2	CONDUIT	0.437	3.370	3.308	0.137	0.164	1.91	0.849	0.037	0.200	0.748	2.00	M2	0
WEIR-2_to_WEIR-3	CONDUIT	10.000	22.000	10.000	0.052	0.112	0.87	0.037	0.000	1.000	0.000	2.00	M1	0
1-1 to 1-2(S)	CONDUIT	0.009	0.632	0.615	0.049	0.038	0.04	0.852	0.037	0.075	2.261	0.00	S2	0
1-2_to_1-3(S)	CONDUIT	0.020	1.229	0.883	0.034	0.028	0.03	0.175	0.002	0.047	0.434	0.00	S1	0
1-3 to 1-5(S)	CONDUIT	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.00	--	0

Link	Type	Area m^2	Wetted Perimeter m	Top Width m	Critical Depth m	Normal Depth m	Critical Slope %	Velocity m/s	Velocity Head m	Specific Energy m	Froude No. (or Cd)	Ku	Flow Profile	Inlet Control
1-9_to_JOD1-5(S)	CONDUIT	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.00	--	0
2-1_to_4-6(S)	CONDUIT	0.005	0.347	0.313	0.024	0.021	0.03	0.266	0.004	0.031	0.723	0.00	S1	0
2-2 to LOST(S)	CONDUIT	0.031	1.400	1.373	0.062	0.060	0.06	0.521	0.014	0.074	1.114	0.00	S3	0
3-1_to_1-1(S)	CONDUIT	0.007	0.528	0.499	0.041	0.031	0.04	0.591	0.018	0.052	1.589	0.00	S2	0
4-1_to_LOST1(S)	CONDUIT	0.047	1.768	1.736	0.073	0.070	0.07	0.593	0.018	0.088	1.151	0.00	S2	0
4-2_to_4-3(S)	CONDUIT	0.027	1.430	1.124	0.037	0.035	0.03	0.147	0.001	0.054	0.338	0.00	S1	0
4-3 to LOST2(S)	CONDUIT	0.047	1.765	1.733	0.073	0.070	0.07	0.592	0.018	0.088	1.151	0.00	S2	0
4-4 to 4-5(S)	CONDUIT	0.021	1.133	1.110	0.058	0.052	0.05	0.602	0.018	0.071	1.391	0.00	S2	0
4-5 to 3-1(S)	CONDUIT	0.009	0.659	0.642	0.039	0.039	0.04	0.396	0.008	0.047	1.046	0.00	S3	0
4-6_to_4-7(S)	CONDUIT	0.024	1.338	1.059	0.035	0.034	0.03	0.136	0.001	0.052	0.318	0.00	S1	0
4-7 to 4-8(S)	CONDUIT	0.048	1.796	1.761	0.082	0.069	0.08	0.808	0.033	0.104	1.561	0.00	S2	0
4-8_to_4-9(S)	CONDUIT	0.052	1.871	1.838	0.101	0.073	0.10	1.415	0.102	0.175	2.683	0.00	S2	0
4-9 to 5-1(S)	CONDUIT	0.050	1.829	1.796	0.092	0.072	0.09	1.117	0.064	0.136	2.140	0.00	S2	0
5-1 to 1-3(S)	CONDUIT	0.041	1.651	1.620	0.072	0.067	0.07	0.632	0.020	0.087	1.265	0.00	S2	0
6-1_to_JOD1-6(S)	CONDUIT	0.047	4.030	3.990	0.012	0.012	0.03	0.368	0.007	0.019	1.084	0.00	S2	0
6-2_to_JOD1-6(S)	CONDUIT	1.308	4.665	3.991	0.002	0.006	0.31	0.007	0.000	0.328	0.004	0.00	--	0
7-1_to_LOST3(S)	CONDUIT	0.019	1.058	1.035	0.057	0.050	0.05	0.644	0.021	0.071	1.521	0.00	S3	0
7-2_to_7-3(S)	CONDUIT	0.014	0.873	0.853	0.059	0.045	0.05	0.994	0.050	0.095	2.482	0.00	S2	0
7-3 to 7-4(S)	CONDUIT	0.008	0.563	0.547	0.044	0.035	0.04	0.675	0.023	0.059	1.810	0.00	S2	0
7-4_to_7-5(S)	CONDUIT	0.022	1.238	1.056	0.051	0.038	0.04	0.428	0.009	0.060	1.004	0.00	S2	0
7-5_to_10-1(S)	CONDUIT	0.039	1.593	1.563	0.087	0.065	0.08	1.209	0.074	0.140	2.455	0.00	S2	0
7-6_to_7-7(S)	CONDUIT	0.006	0.426	0.413	0.044	0.032	0.04	0.900	0.041	0.073	2.402	0.00	S2	0
7-7_to_7-8(S)	CONDUIT	0.037	1.919	1.155	0.031	0.025	0.03	0.093	0.000	0.054	0.213	0.00	S1	0
7-8 to LOST4(S)	CONDUIT	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.00	--	0
8-1_to_7-4(S)	CONDUIT	0.083	4.048	3.990	0.011	0.006	0.03	0.188	0.002	0.023	0.417	0.00	S1	0
9-1_to_13-1(S)	CONDUIT	0.408	4.212	3.991	0.013	0.011	0.03	0.046	0.000	0.102	0.046	0.00	S1	0
9-2_to_7-6(S)	CONDUIT	0.005	0.343	0.324	0.036	0.025	0.03	0.642	0.021	0.049	1.718	0.00	S2	0
10-1_to_7-8(S)	CONDUIT	0.051	1.889	1.783	0.072	0.061	0.07	0.543	0.015	0.087	1.043	0.00	S2	0
11-1 to 11-2(S)	CONDUIT	0.019	0.673	0.602	0.072	0.049	0.09	0.875	0.039	0.099	1.615	0.00	S2	0
12-1 to JOD1-2(S)	CONDUIT	0.148	1.571	0.934	0.148	0.070	0.17	0.373	0.007	0.226	0.367	0.00	S1	0
12-2_to_JOD1-3(S)	CONDUIT	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.00	--	0
12-3 to JOD1-4(S)	CONDUIT	0.176	4.095	3.990	0.016	0.011	0.04	0.152	0.001	0.045	0.231	0.00	S1	0
13-1_to_13-2(S)	CONDUIT	0.546	18.455	16.548	0.026	0.019	0.04	0.174	0.002	0.046	0.322	0.00	S1	0
13-2 to 11-1(S)	CONDUIT	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.00	--	0

Link	Type	Area m^2	Wetted Perimeter m	Top Width m	Critical Depth m	Normal Depth m	Critical Slope %	Velocity m/s	Velocity Head m	Specific Energy m	Froude No. (or Cd)	Ku	Flow Profile	Inlet Control
14-1_to_4-4(S)	CONDUIT	0.059	1.999	1.957	0.073	0.079	0.07	0.469	0.011	0.088	0.866	0.00	--	0
JOD1-5_to_JOD1-6(S)	CONDUIT	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.00	--	0
JOD1-6_to_JOD1-7(S)	CONDUIT	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.00	--	0

Analysis begun on: Wed Aug 21 11:53:16 2024

Analysis ended on: Wed Aug 21 11:54:43 2024

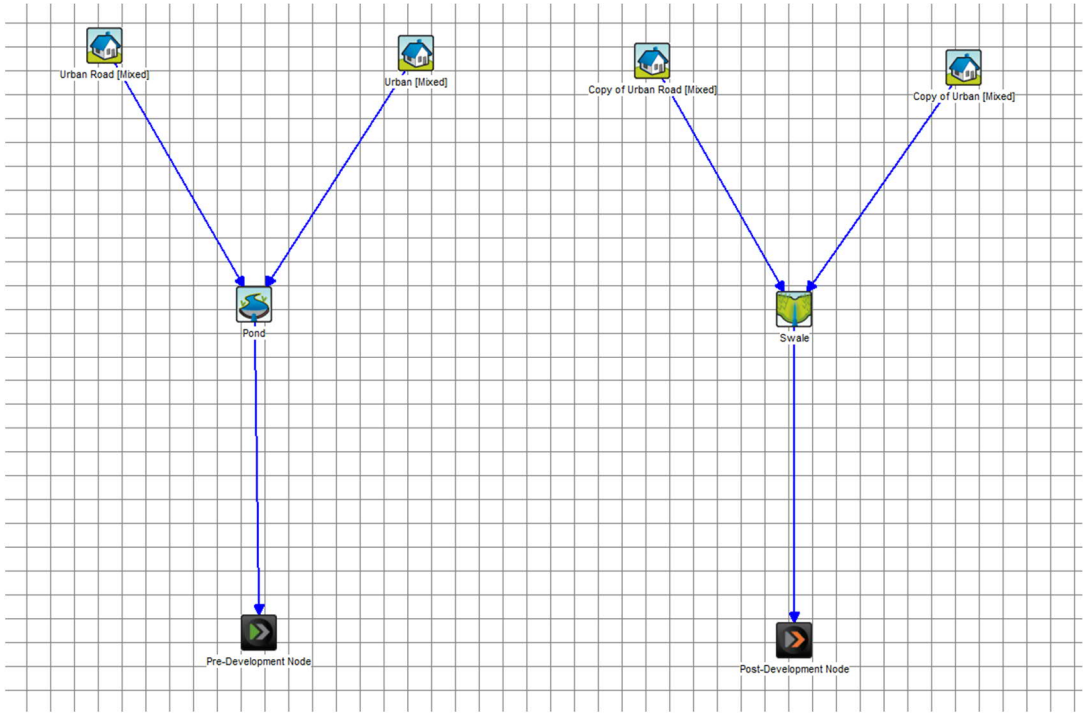
Total elapsed time: 00:01:27

Pre and Post Developed Catchment Model Layout

Dark Blue Catchment = Catchment for John Oxley Drive culvert (Pre-Developed)

Light Blue Catchment = Catchment for subject property (Pre-Developed & Post-Developed)

Pre & Post Developed Model Layout



MUSIC Summary Report

Source nodes
Location,Urban Road,Urban,Copy of Urban Road,Copy of Urban
ID,1,2,5,6
Node Type,UrbanSourceNode,UrbanSourceNode,UrbanSourceNode,UrbanSourceNode
Zoning Surface Type,Mixed,Mixed,Mixed,Mixed
Total Area (ha),0.241,0.899,0.241,0.899
Area Impervious (ha),0.205875149253731,0.0937576492537313,0.205875149253731,0.0937576492537313
Area Pervious (ha),0.0351248507462687,0.805242350746269,0.0351248507462687,0.805242350746269
Field Capacity (mm),99,99,99,99
Pervious Area Infiltration Capacity coefficient - a,180,180,180,180
Pervious Area Infiltration Capacity exponent - b,3,3,3,3
Impervious Area Rainfall Threshold (mm/day),1,1,1,1

Pervious Area Soil Storage Capacity (mm),119,119,119,119
Pervious Area Soil Initial Storage (% of Capacity),25,25,25,25
Groundwater Initial Depth (mm),10,10,10,10
Groundwater Daily Recharge Rate (%),25,25,25,25
Groundwater Daily Baseflow Rate (%),25,25,25,25
Groundwater Daily Deep Seepage Rate (%),0,0,0,0
Stormflow Total Suspended Solids Mean (log mg/L),2.15,2.15,2.15,2.15
Stormflow Total Suspended Solids Standard Deviation (log mg/L),0.32,0.32,0.32,0.32
Stormflow Total Suspended Solids Estimation Method,Stochastic,Stochastic,Stochastic,Stochastic
Stormflow Total Suspended Solids Serial Correlation,0,0,0,0
Stormflow Total Phosphorus Mean (log mg/L),-0.6,-0.6,-0.6,-0.6
Stormflow Total Phosphorus Standard Deviation (log mg/L),0.25,0.25,0.25,0.25
Stormflow Total Phosphorus Estimation Method,Stochastic,Stochastic,Stochastic,Stochastic
Stormflow Total Phosphorus Serial Correlation,0,0,0,0
Stormflow Total Nitrogen Mean (log mg/L),0.3,0.3,0.3,0.3
Stormflow Total Nitrogen Standard Deviation (log mg/L),0.19,0.19,0.19,0.19
Stormflow Total Nitrogen Estimation Method,Stochastic,Stochastic,Stochastic,Stochastic
Stormflow Total Nitrogen Serial Correlation,0,0,0,0
Baseflow Total Suspended Solids Mean (log mg/L),1.2,1.2,1.2,1.2
Baseflow Total Suspended Solids Standard Deviation (log mg/L),0.17,0.17,0.17,0.17
Baseflow Total Suspended Solids Estimation Method,Stochastic,Stochastic,Stochastic,Stochastic
Baseflow Total Suspended Solids Serial Correlation,0,0,0,0
Baseflow Total Phosphorus Mean (log mg/L),-0.85,-0.85,-0.85,-0.85
Baseflow Total Phosphorus Standard Deviation (log mg/L),0.19,0.19,0.19,0.19
Baseflow Total Phosphorus Estimation Method,Stochastic,Stochastic,Stochastic,Stochastic
Baseflow Total Phosphorus Serial Correlation,0,0,0,0
Baseflow Total Nitrogen Mean (log mg/L),0.11,0.11,0.11,0.11
Baseflow Total Nitrogen Standard Deviation (log mg/L),0.12,0.12,0.12,0.12
Baseflow Total Nitrogen Estimation Method,Stochastic,Stochastic,Stochastic,Stochastic
Baseflow Total Nitrogen Serial Correlation,0,0,0,0
Flow based constituent generation - enabled,Off,Off,Off,Off
Flow based constituent generation - flow file, , , ,
Flow based constituent generation - base flow column, , , ,
Flow based constituent generation - pervious flow column, , , ,
Flow based constituent generation - impervious flow column, , , ,
Flow based constituent generation - unit, , , ,
OUT - Mean Annual Flow (ML/yr),3.54,6.93,3.54,6.93
OUT - TSS Mean Annual Load (kg/yr),625,1.12E3,720,1.12E3
OUT - TP Mean Annual Load (kg/yr),1.05,1.80,0.991,1.80
OUT - TN Mean Annual Load (kg/yr),7.24,13.6,7.47,13.6
OUT - Gross Pollutant Mean Annual Load (kg/yr),77.5,67.6,77.5,67.6
Rain In (ML/yr),4.22214,15.7498,4.22214,15.7498
ET Loss (ML/yr),0.671484,8.65284,0.671484,8.65284
Deep Seepage Loss (ML/yr),0,0,0,0
Baseflow Out (ML/yr),0.0396718,0.887923,0.0396718,0.887923
Imp. Stormflow Out (ML/yr),3.29824,1.44746,3.29824,1.44746
Perv. Stormflow Out (ML/yr),0.205228,4.59336,0.205228,4.59336
Total Stormflow Out (ML/yr),3.50347,6.04082,3.50347,6.04082
Total Outflow (ML/yr),3.54314,6.92874,3.54314,6.92874

Change in Soil Storage (ML/yr),0.007516,0.168219,0.007516,0.168219
TSS Baseflow Out (kg/yr),0.675802,16.2706,0.726959,16.2706
TSS Total Stormflow Out (kg/yr),623.836,1102.11,719.136,1102.11
TSS Total Outflow (kg/yr),624.512,1118.38,719.863,1118.38
TP Baseflow Out (kg/yr),0.0060995,0.13329,0.00595525,0.13329
TP Total Stormflow Out (kg/yr),1.04225,1.67057,0.984929,1.67057
TP Total Outflow (kg/yr),1.04835,1.80386,0.990885,1.80386
TN Baseflow Out (kg/yr),0.0536973,1.19939,0.053588,1.19939
TN Total Stormflow Out (kg/yr),7.18409,12.3577,7.41882,12.3577
TN Total Outflow (kg/yr),7.23778,13.5571,7.47241,13.5571
GP Total Outflow (kg/yr),78.3469,70.9152,78.3469,70.9152

No Imported Data Source nodes

USTM treatment nodes
Location,Pond,Swale
ID,3,7
Node Type,PondNode,SwaleNode
Lo-flow bypass rate (cum/sec),0,0
Hi-flow bypass rate (cum/sec),100,
Inlet pond volume,0,
Area (sqm),255,
Initial Volume (m^3),22,
Extended detention depth (m),0.3,0.5
Number of Rainwater tanks, ,
Permanent Pool Volume (cubic metres),22,
Proportion vegetated,0.1,
Equivalent Pipe Diameter (mm),525,
Overflow weir width (m),5,
Notional Detention Time (hrs),60.4E-3,
Orifice Discharge Coefficient,0.6,
Weir Coefficient,1.7,
Number of CSTR Cells,2,10
Total Suspended Solids - k (m/yr),400,8000
Total Suspended Solids - C* (mg/L),12,20
Total Suspended Solids - C** (mg/L),12,14
Total Phosphorus - k (m/yr),300,6000
Total Phosphorus - C* (mg/L),0.09,0.13
Total Phosphorus - C** (mg/L),0.09,0.13
Total Nitrogen - k (m/yr),40,500
Total Nitrogen - C* (mg/L),1,1.4
Total Nitrogen - C** (mg/L),1,1.4
Threshold Hydraulic Loading for C** (m/yr),3500,3500
Horizontal Flow Coefficient, ,
Reuse Enabled,Off,Off
Max drawdown height (m), ,
Annual Demand Enabled,Off,Off
Annual Demand Value (ML/year), ,
Annual Demand Distribution, ,

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Annual Demand Monthly Distribution: Jan, ,
Annual Demand Monthly Distribution: Feb, ,
Annual Demand Monthly Distribution: Mar, ,
Annual Demand Monthly Distribution: Apr, ,
Annual Demand Monthly Distribution: May, ,
Annual Demand Monthly Distribution: Jun, ,
Annual Demand Monthly Distribution: Jul, ,
Annual Demand Monthly Distribution: Aug, ,
Annual Demand Monthly Distribution: Sep, ,
Annual Demand Monthly Distribution: Oct, ,
Annual Demand Monthly Distribution: Nov, ,
Annual Demand Monthly Distribution: Dec, ,
Daily Demand Enabled,Off,Off
Daily Demand Value (ML/day), ,
Custom Demand Enabled,Off,Off
Custom Demand Time Series File, ,
Custom Demand Time Series Units, ,
Filter area (sqm), ,
Filter perimeter (m), ,
Filter depth (m), ,
Filter Median Particle Diameter (mm), ,
Saturated Hydraulic Conductivity (mm/hr), ,
Infiltration Media Porosity, ,
Length (m), ,150
Bed slope, ,0.005
Base Width (m), ,2
Top width (m), ,10
Vegetation height (m), ,0.25
Vegetation Type, ,
Total Nitrogen Content in Filter (mg/kg), ,
Orthophosphate Content in Filter (mg/kg), ,
Is Base Lined?, ,
Is Underdrain Present?, ,
Is Submerged Zone Present?, ,
Submerged Zone Depth (m), ,
B for Media Soil Texture,-9999,-9999
Proportion of upstream impervious area treated, ,
Exfiltration Rate (mm/hr),0,0
Evaporative Loss as % of PET,100,
Depth in metres below the drain pipe, ,
TSS A Coefficient, ,
TSS B Coefficient, ,
TP A Coefficient, ,
TP B Coefficient, ,
TN A Coefficient, ,
TN B Coefficient, ,
Sfc, ,
S*, ,
Sw, ,
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Sh, ,
Emax (m/day), ,
Ew (m/day), ,
IN - Mean Annual Flow (ML/yr),10.5,10.5
IN - TSS Mean Annual Load (kg/yr),1.74E3,1.84E3
IN - TP Mean Annual Load (kg/yr),2.85,2.79
IN - TN Mean Annual Load (kg/yr),20.8,21.0
IN - Gross Pollutant Mean Annual Load (kg/yr),145,145
OUT - Mean Annual Flow (ML/yr),10.1,10.5
OUT - TSS Mean Annual Load (kg/yr),774,147
OUT - TP Mean Annual Load (kg/yr),1.74,1.36
OUT - TN Mean Annual Load (kg/yr),18.3,15.9
OUT - Gross Pollutant Mean Annual Load (kg/yr),0.00,0.00
Flow In (ML/yr),10.4719,10.4719
ET Loss (ML/yr),0.365855,0
Infiltration Loss (ML/yr),0,0
Low Flow Bypass Out (ML/yr),0,0
High Flow Bypass Out (ML/yr),0,0
Orifice / Filter Out (ML/yr),10.1048,10.4715
Weir Out (ML/yr),0,0
Transfer Function Out (ML/yr),0,0
Reuse Supplied (ML/yr),0,0
Reuse Requested (ML/yr),0,0
% Reuse Demand Met,0,0
% Load Reduction,3.5058,0.00381974
TSS Flow In (kg/yr),1742.91,1838.26
TSS ET Loss (kg/yr),0,0
TSS Infiltration Loss (kg/yr),0,0
TSS Low Flow Bypass Out (kg/yr),0,0
TSS High Flow Bypass Out (kg/yr),0,0
TSS Orifice / Filter Out (kg/yr),773.978,146.661
TSS Weir Out (kg/yr),0,0
TSS Transfer Function Out (kg/yr),0,0
TSS Reuse Supplied (kg/yr),0,0
TSS Reuse Requested (kg/yr),0,0
TSS % Reuse Demand Met,0,0
TSS % Load Reduction,55.5927,92.0218
TP Flow In (kg/yr),2.85222,2.79475
TP ET Loss (kg/yr),0,0
TP Infiltration Loss (kg/yr),0,0
TP Low Flow Bypass Out (kg/yr),0,0
TP High Flow Bypass Out (kg/yr),0,0
TP Orifice / Filter Out (kg/yr),1.74253,1.36153
TP Weir Out (kg/yr),0,0
TP Transfer Function Out (kg/yr),0,0
TP Reuse Supplied (kg/yr),0,0
TP Reuse Requested (kg/yr),0,0
TP % Reuse Demand Met,0,0
TP % Load Reduction,38.9065,51.2825

TN Flow In (kg/yr),20.795,21.0296
TN ET Loss (kg/yr),0,0
TN Infiltration Loss (kg/yr),0,0
TN Low Flow Bypass Out (kg/yr),0,0
TN High Flow Bypass Out (kg/yr),0,0
TN Orifice / Filter Out (kg/yr),18.3386,15.8919
TN Weir Out (kg/yr),0,0
TN Transfer Function Out (kg/yr),0,0
TN Reuse Supplied (kg/yr),0,0
TN Reuse Requested (kg/yr),0,0
TN % Reuse Demand Met,0,0
TN % Load Reduction,11.8126,24.431
GP Flow In (kg/yr),145.13,145.13
GP ET Loss (kg/yr),0,0
GP Infiltration Loss (kg/yr),0,0
GP Low Flow Bypass Out (kg/yr),0,0
GP High Flow Bypass Out (kg/yr),0,0
GP Orifice / Filter Out (kg/yr),0,0
GP Weir Out (kg/yr),0,0
GP Transfer Function Out (kg/yr),0,0
GP Reuse Supplied (kg/yr),0,0
GP Reuse Requested (kg/yr),0,0
GP % Reuse Demand Met,0,0
GP % Load Reduction,100,100
PET Scaling Factor, ,

No Generic treatment nodes

Other nodes
Location,Pre-Development Node,Post-Development Node
ID,4,8
Node Type,PreDevelopmentNode,PostDevelopmentNode
IN - Mean Annual Flow (ML/yr),10.1,10.5
IN - TSS Mean Annual Load (kg/yr),774,147
IN - TP Mean Annual Load (kg/yr),1.74,1.36
IN - TN Mean Annual Load (kg/yr),18.3,15.9
IN - Gross Pollutant Mean Annual Load (kg/yr),0.00,0.00
OUT - Mean Annual Flow (ML/yr),10.1,10.5
OUT - TSS Mean Annual Load (kg/yr),774,147
OUT - TP Mean Annual Load (kg/yr),1.74,1.36
OUT - TN Mean Annual Load (kg/yr),18.3,15.9
OUT - Gross Pollutant Mean Annual Load (kg/yr),0.00,0.00
% Load Reduction,3.51,4.00E-3
TSS % Load Reduction,55.6,92.0
TN % Load Reduction,11.8,24.4
TP % Load Reduction,38.9,51.3
GP % Load Reduction,100,100

Links

Location,Drainage Link,Drainage Link,Drainage Link,Drainage Link,Drainage Link,Drainage Link
Source node ID,1,2,3,5,6,7
Target node ID,3,3,4,7,7,8
Muskingum-Cunge Routing,Not Routed,Not Routed,Not Routed,Not Routed,Not Routed,Not Routed
Muskingum K, , , , , ,
Muskingum theta, , , , , ,
IN - Mean Annual Flow (ML/yr),3.54,6.93,10.1,3.54,6.93,10.5
IN - TSS Mean Annual Load (kg/yr),625,1.12E3,774,720,1.12E3,147
IN - TP Mean Annual Load (kg/yr),1.05,1.80,1.74,0.991,1.80,1.36
IN - TN Mean Annual Load (kg/yr),7.24,13.6,18.3,7.47,13.6,15.9
IN - Gross Pollutant Mean Annual Load (kg/yr),77.5,67.6,0.00,77.5,67.6,0.00
OUT - Mean Annual Flow (ML/yr),3.54,6.93,10.1,3.54,6.93,10.5
OUT - TSS Mean Annual Load (kg/yr),625,1.12E3,774,720,1.12E3,147
OUT - TP Mean Annual Load (kg/yr),1.05,1.80,1.74,0.991,1.80,1.36
OUT - TN Mean Annual Load (kg/yr),7.24,13.6,18.3,7.47,13.6,15.9
OUT - Gross Pollutant Mean Annual Load (kg/yr),77.5,67.6,0.00,77.5,67.6,0.00

Catchment Details
Catchment Name,5361 - Elkhorn Grove Basin
Timestep,Day
Start Date,1/01/1972
End Date,31/12/1975
Rainfall Station, Coastal_MUSIC
ET Station,Coastal_MUSIC
Mean Annual Rainfall (mm), 1752
Mean Annual ET (mm), 1484