GEORGE MUNICIPALITY

CONCEPT & VIABILITY REPORT

FOR

PROJECT NO. 8 (WORK PACKAGE 7): IMPLEMENTATION OF STORMWATER MASTER PLAN PROJECTS: UPGRADING OF STREET AND STORMWATER: ROSEMOOR: PHASE 1 AND 2

MARCH 2025

REVISION 2

Draft

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REPORT DETAILS:

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PROJECT 24052: CONCEPT AND VIABILITY REPORT							
REV	**DESCRIPTION**	**ORIG**	**REVIEW**	**LYNERS APPROVAL**	**DATE**	**EMPLOYER APPROVAL**	**DATE**
0	Concept & Viability Report	A Louw	C Davids	APPROVAL	DATE	APPROVAL	DATE
1	Concept & Viability Report	A Louw	C Davids	APPROVAL	DATE	APPROVAL	DATE
2	Concept & Viability Report	A Louw	C Davids	APPROVAL	DATE	APPROVAL	DATE

1. INTRODUCTION

1.1 Appointment

Neil Lyners & Associates (Lyners) was appointed in April 2024 by George Municipality to execute and manage the process and procedures for the upgrading of the Rosemore Storm Water Network in line with the Storm Water Masterplan completed for the area (by Nadeson Consulting Services 2019) as part of the approved capital budget. This report includes our understanding of the scope of services of the project, outlines the methodology to be followed, preliminary design proposals, confirms the project team members, and provides an estimated programme, cash flow and provisional fees based on tendered rates

1.2 Locality

Rosemore is a suburb in George almost in the centre of town. Rosemore is situated nearby the suburbs of Conville and Levallia and is nestled between the Meul River in the south and west and a tributary stream of the Meul River to the East. Refer to figure 1 below:

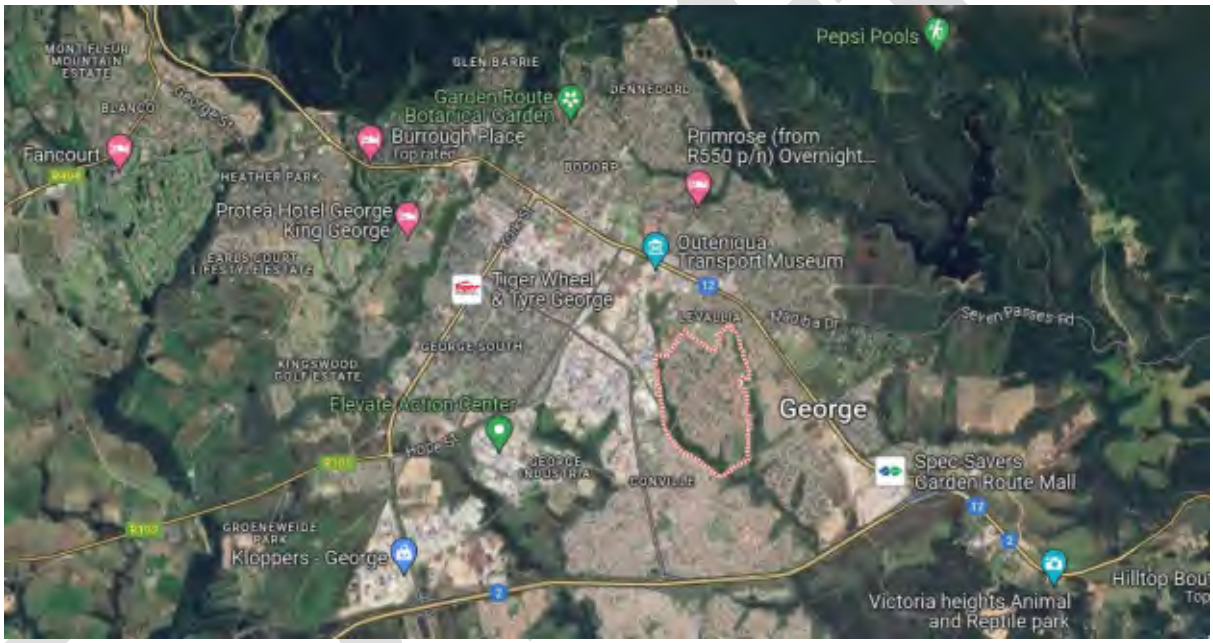


Figure 1: Locality Plan of Rosemore Suburb

1.3 Background

George Municipality identified the need to upgrade the stormwater infrastructure and associated streets in the Municipality after severe flooding in numerous areas following heavy rainfall. A Stormwater Masterplan was developed by Nadeson Consulting Services (Pty) Ltd in 2020 to analyse the catchments, identify problematic areas and proposed upgrades to the stormwater system (both low and high priority).

This project forms a part of the overall storm water management plan specifically focused on the area of Rosemore.

1.4 Scope of Work

Given the background above Lyners was appointed for the scope of services including the standard consulting engineering services from Inception Stage (Stage 1) to Close-out Stage (Stage 6) as per ECSA Guideline Scope of Services (26 March 2021) for the following work based on the Storm Water Masterplan for Levallia, Rosemoor, Protea Park, Urbansville, George East, Commercial East, Molenrivierrif & Convent Gardens (dated April 202) prepared by Nadeson Consulting Services (Pty) Ltd for the George Municipality:

Rosemore Storm Water Upgrades Phase 1

- Miller Street: Upgrade from Ø 450mm to Ø 600mm diameter – Approx 20m
- Parson Street: Upgrade from Ø 450mm to Ø 600mm diameter – Approx 360m
- Niewoudt Street: Upgrade from Ø 450mm to Ø 600mm diameter – Approx 195m
- Niewoudt Outlet: Upgrade from Ø 600mm to Ø 750mm diameter – Approx 170m
- Truter Street: Upgrade from Ø 450mm to Ø 600mm diameter – Approx 125m

Rosemore Storm Water Upgrades Phase 2

- Attakwas Street: Upgrade from Ø450mm to Ø600mm diameter – Approx 410m
- Aleman and Beer Street: Upgrade from Ø 450mm to Ø600mm diameter – Approx 275m
- Hibiscus Street: Upgrade from Ø450mm to Ø600mm diameter -Approx 70m
- St Mary Street: Upgrade from Ø450mm to Ø600mm diameter – Approx 65m
- Miller Street Upgrade from Ø150mm to Ø450mm diameter -Approx 20m
- Harmony Street Upgrade from Ø350mm to Ø 450mm diameter – Approx 60m



Figure 2 : Sections of Storm Water Upgrades with Phase 1 shown in Orange and Phase 2 in Green

Additional Services:

The following additional services are anticipated as defined in the Guideline Scope of Services, requiring the appointment of the following service providers:

- Construction monitoring
- Environmental and Water Use Licence Application services
- Geotechnical services
- Topographical/Land Surveyor

1.5 Suitability of Previously completed Storm Water Master planning

As part of Lyners' appointment, we were requested to review the storm water masterplan completed by Nadeson discussed above. This included review of the hydrological model and discretised storm water model obtained from Nadeson.

The review of the models included two components. Firstly, a review of the rainfall data and storm data used and then a review of the discretised model used.

The client also specifically requested that following the review the discretised model be used to make sure that pipelines be designed to accommodate the 5-year flood. In the Nadeson report the 2-year flood was used to determine which pipes require upgrading.

1.5.1 Hydrological Characteristics used in previous Storm Water Masterplan

The Nadeson Report used the following rainfall data in their master planning.

Mean Annual Precipitation used	:	911mm
2 Year Return Period (24h rainfall)	:	70mm
50 Year Return Period (24h rainfall)	:	229.00mm

The model also utilised the SCS Type 2 rainfall distribution as shown in the figure below

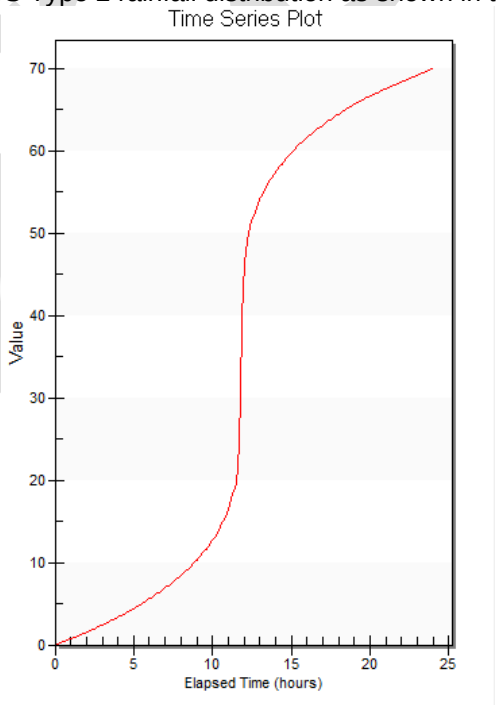


Figure 3 : Type 2 SCS 24-hr Storm Distribution for 2 year return period from Nadeson Report

The Nadeson report also had a discretised storm water model with small catchments draining to pipes with CN values estimated between 30 for sandy conditions and 98 for roads. This model was reviewed and found acceptable.

1.5.2 Suitability of Hydrological Data and Model used

1.5.2.1 Rainfall Data used

The newly published Water Research Commission report TT921/23 : A Best Practice Guideline For Design Flood Estimation In Municipal Areas In South Africa (WRC TT 921/23 report) suggests that that the design rainfall be estimated using the Regional Linear Moment Algorithm and Scale Invariance (RLM&SI) method developed by Smithers and Schulze (2003) This data is available from design rainfall software published by the University of Kwazulu Natal for 1x1 minute latitude and longitude blocks.

Furthermore the WRC TT921/23 report also suggests that the data from the RLM&SI method should be increased by 15% to allow for climate change.

Taking this into account the following rainfall data for Rosemore located at 38° 58' Latitude and 22° 28' Longitude was determined and is shown in the table below

Table 1: Cumulative Rainfall for various Return Periods and Timeframes (RLM&SI Method including 15% Climate Change factor)

Timeframe	Cumulative Rainfall in mm per Return Period						
(m/h/d)	2	5	10	20	50	100	200
5 m	5.29	7.82	9.89	12.075	15.41	18.285	21.62
10 m	7.935	11.73	14.835	18.055	23.115	27.485	32.43
15 m	10.12	14.95	18.745	23	29.325	34.845	41.17
30 m	14.605	21.505	27.025	33.12	42.32	50.255	59.34
45 m	18.055	26.68	33.58	41.055	52.44	62.33	73.6
1 h	21.045	31.165	39.1	47.84	61.065	72.565	85.675
1.5 h	26.105	38.525	48.415	59.225	75.67	89.93	106.26
2 h	30.36	44.85	56.35	69	88.09	104.765	123.74
4 h	41.515	61.295	76.935	94.185	120.29	143.06	168.935
6 h	49.795	73.6	92.345	113.045	144.325	171.695	202.63
8 h	56.58	83.72	104.995	128.57	164.22	195.27	230.575
10 h	62.56	92.575	116.15	142.14	181.47	215.97	254.955
12 h	67.965	100.395	126.04	154.33	196.995	234.37	276.69
16 h	77.28	114.31	143.405	175.605	224.25	266.685	314.87
20 h	85.445	126.385	158.585	194.12	247.825	294.745	347.99
24 h	92.805	137.08	172.04	210.68	268.985	319.93	377.775

In comparing this data with the Nadeson Report we see that the 2-year and 5-year return period rainfall used did not seem to include a climate change factor and are also slightly lower than that determined by the RLM&SI method.

1.5.2.2 Storm Durations and Hyetographs

The Nadeson report utilized the Type 2 SCS storm distribution available within the Storm and Sanitary Analysis software of the Autodesk Civil 3D package. This distribution is actually more suited to American rainfall areas and a distribution suited to South African conditions was developed by Smithers and Smithers and Schulze in 1987.

A comparison is shown in the figure below:

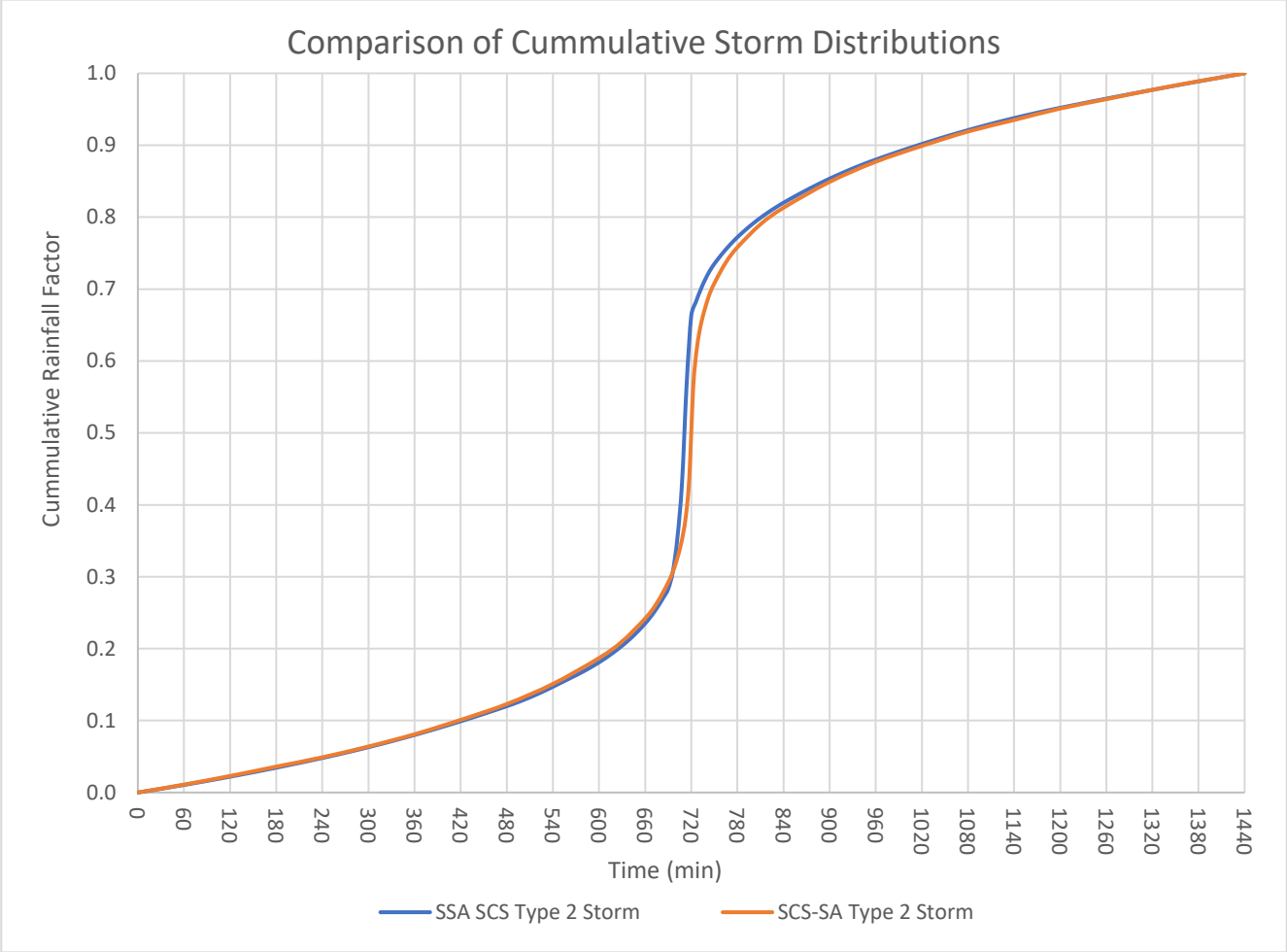


Figure 4 : Comparison of Type 2 SCS vs Type 2 SCS-SA 24-hr Storm Distributions

The SCS Type 2 (American) distribution is slightly more conservative than the SCS-SA Type 2 (South African) distribution with the rainfall intensity determined by the slope of the graph above being higher at the 720 minute peak as is shown in the Hyetographs shown below:

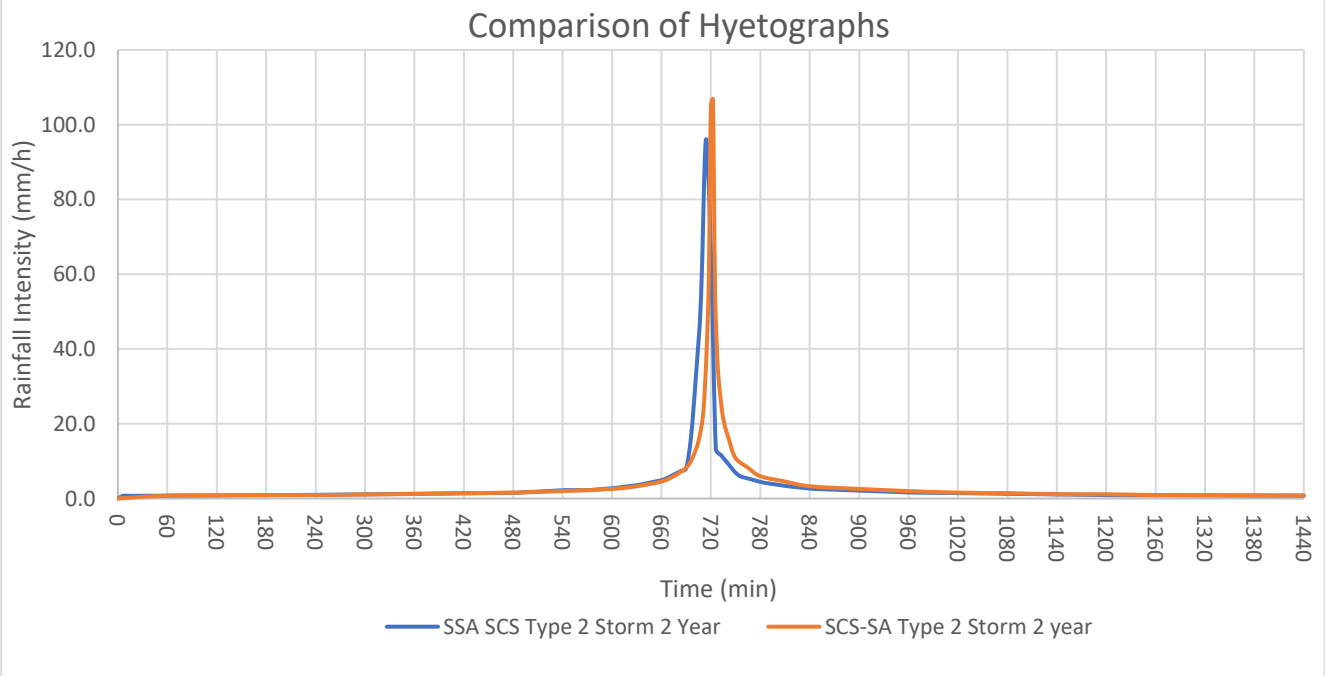


Figure 5 : Comparison of Type 2 SCS vs Type 2 SCS-SA 2-year Hyetographs

This shows that the intensities used in the Nadeson report are slightly high. However, it must also be noted that the WRC TT921/23 report states that if discretised models are used to determine storm water peaks the above rainfall distributions provide very high peaks.

This is likely due to the discretised models containing numerous small catchments each having a short time of concentration. The software models the rainfall over all the catchments as being homogeneous which implies that the rainfall intensity for a particular period of time is applied to all catchments simultaneously. This results in artificially high peaks from the model when using the above-mentioned rainfall distributions. With small catchments the time of concentrations could be as low as 10 minutes.

The WRC TT921/23 report rather suggests that hyetographs be extracted directly from the continuous rainfall record (the RLM&SI method data) or stochastically derived from the daily rainfall data. In comparing the rainfall intensity derived from the 10minute 2-year return rainfall data contained in Table 1 above it can be seen that the intensity is approximately 47.610 mm/h as apposed to the 106.650 mm/h intensity from the SCS Type 2 storm.

Therefor the rainfall intensities from the RLM&SI method data including the climate change factor should rather be used to determine a hyetograph. Comparison of this data compared to the SCS Type 2 and SCS-SA type 2 data is shown in the figure below:

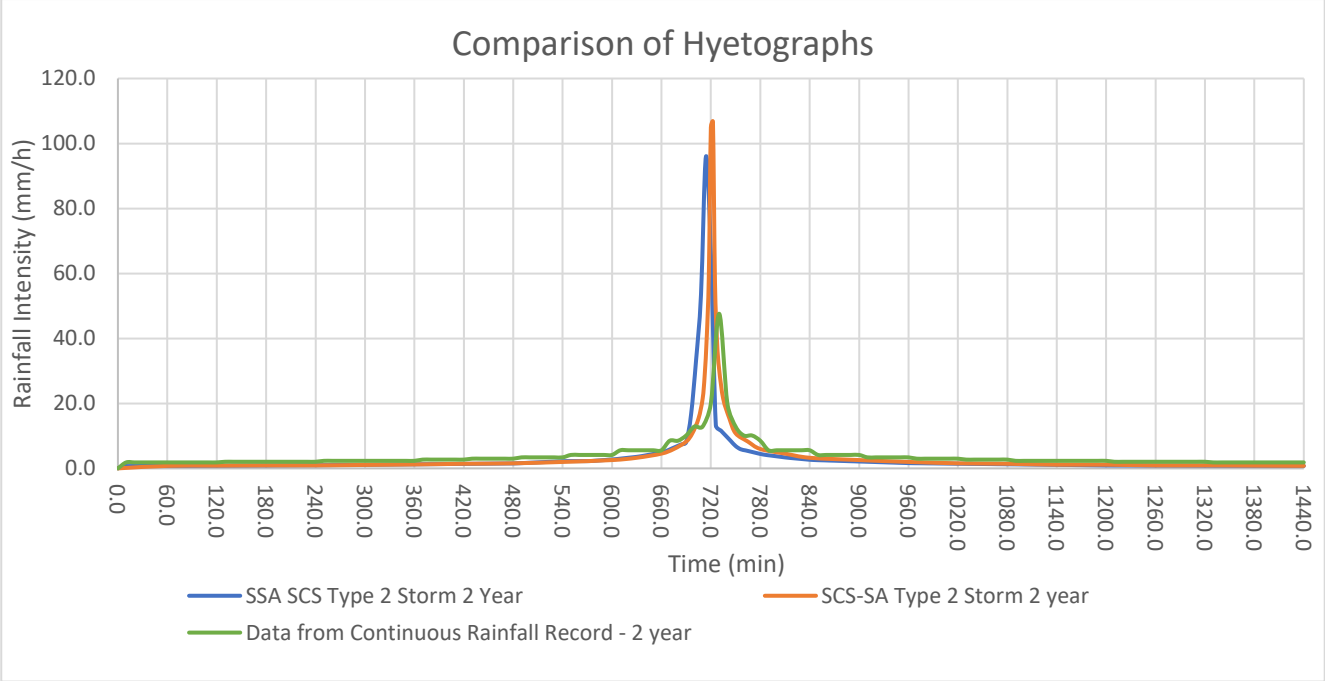


Figure 6 : Comparison of 2-year Continuous Rainfall Record data hyetograph with Type 2 SCS vs Type 2 SCS-SA

Therefor although the rainfall data used in the Nadeson Report did not include for climate change, the hyetographs employed in the discretised model can be deemed very conservative. For the determination of the 5-year return period flows as requested by the client, the following hyetograph was proposed.

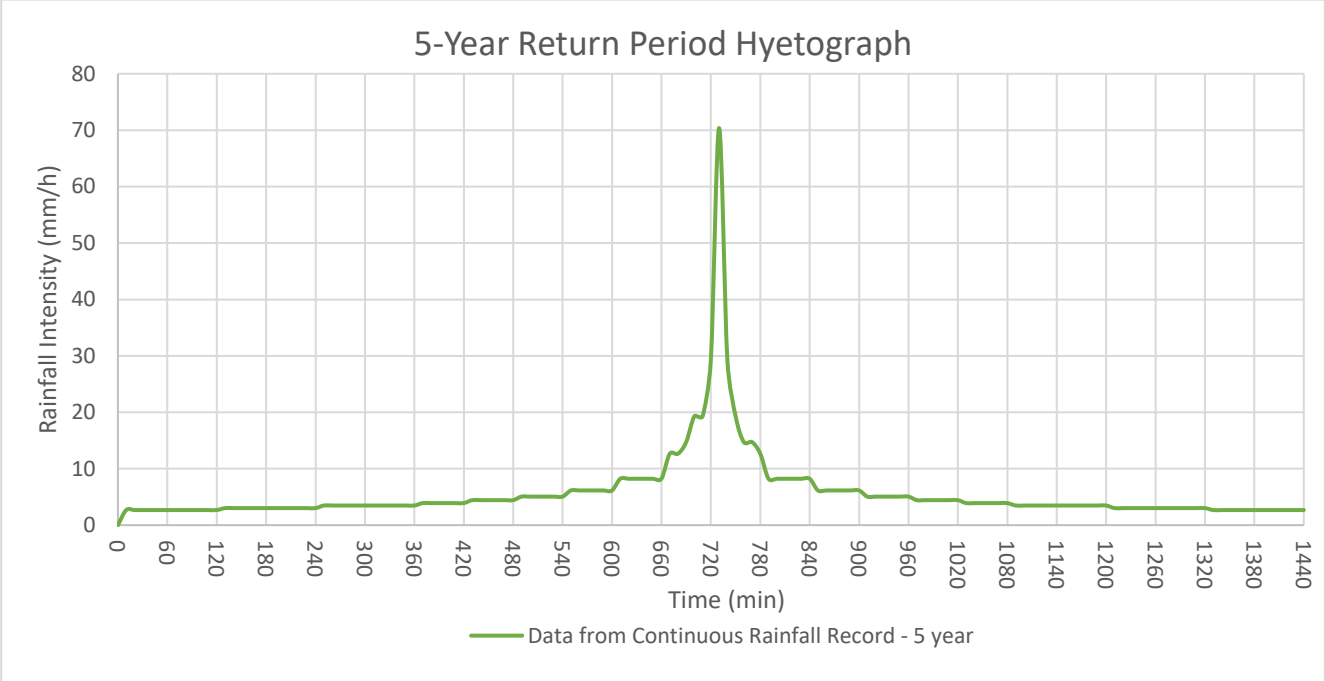


Figure 7 : Proposed 5-year return period hyetograph

Input of this hyetograph and the subsequent analysis in the Storm and Sanity Analysis model yielded the following upgrades required.

1.5.3 Proposed Storm Water Upgrades

Rosemore Storm Water Upgrades Phase 1

- Beer Street: Upgrade from Ø 450mm to 600mm,675mm and 750mm diameter – Approx 275m, 75m, and 235m respectively
- Grens Street: Upgrade from Ø 450mm and 525mm to Ø 750mm and 900mm diameter respectively – Approx 80m and 15m respectively
- O'Connel Street: Upgrade from Ø 450mm to Ø 525mm and 1050mm diameter – Approx 90m and 65m respectively.

Rosemore Storm Water Upgrades Phase 2

- Attakwas Street: Upgrade from Ø 450mm to Ø 525mm diameter – Approx 305m
- Cornish Street: Upgrade from Ø 450mm to Ø525mm, Ø675mm diameter – Approx 108m and 80m respectively
- Langmark Street and Miller Street: Upgrade from Ø450mm to Ø525mm, Ø600mm diameter -Approx 50m and 290m respectively
- Parson Street: Upgrade from Ø450mm to Ø525mm, 600mm and 675mm diameter – Approx 115m, 70m and 155m respectively
- Fotheringham Street Upgrade from Ø450mm to Ø600mm and 750mm diameter -Approx 115m and 145m respectively
- Niewoud Street: Upgrade from Ø 450mm to Ø675mm, 825mm and 900mm diameter – Approx 155m, 75m and 65m respectively
- Truter Street Upgrade from Ø450mm to Ø 600mm diameter – Approx 120m

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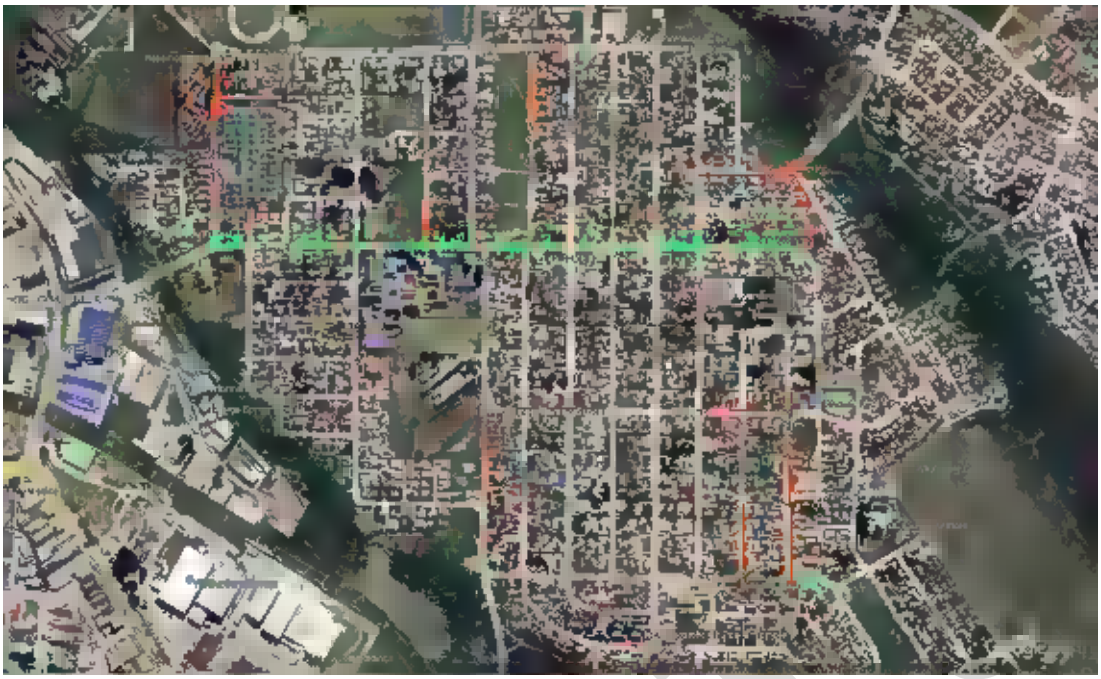


Figure 8 : Sections of Storm Water Upgrades with Phase 1shown in Green and Phase 2 in Red

All the proposed upgrades are indicated on drawings 24052-CG-005 in Annexure D

1.6 Site Description

The site is made up of the following land use types:

- Residential Zoned erven and Group Housing Erven
- Community Zoned erven – mostly Schools and Churches.
- Some Business Zoned erven
- Open Space

In terms of elevations, the site can be considered relatively flat with the highest elevation is approximately 225m MSL and the lowest elevation is in the order of 220m MSL.

The site generally drains in two directions to the Meul River in the west and south and the tributary to the east.

1.7 Objective

George Municipality's stated objectives with this project are to:

- Upgrade stormwater infrastructure in Rosemore to alleviate pressure on the existing aged stormwater infrastructure and to minimise the risk of localised flooding.
- Ensure improved management and conveyance of stormwater in the urban area, and to minimize possible flooding and damage to private properties, and displacement during high rainfall events.
- Address community development and economic development in the community through the transfer of skills by creating employment opportunities through the construction project.

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2. DESIGN STANDARDS AND PARAMETERS

2.1 Design Standards

The following documents form the basis of the technical parameters used in the design:

- SANS 1200: Code of Practice for the Design of Civil Engineering Services;
- The Neighbourhood Planning and Design Guide (2019);
- George Municipality Civil Engineering Services: Civil Engineering Standards & Requirements for Services (Updated January 2009), included in Annexure D (with amendments as discussed with the Client).

2.2 Design Considerations

The following design considerations should be addressed during the planning and execution of this project within the existing area:

2.2.1 Pipeline Layout and Depths

The existing storm water pipelines are positioned within or just outside the road reserves. The exact position of the storm water pipes mains will be determined in the detailed design stage once the engineering survey is complete however from initial site visits the storm water pipes seem to be located within sidewalks as indicated on the Standard Road cross section below:

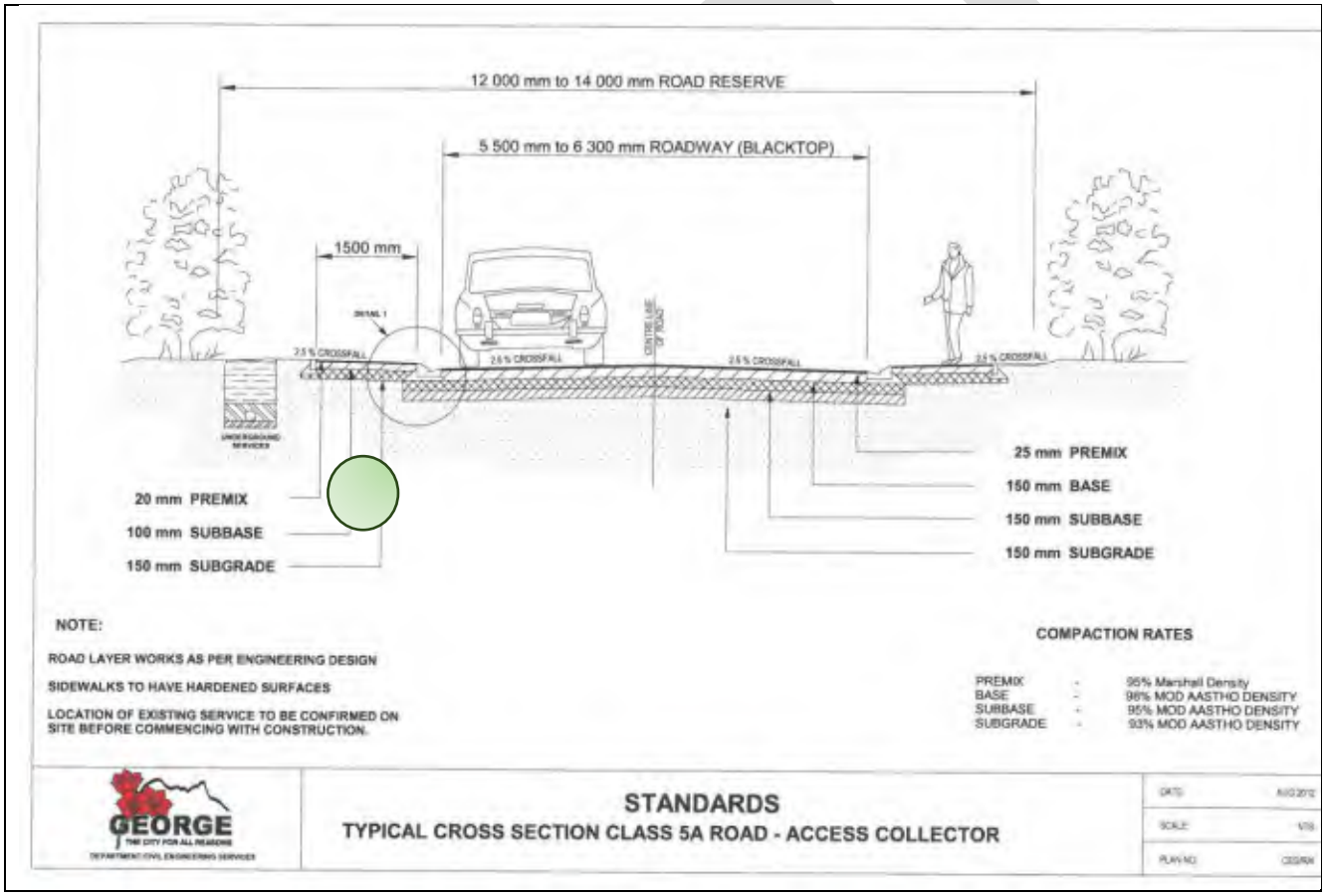


Figure 9 : Position of existing Storm Water pipes(green) in Road Cross Sections

The Storm Water Pipelines mains will be designed to the following depth:

- Minimum cover to main pipes: 800mm or 1000mm in roads.

2.2.2 Pipe Material

George Municipality's Civil Engineering Standards specify the following pipe materials and classes to be used:

- Reinforced Concrete Spigot and Socket pipes
  - 100D class for pipe diameters between 375 to 450mm
  - 50D class for pipe diameters between 600 to 900mm

The specification does state that loading class must be determined by loadings on the pipe and trench conditions. Discussions with the Client confirmed that 100D pipes as a minimum is required.

2.2.3 Network / Hydraulic Capacity

Nadeson Consulting Services was appointed by George Municipality to prepare a Storm Water Master Plan. The Storm Water Master Plan has indicated the need for the upgrades as discussed above.

The initial pipe sizes used in this report were obtained from the Storm Water Master Plan by Nadeson. The pipe sizes will be confirmed in the detailed design stage based on the flow velocities in the pipelines and invert levels, cover levels, etc. However, the Nadeson Report only checked for the 1:2 year recurrence period and the Client confirmed that the 1:5 year recurrence period should be used.

The George Municipality's Civil Engineering Standards specify the following in terms of Hydraulic Capacity of storm water pipelines:

- Minor system: 2 year recurrence interval for low cost residential and 5 year for medium to high cost residential, commercial, town centres and industrial, conveyed in underground pipe system. No overtopping of kerbs allowed. (In our case the 5 year period must be used).
- Major system: 50 year recurrence interval. The difference between the minor and major storm to be conveyed in the road prism with a depth not exceeding 150 mm within the road reserve width. The 100 year recurrence interval flood should be used to check the overall layout design.
- The minimum gradients for pipelines must ensure self-cleaning velocity of at least 0.9 m/s.
- The maximum allowable velocity shall be 3.5 m/s
- Overland flow route available for all trapped low points.

Of particular note is the stipulation that No open channels are allowed across intersections.

These considerations will be taken into account in the detailed design with the exception of the Minor System having to be able to convey the 5-year return period flood.

2.2.4 Safety and Environmental Considerations

The Occupational Health and Safety Act, 1993 (Act no. 85 of 1993), 2014 Construction Regulations and National Environmental Management Act, Act 107 of 1998 (NEMA), will be considered and taken into consideration during the design development for the benefit of the construction force, community, and the environment.

Safety measures should be implemented to protect workers and the surrounding environment during the pipe installation process. Additionally, adherence to environmental regulations should be ensured.

2.2.5 Quality Control and Testing

Quality control measures, including testing and inspection of the new storm water pipelines, will be implemented to verify the integrity and performance of the installed pipe, catchpits and manholes during construction.

The necessary quality control procedures and plans, to ensure adequate implementation and successful completion of the project, will be developed and incorporated during the design and implementation stage.

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2.2.6 Access to Properties

Access to properties should be interrupted as little as possible. Sufficient notification to the affected community must be provided when access will be interrupted. The specifications for the installation of the storm water pipelines should limit the duration that access to properties can be impeded to as short as possible or allow the contractor to make arrangements (in writing) with the owners for alternative access or longer periods of no access.

2.2.7 Manholes, Catchpits and Headwalls

George Municipality's Civil Engineering Standards specify the following for details:

- Manholes to be constructed in accordance with the pipe diameter ranges as indicated on drawings no's CES/SW/2 AND CES/SW/3.
- Manhole covers and frames to be Cl type 2A (modified CCC) in accordance with SABS 558 in roadways of low risk areas and in high risk areas type 2A Cl frame with steel reinforced concrete lid cast in galvanised steel cone, or Polymer Concrete.
- Catch pits to be side inlet kerb type with precast concrete cover and frame as per drawing no CES/SW/4 OR CES/SW/5. In-situ cover slabs shall be according to drawing CES/SW/8
- Catch pits constructed in concrete channels to be of same profile as drawing no CES/SW/6
- Headwalls to be constructed as per drawing CES/SW/7.
- The Client has an energy dissipation structure detail that must be used at outlets

2.2.7.1 Road Crossing and Reinstatement

Road crossings for the storm water pipes will be constructed by means of conventional trench excavation. Road crossings will be reinstated with at least the following layer works:

- 25 mm Continuously Graded Asphalt
- 150 mm G2 base compacted to 98% MOD AASHTO.
- 150 mm G5 subbase compacted to 95% MOD AASHTO
- 150 mm layers from top of bedding to underside of subbase consisting of G7 material compacted to 95% MOD AASHTO or 100% if sand.

Where the storm water pipes will be constructed in paved or covered sidewalks the layer works will conform to at least the following:

- 20 mm Continuously Graded Asphalt or 60mm Clay / Concrete pavers (colour to be approved)
- 100 mm G5 subbase compacted to 98% MOD AASHTO
- 150 mm layers from top of bedding to underside of subbase consisting of G7 material compacted to 95% MOD AASHTO or 100% if sand.

Directional drilling and / or moling could be considered for the installation of pipes beneath the road surface at mayor access roads. This is proposed to reduce damage to the existing asphalt road surfacing and maintain access to area to minimize traffic disruption but will be dependent on the prevailing ground conditions and cost factors.

This option will be investigated further in the detailed design phase once the geotechnical investigation has been completed.

2.2.8 Procurement Strategy

The construction contract will be prepared in accordance with the relevant legislation and George Municipality's supply chain management policy and will consist of the following:

- The format of the Tender / Contract will be prepared in accordance with George Municipality's standard tender document and checked for compliance with SANS10845.
- The contract will be advertised on the online tender bulletins with the relevant CE CIDB grading depending on the estimated value of construction.
- Preference scoring will be applied in accordance with the prevailing Preferential Procurement Policy at the time of tender.

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- Functionality will be used as a prequalifying criterion.
- The form of contract will be the SAICE General Conditions of Contract for Construction Works, Third Edition, 2015.
- A re-measurable (Bill of Quantities) pricing strategy will be used.
- SANS1200 Construction Standards as amended will apply.

As an alternative the Client also has several rates tender contracts which could also be used if suitable.

2.2.9 Project specific challenges

The following project specific challenges exist in terms of construction in general:

- Location of existing storm water mains and connections.
- Existing infrastructure that must remain operational during construction such as water mains, cables, roads, etc.
- Avoiding damage to existing services.
- Maintaining public safety.
- Maintaining vehicular and pedestrian access.
- Environmental sensitive areas.
- Crossing/Entering of rivers/streams for Headwalls.

3. DESIGN DATA

3.1 Engineering Survey

A detailed topographical site survey is underway to determine the location of existing services.

These details are required for the detail design phase. Once the survey data is available the report will be updated accordingly. Refer to section 6.1 for more detail.

3.2 As-built Data

Some as-built data have been retrieved from the George Municipality GIS system in terms of existing services. This will be checked against the topographical survey discussed above. Areas of concern include the alignment of existing pipes at the Nieuwoud Outlet as well as the Hibuscus Street and St Mary Street storm water pipes seeming to discharge onto the St Mary Primary School property. These details are required for the detail design phase and will be investigated further.

3.3 Geotechnical Investigation

A geotechnical investigation is required to identify the:

- Prevailing ground conditions.
- Presence of ground water.
- Presence of hard rock.
- Existing layer works of the existing roads.
- Founding Conditions for the structures

The appointment of a Geotechnical Engineer will be required to investigate the site and will be completed once the pipeline alignments have been finalised.

4. CONCEPT DESIGN OPTIONS

Three concept design concepts were considered for the storm water pipelines

The three design options / concepts are discussed in sections 4.1, 4.2 and 4.3 in further detail. The purpose of this discussion is to enable the Municipality to make an informed decision on the most suitable option for the future of the Rosemore Storm Water System.

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4.1 Replacing the existing Storm Water System in place

This option entails removal of the existing pipes in the alignment in which they currently reside and replacement with new pipes at slightly deeper invert level when upsizing. This option is likely the best option for most of the pipelines identified above but it does come with some challenges.

The presence of existing services in close proximity to the existing sewer pipes could make construction slightly challenging. The existing pipe will need to be found, excavated and removed (whether by hand or by machine), disposed of off site and the new pipe installed. The presence of junction boxes or other connections underground may not be known and it could be prudent to have the existing storm water pipelines CCTV inspected prior to construction.

The replacement of the existing pipe does have the benefit of not having an undersized asset still in the ground that will remain unused in the future and thus this is the preferred option where practical.

4.2 Construction of a new storm water pipe on an alignment that is not the same as the existing pipes.

In some areas the existing pipelines have been encroached upon by structures and removal of the existing pipelines will be difficult to impossible. One such area is the Nieuwoud Outlet shown in the figure below. For this pipeline a possible reroute as shown in blue must be considered depending on ground levels determined in the topographical survey.



Figure 10 : Possible rerouting of Nieuwoud Outlet Pipe

Another such area is in Woltemade Street shown in Figure 8 below. For this pipeline a possible reroute as shown in blue was considered. Unfortunately due to ground levels determined by the topographical survey only Langmark Street can drain to the north towards Miller Street and a reroute in Woltemade Street is possible. Furthermore rerouting of storm water in Beer Street was considered under work currently undertaken by iX Engineers.



Figure 11 : Possible rerouting of Woltemade Outlet Pipe

4.3 Possible extensions to the network not indicated in the initial scope of work

The area of concern around Hibiscus Road and St Mary Street discussed above may necessitate redirecting the storm water infrastructure in alternative routes not indicated by the Storm Water Masterplan.

The figure below shows both Hibiscus Road and St Mary's street seemingly draining into St Mary's Primary School. This is obviously not a tenable situation and depending on the findings of the Topographical Survey additional pipelines to convey the storm water to a suitable downstream location will be required (possibly as shown in red in the figure).

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Figure 12 : Possible additional pipes not included in original scope

It is very likely that the final detailed design will include a combination of all three of the above concepts in order to fulfil on the objectives provided for the project. This can only be confirmed once the Topographical Survey is completed and further investigations are completed on site.

With further investigation some existing storm water midblocks could be rerouted to reduce strain within the existing network and divert the network away from the properties and into the roads. It was deemed possible to reroute the following road storm water network to reduce any strain on the existing network and minimizing the number of upgrades required.

- Langmark Street can be rerouted toward Miller street and tie into its existing network as indicated on Figure 13 below.
- George Moore Street can be rerouted towards O'Connel Street and tie into its existing stormwater network as indicated on Figure 14 below.
- Francis Street can be rerouted towards O'Connel Street and tie into the existing storm water network the two existing networks in question can also be combined into one outlet structure as indicated on Figure 15.
- Nuwe Street can be rerouted towards Kondor Street and tie into the existing storm water network as indicated on Figure 16

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Figure 13 : Possible additional pipes in Langmark Street not included in original scope



Figure 14 : Possible additional pipes in George Moore Street not included in original scope



Figure 15 : Possible additional pipes in Francis Street not included in original scope



Figure 16 : Possible additional pipes in Nuwe Street not included in original scope

It is important to note that due to the natural ground levels of the surrounding area for each of the reroutes in question, it may necessitate pipes to be constructed deep to be able to tie into the existing stormwater network downstream. All of these reroutes are recommended as it reduces the number of pipes running under existing homes and ensures future maintenance on the network takes place within the road.

5. EXISTING SERVICES & WAYLEAVES

Various services are located in the vicinity of the proposed works including municipal services and external services such as fibre optic networks. Lyners have obtained all the existing services details of the municipal services (Civil Engineering Services Directorate and Electrotechnical Directorate), and it will be required to apply for wayleaves for the following services:

1. Telkom/Openserve;
2. Neotel/Liquid Telecoms;
3. Frogfoot;
4. Octotel;
5. Eskom;
6. Fibre Contractors not listed above, such as MTN, Vodacom etc;

All services will need to be carefully opened prior to any excavations to confirm locations. Crossing of various services as well as roads is anticipated along the pipeline routes.

At this stage of the design, it is not anticipated that any other services will need to be relocated in order to accommodate the proposed works but this must be confirmed during the detailed design phase.

6. SUB-CONSULTANTS AND SPECIALIST SERVICE PROVIDERS

6.1 Engineering Survey

An engineering survey was required and completed to identify all the existing features and services along the proposed pipeline routes in order to position the storm water pipelines without impacting existing services.

The engineering surveyor provided the survey information electronically, complete with all features, contours, existing services, and cadastral information indicating the erf numbers and land use.

A ground penetrating radar survey of the area could be considered to identify underground services that are not visible from the surface. This information could be accurately coordinated on the engineering survey. As the storm water pipelines are in an existing built-up area, it is expected that there will be numerous underground services. Completing a ground penetrating radar survey during the detail design stages could substantially reduce the risk of damages to existing services and potential design changes during construction.

6.2 Health and Safety Agent

A Health and Safety Agent is required to:

- Attend design meetings.
- Prepare baseline risk assessments and site-specific health and safety specifications.
- Evaluate and approve successful Service Providers / Contractors Health and Safety Plans, which will be prepared in response to the risk assessments and specifications.
- Prepare and apply for a Construction Work Permit if required.
- Attend monthly site meetings and perform monthly audits (minimum two site visits per month).
- Prepare and submit monthly Health and Safety audit reports.
- Manage the Contractor's compliance with his Health and Safety Plan, the Health and Safety Specifications and the OHS legislation.
- Prepare and submit a Health and Safety close-out report on completion.
- Accept the duties and responsibilities of the Client as set out in the 2014 Construction Regulations.

A Health and Safety Agent must be appointed by George Municipality should the Client during the detailed design phase.

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6.3 Environmental

An Environmental Assessment Practitioner was appointed to determine which NEMA activities are triggered and if an Environmental Impact- or Basic Assessment Application process is to be followed.

Any protected trees within the road reserve that will be disturbed will require permits from the Department of Environment, Forestry and Fisheries.

Work in or near the rivers will require Water use Licencing.

Depending on the method of installation recommended the construction will have a limited to extensive disruptive influence on the residents of the area.

6.3.1 National Heritage Act

Considering the pipe network in total is longer than 300 (three hundred) meters an application to proceed with the implementation of the project may need to be submitted to the responsible heritage resources authority.

This will form part of the environmental process currently underway.

6.3.2 Sensitive Vegetation

Areas of dense vegetation may occur where pipelines are to discharge at the Meul River and Tributary.

Considering the locations of the headwalls a botanical specialist needed to assess the areas as part of the environmental process currently underway.

6.3.3 Water Use Licences for Steam Crossings

Applying for water use licences for the headwalls was identified and is already in process.

6.4 Geotechnical Investigation

A geotechnical investigation wasrequired to assist with the following matters:

- Prevailing ground conditions.
- Presence of ground water.
- Presence of hard rock.
- Existing layer works of the existing roads.
- Founding Conditions for the structures

The investigation was completed and is included in Annexure E. The findings of the geotechnical report are repeated below:

The underlying geology of the area consists of Maalgaten and related Granites of the Kaaimans series and soil derived from the weathering of these rocks. This formation is typically deeply weathered in the area, forming fine gravels to silt/silty clays soil profiles.

The test pits conducted indicate that the soil profiles are dominated by silty sands, Ferricrete, silt/silty clays and find gravels, this correlates with the local geology of the area.

The tests conducted on the soils confirmed the visual assessment of the clayey nature of the soils above the fine gravels with isolated Ferricrete lenses.

Within the trial pits excavated in the insitu materials, the fine gravels and clean silty sands could not be classified according to TRH14, indicating that the material is less that a G10 quality, with only the silty sand that has some well developed Ferricrete in, providing a TRH14 classification of G7 quality.

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The silt/silty clay samples range between SC (clayey sand) and CL (lean clay) classification with low potential expansiveness.

None of the silty sands could meet the requirements of SABS 1200LB for bedding sands.

Within the trial pits excavated in the roadways, the coarse and medium gravels predominantly classified as a G4 Natural gravel with some being classified as G5 according to TRH14. The fine gravels classify between a TRH14 G7 and material that could not be classified.

6.5 CCTV Inspections

It may be advantageous to appoint a service provided to perform CCTV inspections of the existing storm water pipelines to be replaced to determine if there are any underground junction boxes or connections to the existing storm water pipes that will not be picked up by the Topographical Surveyor. Alternatively, the GIS data of the existing storm water system available on the George Municipality GIS portal indicates that some pipes have been CCTV inspected. If the videos of these inspections can be shared with the team it would provide valuable information.

7. COST ESTIMATE

A summary of the estimated construction cost and professional services per phase is indicated in Table 2 below:

Table 2: Cost Estimate Breakdown

COST ESTIMATE : ROSEMOOR STORMWATER UPGRADES			
DESCRIPTION	**COST PHASE 1**	**COST PHASE 2**	**COST TOTAL**
Preliminary and General	R 1 443 568	R 2 191 251	R 3 634 819
Stormwater Pipelines	R 5 774 272	R 8 765 004	R 14 539 276
Sub-Total	R 7 217 840	R 10 956 255	R 18 174 096
Contingencies 10%	R 721 784	R 1 095 626	R 1 817 410
Sub-Total	R 7 939 625	R 12 051 881	R 19 991 505
CPA (7.5% per year over 2 years for second phase)	R 595 472	R 1 875 574	R 2 471 046
SUB-TOTAL CONSTRUCTION COSTS (Excl VAT)	**R 8 535 096**	**R 13 927 455**	**R 22 462 551**
Professional Fees	R 973 063	R 1 493 602	R 2 466 665
Site Supervision (21 months)	R 162 000	R 252 000	R 414 000
Occupational Health & Safety Supervision (21 months)	R 90 000	R 140 000	R 230 000
Environmental Approvals (EIA etc)	R 360 000	R -	R 360 000
Environmental Control Officer (21 months)	R 135 000	R 210 000	R 345 000
Surveys	R 114 000	R -	R 114 000
Geotechnical Investigations	R 109 000	R -	R 109 000
SUB-TOTAL PROFESSIONAL FEES (Excl VAT)	**R 1 943 063**	**R 2 095 602**	**R 4 038 665**
TOTAL COMBINED PROJECT COST (Excl VAT)	**R 10 478 160**	**R 16 023 056**	**R 26 501 216**
VAT (15%)	R 1 571 724	R 2 403 458	R 3 975 182
TOTAL PROJECT COST (Incl VAT)	**R 12 049 884**	**R 18 426 515**	**R 30 476 399**

It must be stated however that some of the work identified in Phase 1 can be implemented through another project. Currently the Go George bus routes are being upgraded which includes Beer Street and O'Connel Street in which much of Phase 1 is located. It would be conceivable that the storm water infrastructure in these streets could be upgraded as part of the roads upgrades identified for the Go George bus routes. To this end the costs of the storm water infrastructure has been ringfenced below to provide an indication of their impact on the project

Table 3: Cost Estimate Breakdown split for Go George affected areas

COST ESTIMATE : ROSEMOOR STORMWATER UPGRADES				
DESCRIPTION	**COST** **WORKS TO BE COMPLETED UNDER GO GEORGE BUS ROUTE PROJECT**	**COST** **REMAINDER OF PHASE 1**	**COST** **PHASE 2**	**COST** **TOTAL**
Preliminary and General	R 1 266 475	R 177 093	R 2 191 251	R 3 634 819
Stormwater Pipelines	R 5 065 900	R 708 372	R 8 765 004	R 14 539 276
Sub-Total	R 6 332 376	R 885 465	R 10 956 255	R 18 174 096
Contingencies 10%	R 633 238	R 88 546	R 1 095 626	R 1 817 410
Sub-Total	R 6 965 613	R 974 011	R 12 051 881	R 19 991 505
CPA (7.5% per year over 2 years for second phase)	R 522 421	R 73 051	R 1 875 574	R 2 471 046
SUB-TOTAL CONSTRUCTION COSTS (Excl VAT)	**R 7 488 034**	**R 1 047 062**	**R 13 927 455**	**R 22 462 551**
Professional Fees	R 601 986	R 399 348	R 1 493 602	R 2 494 936
Site Supervision (21 months)	R 144 000	R 18 000	R 252 000	R 414 000
Occupational Health & Safety Supervision (21 months)	R 80 000	R 10 000	R 140 000	R 230 000
Environmental Approvals (EIA etc)	R -	R 360 000	R -	R 360 000
Environmental Control Officer (21 months)	R 120 000	R 15 000	R 210 000	R 345 000
Surveys	R -	R 114 000	R -	R 114 000
Geotechnical Investigations	R -	R 109 000	R -	R 109 000
SUB-TOTAL PROFESSIONAL FEES (Excl VAT)	**R 945 986**	**R 1 025 348**	**R 2 095 602**	**R 4 066 936**
TOTAL COMBINED PROJECT COST (Excl VAT)	**R 8 434 021**	**R 2 072 410**	**R 16 023 056**	**R 26 529 487**
VAT (15%)	R 1 265 103	R 310 861	R 2 403 458	R 3 979 423
TOTAL PROJECT COST (Incl VAT)	**R 9 699 124**	**R 2 383 271**	**R 18 426 515**	**R 30 508 910**

One could have the Go George project complete the infrastructure in Beer and O'Connel Streets and then combine the remainder of Phase on with phase 2 and implement them in one project possibly spanning two financial years.

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8. CONCLUSION

Lyners was appointed for the Upgrade of Storm Water Pipelines in Rosemore as required in terms of the George Municipal Storm Water Master plan.

The storm water masterplan requires the upsizing of pipelines ranging in diameter from 150mm to 450mm up to new pipes ranging in diameter between 525mm and 900mm.

Various pipelines were identified in Miller Street, Parson Street, Niewoudt Street (including the Niewoudt Outlet), Truter Street, Attakwa Street, Aleman and Beer Street, Hibiscus Street, St Mary Street, Miller Street and Harmony Street.

Possible re-routes of existing midblock storm water networks were identified in Langmark Street, George Moore Street, Francis Street and Nuwe Street.

The position of the storm water pipelines will likely be under sidewalks but in some cases rerouting of pipelines will be required. Once the topographical survey is completed the positions and the preferred routes will be finalised.

Some of the infrastructure can be installed by the Go George bus route upgrade project.

9. RECOMMENDATION

Topographical Surveys and Geotechnical Investigations of pipeline routes have been concluded. It is recommended that the Go George bus route upgrade programme install the storm water infrastructure in Beer and O'Connel Streets and that the remainder phase 1 and phase 2 be combined and be approved for detail design.

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ANNEXURE A

STORM WATER MASTER PLAN FROM NADESON

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PROJECT NO: E025

LEVALLIA, ROSEMOOR, PROTEA PARK, URBANSVILLE, GEORGE EAST, COMMERCIAL EAST, MOLENRIVIERRIF & CONVENT GARDENS

STORMWATER MASTER PLAN



DOCUMENT NO: E025/OD/010 REV OA

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APRIL 2020

Revision Summary

Project Name: Levallia, Rosemoor, Protea Park, Urbansville, George East, Commercial East, Molenrivierrif & Convent Gardens – Stormwater Master Plan

Contract No: E025

This document has gone through a line of checking procedure, which forms part of our Quality Management System.

……..
Signature of Project Leader

……..
Signature of Department Director

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1 EXECUTIVE SUMMARY

Nadeson Consulting Services were appointed by George Municipality to compile a Stormwater Masterplan which would report on investigations into the effectiveness of the stormwater infrastructure servicing Levallia, Rosemoor, Protea Park, Urbansville, George East, Commercial East, Molenrivierrif & Convent Gardens. Further to this stormwater infrastructure required in servicing erven identified in the Spatial Development Framework Plan was to be included in proposals presented.

In general the plan includes phased upgrades necessary to address stormwater issues related to future development, degraded infrastructure and the protection of property and human life.

Preliminary visual assessments conducted on 27th of February 2020, shown a drainage system with both operational and hydraulic deficiencies. Runoff from the various catchments are accommodated through both pipework, concrete channels, open vegetated channels and gabion channels. Damage to road surface and pavement layers caused by water ingress is evident in some localized areas.

In terms of the requirements of the Stormwater Management Plan, the system has been evaluated under both the minor storm conditions (2 year recurrence interval) and major storm conditions (50 year recurrence interval).

The typical geological soil profile of the site consists of a clayey fine textures soil of reddish colour. The soil is expected to have low infiltration rates with restricted permeability characteristics.

The following improvements to the drainage route are proposed:

- Upgrading of road drainage system with an underground pipe network.
- Creating overland flow routes where none are currently present.

The proposed improvements are indicated in the Figure 4 series in Annexure A.

An environmental consultant must be appointed to advise on the relevant environmental legislation prior to further consideration of improvements.

Proposals have been presented as phased packages prioritized according to the urgency of remedial action.

The estimated cost of all recommended upgrades is R 34 404 079 (including 20% P&G's, 15% Contingencies, 15% Fees and excluding VAT). A breakdown and prioritisation of the proposed improvements are included in Annexure C to assist the municipality in planning future upgrades.

2 INTRODUCTION

2.1 BACKGROUND

Nadeson Consulting Services were appointed by the George Municipality to implement stormwater master planning for the suburb of Levallia, Rosemoor, Protea Park, Urbansville, George East, Commercial East, Molenrivierrif & Convent Gardens. The plan includes elements to address the flooding issues that affect Levallia, Rosemoor, Protea Park, Urbansville, George East, Commercial East, Molenrivierrif & Convent Gardens during rainfall events. Further to this the masterplan will address future developments in the area as well as addressing specific concerns that were highlighted during the initial meeting with the Municipality.

The primary objective of the report is to create a stormwater plan that will alleviate the flooding within Levallia, Rosemoor, Protea Park, Urbansville, George East, Commercial East, Molenrivierrif & Convent Gardens and assess the infrastructure for both the minor and major rainfall events.

Once the impact from the rainfall events is known, Nadeson Consulting Services were to create proposals for the improvements to the stormwater conveyance systems throughout the study area. Further to this, cost estimates for the proposed improvements were to be budgeted along with priorities for rollout of these improvements.

Ultimately the report must provide a tool for stormwater management which provides a basis for directing investment and administrative decisions by the various departments within the municipality.

2.2 MASTER PLAN OBJECTIVES

The purpose of the stormwater master plan is to address stormwater issues whilst considering the impact to both the public and natural environment. Operational and hydraulic deficiencies are to be identified and remedied where possible. In addition to this new regulations with regards to environmental impacts and the mitigation thereof must be considered

The Stormwater Master Plan for Levallia, Rosemoor, Protea Park, Urbansville, George East, Commercial East, Molenrivierrif & Convent Gardens has the following objectives:

- Evaluate the effectiveness of infrastructure currently in place.
- Liaise with relevant parties as to historical events.
- Identify the tributary drainage areas and discharge routes.
- Perform desktop study on factors impacting catchment characteristics (land use, infiltration, future developments).
- Develop a Hydrologic Model incorporating the conceptual design of infrastructure upgrades.
- Present upgrades aimed at mitigating all short comings of the existing system.
- Present proposals for new developments identified in the SDF.
- Assess the impact of upgrades on adjoining systems or local community.
- Produce cost estimate for municipal financial planning.
- Priorities the improvements.

2.3 STORMWATER MASTER PLANNING PHILOSOPHY

Master planning is generally contemplated on a catchment-wide basis, irrespective of urban boundaries or the built environment. It is predominantly concerned with the major system components such as natural water ways, wetlands, detention/retention facilities and other stormwater structures. However the minor system is to be considered in conjunction with the major system in the form of bulk stormwater pipeline and open channels.

For the Minor System, the "Guidelines for Human Settlements, Planning and Design" (also known as the "Red Book") recommends a design flood frequency for Residential Land Use as between 1 – 5 years. Typically municipal guidelines prescribe that the underground pipework, in addition to road edge channels and open channels, be designed to accommodate a 2 year recurrence interval. As a rule the length of channel/roadway flow before the introduction of an underground system may not exceed 100m.

In terms of the Roads Drainage Manual the design flood frequency adapted for road crossings structures in an urban environmental where Class D road class is to be expected (Tertiary/Access Roads) must be a 5 year return period.

For the Major System, the Red Book recommends a design flood frequency of 50 years. Further to this the runoff from a major storm should not exceed a depth of 150mm above the highest point of the roadways.

Channels, both open vegetated or lined, are to be evaluated through a two-fold approach. The lined base structure (concrete slab or blocks) will be sized to accommodate a 2-year return period whilst the stone pitched stabilized embankment above the base structure requires adequate capacity for the full 50-year major flood event.

Flow velocities must be limited to the criteria set out in Table 2.1. High flow velocities can cause damage to the conduits, particularly at joints where the majority of the erosion takes place.

Table 2.1: Maximum Velocities in Conduits

Conduit	Recommended Maximum (m/s)	Absolute Maximum
Precast Concrete Pipe	3,5	8
In-situ Concrete	6	8
Grass	1,5	1,8
Gravelly Soil	1,3	1,8
Concrete Blocks (depending on depth)	4	6

Where the velocity of flow exceeds these values energy dissipaters must be considered. To avoid siltation and settlement of fine sand particles, velocities under minor storm conditions should exceed 0,5 m/s. This will promote self-cleansing and reduce the impacts of concentrated flow.

Where feasible, open systems showing signs of detrimental ecological conditions, potential danger to human life and a hazardous environmental situation, may be closed through the introduction of a pipe network. This must however be avoided where the affected system fulfils an overland drainage or bulk conveyance role.

The stormwater planning philosophy sets out the basic criteria according to which all stormwater conveyance systems will be evaluated. In general the philosophy or criteria seek to provide an optimal design which maintains a balance between the cost of infrastructure and the cost of potential damage. In some cases however local incidences in the past or on site features may require a deviation to the norm such as enlarged or mitigating structures.

3 SITE DESCRIPTION

The current study area is Levallia, Rosemoor, Protea Park, Urbansville, George East, Commercial East, Molenrivierrif & Convent Gardens. The study area is located on the north-eastern outskirts of George. Access to the areas is mainly from Knysna Road (N12/N9). Rosemoor is a high point within the study area, with drainage to the south-west and south-east into the two riverine systems (Meul River) that ultimately discharges in to the ocean as seen within Figure 1 insert.

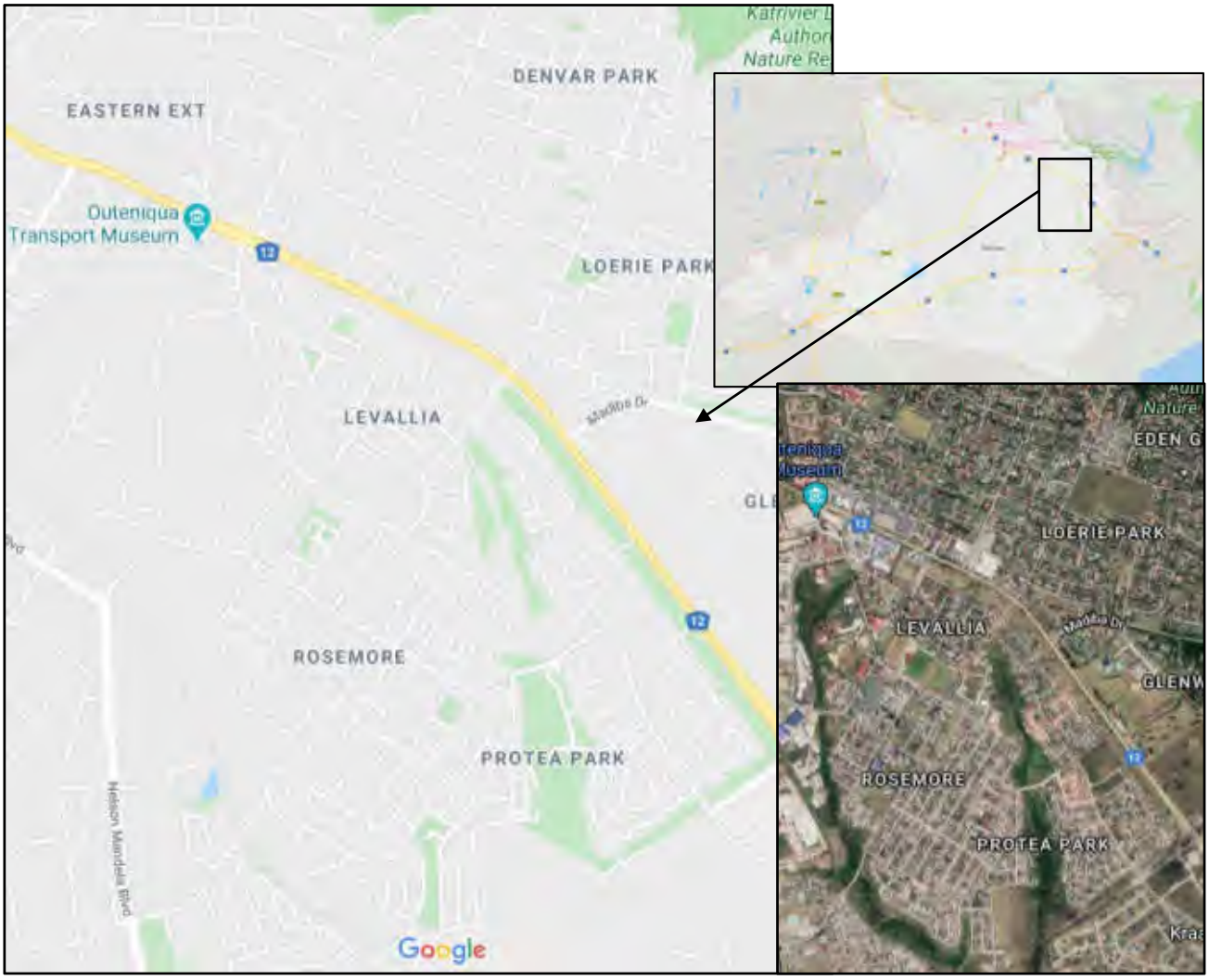


Figure 1.1: Locality Plan within George and areas under investigation.

The soil conditions are mostly clay which promotes increased runoff. This combination creates a scenario of a high volume of runoff flowing at high velocities.

The overall topography is therefore ideal in terms of surface drainage with no localized or trapped low points which require special stormwater measures.

The study area is approximately **370 ha** and the overall catchment plans within Annexure A (Figure 1 and 2) shows the catchment layout for Levallia, Rosemoor, Protea Park, Urbansville, George East, Commercial East, Molenrivierrif & Convent Gardens.

The eight suburbs under investigation, have the following sixty-five (65) distinct drainage paths outlined in detail below:

- George East - six (6) catchment areas;
- Commercial East - two (2) catchment areas;
- Levallia - eight (8) catchment areas;
- Rosemoor - five (5) catchment areas;
- Urbansville - twenty-six (26) catchment area;
- Convent Gardens - four (4) catchment areas and
- Protea Park - fourteen (14) catchment areas.

Each suburb will be covered within an individual section below. For ease of reference, the catchment areas will be combined and discussed as per layout drawings for the existing networks within Annexure A, resulting in eleven (11) primary catchment areas for discussion.

During the review and analyse of the existing data sources, two (2) streams were identified that require floodline delineation in order to report whether the existing structures have the capacity to convey the runoff. The two (2) streams are tributary to the Meul River. The location of the two crossings are:

- Grens Street / Beer Street and downstream crossing in Pienaar Street
- Triumph Close

Rosemoor was highlighted as a concern area with flooding being reported with specific concerns within Saint Mary Street. The topography of Rosemoor is fairly flat as this is the high point within the study area as seen in Figure 1.2 below.



Figure 1.2: Photo of Saint Mary Street within Rosemoor, flat grades with siltation

3.1 GEORGE EAST CATCHMENT AREAS

3.1.1 Western Catchments Areas (GEC-01 to GEC-04)

The Western Catchment Areas consists of 4 catchments draining in a south-westerly direction towards the train tracks (Figure 3.1 – Annexure A). The total area of the catchment is approximately 12.012 hectares, with slopes of 0.8%. The catchments under consideration are within developed area on the western part of George East bordered by Bergsig George to the north, train tracks to the west, Central Catchment Area (Section 3.1.2) to the east & Levallia Catchment 2 (LEC-02, Section 3.2.1) to the south.

It is recommended to upgrade the existing 375mm diameter pipes within the system to increase the conveyance capacity and provide easier access to clean the system. A breakdown of the catchments within the area are provided below in Table 3.1.1.

Table 3.1.1: George East Western Catchments

Catchment	Network	Pipe diameters (mm)
GEC-04	Located within private complex	375 & 450

3.1.2 Central Catchment Area (GEC-05)

The Central Catchment Area (GEC-05) drains in a southerly direction into Commercial East Catchment 1 (CEC-01) and thereafter into Levallia Catchment 1 (LEC-01) (Figure 3.2 – Annexure A). The total area of the catchment is approximately 27.513 hectares, with slopes ranging between 0.5 and 3%. The catchments under consideration are within developed area on the central part of George East bordered by the Western Catchment (Section 3.1.1) to the west, Eastern Catchment (Section 3.1.3) to the east, Panorama George to the north and Levallia Catchment 2 (LEC-02, Section 3.2.1) to the south.

It is recommended to upgrade the existing 225mm, 300mm and 375mm diameter pipes within the system to increase the conveyance capacity and provide easier access to clean the system. A breakdown of the catchments within the area are provided below in Table 3.1.2.

Table 3.1.2: George East Central Catchments

Catchment	Network	Pipe diameters (mm)
GEC-05, CEC-01 & LEC-01	Mainly overland flows within George East, Commercial East & Levallia suburbs	225, 300, 375, 450, 600 & 900

3.1.3 Eastern Catchment Area (GEC-06)

The Eastern Catchment Area (GEC-06) drains in a southerly direction into Commercial East Catchment 2 (CEC-02) and thereafter into Levallia Catchment 7 (LEC-07) (Figure 3.3 & Fig 3.4 – Annexure A). The total area of the catchment is approximately 44.663 hectares, with slopes ranging between 0.2 and 6.8%. The catchments under consideration are within developed area on the western part of George East bordered by the Central Catchment (Section 3.1.2) to the west, Loerie Park to the east, Panorama George to the north and Levallia Catchment 2, 4 & 5 (LEC-02, LEC-04 & LEC-05, Section 3.2.1) to the south.

It is recommended to upgrade the existing 300mm and 375mm diameter pipes within the system to increase the conveyance capacity and provide easier access to clean the system. A breakdown of the catchments within the area are provided below in Table 3.1.3.

Table 3.1.3: George East Eastern Catchments

Catchment	Network	Pipe diameters (mm)
GEC-06, CEC-02 & LEC-07	Mainly overland flows within George East, Commercial East & Levallia suburbs	300, 375, 450, 600 & 900

3.2 LEVALLIA CATCHMENT AREAS

3.2.1 Catchment Areas 2, 4 & 5 (LEC-02, LEC-04 & LEC-05)

The Catchment Area LEC-02 consists of 37 sub-catchments all draining in a south-easterly direction towards a stream with 1 outlet (Figure 3.5 – Annexure A). The total area of the catchment is approximately 18.379 hectares, with slopes ranging between 0 and 6.7%. The catchments under consideration are within developed area of Levallia. The site is bordered by the Levallia Catchment 1 (LEC-01, Section 3.1.1) to the west, Levallia Catchment 7 (LEC-07, Section 3.1.3) to the north, Levallia Catchment 4 (LEC-04, next paragraph) to the east & Levallia Catchment 6 (LEC-06, Section 3.2.2) to the west.

The Catchment Area LEC-04 consists of 3 sub-catchments all draining in a south-westerly direction towards a stream with 1 outlet (Figure 3.5 – Annexure A). The total area of the catchment is approximately 3.175 hectares, with slopes ranging between 0.8 and 2.4%. The catchments under consideration are within developed area of Levallia. The site is bordered by Knysna Road to the north, Levallia Catchment 2 (LEC-02, above) to the west, Protea Park Catchment 1 (PPC-01, Section 10) to the east and a stream to the south

The Catchment Area LEC-05 consists of 3 sub-catchments all draining in a north-easterly direction towards a stream with 1 outlet (Figure 3.5 – Annexure A). The total area of the catchment is approximately 0.707 hectares, with slopes ranging between 4.8 to 5.0%. The catchments under consideration are within developed area of Levallia. The site is bordered by Levallia Catchment 2 (LEC-02, above) to the west and north, Levallia Catchment 8 (LEC-08, Section 11) to the west a stream to the east.

It is recommended to upgrade the existing 300mm and 375mm diameter pipes within the system to increase the conveyance capacity and provide easier access to clean the system. A breakdown of the catchments within the area are provided below in Table 3.2.1

Table 3.2.1: Levallia Catchments 2, 4 & 5

Catchment	Network	Pipe diameters (mm)
LEC-02	Mainly overland flows within Levallia suburb	300, 375, 450, 525, 600, 750 & 900
LEC-04	Located within Swaardlelie Street & Park Road discharging into stream on the south	450
LEC-05	Located within Volkwyn Close discharging into the stream on the east	450

3.2.2 Catchment Areas 3, 6 & 8 (LEC-03, LEC-06 & LEC-08)

The Catchment Area LEC-03 consists of 14 sub-catchments all draining in a north-easterly direction through Levallia (LEC-03), Rosemoor (RMC-01) & Urbansville (UVC-01) towards a stream with 1 outlet (Figure 3.6 – Annexure A). The total area of the catchment is approximately 7.347 hectares, with slopes ranging between 0.4 and 6.3%. The catchments under consideration are within developed area of Levallia. The site is bordered by Levallia Catchment 2 (LEC-02, Section 3.2.1) to the north, Levallia Catchment 6 & 8 (LEC-06/8, below) to the east and a stream to the south

The Catchment Area LEC-06 consists of 5 sub-catchments all draining in an easterly direction towards a stream with 1 outlet (Figure 3.6 – Annexure A). The total area of the catchment is approximately 1.937 hectares, with slopes ranging between 1.1 and 5.5%. The catchments under consideration are within developed area of Levallia. The site is bordered by the Levallia Catchment 2 (LEC-02, Section 3.2.1) to the north, Levallia Catchment 8 (LEC-08, below) to the south, Levallia Catchment 2 (LEC-02, Section 3.2.1) to the west & an open stream to the east.

The Catchment Area LEC-08 consists of 2 sub-catchments all draining in an easterly direction towards a stream with 1 outlet (Figure 3.6 – Annexure A). The total area of the catchment is approximately 1.459 hectares, with slopes ranging between 3.0. & 4.2%. The

catchments under consideration are within developed area of Levallia. The site is bordered by Levallia Catchment 2 (LEC-02, above) to the west, Urbansville Catchment 1 (UVC-01, Section 12) to the south, Levallia Catchment 6 (LEC-06, above) to the north and a stream to the south

It is recommended to upgrade the existing 300mm and 375mm diameter pipes within the system to increase the conveyance capacity and provide easier access to clean the system. A breakdown of the catchments within the area are provided below in Table 3.2.1

Table 3.2.2: Levallia Catchments 3, 6 & 8

Catchment	Network	Pipe diameters (mm)
LEC-03	Mainly located within Miller Street	375, 450, & 600
LEC-06	Located within Stripp Street & Volkwyn Close discharging into stream on the south	450, 525 & 600
LEC-08	Located within Volkwyn Close discharging into the stream on the east	New network

3.3 ROSEMOOR CATCHMENT AREAS

3.3.1 Western Catchment Areas 1 & 2 (RMC-01 & RMC-02)

The Western Catchment Areas consists of 2 catchments, with both draining in a south-westerly direction towards the stream with 3 outlets (Figure 3.7 – Annexure A). The total area of the catchment is approximately 10.588 hectares, with slopes ranging between 0.4 and 9.3%. The catchments under consideration are within developed area on the western part of Rosemoor bordered by a stream to the west, Rosemoor Catchment 3 (RMC-03, below) to the east, Convent Gardens Catchment 2 (CGC-02) to the south and Levallia Catchment 3 (LEC-03, Section 3.2.2) to the north.

It is recommended to upgrade the existing 150mm, 300mm and 375mm diameter pipes within the system to increase the conveyance capacity and provide easier access to clean the system. A breakdown of the catchments within the area are provided below in Table 3.3.1.

Table 3.3.1: Rosemoor Western Catchments

Catchment	Network	Pipe diameters (mm)
RMC-01	Located within Attakwas Street, discharging into stream within Grens Street	150, 300, 450 & 525
RMC-02	Located within Beer & Aleman Street, discharging into stream	450 & 600

3.3.2 Eastern Catchment Areas 3 & 4 (RMC-03 & RMC-04)

The Eastern Catchment Areas consists of 2 catchments, both draining in a south-westerly direction towards the stream with 2 outlets (Figure 3.6 – Annexure A). The total area of the catchment is approximately 5.911 hectares, with slopes ranging between 0.4 and 0.8%. The catchments under consideration are within developed area on the western part of Rosemoor bordered by Levallia Catchment 3 (LEC-03, Section 3.2.2) to the north, Urbansville Catchment 1 (UVC-01, Section 3.4.1) to the east, Urbansville Catchment 4 (UVC-04, Section 3.4.1) to the south and Rosemoor Catchment 2 (RMC-02, Section 3.3.1) to the south.

It is recommended to upgrade the existing 300mm and 375mm diameter pipes within the system to increase the conveyance capacity and provide easier access to clean the system. A breakdown of the catchments within the area are provided below in Table 3.3.2.

Table 3.3.2: Rosemoor Eastern Catchments

Catchment	Network	Pipe diameters (mm)
RMC-03	Located within Hibiscus Street to outlet	375 & 450
RMC-04	Located within Saint Mary Street to outlet	450

3.4 URBANSVILLE CATCHMENT AREAS

3.4.1 Northern Catchment Areas 1 to 4 (UVC-01 to UVC-04)

The Northern Catchment Area consists of 4 catchments, with 3 draining in a eastern direction towards a stream and 1 draining to the south. (Figure 3.8 – Annexure A). The total area of the catchment is approximately 47.543 hectares, with slopes ranging between 0.5 and 5.5%. The catchments under consideration are within developed area of Urbansville bordered by a stream to the west and east, Levallia Catchment 3 (LEC-03, Section 3.2.2) to the north and Urbansville Catchment 5 (UVC-05, Section 3.4.2) to the south.

It is recommended to upgrade the existing 300mm and 375mm diameter pipes within the system to increase the conveyance capacity and provide easier access to clean the system. A breakdown of the catchments within the area are provided below in Table 3.4.1.

Table 3.4.1: Urbansville Northern Catchments

Catchment	Network	Pipe diameters (mm)
UVC-01	Located to the north, discharging into stream	450 & 600
UVC-02	Located within Miller Street	450
UVC-03	Located within Beer & Miller Street	450
UVC-04	Located within Parson & Fortheringham Street, discharging into stream to the west	450 & 600

3.4.2 Southern Catchment Areas 5 to 26 (UVC-05 to UVC-26)

The Southern Catchment Area consists of 22 catchments (Figure 3.9 – Annexure A). The total area of the catchment is approximately 39.921 hectares, with slopes ranging between 0.7 and 11.9%. The catchments under consideration are within developed area of Urbansville bordered by a stream to the west, south and east, and Urbansville Catchment 1 (UVC-01, Section 3.4.1) to the north.

A breakdown of the catchments within the area are provided below in Table 3.4.2.

Table 3.4.2: Urbansville Southern Catchments

Catchment	Network	Pipe diameters (mm)
UVC-05	Located within Parson & Niewoud Street	450 & 600
UVC-06	Located within Beer & Vincent Street	450 & 600
UVC-07	Located within Spandiel Close	450
UVC-08	Located within Parson & Spandiel Close	450
UVC-09	Located within Goedehoop Street	450
UVC-10	Located within Mitchell Baker Street	450 & 600
UVC-11	Located within Mitchell Baker Street	450 & 600
UVC-12	Located within Marsh & WH Christiaan Street	450 & 600
UVC-13	Located within Mitchell Baker Street	600
UVC-14	Located within O'Connel Street	450
UVC-15	Located within Fortheringham Street	450
UVC-16	Located from O'Connel Street to Truter Street	450
UVC-17	Located within Van Till Street	450
UVC-18	Located within Deur Street	450
UVC-19	Located within O'Connel Street	450
UVC-20 to 26	As indicated within Figure 3.9	450

3.5 PROTEA PARK CATCHMENT AREAS

3.5.1 Northern Catchment Area 1 to 6 (PPC-01 to PPC-06)

The Northern Catchment Areas 1 to 6 consists of 2 catchments all draining in a south-western direction towards a stream with multiple outlet (Figure 3.10 – Annexure A). The total area of the catchment is approximately 21.151 hectares, with slopes ranging between 0.5 and 8.3%. The catchments under consideration are within a developed area of Protea Park bordered by a stream to the west, Knysna Road to the north, open spaces to the east and Protea Park Western Catchments to the south (Section 3.5.2).

It is recommended to upgrade the existing 375mm diameter pipes within the system to increase the conveyance capacity and provide easier access to clean the system. A breakdown of the catchments within the area are provided below in Table 3.5.1.

Table 3.5.1: Protea Park Northern Catchments

Catchment	Network	Pipe diameters (mm)
PPC-01	Located within Park Road	375 & 450
PPC-02	Located within Orgidiee Avenue	450
PPC-03	Located within Orgidiee Avenue	450
PPC-04	Located within Triump Close	450
PPC-06	Located within Kosmos Street	450

3.5.2 Western Catchment Areas 7 to 14 (PPC-07 to PPC-14)

The Western Catchment Area consists of 8 catchments draining in a south-westerly direction towards a stream with various outlets (Figure 3.11 – Annexure A). The total area of the catchment is approximately 29.317 hectares, with slopes ranging between 0.5 and 9.6%. The catchments under consideration are within developed area on the Western part of Protea Park bordered by Protea Park Northern Catchments (Section 3.5.1) to the north, the Knysna Road to the east, Blue Mountain to the south and a stream to the west.

It is recommended to upgrade the existing 300mm and 375mm diameter pipes within the system to increase the conveyance capacity and provide easier access to clean the system. A breakdown of the catchments within the area are provided below in Table 3.6.2.

Table 3.6.2: Delville Park Eastern Catchment

Catchment	Network	Pipe diameters (mm)
PPC-07	Located within Kosmos Street	450
PPC-08	Located within Kalossie Street	450
PPC-09	Located within Protea Valley Street	450
PPC-10	Located within various roads (Figure 3.11)	375 and 450
PPC-11	Located within various roads (Figure 3.11)	375, 450 & 600
PPC-12	Located within Kanna Street	450
PPC-13	Located within Kanna Street	355 and 450
PPC-14	Located within Keurboom Close	450

3.6 SITE GEOLOGY

The soil within Pacaltsdorp is primarily cohesive clayey material of a dark red colour.

The type of soil encountered affects the rate of infiltration which ultimately determines the amount of precipitation that becomes runoff.

Natural Resources Conservation Services (NRCS) have classified soils into 4 hydrological soil groups according to their saturated hydraulic conductivity (infiltration rate).

Group C for soils having a moderate to low infiltration rate where permeability is largely restricted has been assumed in hydrological modelling. They consist of moderately fine to very fine textured soils.

3.7 PRELIMINARY ASSESSMENT

A preliminary visual assessment was conducted in November 2019 with the purpose of identifying signs of flooding or problematic drainage conditions.

Where possible, members of the community were questioned over historical rainfall events and their general experiences with flooding of the existing system.

3.7.1 Visual Assessment

The findings of the preliminary investigations were as follows:

- About 17% of the drainage consists of pipe sizes smaller than 450mm diameter with concrete channels that divert the water to lower lying areas, where it then enters in to a closed system to discharge within the open areas. The majority of the roads are also paved roads.
- Where structures were encountered, these were filled with debris and sediment or overgrown.
- Fig 3.3 indicates that Delville Park's road conditions are poor and thus also affecting the infrastructure.

It was clearly evident that a majority of the flooding issues experienced are due to inadequate maintenance and cleaning of the channels, structures, and stormwater pipes. If the municipality can implement a cleaning schedule, the floods caused by the smaller rainfall events will be reduced.

The pictures provided on the next page are just a sample of what is typically found throughout the area.

Figure 3.1: Inlets within George East



Figure 3.2: Construction works, Fifth Street, Levallia



Figure 3.3: Aged Roads Urbansville



Figure 3.4: Dropped Kerb-inlet



3.7.2 Major Risks

The flooding of adjacent properties due to the ineffectiveness of drainage structures acting as the main drainage route in addition to collecting surface runoff can have many negative consequences. Not only is there the risk of danger to life but the more probable damage to property with resulting monetary loss.

Further to this it is important that an emergency overflow route free of obstruction be maintained and that an efficient drainage system is introduced to convey runoff towards the natural watercourses.

4 HYDROLOGICAL AND HYDRAULIC MODELLING

4.1 MODELLING SOFTWARE

A stormwater hydrological and hydraulic model was developed with the aid of the Autodesk Storm and Sanitary Analysis (SSA) software.

The EPA SWMM hydrological calculation method has been used to determine drainage area runoff thereby ensuring compatibility to the master planning modelling, with the infiltration method set to SCS Curve Number and the link routing method set to Hydrodynamics (Hazen-Williams equation).

4.2 MODEL INPUTS/PARAMETERS

Parameters for catchment properties or the development of a design storm are based on accepted norms or sound engineering judgment. Where possible the values have been calculated to ensure the best possible accuracy.

4.2.1 Catchment Areas

All sub-catchments are assigned a composite CN number and topographical information (size, equivalent width, average slope, depression) from which the physical properties used in the model are derived.

The Curve Number is a simple, widely used, and efficient method of determining the fraction of precipitation that will translate to surface runoff. It is based on the drainage areas hydrological soil group, land use hydrological condition (% impervious).

A high CN value (98 for paved roads) causes nearly all precipitation to translate to runoff, where as a low CN value (30 for sandy conditions) causes most of the precipitation to be captured as infiltration.

4.2.2 Hydrological Characteristics

The software utilizes a “rainfall designer” to create a design storm for a specified storm distribution. The rainfall depth has been extracted from the regionalised South African Weather Service rainfall data for the George rainfall station (SAWS No 28838).

The mean annual precipitation (MAP) for the study area – Levallia, Rosemoor, Protea Park, Urbansville, George East, Commercial East, Molenrivierrif & Convent Gardens – is 911mm with a Type 2 storm distribution resulting in the rainfall depths for the different return periods as follow:

2 year Return Period	:	70.00 mm
50 year Return Period	:	229.00 mm

4.3 HYDRAULIC ANALYSIS

4.3.1 System Description

The model developed to reflect the proposed upgrades is a simple representation of the proposed pipe network with nodes placed at all new manhole structures. The Catchment

Plan indicated on the Figure 3 series of plans (Annexure A) shows the various hydraulic model references.

4.3.2 Interpretation of Results

Link Summary

Element ID	Element Type	From (Inlet) Node	To (Out) Node	Length	Average Slope	Dia./ Height	Manning's Roughness	Peak Flow	Design Capacity	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Reported Condition
				(m)	(%)	(m)		(cms)	(cms)	(m/sec)	(m)		
P1	Pipe	MH240	MH245	12.56	1.6500	0.445	0.0120	0.31	0.38	2.54	0.32	0.72	Calculated

Average Slope	= Slope of pipe
Dia./Height	= Size of pipe
Peak Flow	= Maximum flow for the design storm
Design Capacity	= Maximum flow that the pipe can convey
Peak Flow Velocity	= Maximum velocity within the pipe
Peak Flow Depth	= Maximum depth of flow through the pipe
Peak Flow Depth/ Total Depth Ratio	= Ratio of actual flow vs. capacity that is available within the pipe

In the 2-year analysis the following parameters are acceptable in the model:

- Surcharge in SWMM indicates that either the depth of flow in the upstream or downstream node of a pipe exceeds the crown of the pipe. However the following criteria was used to analyse whether the pipe needs to be increased in capacity:
    - If the pipe is surcharged and the slope of the HGL is less than the slope of the pipe, then there is downstream control and the flow does not exceed the capacity of the pipe.
    - If the pipe is surcharged and the slope of the HGL is greater than the slope of the pipe, then the pipe is limited in capacity and may need to be upsized.
    - If the pipe is surcharged and the slope of the HGL equals the slope of the pipe, then the pipe is just below capacity and is probably controlled by the elevated downstream HGL.

In the 50-year analysis the following parameters are acceptable in the model:

- Surcharging in the links; for the major stormwater event the pipes will be surcharged and the runoff that cannot be contained within the pipe network will overflow within the roadway or overflow route to the next downstream manhole. These overflow routes are shown as channels connecting the nodes.
- Flooding of nodes; in the model, SSA does not allow an overflow link to be added from the last junction to the outfall structure. The nodes directly upstream of the outfall are the ones that are flooded. During design an overflow route would be provided for.

There are many 300mm and 375m diameter pipes found in the study area. There are cases where the pipes do not indicate hydraulic capacity constraints theoretically but from experience it is known that smaller pipes can become blocked easily which compromises its drainage ability severely. All pipes of 375mm diameter pipes and smaller will need to be upgraded to 450mm diameter pipes – these pipes are included within the cost estimation as a low priority.

It should also be noted that a survey will need to done to verify the size and slopes of the existing stormwater pipes prior to upgrades being performed. All new stormwater network line that are proposed will need to be designed as assumptions were used for invert levels and slopes based on topographical contours.

Where pipes are running through properties, it is recommended that additional parallel pipe systems are to be constructed around the properties. In the event that slopes are not in favour or re-routing the pipes, the existing pipes need to be maintained before each rain season to prevent possible flooding.

Where larger diameter pipes are tying into smaller diameter pipes, the smaller diameter pipes downstream will need to be upgraded to match the larger upstream diameter pipes

4.3.3 Minor Storm Assessment

Simulation results of the proposed system, under a 2-year storm event conditions, are shown in Annexure B.

The following can be concluded from the results shown:

- The proposed pipe sizes have adequate capacity to accommodate the 2-year storm runoff with over 30% spare capacity (allowed for flash floods).
- Peak flow velocities are above the prescribed minimum (0,5m/s to avoid siltation) and below the absolute maximum for a concrete pipe and channels.

4.3.4 Major Storm Assessment

The simulation results for the major system have been evaluated for the 50-year storm event and are included in Annexure B.

The following can be concluded from the results shown:

- The drainage channels have adequate capacity to accommodate the 50-year storm runoff.
- The road crossings will allow the channel to overtop the road and flow back in to the downstream drainage channel.
- The overland flow paths within the road reserves are able to convey the runoff from the 50-year storm event.
- It should be noted that at some locations, the pipe networks are located within properties with no overland escape route.

5 STORMWATER INFRASTRUCTURE IMPROVEMENTS

5.1 DESIGN STANDARDS

The design standards applicable to stormwater improvements will be accordance with the following guidelines:

- Guidelines for Human Settlements, Planning and Design – Department of Housing (also known as the "Red Book").
- Minimum Standards for Civil Engineering Services in Townships – City of Cape Town.

5.2 PROPOSED STORMWATER INFRASTRUCTURE

The new proposed infrastructure shown is sized assuming that there are no existing pipes. ***In the event of upgrades, it is imperative that a proper survey is completed to determine the location, size, and slopes of any existing systems.*** With this information a detailed design can be implemented for construction and potentially utilize the existing system where possible.

Proposed infrastructure, as indicated on Figure 4 (Annexure A), consists of the following components:

5.2.1 George East Western Catchments Areas (GEC-01 to GEC-04)

- Upgrading of various existing road drainage from smaller diameters to minimum of 450mm diameter.
- Upgrading of the pipe network from a 450mm diameter to a 525mm diameter in order to convey the run-off.

5.2.2 George East Central Catchment Area 5 (GEC-05, CEC-01 & LEC-01))

- Upgrading of various existing road drainage from smaller diameters to minimum of 450mm diameter.
- Upgrade to a 600mm diameter within Second Street in order to increase capacity.
- Upgrading to a 1200mm diameter within Mission Street in order to increase capacity and alleviate flooding due to surcharge.

5.2.3 George East Eastern Catchment Area 6 (GEC-06, CEC-02 & LEC-07)

- Upgrading of various existing road drainage from smaller diameters to minimum of 450mm diameter.
- Upgrade to a 600mm diameter within Third & Mann Street in order to increase capacity.
- Upgrade to a 900mm diameter within Knysna Road in order to increase capacity.
- Construction a new 7500m² Attenuation pond within open space between Knysna Road & Levallia Suburb

5.2.4 Levallia Catchment Areas 2, 4 & 5 (LEC-02, LEC-04 & LEC-05)

- Upgrading of various existing road drainage from smaller diameters to minimum of 450mm diameter.
- Upgrading pipe network between Gerderblom & Plaatjies Street to a 600mm diameter and 900mm diameter
- Upgrading pipe network within Growers Street to a 900mm diameter
- Upgrading pipe network from Fifth Street to discharge Growers Street to a 1050mm diameter

5.2.5 Levallia Catchment Areas 3, 6 & 8 (LEC-03, LEC-06 & LEC-08)

- Upgrading of various existing road drainage from smaller diameters to minimum of 450mm diameter.
- Upgrading pipe network within Miller Street to a 600mm diameter

5.2.6 Rosemoor Western Catchment Areas 1 & 2 (RMC-01 & RMC-02)

- Upgrading of various existing road drainage from smaller diameters to minimum of 450mm diameter.
- Upgrading pipe network within Attakwas Street to a 525mm diameter
- Upgrading pipe network within Beer & Aleman Street to a 600mm diameter

5.2.7 Rosemoor Eastern Catchment Areas 3 & 4 (RMC-03 & RMC-04)

- Upgrading of various existing road drainage from smaller diameters to minimum of 450mm diameter.
- Upgrading pipe network within Hibiscus Street to a 600mm diameter
- Upgrading pipe network within Saint Mary Street to a 600mm diameter

5.2.8 Urbansville Northern Catchment Areas 1 to 4 (UVC-01 to UVC-04)

- Upgrading pipe network within Parson & Fortheringham Street to a 600mm diameter

5.2.9 Urbansville Southern Catchment Areas 5 to 26 (UVC-05 to UVC-26)

- Upgrade to 600mm diameter pipe within Parson & Niewoud Street.
- Upgrade to 600mm diameter pipe within Miller Street.
- Upgrade to 750mm diameter pipe within UVC-05 at discharge for capacity
- Upgrade to 600mm diameter pipe within Truter Street till discharge for capacity

5.2.10 Protea Park Northern Catchment Area 1 to 6 (PPC-01 to PPC-06)

- Upgrading of the one existing network pipe from smaller diameters to minimum of 450mm diameter.
- New 600mm discharge from Park Road within PPC-01
- Upgrade to 600mm diameter pipe within Orgidiee Avenue till discharge
- Upgrade to 600mm diameter pipe within Triump Close

5.2.11 Protea Park Western Catchment Areas 7 to 14 (PPC-07 to PPC-14)

- Upgrading of various existing road drainage from smaller diameters to minimum of 450mm diameter.
- New 600mm discharge from Park Road to discharge within Protea Valley Street within PPC-10
- Upgrade to 600mm diameter pipe within Daisy Street to Kapokblom Street.

6 ENVIRONMENTAL AUTHORISATIONS

6.1 ENVIRONMENTAL CONSULTANT

It is recommended that an environmental consultant be appointed to advise on the Environmental Authorisations that will be required for the proposed stormwater upgrades. The environmental consultant will outline the requirements in an environmental statement. Generally the Authorisations required will be triggered by the following Acts:

- National Environmental Management Act 107 of 1988 (NEMA)
- National Water Act 36 of 1998 (NWA)
- National Heritage Resources Act 25 of 1999 (NHRA)
- Any additional requirements that may be specific to the project

6.2 NATIONAL ENVIRONMENTAL MANAGEMENT ACT (NEMA)

The National Environmental Management Act (NEMA) has a list of activities that will generally trigger the need for an Environmental Authorisation (EA). The EA is required when there are sensitive environmental features present. To a lesser degree, the Basic Assessment (BA) process can be submitted when the activities are triggered but only in areas with little to no sensitive environmental features.

It is recommended that during the detail design phase that the proposed upgrades avoid any environmental sensitive features in order to eliminate the requirement for an EIA and where possible a BA.

The list of activities that could trigger the need for an EIA or BA are varied and the requirements change regularly. Therefore it is recommended that an Environmental Consultant assist in informing on the design of the proposed upgrades.

When existing infrastructure is in place that is no longer functioning as originally intended, a Maintenance Management Plan (MMP) can be compiled. The MMP may be able to act as a blanket cover of approval for doing maintenance to existing infrastructure as well as minor civil works.

A MMP will need to be submitted to DEA&DP for approval and the requirement of an Environmental Authorisation in terms of NEMA will not be required.

6.3 NATIONAL WATER ACT (NWA)

The National Environmental Management Act (NEMA) has a list of activities that will generally trigger the need for an Environmental Authorisation (EA). The EA is required when there are sensitive environmental features present. To a lesser degree, the Basic Assessment (BA) process can be submitted when the activities are triggered but only in areas with little to no sensitive environmental features.

It is recommended that during the detail design phase that the proposed upgrades avoid any environmental sensitive features in order to eliminate the requirement for an EIA and where possible a BA.

The list of activities that could trigger the need for an EIA or BA are varied and the requirements change regularly. Therefore it is recommended that an Environmental Consultant assist in informing on the design of the proposed upgrades.

When existing infrastructure is in place that is no longer functioning as originally intended, a Maintenance Management Plan (MMP) can be compiled. The MMP may be able to act as a blanket cover of approval for doing maintenance to existing infrastructure as well as minor civil works.

A MMP will need to be submitted to DEA&DP for approval and the requirement of an Environmental Authorisation in terms of NEMA will not be required.

6.4 NATIONAL HERITAGE RESOURCES ACT (NHRA)

An application for a Heritage Approval is required when new infrastructure is proposed to be constructed, i.e. linear infrastructure exceeding 300m in length.

This application is completed by submitting a Notice of Intent to Develop (NID) form to Heritage Western Cape, who will then either grant approval or request a specialist Heritage Impact Assessment to be conducted to inform the application.

Generally a Heritage Impact Assessment is only required when proposed upgrades are within a previously undisturbed area.

6.5 ADDITIONAL REQUIREMENTS

The above items are considered to be typical environmental authorisations that may be required, however each project and area is unique, and as such, there may be additional authorisations required that are not mentioned above. A knowledgeable Environmental Consultant will be able to guide the Municipality through the process.

7 COST ESTIMATION

Cost estimates have been created for each of the different phases identified within Levallia, Rosemoor, Protea Park, Urbansville, George East, Commercial East, Molenrivierrif & Convent Gardens. The principle behind the costing break down for each phase is certain works are prioritized before others. High priority works typically address operational issues currently experienced where flooding of properties or damage to structures may occur.

Unit rates (per meter) are derived from the calculation of a 100m sample length with all associated works included. A provision has been made for road improvements for the reinstatement of road as most of the proposed upgrades fall within the developed area.

The installation rate for pipework would typically cover the following items:

- Site Clearance
- Trench excavation, backfilling and bedding
- Supply and laying of pipework
- Manholes and catchpits
- Preliminary and General Costs (20%)

In the case of lined channel (concrete/block) the items are as follows:

- Site Clearance
- Bulk earthworks
- Structural lining of base
- Embankment erosion protection – stone pitching
- Preliminary and General Costs (20%)

The road improvements for roads that are already asphalt typically cover the following items:

- Remove existing asphalt and channels where necessary
- Rework layerworks
- Install new kerb and channels
- Reinstate asphalt
- Preliminary and General Costs (20%)

Allowances that are included in the costs are as follows:

- Escalation of 8.0%.
- The escalation will be applied year on year, assuming that each Phase of improvements will be completed within a fiscal year.
- Contingencies of 15% to be used for unseen circumstances during the project construction
- The fees cover the engineering design fees as well as any additional requirements for environmental and operational health and safety supervision for the duration of the construction of the project.

Rates used in the determination of section amounts are from recent tenders received in the last year for civil project of a similar size.

Refer to Annexure C for the detailed costing for each phase. A summary of estimated upgrade costs can be seen in Table 7.1 below.

Table 7.1: Cost Estimate Summary

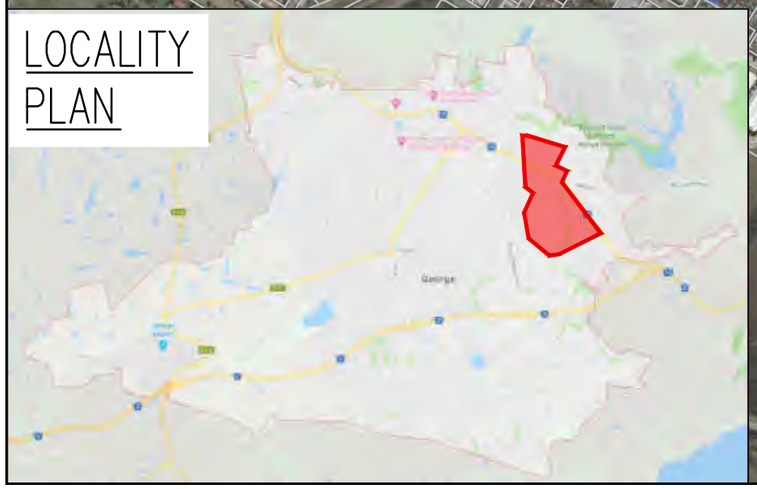
Levallia, Rosemoor, Protea Park, Urbansville, George East, Commercial East, Molenrivierrif & Convent Gardens. **CIVIL ENIGINEERING INFRASTRUCTURE** **Estimated Value of Works**					
Catchment	**Description**	**Construction Cost***		**Cost incl 15% Fees****	
1	George East Western Catchment Areas	R	442 988.68	R	469 568
2	Geroge East Central Catchment Areas	R	5 944 306.60	R	6 300 965
3	George East Eastern Catchment Areas	R	6 348 509.91	R	6 729 421
4	Levallia Catchment Areas 2, 4 & 5	R	5 382 216.98	R	5 705 150
5	Levallia Catchment Areas 3, 6 & 8	R	858 648.58	R	910 168
6	Rosemoor Western Catchment Areas	R	1 038 851.42	R	1 101 183
7	Rosemoor Eastern Catchment Areas	R	3 839 752.36	R	4 070 138
8	Urbansville Northern Catchment Areas	R	1 796 061.32	R	1 903 825
9	Urbansville Southern Catchment Areas	R	2 247 761.79	R	2 382 628
10	Protea Park Northern Catchment Areas	R	1 273 353.77	R	1 349 755
11	Protea Park Western Catchment Areas	R	3 284 226.42	R	3 481 280
TOTAL CIVIL COMPONENT (EXCL VAT)		**R**	**32 456 677.83**	**R**	**34 404 078.50**

*** Cost incl 15% Contingency**

**** Cost incl Contingency and 15% Fees**

ANNEXURE A: PLANS

LOCALITY PLAN



GEORGE
THE CITY FOR ALL REASONS

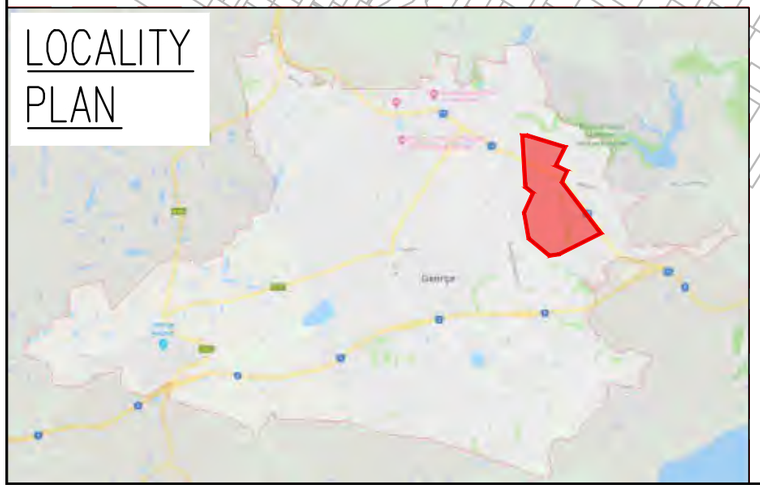
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GEORGE STORMWATER MASTER PLAN
ORTHOPHOTO LAYOUT
LEVALLIA, ROSEMOOR, PROTEA PARK, URBANSVILLE, GEORGE EAST, COMMERCIAL EAST, MOLENRIVIERRIF & CONVENT GARDENS

FIG: 1

GEC-01
GEC-02
GEC-03
GEC-04
GEC-05
GEC-06
GEC-01
GEC-02
LEC-01
LEC-02
LEC-07
LEC-04
LEC-03
LEC-05
LEC-08
LEC-06
RMC-01
RMC-05
RMC-02
RMC-03
RMC-04
MRC-01
PPC-01
PPC-02
PPC-03
PPC-04
PPC-05
PPC-07
PPC-08
PPC-09
PPC-10
PPC-11
PPC-12
PPC-13
PPC-14
CBC-01
CBC-02
CBC-03
CBC-04
UVC-01
UVC-02
UVC-03
UVC-04
UVC-05
UVC-06
UVC-07
UVC-08
UVC-09
UVC-10
UVC-11
UVC-12
UVC-13
UVC-14
UVC-15
UVC-16
UVC-17
UVC-18
UVC-19
UVC-20
UVC-21
UVC-22
UVC-23
UVC-24
UVC-25
UVC-26

LOCALITY PLAN



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GEORGE STORMWATER MASTER PLAN

CADASTRAL LAYOUT

LEVALLIA, ROSEMOOR, PROTEA PARK, URBANSVILLE, GEORGE EAST, COMMERCIAL EAST, MOLENRIVIERRIF & CONVENT GARDENS

FIG: 2

GEC-01

GEC-02

GEC-03

GEC-04

STANDER STREET

MEYER STREET

SECOND STREET

FIRST STREET

NEDERBURG AVENUE

MANN STREET

BOTHA STREET

450ø

375ø

300ø

LEGEND

BC4	SUB - CATCHMENT NUMBER
	EXISTING STORMWATER PIPE
	EXISTING ROADS
	EXISTING STORMWATER CHANNELS
	SUB - CATCHMENT AREA
	CATCHMENT AREA
	WATERSHED DIRECTION
	PROBLEM AREAS

KEYPLAN

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GEORGE STORMWATER MASTER PLAN

FIG: 3.1

GEORGE EAST CATCHMENTS 1 - 4 EXISTING NETWORK

LEGEND

BC4 SUB – CATCHMENT NUMBER

EXISTING STORMWATER PIPE

EXISTING ROADS

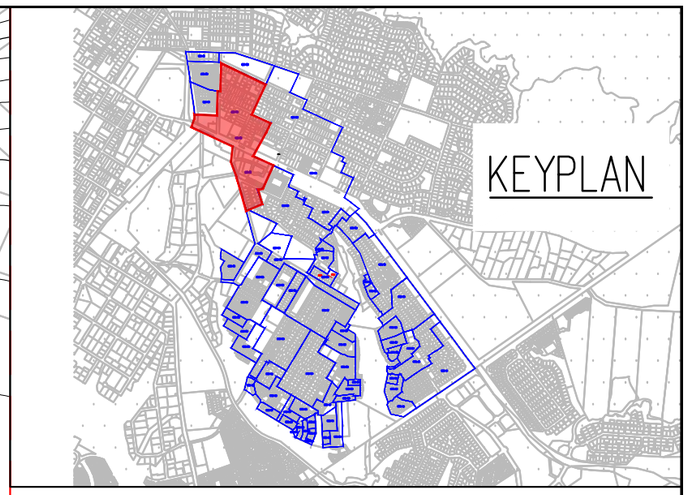
EXISTING STORMWATER CHANNELS

SUB – CATCHMENT AREA

CATCHMENT AREA

WATERSHED DIRECTION

PROBLEM AREAS



INSERT A: LEC-01 CATCHMENT

GE01 GE02 GE03.0 GE03.1 GE04 GE05 GE06 GE07 GE08 GE09 GE10 GE11 GE12 GE13 GE14 GE15

CEC-05 CEC-01 CE01 CE02 CE03 CE04 CE05 CE06

LE01 LE02 LE03 LE04 LE05 LE06 LE07 LE08 LE09 LE10 LE11 LE12 LE13 LE14

LEC-01

STANDER STREET MEYER STREET FIRST STREET SECOND STREET THIRD STREET NEDERBURG AVENUE MANN STREET BOTHA STREET AMANDEL AVENUE WAKKELHAK STREET KNYSNA ROAD COMMERCIAL CLOSE MISSION ROAD CHRIS APRIL STREET SAUER STREET GEORGE KEPLER AVENUE STUURMAN STREET CASANI CRES GERDERDEN

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GEORGE STORMWATER MASTER PLAN

GEORGE EAST, COMM & LEV

FIG: 3.2(GEC-05, CEC-01, LEC-01)

EXISTING NETWORK

LEGEND

BC4 SUB – CATCHMENT NUMBER

EXISTING STORMWATER PIPE

EXISTING ROADS

EXISTING STORMWATER CHANNELS

SUB – CATCHMENT AREA

CATCHMENT AREA

WATERSHED DIRECTION

PROBLEM AREAS

KEYPLAN

GE16 GE19 GE20 GE21 GE22 GE23 GE24 GE25 GE26 GE27 GE28 GE29 GE30 GE31 GE32 GE33 GE34 GE35 GE36 GE37 GE38 GE39 GE40 GE41 GE42 GE43 GE44

GEC–06

SECOND STREET THIRD STREET FOURTH STREET FIFTH STREET

MEYER STREET MANN STREET STEVENS STREET SEELHOUT STREET BOEKENHOUT STREET MIMOSA STREET

AMANDEL AVENUE REGHOEK STREET WINKELHAK STREET AKASIA STREET HONEYSUCKLE CL

KNYSNA ROAD COMMERCIAL CL

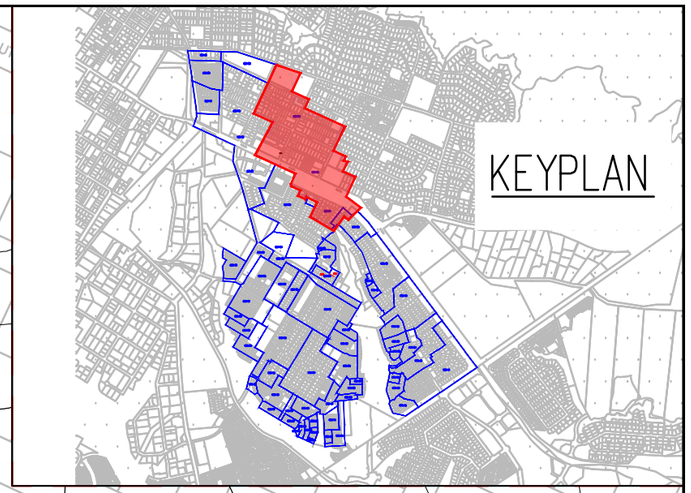
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GEORGE STORMWATER MASTER PLAN

FIG: 3.3

GEORGE EAST
GEC–06
EXISTING NETWORK



CE07
CE08
CE09
CE10
CE11
CE12
CE13
CE14
CE15
CE16
CE17
CE18
CE19
CE20
CE21
CE22
CE23
CEC–02
LEC–07
LE28
LE29
LE30
LE41
LE42
LE43
LE44
LE45
LE46
LE47
LE54

WINKELHAK STREET
MANN STREET
BOEKENHOUT
THIRD STREET
AKASIA STREET
MIMOSA STREET
HONEYSUCKLE CL
FOURTH STREET
ANGELA STREET
KNYSNA ROAD
CASANI CRES
SAUER STREET
GEORGE KEPLER AVENUE
GERDERBLOM STREET
EILEEN STREET
PLAATJIES STREET
FAIRWAY CRES
FIFTH STREET
SWAARDLELIE STREET
PARK ROAD
MARE STREET
VOLKWYN STREET
STUURMAN STREET
MISSION ROAD

LEGEND

- BC4 — SUB – CATCHMENT NUMBER
- EXISTING STORMWATER PIPE
- EXISTING ROADS
- EXISTING STORMWATER CHANNELS
- SUB – CATCHMENT AREA
- CATCHMENT AREA
- WATERSHED DIRECTION
- PROBLEM AREAS

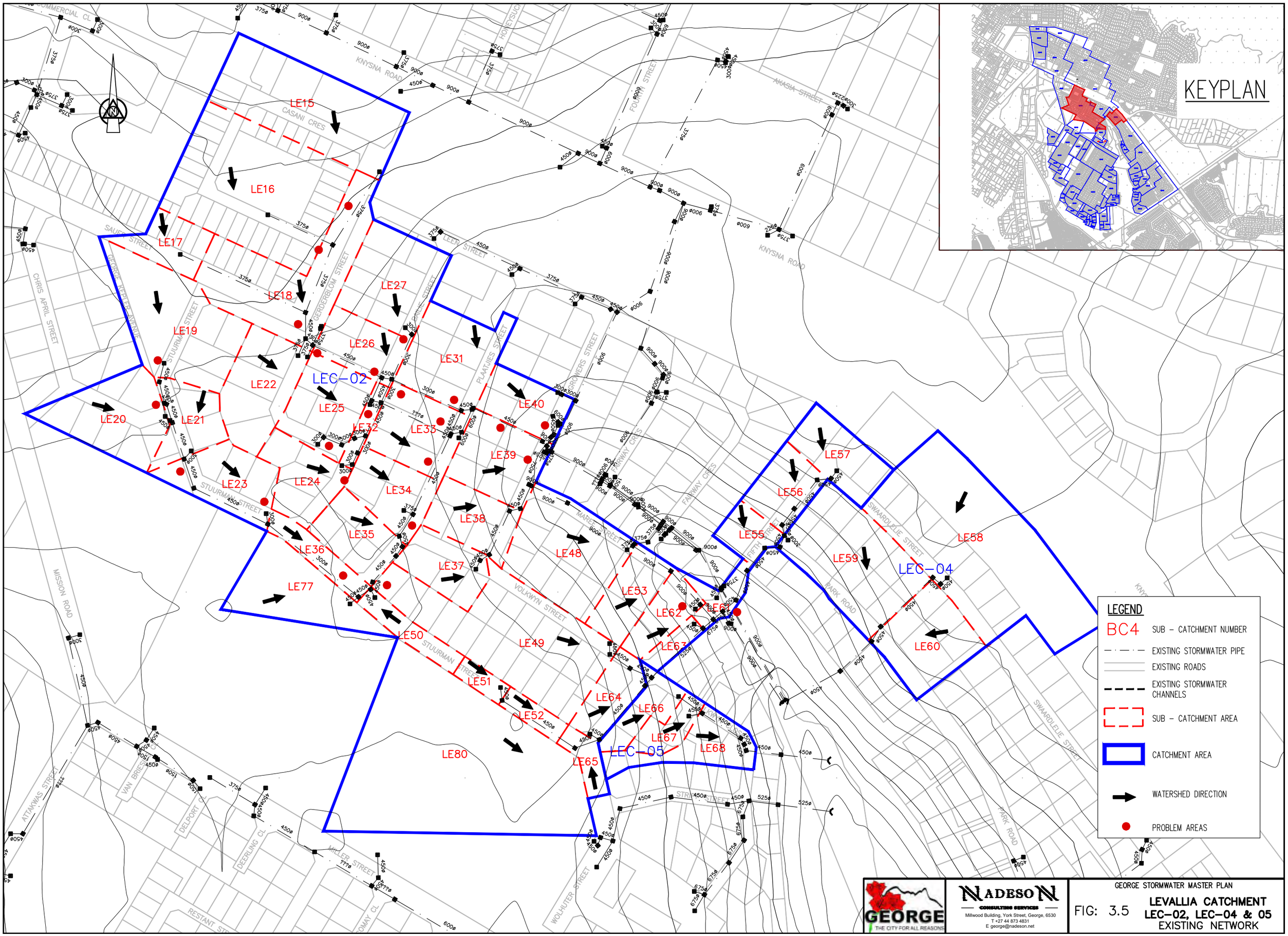
GEORGE
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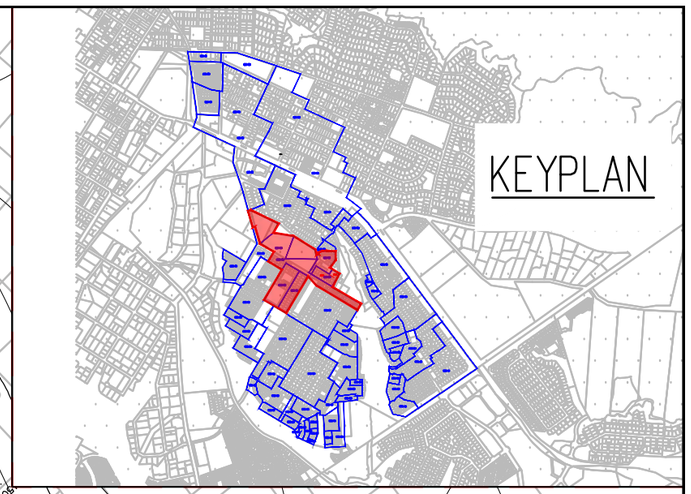
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GEORGE STORMWATER MASTER PLAN

FIG: 3.4

COMM. EAST / LEVALLIA
CEC–02 & LEC–07
EXISTING NETWORK


KEYPLAN
LE15
LE16
LE17
LE18
LE19
LE20
LE21
LE22
LE23
LE24
LE25
LE26
LE27
LE31
LEC–02
LE32
LE33
LE34
LE35
LE36
LE37
LE38
LE39
LE40
LE46
LE48
LE49
LE50
LE51
LE52
LE53
LE55
LE56
LE57
LE58
LE59
LE60
LE62
LE63
LE64
LE65
LE66
LE67
LE68
LEC–04
LEC–05
LE77
LE80
KNYSNA ROAD
CASANI CRES
SAUER STREET
GEORGE REMER AVENUE
CHRIS APRIL STREET
STUURMAN STREET
GERDERBLOM STREET
LEER STREET
PLAATJIES STREET
GROWERS STREET
FOURTH STREET
AKASIA STREET
FAIRWAY CRES
FIFTH STREET
PARK ROAD
SWAARDLELIE STREET
VOLKWYN STREET
WOLHUTER STREET
MISSION ROAD
ATTAKWAS STREET
VAN BRIENEN CL
DELPORT CL
DEERLING CL
MILLER STREET
RESTANT STREET
TOMAY CL
LEGEND
BC4 SUB – CATCHMENT NUMBER
EXISTING STORMWATER PIPE
EXISTING ROADS
EXISTING STORMWATER CHANNELS
SUB – CATCHMENT AREA
CATCHMENT AREA
WATERSHED DIRECTION
PROBLEM AREAS
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GEORGE STORMWATER MASTER PLAN
FIG: 3.5
LEVALLIA CATCHMENT
LEC–02, LEC–04 & 05
EXISTING NETWORK



LE78
LE79
LEC–03
LE69
LE70
LEC–06
LE71
LE81
LE72
LE73
LE74
LEC–08
LE75
RM13
RM14
RM15
RM16
RM17
RM28
RM20
RM29
RMC–03
RM31
RMC–04
RM30
RM32
UV01
UV02
UV03
UV04
UV05
UV06

MISSION ROAD
STUURMAN STREET
VOLKWYN STREET
FAIRWAY CRES
MARE STREET
FIFTH STREET
PARK ROAD
SWARDLELIE STREET
ATTAKWAS STREET
VAN BRESSEM CL
DELPORT CL
DEERLING CL
MILLER STREET
RESTANT STREET
CANARY CL
CANARY STREET
HIBISCUS STREET
HARMONY CL
HARMONY STREET
BAKER STREET
CLINIC STREET
VLEI STREET
BEER STREET
BOUEE STREET
BROWN STREET
CANARY STREET
SAINT MARK STREET
LANGMARK STREET
HICKS STREET
HURTER STREET
KONDOR STREET
WOLHUTER STREET
MACKAY STREET
STRIP STREET
GARDENIA CL

LEGEND

- BC4 — SUB – CATCHMENT NUMBER
- EXISTING STORMWATER PIPE
- EXISTING ROADS
- EXISTING STORMWATER CHANNELS
- SUB – CATCHMENT AREA
- CATCHMENT AREA
- WATERSHED DIRECTION
- PROBLEM AREAS

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GEORGE STORMWATER MASTER PLAN

FIG: 3.6 LEVALLIA/ROSEMOOR
LEC–03&06, RMC–03&04
EXISTING NETWORK

LEGEND

BC4 SUB – CATCHMENT NUMBER

EXISTING STORMWATER PIPE

EXISTING ROADS

EXISTING STORMWATER CHANNELS

SUB – CATCHMENT AREA

CATCHMENT AREA

WATERSHED DIRECTION

PROBLEM AREAS

KEYPLAN

INSERT A: CGC–02 TO CGC–04 CATCHMENT

MRC–01

RMC–01

RMC–02

CGC–01

CGC–02

CGC–03

CGC–04

RM01 RM02 RM03 RM04 RM05 RM06 RM07 RM08 RM09 RM10 RM11 RM12 RM18 RM19 RM21 RM22 RM23 RM24 RM25 RM26 RM27

CG01 CG02 CG03 CG04 CG05 CG06 CG07 CG08 CG09

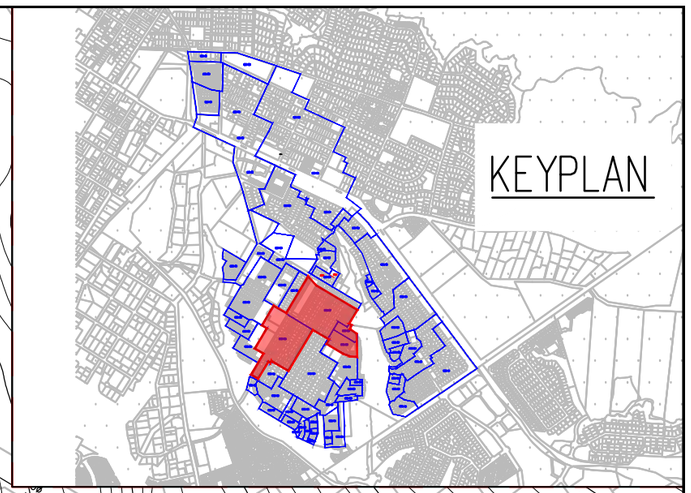
MISSION ROAD, ATTAKWAS STREET, DEERLING CL, MILLER STREET, RESTANT STREET, COMAY CL, WOLHUTER STREET, BROWN STREET, PEDRO STREET, CANARY STREET, WIDOWS STREET, OLIVEWOOD STREET, GROVE STREET, HARMONY STREET, BAKER STREET, CLINIC STREET, VLEI STREET, BEER STREET, SOUER STREET, SALEMAN STREET, GREENS STREET, HARMONY CL, HIBISCUS STREET, SAINT MARY STREET, LANGMARK STREET, ROTHERINGHAM STREET, CANARY LOWER CL, STUURMAN STREET

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GEORGE STORMWATER MASTER PLAN

FIG: 3.7 ROSEMOOR/CONVENT RMC–01&02,CGC–01 to 04 EXISTING NETWORK



UV07
UV08
UV09
UV10
UVC-01
UV11
UV12
UV13
UV14
UV15
UV16
UV17
UV18
UV19
UV20
UVC-02
UV21
UVC-03
UV22
UV23
UV24
UV25
UV26
RM33
RM34
UVC-04
UV29.1
UV29.0
UV28
UV27
RM35
UV31
UV32
UV36
UV35
UV34
UV33
UV37

LANGMARK STREET
HICKS STREET
HURTER STREET
KONDOR STREET
WOLTEMADE STREET
MILLER STREET
BEER STREET
PARSON STREET
HECTOR STREET
GEORGE MOORE STREET
NIEWOUD STREET
VINCENT STREET
MCGREGOR STREET
RIETBOK STREET
TRUMP CLOSE
PARK ROAD
KOSMOS STREET
FOTHERINGHAM STREET
FRANCIS STREET
O'CONNELL STREET
CANARY STREET
CLINIC STREET
BAKER STREET
VLEI STREET
BOUER STREET
HARMONY CL
HIBISCUS STREET
SAINT MARY STREET
STRIP STREET

LEGEND

BC4 SUB - CATCHMENT NUMBER

EXISTING STORMWATER PIPE

EXISTING ROADS

EXISTING STORMWATER CHANNELS

SUB - CATCHMENT AREA

CATCHMENT AREA

WATERSHED DIRECTION

PROBLEM AREAS

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GEORGE STORMWATER MASTER PLAN
URBANSVILLE CATCHMENT
FIG: 3.8 01 - 04 (UVC-01 to 04)
EXISTING NETWORK

INSERT A: UVC-20 TO UVC-26 CATCHMENT

INSERT A: UVC-11 TO UVC-12 CATCHMENT

LEGEND

- BC4 — SUB - CATCHMENT NUMBER
- EXISTING STORMWATER PIPE
- EXISTING ROADS
- EXISTING STORMWATER CHANNELS
- SUB - CATCHMENT AREA
- CATCHMENT AREA
- WATERSHED DIRECTION
- PROBLEM AREAS

KEYPLAN

UVC-20 UVC-21 UVC-22 UVC-23 UVC-24 UVC-25 UVC-26

UVC-01 UVC-02 UVC-03 UVC-04 UVC-05 UVC-06 UVC-07 UVC-08 UVC-09 UVC-10 UVC-11 UVC-12 UVC-13 UVC-14 UVC-15 UVC-16 UVC-17 UVC-18 UVC-19

UV38 UV39 UV40 UV41 UV42 UV43 UV44 UV45 UV46 UV47 UV48 UV49 UV50 UV51 UV52 UV53 UV54 UV55 UV56 UV57 UV58 UV59 UV60 UV61 UV62 UV63 UV64 UV65 UV66 UV67 UV68 UV69 UV70 UV71 UV72 UV73 UV74 UV75 UV76 UV77 UV78 UV79 UV80 UV81 UV82 UV83 UV84 UV85 UV86 UV87 UV88 UV89 UV90 UV91 UV92 UV93 UV94 UV95 UV96

HICKS STREET · HURTER STREET · KONDOR STREET · WOLTEMADE STREET · GEORGE MOORE STREET · NIEWOUD STREET · BEER STREET · HECTOR STREET · PARSON STREET · MILLER STREET · MITCHELL BAKER STREET · MARSH STREET · ROWE STREET · MEESTER STREET · VINCENT STREET · GOEDEHOOP STREET · TRUTER STREET · O'CONNELL STREET · THWAITE STREET · VAN TILL STREET · FOLVERINGHAM STREET · FRANCIS STREET · NUWE STREET · WHITE STREET · JACOB STREET · SPANJAARD CLOSE · WHITE BAKER STREET · WH CUNNINGHAME STREET

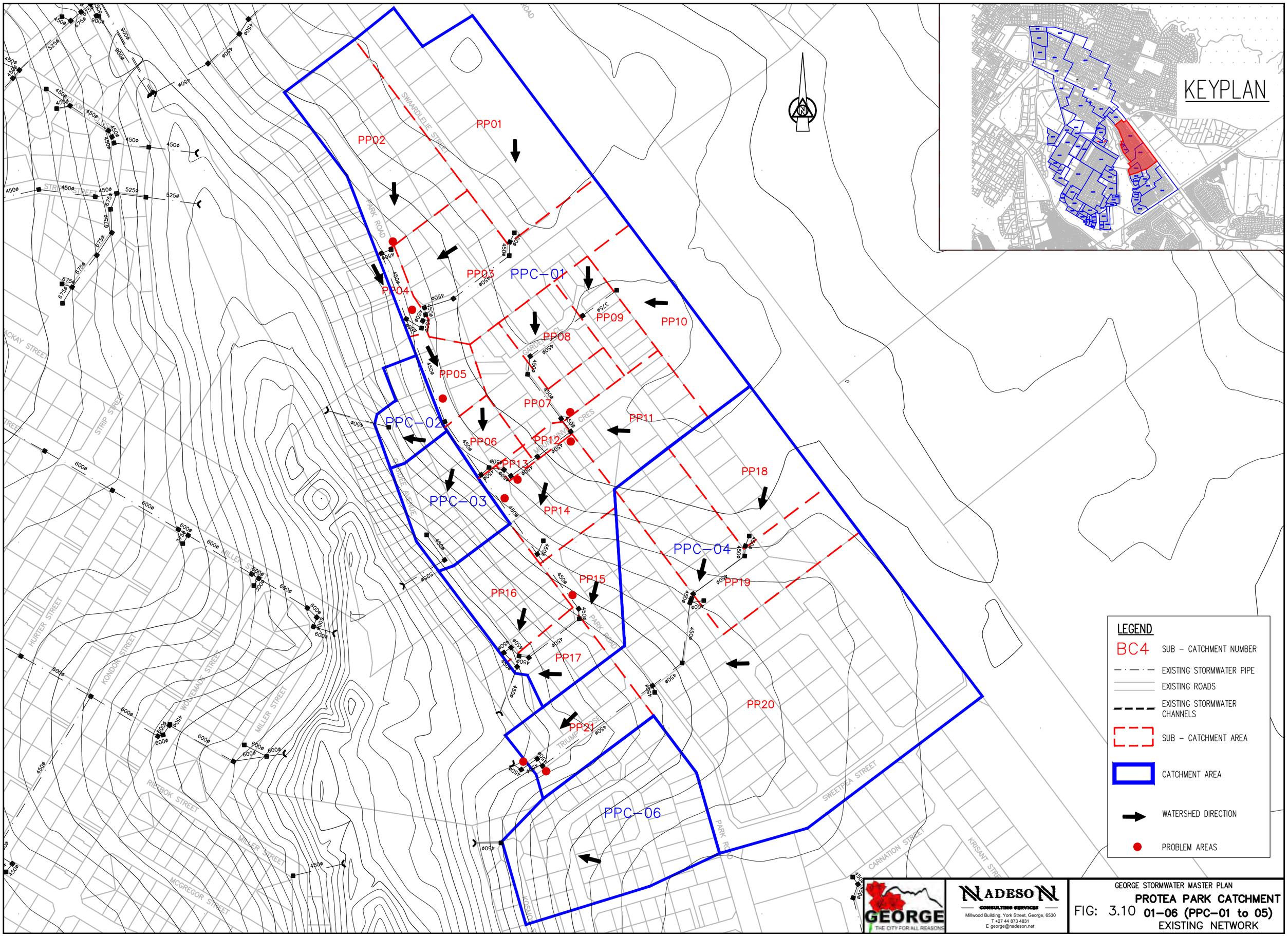
GEORGE STORMWATER MASTER PLAN

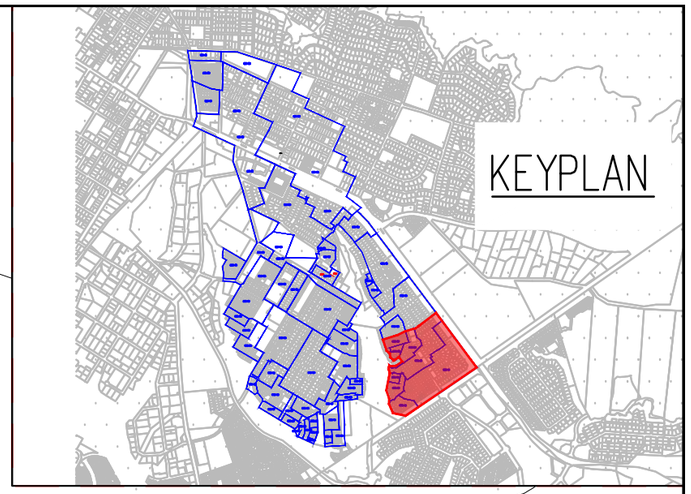
URBANSVILLE CATCHMENT 05-26 (UVC-05 to 26) EXISTING NETWORK

FIG: 3.9

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KEYPLAN
PP01
PP02
PP03
PP04
PP05
PP06
PP07
PP08
PP09
PP10
PP11
PP12
PP13
PP14
PP15
PP16
PP17
PP18
PP19
PP20
PP21
PPC–01
PPC–02
PPC–03
PPC–04
PPC–06
SWAARDLELIE STREET
PARK ROAD
GARDENIA CRES
MILLWOOD CRES
PETRIE AVENUE
STRIP STREET
MACKAY STREET
HURTER STREET
KONDOR STREET
WOLTEMADE STREET
MILLER STREET
RIETBOK STREET
MCGREGOR STREET
TRUMPET CRES
SWEETPEA STREET
CARNATION STREET
KRISANT STREET
LEGEND
BC4 SUB – CATCHMENT NUMBER
EXISTING STORMWATER PIPE
EXISTING ROADS
EXISTING STORMWATER CHANNELS
SUB – CATCHMENT AREA
CATCHMENT AREA
WATERSHED DIRECTION
PROBLEM AREAS
GEORGE
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GEORGE STORMWATER MASTER PLAN
PROTEA PARK CATCHMENT
FIG: 3.10 01–06 (PPC–01 to 05)
EXISTING NETWORK



PPC–07
PPC–08
PPC–09
PPC–10
PPC–11
PPC–12
PPC–13
PPC–14

PP22
PP23
PP24
PP25
PP26
PP27
PP28.0
PP28.1
PP29
PP30
PP31
PP32
PP33
PP34
PP35
PP36
PP37
PP38
PP39
PP40
PP41
PP42
PP43
PP44
PP45
PP46
PP47
PP48
PP49
PP50
PP51
PP52
PP53
PP54
PP55

TRUMP CLOSE
SWEETPEA STREET
PARK ROAD
CARNATION STREET
VIOOLTJIE STREET
KRISANT STREET
KAPPERTJIE STREET
DAISY STREET
KOLOSSIE STREET
KALOSSIE STREET
PROTEA VALLEY STREET
KAKTUS STREET
KRISMISBOOM CL
KAMMA STREET
KAPOKBLOM STREET
KARMELA STREET
KALKOENIE STREET
SPANDIEL CLOSE
KOSMOS STREET

LEGEND

BC4	SUB – CATCHMENT NUMBER
	EXISTING STORMWATER PIPE
	EXISTING ROADS
	EXISTING STORMWATER CHANNELS
	SUB – CATCHMENT AREA
	CATCHMENT AREA
	WATERSHED DIRECTION
	PROBLEM AREAS

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GEORGE STORMWATER MASTER PLAN

FIG: 3.11 **PROTEA PARK CATCHMENT 07–14 (PPC–07 to 14)**
EXISTING NETWORK

GEC–01

GEC–02

GEC–03

GEC–04

STANDER STREET

MEYER STREET

SECOND STREET

FIRST STREET

NEDERBURG AVENUE

MANN STREET

BOTHA STREET

525ø

450ø

GE25

GE5

LS–140

LEGEND

- NODE NUMBER
- BC4 — SUB – CATCHMENT NUMBER
- EXISTING STORMWATER PIPE
- EXISTING ROADS
- EXISTING STORMWATER CHANNELS
- SUB – CATCHMENT AREA
- CATCHMENT AREA
- PROPOSED STORMWATER PIPE (HIGH PRIORITY)
- PROPOSED STORMWATER PIPE (LOW PRIORITY–450mm dia.)
- PROBLEM AREAS

KEYPLAN

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GEORGE STORMWATER MASTER PLAN

FIG: 4.1

GEORGE EAST CATCHMENTS 1 – 4 PROPOSED NETWORK

LEGEND

- LS-140 — NODE NUMBER
- BC4 — SUB - CATCHMENT NUMBER
- EXISTING STORMWATER PIPE
- EXISTING ROADS
- EXISTING STORMWATER CHANNELS
- SUB - CATCHMENT AREA
- CATCHMENT AREA
- PROPOSED STORMWATER PIPE (HIGH PRIORITY)
- PROPOSED STORMWATER PIPE (LOW PRIORITY–450mm dia.)
- PROBLEM AREAS

KEYPLAN

INSERT A: LEC-01 CATCHMENT

GEORGE STORMWATER MASTER PLAN

GEORGE EAST, COMM & LEV

FIG: 4.2(GEC–05, CEC–01, LEC–01) PROPOSED NETWORK

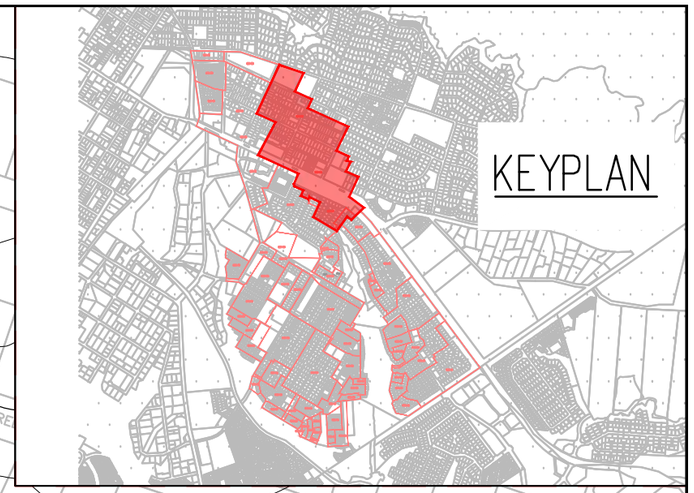
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GEORGE THE CITY FOR ALL REASONS

LEGEND

- LS-140 — NODE NUMBER
- BC4 — SUB – CATCHMENT NUMBER
- EXISTING STORMWATER PIPE
- EXISTING ROADS
- EXISTING STORMWATER CHANNELS
- SUB – CATCHMENT AREA
- CATCHMENT AREA
- PROPOSED STORMWATER PIPE (HIGH PRIORITY)
- PROPOSED STORMWATER PIPE (LOW PRIORITY–450mm dia.)
- PROBLEM AREAS

KEYPLAN



GE16 GE19 GE20 GE21 GE22 GE23 GE24 GE25 GE26 GE27 GE28 GE29 GE30 GE31 GE32 GE33 GE34 GE35 GE36 GE37 GE38 GE39 GE40 GE41 GE42 GE43 GE44

SECOND STREET · THIRD STREET · FOURTH STREET · FIFTH STREET · MEYER STREET · STANDER STREET · SEELHOUT STREET · STEVENS STREET · MANN STREET · REGHOEK STREET · WINKELHAK STREET · AKASIA STREET · HONEYSUCKLE CL · ST JOSEPH AVENUE · OESTER AVENUE · KREEF CRES · BOEKENHOUT STREET · MIMOSA STREET · KNYSNA ROAD · COMMERCIAL CL · AMANDEL AVENUE

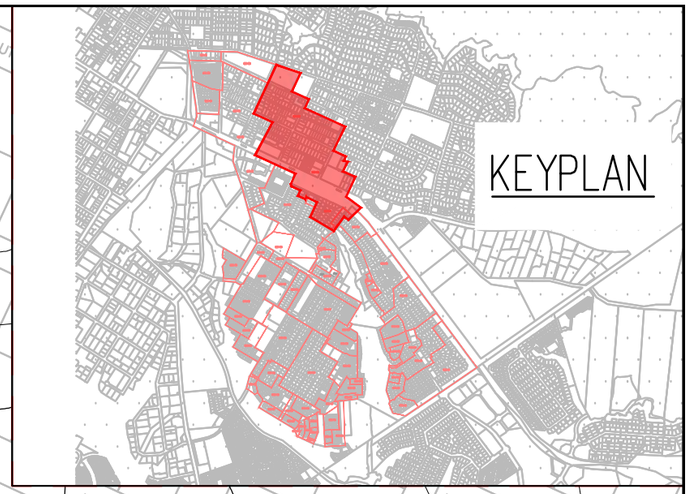
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GEORGE STORMWATER MASTER PLAN

FIG: 4.3

GEORGE EAST
GEC–06
PROPOSED NETWORK



LEGEND

- LS-140 — NODE NUMBER
- BC4 — SUB – CATCHMENT NUMBER
- EXISTING STORMWATER PIPE
- EXISTING ROADS
- EXISTING STORMWATER CHANNELS
- SUB – CATCHMENT AREA
- CATCHMENT AREA
- PROPOSED STORMWATER PIPE (HIGH PRIORITY)
- PROPOSED STORMWATER PIPE (LOW PRIORITY–450mm dia.)
- PROBLEM AREAS

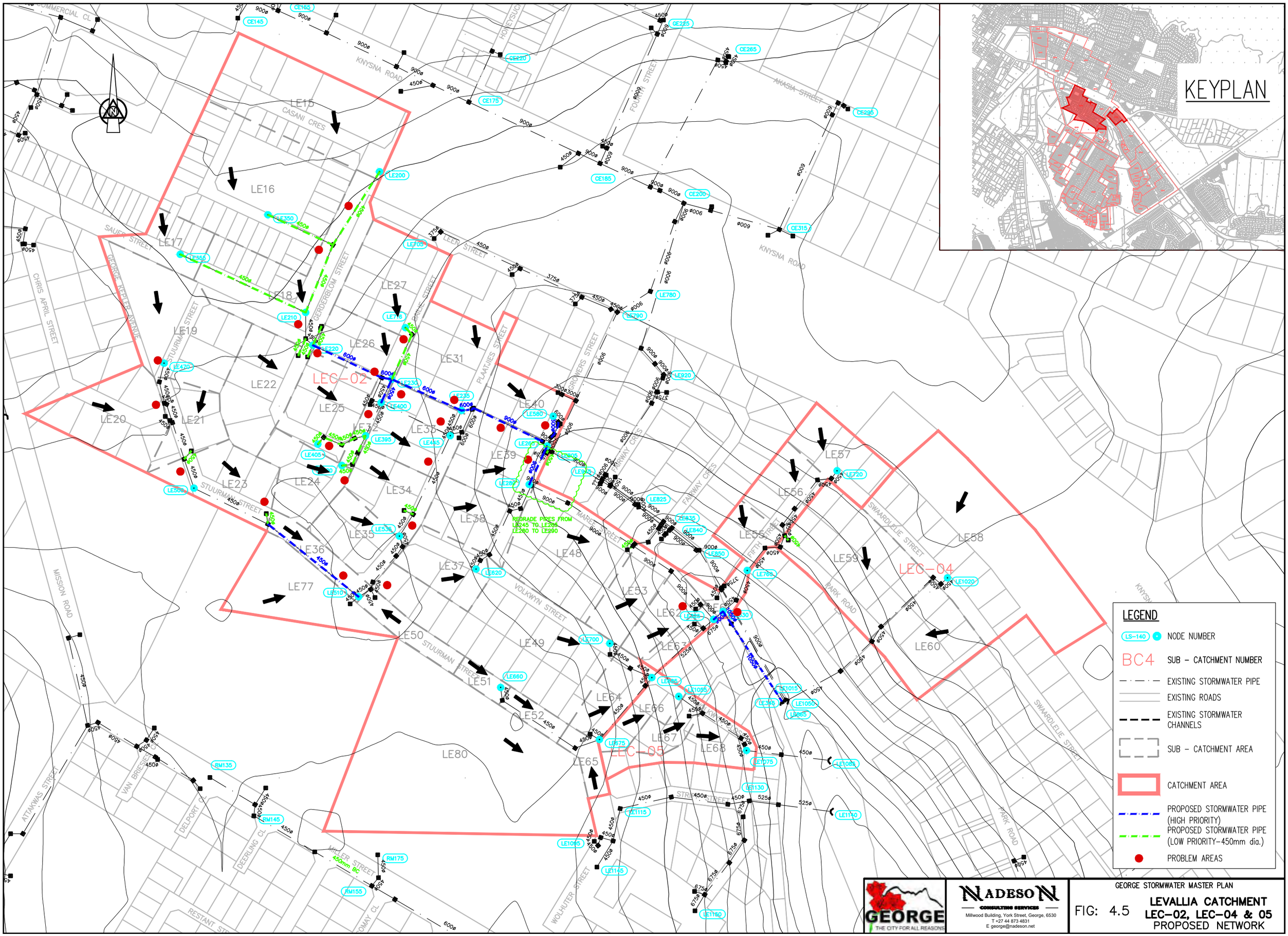
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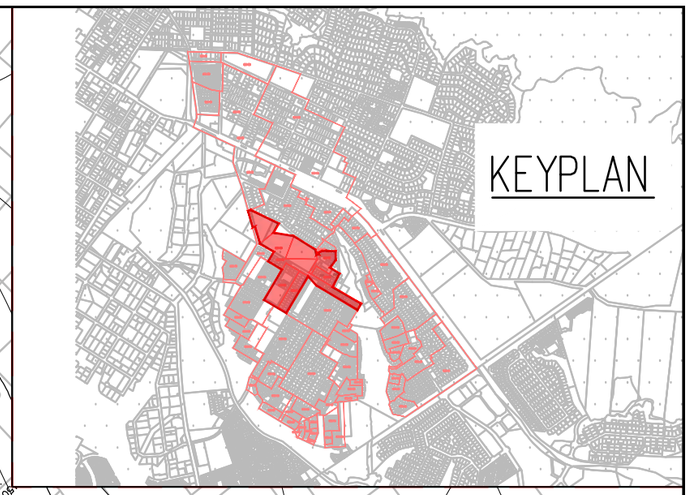
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GEORGE STORMWATER MASTER PLAN

FIG: 4.4

COMM. EAST / LEVALLIA
CEC–02 & LEC–07
PROPOSED NETWORK


KEYPLAN
LEGEND
LS-140 NODE NUMBER
BC4 SUB - CATCHMENT NUMBER
EXISTING STORMWATER PIPE
EXISTING ROADS
EXISTING STORMWATER CHANNELS
SUB - CATCHMENT AREA
CATCHMENT AREA
PROPOSED STORMWATER PIPE (HIGH PRIORITY)
PROPOSED STORMWATER PIPE (LOW PRIORITY-450mm dia.)
PROBLEM AREAS
LEC-02
LEC-04
LEC-05
LE15
LE16
LE17
LE18
LE19
LE20
LE21
LE22
LE23
LE24
LE25
LE26
LE27
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LE56
LE57
LE58
LE59
LE60
LE62
LE63
LE64
LE65
LE66
LE67
LE68
LE77
LE80
KNYSNA ROAD
STUURMAN STREET
GERDERBLOM STREET
GEORGE KEPLER AVENUE
CHRIS APRIL STREET
SAUER STREET
LEER STREET
PUNTJIES STREET
GROWERS STREET
FAIRWAY CRES
FIFTH STREET
PARK ROAD
SWAARDLELIE STREET
VOLKWYN STREET
WOLHUTER STREET
MISSION ROAD
ATTAKWAS STREET
VAN BREEDE CL
DELPORT CL
DEERLING CL
MILLER STREET
RESTANT STREET
REGRADE PIPES FROM LE245 TO LE285 LE260 TO LE290
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GEORGE STORMWATER MASTER PLAN
FIG: 4.5
LEVALLIA CATCHMENT
LEC-02, LEC-04 & 05
PROPOSED NETWORK



LEGEND

- LS–140 — NODE NUMBER
- BC4 — SUB – CATCHMENT NUMBER
- EXISTING STORMWATER PIPE
- EXISTING ROADS
- EXISTING STORMWATER CHANNELS
- SUB – CATCHMENT AREA
- CATCHMENT AREA
- PROPOSED STORMWATER PIPE (HIGH PRIORITY)
- PROPOSED STORMWATER PIPE (LOW PRIORITY–450mm dia.)
- PROBLEM AREAS

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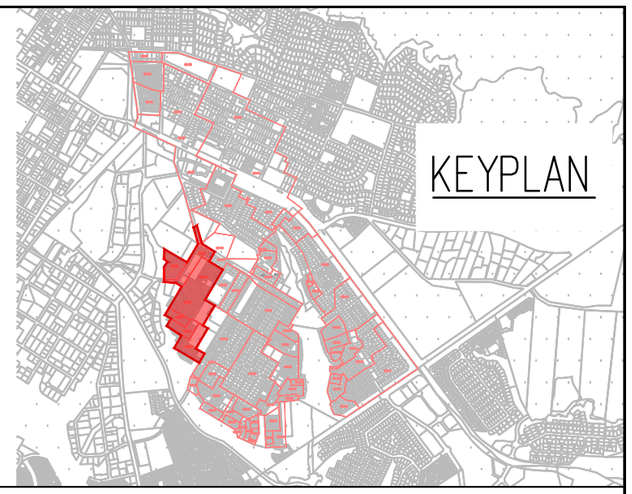
GEORGE STORMWATER MASTER PLAN

FIG: 4.6 LEVALLIA/ROSEMOOR LEC–03&06, RMC–03&04 PROPOSED NETWORK

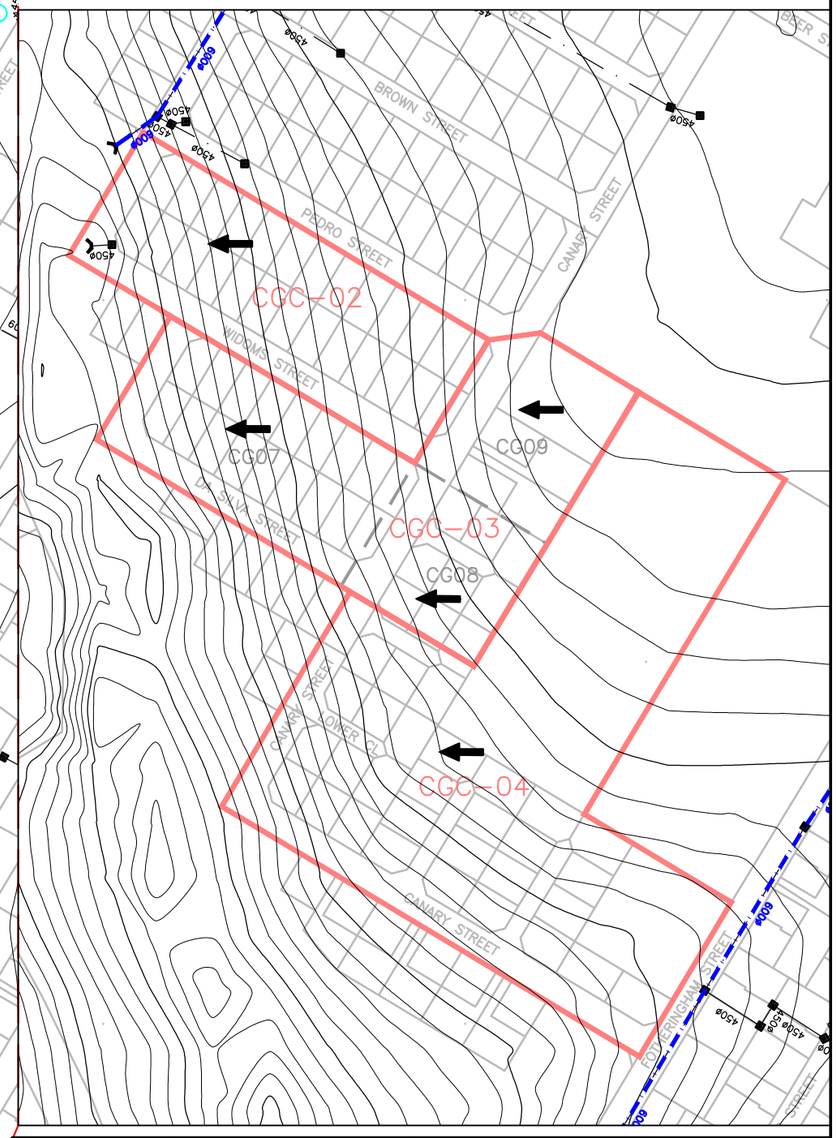
LEGEND

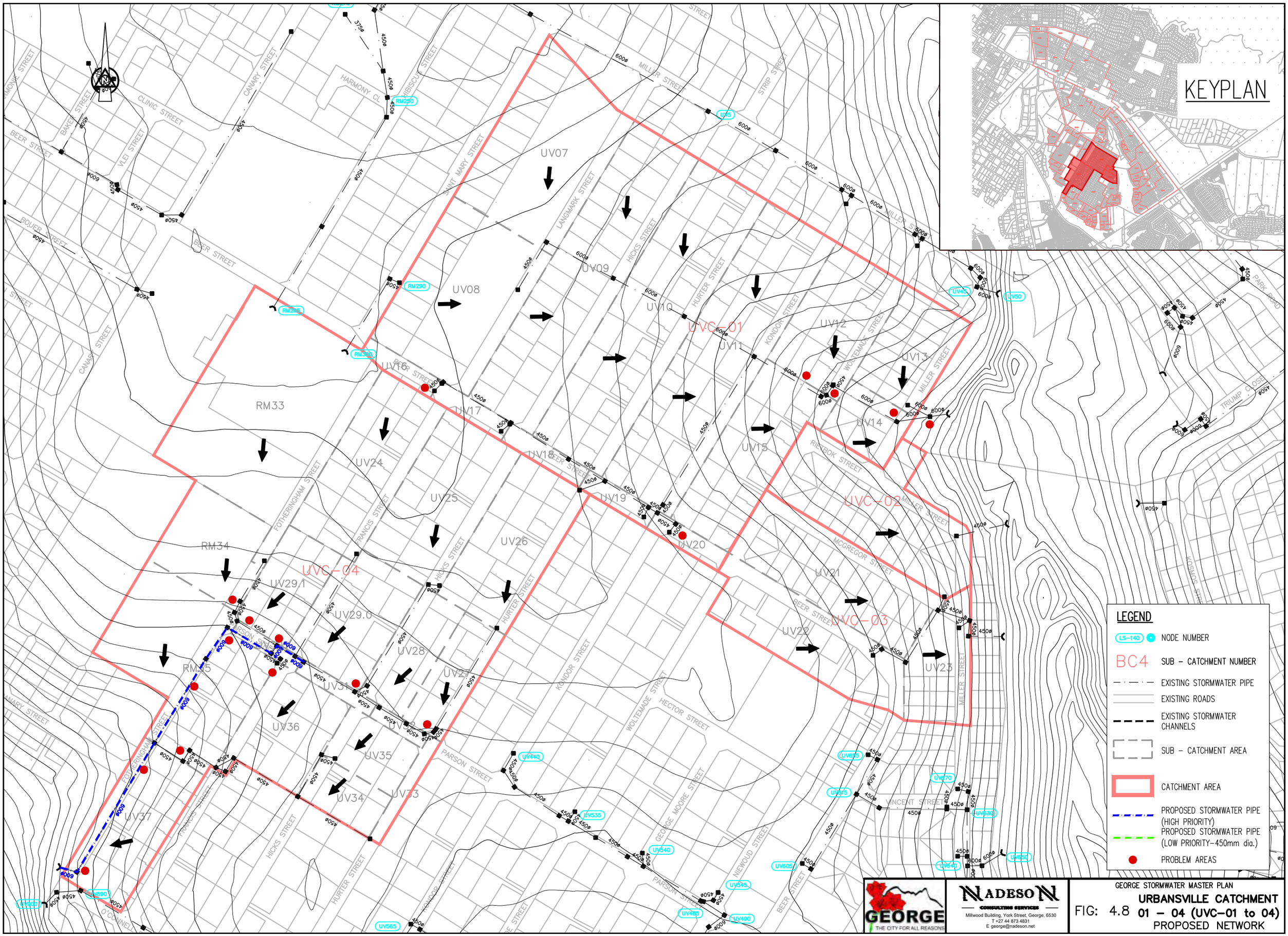
- LS-140 — NODE NUMBER
- BC4 — SUB – CATCHMENT NUMBER
- EXISTING STORMWATER PIPE
- EXISTING ROADS
- EXISTING STORMWATER CHANNELS
- SUB – CATCHMENT AREA
- CATCHMENT AREA
- PROPOSED STORMWATER PIPE (HIGH PRIORITY)
- PROPOSED STORMWATER PIPE (LOW PRIORITY–450mm dia.)
- PROBLEM AREAS

KEYPLAN

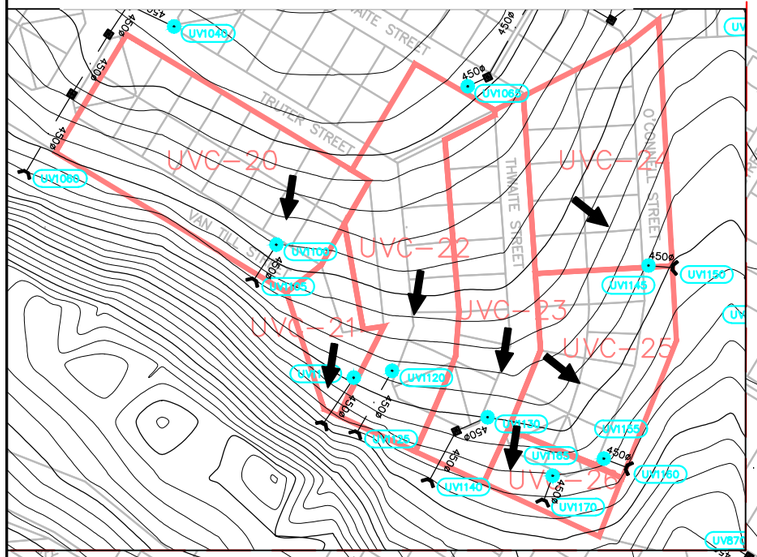


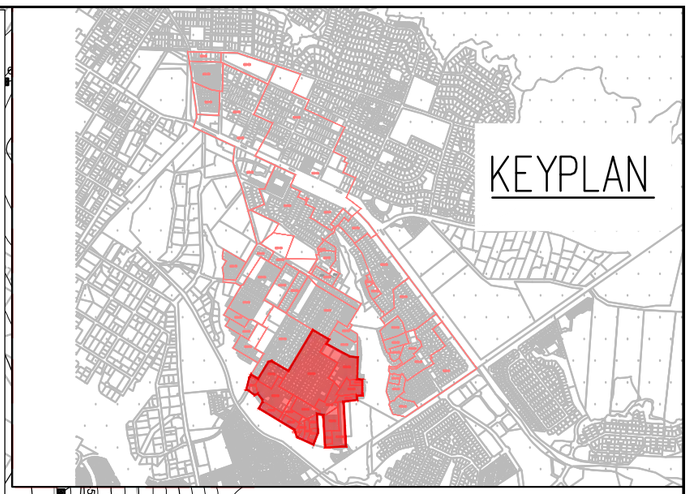
INSERT A: CGC–02 TO CGC–04 CATCHMENT




KEYPLAN
UVC-01
UVC-02
UVC-03
UVC-04
UV07
UV08
UV09
UV10
UV11
UV12
UV13
UV14
UV15
UV16
UV17
UV18
UV19
UV20
UV21
UV22
UV23
UV24
UV25
UV26
UV27
UV28
UV29.0
UV29.1
UV33
UV34
UV35
UV36
UV37
RM33
RM34
RM35
RM290
RM295
RM300
UV5
UV45
UV50
UV440
UV535
UV540
UV545
UV485
UV490
UV565
UV635
UV670
UV675
UV680
UV605
UV640
UV645
UV890
UV950
MILLER STREET
HURTER STREET
HICKS STREET
KONDOR STREET
WOLTEMADE STREET
LANGMARK STREET
SAINT MARY STREET
FOTHERINGHAM STREET
FRANCIS STREET
PARSON STREET
BEER STREET
CANARY STREET
CLINIC STREET
BAKER STREET
VLEI STREET
HARMONY CL
HIBISCUS STREET
STRIP STREET
BOUER STREET
RIETBOK STREET
MCGREGOR STREET
HECTOR STREET
NIEWOUD STREET
GEORGE MOORE STREET
VINCENT STREET
TRUMP CLOSE
PARK ROAD
KOSMOS STREET
O'CONNELL STREET
LEGEND
NODE NUMBER
SUB - CATCHMENT NUMBER
EXISTING STORMWATER PIPE
EXISTING ROADS
EXISTING STORMWATER CHANNELS
SUB - CATCHMENT AREA
CATCHMENT AREA
PROPOSED STORMWATER PIPE (HIGH PRIORITY)
PROPOSED STORMWATER PIPE (LOW PRIORITY-450mm dia.)
PROBLEM AREAS
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URBANSVILLE CATCHMENT
FIG: 4.8 01 - 04 (UVC-01 to 04)
PROPOSED NETWORK

INSERT A: UVC-20 TO UVC-26 CATCHMENT

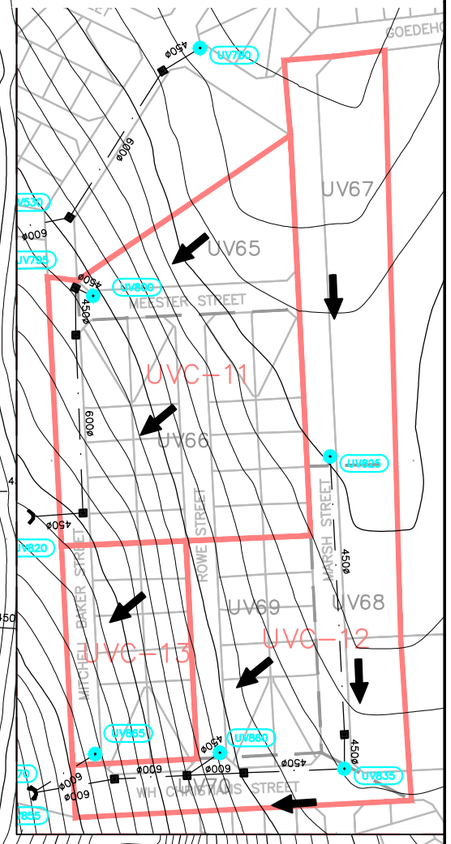




LEGEND

- LS-140 — NODE NUMBER
- BC4 — SUB - CATCHMENT NUMBER
- EXISTING STORMWATER PIPE
- EXISTING ROADS
- EXISTING STORMWATER CHANNELS
- SUB - CATCHMENT AREA
- CATCHMENT AREA
- PROPOSED STORMWATER PIPE (HIGH PRIORITY)
- PROPOSED STORMWATER PIPE (LOW PRIORITY-450mm dia.)
- PROBLEM AREAS

INSERT A: UVC-11 TO UVC-12 CATCHMENT



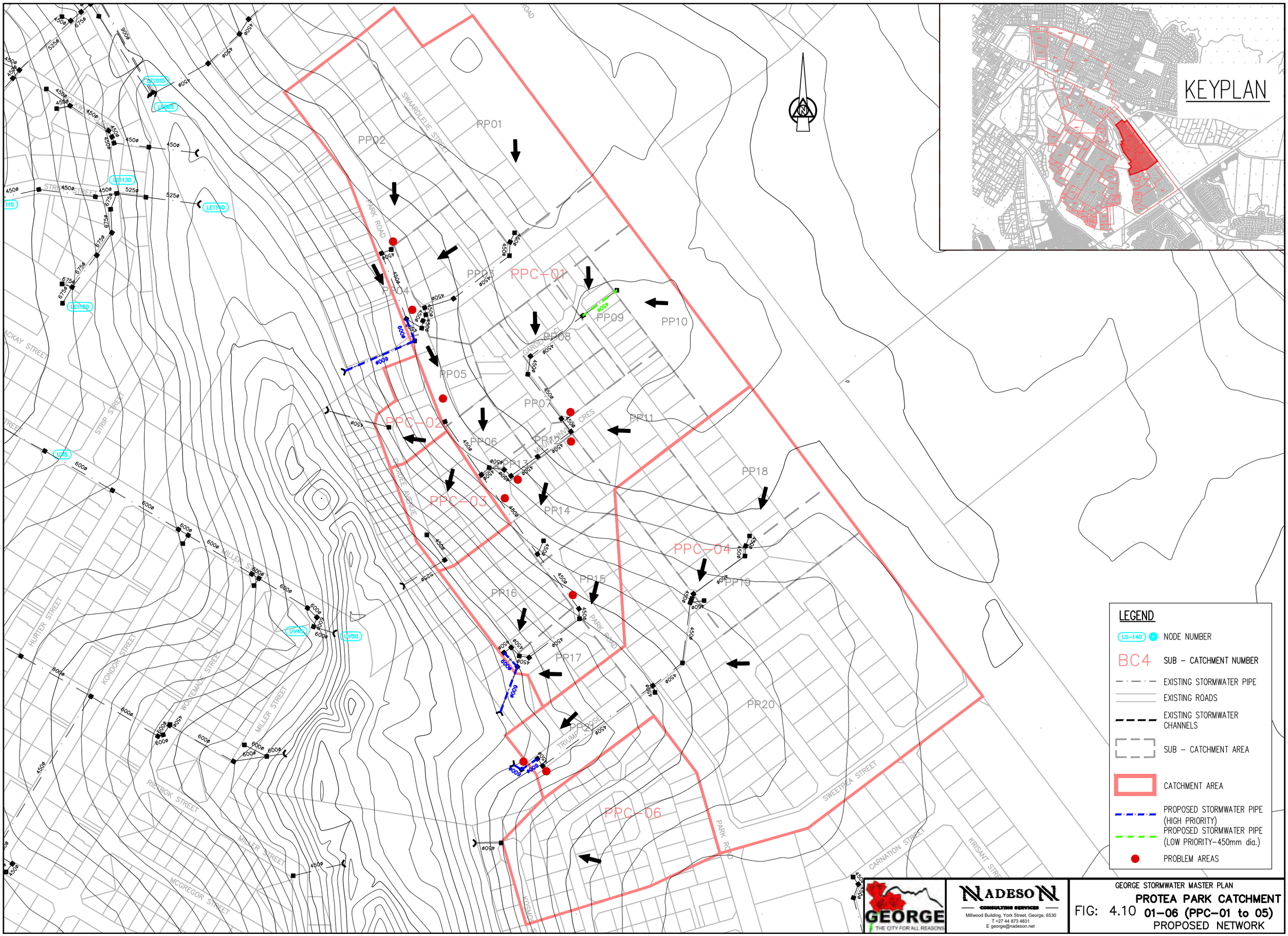
REGRADE PIPE FROM UV480 TO UV 495

GEORGE STORMWATER MASTER PLAN

URBANSVILLE CATCHMENT 05-26 (UVC-05 to 26) PROPOSED NETWORK

FIG: 4.9

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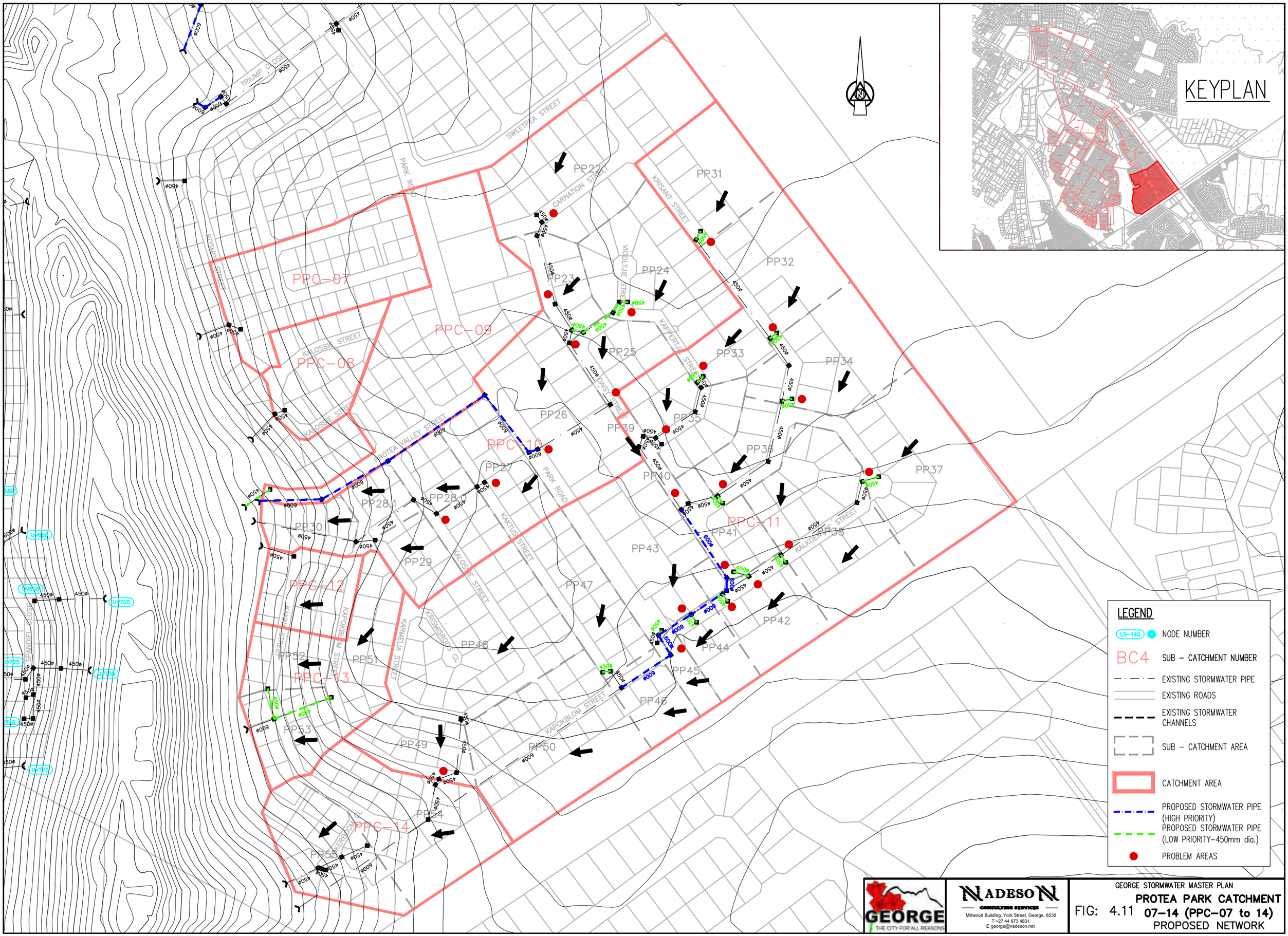


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FIG: 4.10 **PROTEA PARK CATCHMENT 01–06 (PPC–01 to 05)** PROPOSED NETWORK



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FIG: 4.11 **PROTEA PARK CATCHMENT 07–14 (PPC–07 to 14) PROPOSED NETWORK**

ANNEXURE B: HYDRAULIC ANALYSIS RESULTS

2 YEAR OUTPUT – EXISTING NETWORKS

Project Description

File Name ..... E010 EXISTING.SPF

Project Options

Flow Units ..... CMS
Elevation Type ..... Elevation
Hydrology Method ..... EPA SWMM
EPA SWMM Infiltration Method ..... SCS Curve Number
Link Routing Method ..... Hydrodynamic
Enable Overflow Ponding at Nodes ..... YES
Skip Steady State Analysis Time Periods ... NO

Analysis Options

Start Analysis On ..... Apr 27, 2020 00:00:00
End Analysis On ..... Apr 28, 2020 00:00:00
Start Reporting On ..... Apr 27, 2020 00:00:00
Antecedent Dry Days ..... 0 days
Runoff (Dry Weather) Time Step ..... 0 01:00:00 days hh:mm:ss
Runoff (Wet Weather) Time Step ..... 0 00:05:00 days hh:mm:ss
Reporting Time Step ..... 0 00:05:00 days hh:mm:ss
Routing Time Step ..... 30 seconds

Number of Elements

	Qty
Rain Gages	1
Subbasins	361
Nodes	863
Junctions	808
Outfalls	55
Flow Diversions	0
Inlets	0
Storage Nodes	0
Links	819
Channels	0
Pipes	819
Pumps	0
Orifices	0
Weirs	0
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (mm)	Rainfall Distribution
1		Time Series	2YR	Cumulative	mm	None	None	2	70.00	South Africa 24-hr, Type 2

Subbasin Summary

SN	Subbasin ID	Area	Impervious Area	Weighted Curve Number	Average Slope	Equivalent Width	Impervious Area Manning's Roughness	Pervious Area Manning's Roughness	Total Rainfall	Total Infiltration	Total Runoff	Total Runoff Volume	Peak Runoff	Time of Concentration
		(ha)	(%)		(%)	(m)			(mm)	(mm)	(mm)	(ha-mm)	(cms)	(days hh:mm:ss)
1	CE_05	2.02	55.00	82.00	1.3000	150.00	0.1000	0.3000	69.99	13.9650	51.47	103.76	0.20	0 01:35:29
2	CE_10	0.44	50.00	83.00	0.9000	150.00	0.1000	0.3000	69.99	14.9210	51.23	22.75	0.07	0 00:45:49
3	CE_15	1.19	10.00	86.00	1.4000	150.00	0.1000	0.3000	69.99	23.3930	40.01	47.61	0.08	0 01:43:10
4	CE_20	1.04	60.00	81.00	1.5000	150.00	0.1000	0.3000	69.99	12.8730	53.37	55.45	0.14	0 00:57:16
5	CE01	0.19	90.00	92.00	2.6000	76.00	0.1000	0.3000	69.99	1.6790	66.18	12.64	0.04	0 00:22:14
6	CE02	0.30	90.00	92.00	1.2000	150.00	0.1000	0.3000	69.99	1.6790	66.13	19.64	0.06	0 00:24:18
7	CE03	2.06	60.00	81.00	1.4000	150.00	0.1000	0.3000	69.99	12.8730	52.81	108.68	0.22	0 01:28:06
8	CE04	0.21	90.00	92.00	1.8000	150.00	0.1000	0.3000	69.99	1.6790	66.30	14.19	0.05	0 00:17:40
9	CE06	0.72	90.00	92.00	2.0000	150.00	0.1000	0.3000	69.99	1.6790	65.86	47.42	0.14	0 00:35:28
10	CE07	1.80	60.00	81.00	1.7000	150.00	0.1000	0.3000	69.99	12.8730	53.02	95.22	0.21	0 01:16:35
11	CE08	0.72	90.00	92.00	0.6000	150.00	0.1000	0.3000	69.99	1.6790	65.49	46.89	0.12	0 00:50:44
12	CE09	0.51	50.00	83.00	0.9000	150.00	0.1000	0.3000	69.99	14.9210	51.17	25.84	0.07	0 00:49:30
13	CE11	0.40	50.00	83.00	0.9000	150.00	0.1000	0.3000	69.99	14.9210	51.27	20.71	0.06	0 00:43:17
14	CE12	0.70	90.00	92.00	1.4000	150.00	0.1000	0.3000	69.99	1.6790	65.78	45.98	0.13	0 00:38:47
15	CE13	0.77	50.00	83.00	2.6000	150.00	0.1000	0.3000	69.99	14.9210	51.22	39.44	0.11	0 00:46:22
16	CE14	0.47	50.00	83.00	1.4000	133.20	0.1000	0.3000	69.99	14.9210	51.25	24.24	0.07	0 00:44:45
17	CE16	1.03	60.00	81.00	2.3000	150.00	0.1000	0.3000	69.99	12.8730	53.50	55.11	0.15	0 00:50:06
18	CE17	1.23	60.00	81.00	1.4000	150.00	0.1000	0.3000	69.99	12.8730	53.24	65.37	0.16	0 01:04:37
19	CE18	0.86	60.00	81.00	2.5000	150.00	0.1000	0.3000	69.99	12.8730	53.62	45.85	0.13	0 00:43:42
20	CE19	0.61	50.00	83.00	2.1000	150.00	0.1000	0.3000	69.99	14.9210	51.28	31.28	0.09	0 00:42:59
21	CE21	1.05	50.00	83.00	0.8000	150.00	0.1000	0.3000	69.99	14.9210	50.64	53.28	0.12	0 01:19:39
22	CE22	0.10	90.00	92.00	0.7000	138.00	0.1000	0.3000	69.99	1.6790	66.35	6.30	0.02	0 00:15:09
23	CE23	3.77	10.00	86.00	1.0000	150.00	0.1000	0.3000	69.99	23.3930	36.89	138.97	0.12	0 03:47:51
24	CG04	0.86	50.00	83.00	3.4000	150.00	0.1000	0.3000	69.99	14.9210	51.23	44.16	0.13	0 00:45:47
25	CG05	0.25	50.00	83.00	10.9000	110.00	0.1000	0.3000	69.99	14.9210	51.69	12.71	0.04	0 00:18:19
26	CG06	0.97	50.00	83.00	5.1000	150.00	0.1000	0.3000	69.99	14.9210	51.27	49.73	0.15	0 00:43:31
27	CGC01	0.32	50.00	83.00	3.5000	102.60	0.1000	0.3000	69.99	14.9210	51.48	16.63	0.05	0 00:31:38
28	CGC02	0.86	50.00	83.00	2.7000	150.00	0.1000	0.3000	69.99	14.9210	51.17	44.16	0.13	0 00:49:06
29	CGC-02	1.12	50.00	83.00	20.0000	150.00	0.1000	0.3000	69.99	14.9210	51.48	57.40	0.19	0 00:31:24
30	CGC03	0.32	50.00	83.00	6.8000	118.00	0.1000	0.3000	69.99	14.9210	51.61	16.31	0.06	0 00:23:31
31	GE_10	0.47	50.00	83.00	1.0000	150.00	0.1000	0.3000	69.99	14.9210	51.23	23.82	0.07	0 00:45:38
32	GE_15	0.81	90.00	92.00	1.1000	150.00	0.1000	0.3000	69.99	1.6790	65.61	53.21	0.14	0 00:45:34
33	GE_20	2.23	50.00	83.00	0.9000	150.00	0.1000	0.3000	69.99	14.9210	49.92	111.46	0.19	0 02:00:46
34	GE_25	1.13	50.00	83.00	0.3000	150.00	0.1000	0.3000	69.99	14.9210	50.08	56.59	0.10	0 01:51:35
35	GE_26	0.38	90.00	92.00	0.4000	150.00	0.1000	0.3000	69.99	1.6790	65.77	24.99	0.07	0 00:39:10
36	GE_27	0.74	50.00	83.00	1.7000	150.00	0.1000	0.3000	69.99	14.9210	51.13	37.74	0.11	0 00:51:21
37	GE_28	0.71	50.00	83.00	1.6000	88.20	0.1000	0.3000	69.99	14.9210	50.81	36.02	0.09	0 01:10:13
38	GE_30	0.25	90.00	92.00	0.7000	134.00	0.1000	0.3000	69.99	1.6790	66.06	16.32	0.05	0 00:27:22
39	GE_35	1.58	50.00	83.00	0.3000	150.00	0.1000	0.3000	69.99	14.9210	49.63	78.51	0.12	0 02:16:33
40	GE_40	0.68	50.00	83.00	0.4000	150.00	0.1000	0.3000	69.99	14.9210	50.72	34.49	0.08	0 01:15:28
41	GE01	1.56	50.00	83.00	0.5000	150.00	0.1000	0.3000	69.99	14.9210	50.00	77.81	0.14	0 01:55:59
42	GE02	0.87	50.00	83.00	0.8000	150.00	0.1000	0.3000	69.99	14.9210	50.79	44.24	0.11	0 01:11:07
43	GE03.0	1.24	55.00	82.00	0.7000	150.00	0.1000	0.3000	69.99	13.9650	51.64	63.98	0.14	0 01:25:51
44	GE03.1	0.29	90.00	92.00	0.8000	150.00	0.1000	0.3000	69.99	1.6790	66.07	18.83	0.06	0 00:26:46
45	GE04	1.97	50.00	83.00	1.2000	150.00	0.1000	0.3000	69.99	14.9210	50.24	99.12	0.19	0 01:42:51
46	GE05	1.37	50.00	83.00	1.6000	150.00	0.1000	0.3000	69.99	14.9210	50.71	69.47	0.16	0 01:15:48
47	GE06	0.24	90.00	92.00	1.8000	150.00	0.1000	0.3000	69.99	1.6790	66.26	15.97	0.05	0 00:18:59
48	GE07.0	0.29	90.00	92.00	1.0000	150.00	0.1000	0.3000	69.99	1.6790	66.11	19.11	0.06	0 00:25:15
49	GE07.1	0.29	90.00	92.00	1.0000	150.00	0.1000	0.3000	69.99	1.6790	66.11	19.11	0.06	0 00:25:15
50	GE08	1.56	50.00	83.00	0.8000	150.00	0.1000	0.3000	69.99	14.9210	50.27	78.33	0.15	0 01:40:49
51	GE09	1.13	50.00	83.00	0.7000	150.00	0.1000	0.3000	69.99	14.9210	50.53	56.94	0.12	0 01:26:24
52	GE11	0.51	50.00	83.00	1.1000	150.00	0.1000	0.3000	69.99	14.9210	51.22	25.86	0.08	0 00:46:36
53	GE12	0.25	50.00	83.00	1.4000	146.00	0.1000	0.3000	69.99	14.9210	51.52	12.88	0.04	0 00:28:53
54	GE13	0.10	90.00	92.00	1.7000	150.00	0.1000	0.3000	69.99	1.6790	66.43	6.84	0.02	0 00:11:35
55	GE14	1.45	50.00	83.00	1.1000	150.00	0.1000	0.3000	69.99	14.9210	50.50	73.43	0.16	0 01:27:54
56	GE16	2.90	10.00	86.00	0.2000	150.00	0.1000	0.3000	69.99	23.3930	34.23	99.40	0.07	0 05:15:54
57	GE19	0.22	90.00	92.00	0.4000	150.00	0.1000	0.3000	69.99	1.6790	66.04	14.46	0.04	0 00:28:08
58	GE21	1.32	50.00	83.00	0.6000	150.00	0.1000	0.3000	69.99	14.9210	50.29	66.59	0.13	0 01:39:40
59	GE22	0.25	90.00	92.00	1.0000	150.00	0.1000	0.3000	69.99	1.6790	66.17	16.34	0.05	0 00:22:59
60	GE23	2.01	50.00	83.00	0.5000	150.00	0.1000	0.3000	69.99	14.9210	49.65	99.80	0.16	0 02:15:15
61	GE24	0.61	50.00	83.00	0.8000	150.00	0.1000	0.3000	69.99	14.9210	51.03	30.93	0.08	0 00:57:12
62	GE29	0.27	90.00	92.00	0.7000	144.00	0.1000	0.3000	69.99	1.6790	66.04	18.10	0.05	0 00:27:53
63	GE31	0.45	50.00	83.00	0.6000	150.00	0.1000	0.3000	69.99	14.9210	51.12	23.05	0.06	0 00:52:14
64	GE32	0.45	50.00	83.00	0.6000	143.37	0.1000	0.3000	69.99	14.9210	51.09	23.04	0.06	0 00:53:40
65	GE33	1.08	50.00	83.00	0.3000	150.00	0.1000	0.3000	69.99	14.9210	50.14	54.10	0.10	0 01:48:32
66	GE34	0.33	90.00	92.00	0.3000	150.00	0.1000	0.3000	69.99	1.6790	65.76	21.96	0.06	0 00:39:31
67	GE36	0.33	90.00	92.00	0.3000	150.00	0.1000	0.3000	69.99	1.6790	65.76	21.90	0.06	0 00:39:27
68	GE37	0.43	50.00	83.00	1.3000	71.88	0.1000	0.3000	69.99	14.9210	50.93	22.10	0.06	0 01:02:56
69	GE38	0.71	50.00	83.00	0.6000	150.00	0.1000	0.3000	69.99	14.9210	50.83	36.29	0.09	0 01:08:48
70	GE39	1.00	50.00	83.00	0.2000	150.00	0.1000	0.3000	69.99	14.9210	49.99	49.84	0.09	0 01:56:54
71	GE41	0.54	50.00	83.00	0.4000	150.00	0.1000	0.3000	69.99	14.9210	50.89	27.33	0.07	0 01:05:30
72	GE42	1.19	50.00	83.00	0.3000	150.00	0.1000	0.3000	69.99	14.9210	50.02	59.57	0.11	0 01:55:10
73	GE43	1.21	50.00	83.00	0.3000	150.00	0.1000	0.3000	69.99	14.9210	50.00	60.45	0.11	0 01:56:12
74	GE44	0.24	90.00	92.00	2.0000	150.00	0.1000	0.3000	69.99	1.6790	66.28	16.04	0.05	0 00:18:26
75	GEC-04	3.61	50.00	83.00	0.8000	150.00	0.1000	0.3000	69.99	14.9210	49.04	177.00	0.24	0 02:46:53
76	LE_05	0.21	90.00	92.00	2.0000	150.00	0.1000	0.3000	69.99	1.6790	66.31	14.12	0.05	0 00:17:04
77	LE_10	0.13	90.00	92.00	1.4000	70.00	0.1000	0.3000	69.99	1.6790	66.18	8.74	0.03	0 00:22:32
78	LE_15	1.02	55.00	82.00	1.2000	150.00	0.1000	0.3000	69.99	13.9650	52.00	53.15	0.13	0 01:05:04
79	LE_20	0.58	50.00	83.00	0.4000	150.00	0.1000	0.3000	69.99	14.9210	50.83	29.63	0.07	0 01:08:49
80	LE_25	0.45	50.00	83.00	0.6000	142.20	0.1000	0.3000	69.99	14.9210	51.09	23.19	0.06	0 00:54:09
81	LE_30	0.48	50.00	83.00	0.8000	150.00	0.1000	0.3000	69.99	14.9210	51.16	24.66	0.07	0 00:49:52
82	LE_35	0.35	50.00	83.00	0.5000	150.00	0.1000	0.3000	69.99	14.9210	51.20	17.87	0.05	0 00:47:18
83	LE_40	0.31	50.00	83.00	3.1000	128.00	0.1000	0.3000	69.99	14.9210	51.54	16.08	0.05	0 00:28:08
84	LE_45	0.61	50.00	83.00	1.1000	150.00	0.1000	0.3000	69.99	14.9210	51.12	31.38	0.09	0 00:52:24
85	LE_50	0.19	90.00	92.00	0.5000	150.00	0.1000	0.3000	69.99	1.6790	66.15	12.24	0.04	0 00:23:47
86	LE_55	0.17	50.00	83.00	6.8000	88.00	0.1000	0.3000	69.99	14.9210	51.67	8.84	0.03	0 00:19:24
87	LE_60	0.53	50.00	83.00	2.4000	150.00	0.1000	0.3000	69.99	14.9210	51.37	27.02	0.08	0 00:37:47

Subbasin Summary

SN	Subbasin ID	Area	Impervious Area	Weighted Curve Number	Average Slope	Equivalent Width	Impervious Area Manning's Roughness	Pervious Area Manning's Roughness	Total Rainfall	Total Infiltration	Total Runoff	Total Runoff Volume	Peak Runoff	Time of Concentration
		(ha)	(%)		(%)	(m)			(mm)	(mm)	(mm)	(ha-mm)	(cms)	(days hh:mm:ss)
88	LE_65	0.13	90.00	92.00	0.9000	108.00	0.1000	0.3000	69.99	1.6790	66.26	8.35	0.03	0 00:19:17
89	LE_70	0.07	90.00	92.00	2.4000	84.00	0.1000	0.3000	69.99	1.6790	66.42	4.58	0.01	0 00:11:38
90	LE_80	2.38	10.00	86.00	0.4000	150.00	0.1000	0.3000	69.99	23.3930	36.90	87.71	0.08	0 03:47:33
91	LE01	0.16	90.00	92.00	2.9000	140.00	0.1000	0.3000	69.99	1.6790	66.39	10.82	0.03	0 00:13:33
92	LE02	0.49	50.00	83.00	2.6000	109.20	0.1000	0.3000	69.99	14.9210	51.28	25.33	0.08	0 00:42:59
93	LE03	0.67	50.00	83.00	1.5000	117.00	0.1000	0.3000	69.99	14.9210	51.01	34.28	0.09	0 00:58:30
94	LE04	0.62	90.00	92.00	0.8000	150.00	0.1000	0.3000	69.99	1.6790	65.68	40.85	0.11	0 00:42:46
95	LE06	0.30	50.00	83.00	2.8000	150.00	0.1000	0.3000	69.99	14.9210	51.58	15.27	0.05	0 00:25:33
96	LE07	0.73	50.00	83.00	3.0000	149.40	0.1000	0.3000	69.99	14.9210	51.28	37.33	0.11	0 00:43:03
97	LE08	0.18	90.00	92.00	2.2000	138.00	0.1000	0.3000	69.99	1.6790	66.35	11.61	0.04	0 00:15:30
98	LE09	1.23	50.00	83.00	2.0000	150.00	0.1000	0.3000	69.99	14.9210	50.87	62.47	0.16	0 01:06:23
99	LE11	0.26	90.00	92.00	1.5000	150.00	0.1000	0.3000	69.99	1.6790	66.22	17.08	0.05	0 00:20:53
100	LE12	0.66	50.00	83.00	1.1000	150.00	0.1000	0.3000	69.99	14.9210	51.07	33.91	0.09	0 00:54:55
101	LE13	0.66	50.00	83.00	1.7000	150.00	0.1000	0.3000	69.99	14.9210	51.19	33.74	0.10	0 00:47:59
102	LE14	1.62	50.00	83.00	1.3000	150.00	0.1000	0.3000	69.99	14.9210	50.48	81.77	0.17	0 01:29:12
103	LE16	1.41	30.00	85.00	0.9000	150.00	0.1000	0.3000	69.99	19.1270	45.09	63.45	0.12	0 01:52:01
104	LE17	0.27	50.00	83.00	0.7000	140.00	0.1000	0.3000	69.99	14.9210	51.37	13.72	0.04	0 00:37:57
105	LE18	0.94	50.00	83.00	1.0000	150.00	0.1000	0.3000	69.99	14.9210	50.82	47.67	0.12	0 01:09:32
106	LE19	0.86	55.00	82.00	0.7000	146.00	0.1000	0.3000	69.99	13.9650	51.92	44.65	0.11	0 01:10:05
107	LE21	0.32	50.00	83.00	0.9000	99.00	0.1000	0.3000	69.99	14.9210	51.20	16.13	0.05	0 00:47:51
108	LE22	0.52	50.00	83.00	0.7000	120.00	0.1000	0.3000	69.99	14.9210	50.95	26.49	0.07	0 01:02:06
109	LE23	0.45	50.00	83.00	0.6000	164.00	0.1000	0.3000	69.99	14.9210	51.17	22.87	0.07	0 00:49:15
110	LE24	0.37	50.00	83.00	0.7000	115.20	0.1000	0.3000	69.99	14.9210	51.13	18.66	0.05	0 00:51:28
111	LE26	0.33	50.00	83.00	0.7000	152.00	0.1000	0.3000	69.99	14.9210	51.32	16.68	0.05	0 00:40:39
112	LE27	0.59	50.00	83.00	1.0000	150.00	0.1000	0.3000	69.99	14.9210	51.11	30.10	0.08	0 00:52:36
113	LE28	0.12	90.00	92.00	0.8000	126.00	0.1000	0.3000	69.99	1.6790	66.31	7.63	0.02	0 00:17:14
114	LE29	0.13	90.00	92.00	1.7000	116.00	0.1000	0.3000	69.99	1.6790	66.35	8.36	0.03	0 00:15:16
115	LE31	0.58	50.00	83.00	0.5000	150.00	0.1000	0.3000	69.99	14.9210	50.92	29.33	0.07	0 01:03:53
116	LE32	0.10	50.00	83.00	0.5000	114.00	0.1000	0.3000	69.99	14.9210	51.57	5.00	0.02	0 00:25:52
117	LE33	0.45	50.00	83.00	0.5000	135.00	0.1000	0.3000	69.99	14.9210	51.01	22.90	0.06	0 00:58:37
118	LE34	0.37	50.00	83.00	0.5000	112.00	0.1000	0.3000	69.99	14.9210	51.02	18.77	0.05	0 00:58:11
119	LE36	0.20	90.00	92.00	0.5000	150.00	0.1000	0.3000	69.99	1.6790	66.13	12.89	0.04	0 00:24:33
120	LE37	0.33	50.00	83.00	1.4000	144.00	0.1000	0.3000	69.99	14.9210	51.43	17.12	0.05	0 00:34:36
121	LE38	0.35	50.00	83.00	1.3000	152.00	0.1000	0.3000	69.99	14.9210	51.41	18.20	0.06	0 00:35:32
122	LE39	0.46	50.00	83.00	2.3000	150.00	0.1000	0.3000	69.99	14.9210	51.41	23.85	0.07	0 00:35:30
123	LE41	0.31	50.00	83.00	1.4000	144.00	0.1000	0.3000	69.99	14.9210	51.45	15.85	0.05	0 00:33:01
124	LE42	0.28	50.00	83.00	2.0000	88.20	0.1000	0.3000	69.99	14.9210	51.37	14.54	0.04	0 00:37:50
125	LE43	0.82	50.00	83.00	0.8000	150.00	0.1000	0.3000	69.99	14.9210	50.84	41.63	0.10	0 01:08:32
126	LE44	0.58	50.00	83.00	1.0000	150.00	0.1000	0.3000	69.99	14.9210	51.12	29.50	0.08	0 00:51:57
127	LE46	0.17	50.00	83.00	1.9000	104.00	0.1000	0.3000	69.99	14.9210	51.58	8.82	0.03	0 00:25:44
128	LE47	0.16	50.00	83.00	1.9000	108.00	0.1000	0.3000	69.99	14.9210	51.60	8.31	0.03	0 00:24:15
129	LE48	0.77	50.00	83.00	3.6000	150.00	0.1000	0.3000	69.99	14.9210	51.29	39.65	0.12	0 00:42:09
130	LE49	1.26	50.00	83.00	1.4000	150.00	0.1000	0.3000	69.99	14.9210	50.73	63.71	0.15	0 01:14:53
131	LE51	0.09	90.00	92.00	0.4000	150.00	0.1000	0.3000	69.99	1.6790	66.33	5.70	0.02	0 00:16:03
132	LE52	0.11	90.00	92.00	0.7000	150.00	0.1000	0.3000	69.99	1.6790	66.34	7.36	0.02	0 00:15:49
133	LE53	0.31	50.00	83.00	5.9000	150.00	0.1000	0.3000	69.99	14.9210	51.65	15.75	0.05	0 00:20:48
134	LE54	0.56	50.00	83.00	6.0000	180.00	0.1000	0.3000	69.99	14.9210	51.56	28.62	0.10	0 00:26:34
135	LE56	0.30	50.00	83.00	4.2000	142.00	0.1000	0.3000	69.99	14.9210	51.61	15.33	0.05	0 00:23:26
136	LE57	0.37	50.00	83.00	3.5000	116.00	0.1000	0.3000	69.99	14.9210	51.48	18.84	0.06	0 00:31:40
137	LE58	1.78	30.00	85.00	0.8000	150.00	0.1000	0.3000	69.99	19.1270	44.68	79.31	0.13	0 02:13:24
138	LE59	0.87	50.00	83.00	2.3000	150.00	0.1000	0.3000	69.99	14.9210	51.12	44.68	0.12	0 00:51:55
139	LE61	0.10	90.00	92.00	1.9000	52.00	0.1000	0.3000	69.99	1.6790	66.23	6.49	0.02	0 00:20:33
140	LE62	0.23	50.00	83.00	6.9000	129.60	0.1000	0.3000	69.99	14.9210	51.68	12.09	0.04	0 00:18:29
141	LE63	0.10	90.00	92.00	7.1000	100.80	0.1000	0.3000	69.99	1.6790	66.44	6.38	0.02	0 00:09:11
142	LE64	0.26	50.00	83.00	4.1000	131.40	0.1000	0.3000	69.99	14.9210	51.62	13.37	0.05	0 00:22:46
143	LE66	0.22	50.00	83.00	5.0000	150.00	0.1000	0.3000	69.99	14.9210	51.69	11.11	0.04	0 00:17:43
144	LE67	0.16	90.00	92.00	4.8000	126.00	0.1000	0.3000	69.99	1.6790	66.41	10.76	0.03	0 00:12:22
145	LE68	0.33	50.00	83.00	4.9000	150.00	0.1000	0.3000	69.99	14.9210	51.62	16.98	0.06	0 00:23:01
146	LE69	0.42	50.00	83.00	5.5000	150.00	0.1000	0.3000	69.99	14.9210	51.57	21.87	0.07	0 00:25:53
147	LE71	0.63	50.00	83.00	4.5000	150.00	0.1000	0.3000	69.99	14.9210	51.42	32.19	0.10	0 00:34:44
148	LE72	0.23	90.00	92.00	1.1000	150.00	0.1000	0.3000	69.99	1.6790	66.21	15.16	0.05	0 00:21:20
149	LE73	0.59	50.00	83.00	2.2000	150.00	0.1000	0.3000	69.99	14.9210	51.31	30.22	0.09	0 00:41:31
150	LE76	2.62	30.00	85.00	0.8000	150.00	0.1000	0.3000	69.99	19.1270	43.96	115.16	0.16	0 02:48:31
151	LE77	0.58	10.00	86.00	0.9000	150.00	0.1000	0.3000	69.99	23.3930	40.57	23.41	0.05	0 01:16:17
152	LE78	0.70	10.00	86.00	0.9000	150.00	0.1000	0.3000	69.99	23.3930	40.38	28.26	0.05	0 01:25:40
153	LE79	1.91	10.00	86.00	1.2000	150.00	0.1000	0.3000	69.99	23.3930	39.11	74.58	0.09	0 02:23:23
154	LE81	1.16	10.00	86.00	1.2000	117.60	0.1000	0.3000	69.99	23.3930	39.57	46.05	0.06	0 02:03:23
155	PP_10	0.77	10.00	86.00	0.9000	84.80	0.1000	0.3000	69.99	23.3930	39.47	30.32	0.04	0 02:07:32
156	PP_15	0.48	50.00	83.00	4.4000	150.00	0.1000	0.3000	69.99	14.9210	51.51	24.67	0.08	0 00:29:47
157	PP_20	4.96	10.00	86.00	1.4000	150.00	0.1000	0.3000	69.99	23.3930	36.46	180.74	0.16	0 04:02:54
158	PP_25	0.41	50.00	83.00	0.7000	146.00	0.1000	0.3000	69.99	14.9210	51.20	20.89	0.06	0 00:47:44
159	PP_35	0.65	50.00	83.00	0.9000	116.00	0.1000	0.3000	69.99	14.9210	50.86	33.11	0.08	0 01:07:15
160	PP_40	0.10	50.00	92.00	0.7000	138.00	0.1000	0.3000	69.99	8.3940	58.19	5.53	0.02	0 00:20:35
161	PP_45	0.16	90.00	92.00	1.7000	116.00	0.1000	0.3000	69.99	1.6790	66.29	10.81	0.03	0 00:17:49
162	PP_50	0.48	50.00	83.00	2.6000	154.00	0.1000	0.3000	69.99	14.9210	51.43	24.48	0.08	0 00:34:12
163	PP_55	0.78	50.00	83.00	9.4000	106.00	0.1000	0.3000	69.99	14.9210	51.35	40.15	0.12	0 00:39:12
164	PP01	1.82	30.00	85.00	0.6000	150.00	0.1000	0.3000	69.99	19.1270	44.39	80.97	0.13	0 02:27:49
165	PP02	1.28	50.00	83.00	3.3000	150.00	0.1000	0.3000	69.99	14.9210	51.01	65.14	0.17	0 00:58:29
166	PP03	1.40	40.00	84.00	1.6000	150.00	0.1000	0.3000	69.99	17.1640	47.95	67.27	0.15	0 01:25:47
167	PP04	0.13	90.00	92.00	1.6000	128.00	0.1000	0.3000	69.99	1.6790	66.36	8.76	0.03	0 00:15:04
168	PP05	0.30	50.00	83.00	2.9000	138.00	0.1000	0.3000	69.99	14.9210	51.56	15.42	0.05	0 00:26:45
169	PP06	0.24	50.00	83.00	2.9000	136.00	0.1000	0.3000	69.99	14.9210	51.61	12.59	0.04	0 00:23:53
170	PP07	0.59	50.00	83.00	0.5000	150.00	0.1000	0.3000	69.99	14.9210	50.90	29.93	0.08	0 01:04:41
171	PP08	0.42	50.00	83.00	0.8000	118.80	0.1000	0.3000	69.99	14.9210	51.11	21.26	0.06	0 00:52:30
172	PP09	0.36	50.00	83.00	0.7000	127.80	0.1000	0.3000	69.99	14.9210	51.19	18.53	0.05	0 00:48:07
173	PP11	0.73	50.00	83.00	0.5000	150.00	0.1000	0.3000	69.99	14.9210	50.75	36.95	0.09	0 01:13:32
174	PP12	0.07	90.00	92.00	6.3000	64.00	0.1000	0.3000	69.99	1.6790	66.44	4.52	0.01	0 00:10:10

Subbasin Summary

SN	Subbasin ID	Area	Impervious Area	Weighted Curve Number	Average Slope	Equivalent Width	Impervious Area Manning's Roughness	Pervious Area Manning's Roughness	Total Rainfall	Total Infiltration	Total Runoff	Total Runoff Volume	Peak Runoff	Time of Concentration
		(ha)	(%)		(%)	(m)			(mm)	(mm)	(mm)	(ha-mm)	(cms)	(days hh:mm:ss)
175	PP13	0.05	90.00	92.00	4.0000	50.00	0.1000	0.3000	69.99	1.6790	66.43	3.12	0.01	0 00:10:49
176	PP14	0.67	50.00	83.00	3.2000	150.00	0.1000	0.3000	69.99	14.9210	51.33	34.39	0.10	0 00:40:05
177	PP16	0.67	50.00	83.00	4.8000	150.00	0.1000	0.3000	69.99	14.9210	51.41	34.45	0.11	0 00:35:29
178	PP17	0.36	50.00	83.00	5.9000	136.00	0.1000	0.3000	69.99	14.9210	51.60	18.37	0.06	0 00:24:12
179	PP18	0.95	30.00	85.00	1.2000	150.00	0.1000	0.3000	69.99	19.1270	45.67	43.24	0.10	0 01:21:01
180	PP19	1.32	50.00	83.00	2.4000	150.00	0.1000	0.3000	69.99	14.9210	50.89	67.22	0.17	0 01:05:40
181	PP21	0.70	50.00	83.00	4.0000	150.00	0.1000	0.3000	69.99	14.9210	51.36	36.10	0.11	0 00:38:35
182	PP22	1.71	20.00	85.00	0.5000	150.00	0.1000	0.3000	69.99	21.8590	40.81	69.86	0.10	0 02:42:51
183	PP23	0.40	50.00	83.00	0.6000	150.00	0.1000	0.3000	69.99	14.9210	51.18	20.68	0.06	0 00:48:53
184	PP24	1.09	50.00	83.00	0.6000	150.00	0.1000	0.3000	69.99	14.9210	50.49	54.83	0.12	0 01:28:30
185	PP26	1.19	50.00	83.00	1.3000	150.00	0.1000	0.3000	69.99	14.9210	50.74	60.43	0.14	0 01:14:10
186	PP27	0.58	50.00	83.00	0.7000	148.00	0.1000	0.3000	69.99	14.9210	51.01	29.48	0.08	0 00:58:21
187	PP28.0	0.58	50.00	83.00	1.5000	136.00	0.1000	0.3000	69.99	14.9210	51.18	29.58	0.08	0 00:48:50
188	PP28.1	0.28	50.00	83.00	2.7000	148.00	0.1000	0.3000	69.99	14.9210	51.58	14.50	0.05	0 00:25:14
189	PP29	0.33	50.00	83.00	2.7000	148.00	0.1000	0.3000	69.99	14.9210	51.54	17.21	0.06	0 00:28:00
190	PP31	0.79	30.00	85.00	0.7000	148.00	0.1000	0.3000	69.99	19.1270	45.57	36.18	0.08	0 01:26:23
191	PP32	0.88	30.00	85.00	0.7000	148.00	0.1000	0.3000	69.99	19.1270	45.46	40.19	0.08	0 01:32:08
192	PP33	0.32	50.00	83.00	0.7000	133.20	0.1000	0.3000	69.99	14.9210	51.27	16.25	0.05	0 00:43:20
193	PP34	0.93	30.00	85.00	0.5000	150.00	0.1000	0.3000	69.99	19.1270	45.24	42.21	0.08	0 01:44:25
194	PP36	0.48	50.00	83.00	0.5000	150.00	0.1000	0.3000	69.99	14.9210	51.04	24.24	0.07	0 00:56:55
195	PP37	1.35	30.00	85.00	1.5000	150.00	0.1000	0.3000	69.99	19.1270	45.43	61.42	0.13	0 01:33:49
196	PP38	1.32	30.00	85.00	1.6000	150.00	0.1000	0.3000	69.99	19.1270	45.49	60.22	0.13	0 01:30:53
197	PP39	0.03	90.00	92.00	1.9000	54.00	0.1000	0.3000	69.99	1.6790	66.43	2.19	0.01	0 00:10:27
198	PP41	0.41	50.00	83.00	3.6000	122.00	0.1000	0.3000	69.99	14.9210	51.46	21.15	0.07	0 00:32:40
199	PP42	0.64	30.00	85.00	1.5000	120.60	0.1000	0.3000	69.99	19.1270	45.89	29.42	0.07	0 01:08:20
200	PP43	1.03	50.00	83.00	1.0000	150.00	0.1000	0.3000	69.99	14.9210	50.75	52.42	0.12	0 01:13:41
201	PP44	0.32	30.00	85.00	2.3000	88.00	0.1000	0.3000	69.99	19.1270	46.26	14.62	0.04	0 00:47:31
202	PP46	0.35	50.00	83.00	2.1000	96.00	0.1000	0.3000	69.99	14.9210	51.32	18.17	0.06	0 00:40:32
203	PP47	0.72	50.00	83.00	0.7000	150.00	0.1000	0.3000	69.99	14.9210	50.88	36.43	0.09	0 01:05:49
204	PP48	1.58	50.00	83.00	1.3000	150.00	0.1000	0.3000	69.99	14.9210	50.50	79.99	0.17	0 01:28:01
205	PP49	1.44	50.00	83.00	1.3000	150.00	0.1000	0.3000	69.99	14.9210	50.58	72.84	0.16	0 01:23:07
206	PP51	0.61	50.00	83.00	2.7000	150.00	0.1000	0.3000	69.99	14.9210	51.33	31.52	0.10	0 00:40:01
207	PP52	0.37	50.00	83.00	8.3000	144.00	0.1000	0.3000	69.99	14.9210	51.64	18.95	0.06	0 00:21:30
208	PP53	0.51	50.00	83.00	9.6000	104.00	0.1000	0.3000	69.99	14.9210	51.50	26.01	0.08	0 00:30:18
209	PP54	1.22	50.00	83.00	4.7000	154.00	0.1000	0.3000	69.99	14.9210	51.15	62.45	0.18	0 00:50:24
210	PPC-02	0.34	50.00	83.00	8.3000	86.40	0.1000	0.3000	69.99	14.9210	51.54	17.63	0.06	0 00:28:00
211	PPC-03	0.66	50.00	83.00	7.9000	150.00	0.1000	0.3000	69.99	14.9210	51.50	33.99	0.11	0 00:30:17
212	PPC-06	1.89	50.00	83.00	3.8000	150.00	0.1000	0.3000	69.99	14.9210	50.79	96.00	0.23	0 01:10:56
213	PPC-07	1.39	50.00	83.00	3.6000	150.00	0.1000	0.3000	69.99	14.9210	50.98	71.07	0.19	0 01:00:03
214	PPC-08	0.76	50.00	83.00	3.8000	150.00	0.1000	0.3000	69.99	14.9210	51.31	39.20	0.12	0 00:41:11
215	PPC-09	2.24	38.00	84.00	2.7000	150.00	0.1000	0.3000	69.99	17.7360	47.07	105.39	0.22	0 01:38:59
216	PPC-12	0.55	50.00	83.00	8.8000	122.40	0.1000	0.3000	69.99	14.9210	51.51	28.33	0.09	0 00:29:42
217	RM_05	0.09	90.00	92.00	0.7000	150.00	0.1000	0.3000	69.99	1.6790	66.38	5.84	0.02	0 00:13:46
218	RM_10	0.34	50.00	83.00	4.7000	120.00	0.1000	0.3000	69.99	14.9210	51.56	17.32	0.06	0 00:26:59
219	RM_15	0.26	50.00	83.00	0.5000	150.00	0.1000	0.3000	69.99	14.9210	51.35	13.14	0.04	0 00:39:16
220	RM_20	0.60	20.00	85.00	0.7000	120.00	0.1000	0.3000	69.99	21.8590	42.32	25.56	0.05	0 01:30:04
221	RM_25	0.27	50.00	83.00	0.8000	126.00	0.1000	0.3000	69.99	14.9210	51.35	13.71	0.04	0 00:38:50
222	RM_30	1.67	60.00	81.00	0.8000	150.00	0.1000	0.3000	69.99	12.8730	52.74	88.02	0.17	0 01:31:54
223	RM_35	1.49	55.00	82.00	4.6000	150.00	0.1000	0.3000	69.99	13.9650	52.19	77.61	0.21	0 00:54:27
224	RM01	0.25	90.00	92.00	1.5000	136.00	0.1000	0.3000	69.99	1.6790	66.20	16.61	0.05	0 00:21:47
225	RM02	0.11	90.00	92.00	2.4000	84.00	0.1000	0.3000	69.99	1.6790	66.36	6.97	0.02	0 00:14:58
226	RM03	0.13	90.00	92.00	0.8000	128.00	0.1000	0.3000	69.99	1.6790	66.27	8.88	0.03	0 00:18:43
227	RM04	0.39	50.00	83.00	0.7000	150.00	0.1000	0.3000	69.99	14.9210	51.24	19.73	0.06	0 00:45:21
228	RM06	0.45	50.00	83.00	2.7000	150.00	0.1000	0.3000	69.99	14.9210	51.45	23.00	0.07	0 00:33:05
229	RM07	0.07	90.00	92.00	2.0000	150.00	0.1000	0.3000	69.99	1.6790	66.44	4.92	0.02	0 00:09:03
230	RM08	0.92	50.00	83.00	5.3000	120.00	0.1000	0.3000	69.99	14.9210	51.20	47.10	0.14	0 00:47:38
231	RM09	0.18	90.00	92.00	5.3000	150.00	0.1000	0.3000	69.99	1.6790	66.43	12.02	0.04	0 00:11:33
232	RM11	0.08	90.00	92.00	4.0000	150.00	0.1000	0.3000	69.99	1.6790	66.44	5.58	0.02	0 00:07:56
233	RM12	0.20	90.00	92.00	9.3000	150.00	0.1000	0.3000	69.99	1.6790	66.43	13.35	0.04	0 00:10:24
234	RM13	0.35	50.00	83.00	0.7000	146.00	0.1000	0.3000	69.99	14.9210	51.27	17.79	0.05	0 00:43:18
235	RM14	0.46	50.00	83.00	0.6000	170.00	0.1000	0.3000	69.99	14.9210	51.17	23.69	0.07	0 00:49:13
236	RM16	0.34	90.00	92.00	0.4000	150.00	0.1000	0.3000	69.99	1.6790	65.83	22.19	0.06	0 00:36:27
237	RM17	0.72	50.00	83.00	2.4000	150.00	0.1000	0.3000	69.99	14.9210	51.24	36.68	0.11	0 00:45:28
238	RM18	0.99	50.00	83.00	1.1000	150.00	0.1000	0.3000	69.99	14.9210	50.81	50.46	0.12	0 01:09:55
239	RM19	1.16	50.00	83.00	0.4000	150.00	0.1000	0.3000	69.99	14.9210	50.22	58.35	0.11	0 01:44:05
240	RM21	1.10	50.00	83.00	1.0000	150.00	0.1000	0.3000	69.99	14.9210	50.70	55.97	0.13	0 01:16:41
241	RM22	0.40	50.00	83.00	3.0000	150.00	0.1000	0.3000	69.99	14.9210	51.51	20.45	0.07	0 00:29:51
242	RM23	0.38	50.00	83.00	1.2000	150.00	0.1000	0.3000	69.99	14.9210	51.36	19.52	0.06	0 00:38:17
243	RM24	0.24	50.00	83.00	0.7000	144.00	0.1000	0.3000	69.99	14.9210	51.42	12.39	0.04	0 00:35:05
244	RM26	0.22	90.00	92.00	2.3000	150.00	0.1000	0.3000	69.99	1.6790	66.32	14.59	0.05	0 00:16:42
245	RM27	1.40	60.00	81.00	2.3000	140.80	0.1000	0.3000	69.99	12.8730	53.27	74.53	0.18	0 01:02:33
246	RM28	0.45	50.00	83.00	0.8000	117.00	0.1000	0.3000	69.99	14.9210	51.06	23.03	0.06	0 00:55:37
247	RM29	0.87	50.00	83.00	0.4000	150.00	0.1000	0.3000	69.99	14.9210	50.51	43.79	0.09	0 01:27:19
248	RM31	1.85	50.00	83.00	0.8000	150.00	0.1000	0.3000	69.99	14.9210	50.08	92.84	0.17	0 01:51:54
249	RM32	0.47	50.00	83.00	0.6000	166.00	0.1000	0.3000	69.99	14.9210	51.15	23.94	0.07	0 00:50:15
250	RM33	2.28	60.00	81.00	1.4000	150.00	0.1000	0.3000	69.99	12.8730	52.71	120.17	0.23	0 01:33:41
251	RM34	0.65	60.00	81.00	2.7000	150.00	0.1000	0.3000	69.99	12.8730	53.76	34.84	0.11	0 00:36:10
252	UV_05	0.23	50.00	83.00	6.0000	134.00	0.1000	0.3000	69.99	14.9210	51.68	11.99	0.04	0 00:18:48
253	UV_10	1.90	50.00	83.00	3.4000	116.00	0.1000	0.3000	69.99	14.9210	50.54	95.97	0.21	0 01:25:48
254	UV_15	0.96	50.00	83.00	3.6000	150.00	0.1000	0.3000	69.99	14.9210	51.19	48.94	0.14	0 00:47:53
255	UV_20	0.13	90.00	92.00	1.9000	108.00	0.1000	0.3000	69.99	1.6790	66.34	8.62	0.03	0 00:15:42
256	UV_23	0.53	50.00	83.00	5.5000	150.00	0.1000	0.3000	69.99	14.9210	51.51	27.30	0.09	0 00:29:36
257	UV_25	1.04	50.00	83.00	1.2000	150.00	0.1000	0.3000	69.99	14.9210	50.81	52.79	0.13	0 01:10:00
258	UV_30	0.08	90.00	92.00	2.6000	78.00	0.1000	0.3000	69.99	1.6790	66.39	5.51	0.02	0 00:13:16
259	UV_35	0.34	50.00	83.00	0.7000	146.00	0.1000	0.3000	69.99	14.9210	51.28	17.59	0.05	0 00:43:00
260	UV_40	0.89	50.00	83.00	1.8000	150.00	0.1000	0.3000	69.99	14.9210	51.04	45.48	0.12	0 00:56:31
261	UV_45	1.64	50.00	83.00	2.5000	108.00	0.1000	0.3000	69.99	14.9210	50.46	82.91	0.18	0 01:30:03

Subbasin Summary

SN	Subbasin ID	Area	Impervious Area	Weighted Curve Number	Average Slope	Equivalent Width	Impervious Area Manning's Roughness	Pervious Area Manning's Roughness	Total Rainfall	Total Infiltration	Total Runoff	Total Runoff Volume	Peak Runoff	Time of Concentration
		(ha)	(%)		(%)	(m)			(mm)	(mm)	(mm)	(ha-mm)	(cms)	(days hh:mm:ss)
262	UV_55	0.46	50.00	83.00	6.5000	138.60	0.1000	0.3000	69.99	14.9210	51.55	23.71	0.08	0 00:27:07
263	UV_60	1.04	50.00	83.00	5.1000	150.00	0.1000	0.3000	69.99	14.9210	51.24	53.08	0.16	0 00:45:16
264	UV_65	0.45	50.00	83.00	5.8000	150.00	0.1000	0.3000	69.99	14.9210	51.56	23.41	0.08	0 00:26:33
265	UV_70	0.30	90.00	92.00	6.8000	150.00	0.1000	0.3000	69.99	1.6790	66.37	19.58	0.06	0 00:14:23
266	UV_75	0.22	50.00	83.00	2.3000	130.00	0.1000	0.3000	69.99	14.9210	51.60	11.09	0.04	0 00:24:23
267	UV_80	0.17	50.00	83.00	8.0000	90.00	0.1000	0.3000	69.99	14.9210	51.69	8.74	0.03	0 00:18:06
268	UV_85	0.11	50.00	83.00	1.2000	86.00	0.1000	0.3000	69.99	14.9210	51.59	5.52	0.02	0 00:24:59
269	UV_90	0.58	50.00	83.00	2.4000	150.00	0.1000	0.3000	69.99	14.9210	51.33	29.72	0.09	0 00:40:02
270	UV_95	0.52	50.00	83.00	2.8000	150.00	0.1000	0.3000	69.99	14.9210	51.41	26.53	0.08	0 00:35:40
271	UV01	0.35	50.00	83.00	1.5000	105.60	0.1000	0.3000	69.99	14.9210	51.30	17.90	0.05	0 00:41:59
272	UV02	0.35	50.00	83.00	2.3000	117.00	0.1000	0.3000	69.99	14.9210	51.42	18.00	0.06	0 00:34:48
273	UV03	0.04	90.00	92.00	1.6000	62.00	0.1000	0.3000	69.99	1.6790	66.41	2.86	0.01	0 00:11:52
274	UV04	0.13	90.00	92.00	6.1000	132.00	0.1000	0.3000	69.99	1.6790	66.44	8.64	0.03	0 00:09:48
275	UV06	0.35	50.00	83.00	6.3000	100.80	0.1000	0.3000	69.99	14.9210	51.53	18.24	0.06	0 00:28:19
276	UV07	1.45	20.00	85.00	1.8000	150.00	0.1000	0.3000	69.99	21.8590	42.13	60.95	0.11	0 01:40:15
277	UV08	1.38	20.00	85.00	1.1000	150.00	0.1000	0.3000	69.99	21.8590	41.87	57.86	0.10	0 01:53:03
278	UV09	1.77	50.00	83.00	3.7000	108.00	0.1000	0.3000	69.99	14.9210	50.58	89.32	0.20	0 01:23:36
279	UV11	1.89	50.00	83.00	4.3000	116.00	0.1000	0.3000	69.99	14.9210	50.64	95.46	0.22	0 01:19:37
280	UV12	0.82	50.00	83.00	4.1000	150.00	0.1000	0.3000	69.99	14.9210	51.30	42.01	0.13	0 00:41:58
281	UV13	0.59	50.00	83.00	5.0000	150.00	0.1000	0.3000	69.99	14.9210	51.46	30.47	0.10	0 00:32:33
282	UV14	0.33	50.00	83.00	3.0000	132.00	0.1000	0.3000	69.99	14.9210	51.53	16.90	0.06	0 00:28:44
283	UV16	0.12	90.00	92.00	0.7000	142.00	0.1000	0.3000	69.99	1.6790	66.31	8.09	0.03	0 00:17:18
284	UV17	0.13	90.00	92.00	0.8000	130.00	0.1000	0.3000	69.99	1.6790	66.29	8.42	0.03	0 00:17:57
285	UV18	0.14	90.00	92.00	0.6000	160.00	0.1000	0.3000	69.99	1.6790	66.28	9.21	0.03	0 00:18:15
286	UV19	0.12	90.00	92.00	1.7000	118.00	0.1000	0.3000	69.99	1.6790	66.36	8.03	0.03	0 00:14:45
287	UV21	1.09	50.00	83.00	3.7000	150.00	0.1000	0.3000	69.99	14.9210	51.13	55.63	0.16	0 00:51:20
288	UV23	0.96	50.00	83.00	3.4000	150.00	0.1000	0.3000	69.99	14.9210	51.18	48.88	0.14	0 00:48:41
289	UV24	0.99	50.00	83.00	1.9000	150.00	0.1000	0.3000	69.99	14.9210	51.00	50.39	0.13	0 00:59:10
290	UV26	0.96	50.00	83.00	0.5000	150.00	0.1000	0.3000	69.99	14.9210	50.52	48.40	0.10	0 01:26:42
291	UV27	0.42	50.00	83.00	1.5000	150.00	0.1000	0.3000	69.99	14.9210	51.37	21.42	0.07	0 00:37:51
292	UV28	0.45	50.00	83.00	1.4000	150.00	0.1000	0.3000	69.99	14.9210	51.32	23.25	0.07	0 00:40:37
293	UV29.0	0.76	50.00	83.00	2.5000	150.00	0.1000	0.3000	69.99	14.9210	51.22	38.87	0.11	0 00:46:31
294	UV29.1	0.48	50.00	83.00	2.4000	150.00	0.1000	0.3000	69.99	14.9210	51.41	24.73	0.08	0 00:35:49
295	UV31	0.10	90.00	92.00	0.7000	146.00	0.1000	0.3000	69.99	1.6790	66.36	6.37	0.02	0 00:14:44
296	UV32	0.07	90.00	92.00	1.0000	98.00	0.1000	0.3000	69.99	1.6790	66.38	4.58	0.01	0 00:13:48
297	UV33	0.11	90.00	92.00	0.5000	150.00	0.1000	0.3000	69.99	1.6790	66.30	7.49	0.02	0 00:17:41
298	UV34	0.29	50.00	83.00	0.6000	150.00	0.1000	0.3000	69.99	14.9210	51.34	14.73	0.04	0 00:39:49
299	UV36	0.66	50.00	83.00	1.8000	150.00	0.1000	0.3000	69.99	14.9210	51.21	33.80	0.10	0 00:47:12
300	UV37	0.83	50.00	83.00	3.6000	150.00	0.1000	0.3000	69.99	14.9210	51.26	42.34	0.13	0 00:43:52
301	UV38	1.67	50.00	83.00	1.4000	150.00	0.1000	0.3000	69.99	14.9210	50.48	84.41	0.18	0 01:28:55
302	UV39	1.56	50.00	83.00	1.3000	150.00	0.1000	0.3000	69.99	14.9210	50.52	78.55	0.17	0 01:27:03
303	UV41	0.92	50.00	83.00	1.5000	150.00	0.1000	0.3000	69.99	14.9210	50.97	47.09	0.12	0 01:01:01
304	UV42	0.12	90.00	92.00	1.0000	104.00	0.1000	0.3000	69.99	1.6790	66.27	8.02	0.03	0 00:18:39
305	UV43	0.16	90.00	92.00	0.8000	130.00	0.1000	0.3000	69.99	1.6790	66.23	10.40	0.03	0 00:20:24
306	UV44	0.17	90.00	92.00	0.7000	142.00	0.1000	0.3000	69.99	1.6790	66.21	11.32	0.04	0 00:21:12
307	UV46	1.48	50.00	83.00	1.5000	117.00	0.1000	0.3000	69.99	14.9210	50.39	74.63	0.15	0 01:34:00
308	UV47	1.50	50.00	83.00	1.4000	131.40	0.1000	0.3000	69.99	14.9210	50.46	75.49	0.16	0 01:30:03
309	UV48	0.51	50.00	83.00	2.2000	150.00	0.1000	0.3000	69.99	14.9210	51.37	26.09	0.08	0 00:37:59
310	UV49	0.57	50.00	83.00	5.5000	88.00	0.1000	0.3000	69.99	14.9210	51.29	29.28	0.09	0 00:42:38
311	UV50	0.45	50.00	83.00	2.4000	150.00	0.1000	0.3000	69.99	14.9210	51.43	23.04	0.07	0 00:34:19
312	UV51	0.49	50.00	83.00	1.7000	150.00	0.1000	0.3000	69.99	14.9210	51.33	25.30	0.08	0 00:40:19
313	UV52	0.25	50.00	83.00	2.2000	134.00	0.1000	0.3000	69.99	14.9210	51.56	13.04	0.04	0 00:26:45
314	UV53	0.40	50.00	83.00	3.1000	128.00	0.1000	0.3000	69.99	14.9210	51.46	20.69	0.07	0 00:32:45
315	UV54	1.63	55.00	82.00	2.0000	150.00	0.1000	0.3000	69.99	13.9650	51.85	84.62	0.20	0 01:13:55
316	UV56	0.37	50.00	83.00	7.3000	150.00	0.1000	0.3000	69.99	14.9210	51.63	19.26	0.07	0 00:22:01
317	UV57	0.64	50.00	83.00	2.3000	86.00	0.1000	0.3000	69.99	14.9210	50.98	32.58	0.09	0 01:00:04
318	UV58	1.03	50.00	83.00	4.9000	150.00	0.1000	0.3000	69.99	14.9210	51.23	52.97	0.15	0 00:45:46
319	UV59	0.24	50.00	83.00	8.6000	116.00	0.1000	0.3000	69.99	14.9210	51.68	12.56	0.04	0 00:18:55
320	UV61	0.39	50.00	83.00	11.9000	84.00	0.1000	0.3000	69.99	14.9210	51.54	20.26	0.07	0 00:27:47
321	UV62	0.77	50.00	83.00	2.1000	150.00	0.1000	0.3000	69.99	14.9210	51.17	39.25	0.11	0 00:49:19
322	UV63	1.22	50.00	83.00	6.5000	150.00	0.1000	0.3000	69.99	14.9210	51.22	62.54	0.18	0 00:46:27
323	UV64	0.08	90.00	92.00	1.7000	120.00	0.1000	0.3000	69.99	1.6790	66.42	5.51	0.02	0 00:11:38
324	UV66	1.11	50.00	83.00	7.9000	150.00	0.1000	0.3000	69.99	14.9210	51.31	56.80	0.17	0 00:41:18
325	UV67	0.74	50.00	83.00	1.7000	150.00	0.1000	0.3000	69.99	14.9210	51.13	37.89	0.11	0 00:51:29
326	UV68	0.53	50.00	83.00	2.1000	150.00	0.1000	0.3000	69.99	14.9210	51.34	27.16	0.08	0 00:39:28
327	UV69	0.52	50.00	83.00	5.0000	150.00	0.1000	0.3000	69.99	14.9210	51.50	26.94	0.09	0 00:30:13
328	UV71	0.04	90.00	92.00	10.5000	38.00	0.1000	0.3000	69.99	1.6790	66.44	2.39	0.01	0 00:08:08
329	UV72	0.96	50.00	83.00	3.0000	150.00	0.1000	0.3000	69.99	14.9210	51.15	49.00	0.14	0 00:50:39
330	UV73	0.42	50.00	83.00	1.7000	150.00	0.1000	0.3000	69.99	14.9210	51.39	21.43	0.07	0 00:36:27
331	UV74	0.81	50.00	83.00	1.0000	150.00	0.1000	0.3000	69.99	14.9210	50.92	40.99	0.11	0 01:03:26
332	UV76	0.40	50.00	83.00	1.6000	150.00	0.1000	0.3000	69.99	14.9210	51.39	20.76	0.06	0 00:36:26
333	UV77	0.44	50.00	83.00	3.8000	127.00	0.1000	0.3000	69.99	14.9210	51.46	22.54	0.07	0 00:32:36
334	UV78	0.26	50.00	83.00	4.5000	61.60	0.1000	0.3000	69.99	14.9210	51.42	13.37	0.04	0 00:34:58
335	UV79	0.25	50.00	83.00	6.2000	130.00	0.1000	0.3000	69.99	14.9210	51.67	13.02	0.04	0 00:19:55
336	UV81	0.42	50.00	83.00	48.0000	150.00	0.1000	0.3000	69.99	14.9210	51.74	21.78	0.08	0 00:13:27
337	UV82	0.41	50.00	83.00	1.6000	115.20	0.1000	0.3000	69.99	14.9210	51.28	20.82	0.06	0 00:42:48
338	UV83	0.23	50.00	83.00	0.8000	126.00	0.1000	0.3000	69.99	14.9210	51.42	11.57	0.04	0 00:35:03
339	UV84	0.10	90.00	92.00	1.3000	80.00	0.1000	0.3000	69.99	1.6790	66.29	6.63	0.02	0 00:18:00
340	UV86	0.10	50.00	83.00	1.1000	88.00	0.1000	0.3000	69.99	14.9210	51.61	4.95	0.02	0 00:23:42
341	UV87	0.40	50.00	83.00	0.6000	150.00	0.1000	0.3000	69.99	14.9210	51.19	20.22	0.06	0 00:48:14
342	UV88	0.30	50.00	83.00	2.6000	150.00	0.1000	0.3000	69.99	14.9210	51.57	15.26	0.05	0 00:26:08
343	UV89	0.06	90.00	92.00	2.2000	92.00	0.1000	0.3000	69.99	1.6790	66.43	4.19	0.01	0 00:10:43
344	UV91	0.13	90.00	92.00	7.5000	80.00	0.1000	0.3000	69.99	1.6790	66.40	8.90	0.03	0 00:12:41
345	UV92	0.55	50.00	83.00	3.0000	150.00	0.1000	0.3000	69.99	14.9210	51.40	28.01	0.09	0 00:36:06
346	UV93	0.44	50.00	83.00	1.8000	150.00	0.1000	0.3000	69.99	14.9210	51.39	22.56	0.07	0 00:36:58
347	UV94	0.40	50.00	83.00	2.2000	150.00	0.1000	0.3000	69.99	14.9210	51.46	20.48	0.07	0 00:32:49
348	UV96	0.38	50.00	83.00	8.9000	90.00	0.1000	0.3000	69.99	14.9210	51.53	19.43	0.06	0 00:28:22

Subbasin Summary

SN	Subbasin ID	Area	Impervious Area	Weighted Curve Number	Average Slope	Equivalent Width	Impervious Area Manning's Roughness	Pervious Area Manning's Roughness	Total Rainfall	Total Infiltration	Total Runoff	Total Runoff Volume	Peak Runoff	Time of Concentration
		(ha)	(%)		(%)	(m)			(mm)	(mm)	(mm)	(ha-mm)	(cms)	(days hh:mm:ss)
349	UVC-02	1.26	50.00	83.00	4.8000	150.00	0.1000	0.3000	69.99	14.9210	51.12	64.57	0.18	0 00:51:55
350	UVC-07	0.38	50.00	83.00	9.7000	150.00	0.1000	0.3000	69.99	14.9210	51.66	19.73	0.07	0 00:20:31
351	UVC-09	0.66	50.00	83.00	4.3000	150.00	0.1000	0.3000	69.99	14.9210	51.40	33.97	0.11	0 00:36:23
352	UVC-13	0.53	50.00	83.00	7.8000	150.00	0.1000	0.3000	69.99	14.9210	51.56	27.07	0.09	0 00:26:30
353	UVC-15	0.72	50.00	83.00	10.8000	117.00	0.1000	0.3000	69.99	14.9210	51.44	37.09	0.12	0 00:33:45
354	UVC-17	1.00	50.00	83.00	4.1000	150.00	0.1000	0.3000	69.99	14.9210	51.21	50.95	0.15	0 00:47:10
355	UVC-20	0.75	50.00	83.00	3.5000	150.00	0.1000	0.3000	69.99	14.9210	51.30	38.48	0.12	0 00:41:45
356	UVC-21	0.17	90.00	92.00	10.8000	130.00	0.1000	0.3000	69.99	1.6790	66.44	11.03	0.04	0 00:09:39
357	UVC-22	0.63	50.00	83.00	6.7000	150.00	0.1000	0.3000	69.99	14.9210	51.49	32.49	0.11	0 00:30:58
358	UVC-23	0.55	50.00	83.00	6.9000	150.00	0.1000	0.3000	69.99	14.9210	51.54	28.14	0.09	0 00:28:09
359	UVC-24	0.56	50.00	83.00	7.5000	150.00	0.1000	0.3000	69.99	14.9210	51.54	28.71	0.09	0 00:27:47
360	UVC-25	0.47	50.00	83.00	7.1000	150.00	0.1000	0.3000	69.99	14.9210	51.58	24.45	0.08	0 00:25:38
361	UVC-26	0.15	90.00	92.00	7.1000	56.00	0.1000	0.3000	69.99	1.6790	66.32	9.75	0.03	0 00:16:53

Junction Results

SN	Element ID	Peak Inflow (cms)	Peak Lateral Inflow (cms)	Max HGL Elevation Attained (m)	Max HGL Depth Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Average HGL Elevation Attained (m)	Average HGL Depth Attained (m)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)
1	CE10	0.35	0.00	229.44	1.30	0.00	0.61	228.27	0.13	0 12:11	0 00:00
2	CE100	0.14	0.14	228.22	1.52	0.00	0.25	226.77	0.07	0 12:11	0 00:00
3	CE105	0.48	0.00	228.07	1.57	0.00	0.31	226.62	0.12	0 12:11	0 00:00
4	CE110	0.48	0.00	227.43	1.03	0.00	0.83	226.50	0.10	0 12:11	0 00:00
5	CE115	0.48	0.00	226.70	0.51	0.00	1.36	226.29	0.10	0 12:12	0 00:00
6	CE120	0.48	0.00	226.35	0.35	0.00	1.22	226.07	0.07	0 12:12	0 00:00
7	CE125	0.41	0.20	228.75	1.38	0.00	0.00	227.45	0.08	0 12:06	0 12:12
8	CE130	0.36	0.00	228.45	1.45	0.00	0.11	227.08	0.08	0 12:06	0 00:00
9	CE135	0.21	0.21	228.29	0.48	0.00	0.00	227.89	0.08	0 11:58	0 12:12
10	CE140	0.00	0.00	227.62	1.58	0.00	0.36	226.10	0.06	0 12:12	0 00:00
11	CE145	0.12	0.12	227.50	1.43	0.00	0.50	226.14	0.07	0 12:12	0 00:00
12	CE15	0.35	0.00	229.15	1.21	0.00	0.90	228.12	0.18	0 12:09	0 00:00
13	CE150	0.07	0.07	227.50	0.08	0.00	0.62	227.44	0.02	0 12:12	0 00:00
14	CE155	0.40	0.00	226.02	0.31	0.00	1.80	225.79	0.08	0 12:12	0 00:00
15	CE160	0.47	0.00	225.60	0.45	0.00	1.95	225.27	0.12	0 12:12	0 00:00
16	CE165	0.53	0.00	225.27	0.37	0.00	1.92	224.99	0.09	0 12:12	0 00:00
17	CE170	0.65	0.00	224.80	0.39	0.00	1.70	224.50	0.09	0 12:12	0 00:00
18	CE175	0.83	0.07	224.23	0.42	0.00	1.64	223.90	0.09	0 12:13	0 00:00
19	CE180	0.88	0.00	224.10	2.10	0.00	0.00	222.13	0.13	0 12:06	0 12:06
20	CE185	1.49	0.00	223.63	2.00	0.00	0.00	221.85	0.22	0 12:06	0 12:06
21	CE190	1.61	0.00	222.95	2.15	0.00	0.00	221.36	0.56	0 12:11	0 12:11
22	CE195	1.76	0.16	222.54	1.54	0.00	0.41	221.25	0.25	0 12:12	0 00:00
23	CE20	0.40	0.05	228.86	0.94	0.00	1.19	228.06	0.14	0 12:09	0 00:00
24	CE200	2.08	0.00	222.05	1.31	0.00	0.87	220.89	0.15	0 12:11	0 00:00
25	CE205	0.07	0.07	227.69	0.08	0.00	0.63	227.63	0.02	0 12:12	0 00:00
26	CE210	0.06	0.06	226.64	0.08	0.00	0.69	226.58	0.02	0 12:12	0 00:00
27	CE215	0.13	0.13	225.28	0.16	0.00	1.52	225.15	0.03	0 12:12	0 00:00
28	CE220	0.11	0.11	225.48	0.22	0.00	1.60	225.30	0.04	0 12:12	0 00:00
29	CE225	0.11	0.00	225.22	0.16	0.00	1.94	225.09	0.03	0 12:12	0 00:00
30	CE230	0.08	0.08	223.77	0.63	0.00	0.21	223.17	0.03	0 12:13	0 00:00
31	CE240	0.83	0.00	225.91	1.53	0.00	0.00	224.57	0.19	0 12:05	0 12:05
32	CE245	0.92	0.00	223.84	1.88	0.00	0.00	222.21	0.25	0 12:06	0 12:13
33	CE25	0.40	0.00	228.34	0.59	0.00	1.59	227.86	0.11	0 12:11	0 00:00
34	CE255	0.11	0.11	226.19	0.96	0.00	0.00	225.29	0.06	0 12:05	0 12:05
35	CE260	0.15	0.15	223.91	1.16	0.00	0.02	222.81	0.06	0 12:11	0 00:00
36	CE265	0.13	0.13	224.90	0.13	0.00	0.66	224.79	0.02	0 12:12	0 00:00
37	CE270266	0.13	0.00	224.16	0.16	0.00	0.85	224.03	0.03	0 12:12	0 00:00
38	CE280268	0.13	0.00	223.73	0.23	0.00	1.31	223.54	0.04	0 12:13	0 00:00
39	CE285	0.00	0.00	224.77	0.00	0.00	0.79	224.77	0.00	0 00:00	0 00:00
40	CE290	0.00	0.00	224.16	0.01	0.00	0.82	224.15	0.00	0 12:12	0 00:00
41	CE295	0.02	0.02	224.03	0.10	0.00	0.53	223.95	0.02	0 12:12	0 00:00
42	CE30	0.40	0.00	227.82	0.26	0.00	2.06	227.64	0.08	0 12:12	0 00:00
43	CE300	0.02	0.00	223.88	0.05	0.00	0.58	223.84	0.01	0 12:12	0 00:00
44	CE305	0.11	0.09	223.10	0.17	0.00	1.27	222.96	0.03	0 12:12	0 00:00
45	CE310	0.11	0.00	222.83	0.19	0.00	1.39	222.68	0.04	0 12:12	0 00:00
46	CE315	0.23	0.00	222.10	0.23	0.00	1.56	221.92	0.05	0 12:11	0 00:00
47	CE320	0.38	0.00	221.94	0.91	0.00	1.03	221.10	0.07	0 12:12	0 00:00
48	CE325	0.12	0.12	223.02	0.13	0.00	0.83	222.92	0.03	0 12:12	0 00:00
49	CE330	0.00	0.00	222.87	0.00	0.00	0.69	222.87	0.00	0 00:00	0 00:00
50	CE335	0.14	0.14	222.92	0.11	0.00	0.60	222.83	0.02	0 12:12	0 00:00
51	CE40	1.09	0.00	226.91	0.46	0.00	2.48	226.56	0.11	0 12:13	0 00:00
52	CE45	1.09	0.00	226.03	0.74	0.00	2.56	225.44	0.15	0 12:13	0 00:00
53	CE5	0.35	0.00	231.01	2.42	0.00	0.00	228.77	0.18	0 12:04	0 12:04
54	CE50	1.57	0.00	225.67	0.64	0.00	2.08	225.16	0.13	0 12:13	0 00:00
55	CE55	0.45	0.00	228.86	0.29	0.00	0.65	228.64	0.07	0 12:12	0 00:00
56	CE60	0.51	0.00	227.63	0.53	0.00	1.31	227.18	0.08	0 12:13	0 00:00
57	CE65	0.70	0.00	227.55	0.66	0.00	1.72	226.98	0.09	0 12:13	0 00:00
58	CE70	0.06	0.06	229.89	0.18	0.00	0.61	229.75	0.04	0 12:12	0 00:00
59	CE75	0.06	0.00	229.74	0.09	0.00	0.70	229.67	0.02	0 12:12	0 00:00
60	CE80	0.04	0.04	228.88	0.05	0.00	1.08	228.84	0.01	0 12:12	0 00:00
61	CE85	0.06	0.06	227.84	0.06	0.00	1.07	227.79	0.01	0 12:12	0 00:00
62	CE90	0.22	0.22	228.30	0.20	0.00	1.27	228.14	0.04	0 12:12	0 00:00
63	CE95	0.22	0.00	227.71	0.41	0.00	1.84	227.36	0.06	0 12:13	0 00:00
64	CGC10	0.69	0.05	216.47	0.78	0.00	0.00	215.78	0.09	0 12:07	0 12:12
65	CGC15	0.81	0.06	213.69	0.79	0.00	0.00	212.98	0.08	0 12:10	0 12:10
66	CGC20	0.98	0.00	207.95	0.79	0.00	0.00	207.26	0.10	0 12:05	0 12:10
67	CGC30	0.18	0.18	220.16	0.16	0.00	0.96	220.03	0.03	0 12:12	0 00:00
68	CGC35	0.18	0.00	218.98	0.21	0.00	1.95	218.82	0.05	0 12:12	0 00:00
69	CGC40	0.13	0.13	217.06	0.16	0.00	1.03	216.94	0.04	0 12:12	0 00:00
70	CGC45	0.13	0.00	216.85	0.80	0.00	0.33	216.09	0.04	0 12:09	0 00:00
71	CGC5	0.42	0.00	217.39	0.79	0.00	0.00	216.70	0.10	0 12:05	0 12:12
72	CGC50	0.13	0.13	213.94	0.17	0.00	2.06	213.81	0.04	0 12:12	0 00:00
73	CGC55	0.13	0.00	214.37	1.36	0.00	0.00	213.06	0.05	0 12:10	0 12:10
74	CGC60	0.15	0.15	209.94	0.13	0.00	0.87	209.84	0.03	0 12:12	0 00:00
75	CGC65	0.19	0.00	208.14	0.79	0.00	0.00	207.40	0.05	0 12:05	0 12:05
76	CGC70	0.07	0.04	208.78	1.40	0.00	0.00	207.42	0.04	0 12:05	0 12:05
77	CGC75	0.19	0.19	204.38	0.34	0.00	0.45	204.09	0.05	0 12:12	0 00:00
78	GE10	0.15	0.00	233.60	0.79	0.00	1.00	232.96	0.15	0 12:04	0 00:00
79	GE100	0.11	0.00	234.34	1.18	0.00	0.40	233.21	0.05	0 12:11	0 00:00
80	GE105	0.14	0.14	233.22	1.04	0.00	0.00	232.24	0.06	0 12:07	0 12:07
81	GE110	0.19	0.19	233.22	1.41	0.00	0.22	232.73	0.92	0 12:11	0 00:00
82	GE115	0.19	0.00	233.11	1.45	0.00	0.40	232.72	1.06	0 12:11	0 00:00
83	GE120	0.35	0.16	232.76	1.96	0.00	0.00	232.68	1.88	0 05:03	0 12:12
84	GE130	0.01	0.00	232.78	0.59	0.00	0.47	232.74	0.55	0 05:03	0 00:00
85	GE135	0.01	0.00	232.78	1.75	0.00	0.23	232.69	1.66	0 12:37	0 00:00
86	GE140	0.15	0.15	232.55	1.60	0.00	0.47	231.00	0.05	0 12:09	0 00:00
87	GE145	0.15	0.00	232.80	2.88	0.00	0.20	230.01	0.09	0 12:06	0 00:00

Total Flooded Volume	Total Time Flooded
(ha-mm)	(min)
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.89	4.00
0.00	0.00
23.48	58.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.01	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.45	11.00
19.94	17.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0

Junction Results

SN	Element ID	Peak Inflow (cms)	Peak Lateral Inflow (cms)	Max HGL Elevation Attained (m)	Max HGL Depth Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Average HGL Elevation Attained (m)	Average HGL Depth Attained (m)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)
88	GE15	0.15	0.00	233.34	0.62	0.00	1.92	232.87	0.15	0 12:37	0 00:00
89	GE150	0.15	0.00	232.83	3.06	0.00	0.18	229.88	0.11	0 12:06	0 00:00
90	GE155	0.15	0.00	232.34	2.83	0.00	0.00	229.63	0.12	0 12:05	0 12:05
91	GE160	0.07	0.07	232.92	1.57	0.00	0.00	232.29	0.94	0 11:56	0 12:12
92	GE165	0.03	0.00	231.81	0.00	0.00	1.02	231.81	0.00	1 00:00	0 00:00
93	GE170	0.24	0.04	232.38	1.78	0.00	0.00	230.66	0.06	0 12:08	0 12:08
94	GE175	0.17	0.00	231.61	1.93	0.00	0.00	229.79	0.11	0 12:05	0 12:05
95	GE180	0.25	0.00	231.44	2.19	0.00	0.00	229.45	0.20	0 12:05	0 12:05
96	GE185	0.18	0.00	231.40	2.40	0.00	0.00	229.22	0.22	0 12:03	0 12:03
97	GE195	0.32	0.00	231.02	2.75	0.00	0.00	228.57	0.30	0 12:10	0 12:12
98	GE20	0.15	0.00	233.19	0.54	0.00	2.28	232.78	0.13	0 12:04	0 00:00
99	GE200	0.35	0.07	230.88	2.74	0.00	0.00	228.43	0.29	0 12:10	0 12:12
100	GE205	0.44	0.10	229.41	2.35	0.00	0.00	227.27	0.21	0 12:05	0 12:05
101	GE215	0.69	0.18	229.00	2.73	0.00	0.00	226.53	0.26	0 12:05	0 12:05
102	GE220	0.69	0.00	228.73	2.62	0.00	0.24	226.32	0.21	0 12:05	0 00:00
103	GE225	0.80	0.05	226.40	1.72	0.00	0.00	224.91	0.23	0 12:05	0 12:12
104	GE230	0.12	0.00	232.30	1.75	0.00	0.00	230.61	0.06	0 12:08	0 12:08
105	GE235	0.11	0.00	231.94	1.57	0.00	0.00	230.46	0.09	0 12:06	0 12:06
106	GE240	0.10	0.05	231.73	1.36	0.00	0.00	230.45	0.08	0 12:06	0 12:06
107	GE245	0.11	0.00	231.68	1.51	0.00	0.00	230.26	0.09	0 12:06	0 12:06
108	GE25	0.15	0.00	232.92	0.35	0.00	3.13	232.69	0.12	0 12:25	0 00:00
109	GE25{SW_GEORGE EAST C5}	0.06	0.06	230.60	0.23	0.00	0.56	230.40	0.03	0 12:12	0 00:00
110	GE250	0.10	0.00	231.40	1.91	0.00	0.00	229.62	0.13	0 12:04	0 12:08
111	GE255	0.19	0.19	231.97	1.63	0.00	0.00	230.50	0.16	0 12:06	0 12:06
112	GE26	0.22	0.16	230.58	0.28	0.00	0.51	230.35	0.05	0 12:12	0 00:00
113	GE260	0.15	0.00	231.98	1.68	0.00	0.00	230.44	0.14	0 12:06	0 12:06
114	GE265	0.26	0.13	231.61	1.98	0.00	0.00	229.84	0.21	0 12:05	0 12:12
115	GE27	0.22	0.00	230.33	0.18	0.00	0.76	230.19	0.04	0 12:12	0 00:00
116	GE270	0.25	0.00	231.53	1.92	0.00	0.00	229.77	0.16	0 12:05	0 12:05
117	GE275	0.03	0.00	231.93	1.06	0.00	0.00	230.93	0.06	0 12:05	0 12:05
118	GE28	0.35	0.14	229.61	0.30	0.00	0.64	229.37	0.06	0 12:12	0 00:00
119	GE280	0.05	0.05	231.93	1.07	0.00	0.00	230.93	0.07	0 12:05	0 12:05
120	GE285	0.19	0.16	231.72	1.72	0.00	0.00	230.26	0.26	0 12:05	0 12:12
121	GE290	0.17	0.08	231.49	1.74	0.00	0.00	229.91	0.16	0 12:05	0 12:05
122	GE295	0.22	0.00	231.04	2.75	0.00	0.00	228.59	0.30	0 12:05	0 12:05
123	GE300	0.23	0.10	230.94	2.30	0.00	0.00	228.82	0.18	0 12:05	0 12:12
124	GE305	0.12	0.00	231.02	2.57	0.00	0.00	228.65	0.20	0 12:05	0 12:05
125	GE310	0.20	0.06	229.39	2.06	0.00	0.00	227.43	0.10	0 12:05	0 12:05
126	GE315	0.14	0.00	229.41	2.20	0.00	0.00	227.32	0.11	0 12:05	0 12:05
127	GE320	0.06	0.06	230.53	1.55	0.00	0.00	229.02	0.04	0 12:08	0 12:08
128	GE325	0.10	0.00	230.52	1.62	0.00	0.13	228.95	0.05	0 12:08	0 00:00
129	GE330	0.15	0.00	230.19	1.41	0.00	0.00	228.82	0.04	0 12:07	0 12:08
130	GE335	0.17	0.00	230.00	1.45	0.00	0.00	228.62	0.07	0 12:06	0 12:06
131	GE340	0.23	0.00	229.78	1.54	0.00	0.00	228.33	0.09	0 12:06	0 12:06
132	GE345	5.05	0.00	228.99	1.32	0.00	0.00	227.76	0.09	0 02:53	0 02:53
133	GE35	0.14	0.14	234.35	0.30	0.00	1.44	234.12	0.07	0 12:12	0 00:00
134	GE350	0.32	0.05	228.98	1.62	0.00	0.00	227.48	0.12	0 02:53	0 02:53
135	GE355	0.47	0.00	228.94	1.63	0.00	0.00	227.45	0.14	0 03:09	0 03:09
136	GE365	0.32	0.00	228.79	1.61	0.00	0.00	227.35	0.17	0 12:05	0 12:12
137	GE370	0.22	0.00	228.73	1.56	0.00	0.00	227.30	0.13	0 12:05	0 12:12
138	GE375	0.11	0.11	230.29	1.45	0.00	0.00	228.88	0.04	0 12:07	0 12:08
139	GE380	0.13	0.06	229.75	1.25	0.00	0.00	228.55	0.05	0 12:06	0 12:06
140	GE390	1.40	0.09	228.99	1.22	0.00	0.00	227.85	0.08	0 02:36	0 02:53
141	GE395	8.55	0.00	228.99	2.34	0.00	0.00	227.70	1.05	0 02:28	0 02:28
142	GE40	0.14	0.00	234.23	0.21	0.00	1.47	234.07	0.05	0 12:12	0 00:00
143	GE400	1.60	0.00	228.99	1.39	0.00	0.00	227.70	0.10	0 02:53	0 02:53
144	GE405	0.07	0.05	228.80	1.50	0.00	0.00	227.39	0.09	0 12:05	0 12:05
145	GE410	0.08	0.08	227.97	0.13	0.00	1.02	227.87	0.03	0 12:12	0 00:00
146	GE415	0.13	0.00	227.21	0.32	0.00	1.67	226.94	0.05	0 12:14	0 00:00
147	GE420	0.22	0.00	228.98	2.98	0.00	0.00	226.10	0.10	0 12:06	0 12:06
148	GE425	0.22	0.00	226.40	1.43	0.00	0.00	225.07	0.10	0 12:05	0 12:14
149	GE430	0.07	0.07	228.79	1.43	0.00	0.00	227.43	0.07	0 12:05	0 12:12
150	GE435431	0.05	0.00	228.13	0.95	0.00	0.65	227.24	0.06	0 12:14	0 00:00
151	GE440	0.13	0.11	228.91	2.52	0.00	0.00	226.44	0.05	0 12:07	0 12:07
152	GE445	0.07	0.07	230.39	0.12	0.00	0.71	230.29	0.02	0 12:11	0 00:00
153	GE45	0.14	0.00	234.55	1.13	0.00	0.55	233.48	0.06	0 12:11	0 00:00
154	GE450	0.17	0.00	229.74	0.96	0.00	1.13	228.83	0.05	0 12:11	0 00:00
155	GE455	0.21	0.00	229.68	0.99	0.00	1.05	228.74	0.05	0 12:11	0 00:00
156	GE460	0.08	0.08	230.60	1.40	0.00	0.29	229.25	0.05	0 12:11	0 00:00
157	GE465	0.10	0.02	230.24	1.09	0.00	0.51	229.19	0.04	0 12:11	0 00:00
158	GE470	0.10	0.00	229.97	1.02	0.00	0.87	228.99	0.04	0 12:11	0 00:00
159	GE475	0.06	0.04	229.68	0.54	0.00	1.20	229.16	0.02	0 12:11	0 00:00
160	GE480476	0.05	0.00	229.66	0.70	0.00	1.08	228.97	0.01	0 12:11	0 00:00
161	GE485	0.06	0.06	228.94	0.24	0.00	2.03	228.73	0.03	0 12:15	0 00:00
162	GE490	0.06	0.00	228.93	0.37	0.00	2.08	228.61	0.05	0 12:15	0 00:00
163	GE495	0.14	0.00	228.95	0.50	0.00	1.20	228.50	0.05	0 12:14	0 00:00
164	GE5	0.24	0.24	233.94	0.91	0.00	0.00	233.18	0.15	0 12:04	0 12:12
165	GE50	0.14	0.00	234.54	1.27	0.00	0.43	233.33	0.06	0 12:11	0 00:00
166	GE500	0.13	0.00	228.91	0.62	0.00	1.13	228.39	0.10	0 12:14	0 00:00
167	GE505	0.13	0.00	228.87	0.58	0.00	1.07	228.38	0.09	0 12:14	0 00:00
168	GE510	0.13	0.00	228.82	0.54	0.00	0.88	228.34	0.06	0 12:14	0 00:00
169	GE515	0.13	0.00	228.97	1.00	0.00	0.00	228.01	0.04	0 12:11	0 12:11
170	GE520	0.12	0.00	228.61	2.08	0.00	0.23	226.62	0.09	0 12:14	0 00:00
171	GE525	0.05	0.00	228.61	2.14	0.00	0.23	226.57	0.10	0 12:14	0 00:00
172	GE530	0.12	0.00	228.55	2.14	0.00	0.08	226.52	0.11	0 12:14	0 00:00
173	GE540	0.19	0.00	227.86	1.78	0.00	0.11	226.20	0.12	0 12:12	0 00:00
174	GE545	0.23	0.00	227.62	1.71	0.00	0.36	226.05	0.14	0 12:12	0 00:00

Total Flooded Volume	Total Time Flooded
(ha-mm)	(min)
0.00	0.00
0.00	0.00
0.01	0.00
21.94	222.00
0.00	0.00
0.04	0.00
0.03	0.00
0.00	1.00
0.00	0.00
0.00	1.00
0.00	0.00
0.02	2.00
0.02	0.00
0.00	0.00
0.00	0.00
8.93	21.00
0.06	0.00
0.02	0.00
0.02	0.00
0.01	0.00
0.00	0.00
0.00	0.00
8.39	29.00
3.47	19.00
0.00	0.00
0.05	0.00
8.12	24.00
0.00	0.00
0.03	4.00
0.01	2.00
0.00	0.00
0.81	10.00
10.39	32.00
0.02	0.00
0.00	0.00
26.22	35.00
0.00	0.00
0.07	0.00
0.01	0.00
0.00	0.00
0.00	0.00
0.01	0.00
0.02	0.00
0.01	0.00
13.95	20.00
0.00	0.00
0.02	0.00
0.00	0.00
7.46	23.00
1.63	13.00
0.01	0.00
0.03	0.00
6.32	22.00
12.82	7.00
0.00	0.00
2.21	1.00
0.00	2.00
0.00	0.00
0.00	0.00
0.01	0.00
18.49	26.00
0.94	14.00
0.00	0.00
0.01	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
8.94	33.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00

Junction Results

SN	Element ID	Peak Inflow (cms)	Peak Lateral Inflow (cms)	Max HGL Elevation Attained (m)	Max HGL Depth Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Average HGL Elevation Attained (m)	Average HGL Depth Attained (m)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)
175	GE55	0.24	0.00	234.44	1.56	0.00	0.00	232.96	0.08	0 12:09	0 12:09
176	GE550	0.33	0.00	227.44	1.68	0.00	0.55	225.95	0.19	0 12:12	0 00:00
177	GE560	0.09	0.09	229.00	0.55	0.00	1.01	228.53	0.08	0 12:14	0 00:00
178	GE565	0.08	0.00	228.59	2.11	0.00	0.03	226.59	0.11	0 12:15	0 00:00
179	GE570	0.08	0.00	228.56	2.08	0.00	0.00	226.58	0.10	0 12:07	0 12:14
180	GE575	0.07	0.00	228.57	2.10	0.00	0.00	226.56	0.09	0 12:07	0 12:07
181	GE585	0.09	0.09	227.95	0.24	0.00	0.39	227.73	0.02	0 12:12	0 00:00
182	GE590	0.01	0.00	227.85	0.20	0.00	0.42	227.65	0.00	0 12:12	0 00:00
183	GE595	0.01	0.00	227.85	0.14	0.00	0.48	227.71	0.00	0 12:12	0 00:00
184	GE60	0.38	0.00	233.13	1.20	0.00	0.00	232.02	0.09	0 12:07	0 12:12
185	GE600	0.00	0.00	227.66	0.00	0.00	0.79	227.66	0.00	0 00:00	0 00:00
186	GE605	0.00	0.00	226.92	0.00	0.00	1.04	226.92	0.00	0 00:00	0 00:00
187	GE610	0.00	0.00	226.64	0.00	0.00	1.29	226.64	0.00	0 00:00	0 00:00
188	GE65	0.31	0.06	232.98	1.40	0.00	0.00	231.70	0.12	0 12:07	0 12:07
189	GE70	0.31	0.00	231.79	1.13	0.00	0.23	230.80	0.14	0 12:12	0 00:00
190	GE75	0.31	0.00	231.59	0.94	0.00	0.43	230.75	0.10	0 12:12	0 00:00
191	GE80	0.23	0.00	231.95	1.55	0.00	0.00	230.51	0.11	0 12:06	0 12:06
192	GE85	0.35	0.12	231.71	2.46	0.00	0.00	229.42	0.17	0 12:04	0 12:04
193	GE90	0.01	0.00	234.60	1.25	0.00	0.10	233.38	0.03	0 12:09	0 00:00
194	GE95	0.11	0.11	234.59	1.27	0.00	0.10	233.38	0.06	0 12:09	0 00:00
195	LE10	1.52	0.00	223.27	2.02	0.00	0.00	221.54	0.29	0 12:04	0 12:13
196	LE1005	1.32	0.00	217.97	1.24	0.00	0.00	216.96	0.23	0 12:07	0 12:13
197	LE1010	0.98	0.09	217.82	1.24	0.00	0.00	216.83	0.25	0 12:07	0 12:12
198	LE1020	0.13	0.13	221.36	0.25	0.00	1.25	221.16	0.05	0 12:12	0 00:00
199	LE1025	0.13	0.00	221.25	0.32	0.00	1.23	221.00	0.07	0 12:12	0 00:00
200	LE1030	0.13	0.00	221.17	0.33	0.00	1.30	220.92	0.08	0 12:12	0 00:00
201	LE1035	0.25	0.12	220.90	0.26	0.00	0.53	220.69	0.05	0 12:12	0 00:00
202	LE1040	0.33	0.08	220.24	0.24	0.00	0.55	220.05	0.05	0 12:12	0 00:00
203	LE1045	0.33	0.00	217.95	0.24	0.00	0.55	217.76	0.05	0 12:12	0 00:00
204	LE105	0.08	0.00	226.29	2.07	0.00	0.00	224.30	0.08	0 12:05	0 12:11
205	LE1055	0.04	0.04	216.85	0.09	0.00	1.90	216.78	0.02	0 12:12	0 00:00
206	LE1060	0.07	0.00	215.25	0.12	0.00	2.46	215.16	0.03	0 12:12	0 00:00
207	LE1065	0.07	0.00	214.40	0.25	0.00	1.43	214.19	0.04	0 12:12	0 00:00
208	LE1070	0.07	0.00	214.35	0.23	0.00	1.40	214.16	0.04	0 12:12	0 00:00
209	LE1075	0.13	0.06	213.27	0.18	0.00	2.46	213.12	0.03	0 12:12	0 00:00
210	LE1080	0.13	0.00	212.53	0.19	0.00	1.47	212.38	0.04	0 12:12	0 00:00
211	LE1090	0.03	0.03	216.51	0.10	0.00	1.90	216.43	0.02	0 12:12	0 00:00
212	LE1095	0.08	0.08	221.07	0.18	0.00	0.61	220.95	0.06	0 12:12	0 00:00
213	LE110	0.11	0.11	226.80	1.88	0.00	0.12	225.00	0.08	0 12:11	0 00:00
214	LE1100	0.08	0.00	220.95	0.16	0.00	0.63	220.84	0.05	0 12:12	0 00:00
215	LE1105	0.08	0.00	220.76	0.17	0.00	0.73	220.65	0.06	0 12:12	0 00:00
216	LE1110	0.13	0.00	220.63	0.23	0.00	0.56	220.47	0.07	0 12:12	0 00:00
217	LE1115	0.14	0.01	219.24	0.19	0.00	2.06	219.11	0.06	0 12:12	0 00:00
218	LE1120	0.14	0.00	217.11	0.18	0.00	2.70	216.99	0.06	0 12:12	0 00:00
219	LE1125	0.21	0.07	214.97	0.26	0.00	2.42	214.77	0.06	0 12:12	0 00:00
220	LE1130	0.40	0.00	213.61	0.36	0.00	2.54	213.32	0.07	0 12:12	0 00:00
221	LE1135	0.40	0.00	211.95	0.34	0.00	2.46	211.69	0.08	0 12:12	0 00:00
222	LE1145	0.05	0.05	220.75	0.13	0.00	0.78	220.65	0.03	0 12:12	0 00:00
223	LE115	0.11	0.00	226.53	1.69	0.00	0.00	224.90	0.06	0 12:05	0 12:05
224	LE1150	0.09	0.09	218.23	0.15	0.00	1.07	218.11	0.03	0 12:12	0 00:00
225	LE1155	0.09	0.00	216.88	0.12	0.00	2.15	216.78	0.02	0 12:12	0 00:00
226	LE1160	0.09	0.00	216.06	0.17	0.00	1.92	215.93	0.04	0 12:12	0 00:00
227	LE1165	0.19	0.10	215.93	0.25	0.00	0.97	215.73	0.05	0 12:12	0 00:00
228	LE1170	0.19	0.00	214.65	0.21	0.00	2.02	214.48	0.04	0 12:12	0 00:00
229	LE1175	0.00	0.00	217.10	0.00	0.00	2.22	217.10	0.00	0 00:00	0 00:00
230	LE120	0.16	0.16	225.05	0.40	0.00	0.31	224.68	0.03	0 12:12	0 00:00
231	LE125	0.19	0.00	224.86	1.38	0.00	0.00	223.57	0.09	0 12:03	0 12:12
232	LE130	0.04	0.04	224.92	1.35	0.00	0.00	223.63	0.06	0 12:03	0 12:03
233	LE135	0.11	0.11	224.85	0.85	0.00	0.00	224.05	0.05	0 12:04	0 12:04
234	LE140	0.12	0.00	224.63	0.92	0.00	0.00	223.79	0.08	0 12:03	0 12:12
235	LE145	0.07	0.00	224.94	1.34	0.00	0.00	223.67	0.07	0 12:03	0 12:03
236	LE15	1.39	0.00	222.89	1.73	0.00	0.00	221.44	0.28	0 12:04	0 12:04
237	LE150	0.07	0.00	224.73	1.33	0.00	0.01	223.47	0.07	0 12:04	0 00:00
238	LE155	0.03	0.03	223.94	0.04	0.00	0.74	223.91	0.01	0 12:12	0 00:00
239	LE160	0.05	0.05	224.33	0.07	0.00	0.72	224.27	0.01	0 12:12	0 00:00
240	LE165	0.05	0.00	222.91	0.34	0.00	0.90	222.60	0.03	0 12:06	0 00:00
241	LE170	0.10	0.10	223.31	0.22	0.00	0.57	223.13	0.04	0 12:12	0 00:00
242	LE175	0.10	0.00	223.19	0.23	0.00	0.55	223.00	0.04	0 12:12	0 00:00
243	LE180	0.10	0.00	223.05	0.11	0.00	0.68	222.96	0.02	0 12:05	0 00:00
244	LE185	0.15	0.00	223.25	1.58	0.00	0.00	221.72	0.05	0 12:05	0 12:05
245	LE190	0.24	0.09	222.18	1.10	0.00	0.00	221.20	0.12	0 12:04	0 12:12
246	LE195	0.05	0.05	222.26	0.26	0.00	0.45	222.02	0.02	0 12:05	0 00:00
247	LE20	1.39	0.00	222.15	1.24	0.00	0.00	221.16	0.25	0 12:04	0 12:12
248	LE200	0.13	0.13	225.38	0.71	0.00	0.00	224.72	0.05	0 12:09	0 12:09
249	LE205	0.25	0.00	224.79	1.23	0.00	0.00	223.67	0.11	0 12:06	0 12:12
250	LE210	0.21	0.00	224.44	1.31	0.00	0.00	223.22	0.09	0 12:06	0 12:06
251	LE215	0.24	0.00	224.03	1.17	0.00	0.00	222.98	0.12	0 12:06	0 12:07
252	LE220	0.31	0.00	223.97	1.20	0.00	0.00	222.89	0.12	0 12:07	0 12:07
253	LE225	0.33	0.05	223.30	1.12	0.00	0.00	222.27	0.09	0 12:05	0 12:05
254	LE230	0.19	0.00	223.21	1.21	0.00	0.00	222.09	0.09	0 12:05	0 12:05
255	LE235	0.23	0.00	222.38	1.87	0.00	0.05	220.74	0.23	0 12:11	0 00:00
256	LE240	0.49	0.00	222.25	1.78	0.00	0.00	220.69	0.22	0 12:11	0 12:11
257	LE245	0.52	0.07	221.79	1.37	0.00	0.43	220.58	0.16	0 12:11	0 00:00
258	LE25	1.40	0.17	222.04	1.24	0.00	0.00	221.04	0.24	0 12:04	0 12:04
259	LE255	0.52	0.00	219.22	0.78	0.00	0.92	218.55	0.11	0 12:12	0 00:00
260	LE265	0.58	0.00	219.18	0.98	0.00	0.82	218.47	0.27	0 12:12	0 00:00
261	LE270	0.65	0.00	219.06	0.86	0.00	0.93	218.45	0.25	0 12:11	0 00:00

Total Flooded Volume	Total Time Flooded
(ha-mm)	(min)
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.25	5.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
5.20	12.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.01	0.00
0.01	0.00
0.00	0.00
0.00	0.00
8.09	13.00
35.60	23.00
0.02	4.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
1.29	9.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.06	3.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
1.87	10.00
0.00	0.00
0.00	0.00
9.10	21.00
0.00	0.00
6.82	16.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.02	0.00
10.32	22.00
0.00	0.00
15.33	22.00
0.00	0.00
3.84	14.00
0.02	0.00
0.01	0.00
0.00	0.00
0.02	0.00
0.01	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.01	0.00
0.00	0.00
0.00	0.00
0.00	0.00

Junction Results

SN	Element ID	Peak Inflow (cms)	Peak Lateral Inflow (cms)	Max HGL Elevation Attained (m)	Max HGL Depth Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Average HGL Elevation Attained (m)	Average HGL Depth Attained (m)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)
262	LE280	0.65	0.00	218.77	0.58	0.00	1.39	218.35	0.16	0 12:12	0 00:00
263	LE285	0.76	0.00	218.58	0.43	0.00	1.51	218.26	0.11	0 12:12	0 00:00
264	LE295	0.76	0.00	218.07	0.58	0.00	1.45	217.66	0.17	0 12:12	0 00:00
265	LE300	0.87	0.00	217.44	0.27	0.00	0.94	217.24	0.07	0 12:12	0 00:00
266	LE310	0.64	0.05	216.91	0.77	0.00	0.48	216.25	0.11	0 12:12	0 00:00
267	LE315	0.64	0.00	216.80	1.04	0.00	0.20	215.89	0.13	0 12:12	0 00:00
268	LE325	0.73	0.00	216.77	1.20	0.00	0.04	215.73	0.16	0 12:12	0 00:00
269	LE330	0.89	0.02	216.42	1.02	0.00	0.00	215.65	0.25	0 12:03	0 12:12
270	LE335	0.42	0.00	215.84	0.46	0.00	0.39	215.54	0.16	0 12:04	0 00:00
271	LE340	0.42	0.00	215.71	0.33	0.00	0.92	215.49	0.11	0 12:04	0 00:00
272	LE35	0.10	0.03	227.37	2.00	0.00	0.05	225.40	0.03	0 12:07	0 00:00
273	LE350	0.12	0.12	225.55	1.17	0.00	0.00	224.44	0.06	0 12:07	0 12:07
274	LE355	0.04	0.04	224.53	0.12	0.00	0.64	224.43	0.02	0 12:12	0 00:00
275	LE360	0.12	0.12	224.78	0.11	0.00	0.60	224.69	0.02	0 12:12	0 00:00
276	LE365	0.12	0.00	224.27	0.71	0.00	0.00	223.60	0.04	0 12:07	0 12:07
277	LE370	0.10	0.07	224.00	0.95	0.00	0.00	223.11	0.06	0 12:06	0 12:12
278	LE375	0.08	0.00	224.00	0.85	0.00	0.00	223.17	0.02	0 12:06	0 12:06
279	LE380	0.05	0.05	223.21	1.30	0.00	0.53	222.55	0.64	0 12:11	0 00:00
280	LE385	0.05	0.00	223.14	1.12	0.00	0.51	222.55	0.53	0 12:11	0 00:00
281	LE390	0.05	0.00	223.09	1.09	0.00	0.51	222.55	0.55	0 12:11	0 00:00
282	LE395	0.12	0.00	223.00	0.49	0.00	0.50	222.56	0.05	0 12:12	0 00:00
283	LE40	0.08	0.00	227.22	2.13	0.00	0.00	225.13	0.04	0 12:07	0 12:07
284	LE400	0.38	0.00	223.32	1.57	0.00	0.00	221.86	0.11	0 12:06	0 12:06
285	LE405	0.06	0.06	223.44	0.14	0.00	0.48	223.33	0.03	0 12:12	0 00:00
286	LE410	0.06	0.00	223.30	0.40	0.00	0.54	222.93	0.03	0 12:12	0 00:00
287	LE415	0.06	0.00	223.19	1.19	0.00	0.50	222.55	0.55	0 12:12	0 00:00
288	LE420	0.06	0.00	223.10	1.18	0.00	0.49	222.55	0.63	0 12:11	0 00:00
289	LE430	0.19	0.02	223.40	1.37	0.00	0.00	222.11	0.08	0 12:06	0 12:06
290	LE435	0.05	0.00	223.42	1.30	0.00	0.00	222.15	0.03	0 12:06	0 12:06
291	LE445	0.61	0.00	222.62	1.92	0.00	0.00	220.92	0.22	0 12:05	0 12:12
292	LE45	0.06	0.00	227.16	2.12	0.00	0.00	225.08	0.04	0 12:07	0 12:07
293	LE450	0.37	0.00	222.44	1.79	0.00	0.16	220.82	0.17	0 12:12	0 00:00
294	LE455	0.06	0.06	222.33	1.73	0.00	0.11	220.74	0.14	0 12:11	0 00:00
295	LE460	0.26	0.00	222.33	1.76	0.00	0.03	220.74	0.17	0 12:11	0 00:00
296	LE470	0.11	0.11	224.06	0.79	0.00	0.00	223.34	0.07	0 12:05	0 12:05
297	LE475	0.09	0.00	224.04	0.97	0.00	0.00	223.18	0.11	0 12:04	0 12:04
298	LE480	0.09	0.00	224.00	0.95	0.00	0.00	223.14	0.09	0 12:05	0 12:12
299	LE485	0.08	0.00	224.00	0.96	0.00	0.00	223.13	0.09	0 12:05	0 12:05
300	LE490	0.13	0.00	224.00	1.07	0.00	0.00	223.07	0.14	0 12:05	0 12:05
301	LE495	0.17	0.00	223.90	0.99	0.00	0.00	223.01	0.10	0 12:11	0 12:11
302	LE5	1.61	0.05	224.01	2.45	0.00	0.00	221.80	0.24	0 12:04	0 12:04
303	LE50	0.11	0.08	227.05	2.22	0.00	0.00	224.90	0.07	0 12:07	0 12:07
304	LE500	0.22	0.00	223.74	1.04	0.00	0.00	222.82	0.12	0 12:03	0 12:12
305	LE505	0.09	0.00	223.78	1.38	0.00	0.00	222.60	0.20	0 12:05	0 12:05
306	LE510	0.15	0.04	224.00	1.75	0.00	0.00	222.37	0.12	0 12:05	0 12:05
307	LE515	0.16	0.00	224.00	1.92	0.00	0.00	222.21	0.13	0 12:05	0 12:05
308	LE520	0.15	0.00	223.98	1.99	0.00	0.02	222.11	0.12	0 12:05	0 00:00
309	LE525	0.19	0.05	223.97	2.40	0.00	0.03	221.73	0.16	0 12:05	0 00:00
310	LE530	0.19	0.00	223.96	2.47	0.00	0.03	221.64	0.15	0 12:04	0 00:00
311	LE535	0.19	0.00	223.79	2.44	0.00	0.20	221.52	0.17	0 12:05	0 00:00
312	LE540	0.24	0.00	223.56	2.34	0.00	0.05	221.38	0.16	0 12:05	0 00:00
313	LE545	0.09	0.07	224.09	0.36	0.00	0.43	223.76	0.03	0 12:05	0 00:00
314	LE55	0.11	0.00	226.94	2.37	0.00	0.00	224.64	0.07	0 12:05	0 12:05
315	LE550	0.10	0.00	224.26	0.77	0.00	0.02	223.52	0.03	0 12:05	0 00:00
316	LE555	0.05	0.05	223.95	0.86	0.00	0.03	223.15	0.06	0 12:12	0 00:00
317	LE560	0.07	0.07	223.83	1.30	0.00	0.00	222.64	0.11	0 12:05	0 12:12
318	LE565	0.09	0.05	224.00	1.60	0.00	0.00	222.47	0.07	0 12:05	0 12:05
319	LE570	0.06	0.04	224.00	1.87	0.00	0.00	222.22	0.09	0 12:05	0 12:05
320	LE575	0.07	0.05	223.59	2.06	0.00	0.00	221.61	0.08	0 12:04	0 12:04
321	LE580	0.05	0.05	219.20	0.49	0.00	1.30	218.76	0.05	0 12:12	0 00:00
322	LE585	0.05	0.00	219.19	0.50	0.00	1.13	218.73	0.04	0 12:12	0 00:00
323	LE590	0.05	0.00	219.20	0.60	0.00	1.07	218.65	0.05	0 12:12	0 00:00
324	LE595	0.05	0.00	219.19	0.74	0.00	0.94	218.52	0.07	0 12:12	0 00:00
325	LE60	0.16	0.00	226.26	2.11	0.00	0.00	224.27	0.12	0 12:05	0 12:05
326	LE600	0.05	0.00	219.18	0.83	0.00	0.94	218.47	0.12	0 12:12	0 00:00
327	LE605	0.00	0.00	219.19	0.43	0.00	1.07	218.78	0.02	0 12:12	0 00:00
328	LE610	0.07	0.07	219.09	0.43	0.00	0.89	218.70	0.04	0 12:12	0 00:00
329	LE615	0.07	0.00	219.06	0.48	0.00	0.92	218.62	0.04	0 12:12	0 00:00
330	LE620	0.05	0.05	221.35	0.12	0.00	1.52	221.25	0.02	0 12:12	0 00:00
331	LE625	0.05	0.00	221.09	0.11	0.00	1.53	221.00	0.02	0 12:12	0 00:00
332	LE630	0.05	0.00	220.75	0.09	0.00	1.53	220.68	0.02	0 12:12	0 00:00
333	LE635	0.11	0.06	219.42	0.19	0.00	1.62	219.26	0.03	0 12:12	0 00:00
334	LE640	0.11	0.00	219.13	0.16	0.00	1.52	219.00	0.03	0 12:12	0 00:00
335	LE645	0.12	0.12	217.63	0.23	0.00	0.48	217.43	0.03	0 12:12	0 00:00
336	LE65	0.24	0.00	226.32	2.30	0.00	0.00	224.13	0.11	0 12:04	0 12:04
337	LE655	0.22	0.04	216.71	0.79	0.00	0.00	215.98	0.06	0 12:04	0 12:12
338	LE660	0.02	0.02	222.33	0.10	0.00	1.41	222.25	0.02	0 12:12	0 00:00
339	LE665	0.02	0.00	222.27	0.09	0.00	1.59	222.20	0.02	0 12:12	0 00:00
340	LE670	0.04	0.02	221.85	0.09	0.00	1.22	221.78	0.02	0 12:12	0 00:00
341	LE675	0.07	0.00	221.30	0.14	0.00	1.26	221.19	0.03	0 12:12	0 00:00
342	LE680	0.11	0.05	220.42	0.14	0.00	0.65	220.30	0.02	0 12:12	0 00:00
343	LE685	0.26	0.00	219.85	0.17	0.00	0.62	219.72	0.04	0 12:12	0 00:00
344	LE690	0.28	0.00	216.82	0.83	0.00	0.04	216.06	0.07	0 12:12	0 00:00
345	LE695	0.03	0.03	222.02	0.05	0.00	0.88	221.98	0.01	0 12:12	0 00:00
346	LE70	0.38	0.00	224.64	1.44	0.00	0.00	223.32	0.12	0 12:04	0 12:07
347	LE700	0.15	0.15	220.76	0.33	0.00	0.46	220.49	0.06	0 12:12	0 00:00
348	LE705	0.15	0.00	220.63	0.28	0.00	0.75	220.41	0.06	0 12:12	0 00:00

Total Flooded Volume	Total Time Flooded
(ha-mm)	(min)
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
54.56	41.00
0.00	0.00
0.00	0.00
0.00	0.00
0.01	0.00
0.00	0.00
0.00	0.00
0.00	0.00
5.33	16.00
0.02	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.03	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
27.28	26.00
0.01	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.61	9.00
0.01	0.00
1.43	13.00
0.00	0.00
0.05	0.00
0.00	0.00
0.03	0.00
0.00	0.00
22.62	34.00
0.03	1.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.01	0.00
0.00	0.00
0.00	0.00
0.10	4.00
0.02	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.66	7.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.01	0.00
13.61	17.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
2.42	11.00
0.00	0.00
0.00	0.00

Junction Results

SN	Element ID	Peak Inflow (cms)	Peak Lateral Inflow (cms)	Max HGL Elevation Attained (m)	Max HGL Depth Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Average HGL Elevation Attained (m)	Average HGL Depth Attained (m)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)
349	LE710	0.15	0.00	220.37	0.21	0.00	0.58	220.20	0.04	0 12:12	0 00:00
350	LE715	0.03	0.02	216.81	0.26	0.00	0.53	216.56	0.01	0 12:12	0 00:00
351	LE720	0.06	0.06	221.33	0.15	0.00	1.12	221.21	0.03	0 12:12	0 00:00
352	LE725	0.06	0.00	221.08	0.08	0.00	1.13	221.02	0.02	0 12:12	0 00:00
353	LE730	0.06	0.00	220.04	0.12	0.00	1.97	219.94	0.02	0 12:12	0 00:00
354	LE735	0.11	0.05	219.45	0.16	0.00	1.09	219.32	0.03	0 12:12	0 00:00
355	LE740	0.11	0.00	218.85	0.13	0.00	0.85	218.74	0.02	0 12:12	0 00:00
356	LE745	0.11	0.00	218.18	0.17	0.00	1.22	218.04	0.03	0 12:12	0 00:00
357	LE75	0.32	0.00	224.34	1.40	0.00	0.04	223.08	0.14	0 12:04	0 00:00
358	LE750	0.11	0.00	217.77	0.14	0.00	1.20	217.65	0.02	0 12:12	0 00:00
359	LE755	0.14	0.03	217.09	0.19	0.00	1.55	216.94	0.04	0 12:12	0 00:00
360	LE760	0.14	0.00	216.57	0.27	0.00	0.75	216.34	0.04	0 12:12	0 00:00
361	LE765	0.14	0.00	216.49	0.79	0.00	0.00	215.78	0.08	0 12:10	0 12:12
362	LE770	0.00	0.00	218.18	0.31	0.00	1.17	218.04	0.17	0 12:12	0 00:00
363	LE775	1.01	0.00	221.83	1.45	0.00	1.01	220.53	0.15	0 12:10	0 00:00
364	LE780	1.14	0.12	222.25	2.67	0.00	0.00	219.76	0.18	0 12:09	0 12:09
365	LE790	1.21	0.04	221.94	2.79	0.00	0.00	219.34	0.19	0 12:09	0 12:09
366	LE80	0.35	0.00	223.77	1.05	0.00	0.00	222.86	0.14	0 12:03	0 12:11
367	LE800	1.26	0.00	220.57	2.26	0.00	0.00	218.53	0.22	0 12:08	0 12:08
368	LE805	1.26	0.00	219.96	2.07	0.00	0.00	218.08	0.19	0 12:07	0 12:07
369	LE810	1.26	0.00	219.36	2.13	0.00	0.00	217.54	0.31	0 12:12	0 12:12
370	LE815	1.26	0.00	219.09	1.86	0.00	0.16	217.46	0.23	0 12:09	0 00:00
371	LE820	1.26	0.00	218.67	1.72	0.00	0.04	217.23	0.28	0 12:12	0 00:00
372	LE825	2.50	0.00	218.42	1.52	0.00	0.24	217.15	0.25	0 12:09	0 00:00
373	LE830	1.19	0.00	218.22	1.37	0.00	0.34	217.07	0.22	0 12:08	0 00:00
374	LE835	1.19	0.00	217.83	1.24	0.00	0.00	216.87	0.28	0 12:07	0 12:13
375	LE840	0.76	0.00	217.74	1.19	0.00	0.05	216.80	0.25	0 12:12	0 00:00
376	LE845	0.62	0.00	217.64	1.24	0.00	0.00	216.74	0.34	0 12:12	0 12:12
377	LE85	0.30	0.00	223.70	1.20	0.00	0.00	222.63	0.13	0 12:04	0 12:13
378	LE850	1.59	0.00	217.58	1.19	0.00	0.05	216.71	0.32	0 12:12	0 00:00
379	LE855	1.68	0.00	216.68	0.51	0.00	0.73	216.35	0.18	0 12:12	0 00:00
380	LE860	0.58	0.00	216.49	0.34	0.00	0.90	216.27	0.12	0 12:08	0 00:00
381	LE870	0.03	0.03	221.72	0.22	0.00	0.57	221.59	0.09	0 12:12	0 00:00
382	LE875	0.05	0.00	221.67	0.11	0.00	0.68	221.58	0.02	0 12:12	0 00:00
383	LE880	0.13	0.00	221.95	1.84	0.00	0.00	220.16	0.05	0 12:10	0 12:10
384	LE885	0.15	0.00	221.93	2.11	0.00	0.00	219.86	0.04	0 12:09	0 12:09
385	LE890	0.07	0.07	221.51	0.97	0.00	0.34	220.57	0.03	0 12:10	0 00:00
386	LE895	0.07	0.05	220.87	1.37	0.00	0.00	219.53	0.03	0 12:09	0 12:09
387	LE90	0.30	0.00	223.88	1.64	0.00	0.00	222.36	0.12	0 12:04	0 12:04
388	LE900	0.11	0.00	220.79	1.75	0.00	0.00	219.08	0.04	0 12:08	0 12:08
389	LE905	0.03	0.03	219.35	1.20	0.00	0.00	218.19	0.04	0 12:09	0 12:13
390	LE910	1.16	0.00	221.60	2.60	0.00	0.00	219.20	0.20	0 12:07	0 12:07
391	LE915	1.13	0.00	221.12	2.40	0.00	0.40	218.94	0.22	0 12:07	0 00:00
392	LE920	1.13	0.00	220.94	2.38	0.00	0.49	218.80	0.24	0 12:07	0 00:00
393	LE925	1.14	0.00	220.77	2.27	0.00	0.61	218.72	0.22	0 12:07	0 00:00
394	LE930	1.21	0.00	220.50	2.13	0.00	0.59	218.56	0.19	0 12:07	0 00:00
395	LE935	1.20	0.00	220.22	2.12	0.00	0.61	218.29	0.19	0 12:07	0 00:00
396	LE940	1.24	0.00	219.36	1.99	0.00	0.04	217.65	0.28	0 12:12	0 00:00
397	LE945	1.24	0.00	219.09	1.76	0.00	0.28	217.57	0.24	0 12:13	0 00:00
398	LE95	0.09	0.09	226.44	2.08	0.00	0.00	224.44	0.08	0 12:05	0 12:05
399	LE950	1.24	0.00	218.81	1.56	0.00	0.45	217.45	0.20	0 12:13	0 00:00
400	LE955	0.01	0.00	219.30	0.90	0.00	0.00	218.41	0.01	0 12:07	0 12:07
401	LE970	0.04	0.03	217.80	0.63	0.00	0.08	217.21	0.04	0 12:05	0 00:00
402	LE975	0.26	0.00	217.53	0.88	0.00	0.00	216.86	0.21	0 12:05	0 12:07
403	LE985	0.01	0.00	217.44	0.31	0.00	0.32	217.15	0.02	0 12:05	0 00:00
404	LE990	0.01	0.00	217.42	0.33	0.00	0.30	217.11	0.02	0 12:05	0 00:00
405	LE995	0.15	0.00	217.40	0.62	0.00	0.00	216.85	0.07	0 12:05	0 12:07
406	MH1414	0.09	0.08	219.02	1.96	0.00	0.00	217.11	0.05	0 12:08	0 12:08
407	MH1415	0.09	0.00	219.02	2.19	0.00	0.00	216.90	0.07	0 12:08	0 12:08
408	MH1741	0.02	0.02	223.36	0.08	0.00	0.63	223.29	0.01	0 12:12	0 00:00
409	MH1742	0.02	0.00	223.08	0.07	0.00	0.63	223.03	0.02	0 12:12	0 00:00
410	MH1782	0.20	0.10	221.21	2.20	0.00	0.00	219.08	0.07	0 12:07	0 12:07
411	MH1783	0.19	0.00	220.53	1.60	0.00	0.58	218.97	0.04	0 12:07	0 00:00
412	MH1785	0.08	0.08	219.38	1.71	0.00	0.00	217.77	0.10	0 12:07	0 12:13
413	MH1786	0.09	0.09	216.72	0.30	0.00	0.41	216.46	0.04	0 12:12	0 00:00
414	MH1787	0.00	0.00	216.69	0.60	0.00	0.19	216.35	0.26	0 12:09	0 00:00
415	MH1827	0.08	0.08	223.18	0.86	0.00	0.00	222.39	0.07	0 12:05	0 12:05
416	MH1828	0.06	0.00	223.09	0.85	0.00	0.00	222.31	0.07	0 12:05	0 12:12
417	MH1946	0.06	0.06	222.90	0.06	0.00	0.38	222.85	0.01	0 12:12	0 00:00
418	MH1953	0.00	0.00	214.35	0.00	0.00	0.79	214.35	0.00	0 00:00	0 00:00
419	Null Structure	0.21	0.00	230.98	0.29	0.00	0.00	230.74	0.05	0 12:05	0 12:12
420	Null Structure{SW_GEORGE EAST C6}	0.03	0.00	217.58	0.37	0.00	0.00	217.23	0.02	0 12:05	0 12:05
421	Out-1P1642	0.00	0.00	221.84	0.00	0.00	6.00	221.84	0.00	0 00:00	0 00:00
422	Out-1PGE120	0.00	0.00	232.77	2.08	0.00	3.92	232.68	1.99	0 05:03	0 00:00
423	PP10	0.13	0.00	220.04	0.22	0.00	1.50	219.88	0.06	0 12:12	0 00:00
424	PP105	0.17	0.17	218.01	0.62	0.00	0.30	217.46	0.07	0 12:12	0 00:00
425	PP110	0.17	0.00	217.91	0.94	0.00	0.00	217.29	0.32	0 12:05	0 12:12
426	PP115	0.04	0.04	220.69	0.11	0.00	0.59	220.62	0.04	0 12:12	0 00:00
427	PP120	0.09	0.05	220.34	0.21	0.00	0.65	220.18	0.05	0 12:12	0 00:00
428	PP125	0.15	0.06	220.24	0.37	0.00	0.60	219.95	0.08	0 12:13	0 00:00
429	PP130	0.15	0.00	220.08	0.24	0.00	0.56	219.89	0.05	0 12:13	0 00:00
430	PP135	0.22	0.08	220.37	1.23	0.00	0.00	219.20	0.06	0 12:10	0 12:10
431	PP140	0.30	0.09	220.18	1.27	0.00	0.20	218.98	0.07	0 12:10	0 00:00
432	PP145	0.31	0.01	219.39	1.00	0.00	0.30	218.48	0.09	0 12:10	0 00:00
433	PP15	0.13	0.00	219.80	0.20	0.00	1.54	219.66	0.06	0 12:12	0 00:00
434	PP150	0.31	0.00	218.71	0.53	0.00	0.26	218.26	0.08	0 12:10	0 00:00
435	PP155	0.32	0.01	218.36	0.34	0.00	0.45	218.08	0.06	0 12:12	0 00:00

Total Flooded Volume	Total Time Flooded
(ha-mm)	(min)
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.02	2.00
0.00	0.00
0.00	0.00
0.02	0.00
0.01	0.00
29.88	27.00
0.03	0.00
0.01	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
14.68	21.00
0.00	0.00
0.00	0.00
11.98	17.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.20	3.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.12	4.00
0.00	0.00
0.00	0.00
0.00	0.00
51.90	46.00
0.00	0.00
0.00	0.00
33.86	50.00
0.03	0.00
0.02	0.00
0.00	0.00
0.00	0.00
0.02	0.00
0.00	0.00
0.31	4.00
0.00	0.00
0.00	0.00
0.53	9.00
3.62	18.00
0.00	0.00
0.00	0.00
24.88	32.00
0.01	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
1.53	11.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00

Junction Results

SN	Element ID	Peak Inflow (cms)	Peak Lateral Inflow (cms)	Max HGL Elevation Attained (m)	Max HGL Depth Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Average HGL Elevation Attained (m)	Average HGL Depth Attained (m)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)
436	PP160	0.32	0.00	217.88	0.40	0.00	0.39	217.54	0.06	0 12:12	0 00:00
437	PP165	0.10	0.10	216.21	0.10	0.00	0.68	216.13	0.02	0 12:12	0 00:00
438	PP170	0.06	0.06	209.29	0.11	0.00	4.88	209.20	0.02	0 12:12	0 00:00
439	PP180	0.11	0.11	209.94	0.19	0.00	0.80	209.78	0.03	0 12:12	0 00:00
440	PP185	0.11	0.00	205.45	0.15	0.00	4.91	205.33	0.03	0 12:12	0 00:00
441	PP195	0.10	0.10	218.04	0.20	0.00	1.25	217.88	0.04	0 12:12	0 00:00
442	PP20	0.13	0.00	218.87	0.17	0.00	0.97	218.75	0.05	0 12:18	0 00:00
443	PP200	0.10	0.00	217.88	0.18	0.00	1.16	217.74	0.04	0 12:12	0 00:00
444	PP205	0.10	0.00	217.62	0.13	0.00	1.13	217.52	0.03	0 12:12	0 00:00
445	PP210	0.10	0.00	216.35	0.22	0.00	0.86	216.18	0.05	0 12:13	0 00:00
446	PP215	0.10	0.00	216.19	0.12	0.00	0.86	216.09	0.02	0 12:12	0 00:00
447	PP220	0.26	0.00	216.21	0.68	0.00	0.69	215.61	0.08	0 12:10	0 00:00
448	PP225	0.26	0.00	215.37	0.18	0.00	0.61	215.23	0.04	0 12:12	0 00:00
449	PP230	0.42	0.00	213.15	0.33	0.00	0.89	212.90	0.08	0 12:12	0 00:00
450	PP235	0.42	0.00	210.22	1.25	0.00	0.00	209.14	0.17	0 12:11	0 12:12
451	PP240	0.52	0.11	209.73	0.79	0.00	0.00	209.05	0.11	0 12:08	0 12:12
452	PP245	0.43	0.00	208.99	0.50	0.00	0.60	208.59	0.10	0 12:13	0 00:00
453	PP25	0.27	0.15	218.81	0.61	0.00	0.18	218.26	0.06	0 12:11	0 00:00
454	PP255	0.17	0.17	216.56	0.16	0.00	0.64	216.43	0.03	0 12:12	0 00:00
455	PP260	0.16	0.16	213.31	0.25	0.00	0.67	213.14	0.08	0 12:12	0 00:00
456	PP265	0.23	0.23	209.60	0.21	0.00	1.25	209.43	0.04	0 12:12	0 00:00
457	PP275	0.19	0.19	210.88	0.21	0.00	1.54	210.71	0.04	0 12:12	0 00:00
458	PP280	0.19	0.00	210.23	0.16	0.00	1.28	210.10	0.03	0 12:12	0 00:00
459	PP290	0.12	0.12	211.90	0.12	0.00	1.27	211.80	0.02	0 12:12	0 00:00
460	PP295	0.12	0.00	210.74	0.14	0.00	1.44	210.63	0.03	0 12:12	0 00:00
461	PP30	0.27	0.00	218.60	0.70	0.00	0.08	217.97	0.07	0 12:11	0 00:00
462	PP305	0.22	0.22	207.16	0.20	0.00	0.46	207.00	0.04	0 12:12	0 00:00
463	PP315	0.10	0.10	218.38	1.45	0.00	0.00	216.99	0.06	0 12:09	0 12:09
464	PP320	0.10	0.00	218.44	1.73	0.00	0.00	216.80	0.09	0 12:09	0 12:09
465	PP325	0.10	0.00	218.38	1.74	0.00	0.00	216.72	0.08	0 12:09	0 12:09
466	PP330	0.10	0.00	218.21	1.91	0.00	0.00	216.39	0.09	0 12:08	0 12:08
467	PP335	0.23	0.06	218.03	1.92	0.00	0.00	216.20	0.09	0 12:08	0 12:08
468	PP340	0.23	0.00	217.85	2.24	0.00	0.00	215.74	0.13	0 12:08	0 12:09
469	PP345	0.26	0.06	217.48	2.18	0.00	0.00	215.44	0.14	0 12:06	0 12:06
470	PP35	0.27	0.00	218.39	0.75	0.00	0.06	217.73	0.09	0 12:11	0 00:00
471	PP350	0.24	0.00	216.96	2.00	0.00	0.00	215.10	0.14	0 12:09	0 12:12
472	PP355	0.34	0.14	216.87	1.96	0.00	0.11	215.04	0.13	0 12:11	0 00:00
473	PP360	0.41	0.08	216.08	1.67	0.00	0.92	214.57	0.16	0 12:11	0 00:00
474	PP365	0.41	0.00	215.60	1.22	0.00	1.40	214.48	0.10	0 12:08	0 00:00
475	PP370	0.41	0.00	214.57	1.07	0.00	1.71	213.62	0.12	0 12:05	0 00:00
476	PP375	0.50	0.08	213.67	0.44	0.00	2.05	213.32	0.09	0 12:12	0 00:00
477	PP380	0.60	0.05	211.47	0.31	0.00	2.15	211.23	0.07	0 12:12	0 00:00
478	PP390	0.12	0.12	218.77	2.13	0.00	0.00	216.70	0.06	0 12:08	0 12:08
479	PP395	0.12	0.00	218.70	2.28	0.00	0.00	216.51	0.09	0 12:08	0 12:08
480	PP40	0.30	0.03	218.16	0.61	0.00	0.21	217.61	0.06	0 12:11	0 00:00
481	PP400	0.12	0.00	218.52	2.17	0.00	0.00	216.44	0.09	0 12:08	0 12:08
482	PP405	0.12	0.00	218.06	1.86	0.00	0.00	216.29	0.09	0 12:08	0 12:12
483	PP410	0.06	0.06	212.23	0.08	0.00	2.45	212.17	0.02	0 12:12	0 00:00
484	PP415	0.08	0.08	218.56	2.33	0.00	0.00	216.37	0.14	0 12:07	0 12:09
485	PP420	0.16	0.00	218.56	2.33	0.00	0.00	216.37	0.14	0 12:07	0 12:07
486	PP425	0.16	0.00	218.36	2.16	0.00	0.00	216.30	0.10	0 12:07	0 12:07
487	PP430	0.21	0.00	218.22	2.25	0.00	0.00	216.09	0.12	0 12:07	0 12:07
488	PP435	0.21	0.00	217.93	2.43	0.00	0.00	215.63	0.13	0 12:05	0 12:05
489	PP440	0.24	0.00	217.46	2.56	0.00	0.14	215.10	0.20	0 12:09	0 00:00
490	PP445	0.24	0.00	217.24	2.39	0.00	0.22	215.02	0.17	0 12:07	0 00:00
491	PP45	0.43	0.00	217.77	1.19	0.00	0.00	217.27	0.69	0 12:00	0 12:12
492	PP450	0.36	0.02	217.33	2.57	0.00	0.00	214.94	0.18	0 12:03	0 12:03
493	PP455	0.36	0.00	215.79	1.62	0.00	0.00	214.35	0.18	0 12:07	0 12:12
494	PP460	0.39	0.00	215.57	1.54	0.00	0.00	214.29	0.26	0 12:04	0 12:11
495	PP465	0.27	0.00	215.47	1.45	0.00	0.08	214.24	0.22	0 12:03	0 00:00
496	PP470	0.28	0.00	215.26	1.43	0.00	0.14	214.02	0.19	0 12:11	0 00:00
497	PP475	0.35	0.00	214.96	1.46	0.00	0.38	213.70	0.20	0 12:11	0 00:00
498	PP480	0.38	0.03	214.44	1.14	0.00	0.56	213.48	0.18	0 12:11	0 00:00
499	PP485	0.53	0.06	213.27	0.39	0.00	2.46	213.00	0.12	0 12:12	0 00:00
500	PP490	0.94	0.00	210.36	0.36	0.00	0.58	210.10	0.10	0 12:12	0 00:00
501	PP5	0.13	0.13	220.24	0.22	0.00	1.47	220.07	0.05	0 12:12	0 00:00
502	PP50	0.15	0.05	217.71	2.21	0.00	0.48	217.22	1.72	0 12:11	0 00:00
503	PP500	0.08	0.08	218.19	1.94	0.00	0.00	216.32	0.07	0 12:07	0 12:12
504	PP505	0.11	0.07	217.44	2.46	0.00	0.00	215.12	0.14	0 12:04	0 12:04
505	PP510	0.05	0.05	218.46	2.28	0.00	0.00	216.23	0.05	0 12:07	0 12:07
506	PP515	0.06	0.00	218.40	2.29	0.00	0.00	216.15	0.04	0 12:07	0 12:07
507	PP520	0.08	0.00	218.36	2.36	0.00	0.00	216.05	0.05	0 12:07	0 12:07
508	PP525	0.07	0.00	218.15	2.44	0.00	0.00	215.81	0.10	0 12:07	0 12:07
509	PP530	0.13	0.00	217.84	2.13	0.00	0.00	215.79	0.08	0 12:07	0 12:07
510	PP535	0.14	0.01	217.67	2.05	0.00	0.00	215.70	0.08	0 12:07	0 12:07
511	PP540	0.14	0.00	217.56	2.20	0.00	0.00	215.46	0.10	0 12:07	0 12:07
512	PP545	0.08	0.08	217.89	2.17	0.00	0.00	215.82	0.10	0 12:07	0 12:07
513	PP55	0.49	0.04	217.56	0.44	0.00	0.00	217.22	0.10	0 12:07	0 12:12
514	PP550	0.13	0.13	216.83	1.34	0.00	0.00	215.55	0.06	0 12:04	0 12:04
515	PP555	0.13	0.00	216.82	1.62	0.00	0.00	215.28	0.08	0 12:04	0 12:04
516	PP560	0.13	0.00	216.46	1.46	0.00	0.00	215.09	0.09	0 12:04	0 12:04
517	PP565	0.13	0.00	215.83	1.60	0.00	0.00	214.45	0.22	0 12:02	0 12:02
518	PP570	0.14	0.00	215.68	1.46	0.00	0.00	214.38	0.16	0 12:02	0 12:02
519	PP575	0.19	0.13	215.67	1.16	0.00	0.00	214.62	0.11	0 12:02	0 12:12
520	PP580	0.08	0.07	215.87	1.19	0.00	0.00	214.76	0.08	0 12:03	0 12:03
521	PP585	0.13	0.07	215.41	1.20	0.00	0.00	214.32	0.11	0 12:03	0 12:12
522	PP590	0.04	0.04	215.26	1.38	0.00	0.01	214.02	0.14	0 12:11	0 00:00

Total Flooded Volume	Total Time Flooded
(ha-mm)	(min)
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.06	2.00
2.24	8.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.07	0.00
0.01	0.00
0.00	0.00
0.01	0.00
0.00	0.00
1.11	9.00
1.12	9.00
0.00	0.00
0.84	7.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
1.19	9.00
0.00	0.00
0.01	0.00
0.00	0.00
0.01	0.00
0.00	0.00
0.01	0.00
0.00	0.00
0.00	0.00
44.27	55.00
0.00	0.00
7.35	18.00
20.80	41.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.60	6.00
2.29	8.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
3.81	11.00
0.02	0.00
0.01	0.00
0.02	0.00
0.00	0.00
0.00	0.00
18.79	42.00
0.01	0.00
12.63	42.00
0.00	0.00

Junction Results

SN	Element ID	Peak Inflow (cms)	Peak Lateral Inflow (cms)	Max HGL Elevation Attained (m)	Max HGL Depth Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Average HGL Elevation Attained (m)	Average HGL Depth Attained (m)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)
523	PP595	0.12	0.12	215.05	0.97	0.00	0.23	214.14	0.06	0 12:11	0 00:00
524	PP60	0.50	0.00	215.84	0.79	0.00	0.00	215.16	0.11	0 12:06	0 12:07
525	PP600	0.03	0.00	214.96	0.87	0.00	0.35	214.13	0.04	0 12:11	0 00:00
526	PP605	0.09	0.09	214.46	0.17	0.00	1.71	214.32	0.03	0 12:12	0 00:00
527	PP610	0.09	0.00	214.06	0.10	0.00	2.02	213.98	0.02	0 12:12	0 00:00
528	PP615	0.00	0.00	213.93	0.00	0.00	0.99	213.93	0.00	0 00:00	0 00:00
529	PP620	0.17	0.17	213.83	0.16	0.00	1.04	213.71	0.04	0 12:12	0 00:00
530	PP625	0.25	0.08	212.47	0.80	0.00	0.44	211.74	0.07	0 12:11	0 00:00
531	PP630	0.41	0.16	212.06	0.63	0.00	0.24	211.50	0.07	0 12:11	0 00:00
532	PP635	0.41	0.00	211.49	0.34	0.00	0.54	211.21	0.06	0 12:12	0 00:00
533	PP645	0.18	0.18	207.66	0.13	0.00	0.66	207.56	0.03	0 12:12	0 00:00
534	PP65	0.52	0.08	214.17	0.67	0.00	0.17	213.61	0.11	0 12:11	0 00:00
535	PP650	0.18	0.00	204.91	0.17	0.00	1.28	204.77	0.03	0 12:12	0 00:00
536	PP655	0.30	0.00	203.66	0.21	0.00	0.58	203.49	0.04	0 12:12	0 00:00
537	PP665	0.12	0.12	204.42	0.28	0.00	0.50	204.20	0.06	0 12:12	0 00:00
538	PP670	0.12	0.00	204.30	0.16	0.00	0.28	204.16	0.02	0 12:12	0 00:00
539	PP675	0.10	0.10	211.78	0.10	0.00	1.55	211.70	0.02	0 12:12	0 00:00
540	PP680	0.24	0.08	206.75	0.18	0.00	1.21	206.60	0.03	0 12:12	0 00:00
541	PP690	0.06	0.06	207.79	0.11	0.00	0.56	207.70	0.02	0 12:12	0 00:00
542	PP695	0.09	0.09	208.24	0.11	0.00	0.69	208.15	0.02	0 12:12	0 00:00
543	PP70	0.52	0.00	213.24	0.33	0.00	0.68	212.99	0.08	0 12:12	0 00:00
544	PP75	0.52	0.00	210.66	1.26	0.00	0.00	209.58	0.18	0 12:03	0 12:12
545	PP80	0.38	0.00	210.23	1.03	0.00	0.00	209.39	0.19	0 12:00	0 12:04
546	PP85	0.30	0.00	209.99	0.91	0.00	0.02	209.25	0.17	0 12:16	0 00:00
547	PP90	0.39	0.11	209.74	0.79	0.00	0.00	209.11	0.16	0 12:00	0 12:12
548	PP95	0.36	0.06	209.65	1.00	0.00	0.28	208.81	0.16	0 12:00	0 00:00
549	RM10	0.01	0.00	222.98	0.69	0.00	0.03	222.34	0.05	0 12:01	0 00:00
550	RM100	0.19	0.05	222.04	0.63	0.00	0.00	221.48	0.07	0 12:09	0 12:09
551	RM105	0.14	0.14	220.11	0.11	0.00	0.68	220.02	0.02	0 12:12	0 00:00
552	RM110	0.14	0.00	218.61	0.16	0.00	1.18	218.48	0.03	0 12:12	0 00:00
553	RM115	0.19	0.06	215.68	0.24	0.00	0.88	215.48	0.04	0 12:12	0 00:00
554	RM120	0.20	0.00	215.63	0.59	0.00	0.50	215.06	0.02	0 12:12	0 00:00
555	RM125	0.02	0.02	214.66	0.05	0.00	0.99	214.62	0.01	0 12:10	0 00:00
556	RM130	0.03	0.00	213.62	0.40	0.00	0.73	213.23	0.01	0 12:13	0 00:00
557	RM135	0.05	0.05	222.45	0.14	0.00	0.60	222.34	0.03	0 12:12	0 00:00
558	RM140	0.14	0.00	222.32	0.37	0.00	0.40	222.05	0.10	0 12:12	0 00:00
559	RM145	0.14	0.00	222.19	0.26	0.00	0.53	222.00	0.07	0 12:13	0 00:00
560	RM15	0.07	0.00	222.84	0.74	0.00	0.00	222.18	0.08	0 12:01	0 12:12
561	RM150	0.21	0.07	222.09	0.52	0.00	0.27	221.64	0.07	0 12:13	0 00:00
562	RM155	0.30	0.04	221.74	0.77	0.00	0.61	221.12	0.15	0 12:13	0 00:00
563	RM160	0.30	0.00	221.29	0.35	0.00	1.24	221.03	0.09	0 12:13	0 00:00
564	RM165	0.36	0.06	220.53	0.29	0.00	2.47	220.32	0.08	0 12:13	0 00:00
565	RM170	0.09	0.09	223.11	0.11	0.00	0.68	223.04	0.04	0 12:12	0 00:00
566	RM175	0.06	0.06	222.09	0.09	0.00	0.70	222.03	0.03	0 12:12	0 00:00
567	RM180	0.06	0.00	221.76	0.74	0.00	0.57	221.12	0.10	0 12:13	0 00:00
568	RM185	0.11	0.11	220.80	0.23	0.00	1.74	220.63	0.06	0 12:12	0 00:00
569	RM190	0.11	0.00	219.95	0.31	0.00	1.84	219.72	0.08	0 12:13	0 00:00
570	RM195	0.14	0.04	219.81	0.19	0.00	1.70	219.67	0.05	0 12:13	0 00:00
571	RM20	0.11	0.03	222.00	0.25	0.00	0.73	221.79	0.04	0 12:12	0 00:00
572	RM200	0.14	0.00	220.39	1.44	0.00	0.37	219.01	0.06	0 12:10	0 00:00
573	RM205	0.18	0.04	220.41	1.52	0.00	0.32	218.95	0.06	0 12:10	0 00:00
574	RM210	0.49	0.06	219.42	1.22	0.00	0.00	218.30	0.10	0 12:07	0 12:12
575	RM215	0.49	0.11	218.18	1.15	0.00	0.00	217.14	0.11	0 12:04	0 12:12
576	RM220	0.12	0.12	221.11	0.11	0.00	0.68	221.03	0.03	0 12:12	0 00:00
577	RM225	0.25	0.00	220.69	1.52	0.00	0.02	219.23	0.06	0 12:10	0 00:00
578	RM230	0.13	0.13	220.68	1.15	0.00	0.38	219.57	0.04	0 12:10	0 00:00
579	RM235	0.06	0.06	222.72	1.44	0.00	0.00	221.32	0.04	0 12:12	0 12:12
580	RM240	0.06	0.00	222.88	1.68	0.00	0.03	221.23	0.03	0 12:12	0 00:00
581	RM245	0.11	0.00	222.75	2.14	0.00	0.07	220.67	0.06	0 12:12	0 00:00
582	RM25	0.13	0.02	222.14	1.00	0.00	0.00	221.19	0.05	0 12:09	0 12:09
583	RM250	0.11	0.00	222.64	2.24	0.00	0.04	220.47	0.07	0 12:12	0 00:00
584	RM255	0.20	0.09	222.47	2.18	0.00	0.00	220.38	0.09	0 12:12	0 12:12
585	RM260	0.37	0.17	221.43	1.59	0.00	0.00	219.97	0.13	0 12:06	0 12:06
586	RM270	0.06	0.05	222.79	1.94	0.00	0.00	220.90	0.05	0 12:10	0 12:10
587	RM290	0.17	0.17	220.22	0.72	0.00	0.45	219.56	0.06	0 12:12	0 00:00
588	RM295	0.24	0.07	220.13	0.85	0.00	0.71	219.41	0.13	0 12:12	0 00:00
589	RM30	0.28	0.00	221.92	1.61	0.00	0.00	220.44	0.13	0 12:09	0 12:09
590	RM35	0.32	0.07	219.78	0.57	0.00	0.70	219.31	0.10	0 12:12	0 00:00
591	RM40	0.32	0.00	219.40	0.36	0.00	0.76	219.12	0.08	0 12:12	0 00:00
592	RM45	0.34	0.02	218.75	0.59	0.00	0.50	218.29	0.13	0 12:11	0 00:00
593	RM5	0.02	0.02	223.01	0.67	0.00	0.00	222.38	0.04	0 12:01	0 12:11
594	RM50	0.34	0.00	218.40	0.26	0.00	0.76	218.21	0.07	0 12:12	0 00:00
595	RM55	0.56	0.04	215.55	1.64	0.00	0.44	214.00	0.09	0 12:12	0 00:00
596	RM60	0.57	0.00	213.62	1.05	0.00	0.66	212.66	0.09	0 12:13	0 00:00
597	RM65	0.57	0.00	210.07	0.79	0.00	0.00	209.37	0.09	0 12:05	0 12:13
598	RM70	0.47	0.04	209.70	0.79	0.00	0.00	209.02	0.11	0 12:05	0 12:05
599	RM75	0.47	0.00	209.32	0.68	0.00	0.18	208.77	0.13	0 12:05	0 00:00
600	RM85	0.05	0.05	222.18	0.15	0.00	0.83	222.07	0.04	0 12:12	0 00:00
601	RM90	0.05	0.00	222.06	0.13	0.00	0.87	221.96	0.03	0 12:15	0 00:00
602	RM95	0.16	0.16	222.16	0.63	0.00	0.00	221.63	0.10	0 12:09	0 12:12
603	UV10	0.50	0.05	217.39	0.35	0.00	0.59	217.12	0.08	0 12:13	0 00:00
604	UV100	1.04	0.00	209.33	1.53	0.00	1.29	207.90	0.10	0 12:11	0 00:00
605	UV1000	0.06	0.06	211.42	0.14	0.00	2.31	211.31	0.03	0 12:12	0 00:00
606	UV1005	0.06	0.00	211.07	0.07	0.00	2.21	211.02	0.02	0 12:12	0 00:00
607	UV1010	0.01	0.01	209.48	0.69	0.00	1.52	208.81	0.02	0 12:12	0 00:00
608	UV1015	0.04	0.04	211.74	0.07	0.00	1.57	211.68	0.01	0 12:12	0 00:00
609	UV1020	0.07	0.07	208.68	0.17	0.00	1.72	208.54	0.03	0 12:12	0 00:00

Total Flooded Volume	Total Time Flooded
(ha-mm)	(min)
0.00	0.00
2.49	13.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
14.75	24.00
16.15	36.00
0.00	0.00
6.94	24.00
0.00	0.00
0.00	0.00
0.05	2.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
2.60	22.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
3.01	8.00
2.48	12.00
0.00	0.00
0.00	0.00
0.00	0.00
0.01	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.01	0.00
0.01	0.00
0.00	0.00
0.00	0.00
0.01	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.56	15.00
0.00	0.00
0.00	0.00
0.00	0.00
6.46	13.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
3.49	12.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00

Junction Results

SN	Element ID	Peak Inflow (cms)	Peak Lateral Inflow (cms)	Max HGL Elevation Attained (m)	Max HGL Depth Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Average HGL Elevation Attained (m)	Average HGL Depth Attained (m)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)
610	UV1025	0.12	0.04	208.18	0.14	0.00	1.02	208.07	0.03	0 12:12	0 00:00
611	UV1030	0.15	0.15	201.99	0.18	0.00	2.20	201.84	0.03	0 12:12	0 00:00
612	UV1040	0.09	0.09	210.40	0.14	0.00	1.08	210.29	0.03	0 12:12	0 00:00
613	UV1045	0.18	0.09	209.86	0.17	0.00	1.42	209.72	0.03	0 12:12	0 00:00
614	UV105	1.10	0.06	207.14	2.69	0.00	0.93	204.58	0.13	0 12:06	0 00:00
615	UV1050	0.18	0.00	208.69	0.15	0.00	1.84	208.57	0.03	0 12:12	0 00:00
616	UV1055	0.21	0.03	206.45	0.17	0.00	1.85	206.31	0.03	0 12:12	0 00:00
617	UV1065	0.08	0.08	209.34	0.17	0.00	1.09	209.20	0.03	0 12:12	0 00:00
618	UV1070	0.08	0.00	209.10	0.14	0.00	1.13	208.99	0.03	0 12:12	0 00:00
619	UV1075	0.22	0.07	208.03	0.15	0.00	2.22	207.91	0.03	0 12:12	0 00:00
620	UV1080	0.28	0.06	205.65	0.55	0.00	1.24	205.17	0.07	0 12:12	0 00:00
621	UV1090	0.07	0.07	210.15	0.10	0.00	1.90	210.07	0.02	0 12:12	0 00:00
622	UV1095	0.07	0.00	208.65	0.10	0.00	2.25	208.57	0.02	0 12:12	0 00:00
623	UV110	1.19	0.00	205.04	1.54	0.00	1.75	203.63	0.13	0 12:11	0 00:00
624	UV1100	0.12	0.12	204.57	0.14	0.00	1.36	204.46	0.03	0 12:12	0 00:00
625	UV1110	0.04	0.04	199.77	0.09	0.00	0.70	199.70	0.02	0 12:12	0 00:00
626	UV1120	0.11	0.11	199.68	0.10	0.00	1.83	199.60	0.02	0 12:12	0 00:00
627	UV1130	0.09	0.09	199.45	0.14	0.00	0.65	199.33	0.02	0 12:12	0 00:00
628	UV1135	0.09	0.00	198.72	0.10	0.00	0.69	198.64	0.02	0 12:12	0 00:00
629	UV1145	0.09	0.09	200.08	0.15	0.00	0.79	199.96	0.03	0 12:12	0 00:00
630	UV1155	0.08	0.08	197.58	0.13	0.00	0.66	197.47	0.02	0 12:12	0 00:00
631	UV1165	0.03	0.03	197.86	0.08	0.00	0.71	197.79	0.01	0 12:12	0 00:00
632	UV120	0.03	0.03	220.33	1.20	0.00	0.00	219.17	0.04	0 12:02	0 12:12
633	UV125	0.02	0.00	218.60	0.00	0.00	1.62	218.60	0.00	1 00:00	0 00:00
634	UV130	0.00	0.00	219.00	0.00	0.00	1.20	219.00	0.00	0 00:00	0 00:00
635	UV135	0.03	0.00	217.88	0.08	0.00	1.68	217.82	0.02	0 12:12	0 00:00
636	UV140	0.03	0.00	216.60	0.09	0.00	2.45	216.53	0.02	0 12:12	0 00:00
637	UV145	0.06	0.00	216.15	0.11	0.00	2.34	216.06	0.02	0 12:12	0 00:00
638	UV15	0.55	0.06	216.12	0.40	0.00	0.54	215.80	0.08	0 12:13	0 00:00
639	UV150	0.08	0.00	215.29	0.16	0.00	2.59	215.16	0.03	0 12:12	0 00:00
640	UV155	0.08	0.00	215.09	0.17	0.00	2.68	214.95	0.03	0 12:12	0 00:00
641	UV160	0.08	0.00	214.86	0.13	0.00	2.65	214.76	0.03	0 12:12	0 00:00
642	UV165	0.03	0.03	218.58	0.06	0.00	1.07	218.53	0.01	0 12:12	0 00:00
643	UV170	0.03	0.00	217.96	0.10	0.00	1.61	217.88	0.02	0 12:12	0 00:00
644	UV175	0.03	0.03	217.42	0.06	0.00	1.56	217.37	0.01	0 12:12	0 00:00
645	UV180	0.03	0.03	216.62	0.05	0.00	1.47	216.58	0.01	0 12:12	0 00:00
646	UV185	0.03	0.03	217.85	1.41	0.00	0.00	217.80	1.36	0 04:39	0 12:12
647	UV190	0.00	0.00	219.36	0.00	0.00	0.45	219.36	0.00	0 00:00	0 00:00
648	UV195	0.13	0.13	209.35	0.34	0.00	1.27	209.02	0.01	0 12:12	0 00:00
649	UV20	0.56	0.00	215.43	0.26	0.00	0.69	215.24	0.07	0 12:13	0 00:00
650	UV200	0.10	0.10	205.05	0.82	0.00	3.26	204.26	0.03	0 12:11	0 00:00
651	UV205	0.18	0.18	205.67	0.30	0.00	0.78	205.42	0.05	0 12:12	0 00:00
652	UV215	0.14	0.14	214.31	0.24	0.00	0.74	214.11	0.04	0 12:12	0 00:00
653	UV220	0.14	0.00	213.93	0.10	0.00	0.69	213.85	0.02	0 12:12	0 00:00
654	UV225	0.14	0.00	209.83	0.19	0.00	3.37	209.68	0.04	0 12:12	0 00:00
655	UV230	0.29	0.00	208.93	0.24	0.00	1.41	208.73	0.04	0 12:12	0 00:00
656	UV235	0.38	0.00	207.93	0.53	0.00	0.26	207.46	0.06	0 12:12	0 00:00
657	UV240	0.38	0.00	207.14	0.19	0.00	0.59	206.99	0.04	0 12:12	0 00:00
658	UV25	0.58	0.03	212.00	0.41	0.00	0.53	211.66	0.07	0 12:13	0 00:00
659	UV250	0.16	0.16	210.13	0.13	0.00	0.66	210.03	0.03	0 12:12	0 00:00
660	UV255	0.09	0.09	207.94	0.19	0.00	0.77	207.77	0.02	0 12:12	0 00:00
661	UV260	0.10	0.10	217.13	0.35	0.00	1.49	216.82	0.04	0 12:12	0 00:00
662	UV265	0.21	0.07	217.00	1.57	0.00	0.00	215.51	0.08	0 12:05	0 12:05
663	UV270	0.17	0.00	216.95	1.61	0.00	0.00	215.43	0.09	0 12:05	0 12:05
664	UV275	0.16	0.00	216.93	1.69	0.00	0.00	215.33	0.09	0 12:04	0 12:04
665	UV280	0.14	0.00	216.99	1.93	0.00	0.00	215.20	0.14	0 12:04	0 12:04
666	UV285	0.14	0.01	216.83	1.79	0.00	0.00	215.13	0.09	0 12:04	0 12:04
667	UV290	0.32	0.00	216.69	2.04	0.00	0.00	214.78	0.13	0 12:03	0 12:03
668	UV295	0.43	0.11	215.93	2.09	0.00	0.00	214.01	0.17	0 12:02	0 12:12
669	UV30	0.62	0.00	211.26	0.24	0.00	0.70	211.08	0.06	0 12:13	0 00:00
670	UV300	0.33	0.00	215.81	2.09	0.00	0.00	213.89	0.17	0 12:04	0 12:04
671	UV305	0.42	0.08	215.66	2.27	0.00	0.00	213.60	0.21	0 12:03	0 12:03
672	UV310	0.42	0.00	215.36	2.11	0.00	0.10	213.45	0.20	0 12:03	0 00:00
673	UV315	0.44	0.02	215.00	2.22	0.00	0.00	212.92	0.14	0 12:03	0 12:03
674	UV320	0.41	0.00	214.25	2.34	0.00	0.00	212.04	0.13	0 12:03	0 12:03
675	UV325	0.83	0.21	211.07	1.81	0.00	0.00	209.48	0.22	0 12:01	0 12:12
676	UV330	0.56	0.13	208.44	1.29	0.00	0.49	207.28	0.13	0 12:02	0 00:00
677	UV340	0.13	0.13	217.29	0.19	0.00	1.48	217.14	0.04	0 12:12	0 00:00
678	UV345	0.13	0.00	217.02	0.25	0.00	1.74	216.81	0.04	0 12:12	0 00:00
679	UV35	0.62	0.00	207.86	0.72	0.00	1.08	207.23	0.09	0 12:13	0 00:00
680	UV350	0.19	0.07	216.92	1.86	0.00	0.00	215.15	0.09	0 12:04	0 12:04
681	UV355	0.13	0.13	216.87	0.15	0.00	1.93	216.75	0.03	0 12:12	0 00:00
682	UV360	0.23	0.23	216.87	0.21	0.00	0.88	216.71	0.05	0 12:12	0 00:00
683	UV365	0.23	0.00	216.19	1.20	0.00	0.00	215.06	0.07	0 12:04	0 12:04
684	UV370	0.33	0.11	215.70	1.20	0.00	0.00	214.59	0.09	0 12:03	0 12:03
685	UV375	0.37	0.00	215.37	1.27	0.00	0.00	214.22	0.12	0 12:03	0 12:12
686	UV380	0.03	0.02	215.49	1.49	0.00	0.00	214.05	0.05	0 12:03	0 12:03
687	UV385	0.07	0.00	215.49	1.79	0.00	0.08	213.77	0.07	0 12:03	0 00:00
688	UV390	0.05	0.05	214.50	0.19	0.00	1.80	214.36	0.05	0 12:12	0 00:00
689	UV395	0.05	0.00	214.40	0.10	0.00	1.76	214.32	0.02	0 12:12	0 00:00
690	UV40	0.62	0.00	207.48	0.68	0.00	1.00	206.91	0.11	0 12:13	0 00:00
691	UV400	0.12	0.04	213.54	0.18	0.00	2.60	213.40	0.04	0 12:12	0 00:00
692	UV405	0.22	0.10	212.50	0.21	0.00	1.80	212.33	0.04	0 12:12	0 00:00
693	UV410	0.22	0.00	212.24	0.21	0.00	1.53	212.07	0.04	0 12:12	0 00:00
694	UV415	0.22	0.00	211.48	0.48	0.00	1.07	211.04	0.04	0 12:12	0 00:00
695	UV420	0.22	0.00	211.78	1.48	0.00	0.62	210.38	0.08	0 12:02	0 00:00
696	UV425	0.02	0.02	214.64	0.07	0.00	1.75	214.59	0.02	0 12:12	0 00:00

Total Flooded Volume	Total Time Flooded
(ha-mm)	(min)
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.49	13.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
8.37	1160.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.41	5.00
1.06	8.00
0.01	0.00
0.01	0.00
0.01	0.00
0.12	3.00
16.39	19.00
0.00	0.00
0.04	2.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
41.59	40.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.01	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
34.17	29.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00

Junction Results

SN	Element ID	Peak Inflow (cms)	Peak Lateral Inflow (cms)	Max HGL Elevation Attained (m)	Max HGL Depth Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Average HGL Elevation Attained (m)	Average HGL Depth Attained (m)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)
697	UV430	0.10	0.00	212.35	0.26	0.00	1.80	212.14	0.05	0 12:12	0 00:00
698	UV440	0.18	0.18	216.18	0.18	0.00	0.61	216.04	0.04	0 12:12	0 00:00
699	UV445	0.18	0.00	216.44	1.52	0.00	0.00	214.98	0.06	0 12:05	0 12:05
700	UV45	0.67	0.06	207.08	0.45	0.00	2.10	206.71	0.08	0 12:12	0 00:00
701	UV450	0.18	0.00	216.15	1.58	0.00	0.00	214.65	0.08	0 12:05	0 12:05
702	UV455	0.20	0.03	215.46	1.53	0.00	0.00	214.04	0.11	0 12:04	0 12:04
703	UV460	0.37	0.00	215.30	1.44	0.00	0.00	213.99	0.13	0 12:04	0 12:12
704	UV465	0.29	0.00	214.94	1.30	0.00	0.00	213.83	0.19	0 01:20	0 01:20
705	UV470	0.60	0.03	214.91	1.29	0.00	0.00	213.74	0.12	0 01:20	0 01:20
706	UV475	0.28	0.00	214.83	1.39	0.00	0.11	213.57	0.13	0 12:11	0 00:00
707	UV480	1.23	0.04	215.07	2.27	0.00	0.00	213.15	0.35	0 01:28	0 01:54
708	UV485	1.56	0.00	215.08	2.13	0.00	0.01	213.12	0.17	0 02:19	0 00:00
709	UV490	1.22	0.00	214.35	1.45	0.00	0.71	212.99	0.09	0 02:00	0 00:00
710	UV495	2.59	0.00	214.50	2.00	0.00	0.00	212.58	0.08	0 01:20	0 02:20
711	UV5	0.45	0.11	218.33	0.38	0.00	0.96	218.04	0.09	0 12:13	0 00:00
712	UV500	0.89	0.09	211.92	1.60	0.00	0.00	210.45	0.13	0 01:20	0 12:12
713	UV505	0.54	0.00	210.05	1.09	0.00	0.00	209.11	0.15	0 01:20	0 01:20
714	UV510	0.90	0.08	209.62	0.92	0.00	0.00	208.88	0.18	0 12:03	0 12:12
715	UV515	0.55	0.00	209.40	0.84	0.00	0.10	208.74	0.18	0 12:12	0 00:00
716	UV520	0.58	0.00	208.74	0.68	0.00	1.20	208.24	0.18	0 12:12	0 00:00
717	UV525	0.58	0.00	208.21	0.32	0.00	1.94	208.00	0.11	0 12:12	0 00:00
718	UV535	0.17	0.17	215.48	1.21	0.00	0.00	214.34	0.07	0 12:04	0 12:04
719	UV540	0.12	0.12	214.88	1.13	0.00	0.30	213.81	0.06	0 12:11	0 00:00
720	UV545	0.89	0.12	215.34	2.05	0.00	0.00	213.35	0.06	0 01:40	0 01:40
721	UV55	0.01	0.01	216.07	0.03	0.00	0.67	216.05	0.01	0 12:12	0 00:00
722	UV550	4.41	0.00	215.19	2.03	0.00	0.00	213.22	0.06	0 01:34	0 01:34
723	UV555	0.13	0.08	212.06	1.44	0.00	0.00	210.68	0.06	0 01:20	0 12:04
724	UV560	0.10	0.07	210.26	0.79	0.00	0.00	209.51	0.04	0 12:03	0 12:03
725	UV565	0.18	0.18	214.13	0.32	0.00	0.92	213.88	0.07	0 12:12	0 00:00
726	UV570	0.17	0.00	213.94	0.22	0.00	0.88	213.77	0.05	0 12:12	0 00:00
727	UV575	0.32	0.15	213.49	1.30	0.00	0.00	212.27	0.08	0 12:09	0 12:09
728	UV580	0.48	0.16	212.50	1.80	0.00	0.00	210.81	0.11	0 12:09	0 12:12
729	UV585	0.42	0.00	212.01	1.55	0.00	0.36	210.57	0.11	0 12:09	0 00:00
730	UV590	0.49	0.07	210.30	1.10	0.00	0.00	209.30	0.10	0 12:03	0 12:03
731	UV595	0.04	0.04	208.74	0.16	0.00	1.91	208.60	0.02	0 12:12	0 00:00
732	UV60	0.04	0.04	211.87	0.07	0.00	0.56	211.81	0.01	0 12:12	0 00:00
733	UV600	0.04	0.00	208.74	0.44	0.00	1.41	208.34	0.04	0 12:12	0 00:00
734	UV605	0.09	0.09	213.07	0.17	0.00	1.77	212.93	0.03	0 12:12	0 00:00
735	UV610	0.09	0.00	212.79	0.11	0.00	1.82	212.71	0.03	0 12:12	0 00:00
736	UV615	0.28	0.00	210.03	0.26	0.00	3.97	209.82	0.05	0 12:12	0 00:00
737	UV620	0.28	0.00	209.00	0.23	0.00	3.48	208.82	0.05	0 12:12	0 00:00
738	UV625	0.34	0.00	206.89	0.29	0.00	1.00	206.65	0.05	0 12:12	0 00:00
739	UV630	0.42	0.00	206.15	0.79	0.00	0.00	205.43	0.07	0 12:06	0 12:12
740	UV635	0.47	0.00	205.51	1.05	0.00	0.04	204.59	0.13	0 12:11	0 00:00
741	UV640	0.51	0.00	204.71	0.29	0.00	0.85	204.48	0.06	0 12:12	0 00:00
742	UV645	0.51	0.00	203.60	0.29	0.00	0.65	203.37	0.06	0 12:12	0 00:00
743	UV65	0.10	0.10	218.76	0.28	0.00	0.63	218.55	0.07	0 12:12	0 00:00
744	UV655	0.20	0.20	213.06	0.30	0.00	1.25	212.82	0.06	0 12:12	0 00:00
745	UV660	0.20	0.00	212.69	0.15	0.00	1.05	212.58	0.04	0 12:12	0 00:00
746	UV665	0.07	0.07	206.90	0.23	0.00	1.01	206.69	0.02	0 12:12	0 00:00
747	UV670	0.08	0.08	206.65	0.13	0.00	0.80	206.54	0.02	0 12:12	0 00:00
748	UV675	0.08	0.00	206.19	0.10	0.00	0.68	206.11	0.02	0 12:12	0 00:00
749	UV680	0.15	0.15	205.59	0.96	0.00	0.97	204.69	0.06	0 12:12	0 00:00
750	UV685	0.04	0.04	205.06	0.14	0.00	1.97	204.94	0.02	0 12:12	0 00:00
751	UV690	0.04	0.00	204.92	0.08	0.00	1.12	204.86	0.02	0 12:12	0 00:00
752	UV695	0.07	0.07	201.70	0.07	0.00	0.72	201.64	0.01	0 12:12	0 00:00
753	UV70	0.21	0.11	218.55	0.19	0.00	0.99	218.41	0.05	0 12:12	0 00:00
754	UV700	0.07	0.00	197.73	0.07	0.00	0.72	197.67	0.01	0 12:12	0 00:00
755	UV710	0.16	0.16	209.39	0.16	0.00	0.62	209.26	0.03	0 12:12	0 00:00
756	UV715	0.16	0.00	208.28	0.13	0.00	0.66	208.18	0.03	0 12:12	0 00:00
757	UV720	0.22	0.07	205.14	0.14	0.00	0.65	205.03	0.03	0 12:12	0 00:00
758	UV725	0.22	0.00	202.47	0.14	0.00	1.26	202.36	0.03	0 12:12	0 00:00
759	UV730	0.22	0.00	198.60	0.15	0.00	0.64	198.48	0.03	0 12:12	0 00:00
760	UV740	0.00	0.00	203.70	0.00	0.00	0.79	203.70	0.00	0 00:00	0 00:00
761	UV745	0.00	0.00	202.88	0.00	0.00	0.79	202.88	0.00	0 00:00	0 00:00
762	UV75	0.41	0.20	217.03	0.25	0.00	1.25	216.84	0.06	0 12:12	0 00:00
763	UV750	0.00	0.00	202.64	0.00	0.00	0.79	202.64	0.00	0 00:00	0 00:00
764	UV755	0.00	0.00	203.73	0.00	0.00	0.79	203.73	0.00	0 00:00	0 00:00
765	UV760	0.11	0.11	208.17	0.16	0.00	0.63	208.04	0.03	0 12:12	0 00:00
766	UV765	0.11	0.00	207.77	0.14	0.00	0.65	207.66	0.03	0 12:12	0 00:00
767	UV770	0.11	0.00	206.71	0.10	0.00	0.69	206.63	0.02	0 12:12	0 00:00
768	UV780	0.11	0.11	211.90	0.14	0.00	0.65	211.79	0.03	0 12:12	0 00:00
769	UV785	0.13	0.02	210.69	0.11	0.00	0.68	210.60	0.02	0 12:12	0 00:00
770	UV790	0.31	0.18	205.68	0.27	0.00	0.67	205.46	0.05	0 12:12	0 00:00
771	UV80	0.62	0.21	214.72	0.33	0.00	1.62	214.46	0.07	0 12:12	0 00:00
772	UV800	0.08	0.08	204.50	0.13	0.00	0.66	204.39	0.02	0 12:12	0 00:00
773	UV805	0.08	0.00	204.06	0.11	0.00	0.67	203.97	0.02	0 12:12	0 00:00
774	UV810	0.08	0.00	202.94	0.09	0.00	0.70	202.87	0.02	0 12:12	0 00:00
775	UV815	0.25	0.17	199.26	0.55	0.00	1.12	198.78	0.07	0 12:12	0 00:00
776	UV825	0.11	0.11	210.26	0.14	0.00	0.65	210.15	0.03	0 12:12	0 00:00
777	UV830	0.11	0.00	207.41	0.23	0.00	0.56	207.22	0.04	0 12:12	0 00:00
778	UV835	0.19	0.08	207.21	0.16	0.00	0.63	207.08	0.03	0 12:12	0 00:00
779	UV840	0.19	0.00	203.84	0.12	0.00	1.24	203.75	0.03	0 12:12	0 00:00
780	UV845	0.27	0.00	200.79	0.14	0.00	1.21	200.68	0.03	0 12:12	0 00:00
781	UV85	0.90	0.22	213.84	2.13	0.00	0.00	211.80	0.09	0 12:12	0 12:12
782	UV850	0.33	0.06	196.47	0.18	0.00	0.91	196.33	0.04	0 12:12	0 00:00
783	UV860	0.09	0.09	202.98	0.09	0.00	1.19	202.91	0.02	0 12:12	0 00:00

Total Flooded Volume	Total Time Flooded
(ha-mm)	(min)
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.01	0.00
0.00	0.00
4.52	14.00
13.17	22.00
0.58	1.00
0.00	0.00
4.13	5.00
0.00	0.00
0.00	0.00
2.37	1.00
0.00	0.00
4.73	13.00
18.85	27.00
43.15	35.00
0.00	0.00
0.00	0.00
0.00	0.00
0.01	0.00
0.00	0.00
4.04	2.00
0.00	0.00
12.79	1.00
0.01	1.00
0.00	0.00
0.00	0.00
0.00	0.00
0.02	1.00
1.30	6.00
0.00	0.00
1.06	7.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
2.93	9.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0

Junction Results

SN	Element ID	Peak Inflow (cms)	Peak Lateral Inflow (cms)	Max HGL Elevation Attained (m)	Max HGL Depth Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Average HGL Elevation Attained (m)	Average HGL Depth Attained (m)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)
784	UV865	0.09	0.09	195.32	0.09	0.00	1.33	195.25	0.02	0 12:12	0 00:00
785	UV875	0.04	0.04	214.49	0.08	0.00	0.71	214.43	0.02	0 12:12	0 00:00
786	UV880	0.14	0.00	213.72	0.16	0.00	0.63	213.59	0.03	0 12:12	0 00:00
787	UV885	0.21	0.07	211.91	0.16	0.00	0.63	211.78	0.03	0 12:12	0 00:00
788	UV890	0.35	0.14	207.74	0.32	0.00	1.47	207.47	0.05	0 12:12	0 00:00
789	UV895	0.35	0.01	206.79	0.23	0.00	0.21	206.60	0.04	0 12:12	0 00:00
790	UV90	1.03	0.14	210.82	2.25	0.00	0.00	208.70	0.13	0 12:11	0 12:12
791	UV905	0.11	0.11	214.16	0.15	0.00	0.64	214.04	0.03	0 12:12	0 00:00
792	UV910	0.12	0.12	202.61	0.14	0.00	0.65	202.49	0.02	0 12:12	0 00:00
793	UV915	0.12	0.00	201.91	0.16	0.00	0.63	201.78	0.03	0 12:12	0 00:00
794	UV925	0.06	0.06	214.52	0.14	0.00	1.01	214.41	0.03	0 12:12	0 00:00
795	UV930	0.06	0.00	213.92	0.10	0.00	1.57	213.84	0.02	0 12:12	0 00:00
796	UV935	0.12	0.02	212.87	0.25	0.00	2.25	212.66	0.04	0 12:12	0 00:00
797	UV940	0.16	0.04	212.70	0.19	0.00	2.35	212.54	0.03	0 12:12	0 00:00
798	UV945	0.16	0.00	212.16	0.16	0.00	2.86	212.03	0.03	0 12:12	0 00:00
799	UV95	0.95	0.00	210.14	1.84	0.00	0.51	208.42	0.12	0 12:11	0 00:00
800	UV950	0.28	0.06	210.42	0.27	0.00	2.73	210.19	0.04	0 12:12	0 00:00
801	UV955	0.27	0.00	209.73	0.79	0.00	1.83	208.98	0.04	0 12:12	0 00:00
802	UV960	0.33	0.05	209.48	1.19	0.00	1.34	208.35	0.06	0 12:12	0 00:00
803	UV965	0.33	0.00	209.17	1.07	0.00	1.51	208.19	0.09	0 12:12	0 00:00
804	UV970	0.41	0.08	208.07	0.42	0.00	0.82	207.70	0.05	0 12:12	0 00:00
805	UV975	0.60	0.03	207.56	0.40	0.00	0.54	207.22	0.06	0 12:12	0 00:00
806	UV985	0.02	0.02	213.34	0.07	0.00	1.56	213.28	0.01	0 12:12	0 00:00
807	UV990	0.02	0.00	213.21	0.09	0.00	1.66	213.14	0.02	0 12:12	0 00:00
808	UV995	0.04	0.02	213.09	0.09	0.00	2.00	213.02	0.02	0 12:12	0 00:00

Total Flooded Volume	Total Time Flooded
(ha-mm)	(min)
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
1.35	4.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00

Pipe Results

SN	Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Froude Number	Reported Condition
		(cms)	(days hh:mm)	(cms)		(m/sec)	(min)	(m)		(min)		
1	Link-01	0.06	0 12:12	1.28	0.05	0.61	0.08	0.26	0.57	0.00	0.82	Calculated
2	P1131	0.08	0 12:12	0.30	0.26	1.53	0.09	0.37	1.00	13.00	1.48	SURCHARGED
3	P1132	0.08	0 12:12	0.23	0.35	0.64	2.75	0.44	1.00	15.00	0.37	SURCHARGED
4	P1324	0.00	0 00:00	0.13	0.00	0.00		0.00	0.01	0.00	0.00	Calculated
5	P1424	0.01	0 12:11	0.99	0.01	0.14	0.18	0.22	0.85	0.00	0.00	Calculated
6	P1440	0.02	0 12:12	0.33	0.07	1.55	0.09	0.07	0.20	0.00	1.96	Calculated
7	P1441	0.02	0 12:12	0.42	0.06	1.10	1.13	0.09	0.20	0.00	1.16	Calculated
8	P1484	0.12	0 12:07	0.19	0.67	1.84	0.07	0.37	1.00	24.00	2.08	SURCHARGED
9	P1485	0.12	0 12:07	1.54	0.08	1.12	0.01	0.37	1.00	25.00	0.40	SURCHARGED
10	P1487	0.08	0 12:11	0.53	0.15	1.21	0.01	0.29	1.00	65.00	0.14	SURCHARGED
11	P1488	0.10	0 12:12	0.54	0.18	0.93	0.05	0.33	0.91	0.00	0.18	Calculated
12	P1489	0.00	0 03:09	0.28	0.01	0.08	1.95	0.44	1.00	45.00	0.00	SURCHARGED
13	P1531	0.07	0 12:09	0.10	0.66	1.11	0.12	0.29	1.00	32.00	1.05	SURCHARGED
14	P1532	0.06	0 12:05	0.07	0.85	0.99	0.71	0.29	1.00	32.00	0.75	SURCHARGED
15	P1649	0.00	0 00:00	0.13	0.00	0.00		0.00	0.00	0.00	0.00	Calculated
16	P1700 (1)	0.03	0 12:12	0.56	0.05	1.26	0.02	0.09	0.19	0.00	1.81	Calculated
17	P1706	0.00	0 00:00	0.13	0.00	0.00		0.00	0.00	0.00	0.00	Calculated
18	PCE10	0.36	0 12:12	0.28	1.26	2.28	0.37	0.44	1.00	47.00	1.53	SURCHARGED
19	PCE100	0.14	0 12:12	0.22	0.62	1.26	0.18	0.37	1.00	21.00	0.56	SURCHARGED
20	PCE105	0.48	0 12:11	0.38	1.26	3.08	0.03	0.44	1.00	20.00	1.47	SURCHARGED
21	PCE110	0.48	0 12:12	0.45	1.06	3.08	0.05	0.44	1.00	12.00	1.55	SURCHARGED
22	PCE115	0.48	0 12:12	0.62	0.77	2.28	0.14	0.42	0.74	0.00	1.62	Calculated
23	PCE120	0.48	0 12:12	0.96	0.50	2.19	0.30	0.46	0.80	0.00	1.18	Calculated
24	PCE125	0.21	0 12:11	0.30	0.70	1.54	1.41	0.44	1.00	5.00	1.16	SURCHARGED
25	PCE130	0.36	0 12:14	0.73	0.49	2.52	0.04	0.44	1.00	13.00	2.85	SURCHARGED
26	PCE135	0.36	0 12:14	0.72	0.50	2.31	0.06	0.44	1.00	17.00	1.64	SURCHARGED
27	PCE135{SW_GEORGE EAST C6}	0.05	0 11:59	0.05	0.96	2.73	0.13	0.15	1.00	62.00	1.86	SURCHARGED
28	PCE140	0.01	0 12:04	0.32	0.01	0.07	0.29	0.29	1.00	47.00	0.00	SURCHARGED
29	PCE145	0.12	0 12:12	0.37	0.31	0.74	0.45	0.44	1.00	29.00	0.25	SURCHARGED
30	PCE15	0.36	0 12:12	0.98	0.36	2.28	0.01	0.44	1.00	49.00	1.26	SURCHARGED
31	PCE150	0.07	0 12:12	0.67	0.11	1.32	0.16	0.19	0.53	0.00	0.63	Calculated
32	PCE155	0.40	0 12:12	1.89	0.21	1.65	0.46	0.37	0.45	0.00	1.12	Calculated
33	PCE160	0.47	0 12:12	1.04	0.45	1.74	0.64	0.39	0.48	0.00	1.14	Calculated
34	PCE165	0.53	0 12:13	2.01	0.26	2.16	0.27	0.36	0.44	0.00	1.65	Calculated
35	PCE170	0.65	0 12:12	2.26	0.29	2.64	0.21	0.38	0.47	0.00	1.81	Calculated
36	PCE175	0.81	0 12:13	2.26	0.36	2.41	0.71	0.62	0.74	0.00	1.81	Calculated
37	PCE180	0.88	0 12:13	2.26	0.39	1.55	0.22	0.85	1.00	23.00	1.01	SURCHARGED
38	PCE185	1.49	0 12:10	2.26	0.66	2.61	0.30	0.85	1.00	36.00	0.45	SURCHARGED
39	PCE190	1.61	0 12:10	2.58	0.62	2.82	0.05	0.85	1.00	24.00	0.40	SURCHARGED
40	PCE195	1.76	0 12:10	1.80	0.98	3.43	0.11	0.85	1.00	5.00	1.86	SURCHARGED
41	PCE20	0.36	0 12:12	0.33	1.09	2.28	0.01	0.44	1.00	43.00	0.99	SURCHARGED
42	PCE205	0.07	0 12:12	0.69	0.10	0.98	0.29	0.22	0.61	0.00	0.31	Calculated
43	PCE210	0.06	0 12:12	0.64	0.10	0.99	0.23	0.21	0.60	0.00	0.46	Calculated
44	PCE215	0.13	0 12:12	0.48	0.27	1.29	0.36	0.26	0.61	0.00	0.67	Calculated
45	PCE220	0.12	0 12:12	0.30	0.39	2.05	0.06	0.18	0.52	0.00	2.00	Calculated
46	PCE225	0.11	0 12:12	0.29	0.39	1.41	0.57	0.26	0.72	0.00	0.62	Calculated
47	PCE230	0.08	0 12:16	0.73	0.11	0.86	0.38	0.44	1.00	5.00	0.63	SURCHARGED
48	PCE240	0.77	0 12:04	0.93	0.82	3.01	0.07	0.58	1.00	40.00	1.80	SURCHARGED
49	PCE245	0.81	0 12:33	0.93	0.87	3.03	0.59	0.58	1.00	40.00	1.82	SURCHARGED
50	PCE25	0.40	0 12:12	0.39	1.04	2.57	0.07	0.44	1.00	19.00	1.58	SURCHARGED
51	PCE250	0.91	0 12:06	0.93	0.97	3.38	0.07	0.58	1.00	49.00	1.65	SURCHARGED
52	PCE255	0.11	0 12:12	0.33	0.32	1.60	0.08	0.29	1.00	33.00	0.56	SURCHARGED
53	PCE260	0.15	0 12:11	1.34	0.11	0.97	0.07	0.44	1.00	36.00	0.30	SURCHARGED
54	PCE265	0.13	0 12:12	1.21	0.11	2.98	0.03	0.14	0.33	0.00	3.98	Calculated
55	PCE270266	0.13	0 12:12	0.79	0.17	2.33	0.05	0.17	0.42	0.00	2.38	Calculated
56	PCE275267	0.13	0 12:12	0.27	0.47	1.39	1.47	0.28	0.81	0.00	0.09	Calculated
57	PCE285	0.00	0 00:00	1.22	0.00	0.00		0.08	0.18	0.00	0.00	Calculated
58	PCE290	0.00	0 12:12	0.36	0.00	0.02	0.92	0.08	0.29	0.00	0.00	Calculated
59	PCE295	0.02	0 12:12	0.15	0.14	1.55	0.05	0.07	0.25	0.00	2.22	Calculated
60	PCE30	0.40	0 12:12	0.73	0.55	3.01	0.02	0.35	0.80	0.00	2.44	Calculated
61	PCE300	0.02	0 12:12	0.21	0.10	1.17	0.08	0.10	0.47	0.00	1.22	Calculated
62	PCE305	0.11	0 12:12	0.99	0.11	1.67	0.11	0.17	0.30	0.00	1.51	Calculated
63	PCE310	0.11	0 12:12	0.52	0.21	1.32	1.36	0.20	0.36	0.00	0.86	Calculated
64	PCE315	0.24	0 12:11	0.73	0.33	1.75	0.58	0.40	0.69	0.00	1.41	Calculated
65	PCE320	0.38	0 12:13	1.89	0.20	1.16	0.34	0.80	1.00	0.00	0.58	SURCHARGED
66	PCE325	0.12	0 12:12	0.51	0.24	2.32	0.09	0.18	0.49	0.00	2.01	Calculated
67	PCE330	0.00	0 00:00	0.15	0.00	0.00		0.11	0.50	0.00	0.00	Calculated
68	PCE335	0.14	0 12:12	1.35	0.10	2.39	0.02	0.23	0.65	0.00	2.16	Calculated
69	PCE35	0.40	0 12:12	1.19	0.33	2.74	0.18	0.35	0.62	0.00	2.11	Calculated
70	PCE40	1.09	0 12:13	2.77	0.39	2.63	0.28	0.59	0.71	0.00	1.79	Calculated
71	PCE45	1.09	0 12:13	1.78	0.61	2.43	0.16	0.68	0.81	0.00	1.54	Calculated
72	PCE5	0.36	0 12:12	0.32	1.11	2.28	0.42	0.44	1.00	43.00	1.28	SURCHARGED
73	PCE50	0.35	0 12:12	0.89	0.40	2.56	0.23	0.28	0.51	0.00	1.81	Calculated
74	PCE55	0.45	0 12:12	1.41	0.32	1.90	0.95	0.38	0.55	0.00	1.51	Calculated
75	PCE60	0.49	0 12:13	1.35	0.36	1.50	0.19	0.55	0.79	0.00	1.30	Calculated
76	PCE65	0.70	0 12:13	0.94	0.74	2.76	0.11	0.52	0.90	0.00	1.69	Calculated
77	PCE70	0.06	0 12:12	0.20	0.29	1.44	0.16	0.13	0.31	0.00	1.28	Calculated
78	PCE75	0.06	0 12:12	0.43	0.14	1.04	0.32	0.18	0.52	0.00	0.61	Calculated
79	PCE80	0.04	0 12:12	4.37	0.01	0.56	0.06	0.16	0.23	0.00	0.35	Calculated
80	PCE85	0.06	0 12:12	1.11	0.06	0.92	0.04	0.22	0.58	0.00	0.59	Calculated
81	PCE90	0.22	0 12:12	0.94	0.23	3.17	0.02	0.26	0.77	0.00	3.60	Calculated
82	PCE95	0.21	0 12:12	0.47	0.45	1.44	0.19	0.40	0.96	0.00	1.30	Calculated
83	PCGC10	0.64	0 12:10	0.71	0.91	4.55	0.18	0.44	1.00	7.00	3.38	SURCHARGED
84	PCGC15	0.80	0 12:09	0.88	0.90	5.21	0.21	0.44	1.00	7.00	3.78	SURCHARGED
85	PCGC20	0.70	0 12:06	0.93	0.75	5.17	0.07	0.37	0.82	0.00	4.16	Calculated
86	PCGC30	0.18	0 12:12	0.91	0.20	2.99	0.08	0.17	0.42	0.00	2.56	Calculated
87	PCGC35	0.18	0 12:12	0.38	0.47	1.46	2.15	0.32	0.74	0.00	0.98	Calculated

Pipe Results

SN	Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Froude Number	Reported Condition
		(cms)	(days hh:mm)	(cms)		(m/sec)	(min)	(m)		(min)		
88	PCGC40	0.13	0 12:12	0.44	0.28	2.16	0.30	0.30	0.68	0.00	1.92	Calculated
89	PCGC45	0.13	0 12:12	0.46	0.28	0.99	0.28	0.45	1.00	7.00	0.69	SURCHARGED
90	PCGC5	0.39	0 12:06	0.39	1.00	2.54	0.35	0.44	1.00	17.00	1.87	SURCHARGED
91	PCGC50	0.13	0 12:12	0.41	0.31	1.44	0.47	0.30	0.69	0.00	1.50	Calculated
92	PCGC55	0.13	0 12:12	0.28	0.46	0.89	0.24	0.44	1.00	5.00	0.66	SURCHARGED
93	PCGC60	0.15	0 12:12	0.78	0.19	1.99	0.31	0.29	0.65	0.00	2.30	Calculated
94	PCGC65	0.19	0 12:12	0.49	0.39	1.23	0.10	0.44	1.00	22.00	0.86	SURCHARGED
95	PCGC70	0.04	0 12:11	0.20	0.21	0.47	0.23	0.44	1.00	21.00	0.57	SURCHARGED
96	PCGC75	0.19	0 12:12	0.30	0.62	1.68	0.09	0.29	0.67	0.00	1.27	Calculated
97	PGE10	0.15	0 12:27	0.13	1.16	1.40	0.21	0.37	1.00	53.00	0.78	SURCHARGED
98	PGE100	0.11	0 12:09	0.13	0.84	1.61	0.17	0.29	1.00	15.00	0.91	SURCHARGED
99	PGE105	0.14	0 12:12	0.54	0.25	1.16	0.11	0.44	1.00	19.00	1.26	SURCHARGED
100	PGE110	0.19	0 12:12	0.36	0.54	1.23	0.14	0.44	1.00	1142.00	0.05	SURCHARGED
101	PGE115	0.19	0 12:12	0.36	0.54	1.23	0.83	0.44	1.00	1145.00	0.01	SURCHARGED
102	PGE120	0.00	0 03:41	0.13	0.01	0.12	8.50	0.44	1.00	1179.00	0.00	SURCHARGED
103	PGE125	0.21	0 12:12	0.15	1.46	3.20	0.01	0.29	1.00	32.00	0.00	SURCHARGED
104	PGE130	0.01	0 04:58	0.23	0.03	0.13	2.75	0.29	1.00	1138.00	0.00	SURCHARGED
105	PGE135	0.01	0 04:58	0.09	0.07	0.09	5.38	0.29	1.00	1176.00	0.00	SURCHARGED
106	PGE140	0.15	0 12:12	0.51	0.30	1.88	0.32	0.44	1.00	11.00	2.15	SURCHARGED
107	PGE145	0.15	0 12:12	0.59	0.26	1.49	0.04	0.44	1.00	34.00	1.46	SURCHARGED
108	PGE15	0.15	0 12:08	0.13	1.16	1.40	0.17	0.37	1.00	47.00	0.78	SURCHARGED
109	PGE150	0.15	0 12:12	0.25	0.62	1.35	0.47	0.44	1.00	37.00	1.10	SURCHARGED
110	PGE155	0.15	0 12:12	0.25	0.61	0.99	0.62	0.44	1.00	40.00	0.57	SURCHARGED
111	PGE160	0.03	0 15:38	0.65	0.04	0.32	0.51	0.22	0.51	0.00	0.13	Calculated
112	PGE165	0.01	0 12:08	0.30	0.03	0.14	14.15	0.22	0.50	0.00	0.12	Calculated
113	PGE170	0.12	0 12:07	0.28	0.43	1.10	1.62	0.44	1.00	34.00	1.27	SURCHARGED
114	PGE175	0.15	0 12:05	0.48	0.31	1.08	0.26	0.44	1.00	52.00	0.19	SURCHARGED
115	PGE180	0.18	0 12:51	0.40	0.46	1.77	0.13	0.44	1.00	60.00	1.39	SURCHARGED
116	PGE185	0.18	0 12:51	0.27	0.69	1.18	1.30	0.44	1.00	61.00	0.74	SURCHARGED
117	PGE190	0.32	0 12:51	0.28	1.15	2.08	0.12	0.44	1.00	65.00	0.98	SURCHARGED
118	PGE195	0.35	0 12:05	0.23	1.48	2.22	1.34	0.44	1.00	45.00	1.09	SURCHARGED
119	PGE20	0.15	0 12:25	0.13	1.16	1.41	0.20	0.36	0.98	0.00	0.86	> CAPACITY
120	PGE200	0.42	0 12:12	0.48	0.88	1.60	1.35	0.58	1.00	41.00	0.93	SURCHARGED
121	PGE205	0.69	0 12:12	0.66	1.05	2.59	0.09	0.58	1.00	41.00	1.36	SURCHARGED
122	PGE210	0.69	0 12:12	0.71	0.98	2.59	0.70	0.58	1.00	41.00	1.48	SURCHARGED
123	PGE225	0.08	0 12:07	0.16	0.51	0.82	0.35	0.44	1.00	34.00	0.62	SURCHARGED
124	PGE230	0.08	0 12:07	0.17	0.46	0.67	1.45	0.44	1.00	36.00	0.27	SURCHARGED
125	PGE235	0.10	0 12:06	0.04	2.19	1.42	0.25	0.29	1.00	46.00	0.28	SURCHARGED
126	PGE240	0.07	0 12:08	0.17	0.40	1.75	0.06	0.29	1.00	46.00	1.90	SURCHARGED
127	PGE245	0.07	0 12:08	0.24	0.28	1.48	0.43	0.37	1.00	48.00	1.49	SURCHARGED
128	PGE25	0.15	0 12:25	0.21	0.71	1.28	0.15	0.31	0.70	0.00	0.94	Calculated
129	PGE25{SW_GEORGE EAST C5}	0.06	0 12:12	0.23	0.25	0.70	0.27	0.24	0.57	0.00	0.62	Calculated
130	PGE250	0.06	0 12:06	0.13	0.48	0.94	0.24	0.29	1.00	58.00	0.43	SURCHARGED
131	PGE255	0.15	0 12:08	0.11	1.37	1.38	0.14	0.37	1.00	48.00	0.94	SURCHARGED
132	PGE26	0.22	0 12:12	1.14	0.19	2.25	0.03	0.21	0.39	0.00	2.34	Calculated
133	PGE260	0.15	0 12:08	0.25	0.58	0.99	1.59	0.44	1.00	46.00	0.67	SURCHARGED
134	PGE265	0.25	0 12:08	0.14	1.72	1.60	0.09	0.44	1.00	53.00	1.14	SURCHARGED
135	PGE27	0.22	0 12:12	1.39	0.15	2.08	0.13	0.22	0.41	0.00	1.91	Calculated
136	PGE270	0.25	0 12:08	0.55	0.45	1.74	0.10	0.44	1.00	53.00	1.71	SURCHARGED
137	PGE275	0.03	0 12:05	0.10	0.32	0.46	0.02	0.29	1.00	39.00	0.00	SURCHARGED
138	PGE280	0.03	0 12:15	0.07	0.48	0.50	5.41	0.29	1.00	39.00	0.09	SURCHARGED
139	PGE285	0.11	0 12:05	0.04	2.62	1.73	0.51	0.29	1.00	46.00	0.42	SURCHARGED
140	PGE290	0.16	0 12:04	0.21	0.77	1.35	1.10	0.44	1.00	48.00	0.97	SURCHARGED
141	PGE295	0.21	0 12:04	0.28	0.74	1.34	0.03	0.44	1.00	67.00	0.52	SURCHARGED
142	PGE300	0.12	0 12:12	0.40	0.31	1.22	0.14	0.44	1.00	63.00	1.78	SURCHARGED
143	PGE310	0.12	0 12:12	0.66	0.19	0.80	0.07	0.44	1.00	65.00	0.39	SURCHARGED
144	PGE315	0.16	0 12:05	0.33	0.47	1.03	0.16	0.44	1.00	39.00	1.45	SURCHARGED
145	PGE320	0.14	0 12:05	0.61	0.24	0.93	0.07	0.44	1.00	41.00	0.16	SURCHARGED
146	PGE325	0.06	0 12:12	0.18	0.36	1.03	0.13	0.37	1.00	11.00	0.92	SURCHARGED
147	PGE330	0.06	0 12:12	0.17	0.38	1.14	0.55	0.44	1.00	10.00	0.96	SURCHARGED
148	PGE335	0.10	0 12:07	0.36	0.27	0.91	0.28	0.44	1.00	14.00	0.88	SURCHARGED
149	PGE340	0.17	0 12:12	0.34	0.50	1.35	0.29	0.44	1.00	24.00	1.01	SURCHARGED
150	PGE345	0.23	0 12:12	0.25	0.95	1.63	0.87	0.44	1.00	28.00	1.33	SURCHARGED
151	PGE35	0.14	0 12:12	0.24	0.57	1.62	0.05	0.23	0.56	0.00	1.24	Calculated
152	PGE350	0.28	0 03:08	0.17	1.71	2.66	0.23	0.37	1.00	35.00	0.89	SURCHARGED
153	PGE355	0.17	0 02:53	0.21	0.81	1.56	0.11	0.44	1.00	39.00	0.63	SURCHARGED
154	PGE360	0.32	0 03:09	0.22	1.48	2.80	0.15	0.44	1.00	39.00	0.67	SURCHARGED
155	PGE365	0.22	0 03:09	0.13	1.66	1.95	0.08	0.44	1.00	37.00	0.80	SURCHARGED
156	PGE370	0.18	0 12:05	0.28	0.66	2.16	0.82	0.44	1.00	37.00	0.49	SURCHARGED
157	PGE375	0.11	0 12:12	0.51	0.21	1.37	0.12	0.44	1.00	12.00	1.36	SURCHARGED
158	PGE380	0.09	0 12:06	0.32	0.27	0.97	0.14	0.37	1.00	26.00	0.64	SURCHARGED
159	PGE385	5.05	0 03:18	0.23	21.77	43.01	0.00	0.44	1.00	33.00	0.90	SURCHARGED
160	PGE390	1.40	0 02:53	0.28	5.04	25.07	0.00	0.37	1.00	33.00	1.72	SURCHARGED
161	PGE395	6.49	0 02:28	1.42	4.58	50.00	0.00	0.44	1.00	34.00	0.06	SURCHARGED
162	PGE40	0.14	0 12:13	0.39	0.35	1.71	0.34	0.31	0.73	0.00	1.67	Calculated
163	PGE400	0.47	0 02:53	0.25	1.89	5.77	0.12	0.44	1.00	33.00	0.72	SURCHARGED
164	PGE405	0.07	0 03:09	0.23	0.30	0.78	0.16	0.37	1.00	39.00	0.17	SURCHARGED
165	PGE410	0.08	0 12:12	0.42	0.19	1.29	0.62	0.22	0.49	0.00	1.10	Calculated
166	PGE415	0.12	0 12:16	0.28	0.43	1.34	1.29	0.38	0.85	0.00	0.83	Calculated
167	PGE420	0.22	0 12:14	0.30	0.72	1.86	0.90	0.44	1.00	28.00	1.90	SURCHARGED
168	PGE425	0.14	0 12:05	0.94	0.15	0.93	0.05	0.44	1.00	43.00	0.61	SURCHARGED
169	PGE430	0.05	0 12:05	0.03	1.49	2.57	0.03	0.15	1.00	30.00	1.98	SURCHARGED
170	PGE435431	0.05	0 12:05	0.03	1.50	2.57	0.06	0.15	1.00	25.00	1.39	SURCHARGED
171	PGE440	0.11	0 12:12	0.40	0.27	1.36	0.10	0.37	1.00	18.00	1.18	SURCHARGED
172	PGE445	0.07	0 12:11	0.24	0.30	1.41	0.29	0.20	0.71	0.00	1.20	Calculated
173	PGE45	0.14	0 12:13	0.41	0.33	1.70	0.08	0.44	1.00	5.00	1.57	SURCHARGED
174	PGE450	0.17	0 12:12	0.30	0.56	1.43	0.11	0.44	1.00	4.00	1.17	SURCHARGED

Pipe Results

SN	Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Froude Number	Reported Condition
		(cms)	(days hh:mm)	(cms)		(m/sec)	(min)	(m)		(min)		
175	PGE460	0.08	0 12:12	0.04	1.82	1.82	0.07	0.23	1.00	9.00	1.10	SURCHARGED
176	PGE465	0.10	0 12:11	0.12	0.80	1.46	0.14	0.29	1.00	6.00	1.56	SURCHARGED
177	PGE470	0.10	0 12:11	0.13	0.78	1.47	0.12	0.29	1.00	8.00	1.16	SURCHARGED
178	PGE475	0.05	0 12:11	0.28	0.19	1.93	0.07	0.17	1.00	0.00	2.48	SURCHARGED
179	PGE480476	0.06	0 12:17	0.79	0.07	0.89	0.03	0.31	1.00	2.00	0.73	SURCHARGED
180	PGE485	0.06	0 12:12	0.25	0.23	0.99	0.13	0.30	0.82	0.00	0.94	Calculated
181	PGE490	0.05	0 12:11	0.13	0.40	0.59	1.65	0.40	0.91	0.00	0.59	Calculated
182	PGE495	0.14	0 12:11	0.39	0.34	1.00	0.16	0.44	1.00	1.00	0.67	SURCHARGED
183	PGE5	0.15	0 12:25	0.13	1.16	1.40	0.53	0.37	1.00	54.00	0.84	SURCHARGED
184	PGE50	0.14	0 12:13	0.34	0.41	1.34	0.39	0.44	1.00	10.00	1.11	SURCHARGED
185	PGE500	0.13	0 12:11	0.13	1.00	0.94	0.09	0.44	1.00	7.00	0.41	SURCHARGED
186	PGE505	0.13	0 12:11	0.13	0.99	1.27	0.14	0.44	1.00	6.00	0.69	SURCHARGED
187	PGE510	0.13	0 12:11	0.29	0.46	1.90	0.29	0.44	1.00	6.00	1.66	SURCHARGED
188	PGE515	0.12	0 12:15	0.62	0.20	1.87	0.32	0.45	1.00	13.00	1.99	SURCHARGED
189	PGE520	0.05	0 12:21	0.20	0.23	0.66	0.35	0.44	1.00	24.00	0.76	SURCHARGED
190	PGE525	0.05	0 12:21	0.07	0.70	0.75	0.26	0.29	1.00	36.00	0.67	SURCHARGED
191	PGE530	0.12	0 12:21	0.08	1.48	1.67	0.57	0.30	1.00	38.00	0.73	SURCHARGED
192	PGE535	0.19	0 12:16	0.19	1.00	1.25	0.54	0.44	1.00	38.00	0.79	SURCHARGED
193	PGE540	0.23	0 12:18	0.31	0.72	1.44	0.16	0.44	1.00	46.00	0.72	SURCHARGED
194	PGE545	0.33	0 12:12	0.08	4.07	3.22	0.13	0.33	0.92	0.00	1.12	> CAPACITY
195	PGE55	0.24	0 12:12	0.29	0.84	1.55	1.11	0.44	1.00	15.00	1.40	SURCHARGED
196	PGE560	0.09	0 12:12	0.08	1.10	0.86	0.15	0.37	1.00	7.00	0.63	SURCHARGED
197	PGE565	0.08	0 12:15	0.18	0.43	0.57	0.39	0.44	1.00	24.00	0.54	SURCHARGED
198	PGE570	0.08	0 12:15	0.13	0.58	0.55	0.10	0.44	1.00	26.00	0.56	SURCHARGED
199	PGE575	0.07	0 12:21	0.30	0.25	0.63	0.04	0.44	1.00	26.00	0.83	SURCHARGED
200	PGE580	0.07	0 12:22	0.20	0.36	0.51	0.44	0.44	1.00	27.00	0.55	SURCHARGED
201	PGE585	0.09	0 12:12	0.97	0.09	1.51	0.02	0.24	0.91	0.00	1.45	Calculated
202	PGE595	0.01	0 12:11	1.02	0.01	0.14	0.18	0.19	0.74	0.00	0.00	Calculated
203	PGE60	0.28	0 12:21	0.55	0.51	1.95	0.09	0.44	1.00	20.00	1.64	SURCHARGED
204	PGE600	0.00	0 00:00	1.42	0.00	0.00		0.00	0.00	0.00	0.00	Calculated
205	PGE605	0.00	0 00:00	0.47	0.00	0.00		0.00	0.00	0.00	0.00	Calculated
206	PGE610	0.00	0 00:00	0.82	0.00	0.00		0.15	0.35	0.00	0.00	Calculated
207	PGE65	0.31	0 12:21	0.28	1.09	1.97	0.89	0.44	1.00	24.00	1.01	SURCHARGED
208	PGE70	0.31	0 12:21	0.21	1.45	1.97	0.02	0.44	1.00	22.00	1.10	SURCHARGED
209	PGE75	0.23	0 12:05	0.40	0.58	2.03	0.12	0.44	1.00	22.00	1.50	SURCHARGED
210	PGE80	0.21	0 12:05	0.30	0.72	1.56	1.25	0.44	1.00	32.00	1.10	SURCHARGED
211	PGE90	0.02	0 12:09	0.17	0.08	0.22	0.07	0.29	1.00	14.00	0.00	SURCHARGED
212	PGE95	0.11	0 12:09	0.13	0.82	1.60	0.09	0.29	1.00	14.00	1.62	SURCHARGED
213	PLE0	1.57	0 12:14	2.53	0.62	2.95	0.89	0.74	0.88	0.00	1.64	Calculated
214	PLE10	1.34	0 12:10	1.28	1.05	2.35	0.11	0.85	1.00	39.00	0.78	SURCHARGED
215	PLE100	0.08	0 12:11	0.11	0.73	1.23	0.14	0.29	1.00	26.00	1.56	SURCHARGED
216	PLE1000	1.32	0 12:13	1.37	0.96	2.31	0.19	0.85	1.00	41.00	1.08	SURCHARGED
217	PLE1005	0.94	0 12:30	2.19	0.43	1.65	0.09	0.85	1.00	44.00	1.12	SURCHARGED
218	PLE1010	0.98	0 12:12	1.35	0.72	1.71	0.29	0.85	1.00	48.00	0.69	SURCHARGED
219	PLE1015	1.10	0 12:12	2.04	0.54	3.34	0.55	0.48	0.56	0.00	1.90	Calculated
220	PLE1020	0.13	0 12:12	0.46	0.29	1.28	0.10	0.26	0.63	0.00	1.48	Calculated
221	PLE1025	0.13	0 12:12	0.31	0.43	1.10	0.13	0.30	0.72	0.00	0.93	Calculated
222	PLE1030	0.13	0 12:12	0.17	0.76	1.23	0.83	0.27	0.66	0.00	1.06	Calculated
223	PLE1035	0.25	0 12:12	0.62	0.40	2.85	0.09	0.23	0.56	0.00	2.67	Calculated
224	PLE1040	0.33	0 12:12	0.75	0.45	3.98	0.15	0.22	0.53	0.00	3.33	Calculated
225	PLE1045	0.33	0 12:12	0.74	0.45	4.29	0.20	0.21	0.50	0.00	3.37	Calculated
226	PLE105	0.08	0 12:05	0.18	0.43	1.07	0.04	0.30	1.00	28.00	0.67	SURCHARGED
227	PLE1055	0.04	0 12:12	0.48	0.08	1.74	0.24	0.09	0.20	0.00	1.91	Calculated
228	PLE1060	0.07	0 12:12	0.48	0.15	1.20	0.54	0.18	0.42	0.00	1.21	Calculated
229	PLE1065	0.07	0 12:12	0.21	0.34	0.85	0.12	0.24	0.54	0.00	0.81	Calculated
230	PLE1070	0.07	0 12:12	0.21	0.34	1.05	0.09	0.20	0.46	0.00	0.93	Calculated
231	PLE1075	0.13	0 12:12	0.48	0.27	2.16	0.23	0.18	0.41	0.00	1.93	Calculated
232	PLE1080	0.13	0 12:12	0.42	0.31	2.21	0.31	0.18	0.40	0.00	1.84	Calculated
233	PLE1090	0.04	0 12:12	0.48	0.07	1.61	0.12	0.09	0.20	0.00	1.89	Calculated
234	PLE1095	0.08	0 12:12	0.43	0.18	1.43	0.06	0.16	0.38	0.00	1.67	Calculated
235	PLE110	0.11	0 12:12	0.08	1.28	1.63	0.11	0.29	1.00	19.00	1.38	SURCHARGED
236	PLE1100	0.08	0 12:12	0.50	0.16	1.49	0.08	0.16	0.37	0.00	1.76	Calculated
237	PLE1105	0.08	0 12:12	0.40	0.20	1.25	0.15	0.19	0.45	0.00	1.29	Calculated
238	PLE1110	0.13	0 12:12	0.31	0.40	1.70	0.28	0.20	0.48	0.00	1.42	Calculated
239	PLE1115	0.14	0 12:12	0.48	0.29	2.48	0.30	0.16	0.39	0.00	2.18	Calculated
240	PLE1120	0.14	0 12:12	0.48	0.29	2.50	0.32	0.16	0.39	0.00	2.19	Calculated
241	PLE1125	0.21	0 12:12	0.48	0.44	2.50	0.12	0.22	0.53	0.00	2.11	Calculated
242	PLE1130	0.40	0 12:12	0.70	0.57	2.92	0.14	0.30	0.63	0.00	2.18	Calculated
243	PLE1135	0.40	0 12:12	0.70	0.57	3.11	0.24	0.29	0.59	0.00	2.23	Calculated
244	PLE1145	0.05	0 12:12	0.27	0.17	0.87	0.50	0.17	0.40	0.00	0.43	Calculated
245	PLE115	0.10	0 12:12	0.16	0.63	1.52	0.32	0.29	1.00	20.00	1.04	SURCHARGED
246	PLE1150	0.09	0 12:12	1.15	0.08	1.86	0.14	0.13	0.21	0.00	1.81	Calculated
247	PLE1155	0.09	0 12:12	1.29	0.07	1.71	0.34	0.13	0.22	0.00	1.59	Calculated
248	PLE1160	0.09	0 12:12	0.78	0.12	1.01	0.38	0.20	0.32	0.00	0.91	Calculated
249	PLE1165	0.19	0 12:12	0.89	0.21	1.87	0.18	0.22	0.35	0.00	1.48	Calculated
250	PLE1170	0.19	0 12:12	1.29	0.15	2.34	0.10	0.18	0.30	0.00	2.07	Calculated
251	PLE1175	0.00	0 00:00	1.29	0.00	0.00		0.00	0.01	0.00	0.00	Calculated
252	PLE120	0.16	0 12:12	0.62	0.25	2.04	0.08	0.37	1.00	3.00	2.11	SURCHARGED
253	PLE125	0.15	0 12:06	0.20	0.73	1.35	0.29	0.37	1.00	33.00	0.95	SURCHARGED
254	PLE130	0.04	0 12:11	0.09	0.42	0.62	0.28	0.29	1.00	32.00	0.46	SURCHARGED
255	PLE135	0.11	0 12:12	0.21	0.53	1.66	0.06	0.29	1.00	27.00	1.36	SURCHARGED
256	PLE140	0.07	0 12:04	0.07	1.02	1.12	0.34	0.29	1.00	31.00	0.98	SURCHARGED
257	PLE145	0.07	0 12:04	0.11	0.64	1.50	0.18	0.29	1.00	32.00	1.70	SURCHARGED
258	PLE15	1.30	0 12:12	0.94	1.37	2.27	0.60	0.85	1.00	34.00	0.86	SURCHARGED
259	PLE150	0.07	0 12:04	0.21	0.33	1.03	0.07	0.29	1.00	34.00	0.78	SURCHARGED
260	PLE155	0.03	0 12:12	1.34	0.02	0.31	0.32	0.24	0.55	0.00	0.14	Calculated
261	PLE160	0.05	0 12:12	0.96	0.05	2.28	0.12	0.19	0.46	0.00	2.53	Calculated

Pipe Results

SN	Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Froude Number	Reported Condition
		(cms)	(days hh:mm)	(cms)		(m/sec)	(min)	(m)		(min)		
262	PLE165	0.05	0 12:07	0.47	0.11	1.21	0.54	0.38	0.89	0.00	1.77	Calculated
263	PLE170	0.10	0 12:12	0.39	0.25	1.23	0.11	0.21	0.51	0.00	1.28	Calculated
264	PLE175	0.10	0 12:12	0.36	0.27	1.84	0.01	0.16	0.37	0.00	1.80	Calculated
265	PLE180	0.10	0 12:05	0.93	0.11	2.18	0.10	0.27	0.63	0.00	2.15	Calculated
266	PLE185	0.10	0 12:05	0.32	0.32	0.66	1.28	0.44	1.00	23.00	0.77	SURCHARGED
267	PLE190	0.15	0 12:04	0.38	0.38	0.93	0.19	0.44	1.00	54.00	0.24	SURCHARGED
268	PLE195	0.06	0 12:06	0.35	0.18	0.69	0.61	0.29	0.85	0.00	0.63	Calculated
269	PLE20	1.28	0 12:26	1.91	0.67	2.24	0.06	0.85	1.00	30.00	1.02	SURCHARGED
270	PLE200	0.13	0 12:12	0.22	0.59	1.23	1.00	0.37	1.00	9.00	0.80	SURCHARGED
271	PLE2000	1.01	0 12:09	2.44	0.41	2.64	0.11	0.85	1.00	5.00	1.75	SURCHARGED
272	PLE205	0.18	0 12:06	0.15	1.19	1.70	0.61	0.37	1.00	22.00	1.24	SURCHARGED
273	PLE210	0.20	0 12:12	0.33	0.61	1.30	0.29	0.44	1.00	21.00	1.16	SURCHARGED
274	PLE215	0.23	0 12:06	0.31	0.75	1.51	0.09	0.44	1.00	29.00	1.00	SURCHARGED
275	PLE220	0.29	0 12:21	0.29	1.01	2.04	0.53	0.44	1.00	29.00	1.61	SURCHARGED
276	PLE225	0.16	0 12:12	0.43	0.37	1.77	0.08	0.44	1.00	31.00	1.84	SURCHARGED
277	PLE230	0.10	0 12:07	0.15	0.66	1.51	0.72	0.29	1.00	36.00	0.58	SURCHARGED
278	PLE235	0.23	0 12:32	0.20	1.15	1.47	0.10	0.44	1.00	57.00	0.62	SURCHARGED
279	PLE240	0.48	0 12:31	0.52	0.92	3.10	0.01	0.44	1.00	39.00	1.41	SURCHARGED
280	PLE245	0.52	0 12:12	0.52	1.00	3.36	0.33	0.44	1.00	39.00	2.78	SURCHARGED
281	PLE25	1.40	0 12:12	1.38	1.01	2.56	0.30	0.78	0.91	0.00	1.21	> CAPACITY
282	PLE250	0.53	0 12:12	3.56	0.15	1.00	0.09	0.81	0.95	0.00	0.68	Calculated
283	PLE255	0.58	0 12:12	0.48	1.20	1.42	0.07	0.72	1.00	32.00	0.36	SURCHARGED
284	PLE260	0.65	0 12:12	0.48	1.35	1.69	0.30	0.64	0.90	0.00	0.65	> CAPACITY
285	PLE265	0.65	0 12:12	2.34	0.28	1.95	0.02	0.49	0.59	0.00	1.40	Calculated
286	PLE270	0.76	0 12:12	2.35	0.32	2.17	0.27	0.49	0.59	0.00	1.28	Calculated
287	PLE275	0.76	0 12:12	1.18	0.64	2.71	0.41	0.41	0.49	0.00	1.77	Calculated
288	PLE280	0.58	0 12:12	2.76	0.21	2.32	0.28	0.50	0.61	0.00	1.71	Calculated
289	PLE285	0.64	0 12:12	1.70	0.37	1.50	0.42	0.79	0.95	0.00	1.31	Calculated
290	PLE290	0.47	0 12:21	1.80	0.26	1.09	0.26	0.85	1.00	25.00	1.15	SURCHARGED
291	PLE295	0.73	0 12:12	1.03	0.71	2.23	0.08	0.65	1.00	52.00	0.69	SURCHARGED
292	PLE300	0.42	0 12:03	0.13	3.10	2.67	0.07	0.44	1.00	45.00	0.71	SURCHARGED
293	PLE3000	1.16	0 12:07	1.97	0.59	2.45	0.88	0.85	1.00	5.00	1.65	SURCHARGED
294	PLE305	0.42	0 12:03	0.76	0.55	1.64	0.02	0.39	0.46	0.00	0.98	Calculated
295	PLE310	0.42	0 12:04	1.64	0.25	2.23	0.59	0.31	0.36	0.00	1.48	Calculated
296	PLE35	0.07	0 12:06	0.42	0.15	1.17	0.21	0.44	1.00	11.00	1.42	SURCHARGED
297	PLE350	0.12	0 12:12	0.21	0.56	1.11	0.92	0.37	1.00	17.00	0.90	SURCHARGED
298	PLE355	0.04	0 12:12	0.19	0.22	0.59	3.33	0.24	0.66	0.00	0.36	Calculated
299	PLE360	0.12	0 12:12	1.33	0.09	3.60	0.01	0.23	0.65	0.00	4.56	Calculated
300	PLE365	0.12	0 12:12	0.41	0.29	1.15	0.23	0.37	1.00	12.00	0.69	SURCHARGED
301	PLE370	0.05	0 12:06	0.20	0.27	0.57	0.46	0.37	1.00	26.00	0.42	SURCHARGED
302	PLE375	0.08	0 12:06	0.34	0.23	0.73	0.25	0.37	1.00	20.00	0.00	SURCHARGED
303	PLE380	0.05	0 12:12	0.11	0.48	0.78	0.19	0.29	1.00	1178.00	0.00	SURCHARGED
304	PLE385	0.05	0 12:12	0.04	1.20	0.78	0.23	0.29	1.00	1178.00	0.00	SURCHARGED
305	PLE390	0.05	0 12:12	0.17	0.30	0.78	0.34	0.29	1.00	20.00	0.05	SURCHARGED
306	PLE395	0.12	0 12:12	0.23	0.50	1.24	0.42	0.44	1.00	5.00	0.98	SURCHARGED
307	PLE40	0.05	0 12:06	0.36	0.15	1.24	0.05	0.44	1.00	14.00	1.46	SURCHARGED
308	PLE400	0.08	0 12:04	0.10	0.77	1.31	0.28	0.29	1.00	36.00	1.10	SURCHARGED
309	PLE405	0.06	0 12:12	0.22	0.29	2.22	0.06	0.20	0.74	0.00	2.70	Calculated
310	PLE410	0.06	0 12:12	0.23	0.28	0.99	0.28	0.29	1.00	5.00	0.09	SURCHARGED
311	PLE415	0.06	0 12:12	0.08	0.81	0.95	0.22	0.29	1.00	1202.00	0.00	SURCHARGED
312	PLE420	0.06	0 12:12	0.24	0.26	0.95	0.17	0.29	1.00	20.00	0.06	SURCHARGED
313	PLE425	0.18	0 12:08	0.25	0.71	1.57	0.23	0.44	1.00	31.00	1.40	SURCHARGED
314	PLE430426	0.19	0 12:08	0.56	0.35	1.62	0.08	0.44	1.00	32.00	1.42	SURCHARGED
315	PLE440	0.38	0 12:12	0.84	0.45	1.34	0.81	0.60	1.00	34.00	0.81	SURCHARGED
316	PLE440436	0.05	0 12:05	0.47	0.11	0.36	0.17	0.44	1.00	31.00	0.00	SURCHARGED
317	PLE445	0.37	0 12:32	0.52	0.72	2.40	0.01	0.44	1.00	51.00	1.44	SURCHARGED
318	PLE45	0.06	0 12:06	0.44	0.13	0.78	0.20	0.44	1.00	15.00	0.56	SURCHARGED
319	PLE450446	0.14	0 12:33	0.24	0.59	0.91	0.40	0.44	1.00	51.00	0.63	SURCHARGED
320	PLE455	0.06	0 12:12	0.46	0.13	0.23	0.39	0.58	1.00	42.00	0.15	SURCHARGED
321	PLE460	0.26	0 12:04	0.42	0.61	0.97	0.37	0.58	1.00	43.00	0.55	SURCHARGED
322	PLE465	0.23	0 12:33	0.28	0.84	1.50	0.10	0.44	1.00	51.00	0.95	SURCHARGED
323	PLE470	0.09	0 12:11	0.33	0.26	0.89	0.31	0.44	1.00	35.00	0.68	SURCHARGED
324	PLE475	0.09	0 12:15	0.13	0.64	0.61	0.51	0.44	1.00	38.00	0.49	SURCHARGED
325	PLE480	0.08	0 12:18	0.16	0.49	0.76	0.05	0.44	1.00	39.00	0.80	SURCHARGED
326	PLE485	0.08	0 12:18	0.25	0.31	0.51	0.54	0.44	1.00	39.00	0.38	SURCHARGED
327	PLE490	0.13	0 12:18	0.13	0.97	0.83	0.66	0.44	1.00	42.00	0.51	SURCHARGED
328	PLE495	0.17	0 12:12	0.27	0.64	1.15	0.38	0.44	1.00	42.00	1.00	SURCHARGED
329	PLE5	1.52	0 12:13	2.13	0.71	2.66	0.12	0.85	1.00	37.00	1.07	SURCHARGED
330	PLE50	0.11	0 12:12	0.23	0.48	1.42	0.52	0.44	1.00	17.00	1.15	SURCHARGED
331	PLE500	0.07	0 12:44	0.20	0.38	0.51	2.30	0.44	1.00	51.00	0.40	SURCHARGED
332	PLE505	0.09	0 12:04	0.04	2.11	1.38	1.20	0.29	1.00	39.00	0.64	SURCHARGED
333	PLE510	0.14	0 12:04	0.35	0.39	1.34	0.15	0.44	1.00	36.00	1.25	SURCHARGED
334	PLE515	0.15	0 12:43	0.35	0.43	1.67	0.06	0.44	1.00	39.00	1.39	SURCHARGED
335	PLE520	0.16	0 12:44	0.35	0.45	1.32	0.38	0.44	1.00	39.00	1.18	SURCHARGED
336	PLE525	0.19	0 12:12	0.27	0.69	1.27	0.13	0.44	1.00	42.00	1.16	SURCHARGED
337	PLE530	0.19	0 12:05	0.37	0.51	1.30	0.12	0.44	1.00	42.00	1.13	SURCHARGED
338	PLE535	0.19	0 12:05	0.23	0.82	1.33	0.28	0.44	1.00	43.00	1.00	SURCHARGED
339	PLE540	0.24	0 12:12	0.25	0.94	1.52	0.81	0.44	1.00	43.00	0.76	SURCHARGED
340	PLE545	0.08	0 12:05	0.63	0.13	2.21	0.04	0.35	0.90	0.00	3.04	Calculated
341	PLE55	0.11	0 12:07	0.33	0.33	0.86	0.67	0.44	1.00	21.00	0.55	SURCHARGED
342	PLE550	0.08	0 12:05	1.36	0.06	0.66	0.07	0.44	1.00	15.00	0.38	SURCHARGED
343	PLE555	0.05	0 12:12	0.14	0.34	0.78	0.20	0.29	1.00	41.00	0.52	SURCHARGED
344	PLE560	0.06	0 12:13	0.12	0.52	0.90	0.17	0.29	1.00	67.00	0.18	SURCHARGED
345	PLE565	0.06	0 12:05	0.38	0.16	0.46	0.34	0.44	1.00	34.00	0.43	SURCHARGED
346	PLE570	0.05	0 12:04	0.24	0.19	0.29	0.45	0.44	1.00	38.00	0.20	SURCHARGED
347	PLE575	0.05	0 12:11	0.35	0.15	0.55	0.26	0.37	1.00	41.00	0.32	SURCHARGED
348	PLE580	0.05	0 12:12	0.34	0.15	0.79	0.14	0.48	0.85	0.00	0.95	Calculated

Pipe Results

SN	Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Froude Number	Reported Condition
		(cms)	(days hh:mm)	(cms)		(m/sec)	(min)	(m)		(min)		
349	PLE585	0.05	0 12:12	0.52	0.10	1.03	0.05	0.44	1.00	9.00	1.56	SURCHARGED
350	PLE590	0.05	0 12:12	0.40	0.13	0.75	0.19	0.44	1.00	22.00	1.36	SURCHARGED
351	PLE595	0.05	0 12:12	0.52	0.10	0.58	0.10	0.44	1.00	43.00	0.60	SURCHARGED
352	PLE60	0.15	0 12:15	0.14	1.07	0.97	1.05	0.44	1.00	26.00	0.68	SURCHARGED
353	PLE600	0.05	0 12:12	1.44	0.04	0.13	1.07	0.72	1.00	16.00	0.02	SURCHARGED
354	PLE605	0.01	0 12:03	0.53	0.01	0.12	0.32	0.43	0.99	0.00	0.00	Calculated
355	PLE610	0.08	0 12:12	0.34	0.22	1.47	0.03	0.37	1.00	9.00	2.50	SURCHARGED
356	PLE615	0.08	0 12:11	1.82	0.04	0.37	0.10	0.49	0.97	0.00	0.07	Calculated
357	PLE620	0.05	0 12:12	0.52	0.10	1.67	0.08	0.11	0.26	0.00	2.07	Calculated
358	PLE625	0.05	0 12:12	0.56	0.10	1.97	0.08	0.10	0.23	0.00	2.23	Calculated
359	PLE630	0.05	0 12:12	0.56	0.10	1.29	0.53	0.13	0.31	0.00	1.41	Calculated
360	PLE635	0.11	0 12:12	0.50	0.22	1.95	0.08	0.17	0.39	0.00	2.00	Calculated
361	PLE640	0.11	0 12:12	0.49	0.23	2.05	0.18	0.17	0.39	0.00	2.05	Calculated
362	PLE645	0.12	0 12:12	0.36	0.33	1.57	0.06	0.24	0.67	0.00	1.02	Calculated
363	PLE65	0.24	0 12:10	0.20	1.21	2.24	0.51	0.37	1.00	30.00	1.19	SURCHARGED
364	PLE650	0.29	0 12:12	1.37	0.21	5.21	0.01	0.19	0.52	0.00	7.23	Calculated
365	PLE655	0.18	0 12:12	0.51	0.36	1.18	0.08	0.44	1.00	48.00	0.21	SURCHARGED
366	PLE660	0.02	0 12:12	0.20	0.09	0.76	0.24	0.09	0.21	0.00	0.83	Calculated
367	PLE665	0.02	0 12:12	0.23	0.08	0.84	1.48	0.09	0.20	0.00	0.90	Calculated
368	PLE670	0.04	0 12:12	0.50	0.08	1.35	0.27	0.11	0.25	0.00	1.29	Calculated
369	PLE675	0.07	0 12:12	0.36	0.19	1.66	0.61	0.14	0.31	0.00	1.70	Calculated
370	PLE680	0.11	0 12:12	0.78	0.15	2.38	0.06	0.15	0.35	0.00	1.88	Calculated
371	PLE685	0.26	0 12:12	1.08	0.24	2.72	0.37	0.34	0.67	0.00	2.87	Calculated
372	PLE690	0.28	0 12:12	1.55	0.18	0.86	0.23	0.65	1.00	20.00	0.87	SURCHARGED
373	PLE695	0.03	0 12:12	0.89	0.03	1.10	0.14	0.09	0.21	0.00	1.15	Calculated
374	PLE70	0.32	0 12:14	0.44	0.73	2.07	0.10	0.44	1.00	35.00	1.43	SURCHARGED
375	PLE700	0.15	0 12:12	0.28	0.54	1.33	0.12	0.28	0.68	0.00	1.14	Calculated
376	PLE705	0.15	0 12:12	0.29	0.52	1.72	0.20	0.23	0.55	0.00	1.47	Calculated
377	PLE710	0.15	0 12:12	0.46	0.32	2.33	0.14	0.18	0.43	0.00	2.13	Calculated
378	PLE715	0.03	0 12:05	0.78	0.04	0.54	0.26	0.34	0.79	0.00	0.45	Calculated
379	PLE720	0.06	0 12:12	0.45	0.14	1.93	0.07	0.11	0.26	0.00	2.26	Calculated
380	PLE725	0.06	0 12:12	0.90	0.07	2.34	0.08	0.10	0.22	0.00	2.47	Calculated
381	PLE730	0.06	0 12:12	0.42	0.14	1.44	0.36	0.14	0.32	0.00	1.42	Calculated
382	PLE735	0.11	0 12:12	0.54	0.21	2.48	0.12	0.14	0.33	0.00	2.62	Calculated
383	PLE740	0.11	0 12:12	0.83	0.14	2.40	0.06	0.15	0.34	0.00	2.71	Calculated
384	PLE745	0.11	0 12:12	0.57	0.20	2.34	0.07	0.15	0.35	0.00	2.54	Calculated
385	PLE75	0.32	0 12:08	0.28	1.17	2.07	0.21	0.44	1.00	36.00	1.11	SURCHARGED
386	PLE750	0.11	0 12:12	0.70	0.16	2.20	0.10	0.16	0.36	0.00	2.14	Calculated
387	PLE755	0.14	0 12:12	0.47	0.30	2.07	0.20	0.22	0.52	0.00	1.95	Calculated
388	PLE760	0.14	0 12:12	0.45	0.32	1.29	0.35	0.35	0.81	0.00	1.70	Calculated
389	PLE765	0.14	0 12:13	0.43	0.32	0.89	0.28	0.44	1.00	53.00	0.14	SURCHARGED
390	PLE770	0.00	0 02:53	0.17	0.00	0.10	0.81	0.23	0.79	0.00	0.00	Calculated
391	PLE775	1.03	0 12:09	1.91	0.54	2.33	0.45	0.85	1.00	9.00	1.46	SURCHARGED
392	PLE780	1.06	0 12:13	1.93	0.55	2.46	0.23	0.85	1.00	15.00	1.49	SURCHARGED
393	PLE790	1.21	0 12:13	1.71	0.71	2.28	0.61	0.85	1.00	17.00	1.37	SURCHARGED
394	PLE795	1.26	0 12:13	1.58	0.80	2.43	0.33	0.85	1.00	22.00	1.48	SURCHARGED
395	PLE80	0.30	0 12:04	0.26	1.16	1.92	0.26	0.44	1.00	35.00	1.14	SURCHARGED
396	PLE805	1.26	0 12:13	1.97	0.64	2.21	0.37	0.85	1.00	25.00	0.95	SURCHARGED
397	PLE810	1.26	0 12:12	0.76	1.66	2.21	0.06	0.85	1.00	36.00	0.83	SURCHARGED
398	PLE815	1.26	0 12:12	1.75	0.72	2.21	0.20	0.85	1.00	36.00	1.04	SURCHARGED
399	PLE820	1.26	0 12:12	2.30	0.55	2.21	0.02	0.85	1.00	41.00	0.94	SURCHARGED
400	PLE825	1.19	0 12:13	2.51	0.47	2.08	0.02	0.85	1.00	39.00	1.09	SURCHARGED
401	PLE830	1.19	0 12:13	1.75	0.68	2.07	0.20	0.85	1.00	39.00	0.92	SURCHARGED
402	PLE835	0.76	0 12:27	1.22	0.62	1.33	0.11	0.85	1.00	50.00	0.80	SURCHARGED
403	PLE840	0.62	0 12:27	1.22	0.50	1.08	0.44	0.85	1.00	50.00	0.58	SURCHARGED
404	PLE845	0.62	0 12:27	1.10	0.56	1.08	0.04	0.85	1.00	51.00	0.43	SURCHARGED
405	PLE85	0.30	0 12:04	0.30	0.98	2.05	0.21	0.44	1.00	35.00	1.62	SURCHARGED
406	PLE850	1.59	0 12:12	1.30	1.22	3.27	0.19	0.68	0.80	0.00	1.52	> CAPACITY
407	PLE855	0.58	0 12:12	2.05	0.28	2.05	0.01	0.42	0.50	0.00	1.26	Calculated
408	PLE860	0.58	0 12:12	2.04	0.29	2.89	0.63	0.33	0.38	0.00	1.86	Calculated
409	PLE870	0.03	0 12:12	0.25	0.11	0.53	0.27	0.16	0.36	0.00	0.14	Calculated
410	PLE875	0.05	0 12:12	0.29	0.18	1.17	0.83	0.23	0.64	0.00	0.85	Calculated
411	PLE880	0.13	0 12:09	0.31	0.42	2.13	0.21	0.44	1.00	11.00	1.92	SURCHARGED
412	PLE885	0.13	0 12:10	1.01	0.13	1.07	0.09	0.44	1.00	14.00	0.25	SURCHARGED
413	PLE890	0.08	0 12:10	0.42	0.18	1.44	0.09	0.37	1.00	5.00	1.32	SURCHARGED
414	PLE895	0.07	0 12:08	0.34	0.20	2.51	0.02	0.29	1.00	14.00	3.27	SURCHARGED
415	PLE90	0.29	0 12:04	0.50	0.58	1.88	0.21	0.44	1.00	36.00	0.85	SURCHARGED
416	PLE900	0.07	0 12:08	0.23	0.30	1.03	0.21	0.29	1.00	20.00	0.11	SURCHARGED
417	PLE905	0.04	0 12:05	0.62	0.07	0.80	0.05	0.30	1.00	27.00	0.04	SURCHARGED
418	PLE910	1.13	0 12:07	2.13	0.53	1.98	0.15	0.85	1.00	27.00	1.34	SURCHARGED
419	PLE915	1.14	0 12:07	1.97	0.58	1.99	0.10	0.85	1.00	30.00	1.08	SURCHARGED
420	PLE920	1.14	0 12:07	2.44	0.47	1.99	0.02	0.85	1.00	27.00	1.04	SURCHARGED
421	PLE925	1.16	0 12:07	1.71	0.68	2.07	0.11	0.85	1.00	26.00	1.34	SURCHARGED
422	PLE930	1.20	0 12:13	2.73	0.44	2.46	0.07	0.85	1.00	26.00	1.64	SURCHARGED
423	PLE935	1.20	0 12:13	1.71	0.70	2.09	0.58	0.85	1.00	29.00	1.03	SURCHARGED
424	PLE940	1.24	0 12:13	1.60	0.78	2.18	0.03	0.85	1.00	36.00	0.86	SURCHARGED
425	PLE945	1.24	0 12:13	1.63	0.77	2.18	0.07	0.85	1.00	34.00	1.18	SURCHARGED
426	PLE950	1.24	0 12:13	1.87	0.66	2.18	0.22	0.85	1.00	34.00	1.11	SURCHARGED
427	PLE955	0.01	0 12:07	0.07	0.19	0.84	0.15	0.15	1.00	18.00	0.00	SURCHARGED
428	PLE965	0.03	0 12:05	0.11	0.25	0.25	0.79	0.35	1.00	0.00	0.00	SURCHARGED
429	PLE970966	0.04	0 12:05	0.34	0.10	0.33	0.74	0.37	1.00	1.00	0.10	SURCHARGED
430	PLE980968	0.23	0 12:08	0.23	1.01	2.16	0.03	0.37	1.00	109.00	0.01	SURCHARGED
431	PLE985	0.01	0 12:05	0.09	0.10	0.22	0.35	0.28	1.00	0.00	0.01	SURCHARGED
432	PLE990	0.01	0 12:05	0.43	0.02	0.15	0.18	0.29	1.00	51.00	0.00	SURCHARGED
433	PLE995	0.14	0 12:12	0.23	0.62	2.15	0.03	0.29	1.00	79.00	0.00	SURCHARGED
434	PPP10	0.13	0 12:12	0.41	0.31	1.77	0.11	0.20	0.47	0.00	1.66	Calculated
435	PPP105	0.17	0 12:12	0.65	0.27	1.11	0.13	0.44	1.00	24.00	0.16	SURCHARGED

Pipe Results

SN	Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Froude Number	Reported Condition
		(cms)	(days hh:mm)	(cms)		(m/sec)	(min)	(m)		(min)		
436	PPP110	0.13	0 12:14	0.24	0.52	0.81	1.23	0.44	1.00	120.00	0.04	SURCHARGED
437	PPP115	0.04	0 12:12	0.20	0.20	0.97	0.62	0.15	0.44	0.00	0.91	Calculated
438	PPP120	0.09	0 12:12	0.20	0.46	0.91	1.04	0.26	0.65	0.00	0.62	Calculated
439	PPP125	0.15	0 12:12	0.13	1.09	1.51	0.17	0.27	0.68	0.00	0.96	> CAPACITY
440	PPP130	0.15	0 12:14	0.36	0.41	1.40	0.57	0.32	0.77	0.00	1.39	Calculated
441	PPP135	0.22	0 12:13	0.39	0.56	1.56	0.15	0.44	1.00	5.00	1.42	SURCHARGED
442	PPP140	0.30	0 12:12	0.36	0.83	1.93	0.31	0.44	1.00	8.00	1.32	SURCHARGED
443	PPP145	0.31	0 12:12	0.26	1.21	2.02	0.23	0.44	1.00	4.00	1.29	SURCHARGED
444	PPP15	0.13	0 12:12	0.37	0.34	2.11	0.48	0.17	0.41	0.00	1.76	Calculated
445	PPP150	0.31	0 12:12	0.43	0.73	2.18	0.06	0.38	0.88	0.00	1.91	Calculated
446	PPP155	0.32	0 12:12	0.61	0.53	2.37	0.09	0.35	0.83	0.00	2.56	Calculated
447	PPP160	0.32	0 12:12	0.60	0.54	2.12	0.07	0.41	0.95	0.00	1.41	Calculated
448	PPP165	0.11	0 12:12	0.87	0.12	1.04	0.20	0.27	0.62	0.00	0.48	Calculated
449	PPP170	0.06	0 12:12	0.48	0.12	2.00	0.45	0.10	0.24	0.00	1.98	Calculated
450	PPP180	0.11	0 12:12	0.39	0.28	1.96	0.22	0.17	0.39	0.00	1.69	Calculated
451	PPP185	0.11	0 12:12	0.70	0.16	2.31	0.30	0.14	0.28	0.00	2.05	Calculated
452	PPP195	0.10	0 12:12	0.37	0.26	1.51	0.10	0.18	0.43	0.00	1.62	Calculated
453	PPP20	0.13	0 12:12	0.42	0.30	1.38	0.31	0.27	0.69	0.00	1.59	Calculated
454	PPP200	0.10	0 12:12	0.47	0.21	1.95	0.07	0.15	0.36	0.00	1.96	Calculated
455	PPP205	0.10	0 12:12	0.47	0.21	1.67	0.55	0.17	0.40	0.00	1.50	Calculated
456	PPP210	0.10	0 12:12	0.35	0.27	1.93	0.04	0.15	0.38	0.00	2.04	Calculated
457	PPP215	0.10	0 12:12	1.16	0.08	0.97	0.06	0.26	0.63	0.00	0.90	Calculated
458	PPP220	0.26	0 12:12	0.24	1.09	2.28	0.38	0.30	0.70	0.00	1.67	> CAPACITY
459	PPP225	0.27	0 12:12	0.82	0.32	3.02	0.18	0.23	0.57	0.00	1.69	Calculated
460	PPP230	0.42	0 12:12	0.55	0.77	2.91	0.67	0.37	0.87	0.00	1.34	Calculated
461	PPP235	0.41	0 12:13	0.19	2.17	2.62	0.05	0.44	1.00	15.00	1.11	SURCHARGED
462	PPP240	0.43	0 12:10	0.50	0.87	2.78	0.10	0.44	1.00	9.00	2.20	SURCHARGED
463	PPP245	0.43	0 12:13	0.75	0.58	3.35	0.04	0.34	0.77	0.00	3.00	Calculated
464	PPP25	0.27	0 12:12	0.67	0.41	1.98	0.05	0.41	1.00	2.00	2.45	SURCHARGED
465	PPP255	0.17	0 12:12	0.81	0.21	1.49	0.13	0.29	0.68	0.00	1.17	Calculated
466	PPP260	0.16	0 12:12	0.60	0.26	1.85	0.05	0.26	0.64	0.00	1.80	Calculated
467	PPP265	0.23	0 12:12	0.76	0.31	3.74	0.10	0.18	0.42	0.00	3.30	Calculated
468	PPP275	0.19	0 12:12	0.71	0.26	3.04	0.06	0.18	0.42	0.00	3.15	Calculated
469	PPP280	0.19	0 12:12	0.86	0.22	4.03	0.11	0.14	0.34	0.00	3.71	Calculated
470	PPP290	0.12	0 12:12	1.09	0.11	3.27	0.05	0.12	0.28	0.00	3.64	Calculated
471	PPP295	0.12	0 12:12	0.72	0.16	3.18	0.15	0.12	0.29	0.00	3.05	Calculated
472	PPP30	0.27	0 12:12	0.63	0.43	1.75	0.06	0.44	1.00	6.00	1.65	SURCHARGED
473	PPP305	0.22	0 12:12	0.45	0.47	4.04	0.10	0.18	0.53	0.00	3.62	Calculated
474	PPP315	0.10	0 12:12	0.51	0.19	1.25	0.10	0.44	1.00	11.00	1.33	SURCHARGED
475	PPP320	0.10	0 12:12	0.23	0.42	1.16	0.18	0.44	1.00	13.00	0.96	SURCHARGED
476	PPP325	0.10	0 12:12	0.23	0.42	1.23	0.82	0.44	1.00	14.00	1.03	SURCHARGED
477	PPP330	0.10	0 12:12	0.25	0.38	1.16	0.38	0.44	1.00	18.00	1.19	SURCHARGED
478	PPP335	0.23	0 12:12	0.64	0.36	1.75	0.11	0.44	1.00	20.00	1.54	SURCHARGED
479	PPP340	0.20	0 12:19	0.21	0.97	1.31	0.80	0.44	1.00	25.00	0.90	SURCHARGED
480	PPP345	0.24	0 12:19	0.20	1.17	1.54	0.79	0.44	1.00	26.00	0.91	SURCHARGED
481	PPP35	0.27	0 12:12	0.36	0.76	1.77	0.06	0.44	1.00	8.00	1.79	SURCHARGED
482	PPP350	0.24	0 12:18	0.24	1.00	1.54	0.09	0.44	1.00	26.00	0.97	SURCHARGED
483	PPP355	0.34	0 12:18	0.31	1.10	2.21	0.35	0.44	1.00	26.00	0.99	SURCHARGED
484	PPP360	0.41	0 12:12	0.19	2.15	2.64	0.05	0.44	1.00	18.00	1.22	SURCHARGED
485	PPP365	0.41	0 12:12	0.44	0.94	2.64	0.26	0.44	1.00	18.00	1.61	SURCHARGED
486	PPP370	0.41	0 12:12	0.33	1.26	2.68	0.14	0.42	0.99	0.00	1.66	> CAPACITY
487	PPP375	0.49	0 12:12	0.55	0.89	3.73	0.27	0.35	0.84	0.00	2.86	Calculated
488	PPP380	0.60	0 12:12	0.81	0.73	5.37	0.27	0.29	0.67	0.00	3.83	Calculated
489	PPP390	0.12	0 12:12	0.32	0.37	1.24	0.10	0.37	1.00	16.00	1.39	SURCHARGED
490	PPP395	0.12	0 12:12	0.15	0.79	1.09	0.16	0.37	1.00	19.00	0.92	SURCHARGED
491	PPP40	0.30	0 12:12	0.76	0.40	1.93	0.13	0.44	1.00	8.00	0.21	SURCHARGED
492	PPP400	0.12	0 12:12	0.13	0.92	1.09	0.47	0.37	1.00	19.00	0.98	SURCHARGED
493	PPP405	0.11	0 12:08	0.17	0.64	1.30	0.13	0.37	1.00	21.00	1.11	SURCHARGED
494	PPP410	0.06	0 12:12	0.74	0.08	0.95	0.29	0.19	0.45	0.00	0.49	Calculated
495	PPP415	0.08	0 12:12	0.08	1.04	0.79	0.16	0.37	1.00	28.00	0.23	SURCHARGED
496	PPP420	0.16	0 12:12	0.13	1.22	1.06	0.44	0.44	1.00	24.00	0.63	SURCHARGED
497	PPP425	0.16	0 12:12	0.26	0.63	1.16	0.45	0.44	1.00	24.00	0.93	SURCHARGED
498	PPP430	0.21	0 12:12	0.28	0.76	1.67	0.53	0.44	1.00	32.00	1.32	SURCHARGED
499	PPP435	0.21	0 12:12	0.32	0.67	1.38	0.63	0.44	1.00	42.00	0.73	SURCHARGED
500	PPP440	0.24	0 12:16	0.13	1.78	1.54	0.28	0.44	1.00	52.00	0.74	SURCHARGED
501	PPP445	0.24	0 12:16	0.32	0.74	1.54	0.08	0.44	1.00	53.00	0.97	SURCHARGED
502	PPP45	0.12	0 12:55	0.32	0.38	0.78	2.00	0.44	1.00	1205.00	0.00	SURCHARGED
503	PPP450	0.36	0 12:12	0.28	1.32	2.34	0.50	0.44	1.00	54.00	1.27	SURCHARGED
504	PPP455	0.25	0 12:10	0.34	0.75	1.62	0.11	0.44	1.00	62.00	0.57	SURCHARGED
505	PPP460	0.25	0 12:45	0.14	1.80	1.63	0.05	0.44	1.00	63.00	0.66	SURCHARGED
506	PPP465	0.27	0 12:45	0.23	1.18	1.76	0.30	0.44	1.00	61.00	1.05	SURCHARGED
507	PPP470	0.28	0 12:45	0.30	0.95	1.82	0.30	0.44	1.00	61.00	1.11	SURCHARGED
508	PPP475	0.35	0 12:12	0.30	1.16	2.24	0.15	0.44	1.00	61.00	1.11	SURCHARGED
509	PPP480	0.38	0 12:12	0.27	1.40	2.53	0.33	0.41	0.94	0.00	1.41	> CAPACITY
510	PPP485	0.53	0 12:12	0.74	0.71	2.94	1.13	0.36	0.64	0.00	2.08	Calculated
511	PPP490	0.93	0 12:12	1.51	0.62	5.64	0.40	0.33	0.59	0.00	3.64	Calculated
512	PPP5	0.13	0 12:12	0.45	0.28	1.65	0.09	0.21	0.50	0.00	1.74	Calculated
513	PPP50	0.15	0 12:06	0.51	0.28	1.06	0.86	0.44	1.00	0.00	0.19	SURCHARGED
514	PPP500	0.07	0 12:15	0.33	0.22	1.09	0.13	0.37	1.00	24.00	0.91	SURCHARGED
515	PPP505	0.07	0 12:04	0.19	0.37	0.65	0.19	0.37	1.00	52.00	0.22	SURCHARGED
516	PPP510	0.05	0 12:12	0.18	0.27	1.15	0.11	0.37	1.00	16.00	1.34	SURCHARGED
517	PPP515	0.05	0 12:12	0.42	0.12	1.32	0.07	0.44	1.00	15.00	1.50	SURCHARGED
518	PPP520	0.05	0 12:07	0.35	0.15	0.66	0.54	0.44	1.00	19.00	0.39	SURCHARGED
519	PPP525	0.05	0 12:07	0.13	0.39	0.40	1.69	0.44	1.00	26.00	0.24	SURCHARGED
520	PPP530	0.13	0 12:12	0.27	0.48	1.49	0.12	0.44	1.00	27.00	1.37	SURCHARGED
521	PPP535	0.14	0 12:12	0.50	0.28	1.63	0.10	0.44	1.00	32.00	1.57	SURCHARGED
522	PPP540	0.14	0 12:12	0.29	0.48	0.89	1.21	0.44	1.00	43.00	0.54	SURCHARGED

Pipe Results

SN	Element ID	Peak Flow (cms)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cms)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (m/sec)	Travel Time (min)	Peak Flow Depth (m)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
523	PPP545	0.08	0 12:12	0.08	1.01	0.78	0.16	0.37	1.00	31.00	0.58	SURCHARGED
524	PPP55	0.41	0 12:07	0.47	0.87	2.85	0.49	0.44	1.00	0.00	2.11	SURCHARGED
525	PPP550	0.13	0 12:11	0.26	0.50	1.68	0.15	0.37	1.00	14.00	1.54	SURCHARGED
526	PPP555	0.13	0 12:12	0.31	0.41	1.38	0.23	0.44	1.00	43.00	1.27	SURCHARGED
527	PPP560	0.13	0 12:12	0.30	0.43	0.82	1.60	0.44	1.00	47.00	0.34	SURCHARGED
528	PPP565	0.10	0 12:56	0.13	0.77	0.71	0.77	0.44	1.00	61.00	0.50	SURCHARGED
529	PPP570	0.14	0 12:11	0.27	0.50	0.88	0.43	0.44	1.00	61.00	0.43	SURCHARGED
530	PPP575	0.08	0 12:04	0.35	0.22	0.73	0.17	0.37	1.00	59.00	0.41	SURCHARGED
531	PPP580	0.07	0 12:12	0.33	0.20	0.63	0.36	0.37	1.00	55.00	0.46	SURCHARGED
532	PPP585	0.05	0 12:12	0.29	0.19	0.50	0.25	0.37	1.00	61.00	0.21	SURCHARGED
533	PPP590	0.04	0 12:12	0.14	0.30	0.40	0.34	0.37	1.00	62.00	0.09	SURCHARGED
534	PPP595	0.13	0 12:12	0.62	0.20	1.16	0.07	0.37	1.00	46.00	0.43	SURCHARGED
535	PPP60	0.45	0 12:19	0.49	0.93	2.91	0.34	0.44	1.00	16.00	2.34	SURCHARGED
536	PPP600	0.03	0 12:03	0.89	0.04	0.26	0.43	0.44	1.00	38.00	0.00	SURCHARGED
537	PPP605	0.09	0 12:12	0.40	0.23	2.54	0.04	0.13	0.37	0.00	2.89	Calculated
538	PPP610	0.09	0 12:12	0.76	0.12	1.04	0.27	0.24	0.55	0.00	0.39	Calculated
539	PPP615	0.00	0 00:00	1.51	0.00	0.00		0.07	0.18	0.00	0.00	Calculated
540	PPP625	0.17	0 12:12	0.63	0.27	1.77	0.43	0.27	0.68	0.00	1.77	Calculated
541	PPP630	0.25	0 12:12	0.37	0.68	1.60	0.17	0.42	1.00	3.00	1.45	SURCHARGED
542	PPP635	0.41	0 12:12	0.66	0.62	2.81	0.03	0.38	0.89	0.00	2.52	Calculated
543	PPP640	0.41	0 12:12	0.58	0.70	3.11	0.16	0.33	0.79	0.00	1.66	Calculated
544	PPP645	0.18	0 12:12	1.03	0.17	3.86	0.10	0.14	0.34	0.00	3.71	Calculated
545	PPP65	0.52	0 12:11	0.79	0.66	3.63	0.04	0.39	0.87	0.00	3.15	Calculated
546	PPP650	0.18	0 12:12	0.72	0.24	2.81	0.13	0.18	0.42	0.00	2.67	Calculated
547	PPP655	0.30	0 12:12	0.86	0.35	4.53	0.11	0.19	0.44	0.00	3.79	Calculated
548	PPP665	0.12	0 12:12	0.13	0.92	1.56	0.04	0.22	0.51	0.00	1.29	Calculated
549	PPP670	0.12	0 12:12	1.20	0.10	3.22	0.01	0.13	0.29	0.00	4.42	Calculated
550	PPP675	0.10	0 12:12	0.51	0.19	2.56	0.34	0.14	0.40	0.00	2.50	Calculated
551	PPP680	0.24	0 12:12	1.57	0.16	3.79	0.11	0.16	0.29	0.00	3.30	Calculated
552	PPP685	0.06	0 12:12	0.34	0.19	1.71	0.26	0.14	0.41	0.00	1.53	Calculated
553	PPP695	0.09	0 12:12	0.94	0.10	3.64	0.13	0.10	0.22	0.00	3.82	Calculated
554	PPP70	0.52	0 12:12	0.76	0.68	3.63	0.25	0.39	0.87	0.00	2.28	Calculated
555	PPP75	0.38	0 12:04	0.46	0.82	2.41	0.06	0.44	1.00	56.00	1.26	SURCHARGED
556	PPP80	0.30	0 12:37	0.33	0.91	1.92	0.09	0.44	1.00	52.00	1.14	SURCHARGED
557	PPP85	0.30	0 12:37	0.39	0.76	1.92	0.07	0.44	1.00	45.00	1.32	SURCHARGED
558	PPP90	0.32	0 12:24	0.40	0.80	2.07	0.13	0.44	1.00	45.00	1.42	SURCHARGED
559	PPP95	0.36	0 12:11	0.33	1.08	2.33	0.30	0.42	0.95	0.00	1.50	> CAPACITY
560	PRM10	0.01	0 12:01	0.01	0.84	0.56	1.13	0.15	1.00	35.00	0.32	SURCHARGED
561	PRM100	0.17	0 12:09	0.36	0.46	1.33	0.96	0.44	1.00	8.00	1.17	SURCHARGED
562	PRM105	0.14	0 12:12	1.24	0.11	3.35	0.05	0.13	0.31	0.00	3.18	Calculated
563	PRM110	0.14	0 12:12	0.49	0.28	2.02	0.95	0.19	0.45	0.00	1.80	Calculated
564	PRM115	0.20	0 12:12	0.63	0.31	2.94	0.05	0.20	0.77	0.00	3.51	Calculated
565	PRM120	0.19	0 12:14	1.79	0.11	1.73	0.03	0.32	1.00	2.00	1.27	SURCHARGED
566	PRM125	0.02	0 12:10	0.76	0.03	2.46	0.15	0.14	0.49	0.00	3.75	Calculated
567	PRM130	0.06	0 12:15	2.17	0.03	0.62	0.03	0.34	0.94	0.00	0.16	Calculated
568	PRM135	0.05	0 12:12	0.16	0.32	0.66	1.14	0.24	0.70	0.00	0.30	Calculated
569	PRM140	0.14	0 12:12	0.14	1.06	1.22	0.13	0.30	0.71	0.00	0.77	> CAPACITY
570	PRM145	0.15	0 12:12	0.23	0.63	1.37	0.73	0.33	0.79	0.00	1.10	Calculated
571	PRM15	0.03	0 12:03	0.01	2.47	1.66	0.18	0.15	0.98	0.00	0.89	> CAPACITY
572	PRM150	0.20	0 12:13	0.32	0.64	1.29	0.73	0.44	1.00	1.00	0.63	SURCHARGED
573	PRM155	0.30	0 12:13	0.14	2.17	2.01	0.19	0.40	0.89	0.00	0.78	> CAPACITY
574	PRM160	0.30	0 12:13	0.51	0.59	1.96	0.88	0.32	0.55	0.00	1.30	Calculated
575	PRM165	0.35	0 12:13	0.71	0.50	2.21	1.30	0.33	0.58	0.00	1.53	Calculated
576	PRM170	0.09	0 12:12	0.75	0.12	1.14	0.25	0.23	0.54	0.00	0.95	Calculated
577	PRM175	0.06	0 12:12	0.67	0.09	0.65	0.50	0.27	0.60	0.00	0.88	Calculated
578	PRM180	0.06	0 12:12	0.22	0.28	0.41	0.36	0.44	1.00	18.00	0.20	SURCHARGED
579	PRM185	0.11	0 12:12	0.21	0.51	1.14	2.67	0.26	0.60	0.00	0.68	Calculated
580	PRM190	0.11	0 12:14	0.13	0.81	1.23	0.23	0.25	0.56	0.00	0.77	Calculated
581	PRM195	0.15	0 12:13	0.37	0.39	1.53	0.47	0.32	0.72	0.00	1.44	Calculated
582	PRM20	0.11	0 12:12	0.37	0.29	1.62	0.40	0.31	0.79	0.00	1.61	Calculated
583	PRM200	0.15	0 12:13	0.35	0.41	1.52	0.05	0.44	1.00	10.00	1.37	SURCHARGED
584	PRM205	0.18	0 12:12	0.69	0.26	1.19	0.77	0.58	1.00	5.00	1.00	SURCHARGED
585	PRM210	0.38	0 12:13	0.42	0.90	2.43	0.41	0.44	1.00	18.00	1.76	SURCHARGED
586	PRM215	0.42	0 12:09	0.43	0.98	2.71	0.13	0.44	1.00	21.00	1.77	SURCHARGED
587	PRM220	0.12	0 12:12	0.86	0.14	1.86	0.20	0.28	0.63	0.00	1.52	Calculated
588	PRM225	0.25	0 12:12	0.37	0.68	1.73	0.60	0.44	1.00	10.00	1.30	SURCHARGED
589	PRM230	0.13	0 12:12	0.44	0.29	1.50	0.18	0.41	1.00	3.00	1.30	SURCHARGED
590	PRM235	0.06	0 12:12	0.13	0.48	1.31	0.20	0.37	1.00	3.00	1.12	SURCHARGED
591	PRM240	0.06	0 12:10	0.32	0.20	1.07	0.82	0.44	1.00	3.00	0.86	SURCHARGED
592	PRM245	0.11	0 12:12	0.29	0.39	1.14	0.33	0.44	1.00	12.00	1.16	SURCHARGED
593	PRM25	0.13	0 12:12	0.45	0.29	1.97	0.08	0.44	1.00	13.00	1.87	SURCHARGED
594	PRM250	0.11	0 12:12	0.24	0.46	0.85	0.33	0.44	1.00	17.00	0.68	SURCHARGED
595	PRM260	0.20	0 12:12	0.19	1.06	1.31	1.38	0.44	1.00	20.00	0.62	SURCHARGED
596	PRM265	0.37	0 12:12	0.20	1.88	2.39	0.56	0.42	0.96	0.00	0.95	> CAPACITY
597	PRM270	0.05	0 12:12	0.12	0.43	0.84	1.16	0.37	1.00	10.00	0.77	SURCHARGED
598	PRM290	0.17	0 12:12	0.47	0.36	1.09	0.14	0.44	1.00	11.00	0.70	SURCHARGED
599	PRM295	0.24	0 12:12	0.13	1.77	1.63	0.74	0.39	0.89	0.00	0.64	> CAPACITY
600	PRM30	0.25	0 12:13	0.19	1.30	2.26	0.79	0.38	1.00	22.00	1.37	SURCHARGED
601	PRM35	0.32	0 12:11	0.38	0.85	2.18	0.08	0.39	0.90	0.00	1.74	Calculated
602	PRM40	0.32	0 12:12	0.46	0.70	2.18	0.28	0.39	0.90	0.00	1.37	Calculated
603	PRM45	0.34	0 12:12	0.32	1.06	2.59	0.01	0.34	0.79	0.00	1.52	> CAPACITY
604	PRM5	0.01	0 12:01	0.01	0.84	0.61	0.25	0.15	1.00	32.00	0.79	SURCHARGED
605	PRM50	0.34	0 12:12	0.58	0.58	2.86	0.65	0.34	0.79	0.00	2.34	Calculated
606	PRM55	0.56	0 12:12	0.58	0.96	3.59	0.16	0.44	1.00	5.00	2.61	SURCHARGED
607	PRM60	0.57	0 12:13	0.61	0.93	3.65	0.37	0.44	1.00	5.00	3.15	SURCHARGED
608	PRM65	0.44	0 12:18	1.49	0.30	2.85	0.01	0.44	1.00	18.00	2.69	SURCHARGED
609	PRM70	0.47	0 12:11	0.72	0.65	2.26	0.07	0.51	1.00	18.00	1.51	SURCHARGED

Pipe Results

SN	Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Froude Number	Reported Condition
		(cms)	(days hh:mm)	(cms)		(m/sec)	(min)	(m)		(min)		
610	PRM75	0.47	0 12:11	0.56	0.84	2.50	0.04	0.44	0.85	0.00	1.51	Calculated
611	PRM85	0.05	0 12:12	0.26	0.20	1.29	0.16	0.14	0.31	0.00	1.30	Calculated
612	PRM90	0.05	0 12:12	0.41	0.13	1.14	0.14	0.15	0.42	0.00	1.04	Calculated
613	PRM95	0.14	0 12:09	0.11	1.31	2.08	0.08	0.29	1.00	15.00	1.44	SURCHARGED
614	PUV10	0.50	0 12:13	0.88	0.57	2.73	0.40	0.37	0.65	0.00	2.20	Calculated
615	PUV100	1.04	0 12:14	1.43	0.73	3.90	0.27	0.58	1.00	8.00	2.82	SURCHARGED
616	PUV1000	0.06	0 12:12	0.49	0.13	2.19	0.08	0.10	0.24	0.00	2.57	Calculated
617	PUV1005	0.06	0 12:12	1.10	0.06	1.32	0.08	0.15	0.38	0.00	1.27	Calculated
618	PUV1010	0.03	0 12:16	0.52	0.05	0.27	1.03	0.44	1.00	4.00	0.22	SURCHARGED
619	PUV1015	0.04	0 12:12	0.82	0.05	0.57	1.76	0.21	0.52	0.00	0.58	Calculated
620	PUV1020	0.07	0 12:12	0.28	0.25	1.50	0.58	0.15	0.35	0.00	1.30	Calculated
621	PUV1025	0.12	0 12:12	0.51	0.23	1.28	0.40	0.25	0.61	0.00	1.06	Calculated
622	PUV1030	0.15	0 12:12	0.55	0.27	2.68	0.15	0.16	0.38	0.00	2.38	Calculated
623	PUV1040	0.09	0 12:12	0.48	0.18	1.80	0.21	0.15	0.35	0.00	1.81	Calculated
624	PUV1045	0.18	0 12:12	0.82	0.22	3.48	0.07	0.16	0.36	0.00	3.43	Calculated
625	PUV105	1.10	0 12:12	1.13	0.97	4.09	0.12	0.58	1.00	16.00	2.34	SURCHARGED
626	PUV1050	0.18	0 12:12	0.81	0.22	3.46	0.15	0.16	0.37	0.00	3.18	Calculated
627	PUV1055	0.21	0 12:12	0.78	0.26	3.94	0.17	0.16	0.37	0.00	3.38	Calculated
628	PUV1065	0.08	0 12:12	0.44	0.19	1.80	0.09	0.15	0.34	0.00	1.83	Calculated
629	PUV1070	0.08	0 12:12	0.44	0.19	1.90	0.43	0.14	0.32	0.00	1.64	Calculated
630	PUV1075	0.22	0 12:12	0.84	0.26	1.96	0.30	0.30	0.67	0.00	1.70	Calculated
631	PUV1080	0.28	0 12:12	0.29	0.98	1.91	0.21	0.39	0.90	0.00	1.30	Calculated
632	PUV1090	0.07	0 12:12	0.77	0.09	2.77	0.14	0.09	0.22	0.00	3.18	Calculated
633	PUV1095	0.07	0 12:12	0.82	0.09	1.94	0.08	0.12	0.28	0.00	1.89	Calculated
634	PUV110	1.19	0 12:12	1.26	0.94	4.75	0.05	0.51	0.89	0.00	2.68	Calculated
635	PUV1100	0.12	0 12:12	0.74	0.16	3.11	0.10	0.12	0.29	0.00	3.09	Calculated
636	PUV1110	0.04	0 12:12	0.47	0.08	1.68	0.24	0.09	0.19	0.00	1.88	Calculated
637	PUV1120	0.11	0 12:12	1.01	0.10	3.99	0.13	0.10	0.23	0.00	4.13	Calculated
638	PUV1130	0.09	0 12:12	0.64	0.14	2.77	0.09	0.12	0.27	0.00	3.05	Calculated
639	PUV1135	0.09	0 12:12	1.00	0.09	3.78	0.11	0.09	0.21	0.00	4.04	Calculated
640	PUV1145	0.10	0 12:12	0.57	0.17	2.29	0.08	0.13	0.31	0.00	2.35	Calculated
641	PUV1155	0.08	0 12:12	0.69	0.12	2.56	0.07	0.11	0.26	0.00	2.78	Calculated
642	PUV1165	0.03	0 12:12	0.63	0.05	1.94	0.10	0.07	0.16	0.00	2.46	Calculated
643	PUV120	0.02	0 12:15	0.73	0.02	1.35	0.11	0.22	0.50	0.00	4.32	Calculated
644	PUV125	0.00	0 00:00	1.45	0.00	0.00		0.00	0.00	0.00	0.00	Calculated
645	PUV130	0.00	0 00:00	0.40	0.00	0.00		0.04	0.08	0.00	0.00	Calculated
646	PUV135	0.03	0 12:12	0.45	0.06	1.42	0.68	0.08	0.18	0.00	1.57	Calculated
647	PUV140	0.03	0 12:12	0.34	0.08	1.08	0.56	0.09	0.22	0.00	1.08	Calculated
648	PUV145	0.06	0 12:12	0.43	0.13	1.40	0.52	0.13	0.30	0.00	1.49	Calculated
649	PUV15	0.55	0 12:13	1.47	0.37	3.56	0.05	0.32	0.56	0.00	3.02	Calculated
650	PUV150	0.08	0 12:12	0.46	0.18	1.56	0.10	0.16	0.37	0.00	1.80	Calculated
651	PUV155	0.08	0 12:12	0.45	0.18	1.79	0.08	0.15	0.33	0.00	1.81	Calculated
652	PUV160	0.08	0 12:12	0.43	0.19	1.00	2.48	0.28	0.65	0.00	0.48	Calculated
653	PUV170	0.03	0 12:12	0.79	0.03	1.47	0.11	0.08	0.18	0.00	2.33	Calculated
654	PUV175	0.03	0 12:12	0.72	0.04	1.43	0.27	0.08	0.19	0.00	1.52	Calculated
655	PUV180	0.03	0 12:12	1.20	0.02	1.02	0.15	0.10	0.23	0.00	1.24	Calculated
656	PUV185	0.00	0 00:00	1.72	0.00	0.00		0.22	0.50	0.00	0.00	Calculated
657	PUV190	0.00	0 00:00	1.48	0.00	0.00		0.08	0.19	0.00	0.00	Calculated
658	PUV195	0.13	0 12:09	3.46	0.04	1.48	0.01	0.32	0.88	0.00	0.92	Calculated
659	PUV20	0.56	0 12:13	1.47	0.38	3.55	0.30	0.33	0.57	0.00	3.16	Calculated
660	PUV200	0.10	0 12:12	1.14	0.09	0.53	0.68	0.58	1.00	8.00	0.32	SURCHARGED
661	PUV205	0.18	0 12:12	0.28	0.65	1.74	0.42	0.27	0.63	0.00	1.27	Calculated
662	PUV215	0.14	0 12:12	0.49	0.29	2.55	0.06	0.16	0.38	0.00	2.71	Calculated
663	PUV220	0.14	0 12:12	1.27	0.11	3.20	0.12	0.14	0.32	0.00	2.89	Calculated
664	PUV225	0.14	0 12:12	0.40	0.35	1.89	0.46	0.20	0.48	0.00	1.57	Calculated
665	PUV230	0.29	0 12:12	0.64	0.46	2.30	0.21	0.32	0.77	0.00	2.08	Calculated
666	PUV235	0.38	0 12:12	0.55	0.69	3.17	0.07	0.30	0.72	0.00	3.05	Calculated
667	PUV240	0.38	0 12:12	1.27	0.30	6.40	0.08	0.17	0.41	0.00	5.52	Calculated
668	PUV25	0.58	0 12:13	1.75	0.33	3.79	0.03	0.32	0.56	0.00	3.43	Calculated
669	PUV250	0.16	0 12:12	0.96	0.16	2.58	0.08	0.17	0.42	0.00	2.39	Calculated
670	PUV255	0.09	0 12:10	0.54	0.16	0.95	0.19	0.27	0.71	0.00	0.79	Calculated
671	PUV260	0.10	0 12:12	0.35	0.30	1.09	1.54	0.38	0.89	0.00	1.32	Calculated
672	PUV265	0.15	0 12:11	0.49	0.30	1.24	0.05	0.44	1.00	25.00	1.42	SURCHARGED
673	PUV270	0.14	0 12:17	0.33	0.41	1.30	0.10	0.44	1.00	29.00	1.30	SURCHARGED
674	PUV275	0.14	0 12:17	0.30	0.45	1.01	0.29	0.44	1.00	31.00	0.63	SURCHARGED
675	PUV280	0.14	0 12:17	0.13	1.02	1.10	0.41	0.44	1.00	33.00	0.66	SURCHARGED
676	PUV285	0.14	0 12:17	0.38	0.38	1.25	0.33	0.44	1.00	34.00	1.17	SURCHARGED
677	PUV290	0.31	0 12:13	0.38	0.83	2.02	0.42	0.44	1.00	39.00	1.29	SURCHARGED
678	PUV295	0.24	0 12:24	0.35	0.70	1.56	0.10	0.44	1.00	43.00	1.33	SURCHARGED
679	PUV30	0.62	0 12:13	1.75	0.35	3.13	0.26	0.41	0.70	0.00	2.88	Calculated
680	PUV300	0.33	0 12:12	0.41	0.80	2.10	0.14	0.44	1.00	43.00	1.08	SURCHARGED
681	PUV305	0.42	0 12:03	0.39	1.07	2.69	0.05	0.44	1.00	47.00	1.26	SURCHARGED
682	PUV310	0.43	0 12:03	0.31	1.36	2.74	0.26	0.44	1.00	40.00	1.57	SURCHARGED
683	PUV315	0.41	0 12:04	0.49	0.83	2.97	0.18	0.44	1.00	40.00	2.24	SURCHARGED
684	PUV320	0.41	0 12:04	0.53	0.77	2.63	0.53	0.44	1.00	41.00	1.69	SURCHARGED
685	PUV325	0.46	0 12:42	0.38	1.19	2.95	0.73	0.44	1.00	41.00	2.01	SURCHARGED
686	PUV330	0.56	0 12:12	0.73	0.77	4.08	0.06	0.37	0.83	0.00	3.14	Calculated
687	PUV340	0.13	0 12:12	0.56	0.23	2.05	0.08	0.20	0.49	0.00	2.01	Calculated
688	PUV345	0.12	0 12:13	0.39	0.32	1.64	1.03	0.33	0.78	0.00	1.70	Calculated
689	PUV35	0.62	0 12:13	1.07	0.57	2.30	0.08	0.58	1.00	5.00	1.79	SURCHARGED
690	PUV350	0.19	0 12:12	0.56	0.34	1.62	0.12	0.44	1.00	33.00	1.36	SURCHARGED
691	PUV355	0.13	0 12:12	0.51	0.26	1.19	1.43	0.30	0.67	0.00	0.77	Calculated
692	PUV360	0.23	0 12:12	0.61	0.38	2.79	0.24	0.32	0.74	0.00	2.65	Calculated
693	PUV365	0.23	0 12:12	0.64	0.36	2.41	0.07	0.44	1.00	30.00	2.34	SURCHARGED
694	PUV370	0.33	0 12:12	0.69	0.49	2.33	0.05	0.44	1.00	37.00	2.20	SURCHARGED
695	PUV375	0.16	0 12:03	0.40	0.40	1.16	0.57	0.44	1.00	41.00	0.84	SURCHARGED
696	PUV380	0.03	0 12:03	0.76	0.04	1.50	0.05	0.44	1.00	36.00	2.47	SURCHARGED

Pipe Results

SN	Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Froude Number	Reported Condition
		(cms)	(days hh:mm)	(cms)		(m/sec)	(min)	(m)		(min)		
697	PUV385	0.06	0 12:02	0.66	0.08	0.47	0.32	0.44	1.00	40.00	0.06	SURCHARGED
698	PUV390	0.05	0 12:12	0.13	0.39	1.19	0.17	0.14	0.33	0.00	0.74	Calculated
699	PUV395	0.05	0 12:12	0.45	0.12	1.26	0.54	0.13	0.31	0.00	1.13	Calculated
700	PUV40	0.62	0 12:13	0.88	0.70	2.45	0.06	0.51	0.89	0.00	1.87	Calculated
701	PUV400	0.12	0 12:12	0.39	0.31	1.88	0.57	0.18	0.43	0.00	1.71	Calculated
702	PUV405	0.11	0 12:12	0.37	0.31	1.63	0.18	0.19	0.46	0.00	1.39	Calculated
703	PUV410	0.22	0 12:12	0.59	0.37	2.71	0.17	0.29	0.73	0.00	2.76	Calculated
704	PUV415	0.22	0 12:12	0.76	0.28	2.48	0.07	0.42	1.00	2.00	2.74	SURCHARGED
705	PUV420	0.22	0 12:12	0.57	0.38	1.39	0.35	0.44	1.00	43.00	0.48	SURCHARGED
706	PUV425	0.02	0 12:12	0.39	0.06	0.70	1.70	0.12	0.28	0.00	0.60	Calculated
707	PUV430	0.10	0 12:12	0.37	0.28	1.26	0.18	0.22	0.52	0.00	1.23	Calculated
708	PUV435431	0.10	0 12:12	0.25	0.41	1.27	0.12	0.21	0.52	0.00	1.09	Calculated
709	PUV440	0.18	0 12:12	0.76	0.24	2.51	0.11	0.30	0.71	0.00	2.41	Calculated
710	PUV445	0.18	0 12:12	0.43	0.42	1.86	0.15	0.44	1.00	19.00	1.71	SURCHARGED
711	PUV45	0.67	0 12:12	1.24	0.54	3.63	0.08	0.37	0.65	0.00	2.71	Calculated
712	PUV450	0.18	0 12:12	0.36	0.50	1.15	0.66	0.44	1.00	25.00	1.21	SURCHARGED
713	PUV455	0.20	0 12:12	0.27	0.76	1.31	0.12	0.44	1.00	31.00	0.83	SURCHARGED
714	PUV460	0.26	0 12:09	0.27	0.99	1.70	0.27	0.44	1.00	33.00	0.63	SURCHARGED
715	PUV465	0.29	0 01:20	0.13	2.15	2.04	0.26	0.44	1.00	32.00	0.62	SURCHARGED
716	PUV470	0.60	0 01:20	0.32	1.90	3.88	0.07	0.44	1.00	33.00	1.23	SURCHARGED
717	PUV475	0.28	0 01:34	0.32	0.88	2.26	0.42	0.44	1.00	37.00	0.28	SURCHARGED
718	PUV480	1.41	0 01:47	0.76	1.85	9.07	0.00	0.44	1.00	46.00	0.22	SURCHARGED
719	PUV485	1.22	0 01:40	0.14	8.46	14.90	0.02	0.44	1.00	1.00	1.15	SURCHARGED
720	PUV490	2.59	0 02:19	0.96	2.70	19.31	0.01	0.46	1.00	1.00	2.20	SURCHARGED
721	PUV495	0.89	0 01:54	1.10	0.81	5.14	0.22	0.44	1.00	0.00	2.00	SURCHARGED
722	PUV5	0.45	0 12:13	0.72	0.62	2.54	0.44	0.36	0.63	0.00	1.72	Calculated
723	PUV500	0.53	0 01:20	0.47	1.13	3.40	0.28	0.44	1.00	34.00	1.88	SURCHARGED
724	PUV505	0.45	0 01:20	0.47	0.96	5.53	0.03	0.44	1.00	45.00	1.27	SURCHARGED
725	PUV510	0.55	0 12:38	1.25	0.44	2.96	0.02	0.58	1.00	40.00	1.37	SURCHARGED
726	PUV515	0.55	0 12:38	0.57	0.96	2.08	0.46	0.58	1.00	37.00	1.16	SURCHARGED
727	PUV520	0.58	0 12:12	0.60	0.97	2.63	0.11	0.45	0.77	0.00	1.70	Calculated
728	PUV525	0.58	0 12:12	1.27	0.46	4.25	0.26	0.30	0.51	0.00	3.01	Calculated
729	PUV530	0.17	0 12:12	0.61	0.28	1.09	0.15	0.44	1.00	29.00	1.06	SURCHARGED
730	PUV535	0.12	0 12:12	0.49	0.25	0.92	0.21	0.44	1.00	29.00	0.60	SURCHARGED
731	PUV540	4.41	0 01:34	0.39	11.37	38.68	0.00	0.44	1.00	25.00	1.62	SURCHARGED
732	PUV545	0.76	0 01:40	0.47	1.63	4.91	0.03	0.44	1.00	31.00	0.28	SURCHARGED
733	PUV55	0.01	0 12:12	0.58	0.02	0.36	0.39	0.14	0.38	0.00	0.16	Calculated
734	PUV555	0.10	0 01:54	0.52	0.19	0.88	0.19	0.44	1.00	27.00	0.39	SURCHARGED
735	PUV560	0.10	0 01:20	0.60	0.16	0.78	0.27	0.44	1.00	35.00	0.26	SURCHARGED
736	PUV565	0.18	0 12:12	0.30	0.58	1.88	0.08	0.24	0.60	0.00	1.54	Calculated
737	PUV570	0.17	0 12:12	0.47	0.36	1.93	0.53	0.31	0.74	0.00	1.51	Calculated
738	PUV575	0.32	0 12:12	0.45	0.72	2.06	0.55	0.44	1.00	9.00	1.59	SURCHARGED
739	PUV580	0.42	0 12:12	0.50	0.85	2.71	0.05	0.44	1.00	18.00	1.82	SURCHARGED
740	PUV585	0.42	0 12:12	0.42	1.01	2.71	0.40	0.44	1.00	18.00	2.16	SURCHARGED
741	PUV590	0.46	0 12:11	0.66	0.69	2.94	0.06	0.44	1.00	36.00	1.23	SURCHARGED
742	PUV595	0.04	0 12:12	0.51	0.08	1.12	0.14	0.30	0.68	0.00	2.03	Calculated
743	PUV60	0.04	0 12:12	0.32	0.13	1.39	0.09	0.15	0.53	0.00	0.59	Calculated
744	PUV600	0.04	0 12:12	0.77	0.06	0.43	0.14	0.44	1.00	0.00	0.08	Calculated
745	PUV605	0.09	0 12:12	0.48	0.18	2.03	0.07	0.13	0.32	0.00	2.13	Calculated
746	PUV610	0.09	0 12:12	0.59	0.14	1.40	0.89	0.17	0.42	0.00	1.27	Calculated
747	PUV615	0.28	0 12:12	0.63	0.44	3.23	0.12	0.23	0.54	0.00	2.66	Calculated
748	PUV620	0.28	0 12:12	0.58	0.48	3.23	0.30	0.24	0.58	0.00	2.82	Calculated
749	PUV625	0.34	0 12:12	0.80	0.43	2.86	0.10	0.35	0.83	0.00	2.50	Calculated
750	PUV630	0.33	0 12:16	0.45	0.74	2.13	0.31	0.44	1.00	12.00	1.05	SURCHARGED
751	PUV635	0.47	0 12:12	0.21	2.23	3.42	0.04	0.37	0.82	0.00	1.60	> CAPACITY
752	PUV640	0.51	0 12:12	1.86	0.28	3.85	0.05	0.29	0.50	0.00	3.65	Calculated
753	PUV645	0.51	0 12:12	1.69	0.30	4.53	0.07	0.25	0.44	0.00	3.68	Calculated
754	PUV65	0.10	0 12:12	0.15	0.66	1.19	0.66	0.22	0.53	0.00	0.86	Calculated
755	PUV655	0.20	0 12:12	0.47	0.42	2.54	0.06	0.21	0.50	0.00	2.41	Calculated
756	PUV660	0.20	0 12:12	0.85	0.23	2.88	0.20	0.19	0.45	0.00	2.70	Calculated
757	PUV665	0.07	0 12:12	0.60	0.11	1.01	0.03	0.24	0.59	0.00	0.90	Calculated
758	PUV670	0.08	0 12:12	0.64	0.12	2.38	0.07	0.11	0.27	0.00	2.60	Calculated
759	PUV675	0.08	0 12:12	0.65	0.12	1.06	0.24	0.27	0.62	0.00	0.68	Calculated
760	PUV680	0.16	0 12:12	0.44	0.36	1.00	0.13	0.44	1.00	18.00	0.45	SURCHARGED
761	PUV685	0.04	0 12:12	0.31	0.14	1.43	0.09	0.11	0.25	0.00	1.53	Calculated
762	PUV690	0.04	0 12:12	1.00	0.04	0.61	0.44	0.18	0.32	0.00	0.46	Calculated
763	PUV695	0.07	0 12:12	1.31	0.05	4.08	0.09	0.07	0.16	0.00	5.00	Calculated
764	PUV70	0.21	0 12:12	0.97	0.22	2.28	0.47	0.21	0.38	0.00	1.81	Calculated
765	PUV700	0.07	0 12:12	1.27	0.05	4.22	0.15	0.07	0.16	0.00	4.98	Calculated
766	PUV710	0.16	0 12:12	0.79	0.20	3.46	0.08	0.14	0.33	0.00	3.47	Calculated
767	PUV715	0.16	0 12:12	0.94	0.17	3.86	0.14	0.13	0.31	0.00	4.09	Calculated
768	PUV720	0.22	0 12:12	1.43	0.16	5.16	0.04	0.14	0.32	0.00	5.46	Calculated
769	PUV725	0.22	0 12:12	1.21	0.18	24.26	0.02	0.14	0.33	0.00	5.05	Calculated
770	PUV730	0.22	0 12:12	1.22	0.18	5.40	0.07	0.13	0.31	0.00	5.12	Calculated
771	PUV740	0.00	0 00:00	0.98	0.00	0.00		0.00	0.00	0.00	0.00	Calculated
772	PUV745	0.00	0 00:00	0.33	0.00	0.00		0.00	0.00	0.00	0.00	Calculated
773	PUV75	0.41	0 12:12	1.15	0.36	3.25	0.35	0.26	0.49	0.00	2.29	Calculated
774	PUV750	0.00	0 00:00	0.35	0.00	0.00		0.07	0.16	0.00	0.00	Calculated
775	PUV755	0.00	0 00:00	1.19	0.00	0.00		0.00	0.00	0.00	0.00	Calculated
776	PUV760	0.11	0 12:12	0.62	0.17	2.33	0.06	0.14	0.33	0.00	2.59	Calculated
777	PUV765	0.11	0 12:12	0.75	0.14	3.18	0.09	0.11	0.27	0.00	3.49	Calculated
778	PUV770	0.11	0 12:12	1.10	0.10	4.18	0.09	0.09	0.22	0.00	4.45	Calculated
779	PUV780	0.11	0 12:12	0.74	0.15	3.17	0.10	0.12	0.28	0.00	3.18	Calculated
780	PUV785	0.13	0 12:12	1.61	0.08	1.67	0.76	0.18	0.33	0.00	1.50	Calculated
781	PUV790	0.31	0 12:12	0.95	0.33	2.80	0.20	0.24	0.43	0.00	2.10	Calculated
782	PUV80	0.61	0 12:13	1.22	0.50	3.60	0.32	0.43	0.78	0.00	2.57	Calculated
783	PUV800	0.08	0 12:12	0.66	0.12	2.26	0.06	0.12	0.27	0.00	2.64	Calculated

Pipe Results

SN	Element ID	Peak Flow (cms)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cms)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (m/sec)	Travel Time (min)	Peak Flow Depth (m)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
784	PUV805	0.08	0 12:12	0.69	0.11	2.83	0.12	0.10	0.23	0.00	2.97	Calculated
785	PUV810	0.08	0 12:12	1.42	0.05	0.63	2.07	0.30	0.55	0.00	0.55	Calculated
786	PUV815	0.24	0 12:12	0.21	1.15	1.67	0.22	0.39	0.89	0.00	0.98	> CAPACITY
787	PUV825	0.11	0 12:12	0.47	0.23	1.73	1.18	0.17	0.42	0.00	1.47	Calculated
788	PUV830	0.10	0 12:12	0.28	0.37	1.61	0.16	0.18	0.43	0.00	1.43	Calculated
789	PUV835	0.19	0 12:12	0.82	0.23	4.32	0.17	0.14	0.32	0.00	4.07	Calculated
790	PUV840	0.19	0 12:12	2.17	0.09	4.06	0.10	0.13	0.23	0.00	3.94	Calculated
791	PUV845	0.27	0 12:12	2.29	0.12	4.50	0.12	0.16	0.28	0.00	4.10	Calculated
792	PUV85	0.90	0 12:12	1.34	0.67	3.38	0.33	0.58	1.00	4.00	2.48	SURCHARGED
793	PUV850	0.33	0 12:12	2.02	0.17	15.69	0.04	0.16	0.29	0.00	4.30	Calculated
794	PUV860	0.09	0 12:12	1.07	0.08	2.79	0.10	0.11	0.26	0.00	2.50	Calculated
795	PUV865	0.09	0 12:12	1.81	0.05	3.35	0.15	0.09	0.16	0.00	3.57	Calculated
796	PUV875	0.04	0 12:12	0.53	0.07	1.15	0.40	0.12	0.27	0.00	0.94	Calculated
797	PUV880	0.14	0 12:12	0.59	0.24	2.88	0.27	0.15	0.35	0.00	2.54	Calculated
798	PUV885	0.21	0 12:12	0.79	0.26	2.45	0.42	0.22	0.53	0.00	2.13	Calculated
799	PUV890	0.34	0 12:12	0.61	0.56	3.40	0.10	0.26	0.62	0.00	3.19	Calculated
800	PUV895	0.35	0 12:12	1.13	0.31	5.16	0.04	0.19	0.45	0.00	4.80	Calculated
801	PUV90	0.95	0 12:16	1.49	0.63	3.53	0.02	0.58	1.00	12.00	2.34	SURCHARGED
802	PUV905	0.11	0 12:12	0.62	0.17	2.16	0.08	0.15	0.35	0.00	2.28	Calculated
803	PUV910	0.12	0 12:12	0.83	0.14	2.60	0.06	0.14	0.33	0.00	3.30	Calculated
804	PUV915	0.12	0 12:12	0.90	0.13	2.97	0.03	0.13	0.30	0.00	3.52	Calculated
805	PUV925	0.07	0 12:12	0.36	0.18	1.90	0.34	0.12	0.27	0.00	1.83	Calculated
806	PUV930	0.07	0 12:12	0.60	0.11	1.16	0.43	0.17	0.39	0.00	1.15	Calculated
807	PUV935	0.12	0 12:12	0.32	0.37	1.60	0.10	0.21	0.49	0.00	1.61	Calculated
808	PUV940	0.16	0 12:12	0.71	0.22	2.73	0.06	0.17	0.40	0.00	2.66	Calculated
809	PUV945	0.16	0 12:12	0.55	0.28	2.34	0.39	0.19	0.49	0.00	1.82	Calculated
810	PUV95	0.95	0 12:16	1.40	0.67	3.53	0.05	0.58	1.00	8.00	2.78	SURCHARGED
811	PUV950	0.27	0 12:12	0.62	0.44	2.92	0.16	0.33	0.80	0.00	2.86	Calculated
812	PUV955	0.27	0 12:12	0.72	0.38	1.84	0.10	0.44	1.00	5.00	2.28	SURCHARGED
813	PUV960	0.34	0 12:12	0.52	0.64	2.15	0.05	0.44	1.00	11.00	1.36	SURCHARGED
814	PUV965	0.34	0 12:12	0.24	1.42	2.18	0.56	0.41	0.97	0.00	1.48	> CAPACITY
815	PUV970	0.41	0 12:12	0.74	0.55	2.77	0.05	0.37	0.92	0.00	2.63	Calculated
816	PUV975	0.59	0 12:12	0.74	0.80	4.56	0.14	0.32	0.79	0.00	3.38	Calculated
817	PUV985	0.02	0 12:12	0.39	0.04	0.86	0.18	0.08	0.18	0.00	1.07	Calculated
818	PUV990	0.02	0 12:12	0.20	0.08	0.71	0.63	0.09	0.21	0.00	0.76	Calculated
819	PUV995	0.04	0 12:12	0.37	0.10	0.65	0.65	0.16	0.38	0.00	0.61	Calculated

2 YEAR OUTPUT – PROPOSED NETWORKS

Project Description

File Name ..... E010 PROPOSED.SPF

Project Options

Flow Units ..... CMS
Elevation Type ..... Elevation
Hydrology Method ..... EPA SWMM
EPA SWMM Infiltration Method ..... SCS Curve Number
Link Routing Method ..... Hydrodynamic
Enable Overflow Ponding at Nodes ..... YES
Skip Steady State Analysis Time Periods ... NO

Analysis Options

Start Analysis On ..... Apr 27, 2020 00:00:00
End Analysis On ..... Apr 28, 2020 00:00:00
Start Reporting On ..... Apr 27, 2020 00:00:00
Antecedent Dry Days ..... 0 days
Runoff (Dry Weather) Time Step ..... 0 01:00:00 days hh:mm:ss
Runoff (Wet Weather) Time Step ..... 0 00:05:00 days hh:mm:ss
Reporting Time Step ..... 0 00:05:00 days hh:mm:ss
Routing Time Step ..... 30 seconds

Number of Elements

	Qty
Rain Gages	1
Subbasins	361
Nodes	866
Junctions	809
Outfalls	56
Flow Diversions	0
Inlets	0
Storage Nodes	1
Links	914
Channels	93
Pipes	821
Pumps	0
Orifices	0
Weirs	0
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (mm)	Rainfall Distribution
1		Time Series	2YR	Cumulative	mm	None	None	2	70.00	South Africa 24-hr, Type 2

Subbasin Summary

SN	Subbasin ID	Area	Impervious Area	Weighted Curve Number	Average Slope	Equivalent Width	Impervious Area Manning's Roughness	Pervious Area Manning's Roughness	Total Rainfall	Total Infiltration	Total Runoff	Total Runoff Volume	Peak Runoff	Time of Concentration
		(ha)	(%)		(%)	(m)			(mm)	(mm)	(mm)	(ha-mm)	(cms)	(days hh:mm:ss)
1	CE_05	2.02	55.00	82.00	1.3000	150.00	0.1000	0.3000	69.99	13.9650	51.47	103.76	0.20	0 01:35:29
2	CE_10	0.44	50.00	83.00	0.9000	150.00	0.1000	0.3000	69.99	14.9210	51.23	22.75	0.07	0 00:45:49
3	CE_15	1.19	10.00	86.00	1.4000	150.00	0.1000	0.3000	69.99	23.3930	40.01	47.61	0.08	0 01:43:10
4	CE_20	1.04	60.00	81.00	1.5000	150.00	0.1000	0.3000	69.99	12.8730	53.37	55.45	0.14	0 00:57:16
5	CE01	0.19	90.00	92.00	2.6000	76.00	0.1000	0.3000	69.99	1.6790	66.18	12.64	0.04	0 00:22:14
6	CE02	0.30	90.00	92.00	1.2000	150.00	0.1000	0.3000	69.99	1.6790	66.13	19.64	0.06	0 00:24:18
7	CE03	2.06	60.00	81.00	1.4000	150.00	0.1000	0.3000	69.99	12.8730	52.81	108.68	0.22	0 01:28:06
8	CE04	0.21	90.00	92.00	1.8000	150.00	0.1000	0.3000	69.99	1.6790	66.30	14.19	0.05	0 00:17:40
9	CE06	0.72	90.00	92.00	2.0000	150.00	0.1000	0.3000	69.99	1.6790	65.86	47.42	0.14	0 00:35:28
10	CE07	1.80	60.00	81.00	1.7000	150.00	0.1000	0.3000	69.99	12.8730	53.02	95.22	0.21	0 01:16:35
11	CE08	0.72	90.00	92.00	0.6000	150.00	0.1000	0.3000	69.99	1.6790	65.49	46.89	0.12	0 00:50:44
12	CE09	0.51	50.00	83.00	0.9000	150.00	0.1000	0.3000	69.99	14.9210	51.17	25.84	0.07	0 00:49:30
13	CE11	0.40	50.00	83.00	0.9000	150.00	0.1000	0.3000	69.99	14.9210	51.27	20.71	0.06	0 00:43:17
14	CE12	0.70	90.00	92.00	1.4000	150.00	0.1000	0.3000	69.99	1.6790	65.78	45.98	0.13	0 00:38:47
15	CE13	0.77	50.00	83.00	2.6000	150.00	0.1000	0.3000	69.99	14.9210	51.22	39.44	0.11	0 00:46:22
16	CE14	0.47	50.00	83.00	1.4000	133.20	0.1000	0.3000	69.99	14.9210	51.25	24.24	0.07	0 00:44:45
17	CE16	1.03	60.00	81.00	2.3000	150.00	0.1000	0.3000	69.99	12.8730	53.50	55.11	0.15	0 00:50:06
18	CE17	1.23	60.00	81.00	1.4000	150.00	0.1000	0.3000	69.99	12.8730	53.24	65.37	0.16	0 01:04:37
19	CE18	0.86	60.00	81.00	2.5000	150.00	0.1000	0.3000	69.99	12.8730	53.62	45.85	0.13	0 00:43:42
20	CE19	0.61	50.00	83.00	2.1000	150.00	0.1000	0.3000	69.99	14.9210	51.28	31.28	0.09	0 00:42:59
21	CE21	1.05	50.00	83.00	0.8000	150.00	0.1000	0.3000	69.99	14.9210	50.64	53.28	0.12	0 01:19:39
22	CE22	0.10	90.00	92.00	0.7000	138.00	0.1000	0.3000	69.99	1.6790	66.35	6.30	0.02	0 00:15:09
23	CE23	3.77	10.00	86.00	1.0000	150.00	0.1000	0.3000	69.99	23.3930	36.89	138.97	0.12	0 03:47:51
24	CG04	0.86	50.00	83.00	3.4000	150.00	0.1000	0.3000	69.99	14.9210	51.23	44.16	0.13	0 00:45:47
25	CG05	0.25	50.00	83.00	10.9000	110.00	0.1000	0.3000	69.99	14.9210	51.69	12.71	0.04	0 00:18:19
26	CG06	0.97	50.00	83.00	5.1000	150.00	0.1000	0.3000	69.99	14.9210	51.27	49.73	0.15	0 00:43:31
27	CGC01	0.32	50.00	83.00	3.5000	102.60	0.1000	0.3000	69.99	14.9210	51.48	16.63	0.05	0 00:31:38
28	CGC02	0.86	50.00	83.00	2.7000	150.00	0.1000	0.3000	69.99	14.9210	51.17	44.16	0.13	0 00:49:06
29	CGC-02	1.12	50.00	83.00	20.0000	150.00	0.1000	0.3000	69.99	14.9210	51.48	57.40	0.19	0 00:31:24
30	CGC03	0.32	50.00	83.00	6.8000	118.00	0.1000	0.3000	69.99	14.9210	51.61	16.31	0.06	0 00:23:31
31	GE_10	0.47	50.00	83.00	1.0000	150.00	0.1000	0.3000	69.99	14.9210	51.23	23.82	0.07	0 00:45:38
32	GE_15	0.81	90.00	92.00	1.1000	150.00	0.1000	0.3000	69.99	1.6790	65.61	53.21	0.14	0 00:45:34
33	GE_20	2.23	50.00	83.00	0.9000	150.00	0.1000	0.3000	69.99	14.9210	49.92	111.46	0.19	0 02:00:46
34	GE_25	1.13	50.00	83.00	0.3000	150.00	0.1000	0.3000	69.99	14.9210	50.08	56.59	0.10	0 01:51:35
35	GE_26	0.38	90.00	92.00	0.4000	150.00	0.1000	0.3000	69.99	1.6790	65.77	24.99	0.07	0 00:39:10
36	GE_27	0.74	50.00	83.00	1.7000	150.00	0.1000	0.3000	69.99	14.9210	51.13	37.74	0.11	0 00:51:21
37	GE_28	0.71	50.00	83.00	1.6000	88.20	0.1000	0.3000	69.99	14.9210	50.81	36.02	0.09	0 01:10:13
38	GE_30	0.25	90.00	92.00	0.7000	134.00	0.1000	0.3000	69.99	1.6790	66.06	16.32	0.05	0 00:27:22
39	GE_35	1.58	50.00	83.00	0.3000	150.00	0.1000	0.3000	69.99	14.9210	49.63	78.51	0.12	0 02:16:33
40	GE_40	0.68	50.00	83.00	0.4000	150.00	0.1000	0.3000	69.99	14.9210	50.72	34.49	0.08	0 01:15:28
41	GE01	1.56	50.00	83.00	0.5000	150.00	0.1000	0.3000	69.99	14.9210	50.00	77.81	0.14	0 01:55:59
42	GE02	0.87	50.00	83.00	0.8000	150.00	0.1000	0.3000	69.99	14.9210	50.79	44.24	0.11	0 01:11:07
43	GE03.0	1.24	55.00	82.00	0.7000	150.00	0.1000	0.3000	69.99	13.9650	51.64	63.98	0.14	0 01:25:51
44	GE03.1	0.29	90.00	92.00	0.8000	150.00	0.1000	0.3000	69.99	1.6790	66.07	18.83	0.06	0 00:26:46
45	GE04	1.97	50.00	83.00	1.2000	150.00	0.1000	0.3000	69.99	14.9210	50.24	99.12	0.19	0 01:42:51
46	GE05	1.37	50.00	83.00	1.6000	150.00	0.1000	0.3000	69.99	14.9210	50.71	69.47	0.16	0 01:15:48
47	GE06	0.24	90.00	92.00	1.8000	150.00	0.1000	0.3000	69.99	1.6790	66.26	15.97	0.05	0 00:18:59
48	GE07.0	0.29	90.00	92.00	1.0000	150.00	0.1000	0.3000	69.99	1.6790	66.11	19.11	0.06	0 00:25:15
49	GE07.1	0.29	90.00	92.00	1.0000	150.00	0.1000	0.3000	69.99	1.6790	66.11	19.11	0.06	0 00:25:15
50	GE08	1.56	50.00	83.00	0.8000	150.00	0.1000	0.3000	69.99	14.9210	50.27	78.33	0.15	0 01:40:49
51	GE09	1.13	50.00	83.00	0.7000	150.00	0.1000	0.3000	69.99	14.9210	50.53	56.94	0.12	0 01:26:24
52	GE11	0.51	50.00	83.00	1.1000	150.00	0.1000	0.3000	69.99	14.9210	51.22	25.86	0.08	0 00:46:36
53	GE12	0.25	50.00	83.00	1.4000	146.00	0.1000	0.3000	69.99	14.9210	51.52	12.88	0.04	0 00:28:53
54	GE13	0.10	90.00	92.00	1.7000	150.00	0.1000	0.3000	69.99	1.6790	66.43	6.84	0.02	0 00:11:35
55	GE14	1.45	50.00	83.00	1.1000	150.00	0.1000	0.3000	69.99	14.9210	50.50	73.43	0.16	0 01:27:54
56	GE16	2.90	10.00	86.00	0.2000	150.00	0.1000	0.3000	69.99	23.3930	34.23	99.40	0.07	0 05:15:54
57	GE19	0.22	90.00	92.00	0.4000	150.00	0.1000	0.3000	69.99	1.6790	66.04	14.46	0.04	0 00:28:08
58	GE21	1.32	50.00	83.00	0.6000	150.00	0.1000	0.3000	69.99	14.9210	50.29	66.59	0.13	0 01:39:40
59	GE22	0.25	90.00	92.00	1.0000	150.00	0.1000	0.3000	69.99	1.6790	66.17	16.34	0.05	0 00:22:59
60	GE23	2.01	50.00	83.00	0.5000	150.00	0.1000	0.3000	69.99	14.9210	49.65	99.80	0.16	0 02:15:15
61	GE24	0.61	50.00	83.00	0.8000	150.00	0.1000	0.3000	69.99	14.9210	51.03	30.93	0.08	0 00:57:12
62	GE29	0.27	90.00	92.00	0.7000	144.00	0.1000	0.3000	69.99	1.6790	66.04	18.10	0.05	0 00:27:53
63	GE31	0.45	50.00	83.00	0.6000	150.00	0.1000	0.3000	69.99	14.9210	51.12	23.05	0.06	0 00:52:14
64	GE32	0.45	50.00	83.00	0.6000	143.37	0.1000	0.3000	69.99	14.9210	51.09	23.04	0.06	0 00:53:40
65	GE33	1.08	50.00	83.00	0.3000	150.00	0.1000	0.3000	69.99	14.9210	50.14	54.10	0.10	0 01:48:32
66	GE34	0.33	90.00	92.00	0.3000	150.00	0.1000	0.3000	69.99	1.6790	65.76	21.96	0.06	0 00:39:31
67	GE36	0.33	90.00	92.00	0.3000	150.00	0.1000	0.3000	69.99	1.6790	65.76	21.90	0.06	0 00:39:27
68	GE37	0.43	50.00	83.00	1.3000	71.88	0.1000	0.3000	69.99	14.9210	50.93	22.10	0.06	0 01:02:56
69	GE38	0.71	50.00	83.00	0.6000	150.00	0.1000	0.3000	69.99	14.9210	50.83	36.29	0.09	0 01:08:48
70	GE39	1.00	50.00	83.00	0.2000	150.00	0.1000	0.3000	69.99	14.9210	49.99	49.84	0.09	0 01:56:54
71	GE41	0.54	50.00	83.00	0.4000	150.00	0.1000	0.3000	69.99	14.9210	50.89	27.33	0.07	0 01:05:30
72	GE42	1.19	50.00	83.00	0.3000	150.00	0.1000	0.3000	69.99	14.9210	50.02	59.57	0.11	0 01:55:10
73	GE43	1.21	50.00	83.00	0.3000	150.00	0.1000	0.3000	69.99	14.9210	50.00	60.45	0.11	0 01:56:12
74	GE44	0.24	90.00	92.00	2.0000	150.00	0.1000	0.3000	69.99	1.6790	66.28	16.04	0.05	0 00:18:26
75	GEC-04	3.61	50.00	83.00	0.8000	150.00	0.1000	0.3000	69.99	14.9210	49.04	177.00	0.24	0 02:46:53
76	LE_05	0.21	90.00	92.00	2.0000	150.00	0.1000	0.3000	69.99	1.6790	66.31	14.12	0.05	0 00:17:04
77	LE_10	0.13	90.00	92.00	1.4000	70.00	0.1000	0.3000	69.99	1.6790	66.18	8.74	0.03	0 00:22:32
78	LE_15	1.02	55.00	82.00	1.2000	150.00	0.1000	0.3000	69.99	13.9650	52.00	53.15	0.13	0 01:05:04
79	LE_20	0.58	50.00	83.00	0.4000	150.00	0.1000	0.3000	69.99	14.9210	50.83	29.63	0.07	0 01:08:49
80	LE_25	0.45	50.00	83.00	0.6000	142.20	0.1000	0.3000	69.99	14.9210	51.09	23.19	0.06	0 00:54:09
81	LE_30	0.48	50.00	83.00	0.8000	150.00	0.1000	0.3000	69.99	14.9210	51.16	24.66	0.07	0 00:49:52
82	LE_35	0.35	50.00	83.00	0.5000	150.00	0.1000	0.3000	69.99	14.9210	51.20	17.87	0.05	0 00:47:18
83	LE_40	0.31	50.00	83.00	3.1000	128.00	0.1000	0.3000	69.99	14.9210	51.54	16.08	0.05	0 00:28:08
84	LE_45	0.61	50.00	83.00	1.1000	150.00	0.1000	0.3000	69.99	14.9210	51.12	31.38	0.09	0 00:52:24
85	LE_50	0.19	90.00	92.00	0.5000	150.00	0.1000	0.3000	69.99	1.6790	66.15	12.24	0.04	0 00:23:47
86	LE_55	0.17	50.00	83.00	6.8000	88.00	0.1000	0.3000	69.99	14.9210	51.67	8.84	0.03	0 00:19:24
87	LE_60	0.53	50.00	83.00	2.4000	150.00	0.1000	0.3000	69.99	14.9210	51.37	27.02	0.08	0 00:37:47

Subbasin Summary

SN	Subbasin ID	Area	Impervious Area	Weighted Curve Number	Average Slope	Equivalent Width	Impervious Area Manning's Roughness	Pervious Area Manning's Roughness	Total Rainfall	Total Infiltration	Total Runoff	Total Runoff Volume	Peak Runoff	Time of Concentration
		(ha)	(%)		(%)	(m)			(mm)	(mm)	(mm)	(ha-mm)	(cms)	(days hh:mm:ss)
88	LE_65	0.13	90.00	92.00	0.9000	108.00	0.1000	0.3000	69.99	1.6790	66.26	8.35	0.03	0 00:19:17
89	LE_70	0.07	90.00	92.00	2.4000	84.00	0.1000	0.3000	69.99	1.6790	66.42	4.58	0.01	0 00:11:38
90	LE_80	2.38	10.00	86.00	0.4000	150.00	0.1000	0.3000	69.99	23.3930	36.90	87.71	0.08	0 03:47:33
91	LE01	0.16	90.00	92.00	2.9000	140.00	0.1000	0.3000	69.99	1.6790	66.39	10.82	0.03	0 00:13:33
92	LE02	0.49	50.00	83.00	2.6000	109.20	0.1000	0.3000	69.99	14.9210	51.28	25.33	0.08	0 00:42:59
93	LE03	0.67	50.00	83.00	1.5000	117.00	0.1000	0.3000	69.99	14.9210	51.01	34.28	0.09	0 00:58:30
94	LE04	0.62	90.00	92.00	0.8000	150.00	0.1000	0.3000	69.99	1.6790	65.68	40.85	0.11	0 00:42:46
95	LE06	0.30	50.00	83.00	2.8000	150.00	0.1000	0.3000	69.99	14.9210	51.58	15.27	0.05	0 00:25:33
96	LE07	0.73	50.00	83.00	3.0000	149.40	0.1000	0.3000	69.99	14.9210	51.28	37.33	0.11	0 00:43:03
97	LE08	0.18	90.00	92.00	2.2000	138.00	0.1000	0.3000	69.99	1.6790	66.35	11.61	0.04	0 00:15:30
98	LE09	1.23	50.00	83.00	2.0000	150.00	0.1000	0.3000	69.99	14.9210	50.87	62.47	0.16	0 01:06:23
99	LE11	0.26	90.00	92.00	1.5000	150.00	0.1000	0.3000	69.99	1.6790	66.22	17.08	0.05	0 00:20:53
100	LE12	0.66	50.00	83.00	1.1000	150.00	0.1000	0.3000	69.99	14.9210	51.07	33.91	0.09	0 00:54:55
101	LE13	0.66	50.00	83.00	1.7000	150.00	0.1000	0.3000	69.99	14.9210	51.19	33.74	0.10	0 00:47:59
102	LE14	1.62	50.00	83.00	1.3000	150.00	0.1000	0.3000	69.99	14.9210	50.48	81.77	0.17	0 01:29:12
103	LE16	1.41	30.00	85.00	0.9000	150.00	0.1000	0.3000	69.99	19.1270	45.09	63.45	0.12	0 01:52:01
104	LE17	0.27	50.00	83.00	0.7000	140.00	0.1000	0.3000	69.99	14.9210	51.37	13.72	0.04	0 00:37:57
105	LE18	0.94	50.00	83.00	1.0000	150.00	0.1000	0.3000	69.99	14.9210	50.82	47.67	0.12	0 01:09:32
106	LE19	0.86	55.00	82.00	0.7000	146.00	0.1000	0.3000	69.99	13.9650	51.92	44.65	0.11	0 01:10:05
107	LE21	0.32	50.00	83.00	0.9000	99.00	0.1000	0.3000	69.99	14.9210	51.20	16.13	0.05	0 00:47:51
108	LE22	0.52	50.00	83.00	0.7000	120.00	0.1000	0.3000	69.99	14.9210	50.95	26.49	0.07	0 01:02:06
109	LE23	0.45	50.00	83.00	0.6000	164.00	0.1000	0.3000	69.99	14.9210	51.17	22.87	0.07	0 00:49:15
110	LE24	0.37	50.00	83.00	0.7000	115.20	0.1000	0.3000	69.99	14.9210	51.13	18.66	0.05	0 00:51:28
111	LE26	0.33	50.00	83.00	0.7000	152.00	0.1000	0.3000	69.99	14.9210	51.32	16.68	0.05	0 00:40:39
112	LE27	0.59	50.00	83.00	1.0000	150.00	0.1000	0.3000	69.99	14.9210	51.11	30.10	0.08	0 00:52:36
113	LE28	0.12	90.00	92.00	0.8000	126.00	0.1000	0.3000	69.99	1.6790	66.31	7.63	0.02	0 00:17:14
114	LE29	0.13	90.00	92.00	1.7000	116.00	0.1000	0.3000	69.99	1.6790	66.35	8.36	0.03	0 00:15:16
115	LE31	0.58	50.00	83.00	0.5000	150.00	0.1000	0.3000	69.99	14.9210	50.92	29.33	0.07	0 01:03:53
116	LE32	0.10	50.00	83.00	0.5000	114.00	0.1000	0.3000	69.99	14.9210	51.57	5.00	0.02	0 00:25:52
117	LE33	0.45	50.00	83.00	0.5000	135.00	0.1000	0.3000	69.99	14.9210	51.01	22.90	0.06	0 00:58:37
118	LE34	0.37	50.00	83.00	0.5000	112.00	0.1000	0.3000	69.99	14.9210	51.02	18.77	0.05	0 00:58:11
119	LE36	0.20	90.00	92.00	0.5000	150.00	0.1000	0.3000	69.99	1.6790	66.13	12.89	0.04	0 00:24:33
120	LE37	0.33	50.00	83.00	1.4000	144.00	0.1000	0.3000	69.99	14.9210	51.43	17.12	0.05	0 00:34:36
121	LE38	0.35	50.00	83.00	1.3000	152.00	0.1000	0.3000	69.99	14.9210	51.41	18.20	0.06	0 00:35:32
122	LE39	0.46	50.00	83.00	2.3000	150.00	0.1000	0.3000	69.99	14.9210	51.41	23.85	0.07	0 00:35:30
123	LE41	0.31	50.00	83.00	1.4000	144.00	0.1000	0.3000	69.99	14.9210	51.45	15.85	0.05	0 00:33:01
124	LE42	0.28	50.00	83.00	2.0000	88.20	0.1000	0.3000	69.99	14.9210	51.37	14.54	0.04	0 00:37:50
125	LE43	0.82	50.00	83.00	0.8000	150.00	0.1000	0.3000	69.99	14.9210	50.84	41.63	0.10	0 01:08:32
126	LE44	0.58	50.00	83.00	1.0000	150.00	0.1000	0.3000	69.99	14.9210	51.12	29.50	0.08	0 00:51:57
127	LE46	0.17	50.00	83.00	1.9000	104.00	0.1000	0.3000	69.99	14.9210	51.58	8.82	0.03	0 00:25:44
128	LE47	0.16	50.00	83.00	1.9000	108.00	0.1000	0.3000	69.99	14.9210	51.60	8.31	0.03	0 00:24:15
129	LE48	0.77	50.00	83.00	3.6000	150.00	0.1000	0.3000	69.99	14.9210	51.29	39.65	0.12	0 00:42:09
130	LE49	1.26	50.00	83.00	1.4000	150.00	0.1000	0.3000	69.99	14.9210	50.73	63.71	0.15	0 01:14:53
131	LE51	0.09	90.00	92.00	0.4000	150.00	0.1000	0.3000	69.99	1.6790	66.33	5.70	0.02	0 00:16:03
132	LE52	0.11	90.00	92.00	0.7000	150.00	0.1000	0.3000	69.99	1.6790	66.34	7.36	0.02	0 00:15:49
133	LE53	0.31	50.00	83.00	5.9000	150.00	0.1000	0.3000	69.99	14.9210	51.65	15.75	0.05	0 00:20:48
134	LE54	0.56	50.00	83.00	6.0000	180.00	0.1000	0.3000	69.99	14.9210	51.56	28.62	0.10	0 00:26:34
135	LE56	0.30	50.00	83.00	4.2000	142.00	0.1000	0.3000	69.99	14.9210	51.61	15.33	0.05	0 00:23:26
136	LE57	0.37	50.00	83.00	3.5000	116.00	0.1000	0.3000	69.99	14.9210	51.48	18.84	0.06	0 00:31:40
137	LE58	1.78	30.00	85.00	0.8000	150.00	0.1000	0.3000	69.99	19.1270	44.68	79.31	0.13	0 02:13:24
138	LE59	0.87	50.00	83.00	2.3000	150.00	0.1000	0.3000	69.99	14.9210	51.12	44.68	0.12	0 00:51:55
139	LE61	0.10	90.00	92.00	1.9000	52.00	0.1000	0.3000	69.99	1.6790	66.23	6.49	0.02	0 00:20:33
140	LE62	0.23	50.00	83.00	6.9000	129.60	0.1000	0.3000	69.99	14.9210	51.68	12.09	0.04	0 00:18:29
141	LE63	0.10	90.00	92.00	7.1000	100.80	0.1000	0.3000	69.99	1.6790	66.44	6.38	0.02	0 00:09:11
142	LE64	0.26	50.00	83.00	4.1000	131.40	0.1000	0.3000	69.99	14.9210	51.62	13.37	0.05	0 00:22:46
143	LE66	0.22	50.00	83.00	5.0000	150.00	0.1000	0.3000	69.99	14.9210	51.69	11.11	0.04	0 00:17:43
144	LE67	0.16	90.00	92.00	4.8000	126.00	0.1000	0.3000	69.99	1.6790	66.41	10.76	0.03	0 00:12:22
145	LE68	0.33	50.00	83.00	4.9000	150.00	0.1000	0.3000	69.99	14.9210	51.62	16.98	0.06	0 00:23:01
146	LE69	0.42	50.00	83.00	5.5000	150.00	0.1000	0.3000	69.99	14.9210	51.57	21.87	0.07	0 00:25:53
147	LE71	0.63	50.00	83.00	4.5000	150.00	0.1000	0.3000	69.99	14.9210	51.42	32.19	0.10	0 00:34:44
148	LE72	0.23	90.00	92.00	1.1000	150.00	0.1000	0.3000	69.99	1.6790	66.21	15.16	0.05	0 00:21:20
149	LE73	0.59	50.00	83.00	2.2000	150.00	0.1000	0.3000	69.99	14.9210	51.31	30.22	0.09	0 00:41:31
150	LE76	2.62	30.00	85.00	0.8000	150.00	0.1000	0.3000	69.99	19.1270	43.96	115.16	0.16	0 02:48:31
151	LE77	0.58	10.00	86.00	0.9000	150.00	0.1000	0.3000	69.99	23.3930	40.57	23.41	0.05	0 01:16:17
152	LE78	0.70	10.00	86.00	0.9000	150.00	0.1000	0.3000	69.99	23.3930	40.38	28.26	0.05	0 01:25:40
153	LE79	1.91	10.00	86.00	1.2000	150.00	0.1000	0.3000	69.99	23.3930	39.11	74.58	0.09	0 02:23:23
154	LE81	1.16	10.00	86.00	1.2000	117.60	0.1000	0.3000	69.99	23.3930	39.57	46.05	0.06	0 02:03:23
155	PP_10	0.77	10.00	86.00	0.9000	84.80	0.1000	0.3000	69.99	23.3930	39.47	30.32	0.04	0 02:07:32
156	PP_15	0.48	50.00	83.00	4.4000	150.00	0.1000	0.3000	69.99	14.9210	51.51	24.67	0.08	0 00:29:47
157	PP_20	4.96	10.00	86.00	1.4000	150.00	0.1000	0.3000	69.99	23.3930	36.46	180.74	0.16	0 04:02:54
158	PP_25	0.41	50.00	83.00	0.7000	146.00	0.1000	0.3000	69.99	14.9210	51.20	20.89	0.06	0 00:47:44
159	PP_35	0.65	50.00	83.00	0.9000	116.00	0.1000	0.3000	69.99	14.9210	50.86	33.11	0.08	0 01:07:15
160	PP_40	0.10	50.00	92.00	0.7000	138.00	0.1000	0.3000	69.99	8.3940	58.19	5.53	0.02	0 00:20:35
161	PP_45	0.16	90.00	92.00	1.7000	116.00	0.1000	0.3000	69.99	1.6790	66.29	10.81	0.03	0 00:17:49
162	PP_50	0.48	50.00	83.00	2.6000	154.00	0.1000	0.3000	69.99	14.9210	51.43	24.48	0.08	0 00:34:12
163	PP_55	0.78	50.00	83.00	9.4000	106.00	0.1000	0.3000	69.99	14.9210	51.35	40.15	0.12	0 00:39:12
164	PP01	1.82	30.00	85.00	0.6000	150.00	0.1000	0.3000	69.99	19.1270	44.39	80.97	0.13	0 02:27:49
165	PP02	1.28	50.00	83.00	3.3000	150.00	0.1000	0.3000	69.99	14.9210	51.01	65.14	0.17	0 00:58:29
166	PP03	1.40	40.00	84.00	1.6000	150.00	0.1000	0.3000	69.99	17.1640	47.95	67.27	0.15	0 01:25:47
167	PP04	0.13	90.00	92.00	1.6000	128.00	0.1000	0.3000	69.99	1.6790	66.36	8.76	0.03	0 00:15:04
168	PP05	0.30	50.00	83.00	2.9000	138.00	0.1000	0.3000	69.99	14.9210	51.56	15.42	0.05	0 00:26:45
169	PP06	0.24	50.00	83.00	2.9000	136.00	0.1000	0.3000	69.99	14.9210	51.61	12.59	0.04	0 00:23:53
170	PP07	0.59	50.00	83.00	0.5000	150.00	0.1000	0.3000	69.99	14.9210	50.90	29.93	0.08	0 01:04:41
171	PP08	0.42	50.00	83.00	0.8000	118.80	0.1000	0.3000	69.99	14.9210	51.11	21.26	0.06	0 00:52:30
172	PP09	0.36	50.00	83.00	0.7000	127.80	0.1000	0.3000	69.99	14.9210	51.19	18.53	0.05	0 00:48:07
173	PP11	0.73	50.00	83.00	0.5000	150.00	0.1000	0.3000	69.99	14.9210	50.75	36.95	0.09	0 01:13:32
174	PP12	0.07	90.00	92.00	6.3000	64.00	0.1000	0.3000	69.99	1.6790	66.44	4.52	0.01	0 00:10:10

Subbasin Summary

SN	Subbasin ID	Area	Impervious Area	Weighted Curve Number	Average Slope	Equivalent Width	Impervious Area Manning's Roughness	Pervious Area Manning's Roughness	Total Rainfall	Total Infiltration	Total Runoff	Total Runoff Volume	Peak Runoff	Time of Concentration
		(ha)	(%)		(%)	(m)			(mm)	(mm)	(mm)	(ha-mm)	(cms)	(days hh:mm:ss)
175	PP13	0.05	90.00	92.00	4.0000	50.00	0.1000	0.3000	69.99	1.6790	66.43	3.12	0.01	0 00:10:49
176	PP14	0.67	50.00	83.00	3.2000	150.00	0.1000	0.3000	69.99	14.9210	51.33	34.39	0.10	0 00:40:05
177	PP16	0.67	50.00	83.00	4.8000	150.00	0.1000	0.3000	69.99	14.9210	51.41	34.45	0.11	0 00:35:29
178	PP17	0.36	50.00	83.00	5.9000	136.00	0.1000	0.3000	69.99	14.9210	51.60	18.37	0.06	0 00:24:12
179	PP18	0.95	30.00	85.00	1.2000	150.00	0.1000	0.3000	69.99	19.1270	45.67	43.24	0.10	0 01:21:01
180	PP19	1.32	50.00	83.00	2.4000	150.00	0.1000	0.3000	69.99	14.9210	50.89	67.22	0.17	0 01:05:40
181	PP21	0.70	50.00	83.00	4.0000	150.00	0.1000	0.3000	69.99	14.9210	51.36	36.10	0.11	0 00:38:35
182	PP22	1.71	20.00	85.00	0.5000	150.00	0.1000	0.3000	69.99	21.8590	40.81	69.86	0.10	0 02:42:51
183	PP23	0.40	50.00	83.00	0.6000	150.00	0.1000	0.3000	69.99	14.9210	51.18	20.68	0.06	0 00:48:53
184	PP24	1.09	50.00	83.00	0.6000	150.00	0.1000	0.3000	69.99	14.9210	50.49	54.83	0.12	0 01:28:30
185	PP26	1.19	50.00	83.00	1.3000	150.00	0.1000	0.3000	69.99	14.9210	50.74	60.43	0.14	0 01:14:10
186	PP27	0.58	50.00	83.00	0.7000	148.00	0.1000	0.3000	69.99	14.9210	51.01	29.48	0.08	0 00:58:21
187	PP28.0	0.58	50.00	83.00	1.5000	136.00	0.1000	0.3000	69.99	14.9210	51.18	29.58	0.08	0 00:48:50
188	PP28.1	0.28	50.00	83.00	2.7000	148.00	0.1000	0.3000	69.99	14.9210	51.58	14.50	0.05	0 00:25:14
189	PP29	0.33	50.00	83.00	2.7000	148.00	0.1000	0.3000	69.99	14.9210	51.54	17.21	0.06	0 00:28:00
190	PP31	0.79	30.00	85.00	0.7000	148.00	0.1000	0.3000	69.99	19.1270	45.57	36.18	0.08	0 01:26:23
191	PP32	0.88	30.00	85.00	0.7000	148.00	0.1000	0.3000	69.99	19.1270	45.46	40.19	0.08	0 01:32:08
192	PP33	0.32	50.00	83.00	0.7000	133.20	0.1000	0.3000	69.99	14.9210	51.27	16.25	0.05	0 00:43:20
193	PP34	0.93	30.00	85.00	0.5000	150.00	0.1000	0.3000	69.99	19.1270	45.24	42.21	0.08	0 01:44:25
194	PP36	0.48	50.00	83.00	0.5000	150.00	0.1000	0.3000	69.99	14.9210	51.04	24.24	0.07	0 00:56:55
195	PP37	1.35	30.00	85.00	1.5000	150.00	0.1000	0.3000	69.99	19.1270	45.43	61.42	0.13	0 01:33:49
196	PP38	1.32	30.00	85.00	1.6000	150.00	0.1000	0.3000	69.99	19.1270	45.49	60.22	0.13	0 01:30:53
197	PP39	0.03	90.00	92.00	1.9000	54.00	0.1000	0.3000	69.99	1.6790	66.43	2.19	0.01	0 00:10:27
198	PP41	0.41	50.00	83.00	3.6000	122.00	0.1000	0.3000	69.99	14.9210	51.46	21.15	0.07	0 00:32:40
199	PP42	0.64	30.00	85.00	1.5000	120.60	0.1000	0.3000	69.99	19.1270	45.89	29.42	0.07	0 01:08:20
200	PP43	1.03	50.00	83.00	1.0000	150.00	0.1000	0.3000	69.99	14.9210	50.75	52.42	0.12	0 01:13:41
201	PP44	0.32	30.00	85.00	2.3000	88.00	0.1000	0.3000	69.99	19.1270	46.26	14.62	0.04	0 00:47:31
202	PP46	0.35	50.00	83.00	2.1000	96.00	0.1000	0.3000	69.99	14.9210	51.32	18.17	0.06	0 00:40:32
203	PP47	0.72	50.00	83.00	0.7000	150.00	0.1000	0.3000	69.99	14.9210	50.88	36.43	0.09	0 01:05:49
204	PP48	1.58	50.00	83.00	1.3000	150.00	0.1000	0.3000	69.99	14.9210	50.50	79.99	0.17	0 01:28:01
205	PP49	1.44	50.00	83.00	1.3000	150.00	0.1000	0.3000	69.99	14.9210	50.58	72.84	0.16	0 01:23:07
206	PP51	0.61	50.00	83.00	2.7000	150.00	0.1000	0.3000	69.99	14.9210	51.33	31.52	0.10	0 00:40:01
207	PP52	0.37	50.00	83.00	8.3000	144.00	0.1000	0.3000	69.99	14.9210	51.64	18.95	0.06	0 00:21:30
208	PP53	0.51	50.00	83.00	9.6000	104.00	0.1000	0.3000	69.99	14.9210	51.50	26.01	0.08	0 00:30:18
209	PP54	1.22	50.00	83.00	4.7000	154.00	0.1000	0.3000	69.99	14.9210	51.15	62.45	0.18	0 00:50:24
210	PPC-02	0.34	50.00	83.00	8.3000	86.40	0.1000	0.3000	69.99	14.9210	51.54	17.63	0.06	0 00:28:00
211	PPC-03	0.66	50.00	83.00	7.9000	150.00	0.1000	0.3000	69.99	14.9210	51.50	33.99	0.11	0 00:30:17
212	PPC-06	1.89	50.00	83.00	3.8000	150.00	0.1000	0.3000	69.99	14.9210	50.79	96.00	0.23	0 01:10:56
213	PPC-07	1.39	50.00	83.00	3.6000	150.00	0.1000	0.3000	69.99	14.9210	50.98	71.07	0.19	0 01:00:03
214	PPC-08	0.76	50.00	83.00	3.8000	150.00	0.1000	0.3000	69.99	14.9210	51.31	39.20	0.12	0 00:41:11
215	PPC-09	2.24	38.00	84.00	2.7000	150.00	0.1000	0.3000	69.99	17.7360	47.07	105.39	0.22	0 01:38:59
216	PPC-12	0.55	50.00	83.00	8.8000	122.40	0.1000	0.3000	69.99	14.9210	51.51	28.33	0.09	0 00:29:42
217	RM_05	0.09	90.00	92.00	0.7000	150.00	0.1000	0.3000	69.99	1.6790	66.38	5.84	0.02	0 00:13:46
218	RM_10	0.34	50.00	83.00	4.7000	120.00	0.1000	0.3000	69.99	14.9210	51.56	17.32	0.06	0 00:26:59
219	RM_15	0.26	50.00	83.00	0.5000	150.00	0.1000	0.3000	69.99	14.9210	51.35	13.14	0.04	0 00:39:16
220	RM_20	0.60	20.00	85.00	0.7000	120.00	0.1000	0.3000	69.99	21.8590	42.32	25.56	0.05	0 01:30:04
221	RM_25	0.27	50.00	83.00	0.8000	126.00	0.1000	0.3000	69.99	14.9210	51.35	13.71	0.04	0 00:38:50
222	RM_30	1.67	60.00	81.00	0.8000	150.00	0.1000	0.3000	69.99	12.8730	52.74	88.02	0.17	0 01:31:54
223	RM_35	1.49	55.00	82.00	4.6000	150.00	0.1000	0.3000	69.99	13.9650	52.19	77.61	0.21	0 00:54:27
224	RM01	0.25	90.00	92.00	1.5000	136.00	0.1000	0.3000	69.99	1.6790	66.20	16.61	0.05	0 00:21:47
225	RM02	0.11	90.00	92.00	2.4000	84.00	0.1000	0.3000	69.99	1.6790	66.36	6.97	0.02	0 00:14:58
226	RM03	0.13	90.00	92.00	0.8000	128.00	0.1000	0.3000	69.99	1.6790	66.27	8.88	0.03	0 00:18:43
227	RM04	0.39	50.00	83.00	0.7000	150.00	0.1000	0.3000	69.99	14.9210	51.24	19.73	0.06	0 00:45:21
228	RM06	0.45	50.00	83.00	2.7000	150.00	0.1000	0.3000	69.99	14.9210	51.45	23.00	0.07	0 00:33:05
229	RM07	0.07	90.00	92.00	2.0000	150.00	0.1000	0.3000	69.99	1.6790	66.44	4.92	0.02	0 00:09:03
230	RM08	0.92	50.00	83.00	5.3000	120.00	0.1000	0.3000	69.99	14.9210	51.20	47.10	0.14	0 00:47:38
231	RM09	0.18	90.00	92.00	5.3000	150.00	0.1000	0.3000	69.99	1.6790	66.43	12.02	0.04	0 00:11:33
232	RM11	0.08	90.00	92.00	4.0000	150.00	0.1000	0.3000	69.99	1.6790	66.44	5.58	0.02	0 00:07:56
233	RM12	0.20	90.00	92.00	9.3000	150.00	0.1000	0.3000	69.99	1.6790	66.43	13.35	0.04	0 00:10:24
234	RM13	0.35	50.00	83.00	0.7000	146.00	0.1000	0.3000	69.99	14.9210	51.27	17.79	0.05	0 00:43:18
235	RM14	0.46	50.00	83.00	0.6000	170.00	0.1000	0.3000	69.99	14.9210	51.17	23.69	0.07	0 00:49:13
236	RM16	0.34	90.00	92.00	0.4000	150.00	0.1000	0.3000	69.99	1.6790	65.83	22.19	0.06	0 00:36:27
237	RM17	0.72	50.00	83.00	2.4000	150.00	0.1000	0.3000	69.99	14.9210	51.24	36.68	0.11	0 00:45:28
238	RM18	0.99	50.00	83.00	1.1000	150.00	0.1000	0.3000	69.99	14.9210	50.81	50.46	0.12	0 01:09:55
239	RM19	1.16	50.00	83.00	0.4000	150.00	0.1000	0.3000	69.99	14.9210	50.22	58.35	0.11	0 01:44:05
240	RM21	1.10	50.00	83.00	1.0000	150.00	0.1000	0.3000	69.99	14.9210	50.70	55.97	0.13	0 01:16:41
241	RM22	0.40	50.00	83.00	3.0000	150.00	0.1000	0.3000	69.99	14.9210	51.51	20.45	0.07	0 00:29:51
242	RM23	0.38	50.00	83.00	1.2000	150.00	0.1000	0.3000	69.99	14.9210	51.36	19.52	0.06	0 00:38:17
243	RM24	0.24	50.00	83.00	0.7000	144.00	0.1000	0.3000	69.99	14.9210	51.42	12.39	0.04	0 00:35:05
244	RM26	0.22	90.00	92.00	2.3000	150.00	0.1000	0.3000	69.99	1.6790	66.32	14.59	0.05	0 00:16:42
245	RM27	1.40	60.00	81.00	2.3000	140.80	0.1000	0.3000	69.99	12.8730	53.27	74.53	0.18	0 01:02:33
246	RM28	0.45	50.00	83.00	0.8000	117.00	0.1000	0.3000	69.99	14.9210	51.06	23.03	0.06	0 00:55:37
247	RM29	0.87	50.00	83.00	0.4000	150.00	0.1000	0.3000	69.99	14.9210	50.51	43.79	0.09	0 01:27:19
248	RM31	1.85	50.00	83.00	0.8000	150.00	0.1000	0.3000	69.99	14.9210	50.08	92.84	0.17	0 01:51:54
249	RM32	0.47	50.00	83.00	0.6000	166.00	0.1000	0.3000	69.99	14.9210	51.15	23.94	0.07	0 00:50:15
250	RM33	2.28	60.00	81.00	1.4000	150.00	0.1000	0.3000	69.99	12.8730	52.71	120.17	0.23	0 01:33:41
251	RM34	0.65	60.00	81.00	2.7000	150.00	0.1000	0.3000	69.99	12.8730	53.76	34.84	0.11	0 00:36:10
252	UV_05	0.23	50.00	83.00	6.0000	134.00	0.1000	0.3000	69.99	14.9210	51.68	11.99	0.04	0 00:18:48
253	UV_10	1.90	50.00	83.00	3.4000	116.00	0.1000	0.3000	69.99	14.9210	50.54	95.97	0.21	0 01:25:48
254	UV_15	0.96	50.00	83.00	3.6000	150.00	0.1000	0.3000	69.99	14.9210	51.19	48.94	0.14	0 00:47:53
255	UV_20	0.13	90.00	92.00	1.9000	108.00	0.1000	0.3000	69.99	1.6790	66.34	8.62	0.03	0 00:15:42
256	UV_23	0.53	50.00	83.00	5.5000	150.00	0.1000	0.3000	69.99	14.9210	51.51	27.30	0.09	0 00:29:36
257	UV_25	1.04	50.00	83.00	1.2000	150.00	0.1000	0.3000	69.99	14.9210	50.81	52.79	0.13	0 01:10:00
258	UV_30	0.08	90.00	92.00	2.6000	78.00	0.1000	0.3000	69.99	1.6790	66.39	5.51	0.02	0 00:13:16
259	UV_35	0.34	50.00	83.00	0.7000	146.00	0.1000	0.3000	69.99	14.9210	51.28	17.59	0.05	0 00:43:00
260	UV_40	0.89	50.00	83.00	1.8000	150.00	0.1000	0.3000	69.99	14.9210	51.04	45.48	0.12	0 00:56:31
261	UV_45	1.64	50.00	83.00	2.5000	108.00	0.1000	0.3000	69.99	14.9210	50.46	82.91	0.18	0 01:30:03

Subbasin Summary

SN	Subbasin ID	Area	Impervious Area	Weighted Curve Number	Average Slope	Equivalent Width	Impervious Area Manning's Roughness	Pervious Area Manning's Roughness	Total Rainfall	Total Infiltration	Total Runoff	Total Runoff Volume	Peak Runoff	Time of Concentration
		(ha)	(%)		(%)	(m)			(mm)	(mm)	(mm)	(ha-mm)	(cms)	(days hh:mm:ss)
262	UV_55	0.46	50.00	83.00	6.5000	138.60	0.1000	0.3000	69.99	14.9210	51.55	23.71	0.08	0 00:27:07
263	UV_60	1.04	50.00	83.00	5.1000	150.00	0.1000	0.3000	69.99	14.9210	51.24	53.08	0.16	0 00:45:16
264	UV_65	0.45	50.00	83.00	5.8000	150.00	0.1000	0.3000	69.99	14.9210	51.56	23.41	0.08	0 00:26:33
265	UV_70	0.30	90.00	92.00	6.8000	150.00	0.1000	0.3000	69.99	1.6790	66.37	19.58	0.06	0 00:14:23
266	UV_75	0.22	50.00	83.00	2.3000	130.00	0.1000	0.3000	69.99	14.9210	51.60	11.09	0.04	0 00:24:23
267	UV_80	0.17	50.00	83.00	8.0000	90.00	0.1000	0.3000	69.99	14.9210	51.69	8.74	0.03	0 00:18:06
268	UV_85	0.11	50.00	83.00	1.2000	86.00	0.1000	0.3000	69.99	14.9210	51.59	5.52	0.02	0 00:24:59
269	UV_90	0.58	50.00	83.00	2.4000	150.00	0.1000	0.3000	69.99	14.9210	51.33	29.72	0.09	0 00:40:02
270	UV_95	0.52	50.00	83.00	2.8000	150.00	0.1000	0.3000	69.99	14.9210	51.41	26.53	0.08	0 00:35:40
271	UV01	0.35	50.00	83.00	1.5000	105.60	0.1000	0.3000	69.99	14.9210	51.30	17.90	0.05	0 00:41:59
272	UV02	0.35	50.00	83.00	2.3000	117.00	0.1000	0.3000	69.99	14.9210	51.42	18.00	0.06	0 00:34:48
273	UV03	0.04	90.00	92.00	1.6000	62.00	0.1000	0.3000	69.99	1.6790	66.41	2.86	0.01	0 00:11:52
274	UV04	0.13	90.00	92.00	6.1000	132.00	0.1000	0.3000	69.99	1.6790	66.44	8.64	0.03	0 00:09:48
275	UV06	0.35	50.00	83.00	6.3000	100.80	0.1000	0.3000	69.99	14.9210	51.53	18.24	0.06	0 00:28:19
276	UV07	1.45	20.00	85.00	1.8000	150.00	0.1000	0.3000	69.99	21.8590	42.13	60.95	0.11	0 01:40:15
277	UV08	1.38	20.00	85.00	1.1000	150.00	0.1000	0.3000	69.99	21.8590	41.87	57.86	0.10	0 01:53:03
278	UV09	1.77	50.00	83.00	3.7000	108.00	0.1000	0.3000	69.99	14.9210	50.58	89.32	0.20	0 01:23:36
279	UV11	1.89	50.00	83.00	4.3000	116.00	0.1000	0.3000	69.99	14.9210	50.64	95.46	0.22	0 01:19:37
280	UV12	0.82	50.00	83.00	4.1000	150.00	0.1000	0.3000	69.99	14.9210	51.30	42.01	0.13	0 00:41:58
281	UV13	0.59	50.00	83.00	5.0000	150.00	0.1000	0.3000	69.99	14.9210	51.46	30.47	0.10	0 00:32:33
282	UV14	0.33	50.00	83.00	3.0000	132.00	0.1000	0.3000	69.99	14.9210	51.53	16.90	0.06	0 00:28:44
283	UV16	0.12	90.00	92.00	0.7000	142.00	0.1000	0.3000	69.99	1.6790	66.31	8.09	0.03	0 00:17:18
284	UV17	0.13	90.00	92.00	0.8000	130.00	0.1000	0.3000	69.99	1.6790	66.29	8.42	0.03	0 00:17:57
285	UV18	0.14	90.00	92.00	0.6000	160.00	0.1000	0.3000	69.99	1.6790	66.28	9.21	0.03	0 00:18:15
286	UV19	0.12	90.00	92.00	1.7000	118.00	0.1000	0.3000	69.99	1.6790	66.36	8.03	0.03	0 00:14:45
287	UV21	1.09	50.00	83.00	3.7000	150.00	0.1000	0.3000	69.99	14.9210	51.13	55.63	0.16	0 00:51:20
288	UV23	0.96	50.00	83.00	3.4000	150.00	0.1000	0.3000	69.99	14.9210	51.18	48.88	0.14	0 00:48:41
289	UV24	0.99	50.00	83.00	1.9000	150.00	0.1000	0.3000	69.99	14.9210	51.00	50.39	0.13	0 00:59:10
290	UV26	0.96	50.00	83.00	0.5000	150.00	0.1000	0.3000	69.99	14.9210	50.52	48.40	0.10	0 01:26:42
291	UV27	0.42	50.00	83.00	1.5000	150.00	0.1000	0.3000	69.99	14.9210	51.37	21.42	0.07	0 00:37:51
292	UV28	0.45	50.00	83.00	1.4000	150.00	0.1000	0.3000	69.99	14.9210	51.32	23.25	0.07	0 00:40:37
293	UV29.0	0.76	50.00	83.00	2.5000	150.00	0.1000	0.3000	69.99	14.9210	51.22	38.87	0.11	0 00:46:31
294	UV29.1	0.48	50.00	83.00	2.4000	150.00	0.1000	0.3000	69.99	14.9210	51.41	24.73	0.08	0 00:35:49
295	UV31	0.10	90.00	92.00	0.7000	146.00	0.1000	0.3000	69.99	1.6790	66.36	6.37	0.02	0 00:14:44
296	UV32	0.07	90.00	92.00	1.0000	98.00	0.1000	0.3000	69.99	1.6790	66.38	4.58	0.01	0 00:13:48
297	UV33	0.11	90.00	92.00	0.5000	150.00	0.1000	0.3000	69.99	1.6790	66.30	7.49	0.02	0 00:17:41
298	UV34	0.29	50.00	83.00	0.6000	150.00	0.1000	0.3000	69.99	14.9210	51.34	14.73	0.04	0 00:39:49
299	UV36	0.66	50.00	83.00	1.8000	150.00	0.1000	0.3000	69.99	14.9210	51.21	33.80	0.10	0 00:47:12
300	UV37	0.83	50.00	83.00	3.6000	150.00	0.1000	0.3000	69.99	14.9210	51.26	42.34	0.13	0 00:43:52
301	UV38	1.67	50.00	83.00	1.4000	150.00	0.1000	0.3000	69.99	14.9210	50.48	84.41	0.18	0 01:28:55
302	UV39	1.56	50.00	83.00	1.3000	150.00	0.1000	0.3000	69.99	14.9210	50.52	78.55	0.17	0 01:27:03
303	UV41	0.92	50.00	83.00	1.5000	150.00	0.1000	0.3000	69.99	14.9210	50.97	47.09	0.12	0 01:01:01
304	UV42	0.12	90.00	92.00	1.0000	104.00	0.1000	0.3000	69.99	1.6790	66.27	8.02	0.03	0 00:18:39
305	UV43	0.16	90.00	92.00	0.8000	130.00	0.1000	0.3000	69.99	1.6790	66.23	10.40	0.03	0 00:20:24
306	UV44	0.17	90.00	92.00	0.7000	142.00	0.1000	0.3000	69.99	1.6790	66.21	11.32	0.04	0 00:21:12
307	UV46	1.48	50.00	83.00	1.5000	117.00	0.1000	0.3000	69.99	14.9210	50.39	74.63	0.15	0 01:34:00
308	UV47	1.50	50.00	83.00	1.4000	131.40	0.1000	0.3000	69.99	14.9210	50.46	75.49	0.16	0 01:30:03
309	UV48	0.51	50.00	83.00	2.2000	150.00	0.1000	0.3000	69.99	14.9210	51.37	26.09	0.08	0 00:37:59
310	UV49	0.57	50.00	83.00	5.5000	88.00	0.1000	0.3000	69.99	14.9210	51.29	29.28	0.09	0 00:42:38
311	UV50	0.45	50.00	83.00	2.4000	150.00	0.1000	0.3000	69.99	14.9210	51.43	23.04	0.07	0 00:34:19
312	UV51	0.49	50.00	83.00	1.7000	150.00	0.1000	0.3000	69.99	14.9210	51.33	25.30	0.08	0 00:40:19
313	UV52	0.25	50.00	83.00	2.2000	134.00	0.1000	0.3000	69.99	14.9210	51.56	13.04	0.04	0 00:26:45
314	UV53	0.40	50.00	83.00	3.1000	128.00	0.1000	0.3000	69.99	14.9210	51.46	20.69	0.07	0 00:32:45
315	UV54	1.63	55.00	82.00	2.0000	150.00	0.1000	0.3000	69.99	13.9650	51.85	84.62	0.20	0 01:13:55
316	UV56	0.37	50.00	83.00	7.3000	150.00	0.1000	0.3000	69.99	14.9210	51.63	19.26	0.07	0 00:22:01
317	UV57	0.64	50.00	83.00	2.3000	86.00	0.1000	0.3000	69.99	14.9210	50.98	32.58	0.09	0 01:00:04
318	UV58	1.03	50.00	83.00	4.9000	150.00	0.1000	0.3000	69.99	14.9210	51.23	52.97	0.15	0 00:45:46
319	UV59	0.24	50.00	83.00	8.6000	116.00	0.1000	0.3000	69.99	14.9210	51.68	12.56	0.04	0 00:18:55
320	UV61	0.39	50.00	83.00	11.9000	84.00	0.1000	0.3000	69.99	14.9210	51.54	20.26	0.07	0 00:27:47
321	UV62	0.77	50.00	83.00	2.1000	150.00	0.1000	0.3000	69.99	14.9210	51.17	39.25	0.11	0 00:49:19
322	UV63	1.22	50.00	83.00	6.5000	150.00	0.1000	0.3000	69.99	14.9210	51.22	62.54	0.18	0 00:46:27
323	UV64	0.08	90.00	92.00	1.7000	120.00	0.1000	0.3000	69.99	1.6790	66.42	5.51	0.02	0 00:11:38
324	UV66	1.11	50.00	83.00	7.9000	150.00	0.1000	0.3000	69.99	14.9210	51.31	56.80	0.17	0 00:41:18
325	UV67	0.74	50.00	83.00	1.7000	150.00	0.1000	0.3000	69.99	14.9210	51.13	37.89	0.11	0 00:51:29
326	UV68	0.53	50.00	83.00	2.1000	150.00	0.1000	0.3000	69.99	14.9210	51.34	27.16	0.08	0 00:39:28
327	UV69	0.52	50.00	83.00	5.0000	150.00	0.1000	0.3000	69.99	14.9210	51.50	26.94	0.09	0 00:30:13
328	UV71	0.04	90.00	92.00	10.5000	38.00	0.1000	0.3000	69.99	1.6790	66.44	2.39	0.01	0 00:08:08
329	UV72	0.96	50.00	83.00	3.0000	150.00	0.1000	0.3000	69.99	14.9210	51.15	49.00	0.14	0 00:50:39
330	UV73	0.42	50.00	83.00	1.7000	150.00	0.1000	0.3000	69.99	14.9210	51.39	21.43	0.07	0 00:36:27
331	UV74	0.81	50.00	83.00	1.0000	150.00	0.1000	0.3000	69.99	14.9210	50.92	40.99	0.11	0 01:03:26
332	UV76	0.40	50.00	83.00	1.6000	150.00	0.1000	0.3000	69.99	14.9210	51.39	20.76	0.06	0 00:36:26
333	UV77	0.44	50.00	83.00	3.8000	127.00	0.1000	0.3000	69.99	14.9210	51.46	22.54	0.07	0 00:32:36
334	UV78	0.26	50.00	83.00	4.5000	61.60	0.1000	0.3000	69.99	14.9210	51.42	13.37	0.04	0 00:34:58
335	UV79	0.25	50.00	83.00	6.2000	130.00	0.1000	0.3000	69.99	14.9210	51.67	13.02	0.04	0 00:19:55
336	UV81	0.42	50.00	83.00	48.0000	150.00	0.1000	0.3000	69.99	14.9210	51.74	21.78	0.08	0 00:13:27
337	UV82	0.41	50.00	83.00	1.6000	115.20	0.1000	0.3000	69.99	14.9210	51.28	20.82	0.06	0 00:42:48
338	UV83	0.23	50.00	83.00	0.8000	126.00	0.1000	0.3000	69.99	14.9210	51.42	11.57	0.04	0 00:35:03
339	UV84	0.10	90.00	92.00	1.3000	80.00	0.1000	0.3000	69.99	1.6790	66.29	6.63	0.02	0 00:18:00
340	UV86	0.10	50.00	83.00	1.1000	88.00	0.1000	0.3000	69.99	14.9210	51.61	4.95	0.02	0 00:23:42
341	UV87	0.40	50.00	83.00	0.6000	150.00	0.1000	0.3000	69.99	14.9210	51.19	20.22	0.06	0 00:48:14
342	UV88	0.30	50.00	83.00	2.6000	150.00	0.1000	0.3000	69.99	14.9210	51.57	15.26	0.05	0 00:26:08
343	UV89	0.06	90.00	92.00	2.2000	92.00	0.1000	0.3000	69.99	1.6790	66.43	4.19	0.01	0 00:10:43
344	UV91	0.13	90.00	92.00	7.5000	80.00	0.1000	0.3000	69.99	1.6790	66.40	8.90	0.03	0 00:12:41
345	UV92	0.55	50.00	83.00	3.0000	150.00	0.1000	0.3000	69.99	14.9210	51.40	28.01	0.09	0 00:36:06
346	UV93	0.44	50.00	83.00	1.8000	150.00	0.1000	0.3000	69.99	14.9210	51.39	22.56	0.07	0 00:36:58
347	UV94	0.40	50.00	83.00	2.2000	150.00	0.1000	0.3000	69.99	14.9210	51.46	20.48	0.07	0 00:32:49
348	UV96	0.38	50.00	83.00	8.9000	90.00	0.1000	0.3000	69.99	14.9210	51.53	19.43	0.06	0 00:28:22

Subbasin Summary

SN	Subbasin ID	Area	Impervious Area	Weighted Curve Number	Average Slope	Equivalent Width	Impervious Area Manning's Roughness	Pervious Area Manning's Roughness	Total Rainfall	Total Infiltration	Total Runoff	Total Runoff Volume	Peak Runoff	Time of Concentration
		(ha)	(%)		(%)	(m)			(mm)	(mm)	(mm)	(ha-mm)	(cms)	(days hh:mm:ss)
349	UVC-02	1.26	50.00	83.00	4.8000	150.00	0.1000	0.3000	69.99	14.9210	51.12	64.57	0.18	0 00:51:55
350	UVC-07	0.38	50.00	83.00	9.7000	150.00	0.1000	0.3000	69.99	14.9210	51.66	19.73	0.07	0 00:20:31
351	UVC-09	0.66	50.00	83.00	4.3000	150.00	0.1000	0.3000	69.99	14.9210	51.40	33.97	0.11	0 00:36:23
352	UVC-13	0.53	50.00	83.00	7.8000	150.00	0.1000	0.3000	69.99	14.9210	51.56	27.07	0.09	0 00:26:30
353	UVC-15	0.72	50.00	83.00	10.8000	117.00	0.1000	0.3000	69.99	14.9210	51.44	37.09	0.12	0 00:33:45
354	UVC-17	1.00	50.00	83.00	4.1000	150.00	0.1000	0.3000	69.99	14.9210	51.21	50.95	0.15	0 00:47:10
355	UVC-20	0.75	50.00	83.00	3.5000	150.00	0.1000	0.3000	69.99	14.9210	51.30	38.48	0.12	0 00:41:45
356	UVC-21	0.17	90.00	92.00	10.8000	130.00	0.1000	0.3000	69.99	1.6790	66.44	11.03	0.04	0 00:09:39
357	UVC-22	0.63	50.00	83.00	6.7000	150.00	0.1000	0.3000	69.99	14.9210	51.49	32.49	0.11	0 00:30:58
358	UVC-23	0.55	50.00	83.00	6.9000	150.00	0.1000	0.3000	69.99	14.9210	51.54	28.14	0.09	0 00:28:09
359	UVC-24	0.56	50.00	83.00	7.5000	150.00	0.1000	0.3000	69.99	14.9210	51.54	28.71	0.09	0 00:27:47
360	UVC-25	0.47	50.00	83.00	7.1000	150.00	0.1000	0.3000	69.99	14.9210	51.58	24.45	0.08	0 00:25:38
361	UVC-26	0.15	90.00	92.00	7.1000	56.00	0.1000	0.3000	69.99	1.6790	66.32	9.75	0.03	0 00:16:53

Junction Results

SN	Element ID	Peak Inflow (cms)	Peak Lateral Inflow (cms)	Max HGL Elevation Attained (m)	Max HGL Depth Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Average HGL Elevation Attained (m)	Average HGL Depth Attained (m)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ha-mm)
1	CE10	1.02	0.00	228.39	0.25	0.00	1.66	228.19	0.05	0 12:15	0 00:00	0.00
2	CE100	0.14	0.14	226.95	0.25	0.00	1.53	226.75	0.05	0 12:12	0 00:00	0.00
3	CE105	0.54	0.00	226.75	0.25	0.00	1.63	226.55	0.05	0 12:12	0 00:00	0.00
4	CE110	0.54	0.00	226.62	0.22	0.00	1.65	226.44	0.04	0 12:12	0 00:00	0.00
5	CE115	0.54	0.00	226.42	0.23	0.00	1.65	226.24	0.05	0 12:12	0 00:00	0.00
6	CE120	0.54	0.00	226.15	0.15	0.00	1.42	226.03	0.03	0 12:12	0 00:00	0.00
7	CE125	0.40	0.20	228.22	0.85	0.00	0.53	227.48	0.11	0 12:12	0 00:00	0.00
8	CE130	0.40	0.00	227.12	0.12	0.00	1.44	227.02	0.02	0 12:12	0 00:00	0.00
9	CE135	0.21	0.21	227.98	0.17	0.00	0.30	227.85	0.04	0 12:12	0 00:00	0.00
10	CE140	0.03	0.00	227.01	0.97	0.00	0.96	226.08	0.04	0 12:12	0 00:00	0.00
11	CE145	0.12	0.12	226.38	0.31	0.00	1.62	226.12	0.05	0 12:12	0 00:00	0.00
12	CE150	0.07	0.07	227.52	0.10	0.00	0.61	227.44	0.02	0 12:12	0 00:00	0.00
13	CE155	0.62	0.00	226.12	0.41	0.00	1.70	225.80	0.09	0 12:12	0 00:00	0.00
14	CE160	0.68	0.00	225.73	0.58	0.00	1.81	225.29	0.14	0 12:12	0 00:00	0.00
15	CE165	0.74	0.00	225.36	0.46	0.00	1.83	225.00	0.10	0 12:13	0 00:00	0.00
16	CE170	0.85	0.00	224.88	0.47	0.00	1.62	224.51	0.10	0 12:13	0 00:00	0.00
17	CE175	1.02	0.07	224.25	0.44	0.00	1.62	223.92	0.11	0 12:13	0 00:00	0.00
18	CE180	1.10	0.00	222.66	0.66	0.00	1.44	222.13	0.13	0 12:14	0 00:00	0.00
19	CE185	2.99	0.00	222.40	0.77	0.00	1.23	221.74	0.11	0 12:16	0 00:00	0.00
20	CE190	2.96	0.00	222.32	1.52	0.00	0.63	221.21	0.41	0 12:17	0 00:00	0.00
21	CE195	3.08	0.16	222.26	1.26	0.00	0.69	221.15	0.15	0 12:17	0 00:00	0.00
22	CE200	3.36	0.00	222.18	1.44	0.00	0.75	220.96	0.22	0 12:17	0 00:00	0.00
23	CE205	0.07	0.07	227.68	0.07	0.00	0.63	227.63	0.02	0 12:12	0 00:00	0.00
24	CE210	0.06	0.06	226.63	0.07	0.00	0.69	226.58	0.02	0 12:12	0 00:00	0.00
25	CE215	0.13	0.13	225.28	0.16	0.00	1.52	225.16	0.04	0 12:12	0 00:00	0.00
26	CE220	0.11	0.11	225.46	0.20	0.00	1.62	225.30	0.04	0 12:12	0 00:00	0.00
27	CE225	0.11	0.00	225.21	0.15	0.00	1.95	225.10	0.04	0 12:12	0 00:00	0.00
28	CE230	0.08	0.08	223.24	0.10	0.00	0.74	223.17	0.03	0 12:12	0 00:00	0.00
29	CE240	1.80	0.00	224.68	0.30	0.00	1.23	224.46	0.08	0 12:15	0 00:00	0.00
30	CE245	1.92	0.00	222.44	0.48	0.00	1.40	222.06	0.10	0 12:17	0 00:00	0.00
31	CE255	0.11	0.11	225.34	0.11	0.00	0.85	225.26	0.03	0 12:12	0 00:00	0.00
32	CE260	0.15	0.15	222.88	0.13	0.00	1.04	222.78	0.03	0 12:10	0 00:00	0.00
33	CE265	0.13	0.13	224.90	0.13	0.00	0.66	224.80	0.03	0 12:12	0 00:00	0.00
34	CE270266	0.13	0.00	224.16	0.16	0.00	0.84	224.03	0.03	0 12:12	0 00:00	0.00
35	CE280268	0.13	0.00	223.67	0.17	0.00	1.37	223.54	0.04	0 12:12	0 00:00	0.00
36	CE285	0.00	0.00	224.77	0.00	0.00	0.79	224.77	0.00	0 00:00	0 00:00	0.00
37	CE290	0.00	0.00	224.16	0.01	0.00	0.82	224.15	0.00	0 12:12	0 00:00	0.00
38	CE295	0.02	0.02	224.02	0.09	0.00	0.54	223.95	0.02	0 12:12	0 00:00	0.00
39	CE30	1.05	0.05	227.77	0.21	0.00	2.12	227.60	0.04	0 12:15	0 00:00	0.00
40	CE300	0.02	0.00	223.87	0.04	0.00	0.59	223.84	0.01	0 12:12	0 00:00	0.00
41	CE305	0.11	0.09	223.10	0.17	0.00	1.27	222.96	0.03	0 12:12	0 00:00	0.00
42	CE310	0.11	0.00	222.83	0.19	0.00	1.39	222.68	0.04	0 12:12	0 00:00	0.00
43	CE315	0.23	0.00	222.25	0.38	0.00	1.41	221.93	0.06	0 12:16	0 00:00	0.00
44	CE320	0.37	0.00	222.95	1.92	0.00	0.02	221.13	0.10	0 12:11	0 00:00	0.00
45	CE325	0.12	0.12	223.01	0.12	0.00	0.84	222.92	0.03	0 12:12	0 00:00	0.00
46	CE330	0.00	0.00	222.87	0.00	0.00	0.69	222.87	0.00	0 00:00	0 00:00	0.00
47	CE335	0.14	0.14	222.91	0.10	0.00	0.61	222.83	0.02	0 12:12	0 00:00	0.00
48	CE40	1.73	0.00	226.74	0.29	0.00	2.66	226.52	0.07	0 12:14	0 00:00	0.00
49	CE45	1.73	0.00	225.72	0.43	0.00	2.87	225.39	0.10	0 12:14	0 00:00	0.00
50	CE5	1.02	0.00	228.91	0.32	0.00	2.10	228.67	0.08	0 12:14	0 00:00	0.00
51	CE50	2.24	0.00	225.24	0.21	0.00	2.52	225.08	0.05	0 12:14	0 00:00	0.00
52	CE55	0.47	0.00	229.17	0.60	0.00	0.34	228.72	0.15	0 12:12	0 00:00	0.00
53	CE60	0.50	0.00	227.75	0.65	0.00	1.20	227.26	0.16	0 12:12	0 00:00	0.00
54	CE65	0.71	0.00	227.37	0.48	0.00	1.90	226.99	0.10	0 12:12	0 00:00	0.00
55	CE70	0.06	0.06	229.89	0.18	0.00	0.61	229.75	0.04	0 12:12	0 00:00	0.00
56	CE75	0.06	0.00	229.74	0.09	0.00	0.70	229.67	0.02	0 12:12	0 00:00	0.00
57	CE80	0.08	0.04	229.18	0.35	0.00	0.79	228.85	0.02	0 12:12	0 00:00	0.00
58	CE85	0.06	0.06	227.84	0.06	0.00	1.08	227.79	0.01	0 12:12	0 00:00	0.00
59	CE90	0.22	0.22	228.27	0.17	0.00	1.30	228.14	0.04	0 12:12	0 00:00	0.00
60	CE95	0.22	0.00	227.59	0.29	0.00	1.96	227.36	0.06	0 12:12	0 00:00	0.00
61	CGC10	0.94	0.05	216.11	0.42	0.00	0.37	215.77	0.08	0 12:12	0 00:00	0.00
62	CGC15	1.12	0.06	213.25	0.35	0.00	0.44	212.98	0.08	0 12:12	0 00:00	0.00
63	CGC20	1.30	0.00	207.95	0.93	0.00	0.00	207.12	0.10	0 12:11	0 12:12	0.17
64	CGC30	0.18	0.18	220.16	0.16	0.00	0.96	220.04	0.04	0 12:12	0 00:00	0.00
65	CGC35	0.18	0.00	218.98	0.21	0.00	1.95	218.82	0.05	0 12:12	0 00:00	0.00
66	CGC40	0.13	0.13	217.08	0.18	0.00	1.01	216.94	0.04	0 12:12	0 00:00	0.00
67	CGC45	0.13	0.00	216.22	0.17	0.00	0.96	216.09	0.04	0 12:12	0 00:00	0.00
68	CGC5	0.59	0.00	217.05	0.45	0.00	0.34	216.70	0.10	0 12:12	0 00:00	0.00
69	CGC50	0.13	0.13	213.95	0.18	0.00	2.05	213.81	0.04	0 12:12	0 00:00	0.00
70	CGC55	0.13	0.00	213.32	0.31	0.00	1.05	213.06	0.05	0 12:12	0 00:00	0.00
71	CGC60	0.15	0.15	209.94	0.13	0.00	0.87	209.84	0.03	0 12:12	0 00:00	0.00
72	CGC65	0.19	0.00	208.14	0.79	0.00	0.00	207.40	0.05	0 12:11	0 12:11	0.00
73	CGC70	0.04	0.04	208.40	1.02	0.00	0.38	207.42	0.04	0 12:11	0 00:00	0.00
74	CGC75	0.19	0.19	204.38	0.34	0.00	0.45	204.10	0.06	0 12:12	0 00:00	0.00
75	GE10	0.23	0.00	233.60	0.79	0.00	1.00	232.96	0.15	0 12:12	0 00:00	0.00
76	GE100	0.11	0.00	233.35	0.19	0.00	1.39	233.20	0.04	0 12:12	0 00:00	0.00
77	GE105	0.14	0.14	232.47	0.29	0.00	0.75	232.23	0.05	0 12:13	0 00:00	0.00
78	GE110	0.19	0.19	231.93	0.12	0.00	1.52	231.84	0.03	0 12:12	0 00:00	0.00
79	GE115	0.19	0.00	231.76	0.10	0.00	1.75	231.68	0.02	0 12:12	0 00:00	0.00
80	GE120	0.35	0.16	231.11	0.31	0.00	1.65	230.88	0.08	0 12:13	0 00:00	0.00
81	GE130	0.00	0.00	232.19	0.00	0.00	1.06	232.19	0.00	0 00:00	0 00:00	0.00
82	GE135	0.00	0.00	231.11	0.08	0.00	1.90	231.03	0.00	0 12:13	0 00:00	0.00
83	GE140	0.15	0.15	231.12	0.17	0.00	1.90	231.00	0.05	0 12:12	0 00:00	0.00
84	GE145	0.15	0.00	230.19	0.27	0.00	2.81	229.98	0.06	0 12:12	0 00:00	0.00
85	GE15	0.23	0.00	233.39	0.67	0.00	1.87	232.87	0.15	0 12:15	0 00:00	0.00
86	GE150	0.15	0.00	230.07	0.30	0.00	2.94	229.84	0.07	0 12:12	0 00:00	0.00
87	GE155	0.15	0.00	229.80	0.29	0.00	2.54	229.59	0.08	0 12:12	0 00:00	0.00

Total Time Flooded (min)
0.00
0.00
0.00

Junction Results

SN	Element ID	Peak Inflow (cms)	Peak Lateral Inflow (cms)	Max HGL Elevation Attained (m)	Max HGL Depth Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Average HGL Elevation Attained (m)	Average HGL Depth Attained (m)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ha-mm)
88	GE160	0.07	0.07	232.92	1.57	0.00	0.00	232.42	1.07	0 11:56	0 12:12	21.95
89	GE165	0.03	0.00	231.81	0.00	0.00	1.02	231.81	0.00	1 00:00	0 00:00	0.00
90	GE170	0.06	0.04	230.76	0.16	0.00	1.62	230.62	0.02	0 12:15	0 00:00	0.00
91	GE175	0.07	0.00	231.61	1.93	0.00	0.00	229.72	0.04	0 12:10	0 12:10	0.00
92	GE180	0.35	0.00	231.00	1.75	0.00	0.44	229.38	0.13	0 12:10	0 00:00	0.00
93	GE185	0.35	0.00	230.58	1.58	0.00	0.82	229.15	0.15	0 12:10	0 00:00	0.00
94	GE195	0.73	0.00	228.59	0.32	0.00	2.43	228.34	0.07	0 12:13	0 00:00	0.00
95	GE20	0.23	0.00	233.19	0.54	0.00	2.28	232.79	0.14	0 12:12	0 00:00	0.00
96	GE200	0.80	0.07	228.43	0.29	0.00	2.44	228.21	0.07	0 12:13	0 00:00	0.00
97	GE205	0.95	0.10	227.36	0.30	0.00	2.05	227.14	0.08	0 12:14	0 00:00	0.00
98	GE215	1.43	0.18	226.70	0.43	0.00	2.30	226.37	0.10	0 12:15	0 00:00	0.00
99	GE220	1.42	0.00	226.42	0.31	0.00	2.55	226.19	0.08	0 12:15	0 00:00	0.00
100	GE225	1.70	0.05	225.09	0.41	0.00	1.30	224.77	0.09	0 12:15	0 00:00	0.00
101	GE230	0.04	0.00	230.77	0.22	0.00	1.53	230.57	0.02	0 12:15	0 00:00	0.00
102	GE235	0.08	0.00	230.76	0.39	0.00	1.18	230.42	0.05	0 12:16	0 00:00	0.00
103	GE240	0.09	0.05	230.76	0.39	0.00	0.97	230.40	0.03	0 12:16	0 00:00	0.00
104	GE245	0.08	0.00	231.09	0.92	0.00	0.59	230.21	0.04	0 12:11	0 00:00	0.00
105	GE25	0.23	0.00	232.99	0.42	0.00	3.06	232.70	0.13	0 12:11	0 00:00	0.00
106	GE25{SW_GEORGE EAST C5}	0.06	0.06	230.60	0.23	0.00	0.56	230.41	0.04	0 12:12	0 00:00	0.00
107	GE250	0.07	0.00	230.90	1.41	0.00	0.50	229.55	0.06	0 12:10	0 00:00	0.00
108	GE255	0.19	0.19	231.97	1.63	0.00	0.00	230.47	0.13	0 12:10	0 12:10	0.02
109	GE26	0.22	0.16	230.58	0.28	0.00	0.51	230.36	0.06	0 12:12	0 00:00	0.00
110	GE260	0.19	0.00	231.98	1.68	0.00	0.00	230.41	0.11	0 12:10	0 12:10	0.00
111	GE265	0.32	0.13	231.47	1.84	0.00	0.14	229.80	0.17	0 12:11	0 00:00	0.00
112	GE27	0.22	0.00	230.33	0.18	0.00	0.76	230.19	0.04	0 12:12	0 00:00	0.00
113	GE270	0.32	0.00	231.25	1.64	0.00	0.28	229.72	0.11	0 12:10	0 00:00	0.00
114	GE275	0.00	0.00	231.02	0.15	0.00	0.92	230.89	0.02	0 12:12	0 00:00	0.00
115	GE28	0.35	0.14	229.58	0.27	0.00	0.67	229.38	0.07	0 12:12	0 00:00	0.00
116	GE280	0.05	0.05	231.02	0.16	0.00	0.91	230.89	0.03	0 12:12	0 00:00	0.00
117	GE285	0.20	0.16	231.72	1.72	0.00	0.00	230.19	0.19	0 12:06	0 12:06	0.00
118	GE290	0.28	0.08	231.49	1.74	0.00	0.00	229.87	0.12	0 12:11	0 12:11	0.00
119	GE295	0.39	0.00	228.99	0.70	0.00	2.04	228.43	0.14	0 12:12	0 00:00	0.00
120	GE300	0.10	0.10	229.05	0.41	0.00	1.88	228.70	0.06	0 12:12	0 00:00	0.00
121	GE305	0.10	0.00	229.03	0.58	0.00	1.99	228.50	0.05	0 12:12	0 00:00	0.00
122	GE310	0.06	0.06	227.49	0.16	0.00	1.90	227.37	0.04	0 12:12	0 00:00	0.00
123	GE315	0.06	0.00	227.35	0.14	0.00	2.06	227.24	0.03	0 12:12	0 00:00	0.00
124	GE320	0.07	0.06	230.53	1.55	0.00	0.00	229.02	0.04	0 12:10	0 12:10	0.01
125	GE325	0.06	0.00	230.66	1.76	0.00	0.00	228.95	0.05	0 12:10	0 12:10	0.00
126	GE330	0.08	0.00	230.19	1.41	0.00	0.00	228.82	0.04	0 12:10	0 12:10	0.00
127	GE335	0.17	0.00	230.00	1.45	0.00	0.00	228.62	0.07	0 12:10	0 12:10	0.01
128	GE340	0.23	0.00	229.78	1.54	0.00	0.00	228.33	0.09	0 12:10	0 12:10	0.00
129	GE345	3.54	0.00	228.99	1.32	0.00	0.00	227.75	0.08	0 02:53	0 02:53	17.81
130	GE35	0.14	0.14	234.35	0.30	0.00	1.44	234.13	0.08	0 12:12	0 00:00	0.00
131	GE350	0.63	0.05	228.98	1.62	0.00	0.00	227.48	0.12	0 02:53	0 04:08	0.62
132	GE355	0.69	0.00	228.94	1.63	0.00	0.00	227.45	0.14	0 03:23	0 03:51	0.30
133	GE365	0.34	0.00	228.74	1.56	0.00	0.05	227.34	0.16	0 12:07	0 00:00	0.00
134	GE370	0.33	0.00	228.59	1.42	0.00	0.14	227.28	0.11	0 12:07	0 00:00	0.00
135	GE375	0.11	0.11	230.12	1.28	0.00	0.17	228.88	0.04	0 12:10	0 00:00	0.00
136	GE380	0.06	0.06	229.75	1.25	0.00	0.00	228.54	0.04	0 12:10	0 12:10	0.02
137	GE390	2.75	0.09	228.99	1.22	0.00	0.00	227.84	0.07	0 02:30	0 04:27	15.59
138	GE395	5.19	0.00	228.99	2.34	0.00	0.00	227.70	1.05	0 02:30	0 02:30	22.80
139	GE40	0.14	0.00	234.22	0.20	0.00	1.47	234.08	0.06	0 12:12	0 00:00	0.00
140	GE400	1.62	0.00	228.99	1.39	0.00	0.00	227.69	0.09	0 02:53	0 04:28	4.93
141	GE405	0.11	0.05	228.77	1.47	0.00	0.03	227.37	0.07	0 12:07	0 00:00	0.00
142	GE410	0.08	0.08	227.97	0.13	0.00	1.02	227.88	0.04	0 12:12	0 00:00	0.00
143	GE415	0.15	0.00	227.12	0.23	0.00	1.76	226.95	0.06	0 12:12	0 00:00	0.00
144	GE420	0.25	0.00	226.34	0.34	0.00	2.64	226.09	0.09	0 12:13	0 00:00	0.00
145	GE425	0.25	0.00	225.29	0.32	0.00	1.11	225.03	0.06	0 12:13	0 00:00	0.00
146	GE430	0.07	0.07	227.51	0.15	0.00	1.29	227.39	0.03	0 12:12	0 00:00	0.00
147	GE435431	0.07	0.00	227.32	0.14	0.00	1.46	227.21	0.03	0 12:12	0 00:00	0.00
148	GE440	0.11	0.11	226.54	0.15	0.00	2.37	226.43	0.04	0 12:12	0 00:00	0.00
149	GE445	0.07	0.07	230.36	0.09	0.00	0.73	230.29	0.02	0 12:12	0 00:00	0.00
150	GE45	0.14	0.00	233.67	0.25	0.00	1.42	233.48	0.06	0 12:12	0 00:00	0.00
151	GE450	0.17	0.00	229.12	0.34	0.00	1.75	228.84	0.06	0 12:12	0 00:00	0.00
152	GE455	0.21	0.00	228.98	0.29	0.00	1.75	228.75	0.06	0 12:12	0 00:00	0.00
153	GE460	0.08	0.08	229.43	0.23	0.00	1.47	229.24	0.04	0 12:12	0 00:00	0.00
154	GE465	0.10	0.02	229.35	0.20	0.00	1.41	229.19	0.04	0 12:12	0 00:00	0.00
155	GE470	0.10	0.00	229.16	0.21	0.00	1.69	228.99	0.04	0 12:12	0 00:00	0.00
156	GE475	0.04	0.04	229.26	0.12	0.00	1.61	229.16	0.02	0 12:12	0 00:00	0.00
157	GE480476	0.04	0.00	229.02	0.06	0.00	1.73	228.97	0.01	0 12:10	0 00:00	0.00
158	GE485	0.06	0.06	228.84	0.14	0.00	2.12	228.73	0.03	0 12:12	0 00:00	0.00
159	GE490	0.06	0.00	228.81	0.25	0.00	2.19	228.61	0.05	0 12:13	0 00:00	0.00
160	GE495	0.14	0.00	228.78	0.33	0.00	1.38	228.50	0.05	0 12:13	0 00:00	0.00
161	GE5	0.24	0.24	233.94	0.91	0.00	0.00	233.18	0.15	0 12:08	0 12:12	0.22
162	GE50	0.14	0.00	233.49	0.22	0.00	1.48	233.33	0.06	0 12:12	0 00:00	0.00
163	GE500	0.14	0.00	228.73	0.44	0.00	1.31	228.40	0.11	0 12:13	0 00:00	0.00
164	GE505	0.14	0.00	228.67	0.38	0.00	1.28	228.38	0.09	0 12:13	0 00:00	0.00
165	GE510	0.14	0.00	228.54	0.26	0.00	1.16	228.34	0.06	0 12:13	0 00:00	0.00
166	GE515	0.14	0.00	228.12	0.15	0.00	0.86	228.01	0.04	0 12:13	0 00:00	0.00
167	GE520	0.14	0.00	228.13	1.60	0.00	0.71	226.59	0.06	0 12:11	0 00:00	0.00
168	GE525	0.08	0.00	228.11	1.64	0.00	0.73	226.53	0.06	0 12:11	0 00:00	0.00
169	GE530	0.14	0.00	228.08	1.67	0.00	0.56	226.49	0.08	0 12:11	0 00:00	0.00
170	GE540	0.23	0.00	227.60	1.52	0.00	0.38	226.19	0.11	0 12:11	0 00:00	0.00
171	GE545	0.43	0.00	227.02	1.11	0.00	0.96	226.04	0.13	0 12:12	0 00:00	0.00
172	GE55	0.24	0.00	233.21	0.33	0.00	1.22	232.96	0.08	0 12:13	0 00:00	0.00
173	GE550	0.54	0.00	226.33	0.57	0.00	1.66	225.90	0.14	0 12:12	0 00:00	0.00
174	GE560	0.09	0.09	228.81	0.36	0.00	1.20	228.53	0.08	0 12:12	0 00:00	0.00

Total Time Flooded (min)
222.00
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Junction Results

SN	Element ID	Peak Inflow (cms)	Peak Lateral Inflow (cms)	Max HGL Elevation Attained (m)	Max HGL Depth Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Average HGL Elevation Attained (m)	Average HGL Depth Attained (m)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ha-mm)
175	GE565	0.06	0.00	228.16	1.68	0.00	0.46	226.56	0.08	0 12:11	0 00:00	0.00
176	GE570	0.06	0.00	228.16	1.68	0.00	0.41	226.55	0.07	0 12:11	0 00:00	0.00
177	GE575	0.06	0.00	228.15	1.68	0.00	0.42	226.53	0.06	0 12:11	0 00:00	0.00
178	GE585	0.09	0.09	227.76	0.05	0.00	0.57	227.73	0.02	0 12:12	0 00:00	0.00
179	GE590	0.00	0.00	227.65	0.00	0.00	0.63	227.65	0.00	0 00:00	0 00:00	0.00
180	GE595	0.00	0.00	227.71	0.00	0.00	0.63	227.71	0.00	0 00:00	0 00:00	0.00
181	GE60	0.37	0.00	232.44	0.51	0.00	0.70	232.02	0.09	0 12:13	0 00:00	0.00
182	GE600	0.00	0.00	227.66	0.00	0.00	0.79	227.66	0.00	0 00:00	0 00:00	0.00
183	GE605	0.00	0.00	226.92	0.00	0.00	1.04	226.92	0.00	0 00:00	0 00:00	0.00
184	GE610	0.00	0.00	226.64	0.00	0.00	1.29	226.64	0.00	0 00:00	0 00:00	0.00
185	GE65	0.42	0.06	231.98	0.40	0.00	1.00	231.68	0.10	0 12:12	0 00:00	0.00
186	GE70	0.42	0.00	231.16	0.50	0.00	0.86	230.79	0.13	0 12:13	0 00:00	0.00
187	GE75	0.76	0.00	230.90	0.25	0.00	1.12	230.70	0.05	0 12:13	0 00:00	0.00
188	GE80	0.76	0.00	230.63	0.23	0.00	1.32	230.46	0.06	0 12:14	0 00:00	0.00
189	GE85	1.02	0.12	229.54	0.29	0.00	2.17	229.32	0.07	0 12:14	0 00:00	0.00
190	GE90	0.00	0.00	233.53	0.18	0.00	1.17	233.37	0.02	0 12:12	0 00:00	0.00
191	GE95	0.11	0.11	233.53	0.21	0.00	1.16	233.37	0.05	0 12:12	0 00:00	0.00
192	Jun-03	0.42	0.14	214.36	0.36	0.00	0.64	214.10	0.10	0 12:13	0 00:00	0.00
193	Jun-04	0.42	0.00	212.27	0.27	0.00	0.73	212.08	0.08	0 12:14	0 00:00	0.00
194	Jun-05	0.42	0.00	209.28	0.28	0.00	0.72	209.08	0.08	0 12:14	0 00:00	0.00
195	LE	0.16	0.00	217.74	0.53	0.00	0.63	217.29	0.08	0 12:13	0 00:00	0.00
196	LE10	2.89	0.00	221.79	0.54	0.00	1.48	221.36	0.11	0 12:16	0 00:00	0.00
197	LE1005	0.97	0.00	217.93	1.20	0.00	0.04	217.03	0.30	0 12:25	0 00:00	0.00
198	LE1010	1.00	0.09	217.75	1.17	0.00	0.07	216.89	0.31	0 12:25	0 00:00	0.00
199	LE1020	0.13	0.13	221.36	0.25	0.00	1.25	221.17	0.06	0 12:12	0 00:00	0.00
200	LE1025	0.13	0.00	221.25	0.32	0.00	1.23	221.01	0.08	0 12:12	0 00:00	0.00
201	LE1030	0.13	0.00	221.17	0.33	0.00	1.30	220.93	0.09	0 12:12	0 00:00	0.00
202	LE1035	0.25	0.12	220.90	0.26	0.00	0.53	220.70	0.06	0 12:12	0 00:00	0.00
203	LE1040	0.33	0.08	220.24	0.24	0.00	0.55	220.06	0.06	0 12:12	0 00:00	0.00
204	LE1045	0.33	0.00	217.95	0.24	0.00	0.55	217.77	0.06	0 12:12	0 00:00	0.00
205	LE105	0.09	0.00	224.43	0.21	0.00	1.86	224.26	0.04	0 12:12	0 00:00	0.00
206	LE1055	0.04	0.04	216.85	0.09	0.00	1.90	216.78	0.02	0 12:12	0 00:00	0.00
207	LE1060	0.07	0.00	215.25	0.12	0.00	2.46	215.16	0.03	0 12:12	0 00:00	0.00
208	LE1065	0.07	0.00	214.40	0.25	0.00	1.43	214.19	0.04	0 12:12	0 00:00	0.00
209	LE1070	0.07	0.00	214.35	0.23	0.00	1.40	214.16	0.04	0 12:12	0 00:00	0.00
210	LE1075	0.13	0.06	213.27	0.18	0.00	2.46	213.13	0.04	0 12:12	0 00:00	0.00
211	LE1080	0.13	0.00	212.53	0.19	0.00	1.47	212.38	0.04	0 12:12	0 00:00	0.00
212	LE1090	0.03	0.03	216.51	0.10	0.00	1.90	216.43	0.02	0 12:12	0 00:00	0.00
213	LE1095	0.08	0.08	221.07	0.18	0.00	0.61	220.96	0.07	0 12:12	0 00:00	0.00
214	LE110	0.11	0.11	225.01	0.09	0.00	1.90	224.94	0.02	0 12:12	0 00:00	0.00
215	LE1100	0.08	0.00	220.95	0.16	0.00	0.63	220.85	0.06	0 12:12	0 00:00	0.00
216	LE1105	0.08	0.00	220.76	0.17	0.00	0.73	220.66	0.07	0 12:12	0 00:00	0.00
217	LE1110	0.13	0.00	220.63	0.23	0.00	0.56	220.48	0.08	0 12:12	0 00:00	0.00
218	LE1115	0.14	0.01	219.24	0.19	0.00	2.06	219.12	0.07	0 12:12	0 00:00	0.00
219	LE1120	0.14	0.00	217.11	0.18	0.00	2.70	216.99	0.06	0 12:12	0 00:00	0.00
220	LE1125	0.21	0.07	214.97	0.26	0.00	2.42	214.78	0.07	0 12:12	0 00:00	0.00
221	LE1130	0.40	0.00	213.61	0.36	0.00	2.54	213.33	0.08	0 12:12	0 00:00	0.00
222	LE1135	0.40	0.00	211.95	0.34	0.00	2.46	211.70	0.09	0 12:12	0 00:00	0.00
223	LE1145	0.05	0.05	220.75	0.13	0.00	0.78	220.65	0.03	0 12:12	0 00:00	0.00
224	LE115	0.11	0.00	224.90	0.06	0.00	1.63	224.85	0.01	0 12:12	0 00:00	0.00
225	LE1150	0.09	0.09	218.23	0.15	0.00	1.07	218.11	0.03	0 12:12	0 00:00	0.00
226	LE1155	0.09	0.00	216.88	0.12	0.00	2.15	216.79	0.03	0 12:12	0 00:00	0.00
227	LE1160	0.09	0.00	216.06	0.17	0.00	1.92	215.93	0.04	0 12:12	0 00:00	0.00
228	LE1165	0.19	0.10	215.93	0.25	0.00	0.97	215.73	0.05	0 12:12	0 00:00	0.00
229	LE1170	0.19	0.00	214.65	0.21	0.00	2.02	214.48	0.04	0 12:12	0 00:00	0.00
230	LE1175	0.00	0.00	217.10	0.00	0.00	2.22	217.10	0.00	0 00:00	0 00:00	0.00
231	LE120	0.16	0.16	224.70	0.05	0.00	0.70	224.66	0.01	0 12:12	0 00:00	0.00
232	LE125	0.19	0.00	223.58	0.10	0.00	1.28	223.50	0.02	0 12:12	0 00:00	0.00
233	LE130	0.04	0.04	223.61	0.04	0.00	1.31	223.58	0.01	0 12:12	0 00:00	0.00
234	LE135	0.11	0.11	224.05	0.05	0.00	0.80	224.01	0.01	0 12:12	0 00:00	0.00
235	LE140	0.11	0.00	223.81	0.10	0.00	0.82	223.73	0.02	0 12:12	0 00:00	0.00
236	LE145	0.11	0.00	223.68	0.08	0.00	1.26	223.61	0.01	0 12:12	0 00:00	0.00
237	LE15	2.92	0.00	221.58	0.67	0.00	1.30	221.03	0.12	0 12:17	0 00:00	0.00
238	LE150	0.11	0.00	223.45	0.05	0.00	1.29	223.41	0.01	0 12:12	0 00:00	0.00
239	LE155	0.03	0.03	223.92	0.02	0.00	0.77	223.90	0.00	0 12:12	0 00:00	0.00
240	LE160	0.05	0.05	224.33	0.07	0.00	0.72	224.28	0.02	0 12:12	0 00:00	0.00
241	LE165	0.05	0.00	222.67	0.10	0.00	1.14	222.59	0.02	0 12:12	0 00:00	0.00
242	LE170	0.10	0.10	223.31	0.22	0.00	0.57	223.13	0.04	0 12:12	0 00:00	0.00
243	LE175	0.10	0.00	223.19	0.23	0.00	0.56	223.01	0.05	0 12:12	0 00:00	0.00
244	LE180	0.10	0.00	223.04	0.10	0.00	0.69	222.96	0.02	0 12:12	0 00:00	0.00
245	LE185	0.10	0.00	221.84	0.17	0.00	1.42	221.71	0.04	0 12:12	0 00:00	0.00
246	LE190	0.24	0.09	222.18	1.10	0.00	0.00	221.15	0.07	0 12:14	0 12:14	0.00
247	LE195	0.05	0.05	222.09	0.09	0.00	0.61	222.02	0.02	0 12:12	0 00:00	0.00
248	LE20	2.90	0.00	221.51	1.28	0.00	0.64	220.36	0.13	0 12:17	0 00:00	0.00
249	LE200	0.13	0.13	224.85	0.18	0.00	0.52	224.72	0.05	0 12:12	0 00:00	0.00
250	LE205	0.24	0.00	224.79	1.23	0.00	0.00	223.65	0.09	0 12:11	0 12:11	0.01
251	LE210	0.29	0.00	224.44	1.31	0.00	0.00	223.22	0.09	0 12:10	0 12:10	0.00
252	LE215	0.35	0.00	223.69	0.83	0.00	0.34	222.97	0.11	0 12:11	0 00:00	0.00
253	LE220	0.47	0.00	223.15	0.52	0.00	0.81	222.75	0.12	0 12:12	0 00:00	0.00
254	LE225	0.52	0.05	222.60	0.42	0.00	0.71	222.26	0.08	0 12:13	0 00:00	0.00
255	LE230	0.43	0.00	222.42	0.42	0.00	0.79	222.06	0.06	0 12:14	0 00:00	0.00
256	LE235	0.58	0.00	222.02	1.51	0.00	0.40	220.72	0.21	0 12:14	0 00:00	0.00
257	LE240	1.00	0.00	221.70	1.23	0.00	0.54	220.67	0.20	0 12:14	0 00:00	0.00
258	LE245	1.06	0.07	220.63	0.48	0.00	1.58	220.26	0.11	0 12:13	0 00:00	0.00
259	LE25	2.96	0.17	221.48	1.48	0.00	1.52	220.27	0.27	0 12:17	0 00:00	0.00
260	LE255	1.07	0.00	219.97	1.53	0.00	0.16	218.59	0.15	0 12:13	0 00:00	0.00
261	LE265	1.11	0.00	219.77	1.57	0.00	0.23	218.40	0.20	0 12:13	0 00:00	0.00

Total Time Flooded (min)
0.00
0.00
0.00

Junction Results

SN	Element ID	Peak Inflow (cms)	Peak Lateral Inflow (cms)	Max HGL Elevation Attained (m)	Max HGL Depth Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Average HGL Elevation Attained (m)	Average HGL Depth Attained (m)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ha-mm)
262	LE270	1.17	0.00	219.56	1.41	0.00	0.43	218.32	0.17	0 12:13	0 00:00	0.00
263	LE280	1.17	0.00	219.20	1.38	0.00	0.96	218.04	0.22	0 12:13	0 00:00	0.00
264	LE285	1.27	0.00	218.97	1.17	0.00	1.12	217.97	0.17	0 12:13	0 00:00	0.00
265	LE295	1.27	0.00	218.52	1.03	0.00	0.99	217.68	0.19	0 12:13	0 00:00	0.00
266	LE300	1.38	0.00	217.79	0.62	0.00	0.59	217.29	0.12	0 12:13	0 00:00	0.00
267	LE310	1.27	0.05	217.38	1.24	0.00	0.00	216.32	0.18	0 12:08	0 12:08	0.01
268	LE315	1.27	0.00	216.88	1.12	0.00	0.12	215.95	0.19	0 12:13	0 00:00	0.00
269	LE325	1.30	0.00	216.65	1.08	0.00	0.16	215.77	0.20	0 12:12	0 00:00	0.00
270	LE330	1.46	0.02	216.32	0.92	0.00	0.28	215.61	0.21	0 12:12	0 00:00	0.00
271	LE340	1.46	0.00	215.97	0.72	0.00	0.66	215.43	0.18	0 12:12	0 00:00	0.00
272	LE35	0.03	0.03	225.40	0.03	0.00	2.02	225.38	0.01	0 12:12	0 00:00	0.00
273	LE350	0.12	0.12	224.59	0.21	0.00	0.96	224.43	0.05	0 12:12	0 00:00	0.00
274	LE355	0.04	0.04	224.52	0.11	0.00	0.64	224.44	0.03	0 12:12	0 00:00	0.00
275	LE360	0.12	0.12	224.77	0.10	0.00	0.61	224.69	0.02	0 12:12	0 00:00	0.00
276	LE365	0.12	0.00	223.69	0.13	0.00	0.58	223.59	0.03	0 12:11	0 00:00	0.00
277	LE370	0.07	0.07	224.00	0.95	0.00	0.00	223.09	0.04	0 12:11	0 12:11	0.00
278	LE375	0.00	0.00	223.15	0.00	0.00	0.84	223.15	0.00	0 12:12	0 00:00	0.00
279	LE380	0.05	0.05	222.96	0.16	0.00	0.78	222.83	0.03	0 12:12	0 00:00	0.00
280	LE385	0.05	0.00	222.86	0.16	0.00	0.80	222.73	0.03	0 12:12	0 00:00	0.00
281	LE390	0.05	0.00	222.79	0.19	0.00	0.81	222.64	0.04	0 12:12	0 00:00	0.00
282	LE395	0.11	0.00	222.76	0.25	0.00	0.74	222.56	0.05	0 12:12	0 00:00	0.00
283	LE40	0.03	0.00	225.13	0.04	0.00	2.09	225.10	0.01	0 12:12	0 00:00	0.00
284	LE400	0.32	0.00	222.42	0.67	0.00	0.90	221.83	0.08	0 12:13	0 00:00	0.00
285	LE405	0.06	0.06	223.41	0.11	0.00	0.52	223.32	0.02	0 12:12	0 00:00	0.00
286	LE410	0.06	0.00	223.06	0.16	0.00	0.78	222.93	0.03	0 12:12	0 00:00	0.00
287	LE415	0.06	0.00	222.88	0.18	0.00	0.81	222.74	0.04	0 12:12	0 00:00	0.00
288	LE420	0.06	0.00	222.80	0.20	0.00	0.79	222.64	0.04	0 12:12	0 00:00	0.00
289	LE430	0.19	0.02	222.50	0.47	0.00	0.89	222.10	0.07	0 12:13	0 00:00	0.00
290	LE435	0.01	0.00	222.50	0.38	0.00	0.91	222.13	0.01	0 12:13	0 00:00	0.00
291	LE445	0.56	0.00	222.26	1.56	0.00	0.36	220.88	0.18	0 12:13	0 00:00	0.00
292	LE45	0.03	0.00	225.07	0.03	0.00	2.09	225.05	0.01	0 12:12	0 00:00	0.00
293	LE450	0.56	0.00	222.05	1.40	0.00	0.55	220.79	0.14	0 12:13	0 00:00	0.00
294	LE455	0.06	0.06	221.93	1.33	0.00	0.52	220.72	0.12	0 12:14	0 00:00	0.00
295	LE460	0.42	0.00	221.93	1.36	0.00	0.43	220.72	0.15	0 12:13	0 00:00	0.00
296	LE470	0.13	0.11	224.06	0.79	0.00	0.00	223.34	0.07	0 12:07	0 12:07	0.75
297	LE475	0.13	0.00	224.04	0.97	0.00	0.00	223.18	0.11	0 12:07	0 12:07	0.01
298	LE480	0.15	0.00	224.00	0.95	0.00	0.00	223.15	0.10	0 12:07	0 12:07	1.34
299	LE485	0.09	0.00	224.00	0.96	0.00	0.00	223.13	0.09	0 12:07	0 12:07	0.01
300	LE490	0.13	0.00	224.00	1.07	0.00	0.00	223.08	0.15	0 12:07	0 12:07	0.03
301	LE495	0.17	0.00	223.90	0.99	0.00	0.00	223.01	0.10	0 12:06	0 12:06	0.00
302	LE5	2.89	0.05	222.10	0.54	0.00	1.92	221.67	0.11	0 12:14	0 00:00	0.00
303	LE50	0.11	0.08	224.93	0.10	0.00	2.13	224.85	0.02	0 12:12	0 00:00	0.00
304	LE500	0.20	0.00	223.74	1.04	0.00	0.00	222.81	0.11	0 12:06	0 12:12	11.73
305	LE505	0.16	0.00	223.78	1.38	0.00	0.00	222.57	0.17	0 12:06	0 12:06	0.01
306	LE510	0.21	0.04	224.00	1.75	0.00	0.00	222.38	0.13	0 12:06	0 12:06	0.01
307	LE515	0.20	0.00	224.00	1.92	0.00	0.00	222.22	0.14	0 12:06	0 12:06	0.00
308	LE520	0.20	0.00	223.91	1.92	0.00	0.09	222.12	0.13	0 12:06	0 00:00	0.00
309	LE525	0.23	0.05	223.80	2.23	0.00	0.20	221.74	0.17	0 12:06	0 00:00	0.00
310	LE530	0.23	0.00	223.66	2.17	0.00	0.33	221.64	0.15	0 12:06	0 00:00	0.00
311	LE535	0.23	0.00	223.50	2.15	0.00	0.49	221.52	0.17	0 12:06	0 00:00	0.00
312	LE540	0.27	0.00	223.21	1.99	0.00	0.40	221.39	0.17	0 12:06	0 00:00	0.00
313	LE545	0.08	0.07	224.04	0.31	0.00	0.48	223.77	0.04	0 12:07	0 00:00	0.00
314	LE55	0.11	0.00	224.65	0.08	0.00	2.29	224.59	0.02	0 12:12	0 00:00	0.00
315	LE550	0.07	0.00	224.15	0.66	0.00	0.13	223.52	0.03	0 12:07	0 00:00	0.00
316	LE555	0.10	0.05	223.98	0.89	0.00	0.00	223.14	0.05	0 12:06	0 12:06	0.01
317	LE560	0.07	0.07	223.83	1.30	0.00	0.00	222.61	0.08	0 12:06	0 12:06	0.00
318	LE565	0.10	0.05	224.10	1.70	0.00	0.00	222.47	0.07	0 12:06	0 12:06	0.01
319	LE570	0.04	0.04	224.00	1.87	0.00	0.00	222.23	0.10	0 12:06	0 12:06	0.00
320	LE575	0.05	0.05	223.24	1.71	0.00	0.35	221.60	0.07	0 12:06	0 00:00	0.00
321	LE580	0.05	0.05	219.78	1.07	0.00	0.72	218.76	0.05	0 12:13	0 00:00	0.00
322	LE585	0.06	0.00	219.78	1.09	0.00	0.55	218.74	0.05	0 12:13	0 00:00	0.00
323	LE590	0.06	0.00	219.78	1.13	0.00	0.49	218.70	0.05	0 12:13	0 00:00	0.00
324	LE595	0.06	0.00	219.78	1.18	0.00	0.36	218.66	0.06	0 12:13	0 00:00	0.00
325	LE60	0.20	0.00	224.33	0.18	0.00	1.92	224.19	0.04	0 12:12	0 00:00	0.00
326	LE600	0.06	0.00	219.77	1.32	0.00	0.34	218.51	0.06	0 12:13	0 00:00	0.00
327	LE605	0.01	0.00	219.77	1.01	0.00	0.49	218.78	0.02	0 12:13	0 00:00	0.00
328	LE610	0.07	0.07	219.57	0.91	0.00	0.40	218.70	0.04	0 12:13	0 00:00	0.00
329	LE615	0.08	0.00	219.56	0.98	0.00	0.41	218.61	0.03	0 12:13	0 00:00	0.00
330	LE620	0.05	0.05	221.35	0.12	0.00	1.52	221.25	0.02	0 12:12	0 00:00	0.00
331	LE625	0.05	0.00	221.09	0.11	0.00	1.53	221.00	0.02	0 12:12	0 00:00	0.00
332	LE630	0.05	0.00	220.75	0.09	0.00	1.53	220.68	0.02	0 12:12	0 00:00	0.00
333	LE635	0.11	0.06	219.42	0.19	0.00	1.62	219.27	0.04	0 12:12	0 00:00	0.00
334	LE640	0.11	0.00	219.13	0.16	0.00	1.53	219.00	0.03	0 12:09	0 00:00	0.00
335	LE645	0.12	0.12	217.92	0.32	0.00	0.19	217.66	0.06	0 12:12	0 00:00	0.00
336	LE65	0.30	0.00	224.15	0.13	0.00	2.17	224.05	0.03	0 12:13	0 00:00	0.00
337	LE655	0.28	0.04	216.71	0.79	0.00	0.00	216.00	0.08	0 12:08	0 12:12	13.51
338	LE660	0.02	0.02	222.33	0.10	0.00	1.41	222.25	0.02	0 12:12	0 00:00	0.00
339	LE665	0.02	0.00	222.27	0.09	0.00	1.59	222.20	0.02	0 12:12	0 00:00	0.00
340	LE670	0.04	0.02	221.85	0.09	0.00	1.22	221.78	0.02	0 12:12	0 00:00	0.00
341	LE675	0.07	0.00	221.30	0.14	0.00	1.26	221.19	0.03	0 12:12	0 00:00	0.00
342	LE680	0.11	0.05	220.42	0.14	0.00	0.65	220.31	0.03	0 12:12	0 00:00	0.00
343	LE685	0.26	0.00	219.85	0.17	0.00	0.62	219.72	0.04	0 12:12	0 00:00	0.00
344	LE690	0.28	0.00	216.69	0.70	0.00	0.16	216.05	0.06	0 12:12	0 00:00	0.00
345	LE695	0.03	0.03	222.02	0.05	0.00	0.88	221.98	0.01	0 12:12	0 00:00	0.00
346	LE70	0.60	0.00	223.42	0.22	0.00	1.22	223.24	0.04	0 12:12	0 00:00	0.00
347	LE700	0.15	0.15	220.76	0.33	0.00	0.46	220.50	0.07	0 12:12	0 00:00	0.00
348	LE705	0.15	0.00	220.63	0.28	0.00	0.75	220.41	0.06	0 12:12	0 00:00	0.00

Total Time Flooded (min)
0.00
0.00
0.00

Junction Results

SN	Element ID	Peak Inflow (cms)	Peak Lateral Inflow (cms)	Max HGL Elevation Attained (m)	Max HGL Depth Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Average HGL Elevation Attained (m)	Average HGL Depth Attained (m)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ha-mm)
349	LE710	0.15	0.00	220.37	0.21	0.00	0.58	220.21	0.05	0 12:12	0 00:00	0.00
350	LE715	0.02	0.02	216.69	0.14	0.00	0.64	216.56	0.01	0 12:12	0 00:00	0.00
351	LE720	0.06	0.06	221.33	0.15	0.00	1.12	221.21	0.03	0 12:12	0 00:00	0.00
352	LE725	0.06	0.00	221.08	0.08	0.00	1.13	221.02	0.02	0 12:12	0 00:00	0.00
353	LE730	0.06	0.00	220.04	0.12	0.00	1.97	219.95	0.03	0 12:12	0 00:00	0.00
354	LE735	0.11	0.05	219.45	0.16	0.00	1.09	219.32	0.03	0 12:12	0 00:00	0.00
355	LE740	0.11	0.00	218.85	0.13	0.00	0.85	218.75	0.03	0 12:12	0 00:00	0.00
356	LE745	0.11	0.00	218.18	0.17	0.00	1.22	218.04	0.03	0 12:12	0 00:00	0.00
357	LE75	0.60	0.00	223.20	0.26	0.00	1.18	222.99	0.05	0 12:12	0 00:00	0.00
358	LE750	0.11	0.00	217.77	0.14	0.00	1.20	217.66	0.03	0 12:12	0 00:00	0.00
359	LE755	0.14	0.03	217.10	0.20	0.00	1.55	216.94	0.04	0 12:12	0 00:00	0.00
360	LE760	0.14	0.00	216.51	0.21	0.00	0.81	216.34	0.04	0 12:12	0 00:00	0.00
361	LE765	0.14	0.00	216.40	0.70	0.00	0.09	215.76	0.06	0 12:12	0 00:00	0.00
362	LE770	0.00	0.00	218.18	0.31	0.00	1.17	218.04	0.17	0 12:12	0 00:00	0.00
363	LE775	1.46	0.00	221.94	1.34	0.00	0.90	220.80	0.20	0 12:11	0 00:00	0.00
364	LE780	0.93	0.12	220.16	0.58	0.00	2.10	219.78	0.20	0 12:34	0 00:00	0.00
365	LE790	0.97	0.04	219.76	0.61	0.00	2.18	219.35	0.20	0 12:34	0 00:00	0.00
366	LE80	0.62	0.00	222.99	0.27	0.00	0.78	222.77	0.05	0 12:13	0 00:00	0.00
367	LE800	0.98	0.00	219.37	1.06	0.00	1.21	218.55	0.24	0 12:33	0 00:00	0.00
368	LE805	0.98	0.00	219.06	1.17	0.00	0.90	218.11	0.22	0 12:33	0 00:00	0.00
369	LE810	0.99	0.00	218.74	1.51	0.00	0.62	217.60	0.37	0 12:33	0 00:00	0.00
370	LE815	0.99	0.00	218.56	1.33	0.00	0.69	217.51	0.28	0 12:33	0 00:00	0.00
371	LE820	0.99	0.00	218.32	1.37	0.00	0.39	217.29	0.34	0 12:33	0 00:00	0.00
372	LE825	2.03	0.00	218.16	1.26	0.00	0.49	217.21	0.31	0 12:32	0 00:00	0.00
373	LE830	1.05	0.00	217.98	1.13	0.00	0.59	217.12	0.27	0 12:32	0 00:00	0.00
374	LE835	1.05	0.00	217.71	1.12	0.00	0.12	216.94	0.35	0 12:32	0 00:00	0.00
375	LE840	0.79	0.00	217.60	1.05	0.00	0.19	216.87	0.32	0 12:32	0 00:00	0.00
376	LE845	0.60	0.00	217.54	1.14	0.00	0.11	216.81	0.41	0 12:25	0 00:00	0.00
377	LE85	0.62	0.00	222.75	0.25	0.00	0.96	222.55	0.05	0 12:13	0 00:00	0.00
378	LE850	1.51	0.00	217.49	1.10	0.00	0.14	216.78	0.39	0 12:25	0 00:00	0.00
379	LE855	1.53	0.00	216.65	0.48	0.00	0.76	216.38	0.21	0 12:30	0 00:00	0.00
380	LE860	0.53	0.00	216.47	0.32	0.00	0.92	216.30	0.15	0 12:30	0 00:00	0.00
381	LE870	0.03	0.03	221.72	0.22	0.00	0.57	221.59	0.09	0 12:12	0 00:00	0.00
382	LE875	0.05	0.00	221.66	0.10	0.00	0.69	221.58	0.02	0 12:12	0 00:00	0.00
383	LE880	0.12	0.00	220.35	0.24	0.00	1.60	220.16	0.05	0 12:12	0 00:00	0.00
384	LE885	0.12	0.00	219.93	0.11	0.00	2.00	219.85	0.03	0 12:07	0 00:00	0.00
385	LE890	0.07	0.07	220.65	0.11	0.00	1.20	220.56	0.02	0 12:12	0 00:00	0.00
386	LE895	0.05	0.05	219.59	0.09	0.00	1.28	219.52	0.02	0 12:12	0 00:00	0.00
387	LE90	0.62	0.00	222.41	0.17	0.00	1.48	222.27	0.03	0 12:13	0 00:00	0.00
388	LE900	0.05	0.00	219.37	0.33	0.00	1.42	219.07	0.03	0 12:33	0 00:00	0.00
389	LE905	0.03	0.03	218.74	0.59	0.00	0.60	218.19	0.04	0 12:33	0 00:00	0.00
390	LE910	1.04	0.00	220.52	1.52	0.00	1.08	219.25	0.25	0 12:22	0 00:00	0.00
391	LE915	1.02	0.00	220.13	1.41	0.00	1.39	219.00	0.28	0 12:23	0 00:00	0.00
392	LE920	1.02	0.00	219.95	1.39	0.00	1.48	218.86	0.30	0 12:23	0 00:00	0.00
393	LE925	1.02	0.00	219.79	1.29	0.00	1.58	218.77	0.27	0 12:23	0 00:00	0.00
394	LE930	1.11	0.00	219.56	1.19	0.00	1.53	218.60	0.23	0 12:23	0 00:00	0.00
395	LE935	1.02	0.00	219.36	1.26	0.00	1.48	218.33	0.23	0 12:23	0 00:00	0.00
396	LE940	1.06	0.00	218.87	1.50	0.00	0.53	217.72	0.35	0 12:23	0 00:00	0.00
397	LE945	1.06	0.00	218.67	1.34	0.00	0.70	217.64	0.31	0 12:23	0 00:00	0.00
398	LE95	0.09	0.09	224.57	0.21	0.00	1.88	224.40	0.04	0 12:12	0 00:00	0.00
399	LE950	1.07	0.00	218.45	1.20	0.00	0.81	217.51	0.26	0 12:23	0 00:00	0.00
400	LE955	0.00	0.00	218.44	0.04	0.00	0.86	218.40	0.00	0 12:32	0 00:00	0.00
401	LE970	0.18	0.03	217.65	0.48	0.00	0.22	217.24	0.07	0 12:13	0 00:00	0.00
402	LE975	0.33	0.00	217.53	0.88	0.00	0.00	216.93	0.28	0 12:10	0 12:25	68.60
403	LE985	0.01	0.00	217.41	0.28	0.00	0.35	217.17	0.04	0 12:10	0 00:00	0.00
404	LE990	0.01	0.00	217.41	0.32	0.00	0.31	217.13	0.04	0 12:10	0 00:00	0.00
405	LE995	0.28	0.00	217.40	0.62	0.00	0.00	216.90	0.12	0 12:10	0 12:32	83.30
406	MH1414	0.08	0.08	217.21	0.15	0.00	1.80	217.10	0.04	0 12:12	0 00:00	0.00
407	MH1415	0.08	0.00	217.01	0.18	0.00	2.01	216.88	0.05	0 12:12	0 00:00	0.00
408	MH1741	0.02	0.02	223.35	0.07	0.00	0.63	223.30	0.02	0 12:12	0 00:00	0.00
409	MH1742	0.02	0.00	223.08	0.07	0.00	0.63	223.03	0.02	0 12:12	0 00:00	0.00
410	MH1782	0.10	0.10	219.75	0.74	0.00	1.47	219.08	0.07	0 12:23	0 00:00	0.00
411	MH1783	0.11	0.00	219.57	0.64	0.00	1.54	218.97	0.04	0 12:23	0 00:00	0.00
412	MH1785	0.08	0.08	218.87	1.20	0.00	0.50	217.81	0.14	0 12:23	0 00:00	0.00
413	MH1786	0.10	0.10	216.65	0.23	0.00	0.48	216.47	0.05	0 12:30	0 00:00	0.00
414	MH1787	0.00	0.00	216.66	0.57	0.00	0.22	216.38	0.29	0 12:25	0 00:00	0.00
415	MH1827	0.08	0.08	222.53	0.21	0.00	0.64	222.36	0.04	0 12:11	0 00:00	0.00
416	MH1828	0.08	0.00	222.46	0.22	0.00	0.64	222.29	0.05	0 12:14	0 00:00	0.00
417	MH1946	0.06	0.06	222.91	0.07	0.00	0.38	222.86	0.02	0 12:12	0 00:00	0.00
418	MH1953	0.00	0.00	214.35	0.00	0.00	0.79	214.35	0.00	0 00:00	0 00:00	0.00
419	Null Structure	0.34	0.00	230.95	0.26	0.00	0.55	230.74	0.05	0 12:13	0 00:00	0.00
420	Out-1P1642	0.00	0.00	221.84	0.00	0.00	6.00	221.84	0.00	0 00:00	0 00:00	0.00
421	Out-1PGE120	0.01	0.00	231.11	0.42	0.00	5.58	230.88	0.19	0 12:13	0 00:00	0.00
422	Out-1PLE650	0.00	0.00	216.00	0.00	0.00	6.00	216.00	0.00	0 00:00	0 00:00	0.00
423	PP10	0.13	0.00	220.04	0.22	0.00	1.50	219.88	0.06	0 12:12	0 00:00	0.00
424	PP105	0.17	0.17	217.61	0.22	0.00	0.69	217.43	0.04	0 12:12	0 00:00	0.00
425	PP110	0.17	0.00	217.29	0.32	0.00	0.62	217.03	0.06	0 12:12	0 00:00	0.00
426	PP115	0.04	0.04	220.68	0.10	0.00	0.60	220.62	0.04	0 12:12	0 00:00	0.00
427	PP120	0.09	0.05	220.34	0.21	0.00	0.65	220.19	0.06	0 12:12	0 00:00	0.00
428	PP125	0.15	0.06	220.24	0.37	0.00	0.60	219.96	0.09	0 12:13	0 00:00	0.00
429	PP130	0.15	0.00	220.08	0.24	0.00	0.56	219.90	0.06	0 12:13	0 00:00	0.00
430	PP135	0.22	0.08	220.36	1.22	0.00	0.02	219.22	0.08	0 12:10	0 00:00	0.00
431	PP140	0.30	0.09	220.26	1.35	0.00	0.12	218.99	0.08	0 12:10	0 00:00	0.00
432	PP145	0.31	0.01	219.41	1.02	0.00	0.28	218.50	0.11	0 12:10	0 00:00	0.00
433	PP15	0.13	0.00	219.80	0.20	0.00	1.54	219.66	0.06	0 12:12	0 00:00	0.00
434	PP150	0.31	0.00	218.73	0.55	0.00	0.24	218.27	0.09	0 12:10	0 00:00	0.00
435	PP155	0.32	0.01	218.38	0.36	0.00	0.43	218.09	0.07	0 12:12	0 00:00	0.00

Total Time Flooded (min)
0.00
0.00
0.00

Junction Results

SN	Element ID	Peak Inflow (cms)	Peak Lateral Inflow (cms)	Max HGL Elevation Attained (m)	Max HGL Depth Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Average HGL Elevation Attained (m)	Average HGL Depth Attained (m)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ha-mm)
436	PP160	0.32	0.00	217.97	0.49	0.00	0.30	217.57	0.09	0 12:12	0 00:00	0.00
437	PP165	0.10	0.10	216.23	0.12	0.00	0.67	216.14	0.03	0 12:12	0 00:00	0.00
438	PP170	0.06	0.06	209.29	0.11	0.00	4.88	209.21	0.03	0 12:12	0 00:00	0.00
439	PP180	0.11	0.11	209.94	0.19	0.00	0.80	209.79	0.04	0 12:12	0 00:00	0.00
440	PP185	0.11	0.00	205.45	0.15	0.00	4.91	205.33	0.03	0 12:12	0 00:00	0.00
441	PP195	0.10	0.10	218.04	0.20	0.00	1.25	217.89	0.05	0 12:12	0 00:00	0.00
442	PP20	0.13	0.00	218.88	0.18	0.00	0.96	218.76	0.06	0 12:13	0 00:00	0.00
443	PP200	0.10	0.00	217.88	0.18	0.00	1.16	217.74	0.04	0 12:12	0 00:00	0.00
444	PP205	0.10	0.00	217.62	0.13	0.00	1.13	217.52	0.03	0 12:12	0 00:00	0.00
445	PP210	0.10	0.00	216.35	0.22	0.00	0.86	216.19	0.06	0 12:13	0 00:00	0.00
446	PP215	0.10	0.00	216.19	0.12	0.00	0.86	216.10	0.03	0 12:12	0 00:00	0.00
447	PP220	0.26	0.00	216.19	0.66	0.00	0.72	215.63	0.10	0 12:12	0 00:00	0.00
448	PP225	0.26	0.00	215.37	0.18	0.00	0.61	215.24	0.05	0 12:12	0 00:00	0.00
449	PP230	0.42	0.00	213.13	0.31	0.00	0.91	212.91	0.09	0 12:12	0 00:00	0.00
450	PP235	0.42	0.00	209.89	0.92	0.00	0.33	209.18	0.21	0 12:12	0 00:00	0.00
451	PP240	0.52	0.11	209.29	0.49	0.00	0.44	208.93	0.13	0 12:12	0 00:00	0.00
452	PP245	0.52	0.00	208.89	0.40	0.00	0.71	208.59	0.10	0 12:12	0 00:00	0.00
453	PP25	0.27	0.15	218.54	0.34	0.00	0.44	218.27	0.07	0 12:12	0 00:00	0.00
454	PP255	0.17	0.17	216.56	0.16	0.00	0.64	216.44	0.04	0 12:12	0 00:00	0.00
455	PP260	0.16	0.16	213.31	0.25	0.00	0.67	213.15	0.09	0 12:12	0 00:00	0.00
456	PP265	0.23	0.23	209.60	0.21	0.00	1.25	209.44	0.05	0 12:12	0 00:00	0.00
457	PP275	0.19	0.19	210.88	0.21	0.00	1.54	210.71	0.04	0 12:12	0 00:00	0.00
458	PP280	0.19	0.00	210.23	0.16	0.00	1.28	210.11	0.04	0 12:12	0 00:00	0.00
459	PP290	0.12	0.12	211.90	0.12	0.00	1.27	211.80	0.02	0 12:12	0 00:00	0.00
460	PP295	0.12	0.00	210.74	0.14	0.00	1.44	210.63	0.03	0 12:12	0 00:00	0.00
461	PP30	0.27	0.00	218.28	0.38	0.00	0.41	217.98	0.08	0 12:12	0 00:00	0.00
462	PP305	0.22	0.22	207.14	0.18	0.00	0.48	207.01	0.05	0 12:12	0 00:00	0.00
463	PP315	0.10	0.10	217.11	0.18	0.00	1.27	216.98	0.05	0 12:12	0 00:00	0.00
464	PP320	0.10	0.00	217.01	0.30	0.00	1.43	216.79	0.08	0 12:15	0 00:00	0.00
465	PP325	0.10	0.00	216.97	0.33	0.00	1.40	216.72	0.08	0 12:15	0 00:00	0.00
466	PP330	0.10	0.00	217.66	1.36	0.00	0.55	216.38	0.08	0 12:12	0 00:00	0.00
467	PP335	0.24	0.06	217.17	1.06	0.00	0.86	216.18	0.07	0 12:12	0 00:00	0.00
468	PP340	0.24	0.00	217.06	1.45	0.00	0.78	215.74	0.13	0 12:12	0 00:00	0.00
469	PP345	0.29	0.06	216.94	1.64	0.00	0.55	215.43	0.13	0 12:07	0 00:00	0.00
470	PP35	0.27	0.00	218.07	0.43	0.00	0.38	217.74	0.10	0 12:12	0 00:00	0.00
471	PP350	0.29	0.00	215.38	0.42	0.00	1.59	215.07	0.11	0 12:13	0 00:00	0.00
472	PP355	0.29	0.00	215.22	0.31	0.00	1.76	215.00	0.09	0 12:13	0 00:00	0.00
473	PP360	0.00	0.00	214.33	0.06	0.00	2.67	214.27	0.00	0 12:12	0 00:00	0.00
474	PP365	0.08	0.08	214.33	0.13	0.00	2.67	214.23	0.03	0 12:12	0 00:00	0.00
475	PP370	0.08	0.00	213.65	0.15	0.00	2.63	213.54	0.04	0 12:12	0 00:00	0.00
476	PP375	0.16	0.08	213.38	0.15	0.00	2.33	213.27	0.04	0 12:12	0 00:00	0.00
477	PP380	0.27	0.05	211.32	0.16	0.00	2.30	211.20	0.04	0 12:12	0 00:00	0.00
478	PP390	0.12	0.12	217.07	0.43	0.00	1.70	216.69	0.05	0 12:13	0 00:00	0.00
479	PP395	0.12	0.00	217.04	0.62	0.00	1.66	216.49	0.07	0 12:13	0 00:00	0.00
480	PP40	0.30	0.03	217.80	0.25	0.00	0.57	217.61	0.06	0 12:12	0 00:00	0.00
481	PP400	0.12	0.00	217.02	0.67	0.00	1.50	216.42	0.07	0 12:12	0 00:00	0.00
482	PP405	0.12	0.00	217.16	0.96	0.00	0.90	216.27	0.07	0 12:12	0 00:00	0.00
483	PP410	0.06	0.06	212.23	0.08	0.00	2.45	212.17	0.02	0 12:12	0 00:00	0.00
484	PP415	0.08	0.08	216.67	0.44	0.00	1.89	216.33	0.10	0 12:14	0 00:00	0.00
485	PP420	0.16	0.00	216.65	0.42	0.00	1.91	216.31	0.08	0 12:15	0 00:00	0.00
486	PP425	0.15	0.00	216.56	0.46	0.00	1.81	216.19	0.09	0 12:14	0 00:00	0.00
487	PP430	0.23	0.00	216.45	0.48	0.00	1.77	216.06	0.09	0 12:13	0 00:00	0.00
488	PP435	0.22	0.00	217.08	1.58	0.00	0.85	215.58	0.08	0 12:11	0 00:00	0.00
489	PP440	0.27	0.00	215.97	1.07	0.00	1.63	215.05	0.15	0 12:11	0 00:00	0.00
490	PP445	0.27	0.00	215.46	0.61	0.00	2.00	214.95	0.10	0 12:11	0 00:00	0.00
491	PP45	0.47	0.00	217.06	0.48	0.00	0.70	216.69	0.11	0 12:12	0 00:00	0.00
492	PP450	0.42	0.02	214.82	0.20	0.00	2.51	214.67	0.05	0 12:12	0 00:00	0.00
493	PP455	0.43	0.00	214.30	0.13	0.00	1.48	214.20	0.03	0 12:13	0 00:00	0.00
494	PP460	0.72	0.00	214.26	0.37	0.00	1.31	213.97	0.08	0 12:13	0 00:00	0.00
495	PP465	0.79	0.00	214.17	0.32	0.00	1.38	213.92	0.07	0 12:13	0 00:00	0.00
496	PP470	0.83	0.00	213.95	0.30	0.00	1.45	213.71	0.06	0 12:13	0 00:00	0.00
497	PP475	0.94	0.00	213.70	0.34	0.00	1.64	213.43	0.07	0 12:13	0 00:00	0.00
498	PP480	0.97	0.03	213.51	0.35	0.00	1.49	213.24	0.08	0 12:13	0 00:00	0.00
499	PP485	1.11	0.06	213.13	0.25	0.00	2.60	212.94	0.06	0 12:14	0 00:00	0.00
500	PP490	1.48	0.00	210.54	0.54	0.00	0.41	210.11	0.11	0 12:16	0 00:00	0.00
501	PP5	0.13	0.13	220.24	0.22	0.00	1.47	220.08	0.06	0 12:12	0 00:00	0.00
502	PP50	0.05	0.05	217.34	1.84	0.00	0.85	217.10	1.60	0 12:11	0 00:00	0.00
503	PP500	0.08	0.08	216.45	0.20	0.00	1.74	216.29	0.04	0 12:13	0 00:00	0.00
504	PP505	0.07	0.07	216.04	1.06	0.00	1.40	215.06	0.08	0 12:11	0 00:00	0.00
505	PP510	0.05	0.05	216.33	0.15	0.00	2.12	216.21	0.03	0 12:12	0 00:00	0.00
506	PP515	0.05	0.00	216.24	0.13	0.00	2.15	216.14	0.03	0 12:12	0 00:00	0.00
507	PP520	0.05	0.00	216.11	0.11	0.00	2.25	216.03	0.03	0 12:12	0 00:00	0.00
508	PP525	0.05	0.00	216.01	0.30	0.00	2.14	215.78	0.07	0 12:12	0 00:00	0.00
509	PP530	0.13	0.00	215.98	0.27	0.00	1.86	215.77	0.06	0 12:12	0 00:00	0.00
510	PP535	0.13	0.01	215.83	0.21	0.00	1.83	215.66	0.04	0 12:12	0 00:00	0.00
511	PP540	0.13	0.00	215.59	0.23	0.00	1.97	215.41	0.05	0 12:12	0 00:00	0.00
512	PP545	0.08	0.08	216.03	0.31	0.00	1.86	215.79	0.07	0 12:12	0 00:00	0.00
513	PP55	0.42	0.04	217.25	0.13	0.00	0.62	217.15	0.03	0 12:12	0 00:00	0.00
514	PP550	0.13	0.13	215.70	0.21	0.00	1.12	215.54	0.05	0 12:12	0 00:00	0.00
515	PP555	0.13	0.00	215.45	0.25	0.00	1.37	215.26	0.06	0 12:12	0 00:00	0.00
516	PP560	0.13	0.00	215.32	0.32	0.00	1.14	215.06	0.06	0 12:13	0 00:00	0.00
517	PP565	0.24	0.00	215.19	0.96	0.00	0.64	214.40	0.17	0 12:12	0 00:00	0.00
518	PP570	0.30	0.00	214.86	0.64	0.00	0.82	214.32	0.10	0 12:12	0 00:00	0.00
519	PP575	0.13	0.13	215.23	0.72	0.00	0.44	214.56	0.05	0 12:12	0 00:00	0.00
520	PP580	0.07	0.07	214.85	0.17	0.00	1.01	214.70	0.02	0 12:12	0 00:00	0.00
521	PP585	0.07	0.07	214.36	0.15	0.00	1.05	214.24	0.03	0 12:12	0 00:00	0.00
522	PP590	0.04	0.04	214.02	0.14	0.00	1.26	213.91	0.03	0 12:12	0 00:00	0.00

Total Time Flooded (min)
0.00
0.00
0.00

Junction Results

SN	Element ID	Peak Inflow (cms)	Peak Lateral Inflow (cms)	Max HGL Elevation Attained (m)	Max HGL Depth Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Average HGL Elevation Attained (m)	Average HGL Depth Attained (m)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ha-mm)
523	PP595	0.12	0.12	214.22	0.14	0.00	1.07	214.11	0.03	0 12:12	0 00:00	0.00
524	PP60	0.52	0.00	215.20	0.15	0.00	0.65	215.08	0.03	0 12:12	0 00:00	0.00
525	PP600	0.00	0.00	214.09	0.00	0.00	1.22	214.09	0.00	0 00:00	0 00:00	0.00
526	PP605	0.09	0.09	214.44	0.15	0.00	1.73	214.32	0.03	0 12:12	0 00:00	0.00
527	PP610	0.09	0.00	214.09	0.13	0.00	2.00	213.99	0.03	0 12:12	0 00:00	0.00
528	PP615	0.00	0.00	213.93	0.00	0.00	0.99	213.93	0.00	0 00:00	0 00:00	0.00
529	PP620	0.17	0.17	213.83	0.16	0.00	1.04	213.71	0.04	0 12:12	0 00:00	0.00
530	PP625	0.25	0.08	212.47	0.80	0.00	0.44	211.74	0.07	0 12:11	0 00:00	0.00
531	PP630	0.41	0.16	212.06	0.63	0.00	0.24	211.51	0.08	0 12:11	0 00:00	0.00
532	PP635	0.41	0.00	211.50	0.35	0.00	0.53	211.22	0.07	0 12:12	0 00:00	0.00
533	PP645	0.18	0.18	207.66	0.13	0.00	0.66	207.56	0.03	0 12:12	0 00:00	0.00
534	PP65	0.60	0.08	213.67	0.17	0.00	0.68	213.53	0.03	0 12:12	0 00:00	0.00
535	PP650	0.18	0.00	204.91	0.17	0.00	1.28	204.78	0.04	0 12:12	0 00:00	0.00
536	PP655	0.30	0.00	203.66	0.21	0.00	0.58	203.49	0.04	0 12:12	0 00:00	0.00
537	PP665	0.12	0.12	204.42	0.28	0.00	0.50	204.20	0.06	0 12:12	0 00:00	0.00
538	PP670	0.12	0.00	204.30	0.16	0.00	0.28	204.17	0.03	0 12:12	0 00:00	0.00
539	PP675	0.10	0.10	211.78	0.10	0.00	1.56	211.70	0.02	0 12:12	0 00:00	0.00
540	PP680	0.24	0.08	206.75	0.18	0.00	1.21	206.61	0.04	0 12:12	0 00:00	0.00
541	PP690	0.06	0.06	207.78	0.10	0.00	0.56	207.70	0.02	0 12:12	0 00:00	0.00
542	PP695	0.09	0.09	208.24	0.11	0.00	0.69	208.16	0.03	0 12:12	0 00:00	0.00
543	PP70	0.60	0.00	213.03	0.12	0.00	0.89	212.93	0.02	0 12:12	0 00:00	0.00
544	PP705	0.47	0.00	216.66	0.26	0.00	5.74	216.47	0.07	0 12:12	0 00:00	0.00
545	PP75	0.59	0.00	209.64	0.24	0.00	1.02	209.44	0.04	0 12:13	0 00:00	0.00
546	PP80	0.59	0.00	209.49	0.29	0.00	0.75	209.25	0.05	0 12:14	0 00:00	0.00
547	PP85	0.66	0.00	209.42	0.34	0.00	0.59	209.12	0.04	0 12:15	0 00:00	0.00
548	PP90	0.78	0.11	209.46	0.64	0.00	0.28	208.88	0.06	0 12:15	0 00:00	0.00
549	PP95	0.71	0.06	209.45	0.80	0.00	0.47	208.77	0.12	0 12:15	0 00:00	0.00
550	RM10	0.02	0.00	222.38	0.09	0.00	0.63	222.31	0.02	0 12:12	0 00:00	0.00
551	RM100	0.22	0.05	221.67	0.26	0.00	0.37	221.49	0.08	0 12:12	0 00:00	0.00
552	RM105	0.14	0.14	220.11	0.11	0.00	0.68	220.02	0.02	0 12:12	0 00:00	0.00
553	RM110	0.14	0.00	218.61	0.16	0.00	1.18	218.49	0.04	0 12:12	0 00:00	0.00
554	RM115	0.19	0.06	215.69	0.25	0.00	0.88	215.49	0.05	0 12:12	0 00:00	0.00
555	RM120	0.19	0.00	215.18	0.14	0.00	0.96	215.06	0.02	0 12:12	0 00:00	0.00
556	RM125	0.02	0.02	214.66	0.05	0.00	0.99	214.62	0.01	0 12:12	0 00:00	0.00
557	RM130	0.02	0.00	213.25	0.03	0.00	1.09	213.23	0.01	0 12:12	0 00:00	0.00
558	RM135	0.05	0.05	222.44	0.13	0.00	0.61	222.34	0.03	0 12:12	0 00:00	0.00
559	RM140	0.14	0.00	222.32	0.37	0.00	0.40	222.06	0.11	0 12:12	0 00:00	0.00
560	RM145	0.14	0.00	222.20	0.27	0.00	0.51	222.01	0.08	0 12:12	0 00:00	0.00
561	RM15	0.08	0.00	222.32	0.22	0.00	0.52	222.15	0.05	0 12:12	0 00:00	0.00
562	RM150	0.20	0.07	222.09	0.52	0.00	0.26	221.71	0.14	0 12:12	0 00:00	0.00
563	RM155	0.31	0.04	221.54	0.57	0.00	0.81	221.14	0.17	0 12:12	0 00:00	0.00
564	RM160	0.31	0.00	221.30	0.36	0.00	1.24	221.04	0.10	0 12:12	0 00:00	0.00
565	RM165	0.36	0.06	220.54	0.30	0.00	2.46	220.33	0.09	0 12:13	0 00:00	0.00
566	RM170	0.09	0.09	223.11	0.11	0.00	0.68	223.04	0.04	0 12:12	0 00:00	0.00
567	RM175	0.06	0.06	222.09	0.09	0.00	0.70	222.03	0.03	0 12:12	0 00:00	0.00
568	RM180	0.06	0.00	221.56	0.54	0.00	0.78	221.14	0.12	0 12:12	0 00:00	0.00
569	RM185	0.11	0.11	220.80	0.23	0.00	1.74	220.64	0.07	0 12:12	0 00:00	0.00
570	RM190	0.11	0.00	219.96	0.32	0.00	1.83	219.73	0.09	0 12:14	0 00:00	0.00
571	RM195	0.14	0.04	219.83	0.21	0.00	1.69	219.68	0.06	0 12:13	0 00:00	0.00
572	RM20	0.16	0.03	221.97	0.22	0.00	0.77	221.80	0.05	0 12:12	0 00:00	0.00
573	RM200	0.14	0.00	219.23	0.28	0.00	1.53	219.02	0.07	0 12:13	0 00:00	0.00
574	RM205	0.18	0.04	218.98	0.23	0.00	1.75	218.81	0.06	0 12:14	0 00:00	0.00
575	RM210	0.49	0.06	218.55	0.35	0.00	0.87	218.28	0.08	0 12:12	0 00:00	0.00
576	RM215	0.59	0.11	217.54	0.51	0.00	0.64	217.13	0.10	0 12:12	0 00:00	0.00
577	RM220	0.12	0.12	221.11	0.11	0.00	0.68	221.03	0.03	0 12:12	0 00:00	0.00
578	RM225	0.25	0.00	219.46	0.29	0.00	1.25	219.24	0.07	0 12:12	0 00:00	0.00
579	RM230	0.13	0.13	219.74	0.21	0.00	1.33	219.58	0.05	0 12:12	0 00:00	0.00
580	RM235	0.06	0.06	221.46	0.18	0.00	1.25	221.32	0.04	0 12:12	0 00:00	0.00
581	RM240	0.06	0.00	221.33	0.13	0.00	1.58	221.23	0.03	0 12:12	0 00:00	0.00
582	RM245	0.11	0.00	220.87	0.26	0.00	1.95	220.66	0.05	0 12:14	0 00:00	0.00
583	RM25	0.18	0.02	221.41	0.27	0.00	0.73	221.19	0.05	0 12:12	0 00:00	0.00
584	RM250	0.11	0.00	220.85	0.45	0.00	1.82	220.46	0.06	0 12:13	0 00:00	0.00
585	RM255	0.20	0.09	220.89	0.60	0.00	1.59	220.38	0.09	0 12:12	0 00:00	0.00
586	RM260	0.35	0.17	220.36	0.66	0.00	1.08	219.84	0.14	0 12:11	0 00:00	0.00
587	RM270	0.05	0.05	221.00	0.15	0.00	1.79	220.90	0.05	0 12:12	0 00:00	0.00
588	RM290	0.17	0.17	219.83	0.33	0.00	0.84	219.56	0.06	0 12:12	0 00:00	0.00
589	RM295	0.24	0.07	219.76	0.48	0.00	1.08	219.41	0.13	0 12:12	0 00:00	0.00
590	RM30	0.39	0.00	220.74	0.43	0.00	1.18	220.41	0.10	0 12:13	0 00:00	0.00
591	RM35	0.45	0.07	219.84	0.63	0.00	0.64	219.32	0.11	0 12:12	0 00:00	0.00
592	RM40	0.45	0.00	219.45	0.41	0.00	0.71	219.13	0.09	0 12:13	0 00:00	0.00
593	RM45	0.47	0.02	218.81	0.65	0.00	0.44	218.30	0.14	0 12:13	0 00:00	0.00
594	RM5	0.02	0.02	222.44	0.10	0.00	0.57	222.36	0.02	0 12:12	0 00:00	0.00
595	RM50	0.47	0.00	218.41	0.27	0.00	0.75	218.22	0.08	0 12:13	0 00:00	0.00
596	RM55	0.69	0.04	214.39	0.48	0.00	1.59	214.00	0.09	0 12:13	0 00:00	0.00
597	RM60	0.70	0.00	212.96	0.39	0.00	1.32	212.66	0.09	0 12:13	0 00:00	0.00
598	RM65	0.70	0.00	210.07	0.79	0.00	0.00	209.38	0.10	0 12:05	0 12:13	14.34
599	RM70	0.47	0.04	209.70	0.79	0.00	0.00	209.04	0.13	0 12:05	0 12:05	0.00
600	RM75	0.47	0.00	209.32	0.68	0.00	0.19	208.79	0.15	0 12:05	0 00:00	0.00
601	RM85	0.05	0.05	222.18	0.15	0.00	0.83	222.07	0.04	0 12:12	0 00:00	0.00
602	RM90	0.05	0.00	222.05	0.12	0.00	0.87	221.97	0.04	0 12:12	0 00:00	0.00
603	RM95	0.16	0.16	221.84	0.31	0.00	0.32	221.62	0.09	0 12:12	0 00:00	0.00
604	UV10	0.51	0.05	217.40	0.36	0.00	0.58	217.13	0.09	0 12:13	0 00:00	0.00
605	UV100	1.04	0.00	209.33	1.53	0.00	1.29	207.91	0.11	0 12:11	0 00:00	0.00
606	UV1000	0.06	0.06	211.42	0.14	0.00	2.31	211.31	0.03	0 12:12	0 00:00	0.00
607	UV1005	0.06	0.00	211.07	0.07	0.00	2.21	211.02	0.02	0 12:12	0 00:00	0.00
608	UV1010	0.01	0.01	208.84	0.05	0.00	2.16	208.80	0.01	0 12:12	0 00:00	0.00
609	UV1015	0.04	0.04	211.74	0.07	0.00	1.57	211.69	0.02	0 12:12	0 00:00	0.00

Total Time Flooded (min)
0.00
0.00
0.00

Junction Results

SN	Element ID	Peak Inflow (cms)	Peak Lateral Inflow (cms)	Max HGL Elevation Attained (m)	Max HGL Depth Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Average HGL Elevation Attained (m)	Average HGL Depth Attained (m)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ha-mm)
610	UV1020	0.07	0.07	208.67	0.16	0.00	1.72	208.55	0.04	0 12:12	0 00:00	0.00
611	UV1025	0.12	0.04	208.19	0.15	0.00	1.02	208.07	0.03	0 12:12	0 00:00	0.00
612	UV1030	0.15	0.15	201.99	0.18	0.00	2.20	201.85	0.04	0 12:12	0 00:00	0.00
613	UV1040	0.09	0.09	210.40	0.14	0.00	1.08	210.29	0.03	0 12:12	0 00:00	0.00
614	UV1045	0.18	0.09	209.86	0.17	0.00	1.42	209.72	0.03	0 12:12	0 00:00	0.00
615	UV105	1.10	0.06	207.16	2.71	0.00	0.91	204.61	0.16	0 12:06	0 00:00	0.00
616	UV1050	0.18	0.00	208.69	0.15	0.00	1.84	208.57	0.03	0 12:12	0 00:00	0.00
617	UV1055	0.21	0.03	206.45	0.17	0.00	1.85	206.32	0.04	0 12:12	0 00:00	0.00
618	UV1065	0.08	0.08	209.34	0.17	0.00	1.09	209.20	0.03	0 12:12	0 00:00	0.00
619	UV1070	0.08	0.00	209.10	0.14	0.00	1.13	208.99	0.03	0 12:12	0 00:00	0.00
620	UV1075	0.22	0.07	208.03	0.15	0.00	2.22	207.92	0.04	0 12:12	0 00:00	0.00
621	UV1080	0.28	0.06	205.65	0.55	0.00	1.24	205.17	0.07	0 12:12	0 00:00	0.00
622	UV1090	0.07	0.07	210.15	0.10	0.00	1.90	210.07	0.02	0 12:12	0 00:00	0.00
623	UV1095	0.07	0.00	208.65	0.10	0.00	2.25	208.57	0.02	0 12:12	0 00:00	0.00
624	UV110	1.19	0.00	205.04	1.54	0.00	1.75	203.65	0.15	0 12:11	0 00:00	0.00
625	UV1100	0.12	0.12	204.57	0.14	0.00	1.36	204.46	0.03	0 12:12	0 00:00	0.00
626	UV1110	0.04	0.04	199.77	0.09	0.00	0.70	199.70	0.02	0 12:12	0 00:00	0.00
627	UV1120	0.11	0.11	199.68	0.10	0.00	1.83	199.60	0.02	0 12:12	0 00:00	0.00
628	UV1130	0.09	0.09	199.45	0.14	0.00	0.65	199.34	0.03	0 12:12	0 00:00	0.00
629	UV1135	0.09	0.00	198.72	0.10	0.00	0.69	198.64	0.02	0 12:12	0 00:00	0.00
630	UV1145	0.09	0.09	200.08	0.15	0.00	0.79	199.96	0.03	0 12:12	0 00:00	0.00
631	UV1155	0.08	0.08	197.58	0.13	0.00	0.66	197.47	0.02	0 12:12	0 00:00	0.00
632	UV1165	0.03	0.03	197.86	0.08	0.00	0.71	197.80	0.02	0 12:12	0 00:00	0.00
633	UV120	0.03	0.03	220.33	1.20	0.00	0.00	219.19	0.06	0 12:02	0 12:12	0.49
634	UV125	0.02	0.00	218.60	0.00	0.00	1.62	218.60	0.00	1 00:00	0 00:00	0.00
635	UV130	0.00	0.00	219.00	0.00	0.00	1.20	219.00	0.00	0 00:00	0 00:00	0.00
636	UV135	0.03	0.00	217.88	0.08	0.00	1.68	217.82	0.02	0 12:12	0 00:00	0.00
637	UV140	0.03	0.00	216.60	0.09	0.00	2.45	216.53	0.02	0 12:12	0 00:00	0.00
638	UV145	0.06	0.00	216.15	0.11	0.00	2.34	216.06	0.02	0 12:12	0 00:00	0.00
639	UV15	0.56	0.06	216.13	0.41	0.00	0.53	215.81	0.09	0 12:13	0 00:00	0.00
640	UV150	0.08	0.00	215.29	0.16	0.00	2.59	215.16	0.03	0 12:12	0 00:00	0.00
641	UV155	0.08	0.00	215.09	0.17	0.00	2.68	214.95	0.03	0 12:12	0 00:00	0.00
642	UV160	0.08	0.00	214.86	0.13	0.00	2.65	214.76	0.03	0 12:12	0 00:00	0.00
643	UV165	0.03	0.03	218.58	0.06	0.00	1.07	218.53	0.01	0 12:12	0 00:00	0.00
644	UV170	0.03	0.00	217.96	0.10	0.00	1.61	217.88	0.02	0 12:12	0 00:00	0.00
645	UV175	0.03	0.03	217.42	0.06	0.00	1.56	217.37	0.01	0 12:12	0 00:00	0.00
646	UV180	0.03	0.03	216.62	0.05	0.00	1.47	216.58	0.01	0 12:12	0 00:00	0.00
647	UV185	0.03	0.03	217.85	1.41	0.00	0.00	217.82	1.38	0 03:43	0 12:12	8.48
648	UV190	0.00	0.00	219.36	0.00	0.00	0.45	219.36	0.00	0 00:00	0 00:00	0.00
649	UV195	0.13	0.13	209.35	0.34	0.00	1.27	209.03	0.02	0 12:12	0 00:00	0.00
650	UV20	0.57	0.00	215.43	0.26	0.00	0.69	215.25	0.08	0 12:13	0 00:00	0.00
651	UV200	0.10	0.10	205.06	0.83	0.00	3.26	204.27	0.04	0 12:11	0 00:00	0.00
652	UV205	0.18	0.18	205.67	0.30	0.00	0.78	205.43	0.06	0 12:12	0 00:00	0.00
653	UV215	0.14	0.14	214.31	0.24	0.00	0.74	214.12	0.05	0 12:12	0 00:00	0.00
654	UV220	0.14	0.00	213.93	0.10	0.00	0.69	213.85	0.02	0 12:12	0 00:00	0.00
655	UV225	0.14	0.00	209.83	0.19	0.00	3.37	209.68	0.04	0 12:12	0 00:00	0.00
656	UV230	0.29	0.00	208.93	0.24	0.00	1.41	208.74	0.05	0 12:12	0 00:00	0.00
657	UV235	0.38	0.00	207.93	0.53	0.00	0.26	207.47	0.07	0 12:12	0 00:00	0.00
658	UV240	0.38	0.00	207.14	0.19	0.00	0.59	206.99	0.04	0 12:12	0 00:00	0.00
659	UV25	0.59	0.03	212.01	0.42	0.00	0.53	211.68	0.09	0 12:13	0 00:00	0.00
660	UV250	0.16	0.16	210.13	0.13	0.00	0.66	210.03	0.03	0 12:12	0 00:00	0.00
661	UV255	0.09	0.09	207.94	0.19	0.00	0.77	207.78	0.03	0 12:12	0 00:00	0.00
662	UV260	0.10	0.10	216.95	0.17	0.00	1.67	216.83	0.05	0 12:12	0 00:00	0.00
663	UV265	0.17	0.07	215.79	0.36	0.00	1.21	215.49	0.06	0 12:13	0 00:00	0.00
664	UV270	0.16	0.00	215.72	0.38	0.00	1.23	215.41	0.07	0 12:13	0 00:00	0.00
665	UV275	0.16	0.00	215.64	0.40	0.00	1.29	215.30	0.06	0 12:13	0 00:00	0.00
666	UV280	0.16	0.00	215.54	0.48	0.00	1.45	215.17	0.11	0 12:13	0 00:00	0.00
667	UV285	0.17	0.01	215.40	0.36	0.00	1.43	215.10	0.06	0 12:13	0 00:00	0.00
668	UV290	0.35	0.00	215.49	0.84	0.00	1.20	214.73	0.08	0 12:10	0 00:00	0.00
669	UV295	0.45	0.11	214.33	0.63	0.00	1.60	213.81	0.11	0 12:12	0 00:00	0.00
670	UV30	0.62	0.00	211.26	0.24	0.00	0.70	211.09	0.07	0 12:13	0 00:00	0.00
671	UV300	0.59	0.00	214.12	0.52	0.00	1.69	213.70	0.10	0 12:12	0 00:00	0.00
672	UV305	0.99	0.08	213.61	0.36	0.00	2.05	213.31	0.06	0 12:12	0 00:00	0.00
673	UV310	1.01	0.00	213.45	0.34	0.00	2.02	213.18	0.07	0 12:12	0 00:00	0.00
674	UV315	1.03	0.02	213.01	0.23	0.00	1.98	212.83	0.05	0 12:12	0 00:00	0.00
675	UV320	1.03	0.00	211.97	0.20	0.00	2.28	211.82	0.05	0 12:13	0 00:00	0.00
676	UV325	1.44	0.21	209.55	0.29	0.00	1.52	209.32	0.06	0 12:13	0 00:00	0.00
677	UV330	1.54	0.13	208.93	1.78	0.00	0.00	207.30	0.15	0 12:10	0 12:10	4.75
678	UV340	0.13	0.13	217.29	0.19	0.00	1.48	217.14	0.04	0 12:12	0 00:00	0.00
679	UV345	0.13	0.00	216.95	0.18	0.00	1.81	216.82	0.05	0 12:12	0 00:00	0.00
680	UV35	0.62	0.00	207.90	0.76	0.00	1.05	207.25	0.11	0 12:13	0 00:00	0.00
681	UV350	0.20	0.07	215.38	0.32	0.00	1.54	215.11	0.05	0 12:13	0 00:00	0.00
682	UV355	0.13	0.13	216.87	0.15	0.00	1.93	216.76	0.04	0 12:12	0 00:00	0.00
683	UV360	0.23	0.23	216.86	0.20	0.00	0.89	216.72	0.06	0 12:12	0 00:00	0.00
684	UV365	0.23	0.00	215.25	0.26	0.00	0.95	215.05	0.06	0 12:12	0 00:00	0.00
685	UV370	0.33	0.11	214.87	0.37	0.00	0.84	214.57	0.07	0 12:12	0 00:00	0.00
686	UV375	0.33	0.00	214.49	0.39	0.00	0.88	214.18	0.08	0 12:12	0 00:00	0.00
687	UV380	0.02	0.02	214.06	0.06	0.00	1.43	214.01	0.01	0 12:12	0 00:00	0.00
688	UV385	0.02	0.00	213.75	0.05	0.00	1.81	213.71	0.01	0 12:12	0 00:00	0.00
689	UV390	0.05	0.05	214.50	0.19	0.00	1.80	214.36	0.05	0 12:12	0 00:00	0.00
690	UV395	0.05	0.00	214.40	0.10	0.00	1.76	214.32	0.02	0 12:12	0 00:00	0.00
691	UV40	0.62	0.00	207.50	0.70	0.00	0.98	206.92	0.12	0 12:13	0 00:00	0.00
692	UV400	0.12	0.04	213.54	0.18	0.00	2.60	213.40	0.04	0 12:12	0 00:00	0.00
693	UV405	0.22	0.10	212.50	0.21	0.00	1.80	212.33	0.04	0 12:12	0 00:00	0.00
694	UV410	0.22	0.00	212.25	0.22	0.00	1.51	212.08	0.05	0 12:12	0 00:00	0.00
695	UV415	0.22	0.00	211.21	0.21	0.00	1.34	211.04	0.04	0 12:12	0 00:00	0.00
696	UV420	0.22	0.00	210.54	0.24	0.00	1.86	210.35	0.05	0 12:12	0 00:00	0.00

Total Time Flooded (min)
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Junction Results

SN	Element ID	Peak Inflow (cms)	Peak Lateral Inflow (cms)	Max HGL Elevation Attained (m)	Max HGL Depth Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Average HGL Elevation Attained (m)	Average HGL Depth Attained (m)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ha-mm)
697	UV425	0.02	0.02	214.64	0.07	0.00	1.75	214.59	0.02	0 12:12	0 00:00	0.00
698	UV430	0.10	0.00	212.35	0.26	0.00	1.79	212.14	0.05	0 12:12	0 00:00	0.00
699	UV440	0.18	0.18	216.20	0.20	0.00	0.59	216.05	0.05	0 12:12	0 00:00	0.00
700	UV445	0.18	0.00	215.02	0.10	0.00	1.42	214.94	0.02	0 12:12	0 00:00	0.00
701	UV45	0.68	0.06	207.09	0.46	0.00	2.09	206.73	0.10	0 12:13	0 00:00	0.00
702	UV450	0.18	0.00	214.66	0.09	0.00	1.49	214.59	0.02	0 12:12	0 00:00	0.00
703	UV455	0.20	0.03	214.09	0.16	0.00	1.37	213.96	0.03	0 12:12	0 00:00	0.00
704	UV460	0.37	0.00	214.04	0.18	0.00	1.26	213.90	0.04	0 12:12	0 00:00	0.00
705	UV465	0.37	0.00	213.93	0.29	0.00	1.01	213.72	0.08	0 12:13	0 00:00	0.00
706	UV470	0.40	0.03	213.79	0.17	0.00	1.12	213.65	0.03	0 12:13	0 00:00	0.00
707	UV475	0.51	0.00	213.49	0.19	0.00	1.45	213.35	0.05	0 12:13	0 00:00	0.00
708	UV480	0.54	0.04	213.13	0.33	0.00	1.94	212.86	0.06	0 12:13	0 00:00	0.00
709	UV485	0.66	0.00	213.06	0.28	0.00	2.03	212.83	0.05	0 12:13	0 00:00	0.00
710	UV490	0.66	0.00	212.88	0.28	0.00	2.18	212.66	0.06	0 12:13	0 00:00	0.00
711	UV495	0.66	0.00	212.65	0.15	0.00	1.85	212.53	0.03	0 12:13	0 00:00	0.00
712	UV5	0.46	0.11	218.34	0.39	0.00	0.95	218.05	0.10	0 12:13	0 00:00	0.00
713	UV500	0.81	0.09	210.51	0.19	0.00	1.41	210.36	0.04	0 12:13	0 00:00	0.00
714	UV505	0.87	0.00	209.24	0.28	0.00	0.81	209.01	0.05	0 12:13	0 00:00	0.00
715	UV510	1.47	0.08	209.14	0.44	0.00	0.48	208.77	0.07	0 12:13	0 00:00	0.00
716	UV515	1.47	0.00	208.96	0.40	0.00	0.54	208.64	0.08	0 12:13	0 00:00	0.00
717	UV520	1.51	0.00	208.52	0.46	0.00	1.41	208.15	0.09	0 12:13	0 00:00	0.00
718	UV525	1.51	0.00	208.32	0.56	0.00	1.83	207.87	0.11	0 12:13	0 00:00	0.00
719	UV535	0.17	0.17	214.49	0.22	0.00	0.99	214.32	0.05	0 12:12	0 00:00	0.00
720	UV540	0.12	0.12	213.95	0.20	0.00	1.24	213.79	0.04	0 12:12	0 00:00	0.00
721	UV545	0.12	0.12	213.53	0.24	0.00	1.81	213.34	0.05	0 12:12	0 00:00	0.00
722	UV55	0.01	0.01	216.07	0.03	0.00	0.68	216.05	0.01	0 12:12	0 00:00	0.00
723	UV550	0.12	0.00	213.36	0.20	0.00	1.82	213.20	0.04	0 12:12	0 00:00	0.00
724	UV555	0.08	0.08	210.80	0.18	0.00	1.26	210.65	0.03	0 12:12	0 00:00	0.00
725	UV560	0.07	0.07	209.60	0.13	0.00	0.66	209.50	0.03	0 12:12	0 00:00	0.00
726	UV565	0.18	0.18	214.13	0.32	0.00	0.92	213.89	0.08	0 12:12	0 00:00	0.00
727	UV570	0.17	0.00	213.94	0.22	0.00	0.88	213.77	0.05	0 12:12	0 00:00	0.00
728	UV575	0.32	0.15	213.50	1.31	0.00	0.00	212.27	0.08	0 12:11	0 12:11	0.01
729	UV580	0.48	0.16	212.50	1.80	0.00	0.00	210.83	0.13	0 12:11	0 12:12	0.07
730	UV585	0.47	0.00	212.03	1.57	0.00	0.35	210.57	0.11	0 12:08	0 00:00	0.00
731	UV590	0.54	0.07	209.32	0.12	0.00	0.98	209.23	0.03	0 12:12	0 00:00	0.00
732	UV595	0.04	0.04	208.68	0.10	0.00	1.97	208.60	0.02	0 12:10	0 00:00	0.00
733	UV60	0.04	0.04	211.86	0.06	0.00	0.56	211.81	0.01	0 12:12	0 00:00	0.00
734	UV600	0.04	0.00	208.53	0.23	0.00	1.62	208.32	0.02	0 12:13	0 00:00	0.00
735	UV605	0.09	0.09	213.07	0.17	0.00	1.77	212.94	0.04	0 12:12	0 00:00	0.00
736	UV610	0.09	0.00	212.79	0.11	0.00	1.82	212.71	0.03	0 12:12	0 00:00	0.00
737	UV615	0.28	0.00	210.03	0.26	0.00	3.97	209.83	0.06	0 12:12	0 00:00	0.00
738	UV620	0.28	0.00	209.00	0.23	0.00	3.47	208.83	0.06	0 12:12	0 00:00	0.00
739	UV625	0.34	0.00	206.86	0.26	0.00	1.03	206.66	0.06	0 12:12	0 00:00	0.00
740	UV630	0.42	0.00	205.59	0.37	0.00	0.56	205.30	0.08	0 12:12	0 00:00	0.00
741	UV635	0.57	0.00	205.15	0.55	0.00	0.41	204.70	0.10	0 12:12	0 00:00	0.00
742	UV640	0.61	0.00	204.75	0.33	0.00	0.81	204.48	0.06	0 12:12	0 00:00	0.00
743	UV645	0.61	0.00	203.64	0.33	0.00	0.61	203.38	0.07	0 12:12	0 00:00	0.00
744	UV65	0.10	0.10	218.76	0.28	0.00	0.63	218.56	0.08	0 12:12	0 00:00	0.00
745	UV655	0.20	0.20	213.06	0.30	0.00	1.25	212.82	0.06	0 12:12	0 00:00	0.00
746	UV660	0.20	0.00	212.69	0.15	0.00	1.05	212.58	0.04	0 12:12	0 00:00	0.00
747	UV665	0.07	0.07	206.88	0.21	0.00	1.03	206.70	0.03	0 12:12	0 00:00	0.00
748	UV670	0.08	0.08	206.65	0.13	0.00	0.80	206.55	0.03	0 12:12	0 00:00	0.00
749	UV675	0.08	0.00	206.20	0.11	0.00	0.68	206.11	0.02	0 12:12	0 00:00	0.00
750	UV680	0.15	0.15	205.22	0.59	0.00	1.34	204.86	0.23	0 12:12	0 00:00	0.00
751	UV685	0.04	0.04	205.06	0.14	0.00	1.97	204.95	0.03	0 12:12	0 00:00	0.00
752	UV690	0.04	0.00	204.92	0.08	0.00	1.12	204.86	0.02	0 12:12	0 00:00	0.00
753	UV695	0.07	0.07	201.70	0.07	0.00	0.72	201.65	0.02	0 12:12	0 00:00	0.00
754	UV70	0.21	0.11	218.55	0.19	0.00	0.99	218.42	0.06	0 12:12	0 00:00	0.00
755	UV700	0.07	0.00	197.73	0.07	0.00	0.72	197.68	0.02	0 12:12	0 00:00	0.00
756	UV710	0.16	0.16	209.39	0.16	0.00	0.62	209.26	0.03	0 12:12	0 00:00	0.00
757	UV715	0.16	0.00	208.28	0.13	0.00	0.66	208.18	0.03	0 12:12	0 00:00	0.00
758	UV720	0.22	0.07	205.14	0.14	0.00	0.65	205.03	0.03	0 12:12	0 00:00	0.00
759	UV725	0.22	0.00	202.47	0.14	0.00	1.26	202.36	0.03	0 12:12	0 00:00	0.00
760	UV730	0.22	0.00	198.60	0.15	0.00	0.64	198.49	0.04	0 12:12	0 00:00	0.00
761	UV740	0.00	0.00	203.70	0.00	0.00	0.79	203.70	0.00	0 00:00	0 00:00	0.00
762	UV745	0.00	0.00	202.88	0.00	0.00	0.79	202.88	0.00	0 00:00	0 00:00	0.00
763	UV75	0.41	0.20	217.03	0.25	0.00	1.25	216.85	0.07	0 12:12	0 00:00	0.00
764	UV750	0.00	0.00	202.64	0.00	0.00	0.79	202.64	0.00	0 00:00	0 00:00	0.00
765	UV755	0.00	0.00	203.73	0.00	0.00	0.79	203.73	0.00	0 00:00	0 00:00	0.00
766	UV760	0.11	0.11	208.17	0.16	0.00	0.63	208.04	0.03	0 12:12	0 00:00	0.00
767	UV765	0.11	0.00	207.77	0.14	0.00	0.65	207.66	0.03	0 12:12	0 00:00	0.00
768	UV770	0.11	0.00	206.71	0.10	0.00	0.69	206.63	0.02	0 12:12	0 00:00	0.00
769	UV780	0.11	0.11	211.90	0.14	0.00	0.65	211.79	0.03	0 12:12	0 00:00	0.00
770	UV785	0.13	0.02	210.69	0.11	0.00	0.68	210.61	0.03	0 12:12	0 00:00	0.00
771	UV790	0.31	0.18	205.68	0.27	0.00	0.67	205.47	0.06	0 12:12	0 00:00	0.00
772	UV80	0.62	0.21	214.72	0.33	0.00	1.62	214.47	0.08	0 12:12	0 00:00	0.00
773	UV800	0.08	0.08	204.50	0.13	0.00	0.66	204.39	0.02	0 12:12	0 00:00	0.00
774	UV805	0.08	0.00	204.06	0.11	0.00	0.67	203.97	0.02	0 12:12	0 00:00	0.00
775	UV810	0.08	0.00	202.94	0.09	0.00	0.70	202.87	0.02	0 12:12	0 00:00	0.00
776	UV815	0.25	0.17	199.26	0.55	0.00	1.12	198.79	0.08	0 12:12	0 00:00	0.00
777	UV825	0.11	0.11	210.26	0.14	0.00	0.65	210.16	0.04	0 12:12	0 00:00	0.00
778	UV830	0.11	0.00	207.41	0.23	0.00	0.56	207.23	0.05	0 12:12	0 00:00	0.00
779	UV835	0.19	0.08	207.21	0.16	0.00	0.63	207.09	0.04	0 12:12	0 00:00	0.00
780	UV840	0.19	0.00	203.84	0.12	0.00	1.24	203.75	0.03	0 12:12	0 00:00	0.00
781	UV845	0.27	0.00	200.79	0.14	0.00	1.21	200.68	0.03	0 12:12	0 00:00	0.00
782	UV85	0.90	0.22	213.84	2.13	0.00	0.00	211.81	0.10	0 12:12	0 12:12	0.01
783	UV850	0.33	0.06	196.47	0.18	0.00	0.91	196.33	0.04	0 12:12	0 00:00	0.00

Total Time Flooded (min)
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Junction Results

SN	Element ID	Peak Inflow (cms)	Peak Lateral Inflow (cms)	Max HGL Elevation Attained (m)	Max HGL Depth Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Average HGL Elevation Attained (m)	Average HGL Depth Attained (m)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ha-mm)
784	UV860	0.09	0.09	202.98	0.09	0.00	1.19	202.91	0.02	0 12:12	0 00:00	0.00
785	UV865	0.09	0.09	195.32	0.09	0.00	1.33	195.25	0.02	0 12:12	0 00:00	0.00
786	UV875	0.04	0.04	214.49	0.08	0.00	0.71	214.43	0.02	0 12:12	0 00:00	0.00
787	UV880	0.14	0.00	213.72	0.16	0.00	0.63	213.60	0.04	0 12:12	0 00:00	0.00
788	UV885	0.21	0.07	211.91	0.16	0.00	0.63	211.79	0.04	0 12:12	0 00:00	0.00
789	UV890	0.35	0.14	207.74	0.32	0.00	1.47	207.48	0.06	0 12:12	0 00:00	0.00
790	UV895	0.35	0.01	206.79	0.23	0.00	0.21	206.60	0.04	0 12:12	0 00:00	0.00
791	UV90	1.03	0.14	210.82	2.25	0.00	0.00	208.73	0.16	0 12:11	0 12:12	1.35
792	UV905	0.11	0.11	214.16	0.15	0.00	0.64	214.04	0.03	0 12:12	0 00:00	0.00
793	UV910	0.12	0.12	202.61	0.14	0.00	0.65	202.50	0.03	0 12:12	0 00:00	0.00
794	UV915	0.12	0.00	201.91	0.16	0.00	0.63	201.78	0.03	0 12:12	0 00:00	0.00
795	UV925	0.06	0.06	214.52	0.14	0.00	1.01	214.41	0.03	0 12:12	0 00:00	0.00
796	UV930	0.06	0.00	213.92	0.10	0.00	1.57	213.84	0.02	0 12:12	0 00:00	0.00
797	UV935	0.12	0.02	212.87	0.25	0.00	2.25	212.67	0.05	0 12:12	0 00:00	0.00
798	UV940	0.16	0.04	212.70	0.19	0.00	2.35	212.54	0.03	0 12:12	0 00:00	0.00
799	UV945	0.16	0.00	212.16	0.16	0.00	2.86	212.04	0.04	0 12:12	0 00:00	0.00
800	UV95	0.95	0.00	210.14	1.84	0.00	0.51	208.44	0.14	0 12:11	0 00:00	0.00
801	UV950	0.28	0.06	210.39	0.24	0.00	2.77	210.20	0.05	0 12:12	0 00:00	0.00
802	UV955	0.28	0.00	209.23	0.29	0.00	2.33	208.99	0.05	0 12:12	0 00:00	0.00
803	UV960	0.34	0.05	208.84	0.55	0.00	1.99	208.35	0.06	0 12:12	0 00:00	0.00
804	UV965	0.34	0.00	208.50	0.40	0.00	2.18	208.18	0.08	0 12:12	0 00:00	0.00
805	UV970	0.41	0.08	207.97	0.32	0.00	0.91	207.70	0.05	0 12:12	0 00:00	0.00
806	UV975	0.60	0.03	207.46	0.30	0.00	0.63	207.22	0.06	0 12:12	0 00:00	0.00
807	UV985	0.02	0.02	213.34	0.07	0.00	1.56	213.28	0.01	0 12:12	0 00:00	0.00
808	UV990	0.02	0.00	213.21	0.09	0.00	1.66	213.14	0.02	0 12:12	0 00:00	0.00
809	UV995	0.04	0.02	213.09	0.09	0.00	2.00	213.02	0.02	0 12:12	0 00:00	0.00

Total Time Flooded (min)
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Channel Results

SN	Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Froude Number	Reported Condition
		(cms)	(days hh:mm)	(cms)		(m/sec)	(min)	(m)		(min)		
1	Link-100	1.05	0 12:15	9.64	0.11	2.14	0.86	0.36	0.49	0.00	1.36	
2	Link-101	1.25	0 12:15	11.66	0.11	2.63	0.10	0.35	0.47	0.00	1.61	
3	Link-102	1.32	0 12:15	12.65	0.10	2.53	0.72	0.38	0.52	0.00	1.66	
4	Link-103	1.68	0 12:17	11.11	0.15	2.17	0.15	0.60	0.82	0.00	1.35	
5	Link-104	2.32	0 12:18	11.07	0.21	1.25	0.66	0.74	1.00	3.00	0.39	
6	Link-105	2.38	0 12:18	10.64	0.22	1.03	0.21	0.75	1.00	14.00	0.34	
7	Link-106	2.50	0 12:18	8.68	0.29	1.36	0.30	0.75	1.00	14.00	0.84	
8	Link-11	0.32	0 12:13	6.74	0.05	1.62	0.73	0.17	0.23	0.00	1.16	
9	Link-12	0.32	0 12:13	13.03	0.02	1.03	0.19	0.25	0.34	0.00	0.81	
10	Link-13	0.53	0 12:13	6.93	0.08	1.15	0.09	0.34	0.46	0.00	0.80	
11	Link-14	0.58	0 12:13	6.62	0.09	1.44	0.38	0.30	0.41	0.00	0.96	
12	Link-15	0.61	0 12:13	7.76	0.08	1.45	0.40	0.32	0.43	0.00	1.03	
13	Link-16	0.70	0 12:13	8.27	0.08	1.51	0.23	0.34	0.46	0.00	0.97	
14	Link-17	0.72	0 12:13	6.31	0.11	1.85	0.46	0.30	0.40	0.00	1.05	
15	Link-18	0.81	0 12:14	10.17	0.08	1.60	2.09	0.39	0.52	0.00	0.81	
16	Link-19	0.33	0 12:12	13.37	0.02	2.11	0.66	0.13	0.18	0.00	1.60	
17	Link-20	0.41	0 12:12	13.56	0.03	2.24	0.45	0.15	0.21	0.00	1.85	
18	Link-21	0.46	0 12:12	18.38	0.03	2.83	0.07	0.13	0.19	0.00	2.40	
19	Link-22	0.47	0 12:12	21.08	0.02	2.26	0.42	0.17	0.24	0.00	1.99	
20	Link-23	0.46	0 12:13	11.81	0.04	1.45	0.12	0.26	0.35	0.00	1.21	
21	Link-24	0.45	0 12:13	8.23	0.06	1.50	0.14	0.31	0.42	0.00	1.24	
22	Link-25	0.65	0 12:13	13.23	0.05	1.37	0.13	0.48	0.65	0.00	1.30	
23	Link-26	0.65	0 12:12	8.13	0.08	0.74	0.42	0.69	0.92	0.00	0.47	
24	Link-27	0.14	0 12:12	10.96	0.01	1.40	0.25	0.09	0.13	0.00	1.30	
25	Link-28	0.15	0 12:12	9.95	0.01	1.02	0.76	0.12	0.17	0.00	0.97	
26	Link-29	0.16	0 12:12	6.30	0.02	0.78	0.28	0.16	0.23	0.00	0.66	
27	Link-30	0.29	0 12:12	7.34	0.04	0.99	0.49	0.23	0.32	0.00	0.48	
28	Link-31	0.29	0 12:13	3.80	0.08	1.01	0.56	0.22	0.31	0.00	0.48	
29	Link-32	0.33	0 12:13	11.08	0.03	1.57	0.20	0.17	0.24	0.00	1.16	
30	Link-33	0.38	0 12:13	7.93	0.05	1.17	0.82	0.25	0.35	0.00	0.82	
31	Link-34	0.40	0 12:13	5.57	0.07	1.00	0.08	0.30	0.41	0.00	0.71	
32	Link-35	0.48	0 12:13	7.53	0.06	1.36	0.28	0.27	0.37	0.00	0.90	
33	Link-36	0.49	0 12:13	6.32	0.08	1.84	0.16	0.21	0.29	0.00	1.18	
34	Link-37	0.50	0 12:13	15.00	0.03	2.49	0.47	0.17	0.23	0.00	1.75	
35	Link-38	0.60	0 12:13	13.10	0.05	2.11	0.45	0.23	0.31	0.00	1.69	
36	Link-39	0.64	0 12:13	12.88	0.05	1.33	0.14	0.35	0.48	0.00	1.20	
37	Link-40	1.10	0 12:13	14.84	0.07	1.84	0.04	0.41	0.56	0.00	1.32	
38	Link-41	1.10	0 12:13	7.85	0.14	1.76	0.55	0.43	0.58	0.00	1.09	
39	Link-42	1.15	0 12:13	8.06	0.14	1.85	0.17	0.44	0.59	0.00	1.13	
40	Link-43	0.42	0 12:12	18.47	0.02	1.19	0.15	0.27	0.37	0.00	1.13	
41	Link-44	0.73	0 12:12	10.36	0.07	1.58	0.10	0.33	0.46	0.00	1.08	
42	Link-45	0.75	0 12:12	7.35	0.10	2.06	0.36	0.27	0.38	0.00	1.29	
43	Link-46	0.77	0 12:13	14.70	0.05	2.97	0.19	0.21	0.29	0.00	2.00	
44	Link-47	0.76	0 12:13	14.58	0.05	2.52	0.56	0.24	0.33	0.00	1.54	
45	Link-48	1.11	0 12:13	10.84	0.10	1.41	1.53	0.52	0.69	0.00	0.82	
46	Link-49	0.15	0 12:12	9.05	0.02	1.29	0.17	0.10	0.14	0.00	1.17	
47	Link-50	0.15	0 12:12	10.01	0.02	0.65	1.59	0.20	0.27	0.00	0.39	
48	Link-51	0.34	0 12:13	3.80	0.09	0.95	1.12	0.28	0.38	0.00	0.57	
49	Link-52	0.27	0 12:14	9.13	0.03	0.85	0.07	0.25	0.34	0.00	0.83	
50	Link-53	0.56	0 12:13	11.26	0.05	1.86	0.13	0.24	0.33	0.00	1.33	
51	Link-54	0.56	0 12:14	8.41	0.07	1.72	1.13	0.26	0.35	0.00	1.08	
52	Link-55	0.75	0 12:14	9.03	0.08	1.91	0.51	0.30	0.41	0.00	1.17	
53	Link-56	0.75	0 12:14	7.93	0.09	2.07	0.42	0.28	0.38	0.00	1.36	
54	Link-57	0.77	0 12:15	15.37	0.05	2.76	0.11	0.23	0.31	0.00	2.09	
55	Link-58	0.78	0 12:15	16.22	0.05	2.53	0.20	0.25	0.33	0.00	1.72	
56	Link-59	1.16	0 12:14	13.64	0.08	2.38	0.31	0.36	0.48	0.00	1.44	
57	Link-60	1.18	0 12:14	8.76	0.13	2.83	0.14	0.32	0.42	0.00	1.72	
58	Link-61	0.31	0 12:12	17.52	0.02	1.43	0.14	0.18	0.25	0.00	1.29	
59	Link-62	0.41	0 12:12	8.77	0.05	1.44	0.11	0.22	0.31	0.00	1.22	
60	Link-63	0.41	0 12:12	11.41	0.04	1.53	0.13	0.21	0.30	0.00	1.19	
61	Link-64	0.40	0 12:12	7.79	0.05	1.75	0.21	0.18	0.25	0.00	1.25	
62	Link-65	0.40	0 12:12	12.98	0.03	1.95	0.35	0.17	0.24	0.00	1.27	
63	Link-66	1.91	0 12:14	7.81	0.24	1.83	1.43	0.35	0.71	0.00	0.84	
64	Link-67	2.09	0 12:14	10.45	0.20	2.01	0.17	0.53	0.71	0.00	1.40	
65	Link-68	2.28	0 12:14	12.34	0.18	2.68	0.10	0.57	0.80	0.00	1.45	
66	Link-69	1.75	0 12:18	7.76	0.23	1.56	0.87	0.69	0.95	0.00	1.31	
67	Link-70	1.97	0 12:17	13.04	0.15	1.16	0.14	0.75	1.00	19.00	0.65	
68	Link-71	0.03	0 12:12	11.54	0.00	0.76	0.33	0.04	0.05	0.00	1.02	
69	Link-72	0.03	0 12:12	9.07	0.00	0.76	0.10	0.04	0.05	0.00	1.04	
70	Link-73	0.03	0 12:12	12.31	0.00	0.47	0.35	0.06	0.09	0.00	0.40	
71	Link-74	0.09	0 12:12	6.46	0.01	0.99	0.74	0.08	0.11	0.00	0.86	
72	Link-75	0.09	0 12:12	9.35	0.01	0.63	0.93	0.12	0.17	0.00	0.40	
73	Link-76	0.16	0 12:12	3.91	0.04	0.85	1.20	0.15	0.21	0.00	0.54	
74	Link-78	0.09	0 12:12	7.23	0.01	1.10	0.17	0.07	0.10	0.00	1.07	
75	Link-79	0.09	0 12:12	13.99	0.01	0.90	0.56	0.09	0.12	0.00	0.74	
76	Link-80	0.24	0 12:13	9.25	0.03	1.17	0.98	0.17	0.24	0.00	0.95	
77	Link-81	0.47	0 12:12	12.08	0.04	1.56	0.14	0.23	0.32	0.00	1.26	
78	Link-82	0.47	0 12:13	7.76	0.06	1.40	0.31	0.25	0.35	0.00	0.98	
79	Link-83	0.49	0 12:13	7.23	0.07	1.50	0.34	0.25	0.35	0.00	1.00	
80	Link-84	0.49	0 12:13	8.51	0.06	1.96	0.22	0.20	0.28	0.00	1.34	
81	Link-85	0.55	0 12:13	14.16	0.04	1.18	0.34	0.35	0.47	0.00	0.57	
82	Link-86	0.13	0 12:12	28.55	0.00	1.69	0.10	0.07	0.10	0.00	1.62	
83	Link-87	0.16	0 12:12	9.24	0.02	0.84	0.47	0.15	0.22	0.00	0.76	
84	Link-88	0.09	0 12:12	17.82	0.01	1.08	0.10	0.08	0.11	0.00	1.01	
85	Link-89	0.09	0 12:12	5.75	0.02	0.87	0.46	0.09	0.13	0.00	0.76	
86	Link-90	0.09	0 12:12	9.23	0.01	1.27	0.22	0.06	0.09	0.00	1.31	
87	Link-91	0.09	0 12:12	16.88	0.01	0.60	0.14	0.13	0.18	0.00	0.54	

Channel Results

SN	Element ID	Peak Flow (cms)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cms)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (m/sec)	Travel Time (min)	Peak Flow Depth (m)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
88	Link-92	0.03	0 12:12	7.60	0.00	0.44	0.43	0.07	0.10	0.00	0.31	
89	Link-93	0.02	0 12:12	33.09	0.00	0.18	0.72	0.14	0.19	0.00	0.10	
90	Link-96	0.57	0 12:13	7.20	0.08	1.45	0.20	0.31	0.41	0.00	0.93	
91	Link-97	0.63	0 12:13	6.59	0.10	1.68	1.78	0.29	0.39	0.00	0.93	
92	Link-98	0.69	0 12:14	6.62	0.10	1.40	1.55	0.36	0.48	0.00	0.80	
93	Link-99	1.04	0 12:15	7.15	0.15	2.06	0.18	0.37	0.50	0.00	1.14	

Exit/Bend Losses	Additional Losses	Initial Flow (cms)	Flap Gate	No. of Barrels
0.5000	0.0000	0.00	No	1
0.5000	0.0000	0.00	No	1
0.5000	0.0000	0.00	No	1
0.5000	0.0000	0.00	No	1
0.5000	0.0000	0.00	No	1
0.5000	0.0000	0.00	No	1
0.5000	0.0000	0.00	No	1
0.5000	0.0000	0.00	No	1
0.5000	0.0000	0.00	No	1
0.5000	0.0000	0.00	No	1
0.5000	0.0000	0.00	No	1
0.5000	0.0000	0.00	No	1
0.5000	0.0000	0.00	No	1
0.5000	0.0000	0.00	No	1
0.5000	0.0000	0.00	No	1
0.5000	0.0000	0.00	No	1
0.5000	0.0000	0.00	No	1
0.5000	0.0000	0.00	No	1
0.5000	0.0000	0.00	No	1
0.5000	0.0000	0.00	No	1
0.5000	0.0000	0.00	No	1
0.5000	0.0000	0.00	No	1
0.5000	0.0000	0.00	No	1
0.5000	0.0000	0.00	No	1
0.5000	0.0000	0.00	No	1
0.5000	0.0000	0.00	No	1
0.5000	0.0000	0.00	No	1
0.5000	0.0000	0.00	No	1
0.5000	0.0000	0.00	No	1

Pipe Results

SN	Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Froude Number	Reported Condition
		(cms)	(days hh:mm)	(cms)		(m/sec)	(min)	(m)		(min)		
1	Link-01	0.06	0 12:12	1.28	0.05	1.33	0.03	0.14	0.32	0.00	1.45	Calculated
2	Link-07	0.29	0 12:13	0.59	0.49	1.83	0.57	0.33	0.57	0.00	1.28	Calculated
3	Link-08	0.42	0 12:13	0.69	0.61	2.84	0.60	0.31	0.54	0.00	1.93	Calculated
4	Link-09	0.42	0 12:14	1.07	0.39	3.39	0.31	0.27	0.47	0.00	2.48	Calculated
5	Link-10	0.42	0 12:14	1.05	0.40	3.49	0.26	0.27	0.46	0.00	2.48	Calculated
6	Link-94	1.04	0 12:22	2.01	0.52	2.30	0.62	0.68	0.80	0.00	1.58	Calculated
7	Link-95	0.85	0 12:35	1.74	0.48	2.23	0.28	0.55	0.64	0.00	1.36	Calculated
8	P1131	0.08	0 12:12	0.50	0.16	1.48	0.09	0.16	0.37	0.00	1.46	Calculated
9	P1132	0.08	0 12:12	0.23	0.34	0.76	2.31	0.30	0.67	0.00	0.63	Calculated
10	P1324	0.00	0 00:00	0.13	0.00	0.00		0.00	0.01	0.00	0.00	Calculated
11	P1424	0.00	0 00:00	3.05	0.00	0.00		0.22	0.50	0.00	0.00	Calculated
12	P1440	0.02	0 12:12	0.55	0.04	1.47	0.09	0.07	0.16	0.00	1.90	Calculated
13	P1441	0.02	0 12:12	0.42	0.06	1.16	1.07	0.08	0.19	0.00	1.24	Calculated
14	P1484	0.10	0 12:12	0.30	0.34	2.01	0.06	0.44	1.00	4.00	2.01	SURCHARGED
15	P1485	0.12	0 12:12	2.54	0.05	1.29	0.01	0.44	1.00	22.00	0.34	SURCHARGED
16	P1487	0.11	0 12:05	1.63	0.07	0.98	0.02	0.44	1.00	63.00	0.11	SURCHARGED
17	P1488	0.10	0 12:12	0.88	0.11	0.95	0.05	0.34	0.76	0.00	0.17	Calculated
18	P1489	0.00	0 12:04	0.28	0.00	0.09	1.74	0.44	1.00	60.00	0.00	SURCHARGED
19	P1531	0.08	0 12:12	0.30	0.28	1.24	0.11	0.20	0.47	0.00	1.11	Calculated
20	P1532	0.09	0 12:11	0.23	0.38	1.07	0.65	0.31	0.71	0.00	0.74	Calculated
21	P1649	0.00	0 00:00	0.13	0.00	0.00		0.00	0.00	0.00	0.00	Calculated
22	P1700 (1)	0.03	0 12:12	0.56	0.05	1.26	0.02	0.09	0.19	0.00	1.82	Calculated
23	P1706	0.00	0 00:00	0.13	0.00	0.00		0.00	0.00	0.00	0.00	Calculated
24	PCE10	0.27	0 12:14	0.58	0.46	2.06	0.41	0.28	0.49	0.00	1.64	Calculated
25	PCE100	0.14	0 12:12	0.36	0.38	1.52	0.15	0.24	0.56	0.00	1.63	Calculated
26	PCE105	0.12	0 12:12	0.38	0.33	1.50	0.07	0.22	0.53	0.00	1.68	Calculated
27	PCE110	0.12	0 12:12	0.45	0.27	1.57	0.10	0.21	0.50	0.00	1.45	Calculated
28	PCE115	0.14	0 12:12	0.62	0.23	1.85	0.17	0.18	0.33	0.00	1.62	Calculated
29	PCE120	0.13	0 12:12	0.96	0.14	1.96	0.34	0.17	0.30	0.00	1.37	Calculated
30	PCE125	0.20	0 12:12	0.30	0.67	1.47	1.48	0.35	0.83	0.00	0.86	Calculated
31	PCE130	0.40	0 12:12	0.73	0.55	3.84	0.03	0.28	0.64	0.00	3.89	Calculated
32	PCE135	0.09	0 12:12	0.72	0.12	1.42	0.10	0.18	0.42	0.00	1.47	Calculated
33	PCE135{SW_GEORGE EAST C6}	0.21	0 12:12	0.90	0.23	1.81	0.20	0.30	0.69	0.00	1.20	Calculated
34	PCE140	0.03	0 12:06	0.99	0.03	0.17	0.12	0.44	1.00	19.00	0.00	SURCHARGED
35	PCE145	0.12	0 12:11	0.37	0.31	0.86	0.38	0.35	0.85	0.00	0.39	Calculated
36	PCE150	0.07	0 12:12	0.97	0.08	3.31	0.06	0.09	0.20	0.00	3.91	Calculated
37	PCE155	0.62	0 12:12	1.89	0.33	1.82	0.42	0.47	0.58	0.00	1.13	Calculated
38	PCE160	0.68	0 12:13	1.04	0.65	1.86	0.59	0.50	0.61	0.00	1.14	Calculated
39	PCE165	0.74	0 12:13	2.01	0.37	2.31	0.25	0.45	0.54	0.00	1.65	Calculated
40	PCE170	0.85	0 12:13	2.26	0.38	2.78	0.20	0.43	0.53	0.00	1.82	Calculated
41	PCE175	1.02	0 12:13	2.26	0.45	2.74	0.63	0.54	0.64	0.00	1.71	Calculated
42	PCE180	1.07	0 12:14	2.26	0.47	2.95	0.12	0.70	0.83	0.00	2.00	Calculated
43	PCE185	0.79	0 12:10	2.26	0.35	1.76	0.45	0.79	0.95	0.00	0.32	Calculated
44	PCE190	0.59	0 12:18	2.58	0.23	1.13	0.13	0.85	1.00	12.00	0.33	SURCHARGED
45	PCE195	0.59	0 12:18	1.80	0.32	1.43	0.27	0.85	1.00	12.00	0.89	SURCHARGED
46	PCE205	0.07	0 12:12	1.13	0.06	0.71	0.41	0.26	0.58	0.00	0.28	Calculated
47	PCE210	0.06	0 12:12	1.05	0.06	0.76	0.30	0.25	0.58	0.00	0.41	Calculated
48	PCE215	0.13	0 12:12	0.48	0.27	1.16	0.40	0.29	0.68	0.00	0.66	Calculated
49	PCE220	0.12	0 12:12	0.49	0.23	2.03	0.06	0.17	0.39	0.00	2.01	Calculated
50	PCE225	0.11	0 12:12	0.48	0.24	1.11	0.72	0.27	0.65	0.00	0.58	Calculated
51	PCE230	0.08	0 12:12	0.73	0.10	0.76	0.43	0.27	0.61	0.00	0.61	Calculated
52	PCE240	0.45	0 12:15	0.93	0.48	2.61	0.08	0.35	0.61	0.00	2.00	Calculated
53	PCE245	0.48	0 12:16	0.93	0.51	2.56	0.69	0.38	0.66	0.00	1.86	Calculated
54	PCE25	0.25	0 12:15	0.91	0.27	2.52	0.11	0.23	0.39	0.00	2.06	Calculated
55	PCE250	0.45	0 12:12	0.93	0.48	2.26	0.11	0.53	0.91	0.00	1.68	Calculated
56	PCE255	0.11	0 12:12	1.02	0.11	1.69	0.07	0.20	0.45	0.00	1.66	Calculated
57	PCE260	0.15	0 12:12	1.34	0.11	1.75	0.04	0.27	0.63	0.00	1.21	Calculated
58	PCE265	0.13	0 12:12	1.21	0.11	2.94	0.03	0.14	0.33	0.00	3.97	Calculated
59	PCE270266	0.13	0 12:12	0.79	0.17	2.53	0.05	0.16	0.37	0.00	2.55	Calculated
60	PCE275267	0.13	0 12:12	0.44	0.29	1.15	1.78	0.30	0.69	0.00	0.09	Calculated
61	PCE285	0.00	0 00:00	1.22	0.00	0.00		0.08	0.18	0.00	0.00	Calculated
62	PCE290	0.00	0 12:12	1.10	0.00	0.01	1.85	0.08	0.20	0.00	0.00	Calculated
63	PCE295	0.02	0 12:12	0.45	0.05	1.52	0.05	0.06	0.14	0.00	2.31	Calculated
64	PCE300	0.02	0 12:12	1.23	0.02	0.83	0.11	0.10	0.23	0.00	0.93	Calculated
65	PCE305	0.11	0 12:12	0.99	0.11	1.66	0.11	0.17	0.30	0.00	1.53	Calculated
66	PCE310	0.11	0 12:12	0.52	0.22	1.32	1.36	0.25	0.46	0.00	0.86	Calculated
67	PCE315	0.23	0 12:11	0.73	0.31	1.69	0.60	0.46	0.83	0.00	1.38	Calculated
68	PCE320	0.37	0 12:12	1.89	0.19	0.89	0.44	0.85	1.00	11.00	0.43	SURCHARGED
69	PCE325	0.12	0 12:12	0.85	0.14	2.14	0.10	0.22	0.55	0.00	1.91	Calculated
70	PCE330	0.00	0 00:00	0.91	0.00	0.00		0.16	0.43	0.00	0.00	Calculated
71	PCE335	0.14	0 12:12	2.23	0.06	2.25	0.02	0.26	0.61	0.00	1.93	Calculated
72	PCE35	0.27	0 12:15	1.19	0.23	2.52	0.20	0.25	0.43	0.00	1.87	Calculated
73	PCE40	0.57	0 12:14	2.77	0.20	2.46	0.30	0.36	0.42	0.00	1.56	Calculated
74	PCE45	0.55	0 12:14	1.78	0.31	2.83	0.14	0.32	0.37	0.00	2.15	Calculated
75	PCE5	0.27	0 12:14	0.66	0.41	1.91	0.50	0.30	0.52	0.00	1.33	Calculated
76	PCE50	0.35	0 12:12	0.89	0.39	1.67	0.36	0.41	0.73	0.00	0.82	Calculated
77	PCE55	0.44	0 12:12	1.12	0.39	1.12	1.61	0.59	0.83	0.00	0.44	Calculated
78	PCE60	0.50	0 12:12	1.08	0.46	1.40	0.20	0.54	0.75	0.00	0.66	Calculated
79	PCE65	0.71	0 12:12	1.61	0.44	3.26	0.10	0.37	0.54	0.00	2.63	Calculated
80	PCE70	0.06	0 12:12	0.20	0.29	1.48	0.15	0.13	0.30	0.00	1.33	Calculated
81	PCE75	0.06	0 12:12	0.70	0.08	0.61	0.54	0.26	0.60	0.00	0.19	Calculated
82	PCE80	0.10	0 12:05	4.37	0.02	0.65	0.05	0.45	0.63	0.00	0.10	Calculated
83	PCE85	0.06	0 12:12	1.75	0.03	0.67	0.05	0.25	0.56	0.00	0.19	Calculated
84	PCE90	0.22	0 12:12	1.54	0.14	2.82	0.02	0.21	0.52	0.00	3.41	Calculated
85	PCE95	0.22	0 12:12	0.47	0.46	1.57	0.18	0.35	0.82	0.00	1.25	Calculated
86	PCGC10	0.94	0 12:12	1.45	0.65	5.06	0.16	0.36	0.66	0.00	3.51	Calculated
87	PCGC15	1.12	0 12:12	1.84	0.61	4.90	0.22	0.45	0.80	0.00	3.84	Calculated

Pipe Results

SN	Element ID	Peak Flow (cms)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cms)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (m/sec)	Travel Time (min)	Peak Flow Depth (m)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
88	PCGC20	1.27	0 12:13	1.84	0.69	5.53	0.07	0.46	0.81	0.00	4.10	Calculated
89	PCGC30	0.18	0 12:12	0.91	0.20	3.00	0.07	0.17	0.42	0.00	2.59	Calculated
90	PCGC35	0.18	0 12:12	0.38	0.47	1.52	2.06	0.30	0.71	0.00	1.08	Calculated
91	PCGC40	0.13	0 12:12	0.44	0.28	2.26	0.29	0.16	0.39	0.00	1.97	Calculated
92	PCGC45	0.13	0 12:12	0.46	0.28	1.15	0.24	0.27	0.65	0.00	0.78	Calculated
93	PCGC5	0.59	0 12:13	0.80	0.73	2.76	0.32	0.41	0.75	0.00	1.94	Calculated
94	PCGC50	0.13	0 12:12	0.41	0.31	1.50	0.45	0.23	0.55	0.00	1.51	Calculated
95	PCGC55	0.13	0 12:12	0.28	0.45	1.06	0.20	0.30	0.74	0.00	0.75	Calculated
96	PCGC60	0.15	0 12:12	0.78	0.19	1.89	0.32	0.27	0.65	0.00	2.14	Calculated
97	PCGC65	0.19	0 12:11	0.49	0.39	1.93	0.06	0.44	1.00	3.00	1.98	SURCHARGED
98	PCGC70	0.04	0 12:11	0.20	0.22	0.47	0.23	0.41	1.00	3.00	0.52	SURCHARGED
99	PCGC75	0.19	0 12:12	0.30	0.62	1.68	0.09	0.29	0.67	0.00	1.27	Calculated
100	PGE10	0.23	0 12:12	0.21	1.06	1.45	0.20	0.44	1.00	24.00	0.80	SURCHARGED
101	PGE100	0.11	0 12:12	0.39	0.27	1.19	0.23	0.24	0.57	0.00	0.81	Calculated
102	PGE105	0.13	0 12:12	0.54	0.25	1.16	0.11	0.34	0.82	0.00	1.24	Calculated
103	PGE110	0.04	0 12:12	0.36	0.11	1.38	0.13	0.10	0.24	0.00	1.51	Calculated
104	PGE115	0.04	0 12:12	0.36	0.10	0.53	1.92	0.20	0.45	0.00	0.32	Calculated
105	PGE120	0.01	0 12:02	0.13	0.04	0.07	14.56	0.36	0.82	0.00	0.00	Calculated
106	PGE125	0.07	0 12:13	0.45	0.16	0.84	0.04	0.25	0.57	0.00	0.43	Calculated
107	PGE130	0.00	0 00:00	0.70	0.00	0.00		0.04	0.09	0.00	0.00	Calculated
108	PGE135	0.00	0 12:07	0.27	0.01	0.06	8.07	0.19	0.44	0.00	0.00	Calculated
109	PGE140	0.15	0 12:12	0.51	0.30	1.96	0.30	0.21	0.50	0.00	2.20	Calculated
110	PGE145	0.15	0 12:12	0.59	0.26	1.46	0.04	0.27	0.64	0.00	1.50	Calculated
111	PGE15	0.23	0 12:11	0.21	1.06	1.45	0.17	0.44	1.00	18.00	0.80	SURCHARGED
112	PGE150	0.15	0 12:12	0.25	0.62	1.40	0.45	0.28	0.66	0.00	1.10	Calculated
113	PGE155	0.15	0 12:13	0.25	0.60	1.43	0.43	0.28	0.65	0.00	1.29	Calculated
114	PGE160	0.03	0 15:38	0.65	0.04	0.32	0.51	0.22	0.51	0.00	0.15	Calculated
115	PGE165	0.00	1 00:00	0.30	0.00	0.10	19.81	0.08	0.18	0.00	0.12	Calculated
116	PGE170	0.04	0 12:19	0.28	0.13	1.23	1.45	0.30	0.67	0.00	1.34	Calculated
117	PGE175	0.04	0 12:09	0.48	0.08	0.33	0.86	0.44	1.00	13.00	0.18	SURCHARGED
118	PGE180	0.35	0 12:16	0.40	0.87	2.27	0.10	0.44	1.00	24.00	1.28	SURCHARGED
119	PGE185	0.35	0 12:16	0.27	1.32	2.50	0.61	0.38	0.87	0.00	1.78	> CAPACITY
120	PGE190	0.16	0 12:13	0.28	0.57	1.43	0.17	0.31	0.70	0.00	1.14	Calculated
121	PGE195	0.17	0 12:13	0.23	0.72	1.56	1.90	0.29	0.66	0.00	1.04	Calculated
122	PGE20	0.23	0 12:12	0.21	1.06	1.46	0.19	0.43	0.98	0.00	0.86	> CAPACITY
123	PGE200	0.25	0 12:14	0.48	0.51	1.41	1.53	0.36	0.62	0.00	0.88	Calculated
124	PGE205	0.38	0 12:15	0.66	0.58	2.11	0.11	0.37	0.64	0.00	1.58	Calculated
125	PGE210	0.38	0 12:15	0.71	0.53	2.13	0.86	0.36	0.62	0.00	1.56	Calculated
126	PGE225	0.02	0 12:14	0.16	0.13	0.61	0.47	0.17	0.41	0.00	0.66	Calculated
127	PGE230	0.03	0 12:13	0.17	0.17	0.40	2.43	0.28	0.67	0.00	0.33	Calculated
128	PGE235	0.06	0 12:12	0.13	0.48	0.68	0.53	0.37	0.87	0.00	0.30	Calculated
129	PGE240	0.07	0 12:11	0.51	0.13	1.80	0.06	0.40	0.94	0.00	2.00	Calculated
130	PGE245	0.07	0 12:22	0.40	0.18	1.65	0.38	0.44	1.00	9.00	1.65	SURCHARGED
131	PGE25	0.23	0 12:12	0.31	0.72	1.40	0.14	0.37	0.73	0.00	0.95	Calculated
132	PGE25{SW_GEORGE EAST C5}	0.06	0 12:12	0.23	0.25	0.70	0.27	0.24	0.57	0.00	0.60	Calculated
133	PGE250	0.07	0 12:22	0.40	0.18	0.58	0.38	0.44	1.00	19.00	0.36	SURCHARGED
134	PGE255	0.19	0 12:12	0.18	1.09	1.36	0.14	0.44	1.00	13.00	0.93	SURCHARGED
135	PGE26	0.22	0 12:12	1.14	0.19	2.24	0.03	0.21	0.39	0.00	2.33	Calculated
136	PGE260	0.19	0 12:12	0.25	0.76	1.24	1.27	0.44	1.00	13.00	0.70	SURCHARGED
137	PGE265	0.32	0 12:12	0.14	2.24	2.08	0.07	0.44	1.00	20.00	1.17	SURCHARGED
138	PGE27	0.22	0 12:12	1.39	0.15	2.33	0.12	0.21	0.38	0.00	1.97	Calculated
139	PGE270	0.32	0 12:12	0.55	0.58	2.09	0.08	0.44	1.00	20.00	1.75	SURCHARGED
140	PGE275	0.00	0 12:11	0.30	0.00	0.12	0.07	0.14	0.35	0.00	0.00	Calculated
141	PGE280	0.05	0 12:14	0.22	0.23	0.46	5.88	0.29	0.68	0.00	0.10	Calculated
142	PGE285	0.20	0 12:14	0.13	1.52	1.31	0.67	0.44	1.00	4.00	0.46	SURCHARGED
143	PGE290	0.28	0 12:12	0.21	1.34	1.90	0.78	0.40	0.92	0.00	1.02	> CAPACITY
144	PGE295	0.39	0 12:12	0.28	1.37	2.70	0.02	0.38	0.87	0.00	1.59	> CAPACITY
145	PGE300	0.10	0 12:12	0.40	0.26	1.50	0.12	0.40	0.96	0.00	1.95	Calculated
146	PGE310	0.10	0 12:12	0.66	0.16	0.66	0.08	0.44	1.00	8.00	0.58	SURCHARGED
147	PGE315	0.06	0 12:12	0.33	0.18	1.33	0.12	0.14	0.34	0.00	1.68	Calculated
148	PGE320	0.06	0 12:12	0.61	0.10	0.92	0.07	0.22	0.49	0.00	0.63	Calculated
149	PGE325	0.07	0 12:10	0.30	0.22	0.97	0.14	0.44	1.00	5.00	0.89	SURCHARGED
150	PGE330	0.07	0 12:10	0.17	0.39	1.17	0.53	0.44	1.00	6.00	0.99	SURCHARGED
151	PGE335	0.07	0 12:19	0.36	0.20	0.93	0.28	0.44	1.00	7.00	0.90	SURCHARGED
152	PGE340	0.17	0 12:12	0.34	0.50	1.38	0.29	0.44	1.00	11.00	1.03	SURCHARGED
153	PGE345	0.23	0 12:12	0.25	0.95	1.69	0.84	0.44	1.00	14.00	1.37	SURCHARGED
154	PGE35	0.14	0 12:12	0.24	0.57	1.55	0.05	0.24	0.56	0.00	1.24	Calculated
155	PGE350	0.61	0 04:08	0.27	2.22	5.89	0.10	0.44	1.00	19.00	0.84	SURCHARGED
156	PGE355	0.69	0 04:28	0.21	3.24	7.57	0.02	0.44	1.00	30.00	0.62	SURCHARGED
157	PGE360	0.34	0 05:31	0.22	1.55	2.83	0.15	0.44	1.00	26.00	0.68	SURCHARGED
158	PGE365	0.33	0 12:12	0.13	2.46	2.16	0.07	0.44	1.00	15.00	0.81	SURCHARGED
159	PGE370	0.33	0 12:12	0.28	1.20	2.51	0.71	0.44	0.99	0.00	1.27	> CAPACITY
160	PGE375	0.11	0 12:10	0.51	0.21	1.41	0.12	0.44	1.00	6.00	1.38	SURCHARGED
161	PGE380	0.07	0 12:08	0.53	0.13	0.78	0.18	0.44	1.00	11.00	0.61	SURCHARGED
162	PGE385	3.54	0 02:53	0.23	15.26	43.85	0.00	0.44	1.00	20.00	0.88	SURCHARGED
163	PGE390	2.75	0 04:27	0.46	6.02	33.51	0.00	0.44	1.00	19.00	1.69	SURCHARGED
164	PGE395	4.92	0 02:37	1.42	3.47	50.00	0.00	0.44	1.00	22.00	0.08	SURCHARGED
165	PGE40	0.14	0 12:12	0.39	0.35	1.75	0.34	0.22	0.51	0.00	1.68	Calculated
166	PGE400	0.48	0 05:31	0.25	1.94	5.77	0.12	0.44	1.00	18.00	0.71	SURCHARGED
167	PGE405	0.11	0 03:06	0.38	0.28	0.86	0.15	0.44	1.00	18.00	0.14	SURCHARGED
168	PGE410	0.08	0 12:12	0.42	0.19	1.36	0.59	0.17	0.41	0.00	1.12	Calculated
169	PGE415	0.15	0 12:12	0.28	0.53	1.42	1.22	0.27	0.64	0.00	0.87	Calculated
170	PGE420	0.25	0 12:13	0.30	0.83	2.03	0.83	0.32	0.74	0.00	1.90	Calculated
171	PGE425	0.25	0 12:13	0.94	0.27	1.84	0.03	0.36	0.82	0.00	2.02	Calculated
172	PGE430	0.07	0 12:12	0.54	0.13	1.66	0.05	0.13	0.31	0.00	2.16	Calculated
173	PGE435431	0.07	0 12:12	0.54	0.13	1.15	0.13	0.17	0.41	0.00	1.03	Calculated
174	PGE440	0.11	0 12:12	0.65	0.16	1.25	0.11	0.23	0.54	0.00	1.17	Calculated

Pipe Results

SN	Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Froude Number	Reported Condition
		(cms)	(days hh:mm)	(cms)		(m/sec)	(min)	(m)		(min)		
175	PGE445	0.07	0 12:12	0.73	0.09	0.96	0.43	0.20	0.48	0.00	1.02	Calculated
176	PGE45	0.14	0 12:12	0.41	0.33	1.64	0.08	0.23	0.53	0.00	1.58	Calculated
177	PGE450	0.16	0 12:12	0.30	0.54	1.47	0.10	0.28	0.70	0.00	1.18	Calculated
178	PGE460	0.08	0 12:12	0.24	0.31	1.04	0.12	0.20	0.47	0.00	1.08	Calculated
179	PGE465	0.10	0 12:12	0.38	0.26	1.43	0.15	0.19	0.45	0.00	1.60	Calculated
180	PGE470	0.10	0 12:12	0.39	0.25	1.00	0.17	0.25	0.61	0.00	1.03	Calculated
181	PGE475	0.04	0 12:12	0.46	0.09	1.93	0.07	0.09	0.20	0.00	2.52	Calculated
182	PGE480476	0.04	0 12:12	1.30	0.03	0.84	0.03	0.16	0.39	0.00	0.68	Calculated
183	PGE485	0.06	0 12:12	0.41	0.14	0.92	0.14	0.18	0.44	0.00	0.90	Calculated
184	PGE490	0.05	0 12:13	0.13	0.40	0.59	1.65	0.27	0.65	0.00	0.60	Calculated
185	PGE495	0.14	0 12:12	0.39	0.35	0.98	0.16	0.37	0.86	0.00	0.69	Calculated
186	PGE5	0.23	0 12:12	0.21	1.06	1.45	0.51	0.44	1.00	25.00	0.87	SURCHARGED
187	PGE50	0.14	0 12:12	0.34	0.41	1.39	0.37	0.26	0.62	0.00	1.14	Calculated
188	PGE500	0.14	0 12:13	0.13	1.03	0.93	0.09	0.40	0.92	0.00	0.42	> CAPACITY
189	PGE505	0.14	0 12:13	0.13	1.03	1.17	0.15	0.31	0.71	0.00	0.71	> CAPACITY
190	PGE510	0.14	0 12:13	0.29	0.47	2.04	0.27	0.20	0.45	0.00	1.70	Calculated
191	PGE515	0.14	0 12:13	0.62	0.23	1.98	0.31	0.30	0.66	0.00	2.02	Calculated
192	PGE520	0.08	0 12:13	0.20	0.39	0.83	0.28	0.44	1.00	9.00	0.86	SURCHARGED
193	PGE525	0.08	0 12:13	0.21	0.38	0.81	0.24	0.44	1.00	11.00	0.69	SURCHARGED
194	PGE530	0.14	0 12:11	0.23	0.62	0.92	1.03	0.44	1.00	12.00	0.67	SURCHARGED
195	PGE535	0.23	0 12:11	0.19	1.18	1.47	0.46	0.44	1.00	23.00	0.76	SURCHARGED
196	PGE540	0.43	0 12:12	0.31	1.38	2.76	0.08	0.44	1.00	16.00	0.94	SURCHARGED
197	PGE545	0.54	0 12:12	0.76	0.72	1.61	0.27	0.46	0.58	0.00	0.97	Calculated
198	PGE55	0.24	0 12:13	0.29	0.83	1.66	1.04	0.38	0.87	0.00	1.41	Calculated
199	PGE560	0.09	0 12:12	0.13	0.66	0.75	0.17	0.32	0.77	0.00	0.62	Calculated
200	PGE565	0.07	0 12:11	0.18	0.36	0.60	0.37	0.44	1.00	9.00	0.56	SURCHARGED
201	PGE570	0.06	0 12:13	0.13	0.45	0.60	0.09	0.44	1.00	10.00	0.57	SURCHARGED
202	PGE575	0.06	0 12:13	0.30	0.21	0.69	0.04	0.44	1.00	10.00	0.83	SURCHARGED
203	PGE580	0.06	0 12:11	0.20	0.33	0.66	0.34	0.44	1.00	11.00	0.65	SURCHARGED
204	PGE585	0.09	0 12:12	2.97	0.03	1.19	0.02	0.25	0.56	0.00	1.23	Calculated
205	PGE595	0.00	0 00:00	3.14	0.00	0.00		0.22	0.50	0.00	0.00	Calculated
206	PGE60	0.37	0 12:13	0.55	0.67	2.42	0.07	0.42	0.95	0.00	1.81	Calculated
207	PGE600	0.00	0 00:00	1.42	0.00	0.00		0.00	0.00	0.00	0.00	Calculated
208	PGE605	0.00	0 00:00	0.47	0.00	0.00		0.00	0.00	0.00	0.00	Calculated
209	PGE610	0.00	0 00:00	0.62	0.00	0.00		0.00	0.00	0.00	0.00	Calculated
210	PGE65	0.42	0 12:13	0.58	0.73	1.91	0.92	0.44	0.77	0.00	1.06	Calculated
211	PGE70	0.42	0 12:13	0.43	0.97	2.31	0.01	0.37	0.65	0.00	1.72	Calculated
212	PGE75	0.20	0 12:13	0.82	0.24	1.87	0.13	0.24	0.42	0.00	1.52	Calculated
213	PGE80	0.20	0 12:14	0.61	0.33	1.72	1.13	0.26	0.45	0.00	1.22	Calculated
214	PGE90	0.00	0 12:00	0.54	0.00	0.02	0.78	0.18	0.44	0.00	0.00	Calculated
215	PGE95	0.11	0 12:12	0.41	0.26	1.64	0.09	0.18	0.44	0.00	1.68	Calculated
216	PLE0	0.32	0 12:14	2.53	0.13	1.35	1.93	0.37	0.43	0.00	0.76	Calculated
217	PLE10	0.61	0 12:16	1.28	0.48	1.86	0.14	0.47	0.56	0.00	1.06	Calculated
218	PLE100	0.09	0 12:12	0.35	0.26	1.27	0.14	0.20	0.47	0.00	1.49	Calculated
219	PLE1000	0.98	0 12:34	1.37	0.71	1.71	0.25	0.85	1.00	56.00	0.99	SURCHARGED
220	PLE1005	0.98	0 12:34	2.19	0.44	1.71	0.09	0.85	1.00	58.00	1.01	SURCHARGED
221	PLE1010	1.00	0 12:31	1.35	0.74	1.75	0.29	0.85	1.00	62.00	0.63	SURCHARGED
222	PLE1015	1.01	0 12:30	2.04	0.49	3.28	0.56	0.45	0.53	0.00	1.89	Calculated
223	PLE1020	0.13	0 12:12	0.46	0.29	1.28	0.10	0.26	0.63	0.00	1.45	Calculated
224	PLE1025	0.13	0 12:12	0.31	0.43	1.10	0.13	0.30	0.72	0.00	0.92	Calculated
225	PLE1030	0.13	0 12:12	0.17	0.76	1.23	0.83	0.27	0.66	0.00	1.07	Calculated
226	PLE1035	0.25	0 12:12	0.62	0.40	2.85	0.09	0.23	0.56	0.00	2.68	Calculated
227	PLE1040	0.33	0 12:12	0.75	0.45	3.98	0.15	0.22	0.53	0.00	3.36	Calculated
228	PLE1045	0.33	0 12:12	0.74	0.45	4.29	0.20	0.21	0.50	0.00	3.41	Calculated
229	PLE105	0.09	0 12:12	0.51	0.18	1.36	0.03	0.19	0.45	0.00	1.74	Calculated
230	PLE1055	0.04	0 12:12	0.48	0.08	1.74	0.24	0.09	0.20	0.00	1.93	Calculated
231	PLE1060	0.07	0 12:12	0.48	0.15	1.20	0.54	0.18	0.42	0.00	1.21	Calculated
232	PLE1065	0.07	0 12:12	0.21	0.34	0.85	0.12	0.24	0.54	0.00	0.81	Calculated
233	PLE1070	0.07	0 12:12	0.21	0.34	1.05	0.09	0.20	0.46	0.00	0.92	Calculated
234	PLE1075	0.13	0 12:12	0.48	0.27	2.16	0.23	0.18	0.41	0.00	1.95	Calculated
235	PLE1080	0.13	0 12:12	0.42	0.31	2.21	0.31	0.18	0.40	0.00	1.85	Calculated
236	PLE1090	0.04	0 12:12	0.48	0.07	1.61	0.12	0.09	0.20	0.00	1.90	Calculated
237	PLE1095	0.08	0 12:12	0.43	0.18	1.43	0.06	0.16	0.38	0.00	1.65	Calculated
238	PLE110	0.02	0 12:12	0.26	0.08	1.13	0.16	0.07	0.17	0.00	1.32	Calculated
239	PLE1100	0.08	0 12:12	0.50	0.16	1.49	0.08	0.16	0.37	0.00	1.75	Calculated
240	PLE1105	0.08	0 12:12	0.40	0.20	1.25	0.15	0.19	0.45	0.00	1.31	Calculated
241	PLE1110	0.13	0 12:12	0.31	0.40	1.70	0.28	0.20	0.48	0.00	1.43	Calculated
242	PLE1115	0.14	0 12:12	0.48	0.29	2.48	0.30	0.16	0.39	0.00	2.21	Calculated
243	PLE1120	0.14	0 12:12	0.48	0.29	2.50	0.32	0.16	0.39	0.00	2.21	Calculated
244	PLE1125	0.21	0 12:12	0.48	0.44	2.50	0.12	0.22	0.53	0.00	2.12	Calculated
245	PLE1130	0.40	0 12:12	0.70	0.57	2.92	0.14	0.30	0.63	0.00	2.19	Calculated
246	PLE1135	0.40	0 12:12	0.70	0.57	3.11	0.24	0.29	0.59	0.00	2.25	Calculated
247	PLE1145	0.05	0 12:12	0.27	0.17	0.87	0.50	0.17	0.40	0.00	0.40	Calculated
248	PLE115	0.02	0 12:12	0.50	0.03	0.74	0.66	0.09	0.21	0.00	0.71	Calculated
249	PLE1150	0.09	0 12:12	1.15	0.08	1.86	0.14	0.13	0.21	0.00	1.83	Calculated
250	PLE1155	0.09	0 12:12	1.29	0.07	1.71	0.34	0.13	0.22	0.00	1.62	Calculated
251	PLE1160	0.09	0 12:12	0.78	0.12	1.01	0.38	0.20	0.32	0.00	0.92	Calculated
252	PLE1165	0.19	0 12:12	0.89	0.21	1.87	0.18	0.22	0.35	0.00	1.49	Calculated
253	PLE1170	0.19	0 12:12	1.29	0.15	2.34	0.10	0.18	0.30	0.00	2.08	Calculated
254	PLE1175	0.00	0 00:00	1.29	0.00	0.00		0.00	0.01	0.00	0.00	Calculated
255	PLE120	0.02	0 12:12	1.02	0.02	1.39	0.12	0.07	0.17	0.00	1.61	Calculated
256	PLE125	0.04	0 12:12	0.33	0.11	0.73	0.53	0.15	0.36	0.00	0.78	Calculated
257	PLE130	0.01	0 12:12	0.28	0.02	0.37	0.48	0.07	0.16	0.00	0.31	Calculated
258	PLE135	0.02	0 12:12	0.65	0.03	0.99	0.10	0.08	0.18	0.00	1.03	Calculated
259	PLE140	0.02	0 12:12	0.21	0.10	0.91	0.42	0.09	0.21	0.00	0.99	Calculated
260	PLE145	0.02	0 12:12	0.33	0.06	1.31	0.21	0.06	0.15	0.00	1.58	Calculated
261	PLE15	1.10	0 12:14	3.27	0.34	1.69	0.80	0.88	0.80	0.00	1.59	Calculated

Pipe Results

SN	Element ID	Peak Flow (cms)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cms)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (m/sec)	Travel Time (min)	Peak Flow Depth (m)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
262	PLE150	0.02	0 12:12	0.65	0.03	0.46	0.15	0.13	0.31	0.00	0.49	Calculated
263	PLE155	0.00	0 12:12	1.34	0.00	0.09	1.10	0.14	0.32	0.00	0.09	Calculated
264	PLE160	0.05	0 12:12	0.96	0.05	2.30	0.12	0.08	0.18	0.00	2.64	Calculated
265	PLE165	0.05	0 12:12	0.47	0.10	1.85	0.35	0.09	0.21	0.00	1.96	Calculated
266	PLE170	0.10	0 12:12	0.39	0.25	1.23	0.11	0.21	0.50	0.00	1.27	Calculated
267	PLE175	0.10	0 12:12	0.36	0.27	1.81	0.01	0.16	0.38	0.00	1.80	Calculated
268	PLE180	0.10	0 12:12	0.93	0.10	2.45	0.09	0.13	0.30	0.00	2.27	Calculated
269	PLE185	0.10	0 12:12	0.32	0.30	1.00	0.84	0.30	0.67	0.00	0.89	Calculated
270	PLE190	0.24	0 12:12	0.38	0.63	2.08	0.08	0.44	1.00	5.00	1.61	SURCHARGED
271	PLE195	0.05	0 12:12	0.57	0.09	0.76	0.55	0.26	0.59	0.00	0.63	Calculated
272	PLE20	0.85	0 12:17	5.79	0.15	0.94	0.15	1.13	1.00	8.00	0.59	SURCHARGED
273	PLE200	0.13	0 12:12	0.37	0.36	1.21	1.02	0.31	0.71	0.00	0.83	Calculated
274	PLE2000	1.46	0 12:17	1.52	0.96	2.55	0.11	0.85	1.00	12.00	1.08	SURCHARGED
275	PLE205	0.24	0 12:12	0.25	0.98	1.57	0.66	0.44	1.00	6.00	1.21	SURCHARGED
276	PLE210	0.29	0 12:12	0.33	0.86	1.83	0.20	0.44	1.00	10.00	1.16	SURCHARGED
277	PLE215	0.35	0 12:12	0.31	1.13	2.31	0.06	0.42	0.95	0.00	1.31	> CAPACITY
278	PLE220	0.47	0 12:12	0.51	0.91	2.11	0.51	0.44	0.80	0.00	1.54	Calculated
279	PLE225	0.34	0 12:13	0.89	0.39	2.21	0.06	0.40	0.72	0.00	1.93	Calculated
280	PLE230	0.41	0 12:14	0.89	0.47	1.69	0.64	0.50	0.86	0.00	1.78	Calculated
281	PLE235	0.58	0 12:14	0.41	1.41	2.16	0.07	0.58	1.00	28.00	0.65	SURCHARGED
282	PLE240	1.00	0 12:13	1.07	0.93	4.00	0.01	0.51	0.88	0.00	1.63	Calculated
283	PLE245	1.07	0 12:14	2.74	0.39	2.61	0.42	0.66	0.78	0.00	2.20	Calculated
284	PLE25	2.96	0 12:17	2.91	1.02	3.07	0.25	1.02	0.92	0.00	1.24	> CAPACITY
285	PLE250	1.07	0 12:14	3.56	0.30	1.86	0.05	0.85	1.00	10.00	1.30	SURCHARGED
286	PLE255	1.11	0 12:14	1.61	0.69	1.94	0.05	0.85	1.00	10.00	1.12	SURCHARGED
287	PLE260	1.17	0 12:13	1.76	0.67	2.05	0.25	0.85	1.00	10.00	1.05	SURCHARGED
288	PLE265	1.17	0 12:13	1.72	0.68	2.05	0.02	0.85	1.00	8.00	0.99	SURCHARGED
289	PLE270	1.27	0 12:13	1.61	0.79	2.23	0.26	0.85	1.00	6.00	1.10	SURCHARGED
290	PLE275	1.27	0 12:13	1.18	1.08	2.56	0.43	0.72	0.87	0.00	1.42	> CAPACITY
291	PLE280	1.23	0 12:13	2.76	0.44	2.46	0.26	0.72	0.87	0.00	1.78	Calculated
292	PLE285	1.27	0 12:13	1.70	0.75	2.22	0.29	0.85	1.00	13.00	1.28	SURCHARGED
293	PLE290	1.04	0 12:14	1.80	0.58	1.82	0.15	0.85	1.00	16.00	1.18	SURCHARGED
294	PLE295	1.30	0 12:12	2.16	0.60	2.28	0.08	0.85	1.00	8.00	1.19	SURCHARGED
295	PLE3000	1.91	0 12:18	1.90	1.00	4.23	0.17	0.67	0.79	0.00	1.68	> CAPACITY
296	PLE310	1.46	0 12:13	2.19	0.67	2.73	0.48	0.64	0.66	0.00	1.37	Calculated
297	PLE330	1.46	0 12:12	2.18	0.67	2.16	0.10	0.79	0.83	0.00	1.19	Calculated
298	PLE35	0.01	0 12:12	0.42	0.01	0.72	0.33	0.04	0.09	0.00	1.13	Calculated
299	PLE350	0.12	0 12:13	0.35	0.34	1.10	0.93	0.31	0.74	0.00	0.96	Calculated
300	PLE355	0.04	0 12:12	0.31	0.13	0.52	3.78	0.27	0.62	0.00	0.32	Calculated
301	PLE360	0.12	0 12:12	2.18	0.05	3.76	0.01	0.11	0.26	0.00	4.54	Calculated
302	PLE365	0.12	0 12:11	0.67	0.18	7.48	0.03	0.23	0.57	0.00	2.74	Calculated
303	PLE370	0.07	0 12:12	0.33	0.21	0.58	0.46	0.44	1.00	3.00	0.39	SURCHARGED
304	PLE375	0.00	0 12:12	0.56	0.00	0.01	18.33	0.17	0.44	0.00	0.00	Calculated
305	PLE380	0.05	0 12:12	0.32	0.16	1.05	0.14	0.15	0.36	0.00	1.23	Calculated
306	PLE385	0.05	0 12:12	0.29	0.18	0.92	0.20	0.16	0.39	0.00	1.08	Calculated
307	PLE390	0.05	0 12:12	0.22	0.23	0.68	0.39	0.20	0.49	0.00	0.65	Calculated
308	PLE395	0.11	0 12:12	0.23	0.49	1.36	0.38	0.22	0.53	0.00	1.06	Calculated
309	PLE40	0.01	0 12:12	0.36	0.01	0.82	0.07	0.04	0.08	0.00	1.26	Calculated
310	PLE400	0.07	0 12:09	0.21	0.33	1.09	0.34	0.43	0.97	0.00	0.96	Calculated
311	PLE405	0.06	0 12:12	0.68	0.09	1.64	0.08	0.13	0.30	0.00	1.94	Calculated
312	PLE410	0.06	0 12:12	0.33	0.19	1.16	0.24	0.16	0.38	0.00	1.24	Calculated
313	PLE415	0.06	0 12:12	0.27	0.23	1.00	0.20	0.18	0.43	0.00	1.17	Calculated
314	PLE420	0.06	0 12:12	0.29	0.22	0.80	0.20	0.21	0.50	0.00	0.81	Calculated
315	PLE425	0.17	0 12:12	0.25	0.69	1.37	0.26	0.42	0.97	0.00	1.21	Calculated
316	PLE430426	0.18	0 12:12	0.39	0.45	1.87	0.07	0.44	1.00	3.00	1.62	SURCHARGED
317	PLE440	0.31	0 12:19	0.84	0.37	1.29	0.84	0.60	1.00	4.00	0.88	SURCHARGED
318	PLE440436	0.01	0 12:12	0.47	0.01	0.04	1.52	0.41	0.93	0.00	0.00	Calculated
319	PLE445	0.57	0 12:09	1.07	0.53	2.12	0.01	0.58	1.00	25.00	1.47	SURCHARGED
320	PLE45	0.01	0 12:12	0.44	0.01	0.35	0.46	0.06	0.14	0.00	0.39	Calculated
321	PLE450446	0.23	0 12:08	0.49	0.47	0.87	0.42	0.58	1.00	25.00	0.61	SURCHARGED
322	PLE455	0.06	0 12:12	0.46	0.13	0.23	0.39	0.58	1.00	25.00	0.15	SURCHARGED
323	PLE460	0.42	0 12:13	0.42	0.99	1.57	0.23	0.58	1.00	26.00	0.58	SURCHARGED
324	PLE465	0.37	0 12:14	0.57	0.64	1.37	0.11	0.58	1.00	25.00	0.89	SURCHARGED
325	PLE470	0.09	0 12:11	0.33	0.26	0.88	0.31	0.44	1.00	19.00	0.70	SURCHARGED
326	PLE475	0.09	0 12:15	0.13	0.64	0.60	0.52	0.44	1.00	21.00	0.50	SURCHARGED
327	PLE480	0.08	0 12:18	0.16	0.49	0.76	0.05	0.44	1.00	21.00	0.81	SURCHARGED
328	PLE485	0.09	0 12:07	0.25	0.37	0.59	0.47	0.44	1.00	21.00	0.39	SURCHARGED
329	PLE490	0.13	0 12:18	0.13	0.97	0.91	0.60	0.44	1.00	22.00	0.53	SURCHARGED
330	PLE495	0.17	0 12:11	0.27	0.64	1.37	0.32	0.44	1.00	22.00	1.03	SURCHARGED
331	PLE5	0.80	0 12:14	2.13	0.37	2.11	0.16	0.53	0.63	0.00	1.64	Calculated
332	PLE50	0.02	0 12:12	0.23	0.09	1.00	0.73	0.08	0.19	0.00	1.07	Calculated
333	PLE500	0.12	0 12:32	0.20	0.63	0.92	1.27	0.44	1.00	26.00	0.53	SURCHARGED
334	PLE505	0.16	0 12:06	0.13	1.16	1.02	1.62	0.44	1.00	27.00	0.63	SURCHARGED
335	PLE510	0.19	0 12:25	0.35	0.54	1.39	0.15	0.44	1.00	27.00	1.23	SURCHARGED
336	PLE515	0.20	0 12:25	0.35	0.58	1.72	0.06	0.44	1.00	30.00	1.37	SURCHARGED
337	PLE520	0.20	0 12:25	0.35	0.58	1.34	0.37	0.44	1.00	30.00	1.16	SURCHARGED
338	PLE525	0.23	0 12:07	0.27	0.86	1.50	0.11	0.44	1.00	33.00	1.13	SURCHARGED
339	PLE530	0.23	0 12:07	0.37	0.63	1.50	0.10	0.44	1.00	33.00	1.10	SURCHARGED
340	PLE535	0.23	0 12:07	0.23	1.01	1.50	0.25	0.44	1.00	33.00	0.89	SURCHARGED
341	PLE540	0.27	0 12:07	0.22	1.27	1.76	0.70	0.44	1.00	30.00	0.98	SURCHARGED
342	PLE545	0.07	0 12:12	0.63	0.12	2.28	0.04	0.35	0.84	0.00	3.08	Calculated
343	PLE55	0.02	0 12:12	0.33	0.06	0.51	1.13	0.12	0.29	0.00	0.35	Calculated
344	PLE550	0.08	0 12:07	1.36	0.06	0.79	0.06	0.44	1.00	13.00	0.40	SURCHARGED
345	PLE555	0.07	0 12:06	0.42	0.16	0.60	0.26	0.44	1.00	20.00	0.45	SURCHARGED
346	PLE560	0.07	0 12:12	0.36	0.18	0.42	0.36	0.44	1.00	27.00	0.21	SURCHARGED
347	PLE565	0.07	0 12:06	0.38	0.18	0.46	0.34	0.44	1.00	24.00	0.46	SURCHARGED
348	PLE570	0.04	0 12:12	0.24	0.16	0.25	0.52	0.44	1.00	28.00	0.18	SURCHARGED

Pipe Results

SN	Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Froude Number	Reported Condition
		(cms)	(days hh:mm)	(cms)		(m/sec)	(min)	(m)		(min)		
349	PLE575	0.05	0 12:12	0.57	0.09	0.41	0.35	0.44	1.00	23.00	0.25	SURCHARGED
350	PLE580	0.06	0 12:10	0.34	0.16	0.72	0.15	0.58	1.00	8.00	0.84	SURCHARGED
351	PLE585	0.06	0 12:10	0.72	0.08	0.77	0.06	0.58	1.00	8.00	1.04	SURCHARGED
352	PLE590	0.06	0 12:10	0.47	0.12	0.72	0.20	0.58	1.00	9.00	0.80	SURCHARGED
353	PLE595	0.06	0 12:10	0.41	0.14	0.78	0.07	0.58	1.00	9.00	0.91	SURCHARGED
354	PLE60	0.04	0 12:12	0.14	0.31	0.88	1.16	0.15	0.35	0.00	0.67	Calculated
355	PLE600	0.06	0 12:10	1.20	0.05	0.59	0.24	0.72	1.00	10.00	1.17	SURCHARGED
356	PLE605	0.02	0 12:09	0.53	0.03	0.10	0.38	0.44	1.00	9.00	0.00	SURCHARGED
357	PLE610	0.08	0 12:11	0.56	0.13	1.89	0.02	0.44	1.00	8.00	2.58	SURCHARGED
358	PLE615	0.08	0 12:09	1.82	0.04	1.18	0.03	0.51	1.00	8.00	0.79	SURCHARGED
359	PLE620	0.05	0 12:12	0.52	0.10	1.67	0.08	0.11	0.26	0.00	2.09	Calculated
360	PLE625	0.05	0 12:12	0.56	0.10	1.97	0.08	0.10	0.23	0.00	2.26	Calculated
361	PLE630	0.05	0 12:12	0.56	0.10	1.28	0.53	0.13	0.32	0.00	1.42	Calculated
362	PLE635	0.11	0 12:12	0.50	0.22	2.09	0.08	0.17	0.38	0.00	2.01	Calculated
363	PLE640	0.12	0 12:11	0.49	0.24	2.21	0.16	0.29	0.66	0.00	2.07	Calculated
364	PLE645	0.12	0 12:12	0.18	0.65	1.15	0.09	0.27	0.63	0.00	0.85	Calculated
365	PLE65	0.06	0 12:13	0.33	0.19	1.07	1.07	0.17	0.40	0.00	1.03	Calculated
366	PLE650	0.16	0 12:13	0.42	0.37	1.00	0.03	0.44	1.00	6.00	0.21	SURCHARGED
367	PLE655	0.24	0 12:13	0.51	0.48	1.56	0.06	0.44	1.00	30.00	0.09	SURCHARGED
368	PLE660	0.02	0 12:12	0.20	0.09	0.76	0.24	0.09	0.21	0.00	0.84	Calculated
369	PLE665	0.02	0 12:12	0.23	0.08	0.84	1.48	0.09	0.20	0.00	0.91	Calculated
370	PLE670	0.04	0 12:12	0.50	0.08	1.35	0.27	0.11	0.25	0.00	1.30	Calculated
371	PLE675	0.07	0 12:12	0.36	0.19	1.66	0.61	0.14	0.31	0.00	1.71	Calculated
372	PLE680	0.11	0 12:12	0.78	0.15	2.38	0.06	0.15	0.35	0.00	1.87	Calculated
373	PLE685	0.26	0 12:12	1.08	0.24	3.37	0.30	0.34	0.67	0.00	2.96	Calculated
374	PLE690	0.28	0 12:12	1.55	0.18	0.90	0.22	0.65	1.00	4.00	0.49	SURCHARGED
375	PLE695	0.03	0 12:12	0.89	0.03	1.10	0.14	0.09	0.21	0.00	1.16	Calculated
376	PLE70	0.13	0 12:12	0.44	0.30	1.54	0.13	0.23	0.54	0.00	1.42	Calculated
377	PLE700	0.15	0 12:12	0.28	0.54	1.33	0.12	0.28	0.68	0.00	1.13	Calculated
378	PLE705	0.15	0 12:12	0.29	0.52	1.72	0.20	0.23	0.55	0.00	1.48	Calculated
379	PLE710	0.15	0 12:12	0.46	0.32	2.33	0.14	0.18	0.43	0.00	2.16	Calculated
380	PLE715	0.02	0 12:11	0.78	0.03	0.73	0.19	0.27	0.66	0.00	0.45	Calculated
381	PLE720	0.06	0 12:12	0.45	0.14	1.93	0.07	0.11	0.26	0.00	2.28	Calculated
382	PLE725	0.06	0 12:12	0.90	0.07	2.34	0.08	0.10	0.22	0.00	2.51	Calculated
383	PLE730	0.06	0 12:12	0.42	0.14	1.44	0.36	0.14	0.32	0.00	1.43	Calculated
384	PLE735	0.11	0 12:12	0.54	0.21	2.48	0.12	0.14	0.33	0.00	2.65	Calculated
385	PLE740	0.11	0 12:12	0.83	0.14	2.40	0.06	0.15	0.34	0.00	2.73	Calculated
386	PLE745	0.11	0 12:12	0.57	0.20	2.35	0.07	0.15	0.35	0.00	2.56	Calculated
387	PLE75	0.13	0 12:13	0.28	0.48	1.36	0.32	0.25	0.60	0.00	1.12	Calculated
388	PLE750	0.11	0 12:12	0.70	0.16	2.17	0.10	0.16	0.37	0.00	2.16	Calculated
389	PLE755	0.14	0 12:12	0.47	0.30	2.29	0.18	0.18	0.45	0.00	2.00	Calculated
390	PLE760	0.14	0 12:12	0.45	0.31	1.67	0.27	0.31	0.73	0.00	1.77	Calculated
391	PLE765	0.14	0 12:12	0.43	0.33	0.90	0.28	0.44	1.00	18.00	0.21	SURCHARGED
392	PLE770	0.00	0 03:01	0.51	0.00	0.07	1.16	0.24	0.54	0.00	0.00	Calculated
393	PLE775	1.46	0 12:17	1.35	1.08	3.26	0.32	0.65	0.78	0.00	1.24	> CAPACITY
394	PLE780	0.93	0 12:35	1.93	0.48	2.49	0.22	0.59	0.69	0.00	1.47	Calculated
395	PLE790	0.97	0 12:35	1.71	0.57	2.24	0.62	0.73	0.86	0.00	1.35	Calculated
396	PLE795	0.98	0 12:34	1.58	0.62	2.42	0.33	0.85	1.00	23.00	1.43	SURCHARGED
397	PLE80	0.14	0 12:13	0.26	0.53	1.45	0.34	0.25	0.58	0.00	1.17	Calculated
398	PLE805	0.98	0 12:34	1.97	0.50	1.72	0.48	0.85	1.00	31.00	0.91	SURCHARGED
399	PLE810	0.99	0 12:34	0.76	1.30	1.73	0.08	0.85	1.00	51.00	0.78	SURCHARGED
400	PLE815	0.99	0 12:34	1.75	0.56	1.73	0.25	0.85	1.00	51.00	0.94	SURCHARGED
401	PLE820	0.99	0 12:34	2.30	0.43	1.73	0.03	0.85	1.00	56.00	0.83	SURCHARGED
402	PLE825	1.05	0 12:32	2.51	0.42	1.84	0.02	0.85	1.00	53.00	1.00	SURCHARGED
403	PLE830	1.05	0 12:32	1.75	0.60	1.84	0.22	0.85	1.00	53.00	0.83	SURCHARGED
404	PLE835	0.79	0 12:33	1.22	0.65	1.38	0.10	0.85	1.00	67.00	0.71	SURCHARGED
405	PLE840	0.60	0 12:10	1.22	0.49	1.05	0.45	0.85	1.00	67.00	0.53	SURCHARGED
406	PLE845	0.60	0 12:10	1.10	0.54	1.04	0.04	0.85	1.00	69.00	0.40	SURCHARGED
407	PLE85	0.14	0 12:13	0.30	0.45	1.92	0.22	0.20	0.47	0.00	1.62	Calculated
408	PLE850	1.51	0 12:32	1.30	1.16	3.16	0.20	0.67	0.78	0.00	1.48	> CAPACITY
409	PLE855	0.53	0 12:30	2.05	0.26	2.00	0.01	0.40	0.47	0.00	1.24	Calculated
410	PLE860	0.53	0 12:30	2.04	0.26	2.82	0.64	0.31	0.36	0.00	1.88	Calculated
411	PLE870	0.03	0 12:12	0.25	0.11	0.54	0.26	0.16	0.35	0.00	0.17	Calculated
412	PLE875	0.05	0 12:12	0.47	0.11	1.00	0.97	0.16	0.38	0.00	0.80	Calculated
413	PLE880	0.12	0 12:12	0.31	0.39	2.19	0.20	0.16	0.38	0.00	1.98	Calculated
414	PLE885	0.12	0 12:12	1.01	0.12	1.27	0.08	0.27	0.61	0.00	0.28	Calculated
415	PLE890	0.07	0 12:12	0.69	0.10	1.24	0.11	0.17	0.39	0.00	1.27	Calculated
416	PLE895	0.05	0 12:12	1.05	0.05	2.50	0.02	0.18	0.40	0.00	3.25	Calculated
417	PLE90	0.07	0 12:13	0.32	0.23	1.52	0.26	0.15	0.35	0.00	1.37	Calculated
418	PLE900	0.05	0 12:12	0.71	0.07	0.53	0.41	0.39	0.87	0.00	0.10	Calculated
419	PLE905	0.03	0 12:12	1.77	0.02	0.34	0.13	0.44	1.00	25.00	0.03	SURCHARGED
420	PLE910	1.02	0 12:22	2.13	0.48	1.79	0.17	0.85	1.00	40.00	1.23	SURCHARGED
421	PLE915	1.02	0 12:23	1.97	0.52	1.78	0.11	0.85	1.00	44.00	0.98	SURCHARGED
422	PLE920	1.02	0 12:23	2.44	0.42	1.79	0.03	0.85	1.00	38.00	0.95	SURCHARGED
423	PLE925	1.04	0 12:23	1.71	0.61	1.95	0.11	0.85	1.00	34.00	1.24	SURCHARGED
424	PLE930	1.02	0 12:23	2.73	0.38	2.49	0.07	0.85	1.00	34.00	1.55	SURCHARGED
425	PLE935	1.02	0 12:23	1.71	0.60	1.79	0.68	0.85	1.00	39.00	0.96	SURCHARGED
426	PLE940	1.06	0 12:23	1.60	0.66	1.86	0.04	0.85	1.00	50.00	0.78	SURCHARGED
427	PLE945	1.07	0 12:23	1.63	0.66	1.86	0.08	0.85	1.00	47.00	1.09	SURCHARGED
428	PLE950	1.07	0 12:23	1.87	0.57	1.86	0.26	0.85	1.00	47.00	1.07	SURCHARGED
429	PLE955	0.00	0 12:25	1.17	0.00	0.05	2.50	0.24	0.54	0.00	0.00	Calculated
430	PLE965	0.16	0 12:13	0.17	0.89	1.20	0.16	0.44	1.00	5.00	0.65	SURCHARGED
431	PLE970966	0.18	0 12:13	0.56	0.32	1.16	0.21	0.44	1.00	5.00	0.18	SURCHARGED
432	PLE980968	0.27	0 12:32	0.38	0.71	1.72	0.04	0.44	1.00	114.00	0.03	SURCHARGED
433	PLE985	0.01	0 12:11	0.28	0.02	0.22	0.35	0.29	0.67	0.00	0.01	Calculated
434	PLE990	0.01	0 12:10	1.33	0.01	0.08	0.33	0.38	0.86	0.00	0.00	Calculated
435	PLE995	0.28	0 12:32	0.72	0.39	1.78	0.04	0.44	1.00	84.00	0.00	SURCHARGED

Pipe Results

SN	Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Froude Number	Reported Condition
		(cms)	(days hh:mm)	(cms)		(m/sec)	(min)	(m)		(min)		
436	PPP10	0.13	0 12:12	0.41	0.31	1.78	0.11	0.20	0.47	0.00	1.66	Calculated
437	PPP105	0.17	0 12:12	0.65	0.27	1.93	0.08	0.23	0.60	0.00	1.73	Calculated
438	PPP110	0.17	0 12:12	0.24	0.69	1.19	0.84	0.36	0.86	0.00	0.64	Calculated
439	PPP115	0.04	0 12:12	0.33	0.12	0.89	0.68	0.15	0.35	0.00	0.90	Calculated
440	PPP120	0.09	0 12:12	0.20	0.46	0.91	1.04	0.27	0.65	0.00	0.64	Calculated
441	PPP125	0.15	0 12:12	0.13	1.08	1.51	0.17	0.27	0.69	0.00	0.99	> CAPACITY
442	PPP130	0.15	0 12:14	0.36	0.41	1.40	0.57	0.33	0.77	0.00	1.39	Calculated
443	PPP135	0.22	0 12:13	0.39	0.56	1.56	0.15	0.44	1.00	5.00	1.42	SURCHARGED
444	PPP140	0.30	0 12:13	0.36	0.83	1.93	0.31	0.44	1.00	8.00	1.32	SURCHARGED
445	PPP145	0.31	0 12:12	0.26	1.21	2.01	0.23	0.44	1.00	5.00	1.27	SURCHARGED
446	PPP15	0.13	0 12:12	0.37	0.34	2.05	0.49	0.18	0.42	0.00	1.78	Calculated
447	PPP150	0.31	0 12:12	0.43	0.73	2.17	0.06	0.39	0.90	0.00	1.95	Calculated
448	PPP155	0.32	0 12:12	0.61	0.53	2.22	0.10	0.39	0.90	0.00	2.03	Calculated
449	PPP160	0.32	0 12:12	0.60	0.54	3.07	0.05	0.28	0.64	0.00	3.62	Calculated
450	PPP165	0.11	0 12:12	0.87	0.12	2.74	0.08	0.13	0.30	0.00	3.13	Calculated
451	PPP170	0.06	0 12:12	0.48	0.12	2.00	0.45	0.10	0.24	0.00	2.00	Calculated
452	PPP180	0.11	0 12:12	0.39	0.28	1.96	0.22	0.17	0.39	0.00	1.70	Calculated
453	PPP185	0.11	0 12:12	0.70	0.16	2.31	0.30	0.14	0.28	0.00	2.07	Calculated
454	PPP195	0.10	0 12:12	0.37	0.26	1.51	0.10	0.18	0.43	0.00	1.62	Calculated
455	PPP20	0.13	0 12:12	0.42	0.30	1.39	0.31	0.25	0.58	0.00	1.59	Calculated
456	PPP200	0.10	0 12:12	0.47	0.21	1.95	0.07	0.15	0.36	0.00	1.98	Calculated
457	PPP205	0.10	0 12:12	0.47	0.21	1.67	0.55	0.17	0.40	0.00	1.50	Calculated
458	PPP210	0.10	0 12:12	0.35	0.27	1.93	0.04	0.15	0.38	0.00	2.04	Calculated
459	PPP215	0.10	0 12:12	1.16	0.08	0.97	0.06	0.26	0.63	0.00	0.92	Calculated
460	PPP220	0.26	0 12:12	0.24	1.09	2.27	0.38	0.31	0.70	0.00	1.68	> CAPACITY
461	PPP225	0.27	0 12:12	0.82	0.32	3.10	0.17	0.22	0.55	0.00	1.67	Calculated
462	PPP230	0.42	0 12:12	0.55	0.77	2.97	0.65	0.36	0.85	0.00	1.19	Calculated
463	PPP235	0.42	0 12:12	0.19	2.22	2.71	0.05	0.43	0.97	0.00	0.81	> CAPACITY
464	PPP240	0.52	0 12:12	0.85	0.62	2.41	0.11	0.41	0.76	0.00	2.00	Calculated
465	PPP245	0.52	0 12:12	1.53	0.34	3.53	0.04	0.30	0.54	0.00	3.04	Calculated
466	PPP25	0.27	0 12:12	0.67	0.40	2.02	0.05	0.33	0.81	0.00	2.40	Calculated
467	PPP255	0.17	0 12:12	0.81	0.21	1.49	0.13	0.29	0.68	0.00	1.16	Calculated
468	PPP260	0.16	0 12:12	0.60	0.26	1.85	0.05	0.25	0.62	0.00	1.83	Calculated
469	PPP265	0.23	0 12:12	0.76	0.31	3.74	0.10	0.18	0.42	0.00	3.33	Calculated
470	PPP275	0.19	0 12:12	0.71	0.26	3.04	0.06	0.18	0.42	0.00	3.16	Calculated
471	PPP280	0.19	0 12:12	0.86	0.22	4.03	0.11	0.14	0.34	0.00	3.75	Calculated
472	PPP290	0.12	0 12:12	1.09	0.11	3.27	0.05	0.12	0.28	0.00	3.68	Calculated
473	PPP295	0.12	0 12:12	0.72	0.16	3.18	0.15	0.12	0.29	0.00	3.09	Calculated
474	PPP30	0.27	0 12:12	0.63	0.43	1.83	0.05	0.37	0.90	0.00	1.63	Calculated
475	PPP305	0.22	0 12:12	0.83	0.26	4.03	0.11	0.16	0.38	0.00	3.69	Calculated
476	PPP315	0.10	0 12:12	0.51	0.19	1.28	0.10	0.23	0.51	0.00	1.33	Calculated
477	PPP320	0.10	0 12:12	0.23	0.42	1.22	0.17	0.32	0.71	0.00	0.97	Calculated
478	PPP325	0.10	0 12:17	0.23	0.43	1.25	0.80	0.39	0.87	0.00	1.05	Calculated
479	PPP330	0.10	0 12:17	0.25	0.38	1.13	0.39	0.44	1.00	6.00	1.22	SURCHARGED
480	PPP335	0.24	0 12:15	0.64	0.37	1.74	0.11	0.44	1.00	11.00	1.55	SURCHARGED
481	PPP340	0.24	0 12:15	0.21	1.14	1.54	0.68	0.44	1.00	17.00	0.89	SURCHARGED
482	PPP345	0.29	0 12:13	0.20	1.41	1.88	0.65	0.43	0.97	0.00	1.00	> CAPACITY
483	PPP35	0.27	0 12:12	0.36	0.76	2.16	0.05	0.31	0.76	0.00	1.85	Calculated
484	PPP350	0.29	0 12:14	0.49	0.59	1.67	0.08	0.36	0.62	0.00	1.14	Calculated
485	PPP360	0.00	0 12:01	0.61	0.00	0.04	3.08	0.09	0.16	0.00	0.00	Calculated
486	PPP365	0.08	0 12:12	0.80	0.10	1.59	0.44	0.13	0.24	0.00	1.56	Calculated
487	PPP370	0.08	0 12:12	0.67	0.12	1.40	0.27	0.14	0.26	0.00	1.33	Calculated
488	PPP375	0.16	0 12:12	1.14	0.14	2.71	0.37	0.15	0.27	0.00	2.44	Calculated
489	PPP380	0.27	0 12:12	1.67	0.16	4.42	0.33	0.15	0.28	0.00	3.67	Calculated
490	PPP390	0.12	0 12:12	0.52	0.22	1.26	0.10	0.42	0.98	0.00	1.40	Calculated
491	PPP395	0.12	0 12:13	0.24	0.47	1.06	0.17	0.44	1.00	5.00	0.94	SURCHARGED
492	PPP40	0.30	0 12:12	0.76	0.39	2.29	0.11	0.34	0.78	0.00	1.78	Calculated
493	PPP400	0.12	0 12:13	0.21	0.55	1.08	0.47	0.44	1.00	6.00	1.00	SURCHARGED
494	PPP405	0.12	0 12:13	0.28	0.41	1.17	0.14	0.44	1.00	9.00	1.05	SURCHARGED
495	PPP410	0.06	0 12:12	0.74	0.08	1.60	0.17	0.12	0.28	0.00	1.37	Calculated
496	PPP415	0.08	0 12:12	0.13	0.62	0.59	0.21	0.43	0.97	0.00	0.40	Calculated
497	PPP420	0.15	0 12:12	0.20	0.76	1.10	0.43	0.43	0.98	0.00	0.88	Calculated
498	PPP425	0.15	0 12:12	0.19	0.77	1.13	0.46	0.44	1.00	2.00	0.83	SURCHARGED
499	PPP430	0.22	0 12:11	0.28	0.79	1.83	0.48	0.44	1.00	3.00	1.39	SURCHARGED
500	PPP435	0.22	0 12:17	0.32	0.68	1.40	0.62	0.44	1.00	8.00	0.77	SURCHARGED
501	PPP440	0.27	0 12:11	0.13	2.05	1.76	0.25	0.44	1.00	9.00	0.78	SURCHARGED
502	PPP445	0.28	0 12:11	0.32	0.85	1.95	0.07	0.38	0.86	0.00	1.34	Calculated
503	PPP45	0.47	0 12:12	0.70	0.67	2.59	0.09	0.35	0.64	0.00	1.89	Calculated
504	PPP450	0.11	0 12:13	0.49	0.22	1.67	0.70	0.17	0.29	0.00	1.38	Calculated
505	PPP455	0.11	0 12:13	0.98	0.11	0.98	0.19	0.25	0.43	0.00	0.78	Calculated
506	PPP460	0.19	0 12:13	0.59	0.33	1.17	0.06	0.34	0.59	0.00	1.02	Calculated
507	PPP465	0.21	0 12:13	0.49	0.43	1.45	0.37	0.30	0.53	0.00	1.14	Calculated
508	PPP470	0.22	0 12:13	0.57	0.38	1.46	0.38	0.32	0.55	0.00	1.20	Calculated
509	PPP475	0.25	0 12:13	0.62	0.41	1.51	0.22	0.34	0.59	0.00	1.11	Calculated
510	PPP480	0.25	0 12:13	0.46	0.55	1.83	0.46	0.30	0.52	0.00	1.25	Calculated
511	PPP485	0.29	0 12:14	0.74	0.39	1.58	2.11	0.39	0.67	0.00	0.79	Calculated
512	PPP490	1.41	0 12:16	1.51	0.93	5.94	0.38	0.49	0.84	0.00	3.65	Calculated
513	PPP5	0.13	0 12:12	0.45	0.28	1.65	0.09	0.21	0.49	0.00	1.73	Calculated
514	PPP50	0.05	0 12:12	0.51	0.10	0.48	1.91	0.28	0.64	0.00	0.03	Calculated
515	PPP500	0.08	0 12:12	0.54	0.15	0.99	0.15	0.32	0.72	0.00	0.88	Calculated
516	PPP505	0.07	0 12:11	0.31	0.22	0.43	0.29	0.44	1.00	17.00	0.19	SURCHARGED
517	PPP510	0.05	0 12:12	0.29	0.16	1.12	0.11	0.14	0.32	0.00	1.33	Calculated
518	PPP515	0.05	0 12:12	0.42	0.11	1.39	0.07	0.12	0.27	0.00	1.56	Calculated
519	PPP520	0.05	0 12:12	0.35	0.14	0.68	0.52	0.19	0.46	0.00	0.43	Calculated
520	PPP525	0.05	0 12:12	0.13	0.35	0.45	1.50	0.27	0.64	0.00	0.26	Calculated
521	PPP530	0.13	0 12:12	0.27	0.47	1.48	0.12	0.23	0.55	0.00	1.44	Calculated
522	PPP535	0.14	0 12:12	0.50	0.27	1.73	0.09	0.21	0.50	0.00	1.65	Calculated

Pipe Results

SN	Element ID	Peak Flow (cms)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cms)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (m/sec)	Travel Time (min)	Peak Flow Depth (m)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
523	PPP540	0.13	0 12:13	0.29	0.46	1.72	0.63	0.21	0.50	0.00	1.33	Calculated
524	PPP545	0.08	0 12:12	0.13	0.61	0.77	0.16	0.27	0.65	0.00	0.58	Calculated
525	PPP55	0.09	0 12:12	0.47	0.18	2.06	0.67	0.13	0.31	0.00	1.81	Calculated
526	PPP550	0.13	0 12:12	0.42	0.30	1.58	0.15	0.21	0.52	0.00	1.55	Calculated
527	PPP555	0.13	0 12:12	0.31	0.41	1.59	0.20	0.26	0.63	0.00	1.36	Calculated
528	PPP560	0.13	0 12:15	0.30	0.42	1.00	1.31	0.37	0.86	0.00	0.38	Calculated
529	PPP565	0.24	0 12:13	0.13	1.79	1.54	0.36	0.44	1.00	10.00	0.53	SURCHARGED
530	PPP570	0.30	0 12:12	0.27	1.10	2.00	0.19	0.41	0.93	0.00	1.24	> CAPACITY
531	PPP575	0.13	0 12:12	0.58	0.22	0.82	0.15	0.44	1.00	9.00	0.42	SURCHARGED
532	PPP580	0.07	0 12:12	0.55	0.12	0.73	0.31	0.29	0.70	0.00	0.40	Calculated
533	PPP585	0.07	0 12:12	0.51	0.14	1.78	0.07	0.15	0.36	0.00	2.08	Calculated
534	PPP590	0.04	0 12:12	0.32	0.13	1.16	0.12	0.14	0.33	0.00	1.32	Calculated
535	PPP595	0.12	0 12:12	1.02	0.12	3.07	0.03	0.16	0.38	0.00	3.98	Calculated
536	PPP60	0.11	0 12:12	0.49	0.23	2.22	0.44	0.15	0.36	0.00	2.20	Calculated
537	PPP600	0.00	0 00:00	0.89	0.00	0.00		0.10	0.23	0.00	0.00	Calculated
538	PPP605	0.09	0 12:12	0.66	0.14	2.25	0.05	0.13	0.31	0.00	2.69	Calculated
539	PPP610	0.09	0 12:12	0.70	0.13	2.80	0.10	0.11	0.26	0.00	2.96	Calculated
540	PPP615	0.00	0 00:00	1.51	0.00	0.00		0.07	0.18	0.00	0.00	Calculated
541	PPP625	0.17	0 12:12	0.63	0.27	1.77	0.43	0.27	0.68	0.00	1.78	Calculated
542	PPP630	0.25	0 12:12	0.37	0.68	1.60	0.17	0.42	1.00	3.00	1.43	SURCHARGED
543	PPP635	0.41	0 12:12	0.66	0.62	2.80	0.03	0.38	0.89	0.00	2.49	Calculated
544	PPP640	0.41	0 12:12	0.58	0.70	2.79	0.18	0.38	0.89	0.00	1.64	Calculated
545	PPP645	0.18	0 12:12	1.03	0.17	3.86	0.10	0.14	0.34	0.00	3.77	Calculated
546	PPP65	0.13	0 12:12	0.79	0.17	3.07	0.05	0.13	0.32	0.00	3.33	Calculated
547	PPP650	0.18	0 12:12	0.72	0.24	2.81	0.13	0.18	0.42	0.00	2.69	Calculated
548	PPP655	0.30	0 12:12	0.86	0.35	4.53	0.11	0.19	0.44	0.00	3.83	Calculated
549	PPP665	0.12	0 12:12	0.13	0.92	1.56	0.04	0.22	0.51	0.00	1.31	Calculated
550	PPP670	0.12	0 12:12	1.20	0.10	3.22	0.01	0.13	0.29	0.00	4.42	Calculated
551	PPP675	0.10	0 12:12	0.94	0.10	2.30	0.38	0.13	0.31	0.00	2.35	Calculated
552	PPP680	0.24	0 12:12	1.57	0.16	3.79	0.11	0.16	0.29	0.00	3.34	Calculated
553	PPP685	0.06	0 12:12	0.62	0.10	1.55	0.28	0.14	0.31	0.00	1.44	Calculated
554	PPP695	0.09	0 12:12	0.94	0.10	3.64	0.13	0.10	0.22	0.00	3.87	Calculated
555	PPP70	0.12	0 12:12	0.76	0.16	2.06	0.44	0.17	0.40	0.00	2.15	Calculated
556	PPP705	0.47	0 12:12	1.33	0.35	4.28	0.19	0.24	0.43	0.00	3.11	Calculated
557	PPP75	0.13	0 12:13	0.46	0.29	1.47	0.10	0.26	0.59	0.00	1.45	Calculated
558	PPP80	0.13	0 12:12	0.33	0.41	1.54	0.11	0.31	0.70	0.00	1.62	Calculated
559	PPP85	0.09	0 12:15	0.39	0.23	1.49	0.09	0.39	0.88	0.00	1.58	Calculated
560	PPP90	0.11	0 12:05	0.63	0.18	0.74	0.37	0.58	1.00	4.00	0.45	SURCHARGED
561	PPP95	0.66	0 12:15	0.68	0.97	2.60	0.27	0.52	0.90	0.00	1.57	Calculated
562	PRM10	0.02	0 12:12	0.21	0.09	0.43	1.47	0.15	0.34	0.00	0.36	Calculated
563	PRM100	0.22	0 12:12	0.36	0.61	1.75	0.73	0.31	0.76	0.00	1.37	Calculated
564	PRM105	0.14	0 12:12	1.24	0.11	3.35	0.05	0.13	0.31	0.00	3.23	Calculated
565	PRM110	0.14	0 12:12	0.49	0.28	1.94	0.99	0.19	0.46	0.00	1.81	Calculated
566	PRM115	0.19	0 12:12	0.63	0.30	2.94	0.05	0.18	0.43	0.00	3.52	Calculated
567	PRM120	0.19	0 12:12	1.79	0.11	1.86	0.03	0.28	0.66	0.00	1.33	Calculated
568	PRM125	0.02	0 12:12	0.76	0.02	2.46	0.15	0.04	0.09	0.00	3.85	Calculated
569	PRM130	0.02	0 12:12	2.17	0.01	0.43	0.05	0.20	0.47	0.00	0.17	Calculated
570	PRM135	0.05	0 12:12	0.27	0.20	0.59	1.27	0.23	0.57	0.00	0.27	Calculated
571	PRM140	0.14	0 12:12	0.14	1.03	1.22	0.13	0.30	0.73	0.00	0.81	> CAPACITY
572	PRM145	0.14	0 12:13	0.23	0.61	1.06	0.95	0.35	0.81	0.00	0.64	Calculated
573	PRM15	0.08	0 12:12	0.21	0.36	1.12	0.27	0.19	0.45	0.00	0.97	Calculated
574	PRM150	0.21	0 12:13	0.25	0.82	1.31	0.72	0.45	1.00	7.00	0.41	SURCHARGED
575	PRM155	0.31	0 12:12	0.22	1.39	1.34	0.28	0.44	0.80	0.00	0.67	> CAPACITY
576	PRM160	0.30	0 12:13	0.51	0.60	1.97	0.88	0.32	0.56	0.00	1.32	Calculated
577	PRM165	0.36	0 12:13	0.71	0.51	2.22	1.30	0.34	0.59	0.00	1.56	Calculated
578	PRM170	0.09	0 12:12	0.75	0.12	1.17	0.24	0.23	0.54	0.00	1.01	Calculated
579	PRM175	0.06	0 12:12	0.67	0.09	0.65	0.50	0.27	0.60	0.00	0.74	Calculated
580	PRM180	0.06	0 12:12	0.22	0.28	0.41	0.36	0.44	1.00	10.00	0.19	SURCHARGED
581	PRM185	0.11	0 12:12	0.21	0.51	1.12	2.71	0.27	0.61	0.00	0.69	Calculated
582	PRM190	0.11	0 12:14	0.13	0.81	1.16	0.25	0.26	0.59	0.00	0.79	Calculated
583	PRM195	0.14	0 12:13	0.37	0.39	1.64	0.44	0.24	0.55	0.00	1.44	Calculated
584	PRM20	0.16	0 12:12	0.37	0.42	1.76	0.37	0.23	0.55	0.00	1.64	Calculated
585	PRM200	0.14	0 12:13	0.35	0.41	1.67	0.04	0.24	0.54	0.00	1.41	Calculated
586	PRM205	0.18	0 12:12	0.62	0.29	1.39	0.66	0.28	0.49	0.00	1.08	Calculated
587	PRM210	0.49	0 12:12	0.87	0.56	2.34	0.42	0.40	0.74	0.00	1.82	Calculated
588	PRM215	0.59	0 12:12	0.89	0.67	2.51	0.14	0.44	0.82	0.00	1.84	Calculated
589	PRM220	0.12	0 12:12	0.86	0.14	1.78	0.21	0.19	0.46	0.00	1.55	Calculated
590	PRM225	0.25	0 12:12	0.37	0.67	2.10	0.49	0.30	0.72	0.00	1.45	Calculated
591	PRM230	0.13	0 12:12	0.44	0.29	1.45	0.19	0.23	0.56	0.00	1.33	Calculated
592	PRM235	0.06	0 12:12	0.22	0.29	1.25	0.21	0.15	0.36	0.00	1.10	Calculated
593	PRM240	0.06	0 12:12	0.32	0.20	1.06	0.83	0.19	0.43	0.00	0.86	Calculated
594	PRM245	0.11	0 12:12	0.29	0.39	1.12	0.34	0.35	0.79	0.00	1.18	Calculated
595	PRM25	0.18	0 12:12	0.45	0.39	2.16	0.07	0.22	0.52	0.00	1.92	Calculated
596	PRM250	0.11	0 12:17	0.24	0.43	0.80	0.35	0.44	1.00	0.00	0.69	SURCHARGED
597	PRM260	0.19	0 12:15	0.19	0.97	1.26	1.43	0.44	1.00	4.00	0.94	SURCHARGED
598	PRM265	0.35	0 12:12	0.31	1.14	1.48	0.90	0.48	0.84	0.00	0.82	> CAPACITY
599	PRM270	0.05	0 12:12	0.19	0.26	0.79	1.23	0.20	0.46	0.00	0.77	Calculated
600	PRM290	0.17	0 12:12	0.47	0.36	1.17	0.13	0.37	0.87	0.00	0.82	Calculated
601	PRM295	0.23	0 12:12	0.28	0.85	1.20	1.00	0.38	0.68	0.00	0.66	Calculated
602	PRM30	0.39	0 12:13	0.45	0.86	1.93	0.93	0.45	0.92	0.00	1.38	Calculated
603	PRM35	0.45	0 12:12	0.56	0.81	2.30	0.08	0.45	0.90	0.00	1.75	Calculated
604	PRM40	0.45	0 12:13	0.68	0.66	2.30	0.27	0.45	0.90	0.00	1.38	Calculated
605	PRM45	0.47	0 12:13	0.47	0.99	2.74	0.01	0.39	0.76	0.00	1.53	Calculated
606	PRM5	0.02	0 12:12	0.21	0.09	0.76	0.20	0.10	0.22	0.00	0.85	Calculated
607	PRM50	0.47	0 12:13	0.86	0.54	2.99	0.63	0.35	0.74	0.00	2.38	Calculated
608	PRM55	0.68	0 12:13	0.86	0.80	3.72	0.16	0.40	0.85	0.00	2.69	Calculated
609	PRM60	0.70	0 12:13	0.89	0.78	3.63	0.37	0.44	0.88	0.00	3.01	Calculated

Pipe Results

SN	Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Froude Number	Reported Condition
		(cms)	(days hh:mm)	(cms)		(m/sec)	(min)	(m)		(min)		
610	PRM65	0.45	0 12:20	1.49	0.30	2.86	0.01	0.44	1.00	20.00	2.56	SURCHARGED
611	PRM70	0.47	0 12:11	0.72	0.65	2.26	0.07	0.51	1.00	19.00	1.45	SURCHARGED
612	PRM75	0.47	0 12:11	0.56	0.84	2.50	0.04	0.44	0.85	0.00	1.49	Calculated
613	PRM85	0.05	0 12:12	0.26	0.20	1.24	0.17	0.13	0.31	0.00	1.32	Calculated
614	PRM90	0.05	0 12:12	0.41	0.13	1.06	0.15	0.16	0.39	0.00	1.10	Calculated
615	PRM95	0.16	0 12:12	0.33	0.50	1.62	0.10	0.26	0.63	0.00	1.38	Calculated
616	PUV10	0.51	0 12:13	0.88	0.58	2.74	0.40	0.37	0.65	0.00	2.19	Calculated
617	PUV100	1.04	0 12:14	1.43	0.73	3.90	0.27	0.58	1.00	8.00	2.81	SURCHARGED
618	PUV1000	0.06	0 12:12	0.49	0.13	2.18	0.08	0.10	0.24	0.00	2.59	Calculated
619	PUV1005	0.06	0 12:12	1.10	0.06	1.28	0.08	0.15	0.35	0.00	1.29	Calculated
620	PUV1010	0.01	0 12:12	0.52	0.03	0.20	1.40	0.25	0.56	0.00	0.21	Calculated
621	PUV1015	0.04	0 12:12	0.82	0.05	0.68	1.47	0.18	0.42	0.00	0.66	Calculated
622	PUV1020	0.07	0 12:12	0.28	0.25	1.49	0.59	0.15	0.35	0.00	1.31	Calculated
623	PUV1025	0.12	0 12:12	0.51	0.23	1.47	0.34	0.22	0.51	0.00	1.18	Calculated
624	PUV1030	0.15	0 12:12	0.55	0.27	2.68	0.15	0.16	0.38	0.00	2.40	Calculated
625	PUV1040	0.09	0 12:12	0.48	0.18	1.80	0.21	0.15	0.35	0.00	1.83	Calculated
626	PUV1045	0.18	0 12:12	0.82	0.22	3.48	0.07	0.16	0.36	0.00	3.46	Calculated
627	PUV105	1.10	0 12:11	1.13	0.97	4.09	0.12	0.58	1.00	16.00	2.29	SURCHARGED
628	PUV1050	0.18	0 12:12	0.81	0.22	3.46	0.15	0.16	0.37	0.00	3.23	Calculated
629	PUV1055	0.21	0 12:12	0.78	0.26	3.94	0.17	0.16	0.37	0.00	3.42	Calculated
630	PUV1065	0.08	0 12:12	0.44	0.19	1.80	0.09	0.15	0.34	0.00	1.84	Calculated
631	PUV1070	0.08	0 12:12	0.44	0.19	1.90	0.43	0.14	0.32	0.00	1.66	Calculated
632	PUV1075	0.22	0 12:12	0.84	0.26	1.96	0.30	0.30	0.67	0.00	1.71	Calculated
633	PUV1080	0.28	0 12:12	0.29	0.98	1.91	0.21	0.39	0.90	0.00	1.30	Calculated
634	PUV1090	0.07	0 12:12	0.77	0.09	2.77	0.14	0.09	0.22	0.00	3.23	Calculated
635	PUV1095	0.07	0 12:12	0.82	0.09	1.94	0.08	0.12	0.28	0.00	1.91	Calculated
636	PUV110	1.19	0 12:12	1.26	0.94	4.75	0.05	0.51	0.89	0.00	2.66	Calculated
637	PUV1100	0.12	0 12:12	0.74	0.16	3.11	0.10	0.12	0.29	0.00	3.13	Calculated
638	PUV1110	0.04	0 12:12	0.47	0.08	1.68	0.24	0.09	0.19	0.00	1.90	Calculated
639	PUV1120	0.11	0 12:12	1.01	0.10	3.99	0.13	0.10	0.23	0.00	4.18	Calculated
640	PUV1130	0.09	0 12:12	0.64	0.14	2.77	0.09	0.12	0.27	0.00	3.09	Calculated
641	PUV1135	0.09	0 12:12	1.00	0.09	3.78	0.11	0.09	0.21	0.00	4.09	Calculated
642	PUV1145	0.10	0 12:12	0.57	0.17	2.29	0.08	0.13	0.31	0.00	2.37	Calculated
643	PUV1155	0.08	0 12:12	0.69	0.12	2.56	0.07	0.11	0.26	0.00	2.81	Calculated
644	PUV1165	0.03	0 12:12	0.63	0.05	1.94	0.10	0.07	0.16	0.00	2.48	Calculated
645	PUV120	0.02	0 12:15	0.73	0.02	1.35	0.11	0.22	0.50	0.00	4.23	Calculated
646	PUV125	0.00	0 00:00	1.45	0.00	0.00		0.00	0.00	0.00	0.00	Calculated
647	PUV130	0.00	0 00:00	0.40	0.00	0.00		0.04	0.08	0.00	0.00	Calculated
648	PUV135	0.03	0 12:12	0.45	0.06	1.42	0.68	0.08	0.18	0.00	1.59	Calculated
649	PUV140	0.03	0 12:12	0.34	0.08	1.08	0.56	0.09	0.22	0.00	1.10	Calculated
650	PUV145	0.06	0 12:12	0.43	0.13	1.40	0.52	0.13	0.30	0.00	1.51	Calculated
651	PUV15	0.56	0 12:13	1.47	0.38	3.56	0.05	0.32	0.57	0.00	3.01	Calculated
652	PUV150	0.08	0 12:12	0.46	0.18	1.56	0.10	0.16	0.37	0.00	1.80	Calculated
653	PUV155	0.08	0 12:12	0.45	0.18	1.79	0.08	0.15	0.33	0.00	1.82	Calculated
654	PUV160	0.08	0 12:12	0.43	0.19	1.00	2.48	0.28	0.65	0.00	0.47	Calculated
655	PUV170	0.03	0 12:12	0.79	0.03	1.47	0.11	0.08	0.18	0.00	2.33	Calculated
656	PUV175	0.03	0 12:12	0.72	0.04	1.43	0.27	0.08	0.19	0.00	1.54	Calculated
657	PUV180	0.03	0 12:12	1.20	0.02	1.02	0.15	0.10	0.23	0.00	1.24	Calculated
658	PUV185	0.00	0 00:00	1.72	0.00	0.00		0.22	0.50	0.00	0.00	Calculated
659	PUV190	0.00	0 00:00	1.48	0.00	0.00		0.08	0.19	0.00	0.00	Calculated
660	PUV195	0.13	0 12:09	3.46	0.04	1.48	0.01	0.32	0.88	0.00	0.91	Calculated
661	PUV20	0.57	0 12:13	1.47	0.39	3.56	0.30	0.33	0.57	0.00	3.15	Calculated
662	PUV200	0.10	0 12:12	1.14	0.09	0.53	0.68	0.58	1.00	8.00	0.31	SURCHARGED
663	PUV205	0.18	0 12:12	0.28	0.65	1.74	0.42	0.27	0.63	0.00	1.27	Calculated
664	PUV215	0.14	0 12:12	0.49	0.29	2.55	0.06	0.16	0.38	0.00	2.72	Calculated
665	PUV220	0.14	0 12:12	1.27	0.11	3.20	0.12	0.14	0.32	0.00	2.94	Calculated
666	PUV225	0.14	0 12:12	0.40	0.35	1.89	0.46	0.20	0.48	0.00	1.59	Calculated
667	PUV230	0.29	0 12:12	0.64	0.46	2.30	0.21	0.32	0.77	0.00	2.08	Calculated
668	PUV235	0.38	0 12:12	0.55	0.69	3.17	0.07	0.30	0.72	0.00	3.05	Calculated
669	PUV240	0.38	0 12:12	1.27	0.30	6.40	0.08	0.17	0.41	0.00	5.57	Calculated
670	PUV25	0.59	0 12:13	1.75	0.34	3.80	0.03	0.32	0.56	0.00	3.41	Calculated
671	PUV250	0.16	0 12:12	0.96	0.16	2.58	0.08	0.17	0.42	0.00	2.42	Calculated
672	PUV255	0.09	0 12:10	0.54	0.16	0.95	0.19	0.27	0.71	0.00	0.78	Calculated
673	PUV260	0.10	0 12:12	0.35	0.30	1.15	1.46	0.25	0.59	0.00	1.33	Calculated
674	PUV265	0.16	0 12:12	0.49	0.34	1.24	0.05	0.35	0.83	0.00	1.43	Calculated
675	PUV270	0.16	0 12:12	0.33	0.49	1.28	0.11	0.37	0.87	0.00	1.33	Calculated
676	PUV275	0.16	0 12:13	0.30	0.53	1.10	0.27	0.41	0.95	0.00	0.68	Calculated
677	PUV280	0.16	0 12:13	0.13	1.20	1.27	0.35	0.39	0.91	0.00	0.72	> CAPACITY
678	PUV285	0.17	0 12:14	0.38	0.46	1.40	0.30	0.39	0.91	0.00	1.18	Calculated
679	PUV290	0.35	0 12:14	0.38	0.93	2.28	0.37	0.44	1.00	6.00	1.75	SURCHARGED
680	PUV295	0.45	0 12:12	0.66	0.69	1.74	0.09	0.54	0.94	0.00	1.19	Calculated
681	PUV30	0.63	0 12:13	1.75	0.36	3.13	0.26	0.41	0.71	0.00	2.85	Calculated
682	PUV300	0.58	0 12:12	0.86	0.68	2.74	0.11	0.42	0.75	0.00	2.52	Calculated
683	PUV305	0.26	0 12:12	0.80	0.33	1.59	0.09	0.33	0.59	0.00	1.28	Calculated
684	PUV310	0.27	0 12:12	0.54	0.49	2.05	0.35	0.27	0.49	0.00	1.57	Calculated
685	PUV315	0.25	0 12:12	1.01	0.25	2.81	0.19	0.21	0.37	0.00	2.20	Calculated
686	PUV320	0.26	0 12:13	1.06	0.25	2.48	0.57	0.24	0.42	0.00	1.66	Calculated
687	PUV325	0.34	0 12:10	0.79	0.42	1.61	1.33	0.43	0.75	0.00	0.80	Calculated
688	PUV330	1.35	0 12:11	1.50	0.90	5.47	0.05	0.51	0.87	0.00	3.19	Calculated
689	PUV340	0.13	0 12:12	0.56	0.23	2.13	0.07	0.17	0.41	0.00	2.03	Calculated
690	PUV345	0.13	0 12:12	0.39	0.33	1.81	0.93	0.23	0.55	0.00	1.77	Calculated
691	PUV35	0.63	0 12:13	1.07	0.58	2.33	0.08	0.58	1.00	5.00	1.74	SURCHARGED
692	PUV350	0.19	0 12:10	0.56	0.34	1.56	0.12	0.37	0.86	0.00	1.37	Calculated
693	PUV355	0.13	0 12:12	0.51	0.26	1.78	0.96	0.26	0.62	0.00	2.22	Calculated
694	PUV360	0.23	0 12:12	0.61	0.38	2.83	0.24	0.22	0.52	0.00	2.71	Calculated
695	PUV365	0.23	0 12:12	0.64	0.36	2.15	0.08	0.29	0.70	0.00	2.39	Calculated
696	PUV370	0.33	0 12:12	0.69	0.49	2.37	0.05	0.34	0.85	0.00	2.20	Calculated

Pipe Results

SN	Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Froude Number	Reported Condition
		(cms)	(days hh:mm)	(cms)		(m/sec)	(min)	(m)		(min)		
697	PUV375	0.33	0 12:12	0.40	0.83	2.54	0.26	0.32	0.78	0.00	1.86	Calculated
698	PUV380	0.02	0 12:12	0.76	0.03	1.77	0.04	0.06	0.13	0.00	2.63	Calculated
699	PUV385	0.02	0 12:12	0.66	0.03	1.48	0.10	0.12	0.28	0.00	2.39	Calculated
700	PUV390	0.05	0 12:12	0.13	0.39	1.19	0.17	0.14	0.33	0.00	0.78	Calculated
701	PUV395	0.05	0 12:12	0.45	0.12	1.26	0.54	0.13	0.31	0.00	1.16	Calculated
702	PUV40	0.63	0 12:13	0.88	0.71	2.48	0.06	0.51	0.89	0.00	1.84	Calculated
703	PUV400	0.12	0 12:12	0.39	0.31	1.88	0.57	0.18	0.43	0.00	1.72	Calculated
704	PUV405	0.11	0 12:12	0.37	0.31	1.55	0.19	0.20	0.48	0.00	1.40	Calculated
705	PUV410	0.22	0 12:12	0.59	0.37	2.92	0.15	0.20	0.48	0.00	2.81	Calculated
706	PUV415	0.22	0 12:12	0.76	0.28	2.77	0.07	0.21	0.50	0.00	2.73	Calculated
707	PUV420	0.22	0 12:12	0.53	0.41	2.88	0.17	0.20	0.49	0.00	2.36	Calculated
708	PUV425	0.02	0 12:12	0.39	0.06	0.70	1.70	0.12	0.28	0.00	0.59	Calculated
709	PUV430	0.10	0 12:12	0.37	0.28	1.23	0.18	0.22	0.53	0.00	1.23	Calculated
710	PUV435431	0.10	0 12:12	0.25	0.42	1.20	0.12	0.23	0.54	0.00	1.09	Calculated
711	PUV440	0.18	0 12:12	0.76	0.24	3.95	0.07	0.14	0.33	0.00	4.96	Calculated
712	PUV445	0.04	0 12:12	0.43	0.08	1.50	0.19	0.09	0.21	0.00	1.65	Calculated
713	PUV45	0.68	0 12:13	1.24	0.55	3.64	0.08	0.37	0.66	0.00	2.71	Calculated
714	PUV450	0.03	0 12:12	0.36	0.09	0.92	0.82	0.12	0.28	0.00	1.05	Calculated
715	PUV455	0.05	0 12:12	0.27	0.17	0.83	0.18	0.16	0.38	0.00	0.84	Calculated
716	PUV460	0.08	0 12:12	0.27	0.30	0.97	0.47	0.23	0.53	0.00	0.46	Calculated
717	PUV465	0.08	0 12:13	0.13	0.61	1.05	0.50	0.22	0.52	0.00	0.70	Calculated
718	PUV470	0.07	0 12:13	0.32	0.22	1.46	0.18	0.15	0.35	0.00	1.35	Calculated
719	PUV475	0.13	0 12:13	0.58	0.23	1.13	0.84	0.25	0.45	0.00	0.88	Calculated
720	PUV480	0.15	0 12:13	0.57	0.26	1.04	0.04	0.30	0.52	0.00	1.08	Calculated
721	PUV485	0.18	0 12:13	0.56	0.31	1.37	0.26	0.27	0.48	0.00	1.04	Calculated
722	PUV490	0.17	0 12:13	0.48	0.36	1.87	0.15	0.21	0.37	0.00	1.48	Calculated
723	PUV495	0.16	0 12:13	1.10	0.15	2.49	0.46	0.17	0.29	0.00	1.96	Calculated
724	PUV5	0.46	0 12:13	0.72	0.64	2.54	0.44	0.37	0.64	0.00	1.73	Calculated
725	PUV500	0.21	0 12:13	0.96	0.22	2.09	0.45	0.23	0.40	0.00	1.97	Calculated
726	PUV505	0.23	0 12:13	0.96	0.24	1.32	0.14	0.35	0.62	0.00	1.31	Calculated
727	PUV510	0.37	0 12:13	1.25	0.30	1.80	0.03	0.41	0.72	0.00	1.60	Calculated
728	PUV515	0.38	0 12:13	0.57	0.65	1.77	0.55	0.43	0.74	0.00	1.25	Calculated
729	PUV520	0.36	0 12:13	0.60	0.59	1.85	0.16	0.44	0.76	0.00	1.33	Calculated
730	PUV525	1.51	0 12:14	2.14	0.70	4.97	0.22	0.50	0.70	0.00	2.97	Calculated
731	PUV530	0.17	0 12:12	0.61	0.28	2.53	0.07	0.18	0.44	0.00	2.99	Calculated
732	PUV535	0.12	0 12:12	0.49	0.25	2.19	0.09	0.16	0.39	0.00	2.09	Calculated
733	PUV540	0.12	0 12:12	0.39	0.32	1.60	0.08	0.21	0.50	0.00	1.69	Calculated
734	PUV545	0.12	0 12:12	0.50	0.24	2.13	0.07	0.17	0.40	0.00	2.09	Calculated
735	PUV55	0.01	0 12:12	0.96	0.01	0.33	0.43	0.14	0.32	0.00	0.14	Calculated
736	PUV555	0.08	0 12:12	0.38	0.21	1.65	0.10	0.15	0.35	0.00	1.61	Calculated
737	PUV560	0.07	0 12:12	0.52	0.13	1.96	0.11	0.12	0.29	0.00	2.12	Calculated
738	PUV565	0.18	0 12:12	0.30	0.58	1.92	0.08	0.24	0.60	0.00	1.54	Calculated
739	PUV570	0.17	0 12:12	0.47	0.36	1.94	0.52	0.31	0.75	0.00	1.53	Calculated
740	PUV575	0.32	0 12:12	0.45	0.72	2.07	0.54	0.44	1.00	5.00	1.57	SURCHARGED
741	PUV580	0.47	0 12:12	0.50	0.94	3.02	0.05	0.44	1.00	13.00	1.79	SURCHARGED
742	PUV585	0.47	0 12:12	0.40	1.19	3.02	0.36	0.43	1.00	3.00	1.86	SURCHARGED
743	PUV590	0.13	0 12:12	1.35	0.09	1.00	0.17	0.27	0.48	0.00	1.07	Calculated
744	PUV595	0.04	0 12:12	0.51	0.08	1.35	0.12	0.15	0.35	0.00	1.90	Calculated
745	PUV60	0.04	0 12:12	0.98	0.04	1.13	0.11	0.14	0.34	0.00	0.49	Calculated
746	PUV600	0.04	0 12:12	0.50	0.08	1.26	0.05	0.27	0.62	0.00	1.80	Calculated
747	PUV605	0.09	0 12:12	0.48	0.18	2.03	0.07	0.13	0.32	0.00	2.14	Calculated
748	PUV610	0.09	0 12:12	0.59	0.14	1.40	0.89	0.17	0.41	0.00	1.27	Calculated
749	PUV615	0.28	0 12:12	0.63	0.44	3.20	0.12	0.23	0.55	0.00	2.69	Calculated
750	PUV620	0.28	0 12:12	0.58	0.48	3.13	0.31	0.23	0.56	0.00	2.75	Calculated
751	PUV625	0.34	0 12:12	0.80	0.43	3.96	0.07	0.22	0.55	0.00	3.51	Calculated
752	PUV630	0.42	0 12:12	0.77	0.54	1.87	0.35	0.42	0.78	0.00	1.43	Calculated
753	PUV635	0.57	0 12:12	0.92	0.62	2.65	0.05	0.40	0.75	0.00	2.22	Calculated
754	PUV640	0.61	0 12:12	1.86	0.33	3.91	0.05	0.31	0.56	0.00	3.64	Calculated
755	PUV645	0.61	0 12:12	1.69	0.36	4.66	0.07	0.27	0.49	0.00	3.70	Calculated
756	PUV65	0.10	0 12:12	0.15	0.66	1.19	0.66	0.22	0.53	0.00	0.87	Calculated
757	PUV655	0.20	0 12:12	0.47	0.42	2.54	0.06	0.21	0.50	0.00	2.41	Calculated
758	PUV660	0.20	0 12:12	0.85	0.23	2.89	0.20	0.19	0.45	0.00	2.71	Calculated
759	PUV665	0.07	0 12:12	0.60	0.11	0.92	0.03	0.22	0.53	0.00	0.84	Calculated
760	PUV670	0.08	0 12:12	0.64	0.12	2.34	0.07	0.12	0.27	0.00	2.59	Calculated
761	PUV675	0.08	0 12:12	0.65	0.12	2.18	0.12	0.15	0.37	0.00	2.64	Calculated
762	PUV680	0.15	0 12:12	0.26	0.59	1.24	0.11	0.37	0.93	0.00	1.10	Calculated
763	PUV685	0.04	0 12:12	0.31	0.14	1.43	0.09	0.11	0.25	0.00	1.54	Calculated
764	PUV690	0.04	0 12:12	1.00	0.04	0.61	0.44	0.19	0.35	0.00	0.46	Calculated
765	PUV695	0.07	0 12:12	1.31	0.05	4.08	0.09	0.07	0.16	0.00	5.07	Calculated
766	PUV70	0.21	0 12:12	0.97	0.22	2.28	0.47	0.21	0.38	0.00	1.87	Calculated
767	PUV700	0.07	0 12:12	1.27	0.05	4.22	0.15	0.07	0.16	0.00	5.05	Calculated
768	PUV710	0.16	0 12:12	0.79	0.20	3.46	0.08	0.14	0.33	0.00	3.51	Calculated
769	PUV715	0.16	0 12:12	0.94	0.17	3.86	0.14	0.13	0.31	0.00	4.14	Calculated
770	PUV720	0.22	0 12:12	1.43	0.16	5.16	0.04	0.14	0.32	0.00	5.50	Calculated
771	PUV725	0.22	0 12:12	1.21	0.18	24.27	0.02	0.14	0.33	0.00	5.10	Calculated
772	PUV730	0.22	0 12:12	1.22	0.18	5.40	0.07	0.13	0.31	0.00	5.18	Calculated
773	PUV740	0.00	0 00:00	0.98	0.00	0.00		0.00	0.00	0.00	0.00	Calculated
774	PUV745	0.00	0 00:00	0.33	0.00	0.00		0.00	0.00	0.00	0.00	Calculated
775	PUV75	0.41	0 12:12	1.15	0.36	3.25	0.35	0.26	0.49	0.00	2.33	Calculated
776	PUV750	0.00	0 00:00	0.35	0.00	0.00		0.07	0.16	0.00	0.00	Calculated
777	PUV755	0.00	0 00:00	1.19	0.00	0.00		0.00	0.00	0.00	0.00	Calculated
778	PUV760	0.11	0 12:12	0.62	0.17	2.33	0.06	0.14	0.33	0.00	2.60	Calculated
779	PUV765	0.11	0 12:12	0.75	0.14	3.18	0.09	0.11	0.27	0.00	3.53	Calculated
780	PUV770	0.11	0 12:12	1.10	0.10	4.18	0.09	0.09	0.22	0.00	4.51	Calculated
781	PUV780	0.11	0 12:12	0.74	0.15	3.17	0.10	0.12	0.28	0.00	3.23	Calculated
782	PUV785	0.13	0 12:12	1.61	0.08	1.67	0.76	0.18	0.33	0.00	1.52	Calculated
783	PUV790	0.31	0 12:12	0.95	0.33	2.80	0.20	0.24	0.43	0.00	2.12	Calculated

Pipe Results

SN	Element ID	Peak Flow (cms)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cms)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (m/sec)	Travel Time (min)	Peak Flow Depth (m)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
784	PUV80	0.61	0 12:13	1.22	0.50	3.60	0.32	0.43	0.78	0.00	2.61	Calculated
785	PUV800	0.08	0 12:12	0.66	0.12	2.26	0.06	0.12	0.27	0.00	2.66	Calculated
786	PUV805	0.08	0 12:12	0.69	0.11	2.83	0.12	0.10	0.23	0.00	3.01	Calculated
787	PUV810	0.08	0 12:12	1.42	0.05	0.63	2.07	0.30	0.55	0.00	0.55	Calculated
788	PUV815	0.24	0 12:12	0.21	1.15	1.67	0.22	0.39	0.89	0.00	0.97	> CAPACITY
789	PUV825	0.11	0 12:12	0.47	0.23	1.73	1.18	0.17	0.42	0.00	1.48	Calculated
790	PUV830	0.10	0 12:12	0.28	0.37	1.61	0.16	0.18	0.43	0.00	1.44	Calculated
791	PUV835	0.19	0 12:12	0.82	0.23	4.32	0.17	0.14	0.32	0.00	4.12	Calculated
792	PUV840	0.19	0 12:12	2.17	0.09	4.06	0.10	0.13	0.23	0.00	4.00	Calculated
793	PUV845	0.27	0 12:12	2.29	0.12	4.50	0.12	0.16	0.28	0.00	4.17	Calculated
794	PUV85	0.90	0 12:12	1.34	0.67	3.38	0.33	0.58	1.00	4.00	2.43	SURCHARGED
795	PUV850	0.33	0 12:12	2.02	0.17	5.10	0.11	0.16	0.29	0.00	4.35	Calculated
796	PUV860	0.09	0 12:12	1.07	0.08	2.79	0.10	0.11	0.26	0.00	2.53	Calculated
797	PUV865	0.09	0 12:12	1.81	0.05	3.35	0.15	0.09	0.16	0.00	3.61	Calculated
798	PUV875	0.04	0 12:12	0.53	0.07	1.15	0.40	0.12	0.27	0.00	0.94	Calculated
799	PUV880	0.14	0 12:12	0.59	0.24	2.88	0.27	0.15	0.35	0.00	2.58	Calculated
800	PUV885	0.21	0 12:12	0.79	0.26	2.45	0.42	0.22	0.53	0.00	2.14	Calculated
801	PUV890	0.34	0 12:12	0.61	0.56	3.40	0.10	0.26	0.62	0.00	3.20	Calculated
802	PUV895	0.35	0 12:12	1.13	0.31	5.16	0.04	0.19	0.45	0.00	4.82	Calculated
803	PUV90	0.95	0 12:16	1.49	0.63	3.53	0.02	0.58	1.00	12.00	2.25	SURCHARGED
804	PUV905	0.11	0 12:12	0.62	0.17	2.16	0.08	0.15	0.35	0.00	2.30	Calculated
805	PUV910	0.12	0 12:12	0.83	0.14	2.60	0.06	0.14	0.33	0.00	3.32	Calculated
806	PUV915	0.12	0 12:12	0.90	0.13	2.97	0.03	0.13	0.30	0.00	3.53	Calculated
807	PUV925	0.07	0 12:12	0.36	0.18	1.90	0.34	0.12	0.27	0.00	1.85	Calculated
808	PUV930	0.07	0 12:12	0.60	0.11	1.16	0.43	0.17	0.39	0.00	1.17	Calculated
809	PUV935	0.12	0 12:12	0.32	0.37	1.60	0.10	0.21	0.49	0.00	1.61	Calculated
810	PUV940	0.16	0 12:12	0.71	0.22	2.73	0.06	0.17	0.40	0.00	2.68	Calculated
811	PUV945	0.16	0 12:12	0.55	0.28	2.31	0.40	0.19	0.45	0.00	1.83	Calculated
812	PUV95	0.95	0 12:16	1.40	0.67	3.53	0.05	0.58	1.00	8.00	2.74	SURCHARGED
813	PUV950	0.28	0 12:12	0.62	0.45	2.95	0.16	0.25	0.60	0.00	2.88	Calculated
814	PUV955	0.28	0 12:12	0.72	0.38	2.00	0.10	0.36	0.83	0.00	2.25	Calculated
815	PUV960	0.34	0 12:12	0.52	0.65	2.21	0.05	0.41	0.95	0.00	1.48	Calculated
816	PUV965	0.34	0 12:12	0.48	0.70	1.95	0.62	0.34	0.62	0.00	1.50	Calculated
817	PUV970	0.41	0 12:12	1.53	0.27	2.83	0.05	0.30	0.53	0.00	2.66	Calculated
818	PUV975	0.60	0 12:12	1.53	0.39	4.72	0.13	0.27	0.48	0.00	3.44	Calculated
819	PUV985	0.02	0 12:12	0.39	0.04	0.86	0.18	0.08	0.18	0.00	1.09	Calculated
820	PUV990	0.02	0 12:12	0.20	0.08	0.71	0.63	0.09	0.21	0.00	0.77	Calculated
821	PUV995	0.04	0 12:12	0.37	0.10	0.65	0.65	0.16	0.38	0.00	0.62	Calculated

Storage Nodes

Storage Node : Stor-01

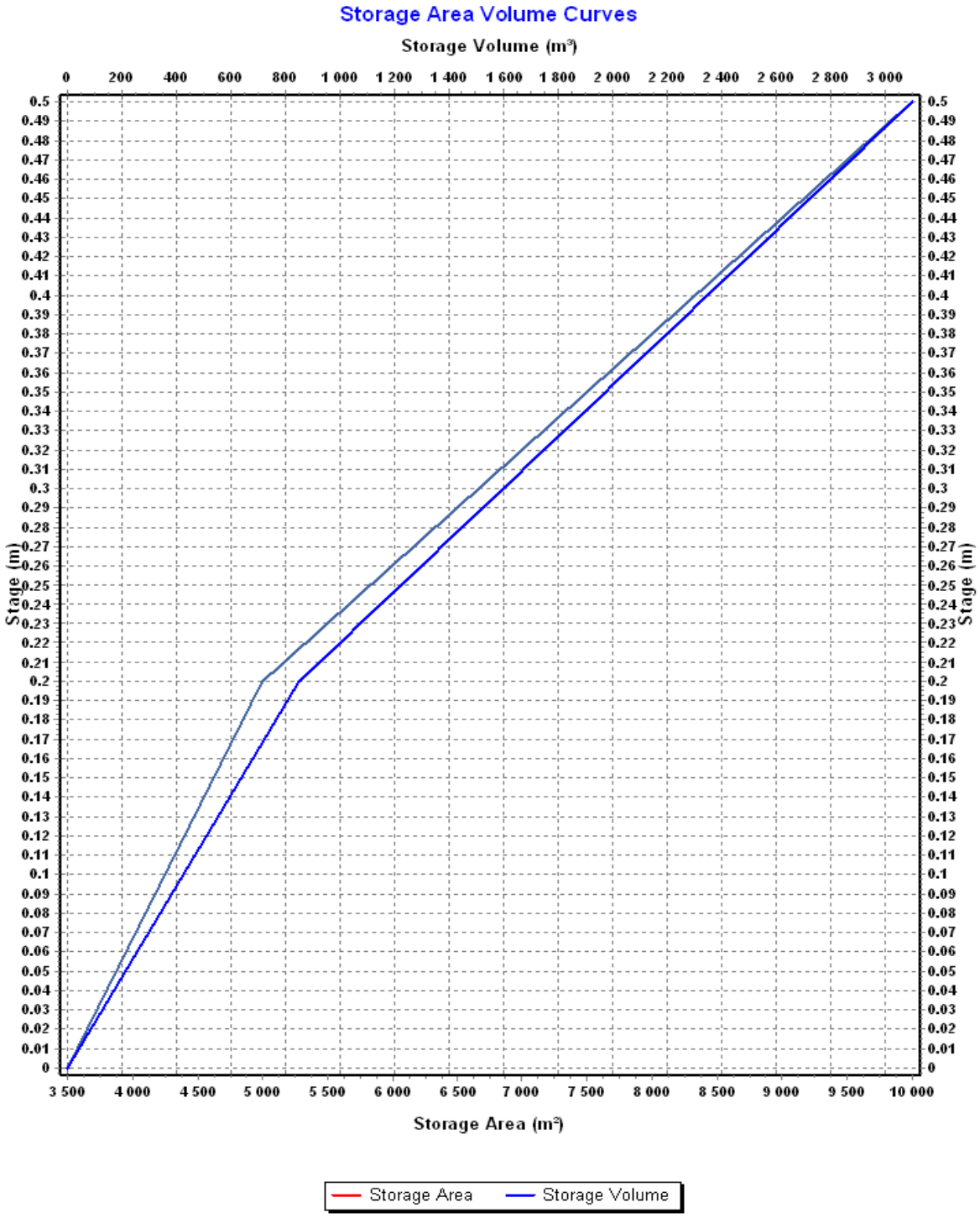
Input Data

Invert Elevation (m)	220.20
Max (Rim) Elevation (m)	221.00
Max (Rim) Offset (m)	0.80
Initial Water Elevation (m)	220.00
Initial Water Depth (m)	-0.20
Ponded Area (m²)	0.00
Evaporation Loss	0.00

Storage Area Volume Curves

Storage Curve : Storage-01

Stage (m)	Storage Area (m²)	Storage Volume (m³)
0	3500	0.000
0.2	5000	850.00
0.5	10000	3100.00


Storage Area Volume Curves
Storage Volume (m³)
0 200 400 600 800 1 000 1 200 1 400 1 600 1 800 2 000 2 200 2 400 2 600 2 800 3 000
0.5 0.49 0.48 0.47 0.46 0.45 0.44 0.43 0.42 0.41 0.4 0.39 0.38 0.37 0.36 0.35 0.34 0.33 0.32 0.31 0.3 0.29 0.28 0.27 0.26 0.25 0.24 0.23 0.22 0.21 0.2 0.19 0.18 0.17 0.16 0.15 0.14 0.13 0.12 0.11 0.1 0.09 0.08 0.07 0.06 0.05 0.04 0.03 0.02 0.01 0
Stage (m)
3 500 4 000 4 500 5 000 5 500 6 000 6 500 7 000 7 500 8 000 8 500 9 000 9 500 10 000
Storage Area (m²)
Storage Area
Storage Volume

Storage Node : Stor-01 (continued)

Output Summary Results

Peak Inflow (cms)	3.36
Peak Lateral Inflow (cms)	0.00
Peak Outflow (cms)	1.83
Peak Exfiltration Flow Rate (cmm)	0.00
Max HGL Elevation Attained (m)	220.72
Max HGL Depth Attained (m)	0.52
Average HGL Elevation Attained (m)	220.38
Average HGL Depth Attained (m)	0.18
Time of Max HGL Occurrence (days hh:mm)	0 12:35
Total Exfiltration Volume (1000-m³)	0.000
Total Flooded Volume (ha-mm)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

50 YEAR OUTPUT – PROPOSED NETWORKS

Project Description

File Name ..... E010 PROPOSED.SPF

Project Options

Flow Units ..... CMS
Elevation Type ..... Elevation
Hydrology Method ..... EPA SWMM
EPA SWMM Infiltration Method ..... SCS Curve Number
Link Routing Method ..... Hydrodynamic
Enable Overflow Ponding at Nodes ..... YES
Skip Steady State Analysis Time Periods ... NO

Analysis Options

Start Analysis On ..... Apr 27, 2020 00:00:00
End Analysis On ..... Apr 28, 2020 00:00:00
Start Reporting On ..... Apr 27, 2020 00:00:00
Antecedent Dry Days ..... 0 days
Runoff (Dry Weather) Time Step ..... 0 01:00:00 days hh:mm:ss
Runoff (Wet Weather) Time Step ..... 0 00:05:00 days hh:mm:ss
Reporting Time Step ..... 0 00:05:00 days hh:mm:ss
Routing Time Step ..... 30 seconds

Number of Elements

	Qty
Rain Gages	1
Subbasins	361
Nodes	866
Junctions	809
Outfalls	56
Flow Diversions	0
Inlets	0
Storage Nodes	1
Links	914
Channels	93
Pipes	821
Pumps	0
Orifices	0
Weirs	0
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (mm)	Rainfall Distribution
1		Time Series	50YR	Cumulative	mm	None	None	50	229.00	South Africa 24-hr, Type 2

Subbasin Summary

SN	Subbasin ID	Area	Impervious Area	Weighted Curve Number	Average Slope	Equivalent Width	Impervious Area Manning's Roughness	Pervious Area Manning's Roughness	Total Rainfall	Total Infiltration	Total Runoff	Total Runoff Volume	Peak Runoff	Time of Concentration
		(ha)	(%)		(%)	(m)			(mm)	(mm)	(mm)	(ha-mm)	(cms)	(days hh:mm:ss)
1	CE_05	2.02	55.00	82.00	1.3000	150.00	0.1000	0.3000	228.96	20.1770	202.79	408.81	1.06	0 00:59:25
2	CE_10	0.44	50.00	83.00	0.9000	150.00	0.1000	0.3000	228.96	21.1960	203.56	90.38	0.29	0 00:28:30
3	CE_15	1.19	10.00	86.00	1.4000	150.00	0.1000	0.3000	228.96	31.5210	188.83	224.71	0.52	0 01:04:12
4	CE_20	1.04	60.00	81.00	1.5000	150.00	0.1000	0.3000	228.96	18.9110	205.64	213.66	0.64	0 00:35:38
5	CE01	0.19	90.00	92.00	2.6000	76.00	0.1000	0.3000	228.96	2.0140	224.84	42.95	0.14	0 00:13:50
6	CE02	0.30	90.00	92.00	1.2000	150.00	0.1000	0.3000	228.96	2.0140	224.76	66.75	0.21	0 00:15:07
7	CE03	2.06	60.00	81.00	1.4000	150.00	0.1000	0.3000	228.96	18.9110	204.39	420.64	1.10	0 00:54:49
8	CE04	0.21	90.00	92.00	1.8000	150.00	0.1000	0.3000	228.96	2.0140	224.99	48.15	0.15	0 00:11:00
9	CE06	0.72	90.00	92.00	2.0000	150.00	0.1000	0.3000	228.96	2.0140	224.22	161.44	0.49	0 00:22:04
10	CE07	1.80	60.00	81.00	1.7000	150.00	0.1000	0.3000	228.96	18.9110	204.85	367.91	1.02	0 00:47:40
11	CE08	0.72	90.00	92.00	0.6000	150.00	0.1000	0.3000	228.96	2.0140	223.44	159.98	0.46	0 00:31:34
12	CE09	0.51	50.00	83.00	0.9000	150.00	0.1000	0.3000	228.96	21.1960	203.42	102.73	0.32	0 00:30:48
13	CE11	0.40	50.00	83.00	0.9000	150.00	0.1000	0.3000	228.96	21.1960	203.65	82.28	0.26	0 00:26:56
14	CE12	0.70	90.00	92.00	1.4000	150.00	0.1000	0.3000	228.96	2.0140	224.05	156.61	0.47	0 00:24:08
15	CE13	0.77	50.00	83.00	2.6000	150.00	0.1000	0.3000	228.96	21.1960	203.54	156.72	0.50	0 00:28:51
16	CE14	0.47	50.00	83.00	1.4000	133.20	0.1000	0.3000	228.96	21.1960	203.60	96.30	0.31	0 00:27:51
17	CE16	1.03	60.00	81.00	2.3000	150.00	0.1000	0.3000	228.96	18.9110	205.94	212.11	0.66	0 00:31:11
18	CE17	1.23	60.00	81.00	1.4000	150.00	0.1000	0.3000	228.96	18.9110	205.34	252.15	0.74	0 00:40:13
19	CE18	0.86	60.00	81.00	2.5000	150.00	0.1000	0.3000	228.96	18.9110	206.20	176.30	0.56	0 00:27:12
20	CE19	0.61	50.00	83.00	2.1000	150.00	0.1000	0.3000	228.96	21.1960	203.66	124.24	0.40	0 00:26:45
21	CE21	1.05	50.00	83.00	0.8000	150.00	0.1000	0.3000	228.96	21.1960	202.26	212.77	0.60	0 00:49:34
22	CE22	0.10	90.00	92.00	0.7000	138.00	0.1000	0.3000	228.96	2.0140	225.04	21.38	0.07	0 00:09:25
23	CE23	3.77	10.00	86.00	1.0000	150.00	0.1000	0.3000	228.96	31.5210	182.98	689.27	0.94	0 02:21:48
24	CG04	0.86	50.00	83.00	3.4000	150.00	0.1000	0.3000	228.96	21.1960	203.56	175.47	0.56	0 00:28:29
25	CG05	0.25	50.00	83.00	10.9000	110.00	0.1000	0.3000	228.96	21.1960	204.37	50.27	0.17	0 00:11:24
26	CG06	0.97	50.00	83.00	5.1000	150.00	0.1000	0.3000	228.96	21.1960	203.65	197.54	0.63	0 00:27:05
27	CGC01	0.32	50.00	83.00	3.5000	102.60	0.1000	0.3000	228.96	21.1960	204.06	65.91	0.22	0 00:19:41
28	CGC02	0.86	50.00	83.00	2.7000	150.00	0.1000	0.3000	228.96	21.1960	203.43	175.56	0.55	0 00:30:33
29	CGC-02	1.12	50.00	83.00	20.0000	150.00	0.1000	0.3000	228.96	21.1960	204.07	227.53	0.75	0 00:19:32
30	CGC03	0.32	50.00	83.00	6.8000	118.00	0.1000	0.3000	228.96	21.1960	204.28	64.55	0.21	0 00:14:38
31	GE_10	0.47	50.00	83.00	1.0000	150.00	0.1000	0.3000	228.96	21.1960	203.57	94.66	0.30	0 00:28:24
32	GE_15	0.81	90.00	92.00	1.1000	150.00	0.1000	0.3000	228.96	2.0140	223.70	181.42	0.54	0 00:28:21
33	GE_20	2.23	50.00	83.00	0.9000	150.00	0.1000	0.3000	228.96	21.1960	200.70	448.17	1.05	0 01:15:09
34	GE_25	1.13	50.00	83.00	0.3000	150.00	0.1000	0.3000	228.96	21.1960	201.05	227.19	0.55	0 01:09:26
35	GE_26	0.38	90.00	92.00	0.4000	150.00	0.1000	0.3000	228.96	2.0140	224.03	85.13	0.26	0 00:24:22
36	GE_27	0.74	50.00	83.00	1.7000	150.00	0.1000	0.3000	228.96	21.1960	203.35	150.07	0.47	0 00:31:57
37	GE_28	0.71	50.00	83.00	1.6000	88.20	0.1000	0.3000	228.96	21.1960	202.62	143.66	0.42	0 00:43:41
38	GE_30	0.25	90.00	92.00	0.7000	134.00	0.1000	0.3000	228.96	2.0140	224.62	55.48	0.17	0 00:17:01
39	GE_35	1.58	50.00	83.00	0.3000	150.00	0.1000	0.3000	228.96	21.1960	200.11	316.57	0.69	0 01:24:58
40	GE_40	0.68	50.00	83.00	0.4000	150.00	0.1000	0.3000	228.96	21.1960	202.42	137.64	0.39	0 00:46:58
41	GE01	1.56	50.00	83.00	0.5000	150.00	0.1000	0.3000	228.96	21.1960	200.88	312.58	0.75	0 01:12:10
42	GE02	0.87	50.00	83.00	0.8000	150.00	0.1000	0.3000	228.96	21.1960	202.59	176.45	0.51	0 00:44:15
43	GE03.0	1.24	55.00	82.00	0.7000	150.00	0.1000	0.3000	228.96	20.1770	203.16	251.71	0.68	0 00:53:25
44	GE03.1	0.29	90.00	92.00	0.8000	150.00	0.1000	0.3000	228.96	2.0140	224.65	64.02	0.20	0 00:16:39
45	GE04	1.97	50.00	83.00	1.2000	150.00	0.1000	0.3000	228.96	21.1960	201.38	397.32	1.01	0 01:04:00
46	GE05	1.37	50.00	83.00	1.6000	150.00	0.1000	0.3000	228.96	21.1960	202.41	277.29	0.79	0 00:47:10
47	GE06	0.24	90.00	92.00	1.8000	150.00	0.1000	0.3000	228.96	2.0140	224.96	54.21	0.17	0 00:11:48
48	GE07.0	0.29	90.00	92.00	1.0000	150.00	0.1000	0.3000	228.96	2.0140	224.72	64.94	0.20	0 00:15:42
49	GE07.1	0.29	90.00	92.00	1.0000	150.00	0.1000	0.3000	228.96	2.0140	224.72	64.94	0.20	0 00:15:42
50	GE08	1.56	50.00	83.00	0.8000	150.00	0.1000	0.3000	228.96	21.1960	201.45	313.87	0.80	0 01:02:44
51	GE09	1.13	50.00	83.00	0.7000	150.00	0.1000	0.3000	228.96	21.1960	202.00	227.65	0.62	0 00:53:46
52	GE11	0.51	50.00	83.00	1.1000	150.00	0.1000	0.3000	228.96	21.1960	203.53	102.78	0.33	0 00:29:00
53	GE12	0.25	50.00	83.00	1.4000	146.00	0.1000	0.3000	228.96	21.1960	204.14	51.04	0.17	0 00:17:59
54	GE13	0.10	90.00	92.00	1.7000	150.00	0.1000	0.3000	228.96	2.0140	225.04	23.18	0.07	0 00:07:13
55	GE14	1.45	50.00	83.00	1.1000	150.00	0.1000	0.3000	228.96	21.1960	201.94	293.63	0.79	0 00:54:42
56	GE16	2.90	10.00	86.00	0.2000	150.00	0.1000	0.3000	228.96	31.5210	178.13	517.28	0.55	0 03:16:35
57	GE19	0.22	90.00	92.00	0.4000	150.00	0.1000	0.3000	228.96	2.0140	224.58	49.18	0.15	0 00:17:31
58	GE21	1.32	50.00	83.00	0.6000	150.00	0.1000	0.3000	228.96	21.1960	201.50	266.78	0.69	0 01:02:01
59	GE22	0.25	90.00	92.00	1.0000	150.00	0.1000	0.3000	228.96	2.0140	224.81	55.53	0.17	0 00:14:18
60	GE23	2.01	50.00	83.00	0.5000	150.00	0.1000	0.3000	228.96	21.1960	200.16	402.32	0.89	0 01:24:10
61	GE24	0.61	50.00	83.00	0.8000	150.00	0.1000	0.3000	228.96	21.1960	203.12	123.09	0.38	0 00:35:36
62	GE29	0.27	90.00	92.00	0.7000	144.00	0.1000	0.3000	228.96	2.0140	224.59	61.54	0.19	0 00:17:21
63	GE31	0.45	50.00	83.00	0.6000	150.00	0.1000	0.3000	228.96	21.1960	203.31	91.69	0.29	0 00:32:30
64	GE32	0.45	50.00	83.00	0.6000	143.37	0.1000	0.3000	228.96	21.1960	203.26	91.67	0.28	0 00:33:24
65	GE33	1.08	50.00	83.00	0.3000	150.00	0.1000	0.3000	228.96	21.1960	201.16	217.06	0.54	0 01:07:32
66	GE34	0.33	90.00	92.00	0.3000	150.00	0.1000	0.3000	228.96	2.0140	224.01	74.82	0.23	0 00:24:35
67	GE36	0.33	90.00	92.00	0.3000	150.00	0.1000	0.3000	228.96	2.0140	224.01	74.60	0.23	0 00:24:33
68	GE37	0.43	50.00	83.00	1.3000	71.88	0.1000	0.3000	228.96	21.1960	202.90	88.06	0.26	0 00:39:10
69	GE38	0.71	50.00	83.00	0.6000	150.00	0.1000	0.3000	228.96	21.1960	202.67	144.71	0.42	0 00:42:49
70	GE39	1.00	50.00	83.00	0.2000	150.00	0.1000	0.3000	228.96	21.1960	200.85	200.25	0.48	0 01:12:44
71	GE41	0.54	50.00	83.00	0.4000	150.00	0.1000	0.3000	228.96	21.1960	202.80	108.90	0.32	0 00:40:45
72	GE42	1.19	50.00	83.00	0.3000	150.00	0.1000	0.3000	228.96	21.1960	200.92	239.29	0.57	0 01:11:40
73	GE43	1.21	50.00	83.00	0.3000	150.00	0.1000	0.3000	228.96	21.1960	200.88	242.86	0.58	0 01:12:19
74	GE44	0.24	90.00	92.00	2.0000	150.00	0.1000	0.3000	228.96	2.0140	224.97	54.44	0.17	0 00:11:28
75	GEC-04	3.61	50.00	83.00	0.8000	150.00	0.1000	0.3000	228.96	21.1960	198.96	718.04	1.39	0 01:43:51
76	LE_05	0.21	90.00	92.00	2.0000	150.00	0.1000	0.3000	228.96	2.0140	225.01	47.93	0.15	0 00:10:37
77	LE_10	0.13	90.00	92.00	1.4000	70.00	0.1000	0.3000	228.96	2.0140	224.83	29.68	0.09	0 00:14:01
78	LE_15	1.02	55.00	82.00	1.2000	150.00	0.1000	0.3000	228.96	20.1770	203.97	208.45	0.62	0 00:40:29
79	LE_20	0.58	50.00	83.00	0.4000	150.00	0.1000	0.3000	228.96	21.1960	202.67	118.16	0.35	0 00:42:49
80	LE_25	0.45	50.00	83.00	0.6000	142.20	0.1000	0.3000	228.96	21.1960	203.24	92.27	0.29	0 00:33:41
81	LE_30	0.48	50.00	83.00	0.8000	150.00	0.1000	0.3000	228.96	21.1960	203.41	98.04	0.31	0 00:31:01
82	LE_35	0.35	50.00	83.00	0.5000	150.00	0.1000	0.3000	228.96	21.1960	203.50	71.02	0.22	0 00:29:26
83	LE_40	0.31	50.00	83.00	3.1000	128.00	0.1000	0.3000	228.96	21.1960	204.16	63.70	0.21	0 00:17:30
84	LE_45	0.61	50.00	83.00	1.1000	150.00	0.1000	0.3000	228.96	21.1960	203.31	124.83	0.39	0 00:32:36
85	LE_50	0.19	90.00	92.00	0.5000	150.00	0.1000	0.3000	228.96	2.0140	224.78	41.58	0.13	0 00:14:48
86	LE_55	0.17	50.00	83.00	6.8000	88.00	0.1000	0.3000	228.96	21.1960	204.35	34.94	0.12	0 00:12:04
87	LE_60	0.53	50.00	83.00	2.4000	150.00	0.1000	0.3000	228.96	21.1960	203.85	107.23	0.35	0 00:23:31

Subbasin Summary

SN	Subbasin ID	Area	Impervious Area	Weighted Curve Number	Average Slope	Equivalent Width	Impervious Area Manning's Roughness	Pervious Area Manning's Roughness	Total Rainfall	Total Infiltration	Total Runoff	Total Runoff Volume	Peak Runoff	Time of Concentration
		(ha)	(%)		(%)	(m)			(mm)	(mm)	(mm)	(ha-mm)	(cms)	(days hh:mm:ss)
88	LE_65	0.13	90.00	92.00	0.9000	108.00	0.1000	0.3000	228.96	2.0140	224.95	28.34	0.09	0 00:12:00
89	LE_70	0.07	90.00	92.00	2.4000	84.00	0.1000	0.3000	228.96	2.0140	225.04	15.53	0.05	0 00:07:14
90	LE_80	2.38	10.00	86.00	0.4000	150.00	0.1000	0.3000	228.96	31.5210	182.99	434.97	0.59	0 02:21:36
91	LE01	0.16	90.00	92.00	2.9000	140.00	0.1000	0.3000	228.96	2.0140	225.05	36.68	0.12	0 00:08:26
92	LE02	0.49	50.00	83.00	2.6000	109.20	0.1000	0.3000	228.96	21.1960	203.66	100.61	0.32	0 00:26:45
93	LE03	0.67	50.00	83.00	1.5000	117.00	0.1000	0.3000	228.96	21.1960	203.07	136.46	0.42	0 00:36:24
94	LE04	0.62	90.00	92.00	0.8000	150.00	0.1000	0.3000	228.96	2.0140	223.85	139.23	0.42	0 00:26:37
95	LE06	0.30	50.00	83.00	2.8000	150.00	0.1000	0.3000	228.96	21.1960	204.23	60.45	0.20	0 00:15:54
96	LE07	0.73	50.00	83.00	3.0000	149.40	0.1000	0.3000	228.96	21.1960	203.66	148.27	0.48	0 00:26:47
97	LE08	0.18	90.00	92.00	2.2000	138.00	0.1000	0.3000	228.96	2.0140	225.03	39.38	0.12	0 00:09:39
98	LE09	1.23	50.00	83.00	2.0000	150.00	0.1000	0.3000	228.96	21.1960	202.77	249.00	0.74	0 00:41:19
99	LE11	0.26	90.00	92.00	1.5000	150.00	0.1000	0.3000	228.96	2.0140	224.89	58.02	0.18	0 00:13:00
100	LE12	0.66	50.00	83.00	1.1000	150.00	0.1000	0.3000	228.96	21.1960	203.21	134.93	0.42	0 00:34:10
101	LE13	0.66	50.00	83.00	1.7000	150.00	0.1000	0.3000	228.96	21.1960	203.48	134.09	0.42	0 00:29:51
102	LE14	1.62	50.00	83.00	1.3000	150.00	0.1000	0.3000	228.96	21.1960	201.89	327.07	0.88	0 00:55:31
103	LE16	1.41	30.00	85.00	0.9000	150.00	0.1000	0.3000	228.96	26.2400	195.12	274.53	0.66	0 01:09:42
104	LE17	0.27	50.00	83.00	0.7000	140.00	0.1000	0.3000	228.96	21.1960	203.85	54.43	0.18	0 00:23:37
105	LE18	0.94	50.00	83.00	1.0000	150.00	0.1000	0.3000	228.96	21.1960	202.65	190.08	0.56	0 00:43:16
106	LE19	0.86	55.00	82.00	0.7000	146.00	0.1000	0.3000	228.96	20.1770	203.77	175.24	0.51	0 00:43:37
107	LE21	0.32	50.00	83.00	0.9000	99.00	0.1000	0.3000	228.96	21.1960	203.48	64.10	0.20	0 00:29:46
108	LE22	0.52	50.00	83.00	0.7000	120.00	0.1000	0.3000	228.96	21.1960	202.93	105.53	0.32	0 00:38:38
109	LE23	0.45	50.00	83.00	0.6000	164.00	0.1000	0.3000	228.96	21.1960	203.43	90.93	0.29	0 00:30:38
110	LE24	0.37	50.00	83.00	0.7000	115.20	0.1000	0.3000	228.96	21.1960	203.34	74.22	0.23	0 00:32:01
111	LE26	0.33	50.00	83.00	0.7000	152.00	0.1000	0.3000	228.96	21.1960	203.75	66.22	0.21	0 00:25:17
112	LE27	0.59	50.00	83.00	1.0000	150.00	0.1000	0.3000	228.96	21.1960	203.30	119.74	0.37	0 00:32:44
113	LE28	0.12	90.00	92.00	0.8000	126.00	0.1000	0.3000	228.96	2.0140	225.00	25.88	0.08	0 00:10:44
114	LE29	0.13	90.00	92.00	1.7000	116.00	0.1000	0.3000	228.96	2.0140	225.04	28.35	0.09	0 00:09:30
115	LE31	0.58	50.00	83.00	0.5000	150.00	0.1000	0.3000	228.96	21.1960	202.86	116.85	0.35	0 00:39:45
116	LE32	0.10	50.00	83.00	0.5000	114.00	0.1000	0.3000	228.96	21.1960	204.22	19.81	0.07	0 00:16:05
117	LE33	0.45	50.00	83.00	0.5000	135.00	0.1000	0.3000	228.96	21.1960	203.07	91.18	0.28	0 00:36:28
118	LE34	0.37	50.00	83.00	0.5000	112.00	0.1000	0.3000	228.96	21.1960	203.08	74.73	0.23	0 00:36:12
119	LE36	0.20	90.00	92.00	0.5000	150.00	0.1000	0.3000	228.96	2.0140	224.75	43.83	0.14	0 00:15:16
120	LE37	0.33	50.00	83.00	1.4000	144.00	0.1000	0.3000	228.96	21.1960	203.96	67.92	0.22	0 00:21:32
121	LE38	0.35	50.00	83.00	1.3000	152.00	0.1000	0.3000	228.96	21.1960	203.93	72.19	0.24	0 00:22:06
122	LE39	0.46	50.00	83.00	2.3000	150.00	0.1000	0.3000	228.96	21.1960	203.93	94.62	0.31	0 00:22:05
123	LE41	0.31	50.00	83.00	1.4000	144.00	0.1000	0.3000	228.96	21.1960	204.02	62.84	0.21	0 00:20:33
124	LE42	0.28	50.00	83.00	2.0000	88.20	0.1000	0.3000	228.96	21.1960	203.85	57.69	0.19	0 00:23:33
125	LE43	0.82	50.00	83.00	0.8000	150.00	0.1000	0.3000	228.96	21.1960	202.68	166.00	0.49	0 00:42:39
126	LE44	0.58	50.00	83.00	1.0000	150.00	0.1000	0.3000	228.96	21.1960	203.33	117.32	0.37	0 00:32:19
127	LE46	0.17	50.00	83.00	1.9000	104.00	0.1000	0.3000	228.96	21.1960	204.23	34.92	0.12	0 00:16:00
128	LE47	0.16	50.00	83.00	1.9000	108.00	0.1000	0.3000	228.96	21.1960	204.26	32.89	0.11	0 00:15:06
129	LE48	0.77	50.00	83.00	3.6000	150.00	0.1000	0.3000	228.96	21.1960	203.70	157.46	0.51	0 00:26:14
130	LE49	1.26	50.00	83.00	1.4000	150.00	0.1000	0.3000	228.96	21.1960	202.44	254.26	0.73	0 00:46:36
131	LE51	0.09	90.00	92.00	0.4000	150.00	0.1000	0.3000	228.96	2.0140	225.02	19.35	0.06	0 00:09:59
132	LE52	0.11	90.00	92.00	0.7000	150.00	0.1000	0.3000	228.96	2.0140	225.03	24.98	0.08	0 00:09:51
133	LE53	0.31	50.00	83.00	5.9000	150.00	0.1000	0.3000	228.96	21.1960	204.33	62.32	0.21	0 00:12:56
134	LE54	0.56	50.00	83.00	6.0000	180.00	0.1000	0.3000	228.96	21.1960	204.21	113.33	0.38	0 00:16:32
135	LE56	0.30	50.00	83.00	4.2000	142.00	0.1000	0.3000	228.96	21.1960	204.28	60.67	0.20	0 00:14:35
136	LE57	0.37	50.00	83.00	3.5000	116.00	0.1000	0.3000	228.96	21.1960	204.06	74.69	0.25	0 00:19:42
137	LE58	1.78	30.00	85.00	0.8000	150.00	0.1000	0.3000	228.96	26.2400	194.28	344.84	0.76	0 01:23:01
138	LE59	0.87	50.00	83.00	2.3000	150.00	0.1000	0.3000	228.96	21.1960	203.33	177.71	0.55	0 00:32:18
139	LE61	0.10	90.00	92.00	1.9000	52.00	0.1000	0.3000	228.96	2.0140	224.91	22.04	0.07	0 00:12:47
140	LE62	0.23	50.00	83.00	6.9000	129.60	0.1000	0.3000	228.96	21.1960	204.36	47.82	0.16	0 00:11:30
141	LE63	0.10	90.00	92.00	7.1000	100.80	0.1000	0.3000	228.96	2.0140	225.01	21.60	0.07	0 00:05:43
142	LE64	0.26	50.00	83.00	4.1000	131.40	0.1000	0.3000	228.96	21.1960	204.29	52.91	0.18	0 00:14:10
143	LE66	0.22	50.00	83.00	5.0000	150.00	0.1000	0.3000	228.96	21.1960	204.37	43.94	0.15	0 00:11:01
144	LE67	0.16	90.00	92.00	4.8000	126.00	0.1000	0.3000	228.96	2.0140	225.05	36.46	0.11	0 00:07:42
145	LE68	0.33	50.00	83.00	4.9000	150.00	0.1000	0.3000	228.96	21.1960	204.29	67.21	0.22	0 00:14:19
146	LE69	0.42	50.00	83.00	5.5000	150.00	0.1000	0.3000	228.96	21.1960	204.22	86.59	0.29	0 00:16:06
147	LE71	0.63	50.00	83.00	4.5000	150.00	0.1000	0.3000	228.96	21.1960	203.96	127.68	0.42	0 00:21:37
148	LE72	0.23	90.00	92.00	1.1000	150.00	0.1000	0.3000	228.96	2.0140	224.88	51.50	0.16	0 00:13:16
149	LE73	0.59	50.00	83.00	2.2000	150.00	0.1000	0.3000	228.96	21.1960	203.72	119.99	0.39	0 00:25:50
150	LE76	2.62	30.00	85.00	0.8000	150.00	0.1000	0.3000	228.96	26.2400	192.87	505.31	0.99	0 01:44:52
151	LE77	0.58	10.00	86.00	0.9000	150.00	0.1000	0.3000	228.96	31.5210	190.00	109.63	0.30	0 00:47:28
152	LE78	0.70	10.00	86.00	0.9000	150.00	0.1000	0.3000	228.96	31.5210	189.59	132.72	0.34	0 00:53:19
153	LE79	1.91	10.00	86.00	1.2000	150.00	0.1000	0.3000	228.96	31.5210	187.04	356.68	0.67	0 01:29:14
154	LE81	1.16	10.00	86.00	1.2000	117.60	0.1000	0.3000	228.96	31.5210	187.93	218.76	0.46	0 01:16:47
155	PP_10	0.77	10.00	86.00	0.9000	84.80	0.1000	0.3000	228.96	31.5210	187.75	144.19	0.29	0 01:19:22
156	PP_15	0.48	50.00	83.00	4.4000	150.00	0.1000	0.3000	228.96	21.1960	204.12	97.77	0.32	0 00:18:32
157	PP_20	4.96	10.00	86.00	1.4000	150.00	0.1000	0.3000	228.96	31.5210	182.20	903.34	1.17	0 02:31:09
158	PP_25	0.41	50.00	83.00	0.7000	146.00	0.1000	0.3000	228.96	21.1960	203.49	83.02	0.26	0 00:29:42
159	PP_35	0.65	50.00	83.00	0.9000	116.00	0.1000	0.3000	228.96	21.1960	202.73	131.98	0.39	0 00:41:51
160	PP_40	0.10	50.00	92.00	0.7000	138.00	0.1000	0.3000	228.96	10.0720	215.49	20.47	0.07	0 00:12:48
161	PP_45	0.16	90.00	92.00	1.7000	116.00	0.1000	0.3000	228.96	2.0140	224.99	36.67	0.12	0 00:11:05
162	PP_50	0.48	50.00	83.00	2.6000	154.00	0.1000	0.3000	228.96	21.1960	203.98	97.09	0.32	0 00:21:17
163	PP_55	0.78	50.00	83.00	9.4000	106.00	0.1000	0.3000	228.96	21.1960	203.80	159.37	0.52	0 00:24:23
164	PP01	1.82	30.00	85.00	0.6000	150.00	0.1000	0.3000	228.96	26.2400	193.70	353.31	0.74	0 01:31:59
165	PP02	1.28	50.00	83.00	3.3000	150.00	0.1000	0.3000	228.96	21.1960	203.07	259.32	0.79	0 00:36:23
166	PP03	1.40	40.00	84.00	1.6000	150.00	0.1000	0.3000	228.96	23.9650	198.90	279.06	0.76	0 00:53:23
167	PP04	0.13	90.00	92.00	1.6000	128.00	0.1000	0.3000	228.96	2.0140	225.04	29.71	0.09	0 00:09:22
168	PP05	0.30	50.00	83.00	2.9000	138.00	0.1000	0.3000	228.96	21.1960	204.20	61.06	0.20	0 00:16:38
169	PP06	0.24	50.00	83.00	2.9000	136.00	0.1000	0.3000	228.96	21.1960	204.27	49.84	0.17	0 00:14:51
170	PP07	0.59	50.00	83.00	0.5000	150.00	0.1000	0.3000	228.96	21.1960	202.83	119.27	0.36	0 00:40:15
171	PP08	0.42	50.00	83.00	0.8000	118.80	0.1000	0.3000	228.96	21.1960	203.30	84.57	0.26	0 00:32:40
172	PP09	0.36	50.00	83.00	0.7000	127.80	0.1000	0.3000	228.96	21.1960	203.47	73.66	0.23	0 00:29:56
173	PP11	0.73	50.00	83.00	0.5000	150.00	0.1000	0.3000	228.96	21.1960	202.49	147.41	0.42	0 00:45:45
174	PP12	0.07	90.00	92.00	6.3000	64.00	0.1000	0.3000	228.96	2.0140	225.03	15.30	0.05	0 00:06:19

Subbasin Summary

SN	Subbasin ID	Area	Impervious Area	Weighted Curve Number	Average Slope	Equivalent Width	Impervious Area Manning's Roughness	Pervious Area Manning's Roughness	Total Rainfall	Total Infiltration	Total Runoff	Total Runoff Volume	Peak Runoff	Time of Concentration
		(ha)	(%)		(%)	(m)			(mm)	(mm)	(mm)	(ha-mm)	(cms)	(days hh:mm:ss)
175	PP13	0.05	90.00	92.00	4.0000	50.00	0.1000	0.3000	228.96	2.0140	225.04	10.58	0.03	0 00:06:44
176	PP14	0.67	50.00	83.00	3.2000	150.00	0.1000	0.3000	228.96	21.1960	203.77	136.53	0.44	0 00:24:56
177	PP16	0.67	50.00	83.00	4.8000	150.00	0.1000	0.3000	228.96	21.1960	203.93	136.64	0.45	0 00:22:05
178	PP17	0.36	50.00	83.00	5.9000	136.00	0.1000	0.3000	228.96	21.1960	204.26	72.72	0.24	0 00:15:04
179	PP18	0.95	30.00	85.00	1.2000	150.00	0.1000	0.3000	228.96	26.2400	196.33	185.92	0.51	0 00:50:25
180	PP19	1.32	50.00	83.00	2.4000	150.00	0.1000	0.3000	228.96	21.1960	202.80	267.89	0.79	0 00:40:52
181	PP21	0.70	50.00	83.00	4.0000	150.00	0.1000	0.3000	228.96	21.1960	203.83	143.29	0.46	0 00:24:00
182	PP22	1.71	20.00	85.00	0.5000	150.00	0.1000	0.3000	228.96	29.9880	188.60	322.87	0.61	0 01:41:20
183	PP23	0.40	50.00	83.00	0.6000	150.00	0.1000	0.3000	228.96	21.1960	203.44	82.19	0.26	0 00:30:25
184	PP24	1.09	50.00	83.00	0.6000	150.00	0.1000	0.3000	228.96	21.1960	201.92	219.29	0.59	0 00:55:04
185	PP26	1.19	50.00	83.00	1.3000	150.00	0.1000	0.3000	228.96	21.1960	202.47	241.14	0.69	0 00:46:09
186	PP27	0.58	50.00	83.00	0.7000	148.00	0.1000	0.3000	228.96	21.1960	203.08	117.38	0.36	0 00:36:18
187	PP28.0	0.58	50.00	83.00	1.5000	136.00	0.1000	0.3000	228.96	21.1960	203.44	117.59	0.37	0 00:30:23
188	PP28.1	0.28	50.00	83.00	2.7000	148.00	0.1000	0.3000	228.96	21.1960	204.24	57.39	0.19	0 00:15:42
189	PP29	0.33	50.00	83.00	2.7000	148.00	0.1000	0.3000	228.96	21.1960	204.17	68.19	0.23	0 00:17:25
190	PP31	0.79	30.00	85.00	0.7000	148.00	0.1000	0.3000	228.96	26.2400	196.12	155.72	0.42	0 00:53:45
191	PP32	0.88	30.00	85.00	0.7000	148.00	0.1000	0.3000	228.96	26.2400	195.90	173.17	0.45	0 00:57:20
192	PP33	0.32	50.00	83.00	0.7000	133.20	0.1000	0.3000	228.96	21.1960	203.65	64.56	0.21	0 00:26:58
193	PP34	0.93	30.00	85.00	0.5000	150.00	0.1000	0.3000	228.96	26.2400	195.42	182.32	0.45	0 01:04:59
194	PP36	0.48	50.00	83.00	0.5000	150.00	0.1000	0.3000	228.96	21.1960	203.13	96.49	0.30	0 00:35:25
195	PP37	1.35	30.00	85.00	1.5000	150.00	0.1000	0.3000	228.96	26.2400	195.83	264.76	0.69	0 00:58:23
196	PP38	1.32	30.00	85.00	1.6000	150.00	0.1000	0.3000	228.96	26.2400	195.94	259.43	0.69	0 00:56:33
197	PP39	0.03	90.00	92.00	1.9000	54.00	0.1000	0.3000	228.96	2.0140	225.03	7.43	0.02	0 00:06:30
198	PP41	0.41	50.00	83.00	3.6000	122.00	0.1000	0.3000	228.96	21.1960	204.03	83.86	0.28	0 00:20:19
199	PP42	0.64	30.00	85.00	1.5000	120.60	0.1000	0.3000	228.96	26.2400	196.81	126.16	0.37	0 00:42:32
200	PP43	1.03	50.00	83.00	1.0000	150.00	0.1000	0.3000	228.96	21.1960	202.49	209.17	0.60	0 00:45:51
201	PP44	0.32	30.00	85.00	2.3000	88.00	0.1000	0.3000	228.96	26.2400	197.60	62.44	0.20	0 00:29:34
202	PP46	0.35	50.00	83.00	2.1000	96.00	0.1000	0.3000	228.96	21.1960	203.76	72.13	0.23	0 00:25:13
203	PP47	0.72	50.00	83.00	0.7000	150.00	0.1000	0.3000	228.96	21.1960	202.79	145.20	0.43	0 00:40:57
204	PP48	1.58	50.00	83.00	1.3000	150.00	0.1000	0.3000	228.96	21.1960	201.94	319.87	0.87	0 00:54:46
205	PP49	1.44	50.00	83.00	1.3000	150.00	0.1000	0.3000	228.96	21.1960	202.12	291.06	0.80	0 00:51:43
206	PP51	0.61	50.00	83.00	2.7000	150.00	0.1000	0.3000	228.96	21.1960	203.77	125.12	0.40	0 00:24:54
207	PP52	0.37	50.00	83.00	8.3000	144.00	0.1000	0.3000	228.96	21.1960	204.32	74.98	0.25	0 00:13:23
208	PP53	0.51	50.00	83.00	9.6000	104.00	0.1000	0.3000	228.96	21.1960	204.10	103.07	0.34	0 00:18:51
209	PP54	1.22	50.00	83.00	4.7000	154.00	0.1000	0.3000	228.96	21.1960	203.38	248.33	0.78	0 00:31:21
210	PPC-02	0.34	50.00	83.00	8.3000	86.40	0.1000	0.3000	228.96	21.1960	204.17	69.83	0.23	0 00:17:25
211	PPC-03	0.66	50.00	83.00	7.9000	150.00	0.1000	0.3000	228.96	21.1960	204.10	134.71	0.44	0 00:18:51
212	PPC-06	1.89	50.00	83.00	3.8000	150.00	0.1000	0.3000	228.96	21.1960	202.59	382.90	1.11	0 00:44:08
213	PPC-07	1.39	50.00	83.00	3.6000	150.00	0.1000	0.3000	228.96	21.1960	203.01	283.00	0.86	0 00:37:22
214	PPC-08	0.76	50.00	83.00	3.8000	150.00	0.1000	0.3000	228.96	21.1960	203.73	155.65	0.50	0 00:25:38
215	PPC-09	2.24	38.00	84.00	2.7000	150.00	0.1000	0.3000	228.96	24.7630	197.51	442.23	1.14	0 01:01:36
216	PPC-12	0.55	50.00	83.00	8.8000	122.40	0.1000	0.3000	228.96	21.1960	204.12	112.27	0.37	0 00:18:29
217	RM_05	0.09	90.00	92.00	0.7000	150.00	0.1000	0.3000	228.96	2.0140	225.05	19.80	0.06	0 00:08:34
218	RM_10	0.34	50.00	83.00	4.7000	120.00	0.1000	0.3000	228.96	21.1960	204.20	68.61	0.23	0 00:16:47
219	RM_15	0.26	50.00	83.00	0.5000	150.00	0.1000	0.3000	228.96	21.1960	203.80	52.17	0.17	0 00:24:26
220	RM_20	0.60	20.00	85.00	0.7000	120.00	0.1000	0.3000	228.96	29.9880	191.63	115.74	0.30	0 00:56:03
221	RM_25	0.27	50.00	83.00	0.8000	126.00	0.1000	0.3000	228.96	21.1960	203.82	54.42	0.18	0 00:24:10
222	RM_30	1.67	60.00	81.00	0.8000	150.00	0.1000	0.3000	228.96	18.9110	204.24	340.88	0.88	0 00:57:11
223	RM_35	1.49	55.00	82.00	4.6000	150.00	0.1000	0.3000	228.96	20.1770	204.39	303.92	0.94	0 00:33:53
224	RM01	0.25	90.00	92.00	1.5000	136.00	0.1000	0.3000	228.96	2.0140	224.86	56.44	0.18	0 00:13:33
225	RM02	0.11	90.00	92.00	2.4000	84.00	0.1000	0.3000	228.96	2.0140	225.04	23.63	0.07	0 00:09:19
226	RM03	0.13	90.00	92.00	0.8000	128.00	0.1000	0.3000	228.96	2.0140	224.96	30.15	0.09	0 00:11:39
227	RM04	0.39	50.00	83.00	0.7000	150.00	0.1000	0.3000	228.96	21.1960	203.58	78.38	0.25	0 00:28:13
228	RM06	0.45	50.00	83.00	2.7000	150.00	0.1000	0.3000	228.96	21.1960	204.01	91.19	0.30	0 00:20:35
229	RM07	0.07	90.00	92.00	2.0000	150.00	0.1000	0.3000	228.96	2.0140	225.01	16.65	0.05	0 00:05:38
230	RM08	0.92	50.00	83.00	5.3000	120.00	0.1000	0.3000	228.96	21.1960	203.49	187.21	0.59	0 00:29:39
231	RM09	0.18	90.00	92.00	5.3000	150.00	0.1000	0.3000	228.96	2.0140	225.04	40.73	0.13	0 00:07:11
232	RM11	0.08	90.00	92.00	4.0000	150.00	0.1000	0.3000	228.96	2.0140	225.00	18.90	0.06	0 00:04:56
233	RM12	0.20	90.00	92.00	9.3000	150.00	0.1000	0.3000	228.96	2.0140	225.03	45.23	0.14	0 00:06:28
234	RM13	0.35	50.00	83.00	0.7000	146.00	0.1000	0.3000	228.96	21.1960	203.65	70.67	0.23	0 00:26:57
235	RM14	0.46	50.00	83.00	0.6000	170.00	0.1000	0.3000	228.96	21.1960	203.43	94.19	0.30	0 00:30:38
236	RM16	0.34	90.00	92.00	0.4000	150.00	0.1000	0.3000	228.96	2.0140	224.17	75.54	0.23	0 00:22:41
237	RM17	0.72	50.00	83.00	2.4000	150.00	0.1000	0.3000	228.96	21.1960	203.57	145.76	0.46	0 00:28:18
238	RM18	0.99	50.00	83.00	1.1000	150.00	0.1000	0.3000	228.96	21.1960	202.63	201.21	0.59	0 00:43:31
239	RM19	1.16	50.00	83.00	0.4000	150.00	0.1000	0.3000	228.96	21.1960	201.33	233.95	0.59	0 01:04:46
240	RM21	1.10	50.00	83.00	1.0000	150.00	0.1000	0.3000	228.96	21.1960	202.37	223.42	0.63	0 00:47:43
241	RM22	0.40	50.00	83.00	3.0000	150.00	0.1000	0.3000	228.96	21.1960	204.11	81.03	0.27	0 00:18:34
242	RM23	0.38	50.00	83.00	1.2000	150.00	0.1000	0.3000	228.96	21.1960	203.84	77.46	0.25	0 00:23:49
243	RM24	0.24	50.00	83.00	0.7000	144.00	0.1000	0.3000	228.96	21.1960	203.95	49.15	0.16	0 00:21:50
244	RM26	0.22	90.00	92.00	2.3000	150.00	0.1000	0.3000	228.96	2.0140	225.90	49.70	0.16	0 00:10:23
245	RM27	1.40	60.00	81.00	2.3000	140.80	0.1000	0.3000	228.96	18.9110	205.42	287.38	0.85	0 00:38:55
246	RM28	0.45	50.00	83.00	0.8000	117.00	0.1000	0.3000	228.96	21.1960	203.18	91.64	0.28	0 00:34:36
247	RM29	0.87	50.00	83.00	0.4000	150.00	0.1000	0.3000	228.96	21.1960	201.97	175.10	0.48	0 00:54:20
248	RM31	1.85	50.00	83.00	0.8000	150.00	0.1000	0.3000	228.96	21.1960	201.04	372.72	0.91	0 01:09:38
249	RM32	0.47	50.00	83.00	0.6000	166.00	0.1000	0.3000	228.96	21.1960	203.39	95.19	0.30	0 00:31:16
250	RM33	2.28	60.00	81.00	1.4000	150.00	0.1000	0.3000	228.96	18.9110	204.17	465.51	1.19	0 00:58:18
251	RM34	0.65	60.00	81.00	2.7000	150.00	0.1000	0.3000	228.96	18.9110	206.51	133.82	0.43	0 00:22:30
252	UV_05	0.23	50.00	83.00	6.0000	134.00	0.1000	0.3000	228.96	21.1960	204.36	47.41	0.16	0 00:11:41
253	UV_10	1.90	50.00	83.00	3.4000	116.00	0.1000	0.3000	228.96	21.1960	202.02	383.64	1.05	0 00:53:24
254	UV_15	0.96	50.00	83.00	3.6000	150.00	0.1000	0.3000	228.96	21.1960	203.48	194.53	0.61	0 00:29:48
255	UV_20	0.13	90.00	92.00	1.9000	108.00	0.1000	0.3000	228.96	2.0140	225.03	29.25	0.09	0 00:09:46
256	UV_23	0.53	50.00	83.00	5.5000	150.00	0.1000	0.3000	228.96	21.1960	204.12	108.18	0.36	0 00:18:25
257	UV_25	1.04	50.00	83.00	1.2000	150.00	0.1000	0.3000	228.96	21.1960	202.63	210.53	0.61	0 00:43:33
258	UV_30	0.08	90.00	92.00	2.6000	78.00	0.1000	0.3000	228.96	2.0140	225.05	18.68	0.06	0 00:08:15
259	UV_35	0.34	50.00	83.00	0.7000	146.00	0.1000	0.3000	228.96	21.1960	203.66	69.86	0.22	0 00:26:46
260	UV_40	0.89	50.00	83.00	1.8000	150.00	0.1000	0.3000	228.96	21.1960	203.15	181.00	0.56	0 00:35:10
261	UV_45	1.64	50.00	83.00	2.5000	108.00	0.1000	0.3000	228.96	21.1960	201.86	331.66	0.89	0 00:56:02

Subbasin Summary

SN	Subbasin ID	Area	Impervious Area	Weighted Curve Number	Average Slope	Equivalent Width	Impervious Area Manning's Roughness	Pervious Area Manning's Roughness	Total Rainfall	Total Infiltration	Total Runoff	Total Runoff Volume	Peak Runoff	Time of Concentration
		(ha)	(%)		(%)	(m)			(mm)	(mm)	(mm)	(ha-mm)	(cms)	(days hh:mm:ss)
262	UV_55	0.46	50.00	83.00	6.5000	138.60	0.1000	0.3000	228.96	21.1960	204.19	93.93	0.31	0 00:16:52
263	UV_60	1.04	50.00	83.00	5.1000	150.00	0.1000	0.3000	228.96	21.1960	203.58	210.91	0.67	0 00:28:10
264	UV_65	0.45	50.00	83.00	5.8000	150.00	0.1000	0.3000	228.96	21.1960	204.21	92.71	0.31	0 00:16:31
265	UV_70	0.30	90.00	92.00	6.8000	150.00	0.1000	0.3000	228.96	2.0140	225.04	66.39	0.21	0 00:08:57
266	UV_75	0.22	50.00	83.00	2.3000	130.00	0.1000	0.3000	228.96	21.1960	204.26	43.92	0.15	0 00:15:10
267	UV_80	0.17	50.00	83.00	8.0000	90.00	0.1000	0.3000	228.96	21.1960	204.37	34.54	0.12	0 00:11:16
268	UV_85	0.11	50.00	83.00	1.2000	86.00	0.1000	0.3000	228.96	21.1960	204.25	21.85	0.07	0 00:15:33
269	UV_90	0.58	50.00	83.00	2.4000	150.00	0.1000	0.3000	228.96	21.1960	203.77	117.98	0.38	0 00:24:54
270	UV_95	0.52	50.00	83.00	2.8000	150.00	0.1000	0.3000	228.96	21.1960	203.93	105.23	0.34	0 00:22:12
271	UV01	0.35	50.00	83.00	1.5000	105.60	0.1000	0.3000	228.96	21.1960	203.70	71.09	0.23	0 00:26:08
272	UV02	0.35	50.00	83.00	2.3000	117.00	0.1000	0.3000	228.96	21.1960	203.96	71.38	0.23	0 00:21:39
273	UV03	0.04	90.00	92.00	1.6000	62.00	0.1000	0.3000	228.96	2.0140	225.05	9.68	0.03	0 00:07:23
274	UV04	0.13	90.00	92.00	6.1000	132.00	0.1000	0.3000	228.96	2.0140	225.02	29.25	0.09	0 00:06:06
275	UV06	0.35	50.00	83.00	6.3000	100.80	0.1000	0.3000	228.96	21.1960	204.16	72.27	0.24	0 00:17:37
276	UV07	1.45	20.00	85.00	1.8000	150.00	0.1000	0.3000	228.96	29.9880	191.22	276.69	0.68	0 01:02:23
277	UV08	1.38	20.00	85.00	1.1000	150.00	0.1000	0.3000	228.96	29.9880	190.69	263.53	0.61	0 01:10:21
278	UV09	1.77	50.00	83.00	3.7000	108.00	0.1000	0.3000	228.96	21.1960	202.11	356.92	0.98	0 00:52:01
279	UV11	1.89	50.00	83.00	4.3000	116.00	0.1000	0.3000	228.96	21.1960	202.26	381.26	1.07	0 00:49:33
280	UV12	0.82	50.00	83.00	4.1000	150.00	0.1000	0.3000	228.96	21.1960	203.70	166.83	0.54	0 00:26:07
281	UV13	0.59	50.00	83.00	5.0000	150.00	0.1000	0.3000	228.96	21.1960	204.03	120.79	0.40	0 00:20:15
282	UV14	0.33	50.00	83.00	3.0000	132.00	0.1000	0.3000	228.96	21.1960	204.15	66.96	0.22	0 00:17:53
283	UV16	0.12	90.00	92.00	0.7000	142.00	0.1000	0.3000	228.96	2.0140	225.00	27.45	0.09	0 00:10:46
284	UV17	0.13	90.00	92.00	0.8000	130.00	0.1000	0.3000	228.96	2.0140	224.98	28.57	0.09	0 00:11:10
285	UV18	0.14	90.00	92.00	0.6000	160.00	0.1000	0.3000	228.96	2.0140	224.98	31.27	0.10	0 00:11:21
286	UV19	0.12	90.00	92.00	1.7000	118.00	0.1000	0.3000	228.96	2.0140	225.04	27.23	0.09	0 00:09:10
287	UV21	1.09	50.00	83.00	3.7000	150.00	0.1000	0.3000	228.96	21.1960	203.35	221.24	0.69	0 00:31:56
288	UV23	0.96	50.00	83.00	3.4000	150.00	0.1000	0.3000	228.96	21.1960	203.45	194.29	0.61	0 00:30:18
289	UV24	0.99	50.00	83.00	1.9000	150.00	0.1000	0.3000	228.96	21.1960	203.05	200.61	0.61	0 00:36:49
290	UV26	0.96	50.00	83.00	0.5000	150.00	0.1000	0.3000	228.96	21.1960	201.99	193.51	0.53	0 00:53:57
291	UV27	0.42	50.00	83.00	1.5000	150.00	0.1000	0.3000	228.96	21.1960	203.85	85.01	0.28	0 00:23:33
292	UV28	0.45	50.00	83.00	1.4000	150.00	0.1000	0.3000	228.96	21.1960	203.75	92.30	0.30	0 00:25:16
293	UV29.0	0.76	50.00	83.00	2.5000	150.00	0.1000	0.3000	228.96	21.1960	203.53	154.48	0.49	0 00:28:57
294	UV29.1	0.48	50.00	83.00	2.4000	150.00	0.1000	0.3000	228.96	21.1960	203.92	98.09	0.32	0 00:22:17
295	UV31	0.10	90.00	92.00	0.7000	146.00	0.1000	0.3000	228.96	2.0140	225.04	21.60	0.07	0 00:09:10
296	UV32	0.07	90.00	92.00	1.0000	98.00	0.1000	0.3000	228.96	2.0140	225.05	15.53	0.05	0 00:08:35
297	UV33	0.11	90.00	92.00	0.5000	150.00	0.1000	0.3000	228.96	2.0140	224.99	25.42	0.08	0 00:11:00
298	UV34	0.29	50.00	83.00	0.6000	150.00	0.1000	0.3000	228.96	21.1960	203.78	58.49	0.19	0 00:24:47
299	UV36	0.66	50.00	83.00	1.8000	150.00	0.1000	0.3000	228.96	21.1960	203.51	134.31	0.43	0 00:29:22
300	UV37	0.83	50.00	83.00	3.6000	150.00	0.1000	0.3000	228.96	21.1960	203.63	168.20	0.54	0 00:27:18
301	UV38	1.67	50.00	83.00	1.4000	150.00	0.1000	0.3000	228.96	21.1960	201.90	337.58	0.91	0 00:55:20
302	UV39	1.56	50.00	83.00	1.3000	150.00	0.1000	0.3000	228.96	21.1960	201.98	314.07	0.85	0 00:54:10
303	UV41	0.92	50.00	83.00	1.5000	150.00	0.1000	0.3000	228.96	21.1960	202.97	187.55	0.57	0 00:37:58
304	UV42	0.12	90.00	92.00	1.0000	104.00	0.1000	0.3000	228.96	2.0140	224.97	27.22	0.09	0 00:11:36
305	UV43	0.16	90.00	92.00	0.8000	130.00	0.1000	0.3000	228.96	2.0140	224.91	35.31	0.11	0 00:12:41
306	UV44	0.17	90.00	92.00	0.7000	142.00	0.1000	0.3000	228.96	2.0140	224.88	38.45	0.12	0 00:13:11
307	UV46	1.48	50.00	83.00	1.5000	117.00	0.1000	0.3000	228.96	21.1960	201.71	298.73	0.79	0 00:58:30
308	UV47	1.50	50.00	83.00	1.4000	131.40	0.1000	0.3000	228.96	21.1960	201.86	301.98	0.81	0 00:56:02
309	UV48	0.51	50.00	83.00	2.2000	150.00	0.1000	0.3000	228.96	21.1960	203.85	103.55	0.34	0 00:23:38
310	UV49	0.57	50.00	83.00	5.5000	88.00	0.1000	0.3000	228.96	21.1960	203.68	116.30	0.37	0 00:26:31
311	UV50	0.45	50.00	83.00	2.4000	150.00	0.1000	0.3000	228.96	21.1960	203.97	91.38	0.30	0 00:21:21
312	UV51	0.49	50.00	83.00	1.7000	150.00	0.1000	0.3000	228.96	21.1960	203.76	100.46	0.32	0 00:25:05
313	UV52	0.25	50.00	83.00	2.2000	134.00	0.1000	0.3000	228.96	21.1960	204.20	51.66	0.17	0 00:16:39
314	UV53	0.40	50.00	83.00	3.1000	128.00	0.1000	0.3000	228.96	21.1960	204.02	82.02	0.27	0 00:20:23
315	UV54	1.63	55.00	82.00	2.0000	150.00	0.1000	0.3000	228.96	20.1770	203.62	332.30	0.95	0 00:46:00
316	UV56	0.37	50.00	83.00	7.3000	150.00	0.1000	0.3000	228.96	21.1960	204.31	76.21	0.25	0 00:13:42
317	UV57	0.64	50.00	83.00	2.3000	86.00	0.1000	0.3000	228.96	21.1960	203.01	129.72	0.39	0 00:37:22
318	UV58	1.03	50.00	83.00	4.9000	150.00	0.1000	0.3000	228.96	21.1960	203.56	210.48	0.67	0 00:28:28
319	UV59	0.24	50.00	83.00	8.6000	116.00	0.1000	0.3000	228.96	21.1960	204.36	49.66	0.17	0 00:11:46
320	UV61	0.39	50.00	83.00	11.9000	84.00	0.1000	0.3000	228.96	21.1960	204.17	80.24	0.27	0 00:17:17
321	UV62	0.77	50.00	83.00	2.1000	150.00	0.1000	0.3000	228.96	21.1960	203.43	156.03	0.49	0 00:30:41
322	UV63	1.22	50.00	83.00	6.5000	150.00	0.1000	0.3000	228.96	21.1960	203.53	248.52	0.79	0 00:28:54
323	UV64	0.08	90.00	92.00	1.7000	120.00	0.1000	0.3000	228.96	2.0140	225.04	18.68	0.06	0 00:07:14
324	UV66	1.11	50.00	83.00	7.9000	150.00	0.1000	0.3000	228.96	21.1960	203.73	225.52	0.73	0 00:25:42
325	UV67	0.74	50.00	83.00	1.7000	150.00	0.1000	0.3000	228.96	21.1960	203.34	150.68	0.47	0 00:32:02
326	UV68	0.53	50.00	83.00	2.1000	150.00	0.1000	0.3000	228.96	21.1960	203.79	107.81	0.35	0 00:24:33
327	UV69	0.52	50.00	83.00	5.0000	150.00	0.1000	0.3000	228.96	21.1960	204.10	106.75	0.35	0 00:18:48
328	UV71	0.04	90.00	92.00	10.5000	38.00	0.1000	0.3000	228.96	2.0140	225.00	8.10	0.03	0 00:05:04
329	UV72	0.96	50.00	83.00	3.0000	150.00	0.1000	0.3000	228.96	21.1960	203.38	194.83	0.61	0 00:31:31
330	UV73	0.42	50.00	83.00	1.7000	150.00	0.1000	0.3000	228.96	21.1960	203.90	85.03	0.28	0 00:22:41
331	UV74	0.81	50.00	83.00	1.0000	150.00	0.1000	0.3000	228.96	21.1960	202.88	163.32	0.49	0 00:39:28
332	UV76	0.40	50.00	83.00	1.6000	150.00	0.1000	0.3000	228.96	21.1960	203.90	82.38	0.27	0 00:22:40
333	UV77	0.44	50.00	83.00	3.8000	127.00	0.1000	0.3000	228.96	21.1960	204.03	89.36	0.29	0 00:20:17
334	UV78	0.26	50.00	83.00	4.5000	61.60	0.1000	0.3000	228.96	21.1960	203.95	53.03	0.17	0 00:21:46
335	UV79	0.25	50.00	83.00	6.2000	130.00	0.1000	0.3000	228.96	21.1960	204.34	51.49	0.17	0 00:12:23
336	UV81	0.42	50.00	83.00	48.0000	150.00	0.1000	0.3000	228.96	21.1960	204.40	86.05	0.29	0 00:08:22
337	UV82	0.41	50.00	83.00	1.6000	115.20	0.1000	0.3000	228.96	21.1960	203.67	82.69	0.27	0 00:26:38
338	UV83	0.23	50.00	83.00	0.8000	126.00	0.1000	0.3000	228.96	21.1960	203.95	45.89	0.15	0 00:21:48
339	UV84	0.10	90.00	92.00	1.3000	80.00	0.1000	0.3000	228.96	2.0140	224.98	22.50	0.07	0 00:11:12
340	UV86	0.10	50.00	83.00	1.1000	88.00	0.1000	0.3000	228.96	21.1960	204.27	19.61	0.07	0 00:14:45
341	UV87	0.40	50.00	83.00	0.6000	150.00	0.1000	0.3000	228.96	21.1960	203.47	80.37	0.25	0 00:30:01
342	UV88	0.30	50.00	83.00	2.6000	150.00	0.1000	0.3000	228.96	21.1960	204.22	60.45	0.20	0 00:16:15
343	UV89	0.06	90.00	92.00	2.2000	92.00	0.1000	0.3000	228.96	2.0140	225.03	14.18	0.04	0 00:06:40
344	UV91	0.13	90.00	92.00	7.5000	80.00	0.1000	0.3000	228.96	2.0140	225.05	30.16	0.10	0 00:07:53
345	UV92	0.55	50.00	83.00	3.0000	150.00	0.1000	0.3000	228.96	21.1960	203.91	111.13	0.36	0 00:22:28
346	UV93	0.44	50.00	83.00	1.8000	150.00	0.1000	0.3000	228.96	21.1960	203.88	89.50	0.29	0 00:23:00
347	UV94	0.40	50.00	83.00	2.2000	150.00	0.1000	0.3000	228.96	21.1960	204.02	81.20	0.27	0 00:20:25
348	UV96	0.38	50.00	83.00	8.9000	90.00	0.1000	0.3000	228.96	21.1960	204.16	76.97	0.25	0 00:17:39

Subbasin Summary

SN	Subbasin ID	Area	Impervious Area	Weighted Curve Number	Average Slope	Equivalent Width	Impervious Area Manning's Roughness	Pervious Area Manning's Roughness	Total Rainfall	Total Infiltration	Total Runoff	Total Runoff Volume	Peak Runoff	Time of Concentration
		(ha)	(%)		(%)	(m)			(mm)	(mm)	(mm)	(ha-mm)	(cms)	(days hh:mm:ss)
349	UVC-02	1.26	50.00	83.00	4.8000	150.00	0.1000	0.3000	228.96	21.1960	203.33	256.80	0.80	0 00:32:18
350	UVC-07	0.38	50.00	83.00	9.7000	150.00	0.1000	0.3000	228.96	21.1960	204.34	78.06	0.26	0 00:12:46
351	UVC-09	0.66	50.00	83.00	4.3000	150.00	0.1000	0.3000	228.96	21.1960	203.90	134.78	0.44	0 00:22:38
352	UVC-13	0.53	50.00	83.00	7.8000	150.00	0.1000	0.3000	228.96	21.1960	204.21	107.21	0.36	0 00:16:29
353	UVC-15	0.72	50.00	83.00	10.8000	117.00	0.1000	0.3000	228.96	21.1960	203.99	147.08	0.48	0 00:21:00
354	UVC-17	1.00	50.00	83.00	4.1000	150.00	0.1000	0.3000	228.96	21.1960	203.51	202.49	0.64	0 00:29:21
355	UVC-20	0.75	50.00	83.00	3.5000	150.00	0.1000	0.3000	228.96	21.1960	203.71	152.78	0.49	0 00:25:59
356	UVC-21	0.17	90.00	92.00	10.8000	130.00	0.1000	0.3000	228.96	2.0140	225.02	37.35	0.12	0 00:06:00
357	UVC-22	0.63	50.00	83.00	6.7000	150.00	0.1000	0.3000	228.96	21.1960	204.08	128.77	0.42	0 00:19:16
358	UVC-23	0.55	50.00	83.00	6.9000	150.00	0.1000	0.3000	228.96	21.1960	204.16	111.47	0.37	0 00:17:31
359	UVC-24	0.56	50.00	83.00	7.5000	150.00	0.1000	0.3000	228.96	21.1960	204.17	113.72	0.38	0 00:17:17
360	UVC-25	0.47	50.00	83.00	7.1000	150.00	0.1000	0.3000	228.96	21.1960	204.23	96.80	0.32	0 00:15:57
361	UVC-26	0.15	90.00	92.00	7.1000	56.00	0.1000	0.3000	228.96	2.0140	225.01	33.08	0.10	0 00:10:30

Junction Results

SN	Element ID	Peak Inflow (cms)	Peak Lateral Inflow (cms)	Max HGL Elevation Attained (m)	Max HGL Depth Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Average HGL Elevation Attained (m)	Average HGL Depth Attained (m)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ha-mm)
1	CE10	3.29	0.00	228.66	0.52	0.00	1.39	228.23	0.09	0 12:14	0 00:00	0.00
2	CE100	0.49	0.49	227.82	1.12	0.00	0.66	226.77	0.07	0 12:11	0 00:00	0.00
3	CE105	0.97	0.00	226.89	0.39	0.00	1.50	226.57	0.07	0 12:12	0 00:00	0.00
4	CE110	0.97	0.00	226.73	0.33	0.00	1.53	226.46	0.06	0 12:12	0 00:00	0.00
5	CE115	0.97	0.00	226.52	0.33	0.00	1.54	226.26	0.07	0 12:12	0 00:00	0.00
6	CE120	0.97	0.00	226.21	0.21	0.00	1.36	226.05	0.05	0 12:09	0 00:00	0.00
7	CE125	1.40	1.06	228.75	1.38	0.00	0.00	227.55	0.18	0 12:00	0 12:12	87.38
8	CE130	0.55	0.00	227.16	0.16	0.00	1.40	227.04	0.04	0 12:19	0 00:00	0.00
9	CE135	1.02	1.02	228.29	0.48	0.00	0.00	227.88	0.07	0 12:01	0 12:12	61.38
10	CE140	0.03	0.00	227.98	1.94	0.00	0.00	226.16	0.12	0 12:02	0 12:02	0.03
11	CE145	0.46	0.46	228.00	1.93	0.00	0.00	226.16	0.09	0 12:02	0 12:12	9.31
12	CE150	0.32	0.32	228.06	0.64	0.00	0.07	227.46	0.04	0 12:12	0 00:00	0.00
13	CE155	0.98	0.00	227.82	2.11	0.00	0.00	225.87	0.16	0 12:02	0 12:02	0.02
14	CE160	1.10	0.00	227.55	2.40	0.00	0.00	225.37	0.22	0 12:02	0 12:02	0.00
15	CE165	1.36	0.00	227.19	2.29	0.00	0.00	225.07	0.17	0 12:02	0 12:02	0.02
16	CE170	1.60	0.00	226.50	2.09	0.00	0.00	224.59	0.18	0 12:02	0 12:02	1.75
17	CE175	2.18	0.31	225.87	2.06	0.00	0.00	223.99	0.18	0 12:01	0 12:12	18.57
18	CE180	1.90	0.00	224.09	2.09	0.00	0.01	222.23	0.23	0 12:13	0 00:00	0.00
19	CE185	6.55	0.00	223.61	1.98	0.00	0.03	221.83	0.20	0 12:00	0 00:00	0.00
20	CE190	6.88	0.00	222.95	2.15	0.00	0.00	221.35	0.55	0 12:00	0 12:12	559.86
21	CE195	3.79	0.74	222.95	1.95	0.00	0.00	221.27	0.27	0 12:00	0 12:00	0.00
22	CE200	4.20	0.00	222.82	2.08	0.00	0.11	221.09	0.35	0 12:11	0 00:00	0.00
23	CE205	0.29	0.29	227.92	0.31	0.00	0.39	227.64	0.03	0 12:12	0 00:00	0.00
24	CE210	0.26	0.26	227.28	0.72	0.00	0.05	226.59	0.03	0 12:11	0 00:00	0.00
25	CE215	0.47	0.47	226.79	1.67	0.00	0.00	225.20	0.08	0 12:02	0 12:12	12.87
26	CE220	0.50	0.50	227.09	1.83	0.00	0.00	225.34	0.08	0 12:02	0 12:12	6.55
27	CE225	0.34	0.00	227.15	2.09	0.00	0.00	225.13	0.07	0 12:02	0 00:00	0.00
28	CE230	0.67	0.52	223.98	0.84	0.00	0.00	223.21	0.07	0 12:00	0 12:12	65.84
29	CE240	4.51	0.00	224.95	0.57	0.00	0.96	224.50	0.12	0 12:13	0 00:00	0.00
30	CE245	4.84	0.00	223.84	1.88	0.00	0.00	222.14	0.18	0 12:00	0 12:00	0.06
31	CE255	0.58	0.58	225.94	0.71	0.00	0.26	225.28	0.05	0 12:11	0 00:00	0.00
32	CE260	0.66	0.66	223.92	1.17	0.00	0.00	222.81	0.06	0 12:00	0 12:00	14.21
33	CE265	0.56	0.56	225.56	0.79	0.00	0.00	224.82	0.05	0 12:05	0 12:12	2.75
34	CE270266	0.46	0.00	225.00	1.00	0.00	0.00	224.06	0.06	0 12:04	0 12:05	1.26
35	CE280268	0.33	0.00	224.70	1.20	0.00	0.34	223.57	0.07	0 12:04	0 00:00	0.00
36	CE285	0.03	0.00	225.02	0.25	0.00	0.54	224.77	0.00	0 12:03	0 00:00	0.00
37	CE290	0.10	0.00	224.98	0.83	0.00	0.00	224.16	0.01	0 12:03	0 12:05	7.27
38	CE295	0.07	0.07	224.41	0.48	0.00	0.15	223.96	0.03	0 12:05	0 00:00	0.00
39	CE30	3.40	0.15	228.02	0.46	0.00	1.87	227.63	0.07	0 12:14	0 00:00	0.00
40	CE300	0.10	0.00	224.39	0.56	0.00	0.06	223.85	0.02	0 12:05	0 00:00	0.00
41	CE305	0.47	0.40	224.37	1.44	0.00	0.00	223.00	0.07	0 12:02	0 12:02	1.43
42	CE310	0.41	0.00	224.22	1.58	0.00	0.00	222.73	0.09	0 12:01	0 12:01	0.01
43	CE315	0.66	0.00	223.66	1.79	0.00	0.00	222.00	0.13	0 11:59	0 11:59	0.00
44	CE320	1.00	0.00	222.97	1.94	0.00	0.00	221.22	0.19	0 12:02	0 12:11	13.35
45	CE325	0.60	0.60	223.85	0.96	0.00	0.00	222.95	0.06	0 12:01	0 12:12	20.69
46	CE330	0.13	0.00	223.56	0.69	0.00	0.00	222.88	0.01	0 12:02	0 12:09	10.00
47	CE335	0.64	0.64	223.52	0.71	0.00	0.00	222.85	0.04	0 12:04	0 12:12	5.99
48	CE40	4.86	0.00	226.97	0.52	0.00	2.42	226.55	0.10	0 12:14	0 00:00	0.00
49	CE45	4.86	0.00	225.97	0.68	0.00	2.62	225.44	0.15	0 12:14	0 00:00	0.00
50	CE5	3.29	0.00	229.19	0.60	0.00	1.82	228.71	0.12	0 12:13	0 00:00	0.00
51	CE50	5.75	0.00	225.51	0.48	0.00	2.25	225.10	0.07	0 12:13	0 00:00	0.00
52	CE55	1.01	0.00	229.51	0.94	0.00	0.00	228.78	0.21	0 12:01	0 12:12	13.08
53	CE60	1.01	0.00	228.62	1.52	0.00	0.33	227.33	0.23	0 12:10	0 00:00	0.00
54	CE65	1.48	0.00	228.24	1.35	0.00	1.03	227.05	0.16	0 12:01	0 00:00	0.00
55	CE70	0.20	0.20	230.09	0.38	0.00	0.41	229.77	0.06	0 12:12	0 00:00	0.00
56	CE75	0.20	0.00	229.88	0.23	0.00	0.56	229.68	0.03	0 12:12	0 00:00	0.00
57	CE80	0.14	0.14	229.52	0.69	0.00	0.44	228.87	0.04	0 12:01	0 00:00	0.00
58	CE85	0.21	0.21	228.72	0.94	0.00	0.19	227.81	0.03	0 12:11	0 00:00	0.00
59	CE90	1.10	1.10	229.57	1.47	0.00	0.00	228.19	0.09	0 12:01	0 12:12	44.51
60	CE95	0.52	0.00	229.04	1.74	0.00	0.51	227.43	0.13	0 12:05	0 00:00	0.00
61	CGC10	1.69	0.22	216.47	0.78	0.00	0.00	215.82	0.13	0 12:00	0 12:12	51.08
62	CGC15	1.83	0.21	213.69	0.79	0.00	0.00	213.02	0.12	0 12:02	0 12:12	21.22
63	CGC20	1.83	0.00	207.95	0.93	0.00	0.00	207.18	0.16	0 11:56	0 12:02	95.23
64	CGC30	0.85	0.85	221.11	1.11	0.00	0.00	220.07	0.07	0 12:02	0 12:12	25.25
65	CGC35	0.43	0.00	220.93	2.16	0.00	0.00	218.87	0.10	0 12:02	0 12:02	0.00
66	CGC40	0.55	0.55	218.09	1.19	0.00	0.00	216.97	0.07	0 12:02	0 12:12	5.99
67	CGC45	0.40	0.00	217.18	1.13	0.00	0.00	216.12	0.07	0 12:01	0 12:01	0.01
68	CGC5	0.79	0.00	217.39	0.79	0.00	0.00	216.75	0.15	0 11:58	0 12:04	24.05
69	CGC50	0.56	0.56	216.00	2.23	0.00	0.00	213.85	0.08	0 12:02	0 12:12	1.13
70	CGC55	0.50	0.00	214.37	1.36	0.00	0.00	213.10	0.09	0 12:02	0 12:09	2.68
71	CGC60	0.63	0.63	210.81	1.00	0.00	0.00	209.86	0.05	0 12:10	0 12:10	0.00
72	CGC65	0.80	0.00	208.14	0.79	0.00	0.00	207.44	0.09	0 11:56	0 12:12	40.06
73	CGC70	0.17	0.17	208.55	1.17	0.00	0.23	207.45	0.07	0 11:56	0 00:00	0.00
74	CGC75	0.75	0.75	204.83	0.79	0.00	0.00	204.14	0.10	0 12:01	0 12:12	21.53
75	GE10	0.23	0.00	233.60	0.79	0.00	1.00	233.04	0.23	0 12:14	0 00:00	0.00
76	GE100	0.19	0.00	234.60	1.44	0.00	0.14	233.27	0.11	0 11:59	0 00:00	0.00
77	GE105	0.68	0.68	233.22	1.04	0.00	0.00	232.28	0.10	0 11:59	0 12:12	48.78
78	GE110	1.01	1.01	232.16	0.35	0.00	1.28	231.85	0.04	0 12:12	0 00:00	0.00
79	GE115	1.01	0.00	231.91	0.25	0.00	1.59	231.70	0.04	0 12:12	0 00:00	0.00
80	GE120	1.79	0.79	231.44	0.64	0.00	1.32	230.92	0.12	0 12:12	0 00:00	0.00
81	GE130	0.00	0.00	232.19	0.00	0.00	1.06	232.19	0.00	0 00:00	0 00:00	0.00
82	GE135	0.01	0.00	231.44	0.41	0.00	1.57	231.04	0.01	0 12:12	0 00:00	0.00
83	GE140	0.80	0.80	233.03	2.08	0.00	0.00	231.06	0.11	0 12:01	0 12:12	26.88
84	GE145	0.40	0.00	232.18	2.26	0.00	0.83	230.05	0.13	0 12:01	0 00:00	0.00
85	GE15	0.23	0.00	233.39	0.67	0.00	1.87	232.95	0.23	0 12:51	0 00:00	0.00
86	GE150	0.40	0.00	231.89	2.12	0.00	1.11	229.92	0.15	0 12:01	0 00:00	0.00
87	GE155	0.40	0.00	230.98	1.47	0.00	1.36	229.64	0.13	0 12:00	0 00:00	0.00

Total Time Flooded (min)
0.00
0.00
0.00
0.00
0.00
0.00
33.00
0.00
28.00
1.00
12.00
0.00
0.00
0.00
0.00
8.00
14.00
0.00
0.00
41.00
0.00
0.00
0.00
0.00
14.00
12.00
0.00
29.00
0.00
0.00
0.00
13.00
9.00
10.00
0.00
0.00
13.00
0.00
0.00
0.00
8.00
0.00
0.00
17.00
19.00
17.00
11.00
0.00
0.00
0.00
0.00
15.00
0.00
0.00
0.00
0.00
0.00
0.00
24.00
0.00
25.00
16.00
41.00
18.00
0.00
11.00
0.00
34.00
6.00
10.00
0.00
23.00
0.00
15.00
0.00
0.00
36.00
0.00
0.00
0.00
0.00
0.00
23.00
0.00
0.00
0.00
0.00

Junction Results

SN	Element ID	Peak Inflow (cms)	Peak Lateral Inflow (cms)	Max HGL Elevation Attained (m)	Max HGL Depth Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Average HGL Elevation Attained (m)	Average HGL Depth Attained (m)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ha-mm)
88	GE160	0.55	0.55	232.92	1.57	0.00	0.00	232.58	1.23	0 09:48	0 12:12	340.87
89	GE165	0.04	0.00	231.82	0.01	0.00	1.02	231.81	0.00	1 00:00	0 00:00	0.00
90	GE170	0.15	0.15	232.38	1.78	0.00	0.00	230.66	0.06	0 12:00	0 12:00	0.00
91	GE175	0.14	0.00	231.61	1.93	0.00	0.00	229.79	0.11	0 11:52	0 11:52	0.00
92	GE180	0.42	0.00	231.38	2.13	0.00	0.06	229.49	0.24	0 12:11	0 00:00	0.00
93	GE185	0.42	0.00	230.83	1.83	0.00	0.57	229.24	0.24	0 11:52	0 00:00	0.00
94	GE195	1.15	0.00	228.71	0.44	0.00	2.31	228.38	0.11	0 12:12	0 00:00	0.00
95	GE20	0.23	0.00	233.19	0.54	0.00	2.28	232.86	0.21	0 12:46	0 00:00	0.00
96	GE200	1.41	0.26	228.55	0.41	0.00	2.32	228.25	0.11	0 12:12	0 00:00	0.00
97	GE205	2.17	0.54	227.55	0.49	0.00	1.86	227.18	0.12	0 12:12	0 00:00	0.00
98	GE215	3.39	0.92	226.91	0.64	0.00	2.08	226.43	0.16	0 12:12	0 00:00	0.00
99	GE220	3.37	0.00	226.62	0.51	0.00	2.36	226.23	0.12	0 12:13	0 00:00	0.00
100	GE225	3.97	0.17	225.31	0.63	0.00	1.09	224.82	0.14	0 12:13	0 00:00	0.00
101	GE230	0.05	0.00	232.30	1.75	0.00	0.00	230.61	0.06	0 12:00	0 12:00	0.01
102	GE235	0.05	0.00	231.92	1.55	0.00	0.02	230.46	0.09	0 12:01	0 00:00	0.00
103	GE240	0.19	0.17	231.73	1.36	0.00	0.00	230.44	0.07	0 12:01	0 12:01	0.00
104	GE245	0.19	0.00	231.68	1.51	0.00	0.00	230.26	0.09	0 12:01	0 12:01	0.00
105	GE25	0.23	0.00	232.99	0.42	0.00	3.06	232.75	0.18	0 11:59	0 00:00	0.00
106	GE25{SW_GEORGE EAST C5}	0.20	0.20	231.16	0.79	0.00	0.00	230.43	0.06	0 12:04	0 12:12	2.76
107	GE250	0.19	0.00	231.40	1.91	0.00	0.00	229.62	0.13	0 12:00	0 12:11	5.76
108	GE255	1.05	1.05	231.97	1.63	0.00	0.00	230.57	0.23	0 11:51	0 12:12	130.08
109	GE26	0.94	0.79	231.09	0.79	0.00	0.00	230.40	0.10	0 12:04	0 12:12	11.99
110	GE260	0.20	0.00	231.98	1.68	0.00	0.00	230.50	0.20	0 11:51	0 11:51	0.00
111	GE265	0.84	0.69	231.61	1.98	0.00	0.00	229.92	0.29	0 11:52	0 12:12	68.19
112	GE27	0.66	0.00	230.75	0.60	0.00	0.35	230.22	0.07	0 12:04	0 00:00	0.00
113	GE270	0.34	0.00	231.51	1.90	0.00	0.02	229.82	0.21	0 12:11	0 00:00	0.00
114	GE275	0.05	0.00	231.93	1.06	0.00	0.00	230.94	0.07	0 11:58	0 11:58	0.01
115	GE28	1.19	0.54	230.25	0.94	0.00	0.00	229.42	0.11	0 12:01	0 12:12	40.51
116	GE280	0.17	0.17	231.93	1.07	0.00	0.00	230.94	0.08	0 11:58	0 12:11	4.14
117	GE285	0.99	0.89	231.72	1.72	0.00	0.00	230.30	0.30	0 11:49	0 12:12	99.39
118	GE290	0.55	0.38	231.49	1.74	0.00	0.00	229.97	0.22	0 11:54	0 12:12	11.80
119	GE295	0.74	0.00	230.04	1.75	0.00	1.00	228.52	0.23	0 12:12	0 00:00	0.00
120	GE300	0.55	0.55	230.94	2.30	0.00	0.00	228.78	0.14	0 12:06	0 12:12	5.89
121	GE305	0.40	0.00	230.43	1.98	0.00	0.59	228.58	0.13	0 12:10	0 00:00	0.00
122	GE310	0.23	0.23	227.84	0.51	0.00	1.55	227.38	0.05	0 12:12	0 00:00	0.00
123	GE315	0.23	0.00	227.68	0.47	0.00	1.73	227.25	0.04	0 12:12	0 00:00	0.00
124	GE320	0.29	0.29	230.53	1.55	0.00	0.00	229.07	0.09	0 11:55	0 12:12	3.35
125	GE325	0.20	0.00	230.66	1.76	0.00	0.00	229.01	0.11	0 11:55	0 11:55	0.00
126	GE330	0.20	0.00	230.19	1.41	0.00	0.00	228.87	0.09	0 11:55	0 11:55	0.00
127	GE335	0.50	0.00	230.00	1.45	0.00	0.00	228.67	0.12	0 11:55	0 12:13	29.39
128	GE340	0.26	0.00	229.78	1.54	0.00	0.00	228.40	0.16	0 11:55	0 11:55	0.00
129	GE345	0.97	0.00	228.99	1.32	0.00	0.00	227.80	0.13	0 01:07	0 01:07	30.70
130	GE35	0.75	0.75	235.78	1.73	0.00	0.00	234.22	0.17	0 11:59	0 12:12	41.23
131	GE350	0.42	0.19	228.98	1.62	0.00	0.00	227.55	0.19	0 12:00	0 12:11	7.91
132	GE355	0.39	0.00	228.94	1.63	0.00	0.00	227.52	0.21	0 12:04	0 12:06	0.00
133	GE365	0.34	0.00	228.76	1.58	0.00	0.03	227.42	0.24	0 12:09	0 00:00	0.00
134	GE370	0.34	0.00	228.43	1.26	0.00	0.31	227.33	0.16	0 12:13	0 00:00	0.00
135	GE375	0.47	0.47	230.29	1.45	0.00	0.00	228.93	0.09	0 12:03	0 12:12	7.67
136	GE380	0.28	0.28	229.75	1.25	0.00	0.00	228.58	0.08	0 11:55	0 12:12	26.38
137	GE390	0.42	0.42	228.99	1.22	0.00	0.00	227.88	0.11	0 01:07	0 12:12	41.16
138	GE395	0.98	0.00	228.99	2.34	0.00	0.00	227.76	1.11	0 01:07	0 01:07	0.04
139	GE40	0.28	0.00	235.69	1.67	0.00	0.00	234.15	0.13	0 11:59	0 11:59	0.00
140	GE400	0.25	0.00	228.98	1.38	0.00	0.01	227.74	0.14	0 12:08	0 00:00	0.00
141	GE405	0.17	0.17	228.80	1.50	0.00	0.00	227.42	0.12	0 12:04	0 12:11	1.48
142	GE410	0.39	0.39	228.99	1.15	0.00	0.00	227.92	0.08	0 12:01	0 12:12	15.52
143	GE415	0.25	0.00	228.88	1.99	0.00	0.00	227.02	0.13	0 12:01	0 12:01	0.00
144	GE420	0.46	0.00	228.59	2.59	0.00	0.39	226.19	0.19	0 12:04	0 00:00	0.00
145	GE425	0.46	0.00	225.82	0.85	0.00	0.58	225.07	0.10	0 12:13	0 00:00	0.00
146	GE430	0.32	0.32	228.79	1.43	0.00	0.00	227.44	0.08	0 12:01	0 12:12	22.44
147	GE435431	0.14	0.00	228.78	1.60	0.00	0.00	227.27	0.09	0 12:01	0 12:13	16.71
148	GE440	0.57	0.57	228.91	2.52	0.00	0.00	226.51	0.12	0 12:04	0 12:12	13.71
149	GE445	0.30	0.30	231.10	0.83	0.00	0.00	230.31	0.04	0 12:01	0 12:12	1.29
150	GE45	0.28	0.00	235.09	1.67	0.00	0.00	233.57	0.15	0 11:58	0 11:58	0.93
151	GE450	0.26	0.00	230.83	2.05	0.00	0.03	228.91	0.13	0 12:01	0 00:00	0.00
152	GE455	0.34	0.00	230.70	2.01	0.00	0.03	228.81	0.12	0 12:09	0 00:00	0.00
153	GE460	0.33	0.33	230.89	1.69	0.00	0.00	229.30	0.10	0 12:03	0 12:12	4.65
154	GE465	0.36	0.07	230.75	1.60	0.00	0.00	229.24	0.09	0 12:00	0 12:11	30.36
155	GE470	0.16	0.00	230.80	1.85	0.00	0.04	229.04	0.09	0 12:01	0 00:00	0.00
156	GE475	0.17	0.17	230.84	1.70	0.00	0.04	229.21	0.07	0 12:11	0 00:00	0.00
157	GE480476	0.17	0.00	230.75	1.79	0.00	0.00	229.01	0.05	0 12:07	0 12:11	0.08
158	GE485	0.26	0.26	230.82	2.12	0.00	0.15	228.78	0.08	0 12:11	0 00:00	0.00
159	GE490	0.26	0.00	230.62	2.06	0.00	0.39	228.67	0.11	0 12:12	0 00:00	0.00
160	GE495	0.26	0.00	230.04	1.59	0.00	0.11	228.56	0.11	0 12:00	0 00:00	0.00
161	GE5	1.39	1.39	233.94	0.91	0.00	0.00	233.26	0.23	0 11:48	0 12:12	217.17
162	GE50	0.28	0.00	234.97	1.70	0.00	0.00	233.41	0.14	0 11:59	0 11:59	0.00
163	GE500	0.26	0.00	229.96	1.67	0.00	0.08	228.47	0.18	0 12:00	0 00:00	0.00
164	GE505	0.26	0.00	229.83	1.54	0.00	0.11	228.44	0.15	0 12:00	0 00:00	0.00
165	GE510	0.26	0.00	229.70	1.42	0.00	0.00	228.39	0.11	0 12:00	0 12:00	0.00
166	GE515	0.26	0.00	228.97	1.00	0.00	0.00	228.05	0.08	0 12:00	0 12:00	2.27
167	GE520	0.25	0.00	228.65	2.12	0.00	0.19	226.68	0.15	0 12:00	0 00:00	0.00
168	GE525	0.14	0.00	228.59	2.12	0.00	0.25	226.62	0.15	0 12:00	0 00:00	0.00
169	GE530	0.25	0.00	228.52	2.11	0.00	0.12	226.58	0.17	0 12:00	0 00:00	0.00
170	GE540	0.64	0.00	227.98	1.90	0.00	0.00	226.29	0.21	0 11:59	0 12:12	85.29
171	GE545	0.58	0.00	227.98	2.07	0.00	0.00	226.15	0.24	0 12:02	0 12:02	0.31
172	GE55	0.47	0.00	234.44	1.56	0.00	0.00	233.05	0.17	0 11:59	0 12:11	32.73
173	GE550	0.81	0.00	227.99	2.23	0.00	0.00	225.98	0.22	0 12:02	0 12:02	0.00
174	GE560	0.42	0.42	230.00	1.55	0.00	0.00	228.59	0.14	0 12:00	0 12:12	30.56

Total Time Flooded (min)
618.00
0.00
0.00
0.00
0.00
0.00
0.00
0.00
0.00
0.00
0.00
0.00
0.00
0.00
0.00
0.00
0.00
0.00
11.00
13.00
67.00
13.00
0.00
43.00
0.00
0.00
2.00
20.00
14.00
48.00
18.00
0.00
13.00
0.00
0.00
0.00
12.00
0.00
0.00
27.00
0.00
43.00
33.00
16.00
0.00
0.00
0.00
13.00
35.00
45.00
8.00
0.00
0.00
10.00
23.00
0.00
0.00
0.00
31.00
30.00
19.00
8.00
34.00
0.00
0.00
12.00
21.00
0.00
0.00
4.00
0.00
0.00
0.00
104.00
0.00
0.00
0.00
0.00
26.00
0.00
0.00
0.00
41.00
9.00
42.00
0.00
25.00

Junction Results

SN	Element ID	Peak Inflow (cms)	Peak Lateral Inflow (cms)	Max HGL Elevation Attained (m)	Max HGL Depth Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Average HGL Elevation Attained (m)	Average HGL Depth Attained (m)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ha-mm)
175	GE565	0.11	0.00	228.60	2.12	0.00	0.02	226.66	0.18	0 12:00	0 00:00	0.00
176	GE570	0.11	0.00	228.56	2.08	0.00	0.00	226.64	0.16	0 12:00	0 12:00	0.01
177	GE575	0.11	0.00	228.56	2.09	0.00	0.01	226.62	0.15	0 12:00	0 00:00	0.00
178	GE585	0.48	0.48	228.34	0.63	0.00	0.00	227.75	0.04	0 12:08	0 12:12	1.85
179	GE590	0.00	0.00	227.98	0.33	0.00	0.30	227.66	0.01	0 11:59	0 00:00	0.00
180	GE595	0.00	0.00	227.98	0.27	0.00	0.36	227.72	0.01	0 11:59	0 00:00	0.00
181	GE60	0.51	0.00	233.13	1.20	0.00	0.00	232.09	0.16	0 11:59	0 12:12	6.25
182	GE600	0.03	0.00	227.71	0.05	0.00	0.74	227.66	0.00	0 12:03	0 00:00	0.00
183	GE605	0.11	0.00	227.96	1.04	0.00	0.00	226.93	0.01	0 12:03	0 12:03	0.01
184	GE610	0.18	0.00	227.93	1.29	0.00	0.00	226.65	0.01	0 12:03	0 12:03	0.01
185	GE65	0.59	0.20	232.98	1.40	0.00	0.00	231.73	0.15	0 11:59	0 11:59	0.00
186	GE70	0.59	0.00	231.46	0.80	0.00	0.56	230.85	0.19	0 12:12	0 00:00	0.00
187	GE75	2.34	0.00	231.17	0.52	0.00	0.86	230.73	0.08	0 12:13	0 00:00	0.00
188	GE80	2.34	0.00	230.86	0.46	0.00	1.09	230.49	0.09	0 12:13	0 00:00	0.00
189	GE85	3.29	0.62	229.81	0.56	0.00	1.90	229.35	0.10	0 12:13	0 00:00	0.00
190	GE90	0.02	0.00	234.70	1.35	0.00	0.00	233.43	0.08	0 11:59	0 11:59	0.00
191	GE95	0.51	0.51	234.69	1.37	0.00	0.00	233.43	0.11	0 11:59	0 12:12	23.69
192	Jun-03	1.11	0.69	215.00	1.00	0.00	0.00	214.16	0.16	0 12:01	0 12:12	29.23
193	Jun-04	0.68	0.00	212.37	0.37	0.00	0.63	212.11	0.11	0 12:03	0 00:00	0.00
194	Jun-05	0.68	0.00	209.39	0.39	0.00	0.61	209.12	0.12	0 12:03	0 00:00	0.00
195	LE	0.19	0.00	217.94	0.73	0.00	0.43	217.35	0.14	0 12:12	0 00:00	0.00
196	LE10	7.52	0.00	223.27	2.02	0.00	0.00	221.45	0.20	0 12:03	0 12:03	0.01
197	LE1005	1.32	0.00	217.97	1.24	0.00	0.00	217.19	0.46	0 11:52	0 12:12	177.87
198	LE1010	1.28	0.39	217.82	1.24	0.00	0.00	217.06	0.48	0 11:58	0 12:12	19.28
199	LE1020	0.76	0.76	222.61	1.50	0.00	0.00	221.25	0.14	0 12:01	0 12:12	44.75
200	LE1025	0.32	0.00	222.39	1.46	0.00	0.09	221.09	0.16	0 12:11	0 00:00	0.00
201	LE1030	0.32	0.00	222.15	1.31	0.00	0.32	221.01	0.17	0 12:11	0 00:00	0.00
202	LE1035	0.84	0.55	221.43	0.79	0.00	0.00	220.75	0.11	0 12:00	0 12:12	31.34
203	LE1040	0.76	0.35	220.79	0.79	0.00	0.00	220.10	0.10	0 12:01	0 12:12	6.75
204	LE1045	0.65	0.00	218.50	0.79	0.00	0.00	217.80	0.09	0 12:03	0 12:03	0.00
205	LE105	0.42	0.00	225.01	0.79	0.00	1.29	224.29	0.07	0 12:11	0 00:00	0.00
206	LE1055	0.15	0.15	216.96	0.20	0.00	1.79	216.79	0.03	0 12:12	0 00:00	0.00
207	LE1060	0.26	0.00	215.56	0.43	0.00	2.15	215.17	0.04	0 12:12	0 00:00	0.00
208	LE1065	0.27	0.00	215.17	1.02	0.00	0.66	214.22	0.07	0 12:11	0 00:00	0.00
209	LE1070	0.27	0.00	214.99	0.87	0.00	0.76	214.19	0.07	0 12:11	0 00:00	0.00
210	LE1075	0.48	0.22	214.79	1.70	0.00	0.94	213.16	0.07	0 12:11	0 00:00	0.00
211	LE1080	0.48	0.00	213.53	1.19	0.00	0.47	212.41	0.07	0 12:11	0 00:00	0.00
212	LE1090	0.11	0.11	216.60	0.19	0.00	1.80	216.44	0.03	0 12:12	0 00:00	0.00
213	LE1095	0.59	0.59	221.68	0.79	0.00	0.00	221.04	0.15	0 12:01	0 12:12	50.24
214	LE110	0.42	0.42	225.14	0.22	0.00	1.78	224.95	0.03	0 12:12	0 00:00	0.00
215	LE1100	0.29	0.00	221.55	0.76	0.00	0.03	220.92	0.13	0 12:01	0 00:00	0.00
216	LE1105	0.29	0.00	221.40	0.81	0.00	0.09	220.72	0.13	0 12:01	0 00:00	0.00
217	LE1110	0.40	0.00	221.19	0.79	0.00	0.00	220.54	0.14	0 12:01	0 12:11	1.64
218	LE1115	0.41	0.05	219.84	0.79	0.00	1.46	219.16	0.11	0 12:12	0 00:00	0.00
219	LE1120	0.41	0.00	219.81	2.88	0.00	0.00	217.05	0.12	0 12:04	0 12:04	0.00
220	LE1125	0.70	0.29	217.39	2.68	0.00	0.00	214.86	0.15	0 12:03	0 12:12	8.04
221	LE1130	1.26	0.00	216.15	2.90	0.00	0.00	213.42	0.17	0 12:03	0 12:08	21.85
222	LE1135	0.93	0.00	214.40	2.79	0.00	0.00	211.77	0.16	0 12:02	0 12:02	0.01
223	LE1145	0.16	0.16	221.53	0.91	0.00	0.00	220.68	0.06	0 12:01	0 12:01	0.00
224	LE115	0.42	0.00	224.96	0.12	0.00	1.57	224.86	0.02	0 12:12	0 00:00	0.00
225	LE1150	0.39	0.39	218.43	0.35	0.00	0.87	218.13	0.05	0 12:12	0 00:00	0.00
226	LE1155	0.39	0.00	217.15	0.39	0.00	1.88	216.80	0.04	0 12:12	0 00:00	0.00
227	LE1160	0.38	0.00	217.97	2.08	0.00	0.00	215.96	0.07	0 12:04	0 12:04	0.01
228	LE1165	0.80	0.42	216.90	1.22	0.00	0.00	215.77	0.09	0 12:03	0 12:12	1.85
229	LE1170	0.72	0.00	216.57	2.13	0.00	0.10	214.53	0.09	0 12:04	0 00:00	0.00
230	LE1175	0.00	0.00	217.15	0.05	0.00	2.16	217.10	0.00	0 12:12	0 00:00	0.00
231	LE120	0.74	0.74	224.78	0.13	0.00	0.62	224.67	0.02	0 12:12	0 00:00	0.00
232	LE125	0.91	0.00	223.90	0.42	0.00	0.97	223.51	0.03	0 12:12	0 00:00	0.00
233	LE130	0.12	0.12	223.90	0.33	0.00	1.03	223.58	0.01	0 12:12	0 00:00	0.00
234	LE135	0.48	0.48	224.17	0.17	0.00	0.68	224.02	0.02	0 12:12	0 00:00	0.00
235	LE140	0.48	0.00	223.99	0.28	0.00	0.64	223.74	0.03	0 12:12	0 00:00	0.00
236	LE145	0.50	0.00	223.90	0.30	0.00	1.04	223.62	0.02	0 12:12	0 00:00	0.00
237	LE15	7.66	0.00	222.89	1.98	0.00	0.00	221.12	0.21	0 12:02	0 12:03	0.18
238	LE150	0.69	0.00	223.93	0.53	0.00	0.80	223.42	0.02	0 12:13	0 00:00	0.00
239	LE155	0.09	0.09	223.93	0.03	0.00	0.76	223.90	0.00	0 12:12	0 00:00	0.00
240	LE160	0.15	0.15	224.39	0.13	0.00	0.66	224.28	0.02	0 12:05	0 00:00	0.00
241	LE165	0.15	0.00	222.87	0.30	0.00	0.94	222.60	0.03	0 12:12	0 00:00	0.00
242	LE170	0.42	0.42	223.88	0.79	0.00	0.00	223.16	0.07	0 12:04	0 12:12	3.74
243	LE175	0.32	0.00	223.59	0.63	0.00	0.16	223.04	0.08	0 12:07	0 00:00	0.00
244	LE180	0.32	0.00	223.32	0.38	0.00	0.41	222.98	0.04	0 12:04	0 00:00	0.00
245	LE185	0.32	0.00	223.25	1.58	0.00	0.00	221.75	0.08	0 12:00	0 12:00	0.00
246	LE190	0.92	0.42	222.18	1.10	0.00	0.00	221.21	0.13	0 12:00	0 12:12	91.31
247	LE195	0.18	0.18	222.32	0.32	0.00	0.38	222.03	0.03	0 12:12	0 00:00	0.00
248	LE20	7.75	0.00	222.15	1.92	0.00	0.00	220.46	0.23	0 12:02	0 12:12	561.87
249	LE200	0.62	0.62	225.38	0.71	0.00	0.00	224.75	0.08	0 12:00	0 12:12	26.52
250	LE205	0.53	0.00	224.79	1.23	0.00	0.00	223.73	0.17	0 11:53	0 12:08	67.54
251	LE210	0.37	0.00	224.44	1.31	0.00	0.00	223.29	0.16	0 12:03	0 12:11	3.78
252	LE215	0.38	0.00	224.03	1.17	0.00	0.00	223.05	0.19	0 11:59	0 12:03	1.33
253	LE220	0.53	0.00	223.92	1.29	0.00	0.04	222.82	0.19	0 12:07	0 00:00	0.00
254	LE225	0.71	0.21	223.30	1.12	0.00	0.00	222.32	0.14	0 12:02	0 12:12	4.66
255	LE230	0.57	0.00	223.10	1.10	0.00	0.11	222.11	0.11	0 12:08	0 00:00	0.00
256	LE235	0.67	0.00	222.43	1.92	0.00	0.00	220.85	0.34	0 12:02	0 12:11	1.73
257	LE240	1.16	0.00	222.04	1.57	0.00	0.21	220.78	0.31	0 12:13	0 00:00	0.00
258	LE245	1.51	0.35	220.93	0.78	0.00	1.28	220.31	0.16	0 12:12	0 00:00	0.00
259	LE25	3.94	0.88	222.11	2.11	0.00	0.89	220.42	0.42	0 12:11	0 00:00	0.00
260	LE255	1.51	0.00	220.13	1.69	0.00	0.00	218.69	0.25	0 11:57	0 12:12	76.48
261	LE265	1.18	0.00	220.00	1.80	0.00	0.00	218.52	0.32	0 12:01	0 12:12	14.78

Total Time Flooded (min)
0.00
0.00
0.00
8.00
0.00
0.00
22.00
0.00
0.00
0.00
0.00
0.00
0.00
0.00
0.00
0.00
26.00
22.00
0.00
0.00
0.00
0.00
176.00
25.00
34.00
0.00
0.00
21.00
13.00
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57.00
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10.00
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39.00
0.00
34.00
24.00
48.00
14.00
17.00
0.00
13.00
0.00
15.00
0.00
0.00
0.00
38.00
15.00

Junction Results

SN	Element ID	Peak Inflow (cms)	Peak Lateral Inflow (cms)	Max HGL Elevation Attained (m)	Max HGL Depth Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Average HGL Elevation Attained (m)	Average HGL Depth Attained (m)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ha-mm)
262	LE270	1.23	0.00	219.88	1.73	0.00	0.11	218.42	0.27	0 12:11	0 00:00	0.00
263	LE280	1.23	0.00	219.64	1.82	0.00	0.52	218.16	0.34	0 12:02	0 00:00	0.00
264	LE285	1.47	0.00	219.43	1.63	0.00	0.66	218.07	0.27	0 12:11	0 00:00	0.00
265	LE295	1.47	0.00	218.84	1.35	0.00	0.67	217.78	0.29	0 12:11	0 00:00	0.00
266	LE300	1.67	0.00	218.01	0.84	0.00	0.37	217.35	0.18	0 12:12	0 00:00	0.00
267	LE310	1.69	0.21	217.38	1.24	0.00	0.00	216.41	0.27	0 11:56	0 12:11	53.41
268	LE315	1.29	0.00	216.95	1.19	0.00	0.05	216.05	0.29	0 12:11	0 00:00	0.00
269	LE325	1.37	0.00	216.76	1.19	0.00	0.05	215.88	0.31	0 12:10	0 00:00	0.00
270	LE330	1.58	0.07	216.40	1.00	0.00	0.20	215.71	0.31	0 12:11	0 00:00	0.00
271	LE340	1.58	0.00	216.01	0.76	0.00	0.61	215.51	0.26	0 12:11	0 00:00	0.00
272	LE35	0.12	0.12	225.44	0.07	0.00	1.98	225.38	0.01	0 12:12	0 00:00	0.00
273	LE350	0.66	0.66	225.55	1.17	0.00	0.00	224.49	0.11	0 11:56	0 12:12	28.24
274	LE355	0.18	0.18	225.16	0.75	0.00	0.00	224.45	0.04	0 12:11	0 12:11	0.00
275	LE360	0.56	0.56	225.06	0.39	0.00	0.32	224.70	0.03	0 12:12	0 00:00	0.00
276	LE365	0.56	0.00	224.27	0.71	0.00	0.00	223.62	0.06	0 12:02	0 12:12	13.33
277	LE370	0.41	0.32	224.00	0.95	0.00	0.00	223.14	0.09	0 11:58	0 12:12	44.03
278	LE375	0.03	0.00	223.92	0.77	0.00	0.08	223.17	0.02	0 12:04	0 00:00	0.00
279	LE380	0.23	0.23	223.74	0.94	0.00	0.00	222.86	0.06	0 12:03	0 12:12	3.14
280	LE385	0.16	0.00	223.66	0.96	0.00	0.00	222.76	0.06	0 12:01	0 12:10	0.61
281	LE390	0.15	0.00	223.60	1.00	0.00	0.00	222.67	0.07	0 12:14	0 00:00	0.00
282	LE395	0.31	0.00	223.50	0.99	0.00	0.00	222.60	0.09	0 12:02	0 12:04	3.60
283	LE40	0.12	0.00	225.18	0.09	0.00	2.04	225.10	0.01	0 12:12	0 00:00	0.00
284	LE400	0.48	0.00	223.29	1.54	0.00	0.03	221.89	0.14	0 11:58	0 00:00	0.00
285	LE405	0.29	0.29	223.93	0.63	0.00	0.00	223.34	0.04	0 12:02	0 12:12	4.63
286	LE410	0.18	0.00	223.84	0.94	0.00	0.00	222.96	0.06	0 12:01	0 12:01	0.00
287	LE415	0.18	0.00	223.69	0.99	0.00	0.00	222.77	0.07	0 12:01	0 12:01	0.31
288	LE420	0.18	0.00	223.58	0.98	0.00	0.00	222.67	0.07	0 12:02	0 12:06	1.21
289	LE430	0.21	0.07	223.25	1.22	0.00	0.15	222.16	0.13	0 11:59	0 00:00	0.00
290	LE435	0.01	0.00	223.29	1.17	0.00	0.12	222.17	0.05	0 11:59	0 00:00	0.00
291	LE445	0.77	0.00	222.62	1.92	0.00	0.00	221.01	0.31	0 11:58	0 12:04	41.42
292	LE45	0.12	0.00	225.10	0.06	0.00	2.06	225.05	0.01	0 12:12	0 00:00	0.00
293	LE450	0.57	0.00	222.47	1.82	0.00	0.13	220.89	0.24	0 12:11	0 00:00	0.00
294	LE455	0.28	0.28	222.43	1.83	0.00	0.01	220.83	0.23	0 12:11	0 00:00	0.00
295	LE460	0.59	0.00	222.36	1.79	0.00	0.00	220.83	0.26	0 12:03	0 12:12	2.89
296	LE470	0.51	0.51	224.06	0.79	0.00	0.00	223.38	0.11	0 11:45	0 12:12	45.72
297	LE475	0.09	0.00	224.04	0.97	0.00	0.00	223.24	0.17	0 11:58	0 00:00	0.00
298	LE480	0.09	0.00	224.00	0.95	0.00	0.00	223.20	0.15	0 11:45	0 12:09	18.05
299	LE485	0.08	0.00	224.00	0.96	0.00	0.00	223.17	0.13	0 11:45	0 12:27	0.25
300	LE490	0.33	0.00	224.00	1.07	0.00	0.00	223.14	0.21	0 11:45	0 12:10	16.82
301	LE495	0.29	0.00	223.90	0.99	0.00	0.00	223.07	0.16	0 11:55	0 12:07	11.47
302	LE5	7.52	0.20	224.01	2.45	0.00	0.00	221.76	0.20	0 12:03	0 12:03	0.11
303	LE50	0.44	0.32	225.05	0.22	0.00	2.00	224.86	0.03	0 12:12	0 00:00	0.00
304	LE500	0.25	0.00	223.74	1.04	0.00	0.00	222.87	0.17	0 11:42	0 12:15	79.68
305	LE505	0.25	0.00	223.78	1.38	0.00	0.00	222.66	0.26	0 11:56	0 12:06	30.37
306	LE510	0.32	0.14	224.00	1.75	0.00	0.00	222.47	0.22	0 12:00	0 12:12	15.39
307	LE515	0.21	0.00	224.00	1.92	0.00	0.00	222.32	0.24	0 12:00	0 12:06	0.12
308	LE520	0.21	0.00	224.00	2.01	0.00	0.00	222.21	0.22	0 12:03	0 12:03	0.00
309	LE525	0.23	0.22	224.00	2.43	0.00	0.00	221.86	0.29	0 12:04	0 12:12	0.78
310	LE530	0.23	0.00	223.88	2.39	0.00	0.11	221.75	0.26	0 12:12	0 00:00	0.00
311	LE535	0.23	0.00	223.76	2.41	0.00	0.23	221.63	0.28	0 12:11	0 00:00	0.00
312	LE540	0.30	0.00	223.57	2.35	0.00	0.03	221.50	0.28	0 12:11	0 00:00	0.00
313	LE545	0.35	0.35	224.52	0.79	0.00	0.00	223.79	0.06	0 12:09	0 12:12	0.31
314	LE55	0.44	0.00	224.74	0.17	0.00	2.20	224.60	0.03	0 12:12	0 00:00	0.00
315	LE550	0.32	0.00	224.25	0.76	0.00	0.03	223.55	0.06	0 12:09	0 00:00	0.00
316	LE555	0.20	0.20	223.98	0.89	0.00	0.00	223.18	0.09	0 12:04	0 12:12	1.46
317	LE560	0.29	0.29	223.83	1.30	0.00	0.00	222.67	0.14	0 12:01	0 12:12	10.33
318	LE565	0.30	0.30	224.10	1.70	0.00	0.00	222.54	0.14	0 12:03	0 12:12	6.06
319	LE570	0.13	0.13	224.00	1.87	0.00	0.00	222.32	0.19	0 12:00	0 12:12	9.14
320	LE575	0.23	0.23	223.59	2.06	0.00	0.00	221.67	0.14	0 12:01	0 12:12	7.65
321	LE580	0.21	0.21	220.18	1.47	0.00	0.32	218.82	0.11	0 12:11	0 00:00	0.00
322	LE585	0.21	0.00	220.14	1.45	0.00	0.19	218.79	0.10	0 12:10	0 00:00	0.00
323	LE590	0.21	0.00	220.10	1.45	0.00	0.17	218.75	0.10	0 12:11	0 00:00	0.00
324	LE595	0.21	0.00	220.06	1.46	0.00	0.07	218.71	0.11	0 12:10	0 00:00	0.00
325	LE60	0.85	0.00	224.58	0.43	0.00	1.67	224.21	0.06	0 12:12	0 00:00	0.00
326	LE600	0.21	0.00	220.03	1.58	0.00	0.09	218.58	0.13	0 12:08	0 00:00	0.00
327	LE605	0.01	0.00	220.14	1.38	0.00	0.13	218.82	0.06	0 12:11	0 00:00	0.00
328	LE610	0.31	0.31	219.98	1.32	0.00	0.00	218.75	0.09	0 12:02	0 12:12	6.94
329	LE615	0.19	0.00	219.92	1.34	0.00	0.06	218.66	0.08	0 12:11	0 00:00	0.00
330	LE620	0.22	0.22	221.63	0.40	0.00	1.23	221.27	0.04	0 12:12	0 00:00	0.00
331	LE625	0.22	0.00	221.50	0.52	0.00	1.13	221.02	0.04	0 12:12	0 00:00	0.00
332	LE630	0.22	0.00	221.35	0.69	0.00	0.93	220.69	0.03	0 12:11	0 00:00	0.00
333	LE635	0.46	0.24	221.03	1.80	0.00	0.01	219.30	0.07	0 12:11	0 00:00	0.00
334	LE640	0.46	0.00	220.38	1.41	0.00	0.28	219.03	0.06	0 12:11	0 00:00	0.00
335	LE645	0.51	0.51	218.11	0.51	0.00	0.00	217.70	0.10	0 12:01	0 12:12	19.65
336	LE65	1.26	0.00	224.33	0.31	0.00	1.99	224.06	0.04	0 12:12	0 00:00	0.00
337	LE655	0.45	0.16	216.71	0.79	0.00	0.00	216.06	0.14	0 11:49	0 12:11	102.22
338	LE660	0.06	0.06	222.43	0.20	0.00	1.31	222.26	0.03	0 12:12	0 00:00	0.00
339	LE665	0.06	0.00	222.34	0.16	0.00	1.52	222.21	0.03	0 12:12	0 00:00	0.00
340	LE670	0.14	0.08	221.94	0.18	0.00	1.12	221.79	0.03	0 12:12	0 00:00	0.00
341	LE675	0.23	0.00	221.44	0.28	0.00	1.12	221.20	0.04	0 12:12	0 00:00	0.00
342	LE680	0.40	0.18	220.65	0.37	0.00	0.42	220.32	0.04	0 12:12	0 00:00	0.00
343	LE685	0.70	0.00	220.01	0.33	0.00	0.46	219.74	0.06	0 12:12	0 00:00	0.00
344	LE690	0.77	0.00	216.85	0.86	0.00	0.00	216.09	0.10	0 12:00	0 12:12	28.76
345	LE695	0.09	0.09	222.07	0.10	0.00	0.83	221.99	0.02	0 12:12	0 00:00	0.00
346	LE70	2.93	0.00	223.91	0.71	0.00	0.73	223.26	0.06	0 12:12	0 00:00	0.00
347	LE700	0.73	0.73	221.22	0.79	0.00	0.00	220.54	0.11	0 12:00	0 12:12	29.82
348	LE705	0.30	0.00	221.08	0.73	0.00	0.30	220.45	0.10	0 12:00	0 00:00	0.00

Total Time Flooded (min)
0.00
0.00
0.00
0.00
0.00
34.00
0.00
0.00
0.00
0.00
0.00
28.00
0.00
0.00
17.00
33.00
0.00
12.00
13.00
0.00
16.00
0.00
0.00
13.00
0.00
13.00
15.00
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0.00
32.00
0.00
0.00
0.00
11.00
56.00
0.00
60.00
29.00
30.00
33.00
0.00
0.00
78.00
37.00
22.00
12.00
3.00
9.00
0.00
0.00
0.00
4.00
0.00
0.00
10.00
20.00
17.00
20.00
18.00
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13.00
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0.00
18.00
0.00
62.00
0.00
0.00
0.00
0.00
0.00
0.00
23.00
0.00
0.00
24.00
0.00

Junction Results

SN	Element ID	Peak Inflow (cms)	Peak Lateral Inflow (cms)	Max HGL Elevation Attained (m)	Max HGL Depth Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Average HGL Elevation Attained (m)	Average HGL Depth Attained (m)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ha-mm)
349	LE710	0.30	0.00	220.51	0.35	0.00	0.43	220.24	0.08	0 12:25	0 00:00	0.00
350	LE715	0.07	0.07	216.87	0.32	0.00	0.47	216.57	0.02	0 12:05	0 00:00	0.00
351	LE720	0.25	0.25	221.53	0.35	0.00	0.91	221.23	0.05	0 12:12	0 00:00	0.00
352	LE725	0.25	0.00	221.26	0.26	0.00	0.96	221.03	0.03	0 12:12	0 00:00	0.00
353	LE730	0.25	0.00	221.41	1.49	0.00	0.60	219.96	0.04	0 12:05	0 00:00	0.00
354	LE735	0.45	0.20	220.55	1.26	0.00	0.00	219.35	0.06	0 12:04	0 12:04	0.00
355	LE740	0.45	0.00	219.70	0.98	0.00	0.00	218.77	0.05	0 12:04	0 12:12	3.26
356	LE745	0.37	0.00	219.37	1.36	0.00	0.04	218.07	0.06	0 12:04	0 00:00	0.00
357	LE75	2.55	0.00	223.92	0.98	0.00	0.46	223.02	0.08	0 12:08	0 00:00	0.00
358	LE750	0.37	0.00	218.95	1.32	0.00	0.02	217.68	0.05	0 12:04	0 00:00	0.00
359	LE755	0.48	0.12	218.46	1.56	0.00	0.19	216.98	0.08	0 12:04	0 00:00	0.00
360	LE760	0.48	0.00	217.32	1.02	0.00	0.00	216.37	0.07	0 12:01	0 12:11	4.07
361	LE765	0.40	0.00	216.49	0.79	0.00	0.00	215.81	0.11	0 11:59	0 12:11	23.29
362	LE770	0.01	0.00	219.35	1.48	0.00	0.00	218.07	0.20	0 12:04	0 12:04	0.00
363	LE775	1.77	0.00	222.18	1.58	0.00	0.66	220.91	0.31	0 12:00	0 00:00	0.00
364	LE780	1.09	0.94	221.56	1.98	0.00	0.69	219.95	0.37	0 11:55	0 00:00	0.00
365	LE790	1.14	0.19	220.92	1.77	0.00	1.02	219.55	0.40	0 12:11	0 00:00	0.00
366	LE80	2.64	0.00	223.77	1.05	0.00	0.00	222.80	0.08	0 12:07	0 12:07	7.37
367	LE800	1.27	0.00	220.40	2.09	0.00	0.17	218.78	0.47	0 12:11	0 00:00	0.00
368	LE805	1.27	0.00	219.88	1.99	0.00	0.08	218.32	0.43	0 12:11	0 00:00	0.00
369	LE810	1.27	0.00	219.36	2.13	0.00	0.00	217.84	0.61	0 12:11	0 00:00	0.00
370	LE815	1.26	0.00	219.07	1.84	0.00	0.19	217.72	0.49	0 12:09	0 00:00	0.00
371	LE820	1.26	0.00	218.67	1.72	0.00	0.04	217.50	0.55	0 12:09	0 00:00	0.00
372	LE825	2.52	0.00	218.41	1.51	0.00	0.25	217.39	0.49	0 12:10	0 00:00	0.00
373	LE830	1.20	0.00	218.17	1.32	0.00	0.39	217.28	0.43	0 12:10	0 00:00	0.00
374	LE835	1.20	0.00	217.83	1.24	0.00	0.00	217.11	0.52	0 12:14	0 00:00	0.00
375	LE840	0.87	0.00	217.69	1.14	0.00	0.10	217.03	0.48	0 12:08	0 00:00	0.00
376	LE845	0.58	0.00	217.60	1.20	0.00	0.04	216.98	0.58	0 12:11	0 00:00	0.00
377	LE85	2.27	0.00	223.70	1.20	0.00	0.00	222.58	0.08	0 12:06	0 12:13	22.77
378	LE850	1.57	0.00	217.55	1.16	0.00	0.08	216.94	0.55	0 12:11	0 00:00	0.00
379	LE855	1.94	0.00	216.73	0.56	0.00	0.68	216.46	0.29	0 12:12	0 00:00	0.00
380	LE860	0.68	0.00	216.53	0.38	0.00	0.87	216.35	0.20	0 12:12	0 00:00	0.00
381	LE870	0.09	0.09	222.06	0.56	0.00	0.23	221.60	0.10	0 12:12	0 00:00	0.00
382	LE875	0.17	0.00	222.03	0.47	0.00	0.32	221.59	0.03	0 12:12	0 00:00	0.00
383	LE880	0.35	0.00	221.78	1.67	0.00	0.16	220.23	0.12	0 12:12	0 00:00	0.00
384	LE885	0.35	0.00	221.22	1.40	0.00	0.70	219.95	0.13	0 11:55	0 00:00	0.00
385	LE890	0.31	0.31	221.85	1.31	0.00	0.00	220.59	0.05	0 12:04	0 12:12	5.69
386	LE895	0.21	0.21	220.67	1.17	0.00	0.20	219.59	0.09	0 12:11	0 00:00	0.00
387	LE90	2.02	0.00	223.69	1.45	0.00	0.20	222.31	0.07	0 12:12	0 00:00	0.00
388	LE900	0.21	0.00	220.56	1.52	0.00	0.23	219.20	0.16	0 12:11	0 00:00	0.00
389	LE905	0.13	0.12	219.35	1.20	0.00	0.00	218.31	0.16	0 12:03	0 12:12	6.15
390	LE910	1.04	0.00	221.11	2.11	0.00	0.49	219.44	0.44	0 11:52	0 00:00	0.00
391	LE915	1.04	0.00	220.59	1.87	0.00	0.93	219.20	0.48	0 12:13	0 00:00	0.00
392	LE920	1.04	0.00	220.47	1.91	0.00	0.96	219.06	0.50	0 12:13	0 00:00	0.00
393	LE925	1.04	0.00	220.38	1.88	0.00	1.00	218.96	0.46	0 12:13	0 00:00	0.00
394	LE930	1.21	0.00	220.25	1.88	0.00	0.85	218.78	0.41	0 12:13	0 00:00	0.00
395	LE935	1.21	0.00	219.98	1.88	0.00	0.86	218.51	0.41	0 12:13	0 00:00	0.00
396	LE940	1.26	0.00	219.38	2.01	0.00	0.01	217.94	0.57	0 12:11	0 00:00	0.00
397	LE945	1.26	0.00	219.11	1.78	0.00	0.26	217.83	0.50	0 12:10	0 00:00	0.00
398	LE95	0.42	0.42	225.57	1.21	0.00	0.87	224.43	0.07	0 12:11	0 00:00	0.00
399	LE950	1.26	0.00	218.82	1.57	0.00	0.44	217.68	0.43	0 12:10	0 00:00	0.00
400	LE955	0.04	0.00	218.81	0.41	0.00	0.49	218.43	0.03	0 12:13	0 00:00	0.00
401	LE970	0.28	0.11	217.84	0.67	0.00	0.03	217.28	0.11	0 12:11	0 00:00	0.00
402	LE975	0.62	0.00	217.53	0.88	0.00	0.00	217.07	0.42	0 11:35	0 12:11	412.14
403	LE985	0.00	0.00	217.40	0.27	0.00	0.35	217.19	0.06	0 11:24	0 00:00	0.00
404	LE990	0.00	0.00	217.40	0.31	0.00	0.31	217.16	0.07	0 11:25	0 00:00	0.00
405	LE995	0.33	0.00	217.40	0.62	0.00	0.00	217.00	0.22	0 11:24	0 12:12	388.83
406	MH1414	0.42	0.42	219.02	1.96	0.00	0.00	217.19	0.13	0 11:57	0 12:12	19.42
407	MH1415	0.17	0.00	219.02	2.19	0.00	0.00	216.98	0.15	0 11:57	0 11:57	0.00
408	MH1741	0.08	0.08	223.43	0.15	0.00	0.56	223.30	0.02	0 12:12	0 00:00	0.00
409	MH1742	0.08	0.00	223.14	0.13	0.00	0.57	223.03	0.02	0 12:12	0 00:00	0.00
410	MH1782	0.49	0.49	221.21	2.20	0.00	0.00	219.20	0.19	0 12:08	0 12:12	0.74
411	MH1783	0.44	0.00	220.67	1.74	0.00	0.45	219.08	0.15	0 12:13	0 00:00	0.00
412	MH1785	0.37	0.37	219.38	1.71	0.00	0.00	217.97	0.30	0 12:01	0 12:12	20.42
413	MH1786	0.38	0.38	217.08	0.66	0.00	0.05	216.50	0.08	0 12:11	0 00:00	0.00
414	MH1787	0.01	0.00	216.74	0.65	0.00	0.14	216.46	0.37	0 12:10	0 00:00	0.00
415	MH1827	0.37	0.37	223.18	0.86	0.00	0.00	222.40	0.08	0 11:58	0 12:12	12.91
416	MH1828	0.17	0.00	223.09	0.85	0.00	0.00	222.32	0.08	0 11:58	0 12:12	14.74
417	MH1946	0.25	0.25	223.11	0.27	0.00	0.18	222.86	0.02	0 12:12	0 00:00	0.00
418	MH1953	0.00	0.00	214.35	0.00	0.00	0.79	214.35	0.00	0 00:00	0 00:00	0.00
419	Null Structure	1.76	0.00	231.26	0.57	0.00	0.24	230.77	0.08	0 12:12	0 00:00	0.00
420	Out-1P1642	0.00	0.00	221.84	0.00	0.00	6.00	221.84	0.00	0 00:00	0 00:00	0.00
421	Out-1PGE120	0.00	0.00	231.45	0.76	0.00	5.24	230.92	0.23	0 12:12	0 00:00	0.00
422	Out-1PLE650	0.00	0.00	216.00	0.00	0.00	6.00	216.00	0.00	0 00:00	0 00:00	0.00
423	PP10	0.37	0.00	221.53	1.71	0.00	0.01	219.95	0.13	0 12:02	0 00:00	0.00
424	PP105	0.79	0.79	218.30	0.91	0.00	0.00	217.47	0.08	0 12:01	0 12:12	26.98
425	PP110	0.36	0.00	217.91	0.94	0.00	0.00	217.08	0.11	0 12:00	0 12:11	14.00
426	PP115	0.29	0.29	221.29	0.71	0.00	0.00	220.66	0.08	0 11:58	0 12:12	2.99
427	PP120	0.45	0.23	220.99	0.86	0.00	0.00	220.25	0.12	0 11:57	0 12:12	38.91
428	PP125	0.40	0.26	220.84	0.97	0.00	0.00	220.03	0.16	0 11:56	0 12:12	11.82
429	PP130	0.23	0.00	220.64	0.80	0.00	0.00	219.94	0.10	0 11:56	0 12:02	7.77
430	PP135	0.55	0.36	220.37	1.23	0.00	0.00	219.29	0.15	0 11:56	0 12:12	60.01
431	PP140	0.45	0.42	220.37	1.46	0.00	0.00	219.07	0.16	0 12:04	0 12:12	4.14
432	PP145	0.38	0.05	219.69	1.30	0.00	0.00	218.58	0.19	0 12:03	0 12:12	0.78
433	PP15	0.37	0.00	221.19	1.59	0.00	0.15	219.72	0.12	0 12:02	0 00:00	0.00
434	PP150	0.37	0.00	218.97	0.79	0.00	0.00	218.33	0.15	0 12:00	0 12:05	1.44
435	PP155	0.39	0.03	218.61	0.59	0.00	0.20	218.13	0.11	0 12:04	0 00:00	0.00

Total Time Flooded (min)
0.00
0.00
0.00
0.00
0.00
0.00
8.00
0.00
0.00
0.00
0.00
11.00
23.00
0.00
0.00
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6.00
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0.00
15.00
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0.00
0.00
220.00
0.00
0.00
240.00
28.00
0.00
0.00
0.00
5.00
0.00
20.00
0.00
0.00
20.00
24.00
0.00
0.00
0.00
0.00
0.00
0.00
0.00
20.00
26.00
14.00
44.00
23.00
45.00
45.00
11.00
11.00
0.00
19.00
0.00

Junction Results

SN	Element ID	Peak Inflow (cms)	Peak Lateral Inflow (cms)	Max HGL Elevation Attained (m)	Max HGL Depth Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Average HGL Elevation Attained (m)	Average HGL Depth Attained (m)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ha-mm)
436	PP160	0.39	0.00	218.12	0.64	0.00	0.15	217.62	0.14	0 12:21	0 00:00	0.00
437	PP165	0.44	0.44	216.44	0.33	0.00	0.46	216.15	0.04	0 12:12	0 00:00	0.00
438	PP170	0.23	0.23	209.43	0.25	0.00	4.74	209.22	0.04	0 12:12	0 00:00	0.00
439	PP180	0.44	0.44	210.74	0.99	0.00	0.00	209.81	0.06	0 12:04	0 12:04	0.00
440	PP185	0.44	0.00	205.66	0.36	0.00	4.70	205.35	0.05	0 12:12	0 00:00	0.00
441	PP195	0.51	0.51	219.30	1.46	0.00	0.00	217.93	0.09	0 12:04	0 12:12	4.35
442	PP20	0.37	0.00	219.84	1.14	0.00	0.00	218.81	0.11	0 11:58	0 11:58	0.00
443	PP200	0.38	0.00	218.99	1.29	0.00	0.05	217.78	0.08	0 12:04	0 00:00	0.00
444	PP205	0.38	0.00	218.62	1.13	0.00	0.13	217.55	0.06	0 12:04	0 00:00	0.00
445	PP210	0.38	0.00	217.22	1.09	0.00	0.00	216.24	0.11	0 12:02	0 12:09	11.23
446	PP215	0.26	0.00	217.04	0.97	0.00	0.00	216.13	0.06	0 12:02	0 12:04	2.49
447	PP220	0.53	0.00	216.90	1.37	0.00	0.00	215.70	0.17	0 11:59	0 12:24	22.71
448	PP225	0.39	0.00	215.46	0.27	0.00	0.52	215.26	0.07	0 12:00	0 00:00	0.00
449	PP230	0.52	0.00	213.98	1.16	0.00	0.06	213.02	0.20	0 11:54	0 00:00	0.00
450	PP235	0.50	0.00	210.22	1.25	0.00	0.00	209.34	0.37	0 12:00	0 12:10	8.06
451	PP240	0.87	0.46	209.73	0.93	0.00	0.00	209.01	0.21	0 12:04	0 12:12	4.01
452	PP245	0.77	0.00	209.06	0.57	0.00	0.53	208.65	0.16	0 12:04	0 00:00	0.00
453	PP25	1.13	0.76	218.99	0.79	0.00	0.00	218.34	0.14	0 11:58	0 12:12	105.90
454	PP255	0.79	0.79	217.20	0.80	0.00	0.00	216.47	0.07	0 12:00	0 12:12	36.06
455	PP260	1.17	1.17	213.98	0.92	0.00	0.00	213.26	0.20	0 11:54	0 12:12	261.26
456	PP265	1.11	1.11	210.85	1.46	0.00	0.00	209.48	0.09	0 12:04	0 12:12	17.32
457	PP275	0.86	0.86	212.42	1.75	0.00	0.00	210.75	0.08	0 12:05	0 12:12	4.99
458	PP280	0.68	0.00	211.17	1.10	0.00	0.34	210.13	0.06	0 12:05	0 00:00	0.00
459	PP290	0.50	0.50	212.10	0.32	0.00	1.06	211.82	0.04	0 12:12	0 00:00	0.00
460	PP295	0.50	0.00	210.96	0.36	0.00	1.21	210.65	0.05	0 12:12	0 00:00	0.00
461	PP30	0.36	0.00	218.69	0.79	0.00	0.00	218.04	0.14	0 12:04	0 12:06	0.00
462	PP305	1.14	1.14	207.62	0.66	0.00	0.00	207.04	0.08	0 12:03	0 12:12	28.75
463	PP315	0.61	0.61	218.38	1.45	0.00	0.00	217.09	0.16	0 11:54	0 12:12	74.38
464	PP320	0.19	0.00	218.44	1.73	0.00	0.00	216.91	0.20	0 11:54	0 11:54	0.00
465	PP325	0.19	0.00	218.36	1.72	0.00	0.01	216.83	0.19	0 11:54	0 00:00	0.00
466	PP330	0.19	0.00	218.13	1.83	0.00	0.08	216.50	0.20	0 12:20	0 00:00	0.00
467	PP335	0.48	0.26	218.03	1.92	0.00	0.00	216.31	0.20	0 11:56	0 12:12	21.84
468	PP340	0.32	0.00	217.85	2.24	0.00	0.00	215.88	0.27	0 12:03	0 12:11	2.28
469	PP345	0.46	0.26	217.48	2.18	0.00	0.00	215.55	0.25	0 12:03	0 12:12	1.29
470	PP35	0.36	0.00	218.39	0.75	0.00	0.06	217.81	0.17	0 12:11	0 00:00	0.00
471	PP350	0.41	0.00	215.96	1.00	0.00	1.01	215.13	0.17	0 12:03	0 00:00	0.00
472	PP355	0.42	0.00	215.79	0.88	0.00	1.18	215.04	0.13	0 12:03	0 00:00	0.00
473	PP360	0.00	0.00	214.52	0.25	0.00	2.48	214.28	0.01	0 12:12	0 00:00	0.00
474	PP365	0.36	0.36	214.52	0.32	0.00	2.48	214.25	0.05	0 12:12	0 00:00	0.00
475	PP370	0.36	0.00	213.90	0.40	0.00	2.38	213.55	0.05	0 12:12	0 00:00	0.00
476	PP375	0.73	0.37	213.62	0.39	0.00	2.09	213.29	0.06	0 12:12	0 00:00	0.00
477	PP380	1.14	0.19	211.56	0.40	0.00	2.06	211.22	0.06	0 12:12	0 00:00	0.00
478	PP390	0.59	0.59	218.77	2.13	0.00	0.00	216.80	0.16	0 12:01	0 12:12	24.97
479	PP395	0.25	0.00	218.60	2.18	0.00	0.10	216.61	0.19	0 12:12	0 00:00	0.00
480	PP40	0.43	0.09	218.06	0.51	0.00	0.31	217.64	0.09	0 12:11	0 00:00	0.00
481	PP400	0.25	0.00	218.41	2.06	0.00	0.11	216.54	0.19	0 12:06	0 00:00	0.00
482	PP405	0.25	0.00	218.06	1.86	0.00	0.00	216.39	0.19	0 11:54	0 12:21	30.88
483	PP410	0.23	0.23	212.35	0.20	0.00	2.34	212.18	0.03	0 12:12	0 00:00	0.00
484	PP415	0.45	0.45	218.56	2.33	0.00	0.00	216.46	0.23	0 11:57	0 12:12	54.28
485	PP420	0.21	0.00	218.56	2.33	0.00	0.00	216.44	0.21	0 11:57	0 11:57	0.00
486	PP425	0.21	0.00	218.36	2.26	0.00	0.00	216.31	0.21	0 11:57	0 12:08	0.62
487	PP430	0.33	0.00	218.19	2.22	0.00	0.03	216.18	0.21	0 12:08	0 00:00	0.00
488	PP435	0.33	0.00	217.72	2.22	0.00	0.21	215.69	0.19	0 12:08	0 00:00	0.00
489	PP440	0.50	0.00	217.25	2.35	0.00	0.35	215.17	0.27	0 12:12	0 00:00	0.00
490	PP445	0.50	0.00	215.97	1.12	0.00	1.49	215.02	0.17	0 12:10	0 00:00	0.00
491	PP45	0.68	0.00	217.38	0.80	0.00	0.39	216.75	0.17	0 12:11	0 00:00	0.00
492	PP450	0.98	0.07	214.95	0.33	0.00	2.38	214.69	0.07	0 12:12	0 00:00	0.00
493	PP455	0.98	0.00	214.48	0.31	0.00	1.31	214.22	0.05	0 12:12	0 00:00	0.00
494	PP460	1.45	0.00	214.45	0.56	0.00	1.12	214.01	0.12	0 12:12	0 00:00	0.00
495	PP465	1.81	0.00	214.37	0.52	0.00	1.17	213.96	0.11	0 12:12	0 00:00	0.00
496	PP470	2.01	0.00	214.17	0.52	0.00	1.23	213.75	0.10	0 12:12	0 00:00	0.00
497	PP475	2.61	0.00	213.95	0.59	0.00	1.39	213.47	0.11	0 12:12	0 00:00	0.00
498	PP480	2.72	0.12	213.76	0.60	0.00	1.24	213.29	0.13	0 12:12	0 00:00	0.00
499	PP485	3.37	0.23	213.36	0.48	0.00	2.37	212.97	0.09	0 12:12	0 00:00	0.00
500	PP490	3.75	0.00	210.94	0.94	0.00	0.00	210.19	0.19	0 12:01	0 12:12	299.72
501	PP5	0.74	0.74	221.71	1.69	0.00	0.00	220.16	0.14	0 12:02	0 12:12	29.09
502	PP50	0.20	0.20	217.87	2.37	0.00	0.31	217.17	1.67	0 12:11	0 00:00	0.00
503	PP500	0.45	0.45	218.19	1.94	0.00	0.00	216.38	0.13	0 11:57	0 12:12	39.47
504	PP505	0.30	0.30	217.44	2.46	0.00	0.00	215.17	0.19	0 12:07	0 12:12	0.60
505	PP510	0.21	0.21	218.46	2.28	0.00	0.00	216.25	0.07	0 12:03	0 12:03	0.04
506	PP515	0.20	0.00	218.40	2.29	0.00	0.00	216.17	0.06	0 12:03	0 12:03	0.00
507	PP520	0.20	0.00	218.34	2.34	0.00	0.02	216.07	0.07	0 12:03	0 00:00	0.00
508	PP525	0.20	0.00	218.15	2.44	0.00	0.00	215.84	0.13	0 12:03	0 12:03	0.00
509	PP530	0.39	0.00	217.82	2.11	0.00	0.02	215.82	0.11	0 12:03	0 00:00	0.00
510	PP535	0.41	0.02	217.43	1.81	0.00	0.24	215.70	0.08	0 12:03	0 00:00	0.00
511	PP540	0.41	0.00	216.98	1.62	0.00	0.58	215.45	0.09	0 12:03	0 00:00	0.00
512	PP545	0.39	0.39	217.89	2.17	0.00	0.00	215.85	0.13	0 12:03	0 12:12	8.88
513	PP55	0.75	0.17	217.30	0.18	0.00	0.57	217.16	0.04	0 12:12	0 00:00	0.00
514	PP550	0.69	0.69	216.83	1.34	0.00	0.00	215.61	0.12	0 11:56	0 12:12	37.02
515	PP555	0.25	0.00	216.79	1.59	0.00	0.03	215.33	0.13	0 11:56	0 00:00	0.00
516	PP560	0.25	0.00	216.46	1.46	0.00	0.00	215.13	0.13	0 11:56	0 11:56	0.00
517	PP565	0.32	0.00	215.69	1.46	0.00	0.14	214.51	0.28	0 12:10	0 00:00	0.00
518	PP570	0.46	0.00	215.48	1.26	0.00	0.20	214.39	0.17	0 12:11	0 00:00	0.00
519	PP575	0.74	0.69	215.67	1.16	0.00	0.00	214.63	0.12	0 11:56	0 12:12	88.28
520	PP580	0.28	0.28	215.75	1.07	0.00	0.11	214.74	0.06	0 12:11	0 00:00	0.00
521	PP585	0.37	0.37	214.80	0.59	0.00	0.61	214.26	0.05	0 12:11	0 00:00	0.00
522	PP590	0.20	0.20	214.31	0.43	0.00	0.97	213.93	0.05	0 12:12	0 00:00	0.00

Total Time Flooded (min)
0.00
0.00
0.00
0.00
0.00
11.00
0.00
0.00
0.00
20.00
22.00
32.00
0.00
0.00
23.00
10.00
0.00
53.00
25.00
101.00
13.00
9.00
0.00
0.00
0.00
1.00
19.00
64.00
0.00
0.00
0.00
29.00
13.00
9.00
0.00
0.00
0.00
0.00
0.00
0.00
0.00
0.00
26.00
0.00
0.00
0.00
46.00
0.00
46.00
5.00
19.00
0.00
0.00
0.00
0.00
0.00
0.00
0.00
0.00
0.00
0.00
0.00
0.00
50.00
29.00
0.00
40.00
6.00
2.00
0.00
0.00
0.00
0.00
0.00
0.00
13.00
0.00
31.00
0.00
0.00
0.00
0.00
49.00
0.00
0.00
0.00

Junction Results

SN	Element ID	Peak Inflow (cms)	Peak Lateral Inflow (cms)	Max HGL Elevation Attained (m)	Max HGL Depth Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Average HGL Elevation Attained (m)	Average HGL Depth Attained (m)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ha-mm)
523	PP595	0.60	0.60	214.91	0.83	0.00	0.37	214.13	0.05	0 12:12	0 00:00	0.00
524	PP60	1.19	0.00	215.30	0.25	0.00	0.55	215.10	0.05	0 12:12	0 00:00	0.00
525	PP600	0.00	0.00	214.09	0.00	0.00	1.22	214.09	0.00	0 00:00	0 00:00	0.00
526	PP605	0.43	0.43	214.89	0.60	0.00	1.28	214.34	0.05	0 12:11	0 00:00	0.00
527	PP610	0.43	0.00	214.31	0.35	0.00	1.77	214.01	0.05	0 12:12	0 00:00	0.00
528	PP615	0.03	0.00	214.88	0.95	0.00	0.04	213.94	0.01	0 12:09	0 00:00	0.00
529	PP620	0.87	0.87	214.87	1.20	0.00	0.00	213.75	0.08	0 12:04	0 12:12	16.48
530	PP625	0.84	0.32	212.91	1.24	0.00	0.00	211.81	0.14	0 12:00	0 12:12	45.44
531	PP630	1.20	0.80	212.30	0.87	0.00	0.00	211.57	0.14	0 11:56	0 12:12	99.92
532	PP635	0.47	0.00	211.86	0.71	0.00	0.17	211.27	0.12	0 12:22	0 00:00	0.00
533	PP645	0.78	0.78	208.32	0.79	0.00	0.00	207.58	0.05	0 12:06	0 12:12	2.39
534	PP65	1.51	0.32	213.83	0.33	0.00	0.52	213.55	0.05	0 12:12	0 00:00	0.00
535	PP650	0.67	0.00	206.19	1.45	0.00	0.00	204.81	0.07	0 12:06	0 12:07	0.72
536	PP655	1.03	0.00	204.24	0.79	0.00	0.00	203.52	0.07	0 12:02	0 12:09	23.99
537	PP665	0.52	0.52	204.93	0.79	0.00	0.00	204.24	0.10	0 12:03	0 12:12	5.87
538	PP670	0.37	0.00	204.57	0.43	0.00	0.01	204.18	0.04	0 12:04	0 00:00	0.00
539	PP675	0.40	0.40	211.88	0.20	0.00	1.45	211.71	0.03	0 12:12	0 00:00	0.00
540	PP680	0.99	0.34	207.07	0.50	0.00	0.89	206.63	0.06	0 12:12	0 00:00	0.00
541	PP690	0.25	0.25	207.90	0.22	0.00	0.44	207.71	0.03	0 12:12	0 00:00	0.00
542	PP695	0.37	0.37	208.37	0.24	0.00	0.56	208.17	0.04	0 12:12	0 00:00	0.00
543	PP70	1.51	0.00	213.12	0.21	0.00	0.80	212.95	0.04	0 12:12	0 00:00	0.00
544	PP705	0.68	0.00	216.73	0.33	0.00	5.67	216.50	0.10	0 12:11	0 00:00	0.00
545	PP75	1.51	0.00	209.89	0.49	0.00	0.77	209.47	0.07	0 12:12	0 00:00	0.00
546	PP80	1.51	0.00	209.78	0.58	0.00	0.45	209.28	0.08	0 12:12	0 00:00	0.00
547	PP85	1.51	0.00	209.76	0.68	0.00	0.25	209.15	0.07	0 12:12	0 00:00	0.00
548	PP90	1.95	0.45	209.74	0.92	0.00	0.00	208.92	0.10	0 12:01	0 12:12	118.21
549	PP95	0.76	0.24	209.74	1.09	0.00	0.18	208.84	0.19	0 12:05	0 00:00	0.00
550	RM10	0.11	0.00	223.01	0.72	0.00	0.00	222.33	0.04	0 12:02	0 12:02	0.04
551	RM100	0.37	0.18	222.04	0.63	0.00	0.00	221.54	0.13	0 11:57	0 12:12	27.81
552	RM105	0.59	0.59	220.79	0.79	0.00	0.00	220.04	0.04	0 12:09	0 12:12	0.21
553	RM110	0.57	0.00	219.79	1.34	0.00	0.00	218.52	0.07	0 12:04	0 12:10	3.85
554	RM115	0.69	0.23	216.56	1.12	0.00	0.00	215.53	0.09	0 12:00	0 12:12	23.55
555	RM120	0.37	0.00	216.13	1.09	0.00	0.00	215.10	0.06	0 12:00	0 12:03	15.96
556	RM125	0.06	0.06	214.69	0.08	0.00	0.96	214.63	0.02	0 12:12	0 00:00	0.00
557	RM130	0.06	0.00	214.05	0.83	0.00	0.29	213.25	0.03	0 12:00	0 00:00	0.00
558	RM135	0.23	0.23	223.05	0.74	0.00	0.00	222.38	0.07	0 11:55	0 11:55	0.12
559	RM140	0.73	0.00	222.72	0.77	0.00	0.00	222.14	0.19	0 11:55	0 12:11	103.75
560	RM145	0.21	0.00	222.64	0.71	0.00	0.08	222.07	0.14	0 12:13	0 00:00	0.00
561	RM15	0.31	0.00	222.84	0.74	0.00	0.00	222.18	0.08	0 12:01	0 12:12	8.99
562	RM150	0.47	0.30	222.36	0.79	0.00	0.00	221.78	0.21	0 11:56	0 12:12	39.21
563	RM155	0.51	0.17	222.36	1.39	0.00	0.00	221.23	0.26	0 12:03	0 12:03	0.00
564	RM160	0.51	0.00	222.35	1.41	0.00	0.19	221.10	0.16	0 12:03	0 00:00	0.00
565	RM165	0.67	0.23	223.00	2.76	0.00	0.00	220.38	0.14	0 12:03	0 12:03	0.01
566	RM170	0.67	0.67	223.79	0.79	0.00	0.00	223.08	0.08	0 12:07	0 12:12	6.15
567	RM175	0.46	0.46	222.79	0.79	0.00	0.00	222.07	0.07	0 12:03	0 12:12	5.73
568	RM180	0.33	0.00	222.33	1.31	0.00	0.00	221.24	0.22	0 12:03	0 12:12	14.29
569	RM185	0.59	0.59	222.54	1.97	0.00	0.00	220.70	0.13	0 12:02	0 12:12	27.71
570	RM190	0.27	0.00	221.61	1.97	0.00	0.17	219.80	0.16	0 12:11	0 00:00	0.00
571	RM195	0.38	0.18	221.52	1.90	0.00	0.00	219.73	0.11	0 12:01	0 12:01	0.00
572	RM20	0.46	0.09	222.74	0.99	0.00	0.00	221.84	0.09	0 12:01	0 12:11	14.16
573	RM200	0.38	0.00	220.76	1.81	0.00	0.00	219.08	0.13	0 12:00	0 12:00	0.00
574	RM205	0.54	0.16	220.73	1.98	0.00	0.00	218.86	0.11	0 12:00	0 12:00	0.01
575	RM210	1.17	0.25	219.42	1.22	0.00	0.00	218.34	0.14	0 11:59	0 12:12	39.18
576	RM215	1.16	0.42	218.18	1.15	0.00	0.00	217.19	0.16	0 11:59	0 12:12	34.35
577	RM220	0.59	0.59	221.79	0.79	0.00	0.00	221.05	0.05	0 12:04	0 12:12	2.43
578	RM225	0.78	0.00	220.72	1.55	0.00	0.00	219.30	0.13	0 12:00	0 12:08	45.30
579	RM230	0.63	0.63	221.06	1.53	0.00	0.00	219.63	0.10	0 12:00	0 12:12	21.27
580	RM235	0.28	0.28	222.72	1.44	0.00	0.00	221.38	0.10	0 11:59	0 12:12	22.10
581	RM240	0.08	0.00	222.73	1.53	0.00	0.18	221.29	0.09	0 11:59	0 00:00	0.00
582	RM245	0.17	0.00	222.78	2.17	0.00	0.04	220.76	0.15	0 11:59	0 00:00	0.00
583	RM25	0.38	0.07	222.14	1.00	0.00	0.00	221.24	0.10	0 11:59	0 12:11	5.76
584	RM250	0.17	0.00	222.67	2.27	0.00	0.00	220.56	0.16	0 11:59	0 00:00	0.00
585	RM255	0.63	0.47	222.47	2.18	0.00	0.00	220.49	0.20	0 11:59	0 12:12	33.79
586	RM260	1.15	0.88	221.43	1.73	0.00	0.00	219.93	0.23	0 12:02	0 12:12	28.05
587	RM270	0.30	0.30	222.79	1.94	0.00	0.00	220.98	0.13	0 11:58	0 12:12	16.43
588	RM290	0.91	0.91	220.67	1.17	0.00	0.00	219.62	0.12	0 12:01	0 12:12	51.85
589	RM295	0.55	0.30	220.48	1.20	0.00	0.36	219.48	0.20	0 12:11	0 00:00	0.00
590	RM30	0.49	0.00	221.92	1.61	0.00	0.00	220.50	0.19	0 11:59	0 11:59	0.00
591	RM35	0.75	0.30	220.48	1.27	0.00	0.00	219.41	0.20	0 12:00	0 12:12	14.02
592	RM40	0.56	0.00	219.97	0.93	0.00	0.19	219.18	0.14	0 12:08	0 00:00	0.00
593	RM45	0.60	0.05	219.05	0.89	0.00	0.20	218.37	0.21	0 12:11	0 00:00	0.00
594	RM5	0.06	0.06	223.01	0.67	0.00	0.00	222.38	0.04	0 12:02	0 12:02	0.05
595	RM50	0.60	0.00	218.54	0.40	0.00	0.61	218.25	0.11	0 12:11	0 00:00	0.00
596	RM55	0.97	0.13	215.99	2.08	0.00	0.00	214.09	0.18	0 12:00	0 12:12	13.83
597	RM60	0.86	0.00	214.05	1.48	0.00	0.23	212.72	0.15	0 12:00	0 00:00	0.00
598	RM65	0.86	0.00	210.07	0.79	0.00	0.00	209.46	0.18	0 11:45	0 12:12	127.90
599	RM70	0.55	0.14	209.70	0.79	0.00	0.00	209.11	0.20	0 12:01	0 12:12	4.13
600	RM75	0.48	0.00	209.31	0.67	0.00	0.20	208.86	0.22	0 12:11	0 00:00	0.00
601	RM85	0.34	0.34	223.02	0.99	0.00	0.00	222.11	0.08	0 12:04	0 12:12	7.15
602	RM90	0.21	0.00	222.88	0.95	0.00	0.04	222.00	0.07	0 12:14	0 00:00	0.00
603	RM95	0.99	0.99	222.16	0.63	0.00	0.00	221.68	0.15	0 11:57	0 12:12	117.79
604	UV10	0.96	0.23	217.98	0.94	0.00	0.00	217.19	0.15	0 12:01	0 12:12	16.09
605	UV100	1.05	0.00	210.27	2.47	0.00	0.35	208.01	0.21	0 12:07	0 00:00	0.00
606	UV1000	0.27	0.27	213.53	2.25	0.00	0.20	211.35	0.07	0 12:01	0 00:00	0.00
607	UV1005	0.27	0.00	213.29	2.29	0.00	0.00	211.06	0.06	0 12:01	0 12:12	1.40
608	UV1010	0.04	0.04	210.89	2.10	0.00	0.11	208.84	0.05	0 12:01	0 00:00	0.00
609	UV1015	0.17	0.17	211.81	0.14	0.00	1.50	211.69	0.02	0 12:12	0 00:00	0.00

Total Time Flooded (min)
0.00
0.00
0.00
0.00
0.00
0.00
16.00
28.00
46.00
0.00
7.00
0.00
8.00
15.00
11.00
0.00
0.00
0.00
0.00
0.00
0.00
0.00
0.00
0.00
0.00
27.00
0.00
0.00
35.00
3.00
9.00
18.00
24.00
0.00
0.00
3.00
71.00
0.00
15.00
42.00
0.00
0.00
0.00
14.00
16.00
22.00
25.00
0.00
0.00
22.00
0.00
0.00
30.00
31.00
8.00
30.00
21.00
34.00
0.00
0.00
23.00
0.00
32.00
22.00
33.00
29.00
0.00
0.00
20.00
0.00
0.00
0.00
0.00
23.00
0.00
84.00
14.00
0.00
18.00
0.00
61.00
21.00
0.00
0.00
9.00
0.00
0.00

Junction Results

SN	Element ID	Peak Inflow (cms)	Peak Lateral Inflow (cms)	Max HGL Elevation Attained (m)	Max HGL Depth Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Average HGL Elevation Attained (m)	Average HGL Depth Attained (m)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ha-mm)
610	UV1020	0.29	0.29	210.40	1.89	0.00	0.00	208.57	0.06	0 12:03	0 12:03	0.00
611	UV1025	0.46	0.17	209.21	1.17	0.00	0.00	208.10	0.06	0 12:03	0 12:03	0.17
612	UV1030	0.64	0.64	203.41	1.60	0.00	0.78	201.88	0.07	0 12:12	0 00:00	0.00
613	UV1040	0.36	0.36	211.49	1.23	0.00	0.00	210.31	0.05	0 12:04	0 12:12	3.73
614	UV1045	0.63	0.38	211.28	1.59	0.00	0.00	209.75	0.06	0 12:05	0 12:05	0.00
615	UV105	1.19	0.22	208.07	3.62	0.00	0.00	204.75	0.30	0 12:06	0 12:12	0.54
616	UV1050	0.63	0.00	210.53	1.99	0.00	0.00	208.60	0.06	0 12:05	0 12:05	0.00
617	UV1055	0.72	0.10	208.07	1.79	0.00	0.23	206.34	0.06	0 12:05	0 00:00	0.00
618	UV1065	0.34	0.34	210.43	1.26	0.00	0.00	209.23	0.06	0 12:04	0 12:12	3.86
619	UV1070	0.26	0.00	210.23	1.27	0.00	0.00	209.01	0.05	0 12:04	0 12:12	3.18
620	UV1075	0.72	0.27	210.03	2.15	0.00	0.22	207.95	0.07	0 12:11	0 00:00	0.00
621	UV1080	0.98	0.25	206.89	1.79	0.00	0.00	205.23	0.13	0 12:02	0 12:12	27.48
622	UV1090	0.29	0.29	210.69	0.64	0.00	1.36	210.09	0.04	0 12:11	0 00:00	0.00
623	UV1095	0.29	0.00	210.32	1.77	0.00	0.57	208.59	0.04	0 12:03	0 00:00	0.00
624	UV110	1.55	0.00	206.12	2.62	0.00	0.67	203.77	0.27	0 12:11	0 00:00	0.00
625	UV1100	0.49	0.49	204.82	0.39	0.00	1.10	204.48	0.05	0 12:12	0 00:00	0.00
626	UV1110	0.12	0.12	199.86	0.18	0.00	0.61	199.71	0.03	0 12:12	0 00:00	0.00
627	UV1120	0.42	0.42	199.82	0.24	0.00	1.70	199.61	0.03	0 12:12	0 00:00	0.00
628	UV1130	0.37	0.37	199.66	0.35	0.00	0.44	199.35	0.04	0 12:12	0 00:00	0.00
629	UV1135	0.37	0.00	198.85	0.23	0.00	0.56	198.65	0.03	0 12:12	0 00:00	0.00
630	UV1145	0.38	0.38	200.39	0.46	0.00	0.49	199.98	0.05	0 12:12	0 00:00	0.00
631	UV1155	0.32	0.32	197.77	0.32	0.00	0.47	197.49	0.04	0 12:12	0 00:00	0.00
632	UV1165	0.10	0.10	197.93	0.15	0.00	0.64	197.80	0.02	0 12:12	0 00:00	0.00
633	UV120	0.09	0.09	220.33	1.20	0.00	0.00	219.20	0.07	0 11:55	0 12:11	5.17
634	UV125	0.02	0.00	218.60	0.00	0.00	1.62	218.60	0.00	1 00:00	0 00:00	0.00
635	UV130	0.00	0.00	219.00	0.00	0.00	1.20	219.00	0.00	0 00:00	0 00:00	0.00
636	UV135	0.09	0.00	217.94	0.14	0.00	1.61	217.83	0.03	0 12:12	0 00:00	0.00
637	UV140	0.09	0.00	216.68	0.17	0.00	2.37	216.54	0.03	0 12:12	0 00:00	0.00
638	UV145	0.19	0.00	216.25	0.21	0.00	2.24	216.08	0.04	0 12:06	0 00:00	0.00
639	UV15	0.98	0.23	216.65	0.93	0.00	0.01	215.86	0.14	0 12:11	0 00:00	0.00
640	UV150	0.27	0.00	215.58	0.45	0.00	2.30	215.18	0.05	0 12:12	0 00:00	0.00
641	UV155	0.27	0.00	215.35	0.43	0.00	2.42	214.97	0.05	0 12:12	0 00:00	0.00
642	UV160	0.27	0.00	215.10	0.37	0.00	2.41	214.77	0.04	0 12:12	0 00:00	0.00
643	UV165	0.09	0.09	218.63	0.11	0.00	1.01	218.54	0.02	0 12:12	0 00:00	0.00
644	UV170	0.09	0.00	218.07	0.21	0.00	1.50	217.89	0.03	0 12:12	0 00:00	0.00
645	UV175	0.10	0.10	217.47	0.11	0.00	1.51	217.38	0.02	0 12:12	0 00:00	0.00
646	UV180	0.09	0.09	216.65	0.08	0.00	1.43	216.58	0.01	0 12:12	0 00:00	0.00
647	UV185	0.09	0.09	217.85	1.41	0.00	0.00	217.84	1.40	0 01:32	0 12:12	29.04
648	UV190	0.00	0.00	219.36	0.00	0.00	0.45	219.36	0.00	0 00:00	0 00:00	0.00
649	UV195	0.54	0.54	210.62	1.61	0.00	0.00	209.06	0.05	0 12:04	0 12:11	4.69
650	UV20	1.01	0.00	215.59	0.42	0.00	0.53	215.28	0.11	0 12:12	0 00:00	0.00
651	UV200	0.40	0.40	206.32	2.09	0.00	2.00	204.32	0.09	0 12:11	0 00:00	0.00
652	UV205	0.80	0.80	206.45	1.08	0.00	0.00	205.47	0.10	0 12:00	0 12:12	24.15
653	UV215	0.61	0.61	215.05	0.98	0.00	0.00	214.15	0.08	0 12:05	0 12:12	3.19
654	UV220	0.50	0.00	214.12	0.29	0.00	0.50	213.87	0.04	0 12:05	0 00:00	0.00
655	UV225	0.50	0.00	213.19	3.55	0.00	0.00	209.73	0.09	0 12:01	0 12:01	0.00
656	UV230	0.86	0.00	210.34	1.65	0.00	0.00	208.79	0.10	0 12:01	0 12:05	16.69
657	UV235	1.00	0.00	208.19	0.79	0.00	0.00	207.52	0.12	0 11:58	0 12:12	58.53
658	UV240	0.45	0.00	207.17	0.22	0.00	0.57	207.01	0.06	0 11:58	0 00:00	0.00
659	UV25	1.10	0.09	212.53	0.94	0.00	0.00	211.73	0.14	0 12:03	0 12:12	2.95
660	UV250	0.69	0.69	210.79	0.79	0.00	0.00	210.05	0.05	0 12:02	0 12:12	18.80
661	UV255	0.36	0.36	208.62	0.87	0.00	0.09	207.80	0.05	0 12:11	0 00:00	0.00
662	UV260	0.53	0.53	218.62	1.84	0.00	0.00	216.88	0.10	0 12:00	0 12:12	7.37
663	UV265	0.62	0.28	217.00	1.57	0.00	0.00	215.56	0.13	0 11:57	0 12:12	56.31
664	UV270	0.22	0.00	216.95	1.61	0.00	0.00	215.48	0.14	0 11:57	0 12:10	4.35
665	UV275	0.22	0.00	216.93	1.69	0.00	0.00	215.37	0.13	0 11:57	0 11:57	0.00
666	UV280	0.22	0.00	216.88	1.82	0.00	0.11	215.25	0.19	0 12:09	0 00:00	0.00
667	UV285	0.23	0.05	216.82	1.78	0.00	0.01	215.17	0.13	0 12:08	0 00:00	0.00
668	UV290	0.46	0.00	216.69	2.04	0.00	0.00	214.82	0.17	0 11:57	0 12:11	6.95
669	UV295	0.80	0.49	215.93	2.23	0.00	0.00	213.90	0.20	0 12:04	0 12:12	4.06
670	UV30	1.19	0.00	211.55	0.53	0.00	0.41	211.12	0.10	0 12:12	0 00:00	0.00
671	UV300	1.18	0.00	215.49	1.89	0.00	0.32	213.78	0.18	0 12:13	0 00:00	0.00
672	UV305	1.95	0.32	213.78	0.53	0.00	1.88	213.35	0.10	0 12:12	0 00:00	0.00
673	UV310	2.02	0.00	213.62	0.51	0.00	1.85	213.22	0.11	0 12:12	0 00:00	0.00
674	UV315	2.08	0.06	213.15	0.37	0.00	1.84	212.85	0.07	0 12:12	0 00:00	0.00
675	UV320	2.08	0.00	212.07	0.30	0.00	2.18	211.84	0.07	0 12:12	0 00:00	0.00
676	UV325	3.55	0.94	209.83	0.57	0.00	1.24	209.36	0.10	0 12:12	0 00:00	0.00
677	UV330	4.06	0.54	208.93	1.78	0.00	0.00	207.40	0.25	0 11:53	0 12:12	334.09
678	UV340	0.61	0.61	218.77	1.67	0.00	0.00	217.19	0.09	0 12:01	0 12:12	14.91
679	UV345	0.34	0.00	218.76	1.99	0.00	0.00	216.86	0.09	0 12:01	0 12:01	0.00
680	UV35	1.19	0.00	208.94	1.80	0.00	0.00	207.34	0.20	0 12:00	0 12:11	38.04
681	UV350	0.63	0.30	216.92	1.86	0.00	0.00	215.18	0.12	0 11:57	0 12:12	35.89
682	UV355	0.61	0.61	218.81	2.09	0.00	0.00	216.79	0.07	0 12:04	0 12:12	2.91
683	UV360	1.19	1.19	217.75	1.09	0.00	0.00	216.76	0.10	0 12:00	0 12:12	54.57
684	UV365	0.49	0.00	216.19	1.20	0.00	0.00	215.11	0.12	0 12:00	0 12:03	18.82
685	UV370	0.82	0.43	215.70	1.20	0.00	0.00	214.63	0.13	0 11:57	0 12:11	34.40
686	UV375	0.45	0.00	215.21	1.11	0.00	0.16	214.24	0.14	0 11:57	0 00:00	0.00
687	UV380	0.07	0.07	214.12	0.12	0.00	1.37	214.02	0.02	0 12:12	0 00:00	0.00
688	UV385	0.07	0.00	213.80	0.10	0.00	1.77	213.72	0.02	0 12:12	0 00:00	0.00
689	UV390	0.22	0.22	216.30	1.99	0.00	0.00	214.40	0.09	0 12:04	0 12:04	0.69
690	UV395	0.19	0.00	216.17	1.87	0.00	0.00	214.35	0.05	0 12:04	0 12:04	1.12
691	UV40	0.87	0.00	208.33	1.53	0.00	0.15	207.01	0.21	0 12:11	0 00:00	0.00
692	UV400	0.43	0.19	216.14	2.78	0.00	0.00	213.45	0.09	0 12:03	0 12:03	0.01
693	UV405	0.85	0.43	214.30	2.01	0.00	0.00	212.37	0.08	0 12:03	0 12:12	9.30
694	UV410	0.65	0.00	213.76	1.73	0.00	0.00	212.12	0.09	0 12:03	0 12:15	7.82
695	UV415	0.53	0.00	212.55	1.55	0.00	0.00	211.08	0.08	0 12:02	0 12:02	0.01
696	UV420	0.53	0.00	211.89	1.59	0.00	0.51	210.38	0.08	0 12:02	0 00:00	0.00

Total Time Flooded (min)
0.00
3.00
0.00
9.00
0.00
6.00
0.00
0.00
10.00
10.00
0.00
16.00
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1347.00
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18.00
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29.00
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14.00
35.00
26.00
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15.00
10.00
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17.00
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28.00
25.00
8.00
28.00
34.00
37.00
0.00
0.00
0.00
7.00
9.00
0.00
0.00
10.00
13.00
0.00
0.00

Junction Results

SN	Element ID	Peak Inflow (cms)	Peak Lateral Inflow (cms)	Max HGL Elevation Attained (m)	Max HGL Depth Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Average HGL Elevation Attained (m)	Average HGL Depth Attained (m)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ha-mm)
697	UV425	0.13	0.08	216.40	1.83	0.00	0.00	214.61	0.04	0 12:04	0 12:04	0.07
698	UV430	0.28	0.00	214.05	1.96	0.00	0.09	212.19	0.10	0 12:03	0 00:00	0.00
699	UV440	0.91	0.91	216.79	0.79	0.00	0.00	216.08	0.08	0 12:03	0 12:12	19.74
700	UV445	0.53	0.00	215.12	0.20	0.00	1.32	214.95	0.03	0 12:03	0 00:00	0.00
701	UV45	1.03	0.24	207.75	1.12	0.00	1.43	206.79	0.16	0 12:11	0 00:00	0.00
702	UV450	0.53	0.00	214.74	0.17	0.00	1.41	214.60	0.03	0 12:07	0 00:00	0.00
703	UV455	0.61	0.09	214.35	0.42	0.00	1.12	213.98	0.05	0 12:12	0 00:00	0.00
704	UV460	1.22	0.00	214.31	0.45	0.00	0.99	213.92	0.06	0 12:12	0 00:00	0.00
705	UV465	1.22	0.00	214.17	0.53	0.00	0.78	213.76	0.12	0 12:12	0 00:00	0.00
706	UV470	1.33	0.11	214.02	0.40	0.00	0.89	213.68	0.06	0 12:12	0 00:00	0.00
707	UV475	1.88	0.00	213.76	0.46	0.00	1.19	213.37	0.07	0 12:12	0 00:00	0.00
708	UV480	2.00	0.12	213.46	0.66	0.00	1.61	212.90	0.10	0 12:12	0 00:00	0.00
709	UV485	2.56	0.00	213.38	0.60	0.00	1.71	212.87	0.09	0 12:12	0 00:00	0.00
710	UV490	2.56	0.00	213.19	0.59	0.00	1.87	212.70	0.10	0 12:12	0 00:00	0.00
711	UV495	2.56	0.00	212.86	0.36	0.00	1.64	212.55	0.05	0 12:12	0 00:00	0.00
712	UV5	1.10	0.46	219.29	1.34	0.00	0.00	218.12	0.17	0 12:01	0 12:12	25.18
713	UV500	3.25	0.37	210.76	0.44	0.00	1.15	210.38	0.06	0 12:12	0 00:00	0.00
714	UV505	3.51	0.00	209.73	0.77	0.00	0.32	209.04	0.08	0 12:12	0 00:00	0.00
715	UV510	4.73	0.32	209.62	0.92	0.00	0.00	208.83	0.13	0 12:04	0 12:12	28.51
716	UV515	3.83	0.00	209.50	0.94	0.00	0.00	208.70	0.14	0 12:04	0 12:11	202.18
717	UV520	2.71	0.00	209.94	1.88	0.00	0.00	208.22	0.16	0 12:03	0 12:03	0.07
718	UV525	2.08	0.00	210.14	2.38	0.00	0.00	207.96	0.20	0 12:03	0 12:03	0.01
719	UV535	0.85	0.85	215.48	1.21	0.00	0.00	214.36	0.09	0 12:05	0 12:12	9.00
720	UV540	0.56	0.56	214.93	1.18	0.00	0.26	213.82	0.07	0 12:12	0 00:00	0.00
721	UV545	0.57	0.57	215.32	2.03	0.00	0.02	213.38	0.09	0 12:11	0 00:00	0.00
722	UV55	0.03	0.03	216.09	0.05	0.00	0.65	216.05	0.01	0 12:12	0 00:00	0.00
723	UV550	0.57	0.00	214.37	1.21	0.00	0.82	213.23	0.07	0 12:11	0 00:00	0.00
724	UV555	0.34	0.34	211.19	0.57	0.00	0.87	210.68	0.06	0 12:11	0 00:00	0.00
725	UV560	0.27	0.27	209.99	0.52	0.00	0.27	209.51	0.04	0 12:12	0 00:00	0.00
726	UV565	0.89	0.89	215.05	1.24	0.00	0.00	213.94	0.13	0 12:00	0 12:12	39.41
727	UV570	0.36	0.00	214.81	1.09	0.00	0.00	213.81	0.09	0 12:00	0 12:00	0.00
728	UV575	1.15	0.79	213.50	1.31	0.00	0.00	212.35	0.16	0 11:53	0 12:12	115.00
729	UV580	1.13	0.81	212.50	1.80	0.00	0.00	210.93	0.23	0 11:54	0 12:12	76.75
730	UV585	0.47	0.00	211.87	1.41	0.00	0.51	210.66	0.20	0 11:53	0 00:00	0.00
731	UV590	0.90	0.30	209.61	0.41	0.00	0.69	209.25	0.05	0 12:04	0 00:00	0.00
732	UV595	0.26	0.17	210.65	2.07	0.00	0.00	208.63	0.05	0 12:03	0 12:03	0.02
733	UV60	0.16	0.16	211.94	0.14	0.00	0.49	211.82	0.02	0 12:12	0 00:00	0.00
734	UV600	0.17	0.00	210.15	1.85	0.00	0.00	208.37	0.07	0 12:03	0 12:03	0.00
735	UV605	0.39	0.39	214.83	1.93	0.00	0.00	212.97	0.07	0 12:03	0 12:12	0.85
736	UV610	0.35	0.00	214.61	1.93	0.00	0.00	212.74	0.06	0 12:03	0 12:03	0.00
737	UV615	0.64	0.00	213.24	3.47	0.00	0.76	209.91	0.14	0 12:10	0 00:00	0.00
738	UV620	0.64	0.00	212.48	3.71	0.00	0.00	208.90	0.13	0 12:01	0 12:01	0.00
739	UV625	0.73	0.00	207.89	1.29	0.00	0.00	206.70	0.10	0 12:01	0 12:11	7.36
740	UV630	0.97	0.00	206.15	0.93	0.00	0.00	205.35	0.13	0 11:59	0 12:12	40.53
741	UV635	1.16	0.00	205.55	0.95	0.00	0.00	204.76	0.16	0 12:00	0 12:12	29.01
742	UV640	0.97	0.00	204.92	0.50	0.00	0.65	204.52	0.10	0 12:12	0 00:00	0.00
743	UV645	0.97	0.00	203.80	0.49	0.00	0.45	203.41	0.10	0 12:12	0 00:00	0.00
744	UV65	0.61	0.61	219.40	0.92	0.00	0.00	218.62	0.14	0 12:01	0 12:12	49.28
745	UV655	0.95	0.95	214.31	1.55	0.00	0.00	212.88	0.12	0 12:02	0 12:12	33.20
746	UV660	0.44	0.00	213.74	1.20	0.00	0.00	212.62	0.08	0 12:02	0 12:13	10.33
747	UV665	0.25	0.25	207.91	1.24	0.00	0.00	206.74	0.07	0 12:01	0 12:12	10.80
748	UV670	0.31	0.31	206.87	0.35	0.00	0.58	206.56	0.04	0 12:12	0 00:00	0.00
749	UV675	0.31	0.00	206.50	0.41	0.00	0.38	206.13	0.04	0 12:12	0 00:00	0.00
750	UV680	0.67	0.67	206.56	1.93	0.00	0.00	204.92	0.29	0 12:06	0 12:12	2.04
751	UV685	0.17	0.17	205.22	0.30	0.00	1.80	204.96	0.04	0 12:12	0 00:00	0.00
752	UV690	0.17	0.00	205.00	0.16	0.00	1.04	204.87	0.03	0 12:12	0 00:00	0.00
753	UV695	0.26	0.26	201.78	0.15	0.00	0.64	201.65	0.02	0 12:12	0 00:00	0.00
754	UV70	0.68	0.68	219.54	1.18	0.00	0.00	218.46	0.10	0 12:02	0 12:02	0.00
755	UV700	0.26	0.00	197.81	0.15	0.00	0.64	197.68	0.02	0 12:12	0 00:00	0.00
756	UV710	0.67	0.67	210.02	0.79	0.00	0.00	209.29	0.06	0 12:04	0 12:12	1.68
757	UV715	0.59	0.00	208.45	0.30	0.00	0.49	208.20	0.05	0 12:13	0 00:00	0.00
758	UV720	0.86	0.27	205.40	0.40	0.00	0.39	205.05	0.05	0 12:12	0 00:00	0.00
759	UV725	0.86	0.00	202.69	0.36	0.00	1.05	202.38	0.05	0 12:12	0 00:00	0.00
760	UV730	0.86	0.00	198.86	0.41	0.00	0.38	198.50	0.05	0 12:12	0 00:00	0.00
761	UV740	0.00	0.00	203.70	0.00	0.00	0.79	203.70	0.00	0 00:00	0 00:00	0.00
762	UV745	0.00	0.00	202.88	0.00	0.00	0.79	202.88	0.00	0 00:00	0 00:00	0.00
763	UV75	1.67	0.98	218.29	1.51	0.00	0.00	216.92	0.14	0 12:00	0 12:12	64.31
764	UV750	0.00	0.00	202.69	0.05	0.00	0.74	202.64	0.00	0 12:11	0 00:00	0.00
765	UV755	0.00	0.00	203.73	0.00	0.00	0.79	203.73	0.00	0 00:00	0 00:00	0.00
766	UV760	0.44	0.44	208.63	0.62	0.00	0.16	208.06	0.05	0 12:11	0 00:00	0.00
767	UV765	0.44	0.00	207.99	0.36	0.00	0.43	207.67	0.04	0 12:12	0 00:00	0.00
768	UV770	0.44	0.00	206.85	0.24	0.00	0.54	206.64	0.03	0 12:12	0 00:00	0.00
769	UV780	0.49	0.49	212.16	0.40	0.00	0.39	211.81	0.05	0 12:12	0 00:00	0.00
770	UV785	0.55	0.06	210.81	0.23	0.00	0.55	210.62	0.04	0 12:12	0 00:00	0.00
771	UV790	1.34	0.79	206.35	0.94	0.00	0.00	205.50	0.09	0 12:03	0 12:12	22.08
772	UV80	1.93	1.05	216.34	1.95	0.00	0.00	214.57	0.18	0 11:57	0 12:12	104.54
773	UV800	0.31	0.31	204.70	0.33	0.00	0.46	204.41	0.04	0 12:12	0 00:00	0.00
774	UV805	0.31	0.00	204.22	0.27	0.00	0.52	203.99	0.04	0 12:12	0 00:00	0.00
775	UV810	0.31	0.00	203.03	0.18	0.00	0.60	202.88	0.03	0 12:12	0 00:00	0.00
776	UV815	1.03	0.73	200.38	1.67	0.00	0.00	198.85	0.14	0 12:02	0 12:12	28.16
777	UV825	0.47	0.47	210.91	0.79	0.00	0.00	210.17	0.05	0 12:09	0 12:12	0.46
778	UV830	0.43	0.00	207.97	0.79	0.00	0.00	207.26	0.08	0 12:03	0 12:12	5.02
779	UV835	0.67	0.35	207.74	0.69	0.00	0.10	207.11	0.06	0 12:06	0 00:00	0.00
780	UV840	0.66	0.00	203.98	0.26	0.00	1.10	203.76	0.04	0 12:14	0 00:00	0.00
781	UV845	1.00	0.00	200.96	0.31	0.00	1.04	200.70	0.05	0 12:12	0 00:00	0.00
782	UV85	2.34	1.07	213.84	2.13	0.00	0.00	211.92	0.21	0 11:55	0 12:12	145.79
783	UV850	1.21	0.21	196.73	0.44	0.00	0.66	196.35	0.06	0 12:12	0 00:00	0.00

Total Time Flooded (min)
0.00
0.00
17.00
0.00
0.00
0.00
0.00
0.00
0.00
0.00
0.00
0.00
0.00
0.00
0.00
0.00
20.00
0.00
0.00
10.00
26.00
0.00
0.00
12.00
0.00
0.00
0.00
0.00
0.00
0.00
26.00
0.00
55.00
56.00
0.00
0.00
0.00
0.00
0.00
6.00
0.00
0.00
0.00
22.00
27.00
22.00
0.00
0.00
31.00
21.00
21.00
18.00
0.00
0.00
7.00
0.00
0.00
0.00
0.00
0.00
6.00
0.00
0.00
0.00
0.00
0.00
0.00
28.00
0.00
0.00
0.00
0.00
0.00
0.00
0.00
13.00
37.00
0.00
0.00
0.00
15.00
3.00
10.00
0.00
0.00
0.00
45.00
0.00

Junction Results

SN	Element ID	Peak Inflow (cms)	Peak Lateral Inflow (cms)	Max HGL Elevation Attained (m)	Max HGL Depth Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Average HGL Elevation Attained (m)	Average HGL Depth Attained (m)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ha-mm)
784	UV860	0.35	0.35	203.09	0.20	0.00	1.08	202.92	0.03	0 12:12	0 00:00	0.00
785	UV865	0.36	0.36	195.43	0.20	0.00	1.22	195.26	0.03	0 12:12	0 00:00	0.00
786	UV875	0.15	0.15	214.58	0.17	0.00	0.62	214.44	0.03	0 12:12	0 00:00	0.00
787	UV880	0.52	0.00	214.35	0.79	0.00	0.00	213.62	0.06	0 12:05	0 12:05	0.56
788	UV885	0.78	0.28	212.54	0.79	0.00	0.00	211.81	0.06	0 12:04	0 12:12	8.99
789	UV890	1.22	0.61	209.21	1.79	0.00	0.00	207.54	0.12	0 12:01	0 12:12	36.11
790	UV895	0.73	0.03	207.01	0.45	0.00	0.00	206.63	0.07	0 12:01	0 12:12	6.89
791	UV90	1.72	0.61	210.82	2.25	0.00	0.00	208.86	0.29	0 11:54	0 12:12	169.94
792	UV905	0.49	0.49	214.80	0.79	0.00	0.00	214.07	0.06	0 12:05	0 12:12	3.69
793	UV910	0.48	0.48	203.13	0.66	0.00	0.13	202.51	0.04	0 12:12	0 00:00	0.00
794	UV915	0.48	0.00	202.40	0.65	0.00	0.14	201.80	0.05	0 12:11	0 00:00	0.00
795	UV925	0.27	0.27	215.53	1.15	0.00	0.00	214.44	0.06	0 12:03	0 12:03	1.72
796	UV930	0.23	0.00	215.49	1.67	0.00	0.00	213.87	0.05	0 12:03	0 12:03	0.03
797	UV935	0.29	0.07	215.11	2.49	0.00	0.00	212.72	0.10	0 12:02	0 12:02	0.01
798	UV940	0.38	0.15	215.00	2.49	0.00	0.06	212.59	0.08	0 12:03	0 00:00	0.00
799	UV945	0.38	0.00	214.63	2.63	0.00	0.39	212.08	0.08	0 12:03	0 00:00	0.00
800	UV95	0.99	0.00	210.57	2.27	0.00	0.07	208.55	0.25	0 12:11	0 00:00	0.00
801	UV950	0.85	0.25	213.15	3.00	0.00	0.00	210.27	0.12	0 12:02	0 12:12	20.19
802	UV955	0.55	0.00	211.56	2.62	0.00	0.00	209.05	0.11	0 12:01	0 12:04	6.64
803	UV960	0.71	0.20	210.82	2.53	0.00	0.00	208.43	0.14	0 12:01	0 12:12	5.85
804	UV965	0.65	0.00	209.81	1.71	0.00	0.87	208.24	0.14	0 12:11	0 00:00	0.00
805	UV970	0.89	0.29	208.84	1.19	0.00	0.04	207.74	0.09	0 12:11	0 00:00	0.00
806	UV975	1.63	0.12	208.10	0.94	0.00	0.00	207.25	0.09	0 12:02	0 12:12	24.96
807	UV985	0.17	0.07	214.90	1.63	0.00	0.00	213.31	0.04	0 12:03	0 12:03	0.04
808	UV990	0.19	0.00	214.87	1.75	0.00	0.00	213.17	0.05	0 12:02	0 12:12	11.51
809	UV995	0.17	0.07	215.09	2.09	0.00	0.00	213.06	0.06	0 12:02	0 12:02	0.01

Total Time Flooded (min)
0.00
0.00
0.00
8.00
12.00
18.00
19.00
55.00
10.00
0.00
0.00
9.00
0.00
0.00
0.00
0.00
0.00
16.00
16.00
13.00
0.00
0.00
14.00
0.00
13.00
0.00

Channel Results

SN	Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Froude Number	Reported Condition
		(cms)	(days hh:mm)	(cms)		(m/sec)	(min)	(m)		(min)		
1	Link-100	2.73	0 12:13	9.64	0.28	2.26	0.82	0.56	0.76	0.00	1.38	
2	Link-101	3.39	0 12:13	11.66	0.29	2.82	0.09	0.59	0.80	0.00	1.63	
3	Link-102	3.88	0 12:13	12.65	0.31	2.60	0.70	0.66	0.88	0.00	1.65	
4	Link-103	4.38	0 12:13	11.11	0.39	2.21	0.14	0.75	1.00	46.00	1.34	
5	Link-104	5.34	0 12:13	11.07	0.48	2.31	0.35	0.75	1.00	57.00	0.50	
6	Link-105	2.93	0 12:41	10.64	0.27	1.26	0.17	0.75	1.00	71.00	0.41	
7	Link-106	3.07	0 12:41	8.68	0.35	1.37	0.30	0.75	1.00	71.00	0.84	
8	Link-11	0.73	0 12:12	6.74	0.11	1.81	0.66	0.32	0.43	0.00	1.22	
9	Link-12	0.75	0 12:12	13.03	0.06	1.27	0.15	0.43	0.58	0.00	0.80	
10	Link-13	1.16	0 12:12	6.93	0.17	1.22	0.09	0.54	0.72	0.00	0.79	
11	Link-14	1.45	0 12:12	6.62	0.22	1.55	0.35	0.52	0.70	0.00	0.99	
12	Link-15	1.62	0 12:12	7.76	0.21	1.52	0.38	0.55	0.74	0.00	1.04	
13	Link-16	2.21	0 12:12	8.27	0.27	1.63	0.22	0.58	0.79	0.00	0.99	
14	Link-17	2.28	0 12:12	6.31	0.36	2.26	0.38	0.53	0.72	0.00	1.11	
15	Link-18	2.68	0 12:12	10.17	0.26	1.77	1.89	0.61	0.82	0.00	0.89	
16	Link-19	0.59	0 12:12	13.37	0.04	2.32	0.60	0.21	0.28	0.00	1.70	
17	Link-20	0.93	0 12:12	13.56	0.07	2.55	0.40	0.28	0.38	0.00	1.93	
18	Link-21	1.17	0 12:12	18.38	0.06	3.49	0.06	0.26	0.36	0.00	2.50	
19	Link-22	1.18	0 12:12	21.08	0.06	2.53	0.38	0.34	0.47	0.00	2.04	
20	Link-23	1.32	0 12:12	11.81	0.11	1.46	0.12	0.53	0.72	0.00	1.22	
21	Link-24	1.42	0 12:12	8.23	0.17	1.50	0.14	0.63	0.84	0.00	1.23	
22	Link-25	1.43	0 12:12	13.23	0.11	1.38	0.13	0.71	0.95	0.00	1.32	
23	Link-26	0.67	0 11:57	8.13	0.08	0.82	0.38	0.75	1.00	37.00	0.51	
24	Link-27	0.41	0 12:04	10.96	0.04	1.90	0.18	0.18	0.24	0.00	1.37	
25	Link-28	0.41	0 12:07	9.95	0.04	1.19	0.65	0.29	0.39	0.00	1.01	
26	Link-29	0.51	0 12:12	6.30	0.08	0.81	0.27	0.44	0.58	0.00	0.68	
27	Link-30	1.05	0 12:12	7.34	0.14	1.28	0.38	0.49	0.66	0.00	0.56	
28	Link-31	1.06	0 12:12	3.80	0.28	1.55	0.37	0.46	0.62	0.00	0.55	
29	Link-32	1.09	0 12:12	11.08	0.10	1.88	0.16	0.43	0.57	0.00	1.22	
30	Link-33	1.49	0 12:12	7.93	0.19	1.44	0.67	0.55	0.74	0.00	0.84	
31	Link-34	1.68	0 12:12	5.57	0.30	1.16	0.07	0.62	0.83	0.00	0.71	
32	Link-35	2.17	0 12:12	7.53	0.29	1.60	0.24	0.58	0.79	0.00	0.94	
33	Link-36	2.10	0 12:12	6.32	0.33	2.78	0.11	0.46	0.63	0.00	1.25	
34	Link-37	1.90	0 12:12	15.00	0.13	3.42	0.34	0.39	0.54	0.00	1.86	
35	Link-38	2.60	0 12:12	13.10	0.20	2.42	0.39	0.59	0.80	0.00	1.73	
36	Link-39	3.17	0 12:12	12.88	0.25	1.41	0.13	0.75	1.00	7.00	1.12	
37	Link-40	3.44	0 12:07	14.84	0.23	1.95	0.04	0.75	1.00	29.00	1.27	
38	Link-41	2.21	0 12:03	7.85	0.28	1.76	0.55	0.75	1.00	30.00	1.09	
39	Link-42	1.91	0 12:03	8.06	0.24	1.84	0.17	0.75	1.00	36.00	1.13	
40	Link-43	1.01	0 12:04	18.47	0.05	1.25	0.14	0.57	0.77	0.00	1.06	
41	Link-44	1.56	0 12:12	10.36	0.15	1.72	0.09	0.51	0.69	0.00	1.09	
42	Link-45	1.56	0 12:12	7.35	0.21	2.44	0.30	0.44	0.58	0.00	1.35	
43	Link-46	1.56	0 12:12	14.70	0.11	3.52	0.16	0.33	0.45	0.00	2.10	
44	Link-47	1.53	0 12:12	14.58	0.10	2.72	0.52	0.43	0.58	0.00	1.62	
45	Link-48	3.05	0 12:12	10.84	0.28	1.72	1.25	0.66	0.88	0.00	0.87	
46	Link-49	0.79	0 12:12	9.05	0.09	2.02	0.11	0.28	0.40	0.00	1.23	
47	Link-50	0.81	0 12:12	10.01	0.08	1.21	0.85	0.43	0.60	0.00	0.44	
48	Link-51	1.76	0 12:12	3.80	0.46	1.21	0.88	0.59	0.81	0.00	0.62	
49	Link-52	1.55	0 12:13	9.13	0.17	1.42	0.04	0.53	0.73	0.00	0.81	
50	Link-53	1.84	0 12:13	11.26	0.16	2.30	0.10	0.47	0.65	0.00	1.37	
51	Link-54	1.81	0 12:13	8.41	0.22	2.04	0.96	0.50	0.67	0.00	1.14	
52	Link-55	2.74	0 12:13	9.03	0.30	2.15	0.45	0.57	0.77	0.00	1.22	
53	Link-56	2.78	0 12:14	7.93	0.35	2.39	0.36	0.56	0.74	0.00	1.41	
54	Link-57	2.64	0 12:14	15.37	0.17	3.24	0.09	0.49	0.65	0.00	2.15	
55	Link-58	2.63	0 12:14	16.22	0.16	3.15	0.16	0.49	0.66	0.00	1.82	
56	Link-59	3.56	0 12:14	13.64	0.26	2.56	0.29	0.60	0.80	0.00	1.49	
57	Link-60	3.73	0 12:14	8.76	0.43	3.60	0.11	0.58	0.77	0.00	1.77	
58	Link-61	0.43	0 12:00	17.52	0.02	1.58	0.12	0.25	0.33	0.00	1.32	
59	Link-62	0.77	0 12:12	8.77	0.09	1.59	0.10	0.35	0.48	0.00	1.23	
60	Link-63	0.76	0 12:12	11.41	0.07	1.73	0.11	0.33	0.44	0.00	1.22	
61	Link-64	0.71	0 12:12	7.79	0.09	2.10	0.18	0.27	0.36	0.00	1.31	
62	Link-65	0.72	0 12:12	12.98	0.06	2.08	0.33	0.33	0.45	0.00	1.34	
63	Link-66	4.57	0 12:14	7.81	0.59	3.13	0.84	0.49	0.98	0.00	0.88	
64	Link-67	6.09	0 12:14	10.45	0.58	2.63	0.13	0.75	1.00	39.00	1.34	
65	Link-68	6.09	0 12:14	12.34	0.49	2.70	0.10	0.75	1.00	46.00	1.44	
66	Link-69	5.37	0 12:12	7.76	0.69	2.32	0.58	0.75	1.00	52.00	1.28	
67	Link-70	2.56	0 12:37	13.04	0.20	1.16	0.14	0.75	1.00	74.00	0.66	
68	Link-71	0.10	0 12:12	11.54	0.01	1.07	0.24	0.08	0.11	0.00	1.09	
69	Link-72	0.09	0 12:12	9.07	0.01	1.10	0.07	0.08	0.11	0.00	1.11	
70	Link-73	0.10	0 12:12	12.31	0.01	0.63	0.26	0.14	0.19	0.00	0.42	
71	Link-74	0.34	0 12:12	6.46	0.05	1.52	0.48	0.19	0.25	0.00	0.93	
72	Link-75	0.34	0 12:12	9.35	0.04	0.91	0.64	0.29	0.39	0.00	0.44	
73	Link-76	0.69	0 12:12	3.91	0.18	1.38	0.74	0.36	0.49	0.00	0.59	
74	Link-78	0.33	0 12:12	7.23	0.05	1.65	0.11	0.16	0.23	0.00	1.14	
75	Link-79	0.33	0 12:12	13.99	0.02	1.27	0.40	0.21	0.29	0.00	0.78	
76	Link-80	1.05	0 12:12	9.25	0.11	1.54	0.75	0.48	0.68	0.00	0.99	
77	Link-81	2.42	0 12:12	12.08	0.20	1.73	0.12	0.71	0.98	0.00	1.29	
78	Link-82	2.43	0 12:12	7.76	0.31	1.60	0.27	0.75	1.00	10.00	1.00	
79	Link-83	2.16	0 12:15	7.23	0.30	1.77	0.29	0.75	1.00	13.00	1.03	
80	Link-84	1.92	0 12:08	8.51	0.23	2.30	0.19	0.75	1.00	16.00	1.38	
81	Link-85	1.92	0 12:08	14.16	0.14	1.29	0.31	0.75	1.00	20.00	0.59	
82	Link-86	0.58	0 12:12	28.55	0.02	2.24	0.08	0.24	0.36	0.00	1.74	
83	Link-87	0.91	0 12:12	9.24	0.10	1.16	0.34	0.53	0.75	0.00	0.79	
84	Link-88	0.37	0 12:12	17.82	0.02	1.42	0.08	0.22	0.30	0.00	1.10	
85	Link-89	0.37	0 12:12	5.75	0.06	1.27	0.31	0.27	0.38	0.00	0.82	
86	Link-90	0.52	0 12:12	9.23	0.06	1.40	0.20	0.36	0.55	0.00	1.38	
87	Link-91	0.90	0 12:15	16.88	0.05	1.09	0.08	0.56	0.83	0.00	0.57	

Channel Results

SN	Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Froude Number	Reported Condition
		(cms)	(days hh:mm)	(cms)		(m/sec)	(min)	(m)		(min)		
88	Link-92	0.10	0 12:11	7.60	0.01	0.46	0.41	0.33	0.49	0.00	0.33	
89	Link-93	0.08	0 12:12	33.09	0.00	0.21	0.62	0.39	0.52	0.00	0.10	
90	Link-96	0.95	0 12:12	7.20	0.13	1.61	0.18	0.43	0.57	0.00	0.95	
91	Link-97	1.18	0 12:12	6.59	0.18	1.79	1.67	0.45	0.60	0.00	0.98	
92	Link-98	1.73	0 12:12	6.62	0.26	1.49	1.46	0.56	0.76	0.00	0.84	
93	Link-99	2.87	0 12:12	7.15	0.40	2.28	0.17	0.57	0.77	0.00	1.18	

Pipe Results

SN	Element ID	Peak Flow (cms)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cms)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (m/sec)	Travel Time (min)	Peak Flow Depth (m)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1	Link-01	0.25	0 12:12	1.28	0.20	1.83	0.03	0.36	0.80	0.00	1.50	Calculated
2	Link-07	0.42	0 12:14	0.59	0.70	1.97	0.53	0.58	1.00	16.00	1.27	SURCHARGED
3	Link-08	0.68	0 12:03	0.69	0.98	2.99	0.57	0.47	0.81	0.00	1.95	Calculated
4	Link-09	0.68	0 12:03	1.07	0.63	3.71	0.29	0.38	0.65	0.00	2.52	Calculated
5	Link-10	0.68	0 12:03	1.05	0.65	3.86	0.24	0.36	0.63	0.00	2.54	Calculated
6	Link-94	1.04	0 13:47	2.01	0.52	2.28	0.63	0.83	0.97	0.00	1.41	Calculated
7	Link-95	0.89	0 14:38	1.74	0.51	2.11	0.30	0.83	0.97	0.00	1.21	Calculated
8	P1131	0.17	0 12:27	0.50	0.33	1.52	0.09	0.44	1.00	54.00	1.42	SURCHARGED
9	P1132	0.17	0 12:28	0.23	0.73	1.06	1.66	0.44	1.00	56.00	0.61	SURCHARGED
10	P1324	0.00	0 00:00	0.13	0.00	0.00		0.01	0.02	0.00	0.00	Calculated
11	P1424	0.01	0 12:43	3.05	0.00	0.06	0.42	0.39	0.87	0.00	0.00	Calculated
12	P1440	0.08	0 12:12	0.55	0.15	1.93	0.07	0.14	0.32	0.00	1.99	Calculated
13	P1441	0.08	0 12:12	0.42	0.20	1.51	0.82	0.27	0.65	0.00	1.30	Calculated
14	P1484	0.44	0 12:09	0.30	1.44	2.82	0.05	0.44	1.00	178.00	1.82	SURCHARGED
15	P1485	0.44	0 12:09	2.54	0.17	2.83	0.00	0.44	1.00	184.00	0.28	SURCHARGED
16	P1487	0.18	0 12:02	1.63	0.11	1.17	0.01	0.44	1.00	230.00	0.08	SURCHARGED
17	P1488	0.38	0 12:11	0.88	0.42	2.42	0.02	0.44	1.00	12.00	0.17	SURCHARGED
18	P1489	0.01	0 10:55	0.28	0.02	0.14	1.12	0.44	1.00	225.00	0.00	SURCHARGED
19	P1531	0.17	0 12:04	0.30	0.55	1.26	0.11	0.44	1.00	36.00	1.09	SURCHARGED
20	P1532	0.14	0 12:00	0.23	0.60	1.02	0.69	0.44	1.00	37.00	0.76	SURCHARGED
21	P1649	0.00	0 00:00	0.13	0.00	0.00		0.00	0.00	0.00	0.00	Calculated
22	P1700 (1)	0.09	0 12:12	0.56	0.16	1.63	0.02	0.17	0.39	0.00	1.83	Calculated
23	P1706	0.00	0 00:00	0.13	0.00	0.00		0.00	0.01	0.00	0.00	Calculated
24	PCE10	0.51	0 12:13	0.58	0.88	2.17	0.39	0.55	0.95	0.00	1.65	Calculated
25	PCE100	0.50	0 12:11	0.36	1.38	3.27	0.07	0.41	0.93	0.00	1.52	> CAPACITY
26	PCE105	0.20	0 12:12	0.38	0.53	1.55	0.07	0.35	0.81	0.00	1.64	Calculated
27	PCE110	0.22	0 12:12	0.45	0.47	1.73	0.09	0.33	0.74	0.00	1.49	Calculated
28	PCE115	0.26	0 12:12	0.62	0.42	2.15	0.15	0.27	0.46	0.00	1.68	Calculated
29	PCE120	0.26	0 12:12	0.96	0.27	2.09	0.32	0.33	0.58	0.00	1.45	Calculated
30	PCE125	0.34	0 12:10	0.30	1.13	2.20	0.99	0.44	1.00	36.00	0.81	SURCHARGED
31	PCE130	0.55	0 12:19	0.73	0.75	4.88	0.02	0.30	0.68	0.00	3.46	Calculated
32	PCE135	0.13	0 12:00	0.72	0.17	1.59	0.09	0.25	0.56	0.00	1.50	Calculated
33	PCE135{SW_GEORGE EAST C6}	0.37	0 12:28	0.90	0.41	2.37	0.15	0.44	1.00	28.00	1.10	SURCHARGED
34	PCE140	0.03	0 12:02	0.99	0.03	0.21	0.10	0.44	1.00	78.00	0.00	SURCHARGED
35	PCE145	0.32	0 12:16	0.37	0.85	2.04	0.16	0.44	1.00	30.00	0.39	SURCHARGED
36	PCE150	0.32	0 12:12	0.97	0.33	3.78	0.05	0.44	1.00	8.00	4.01	SURCHARGED
37	PCE155	0.92	0 12:02	1.89	0.49	1.86	0.41	0.85	1.00	19.00	1.13	SURCHARGED
38	PCE160	1.10	0 12:12	1.04	1.05	1.96	0.56	0.85	1.00	22.00	1.13	SURCHARGED
39	PCE165	1.36	0 12:11	2.01	0.68	2.39	0.24	0.85	1.00	22.00	1.61	SURCHARGED
40	PCE170	1.53	0 12:09	2.26	0.68	2.88	0.20	0.85	1.00	25.00	1.80	SURCHARGED
41	PCE175	1.90	0 12:04	2.26	0.84	3.33	0.52	0.85	1.00	27.00	1.67	SURCHARGED
42	PCE180	1.87	0 12:03	2.26	0.83	3.27	0.10	0.85	1.00	48.00	1.87	SURCHARGED
43	PCE185	1.21	0 12:13	2.26	0.53	2.11	0.37	0.85	1.00	54.00	0.40	SURCHARGED
44	PCE190	0.72	0 12:41	2.58	0.28	1.26	0.11	0.85	1.00	66.00	0.39	SURCHARGED
45	PCE195	0.72	0 12:41	1.80	0.40	1.43	0.27	0.85	1.00	66.00	0.85	SURCHARGED
46	PCE205	0.29	0 12:12	1.13	0.25	2.04	0.14	0.37	0.85	0.00	0.31	Calculated
47	PCE210	0.26	0 12:12	1.05	0.25	1.69	0.13	0.44	1.00	11.00	0.43	SURCHARGED
48	PCE215	0.29	0 12:03	0.48	0.61	1.87	0.25	0.44	1.00	22.00	0.64	SURCHARGED
49	PCE220	0.34	0 12:09	0.49	0.70	2.27	0.06	0.44	1.00	19.00	2.01	SURCHARGED
50	PCE225	0.34	0 12:10	0.48	0.71	2.20	0.36	0.44	1.00	19.00	0.61	SURCHARGED
51	PCE230	0.25	0 12:30	0.73	0.35	1.62	0.20	0.44	1.00	38.00	0.59	SURCHARGED
52	PCE240	0.59	0 12:05	0.93	0.64	2.63	0.08	0.57	0.99	0.00	1.95	Calculated
53	PCE245	0.66	0 12:19	0.93	0.71	2.62	0.68	0.57	0.99	0.00	1.82	Calculated
54	PCE25	0.65	0 12:14	0.91	0.72	2.80	0.10	0.49	0.84	0.00	2.13	Calculated
55	PCE250	0.46	0 12:13	0.93	0.50	2.29	0.10	0.58	1.00	53.00	1.60	SURCHARGED
56	PCE255	0.58	0 12:12	1.02	0.57	3.73	0.03	0.44	1.00	6.00	1.59	SURCHARGED
57	PCE260	0.46	0 12:04	1.34	0.35	2.98	0.02	0.44	1.00	39.00	1.10	SURCHARGED
58	PCE265	0.46	0 12:06	1.21	0.38	3.09	0.03	0.44	1.00	14.00	3.92	SURCHARGED
59	PCE270266	0.33	0 12:08	0.79	0.42	2.73	0.04	0.44	1.00	16.00	2.58	SURCHARGED
60	PCE275267	0.33	0 12:07	0.44	0.75	2.13	0.96	0.44	1.00	18.00	0.13	SURCHARGED
61	PCE285	0.03	0 12:03	1.22	0.03	0.35	0.22	0.34	0.78	0.00	0.00	Calculated
62	PCE290	0.11	0 12:05	1.10	0.09	0.67	0.03	0.44	1.00	15.00	0.00	SURCHARGED
63	PCE295	0.08	0 12:02	0.45	0.17	1.75	0.04	0.44	1.00	8.00	2.36	SURCHARGED
64	PCE300	0.08	0 12:02	1.23	0.06	0.77	0.12	0.44	1.00	9.00	0.90	SURCHARGED
65	PCE305	0.41	0 12:10	0.99	0.41	1.85	0.10	0.58	1.00	20.00	1.56	SURCHARGED
66	PCE310	0.41	0 12:10	0.52	0.78	1.52	1.18	0.58	1.00	24.00	0.88	SURCHARGED
67	PCE315	0.53	0 12:12	0.73	0.73	1.99	0.51	0.58	1.00	47.00	1.37	SURCHARGED
68	PCE320	0.85	0 12:19	1.89	0.45	1.48	0.27	0.85	1.00	64.00	0.41	SURCHARGED
69	PCE325	0.32	0 12:21	0.85	0.38	2.26	0.09	0.44	1.00	25.00	1.91	SURCHARGED
70	PCE330	0.13	0 12:12	0.91	0.15	0.85	0.21	0.44	1.00	21.00	0.00	SURCHARGED
71	PCE335	0.47	0 12:05	2.23	0.21	3.03	0.02	0.44	1.00	17.00	1.94	SURCHARGED
72	PCE35	0.78	0 12:14	1.19	0.65	3.22	0.15	0.49	0.84	0.00	1.97	Calculated
73	PCE40	1.30	0 12:14	2.77	0.47	3.01	0.24	0.60	0.71	0.00	1.61	Calculated
74	PCE45	1.13	0 12:14	1.78	0.63	3.03	0.13	0.58	0.68	0.00	2.15	Calculated
75	PCE5	0.56	0 12:10	0.66	0.84	2.14	0.45	0.57	0.98	0.00	1.36	Calculated
76	PCE50	0.73	0 12:21	0.89	0.82	2.71	0.22	0.58	1.00	24.00	0.85	SURCHARGED
77	PCE55	0.85	0 12:16	1.12	0.75	1.91	0.94	0.75	1.00	26.00	0.46	SURCHARGED
78	PCE60	1.01	0 12:11	1.08	0.93	2.28	0.12	0.75	1.00	27.00	0.68	SURCHARGED
79	PCE65	1.48	0 12:11	1.61	0.92	4.20	0.08	0.62	0.87	0.00	2.50	Calculated
80	PCE70	0.20	0 12:12	0.20	1.02	1.84	0.12	0.30	0.68	0.00	1.40	> CAPACITY
81	PCE75	0.20	0 12:12	0.70	0.29	1.62	0.20	0.33	0.75	0.00	0.21	Calculated
82	PCE80	0.14	0 12:12	4.37	0.03	0.51	0.06	0.72	0.96	0.00	0.11	Calculated
83	PCE85	0.21	0 12:11	1.75	0.12	1.35	0.02	0.44	1.00	22.00	0.21	SURCHARGED
84	PCE90	0.52	0 12:25	1.54	0.34	3.36	0.01	0.44	1.00	30.00	3.27	SURCHARGED
85	PCE95	0.52	0 12:25	0.47	1.11	3.36	0.08	0.44	1.00	39.00	1.21	SURCHARGED
86	PCGC10	1.22	0 12:22	1.45	0.84	5.13	0.16	0.58	1.00	20.00	3.50	SURCHARGED
87	PCGC15	1.57	0 12:02	1.84	0.86	5.98	0.18	0.58	1.00	20.00	3.74	SURCHARGED

Pipe Results

SN	Element ID	Peak Flow (cms)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cms)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (m/sec)	Travel Time (min)	Peak Flow Depth (m)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
88	PCGC20	1.27	0 11:57	1.84	0.69	5.52	0.07	0.47	0.81	0.00	4.08	Calculated
89	PCGC30	0.43	0 12:02	0.91	0.48	3.37	0.07	0.44	1.00	19.00	2.65	SURCHARGED
90	PCGC35	0.42	0 12:04	0.38	1.09	2.68	1.17	0.44	1.00	22.00	1.08	SURCHARGED
91	PCGC40	0.40	0 12:10	0.44	0.90	2.56	0.25	0.44	1.00	15.00	2.01	SURCHARGED
92	PCGC45	0.40	0 12:07	0.46	0.87	2.50	0.11	0.45	1.00	27.00	0.79	SURCHARGED
93	PCGC5	0.75	0 12:00	0.80	0.93	2.88	0.31	0.58	1.00	31.00	1.90	SURCHARGED
94	PCGC50	0.50	0 12:09	0.41	1.21	3.20	0.21	0.44	1.00	18.00	1.53	SURCHARGED
95	PCGC55	0.44	0 12:06	0.28	1.57	2.83	0.07	0.44	1.00	25.00	0.77	SURCHARGED
96	PCGC60	0.63	0 12:12	0.78	0.81	4.06	0.15	0.43	1.00	2.00	2.10	SURCHARGED
97	PCGC65	0.26	0 12:01	0.49	0.52	1.75	0.07	0.44	1.00	43.00	1.91	SURCHARGED
98	PCGC70	0.17	0 12:11	0.20	0.82	1.08	0.10	0.44	1.00	43.00	0.50	SURCHARGED
99	PCGC75	0.38	0 12:02	0.30	1.29	2.50	0.06	0.43	0.96	0.00	1.27	> CAPACITY
100	PGE10	0.23	0 11:59	0.21	1.06	1.45	0.20	0.44	1.00	135.00	0.69	SURCHARGED
101	PGE100	0.19	0 12:09	0.39	0.48	1.22	0.22	0.44	1.00	51.00	0.82	SURCHARGED
102	PGE105	0.19	0 12:35	0.54	0.36	1.24	0.10	0.44	1.00	50.00	1.14	SURCHARGED
103	PGE110	0.22	0 12:12	0.36	0.62	1.96	0.09	0.28	0.68	0.00	1.57	Calculated
104	PGE115	0.20	0 12:12	0.36	0.55	1.49	0.68	0.34	0.79	0.00	0.37	Calculated
105	PGE120	0.00	0 11:55	0.13	0.02	0.11	9.27	0.44	1.00	30.00	0.00	SURCHARGED
106	PGE125	0.21	0 12:12	0.45	0.46	1.32	0.02	0.44	1.00	14.00	0.43	SURCHARGED
107	PGE130	0.00	0 00:00	0.70	0.00	0.00		0.19	0.46	0.00	0.00	Calculated
108	PGE135	0.01	0 12:01	0.27	0.04	0.10	4.84	0.42	0.96	0.00	0.00	Calculated
109	PGE140	0.40	0 12:03	0.51	0.78	2.57	0.23	0.44	1.00	31.00	2.07	SURCHARGED
110	PGE145	0.40	0 12:03	0.59	0.67	2.57	0.02	0.44	1.00	40.00	1.39	SURCHARGED
111	PGE15	0.23	0 12:46	0.21	1.06	1.45	0.17	0.44	1.00	124.00	0.70	SURCHARGED
112	PGE150	0.40	0 12:03	0.25	1.61	2.57	0.25	0.44	1.00	39.00	1.08	SURCHARGED
113	PGE155	0.40	0 12:03	0.25	1.59	2.58	0.24	0.44	1.00	23.00	1.21	SURCHARGED
114	PGE160	0.04	0 20:05	0.65	0.06	0.50	0.33	0.23	0.51	0.00	0.23	Calculated
115	PGE165	0.01	0 12:01	0.30	0.02	0.10	19.81	0.22	0.50	0.00	0.10	Calculated
116	PGE170	0.14	0 12:12	0.28	0.50	1.06	1.68	0.44	1.00	25.00	1.35	SURCHARGED
117	PGE175	0.14	0 12:12	0.48	0.29	0.90	0.31	0.44	1.00	78.00	0.17	SURCHARGED
118	PGE180	0.42	0 12:04	0.40	1.03	2.67	0.09	0.44	1.00	98.00	1.20	SURCHARGED
119	PGE185	0.42	0 12:04	0.27	1.55	2.68	0.57	0.44	1.00	3.00	1.67	SURCHARGED
120	PGE190	0.21	0 12:18	0.28	0.75	1.44	0.17	0.43	0.97	0.00	1.13	Calculated
121	PGE195	0.23	0 12:05	0.23	1.00	1.58	1.88	0.43	0.97	0.00	1.07	> CAPACITY
122	PGE20	0.23	0 11:59	0.21	1.06	1.46	0.19	0.43	0.98	0.00	0.80	> CAPACITY
123	PGE200	0.42	0 12:10	0.48	0.87	1.66	1.30	0.53	0.92	0.00	0.90	Calculated
124	PGE205	0.51	0 12:12	0.66	0.76	2.13	0.11	0.54	0.93	0.00	1.54	Calculated
125	PGE210	0.64	0 12:13	0.71	0.90	2.45	0.74	0.54	0.93	0.00	1.53	Calculated
126	PGE225	0.03	0 12:00	0.16	0.20	0.55	0.52	0.44	1.00	25.00	0.66	SURCHARGED
127	PGE230	0.03	0 11:58	0.17	0.17	0.37	2.63	0.44	1.00	31.00	0.36	SURCHARGED
128	PGE235	0.04	0 11:55	0.13	0.29	0.56	0.64	0.44	1.00	55.00	0.31	SURCHARGED
129	PGE240	0.19	0 12:11	0.51	0.37	1.65	0.06	0.44	1.00	55.00	1.96	SURCHARGED
130	PGE245	0.19	0 12:11	0.40	0.47	1.36	0.46	0.44	1.00	71.00	1.64	SURCHARGED
131	PGE25	0.23	0 11:59	0.31	0.72	1.40	0.14	0.37	0.73	0.00	0.92	Calculated
132	PGE25{SW_GEORGE EAST C5}	0.16	0 12:04	0.23	0.69	1.04	0.18	0.44	1.00	20.00	0.57	SURCHARGED
133	PGE250	0.12	0 12:02	0.40	0.29	0.74	0.30	0.44	1.00	87.00	0.33	SURCHARGED
134	PGE255	0.20	0 11:54	0.18	1.14	1.36	0.14	0.44	1.00	81.00	0.90	SURCHARGED
135	PGE26	0.66	0 12:04	1.14	0.58	2.46	0.03	0.58	1.00	13.00	2.25	SURCHARGED
136	PGE260	0.20	0 11:54	0.25	0.80	1.30	1.21	0.44	1.00	81.00	0.68	SURCHARGED
137	PGE265	0.34	0 11:57	0.14	2.35	2.18	0.07	0.44	1.00	90.00	1.11	SURCHARGED
138	PGE27	0.65	0 12:04	1.39	0.47	2.48	0.11	0.58	1.00	13.00	2.02	SURCHARGED
139	PGE270	0.34	0 11:57	0.55	0.61	2.18	0.08	0.44	1.00	90.00	1.57	SURCHARGED
140	PGE275	0.05	0 11:58	0.30	0.16	0.30	0.03	0.44	1.00	52.00	0.00	SURCHARGED
141	PGE280	0.10	0 12:14	0.22	0.46	0.65	4.16	0.44	1.00	53.00	0.10	SURCHARGED
142	PGE285	0.29	0 12:46	0.13	2.13	1.84	0.48	0.44	1.00	68.00	0.47	SURCHARGED
143	PGE290	0.39	0 12:03	0.21	1.84	2.52	0.59	0.44	1.00	21.00	1.00	SURCHARGED
144	PGE295	0.75	0 12:18	0.28	2.65	4.80	0.01	0.44	1.00	3.00	1.47	SURCHARGED
145	PGE300	0.40	0 12:18	0.40	0.98	2.55	0.07	0.44	1.00	61.00	1.84	SURCHARGED
146	PGE310	0.40	0 12:18	0.66	0.60	2.56	0.02	0.44	1.00	73.00	0.54	SURCHARGED
147	PGE315	0.23	0 12:12	0.33	0.68	1.45	0.11	0.44	1.00	3.00	1.69	SURCHARGED
148	PGE320	0.23	0 12:12	0.61	0.37	1.45	0.04	0.44	1.00	3.00	0.59	SURCHARGED
149	PGE325	0.20	0 12:12	0.30	0.68	1.29	0.10	0.44	1.00	44.00	0.89	SURCHARGED
150	PGE330	0.20	0 12:12	0.17	1.19	1.29	0.48	0.44	1.00	45.00	1.02	SURCHARGED
151	PGE335	0.20	0 12:12	0.36	0.55	1.29	0.20	0.44	1.00	47.00	0.91	SURCHARGED
152	PGE340	0.23	0 12:11	0.34	0.67	1.48	0.27	0.44	1.00	53.00	1.04	SURCHARGED
153	PGE345	0.26	0 12:00	0.25	1.04	1.64	0.87	0.44	1.00	57.00	1.38	SURCHARGED
154	PGE35	0.28	0 12:11	0.24	1.16	1.82	0.04	0.44	1.00	45.00	1.20	SURCHARGED
155	PGE350	0.42	0 01:07	0.27	1.54	2.71	0.23	0.44	1.00	63.00	0.78	SURCHARGED
156	PGE355	0.28	0 01:07	0.21	1.32	2.87	0.06	0.44	1.00	83.00	0.56	SURCHARGED
157	PGE360	0.29	0 12:39	0.22	1.32	1.85	0.22	0.44	1.00	84.00	0.67	SURCHARGED
158	PGE365	0.34	0 12:04	0.13	2.50	2.15	0.07	0.44	1.00	60.00	0.83	SURCHARGED
159	PGE370	0.34	0 12:04	0.28	1.22	2.40	0.74	0.44	1.00	53.00	1.18	SURCHARGED
160	PGE375	0.30	0 12:05	0.51	0.59	1.93	0.09	0.44	1.00	46.00	1.39	SURCHARGED
161	PGE380	0.07	0 12:30	0.53	0.13	0.80	0.17	0.44	1.00	52.00	0.61	SURCHARGED
162	PGE385	0.97	0 01:07	0.23	4.18	6.24	0.01	0.44	1.00	62.00	0.83	SURCHARGED
163	PGE390	0.32	0 01:07	0.46	0.69	2.69	0.03	0.44	1.00	62.00	1.60	SURCHARGED
164	PGE395	0.65	0 01:07	1.42	0.46	9.61	0.01	0.44	1.00	64.00	0.12	SURCHARGED
165	PGE40	0.28	0 12:15	0.39	0.72	1.81	0.33	0.44	1.00	45.00	1.60	SURCHARGED
166	PGE400	0.26	0 01:15	0.25	1.04	2.84	0.25	0.44	1.00	64.00	0.68	SURCHARGED
167	PGE405	0.14	0 12:04	0.38	0.37	0.90	0.14	0.44	1.00	64.00	0.14	SURCHARGED
168	PGE410	0.17	0 12:24	0.42	0.40	1.46	0.55	0.44	1.00	33.00	1.13	SURCHARGED
169	PGE415	0.20	0 12:32	0.28	0.73	1.39	1.25	0.44	1.00	39.00	0.88	SURCHARGED
170	PGE420	0.46	0 12:04	0.30	1.52	2.97	0.56	0.44	1.00	42.00	1.79	SURCHARGED
171	PGE425	0.46	0 12:04	0.94	0.49	2.97	0.02	0.44	1.00	42.00	1.74	SURCHARGED
172	PGE430	0.14	0 12:01	0.54	0.25	1.91	0.05	0.44	1.00	36.00	2.13	SURCHARGED
173	PGE435431	0.14	0 12:01	0.54	0.25	1.21	0.12	0.44	1.00	37.00	1.04	SURCHARGED
174	PGE440	0.34	0 12:04	0.65	0.51	2.16	0.06	0.44	1.00	44.00	1.15	SURCHARGED

Pipe Results

SN	Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Froude Number	Reported Condition
		(cms)	(days hh:mm)	(cms)		(m/sec)	(min)	(m)		(min)		
175	PGE445	0.26	0 12:13	0.73	0.35	1.65	0.25	0.44	1.00	19.00	0.99	SURCHARGED
176	PGE45	0.28	0 12:12	0.41	0.67	1.79	0.07	0.44	1.00	50.00	1.50	SURCHARGED
177	PGE450	0.26	0 12:22	0.30	0.87	1.69	0.09	0.44	1.00	36.00	1.15	SURCHARGED
178	PGE460	0.22	0 12:05	0.24	0.90	1.41	0.09	0.44	1.00	29.00	1.06	SURCHARGED
179	PGE465	0.16	0 12:00	0.38	0.43	1.44	0.15	0.44	1.00	29.00	1.59	SURCHARGED
180	PGE470	0.16	0 12:00	0.39	0.42	1.04	0.16	0.44	1.00	33.00	0.98	SURCHARGED
181	PGE475	0.17	0 12:11	0.46	0.36	1.96	0.06	0.44	1.00	27.00	2.52	SURCHARGED
182	PGE480476	0.16	0 12:11	1.30	0.13	1.05	0.02	0.44	1.00	30.00	0.71	SURCHARGED
183	PGE485	0.26	0 12:12	0.41	0.65	1.70	0.07	0.44	1.00	31.00	0.90	SURCHARGED
184	PGE490	0.26	0 12:12	0.13	1.97	1.70	0.57	0.44	1.00	34.00	0.60	SURCHARGED
185	PGE495	0.26	0 12:12	0.39	0.67	1.70	0.09	0.44	1.00	37.00	0.71	SURCHARGED
186	PGE5	0.23	0 11:59	0.21	1.06	1.45	0.51	0.44	1.00	137.00	0.77	SURCHARGED
187	PGE50	0.28	0 12:21	0.34	0.83	1.78	0.29	0.44	1.00	51.00	1.11	SURCHARGED
188	PGE500	0.26	0 12:10	0.13	1.97	1.70	0.05	0.44	1.00	37.00	0.44	SURCHARGED
189	PGE505	0.26	0 12:10	0.13	1.97	1.70	0.10	0.44	1.00	32.00	0.74	SURCHARGED
190	PGE510	0.26	0 12:10	0.29	0.90	2.04	0.27	0.44	1.00	32.00	1.70	SURCHARGED
191	PGE515	0.25	0 12:22	0.62	0.40	1.89	0.32	0.45	1.00	37.00	1.98	SURCHARGED
192	PGE520	0.14	0 12:07	0.20	0.69	0.90	0.26	0.44	1.00	63.00	0.82	SURCHARGED
193	PGE525	0.14	0 12:18	0.21	0.67	0.90	0.22	0.44	1.00	65.00	0.68	SURCHARGED
194	PGE530	0.25	0 12:23	0.23	1.08	1.58	0.60	0.44	1.00	68.00	0.68	SURCHARGED
195	PGE535	0.30	0 12:40	0.19	1.54	1.93	0.35	0.44	1.00	88.00	0.69	SURCHARGED
196	PGE540	0.58	0 12:28	0.31	1.86	3.73	0.06	0.44	1.00	69.00	0.91	SURCHARGED
197	PGE545	0.80	0 12:02	0.76	1.05	1.71	0.25	0.85	1.00	19.00	0.99	SURCHARGED
198	PGE55	0.33	0 12:40	0.29	1.15	2.12	0.81	0.44	1.00	56.00	1.32	SURCHARGED
199	PGE560	0.16	0 12:25	0.13	1.19	1.03	0.13	0.44	1.00	37.00	0.65	SURCHARGED
200	PGE565	0.11	0 12:14	0.18	0.60	0.69	0.32	0.44	1.00	63.00	0.55	SURCHARGED
201	PGE570	0.11	0 12:14	0.13	0.80	0.69	0.08	0.44	1.00	64.00	0.55	SURCHARGED
202	PGE575	0.11	0 12:14	0.30	0.37	0.69	0.04	0.44	1.00	64.00	0.78	SURCHARGED
203	PGE580	0.11	0 12:09	0.20	0.54	0.69	0.33	0.44	1.00	65.00	0.64	SURCHARGED
204	PGE585	0.40	0 12:08	2.97	0.13	2.55	0.01	0.44	1.00	19.00	1.18	SURCHARGED
205	PGE595	0.01	0 12:43	3.14	0.00	0.06	0.41	0.36	0.80	0.00	0.00	Calculated
206	PGE60	0.51	0 11:59	0.55	0.93	3.29	0.05	0.44	1.00	46.00	1.72	SURCHARGED
207	PGE600	0.03	0 12:03	1.42	0.02	0.37	0.15	0.23	0.55	0.00	0.00	Calculated
208	PGE605	0.11	0 12:03	0.47	0.24	0.93	0.21	0.44	1.00	14.00	0.00	SURCHARGED
209	PGE610	0.18	0 12:03	0.62	0.29	1.37	0.15	0.44	1.00	16.00	0.00	SURCHARGED
210	PGE65	0.59	0 12:05	0.58	1.02	2.20	0.79	0.58	1.00	42.00	1.04	SURCHARGED
211	PGE70	0.59	0 12:05	0.43	1.36	2.53	0.01	0.54	0.94	0.00	1.65	> CAPACITY
212	PGE75	0.50	0 12:12	0.82	0.61	2.14	0.11	0.47	0.83	0.00	1.56	Calculated
213	PGE80	0.52	0 12:13	0.61	0.86	2.13	0.91	0.50	0.87	0.00	1.26	Calculated
214	PGE90	0.02	0 11:58	0.54	0.04	0.13	0.12	0.44	1.00	48.00	0.00	SURCHARGED
215	PGE95	0.19	0 12:11	0.41	0.47	1.69	0.09	0.44	1.00	48.00	1.64	SURCHARGED
216	PLE0	1.18	0 12:14	2.53	0.47	2.48	1.05	0.66	0.78	0.00	0.78	Calculated
217	PLE10	1.44	0 12:14	1.28	1.12	2.52	0.11	0.85	1.00	43.00	1.02	SURCHARGED
218	PLE100	0.42	0 12:12	0.35	1.20	2.67	0.07	0.44	1.00	14.00	1.43	SURCHARGED
219	PLE1000	1.32	0 12:12	1.37	0.96	2.31	0.19	0.85	1.00	219.00	0.80	SURCHARGED
220	PLE1005	1.01	0 14:48	2.19	0.46	1.76	0.09	0.85	1.00	222.00	0.78	SURCHARGED
221	PLE1010	1.04	0 11:52	1.35	0.77	1.81	0.28	0.85	1.00	231.00	0.52	SURCHARGED
222	PLE1015	1.25	0 12:12	2.04	0.61	3.43	0.53	0.52	0.61	0.00	1.88	Calculated
223	PLE1020	0.32	0 12:34	0.46	0.69	2.04	0.06	0.44	1.00	57.00	1.29	SURCHARGED
224	PLE1025	0.32	0 12:34	0.31	1.04	2.04	0.07	0.44	1.00	61.00	0.86	SURCHARGED
225	PLE1030	0.32	0 12:34	0.17	1.85	2.04	0.50	0.44	1.00	34.00	1.04	SURCHARGED
226	PLE1035	0.51	0 12:01	0.62	0.81	3.29	0.07	0.44	1.00	22.00	2.60	SURCHARGED
227	PLE1040	0.65	0 12:02	0.75	0.87	4.26	0.14	0.44	1.00	20.00	3.33	SURCHARGED
228	PLE1045	0.64	0 12:02	0.74	0.86	4.74	0.18	0.38	0.85	0.00	3.47	Calculated
229	PLE105	0.42	0 12:12	0.51	0.82	2.69	0.02	0.43	0.98	0.00	1.61	Calculated
230	PLE1055	0.15	0 12:12	0.48	0.31	2.41	0.17	0.18	0.41	0.00	2.02	Calculated
231	PLE1060	0.27	0 12:12	0.48	0.56	1.86	0.35	0.41	0.98	0.00	1.21	Calculated
232	PLE1065	0.27	0 12:12	0.21	1.26	1.71	0.06	0.44	1.00	11.00	0.79	SURCHARGED
233	PLE1070	0.27	0 12:12	0.21	1.26	1.73	0.05	0.44	1.00	6.00	0.90	SURCHARGED
234	PLE1075	0.48	0 12:12	0.48	1.01	3.10	0.16	0.44	1.00	11.00	2.00	SURCHARGED
235	PLE1080	0.48	0 12:12	0.42	1.15	3.10	0.22	0.44	1.00	0.00	1.91	SURCHARGED
236	PLE1090	0.12	0 12:12	0.48	0.24	2.11	0.09	0.17	0.38	0.00	1.97	Calculated
237	PLE1095	0.29	0 12:58	0.43	0.66	1.84	0.04	0.44	1.00	67.00	1.45	SURCHARGED
238	PLE110	0.09	0 12:12	0.26	0.34	1.65	0.11	0.16	0.38	0.00	1.41	Calculated
239	PLE1100	0.29	0 12:58	0.50	0.57	1.84	0.07	0.44	1.00	67.00	1.55	SURCHARGED
240	PLE1105	0.29	0 12:58	0.40	0.72	1.83	0.10	0.44	1.00	67.00	1.20	SURCHARGED
241	PLE1110	0.36	0 12:05	0.31	1.17	2.36	0.20	0.43	0.96	0.00	1.39	> CAPACITY
242	PLE1115	0.41	0 12:12	0.48	0.86	3.01	0.25	0.44	1.00	11.00	2.20	SURCHARGED
243	PLE1120	0.41	0 12:12	0.48	0.86	3.00	0.27	0.44	1.00	18.00	2.20	SURCHARGED
244	PLE1125	0.55	0 12:04	0.48	1.15	3.51	0.09	0.44	1.00	20.00	2.06	SURCHARGED
245	PLE1130	0.93	0 12:04	0.70	1.33	4.47	0.09	0.51	1.00	22.00	2.14	SURCHARGED
246	PLE1135	0.93	0 12:04	0.70	1.33	4.47	0.17	0.51	1.00	0.00	2.22	SURCHARGED
247	PLE1145	0.16	0 12:11	0.27	0.59	1.04	0.42	0.44	1.00	18.00	0.38	SURCHARGED
248	PLE115	0.08	0 12:12	0.50	0.17	1.12	0.44	0.21	0.49	0.00	0.71	Calculated
249	PLE1150	0.39	0 12:12	1.15	0.33	2.54	0.11	0.30	0.47	0.00	1.88	Calculated
250	PLE1155	0.39	0 12:12	1.29	0.30	1.94	0.30	0.51	0.80	0.00	1.69	Calculated
251	PLE1160	0.39	0 12:12	0.78	0.49	1.17	0.33	0.65	1.00	12.00	0.93	SURCHARGED
252	PLE1165	0.72	0 12:09	0.89	0.80	2.26	0.15	0.65	1.00	14.00	1.50	SURCHARGED
253	PLE1170	0.72	0 12:09	1.29	0.56	2.61	0.09	0.65	1.00	19.00	2.09	SURCHARGED
254	PLE1175	0.00	0 12:12	1.29	0.00	0.05	3.04	0.15	0.26	0.00	0.00	Calculated
255	PLE120	0.15	0 12:12	1.02	0.15	2.05	0.08	0.24	0.61	0.00	1.66	Calculated
256	PLE125	0.12	0 12:04	0.33	0.35	1.01	0.38	0.41	0.97	0.00	0.80	Calculated
257	PLE130	0.03	0 12:05	0.28	0.10	0.50	0.35	0.33	0.83	0.00	0.30	Calculated
258	PLE135	0.10	0 12:12	0.65	0.16	1.39	0.07	0.22	0.51	0.00	1.07	Calculated
259	PLE140	0.11	0 12:12	0.21	0.50	1.28	0.30	0.27	0.65	0.00	1.05	Calculated
260	PLE145	0.10	0 12:08	0.33	0.29	1.44	0.19	0.36	0.84	0.00	1.70	Calculated
261	PLE15	2.29	0 12:12	3.27	0.70	2.29	0.59	1.13	1.00	42.00	1.51	SURCHARGED

Pipe Results

SN	Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Froude Number	Reported Condition
		(cms)	(days hh:mm)	(cms)		(m/sec)	(min)	(m)		(min)		
262	PLE150	0.12	0 12:17	0.65	0.19	0.89	0.08	0.44	1.00	6.00	0.48	SURCHARGED
263	PLE155	0.01	0 12:12	1.34	0.01	0.16	0.62	0.24	0.54	0.00	0.07	Calculated
264	PLE160	0.15	0 12:12	0.96	0.16	3.17	0.09	0.21	0.48	0.00	2.77	Calculated
265	PLE165	0.15	0 12:12	0.47	0.32	1.91	0.34	0.37	0.84	0.00	1.97	Calculated
266	PLE170	0.32	0 12:04	0.39	0.83	2.06	0.06	0.44	1.00	13.00	1.21	SURCHARGED
267	PLE175	0.32	0 12:04	0.36	0.90	2.14	0.01	0.41	0.93	0.00	1.78	Calculated
268	PLE180	0.32	0 12:04	0.93	0.34	2.56	0.09	0.41	0.93	0.00	2.32	Calculated
269	PLE185	0.32	0 12:04	0.32	0.99	2.05	0.41	0.44	1.00	42.00	0.86	SURCHARGED
270	PLE190	0.36	0 12:00	0.38	0.95	2.34	0.07	0.44	1.00	56.00	1.57	SURCHARGED
271	PLE195	0.18	0 12:12	0.57	0.32	1.28	0.33	0.38	0.86	0.00	0.60	Calculated
272	PLE20	1.11	0 12:37	5.79	0.19	1.11	0.13	1.13	1.00	58.00	0.59	SURCHARGED
273	PLE200	0.24	0 12:06	0.37	0.65	1.53	0.81	0.44	1.00	30.00	0.83	SURCHARGED
274	PLE2000	1.77	0 12:05	1.52	1.16	3.10	0.09	0.85	1.00	68.00	1.00	SURCHARGED
275	PLE205	0.29	0 12:44	0.25	1.16	1.86	0.56	0.44	1.00	64.00	1.15	SURCHARGED
276	PLE210	0.31	0 12:44	0.33	0.95	2.00	0.19	0.44	1.00	69.00	1.06	SURCHARGED
277	PLE215	0.39	0 11:58	0.31	1.23	2.47	0.06	0.44	1.00	45.00	1.24	SURCHARGED
278	PLE220	0.52	0 11:58	0.51	1.02	2.17	0.50	0.58	1.00	38.00	1.49	SURCHARGED
279	PLE225	0.48	0 12:15	0.89	0.54	2.29	0.06	0.58	1.00	38.00	1.85	SURCHARGED
280	PLE230	0.52	0 12:02	0.89	0.59	1.96	0.55	0.58	1.00	39.00	1.51	SURCHARGED
281	PLE235	0.66	0 12:02	0.41	1.61	2.46	0.06	0.58	1.00	106.00	0.56	SURCHARGED
282	PLE240	1.16	0 12:08	1.07	1.08	4.36	0.01	0.58	1.00	36.00	1.52	SURCHARGED
283	PLE245	1.51	0 12:12	2.74	0.55	2.68	0.41	0.81	0.96	0.00	2.00	Calculated
284	PLE25	3.94	0 12:11	2.91	1.35	3.99	0.19	1.09	0.96	0.00	1.22	> CAPACITY
285	PLE250	1.15	0 12:35	3.56	0.32	2.01	0.05	0.85	1.00	57.00	1.11	SURCHARGED
286	PLE255	1.18	0 12:35	1.61	0.73	2.06	0.05	0.85	1.00	56.00	1.01	SURCHARGED
287	PLE260	1.23	0 12:35	1.76	0.70	2.15	0.24	0.85	1.00	56.00	0.94	SURCHARGED
288	PLE265	1.23	0 12:35	1.72	0.71	2.15	0.02	0.85	1.00	50.00	0.89	SURCHARGED
289	PLE270	1.47	0 12:12	1.61	0.92	2.58	0.22	0.85	1.00	48.00	1.04	SURCHARGED
290	PLE275	1.47	0 12:12	1.18	1.25	2.58	0.43	0.84	0.99	0.00	1.40	> CAPACITY
291	PLE280	1.49	0 12:05	2.76	0.54	2.62	0.25	0.84	0.99	0.00	1.70	Calculated
292	PLE285	1.29	0 11:57	1.70	0.76	2.26	0.28	0.85	1.00	63.00	1.16	SURCHARGED
293	PLE290	1.05	0 12:35	1.80	0.58	1.83	0.15	0.85	1.00	68.00	1.01	SURCHARGED
294	PLE295	1.37	0 12:25	2.16	0.64	2.40	0.07	0.85	1.00	45.00	1.05	SURCHARGED
295	PLE3000	2.43	0 12:11	1.90	1.28	4.70	0.15	0.83	0.97	0.00	1.60	> CAPACITY
296	PLE310	1.58	0 12:11	2.19	0.72	2.76	0.48	0.69	0.70	0.00	1.39	Calculated
297	PLE330	1.58	0 12:11	2.18	0.72	2.21	0.10	0.87	0.89	0.00	1.13	Calculated
298	PLE35	0.02	0 12:12	0.42	0.05	1.04	0.23	0.08	0.19	0.00	1.24	Calculated
299	PLE350	0.29	0 12:05	0.35	0.84	1.89	0.54	0.44	1.00	51.00	0.93	SURCHARGED
300	PLE355	0.18	0 12:11	0.31	0.57	1.14	1.73	0.42	1.00	1.00	0.33	SURCHARGED
301	PLE360	0.56	0 12:12	2.18	0.25	3.90	0.01	0.40	0.94	0.00	4.56	Calculated
302	PLE365	0.31	0 12:19	0.67	0.46	1.99	0.13	0.44	1.00	22.00	2.67	SURCHARGED
303	PLE370	0.09	0 11:58	0.33	0.27	0.56	0.47	0.44	1.00	57.00	0.37	SURCHARGED
304	PLE375	0.03	0 11:56	0.56	0.06	0.32	0.57	0.44	1.00	33.00	0.00	SURCHARGED
305	PLE380	0.16	0 12:06	0.32	0.50	1.07	0.14	0.44	1.00	22.00	1.21	SURCHARGED
306	PLE385	0.15	0 12:14	0.29	0.52	0.96	0.19	0.44	1.00	25.00	1.09	SURCHARGED
307	PLE390	0.15	0 12:11	0.22	0.66	0.96	0.28	0.44	1.00	27.00	0.65	SURCHARGED
308	PLE395	0.28	0 12:18	0.23	1.19	1.78	0.29	0.44	1.00	30.00	1.05	SURCHARGED
309	PLE40	0.02	0 12:12	0.36	0.06	1.16	0.05	0.08	0.18	0.00	1.42	Calculated
310	PLE400	0.07	0 11:58	0.21	0.35	1.10	0.33	0.44	1.00	44.00	0.94	SURCHARGED
311	PLE405	0.18	0 12:09	0.68	0.27	1.81	0.07	0.44	1.00	17.00	1.96	SURCHARGED
312	PLE410	0.18	0 12:04	0.33	0.56	1.19	0.24	0.44	1.00	21.00	1.23	SURCHARGED
313	PLE415	0.18	0 12:06	0.27	0.66	1.15	0.18	0.44	1.00	25.00	1.17	SURCHARGED
314	PLE420	0.16	0 12:05	0.29	0.56	1.05	0.15	0.44	1.00	28.00	0.81	SURCHARGED
315	PLE425	0.17	0 11:55	0.25	0.69	1.39	0.26	0.44	1.00	44.00	1.14	SURCHARGED
316	PLE430426	0.21	0 12:11	0.39	0.53	1.89	0.07	0.44	1.00	46.00	1.57	SURCHARGED
317	PLE440	0.47	0 12:03	0.84	0.56	1.66	0.66	0.60	1.00	48.00	0.80	SURCHARGED
318	PLE440436	0.01	0 11:58	0.47	0.02	0.07	0.87	0.44	1.00	42.00	0.00	SURCHARGED
319	PLE445	0.57	0 12:30	1.07	0.54	2.15	0.01	0.58	1.00	99.00	1.26	SURCHARGED
320	PLE45	0.02	0 12:12	0.44	0.04	0.49	0.33	0.14	0.32	0.00	0.38	Calculated
321	PLE450446	0.23	0 11:52	0.49	0.47	0.86	0.42	0.58	1.00	99.00	0.53	SURCHARGED
322	PLE455	0.28	0 12:11	0.46	0.60	1.04	0.09	0.58	1.00	98.00	0.11	SURCHARGED
323	PLE460	0.51	0 12:09	0.42	1.21	1.92	0.19	0.58	1.00	102.00	0.50	SURCHARGED
324	PLE465	0.40	0 12:30	0.57	0.70	1.49	0.10	0.58	1.00	99.00	0.75	SURCHARGED
325	PLE470	0.09	0 11:58	0.33	0.26	0.85	0.32	0.44	1.00	80.00	0.71	SURCHARGED
326	PLE475	0.09	0 11:58	0.13	0.64	0.59	0.53	0.44	1.00	84.00	0.50	SURCHARGED
327	PLE480	0.08	0 12:49	0.16	0.49	0.76	0.05	0.44	1.00	84.00	0.79	SURCHARGED
328	PLE485	0.08	0 12:49	0.25	0.32	0.53	0.52	0.44	1.00	84.00	0.41	SURCHARGED
329	PLE490	0.13	0 12:38	0.13	0.99	0.88	0.62	0.44	1.00	87.00	0.54	SURCHARGED
330	PLE495	0.18	0 12:02	0.27	0.67	1.31	0.33	0.44	1.00	87.00	1.00	SURCHARGED
331	PLE5	1.43	0 12:14	2.13	0.67	2.50	0.13	0.85	1.00	35.00	1.52	SURCHARGED
332	PLE50	0.10	0 12:12	0.23	0.42	1.49	0.49	0.19	0.43	0.00	1.14	Calculated
333	PLE500	0.12	0 13:04	0.20	0.59	0.86	1.36	0.44	1.00	94.00	0.53	SURCHARGED
334	PLE505	0.14	0 13:04	0.13	1.06	0.93	1.78	0.44	1.00	98.00	0.61	SURCHARGED
335	PLE510	0.20	0 13:03	0.35	0.55	1.40	0.15	0.44	1.00	98.00	1.10	SURCHARGED
336	PLE515	0.21	0 13:03	0.35	0.58	1.71	0.06	0.44	1.00	103.00	1.27	SURCHARGED
337	PLE520	0.21	0 13:03	0.35	0.58	1.35	0.37	0.44	1.00	103.00	1.07	SURCHARGED
338	PLE525	0.23	0 11:46	0.27	0.85	1.49	0.11	0.44	1.00	111.00	0.99	SURCHARGED
339	PLE530	0.23	0 11:46	0.37	0.63	1.49	0.10	0.44	1.00	111.00	0.97	SURCHARGED
340	PLE535	0.23	0 11:46	0.23	1.01	1.49	0.25	0.44	1.00	112.00	0.83	SURCHARGED
341	PLE540	0.30	0 12:13	0.22	1.40	1.94	0.64	0.44	1.00	111.00	0.94	SURCHARGED
342	PLE545	0.32	0 12:12	0.63	0.50	2.20	0.04	0.44	1.00	17.00	3.01	SURCHARGED
343	PLE55	0.09	0 12:12	0.33	0.28	0.84	0.68	0.29	0.66	0.00	0.38	Calculated
344	PLE550	0.32	0 12:10	1.36	0.23	2.05	0.02	0.44	1.00	65.00	0.42	SURCHARGED
345	PLE555	0.16	0 12:07	0.42	0.38	1.02	0.15	0.44	1.00	82.00	0.44	SURCHARGED
346	PLE560	0.12	0 12:05	0.36	0.35	0.80	0.19	0.44	1.00	96.00	0.21	SURCHARGED
347	PLE565	0.18	0 12:06	0.38	0.47	1.14	0.14	0.44	1.00	92.00	0.43	SURCHARGED
348	PLE570	0.06	0 12:00	0.24	0.23	0.36	0.36	0.44	1.00	100.00	0.13	SURCHARGED

Pipe Results

SN	Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Froude Number	Reported Condition
		(cms)	(days hh:mm)	(cms)		(m/sec)	(min)	(m)		(min)		
349	PLE575	0.11	0 12:20	0.57	0.20	0.73	0.20	0.44	1.00	91.00	0.24	SURCHARGED
350	PLE580	0.21	0 12:11	0.34	0.62	0.79	0.14	0.58	1.00	51.00	0.81	SURCHARGED
351	PLE585	0.21	0 12:11	0.72	0.29	0.79	0.06	0.58	1.00	52.00	0.97	SURCHARGED
352	PLE590	0.21	0 12:11	0.47	0.45	0.79	0.18	0.58	1.00	53.00	0.76	SURCHARGED
353	PLE595	0.21	0 12:11	0.41	0.51	0.79	0.07	0.58	1.00	55.00	0.79	SURCHARGED
354	PLE60	0.15	0 12:12	0.14	1.11	1.12	0.91	0.36	0.83	0.00	0.74	> CAPACITY
355	PLE600	0.21	0 12:11	1.20	0.18	0.59	0.24	0.72	1.00	56.00	0.63	SURCHARGED
356	PLE605	0.01	0 11:53	0.53	0.01	0.04	0.95	0.44	1.00	55.00	0.00	SURCHARGED
357	PLE610	0.19	0 12:03	0.56	0.35	1.66	0.02	0.44	1.00	52.00	2.43	SURCHARGED
358	PLE615	0.19	0 12:03	1.82	0.11	2.96	0.01	0.51	1.00	52.00	0.42	SURCHARGED
359	PLE620	0.22	0 12:12	0.52	0.43	2.01	0.07	0.31	0.95	0.00	2.12	Calculated
360	PLE625	0.22	0 12:12	0.56	0.40	2.46	0.06	0.38	1.00	1.00	2.33	SURCHARGED
361	PLE630	0.22	0 12:12	0.56	0.40	1.57	0.44	0.44	1.00	4.00	1.44	SURCHARGED
362	PLE635	0.46	0 12:11	0.50	0.92	2.93	0.05	0.44	1.00	14.00	2.01	SURCHARGED
363	PLE640	0.46	0 12:12	0.49	0.94	2.93	0.12	0.44	1.00	17.00	2.09	SURCHARGED
364	PLE645	0.23	0 12:01	0.18	1.25	1.57	0.06	0.44	0.98	0.00	0.83	> CAPACITY
365	PLE65	0.22	0 12:08	0.33	0.66	1.58	0.73	0.37	0.85	0.00	1.06	Calculated
366	PLE650	0.19	0 12:17	0.42	0.45	1.21	0.03	0.44	1.00	47.00	0.27	SURCHARGED
367	PLE655	0.29	0 12:10	0.51	0.58	1.88	0.05	0.44	1.00	114.00	0.07	SURCHARGED
368	PLE660	0.06	0 12:12	0.20	0.30	1.03	0.18	0.18	0.41	0.00	0.88	Calculated
369	PLE665	0.06	0 12:12	0.23	0.27	1.10	1.13	0.17	0.39	0.00	0.96	Calculated
370	PLE670	0.14	0 12:12	0.50	0.28	1.71	0.21	0.23	0.52	0.00	1.37	Calculated
371	PLE675	0.23	0 12:12	0.36	0.63	1.91	0.53	0.32	0.73	0.00	1.77	Calculated
372	PLE680	0.41	0 12:12	0.78	0.52	3.08	0.05	0.35	0.79	0.00	1.99	Calculated
373	PLE685	0.70	0 12:12	1.08	0.65	3.84	0.26	0.42	0.82	0.00	3.02	Calculated
374	PLE690	0.42	0 12:23	1.55	0.27	1.27	0.15	0.65	1.00	41.00	0.43	SURCHARGED
375	PLE695	0.09	0 12:12	0.89	0.10	1.45	0.11	0.19	0.43	0.00	1.21	Calculated
376	PLE70	0.26	0 12:03	0.44	0.60	1.72	0.12	0.44	1.00	16.00	1.45	SURCHARGED
377	PLE700	0.30	0 12:14	0.28	1.07	1.92	0.08	0.44	1.00	28.00	1.09	SURCHARGED
378	PLE705	0.30	0 12:14	0.29	1.04	2.04	0.17	0.40	0.90	0.00	1.48	> CAPACITY
379	PLE710	0.30	0 12:01	0.46	0.64	2.84	0.12	0.34	0.77	0.00	2.19	Calculated
380	PLE715	0.07	0 12:05	0.78	0.09	0.48	0.29	0.38	0.85	0.00	0.45	Calculated
381	PLE720	0.25	0 12:12	0.45	0.55	2.42	0.06	0.29	0.69	0.00	2.34	Calculated
382	PLE725	0.25	0 12:12	0.90	0.27	2.91	0.07	0.34	0.79	0.00	2.64	Calculated
383	PLE730	0.25	0 12:12	0.42	0.58	1.74	0.30	0.44	1.00	9.00	1.47	SURCHARGED
384	PLE735	0.45	0 12:11	0.54	0.82	2.87	0.10	0.44	1.00	11.00	2.71	SURCHARGED
385	PLE740	0.37	0 12:13	0.83	0.44	2.66	0.06	0.44	1.00	11.00	2.76	SURCHARGED
386	PLE745	0.37	0 12:13	0.57	0.64	2.56	0.07	0.44	1.00	12.00	2.60	SURCHARGED
387	PLE75	0.22	0 12:03	0.28	0.80	1.45	0.30	0.44	1.00	19.00	1.14	SURCHARGED
388	PLE750	0.37	0 12:13	0.70	0.52	2.37	0.09	0.44	1.00	13.00	2.21	SURCHARGED
389	PLE755	0.48	0 12:11	0.47	1.01	3.06	0.13	0.44	1.00	14.00	2.03	SURCHARGED
390	PLE760	0.40	0 12:06	0.45	0.90	2.60	0.17	0.44	1.00	18.00	1.72	SURCHARGED
391	PLE765	0.18	0 12:00	0.43	0.41	1.13	0.22	0.44	1.00	73.00	0.21	SURCHARGED
392	PLE770	0.01	0 12:04	0.51	0.01	0.16	0.51	0.44	1.00	12.00	0.00	SURCHARGED
393	PLE775	1.77	0 12:05	1.35	1.31	3.49	0.30	0.83	0.97	0.00	1.17	> CAPACITY
394	PLE780	1.09	0 13:33	1.93	0.56	2.50	0.22	0.85	1.00	175.00	1.24	SURCHARGED
395	PLE790	1.15	0 12:40	1.71	0.67	2.25	0.62	0.85	1.00	181.00	1.16	SURCHARGED
396	PLE795	1.27	0 12:12	1.58	0.80	2.42	0.33	0.85	1.00	190.00	1.25	SURCHARGED
397	PLE80	0.23	0 12:03	0.26	0.87	1.51	0.33	0.44	1.00	20.00	1.19	SURCHARGED
398	PLE805	1.27	0 12:12	1.97	0.65	2.23	0.37	0.85	1.00	196.00	0.80	SURCHARGED
399	PLE810	1.26	0 12:10	0.76	1.66	2.21	0.06	0.85	1.00	212.00	0.68	SURCHARGED
400	PLE815	1.26	0 12:10	1.75	0.72	2.21	0.20	0.85	1.00	212.00	0.76	SURCHARGED
401	PLE820	1.26	0 12:10	2.30	0.55	2.21	0.02	0.85	1.00	219.00	0.66	SURCHARGED
402	PLE825	1.20	0 12:13	2.51	0.48	2.11	0.02	0.85	1.00	214.00	0.83	SURCHARGED
403	PLE830	1.20	0 12:11	1.75	0.69	2.10	0.19	0.85	1.00	214.00	0.66	SURCHARGED
404	PLE835	0.87	0 12:14	1.22	0.72	1.52	0.09	0.85	1.00	240.00	0.53	SURCHARGED
405	PLE840	0.58	0 11:22	1.22	0.48	1.02	0.47	0.85	1.00	240.00	0.42	SURCHARGED
406	PLE845	0.58	0 11:22	1.10	0.53	1.02	0.04	0.85	1.00	244.00	0.34	SURCHARGED
407	PLE85	0.24	0 12:03	0.30	0.79	2.10	0.20	0.44	1.00	22.00	1.64	SURCHARGED
408	PLE850	1.57	0 12:17	1.30	1.20	3.21	0.19	0.71	0.83	0.00	1.42	> CAPACITY
409	PLE855	0.68	0 12:12	2.05	0.33	2.13	0.01	0.47	0.55	0.00	1.22	Calculated
410	PLE860	0.68	0 12:12	2.04	0.34	3.00	0.60	0.36	0.42	0.00	1.91	Calculated
411	PLE870	0.09	0 12:11	0.25	0.36	0.83	0.17	0.43	1.00	0.00	0.23	SURCHARGED
412	PLE875	0.17	0 12:12	0.47	0.36	1.09	0.89	0.43	1.00	0.00	0.74	SURCHARGED
413	PLE880	0.35	0 12:06	0.31	1.12	2.24	0.20	0.44	1.00	64.00	1.75	SURCHARGED
414	PLE885	0.35	0 12:06	1.01	0.35	2.24	0.04	0.44	1.00	158.00	0.24	SURCHARGED
415	PLE890	0.23	0 12:04	0.69	0.34	1.50	0.09	0.44	1.00	21.00	1.18	SURCHARGED
416	PLE895	0.21	0 12:11	1.05	0.20	2.31	0.03	0.44	1.00	73.00	2.95	SURCHARGED
417	PLE90	0.14	0 12:03	0.32	0.42	1.54	0.26	0.44	1.00	27.00	1.37	SURCHARGED
418	PLE900	0.21	0 12:12	0.71	0.29	1.33	0.16	0.44	1.00	183.00	0.08	SURCHARGED
419	PLE905	0.08	0 12:03	1.77	0.05	0.52	0.08	0.44	1.00	191.00	0.03	SURCHARGED
420	PLE910	1.04	0 13:47	2.13	0.49	1.82	0.16	0.85	1.00	196.00	0.99	SURCHARGED
421	PLE915	1.04	0 13:47	1.97	0.53	1.82	0.11	0.85	1.00	200.00	0.78	SURCHARGED
422	PLE920	1.04	0 13:47	2.44	0.43	1.82	0.03	0.85	1.00	195.00	0.78	SURCHARGED
423	PLE925	1.04	0 13:47	1.71	0.61	1.94	0.11	0.85	1.00	192.00	1.03	SURCHARGED
424	PLE930	1.21	0 12:13	2.73	0.44	2.47	0.07	0.85	1.00	192.00	1.33	SURCHARGED
425	PLE935	1.21	0 12:13	1.71	0.71	2.11	0.57	0.85	1.00	198.00	0.82	SURCHARGED
426	PLE940	1.26	0 12:13	1.60	0.79	2.21	0.03	0.85	1.00	209.00	0.65	SURCHARGED
427	PLE945	1.26	0 12:13	1.63	0.78	2.21	0.07	0.85	1.00	207.00	0.91	SURCHARGED
428	PLE950	1.26	0 12:13	1.87	0.67	2.21	0.22	0.85	1.00	207.00	0.90	SURCHARGED
429	PLE955	0.04	0 11:52	1.17	0.03	0.40	0.31	0.42	0.96	0.00	0.00	Calculated
430	PLE965	0.19	0 12:17	0.17	1.08	1.21	0.16	0.44	1.00	44.00	0.68	SURCHARGED
431	PLE970966	0.28	0 12:11	0.56	0.50	1.83	0.13	0.44	1.00	44.00	0.16	SURCHARGED
432	PLE980968	0.34	0 12:11	0.38	0.89	2.15	0.03	0.44	1.00	391.00	0.03	SURCHARGED
433	PLE985	0.00	0 11:23	0.28	0.01	0.04	1.93	0.29	0.66	0.00	0.00	Calculated
434	PLE990	0.00	0 11:23	1.33	0.00	0.02	1.33	0.38	0.85	0.00	0.00	Calculated
435	PLE995	0.33	0 12:11	0.72	0.46	2.10	0.03	0.44	1.00	279.00	0.00	SURCHARGED

Pipe Results

SN	Element ID	Peak Flow (cms)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cms)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (m/sec)	Travel Time (min)	Peak Flow Depth (m)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
436	PPP10	0.37	0 12:30	0.41	0.89	2.36	0.08	0.44	1.00	40.00	1.59	SURCHARGED
437	PPP105	0.36	0 12:03	0.65	0.55	2.30	0.06	0.44	1.00	30.00	1.73	SURCHARGED
438	PPP110	0.26	0 12:26	0.24	1.08	1.69	0.59	0.44	1.00	37.00	0.63	SURCHARGED
439	PPP115	0.22	0 12:11	0.33	0.66	1.41	0.43	0.44	1.00	44.00	0.89	SURCHARGED
440	PPP120	0.16	0 12:42	0.20	0.76	1.07	0.88	0.44	1.00	49.00	0.64	SURCHARGED
441	PPP125	0.23	0 12:03	0.13	1.70	1.58	0.16	0.44	1.00	50.00	0.99	SURCHARGED
442	PPP130	0.19	0 12:44	0.36	0.53	1.55	0.51	0.44	1.00	50.00	1.33	SURCHARGED
443	PPP135	0.25	0 12:43	0.39	0.65	1.63	0.14	0.44	1.00	59.00	1.35	SURCHARGED
444	PPP140	0.34	0 12:17	0.36	0.94	2.20	0.27	0.44	1.00	62.00	1.26	SURCHARGED
445	PPP145	0.37	0 12:05	0.26	1.43	2.38	0.20	0.44	1.00	58.00	1.18	SURCHARGED
446	PPP15	0.37	0 12:30	0.37	1.00	2.36	0.42	0.44	1.00	40.00	1.73	SURCHARGED
447	PPP150	0.36	0 12:16	0.43	0.84	2.30	0.06	0.44	1.00	48.00	1.80	SURCHARGED
448	PPP155	0.39	0 12:11	0.61	0.63	2.48	0.09	0.44	1.00	48.00	1.88	SURCHARGED
449	PPP160	0.39	0 12:11	0.60	0.65	3.37	0.05	0.31	0.70	0.00	3.33	Calculated
450	PPP165	0.44	0 12:12	0.87	0.50	4.12	0.05	0.28	0.65	0.00	3.08	Calculated
451	PPP170	0.23	0 12:12	0.48	0.49	2.82	0.32	0.23	0.52	0.00	2.10	Calculated
452	PPP180	0.44	0 12:12	0.39	1.14	2.87	0.15	0.43	0.98	0.00	1.75	> CAPACITY
453	PPP185	0.44	0 12:12	0.70	0.64	3.15	0.22	0.33	0.64	0.00	2.16	Calculated
454	PPP195	0.38	0 12:15	0.37	1.02	2.45	0.06	0.44	1.00	18.00	1.57	SURCHARGED
455	PPP20	0.37	0 12:07	0.42	0.88	2.36	0.18	0.44	1.00	54.00	1.46	SURCHARGED
456	PPP200	0.38	0 12:07	0.47	0.81	2.45	0.06	0.44	1.00	16.00	1.97	SURCHARGED
457	PPP205	0.38	0 12:08	0.47	0.81	2.45	0.37	0.44	1.00	16.00	1.47	SURCHARGED
458	PPP210	0.26	0 12:04	0.35	0.72	2.01	0.04	0.44	1.00	38.00	1.96	SURCHARGED
459	PPP215	0.24	0 12:03	1.16	0.20	1.53	0.04	0.44	1.00	38.00	0.90	SURCHARGED
460	PPP220	0.39	0 12:01	0.24	1.61	2.92	0.30	0.36	0.80	0.00	1.71	> CAPACITY
461	PPP225	0.39	0 12:01	0.82	0.48	2.92	0.18	0.36	0.80	0.00	1.69	Calculated
462	PPP230	0.50	0 12:31	0.55	0.92	3.23	0.60	0.44	1.00	106.00	1.07	SURCHARGED
463	PPP235	0.50	0 12:32	0.19	2.67	3.24	0.04	0.44	1.00	111.00	0.71	SURCHARGED
464	PPP240	0.77	0 12:04	0.85	0.90	2.88	0.10	0.58	0.99	0.00	1.81	Calculated
465	PPP245	0.77	0 12:04	1.53	0.50	3.65	0.04	0.43	0.74	0.00	2.89	Calculated
466	PPP25	0.36	0 12:51	0.67	0.54	2.31	0.04	0.44	1.00	65.00	2.10	SURCHARGED
467	PPP255	0.30	0 12:02	0.81	0.36	1.90	0.10	0.44	1.00	34.00	1.15	SURCHARGED
468	PPP260	0.39	0 13:35	0.60	0.64	2.48	0.04	0.44	1.00	105.00	1.58	SURCHARGED
469	PPP265	0.71	0 12:05	0.76	0.94	4.89	0.07	0.39	0.89	0.00	3.38	Calculated
470	PPP275	0.68	0 12:11	0.71	0.96	4.38	0.04	0.44	1.00	10.00	3.15	SURCHARGED
471	PPP280	0.68	0 12:09	0.86	0.79	4.98	0.09	0.37	0.83	0.00	3.87	Calculated
472	PPP290	0.50	0 12:12	1.09	0.46	3.91	0.04	0.33	0.77	0.00	3.79	Calculated
473	PPP295	0.50	0 12:12	0.72	0.69	4.24	0.11	0.31	0.71	0.00	3.21	Calculated
474	PPP30	0.36	0 12:51	0.63	0.57	2.31	0.04	0.44	1.00	66.00	1.44	SURCHARGED
475	PPP305	0.64	0 12:04	0.83	0.76	4.76	0.09	0.37	0.83	0.00	3.74	Calculated
476	PPP315	0.19	0 12:58	0.51	0.37	1.33	0.10	0.44	1.00	75.00	1.20	SURCHARGED
477	PPP320	0.19	0 12:58	0.23	0.84	1.27	0.16	0.44	1.00	79.00	0.90	SURCHARGED
478	PPP325	0.19	0 12:58	0.23	0.84	1.31	0.77	0.44	1.00	79.00	1.00	SURCHARGED
479	PPP330	0.19	0 12:58	0.25	0.74	1.48	0.30	0.44	1.00	86.00	1.13	SURCHARGED
480	PPP335	0.32	0 12:41	0.64	0.50	2.03	0.09	0.44	1.00	91.00	1.44	SURCHARGED
481	PPP340	0.32	0 12:41	0.21	1.51	2.03	0.52	0.44	1.00	107.00	0.82	SURCHARGED
482	PPP345	0.42	0 12:10	0.20	2.03	2.67	0.45	0.44	1.00	67.00	0.93	SURCHARGED
483	PPP35	0.36	0 12:51	0.36	1.00	2.59	0.04	0.44	1.00	11.00	1.77	SURCHARGED
484	PPP350	0.42	0 12:11	0.49	0.85	1.85	0.07	0.58	1.00	16.00	1.11	SURCHARGED
485	PPP360	0.00	0 12:00	0.61	0.00	0.05	2.47	0.27	0.49	0.00	0.00	Calculated
486	PPP365	0.36	0 12:12	0.80	0.45	2.05	0.34	0.35	0.62	0.00	1.62	Calculated
487	PPP370	0.36	0 12:12	0.67	0.53	1.86	0.21	0.38	0.68	0.00	1.37	Calculated
488	PPP375	0.72	0 12:12	1.14	0.64	3.75	0.27	0.38	0.68	0.00	2.54	Calculated
489	PPP380	1.14	0 12:12	1.67	0.68	6.20	0.24	0.37	0.65	0.00	3.84	Calculated
490	PPP390	0.25	0 12:13	0.52	0.47	1.58	0.08	0.44	1.00	73.00	1.29	SURCHARGED
491	PPP395	0.25	0 12:11	0.24	1.01	1.58	0.11	0.44	1.00	78.00	0.88	SURCHARGED
492	PPP40	0.43	0 12:11	0.76	0.56	2.75	0.09	0.44	1.00	11.00	1.71	SURCHARGED
493	PPP400	0.25	0 12:21	0.21	1.17	1.58	0.32	0.44	1.00	81.00	0.94	SURCHARGED
494	PPP405	0.14	0 12:41	0.28	0.49	1.01	0.17	0.44	1.00	87.00	0.99	SURCHARGED
495	PPP410	0.23	0 12:12	0.74	0.31	2.13	0.13	0.29	0.67	0.00	1.46	Calculated
496	PPP415	0.11	0 12:43	0.13	0.83	0.71	0.17	0.44	1.00	66.00	0.39	SURCHARGED
497	PPP420	0.21	0 12:43	0.20	1.02	1.34	0.35	0.44	1.00	66.00	0.83	SURCHARGED
498	PPP425	0.21	0 12:43	0.19	1.07	1.34	0.39	0.44	1.00	68.00	0.79	SURCHARGED
499	PPP430	0.33	0 12:39	0.28	1.18	2.14	0.41	0.44	1.00	69.00	1.34	SURCHARGED
500	PPP435	0.33	0 12:39	0.32	1.03	2.14	0.41	0.44	1.00	74.00	0.75	SURCHARGED
501	PPP440	0.50	0 12:10	0.13	3.76	3.24	0.13	0.44	1.00	73.00	0.73	SURCHARGED
502	PPP445	0.51	0 12:08	0.32	1.56	3.24	0.04	0.44	1.00	16.00	1.29	SURCHARGED
503	PPP45	0.68	0 12:11	0.70	0.96	3.01	0.08	0.46	0.78	0.00	1.85	Calculated
504	PPP450	0.26	0 12:12	0.49	0.52	1.80	0.65	0.32	0.55	0.00	1.46	Calculated
505	PPP455	0.24	0 12:12	0.98	0.24	1.13	0.16	0.43	0.74	0.00	0.76	Calculated
506	PPP460	0.29	0 12:07	0.59	0.48	1.21	0.06	0.54	0.93	0.00	0.98	Calculated
507	PPP465	0.36	0 12:12	0.49	0.74	1.49	0.36	0.52	0.90	0.00	1.14	Calculated
508	PPP470	0.40	0 12:07	0.57	0.69	1.58	0.35	0.55	0.95	0.00	1.19	Calculated
509	PPP475	0.41	0 12:05	0.62	0.66	1.59	0.21	0.58	1.00	3.00	1.11	SURCHARGED
510	PPP480	0.43	0 12:12	0.46	0.93	1.95	0.43	0.53	0.91	0.00	1.28	Calculated
511	PPP485	0.66	0 12:12	0.74	0.89	2.58	1.29	0.53	0.91	0.00	0.89	Calculated
512	PPP490	1.41	0 11:57	1.51	0.93	5.96	0.37	0.51	0.87	0.00	3.66	Calculated
513	PPP5	0.37	0 12:21	0.45	0.81	2.36	0.06	0.44	1.00	41.00	1.60	SURCHARGED
514	PPP50	0.20	0 12:12	0.51	0.39	1.73	0.53	0.31	0.70	0.00	0.06	Calculated
515	PPP500	0.14	0 12:39	0.54	0.26	0.99	0.15	0.44	1.00	64.00	0.84	SURCHARGED
516	PPP505	0.26	0 12:13	0.31	0.84	1.68	0.07	0.44	1.00	90.00	0.16	SURCHARGED
517	PPP510	0.20	0 12:11	0.29	0.68	1.29	0.09	0.44	1.00	18.00	1.32	SURCHARGED
518	PPP515	0.20	0 12:11	0.42	0.48	1.58	0.06	0.44	1.00	18.00	1.57	SURCHARGED
519	PPP520	0.20	0 12:11	0.35	0.58	1.29	0.28	0.44	1.00	19.00	0.47	SURCHARGED
520	PPP525	0.20	0 12:11	0.13	1.50	1.29	0.52	0.44	1.00	23.00	0.27	SURCHARGED
521	PPP530	0.39	0 12:16	0.27	1.43	2.52	0.07	0.44	1.00	20.00	1.41	SURCHARGED
522	PPP535	0.41	0 12:11	0.50	0.83	2.66	0.06	0.44	1.00	20.00	1.63	SURCHARGED

Pipe Results

SN	Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Froude Number	Reported Condition
		(cms)	(days hh:mm)	(cms)		(m/sec)	(min)	(m)		(min)		
523	PPP540	0.41	0 12:11	0.29	1.43	2.68	0.40	0.43	0.97	0.00	1.36	> CAPACITY
524	PPP545	0.27	0 12:16	0.13	2.00	1.72	0.07	0.44	1.00	23.00	0.58	SURCHARGED
525	PPP55	0.16	0 12:12	0.47	0.34	2.25	0.62	0.21	0.48	0.00	1.91	Calculated
526	PPP550	0.25	0 12:31	0.42	0.59	1.61	0.15	0.44	1.00	50.00	1.48	SURCHARGED
527	PPP555	0.25	0 12:32	0.31	0.81	1.61	0.19	0.44	1.00	54.00	1.32	SURCHARGED
528	PPP560	0.25	0 12:31	0.30	0.84	1.61	0.81	0.44	1.00	57.00	0.39	SURCHARGED
529	PPP565	0.32	0 12:39	0.13	2.38	2.05	0.27	0.44	1.00	73.00	0.53	SURCHARGED
530	PPP570	0.46	0 12:12	0.27	1.69	2.98	0.13	0.44	1.00	8.00	1.22	SURCHARGED
531	PPP575	0.16	0 11:56	0.58	0.27	1.03	0.12	0.44	1.00	73.00	0.43	SURCHARGED
532	PPP580	0.28	0 12:11	0.55	0.50	1.77	0.13	0.44	1.00	28.00	0.40	SURCHARGED
533	PPP585	0.37	0 12:12	0.51	0.72	2.44	0.05	0.41	0.93	0.00	2.07	Calculated
534	PPP590	0.20	0 12:12	0.32	0.62	1.34	0.10	0.39	0.91	0.00	1.30	Calculated
535	PPP595	0.60	0 12:12	1.02	0.59	3.86	0.02	0.44	1.00	3.00	3.91	SURCHARGED
536	PPP60	0.26	0 12:12	0.49	0.54	2.48	0.39	0.28	0.64	0.00	2.28	Calculated
537	PPP600	0.00	0 00:00	0.89	0.00	0.00		0.22	0.50	0.00	0.00	Calculated
538	PPP605	0.43	0 12:12	0.66	0.65	2.93	0.04	0.39	0.90	0.00	2.69	Calculated
539	PPP610	0.43	0 12:12	0.70	0.61	3.40	0.08	0.32	0.76	0.00	3.03	Calculated
540	PPP615	0.03	0 12:03	1.51	0.02	0.25	0.07	0.44	1.00	19.00	0.00	SURCHARGED
541	PPP625	0.52	0 12:06	0.63	0.83	3.37	0.22	0.44	1.00	21.00	1.73	SURCHARGED
542	PPP630	0.40	0 12:02	0.37	1.08	2.56	0.10	0.44	1.00	53.00	1.30	SURCHARGED
543	PPP635	0.47	0 11:56	0.66	0.70	3.00	0.03	0.44	1.00	53.00	2.31	SURCHARGED
544	PPP640	0.46	0 11:57	0.58	0.79	2.98	0.17	0.44	1.00	53.00	1.59	SURCHARGED
545	PPP645	0.67	0 12:07	1.03	0.65	4.38	0.09	0.44	1.00	8.00	3.90	SURCHARGED
546	PPP65	0.34	0 12:12	0.79	0.43	3.50	0.04	0.26	0.60	0.00	3.42	Calculated
547	PPP650	0.65	0 12:07	0.72	0.90	4.20	0.09	0.44	1.00	14.00	2.73	SURCHARGED
548	PPP655	0.69	0 12:04	0.86	0.80	5.16	0.10	0.37	0.84	0.00	3.92	Calculated
549	PPP665	0.38	0 12:03	0.13	2.79	2.42	0.03	0.44	0.99	0.00	1.36	> CAPACITY
550	PPP670	0.37	0 12:04	1.20	0.31	24.32	0.00	0.44	0.99	0.00	4.35	Calculated
551	PPP675	0.40	0 12:12	0.94	0.43	3.32	0.26	0.32	0.73	0.00	2.43	Calculated
552	PPP680	0.99	0 12:12	1.57	0.63	4.82	0.08	0.41	0.72	0.00	3.46	Calculated
553	PPP685	0.25	0 12:12	0.62	0.40	1.99	0.22	0.33	0.75	0.00	1.50	Calculated
554	PPP695	0.37	0 12:12	0.94	0.39	5.03	0.09	0.21	0.48	0.00	4.07	Calculated
555	PPP70	0.33	0 12:12	0.76	0.44	2.73	0.33	0.32	0.73	0.00	2.18	Calculated
556	PPP705	0.68	0 12:11	1.33	0.51	4.64	0.18	0.31	0.54	0.00	3.20	Calculated
557	PPP75	0.19	0 12:12	0.46	0.41	1.48	0.10	0.44	1.00	11.00	1.44	SURCHARGED
558	PPP80	0.14	0 11:58	0.33	0.44	1.54	0.11	0.44	1.00	34.00	1.57	SURCHARGED
559	PPP85	0.10	0 11:58	0.39	0.26	1.54	0.08	0.44	1.00	39.00	1.56	SURCHARGED
560	PPP90	0.11	0 11:46	0.63	0.17	0.75	0.37	0.58	1.00	45.00	0.49	SURCHARGED
561	PPP95	0.76	0 12:09	0.68	1.13	2.89	0.24	0.56	0.96	0.00	1.56	> CAPACITY
562	PRM10	0.08	0 12:02	0.21	0.36	0.55	1.15	0.44	1.00	23.00	0.35	SURCHARGED
563	PRM100	0.31	0 13:00	0.36	0.86	2.08	0.61	0.44	1.00	62.00	1.31	SURCHARGED
564	PRM105	0.57	0 12:10	1.24	0.46	3.82	0.04	0.44	1.00	9.00	3.36	SURCHARGED
565	PRM110	0.47	0 12:07	0.49	0.96	2.99	0.64	0.44	1.00	11.00	1.78	SURCHARGED
566	PRM115	0.37	0 12:03	0.63	0.59	2.95	0.05	0.44	1.00	26.00	3.45	SURCHARGED
567	PRM120	0.25	0 12:24	1.79	0.14	1.79	0.03	0.44	1.00	30.00	1.35	SURCHARGED
568	PRM125	0.06	0 12:12	0.76	0.08	2.57	0.14	0.26	0.59	0.00	4.05	Calculated
569	PRM130	0.06	0 12:12	2.17	0.03	0.38	0.05	0.44	1.00	26.00	0.17	SURCHARGED
570	PRM135	0.22	0 12:12	0.27	0.80	1.38	0.54	0.44	1.00	25.00	0.27	SURCHARGED
571	PRM140	0.21	0 13:06	0.14	1.50	1.32	0.12	0.44	1.00	80.00	0.77	SURCHARGED
572	PRM145	0.21	0 13:06	0.23	0.89	1.32	0.76	0.44	1.00	80.00	0.66	SURCHARGED
573	PRM15	0.16	0 12:07	0.21	0.74	1.21	0.25	0.44	1.00	26.00	0.95	SURCHARGED
574	PRM150	0.25	0 11:56	0.25	0.96	1.54	0.61	0.45	1.00	96.00	0.42	SURCHARGED
575	PRM155	0.51	0 12:03	0.22	2.33	1.93	0.20	0.58	1.00	30.00	0.68	SURCHARGED
576	PRM160	0.51	0 12:03	0.51	1.01	2.17	0.80	0.58	1.00	21.00	1.32	SURCHARGED
577	PRM165	0.64	0 12:12	0.71	0.90	2.40	1.20	0.58	1.00	21.00	1.53	SURCHARGED
578	PRM170	0.52	0 12:08	0.75	0.69	3.33	0.08	0.44	1.00	23.00	1.01	SURCHARGED
579	PRM175	0.33	0 12:08	0.67	0.49	2.10	0.16	0.44	1.00	26.00	0.61	SURCHARGED
580	PRM180	0.29	0 12:25	0.22	1.30	1.88	0.08	0.44	1.00	108.00	0.17	SURCHARGED
581	PRM185	0.27	0 12:27	0.21	1.26	1.73	1.76	0.44	1.00	33.00	0.72	SURCHARGED
582	PRM190	0.27	0 12:27	0.13	2.01	1.73	0.16	0.44	1.00	31.00	0.82	SURCHARGED
583	PRM195	0.38	0 12:12	0.37	1.02	2.45	0.29	0.44	1.00	31.00	1.38	SURCHARGED
584	PRM20	0.31	0 12:06	0.37	0.81	1.96	0.33	0.44	1.00	32.00	1.60	SURCHARGED
585	PRM200	0.38	0 12:12	0.35	1.08	2.45	0.03	0.44	1.00	32.00	1.35	SURCHARGED
586	PRM205	0.54	0 12:12	0.62	0.87	2.02	0.45	0.58	1.00	32.00	1.08	SURCHARGED
587	PRM210	0.74	0 12:04	0.87	0.85	2.77	0.36	0.58	1.00	36.00	1.76	SURCHARGED
588	PRM215	0.79	0 12:02	0.89	0.89	2.96	0.12	0.58	1.00	39.00	1.76	SURCHARGED
589	PRM220	0.48	0 12:08	0.86	0.56	3.10	0.12	0.44	1.00	12.00	1.58	SURCHARGED
590	PRM225	0.41	0 12:00	0.37	1.09	2.63	0.39	0.44	1.00	36.00	1.45	SURCHARGED
591	PRM230	0.30	0 12:04	0.44	0.67	1.91	0.14	0.44	1.00	35.00	1.32	SURCHARGED
592	PRM235	0.08	0 12:00	0.22	0.39	1.31	0.20	0.44	1.00	41.00	1.10	SURCHARGED
593	PRM240	0.08	0 11:59	0.32	0.26	0.99	0.89	0.44	1.00	42.00	0.84	SURCHARGED
594	PRM245	0.17	0 12:00	0.29	0.60	1.11	0.34	0.44	1.00	53.00	1.14	SURCHARGED
595	PRM25	0.32	0 12:24	0.45	0.70	2.22	0.07	0.44	1.00	35.00	1.86	SURCHARGED
596	PRM250	0.17	0 12:00	0.24	0.71	1.11	0.25	0.44	1.00	59.00	0.67	SURCHARGED
597	PRM260	0.32	0 12:00	0.19	1.65	2.05	0.88	0.44	1.00	61.00	0.91	SURCHARGED
598	PRM265	0.71	0 12:06	0.31	2.30	2.70	0.49	0.56	0.96	0.00	0.82	> CAPACITY
599	PRM270	0.11	0 12:32	0.19	0.57	0.92	1.06	0.44	1.00	49.00	0.75	SURCHARGED
600	PRM290	0.39	0 12:30	0.47	0.81	2.47	0.06	0.44	1.00	51.00	0.81	SURCHARGED
601	PRM295	0.55	0 12:12	0.28	2.00	2.15	0.56	0.53	0.92	0.00	0.68	> CAPACITY
602	PRM30	0.46	0 12:29	0.45	1.04	2.23	0.80	0.51	1.00	67.00	1.27	SURCHARGED
603	PRM35	0.56	0 12:21	0.56	0.99	2.68	0.07	0.51	1.00	43.00	1.64	SURCHARGED
604	PRM40	0.56	0 12:21	0.68	0.82	2.68	0.23	0.51	1.00	43.00	1.31	SURCHARGED
605	PRM45	0.60	0 12:07	0.47	1.27	3.10	0.01	0.46	0.89	0.00	1.50	> CAPACITY
606	PRM5	0.06	0 12:11	0.21	0.30	0.89	0.17	0.44	1.00	20.00	0.86	SURCHARGED
607	PRM50	0.60	0 12:11	0.86	0.70	3.32	0.56	0.46	0.89	0.00	2.33	Calculated
608	PRM55	0.83	0 12:23	0.86	0.98	4.02	0.15	0.51	1.00	32.00	2.65	SURCHARGED
609	PRM60	0.86	0 12:12	0.89	0.97	4.16	0.32	0.51	1.00	32.00	2.70	SURCHARGED

Pipe Results

SN	Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Froude Number	Reported Condition
		(cms)	(days hh:mm)	(cms)		(m/sec)	(min)	(m)		(min)		
610	PRM65	0.45	0 13:09	1.49	0.30	2.88	0.01	0.44	1.00	100.00	2.09	SURCHARGED
611	PRM70	0.48	0 12:02	0.72	0.67	2.32	0.07	0.51	1.00	98.00	1.25	SURCHARGED
612	PRM75	0.48	0 12:10	0.56	0.86	2.54	0.04	0.44	0.86	0.00	1.42	Calculated
613	PRM85	0.21	0 12:14	0.26	0.78	1.36	0.15	0.44	1.00	29.00	1.30	SURCHARGED
614	PRM90	0.21	0 12:09	0.41	0.50	1.48	0.11	0.44	1.00	29.00	1.10	SURCHARGED
615	PRM95	0.29	0 12:58	0.33	0.87	1.85	0.09	0.44	1.00	62.00	1.29	SURCHARGED
616	PUV10	0.80	0 12:22	0.88	0.91	2.98	0.37	0.58	1.00	28.00	2.09	SURCHARGED
617	PUV100	1.05	0 12:46	1.43	0.73	3.91	0.27	0.58	1.00	62.00	2.69	SURCHARGED
618	PUV1000	0.27	0 12:11	0.49	0.54	2.45	0.07	0.44	1.00	21.00	2.63	SURCHARGED
619	PUV1005	0.22	0 12:06	1.10	0.20	1.40	0.08	0.44	1.00	22.00	1.30	SURCHARGED
620	PUV1010	0.05	0 12:11	0.52	0.09	0.29	0.96	0.44	1.00	23.00	0.18	SURCHARGED
621	PUV1015	0.17	0 12:12	0.82	0.21	1.60	0.63	0.29	0.66	0.00	0.68	Calculated
622	PUV1020	0.29	0 12:12	0.28	1.03	1.89	0.46	0.44	1.00	11.00	1.36	SURCHARGED
623	PUV1025	0.45	0 12:10	0.51	0.88	2.89	0.18	0.44	1.00	13.00	1.21	SURCHARGED
624	PUV1030	0.64	0 12:12	0.55	1.17	4.12	0.09	0.44	1.00	0.00	2.45	SURCHARGED
625	PUV1040	0.31	0 12:05	0.48	0.64	2.01	0.18	0.44	1.00	9.00	1.87	SURCHARGED
626	PUV1045	0.63	0 12:05	0.82	0.77	4.11	0.06	0.44	1.00	9.00	3.53	SURCHARGED
627	PUV105	1.18	0 12:04	1.13	1.04	4.39	0.11	0.58	1.00	78.00	2.08	SURCHARGED
628	PUV1050	0.62	0 12:13	0.81	0.77	4.14	0.12	0.44	1.00	9.00	3.34	SURCHARGED
629	PUV1055	0.72	0 12:11	0.78	0.92	4.96	0.13	0.39	0.88	0.00	3.55	Calculated
630	PUV1065	0.26	0 12:14	0.44	0.58	2.18	0.07	0.44	1.00	11.00	1.88	SURCHARGED
631	PUV1070	0.26	0 12:14	0.44	0.58	2.02	0.41	0.44	1.00	11.00	1.73	SURCHARGED
632	PUV1075	0.72	0 12:12	0.84	0.86	4.65	0.13	0.44	1.00	14.00	1.70	SURCHARGED
633	PUV1080	0.57	0 12:03	0.29	1.99	3.69	0.11	0.44	1.00	0.00	1.30	SURCHARGED
634	PUV1090	0.29	0 12:12	0.77	0.38	3.32	0.12	0.44	1.00	4.00	3.35	SURCHARGED
635	PUV1095	0.29	0 12:12	0.82	0.36	2.06	0.07	0.44	1.00	12.00	1.99	SURCHARGED
636	PUV110	1.56	0 12:12	1.26	1.23	5.80	0.04	0.58	1.00	20.00	2.53	SURCHARGED
637	PUV1100	0.49	0 12:12	0.74	0.66	4.00	0.08	0.32	0.74	0.00	3.24	Calculated
638	PUV1110	0.12	0 12:12	0.47	0.25	2.26	0.18	0.16	0.37	0.00	1.98	Calculated
639	PUV1120	0.42	0 12:12	1.01	0.42	5.52	0.09	0.22	0.50	0.00	4.40	Calculated
640	PUV1130	0.37	0 12:12	0.64	0.57	3.43	0.07	0.29	0.65	0.00	3.18	Calculated
641	PUV1135	0.37	0 12:12	1.00	0.37	5.18	0.08	0.20	0.47	0.00	4.30	Calculated
642	PUV1145	0.38	0 12:12	0.57	0.66	2.90	0.06	0.34	0.80	0.00	2.43	Calculated
643	PUV1155	0.32	0 12:12	0.69	0.47	3.28	0.05	0.26	0.60	0.00	2.90	Calculated
644	PUV1165	0.10	0 12:12	0.63	0.16	2.55	0.07	0.14	0.31	0.00	2.58	Calculated
645	PUV120	0.02	0 12:22	0.73	0.03	1.52	0.10	0.22	0.50	0.00	4.06	Calculated
646	PUV125	0.00	0 00:00	1.45	0.00	0.00		0.00	0.00	0.00	0.00	Calculated
647	PUV130	0.00	0 00:00	0.40	0.00	0.00		0.07	0.15	0.00	0.00	Calculated
648	PUV135	0.09	0 12:12	0.45	0.20	1.90	0.51	0.15	0.34	0.00	1.68	Calculated
649	PUV140	0.09	0 12:12	0.34	0.26	1.47	0.41	0.19	0.42	0.00	1.16	Calculated
650	PUV145	0.19	0 12:12	0.43	0.43	1.60	0.45	0.32	0.73	0.00	1.55	Calculated
651	PUV15	0.98	0 12:12	1.47	0.67	4.01	0.04	0.50	0.85	0.00	2.91	Calculated
652	PUV150	0.27	0 12:12	0.46	0.60	1.82	0.08	0.43	0.98	0.00	1.81	Calculated
653	PUV155	0.27	0 12:12	0.45	0.60	2.14	0.06	0.39	0.89	0.00	1.87	Calculated
654	PUV160	0.27	0 12:12	0.43	0.64	1.83	1.35	0.40	0.91	0.00	0.48	Calculated
655	PUV170	0.09	0 12:12	0.79	0.11	1.80	0.09	0.16	0.36	0.00	2.33	Calculated
656	PUV175	0.10	0 12:12	0.72	0.14	1.99	0.19	0.16	0.36	0.00	1.62	Calculated
657	PUV180	0.09	0 12:12	1.20	0.07	1.16	0.13	0.26	0.59	0.00	1.25	Calculated
658	PUV185	0.00	0 00:00	1.72	0.00	0.00		0.22	0.50	0.00	0.00	Calculated
659	PUV190	0.00	0 00:00	1.48	0.00	0.00		0.21	0.48	0.00	0.00	Calculated
660	PUV195	0.43	0 12:14	3.46	0.12	2.74	0.01	0.44	1.00	27.00	0.95	SURCHARGED
661	PUV20	1.01	0 12:12	1.47	0.69	4.14	0.26	0.50	0.85	0.00	3.03	Calculated
662	PUV200	0.40	0 12:12	1.14	0.35	1.48	0.24	0.58	1.00	57.00	0.29	SURCHARGED
663	PUV205	0.39	0 12:04	0.28	1.41	2.53	0.29	0.43	0.96	0.00	1.30	> CAPACITY
664	PUV215	0.50	0 12:05	0.49	1.03	3.64	0.04	0.37	0.83	0.00	2.73	> CAPACITY
665	PUV220	0.50	0 12:05	1.27	0.39	3.65	0.11	0.37	0.83	0.00	3.06	Calculated
666	PUV225	0.50	0 12:05	0.40	1.24	3.21	0.27	0.44	1.00	20.00	1.63	SURCHARGED
667	PUV230	0.64	0 12:03	0.64	1.00	4.11	0.12	0.44	1.00	24.00	2.03	SURCHARGED
668	PUV235	0.45	0 11:58	0.55	0.81	3.62	0.06	0.33	0.74	0.00	2.99	Calculated
669	PUV240	0.45	0 11:58	1.27	0.35	26.39	0.02	0.20	0.45	0.00	5.76	Calculated
670	PUV25	1.04	0 12:14	1.75	0.59	4.00	0.03	0.56	0.96	0.00	3.25	Calculated
671	PUV250	0.36	0 12:04	0.96	0.37	2.61	0.08	0.44	1.00	18.00	2.48	SURCHARGED
672	PUV255	0.36	0 12:11	0.54	0.67	2.29	0.08	0.44	1.00	30.00	0.77	SURCHARGED
673	PUV260	0.35	0 12:08	0.35	1.00	2.24	0.75	0.44	1.00	34.00	1.23	SURCHARGED
674	PUV265	0.22	0 12:35	0.49	0.45	1.39	0.04	0.44	1.00	43.00	1.29	SURCHARGED
675	PUV270	0.22	0 12:35	0.33	0.65	1.39	0.10	0.44	1.00	44.00	1.28	SURCHARGED
676	PUV275	0.22	0 12:35	0.30	0.72	1.39	0.21	0.44	1.00	45.00	0.73	SURCHARGED
677	PUV280	0.22	0 12:35	0.13	1.61	1.39	0.32	0.44	1.00	42.00	0.77	SURCHARGED
678	PUV285	0.23	0 11:57	0.38	0.60	1.46	0.28	0.44	1.00	42.00	1.15	SURCHARGED
679	PUV290	0.47	0 12:26	0.38	1.22	2.99	0.28	0.44	1.00	47.00	1.74	SURCHARGED
680	PUV295	0.72	0 12:04	0.66	1.09	2.69	0.06	0.58	1.00	39.00	1.12	SURCHARGED
681	PUV30	1.19	0 12:12	1.75	0.68	4.52	0.18	0.56	0.96	0.00	2.73	Calculated
682	PUV300	1.18	0 12:12	0.86	1.38	4.53	0.07	0.55	0.95	0.00	2.33	> CAPACITY
683	PUV305	0.39	0 12:12	0.80	0.49	1.69	0.08	0.51	0.88	0.00	1.27	Calculated
684	PUV310	0.46	0 12:12	0.54	0.85	2.16	0.34	0.44	0.75	0.00	1.61	Calculated
685	PUV315	0.52	0 12:12	1.01	0.51	3.25	0.17	0.33	0.57	0.00	2.28	Calculated
686	PUV320	0.55	0 12:12	1.06	0.52	2.72	0.52	0.43	0.74	0.00	1.75	Calculated
687	PUV325	0.49	0 12:06	0.79	0.62	1.86	1.15	0.57	0.99	0.00	0.84	Calculated
688	PUV330	1.35	0 11:56	1.50	0.90	5.47	0.05	0.51	0.87	0.00	3.08	Calculated
689	PUV340	0.34	0 12:10	0.56	0.60	2.21	0.07	0.44	1.00	26.00	2.01	SURCHARGED
690	PUV345	0.34	0 12:05	0.39	0.86	2.15	0.78	0.44	1.00	27.00	1.76	SURCHARGED
691	PUV35	0.87	0 12:28	1.07	0.81	3.25	0.06	0.58	1.00	56.00	1.56	SURCHARGED
692	PUV350	0.31	0 12:26	0.56	0.56	2.01	0.10	0.44	1.00	41.00	1.35	SURCHARGED
693	PUV355	0.50	0 12:12	0.51	0.97	3.20	0.53	0.44	1.00	12.00	2.22	SURCHARGED
694	PUV360	0.49	0 12:03	0.61	0.80	3.13	0.21	0.44	1.00	35.00	2.64	SURCHARGED
695	PUV365	0.39	0 12:02	0.64	0.60	2.48	0.07	0.44	1.00	44.00	2.21	SURCHARGED
696	PUV370	0.45	0 12:16	0.69	0.65	2.88	0.04	0.44	1.00	47.00	2.06	SURCHARGED

Pipe Results

SN	Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Froude Number	Reported Condition
		(cms)	(days hh:mm)	(cms)		(m/sec)	(min)	(m)		(min)		
697	PUV375	0.45	0 12:06	0.40	1.12	2.90	0.23	0.44	0.98	0.00	1.85	> CAPACITY
698	PUV380	0.07	0 12:12	0.76	0.09	2.27	0.03	0.11	0.25	0.00	2.74	Calculated
699	PUV385	0.07	0 12:12	0.66	0.10	1.24	0.12	0.23	0.52	0.00	2.40	Calculated
700	PUV390	0.20	0 12:08	0.13	1.45	1.63	0.12	0.44	1.00	14.00	0.91	SURCHARGED
701	PUV395	0.19	0 12:13	0.45	0.42	1.55	0.44	0.44	1.00	14.00	1.21	SURCHARGED
702	PUV40	0.87	0 12:28	0.88	0.99	3.25	0.04	0.58	1.00	35.00	1.68	SURCHARGED
703	PUV400	0.43	0 12:12	0.39	1.10	2.76	0.39	0.44	1.00	16.00	1.75	SURCHARGED
704	PUV405	0.37	0 12:06	0.37	0.99	2.35	0.12	0.44	1.00	18.00	1.41	SURCHARGED
705	PUV410	0.53	0 12:15	0.59	0.91	3.44	0.13	0.44	1.00	18.00	2.81	SURCHARGED
706	PUV415	0.54	0 12:16	0.76	0.70	3.44	0.05	0.44	1.00	19.00	2.71	SURCHARGED
707	PUV420	0.53	0 12:04	0.53	1.01	3.56	0.14	0.44	1.00	13.00	2.39	SURCHARGED
708	PUV425	0.08	0 12:17	0.39	0.21	0.75	1.59	0.44	1.00	11.00	0.60	SURCHARGED
709	PUV430	0.28	0 12:09	0.37	0.77	1.82	0.12	0.44	1.00	18.00	1.21	SURCHARGED
710	PUV435431	0.28	0 12:05	0.25	1.15	1.82	0.08	0.44	1.00	18.00	1.08	SURCHARGED
711	PUV440	0.53	0 12:03	0.76	0.70	4.41	0.06	0.32	0.72	0.00	4.80	Calculated
712	PUV445	0.12	0 12:04	0.43	0.28	1.99	0.14	0.18	0.41	0.00	1.74	Calculated
713	PUV45	1.03	0 12:12	1.24	0.83	4.25	0.07	0.49	0.85	0.00	2.67	Calculated
714	PUV450	0.11	0 12:07	0.36	0.32	1.12	0.67	0.29	0.66	0.00	1.10	Calculated
715	PUV455	0.11	0 12:21	0.27	0.42	0.83	0.18	0.43	0.97	0.00	0.86	Calculated
716	PUV460	0.18	0 12:20	0.27	0.66	1.14	0.40	0.44	1.00	13.00	0.53	SURCHARGED
717	PUV465	0.17	0 12:04	0.13	1.24	1.15	0.46	0.42	0.95	0.00	0.89	> CAPACITY
718	PUV470	0.24	0 12:06	0.32	0.77	1.90	0.14	0.36	0.81	0.00	1.38	Calculated
719	PUV475	0.40	0 12:05	0.58	0.69	1.62	0.59	0.52	0.89	0.00	0.89	Calculated
720	PUV480	0.32	0 12:13	0.57	0.56	1.20	0.03	0.58	1.00	5.00	1.02	SURCHARGED
721	PUV485	0.40	0 12:06	0.56	0.70	1.55	0.23	0.58	1.00	2.00	1.06	SURCHARGED
722	PUV490	0.48	0 12:08	0.48	1.00	2.21	0.13	0.46	0.81	0.00	1.53	> CAPACITY
723	PUV495	0.66	0 12:12	1.10	0.60	3.37	0.34	0.39	0.69	0.00	2.07	Calculated
724	PUV5	0.73	0 12:05	0.72	1.01	2.73	0.41	0.58	1.00	28.00	1.70	SURCHARGED
725	PUV500	0.65	0 12:12	0.96	0.67	2.59	0.36	0.51	0.88	0.00	1.99	Calculated
726	PUV505	0.43	0 12:03	0.96	0.45	1.67	0.11	0.58	1.00	23.00	1.22	SURCHARGED
727	PUV510	0.46	0 12:03	1.25	0.37	1.93	0.03	0.58	1.00	32.00	1.48	SURCHARGED
728	PUV515	0.46	0 12:02	0.57	0.80	1.79	0.54	0.58	1.00	34.00	1.21	SURCHARGED
729	PUV520	0.37	0 11:59	0.60	0.61	1.85	0.16	0.58	1.00	40.00	1.30	SURCHARGED
730	PUV525	1.97	0 12:12	2.14	0.92	5.23	0.21	0.63	0.88	0.00	2.99	Calculated
731	PUV530	0.61	0 12:16	0.61	0.99	3.89	0.04	0.44	1.00	13.00	2.82	SURCHARGED
732	PUV535	0.56	0 12:12	0.49	1.13	3.57	0.05	0.44	1.00	5.00	2.12	SURCHARGED
733	PUV540	0.57	0 12:12	0.39	1.46	3.64	0.04	0.44	1.00	16.00	1.64	SURCHARGED
734	PUV545	0.57	0 12:12	0.50	1.13	3.64	0.04	0.44	1.00	6.00	2.09	SURCHARGED
735	PUV55	0.03	0 12:12	0.96	0.03	0.37	0.38	0.23	0.53	0.00	0.13	Calculated
736	PUV555	0.34	0 12:12	0.38	0.88	2.36	0.07	0.38	0.86	0.00	1.64	Calculated
737	PUV560	0.27	0 12:12	0.52	0.52	1.88	0.11	0.44	1.00	7.00	2.14	SURCHARGED
738	PUV565	0.36	0 12:26	0.30	1.19	2.31	0.06	0.44	1.00	33.00	1.50	SURCHARGED
739	PUV570	0.36	0 12:12	0.47	0.76	2.31	0.44	0.44	1.00	33.00	1.53	SURCHARGED
740	PUV575	0.32	0 11:58	0.45	0.72	2.07	0.54	0.44	1.00	61.00	1.45	SURCHARGED
741	PUV580	0.47	0 12:33	0.50	0.94	3.02	0.05	0.44	1.00	73.00	1.64	SURCHARGED
742	PUV585	0.47	0 12:27	0.40	1.19	3.02	0.36	0.44	1.00	58.00	1.80	SURCHARGED
743	PUV590	0.16	0 12:03	1.35	0.12	1.07	0.16	0.49	0.85	0.00	0.97	Calculated
744	PUV595	0.17	0 12:11	0.51	0.33	1.33	0.12	0.44	1.00	35.00	1.86	SURCHARGED
745	PUV60	0.16	0 12:12	0.98	0.16	1.45	0.08	0.29	0.66	0.00	0.53	Calculated
746	PUV600	0.17	0 12:11	0.50	0.34	1.10	0.06	0.44	1.00	38.00	1.73	SURCHARGED
747	PUV605	0.35	0 12:13	0.48	0.72	2.35	0.06	0.44	1.00	16.00	2.15	SURCHARGED
748	PUV610	0.35	0 12:09	0.59	0.58	2.22	0.56	0.44	1.00	17.00	1.28	SURCHARGED
749	PUV615	0.64	0 12:08	0.63	1.01	4.10	0.09	0.44	1.00	26.00	2.67	SURCHARGED
750	PUV620	0.64	0 12:08	0.58	1.10	4.10	0.23	0.44	1.00	26.00	2.71	SURCHARGED
751	PUV625	0.66	0 12:03	0.80	0.82	4.22	0.07	0.44	1.00	28.00	3.48	SURCHARGED
752	PUV630	0.61	0 12:27	0.77	0.79	2.28	0.29	0.58	1.00	31.00	1.36	SURCHARGED
753	PUV635	0.82	0 12:22	0.92	0.90	3.31	0.04	0.54	0.93	0.00	2.11	Calculated
754	PUV640	0.98	0 12:12	1.86	0.52	4.03	0.05	0.49	0.85	0.00	3.55	Calculated
755	PUV645	0.98	0 12:12	1.69	0.58	4.91	0.07	0.41	0.69	0.00	3.73	Calculated
756	PUV65	0.27	0 12:01	0.15	1.77	1.72	0.46	0.44	1.00	32.00	0.88	SURCHARGED
757	PUV655	0.44	0 12:02	0.47	0.94	3.12	0.05	0.44	1.00	23.00	2.35	SURCHARGED
758	PUV660	0.44	0 12:02	0.85	0.52	3.18	0.18	0.44	1.00	23.00	2.69	SURCHARGED
759	PUV665	0.13	0 12:01	0.60	0.23	0.99	0.03	0.44	1.00	28.00	0.84	SURCHARGED
760	PUV670	0.31	0 12:12	0.64	0.48	2.57	0.06	0.37	0.85	0.00	2.64	Calculated
761	PUV675	0.31	0 12:12	0.65	0.48	2.03	0.13	0.42	0.96	0.00	2.67	Calculated
762	PUV680	0.58	0 12:07	0.26	2.20	3.72	0.04	0.44	1.00	37.00	1.08	SURCHARGED
763	PUV685	0.17	0 12:12	0.31	0.54	2.01	0.06	0.23	0.52	0.00	1.60	Calculated
764	PUV690	0.17	0 12:12	1.00	0.17	1.07	0.25	0.33	0.56	0.00	0.47	Calculated
765	PUV695	0.26	0 12:12	1.31	0.20	5.56	0.06	0.15	0.34	0.00	5.35	Calculated
766	PUV70	0.68	0 12:11	0.97	0.71	2.87	0.38	0.58	1.00	28.00	1.87	SURCHARGED
767	PUV700	0.26	0 12:12	1.27	0.20	26.75	0.02	0.14	0.32	0.00	5.35	Calculated
768	PUV710	0.59	0 12:13	0.79	0.75	4.27	0.06	0.37	0.83	0.00	3.60	Calculated
769	PUV715	0.59	0 12:07	0.94	0.63	4.73	0.11	0.34	0.77	0.00	4.23	Calculated
770	PUV720	0.86	0 12:12	1.43	0.60	6.10	0.03	0.37	0.85	0.00	5.63	Calculated
771	PUV725	0.86	0 12:12	1.21	0.70	24.31	0.02	0.38	0.86	0.00	5.26	Calculated
772	PUV730	0.86	0 12:12	1.22	0.70	24.58	0.02	0.34	0.77	0.00	5.38	Calculated
773	PUV740	0.00	0 00:00	0.98	0.00	0.00		0.00	0.00	0.00	0.00	Calculated
774	PUV745	0.00	0 00:00	0.33	0.00	0.00		0.02	0.06	0.00	0.00	Calculated
775	PUV75	0.88	0 12:04	1.15	0.77	3.47	0.33	0.58	1.00	38.00	2.30	SURCHARGED
776	PUV750	0.00	0 12:05	0.35	0.01	0.07	5.39	0.20	0.46	0.00	0.00	Calculated
777	PUV755	0.00	0 00:00	1.19	0.00	0.00		0.02	0.06	0.00	0.00	Calculated
778	PUV760	0.44	0 12:11	0.62	0.71	2.98	0.05	0.40	0.90	0.00	2.63	Calculated
779	PUV765	0.44	0 12:12	0.75	0.59	3.94	0.07	0.29	0.68	0.00	3.63	Calculated
780	PUV770	0.44	0 12:12	1.10	0.40	19.74	0.02	0.22	0.49	0.00	4.73	Calculated
781	PUV780	0.49	0 12:12	0.74	0.66	4.16	0.08	0.30	0.71	0.00	3.36	Calculated
782	PUV785	0.55	0 12:12	1.61	0.34	2.73	0.46	0.41	0.70	0.00	1.55	Calculated
783	PUV790	0.86	0 12:05	0.95	0.91	3.47	0.16	0.51	0.87	0.00	2.16	Calculated

Pipe Results

SN	Element ID	Peak Flow (cms)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cms)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (m/sec)	Travel Time (min)	Peak Flow Depth (m)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
784	PUV80	1.00	0 12:03	1.22	0.82	3.79	0.30	0.58	1.00	48.00	2.56	SURCHARGED
785	PUV800	0.31	0 12:12	0.66	0.46	2.74	0.05	0.30	0.68	0.00	2.72	Calculated
786	PUV805	0.31	0 12:12	0.69	0.44	3.82	0.09	0.23	0.51	0.00	3.16	Calculated
787	PUV810	0.31	0 12:12	1.42	0.22	1.64	0.79	0.38	0.66	0.00	0.56	Calculated
788	PUV815	0.54	0 12:03	0.21	2.55	3.48	0.11	0.44	1.00	0.00	0.96	SURCHARGED
789	PUV825	0.43	0 12:12	0.47	0.93	2.83	0.72	0.44	1.00	4.00	1.52	SURCHARGED
790	PUV830	0.37	0 12:14	0.28	1.33	2.47	0.10	0.44	1.00	8.00	1.46	SURCHARGED
791	PUV835	0.66	0 12:06	0.82	0.81	5.34	0.14	0.35	0.79	0.00	4.29	Calculated
792	PUV840	0.66	0 12:06	2.17	0.31	5.23	0.08	0.28	0.49	0.00	4.18	Calculated
793	PUV845	1.00	0 12:12	2.29	0.44	5.63	0.09	0.37	0.64	0.00	4.35	Calculated
794	PUV85	1.11	0 12:00	1.34	0.83	4.14	0.27	0.58	1.00	57.00	2.18	SURCHARGED
795	PUV850	1.21	0 12:12	2.02	0.60	6.55	0.09	0.38	0.65	0.00	4.53	Calculated
796	PUV860	0.35	0 12:12	1.07	0.33	3.82	0.08	0.25	0.57	0.00	2.70	Calculated
797	PUV865	0.36	0 12:12	1.81	0.20	4.72	0.11	0.19	0.32	0.00	3.81	Calculated
798	PUV875	0.15	0 12:12	0.53	0.28	1.42	0.33	0.31	0.69	0.00	1.01	Calculated
799	PUV880	0.50	0 12:07	0.59	0.84	3.37	0.23	0.44	1.00	11.00	2.65	SURCHARGED
800	PUV885	0.61	0 12:06	0.79	0.77	3.95	0.26	0.44	1.00	13.00	2.15	SURCHARGED
801	PUV890	0.71	0 12:03	0.61	1.16	4.55	0.08	0.44	1.00	0.00	3.14	SURCHARGED
802	PUV895	0.68	0 12:01	1.13	0.60	21.08	0.01	0.35	0.78	0.00	4.87	Calculated
803	PUV90	0.99	0 12:49	1.49	0.66	3.68	0.02	0.58	1.00	71.00	1.92	SURCHARGED
804	PUV905	0.39	0 12:14	0.62	0.63	2.71	0.07	0.44	1.00	10.00	2.32	SURCHARGED
805	PUV910	0.48	0 12:12	0.83	0.58	3.10	0.05	0.44	1.00	5.00	3.29	SURCHARGED
806	PUV915	0.48	0 12:12	0.90	0.53	3.80	0.02	0.34	0.76	0.00	3.57	Calculated
807	PUV925	0.23	0 12:13	0.36	0.62	2.32	0.28	0.44	1.00	13.00	1.92	SURCHARGED
808	PUV930	0.23	0 12:13	0.60	0.38	1.46	0.34	0.44	1.00	15.00	1.19	SURCHARGED
809	PUV935	0.27	0 12:16	0.32	0.84	1.76	0.09	0.44	1.00	20.00	1.59	SURCHARGED
810	PUV940	0.38	0 12:11	0.71	0.54	2.96	0.05	0.44	1.00	20.00	2.70	SURCHARGED
811	PUV945	0.38	0 12:11	0.55	0.69	2.45	0.38	0.44	1.00	20.00	1.86	SURCHARGED
812	PUV95	0.99	0 12:49	1.40	0.70	3.68	0.04	0.58	1.00	62.00	2.53	SURCHARGED
813	PUV950	0.55	0 12:18	0.62	0.90	3.55	0.13	0.44	1.00	23.00	2.89	SURCHARGED
814	PUV955	0.55	0 12:18	0.72	0.77	3.55	0.05	0.44	1.00	26.00	2.09	SURCHARGED
815	PUV960	0.65	0 12:02	0.52	1.25	4.19	0.02	0.44	1.00	28.00	1.42	SURCHARGED
816	PUV965	0.65	0 12:02	0.48	1.35	2.44	0.50	0.58	1.00	16.00	1.49	SURCHARGED
817	PUV970	0.89	0 12:11	1.53	0.58	3.34	0.04	0.58	1.00	15.00	2.59	SURCHARGED
818	PUV975	1.21	0 12:04	1.53	0.79	5.14	0.12	0.49	0.83	0.00	3.52	Calculated
819	PUV985	0.12	0 12:02	0.39	0.32	1.08	0.14	0.44	1.00	17.00	1.13	SURCHARGED
820	PUV990	0.13	0 12:02	0.20	0.65	0.88	0.51	0.44	1.00	18.00	0.80	SURCHARGED
821	PUV995	0.12	0 12:21	0.37	0.33	1.01	0.42	0.44	1.00	18.00	0.63	SURCHARGED

Storage Nodes

Storage Node : Stor-01

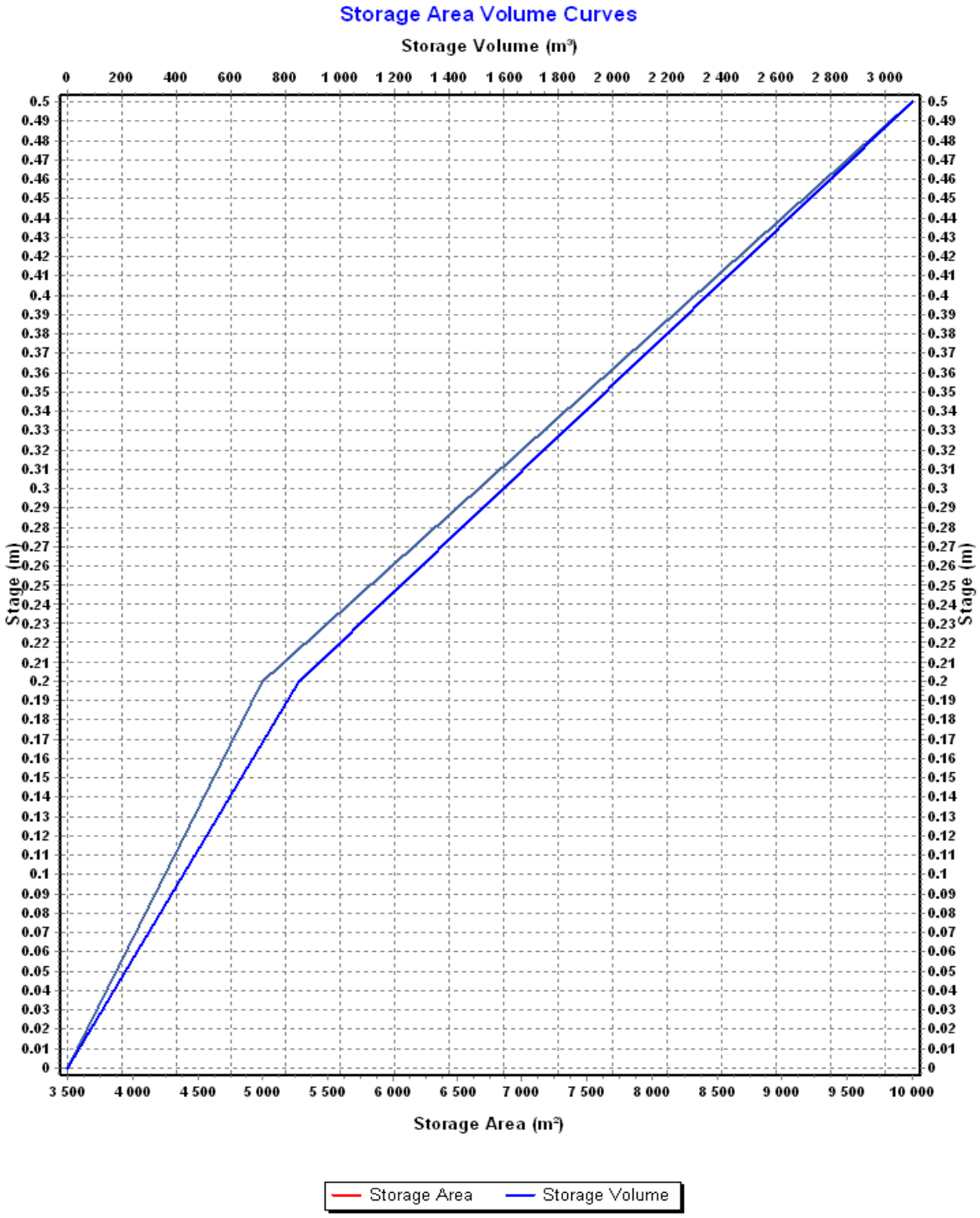
Input Data

Invert Elevation (m)	220.20
Max (Rim) Elevation (m)	221.00
Max (Rim) Offset (m)	0.80
Initial Water Elevation (m)	220.00
Initial Water Depth (m)	-0.20
Ponded Area (m²)	0.00
Evaporation Loss	0.00

Storage Area Volume Curves

Storage Curve : Storage-01

Stage (m)	Storage Area (m²)	Storage Volume (m³)
0	3500	0.000
0.2	5000	850.00
0.5	10000	3100.00


Storage Area Volume Curves
Storage Volume (m³)
0 200 400 600 800 1 000 1 200 1 400 1 600 1 800 2 000 2 200 2 400 2 600 2 800 3 000
0.5 0.49 0.48 0.47 0.46 0.45 0.44 0.43 0.42 0.41 0.4 0.39 0.38 0.37 0.36 0.35 0.34 0.33 0.32 0.31 0.3 0.29 0.28 0.27 0.26 0.25 0.24 0.23 0.22 0.21 0.2 0.19 0.18 0.17 0.16 0.15 0.14 0.13 0.12 0.11 0.1 0.09 0.08 0.07 0.06 0.05 0.04 0.03 0.02 0.01 0
Stage (m)
3 500 4 000 4 500 5 000 5 500 6 000 6 500 7 000 7 500 8 000 8 500 9 000 9 500 10 000
Storage Area (m²)
Storage Area
Storage Volume

Storage Node : Stor-01 (continued)

Output Summary Results

Peak Inflow (cms)	4.58
Peak Lateral Inflow (cms)	0.00
Peak Outflow (cms)	1.91
Peak Exfiltration Flow Rate (cmm)	0.00
Max HGL Elevation Attained (m)	221.00
Max HGL Depth Attained (m)	0.8
Average HGL Elevation Attained (m)	220.48
Average HGL Depth Attained (m)	0.28
Time of Max HGL Occurrence (days hh:mm)	0 12:16
Total Exfiltration Volume (1000-m³)	0.000
Total Flooded Volume (ha-mm)	744.84
Total Time Flooded (min)	70
Total Retention Time (sec)	0.00

ANNEXURE C: COSTING SUMMARY

Table C : Levallia Stormwater Masterplan - Proposed works, cost estimates

Levallia, Rosemoor, Protea Park, Urbansville, George East, Commercial East, Molenrivierrif & Convent Gardens.

	Area	Proposed Works				System Priority	Order of Magnitude Costing			Comments
							Rate	Cost excl Contingency	Cost incl Contingency and Fees	
	Catchment	*Qty*	*Unit*	*Size / Width*	*Desciption*					
George East Western Catchment Areas	GEC-03 & GEC-04	94	m x	450	mm Ø new stormwater pipes	Low	R 2 200.00	R 206 800	R 261 602	Upgrade to minimum 450mm diameter within GEC-04 & GEC-03
		12	m x	525	mm Ø new stormwater pipes	High	R 3 100.00	R 37 200	R 47 058	Upgrade on pipe network to increase capacity
		106	m^2 x	4.5	m wide asphalt road reconstruction	High	R 1 200.00	R 127 200	R 160 908	Upgrade to prevent flooding within Catchment GEC-03 & GEC-04
									R 469 568	**Sub-Total George East Western**
Geroge East Central Catchment Areas	GEC-05, CEC-01 & LEC-01	435	m x	450	mm Ø new stormwater pipes	Low	R 2 200.00	R 957 000	R 1 210 605	Upgrade to minimum 450mm diameter within catchment
		390	m x	600	mm Ø new stormwater pipes	High	R 3 100.00	R 1 209 000	R 1 529 385	New 600mm diameter pipe
		250	m x	1200	mm Ø new stormwater pipes	High	R 6 100.00	R 1 525 000	R 1 929 125	New 1200mm diameter pipe
		1075	m^2 x	4.5	m wide asphalt road reconstruction	High	R 1 200.00	R 1 290 000	R 1 631 850	Upgrade to prevent flooding within Catchment
									R 6 300 965	**Sub-Total George East Central**
George East Eastern Catchment Areas	GEC-06, CEC-02 & LEC-07	60	m x	450	mm Ø New stormwater pipes	High	R 2 200.00	R 132 000	R 166 980	Upgrade to minimum 450mm diameter
		1	m x	7500	Attenuation Pond within Open Space	High	R 1 265 700.00	R 1 265 700	R 1 601 111	New 7500 square m attenuation pond
		30	m x	900	mm Ø New stormwater pipes	High	R 4 800.00	R 144 000	R 182 160	New 900mm diameter
		300	m x	600	mm Ø New stormwater pipes	High	R 3 100.00	R 930 000	R 1 176 450	New 600mm diameter
		700	m x	450	mm Ø New stormwater pipes	Low	R 2 200.00	R 1 540 000	R 1 948 100	Upgrade to minimum 450mm diameter
		1090	m^2 x	4.5	m wide asphalt road reconstruction	Low	R 1 200.00	R 1 308 000	R 1 654 620	Upgrade to prevent flooding within Catchment
									R 6 729 421	**Sub-Total George East Eastern**
Levallia Catchment Areas 2, 4 & 5	LEC-02	560	m x	450	mm Ø New stormwater pipes	Low	R 2 200.00	R 1 232 000	R 1 558 480	Upgrade to minimum 450mm diameter
		125	m x	450	mm Ø New stormwater pipes	hIGH	R 2 200.00	R 275 000	R 347 875	Upgrade to 450mm diameter for capacity
		180	m x	600	mm Ø new stormwater pipes	High	R 3 100.00	R 558 000	R 705 870	Upgrade to 600mm diameter pipe
		90	m x	1050	mm Ø New stormwater pipes	High	R 6 100.00	R 549 000	R 694 485	Upgrade to 1050mm diameter pipe
		125	m x	900	mm Ø New stormwater pipes	High	R 4 800.00	R 600 000	R 759 000	Upgrade to 900mm diameter pipe
		1080	m^2 x	4.5	m wide asphalt road reconstruction	Low	R 1 200.00	R 1 296 000	R 1 639 440	Upgrade to prevent flooding within Catchment
									R 5 705 150	**Sub-Total Levallia 2, 4 & 5**

Table C : Levallia Stormwater Masterplan - Proposed works, cost estimates

Levallia, Rosemoor, Protea Park, Urbansville, George East, Commercial East, Molenrivierrif & Convent Gardens.

	Area	Proposed Works				System Priority	Order of Magnitude Costing			Comments
							Rate	Cost excl Contingency	Cost incl Contingency and Fees	
	Catchment	*Qty*	*Unit*	*Size / Width*	*Desciption*					
Levallia Catchment Areas 3, 6 & 8	LEC-08	100	m x	450	mm Ø New stormwater pipes	Low	R 2 200.00	R 220 000	R 278 300	New 450mm diameter within Catchment Area
		100	m^2 x	4.5	m wide asphalt road reconstruction	Low	R 1 200.00	R 120 000	R 151 800	Upgrade to prevent flooding within Catchment
	LEC-03	80	m x	450	mm Ø New stormwater pipes	Low	R 2 200.00	R 176 000	R 222 640	Upgrade to minimum 450mm diameter within OD-15, Noord Street
		25	m x	600	mm Ø new stormwater pipes	Low	R 3 100.00	R 77 500	R 98 038	New 600mm diameter within Catchment Area
		105	m^2 x	4.5	m wide asphalt road reconstruction	Low	R 1 200.00	R 126 000	R 159 390	Upgrade to prevent flooding within Catchment
									R 910 168	**Sub-Total Levallia 3, 6 & 8**
Rosemoor Western Catchment Areas	RMC-04	75	m x	600	mm Ø New stormwater pipes	High	R 3 100.00	R 232 500	R 294 113	Upgrade to minimum 450mm diameter
		75	m^2 x	4.5	m wide asphalt road reconstruction	High	R 1 200.00	R 90 000	R 113 850	Upgrade to prevent flooding within Catchment
	RMC-03	60	m x	450	mm Ø New stormwater pipes	Low	R 2 200.00	R 132 000	R 166 980	Upgrade to minimum 450mm diameter
		80	m x	600	mm Ø new stormwater pipes	High	R 3 100.00	R 248 000	R 313 720	Upgrade to 600mm diameter pipe
		140	m^2 x	4.5	m wide asphalt road reconstruction	High	R 1 200.00	R 168 000	R 212 520	Upgrade to prevent flooding within Catchment
									R 1 101 183	**Sub-Total Rosemoor Western**
Rosemoor Eastern Catchment Areas	RMC-01	80	m x	450	mm Ø New stormwater pipes	Low	R 2 200.00	R 176 000	R 222 640	Upgrade to minimum 450mm diameter
		400	m x	525	mm Ø new stormwater pipes	High	R 3 100.00	R 1 240 000	R 1 568 600	Upgrade on pipe network to increase capacity
		480	m^2 x	4.5	m wide asphalt road reconstruction	Low	R 1 200.00	R 576 000	R 728 640	Upgrade to prevent flooding within Catchment
	RMC-02	285	m x	600	mm Ø New stormwater pipes	High	R 3 100.00	R 883 500	R 1 117 628	Upgrade to 600mm diameter capacity
		285	m^2 x	4.5	m wide asphalt road reconstruction	Low	R 1 200.00	R 342 000	R 432 630	Upgrade to prevent flooding within Catchment
									R 4 070 138	**Sub-Total Rosemoor Eastern**
Urbansville Northern Catchment	UVC-04	350	m x	600	mm Ø New stormwater pipes	High	R 3 100.00	R 1 085 000	R 1 372 525	Upgrade to minimum 450mm diameter within River Street
		350	m^2 x	4.5	m wide asphalt road reconstruction	High	R 1 200.00	R 420 000	R 531 300	Upgrade to prevent flooding within Catchment OD-30
									R 1 903 825	**Sub-Total Urbansville Northern**

Table C : Levallia Stormwater Masterplan - Proposed works, cost estimates

Levallia, Rosemoor, Protea Park, Urbansville, George East, Commercial East, Molenrivierrif & Convent Gardens.

	Area	Proposed Works				System Priority	Order of Magnitude Costing			Comments
							Rate	Cost excl Contingency	Cost incl Contingency and Fees	
	Catchment	*Qty*	*Unit*	*Size / Width*	*Desciption*					
Urbansville Southern Catchment Areas	UVC-05	180	m x	600	mm Ø New stormwater pipes	High	R 3 100.00	R 558 000	R 705 870	Upgrade to minimum 450mm diameter
		70	m x	750	mm Ø New stormwater pipes	High	R 3 900.00	R 273 000	R 345 345	Upgrade to prevent flooding
		250	m^2 x	4.5	m wide asphalt road reconstruction	High	R 1 200.00	R 300 000	R 379 500	Upgrade to prevent flooding
	UVC-06	50	m x	600	mm Ø New stormwater pipes	High	R 3 100.00	R 155 000	R 196 075	Upgrade to prevent flooding
		50	m^2 x	4.5	m wide asphalt road reconstruction	High	R 1 200.00	R 60 000	R 75 900	Upgrade to prevent flooding
	UVC-16	125	m x	600	mm Ø New stormwater pipes	High	R 3 100.00	R 387 500	R 490 188	Upgrade to prevent flooding
		125	m^2 x	4.5	m wide asphalt road reconstruction	High	R 1 200.00	R 150 000	R 189 750	Upgrade to prevent flooding
									R 2 382 628	**Sub-Total Urbansville Southern**
Protea Park Northern Catchment Areas	PPC-01	40	m x	450	mm Ø New stormwater pipes	Low	R 2 200.00	R 88 000	R 111 320	Upgrade to minimum 450mm diameter
		160	m x	600	mm Ø New stormwater pipes	High	R 3 100.00	R 496 000	R 627 440	Upgrade to prevent flooding, new discharge
		200	m^2 x	4.5	m wide asphalt road reconstruction	High	R 1 200.00	R 240 000	R 303 600	Upgrade to prevent flooding
	PPC-04	30	m x	600	mm Ø New stormwater pipes	High	R 3 100.00	R 93 000	R 117 645	Upgrade to prevent flooding
		125	m^2 x	4.5	m wide asphalt road reconstruction	High	R 1 200.00	R 150 000	R 189 750	Upgrade to prevent flooding
									R 1 349 755	**Sub-Total Protea Park Northern**
Protea Park Western Catchment Areas	PPC-10	70	m x	450	mm Ø New stormwater pipes	Low	R 2 200.00	R 154 000	R 194 810	Upgrade to minimum 450mm diameter
		300	m x	600	mm Ø New stormwater pipes	High	R 3 100.00	R 930 000	R 1 176 450	New 600mm diameter within Catchment Area
		370	m^2 x	4.5	m wide asphalt road reconstruction	Low	R 1 200.00	R 444 000	R 561 660	Upgrade to prevent flooding
	PPC-11	130	m x	450	mm Ø New stormwater pipes	Low	R 2 200.00	R 286 000	R 361 790	New 450mm diameter within Catchment Area
		230	m x	600	mm Ø New stormwater pipes	High	R 2 200.00	R 506 000	R 640 090	New 600mm diameter within Catchment Area
		360	m^2 x	4.5	m wide asphalt road reconstruction	Low	R 1 200.00	R 432 000	R 546 480	Upgrade to prevent flooding
									R 3 481 280	**Sub-Total Protea Park Southern**
	Total Cost Estimates (incl 20% P&G's only)							**R 27 196 900**		
	Total Cost Estimates (including 20% P&G's, 10% Contingencies and 15% Fees - excluding VAT)								**R 34 404 079**	

Table 7.1 : Cost Estimate Summary

Levallia, Rosemoor, Protea Park, Urbansville, George East, Commercial East, Molenrivierrif & Convent Gardens. CIVIL ENIGINEERING INFRASTRUCTURE Estimated Value of Works			
Catchment	**Description**	**Construction Cost***	**Cost incl 15% Fees****
1	George East Western Catchment Areas	R 442 988.68	R 469 568
2	Geroge East Central Catchment Areas	R 5 944 306.60	R 6 300 965
3	George East Eastern Catchment Areas	R 6 348 509.91	R 6 729 421
4	Levallia Catchment Areas 2, 4 & 5	R 5 382 216.98	R 5 705 150
5	Levallia Catchment Areas 3, 6 & 8	R 858 648.58	R 910 168
6	Rosemoor Western Catchment Areas	R 1 038 851.42	R 1 101 183
7	Rosemoor Eastern Catchment Areas	R 3 839 752.36	R 4 070 138
8	Urbansville Northern Catchment Areas	R 1 796 061.32	R 1 903 825
9	Urbansville Southern Catchment Areas	R 2 247 761.79	R 2 382 628
10	Protea Park Northern Catchment Areas	R 1 273 353.77	R 1 349 755
11	Protea Park Western Catchment Areas	R 3 284 226.42	R 3 481 280
TOTAL CIVIL COMPONENT (EXCL VAT)		**R 32 456 677.83**	**R 34 404 078.50**

*** Cost incl 10% Contingency**

**** Cost incl Contingency and 15% Fees**

ANNEXURE B

GEORGE MUNICIPALITY CIVIL ENGINEERING DESIGN STANDARDS

Draft

GEORGE MUNICIPALITY

CIVIL ENGINEERING SERVICES



Civil Engineering Standards
&
Requirements for Services

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1. INTRODUCTION

PURPOSE OF THE DESIGN STANDARDS

The purpose of these design standards is not to replace any of the guidelines such as the Guidelines for Human Settlement Planning and Design (Red Book), SABS 1200 (or SANS equivalent) manuals etc, but to serve as a quick reference guide and lay down specific requirements and standards of George Municipality for all types of developments. This document must be read in conjunction with all applicable bylaws (Water & Sanitation; Stormwater) and applicable acts.

Any conflicts which become apparent are to be referred to the Senior Manager: Civil Engineering services.

2. GENERAL

2.1 USING THESE STANDARDS

These standards must be read in conjunction with other guidelines as set out below with the ultimate goal to provide affordable, but at the same time maintainable, standardised services.

2.2 OTHER APPLICABLE DESIGN GUIDELINES

The "New Red Book" : Guidelines for Human Settlement Planning and Design – CSIR Building and Construction Technology.

Committee of Urban Transport Authorities:

UTG 2	:	Structural Design of Segmental Block Pavements for Southern Africa.
UTG 4	:	Guidelines for Urban Stormwater Management.
UTG 7	:	Geometric Design of Urban Local Residential Streets.
UTG 10	:	Guidelines for the Geometric Design of Commercial and Industrial Local Streets.
TRH 4	:	National Institute for Transport and Road Research
TRH 15	:	Subsurface Drainage for Roads
SARTSM	:	South African Road Traffic Signs Manual
SABS 0252-1	:	Water Supply and Drainage for Buildings

2.3 STANDARD SPECIFICATIONS

All materials and workmanship shall comply to the specifications as set out in the SA Bureau of Standards Standardised Specifications for Civil Engineering (SABS 1200, or SANS equivalent)

2.4 INDUSTRIAL AREAS

Guidelines specific to Industrial Areas can be seen on Table 2, grouped into Heavy, Medium and Light zones.

Industrial areas where large volumes of trucks and articulated vehicles are expected will generally be classified as "Heavy", whereas "Light" will be more service industry orientated.

As it is difficult at design stage to establish what type of industry will develop, a guideline in terms of erf size will give some indication:

Classification	***Erf Size***
Heavy	> 5 000 m²
Medium	1 500 to 5 000 m²
Light	< 1 500 m²

2.7 PUBLIC OPEN SPACES

Proposals for the landscaping of public open spaces within a proposed development must be submitted for consideration to the Senior Manager: Environment Affairs and must include proposals for stabilization,

vegetation and irrigation. These services will only be taken over when the area has been completely landscaped to the satisfaction of the Senior Manager: Environment Affairs (Grass and plants have fully established.)

2.8 AS BUILT INFORMATION SUPPLIED BY CONSULTANTS

Special reference is made under section 8, GIS / CAD Data, regarding requirements in terms of as-built information requirements.

TABLE 1

GUIDELINES FOR GROUP HOUSING DEVELOPMENTS

TYPE OF DEVELOPMENT	GEORGE MUN DESIGN STANDARDS	COMPULSORY HOUSE OWNERS ASSOCIATION	ACCESS	ROADS	STORM WATER	SEWER	WATER	SOLID WASTE	MAINTE-NANCE	BUILDING LINES	PARKING REQUIREMENTS
Single Title Public Services	Must comply	No	TIA if requested By Senior Man. CES required for 50 trips Generated per development	Refer to TDS, Table 2	Refer to TDS	Last inspection chamber required on each erf. Servitude to be registered cen. over midblock	Position of individual water meters to be determined at planning stage. Min cover 800mm	Service to each erf.	Council responsible for communal services.	3,0m building line on all street fronts; 5,0m clearance from road edge for garages.	Refer to table (off street parking)
Single Title Private Services	Must comply Must be practicable in terms of vehicular access, parking and services	Yes A house owner's committee to be established to control communal services.	TIA required No access to individual erven from public roads. Provide waiting embayment's outside.	Refer to TDS, Table 2 Interlocking or brick paved roads allowed to the following specifications: 73 mm clay brick or 80 mm inter-locking concrete pavers 25 mm bedding sand 150 mm sub base 150 mm G7	Refer to TDS	Last inspection chamber required on each erf. Servitude to be registered cen. over midblock	Prior permission from dept CES Bulk water meter supplied at developers cost. HOA responsible for distribution and account.	Refuse room req. >15 units Loading bay for refuse truck to be provided off public road. Or Service to each erf	HOA responsible for all maintenance.	3,0m building line on all street fronts; 5,0m clearance from road edge for garages.	Refer to table (off street parking)
Sectional Title Private Services	Must comply Must be practicable in terms of vehicular access, parking and services	Yes	TIA required for: H - > 30 units M - > 45 units L - > 100 units No access to individual erven from public roads. Provide waiting embayments outside.	Refer to TDS, Table2. Interlocking concrete or brick paved roads allowed to the following specifications: 73 mm clay brick or 80 mm inter-locking concrete pavers 25 mm bedding sand 150 mm sub base 150 mm G7	Refer to TDS	One connection point with last Inspection chamber for whole Development. Internal sewer layout to comply to requirements as laid down by Department of Building Control.	Bulk water meter supplied at developers cost. HOA responsible for distribution and account	Refuse room req. >15 units Loading bay for refuse truck to be provide off public road.	HOA responsible for all Maintenance.	5,0 m clearance from road edge for garage.	Refer to table (off street parking)

3. ROADS

3.1 GENERAL

- See Table 2 for minimum standards for the various road categories.
- Typical road cross-sections showing the location of services, road layers and composition of kerbs, channels etc can be seen on drawing CES/R/2 to CES/R/8.
- Where possible, township road levels should be designed such that erven can drain towards the road.

3.2 ROAD AND STREET NAME SIGNAGE

- All work relating to road signage to be done in conjunction with Departments of Planning & Housing, Traffic and Civil Engineering Services.

- All approved street name signs shall be "cast in kerb" type with white lettering on "Kingfisher blue" PVA background. At T-intersection the name is to be placed centrally opposite the adjoining road.

  Pole mounted signs are allowed in exceptional cases. Signage shall be on 1,4mm chromadek steel plate with black lettering on white reflective background. (Plate 150mm high, 75 mm lettering). Poles shall be 3 m long by 60 mm in diameter, 2 mm wall thickness, with 13mm hole drilled in bottom to provide for a 300 mm long steel rod (y10) to prevent pole from being pulled out.

- All traffic signs and roadmarkings to be provided by developer and comply with SARTSM and the applicable Road Traffic Regulation (Act 29 of 1989).

- All roadmarkings shall be repainted just before the end of the Defects Liability Period.

3.3 STREET ADDRESSES

- Approved street addresses shall be marked on the kerb face opposite the centre of the erf. All lettering to be 75 mm high, white on blue reflective background.

3.4 PAVEMENT LAYERS

- The structural design period for all road categories will be min 20 years.

- Structural design of layers to be in accordance with TRH 4 and the Red Book, with a minimum as specified in Table 2.

- Aggregate for pavement layers to comply with the following:

LAYER	ROAD CAT	TYPE MATERIAL
Base course (G1-G2)	Class 4 Class 5	Crushed Stone Crushed Stone
Subbase (G5)	Class 4 & 5	Crushed Stone
Selected layer (G7)	Class 4 & 5	Natural material/sand (cohesionelss)
Subbase for sidewalks (G5)	Surfaced Unsurfaced	Gravel or crushed stone Natural gravel

- Surfacing : Class 4 Roads (Major bus route) : 40 mm premix continuously Graded COLTA.
  (Local bus route) : 40 mm premix continuously Graded SABS.
  Class 5 Roads : 25 mm premix continuously Graded SABS.

- Surface treatment: Chip and spray, Cape Seal or san asphalt is not permitted.

- Interlocking block paving will be allowed for raised pedestrian crossings, texture changes, raised intersections and for roads with steep gradients (more than 14%) or where specially requested subject to the following minimum specifications:

  - 80 mm Interlocking concrete block pavers, type S-A class 25 in accordance with SABS 1058 for most applications (class 35 for heavy duty use) and laid in herringbone pattern
  - 25 mm Bedding Sand
  - 150 mm Base course (Subbase quality material)

- Private Roads - Interlocking block paving permitted, subject to the minimum specifications, listed above.

- Industrial Roads - Concrete roads permitted, subject to minimum design requirements.

3.5 KERBING AT INTERSECTIONS

To prevent vehicular traffic from cutting corners and to enhance pedestrian safety, the bellmouths of all road intersections with class 4 and 5a roads must be provided with barrier kerbs and channels (BK2 & C1).

3.6 KERBS, CHANNELS AND EDGING DETAILS, PARKING AND ACCESS

Typical details with concrete bedding and backing dimensions are indicated on drawing CES/R/1.
Bedding and backing material shall consist of concrete mix 15/13.

Kerbs must be constructed on subbase layers as indicated.

3.7 FOOTWAYS AND VERGES, PARKING AND ACCESS

3.7.1 *Residential Areas*

Typical cross sections of footway requirements are indicated on drawings CES/R/2 to CES/R/8. In areas where surfaced or gravel footways are not provided, both sides of the roadway (verges) are to be shaped to a width of 2,0 behind kerb with a slope of 2,5% towards the road. Topsoil stripped from within the roadway shall be replaced to a thickness of 100 mm in all verges.

Surfaced footways shall be provided in areas were pedestrian traffic is expected to be high e.g. at churches, schools, along main routes, commercial areas, etc. to the following specifications:

- Width : 2,0 m Class 4 Roads
  1,5 m Class 5 Roads
- Surfacing : Premix 20 mm pavement mix,
  60 mm Clay brick pavers (Colour to be approved)
  60 mm Concrete brick pavers (Colour to be approved)
- Base Course : 100 mm Subbase Material (Crushed Stone)
- Subgrade : 150 mm G7
- Edging : 150 x 75 mm Concrete (E1)

In low cost housing projects where windblown sand is a problem, all roadways shall be provided with 1,5 m wide gravel sidewalks.

Dropped kerbs are to be provided at all intersections to allow for people with disabilities.

3.7.2 *Industrial Areas*

As the George Municipality cannot be held responsible for the provision of footways, parking or grassed surfaces within the road reserves, development proposals must to be submitted in respect of these.

Property access from major roads will be restricted to one entry/exit point per erf. Where on-street parking is required, it shall be restricted to parallel parking with separate embayment's, additional to the roadway.

The provision of parking shall be provided on erven and not within the road reserve. Parking requirements are laid down by the Department of Urban Planning in conjunction with the Department: Civil Engineering Services.

Surfaced footways shall be provided along both sides of the road where pedestrian traffic is expected, to the following specifications:

-	Width	:	2,0 mm
-	Surfacing	:	Premix 20 mm pavement mix,
		:	60 mm Clay brick pavers (Colour to be approved)
		:	60 mm Concrete brick pavers (Colour to be approved)
-	Base Course	:	150 mm Subbase Material (Crushed Stone)
-	Subgrade	:	150 mm G7
-	Edging	:	150 x 75 mm Concrete (E1)

3.8 TRAFFIC CALMING DEVICES

3.8.1 *Speed Humps and Pedestrian Tables*

Speed humps and pedestrian tables shall be constructed in accordance with drawing no CES/R/11 and CES/R/12 according to requirements for speed reduction. It shall not form part of any new developments unless specifically requested by the Department: CES, or Traffic Impact Assessment/Statement, approved by the Department: CES.

3.8.2 *Private Developments*

Stacking space in front of access gates to developments:

No. of units being served	Required stacking space
< 15 units	6m
> 15 units	12m

Dimensions for turning facilities:

For roads serving up to 15 units, the turning shunt shown on drawing CES/R/13 may be used. For roads serving more than 15 units a 6.2m radius turning circle will be required.

3.9 PARKING REQUIREMENTS

TABEL: OFF-STREET PARKING (NORMAL)

• Residential Dwellings		
Single	:	2 bays / dwelling
Flats	:	1.25 bays / dwelling plus 0.25 bays / dwelling for visitors
Attached	:	1 bay / attached dwelling
• Residential hotels, Guest houses, ect	:	3 bays / 4 bedrooms
• Licenced Hotels & Motels	:	1 bay / room plus 20 visitors bays
• Old age homes, Orphanages, etc	:	1 bay / 2 bedroom
• Hospitals	:	1 bay / bed
• Medical consulting rooms	:	4 bays / consulting room
• Single Shops	:	4 bays / 100 m² GLA
• Shopping centre	:	6 bays / 100 m² GLA
• Office, General Banks etc.	:	4 bays / 100 m² GLA
• Industrial	:	4 bays / 100 m² GLA
• Service Station / Public Garages	:	4 bays / 100 m² GLA plus 8 visitors bays
• Place of Assembly / Worship	:	1 bay / 10 seats
• Schools	:	1 bay / classroom
• Colleges, Universities	:	1 bay / classroom plus 1 bay / 6 students
• Restaurant	:	4 bays / 100 m² GLA
• Recreation, Sport & Entertainment	:	2 – 20 bays / 100 m² GLA

TABLE 2

SUMMARY OF MINIMUM REQUIREMENTS FOR ROAD CROSS SECTIONS

ROAD CLASS	FUNCTION	ROAD RESERVE WIDTH			BLACK TOP WIDTH			CAMBER/CROSSFALL			KERB TYPE			MINIMUM PAVEMENT LAYERS	SURFA-CING	MINIMUM BELL-MOUTH RADIUS
Residential		HIGH	MEDIUM	LOW	HIGH	MEDIUM	LOW	HIGH	MEDIUM	LOW	HIGH	MEDIUM	LOW			
4	Local Distributor Major bus route	20	20	20	7.4 – 8.0	7.4	7.4	Camber	Camber	Camber	BK2+C1	BK2+C1	BK2+C1	150mm base 120mm subbase 250 mm G7	40 mm premix	10
4	Local Distributor Local bus route	18	18	18	7.4	7.4	7.4	Camber	Camber	Camber	BK2+C1	BK2+C1 or CK5	CK5	150mm base 120mm subbase 250 mm G7	40 mm premix	10
5a	Access Collector	14	13.5	13	6.3	6	5.7	Camber	Camber	Camber	BK2+C1	CK5	CK5	150mm base 120mm subbase 250 mm G7	25 mm premix	8
5b	Residential Access loop	13.5	13	12	6	5.7	5.5	Camber	Camber/ Crossfall	Camber/ Crossfall	CK5	CK5 + MK10 (Crossfall)	CK5 + MK10 (Crossfall)	150mm base 150 mm G7	25mm premix	6
5c	Access Cul-de-sac	13	12	10	5.7	5.5	5	Camber/ Crossfall	Camber/ Crossfall	Camber/ Crossfall	CK5 + MK10 (Crossfall	CK5 + MK10 (Crossfall)	CK5 + MK10 (Crossfall)	150mm base 150mm G7	25 mm premix	6
5d	Access way	12	10	10	5.5	5	4.5	Camber/ Crossfall	Camber/ Crossfall	Camber/ Crossfall	CK5 + MK10 (Crossfall	CK5 + MK10 (Crossfall)	CK5 + MK10 (Crossfall)	150mm base 150mm G7	25 mm premix	6
5e	Access court	10	10	6 max 75m	5	4.5	4	Camber/ Crossfall	Camber/ Crossfall	Camber/ Crossfall	CK5 + MK10 (Crossfall	CK5 + MK10 (Crossfall)	CK5 + MK10 (Crossfall)	150mm base 150mm G7	25 mm premix	5
Low Income																
Single Title Public Services	Two way One way	10.5 9	10 8	9.5 6	5.7 4.5	5.5 4.0	5.0 4.0	Camber	Camber/ Crossfall	Camber/ Crossfall	BK2+C1 or CK5	CK5 + MK10 (Crossfall)	CK5 + MK10 (Crossfall)	150mm base 150mm G7	25 mm premix	8
Single Title Private Services	Two way One way	10 8	9 6.5	8.5 6.5	5.5 4.0	5.0 3.5	4.6 3.6	Camber	Camber/ Crossfall	Camber/ Crossfall	BK2+C1 or CK5	CK5 + MK10 (Crossfall)	CK5 + MK10 (Crossfall)	150mm base 150mm G7	25 mm premix	8
Industrial		Heavy	Medium	High	Heavy	Medium	High	Heavy	Medium	High	Heavy	Medium	High			
	Major access Road	20	18	16	8.5	8.0	7.4	Camber	Camber	Camber	BK4+ C1	BK2+ C1	BK2+ C1	Refer to approved design and CES for detail		
	Access Road	18	16	14	8.0	7.4	6.8	Camber	Camber	Camber	BK2+ C1	BK2+ C1	BK2+ C1			

4. STORMWATER

4.1 MINIMUM DESIGN CRITERIA

- Minor system: 2 year recurrence interval for low cost residential and 5 year for medium to high cost residential, commercial, town centres and industrial, conveyed in underground pipe system. No overtopping of kerbs allowed.
- Major system: 50 year recurrence interval. The difference between the minor and major storm to be conveyed in the road prism with a depth not exceeding 150 mm within the road reserve width. The 100 year recurrence interval flood should be used to check the overall layout design.
- The minimum gradients for pipelines must ensure self-cleaning velocity of at least 0.9 m/s.
- The maximum allowable velocity shall be 3.5 m/s
- Overland flow route available for all trapped low points.
- Particular attention must be given to the accommodation of flows from upstream properties and discharge runoff through lower properties.
- Increase runoff resulting from new development that is not provided for in the existing downstream system must be retained by the provision of storm water detention ponds.

NOTE: No open channels across intersection

4.2 STORMWATER DETENTION PONDS

- Stormwater detention ponds shall generally be dry ponds. The bottom shall have a minimum slope of 1:200. Subsoil drains are to be installed to provide efficient under drainage. The stabilising of banks, grassing and irrigation of all surfaces are all part of the requirements for the provision of detention ponds.
- Banks to detention ponds shall have a maximum slope of 1:3.
- Wet ponds will only be allowed as a feature where the water depth can be sustained throughout the dry weather period to a minimum depth of 1,0 m. Adequate warning signs or measures to protect people from drowning must be provided.

4.3 PIPES

- Minimum pipe sizes: 375 mm Diameter for catch pits connection.
  375 mm Diameter for longitudinal runs.
- Pipe classes to be determined by the loading and trench conditions.
- Minimum pipe classes: 375 mm Diameter class 100D
  450 mm Diameter class 100D
  600 mm Diameter class 50D
  750 mm Diameter class 50D
  900 mm Diameter class 50D
- Only spigot and socket pipes with rubber ring joints will be allowed.
- Pipes to be laid on Class B bedding.
- Soffits of increased pipe size to be laid at the same level in the downstream direction.
- Changes of pipe direction on main lines to be less that 60° where possible.
- Lifting holes to be adequately covered with geotextile.

4.4 SUBSOIL DRAINAGE

- Reference is to be made to TRH 15.

- Subsoil drainage is to be provided in areas with a high water table in the wet season, to drop the water table a safe distance (at least 0.8 m) below the road surface. Subsoil drainage systems shall generally be installed along a road on the upstream side to form a cut-off drain. Subsoil drains shall be constructed in accordance with drawing no CES/SW/1. The bottom of the subsoil drain must not be covered by any geotextile fabric to prevent the drainage system from getting clogged.
- Manhole constructed from 750 mm diameter rings are to be provided every 60m or at change in direction or grade and at end points.
- Drainage pipes within the subsoil drain shall be 110 mm diameter PVC with 8 mm diameter drilled holes, 120° apart, 75 mm c/c,("Corflo", SABS 1601 or similar).

NOTE: Sausage and fin-drains type subsoil drains will generally not be permitted.

4.5 MANHOLES / CATCHPITS

- Manholes to be constructed in accordance with the pipe diameter ranges as indicated on drawings no's CES/SW/2 AND CES/SW/3.
- Manhole covers and frames to be CI type 2A (modified CCC) in accordance with SABS 558 in roadways of low risk areas and in high risk areas type 2A CI frame with steel reinforced concrete lid cast in galvanised steel cone, or Polymer Concrete.
- Catch pits to be side inlet kerb type with precast concrete cover and frame as per drawing no CES/SW/4 OR CES/SW/5. In-situ cover slabs shall be according to drawing CES/SW/8
- Catch pits constructed in concrete channels to be of same profile as drawing no CES/SW/6
- Headwalls to be constructed as per drawing CES/SW/7.

4.6 POLLUTION CONTROL

- Consideration is to be given to pollution control of storm water discharge where necessary. No contaminated storm water to be discharged into storm water network.
- Oil traps to be installed where contamination is expected.

5. SEWERS

5.1 MINIMUM DESIGN CRITERIA

- A conventional waterborne sewerage system will be provided with separate connections to individual erven. The main sewer line will be constructed within road reserves. Midblock sewers will generally not be allowed unless the topography requires it.
- Design parameters:

Average Daily Flow	-	as per Red Book
Peak Factor	-	as per Red Book
Extraneous flow	-	15%
Minimum velocity	-	0,7 m/s

- Minimum cover over pipes: 0.75 m
- Minimum pipe size: 110 mm Diameter for house connections.
  160 mm Diameter for sewer mains
- Minimum gradients: 110 mm Diameter house connections 1:60.
  Main lines prior to full flow conditions as follows:

Dwellings units	***Grade***
Less than 6	1:80
6 to 10	1:100
11 to 80	1:120
81 to 110	1:150
111 to 130	1:180

- House connections depth shall be 1,0 m, but must be able to drain 100% of an erf.
- Joint connections for 2 or more properties will be permitted in low income housing projects.
- Maximum manhole spacing – 80 m
- Existing downstream systems must be investigated to determine the potential capacity for accepting additional flows.

5.2 HOUSE CONNECTION

- Marker posts to be installed at sewer house connection points to consist of 75 x 150 x 1 000 mm concrete edging stones or wooden peg placed vertically, protruding 100 mm above finished ground level, painted red.
- Typical house connection as per drawing CES/S/3 and CES/S/5

5.3 PIPES

- Pipeline material for pipes sizes up to 250 mm diameter:
  - uPVC (Heavy duty) complying with SABS 791 or
  - Glass reinforced pipe complying with SABS 1748
- Pipes as generally laid on class B bedding.

Note: Special approval to be obtained on pipe specifications for diameters larger than 250 mm. All pipe fittings and materials used shall comply to the latest edition of the relevant SABS specification

5.4 Testing

CCTV inspections are to carried out on all sewer pipelines before final acceptance.

5.5 Manholes

Dolomite aggregates and low alkali sulphate resistant cement to SABS 471, shall be used for all concrete, mortar or screeding.

Manholes shall generally be precast concrete or Polymer unit as indicated on drawing CES/S/1.

Precast AC manholes are allowed

Manholes covers and frames to be CI type 2A (modified CCC) in accordance with SABS 558 in roadways of low risk areas and in high risk areas type 2A CI frame with steel reinforced concrete lid cast in galvanised steel cone, or Polymer Concrete.

5.6 Intercepting trap chambers

Where applicable, to prevent pollution, pollution control can be done by the use of interception trap as per drawing CES/S/2.

5.7 Erf Inspection chambers

Each individual erf connection should be provided with an inspection chamber. The chamber must be positioned one meter inside the erf boundary. The chamber could be any of the following:

- Prefabricated with cover and frame
- Double brick wall, plastered both sides with cover and frame.

Inspection chambers must be provided with a minimum size 600 mm X 800 mm cover and frame. If the chamber falls in the future driveway the cover and frame must be heavy duty type.

Generally the Civil Contractor will stop the erf connection one meter inside the erf boundary with an end cap. The building Contractor will construct the erf chamber and complete the house connection.

5.8 Sewer septic tank

Septic tanks may be installed provided that soil percolation tests, as carried out by an accredited laboratory are within the acceptable norms. Alternately a conservancy tank is to be installed. The owner is to appoint a registered private contractor to service the conservancy tank. All costs will be for the owner. A typical septic tank layout is shown on drawing CES/R/4A.

5.9 Sewer pump station (Sewer lifting pumps stations)

5.9.1 General Requirements

Sewer pumping stations will be used only when it has been determined by the Department: Civil Engineering Service that they are the only practical method to provide sanitary sewer services to the area and are consistent with the Master Water and Sewer Plan.

All Sewer pumping stations shall be designed and specifications in accordance with the Senior Manager: Civil Engineering Services. The plans and specifications shall contain sufficient detail so that no misunderstanding can arise as to the material to be used, the equipment to be installed, or the quality of the workmanship, all of which shall be of first grade quality. The plans and specifications, together with a design analysis, shall be submitted and approved by the Department: Civil Engineering Services prior to the start of any construction.

Prior to start of design, the engineer shall schedule a meeting with the Department: Civil Engineering Services to review the requirements of this standard and to determine specific requirements for equipment selection, and specific design details. The guidance in this chapter is general in nature.

No structures tributary to a proposed pumping station shall be occupied until the following items have been provided:

a) A "Completion Certificate " from the appointed Engineer
b) All OHS required certifications.
c) Two copies of the Operations and Maintenance Manual approved by Department: Civil Engineering Services.

The design engineer shall take into consideration the appearance and landscaping of the sewer pumping station property and submit a site plan for Municipal approval. In particular, trees, shrubs and other landscaping shall be required to present a finished appearance consistent with the zoning and general appearance of the surrounding area.

All sewer pumping stations shall be equipped with a 25 mm water tap and a 110 mm sewer connection point, which must be in close proximity of the wet well.

The construction plans shall identify a 30 meter zone of controlled or limited use surrounding the center of the wet well. Within such zones, residential uses or high-density human activities or activities involving food preparation shall be prohibited. The site shall be provided with a minimum 1 800 mm (6') high razor mesh fence with a minimum 4 meter wide vehicle gate. A board on board fence or other approved visual screening consistent with the general appearance of the surrounding area shall be provided.

An ample, all-weather-access 6 meter wide road, including pavement, storm drainage and parking, shall be provided for easy access to the pumping station. The access road and turn-around shall be paved outside of the fenced area of the pumping station site, as well as the entrance. The grade of the road shall not exceed 10 percent. On long access roads, a locking gate will be provided at the entrance to the access road from the public right-of-way.

All pumping stations shall be designed to minimize odor and hydrogen sulfide generation; odor control facilities approved by the Department: Civil Engineering Services shall be installed where required. Prevention of hydrogen sulfide generation shall be an important design consideration.

Finished floor elevations, entrance hatches and all vents shall be at least 300 mm above the 100-year flood level.

5.9.2 Capacity Design

5.9.2.1 General

Sewer pumping stations shall be sized in accordance with the criteria shown in the Master Water and Sewer Plan and shall take into consideration such parameters as minimum, average, and peak station inflows as well as minimum, average, and maximum pumping rates. The capacity of the station shall be the projected ultimate flow for the drainage basin, unless a lesser capacity is approved by the Department: Civil Engineering Services. In that case a phasing plan shall be submitted by the design engineer.

Pump selection and force main selection shall he based on a hydraulic analysis of the required flows, pipeline velocities, and receiving gravity sewer capacities. Consideration must be given to designs that produce minimum power requirements to accomplish the functions required. If requested, supporting data shall be furnished to the Department: Civil Engineering Services.

5.9.2.2 Wet / Dry well chamber

Wet well shall be constructed of precast concrete with a minimum diameter of 2 meter. For waterproofing and protection against hydrogen sulfide attack, the exterior concrete surfaces shall be coated with two (2) coats of bituminous waterproofing material applied at the rate of 7 mm dry coat or two-part epoxy with each coat being a different color. The interior surface shall have an acid-resistant high-density polyethylene lining. The wet well concrete floor shall have a slope towards a single drain hole, which must be assessible for maintenance

- Typical wet-well chamber as per drawing CES/S/6.
- Typical dry-well chamber as per drawing CES/S/7.

5.9.2.3 Miscellaneous equipment in wet well

Slide rails

All pump lifting slide rails shall be made of stainless steel pipe. Slide rails shall be installed and sized per manufacturer's instructions. The slide rails shall be firmly braced to the wet well wall with stainless steel support brackets place at a maximum spacing of 2m.

Lifting Chain

Pump lifting chain, clevises and shackles shall be made of stainless steel. The chain shall be sized to accommodate the installed pump weight, but not be sized smaller than 3/16- inch stainless steel diameter links.

Bolts

All field installed bolts, nuts and washers used inside either the pump or valve chamber shall be made of stainless steel.

Fasteners

All concrete fasteners used for installation of braces, brackets or boxes shall be stainless steel Welded type stud anchors. Anchor holes shall be drilled to the manufacturer's recommended depth. Anchor shall be Hilti Quick bolt. Two or an approved equal. Pump base anchor studs shall be sized as per pump manufacturer's recommendation.

5.9.2.4 Force Mains

Force mains shall have a positive slope from the pumping station to the point of discharge unless unusual conditions make it impractical. Extra depth of bury shall be provided in lieu of air or air/vacuum relief valves wherever feasible. Every effort shall be expended to maintain the force main below the hydraulic gradient.
Pipe for sanitary sewer force mains shall meet all applicable requirements and shall be tested the same as water mains. A minimum cover of 100 mm shall be provided. Future regrading shall be taken into consideration. A pig launching station shall be installed on the force main adjacent to the pumping station. Gate valves shall be located on the force main adjacent to the pumping station.

Retention Chamber

An 8-hour minimum sewerage retention must be provided. Both the pump chamber and the incoming gravity system are not to be considered for the 8-hour calculations.

Retention chamber shall be installed below ground with an access manhole located at the upstream end. The connection between the retention chamber and the wet well wall shall be made with an Ø 200 PVC pipe. The retention chamber must be a dedicated system; it may not be used as part of the gravity system. The retention chamber and the connecting line shall be laid with a minimum 1% slope

Valve chamber

Valve chambers are required at all sewer pump stations and must be constructed to house a minimum Ø100 mm flange check – and gate valve complete with dividing flange tee. The valve chamber must be connected to the wet well chamber with min Ø50 mm PVC pipe.

5.9.3 Power Source

All stations shall be provided with three phase 60 Hz electrical power. Devices to convert single-phase power to three-phase power will not be allowed.

All stations shall be provided with an emergency by-pass pumping arrangement and a permanently installed emergency generator with an automatic transfer switch. The transfer switch shall be sized in accordance with the electrical service requirements.

5.9.4 Materials and Equipment

Pumps

The pumps, motors, and controls shall be supplied by a single vendor. Pumps shall be capable of passing or grinding a minimum of 75 mm (3") solids. Sewer pump selection should allow for upsizing and downsizing of impellers as dictated by sewer flows.

Pumps installation equipment

All sewer pump stations shall be equipped with hoist, block & tackle, capable of lifting pump & motor 1, 5 meter above ground level in order to transfer pump equipment to transport vehicle.

All equipment must comply with OHS regulations.

Pump protection

For larger sewer pump stations an electrical control screening process must be installed and able to protect submerse pumps form foreign objects. The screening process must include temporary stores and removal of removed material in a safe hygienic manner. Technical information regarding the screening process and control must be included in the "Operations and Maintenance Manual". For Maintenance purposes the screening equipment should have the ability to be bypassed.

Smaller sewer pump stations must be equipped with a grit collection chamber in front of the wet well. The collection chamber must be equipped with a drain pipe as well as being accessible from the access road for maintenance. (See drawing for detail).

5.9.5 Motors

The pump motors shall be submersible, close coupled with normal starting torque and low starting current. The motors shall not overload at the design condition or at any head in the operating range as specified. Motors shall be sized for both maximum and minimum head conditions as well as maximum energy efficiency. Each motor shall be in current NEMA design cast iron frame with copper windings.

Controls and Starters

Controls and starters shall be assembled by the control panel manufacturer in a single panel and contain the following:

a. One properly sized main circuit breaker.

b. A step-down transformer for station voltage of over 460 volts.

c. A circuit breaker and starter for the starting of each pump motor properly sized for motor running current and short circuit protection on all three phases of the motor.

d. Reduced voltage starters shall be provided for 75 HP and larger motors.

e. One control circuit to provide lead, lag, and alternate operation of pumps with provisions for hand-off-auto operation (HOA).

f. Elapsed time meters are to be provided for each pump.

g. An adjustable three phase voltage sensor to protect motors and motor starters from single phasing and under-voltage.

h. Provide for individual circuit breakers for power source for lights, ventilation fans, convenience receptacles, heater, sump pumps, and RTU receptacle as required, with step-down transformer for 120 volt AC. to control separate circuits and station auxiliaries.

i. The panel shall be UL standard aluminum or stainless steel.

j. All panels must have point-to-point wiring.

5.9.6 Standby Power Source

All sewer pumping stations shall be equipped with a standby power source and automatic transfer switch as follows:

a. An automatic power transfer switch and control to sense power failure and generator running and to transfer station to emergency power source.

b. A trickle charger for the generator starting battery.

c. A generator sized to permit operation of all pumps and accessories with the exception of the standby pump.

5.9.7 Flow Meter

All stations operated by variable frequency drives shall have a flow meter. The unit shall have an accuracy of plus or minus 2.0% of full scale. Meters shall be magmeter type.

5.9.8 Telemetry System

All stations shall be provided with a remote telemetry system that is the same type and compatible with the Municipality's existing system. The unit shall have a battery backup and a NEMA-1 enclosure (for inside locations) or NEMA 4X fiberglass enclosure (for exterior locations), and a compatible antenna. Alarm and status inputs shall be specified by the Municipality but as a minimum the following shall be included:

A. High water - wet well level
B. Low water-wet well level
C. Pump failure (due to overload or no-flow or over temperature or seal failure)
D. Pump run status
B. Power failure (single phase and three phase)
F. Generator run status
U. Pump flow rate
H. Intrusion alarm
I. Special points as determined by the Municipality.

5.9.9 General Safety

The design of a pumping station requires a review of the components of the system to assure that the system is safe to operate. Access ladders for the wet well and valve vault, a hoist for lifting out the pump, lighting, ventilation to remove dangerous gases and security for the electrical system are the major safety items that need to be considered.

6. Water

6.1 MINIMUM DESIGN CRITERIA

- Design criteria of the Red Book shall apply.
- Water mains on erven will not be allowed.
- Minimum cover on top of pipe – 0,8 meter
- Minimum pipe size - Ø100 mm AC pipes
  - Ø75 mm uPVC or mPVC

- Water demand:
  - Residential : 1 000 l / erf / day
  - Peak factor : Minimum 4 or as stated in the Red Book
  - Fire Fighting : Hydrants at maximum of 120 m on primary reticulation.
  - Fire Flows : As per Red Book
  - Minimum Head : As per Red Book
  - Residual Head : Minimum under peak demand – 12 meter

- Isolating Valves

  - Valves to be placed such that a maximum of 4 valves need to be closed to isolate a section of pipeline.
  - Valves to be spaced so that the length of main included in an isolated section does not exceed 600 metres
  - All valves to be installed at splays where applicable and not within the road surface.

Static head not to be greater than 90 m, but to be kept lower where possible to reduce water losses.

6.2 Pipe Materials

6.2.1.1 Network

- uPVC and mPVC: uPVC class 16 heavy duty complying to SABS 966 or
  Ø 75 to Ø 250 mm: mPVC class 16 heavy duty complying to SABS 966
- Glass reinforced pipe complying with SABS 1748
- HDPE: Class 16 type 5, Complying to SABS 533

6.2.1.2 Erf connections

- HDPE : Class 16, Type 5 SABS 533
- Polycop: Class 16 JASWIC approved
- Copper: Class 2, SABS approved

Note: Special approval to be obtained on pipe specifications for diameters larger than 250 mm or any other type of pipe material other than listed above. All pipe fittings and materials used shall comply to the latest edition of the relevant SABS specification.

6.3 VALVES

- All valves shall be in accordance with SABS 1200 / SABS 664/1974, and approved by the relevant departments head.

- Valves to be approved, and matching or better than the specification of AVK resilient seal type.
- Valves shall be clockwise opening / left hand closing.
- Direction of opening to be clearly marked on valve body or spindle cap.
- All valves shall be heavy duty, class 16.
- All valves shall have non rising spindles.
- All valves shall be fitted with cast iron cap, secured with retaining bolts.
- All valves Belltobies shall be polymer concrete as per AV Moulding, concrete, recycled plastic or cast iron depending on area and relevant condition.
- Only valves supplied with minimum thickness of 225 micron Copon EP 2300 epoxy paint applied to all internal surfaces after it has been thoroughly cleaned by grit blasting to SA ½ finishes in compliance with the requirements of SIS 05 09 00 or valves with similar approved coatings, will be acceptable.
- Valve chambers and chamber markers shall be constructed in accordance with drawing no CES/W/1 and CES/W/2

6.4 Fire Hydrants

- All fire Hydrants types shall be in accordance with SABS 1200, comply with the local Fire Department standard regulations, and approved by the relevant department head.
- All fire Hydrants shall be 65 mm diameter (Internal).
- Outlets shall be London round thread with loose cap and securing chain.
- Hydrants spindles shall be provided with cast iron caps, secured with retaining bolts.
- Hydrants shall be clockwise opening / left hand closing.
- Hydrant covers shall be polymer concrete as per AV Moulding, concrete recycled plastic or cast iron depending on area and relevant conditions.
- Hydrant covers shall be painted with a minimum of two coats oil paint, "Yellow".
- All hydrants shall be supplied and installed complete with flanged CI extension piece complete with cadmium plated nuts and bolts to ensure depth not greater than 400 mm.
- Hydrants chambers to be constructed in accordance with drawing no CES/W/1 or TS/W/2

6.5 Fittings and specials

Fittings for use in conjunction with FC pipes shall be CI to suit COD pipes.

All internal surfaces of CI fittings shall be thoroughly cleaned by grit blasting to SA ½ finishes in compliance with the requirements of SIS 05 09 00 before applying Copon EP 2300 epoxy paints to ensure a minimum thickness of 225 micron. All external surfaces shall be cleaned and coated in accordance with BS 4772. After it has set coating shall be such that it will not flow when heated to temperature of 75 C.

uPVC fittings and specials shall be class 16, fitted with spigot and socket rubber ring joints and shall comply with the relevant requirements of SABS 966.

Only stainless steel bolts and nuts to be used on all underground saddles, flanges, short collar couplings etc.

All pipe fitting (Valves, Hydrants and scour valve, beds) shall have thrust blocks as per drawing CES/W/5.

6.6 House connections

- House connections shall be installed as indicated on drawing no CES/W3 as part of new developments.
- SABS approved Ball Cocks, Gate valves or Ferrules shall be installed on the main water pipe.
- All cast iron saddles to be wrapped with Denso tape.
- Marker posts to be installed at water house connection points to consist of 75 x 150 x 1 000 mm concrete edging stones or wooden peg placed vertical, protruding 100 mm above finished ground level, painted Blue.

6.7 Water meters

6.7.1 Bulk water meters (Ø > 50 mm)

Water meters Ø80 to Ø 150 mm will general be combination type meters and shall be installed in a manhole chamber as indicated on drawing CES/W/4. Space must be provided for the positioning of the meter chamber on the erf. Access to the meter for maintenance and reading purposes must be insured.

Bulk water meters will be supplied and installed by the Council at the developer's expense. The provision of the meter chamber will be the responsibility of the developer.

Bulk water meters must be correctly sized, in terms of the manufacturing specification, for the expected flow conditions.

6.7.2 Domestic water meters (Ø < 50 mm)

Only SABS approved water meters in Tested Water meter Box, that include a stopcock on supply side will be allowed.

Domestic water meters will be supplied and installed by the council at the owner's expense.

6.7.2 Water loss management

Where relevant, Council may request the installation of additional district/zone bulk water meters at the developer's expense to facilitate water loss management.

7. Ducting & Fencing

7.1 Ducting

7.1.1 Telephone

The requirements as laid down by Telkom for provision of ducting shall apply.

7.1.2 Electrical

Typical details of duct installations requirements can be seen on drawing no CES/R/9.
Only SABS approved pipes to be used. Minimum size of pipe to be used is Ø 110 mm.

All new developments to insure ample amount of ducting, parallel to existing roads and under newly constructed drive ways.

7.1.3 Traffic lights

Traffic light ducts to be installed at all major road intersections. Draw boxes to be constructed at pipes ends in accordance with drawing no CES/R/10.

7.1.4 Markings of ducts

Duct marking shall be cut out on the kerb face above duct crossings, followed by painting the recesses with poly acrylic roof paint. The mark shall be 5 mm thick with 75 mm high lettering. Precast recessed kerbs are preferred. Identification marks as follows:

Services	Lettering	Paint Colour
Telkom	**T**	Green
Electrical	**E**	Red
Municipal water service	**W** (Blue)	White background
Municipal water valve	**V** (Blue)	White background
Municipal sewer service	**S** (Yellow)	White background
Municipal Hydrant valve	**FH** (Red)	Yellow background

7.2 Fencing

7.2.1 Razor Diamond Mesh fencing

Razor fencing may be required on all newly equipped service stations (Sewer and Water pump houses) as per drawing CES/G/1.

7.2.2 Palisade fencing

Palisade fencing, as shown on drawing CES/G/2 will be required as and when determined by George Municipality.

7.2.3 Brick wall

Brick walls as shown on drawing CES/G/3 may be required in sensitive areas, or areas with a high rate of criminal activities. Building plans to be submitted to the Department: Building control.

8. GIS / CAD DATA

8.1 DRAWINGS STANDARDS

8.1.1 Symbols, Line styles, Colour

Drawings supplied by consultants for Civil Engineering Services shall have the same symbols, line types and colour as set out in Drawing CES/G/1

8.1.2 Layers

Drawings shall be produced in the following minimum layers.

Layer	Includes
Roads	Kerb lines, road edge lines, V-channels
Stormwater	Manholes, Catch pits, Pipelines
Sewer	Manholes, Pipelines
Water	All Valves, Fire Hydrants, Pipelines
Electrical	Surface boxes, electrical poles, light poles, cables, overhead lines
Cadastral	All erf lines, road reserves, erf numbers, grid reference

8.1.3 Plan Layout to include the following:

- Survey information, contour layout of existing surfaces.
- All existing services and cadastral information.
- Manhole numbers cover levels and invert levels of all manholes.
- Co-ordinate list of all manholes.
- Pipe diameters, classes and slopes.
- Finished road surface contours of all intersections.
- Grid positions (X,Y) at regular intervals.
- Legend of Services.
- North Point.
- Locality plan.

8.1.4 Longitudinal section to include the following:

- Existing ground profile.
- Depth and position of existing services to be indicated.
- Manhole numbers.
- Pipe diameters, length and slope.
- Stake values and final centre line road levels at regular intervals and at vertical and horizontal curves.

8.2 As built information

8.2.1 As built information supplied by consultants at the completion of a project shall include the following:

- One full set of as built services layout plans (to a scale not smaller than 1:500) including longitudinal sections printed on polyester film on A0 or A1 paper size.
- An electronically produced ASCII file in LYXZ format supplied by an independent surveyor of the centre points of all surfaces boxes (manholes, valve, fire hydrants etc), and kerb face

positions at beginning and end points of all curves and changes in direction shall be provided as part of As built information. Drawings must be adapted where the difference between Design and As Built exceeds the tolerance of 50 mm in XY position and 10 mm in Z (Height).

- As Built drawings to be supplied in electronic format compatible with AllyCad format. (DXF format) (Grid positions to be indicated on all drawings.) Drawings must be supplied in the following CAD format:

  "Projectname".drg or "Projectname".dxf
  AND "Projectname".pdf

- For sewer & water house connections:

  - Two measurements indicating the house connection point in relation to the erf boundary pegs.
  - The position of all junctions on main sewer lines.
  - The invert levels of each house sewer connection point.

- A table of pipe capacities versus design flows for sewer and stormwater and the result of the relevant network analyses for water reticulation as well as a network diagram indicating the node and pipe network.

9. STANDARD DETAIL DRAWINGS

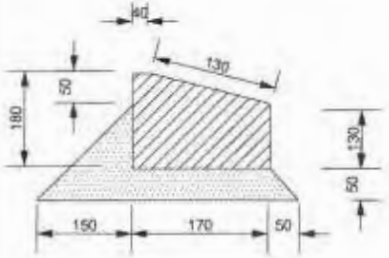
ROADS	DATE	DRAWING NO
Kerbing details	Oct 2008	CES/R/1
Typical cross section of Class 3 road (Dual carriage-way)	Oct 2008	CES/R/2A
Typical cross section of Class 4 road (Major Bus Route)	Oct 2008	CES/R/2B
Typical cross section of Class 4 road (Local Route)	Oct 2008	CES/R/3
Typical cross section of Class 5A road (Access Collector)	Oct 2008	CES/R/4
Typical cross section of Class 5B road (Residential Access loop)	Oct 2008	CES/R/5
Typical cross section of Class 5C road (Access Cul-De-Sac)	Oct 2008	CES/R/6
Typical cross section of Class 5D road (Access way)	Oct 2008	CES/R/7
Typical cross section of Class 5E road (Access Court)	Oct 2008	CES/R/8
Electrical duct Installation	Oct 2008	CES/R/9
Cable Inspection Chamber	Oct 2008	CES/R/10
Typical Speed Hump	Oct 2008	CES/R/11
Raised Pedestrian crossing	Oct 2008	CES/R/12
Turning circles	Oct 2008	CES/R/13
Parking Layouts	Oct 2008	CES/R/14
Traffic Calming: One way Choker	Jan 2009	CES/R/15
Traffic Calming: Two way Choker	Aug 2011	CES/R/16

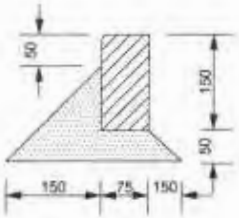
STORMWATER		
Subsoil drain	Oct 2008	CES/SW/1
Storm water Manhole for Pipes up to 600 mm Dia.	Oct 2008	CES/SW/2
Storm water Manhole for Pipes up to 675 mm & larger	Oct 2008	CES/SW/3
Storm water Catch pit - with Mountable or Barrier kerbs	Oct 2008	CES/SW/4A
Storm water Catch pit – Pre-cast Unit Detail	Oct 2008	CES/SW/4B
Storm water Catch pit on steep slopes	Oct 2008	CES/SW/5
Grit inlet Catch pit	Oct 2008	CES/SW/6
Headwall	Oct 2008	CES/SW/7
Typical Storm water Cover Slabs	Oct 2008	CES/SW/8

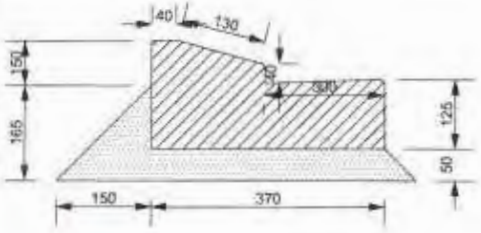
SEWER		
Sewer Manhole	Oct 2008	CES/S/1A
Sewer Back drop Manhole	May 2011	CES/S/1B
Petrol/Oil Interception Trap	Oct 2008	CES/S/2
Typical Sewer connection	Oct 2008	CES/S/3
Typical Sewer septic tank (Farm areas)	Aug 2011	CES/S/4A
Typical Sewer conservancy tank	Oct 2008	CES/S/4B
Typical Roding Eye detail	Oct 2008	CES/S/5
Typical Wet-well pump station (Small Pump station)	Sep 2009	CES/S/6
Typical Dry-well pump station (Large Pump station)	Sep 2009	CES/S/7

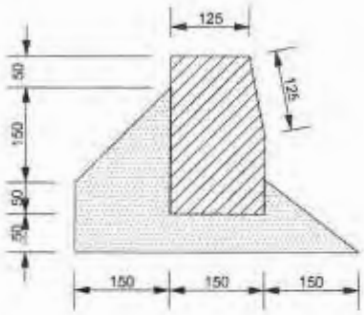
WATER		
Valve & Hydrant chambers	Oct 2008	CES/W/1
Typical Valve & Hydrant Markers	Oct 2008	CES/W/2
Typical Water connections	Oct 2008	CES/W/3
Typical Bulk Water Meter Chamber	Oct 2008	CES/W/4
Typical Thrust Block Detail	Oct 2008	CES/W/5

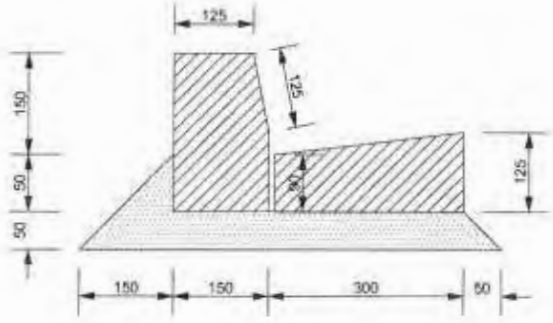
GENERAL		
Typical 1 800 mm Diamond razor mesh fencing	Jan 2009	CES/G/1
Typical 1 800 mm Palisade fencing	Jan 2009	CES/G/2
Standard Brick wall	Feb 2010	CES/G/3
Typical Municipal Project Name Board	Aug 2012	CES/G/4
Typical MIG Project Name Board	Aug 2012	CES/G/5

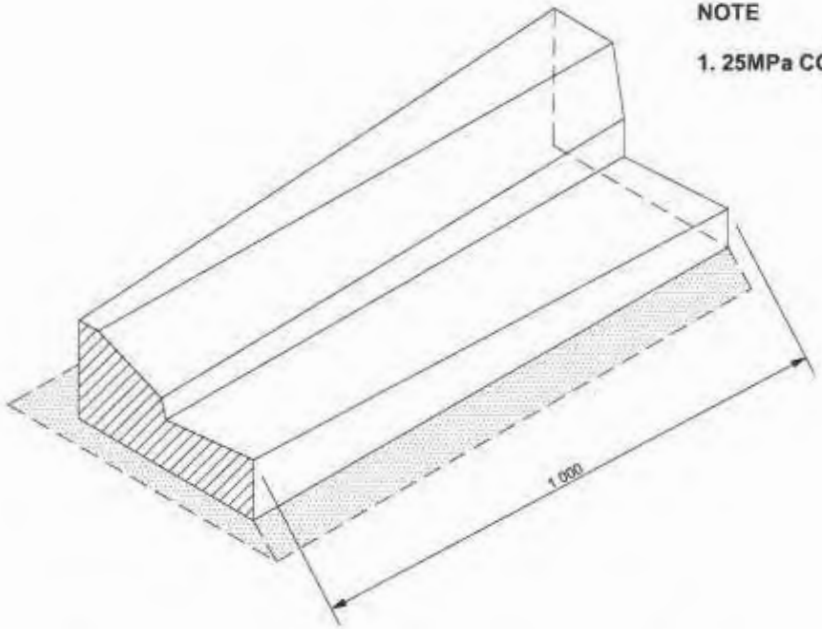












NOTE

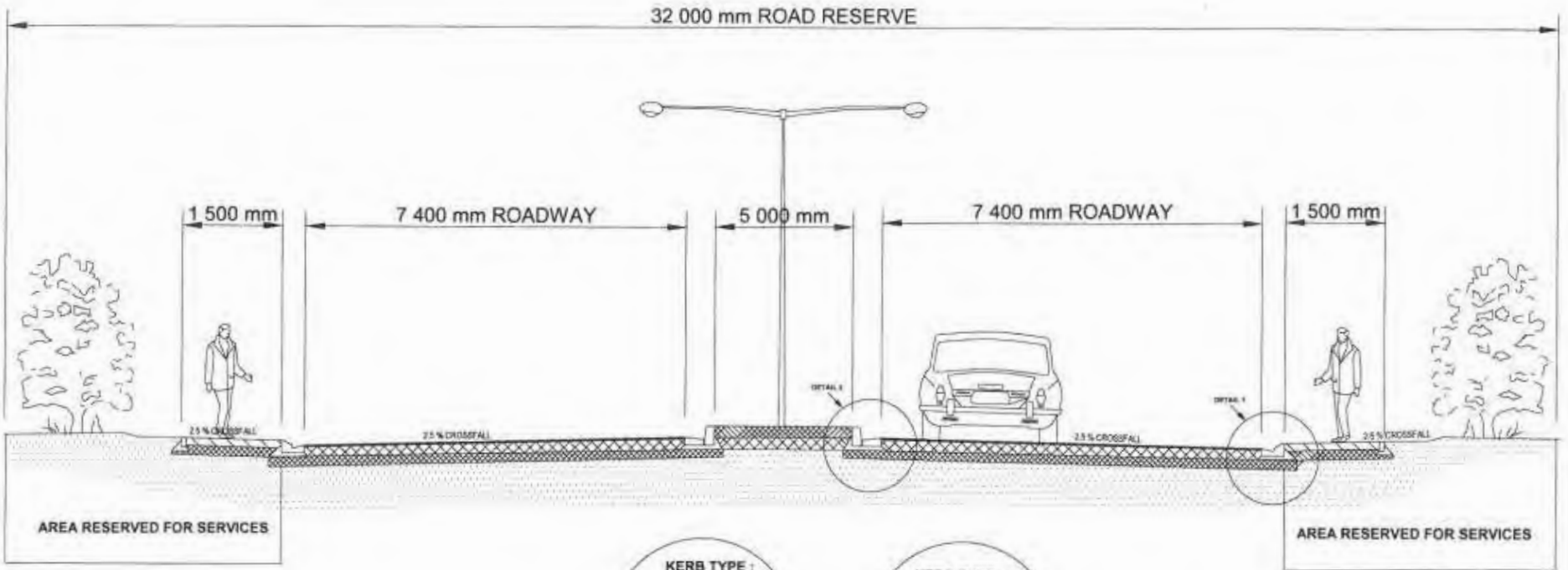
1. 25MPa CONCRETE STRENGTH TO BE USED

GEORGE
THE CITY FOR ALL REASONS

DEPARTMENT: CIVIL ENGINEERING SERVICES

STANDARDS
TYPICAL KERB DETAILS

DATE:	JAN 2009
SCALE:	NTS
PLAN NO:	CES / R / 1





DETAIL 2



DETAIL 1

NOTE:

ROAD LAYER WORKS AS PER ENGINEERING DESIGN

SIDEWALKS TO HAVE HARDENED SURFACES

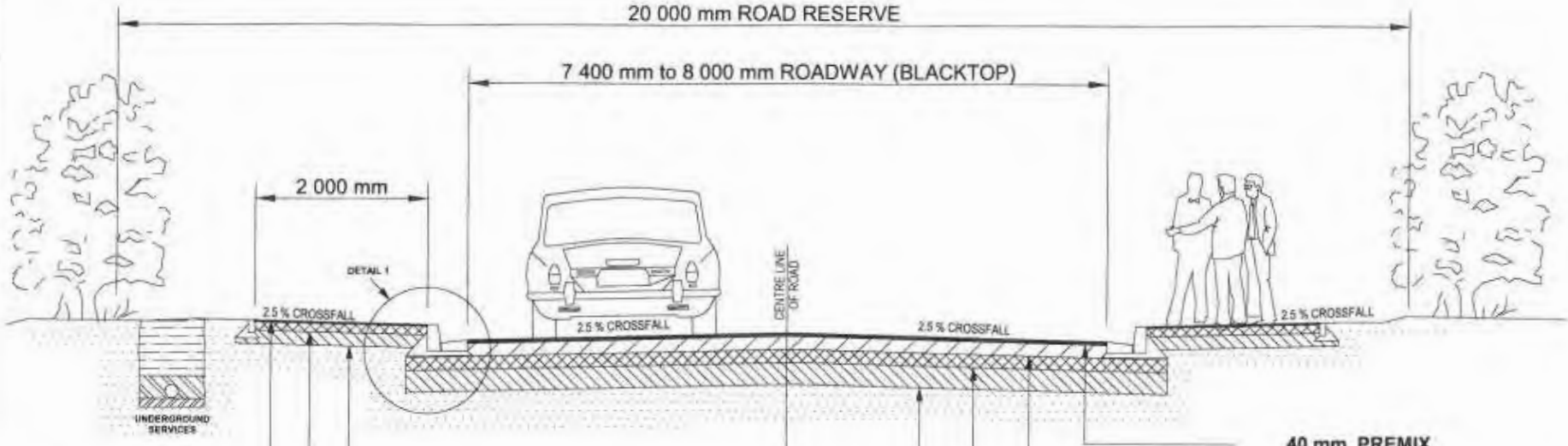
LOCATION OF EXISTING SERVICE TO BE CONFIRMED ON SITE BEFORE COMMENCING WITH CONSTRUCTION.

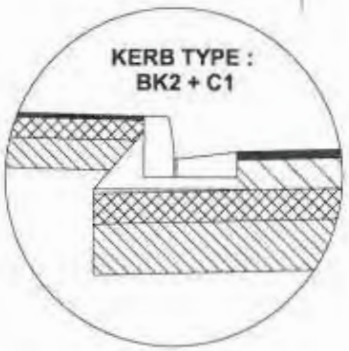
GEORGE
THE CITY FOR ALL REASONS
DEPARTMENT CIVIL ENGINEERING SERVICES

STANDARDS

TYPICAL CROSS SECTION CLASS 3 DUAL CARRIAGE-WAY

DATE:	JUL 2011
SCALE:	NTS
PLAN NO:	CES/R/2A





DETAIL 1

NOTE:

ROAD LAYER WORKS AS PER ENGINEERING DESIGN

SIDEWALKS TO HAVE HARDENED SURFACES

LOCATION OF EXISTING SERVICE TO BE CONFIRMED ON SITE BEFORE COMMENCING WITH CONSTRUCTION.

COMPACTION RATES

PREMIX	- 92% RICE DENSITY
	- 5% AIR VOIDS
BASE	- 98% MOD AASTHO DENSITY
SUBBASE	- 95% MOD AASTHO DENSITY
SUBGRADE	- 93% MOD AASTHO DENSITY

GEORGE
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DEPARTMENT CIVIL ENGINEERING SERVICES

STANDARDS

TYPICAL CROSS SECTION CLASS 4 ROAD - MAJOR BUS ROUTE

DATE:	AUG 2012
SCALE:	NTS
PLAN NO:	CES/R/2B





DETAIL 1

NOTE:

ROAD LAYER WORKS AS PER ENGINEERING DESIGN

SIDEWALKS TO HAVE HARDENED SURFACES

LOCATION OF EXISTING SERVICE TO BE CONFIRMED ON SITE BEFORE COMMENCING WITH CONSTRUCTION.

COMPACTION RATES

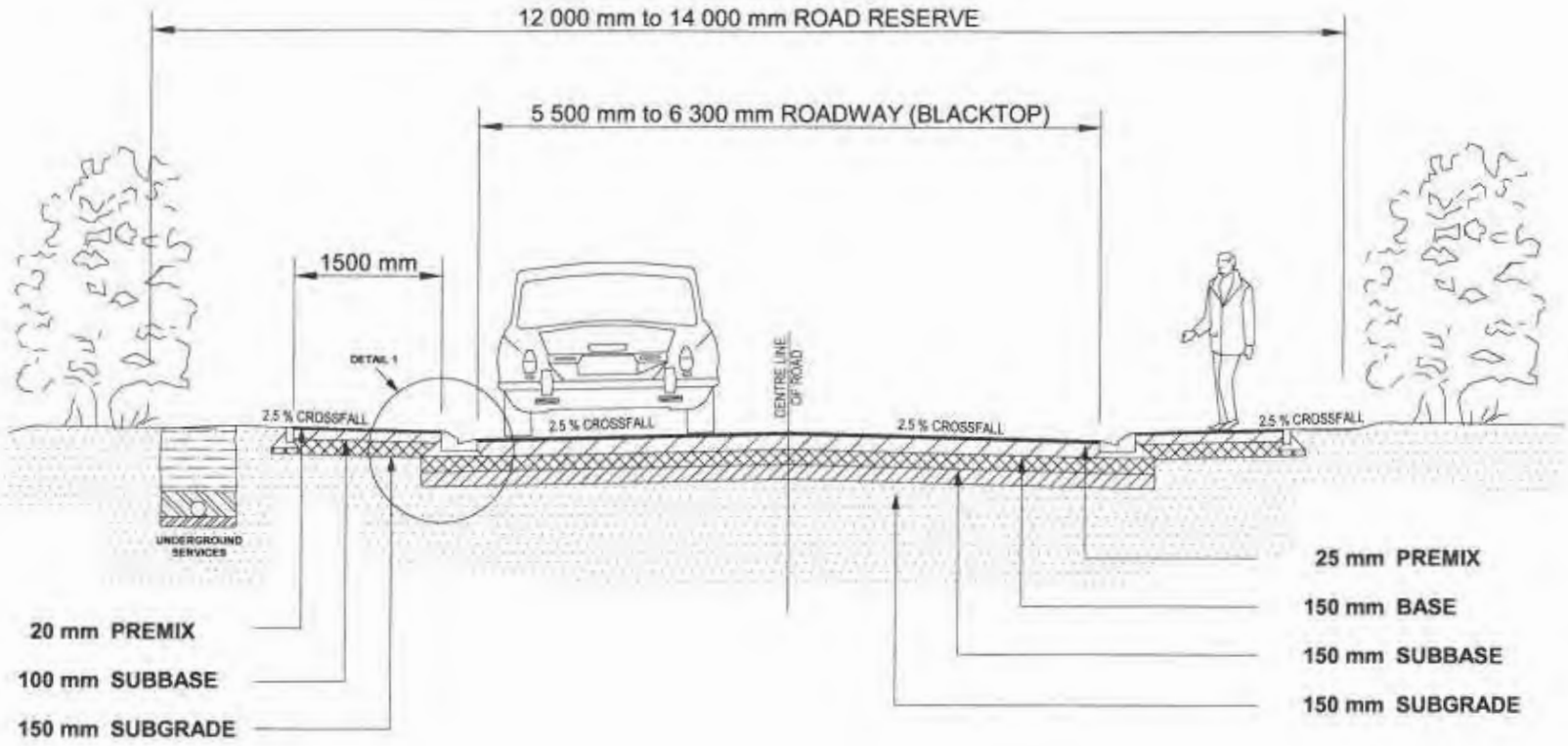
PREMIX	-	95% Marshall Density
BASE	-	98% MOD AASTHO DENSITY
SUBBASE	-	95% MOD AASTHO DENSITY
SUBGRADE	-	93% MOD AASTHO DENSITY

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THE CITY FOR ALL REASONS
DEPARTMENT: CIVIL ENGINEERING SERVICES

STANDARDS

TYPICAL CROSS SECTION CLASS 4 ROAD - LOCAL BUS ROUTE

DATE:	AUG 2012
SCALE:	NTS
PLAN NO:	CES/R/3



NOTE:

ROAD LAYER WORKS AS PER ENGINEERING DESIGN

SIDEWALKS TO HAVE HARDENED SURFACES

LOCATION OF EXISTING SERVICE TO BE CONFIRMED ON SITE BEFORE COMMENCING WITH CONSTRUCTION.

COMPACTION RATES

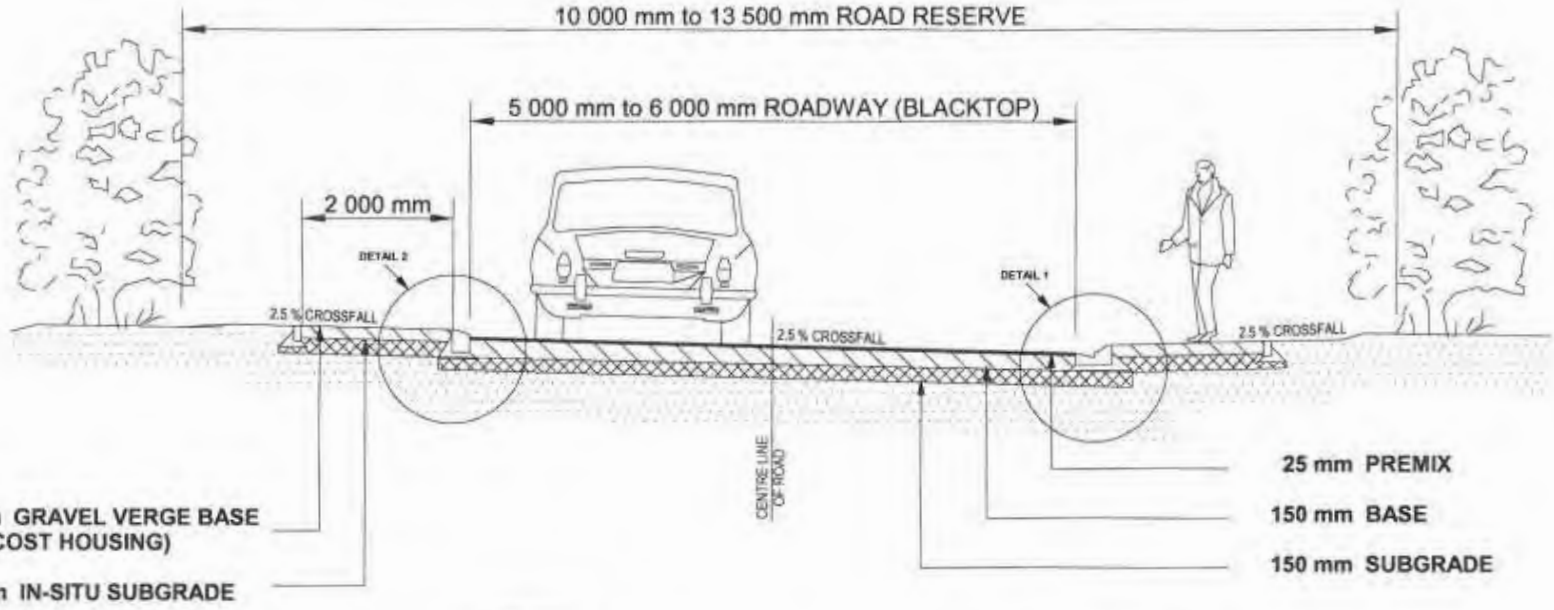
PREMIX	-	95% Marshall Density
BASE	-	98% MOD AASTHO DENSITY
SUBBASE	-	95% MOD AASTHO DENSITY
SUBGRADE	-	93% MOD AASTHO DENSITY

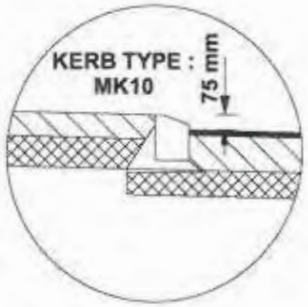
GEORGE
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DEPARTMENT CIVIL ENGINEERING SERVICES

STANDARDS

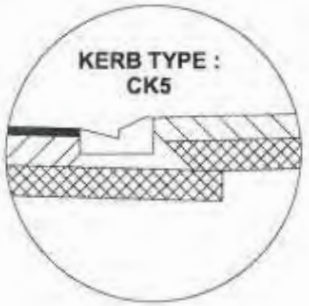
TYPICAL CROSS SECTION CLASS 5A ROAD - ACCESS COLLECTOR

DATE:	AUG 2012
SCALE:	NTS
PLAN NO:	CES/R/4





DETAIL 2



DETAIL 1

NOTE:

ROAD LAYER WORKS AS PER ENGINEERING DESIGN

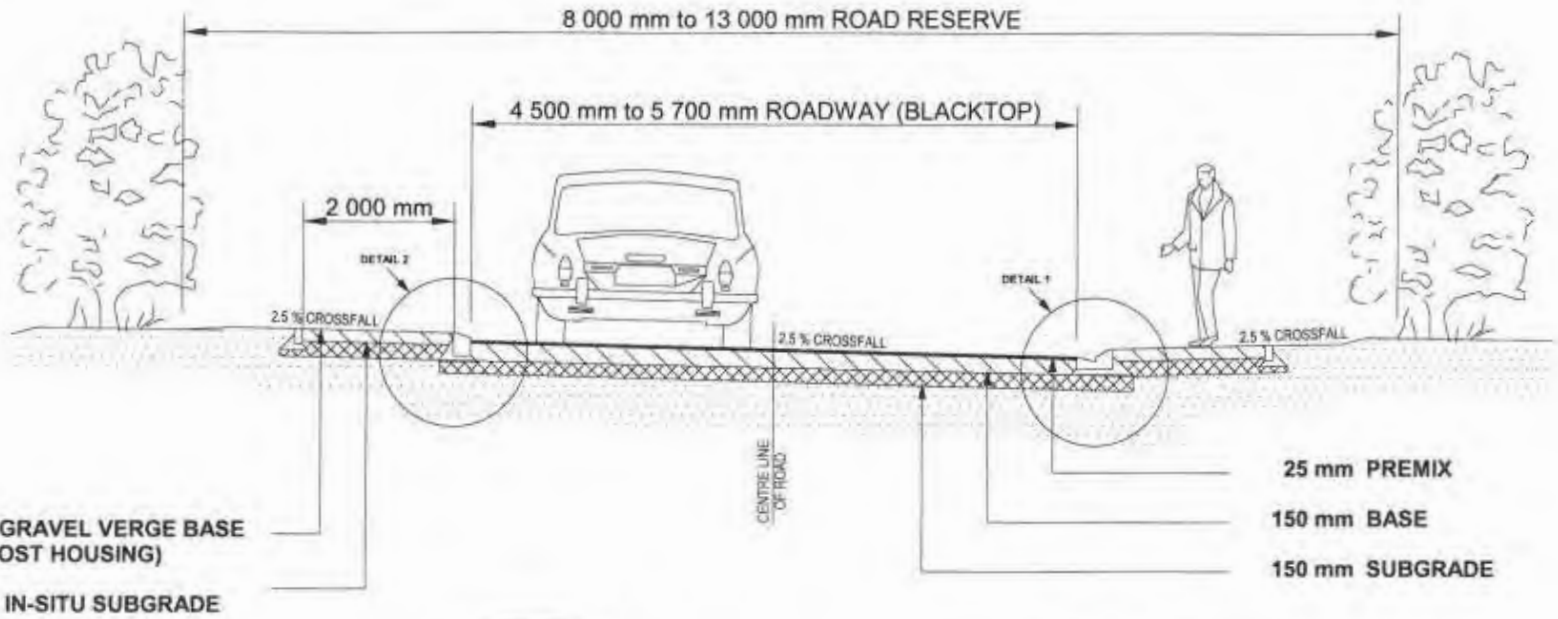
SIDEWALKS TO HAVE HARDENED SURFACES

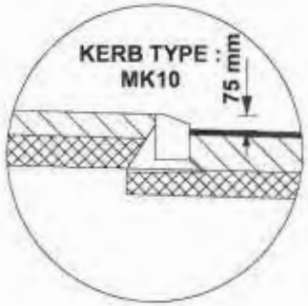
LOCATION OF EXISTING SERVICE TO BE CONFIRMED ON SITE BEFORE COMMENCING WITH CONSTRUCTION.

GEORGE
THE CITY FOR ALL REASONS
DEPARTMENT:CIVIL ENGINEERING SERVICES

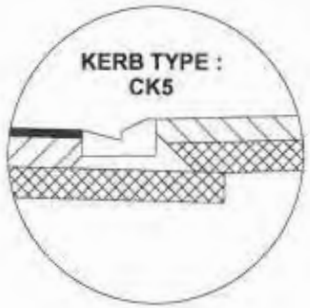
STANDARDS
TYPICAL CROSS SECTION CLASS 5B ROAD - RESIDENTIAL ACCESS LOOP

DATE:	AUG 2012
SCALE:	NTS
PLAN NO:	CES/R/5





DETAIL 2



DETAIL 1

NOTE:

ROAD LAYER WORKS AS PER ENGINEERING DESIGN

SIDEWALKS TO HAVE HARDENED SURFACES

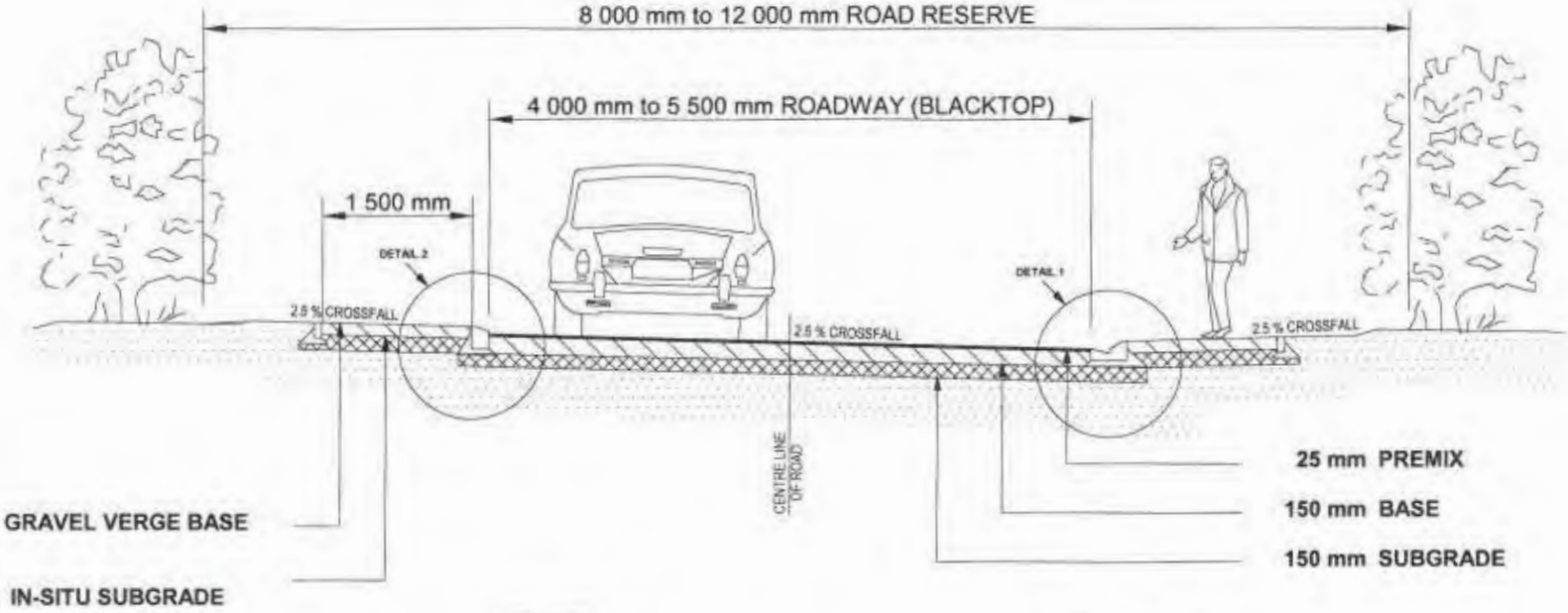
LOCATION OF EXISTING SERVICE TO BE CONFIRMED ON SITE BEFORE COMMENCING WITH CONSTRUCTION.

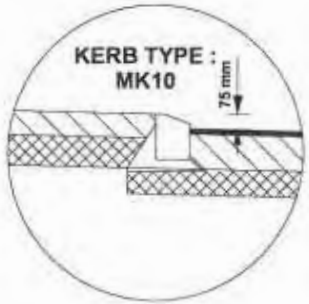
GEORGE
THE CITY FOR ALL REASONS
DEPARTMENT: CIVIL ENGINEERING SERVICES

STANDARDS

TYPICAL CROSS SECTION CLASS 5C ROAD - ACCESS CUL-DE-SAC

DATE:	AUG 2012
SCALE:	NTS
PLAN NO:	CES/R/6





DETAIL 2



DETAIL 1

NOTE:

ROAD LAYER WORKS AS PER ENGINEERING DESIGN

SIDEWALKS TO HAVE HARDED SURFACES

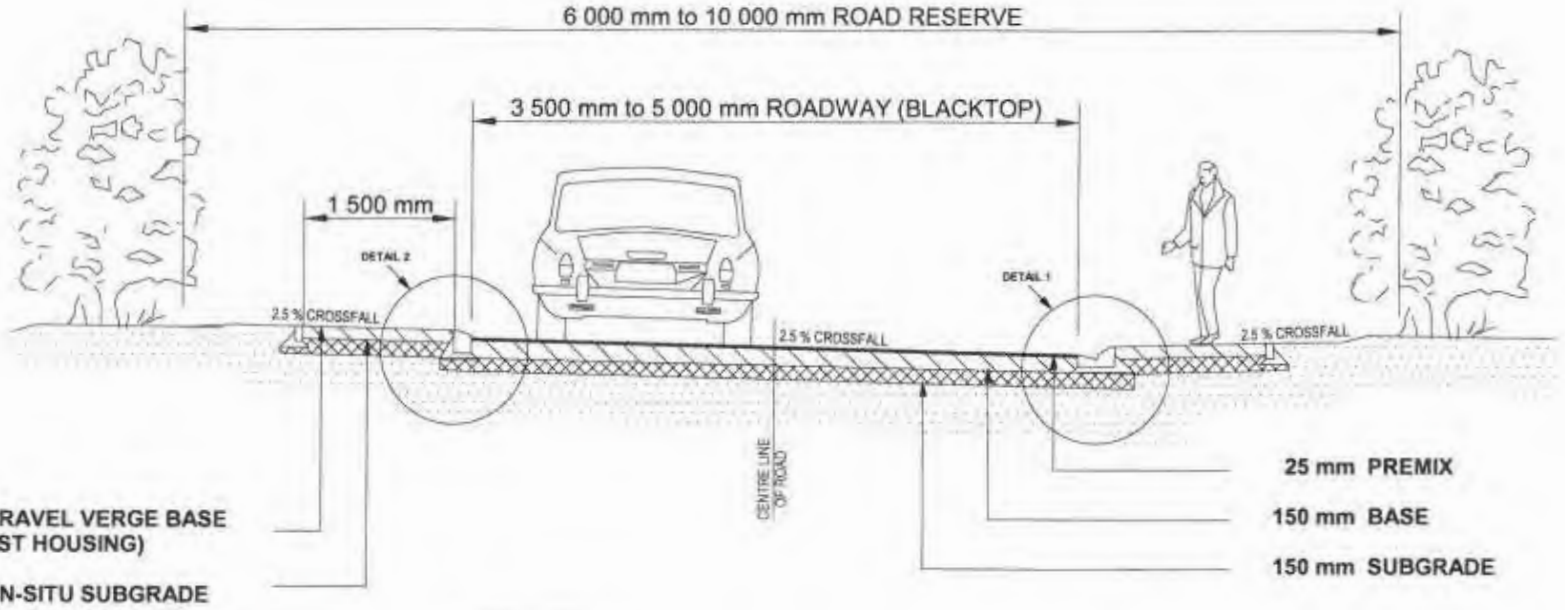
LOCATION OF EXISTING SERVICE TO BE CONFIRMED ON SITE BEFORE COMMENCED WITH CONSTRUCTION.

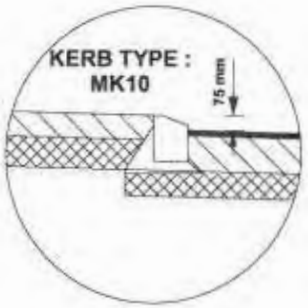
GEORGE
THE CITY FOR ALL REASONS
DEPARTMENT:CIVIL ENGINEERING SERVICES

STANDARDS

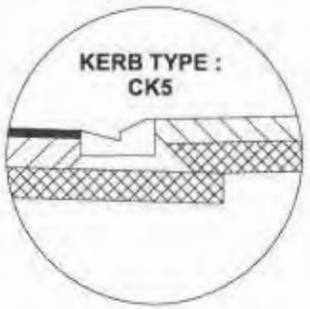
TYPICAL CROSS SECTION CLASS 5D ROAD - ACCESS WAY

DATE	AUG 2012
SCALE	NTS
PLAN NO	CES/R/7





DETAIL 2



DETAIL 1

NOTE:

ROAD LAYER WORKS AS PER ENGINEERING DESIGN

SIDEWALKS TO HAVE HARDENED SURFACES

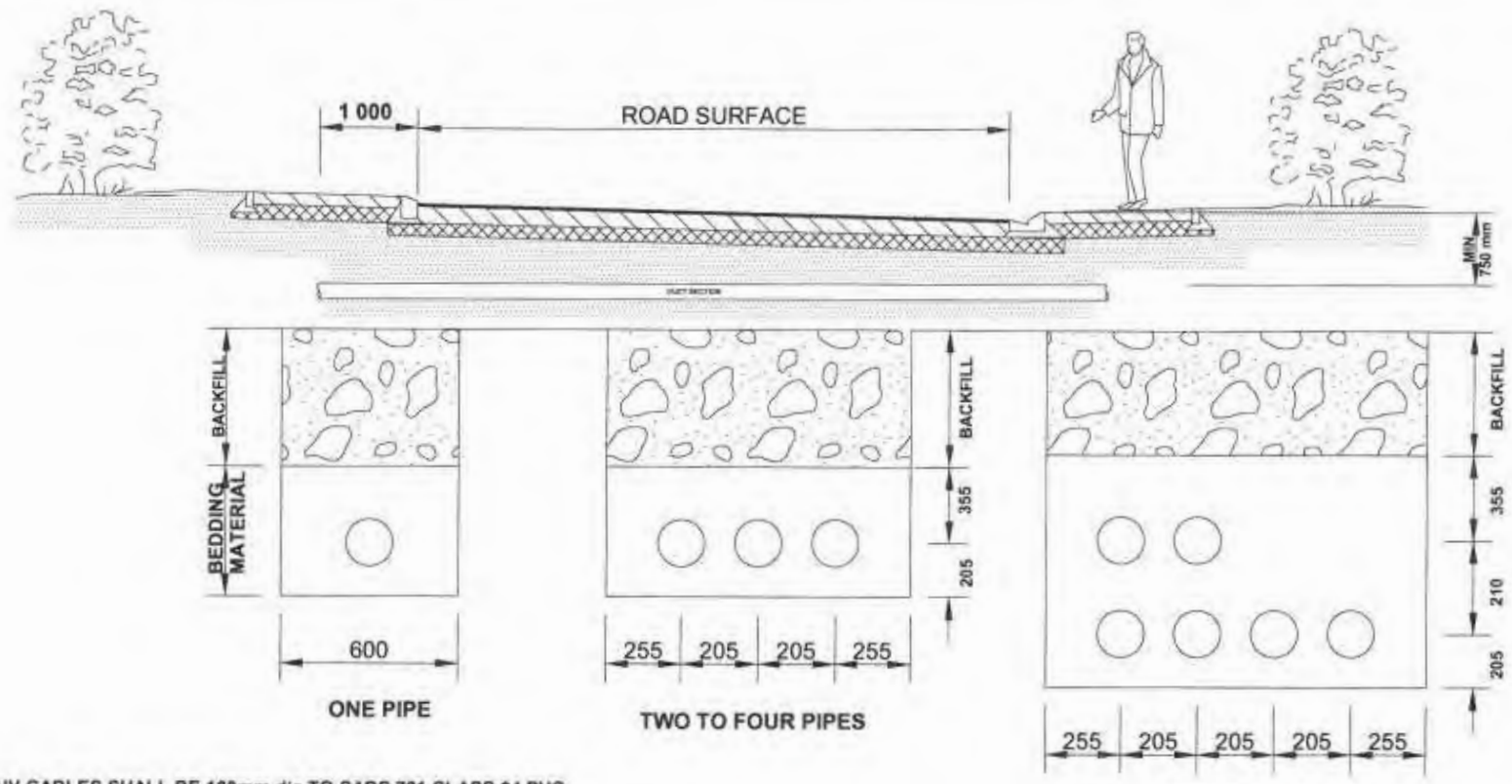
LOCATION OF EXISTING SERVICE TO BE CONFIRMED ON SITE BEFORE COMMENCING WITH CONSTRUCTION.

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DEPARTMENT CIVIL ENGINEERING SERVICES

STANDARDS

TYPICAL CROSS SECTION CLASS 5E ROAD - ACCESS COURT

DATE:	AUG 2012
SCALE:	NTS
PLAN NO:	CES/R/8



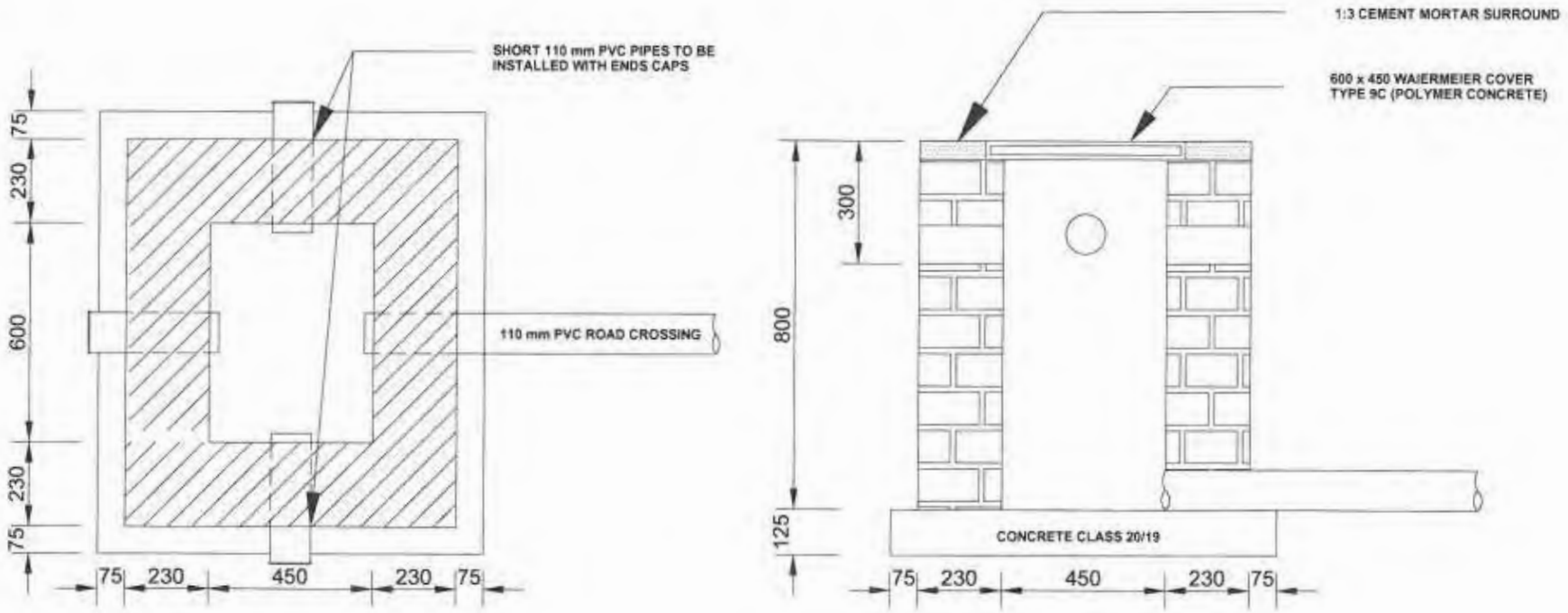
NOTES:

1. CABLEDUCTS FOR HV CABLES SHALL BE 160mm dia TO SABS 791 CLASS 34 PVC AND LV CABLEDUCTS SHALL BE 110 mm TO SABS 791 CLASS 34 PVC.
2. HV CABLEDUCTS SHALL BE INSTALLED AT 900 mm DEPTH BELOW FINISHED ROAD SURFACE.
3. LV CABLEDUCTS SHALL BE BURIED AT 750 mm DEPTH BELOW FINISHED ROAD SURFACE.
4. WHERE HV & LV CABLES CROSS AT THE SAME CROSSING LV CABLESDUCTS SHALL BE BURIED AT THE SAME DEPTH AS THE HV CABLEDUCTS.
5. DUCTS SHALL EXTEND 1 m PAST THE KERB ON BOTH SIDES OF THE ROAD.
6. A 2.5 mm GALVANIZED DRAW WIRE WITH A 2 m FREE LENGTH SHALL BE LEFT IN EACH DUCT.
7. DUCTS SHALL BE SEALED AFTER INSTALLATION WITH A DOUBLE LAYER OF DPC SHEETING, TIED AROUND THE ENDS WITH GALVANIZED BINDING WIRE TO PREVENT THE INGRESS OF OBSTRUCTIONS.
8. THE POSITION OF THE INSTALLED DUCTS TO BE PARMANENTLY MARKED BY A 5,0 mm THICK CUT MADE ON THE KERB FACE OR PREFERABLY WITH RECESSED KERB.

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DEPARTMENT:CIVIL ENGINEERING SERVICES

STANDARDS
ELECTRICAL DUCT INSTALLATION

DATE:	AUG 2012
SCALE:	NTS
PLAN NO:	CES/R/9



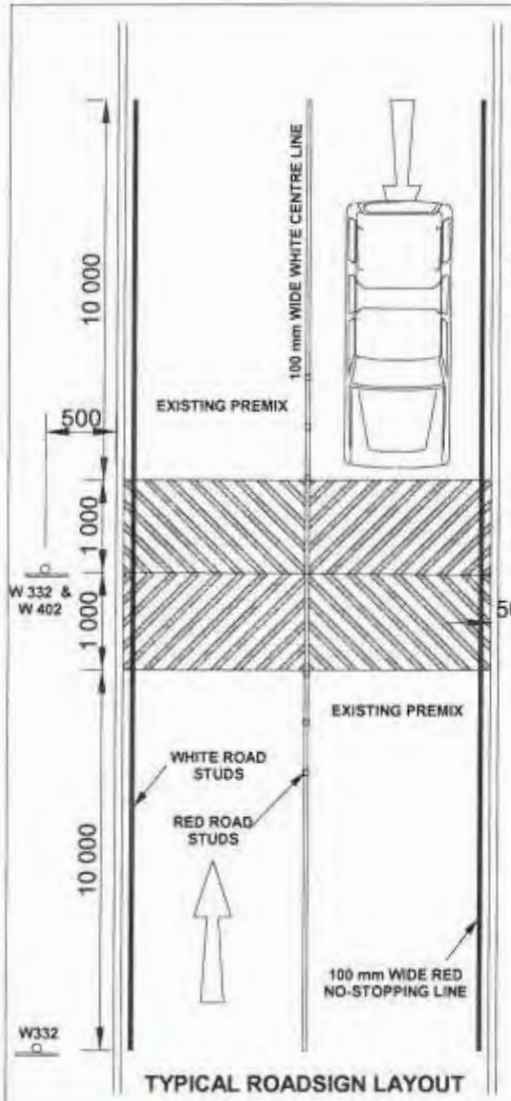
NOTES:

1. EXCAVATION BOTTOM TO BE LEVEL & COMPACTED TO 90% MOD AASTHO DENSITY.
2. BACKFILLING AROUND INSPECTION CHAMBER TO BE IN LAYERS OF 150 mm TO 90% MOD AASTHO DENSITY.
3. FINAL LEVEL TO BE LEVEL WITH SURROUNDING AREA.

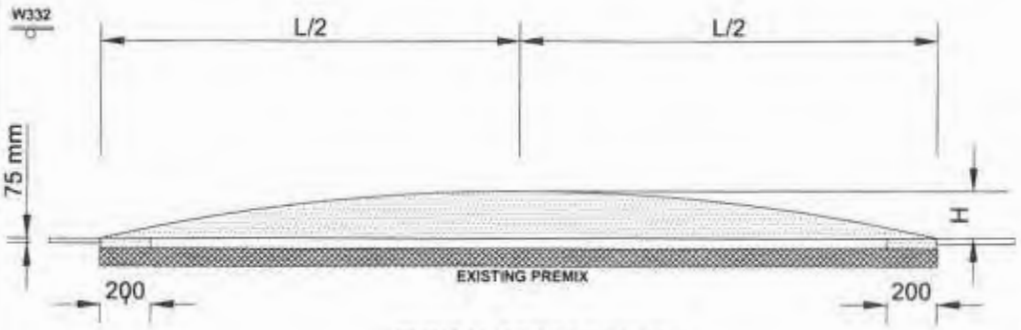
GEORGE
THE CITY FOR ALL REASONS
DEPARTMENT: CIVIL ENGINEERING SERVICES

STANDARDS
CABLE INSPECTION CHAMBER

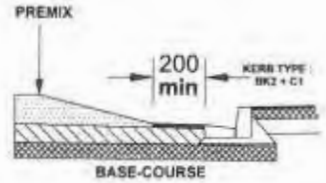
DATE:	AUG 2012
SCALE:	NTS
PLAN NO:	CES/R/10



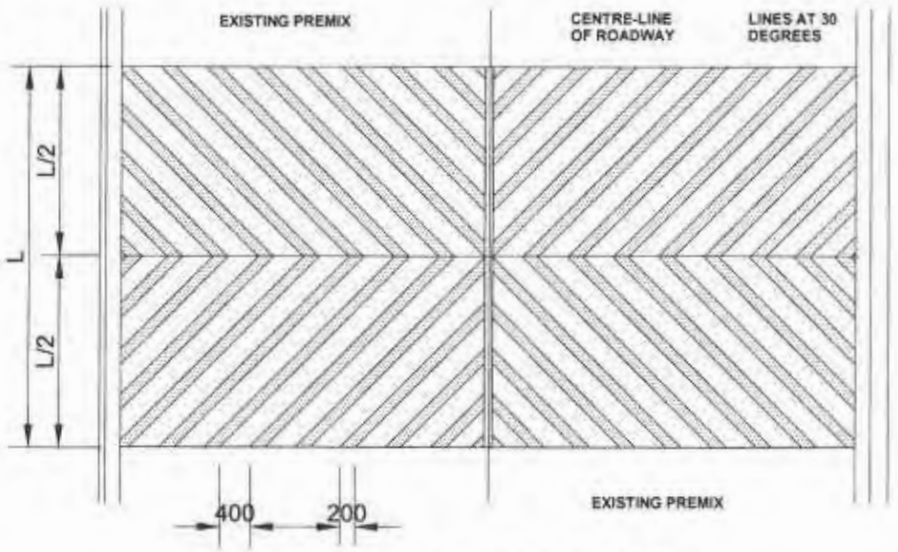
TYPICAL ROADSIGN LAYOUT



TYPICAL CROSS SECTION



BARRIER KERB CONDITION

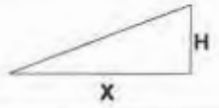


TYPICAL PLAN VIEW OF SPEED HUMP

SPEED (KM / H)	HEIGHT (H)	LENGTH (L)
50	60	5.0
40	80	4.0
30	80	3.5
20	80	2.0

NOTE: FOR CALCULATING INTERMEDIATE HEIGHTS, USE FORMULA

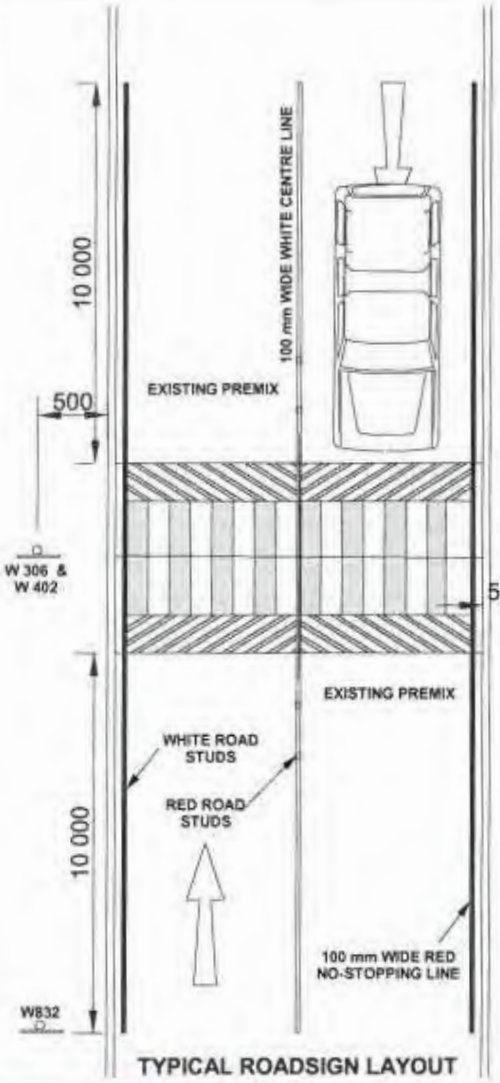
$$H = \frac{4H}{L} \cdot \left(X - \frac{X^2}{L}\right)$$



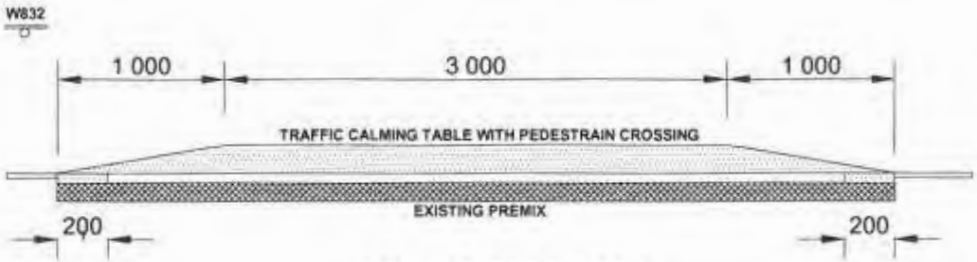
GEORGE
THE CITY FOR ALL REASONS
DEPARTMENT: CIVIL ENGINEERING SERVICES

STANDARDS
TYPICAL SPEED HUMP

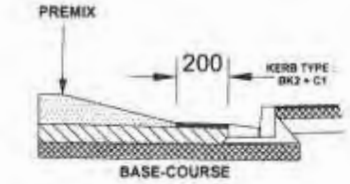
DATE:	JAN 2008
SCALE:	NTS
PLAN NO:	CES/R/11



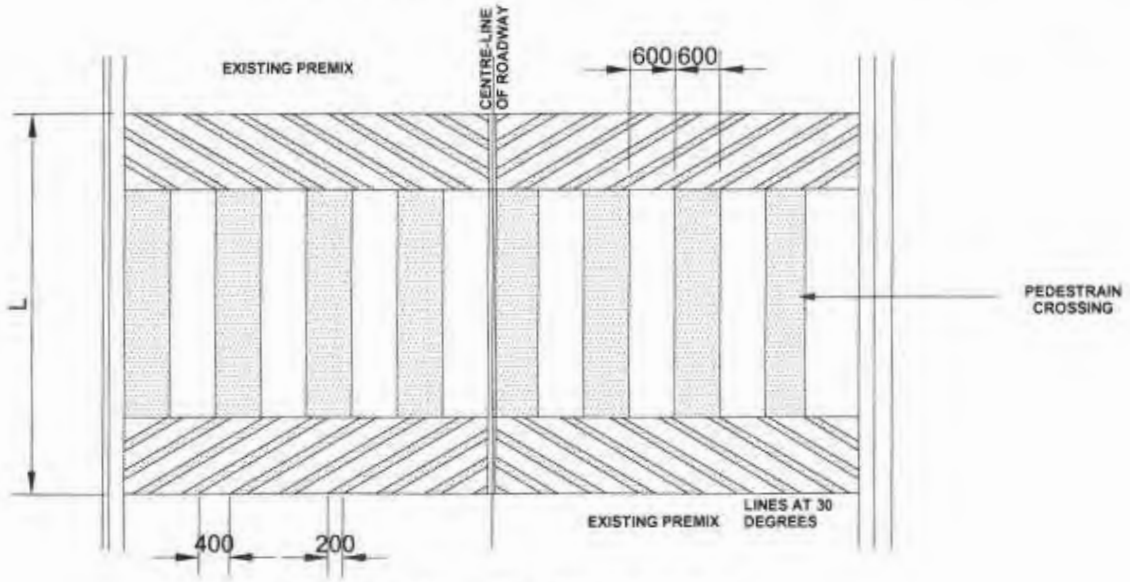
TYPICAL ROADSIGN LAYOUT



TYPICAL CROSS SECTION



BARRIER KERB CONDITION

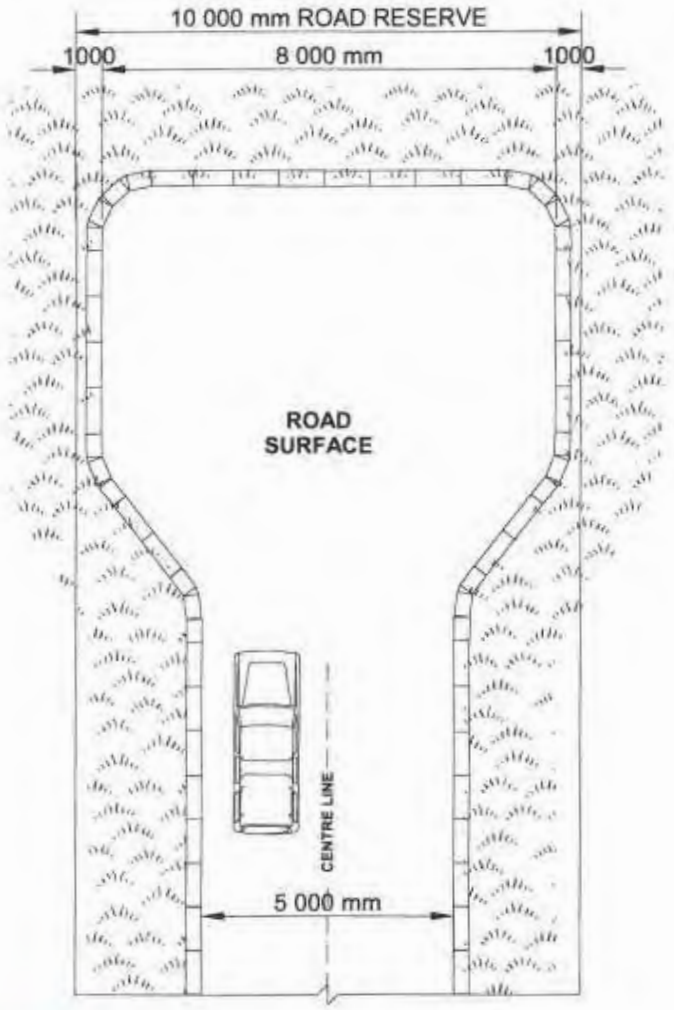


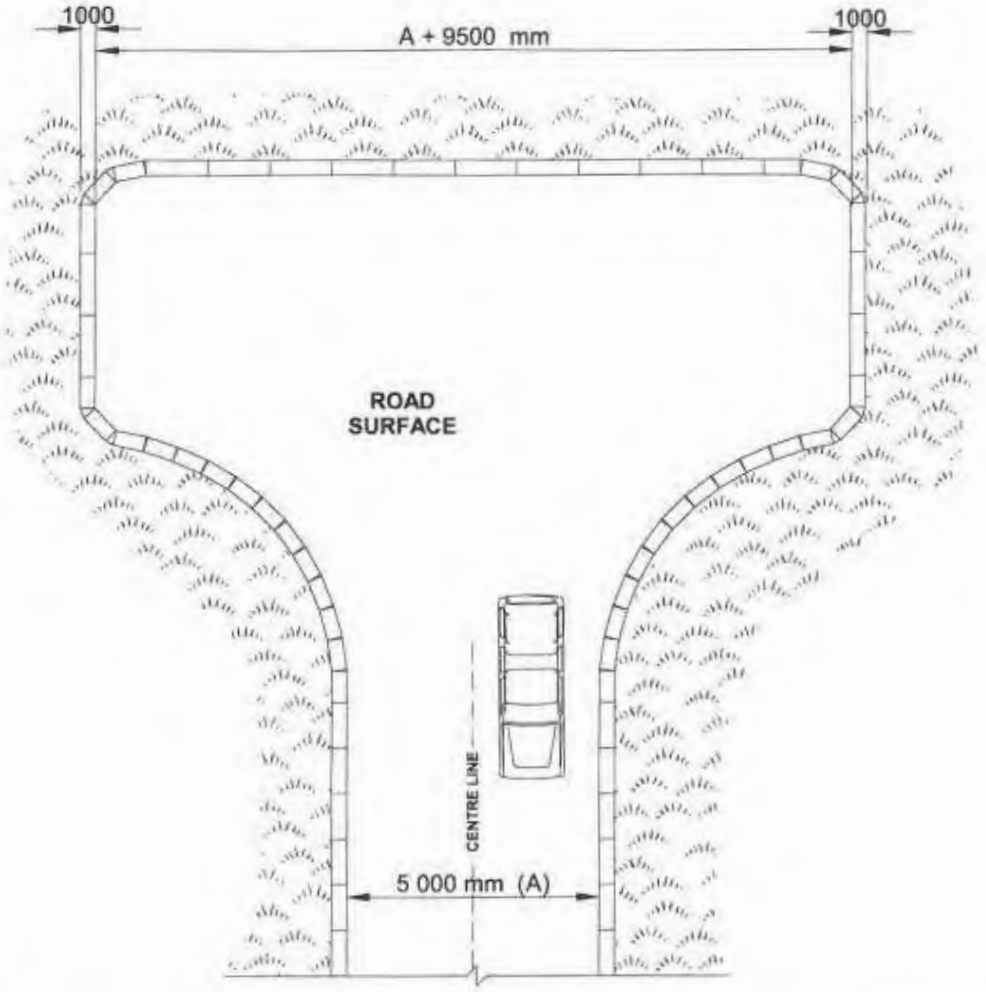
TYPICAL PLAN VIEW OF TRAFFIC TABLE
WITH PEDESTRAIN CROSSING

GEORGE
THE CITY FOR ALL REASONS
DEPARTMENT CIVIL ENGINEERING SERVICES

STANDARDS
RAISED PREDESTRAIN CROSSING

DATE:	JAN 2009
SCALE:	NTS
PLAN NO:	CES/R/12

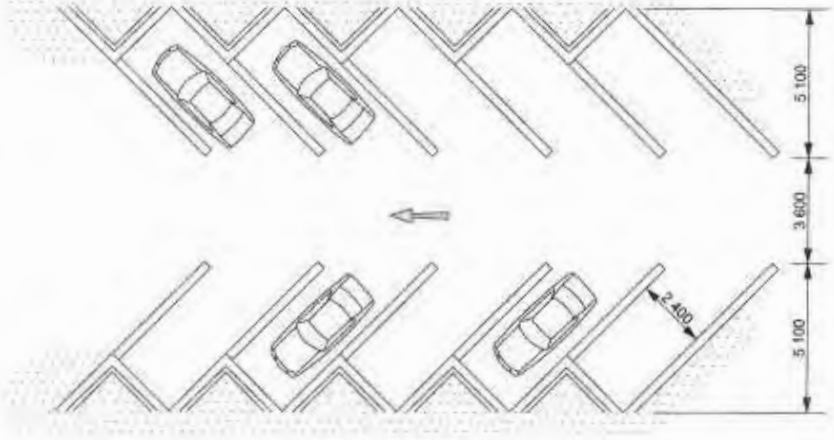




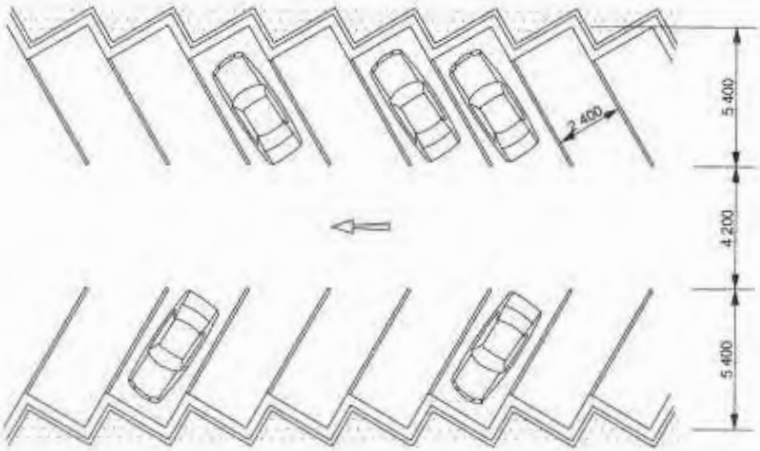
GEORGE
THE CITY FOR ALL REASONS
DEPARTMENT CIVIL ENGINEERING SERVICES

STANDARDS
TURNING CIRCLES

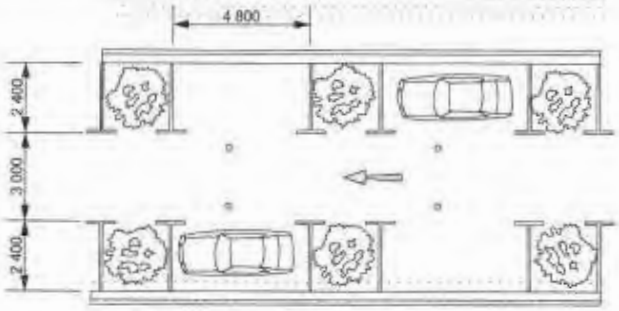
DATE	JAN 2009
SCALE	NTS
PLAN NO	CES/R/13



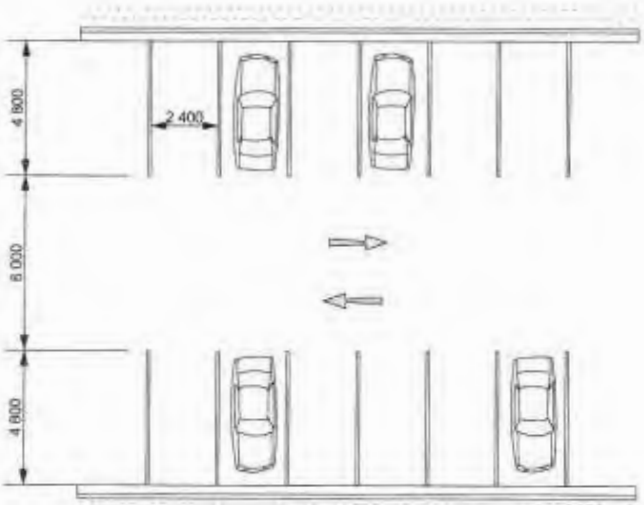
45° PARKING



60° PARKING



0° PARKING



90° PARKING

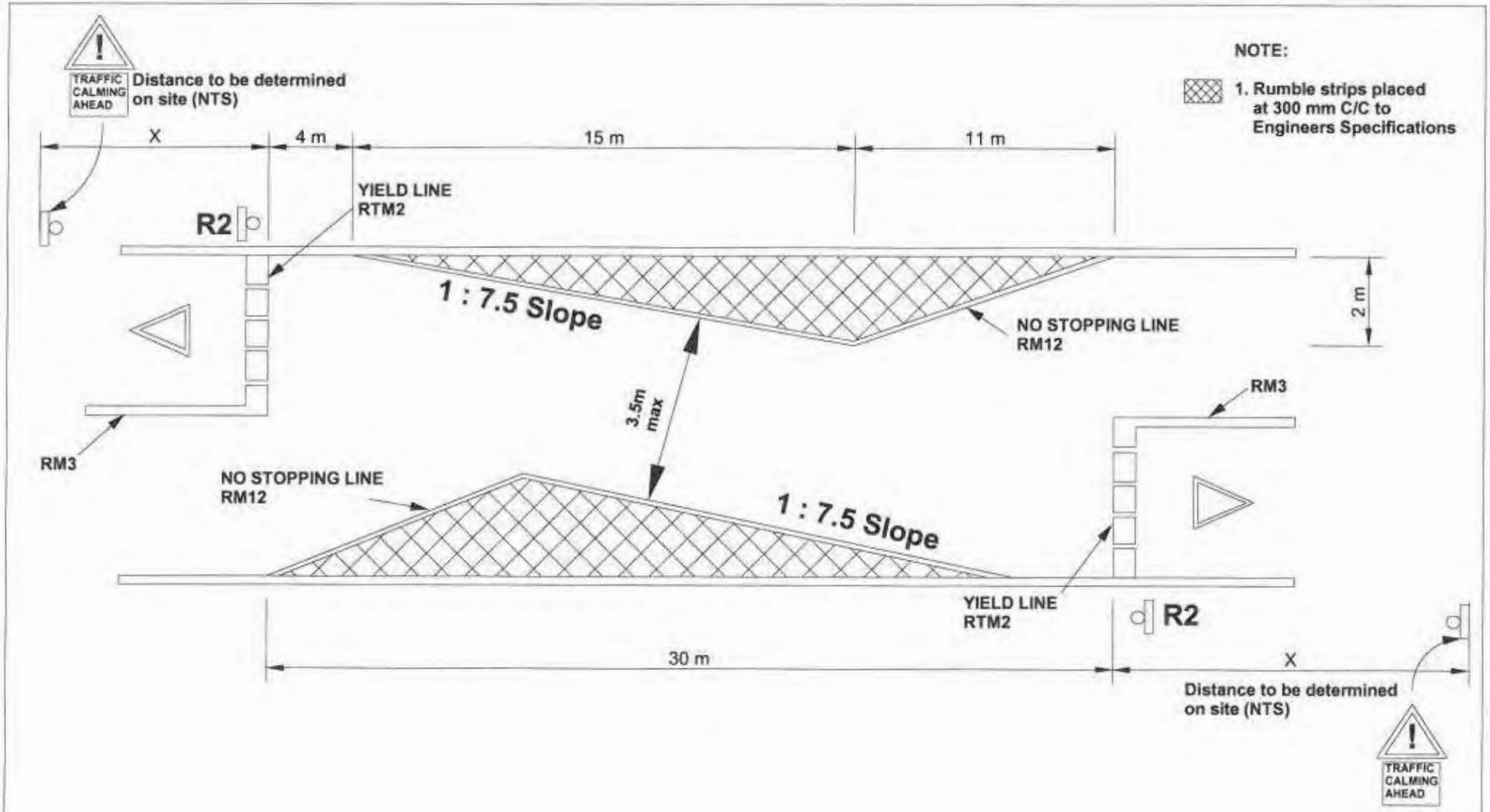
NOTE

1. CAR SPACES CAN ONLY BE INTERLOCKED PROPERLY AT 45°
2. ANGLE PARKING SHOULD ONLY BE USED IN A ONE-WAY ROAD SYSTEM

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DEPARTMENT: CIVIL ENGINEERING SERVICES

STANDARDS
TYPICAL PARKING LAYOUT

DATE:	JAN 2009
SCALE:	NTS
PLAN NO:	CES/ R/14

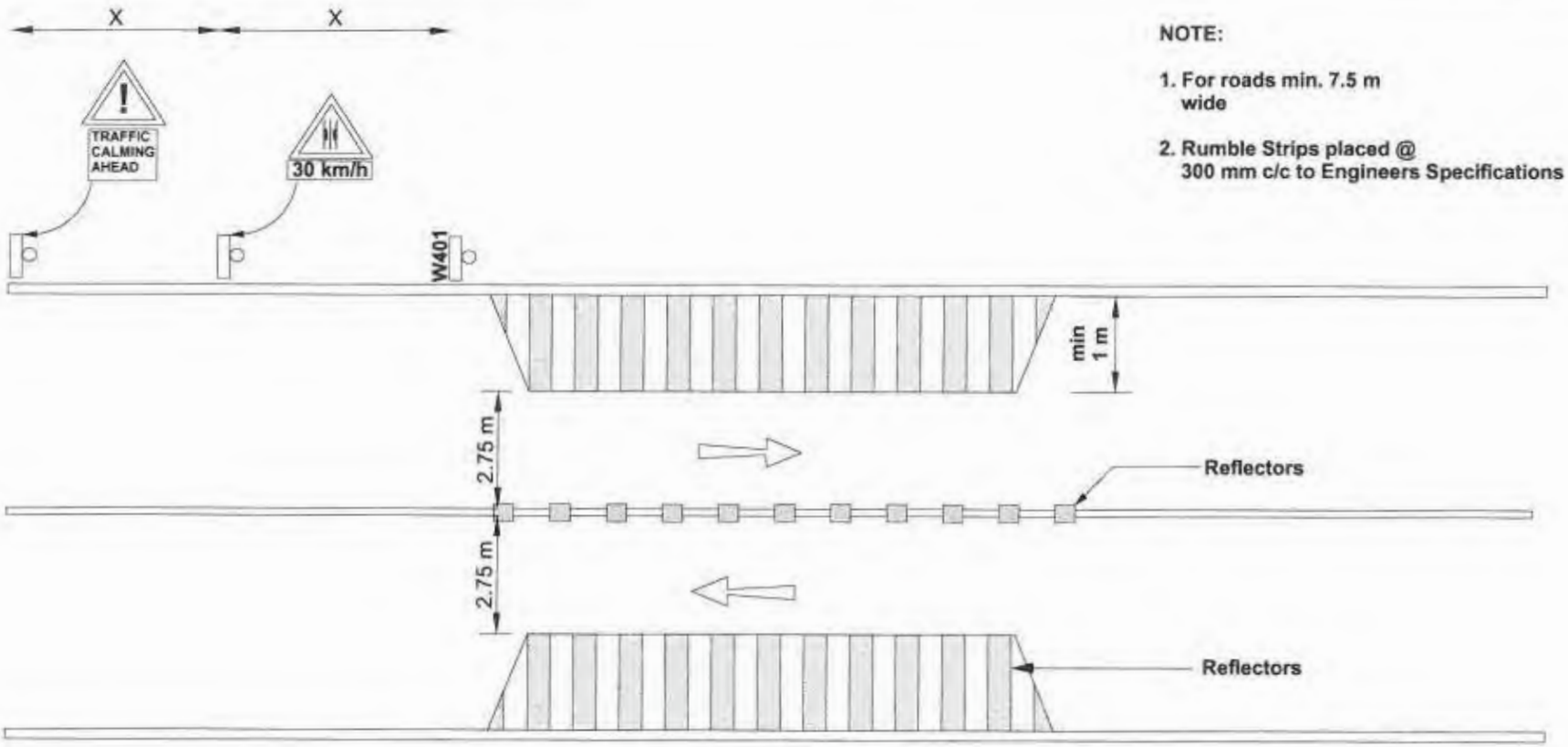


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THE CITY FOR ALL REASONS

STANDARDS

TRAFFIC CALMING: ONE WAY CHOKER FOR ROADS MAX 7.5m

DATE:	JAN 2009
SCALE:	NTS
PLAN NO:	CES/R/15



NOTE:

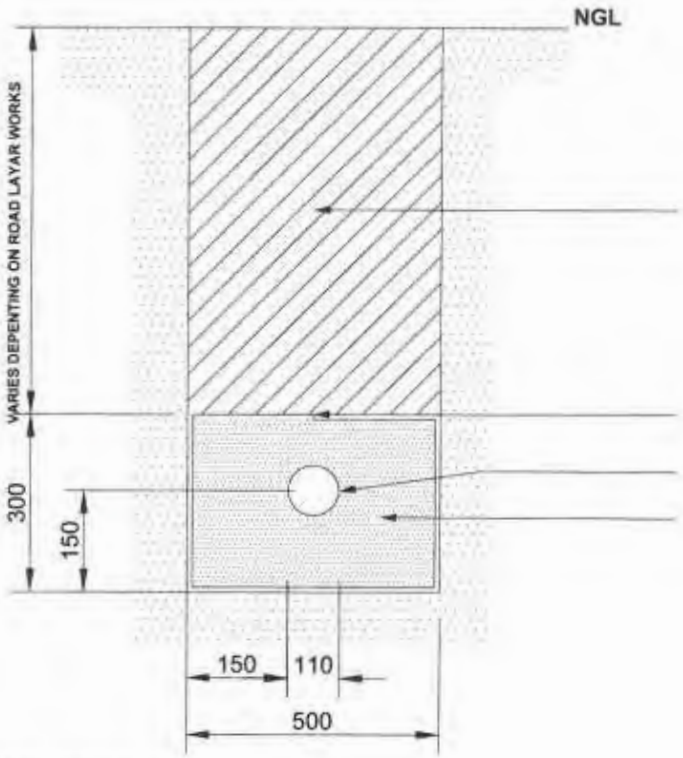
1. For roads min. 7.5 m wide
2. Rumble Strips placed @ 300 mm c/c to Engineers Specifications

GEORGE
THE CITY FOR ALL REASONS

STANDARDS

TRAFFIC CALMING: TWO WAY CHOKER

DATE:	AUG 2011
SCALE:	NTS
PLAN NO.	CES/R/16



FREE DRAINING BUILDING SAND

GEOTEXTILE MATERIAL (A4 KAYTECH OR SIMILAR APPROVED)
200 mm OVERLAP

100 mm GEOTEXTILE PIPE

19 mm CRUSHED STONE

NOTES

1. SUBSOIL DRAINS MUST DRAIN INTO STORMWATER CHAMBER OR OPEN STORMWATER CHANNEL.
2. SUBSOIL MUST SLOPE AT LESS THAN 1:250.
3. STONE TO BE USES MUST BE WASHED.

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DEPARTMENT:CIVIL ENGINEERING SERVICES

STANDARDS
SUBSOIL DRAIN

DATE:	AUG 2012
SCALE:	NTS
PLAN NO:	CES/SW1

MANHOLE COVER LEVEL 100 mm HIGHER THAT NGL, AND LEVEL WITH HARDENED SURFACES

PRECAST CONCRETE COVER WITH LOCKABLE POLYMER CONCRETE LID (ROCLA OR SIMILAR APPROVED)

PRECAST CONCRETE RINGS (250, 500, 1000 mm HIGH)

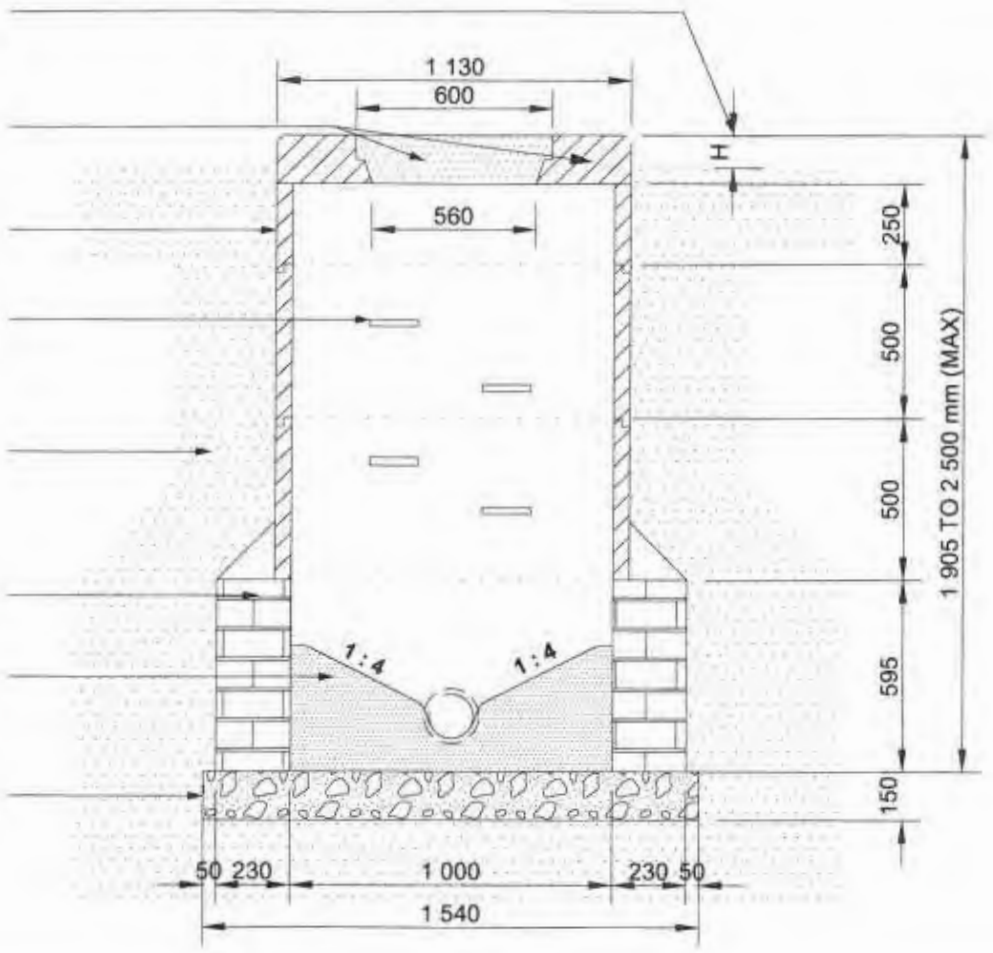
CALCAMITE STEP IRON STAGGERED @ 300 c/c

BACKFILLING IN LAYERS OF 150 mm

220 mm BRICKWORK TO 150 mm ABOVE PIPE SOFFIT

CONCRETE BENCHING GRADE 20/19

CONCRETE FOUNDATIONS GRADE 20/19



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DEPARTMENT: CIVIL ENGINEERING SERVICES

STANDARDS

STORMWATER MANHOLE FOR PIPES UP TO 600 mm

DATE:	AUG 2012
SCALE:	NTS
PLAN NO:	CES/SW2

MANHOLE COVER LEVEL 100 mm HIGHER THAT NGL, AND LEVEL WITH HARDENED SURFACES

PRECAST CONCRETE COVER WITH LOCKABLE POLYMER CONCRETE LID (ROCLA OR SIMILAR APPROVED)

PRECAST CONCRETE RINGS (250, 500, 1000 mm HIGH)

REDUCING PRECAST CONCRETE COVER (ROCLA OR SIMILAR APPROVED)

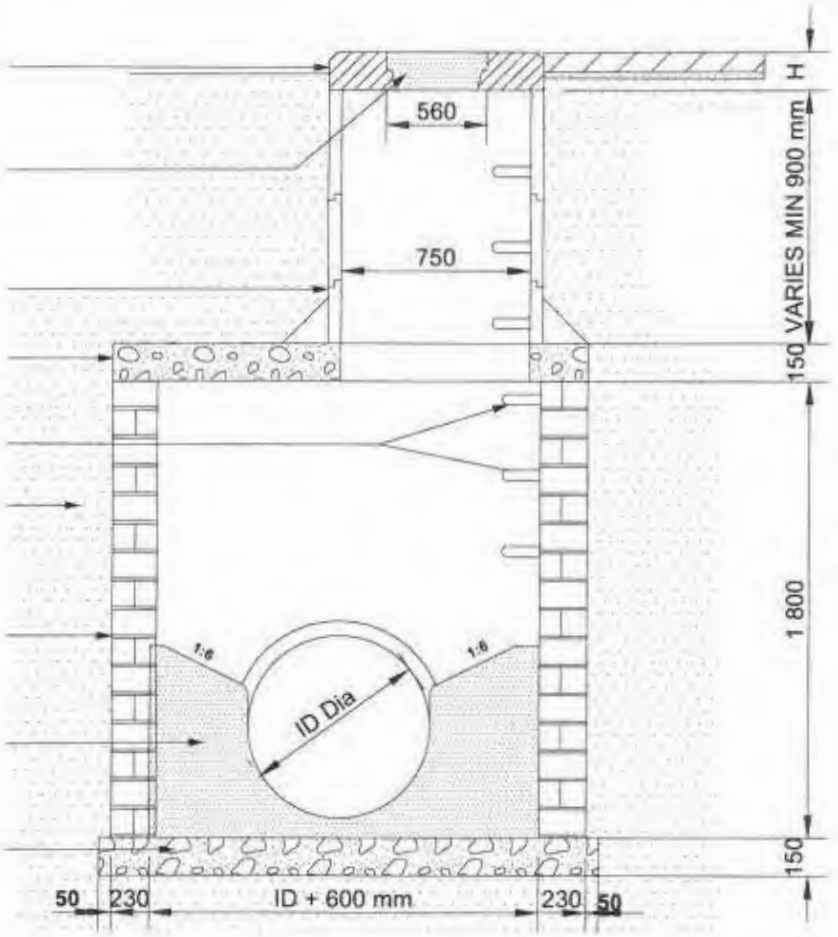
CALCAMITE STEP IRON STAGGERED @ 300 c/c

BACKFILLING IN LAYERS OF 150 mm

220 mm BRICKWORK TO 150 mm ABOVE PIPE SOFFIT

CONCRETE BENCHING GRADE 20/19

CONCRETE FOUNDATIONS GRADE 20/19



NOTE:

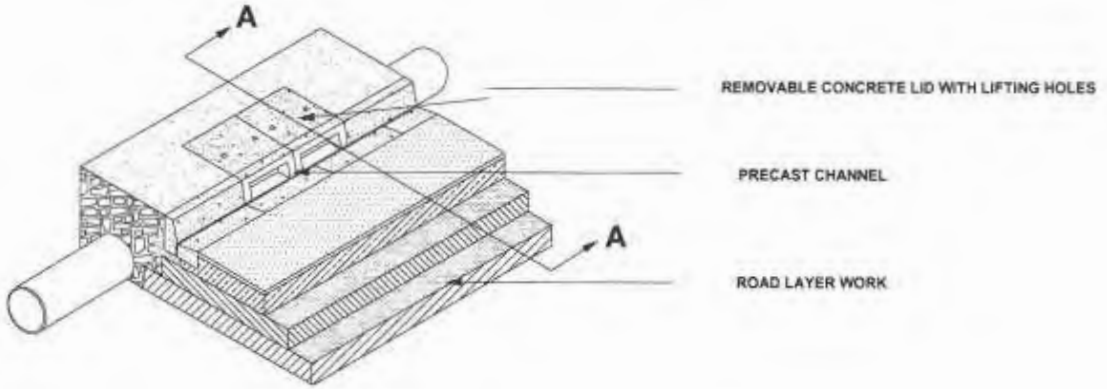
1. MANHOLE NEEDS TO BE PLASTERED ON THE INSIDE

GEORGE
THE CITY FOR ALL REASONS
DEPARTMENT: CIVIL ENGINEERING SERVICES

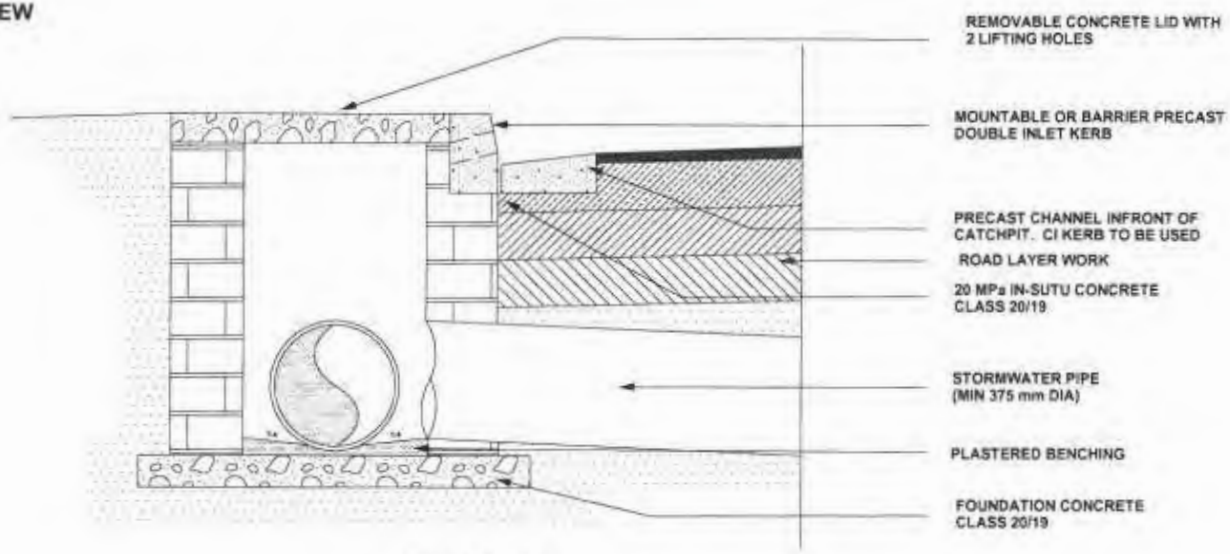
STANDARDS

STORMWATER MANHOLE FOR PIPES LARGER THAN 600mm

DATE:	AUG 2012
SCALE:	NTS
PLAN NO:	CES/SW3



ISOMETRIC VIEW

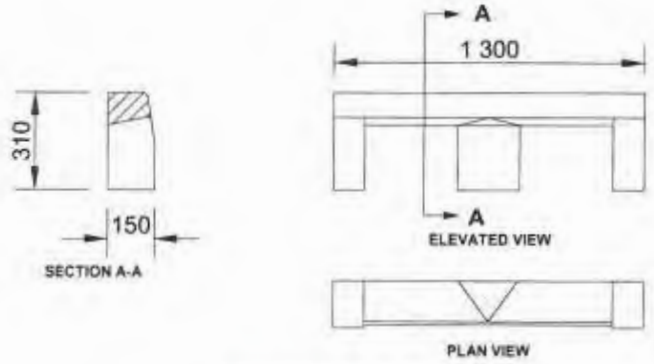


SECTION A - A

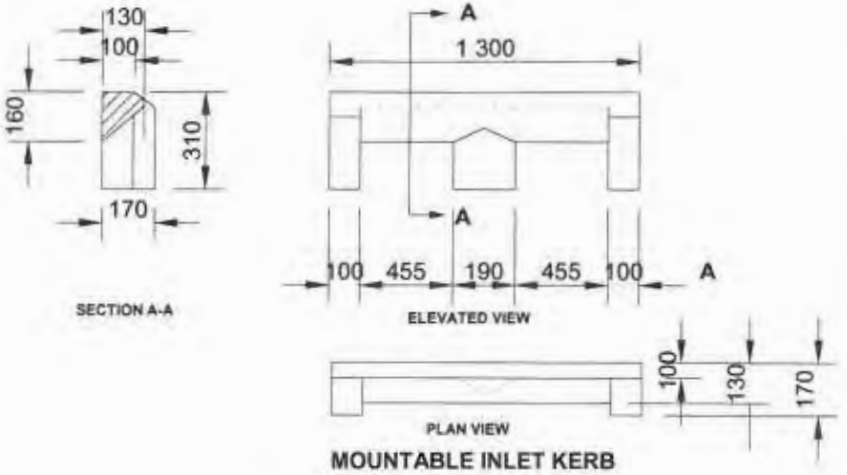
GEORGE
THE CITY FOR ALL REASONS
DEPARTMENT:CIVIL ENGINEERING SERVICES

STANDARDS
STORMWATER CATCHPIT WITH MOUNTABLE OR BARRIER KERB

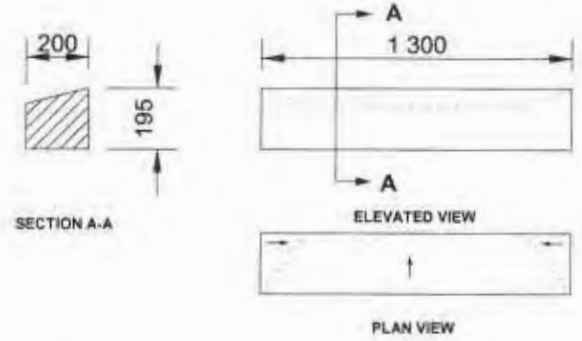
DATE:	AUG 2012
SCALE:	NTS
PLAN NO:	CES/SW/4A



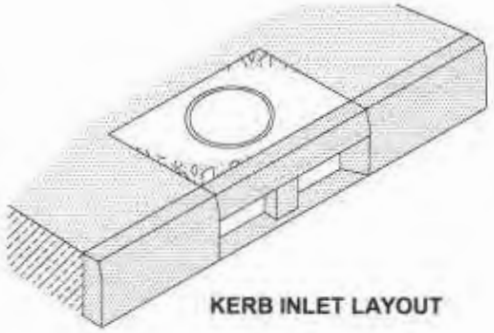
BARRIER INLET KERB



MOUNTABLE INLET KERB



PRECAST CHANNEL FOR MOUNTABLE KERB

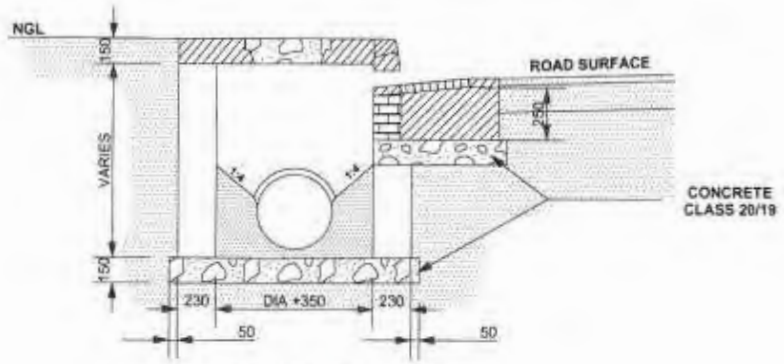


KERB INLET LAYOUT

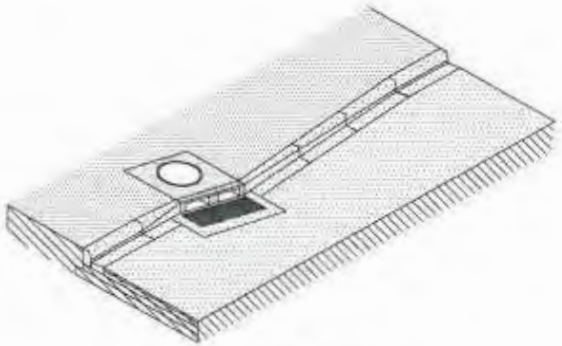
GEORGE
THE CITY FOR ALL REASONS
DEPARTMENT:CIVIL ENGINEERING SERVICES

STANDARDS
STORMWATER CATCHPIT WITH MOUNTABLE OR BARRIER KERB

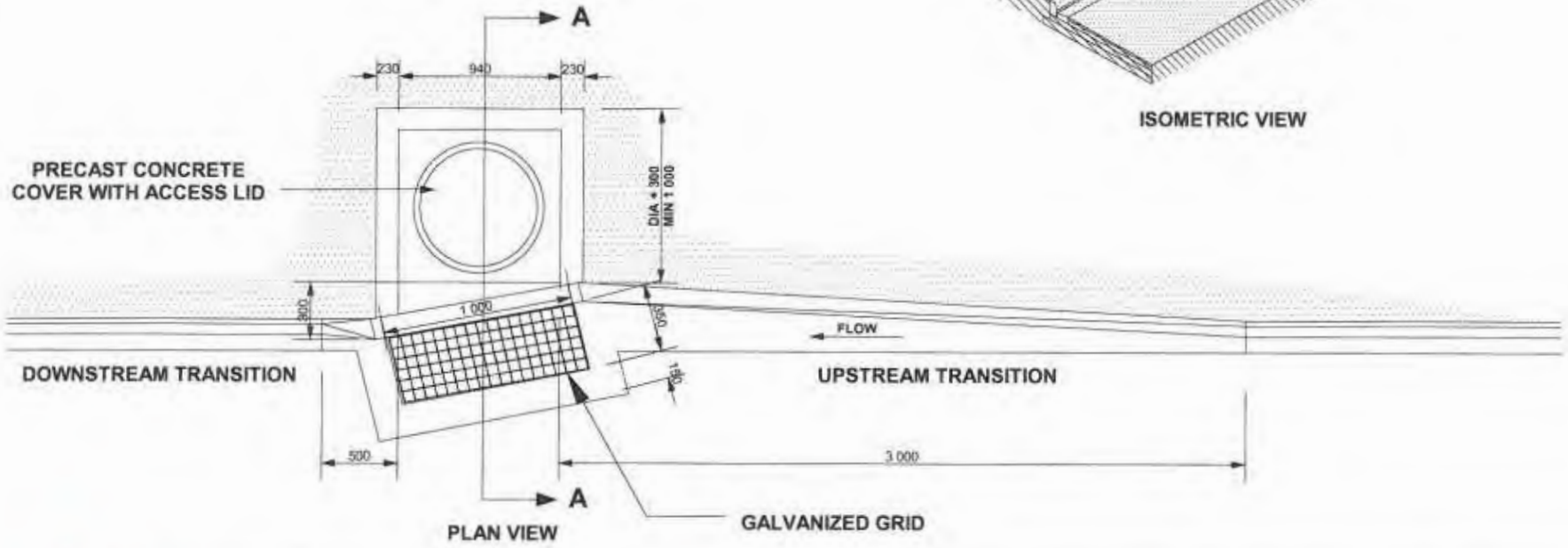
DATE:	OCT 2008
SCALE:	NTS
PLAN NO:	CES/SWKB



SECTION A - A



ISOMETRIC VIEW



PLAN VIEW

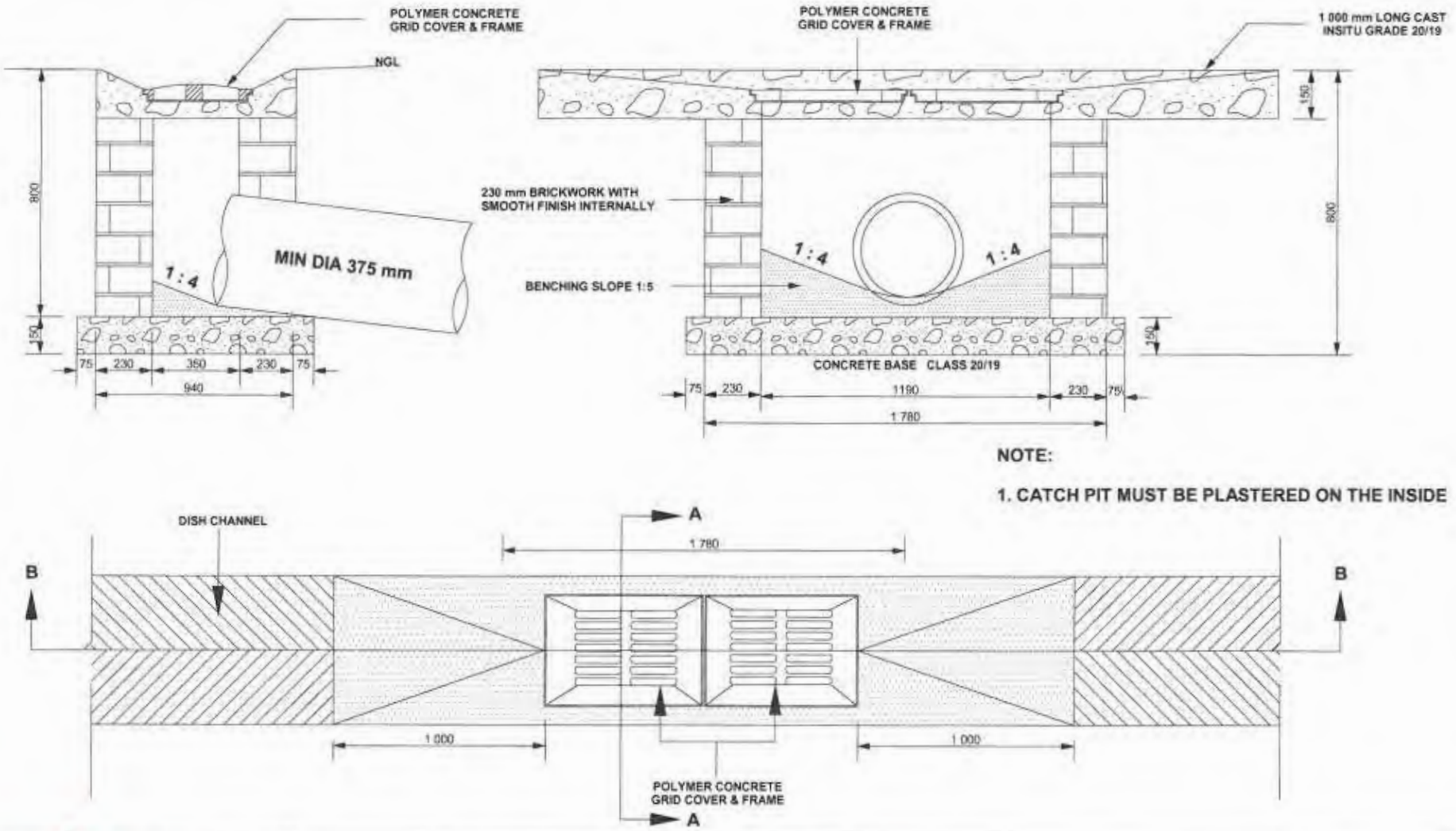
GEORGE
THE CITY FOR ALL REASONS
DEPARTMENT CIVIL ENGINEERING SERVICES

STANDARDS

STORMWATER CATCHPIT ON STEEP SLOPES

SLOPE GADIENTS GREATER THAN 10%

DATE:	AUG 2012
SCALE:	NTS
PLAN NO:	CES/SWS



NOTE:

1. CATCH PIT MUST BE PLASTERED ON THE INSIDE

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THE CITY FOR ALL REASONS
DEPARTMENT CIVIL ENGINEERING SERVICES

STANDARDS
GRID INLET CATCHPIT

DATE:	JAN 2009
SCALE:	NTS
PLAN NO:	CES/SW05

HEADWALL DIMENSIONS

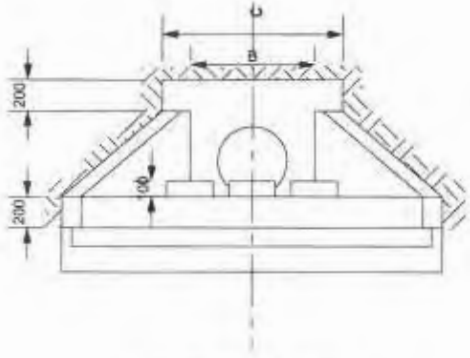
DIA	A	B	C	D	E	F
450	2 200	600	1 160	200	930	1 000
525	2 700	750	1 390	225	1 150	1 200
750	3 400	900	1 625	250	1 520	1 500
900	4 100	1 050	1 825	275	1 880	1 800
1050	4 800	1 200	2 050	300	2 245	2 100
1200	5 500	1 350	2 270	325	2 600	2 400
1350	6 200	1 500	2 500	350	2950	2 700



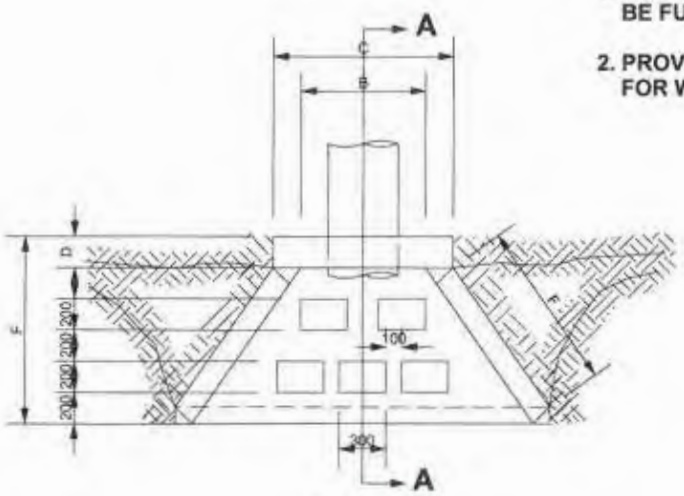
SECTION A - A

NOTE:

1. BRICK STRUCTURES MUST BE FULLY PLASTERED
2. PROVISION MUST BE MADE FOR WEEP HOLES



ELEVATED VIEW



PLAN VIEW

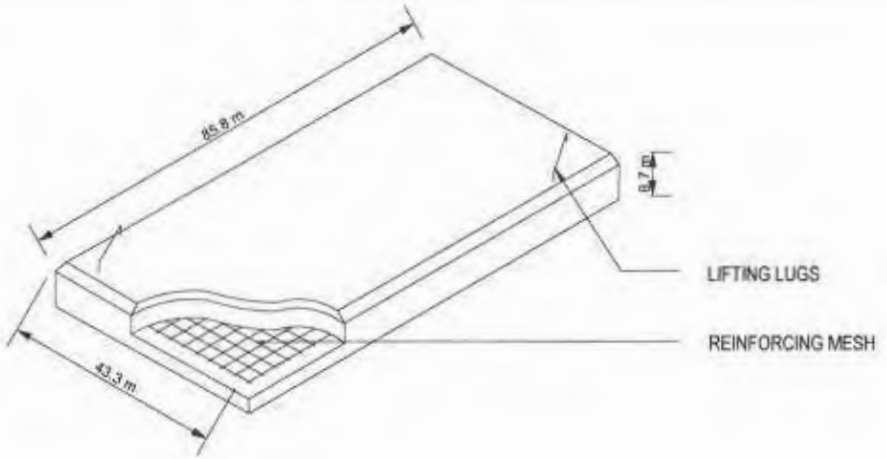
GEORGE
THE CITY FOR ALL REASONS
DEPARTMENT: CIVIL ENGINEERING SERVICES

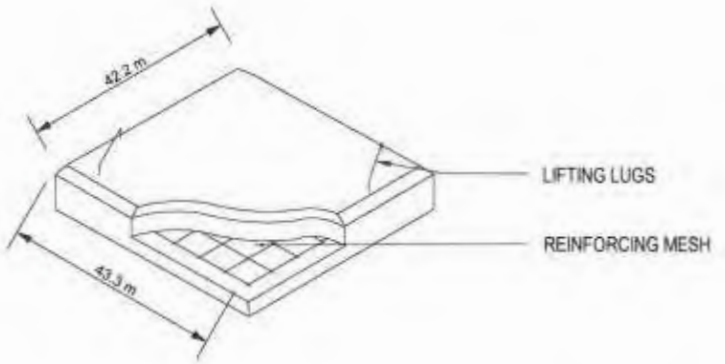
STANDARDS
HEADWALL

JAN 2009

SCALE: NTS

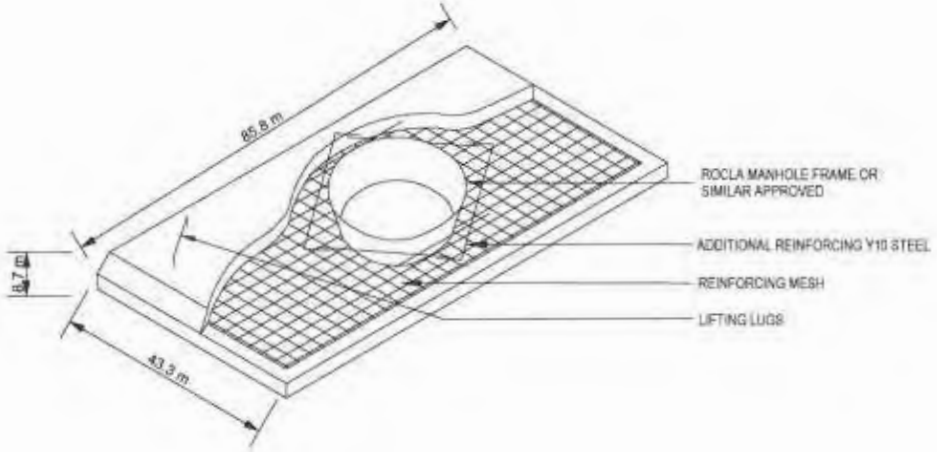
PLAN NO: CES/SW7





NOTE:

1) CONCRETE FOR PRECAST SLABS TO BE MINIMUM STRENGTH 25 MPa
2) MINIMUM CONCRETE COVER TO BE 30 mm
3) LIFTING LUGS TO BE PROVIDED AT MANUFACTURER'S DESCRETION, MINIMUM OF 2 PER SLAB
4) TOP EDGES OF CONCRETE SLAB TO HAVE 20 mm SHAMFERS
5) REINFORCING MESH TO BE MINIMUM CODE 395
6) REINFORCING AROUND MANHOLE COVER FRAME TO BE MINIMUM Y10 CODE 35 & 37
7) PRICE QUOTED TO INCLUDE ROCLA LID (HEAVY DUTY) AND FRAME OR SIMILAR APPROVED
8) FINAL LID COVER LEVEL TO EQUAL FINAL SLAB LEVEL



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DEPARTMENT CIVIL ENGINEERING SERVICES

STANDARDS
TYPICAL STORM WATER COVER SLAB

	AUG 2012
SCALE:	NTS
PLAN NO:	CES/SW/8

PRECAST CONCRETE COVER
WITH LOCKABLE POLYMER LID
(ROCLA OR SIMILAR APPROVED)

MANHOLE COVER LEVEL 100 mm
HIGHER THAT NGL, AND LEVEL
WITH HARDENED SURFACES

BACKFILLING IN
LAYERS OF 150 mm

JOINTING - SEE NOTES

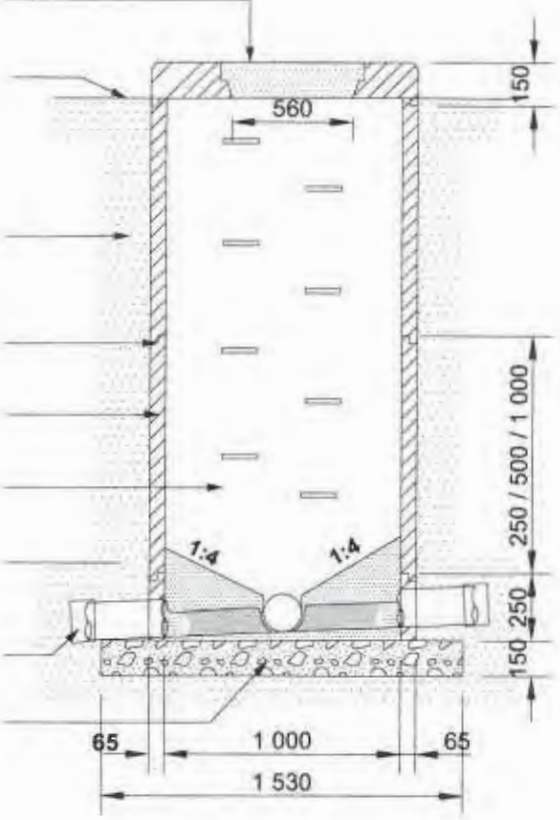
PRECAST CONCRETE RINGS
(250, 500, 1000 mm HIGH)

CALCAMITE STEP IRON
STAGGERED @ 300 c/c

CONCRETE BENCHING
GRADE 20/19

FUTHER SEWER CONNECTIONS
TO PIPE TO BE SUPPLIED WITH END CAP

CONCRETE FOUNDATIONS
GRADE 20/19



NOTES

1. 30 mm COVER TO WALL REINFORCEMENT
2. WALL SECTION: 5.6 mm HD WIRE @ 120 mm PITCH
3. ALL JOINTS TO BE SEALED WATERTIGHT USING DENSO JOINT SEALER OR SIMILAR APPROVED PRODUCT WITH AN APPROVED HEAVY DUTY PVC BASED SEALING TAPE 100 mm WIDE APPLIED UNDER TENSION ONTO A PRIMED SURFACE
4. IF AVAILABLE VITREOUS CLAY SPLITS TO BE USED IN CONJUNCTION WITH CLAY OR PVC PIPE FITTINGS
5. MANHOLE MUST BE PLASTERED ON THE INSIDE
6. FC SPLITS TO BE USED IN CONJUNCTION WITH FC PIPES

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THE CITY FOR ALL REASONS
DEPARTMENT:CIVIL ENGINEERING SERVICES

STANDARDS
SEWER MANHOLE 0 - 4m HEIGHT

DATE:	AUG 2012
SCALE:	NTS
PLAN NO:	CES/S/1A

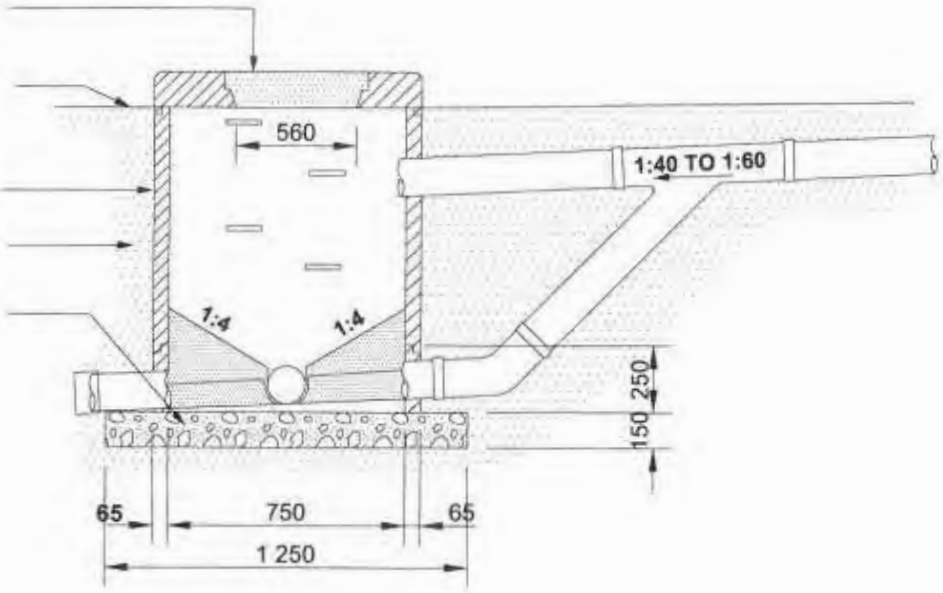
PRECAST CONCRETE COVER
WITH LOCKABLE POLYMER LID
(ROCLA OR SIMILAR APPROVED)

MANHOLE COVER LEVEL 100 mm
HIGHER THAT NGL, AND LEVEL
WITH HARDED SURFACES

PRECAST CONCRETE RINGS
(250, 500, 1000 mm HIGH)

BACKFILLING IN
LAYERS OF 150 mm

CONCRETE BENCHING
GRADE 20/19



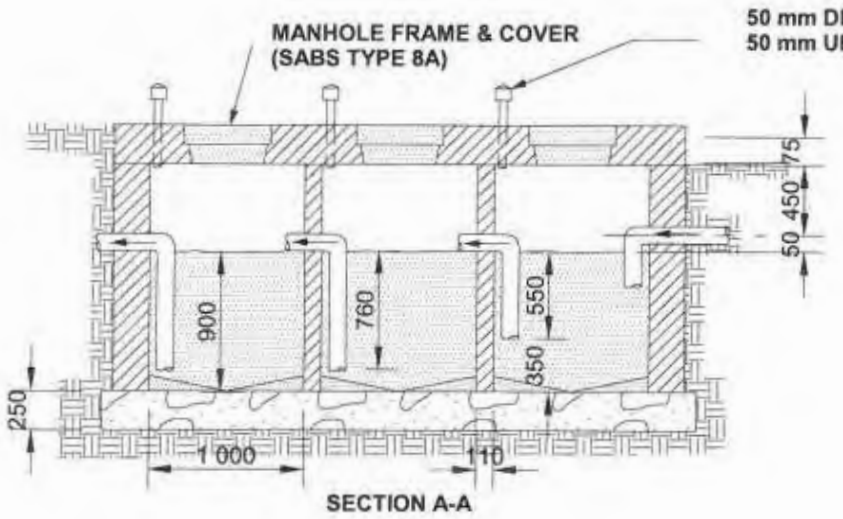
NOTES

1. 30 mm COVER TO WALL REINFORCEMENT
2. WALL SECTION - 5.6 mm HD WIRE @ 120 mm PITCH
3. ALL JOINTS TO BE SEALED WATERTIGHT USING DENSO JOINT SEALER OR SIMILAR APPROVED PRODUCT WITH AN APPROVED HEAVY DUTY PVC BASED SEALING TAPE 100 mm WIDE APPLIED UNDER TENSION ONTO A PRIMED SURFACE
4. IF AVAILIBALE VITREOUS CLAY SPLITS TO BE USED IN CONJUNCTION WITH CLAY OR PVC PIPE FITTINGS
5. MANHOLE MUST BE PLASTERED ON THE INSIDE
6. FC SPLITS TO BE USED IN CONJUNCTION WITH FC PIPES

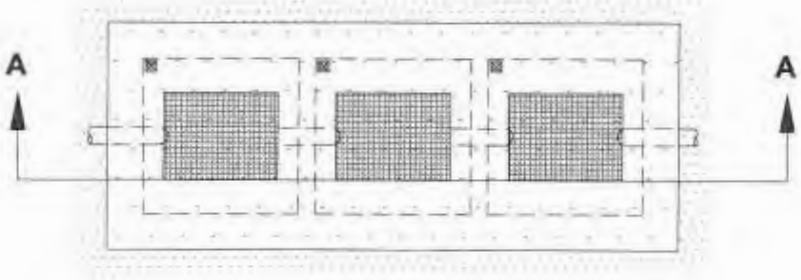
GEORGE
THE CITY FOR ALL REASONS
DEPARTMENT CIVIL ENGINEERING SERVICES

STANDARDS
SEWER DROP MANHOLE

DATE	APR 2011
SCALE	NTS
PLAN NO	CES/S/16



SECTION A-A



PLAN VIEW

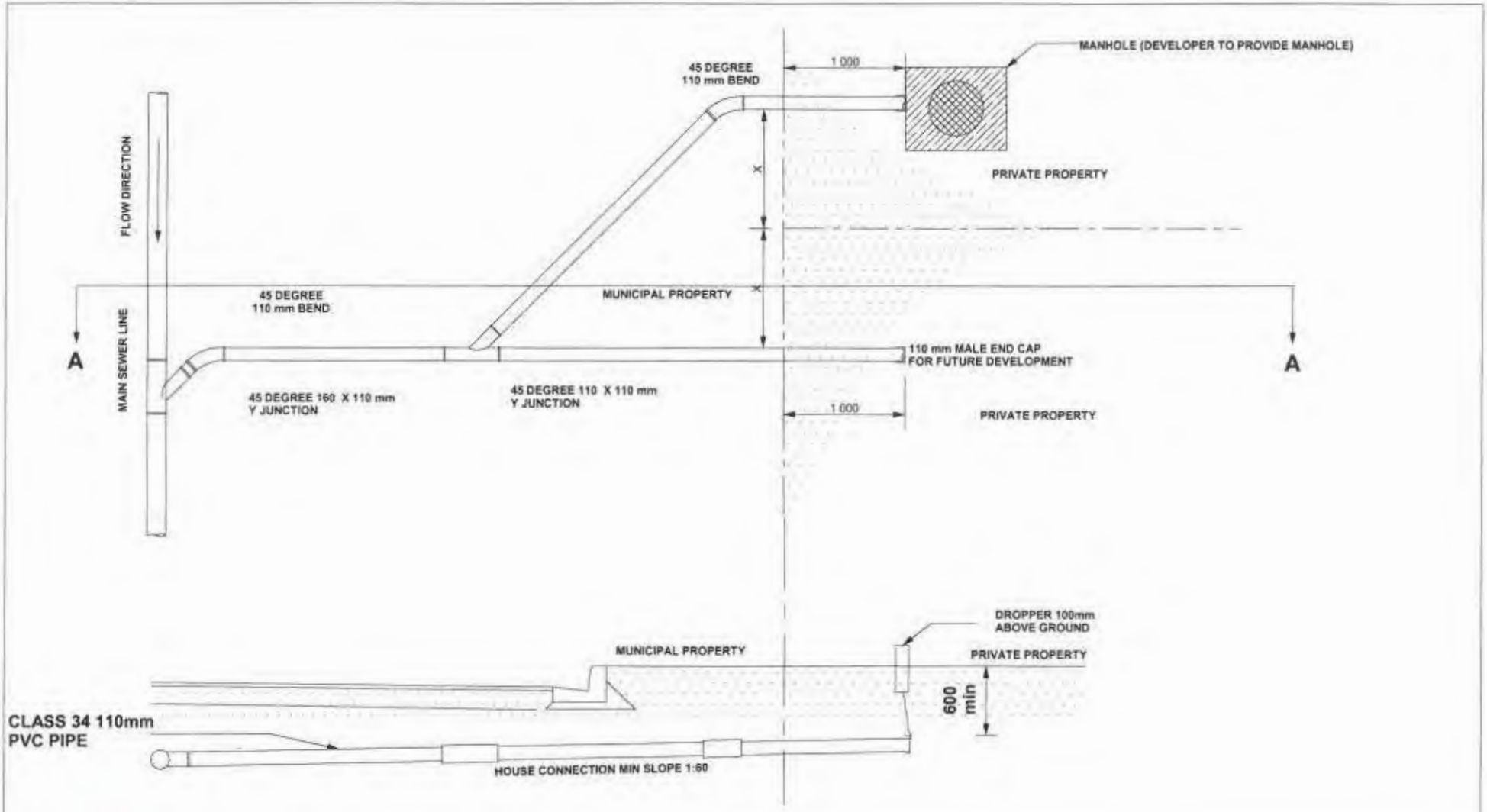
NOTES

1. EXTERNAL AND INTERNAL BRICK WALLS TO BE CEMENT PLASTERED WITH 1:2 CEMENT / SAND MIX
2. ALL BENDS AND JUNCTIONS TO BE 100 mm CAST IRON OR GALV. MILD STEEL.
3. LONG TAIL BENDS TO BE USED AS SHOWN
4. POLYMER MANHOLE COVERS TO BE USED
5. WORK NOT TO BE COMMENCED WITHOUT THE APPROVAL OF THE BUILDING INSPECTOR
6. ALL COMPARTMENTS TO BE FILLED WITH WATER BEFORE TRAP IS USED TO CHECK FOR WATER TIGHTNESS
7. HEAVY DUTY COVER IS REQUIRED IF SUBJECTED TO HEAVY TRAFFIC.
8. CAPACITY TO BE DESIGNED BY CONSULTING ENGINEER.
9. WASTE WATER MANAGEMENT PLAN IS REQUIRED.

GEORGE
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DEPARTMENT CIVIL ENGINEERING SERVICES

STANDARDS
OIL / PETROL INTERCEPTING TRAP

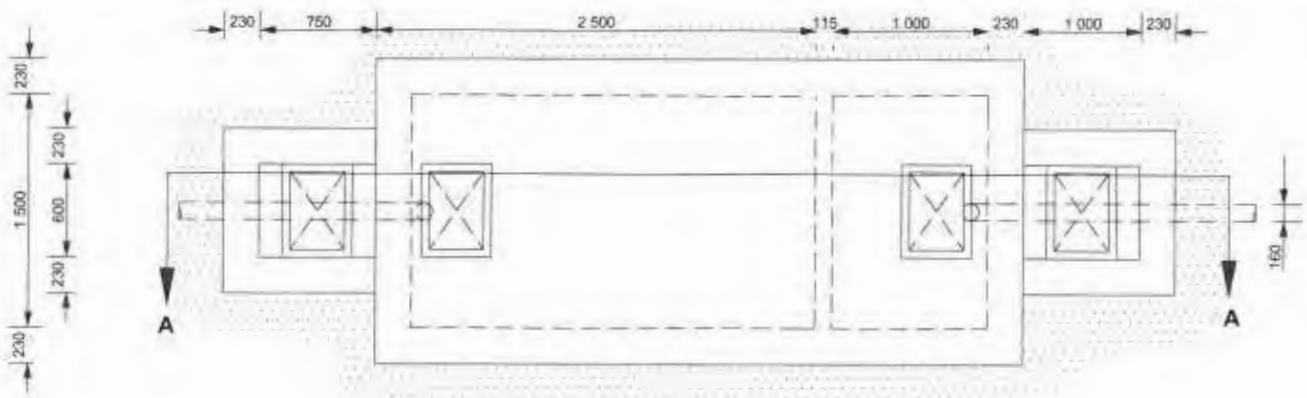
DATE:	JAN 2009
SCALE:	NTS
PLAN NO:	CES/ S / 2



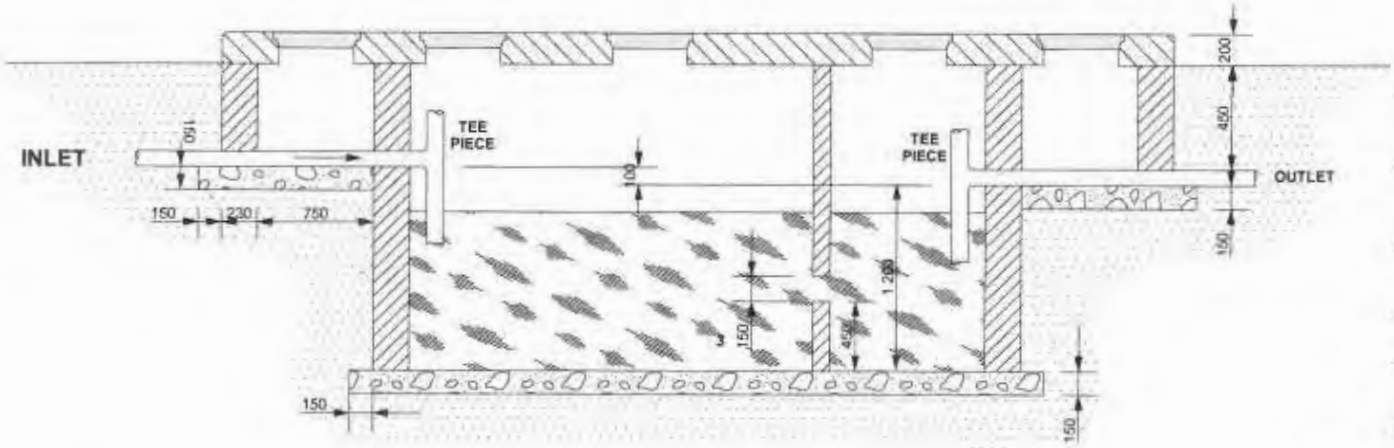
GEORGE
THE CITY FOR ALL REASONS
DEPARTMENT: CIVIL ENGINEERING SERVICES

STANDARDS
TYPICAL SEWER CONNECTION

DATE:	AUG 2012
SCALE:	NTS
PLAN NO:	CES/S/3



PLAN VIEW



SECTION A - A

NOTES

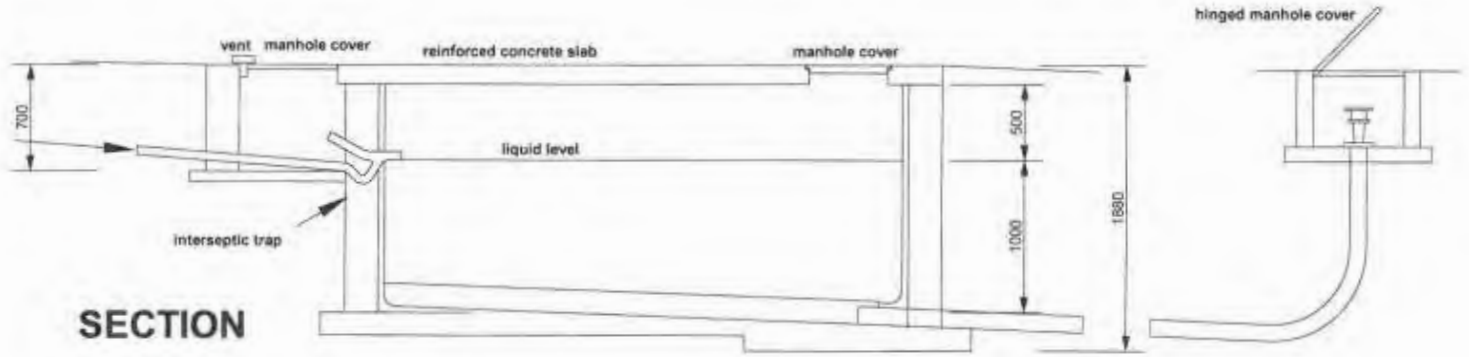
1. SEPTIC TANK MUST BE PLASTERED 2 LAYERS OF I BAG CEMENT, 6 KG LIME AND 150 l OF SAND TO MIN 18 mm
2. NEW CONNECTING MANHOLE MUST BE CONSTRUCTED BEHIND THE SEPTIC TANK, WITH REDUCTION DIA FROM 110 TO 50 mm DEPENDING ON THE CONNECTION POINT
3. MIN REINFORCMENT REQUIRED IN SLAB & FOUNDATION MUST BE REF. 245 EXPANDED MESH
4. LIGHT DUTY MANHOLE FRAMES AND COVERS TO BE USED
5. AVOID BUILDING SEPTIC TANK IN ROAD AREAS, BUT LOCATION MUST BE ACCESSIBLE BY MUNICIPAL SERVICES
6. MIN DIFFERENCE IN HEIGHT BETWEEN INLET AND OUTLET MUST BE 100 mm
7. SEPTIC TANK IS NOT ALLOWED IN AREAS WHERE EXISTING MUNICIPAL SEWER SERVICE IS AVAILIBLE
8. CAPACITY DEPENDS ON THE REQUIREMENTS

GEORGE
THE CITY FOR ALL REASONS
DEPARTMENT: CIVIL ENGINEERING SERVICES

STANDARDS

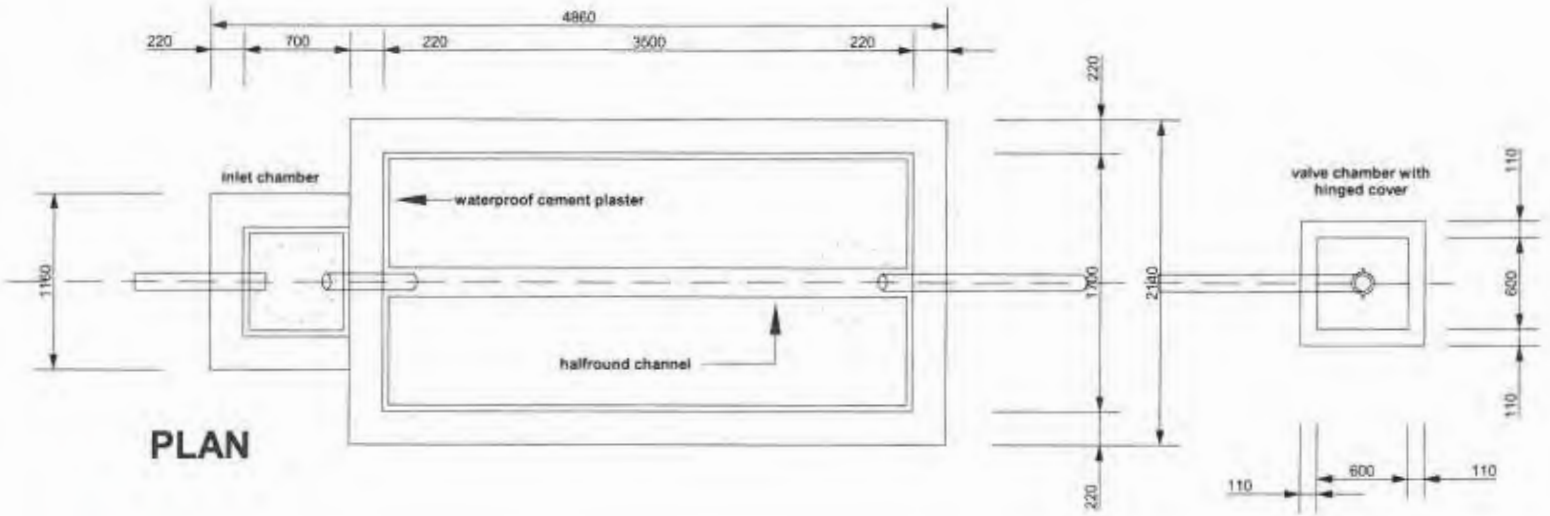
TYPICAL SEPTIC TANK (FARM AREAS)

DATE:	AUG 2011
SCALE:	NTS
PLAN NO:	CES/ S / 4A



SECTION

capacity = 6000l



PLAN

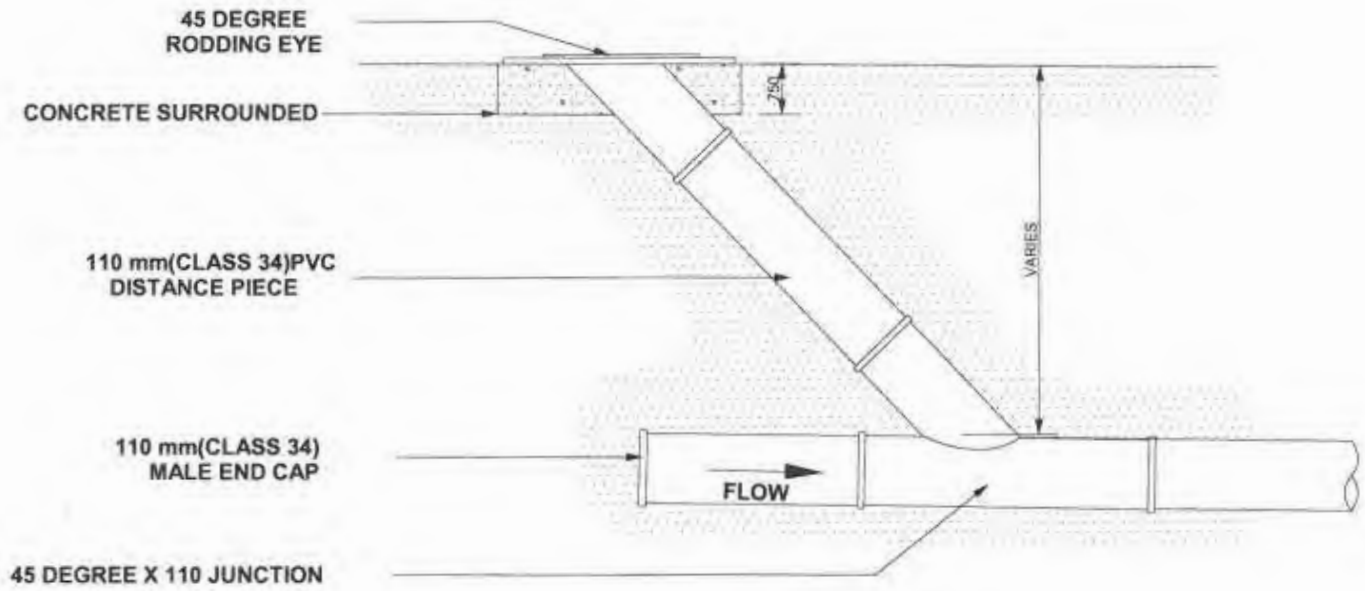
NOTES

1. CONSERVANCY TANK MUST BE PLASTERED 2 LAYERS OF I BAG CEMENT, 6 KG LIME AND 150 l OF SAND TO MIN 18 mm
2. MIN REINFORCMENT REQUIRED IN SLAB & FOUNDATION MUST BE REF. 245 EXPANDED MESH
3. LIGHT DUTY MANHOLE FRAMES AND COVERS TO BE USED
4. AVOID BUILDING CONSERVANCY TANK IN ROAD AREAS, BUT LOCATION MUST BE ACCESSIBLE TO MUNICIPAL SERVICES
5. CONSERVANCY TANK IS NOT ALLOWED IN AREAS WHERE EXISTING MUNICIPAL SEWER SERVICE IS AVAILIBLE
6. CAPACITY DEPENDS ON THE REQUIREMENTS

GEORGE
THE CITY FOR ALL REASONS
DEPARTMENT:CIVIL ENGINEERING SERVICES

STANDARDS
TYPICAL CONSERVANCY TANK

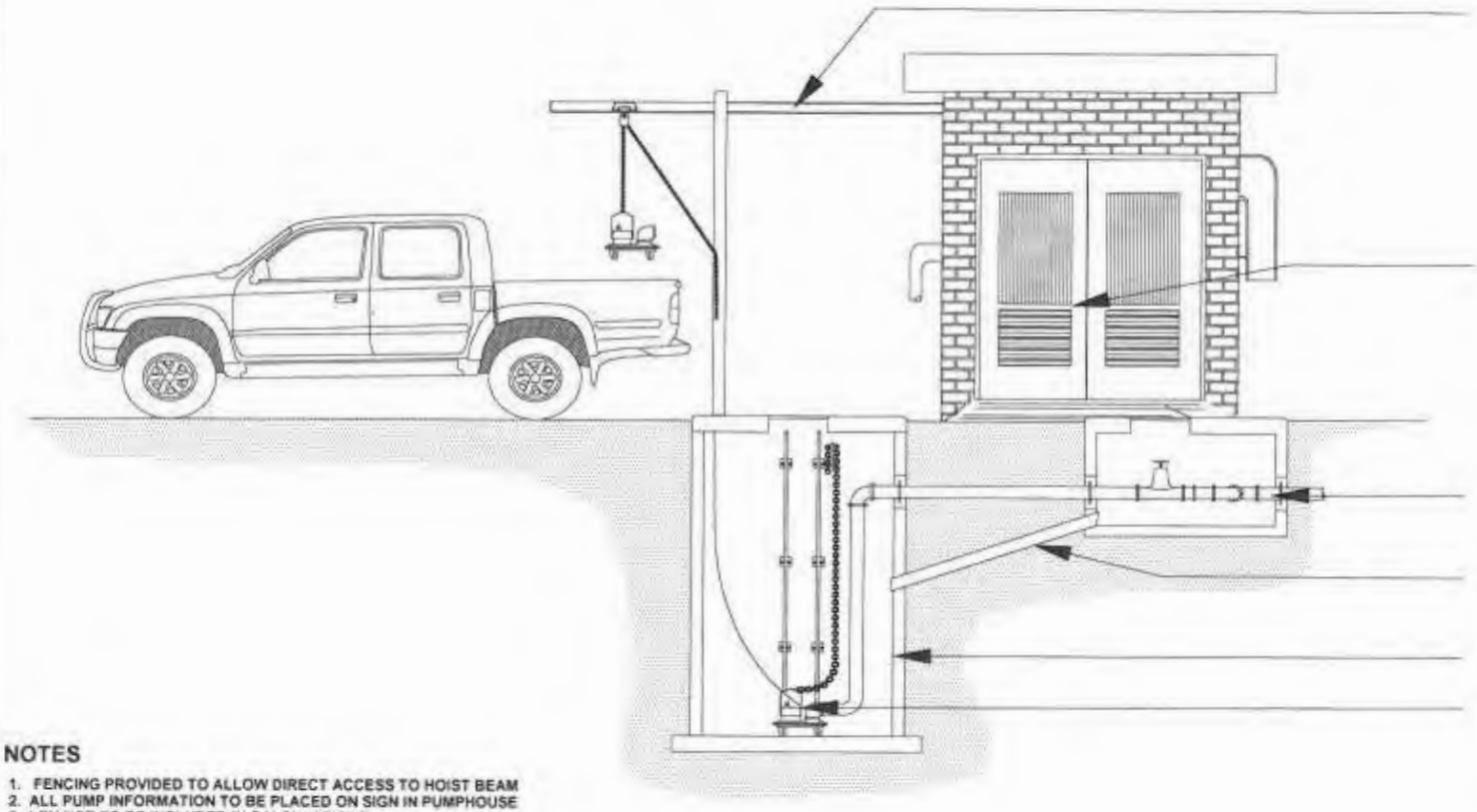
DATE:	AUG 2011
SCALE:	NTS
PLAN NO:	CES/ S / 48



GEORGE
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DEPARTMENT: CIVIL ENGINEERING SERVICES

STANDARDS
TYPICAL RODDING EYE DETAIL

DATE:	JAN 2009
SCALE:	NTS
PLAN NO:	CES/ S / 5



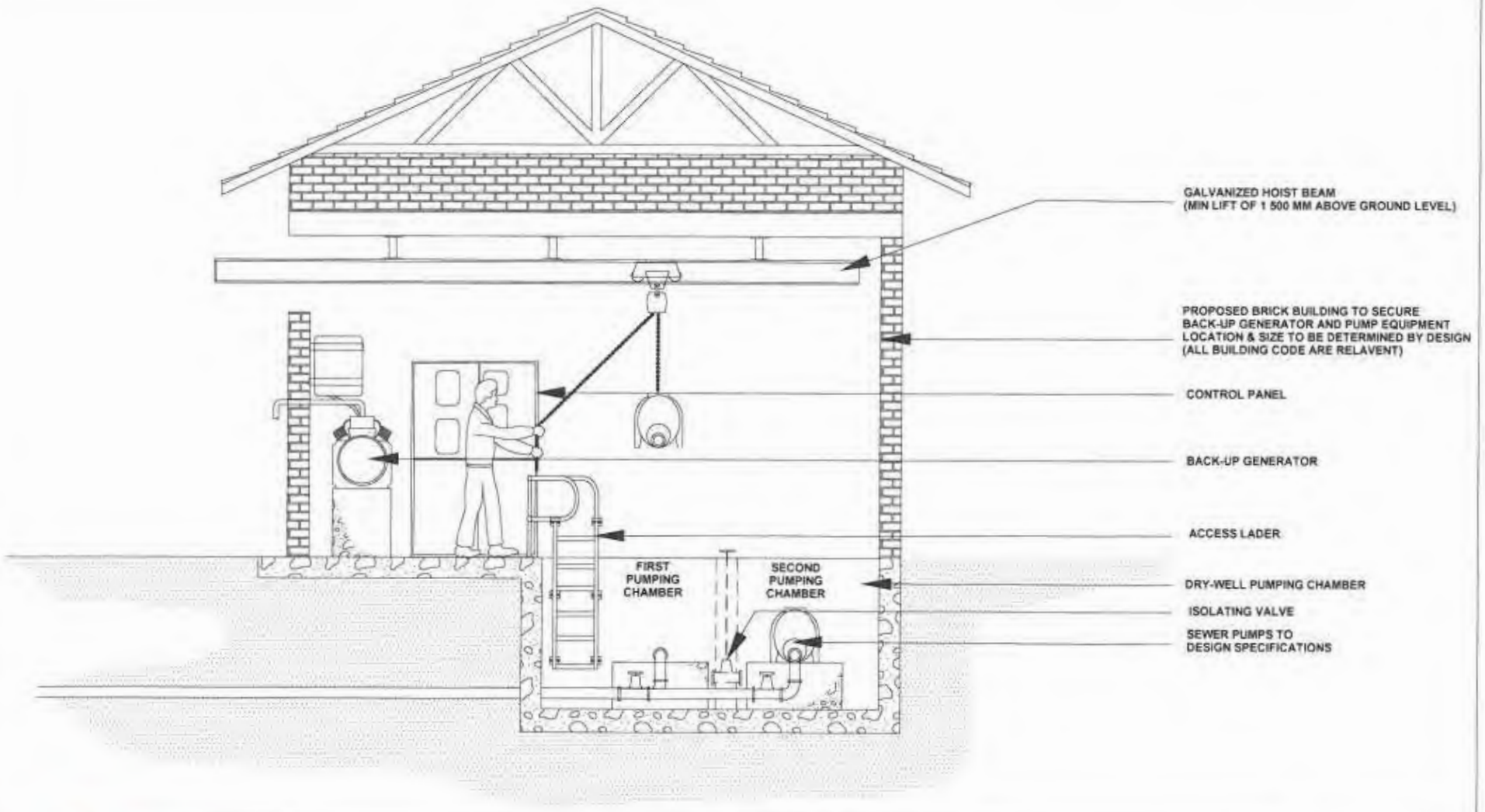
NOTES

1. FENCING PROVIDED TO ALLOW DIRECT ACCESS TO HOIST BEAM
2. ALL PUMP INFORMATION TO BE PLACED ON SIGN IN PUMPHOUSE
3. LDV NOT TO BE INCLUDED IN CALCULATIONS

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DEPARTMENT: CIVIL ENGINEERING SERVICES

STANDARDS
SMALL SIZE SEWER PUMPING STATION
WET-WELL CONFIGURATION

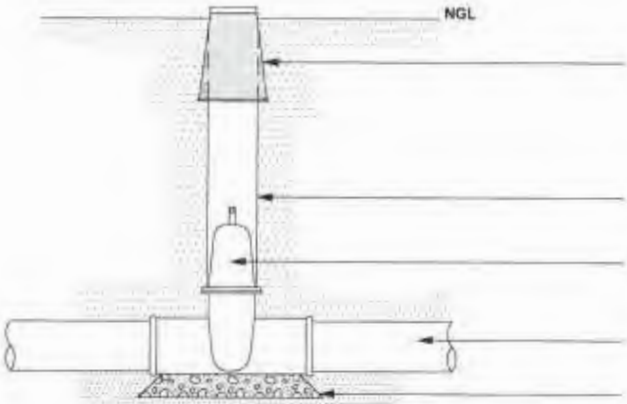
DATE:	AUG 2012
SCALE:	NTS
PLAN NO:	CES/S/6



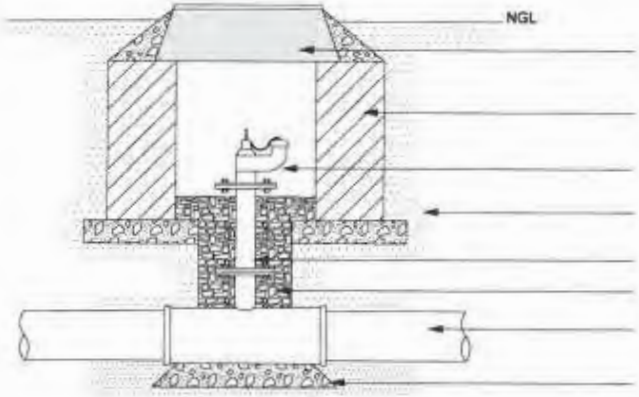
GEORGE
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DEPARTMENT: CIVIL ENGINEERING SERVICES

STANDARDS
LARGE SIZE SEWER PUMPING STATION
DRY-WELL CONFUGIRATION

DATE:	AUG 2012
SCALE:	NTS
PLAN NO:	CES/S/7



VALVE CHAMBER

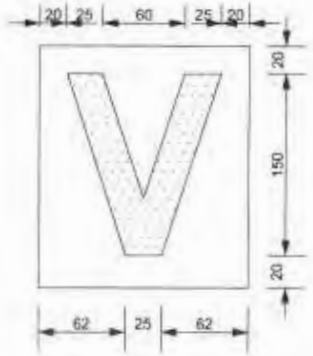


HYDRANT CHAMBER

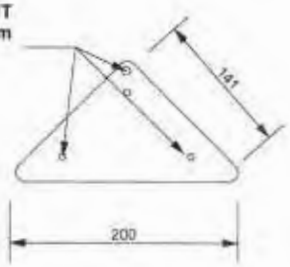
GEORGE
THE CITY FOR ALL REASONS
DEPARTMENT: CIVIL ENGINEERING SERVICES

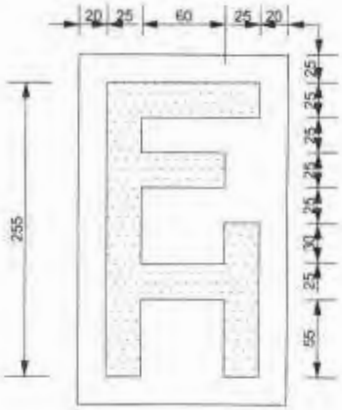
STANDARDS
VALVE AND HYDRANT CHAMBERS

DATE:	AUG 2012
SCALE:	NTS
PLAN NO:	CES/W/1



1 X Y8 BAR REINFORCMENT
CONCRETE COVER = 20 mm
CONCRETE CLASS 20/19







NOTES

1. ALL AREAS TO BE PAINTED WITH TWO COATS OF ROAD PAINT SPECIFIED COLOURS
2. FIRE HYDRANT AND VALVE LETTERING - RED ROAD PAINT
3. COUNTERSUNK - 10 mm WHITE ROAD PAINT
4. HYDRANT MARKERS - YELLOW ROAD PAINT
5. VALVE MARKERS - WHITE ROAD PAINT
6. HYDRANT AND VALVE MARKERS TO BE PLACED MIN 500 mm FROM ERF BOUNDARY



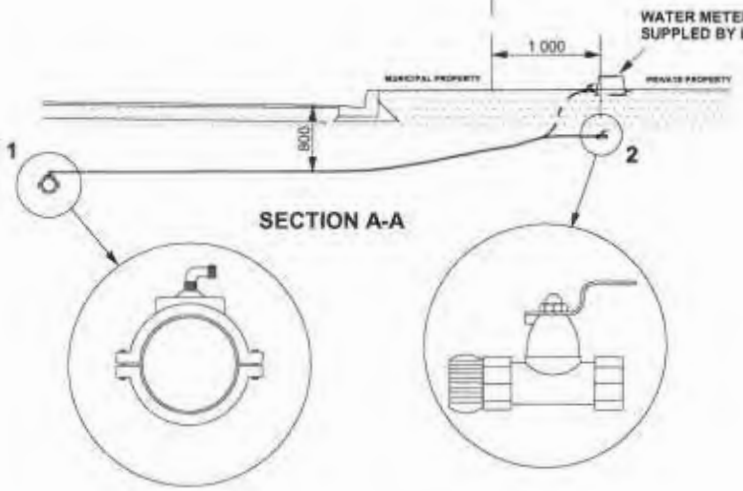
GEORGE
THE CITY FOR ALL REASONS
DEPARTMENT: CIVIL ENGINEERING SERVICES

STANDARDS
TYPICAL VALVE & HYDRANT MARKERS

DATE:	JAN 2009
SCALE:	NTS
PLAN NO:	CES/ W / 2



PLAN VIEW



SECTION A-A

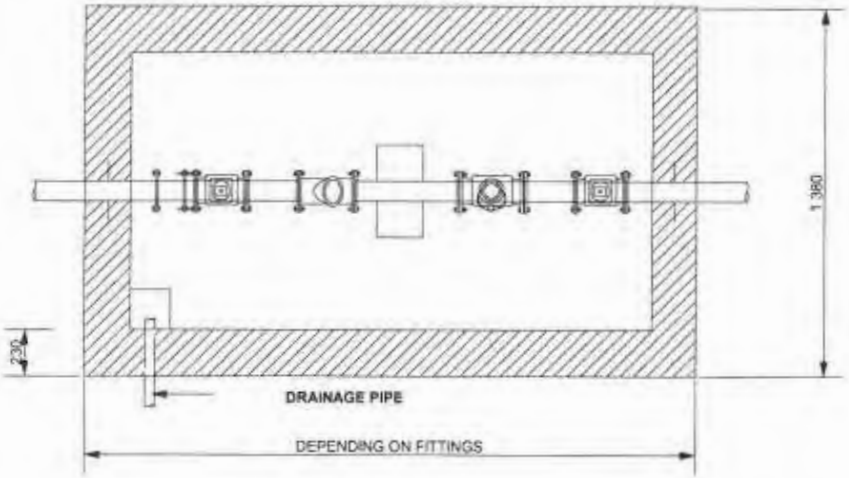
DESCRIBTION

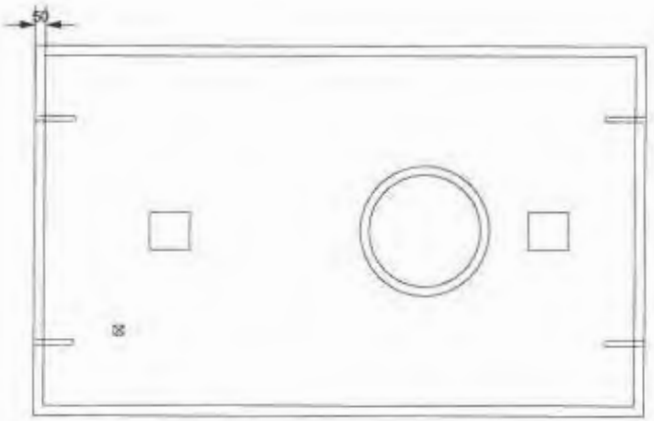
	SINGLE HOUSE CONNECTION		DOUBLE HOUSE CONNECTION	
	INCOME GROUP			
	HIGH - MEDIUM	LOW	HIGH - MEDIUM	LOW
1. CAST IRON OR PN16 BAR JASWIC APPROVED POLYPROPYLENE SADDLE WITH THREADED OUTLET AND SECURED WITH STAINLESS STEEL BOLTS AND NUTS				
2. MALE THREADED 90 DEGREE ELBOW	25 X 3/4"	20 X 3/4"	40 X 1"	25 X 3/4"
3. BRASS BALL VALVE OR BRASS FERULE	3/4"	3/4"	1"	3/4"
4. FEMALE THREADED TEE PIECE	-	-	25 X 1"	20 X 3/4"
5. END CAP	25	20	25	20
6. HDPE PIPE TYPE 5 CLASS 16 (SABS 533 PART 3)	-	-	40	25
7. HDPE PIPE TYPE 5 CLASS 16 (SABS 533 PART 3)	25	-	25	-
8. HDPE PIPE TYPE 4 CLASS 16 (SABS 533 PART 2)	-	20	-	20
9. THREADED MALE ADAPTOR	-	-	40 X 1"	25 X 3/4"

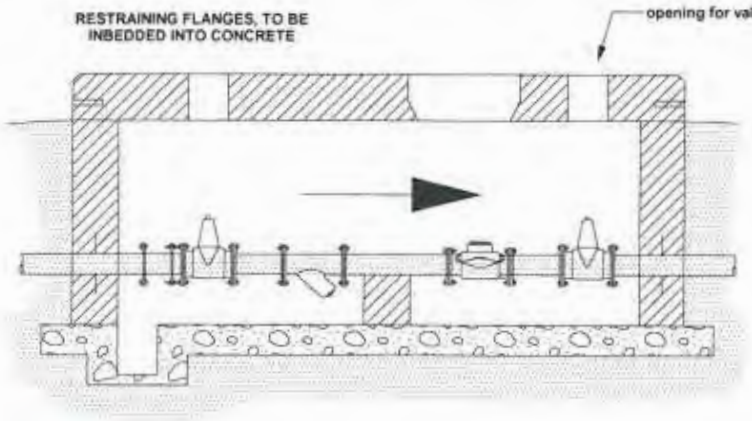
GEORGE
THE CITY FOR ALL REASONS
DEPARTMENT CIVIL ENGINEERING SERVICES

STANDARDS
TYPICAL WATER CONNECTION

DATE:	JAN 2009
SCALE:	NTS
PLAN NO:	CES/ W / 3







NOTES

1. PUDDLE FLANGE TO BE BUILT INTO CHAMBER WALLS
2. 300 X 300 X 75 mm SUMP TO BE CONSTRUCTED IN CHAMBER FLOOR
3. WATER CHAMBER PIPE WORK TO BE SUPPORTED WITH SMALL BRICK SUPPORTS
4. CONCRETE, CLASS 25/19 TO BE USED
5. CHAMBER TO BE BAGGED EXTERNALLY AND INTERNALLY TO PREVENT GROUND WATER SEEPAGE INTO MANHOLE
6. CHAMBER FITTINGS TO INCLUDE 2 FLANGED VALVES
7. AVOID BUILDING CHAMBER INSIDE ROAD AREA

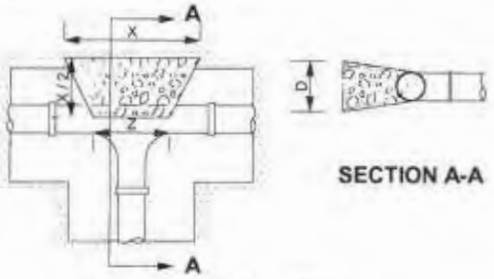


DIA METER	DIST.TO PUDDLE FLANGE	VJ	Valve	DIST. PIECE	STRAINER	DIST. PIECE	WATER METER	DIST. PIECE	Valve	DIST.TO PUDDLE FLANGE
80	250	200	203	400	225	400	300	400	203	250
100	250	200	229	500	250	500	350	500	229	250
160	250	200	267	750	300	750	500	750	267	250

GEORGE
THE CITY FOR ALL REASONS
DEPARTMENT: CIVIL ENGINEERING SERVICES

STANDARDS
TYPICAL BULK WATER METER CHAMBER

DATE:	JAN 2009
SCALE:	NTS
PLAN NO:	CES/ W / 4



SECTION A-A

T-PIECE THRUST BLOCK

PIPE DIA mm	X mm	D mm	Z mm
75	410	300	150
110	530	400	200
150	950	500	280
200	1 250	650	350
250	1 600	800	450
300	1 850	1 000	550
350	2 150	1 300	550

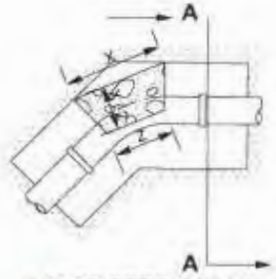




SECTION A-A

90 DEGREE BEND THRUST BLOCK

PIPE DIA mm	X mm	D mm	Z mm
75	410	300	180
110	480	450	250
150	800	600	400
200	1 100	750	480
250	1 400	900	530
300	1 700	1 100	580
350	2 080	1 350	630





SECTION A-A

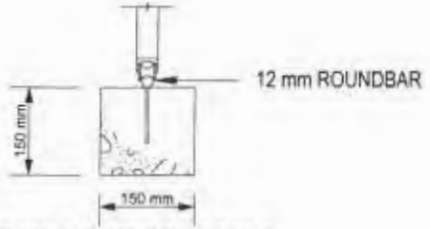
< 90 DEGREE BEND THRUST BLOCK

	11.25 DEGREE BEND			22.5 DEGREE BEND			45 DEGREE BEND		
PIPE DIA mm	X mm	D mm	Z mm	X mm	D mm	Z mm	X mm	D mm	Z mm
75	200	150	120	250	200	150	350	300	150
110	250	200	150	350	250	200	500	400	200
150	350	300	250	500	400	350	700	550	400
200	500	350	350	650	500	400	900	700	450
250	600	450	350	800	650	400	1 100	900	500
300	700	550	400	950	750	450	1 300	1 100	550
350	850	700	400	1 200	900	500	1 700	1 300	600

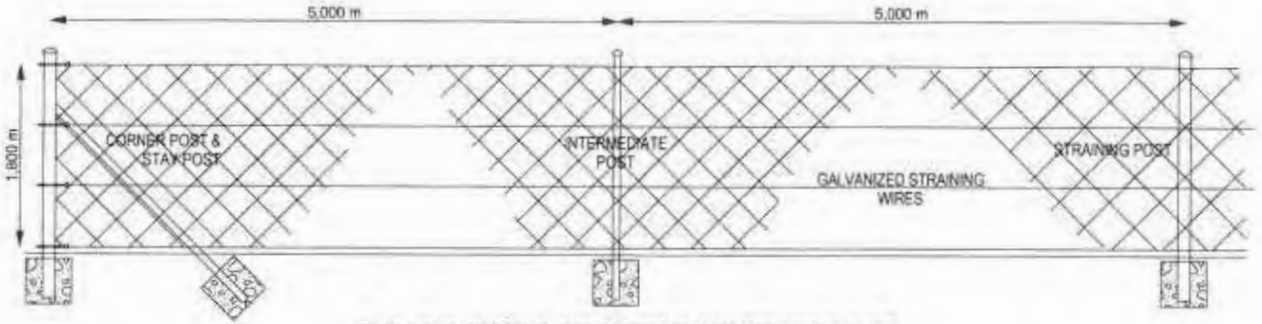
GEORGE
THE CITY FOR ALL REASONS
DEPARTMENT: CIVIL ENGINEERING SERVICES

STANDARDS
TYPICAL THRUST BLOCK DETAILS

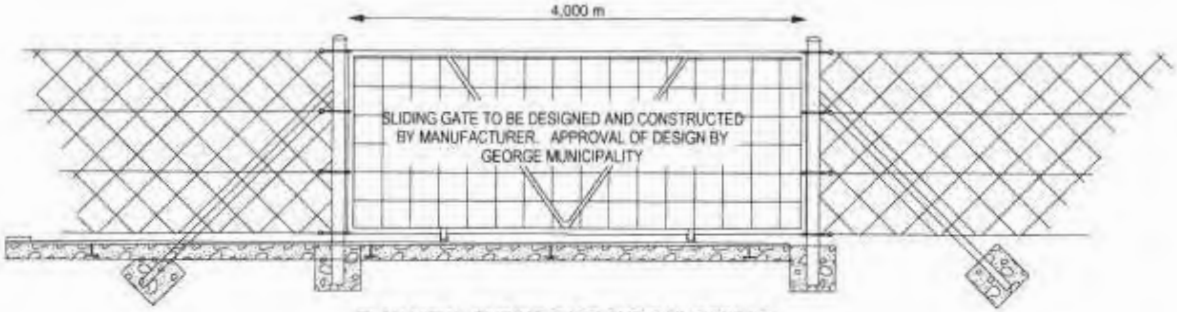
DATE: JAN 2009
SCALE: NTS
PLAN NO: CES/ W / 5



DETAIL 1: SLIDING GATE RAIL & CONCRETE FOOTING



PLAN VIEW: CORNER, INTERMEDIATE AND STRAINING POST



PLAN VIEW : SLIDING GATE AND RAIL DETAILS

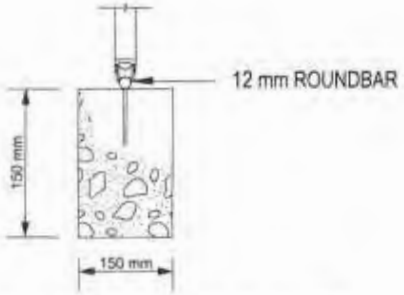
NOTAS:

1. CONCRETE TO BE 25 MPa
2. EXCAVATION OF ALL POLES TO BE 400 X 400 X 500 mm
3. ALL POSTS TO BE GALVANIZED AND CAP
4. 1 800 mm DIAMOND RAZOR MESH TO BE GALVANIZED
5. SLIDING GATE TO HAVE 150 X 150 mm CONCRETE FOOTING (25 MPa) LENGTH TO BE CALCULATED ON SITE
6. SLIDING GATE TO BE PROVIDED WITH 65 mm PADLOCK
7. 12 mm ROUNDBAR TO BE USED AS SLIDING GATE RAILS
8. SLIDING GATE RAIL TO BE FASTENED TO CONCRETE FOOTING BY CHEMICAL ANCHORS

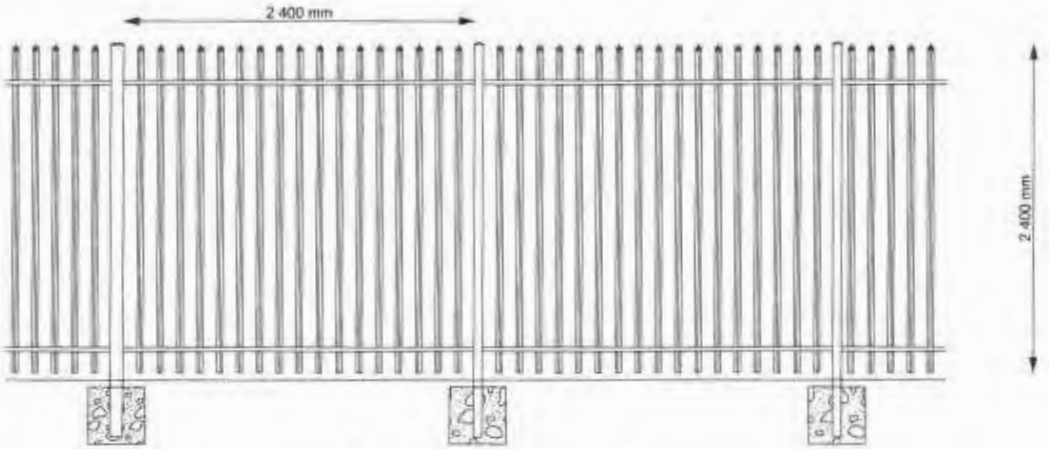
GEORGE
THE CITY FOR ALL REASONS
DEPARTMENT CIVIL ENGINEERING SERVICES

STANDARDS
TYPICAL 1 800 mm RAZOR DIAMOND MESH FENCING

DATE:	AUG 2012
SCALE:	NTS
PLAN NO:	CES/ G / 1



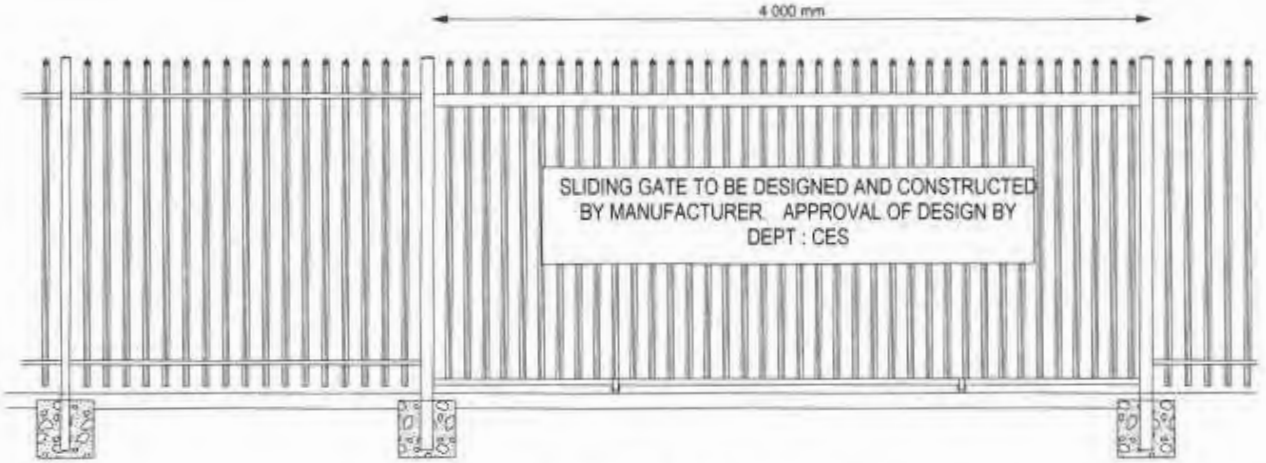
DETAIL 1: SLIDING GATE RAIL & CONCRETE FOOTING



PLAN VIEW : PALISADE FENCING

NOTAS:

1. CONCRETE TO BE 25 MPa
2. EXCAVATION OF ALL POLES TO BE 400 X 400 X 500 mm
3. ALL POSTS TO BE GALVANIZED AND CAPPED
4. 2 400 mm PALISADE TO BE GALVANIZED
5. SLIDING GATE TO HAVE 150 X 150 mm CONCRETE FOOTING (25 MPa) LENGTH TO BE CALCULATED ON SITE
6. SLIDING GATE TO BE PROVIDED WITH 65 mm PADLOCK
7. 12 mm ROUNDBAR TO BE USED AS SLIDING GATE RAILS
8. SLIDING GATE RAIL TO BE FASTENED TO CONCRETE FOOTING BY CHEMICAL ANCHORS
9. HOLDING DOWN BRACES TO BE PROVIDED AT MANUFACTURER'S DISCRETION, MINIMUM OF 2 PER GATE

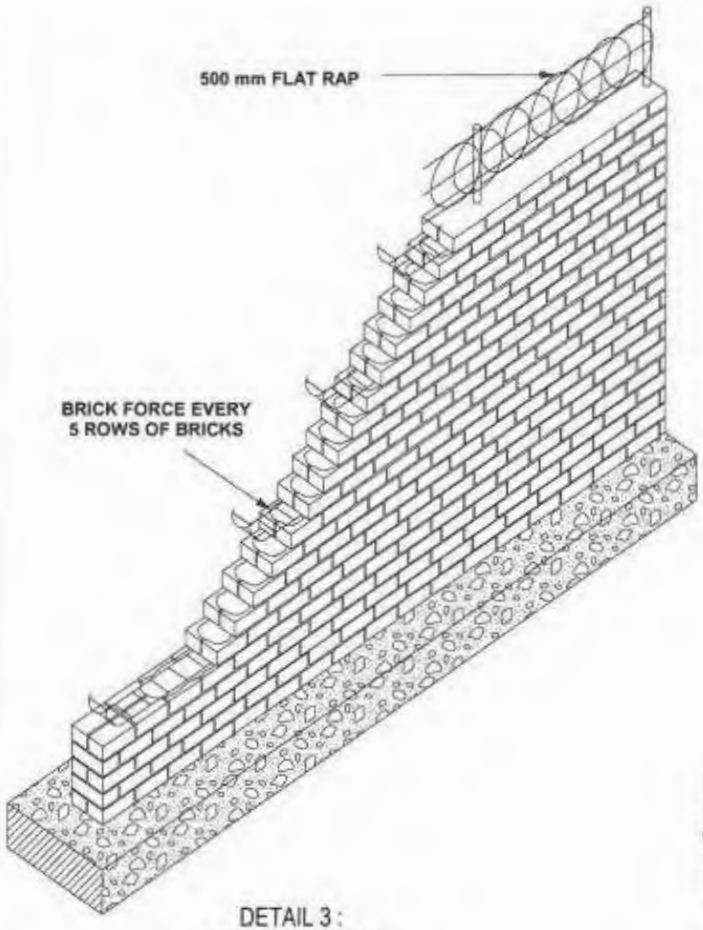


PLAN VIEW : SLIDING GATE & RAIL

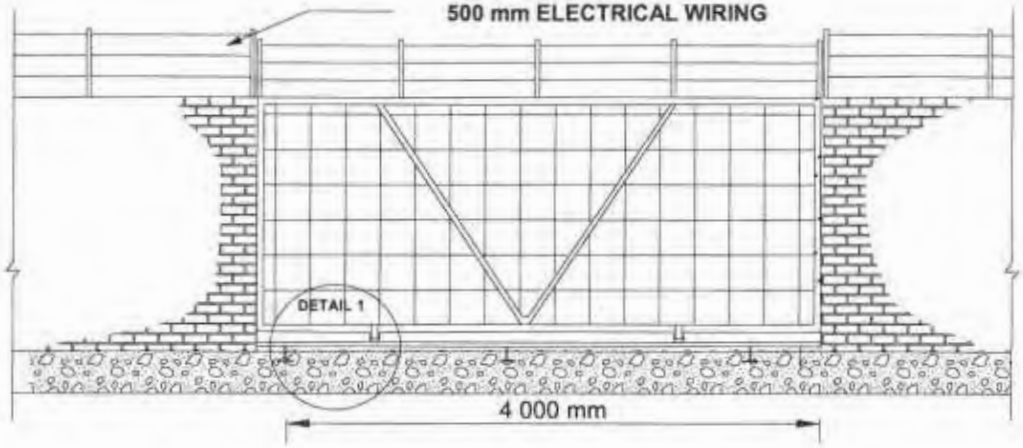
GEORGE
THE CITY FOR ALL REASONS
DEPARTMENT:CIVIL ENGINEERING SERVICES

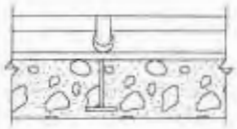
STANDARDS
TYPICAL 2 400 mm PALISADE FENCING

DATE:	AUG 2012
SCALE:	NTS
PLAN NO:	CES/ G / 2

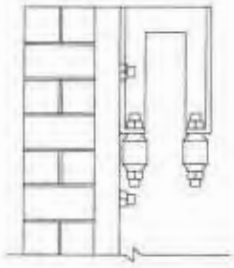


DETAIL 3 :
BRICK FORCE OR
SIMILAR APPROVED





DETAIL 1 :
SLIDING GATE RAIL &
CONCRETE FOOTING



DETAIL 2 :
SLIDING GATE TOP
RAIL GUARD

NOTES

1. ALL MATERIAL AND WORKMANSHIP MUST COMPLY WITH THE REQUIREMENTS OF THE LATEST RELEVANT SANS SPECIFICATIONS
2. ALL CONCRETE TO BE 25 MPa
3. BOUNDARY WALL EXCAVATION TO BE 300 X 600 mm
4. ALL BRICK WORK TO BE .....
5. BRICKFORCE TO BE USED ON EVERY 5 ROWS
6. SLIDING GATE TO HAVE 150 X 150 mm CONCRETE FOOTING (25 MPa) LENGTH TO BE CALCULATED ON SITE
7. SLIDING GATE TO BE PROVIDED WITH 65 mm PADLOCK
8. 12 mm ROUND BAR TO BE USED AS SLIDING GATE RAILS
9. SLIDING GATE RAIL TO BE FASTENED TO CONCRETE FOOTING BY CHEMICAL ANCHORS
10. 500 mm FLAT-RAP TO BE PLACED ON TOP ALL BOUNDARY WALLS

GEORGE
THE CITY FOR ALL REASONS
DEPARTMENT CIVIL ENGINEERING SERVICES

STANDARDS
BRICK WALL

DATE	AUG 2012
SCALE	NTS
PLAN NO:	CES/G/3



GEORGE THE CITY FOR ALL REASONS DEPARTMENT: CIVIL ENGINEERING SERVICES	MUNICIPAL PROJECT NAME BOARD TYPICAL DETAIL	SCALE: NTS DATE: AUG 2012 DRAWING NUMBER: CES/G/4



NOTES:

1. BLUE BACKGROUND WITH WHITE BLOCKS FOR NAMES OF CONSULTANTS AND CONTRACTORS
2. NAME OF CLIENT AND PROJECT DESCRIPTION IN WHITE LETTERING ON BLUE BACKGROUND. IF REQUIRED, THE CLIENT'S LOGO CAN BE PLACED ON A WHITE BACKGROUND IN THE POSITION AS INDICATED. IF NOT REQUIRED, BACKGROUND IS BLUE.
3. THE HEIGHT OF THE BOARD CAN BE INCREASED IN 550mm INCREMENTS TO ALLOW FOR NAMES OF ADDITIONAL CONSULTANTS AND/OR CONTRACTORS EG. ELECTRICAL ETC.
4. TYPE-FACE TO BE USED SHALL BE NEO SANS OR ARIAL. IT IS RECOMMENDED THAT LETRASIGN, SELF ADHESIVE PVC SIGN LETTERING BE USED.
5. THE BOARD MATERIAL TO BE 1mm THICK RUST RESISTANT CHROMADEK OR 5mm THICK TEMPERED HARDBOARD WITH SMOOTH SURFACE.
6. THE NOTICE BOARD MUST BE MOUNTED ON A STRONG SUPPORTING WOODEN OR STEEL STRUCTURE, APPROVED BY THE ENGINEER, AND MUST BE PROPERLY MAINTAINED DURING THE CONSTRUCTION PERIOD.
7. THE LOGO FOR THE CLIENT MUST BE OBTAINED ELECTRONICALLY AND PRINTED IN COLOUR ON THE NAME BOARD.
8. THE LOGO FOR THE ENGINEER MUST BE OBTAINED ELECTRONICALLY AND PRINTED IN COLOUR ON THE NAME BOARD.

GEORGE
THE CITY FOR ALL REASONS
DEPARTMENT: CIVIL ENGINEERING SERVICES

MIG PROJECT NAME BOARD

TYPICAL DETAIL

SCALE	NTS
DATE	MAY 2012
DRAWING NUMBER	CES/G/5

ANNEXURE C

EXISTING SERVICES

Draft

Existing Services Rosemore Sheet 1

Legend

- Registered Properties
- Wards (2019/2020)
- Neotel Route
- MTN Lines
- Frogfoot Route
- DFA Lines
- Links
- Symbols
- Pipes (Existing Zones)

Structures

Type

- Diversion
- Dummy
- End Manhole
- Manhole
- Pump Structure
- Rodding Eye
- T-Piece
- Top End
- WWTP
- Pipes
- Pipes (Existing Zones)



0 0.13 0.25 0.5 km

Date: 7/1/2024 11:14 AM Scale: 1:4,514

N

Disclaimer
George Municipality makes no warranties as to the correctness of the information supplied.
Persons relying on this information do so entirely at their own risk.

George Municipality will not be liable for any claims whatsoever, whether for damages or otherwise, which may arise as a result of inaccuracies in the information supplied.

Existing Services Rosemore Sheet 2

Legend

- Registered Properties
- Wards (2019/2020)
- Neotel Route
- MTN Lines
- Frogfoot Route
- DFA Lines
- Links
- Symbols
- Pipes (Existing Zones)

Structures

Type

- Diversion
- Dummy
- End Manhole
- Manhole
- Pump Structure
- Rodding Eye
- T-Piece
- Top End
- WWTP
- Pipes
- Pipes (Existing Zones)



0 0.13 0.25 0.5 km

Date: 7/1/2024 11:14 AM Scale: 1:4,514

N

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George Municipality makes no warranties as to the correctness of the information supplied. Persons relying on this information do so entirely at their own risk.

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ANNEXURE D

PROPOSED STORMWATER UPGRADES

Draft



The reference made to Engineer will also refer to Employer's Agent for GCC 2015 Contracts

SCALEBAR

0 45 90

Meters 1:1500

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All dimensions must be verified on site before the works commence. Refer any discrepancies to the Engineer.

REV	DESCRIPTION	DATE	REV BY	CHKD
A	FOR INFORMATION	'25-02-19	AL	CD

REVISIONS

DESIGNED	AL	
DRAWN	AL	
CHECKED	CD	

CONSULTING ENGINEERS

LYNERS
PO Box 4901
TYGERVALLEY
7530
Tel: 021 914 0300/Fax: 021 914 0437
email: bellville@lyners.co.za

APPROVED

ENGINEERS: _____

DATE: 2025-02-19

APPROVED

CLIENT: _____

DATE: _____

CLIENT

GEORGE
THE CITY FOR ALL REASONS

PROJECT

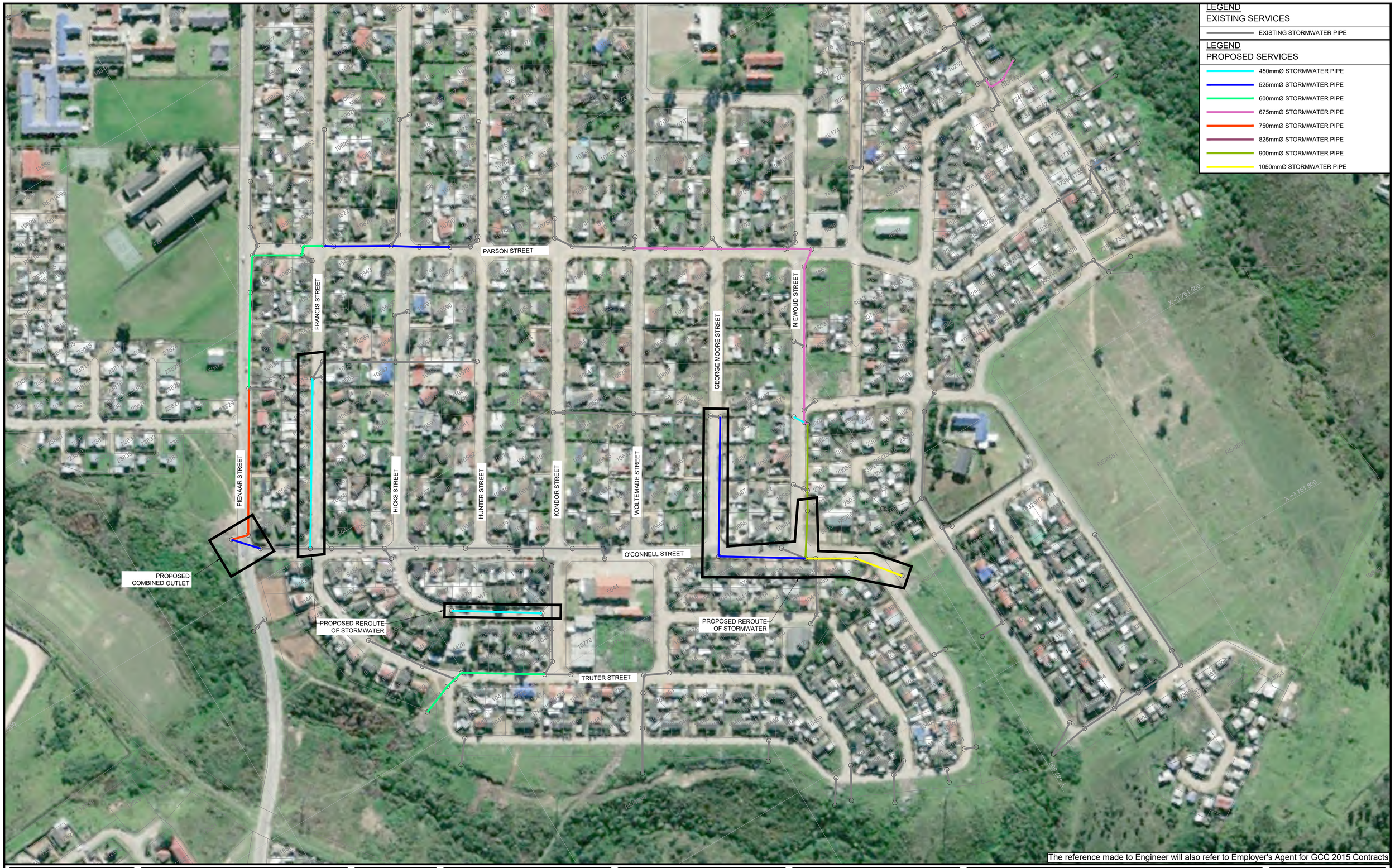
ROSEMOOR STORMWATER UPGRADES

TITLE

PROPOSED STORMWATER UPGRADES LAYOUT (SHEET1)

SCALE on A1 1:1500	SHEET 1 OF 1
CONTRACT No.	PROJECT No. 24052CG
DRAWING No. 24052-CG-005	REV A
COORDINATE SYSTEM: WGS84 / Lo23°	

Date: 2024-10-10
Checked:
Auditing: Arnold Louw



The reference made to Engineer will also refer to Employer's Agent for GCC 2015 Contracts

SCALEBAR
0 45 90
Meters 1:1500

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All dimensions must be verified on site before the works commence. Refer any discrepancies to the Engineer.

REV	DESCRIPTION	DATE	REV BY	CHKD
A	FOR INFORMATION	'25-02-19	AL	CD

REVISIONS

DESIGNED	AL	
DRAWN	AL	
CHECKED	CD	

CONSULTING ENGINEERS

LYNERS
PO Box 4901
TYGERVALLEY
7530
Tel: 021 914 0300/Fax: 021 914 0437
email: bellville@lyners.co.za

APPROVED
ENGINEERS: _____
DATE: 2025-02-19

APPROVED
CLIENT: _____
DATE: _____

CLIENT
GEORGE
THE CITY FOR ALL REASONS

PROJECT
ROSEMOOR STORMWATER UPGRADES

TITLE
PROPOSED STORMWATER UPGRADES LAYOUT (SHEET2)

SCALE	SHEET
on A1 1:1500	1 OF 1
CONTRACT No.	PROJECT No. 24052CG

DRAWING No. 24052-CG-005 REV A

COORDINATE SYSTEM: WGS84 / Lo23°

Auditing: Arnold Louw
Checked: Date: 2024-10-10

ANNEXURE E

GEOTECHNICAL REPORT

Draft

ROSEMORE STREET & STORMWATER UPGRADE GEORGE

24052 CG

SOIL INVESTIGATION



AUGUST 2024

Author:

Llewelyn Heathcote

OUTENIQUA LAB (Pty) Ltd
Registration No. 95/07742/07
Materials Testing Laboratory
6 Mirrorball Street, George : PO Box 3186, George Industria, 6536
Tel: 044 8743274 : Fax: 044 8745779 : e-mail: llewelyn@outeniqualab.co.za
T0347

15 August 2024

Neil Lyners
GEORGE

Attn: F van Eck

CONTRACT NO 24052CG: UPGRADING OF STREET AND STORMWATER: ROSEMOOR: PHASE 1 AND 2 - PR8 WP7

Term of reference

Outeniqua Lab (Pty) Ltd was requested by Neil Lyners on behalf of the George Municipality to excavate 10 trial pits to a maximum depth of 2.5m or refusal as well as 8 trial pits within the roads along the proposed pipeline route and comment on the findings.

Scope of work

The site investigation included a series of trial pits labelled TP1 to TP18, as indicated on the layout plan, as well as insitu DCP penetration tests at each trial pit with laboratory testing carried out on soil samples taken. TP1 to TP10 were done in areas near to the proposed pipeline route and TP11 to TP18 were done in the road adjacent to the pipeline route.

Results from the site investigation

The site is located on the Rosemore suburb South of Muller Street and bordered by the two valleys on the Eastern and Western sides.

The topography of the site is generally gently sloped with only a few areas near the valleys were the gradient increases. The whole site along the pipeline is accessible with a TLB on paved roadways.

The underlying geology of the area consists of Maalgaten and related Granites of the Kaaimans series and soil derived from the weathering of these rocks. This formation is typically deeply weathered in the area, forming fine gravels to silt/silty clays soil profiles.

The test pits conducted indicate that the soil profiles are dominated by silty sands, Ferricrete, silt/silty clays and find gravels, this correlates with the local geology of the area.

The tests conducted on the soils confirmed the visual assessment of the clayey nature of the soils above the fine gravels with isolated Ferricrete lenses.

Within the trial pits excavated in the insitu materials, the fine gravels and clean silty sands could not be classified according to TRH14, indicating that the material is less that a G10 quality, with only the silty sand that has some well developed Ferricrete in, providing a TRH14 classification of G7 quality.

The silt/silty clay samples range between SC (clayey sand) and CL (lean clay) classification with low potential expansiveness.

None of the silty sands could meet the requirements of SABS 1200LB for bedding sands.

Within the trial pits excavated in the roadways, the coarse and medium gravels predominantly classified as a G4 Natural gravel with some being classified as G5 according to TRH14. The fine gravels classify between a TRH14 G7 and material that could not be classified.

Notes:
- The above test results are an indication only of the sample provided and/or taken.
- While every care is taken to ensure the correctness of all tests and reports, neither Outeniqua Lab nor its employees shall be liable in any way whatever for any error made in the execution or reporting of tests or any erroneous conclusions drawn therefrom or for any consequence thereof.

OUTENIQUA LAB (Pty) Ltd
Registration No. 95/07742/07
Materials Testing Laboratory
6 Mirrorball Street, George : PO Box 3186, George Industria, 6536
Tel: 044 8743274 : Fax: 044 8745779 : e-mail: llewelyn@outeniqualab.co.za
T0347

Assessment of data

The slope stability of the site appears suitable, with the material on the steeper slopes being cohesive. However if moisture is allowed into any open trenches the stability of the slopes could be affected.

The trench side walls are also stable under dry conditions, however the Ferricrete layer could form a perched water table which could lead to the sided wall failure of the trench.

The insitu materials are not considered useful as a potential source of bedding, blanket or engineering filling material, due to the high fines content and classification, but if required can be used as general low quality filling material where compaction is not crucial.

Trial pit excavations to a depth of 3.0m are classified as “soft” and can be excavated with light plant such as a TLB.

Conclusion

The investigation indicated that the site is suitable for the pipeline upgrade with the material being easily excavatable with a TLB in most areas with no hard rock encountered alone the line. The site is stable under dry conditions and care must be taken to shore the walls of the trenches where any possible perched water table could be encountered.
Consideration must be taken when selection the backfill material from the site and bedding material should be imported from commercial sources.

Please contact me should you have any queries.

Yours Sincerely



Llewelyn Heathcote B-Tech. (Civil Eng.) & BSc Hons (Transport)
For Outeniqua Lab (Pty) Ltd

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Figure 1:

Locality Plan

Scale:NTS

OUTENIQUA LAB

Outeniqua Lab (Pty) Ltd
Civil Engineering Laboratory

OUTENIQUA LAB (Pty) Ltd.

Registration No. 95/07742/07
Materials Testing Laboratory
6 Mirrorball Street, George : PO Box 3186, George Industria, 6536
Tel: 044 8743274 : Fax: 044 8745779 : e-mail: llewelyn@outeniqualab.co.za

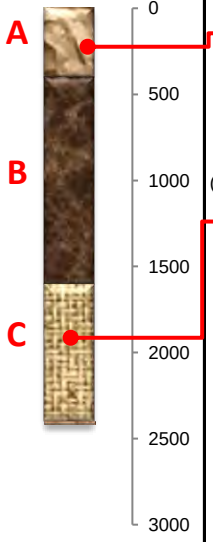
R-PROF-1-5
Jan-22

Customer :	Neil Lyners P O Box 757 George 6530
Project :	24052CG Rosemore Street & Stormwater Upgrade
Date Reported :	06/08/24

TP1

Datum: @NGL | Co-ordinates:

Key to symbols: ● Sample taken ▼ Water seepage



(0 to 400)	Moist to very moist, grey, very loose, intact, SILTY SAND, transported. (● Sample Taken: California Bearing Ratio & Moisture Content)
(400 to 1600)	Moist to very moist, dark brown, loose to medium dense, intact, SILTY SAND, transported.
(1600 to 2400)	Moist to very moist, light reddish orange, firm, slickensided, SILT/SILTY CLAY, residual. (● Sample Taken: Foundation Indicator & Moisture Content)

Dynamic Cone Penetrometer (DCP)

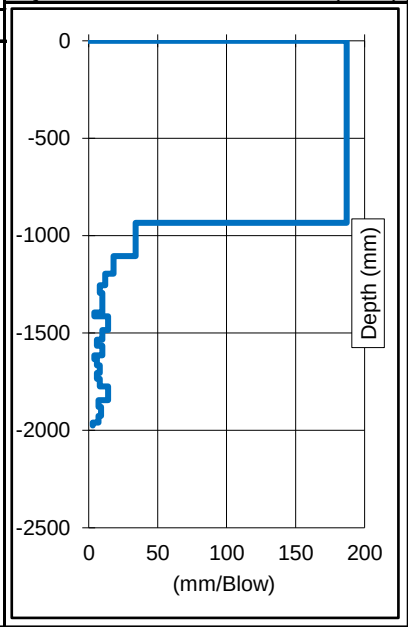


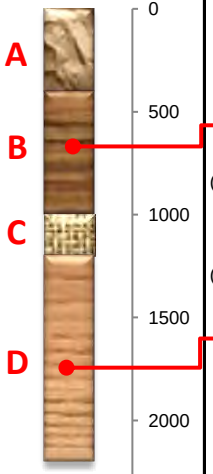
Photo of Test Pit



TP2

Datum: @FRL | Co-ordinates:

Key to symbols: ● Sample taken ▼ Water seepage



(0 to 400)	Moist, grey, loose to medium dense, intact, SOIL/GRAVEL CONTAMINATED WITH RUBBISH, imported.
(400 to 1000)	Moist, dark brown, medium dense to dense, intact, SILTY SAND, transported. (● Sample Taken: California Bearing Ratio & Moisture Content)
(1000 to 1200)	Moist, dark reddish brown, medium dense to dense, intact, FERRICRETE, pedogenic.
(1200 to 2200)	Moist, dark red mottled light yellowish orange, firm to stiff, slickensided, SILT/SILTY CLAY, residual. (● Sample Taken: Foundation Indicator & Moisture Content)

Dynamic Cone Penetrometer (DCP)

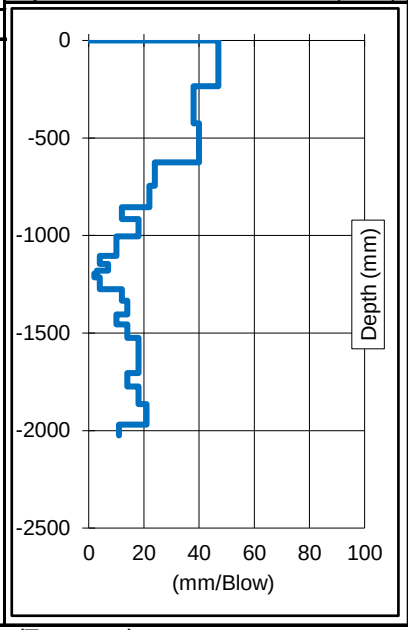


Photo of Test Pit



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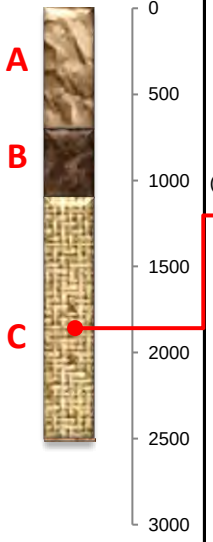
R-PROF-1-5
Jan-22

Customer :	Neil Lyners P O Box 757 George 6530
Project :	24052CG Rosemore Street & Stormwater Upgrade
Date Reported :	06/08/24

TP3

Datum: @NGL | Co-ordinates:

Key to symbols: ● Sample taken ▼ Water seepage



(0 to 700)	Moist, grey, loose to medium dense, intact, SOIL/GRAVEL CONTAMINATED WITH RUBBISH, imported.
(700 to 1100)	Moist, dark brown, medium dense, intact, SILTY SAND, transported.
(1100 to 2500)	Moist to very moist, light reddish orange, firm, slickensided, SILT/SILTY CLAY, residual. (● Sample Taken: Foundation Indicator & Moisture Content)

Dynamic Cone Penetrometer (DCP)

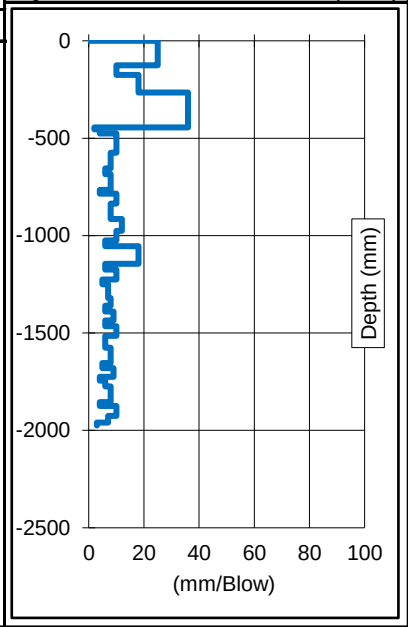


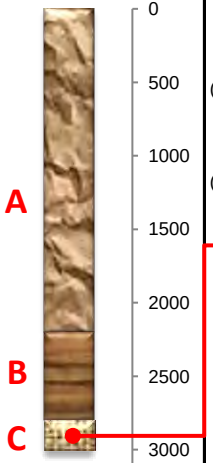
Photo of Test Pit



TP4

Datum: @NGL | Co-ordinates:

Key to symbols: ● Sample taken ▼ Water seepage



(0 to 2200)	Moist, grey, medium dense to dense, intact, SOIL/GRAVEL CONTAMINATED WITH RUBBISH, transported.
(2200 to 2800)	Moist, dark brown, medium dense to dense, intact, SILTY SAND, transported.
(2800 to 3000)	Moist to very moist, light reddish orange, firm to stiff, slickensided, SILT/SILTY CLAY, residual. (● Sample Taken: Foundation Indicator & Moisture Content)

Dynamic Cone Penetrometer (DCP)

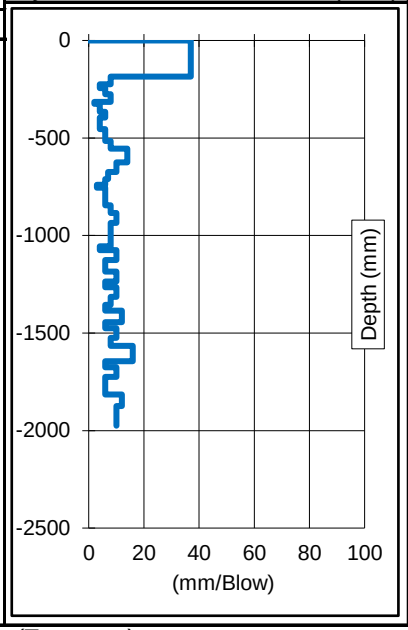


Photo of Test Pit



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R-PROF-1-5
Jan-22

Customer :	Neil Lyners P O Box 757 George 6530
Project :	24052CG Rosemore Street & Stormwater Upgrade
Date Reported :	06/08/24

TP5

Datum: @NGL | Co-ordinates:

Key to symbols: ● Sample taken ▼ Water seepage



(0 to 1700)	Slightly moist to moist, grey, medium dense to dense, intact, SILTY SAND, transported.
(1700 to 2100)	Moist, dark brown, medium dense to dense, intact, SILTY SAND, transported.
(2100 to 2300)	Wet, dark reddish brown, dense, intact, FERRICRETE, pedogenic. (● Sample Taken: California Bearing Ratio & Moisture Content)(□ Water Table @ 2300mm)
(2300 to 2500)	Moist, dark red mottled light yellowish orange, firm to stiff, slickensided, SILT/SILTY CLAY, residual.

Dynamic Cone Penetrometer (DCP)

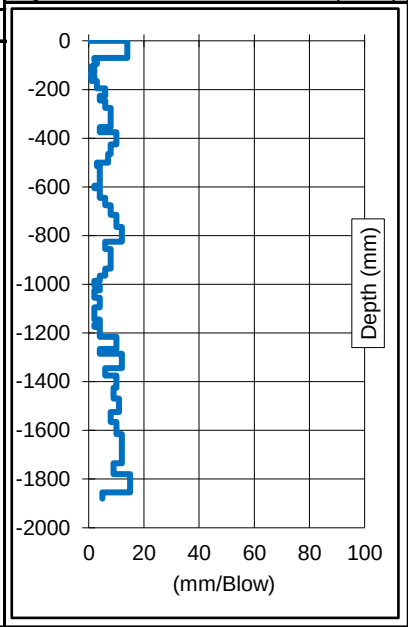


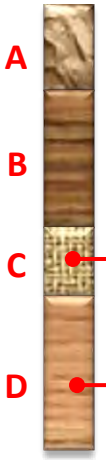
Photo of Test Pit



TP6

Datum: @NGL | Co-ordinates:

Key to symbols: ● Sample taken ▼ Water seepage



(0 to 500)	Slightly moist to moist, grey, medium dense to dense, intact, SILTY SAND, transported.
(500 to 1300)	Moist, dark brown, medium dense to dense, intact, SILTY SAND, transported.
(1300 to 1700)	Moist to very moist, dark red mottled light yellowish orange, firm to stiff, slickensided, SILT/SILTY CLAY, residual. (● Sample Taken: Foundation Indicator & Moisture Content)
(1700 to 2600)	Moist to very moist, light reddish orange, firm to stiff, slickensided, SILT/SILTY CLAY, residual. (● Sample Taken: Foundation Indicator & Moisture Content)

Dynamic Cone Penetrometer (DCP)

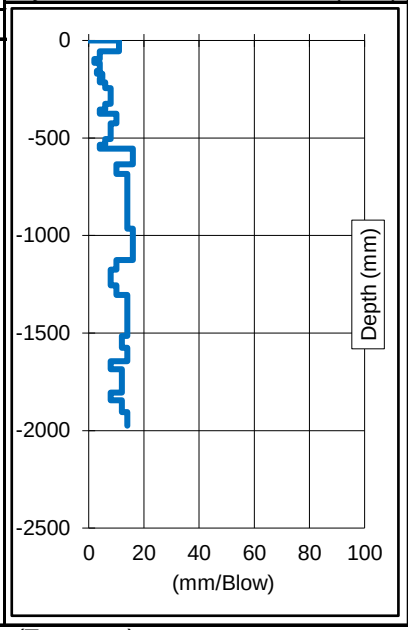


Photo of Test Pit



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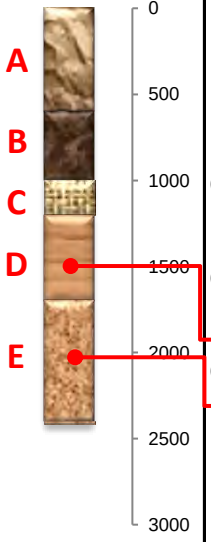
R-PROF-1-5
Jan-22

Customer :	Neil Lyners P O Box 757 George 6530
Project :	24052CG Rosemore Street & Stormwater Upgrade
Date Reported :	06/08/24

TP7

Datum: @NGL | Co-ordinates:

Key to symbols: ● Sample taken ▼ Water seepage



(0 to 600)	Slightly moist to moist, grey, medium dense to dense, intact, SOIL/GRAVEL CONTAMINATED WITH RUBBISH, imported.
(600 to 1000)	Moist, dark brown, medium dense to dense, intact, SILTY SAND, transported.
(1000 to 1200)	Moist, dark reddish brown, dense, intact, FERRICRETE, pedogenic.
(1200 to 1700)	Moist, dark red mottled light yellowish orange, firm to stiff, slickensided, SILT/SILTY CLAY, residual. (● Sample Taken: California Bearing Ratio & Moisture Content)
(1700 to 2400)	Slightly moist to moist, light yellow, dense, intact, CLAYEY GRAVEL, residual. (● Sample Taken: Foundation Indicator & Moisture Content)

Dynamic Cone Penetrometer (DCP)

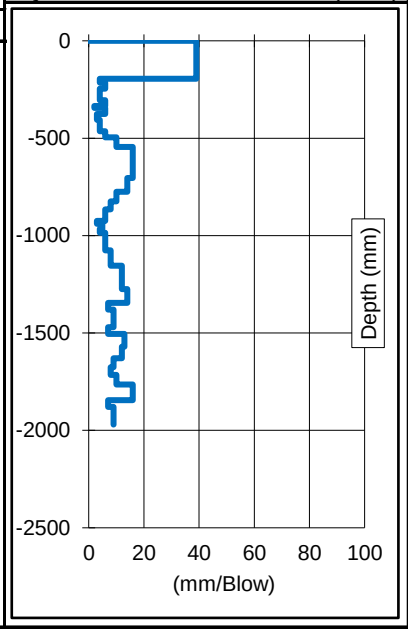


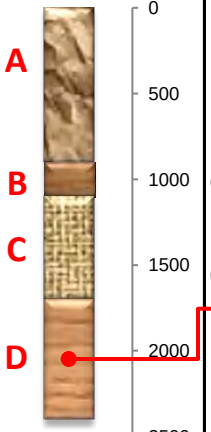
Photo of Test Pit



TP8

Datum: @NGL | Co-ordinates:

Key to symbols: ● Sample taken ▼ Water seepage



(0 to 900)	Slightly moist to moist, dark brown, medium dense to dense, intact, SILTY SAND, transported.
(900 to 1100)	Moist, dark reddish brown, dense, intact, FERRICRETE, pedogenic.
(1100 to 1700)	Moist, dark red mottled light yellowish orange, firm to stiff, slickensided, SILT/SILTY CLAY, residual.
(1700 to 2400)	Moist, light yellow, dense, intact, CLAYEY GRAVEL, residual. (● Sample Taken: Foundation Indicator & Moisture Content)

Dynamic Cone Penetrometer (DCP)

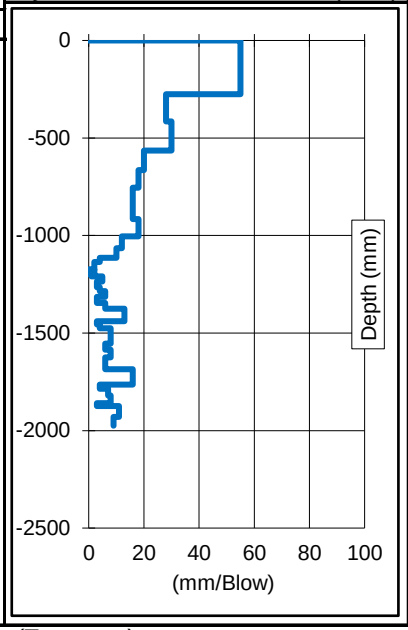


Photo of Test Pit



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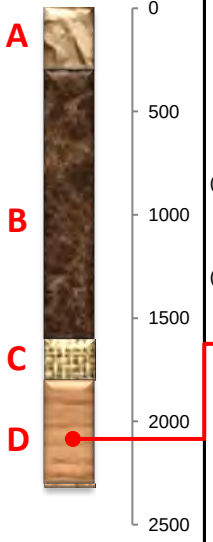
R-PROF-1-5
Jan-22

Customer :	Neil Lyners P O Box 757 George 6530
Project :	24052CG Rosemore Street & Stormwater Upgrade
Date Reported :	06/08/24

TP9

Datum: @NGL | Co-ordinates:

Key to symbols: ● Sample taken ▼ Water seepage



(0 to 300)	Slightly moist to moist, light olive, medium dense to dense, intact, FINE GRAVEL, imported.
(300 to 1600)	Moist, dark brown, medium dense to dense, intact, SILTY SAND, transported.
(1600 to 1800)	Moist, dark reddish brown, dense, intact, FERRICRETE, pedogenic.
(1800 to 2300)	Moist, dark red mottled light yellowish orange, firm to stiff, slickensided, SILT/SILTY CLAY, residual. (● Sample Taken: Foundation Indicator & Moisture Content)

Dynamic Cone Penetrometer (DCP)

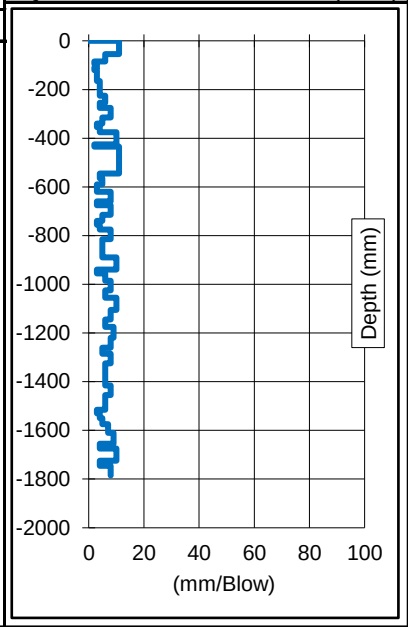
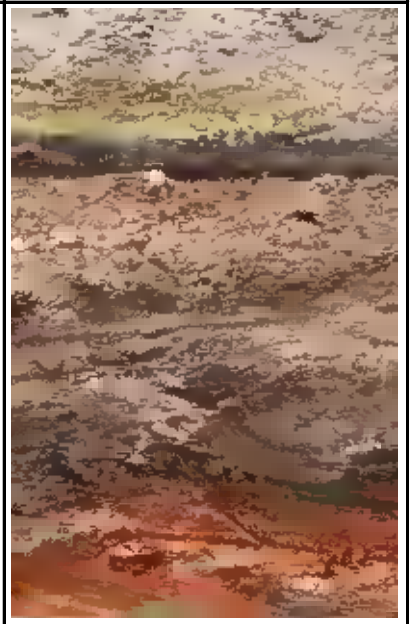


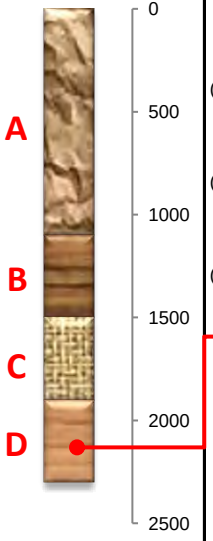
Photo of Test Pit



TP10

Datum: @NGL | Co-ordinates:

Key to symbols: ● Sample taken ▼ Water seepage



(0 to 1100)	Slightly moist to moist, grey, medium dense to dense, intact, SILTY SAND WITH BUILDERS RUBBLE, imported.
(1100 to 1500)	Moist, light brown, medium dense to dense, intact, SILTY SAND, transported.
(1500 to 1900)	Moist, dark reddish brown, dense, intact, FERRICRETE, pedogenic.
(1900 to 2300)	Moist to very moist, dark red mottled light yellowish orange, firm to stiff, slickensided, SILT/SILTY CLAY, residual. (● Sample Taken: Foundation Indicator & Moisture Content)

Dynamic Cone Penetrometer (DCP)

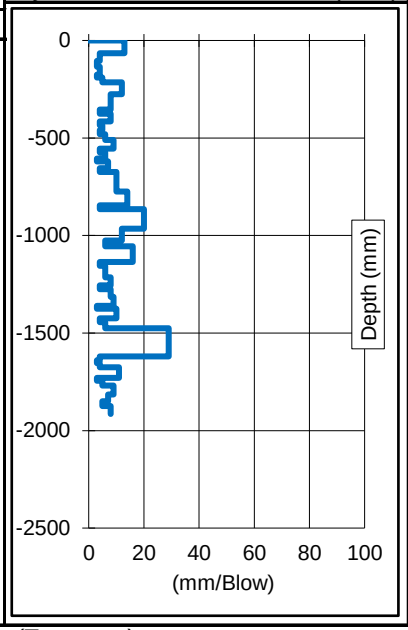


Photo of Test Pit



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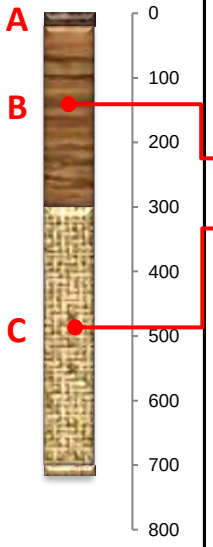
R-PROF-1-5
Jan-22

Customer :	Neil Lyners P O Box 757 George 6530
Project :	24052CG Rosemore Street & Stormwater Upgrade
Date Reported :	06/08/24

TP11

Datum: @FRL | Co-ordinates:

Key to symbols: ● Sample taken ▼ Water seepage



(0 to 20)	Dry, black, very dense, intact, ASPHALT SURFACING, imported.
(20 to 300)	Slightly moist to moist, dark brown, dense to very dense, intact, COARSE GRAVEL, imported. (● Sample Taken: California Bearing Ratio & Moisture Content)
(300 to 700)	Slightly moist to moist, dark olive, dense, intact, FINE GRAVEL, imported. (● Sample Taken: California Bearing Ratio & Moisture Content)

Dynamic Cone Penetrometer (DCP)

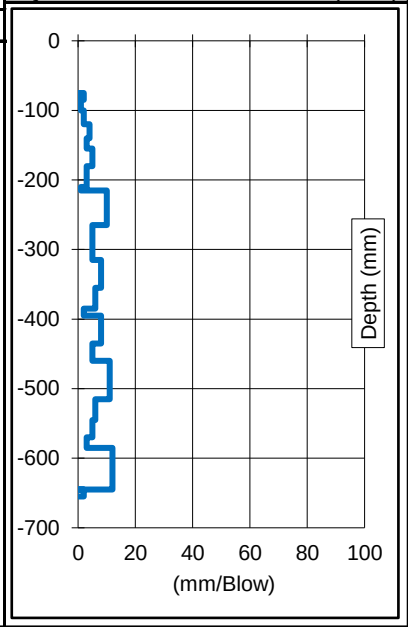


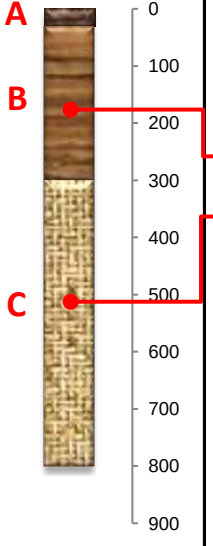
Photo of Test Pit



TP12

Datum: @FRL | Co-ordinates:

Key to symbols: ● Sample taken ▼ Water seepage



(0 to 30)	Dry, black, very dense, intact, ASPHALT SURFACING , imported.
(30 to 300)	Slightly moist to moist, dark brown, dense to very dense, intact, COARSE GRAVEL, imported. (● Sample Taken: California Bearing Ratio & Moisture Content)
(300 to 800)	Moist, dark olive, dense, intact, FINE GRAVEL, imported. (● Sample Taken: California Bearing Ratio & Moisture Content)

Dynamic Cone Penetrometer (DCP)

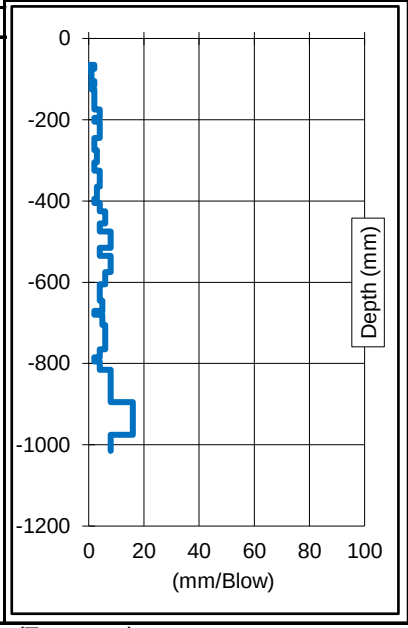


Photo of Test Pit



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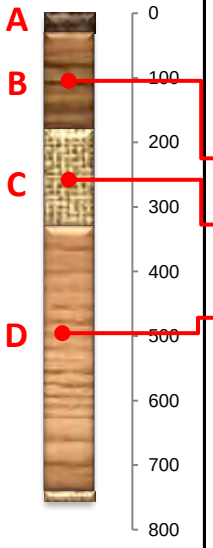
R-PROF-1-5
Jan-22

Customer :	Neil Lyners P O Box 757 George 6530
Project :	24052CG Rosemore Street & Stormwater Upgrade
Date Reported :	06/08/24

TP13

Datum: @NGL | Co-ordinates:

Key to symbols: ● Sample taken ▼ Water seepage



(0 to 30)	Dry, black, very dense, intact, ASPHALT SURFACING, imported.
(30 to 180)	Dry to slightly moist, dark brown, dense to very dense, intact, COARSE GRAVEL, imported. (● Sample Taken: California Bearing Ratio & Moisture Content)
(180 to 330)	Moist to very moist, dark olive, dense, intact, FINE GRAVEL, imported. (● Sample Taken: California Bearing Ratio & Moisture Content)
(330 to 740)	Moist, light olive, medium dense to dense, intact, FINE GRAVEL, imported. (● Sample Taken: California Bearing Ratio & Moisture Content)

Dynamic Cone Penetrometer (DCP)

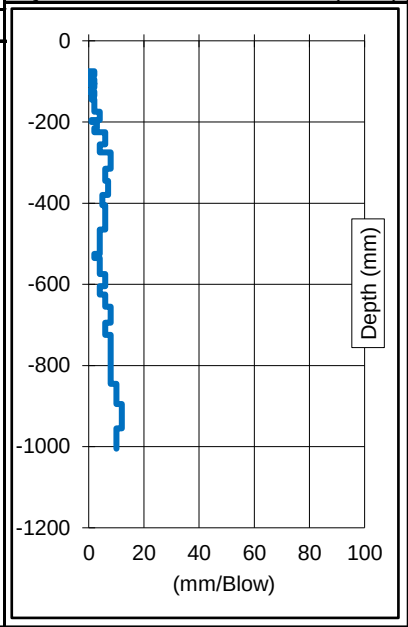


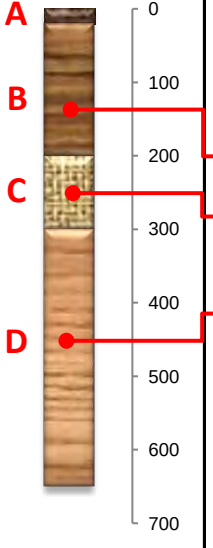
Photo of Test Pit



TP14

Datum: @NGL | Co-ordinates:

Key to symbols: ● Sample taken ▼ Water seepage



(0 to 20)	Dry, black, very dense, intact, ASPHALT SURFACING , imported.
(20 to 200)	Dry to slightly moist, dark brown, dense to very dense, intact, COARSE GRAVEL, imported. (● Sample Taken: California Bearing Ratio & Moisture Content)
(200 to 300)	Moist, dark olive, dense, intact, FINE GRAVEL, imported. (● Sample Taken: California Bearing Ratio & Moisture Content)
(300 to 650)	Moist, light olive, medium dense to dense, intact, FINE GRAVEL, imported. (● Sample Taken: California Bearing Ratio & Moisture Content)

Dynamic Cone Penetrometer (DCP)

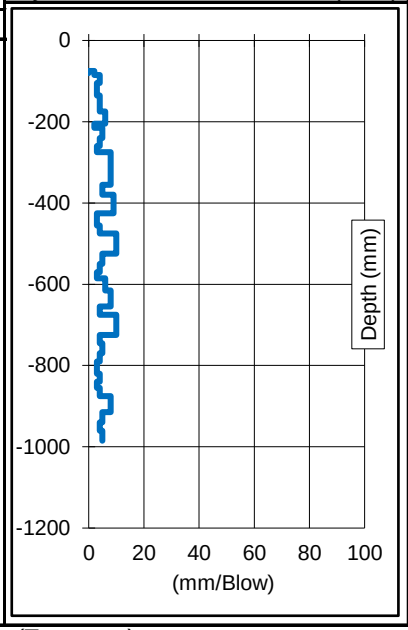


Photo of Test Pit



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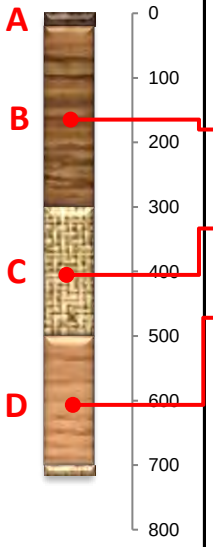
R-PROF-1-5
Jan-22

Customer :	Neil Lyners P O Box 757 George 6530
Project :	24052CG Rosemore Street & Stormwater Upgrade
Date Reported :	06/08/24

TP15

Datum: @FRL | Co-ordinates:

Key to symbols: ● Sample taken ▼ Water seepage



(0 to 20)	Dry, black, very dense, intact, ASPHALT SURFACING, imported.
(20 to 300)	Slightly moist, dark brown, dense to very dense, intact, COARSE GRAVEL, imported. (● Sample Taken: California Bearing Ratio & Moisture Content)
(300 to 500)	Slightly moist, light brown, dense, intact, MEDIUM GRAVEL, imported. (● Sample Taken: California Bearing Ratio & Moisture Content)
(500 to 700)	Moist, light olive, medium dense to dense, intact, FINE GRAVEL, imported. (● Sample Taken: California Bearing Ratio & Moisture Content)

Dynamic Cone Penetrometer (DCP)

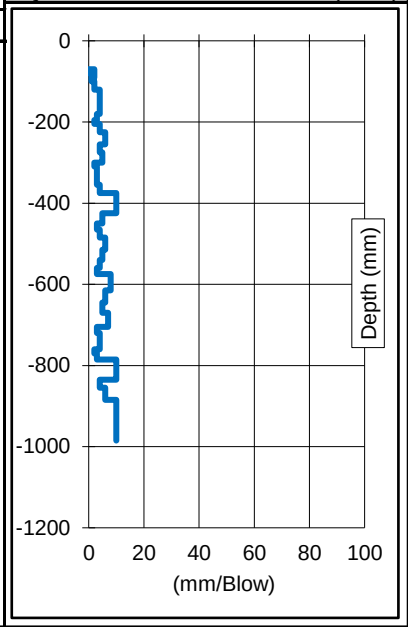


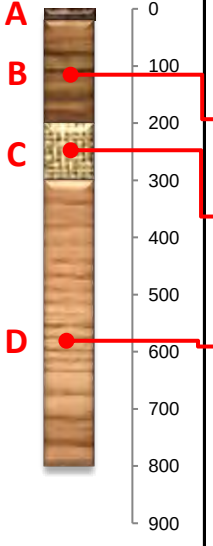
Photo of Test Pit



TP16

Datum: @FRL | Co-ordinates:

Key to symbols: ● Sample taken ▼ Water seepage



(0 to 20)	Dry, black, very dense, intact, ASPHALT SURFACING , imported.
(20 to 200)	Slightly moist, dark brown, dense to very dense, intact, COARSE GRAVEL, imported. (● Sample Taken: California Bearing Ratio & Moisture Content)
(200 to 300)	Moist, dark olive, dense, intact, FINE GRAVEL, imported. (● Sample Taken: California Bearing Ratio & Moisture Content)
(300 to 800)	Slightly moist to moist, light olive, medium dense to dense, intact, FINE GRAVEL WITH BUILDERS RUBBLE, imported. (● Sample Taken: California Bearing Ratio & Moisture Content)

Dynamic Cone Penetrometer (DCP)

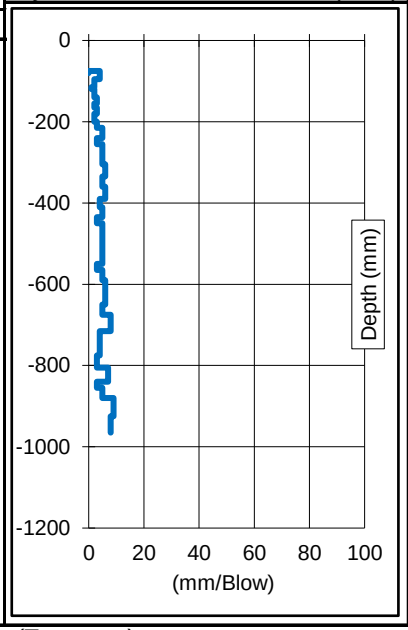


Photo of Test Pit



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Registration No. 95/07742/07

Materials Testing Laboratory

6 Mirrorball Street, George : PO Box 3186, George Industria, 6536

Tel: 044 8743274 : Fax: 044 8745779 : e-mail: llewelyn@outeniqualab.co.za

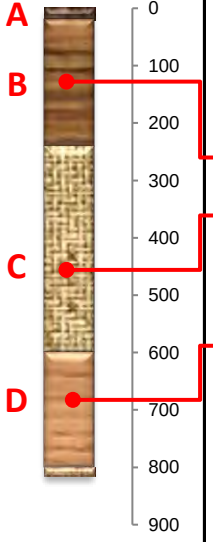
R-PROF-1-5
Jan-22

Customer :	Neil Lyners P O Box 757 George 6530
Project :	24052CG Rosemore Street & Stormwater Upgrade
Date Reported :	06/08/24

TP17

Datum: @NGL | Co-ordinates:

Key to symbols: ● Sample taken ▼ Water seepage



(0 to 20)	Dry, black, very dense, intact, ASPHALT SURFACING, imported.
(20 to 240)	Dry to slightly moist, dark brown, dense to very dense, intact, COARSE GRAVEL, imported. (● Sample Taken: California Bearing Ratio & Moisture Content)
(240 to 600)	Moist to very moist, dark olive, dense, intact, FINE GRAVEL, imported. (● Sample Taken: California Bearing Ratio & Moisture Content)
(600 to 800)	Slightly moist, dark reddish brown, stiff, slickensided, CLAY WITH FERRICRETE, pedogenic. (● Sample Taken: California Bearing Ratio & Moisture Content)

Dynamic Cone Penetrometer (DCP)

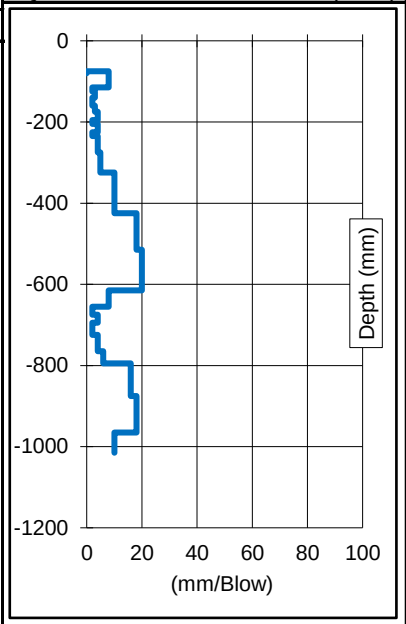


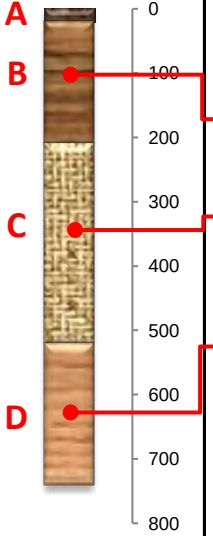
Photo of Test Pit



TP18

Datum: @NGL | Co-ordinates:

Key to symbols: ● Sample taken ▼ Water seepage



(0 to 20)	Dry, black, very dense, intact, ASPHALT SURFACING , imported.
(20 to 210)	Slightly moist, dark brown, dense to very dense, intact, COARSE GRAVEL, imported. (● Sample Taken: California Bearing Ratio & Moisture Content)
(210 to 520)	Slightly moist to moist, dark olive, dense, intact, FINE GRAVEL, imported. (● Sample Taken: California Bearing Ratio & Moisture Content)
(520 to 740)	Slightly moist to moist, dark red, medium dense to dense, intact, SILTY SAND , transported. (● Sample Taken: California Bearing Ratio & Moisture Content)

Dynamic Cone Penetrometer (DCP)

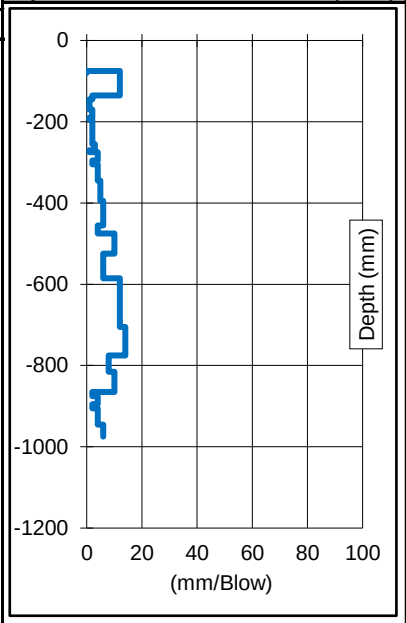


Photo of Test Pit



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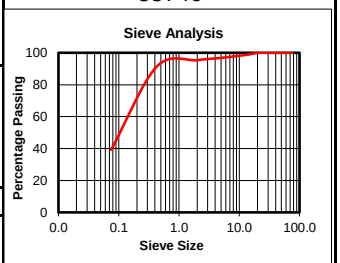
Tel: 044 8743274 : Fax: 044 8745779 : e-mail: llewelyn@outeniqualab.co.za

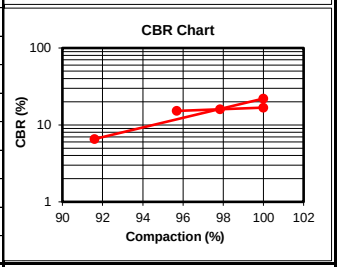
Customer :	Neil Lyners P O Box 757 George 6530	Project :	24052CG Rosemore Street & Stormwater Upgrade
		Date Received :	25/06/24
		Date Reported :	06/08/24
		Req. Number :	2265/24
Attention :	Francois van Eck	No. of Pages :	1 of 16

TEST REPORT
CALIFORNIA BEARING RATIO

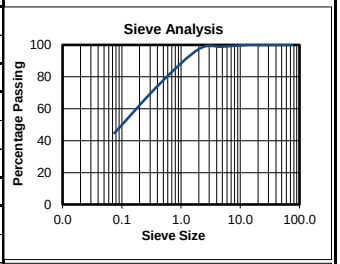
Sample Position (SV)		TP1	TRH 14: Not Classified		TP2	TRH 14: Not Classified	
Depth (mm)		0-400			400-1000		
Sample No		88746			88747		
Materials Description	Source	Trial Pit			Trial Pit		
	Colour	Grey			Dark Brown		
	Soil Type	Silty Sand			Silty Sand		
	Classification	Insitu			Insitu		
Material Indicators - (SANS 3001 Method GR1)							
Percentage Passing	75 mm	100		Opinion	100		Opinion
	63 mm	100			100		
	50 mm	100			100		
	37.5 mm	100			100		
	28 mm	100			100		
	20 mm	100			100		
	14 mm	99			100		
	5 mm	97			99		
	2 mm	95			97		
	0.425 mm	91			75		
	0.075 mm	39.2			44.7		
Material Indicators - (SANS 3001 Method PR5)							
Grading Modulus *		0.74			0.83		
Coarse Sand Soil-Mortar (%)		4			23		
Atterberg Limits - (SANS 3001 Method GR10)							
Liquid Limit (%)		Undetermined			Undetermined		
Plasticity Index (%)		NP			SP		
Linear Shrinkage (%)		NP			SP		
Material Strength - (SANS 3001 Method GR30,GR40 - SCALPED)							
MDD	Max Dry Density (kg/m^3)	1979			1987		
	Optimum Moisture Content (%)	7.6			7.1		
	Mould Moisture Content (%)	7.6			7.2		
A	Relative Compaction (%)	100.0			100.0		
	Swell (%)	0.0			0.0		
B	Relative Compaction (%)	95.7			96.0		
	Swell (%)	0.0			0.0		
C	Relative Compaction (%)	91.6			90.4		
	Swell (%)	0.0			0.0		
CBR	@100% Max Dry Density	22			19		
	@98% Max Dry Density	16			14		
	@95% Max Dry Density	11			9		
	@93% Max Dry Density	8			7		
	@90% Max Dry Density	5			5		
Material Condition - (SANS 3001 Method GR20)							
Insitu Moisture Content (%)		8.8			7.0		
Soil Classification Of The Material Based Only On The Tests Results Above							
TRH 14 Specification:		Not Classified			Not Classified		
AASHTO System		A-4			A-4		
Unified System		SM			SM		

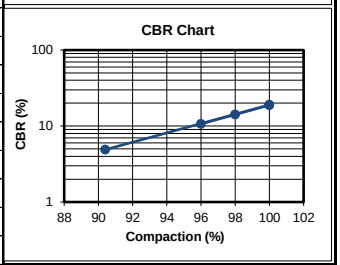
88746

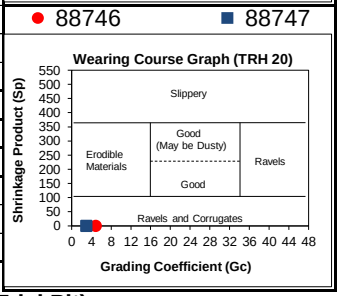




88747







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Llewelyn Heathcote
Technical Signatory
For Outeniqua Lab (Pty) Ltd.

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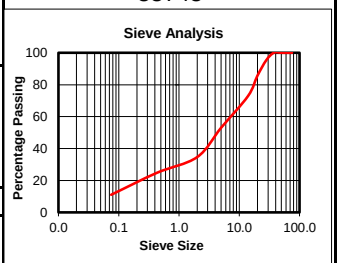
Tel: 044 8743274 : Fax: 044 8745779 : e-mail: llewelyn@outeniqualab.co.za

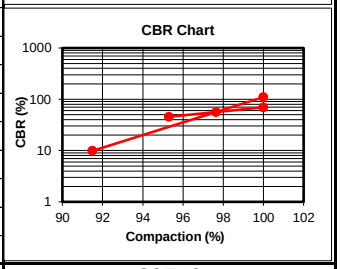
Customer :	Neil Lyners P O Box 757 George 6530	Project :	24052CG Rosemore Street & Stormwater Upgrade
		Date Received :	25/06/24
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Attention :	Francois van Eck	No. of Pages :	2 of 16

TEST REPORT
CALIFORNIA BEARING RATIO

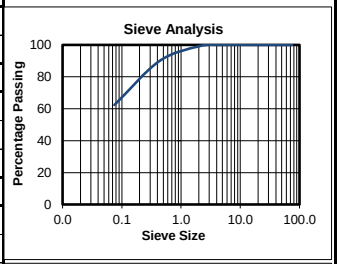
Sample Position (SV)		TP5	TRH 14: G7 SSG		TP7	TRH 14: Not Classified		
Depth (mm)		2100-2300			1200-1700			
Sample No		88748			88749			
Materials Description	Source	Trial Pit			Trial Pit			
	Colour	Dark Reddish Brown			Dark Red Mottled Light Yellowish Orange			
	Soil Type	Ferricrete			Silt/Silty Clay			
	Classification	Insitu			Insitu			
Material Indicators - (SANS 3001 Method GR1)								
Percentage Passing	75 mm	100		Opinion	100		Opinion	
	63 mm	100			100			
	50 mm	100			100			
	37.5 mm	100			100			
	28 mm	95			100			
	20 mm	86			100			
	14 mm	73			100			
	5 mm	53			100			
	2 mm	35			99			
	0.425 mm	25			90			
	0.075 mm	11.0			62.4			
Material Indicators - (SANS 3001 Method PR5)								
Grading Modulus *		2.30	0.75 - 2.70	✓	0.49			
Coarse Sand Soil-Mortar (%)		29			9			
Atterberg Limits - (SANS 3001 Method GR10)								
Liquid Limit (%)		22			42			
Plasticity Index (%)		6	≤ 17	✓	13			
Linear Shrinkage (%)		3.5			6.0			
Material Strength - (SANS 3001 Method GR30,GR40 - SCALPED)								
MDD	Max Dry Density (kg/m^3)	2389			1684			
	Optimum Moisture Content (%)	5.9			17.2			
	Mould Moisture Content (%)	5.8			17.3			
A	Relative Compaction (%)	100.0			100.0			
	Swell (%)	0.2	≤ 1.5	✓	0.0			
B	Relative Compaction (%)	95.3			95.4			
	Swell (%)	0.3			0.0			
C	Relative Compaction (%)	91.5			91.5			
	Swell (%)	0.6			0.0			
CBR	@100% Max Dry Density	110			4			
	@98% Max Dry Density	62			3			
	@95% Max Dry Density	27			2			
	@93% Max Dry Density	15	≥ 15	✳	1			
	@90% Max Dry Density	6			1			
Material Condition - (SANS 3001 Method GR20)								
Insitu Moisture Content (%)		8.9			16.8			
Soil Classification Of The Material Based Only On The Tests Results Above								
TRH 14 Specification:		G7 SSG			Not Classified			
AASHTO System		A-1-a / A-1-b / A-2-4			A-7-6			
Unified System		GP-GM.GC			ML			

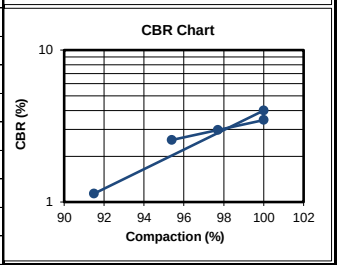
88748

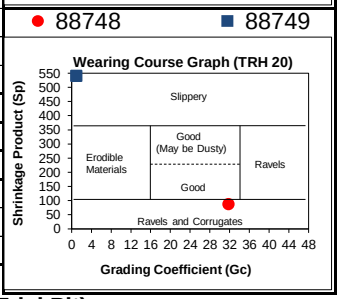




88749







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- **Specimens sampled by Boss Sangwe**
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Llewelyn Heathcote
Technical Signatory
For Outeniqua Lab (Pty) Ltd.

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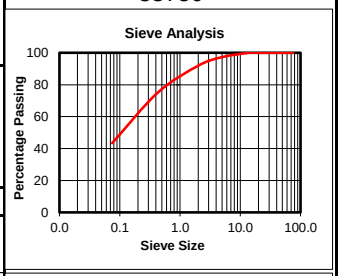
Tel: 044 8743274 : Fax: 044 8745779 : e-mail: llewelyn@outeniqualab.co.za

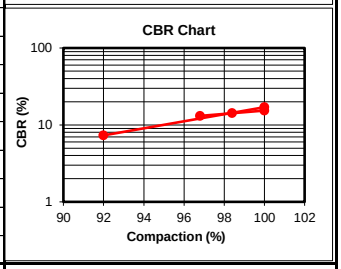
Customer :	Neil Lyners P O Box 757 George 6530	Project :	24052CG Rosemore Street & Stormwater Upgrade
		Date Received :	25/06/24
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Attention :	Francois van Eck	No. of Pages :	3 of 16

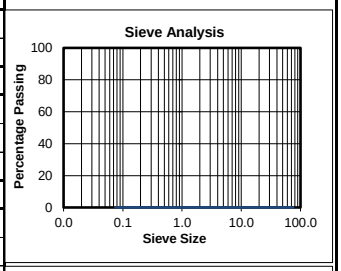
TEST REPORT
CALIFORNIA BEARING RATIO

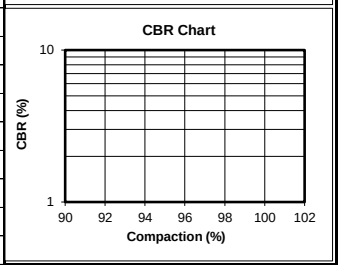
Sample Position (SV)		TP10	TRH 14: Not Classified				
Depth (mm)		1100-1500					
Sample No		88750					
Materials Description	Source	Trial Pit					
	Colour	Light Brown					
	Soil Type	Silty Sand					
	Classification	Insitu					
Material Indicators - (SANS 3001 Method GR1)							
Percentage Passing	75 mm	100		Opinion			
	63 mm	100					
	50 mm	100					
	37.5 mm	100					
	28 mm	100					
	20 mm	100					
	14 mm	100					
	5 mm	97					
	2 mm	92					
	0.425 mm	75					
	0.075 mm	43.4					
Material Indicators - (SANS 3001 Method PR5)							
Grading Modulus *		0.90					
Coarse Sand Soil-Mortar (%)		18					
Atterberg Limits - (SANS 3001 Method GR10)							
Liquid Limit (%)		Undetermined					
Plasticity Index (%)		NP					
Linear Shrinkage (%)		NP					
Material Strength - (SANS 3001 Method GR30,GR40 - SCALPED)							
MDD	Max Dry Density (kg/m^3)	1820					
	Optimum Moisture Content (%)	6.8					
	Mould Moisture Content (%)	6.7					
A	Relative Compaction (%)	100.0					
	Swell (%)	0.0					
B	Relative Compaction (%)	96.8					
	Swell (%)	0.0					
C	Relative Compaction (%)	92.0					
	Swell (%)	0.0					
CBR	@100% Max Dry Density	17					
	@98% Max Dry Density	14					
	@95% Max Dry Density	10					
	@93% Max Dry Density	8					
	@90% Max Dry Density	6					
Material Condition - (SANS 3001 Method GR20)							
Insitu Moisture Content (%)		6.9					
Soil Classification Of The Material Based Only On The Tests Results Above							
TRH 14 Specification:		Not Classified					
AASHTO System		A-4					
Unified System		SM					

88750

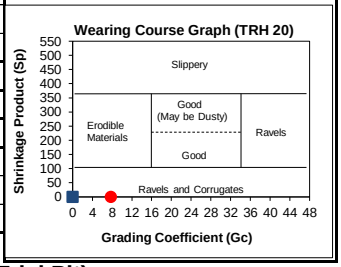








88750



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Llewelyn Heathcote
Technical Signatory
For Outeniqua Lab (Pty) Ltd.

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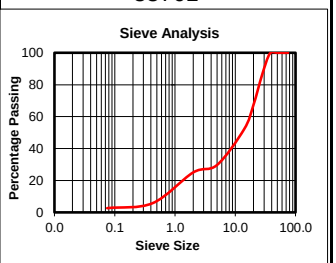
Tel: 044 8743274 : Fax: 044 8745779 : e-mail: llewelyn@outeniqualab.co.za

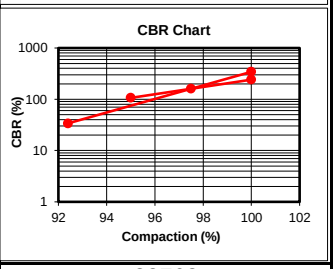
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TEST REPORT
CALIFORNIA BEARING RATIO

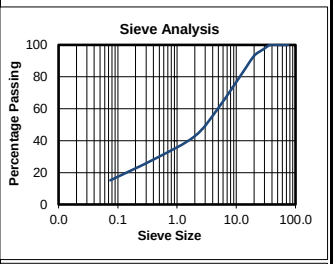
Sample Position (SV)		TP11	TRH 14:		TP11	TRH 14:		
Depth (mm)		20-300	G7 SSG		300-700	G7 SSG		
Sample No		88761			88762			
Materials Description	Source	Trial Pit			Trial Pit			
	Colour	Dark Brown			Dark Olive			
	Soil Type	Coarse Gravel			Fine Gravel			
	Classification	Road Layers			Road Layers			
Material Indicators - (SANS 3001 Method GR1)								
Percentage Passing	75 mm	100		Opinion	100		Opinion	
	63 mm	100			100			
	50 mm	100			100			
	37.5 mm	100			100			
	28 mm	86			97			
	20 mm	67			93			
	14 mm	52			85			
	5 mm	30			61			
	2 mm	25			43			
	0.425 mm	6			29			
	0.075 mm	2.7			15.2			
Material Indicators - (SANS 3001 Method PR5)								
Grading Modulus *		2.67	0.75 - 2.70	✓	2.13	0.75 - 2.70	✓	
Coarse Sand Soil-Mortar (%)		77			33			
Atterberg Limits - (SANS 3001 Method GR10)								
Liquid Limit (%)		Undetermined			36			
Plasticity Index (%)		SP	≤ 18	✓	8	≤ 18	✓	
Linear Shrinkage (%)		SP			4.0			
Material Strength - (SANS 3001 Method GR30,GR40 - SCALPED)								
MDD	Max Dry Density (kg/m³)	2210			2154			
	Optimum Moisture Content (%)	6.6			7.0			
	Mould Moisture Content (%)	6.3			7.2			
A	Relative Compaction (%)	100.0			100.0			
	Swell (%)	0.0	≤ 1.5	✓	0.0	≤ 1.5	✓	
B	Relative Compaction (%)	95.0			95.3			
	Swell (%)	0.0			0.1			
C	Relative Compaction (%)	92.4			92.2			
	Swell (%)	0.0			0.1			
CBR	@100% Max Dry Density	343			33			
	@98% Max Dry Density	187			27			
	@95% Max Dry Density	75			21			
	@93% Max Dry Density	41	≥ 15	✓	17	≥ 15	✳	
	@90% Max Dry Density	16			13			
Material Condition - (SANS 3001 Method GR20)								
Insitu Moisture Content (%)		2.9			5.3			
Soil Classification Of The Material Based Only On The Tests Results Above								
TRH 14 Specification:		G7 SSG			G7 SSG			
AASHTO System		A-1-a / A-1-b / A-2-4			A-2-4			
Unified System		GP			GM			

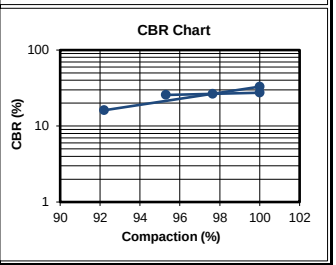
88761



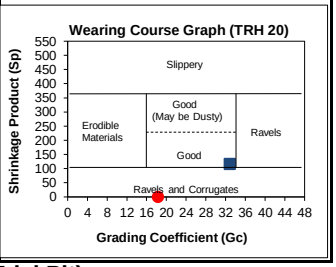


88762





● 88761 ■ 88762



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- **The weather conditions were such that there was no detrimental effect on the sample/s taken.**

Llewelyn Heathcote
Technical Signatory
For Outeniqua Lab (Pty) Ltd.

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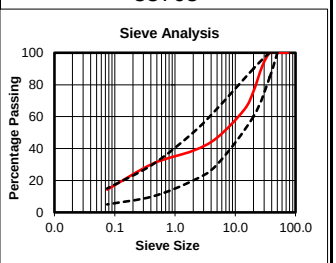
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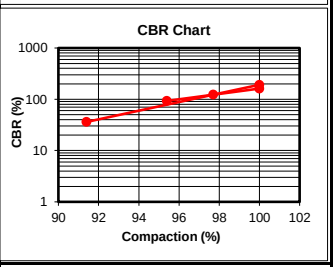
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TEST REPORT
CALIFORNIA BEARING RATIO

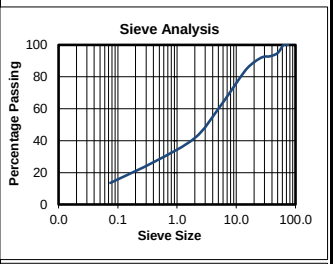
Sample Position (SV)		TP12	TRH 14: G4 Base (Natural)		TP12	TRH 14: G7 SSG		
Depth (mm)		20-300			300-600			
Sample No		88763			88764			
Materials Description	Source	Trial Pit			Trial Pit			
	Colour	Dark Brown			Dark Olive			
	Soil Type	Coarse Gravel			Fine Gravel			
	Classification	Road Layers			Road Layers			
Material Indicators - (SANS 3001 Method GR1)								
Percentage Passing	75 mm	100		Opinion	100		Opinion	
	63 mm	100			100			
	50 mm	100	100 - 100	✳	95			
	37.5 mm	100	85 - 100	✳	93			
	28 mm	92			92			
	20 mm	76	60 - 90	✓	89			
	14 mm	64			84			
	5 mm	47	30 - 65	✓	60			
	2 mm	39	20 - 50	✓	42			
	0.425 mm	30	10 - 30	✳	27			
	0.075 mm	14.3	5 - 15	✓	13.5			
Material Indicators - (SANS 3001 Method PR5)								
Grading Modulus *		2.17			2.18	0.75 - 2.70	✓	
Coarse Sand Soil-Mortar (%)		21			35			
Atterberg Limits - (SANS 3001 Method GR10)								
Liquid Limit (%)		Undetermined	≤ 25	✓	28			
Plasticity Index (%)		SP	≤ 6	✓	5	≤ 17	✓	
Linear Shrinkage (%)		SP	≤ 3	✓	2.5			
Material Strength - (SANS 3001 Method GR30,GR40 - SCALPED)								
MDD	Max Dry Density (kg/m³)	2255			2249			
	Optimum Moisture Content (%)	7.2			5.6			
	Mould Moisture Content (%)	7.1			5.8			
A	Relative Compaction (%)	100.0			100.0			
	Swell (%)	0.0	≤ 0.2	✓	0.2	≤ 1.5	✓	
B	Relative Compaction (%)	95.4			95.0			
	Swell (%)	0.0			0.3			
C	Relative Compaction (%)	91.4			91.7			
	Swell (%)	0.0			0.4			
CBR	@100% Max Dry Density	192			64			
	@98% Max Dry Density	130	≥ 80	✓	44			
	@95% Max Dry Density	73			25			
	@93% Max Dry Density	49			17	≥ 15	✳	
	@90% Max Dry Density	28			9			
Material Condition - (SANS 3001 Method GR20)								
Insitu Moisture Content (%)		4.0			5.6			
Soil Classification Of The Material Based Only On The Tests Results Above								
TRH 14 Specification:		G4 Base (Natural)			G7 SSG			
AASHTO System		A-1-a / A-1-b / A-2-4			A-1-a / A-1-b / A-2-4			
Unified System		GM			GM			

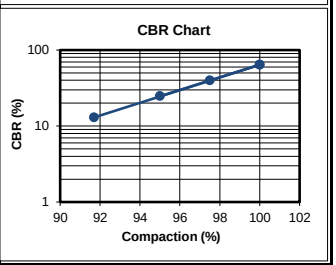
88763



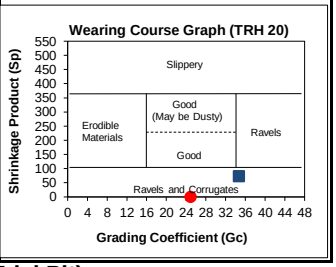


88764





● 88763 ■ 88764



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- **Specimens sampled by Boss Sangwe**
- **The weather conditions were such that there was no detrimental effect on the sample/s taken.**

Llewelyn Heathcote
Technical Signatory
For Outeniqua Lab (Pty) Ltd.

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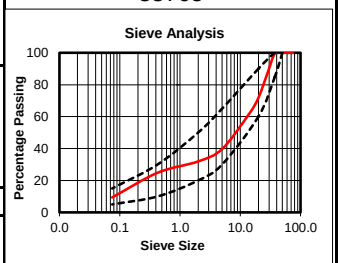
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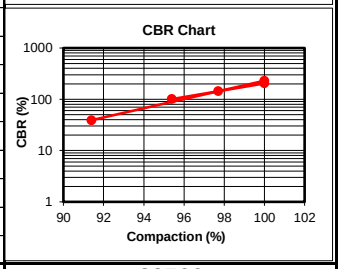
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		Date Received :	25/06/24
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TEST REPORT
CALIFORNIA BEARING RATIO

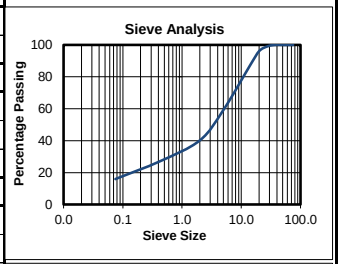
Sample Position (SV)		TP13	TRH 14: G4 Base (Natural)		TP13	TRH 14: Not Classified		
Depth (mm)		30-180			180-330			
Sample No		88765			88766			
Materials Description	Source	Trial Pit			Trial Pit			
	Colour	Dark Brown			Dark Olive			
	Soil Type	Coarse Gravel			Fine Gravel			
	Classification	Road Layers			Road Layers			
Material Indicators - (SANS 3001 Method GR1)								
Percentage Passing	75 mm	100		Opinion	100			Opinion
	63 mm	100			100			
	50 mm	100	100 - 100	∗	100			
	37.5 mm	100	85 - 100	∗	100			
	28 mm	87			99			
	20 mm	72	60 - 90	✓	96			
	14 mm	62			87			
	5 mm	40	30 - 65	✓	59			
	2 mm	32	20 - 50	✓	40			
	0.425 mm	25	10 - 30	✓	27			
	0.075 mm	9.4	5 - 15	✓	15.9			
Material Indicators - (SANS 3001 Method PR5)								
Grading Modulus *		2.34			2.17			
Coarse Sand Soil-Mortar (%)		22			33			
Atterberg Limits - (SANS 3001 Method GR10)								
Liquid Limit (%)		Undetermined	≤ 25	✓	33			
Plasticity Index (%)		NP	≤ 6	✓	9			
Linear Shrinkage (%)		NP	≤ 3	✓	4.5			
Material Strength - (SANS 3001 Method GR30,GR40 - SCALPED)								
MDD	Max Dry Density (kg/m³)	2119			2190			
	Optimum Moisture Content (%)	9.1			6.3			
	Mould Moisture Content (%)	9.2			6.2			
A	Relative Compaction (%)	100.0			100.0			
	Swell (%)	0.0	≤ 0.2	✓	0.7			
B	Relative Compaction (%)	95.4			95.3			
	Swell (%)	0.0			0.8			
C	Relative Compaction (%)	91.4			93.0			
	Swell (%)	0.0			1.0			
CBR	@100% Max Dry Density	230			55			
	@98% Max Dry Density	153	≥ 80	✓	32			
	@95% Max Dry Density	82			14			
	@93% Max Dry Density	54			8			
	@90% Max Dry Density	29			4			
Material Condition - (SANS 3001 Method GR20)								
Insitu Moisture Content (%)		2.9			7.5			
Soil Classification Of The Material Based Only On The Tests Results Above								
TRH 14 Specification:		G4 Base (Natural)			Not Classified			
AASHTO System		A-1-a / A-1-b / A-2-4			A-2-4			
Unified System		GP-GM			GM			

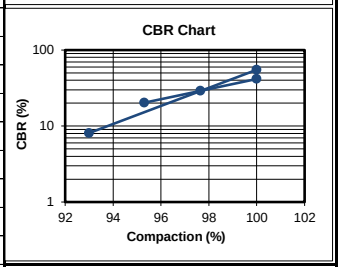
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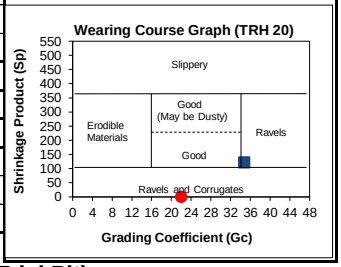


88766





● 88765 ■ 88766



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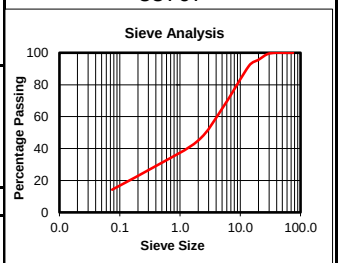
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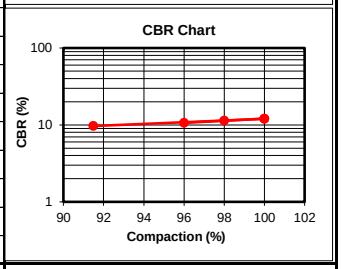
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Attention :	Francois van Eck	No. of Pages :	7 of 16

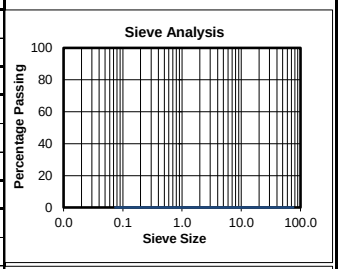
TEST REPORT
CALIFORNIA BEARING RATIO

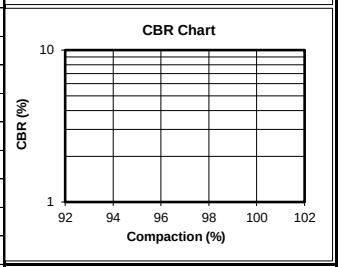
Sample Position (SV)		TP13	TRH 14: Not Classified				
Depth (mm)		330-540					
Sample No		**88767**					
Materials Description	Source	Trial Pit					
	Colour	Light Olive					
	Soil Type	Fine Gravel					
	Classification	Road Layers					
Material Indicators - (SANS 3001 Method GR1)							
Percentage Passing	75 mm	100		Opinion			
	63 mm	100					
	50 mm	100					
	37.5 mm	100					
	28 mm	99					
	20 mm	96					
	14 mm	92					
	5 mm	65					
	2 mm	45					
	0.425 mm	30					
	0.075 mm	14.3					
Material Indicators - (SANS 3001 Method PR5)							
Grading Modulus *		2.11					
Coarse Sand Soil-Mortar (%)		34					
Atterberg Limits - (SANS 3001 Method GR10)							
Liquid Limit (%)		29					
Plasticity Index (%)		9					
Linear Shrinkage (%)		4.5					
Material Strength - (SANS 3001 Method GR30,GR40 - SCALPED)							
MDD	Max Dry Density (kg/m^3)	2262					
	Optimum Moisture Content (%)	7.5					
	Mould Moisture Content (%)	7.6					
A	Relative Compaction (%)	100.0					
	Swell (%)	0.1					
B	Relative Compaction (%)	96.0					
	Swell (%)	0.1					
C	Relative Compaction (%)	91.5					
	Swell (%)	0.2					
CBR	@100% Max Dry Density	12					
	@98% Max Dry Density	11					
	@95% Max Dry Density	11					
	@93% Max Dry Density	10					
	@90% Max Dry Density	9					
Material Condition - (SANS 3001 Method GR20)							
Insitu Moisture Content (%)		7.3					
Soil Classification Of The Material Based Only On The Tests Results Above							
TRH 14 Specification:		Not Classified					
AASHTO System		A-2-4					
Unified System		GC					

88767

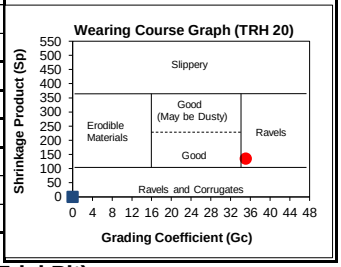








● 88767 ■



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Technical Signatory
For Outeniqua Lab (Pty) Ltd.

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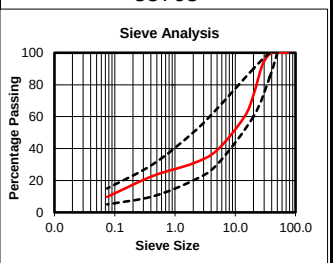
Tel: 044 8743274 : Fax: 044 8745779 : e-mail: llewelyn@outeniqualab.co.za

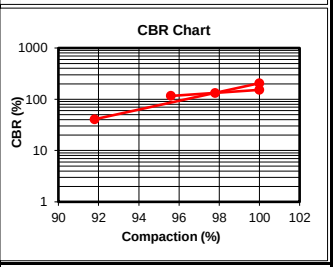
Customer :	Neil Lyners P O Box 757 George 6530	Project :	24052CG Rosemore Street & Stormwater Upgrade
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CALIFORNIA BEARING RATIO

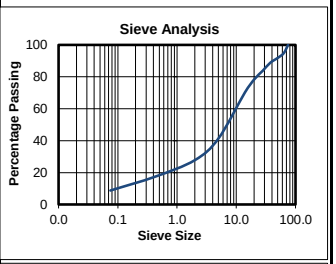
Sample Position (SV)		TP14	TRH 14: G4 Base (Natural)		TP14	TRH 14: G7 SSG		
Depth (mm)		20-200			200-300			
Sample No		88768			88769			
Materials Description	Source	Trial Pit			Trial Pit			
	Colour	Dark Brown			Dark Olive			
	Soil Type	Coarse Gravel			Fine Gravel			
	Classification	Road Layers			Road Layers			
Material Indicators - (SANS 3001 Method GR1)								
Percentage Passing	75 mm	100		Opinion	100		Opinion	
	63 mm	100			95			
	50 mm	100	100 - 100	✳	92			
	37.5 mm	99	85 - 100	✓	89			
	28 mm	92			84			
	20 mm	73	60 - 90	✓	78			
	14 mm	60			70			
	5 mm	39	30 - 65	✓	41			
	2 mm	31	20 - 50	✓	28			
	0.425 mm	23	10 - 30	✓	17			
	0.075 mm	9.7	5 - 15	✓	8.8			
Material Indicators - (SANS 3001 Method PR5)								
Grading Modulus *		2.37			2.46	0.75 - 2.70	✓	
Coarse Sand Soil-Mortar (%)		26			37			
Atterberg Limits - (SANS 3001 Method GR10)								
Liquid Limit (%)		Undetermined	≤ 25	✓	28			
Plasticity Index (%)		SP	≤ 6	✓	6	≤ 17	✓	
Linear Shrinkage (%)		SP	≤ 3	✓	3.0			
Material Strength - (SANS 3001 Method GR30,GR40 - SCALPED)								
MDD	Max Dry Density (kg/m³)	2277			2192			
	Optimum Moisture Content (%)	5.6			7.4			
	Mould Moisture Content (%)	5.7			7.6			
A	Relative Compaction (%)	100.0			100.0			
	Swell (%)	0.0	≤ 0.2	✓	0.2	≤ 1.5	✓	
B	Relative Compaction (%)	95.6			95.3			
	Swell (%)	0.0			0.3			
C	Relative Compaction (%)	91.8			91.7			
	Swell (%)	0.0			0.5			
CBR	@100% Max Dry Density	206			41			
	@98% Max Dry Density	139	≥ 80	✓	30			
	@95% Max Dry Density	77			19			
	@93% Max Dry Density	52			14	≥ 15	✳	
	@90% Max Dry Density	29			9			
Material Condition - (SANS 3001 Method GR20)								
Insitu Moisture Content (%)		2.5			6.1			
Soil Classification Of The Material Based Only On The Tests Results Above								
TRH 14 Specification:		G4 Base (Natural)			G7 SSG			
AASHTO System		A-1-a / A-1-b / A-2-4			A-1-a / A-1-b / A-2-4			
Unified System		GP-GM			GP-GM.GC			

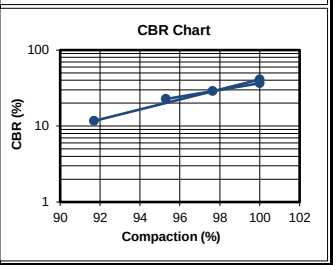
88768



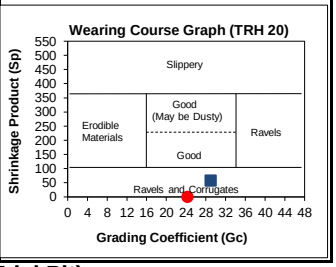


88769





● 88768 ■ 88769



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Technical Signatory
For Outeniqua Lab (Pty) Ltd.

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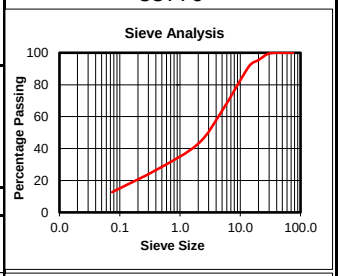
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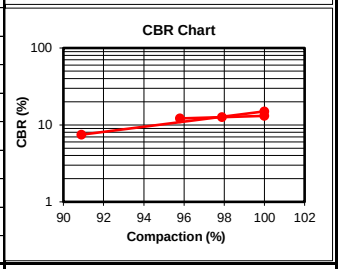
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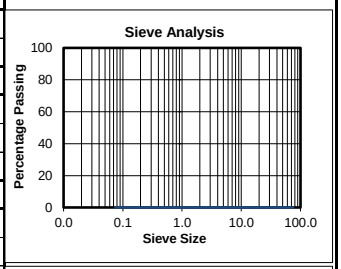
TEST REPORT
CALIFORNIA BEARING RATIO

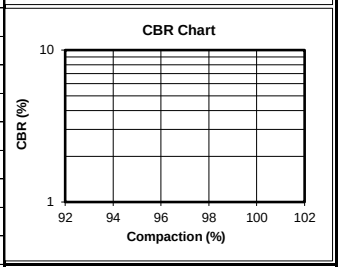
Sample Position (SV)		TP14	TRH 14: Not Classified				
Depth (mm)		300-650					
Sample No		**88776**					
Materials Description	Source	Trial Pit					
	Colour	Light Olive					
	Soil Type	Fine Gravel					
	Classification	Road Layers					
Material Indicators - (SANS 3001 Method GR1)							
Percentage Passing	75 mm	100		Opinion			
	63 mm	100					
	50 mm	100					
	37.5 mm	100					
	28 mm	99					
	20 mm	95					
	14 mm	92					
	5 mm	64					
	2 mm	43					
	0.425 mm	27					
	0.075 mm	12.7					
Material Indicators - (SANS 3001 Method PR5)							
Grading Modulus *		2.17					
Coarse Sand Soil-Mortar (%)		37					
Atterberg Limits - (SANS 3001 Method GR10)							
Liquid Limit (%)		27					
Plasticity Index (%)		8					
Linear Shrinkage (%)		4.0					
Material Strength - (SANS 3001 Method GR30,GR40 - SCALPED)							
MDD	Max Dry Density (kg/m^3)	2248					
	Optimum Moisture Content (%)	7.1					
	Mould Moisture Content (%)	7.2					
A	Relative Compaction (%)	100.0					
	Swell (%)	0.1					
B	Relative Compaction (%)	95.8					
	Swell (%)	0.2					
C	Relative Compaction (%)	90.9					
	Swell (%)	0.3					
CBR	@100% Max Dry Density	15					
	@98% Max Dry Density	13					
	@95% Max Dry Density	10					
	@93% Max Dry Density	9					
	@90% Max Dry Density	7					
Material Condition - (SANS 3001 Method GR20)							
Insitu Moisture Content (%)		6.5					
Soil Classification Of The Material Based Only On The Tests Results Above							
TRH 14 Specification:		Not Classified					
AASHTO System		A-2-4					
Unified System		GC					

88776

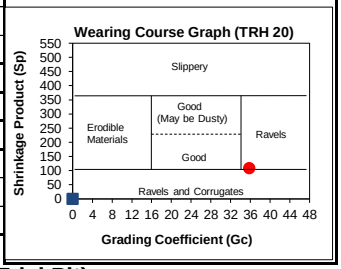








● 88776 ■



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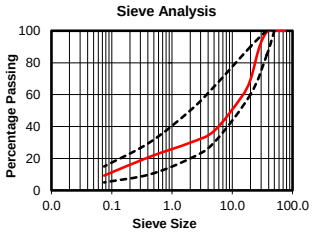
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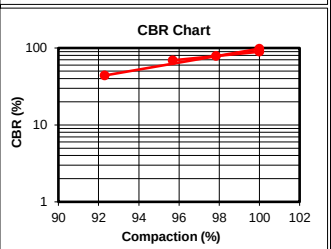
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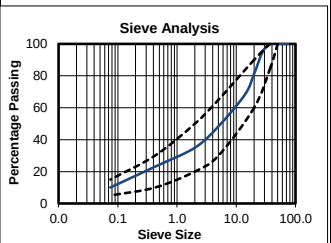
Sample Position (SV)		TP15	TRH 14: G4 Base (Natural)		TP15	TRH 14: G4 Base (Natural)		
Depth (mm)		20-300			200-500			
Sample No		**88770**			**88771**			
Materials Description	Source	Trial Pit			Trial Pit			
	Colour	Dark Brown			Light Brown			
	Soil Type	Coarse Gravel			Medium Gravel			
	Classification	Road Layers			Road Layers			
Material Indicators - (SANS 3001 Method GR1)								
Percentage Passing	75 mm	100		Opinion	100		Opinion	
	63 mm	100			100			
	50 mm	100	100 - 100	∗	100	100 - 100	∗	
	37.5 mm	99	85 - 100	✓	100	85 - 100	∗	
	28 mm	89			95			
	20 mm	69	60 - 90	✓	81	60 - 90	✓	
	14 mm	58			68			
	5 mm	37	30 - 65	✓	48	30 - 65	✓	
	2 mm	30	20 - 50	✓	35	20 - 50	✓	
	0.425 mm	21	10 - 30	✓	23	10 - 30	✓	
	0.075 mm	9.3	5 - 15	✓	10.0	5 - 15	✓	
Material Indicators - (SANS 3001 Method PR5)								
Grading Modulus *		2.40			2.32			
Coarse Sand Soil-Mortar (%)		30			34			
Atterberg Limits - (SANS 3001 Method GR10)								
Liquid Limit (%)		Undetermined	≤ 25	✓	25	≤ 25	∗	
Plasticity Index (%)		SP	≤ 6	✓	5	≤ 6	✓	
Linear Shrinkage (%)		SP	≤ 3	✓	2.5	≤ 3	✓	
Material Strength - (SANS 3001 Method GR30,GR40 - SCALPED)								
MDD	Max Dry Density (kg/m^3)	2284			2251			
	Optimum Moisture Content (%)	5.8			5.4			
	Mould Moisture Content (%)	6.0			5.5			
A	Relative Compaction (%)	100.0			100.0			
	Swell (%)	0.0	≤ 0.2	✓	0.0	≤ 0.2	✓	
B	Relative Compaction (%)	95.7			95.4			
	Swell (%)	0.0			0.0			
C	Relative Compaction (%)	92.3			90.7			
	Swell (%)	0.0			0.0			
CBR	@100% Max Dry Density	98			178			
	@98% Max Dry Density	80	≥ 80	∗	108	≥ 80	✓	
	@95% Max Dry Density	58			51			
	@93% Max Dry Density	47			31			
	@90% Max Dry Density	35			15			
Material Condition - (SANS 3001 Method GR20)								
Insitu Moisture Content (%)		3.5			2.6			
Soil Classification Of The Material Based Only On The Tests Results Above								
TRH 14 Specification:		G4 Base (Natural)			G4 Base (Natural)			
AASHTO System		A-1-a / A-1-b / A-2-4			A-1-a / A-1-b / A-2-4			
Unified System		GP-GM			GP-GM.GC			

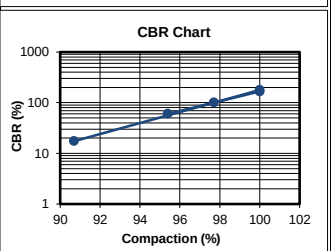
88770



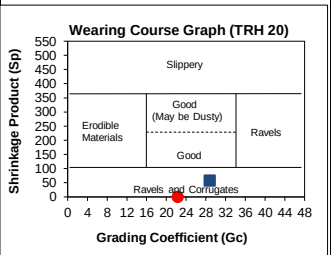


88771





● 88770 ■ 88771



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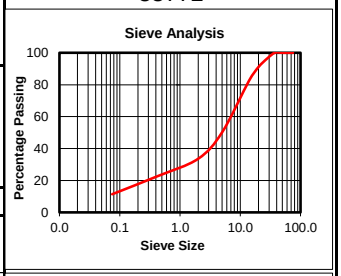
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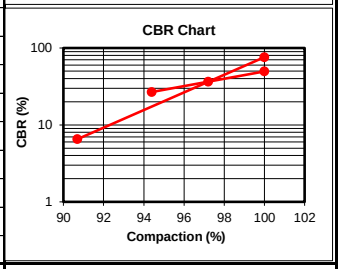
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Attention :	Francois van Eck	No. of Pages :	11 of 16

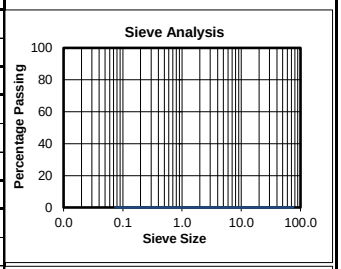
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CALIFORNIA BEARING RATIO

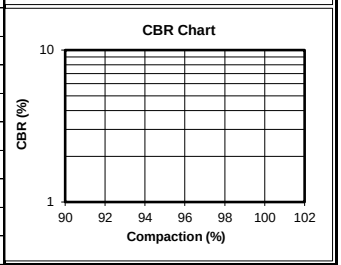
Sample Position (SV)		TP15	TRH 14:				
Depth (mm)		500-700	G7 SSG				
Sample No		**88772**					
Materials Description	Source	Trial Pit					
	Colour	Light Olive					
	Soil Type	Fine Gravel					
	Classification	Road Layers					
Material Indicators - (SANS 3001 Method GR1)							
Percentage Passing	75 mm	100		Opinion			
	63 mm	100					
	50 mm	100					
	37.5 mm	100					
	28 mm	96					
	20 mm	91					
	14 mm	83					
	5 mm	50					
	2 mm	34					
	0.425 mm	23					
	0.075 mm	11.4					
Material Indicators - (SANS 3001 Method PR5)							
Grading Modulus *		2.32	0.75 - 2.70	✓			
Coarse Sand Soil-Mortar (%)		32					
Atterberg Limits - (SANS 3001 Method GR10)							
Liquid Limit (%)		31					
Plasticity Index (%)		9	≤ 17	✓			
Linear Shrinkage (%)		4.5					
Material Strength - (SANS 3001 Method GR30,GR40 - SCALPED)							
MDD	Max Dry Density (kg/m^3)	2214					
	Optimum Moisture Content (%)	5.4					
	Mould Moisture Content (%)	5.2					
A	Relative Compaction (%)	100.0					
	Swell (%)	0.2	≤ 1.5	✓			
B	Relative Compaction (%)	94.4					
	Swell (%)	0.4					
C	Relative Compaction (%)	90.7					
	Swell (%)	0.5					
CBR	@100% Max Dry Density	76					
	@98% Max Dry Density	45					
	@95% Max Dry Density	20					
	@93% Max Dry Density	12	≥ 15	✳			
	@90% Max Dry Density	5					
Material Condition - (SANS 3001 Method GR20)							
Insitu Moisture Content (%)		6.9					
Soil Classification Of The Material Based Only On The Tests Results Above							
TRH 14 Specification:		G7 SSG					
AASHTO System		A-2-4					
Unified System		GP-GC					

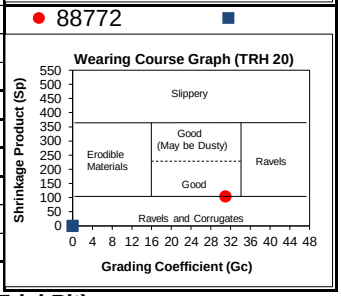
88772











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Technical Signatory
For Outeniqua Lab (Pty) Ltd.

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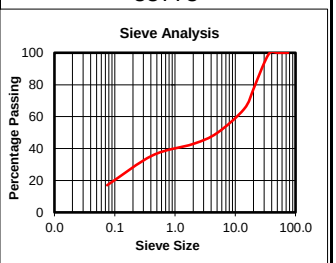
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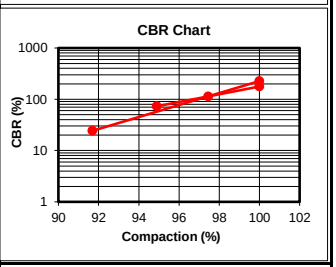
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Attention :	Francois van Eck	No. of Pages :	12 of 16

TEST REPORT
CALIFORNIA BEARING RATIO

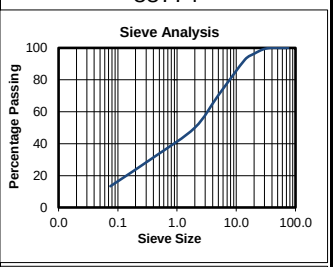
Sample Position (SV)		TP16	TRH 14: G5 Subbase		TP16	TRH 14: Not Classified		
Depth (mm)		20-200			200-300			
Sample No		88773			88774			
Materials Description	Source	Trial Pit			Trial Pit			
	Colour	Dark Brown			Dark Olive			
	Soil Type	Coarse Gravel			Fine Gravel			
	Classification	Road Layers			Road Layers			
Material Indicators - (SANS 3001 Method GR1)								
Percentage Passing	75 mm	100		Opinion	100			Opinion
	63 mm	100			100			
	50 mm	100			100			
	37.5 mm	100			100			
	28 mm	91			99			
	20 mm	77			96			
	14 mm	65			93			
	5 mm	50			70			
	2 mm	43			50			
	0.425 mm	36			32			
	0.075 mm	17.0			13.3			
Material Indicators - (SANS 3001 Method PR5)								
Grading Modulus *		2.04	1.50 - 2.50	✓	2.05			
Coarse Sand Soil-Mortar (%)		17			36			
Atterberg Limits - (SANS 3001 Method GR10)								
Liquid Limit (%)		Undetermined	≤ 30	✓	26			
Plasticity Index (%)		SP	≤ 10	✓	6			
Linear Shrinkage (%)		SP	≤ 5	✓	3.0			
Material Strength - (SANS 3001 Method GR30,GR40 - SCALPED)								
MDD	Max Dry Density (kg/m³)	2279			2185			
	Optimum Moisture Content (%)	5.7			6.0			
	Mould Moisture Content (%)	5.9			6.2			
A	Relative Compaction (%)	100.0			100.0			
	Swell (%)	0.0	≤ 0.5	✓	0.5			
B	Relative Compaction (%)	94.9			94.7			
	Swell (%)	0.0			0.7			
C	Relative Compaction (%)	91.7			91.2			
	Swell (%)	0.0			1.0			
CBR	@100% Max Dry Density	226			40			
	@98% Max Dry Density	132			28			
	@95% Max Dry Density	59	≥ 45	✓	16			
	@93% Max Dry Density	34			11			
	@90% Max Dry Density	15			7			
Material Condition - (SANS 3001 Method GR20)								
Insitu Moisture Content (%)		3.5			7.5			
Soil Classification Of The Material Based Only On The Tests Results Above								
TRH 14 Specification:		G5 Subbase			Not Classified			
AASHTO System		A-1-b / A-2-4			A-1-b / A-2-4			
Unified System		GM			GM-GC			

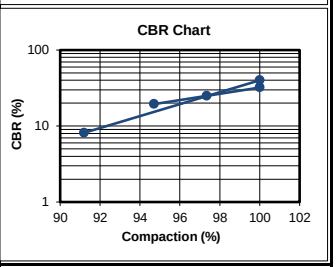
88773

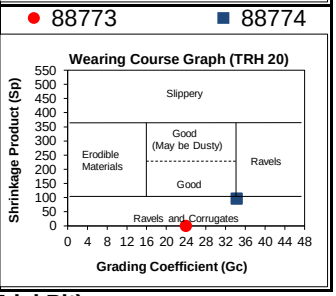




88774







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Technical Signatory
For Outeniqua Lab (Pty) Ltd.

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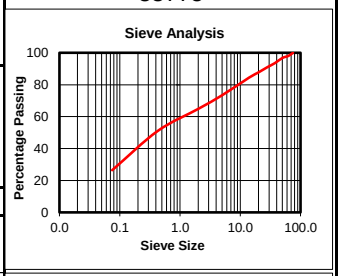
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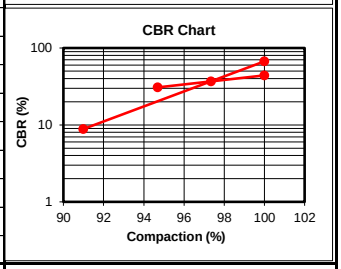
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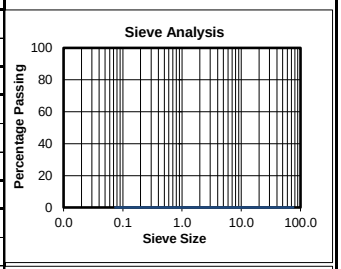
TEST REPORT
CALIFORNIA BEARING RATIO

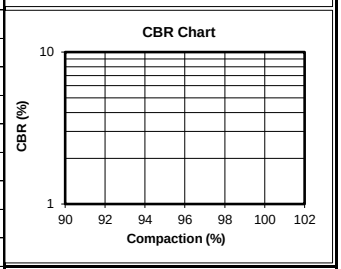
Sample Position (SV)		TP16	TRH 14:				
Depth (mm)		300-800	G7 SSG				
Sample No		88775					
Materials Description	Source	Trial Pit					
	Colour	Light Olive					
	Soil Type	Fine Gravel with Builders Rubble					
	Classification	Road Layers					
Material Indicators - (SANS 3001 Method GR1)							
Percentage Passing	75 mm	100		Opinion			
	63 mm	98					
	50 mm	97					
	37.5 mm	94					
	28 mm	91					
	20 mm	88					
	14 mm	84					
	5 mm	73					
	2 mm	65					
	0.425 mm	51					
	0.075 mm	26.4					
Material Indicators - (SANS 3001 Method PR5)							
Grading Modulus *		1.58	0.75 - 2.70	✓			
Coarse Sand Soil-Mortar (%)		21					
Atterberg Limits - (SANS 3001 Method GR10)							
Liquid Limit (%)		30					
Plasticity Index (%)		7	≤ 15	✓			
Linear Shrinkage (%)		3.5					
Material Strength - (SANS 3001 Method GR30,GR40 - SCALPED)							
MDD	Max Dry Density (kg/m^3)	2054					
	Optimum Moisture Content (%)	8.3					
	Mould Moisture Content (%)	8.2					
A	Relative Compaction (%)	100.0					
	Swell (%)	0.3	≤ 1.5	✓			
B	Relative Compaction (%)	94.7					
	Swell (%)	0.4					
C	Relative Compaction (%)	91.0					
	Swell (%)	0.6					
CBR	@100% Max Dry Density	67					
	@98% Max Dry Density	43					
	@95% Max Dry Density	22					
	@93% Max Dry Density	14	≥ 15	✳			
	@90% Max Dry Density	7					
Material Condition - (SANS 3001 Method GR20)							
Insitu Moisture Content (%)		7.0					
Soil Classification Of The Material Based Only On The Tests Results Above							
TRH 14 Specification:		G7 SSG					
AASHTO System		A-2-4					
Unified System		SM					

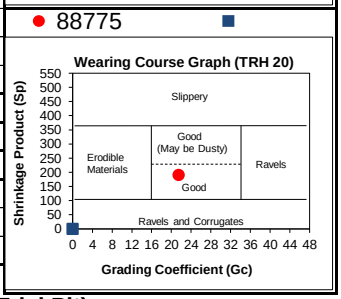
88775











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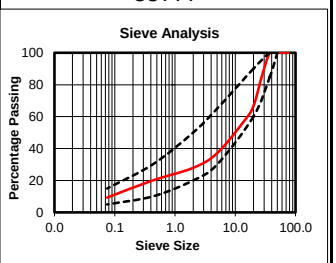
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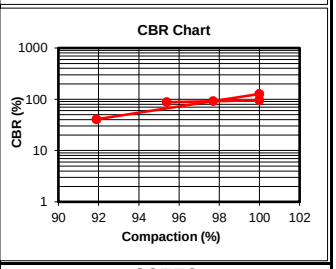
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CALIFORNIA BEARING RATIO

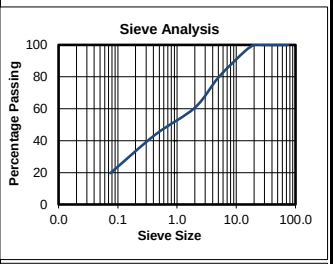
Sample Position (SV)		TP17	TRH 14: G4 Base (Natural)		TP17	TRH 14: Not Classified		
Depth (mm)		20-240			240-600			
Sample No		**88777**			**88778**			
Materials Description	Source	Trial Pit			Trial Pit			
	Colour	Dark Brown			Dark Olive			
	Soil Type	Course Gravel			Fine Gravel			
	Classification	Road Layers			Road Layers			
Material Indicators - (SANS 3001 Method GR1)								
Percentage Passing	75 mm	100		Opinion	100		Opinion	
	63 mm	100			100			
	50 mm	100	100 - 100	✳	100			
	37.5 mm	100	85 - 100	✳	100			
	28 mm	86			100			
	20 mm	66	60 - 90	✓	100			
	14 mm	57			96			
	5 mm	37	30 - 65	✓	80			
	2 mm	28	20 - 50	✓	61			
	0.425 mm	20	10 - 30	✓	44			
	0.075 mm	9.3	5 - 15	✓	19.6			
Material Indicators - (SANS 3001 Method PR5)								
Grading Modulus *		2.43			1.76			
Coarse Sand Soil-Mortar (%)		28			28			
Atterberg Limits - (SANS 3001 Method GR10)								
Liquid Limit (%)		Undetermined	≤ 25	✓	35			
Plasticity Index (%)		SP	≤ 6	✓	10			
Linear Shrinkage (%)		SP	≤ 3	✓	5.5			
Material Strength - (SANS 3001 Method GR30,GR40 - SCALPED)								
MDD	Max Dry Density (kg/m³)	2198			2145			
	Optimum Moisture Content (%)	6.3			6.3			
	Mould Moisture Content (%)	6.4			6.1			
A	Relative Compaction (%)	100.0			100.0			
	Swell (%)	0.0	≤ 0.2	✓	1.6			
B	Relative Compaction (%)	95.4			96.2			
	Swell (%)	0.0			1.7			
C	Relative Compaction (%)	91.9			91.7			
	Swell (%)	0.0			1.8			
CBR	@100% Max Dry Density	127			13			
	@98% Max Dry Density	96	≥ 80	✓	10			
	@95% Max Dry Density	63			6			
	@93% Max Dry Density	48			5			
	@90% Max Dry Density	31			3			
Material Condition - (SANS 3001 Method GR20)								
Insitu Moisture Content (%)		3.1			12.0			
Soil Classification Of The Material Based Only On The Tests Results Above								
TRH 14 Specification:		G4 Base (Natural)			Not Classified			
AASHTO System		A-1-a / A-1-b / A-2-4			A-2-4			
Unified System		GP-GM			SM			

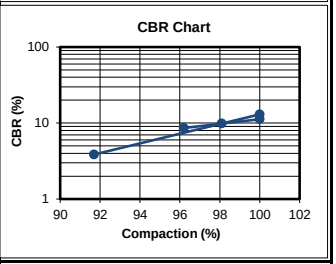
88777



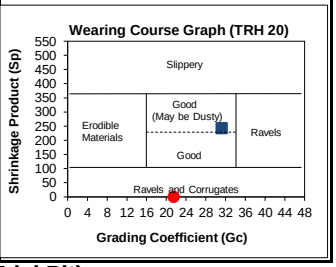


88778





● 88777 ■ 88778



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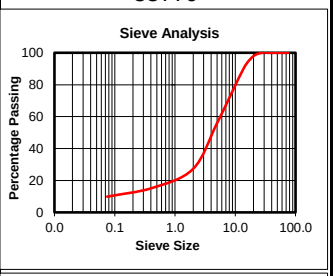
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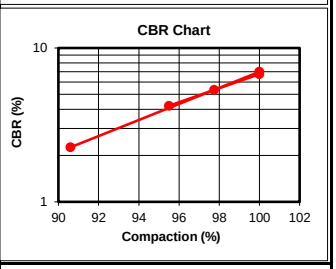
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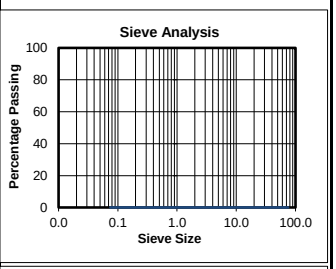
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CALIFORNIA BEARING RATIO

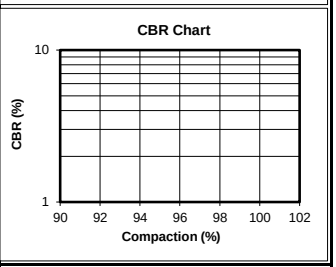
Sample Position (SV)		TP17	TRH 14: Not Classified				
Depth (mm)		600-800					
Sample No		**88779**					
Materials Description	Source	Trial Pit					
	Colour	Dark Reddish Brown					
	Soil Type	Clay with Ferricrete					
	Classification	Road Layers					
Material Indicators - (SANS 3001 Method GR1)							
Percentage Passing	75 mm	100		Opinion			
	63 mm	100					
	50 mm	100					
	37.5 mm	100					
	28 mm	100					
	20 mm	98					
	14 mm	91					
	5 mm	56					
	2 mm	27					
	0.425 mm	15					
	0.075 mm	9.9					
Material Indicators - (SANS 3001 Method PR5)							
Grading Modulus *		2.47					
Coarse Sand Soil-Mortar (%)		44					
Atterberg Limits - (SANS 3001 Method GR10)							
Liquid Limit (%)		35					
Plasticity Index (%)		17					
Linear Shrinkage (%)		8.5					
Material Strength - (SANS 3001 Method GR30,GR40 - SCALPED)							
MDD	Max Dry Density (kg/m^3)	2150					
	Optimum Moisture Content (%)	10.5					
	Mould Moisture Content (%)	10.6					
A	Relative Compaction (%)	100.0					
	Swell (%)	0.9					
B	Relative Compaction (%)	95.5					
	Swell (%)	1.2					
C	Relative Compaction (%)	90.6					
	Swell (%)	1.4					
CBR	@100% Max Dry Density	7					
	@98% Max Dry Density	5					
	@95% Max Dry Density	4					
	@93% Max Dry Density	3					
	@90% Max Dry Density	2					
Material Condition - (SANS 3001 Method GR20)							
Insitu Moisture Content (%)		6.2					
Soil Classification Of The Material Based Only On The Tests Results Above							
TRH 14 Specification:		Not Classified					
AASHTO System		A-2-6					
Unified System		GP-GC					

88779

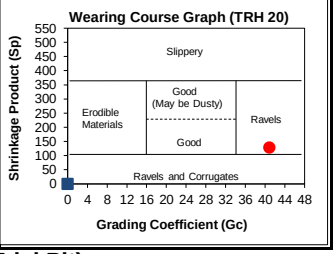








88779



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- **Specimens sampled by Boss Sangwe**
- **The weather conditions were such that there was no detrimental effect on the sample/s taken.**

Llewelyn Heathcote
Technical Signatory
For Outeniqua Lab (Pty) Ltd.

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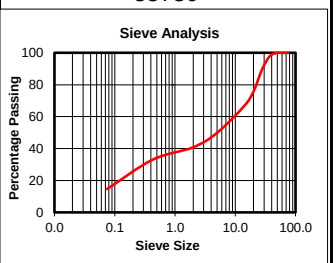
Tel: 044 8743274 : Fax: 044 8745779 : e-mail: llewelyn@outeniqualab.co.za

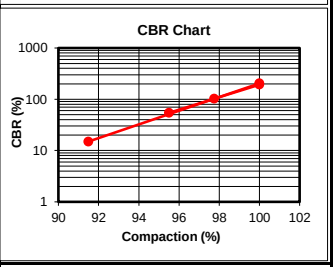
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TEST REPORT
CALIFORNIA BEARING RATIO

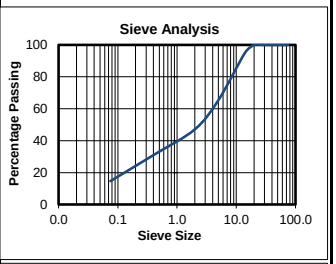
Sample Position (SV)		TP18	TRH 14:		TP18	TRH 14:		
Depth (mm)		20-210	G5 Subbase		210-520	G7 SSG		
Sample No		88780			88781			
Materials Description	Source	Trial Pit			Trial Pit			
	Colour	Dark Brown			Dark Olive			
	Soil Type	Coarse Gravel			Fine Gravel			
	Classification	Road Layers			Road Layers			
Material Indicators - (SANS 3001 Method GR1)								
Percentage Passing	75 mm	100		Opinion	100		Opinion	
	63 mm	100			100			
	50 mm	100			100			
	37.5 mm	98			100			
	28 mm	90			100			
	20 mm	76			100			
	14 mm	67			95			
	5 mm	50			65			
	2 mm	41			47			
	0.425 mm	33			32			
	0.075 mm	14.7			14.6			
Material Indicators - (SANS 3001 Method PR5)								
Grading Modulus *		2.12	1.50 - 2.50	✓	2.07	0.75 - 2.70	✓	
Coarse Sand Soil-Mortar (%)		19			33			
Atterberg Limits - (SANS 3001 Method GR10)								
Liquid Limit (%)		Undetermined	≤ 30	✓	25			
Plasticity Index (%)		SP	≤ 10	✓	5	≤ 16	✓	
Linear Shrinkage (%)		SP	≤ 5	✓	2.5			
Material Strength - (SANS 3001 Method GR30,GR40 - SCALPED)								
MDD	Max Dry Density (kg/m³)	2256			2189			
	Optimum Moisture Content (%)	4.1			6.5			
	Mould Moisture Content (%)	4.1			6.4			
A	Relative Compaction (%)	100.0			100.0			
	Swell (%)	0.0	≤ 0.5	✓	0.1	≤ 1.5	✓	
B	Relative Compaction (%)	95.5			94.5			
	Swell (%)	0.1			0.2			
C	Relative Compaction (%)	91.5			90.3			
	Swell (%)	0.1			0.2			
CBR	@100% Max Dry Density	204			38			
	@98% Max Dry Density	111			32			
	@95% Max Dry Density	44	≥ 45	✳	25			
	@93% Max Dry Density	24			21	≥ 15	✓	
	@90% Max Dry Density	9			16			
Material Condition - (SANS 3001 Method GR20)								
Insitu Moisture Content (%)		3.0			5.3			
Soil Classification Of The Material Based Only On The Tests Results Above								
TRH 14 Specification:		G5 Subbase			G7 SSG			
AASHTO System		A-1-b / A-2-4			A-1-b / A-2-4			
Unified System		GM			GM-GC			

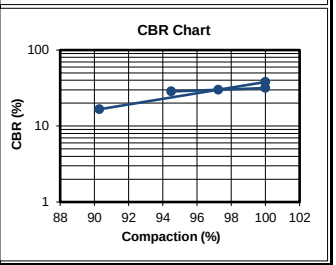
88780



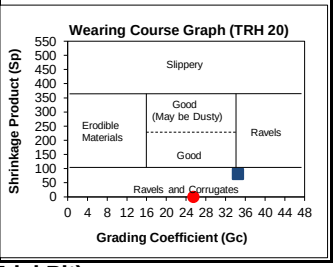


88781





● 88780 ■ 88781



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Technical Signatory
For Outeniqua Lab (Pty) Ltd.

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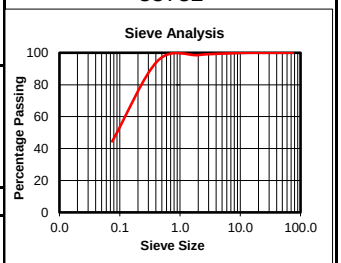
Tel: 044 8743274 : Fax: 044 8745779 : e-mail: llewelyn@outeniqualab.co.za

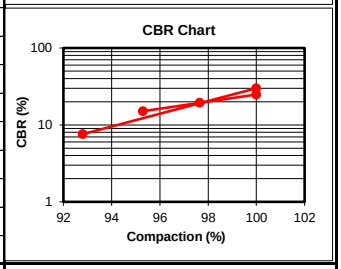
Customer :	Neil Lyners P O Box 757 George 6530	Project :	24052CG Rosemore Street & Stormwater Upgrade
		Date Received :	25/06/24
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Attention :	Francois van Eck	No. of Pages :	16 of 16

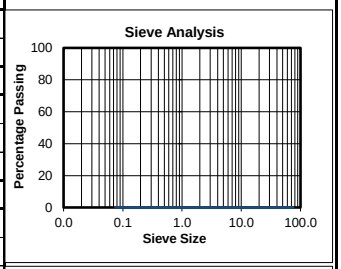
TEST REPORT
CALIFORNIA BEARING RATIO

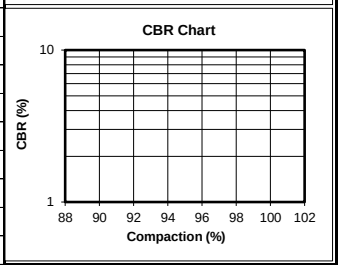
Sample Position (SV)		TP18	TRH 14: Not Classified				
Depth (mm)		520-740					
Sample No		**88782**					
Materials Description	Source	Trial Pit					
	Colour	Dark Red					
	Soil Type	Silty Sand					
	Classification	Road Layers					
Material Indicators - (SANS 3001 Method GR1)							
Percentage Passing	75 mm	100		Opinion			
	63 mm	100					
	50 mm	100					
	37.5 mm	100					
	28 mm	100					
	20 mm	100					
	14 mm	100					
	5 mm	99					
	2 mm	99					
	0.425 mm	95					
	0.075 mm	44.5					
Material Indicators - (SANS 3001 Method PR5)							
Grading Modulus *		0.62					
Coarse Sand Soil-Mortar (%)		4					
Atterberg Limits - (SANS 3001 Method GR10)							
Liquid Limit (%)		Undetermined					
Plasticity Index (%)		SP					
Linear Shrinkage (%)		SP					
Material Strength - (SANS 3001 Method GR30,GR40 - SCALPED)							
MDD	Max Dry Density (kg/m^3)	2051					
	Optimum Moisture Content (%)	7.2					
	Mould Moisture Content (%)	7.1					
A	Relative Compaction (%)	100.0					
	Swell (%)	0.4					
B	Relative Compaction (%)	95.3					
	Swell (%)	0.5					
C	Relative Compaction (%)	92.8					
	Swell (%)	0.6					
CBR	@100% Max Dry Density	30					
	@98% Max Dry Density	21					
	@95% Max Dry Density	12					
	@93% Max Dry Density	8					
	@90% Max Dry Density	4					
Material Condition - (SANS 3001 Method GR20)							
Insitu Moisture Content (%)		10.5					
Soil Classification Of The Material Based Only On The Tests Results Above							
TRH 14 Specification:		Not Classified					
AASHTO System		A-4					
Unified System		SM					

88782

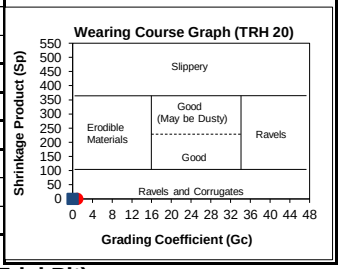








88782



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- **Specimens sampled by Outeniqua Lab according to sampling Plan TMH 5 Methods MA2 (Trial Pit).**
- **Specimens sampled by Boss Sangwe**
- **The weather conditions were such that there was no detrimental effect on the sample/s taken.**

Llewelyn Heathcote
Technical Signatory
For Outeniqua Lab (Pty) Ltd.

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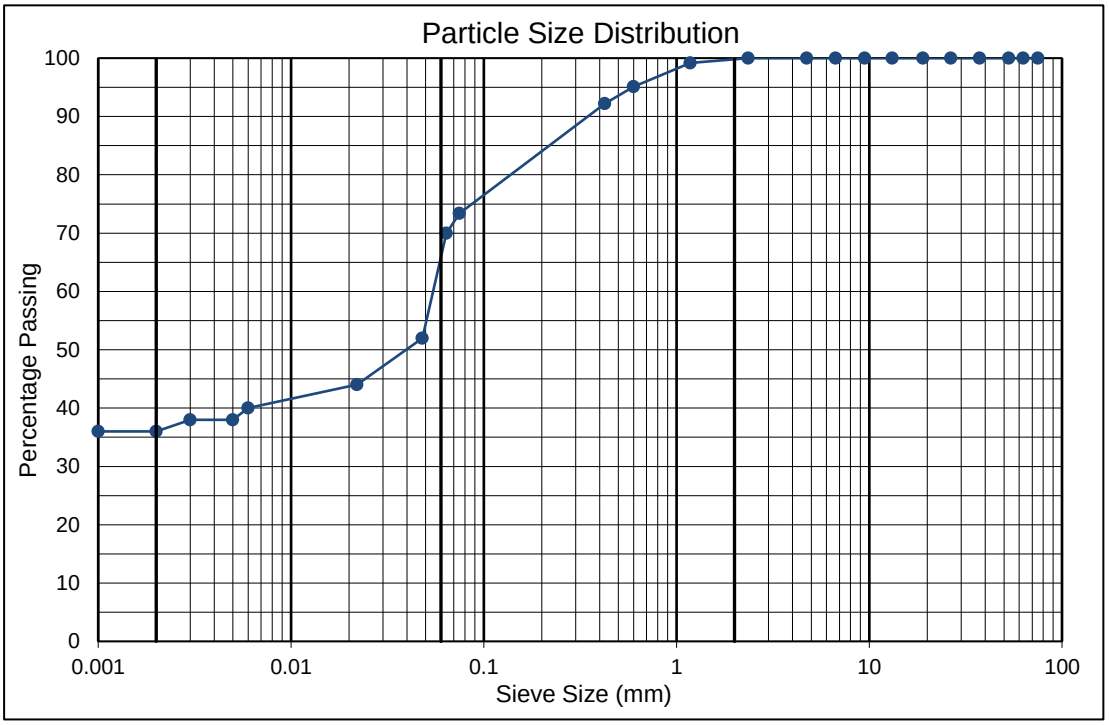
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TEST REPORT

FOUNDATION INDICATOR - (ASTM Method D422)

Sample Position (SV)		TP 1
Depth (mm):		1600-2400
Sample No.:		88751
Materials Description	Source	Trial Pit
	Colour	Dark Red Mottled Light Yellowish Orange
	Soil Type	Silt/Silty Clay
	Classification	Insitu

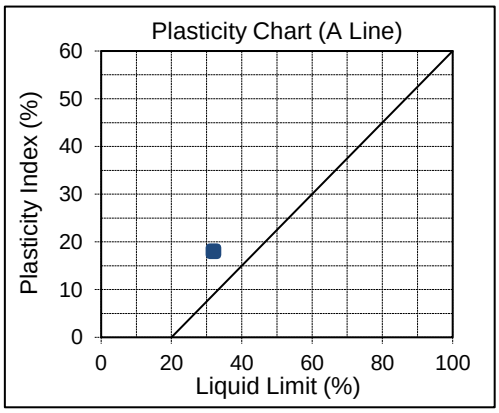
75.0mm	100
63.0mm	100
53.0mm	100
37.5mm	100
26.5mm	100
19mm	100
13.2mm	100
9.5mm	100
6.7mm	100
4.75mm	100
2.36mm	100
1.18mm	99
0.6mm	95
0.425mm	92
0.075mm	73
0.064mm	70
0.048mm	52
0.022mm	44
0.006mm	40
0.005mm	38
0.003mm	38
0.002mm	36
0.001mm	36

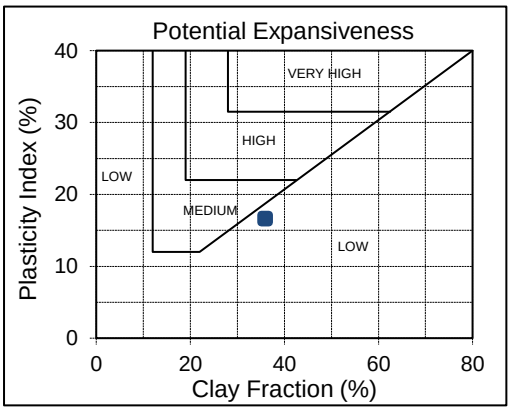


Liquid Limit (%)	32
Plasticity Index (%)	18
Linear Shrinkage (%)	9
Moisture Content (%)	22.1

% Clay	36
% Silt	30
% Sand	34
% Gravel	0

Unified Soil Classification	CL
AASHTO Soil Classification	A-6





- **Specimen delivered to Outeniqua Lab in good order.**

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Technical Signatory
For Outeniqua Lab (Pty) Ltd.

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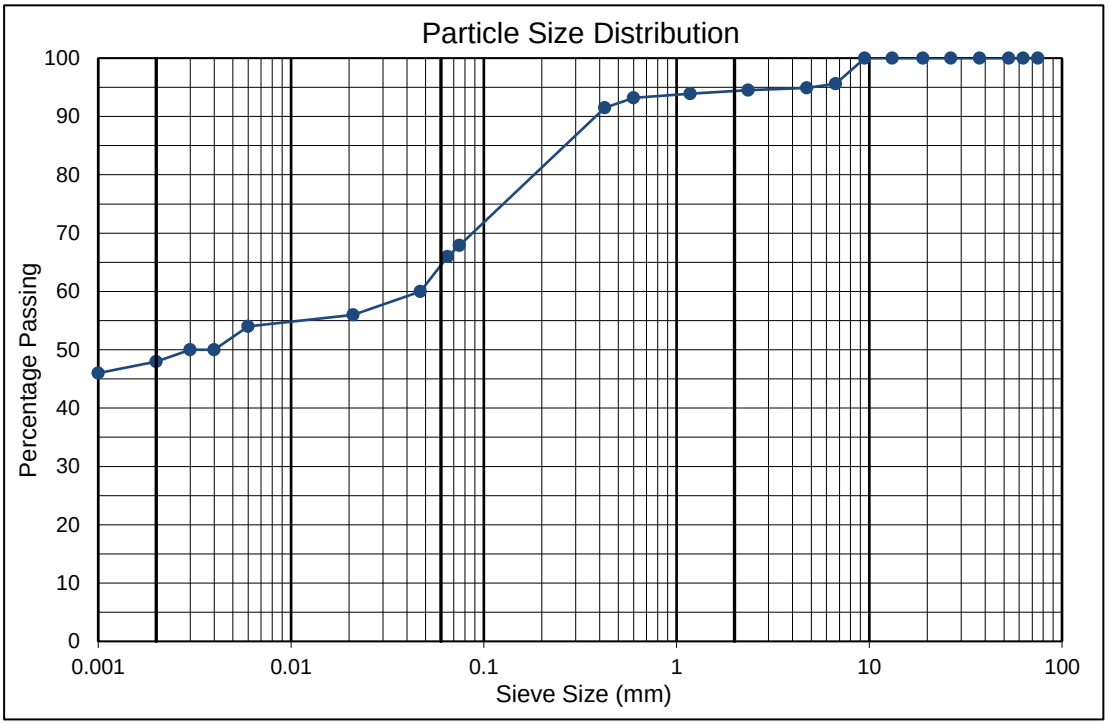
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		Date Received :	25/06/24
		Date Reported :	06/08/24
		Req. Number :	2265/24
Attention :	Francois van Eck	No. of Pages :	2 of 10

TEST REPORT

FOUNDATION INDICATOR - (ASTM Method D422)

Sample Position (SV)		TP 2
Depth (mm):		1200-2200
Sample No.:		88752
Materials Description	Source	Trial Pit
	Colour	Dark Red Mottled Light Yellowish Orange
	Soil Type	Silt/Silty Clay
	Classification	Insitu

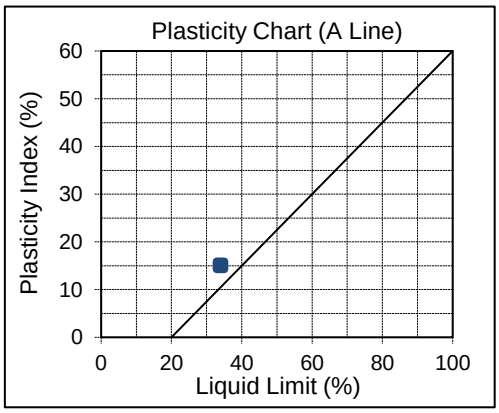
Percentage Passing	
75.0mm	100
63.0mm	100
53.0mm	100
37.5mm	100
26.5mm	100
19mm	100
13.2mm	100
9.5mm	100
6.7mm	96
4.75mm	95
2.36mm	95
1.18mm	94
0.6mm	93
0.425mm	92
0.075mm	68
0.065mm	66
0.047mm	60
0.021mm	56
0.006mm	54
0.004mm	50
0.003mm	50
0.002mm	48
0.001mm	46

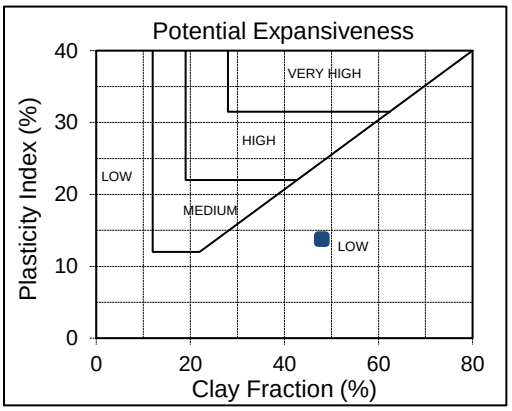


Liquid Limit (%)	34
Plasticity Index (%)	15
Linear Shrinkage (%)	8
Moisture Content (%)	15.0

% Clay	48
% Silt	16
% Sand	30
% Gravel	6

Unified Soil Classification	CL
AASHTO Soil Classification	A-6





- **Specimen sampled by Outeniqua Lab according to sampling Plan TMH 5 Methods MA2 (Trial Pit).**
- **Specimens sampled by Boss Sangwe**
- **The weather conditions were such that there was no detrimental effect on the sample/s taken.**

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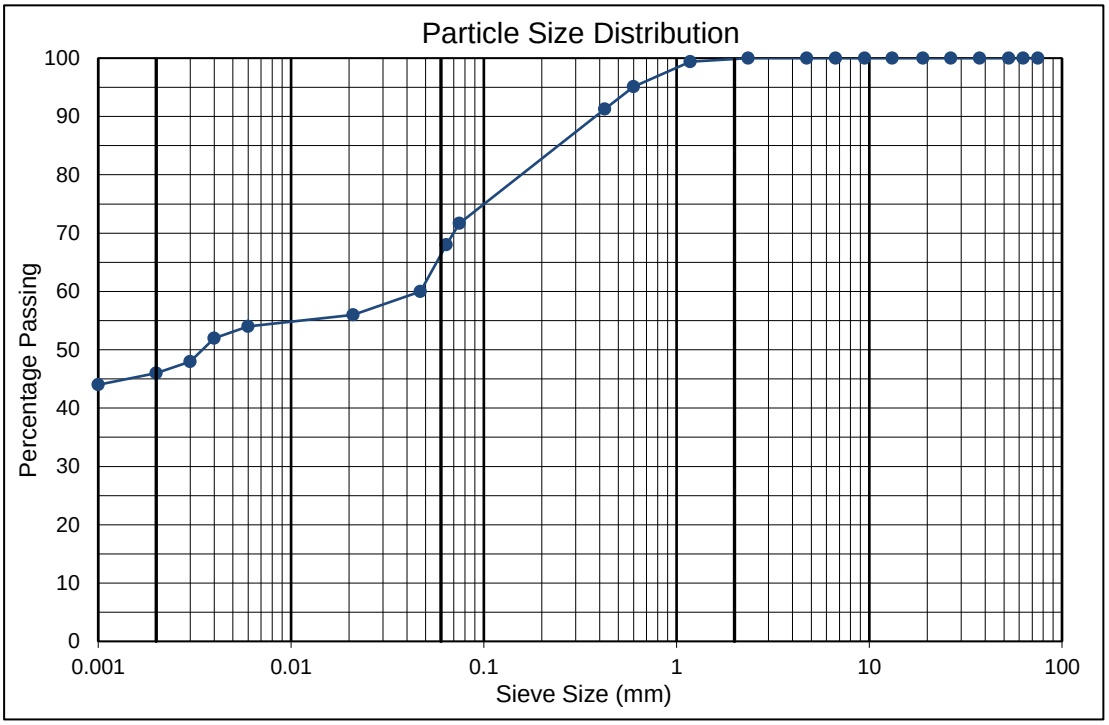
Customer :	Neil Lyners P O Box 757 George 6530	Project :	24052CG Rosemore Street & Stormwater Upgrade
		Date Received :	25/06/24
		Date Reported :	06/08/24
		Req. Number :	2265/24
Attention :	Francois van Eck	No. of Pages :	3 of 10

TEST REPORT

FOUNDATION INDICATOR - (ASTM Method D422)

Sample Position (SV)		TP 3
Depth (mm):		1100-2500
Sample No.:		88753
Materials Description	Source	Trial Pit
	Colour	Light Reddish Orange
	Soil Type	Silt/Silty Clay
	Classification	Insitu

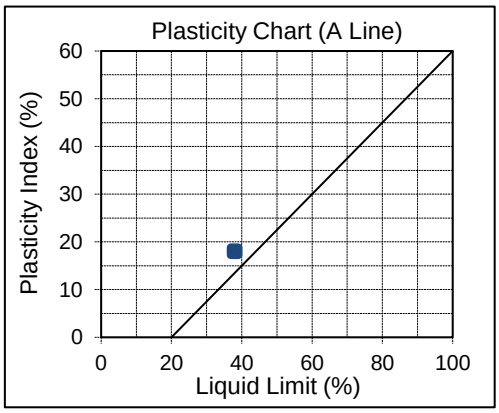
Percentage Passing	
75.0mm	100
63.0mm	100
53.0mm	100
37.5mm	100
26.5mm	100
19mm	100
13.2mm	100
9.5mm	100
6.7mm	100
4.75mm	100
2.36mm	100
1.18mm	99
0.6mm	95
0.425mm	91
0.075mm	72
0.064mm	68
0.047mm	60
0.021mm	56
0.006mm	54
0.004mm	52
0.003mm	48
0.002mm	46
0.001mm	44

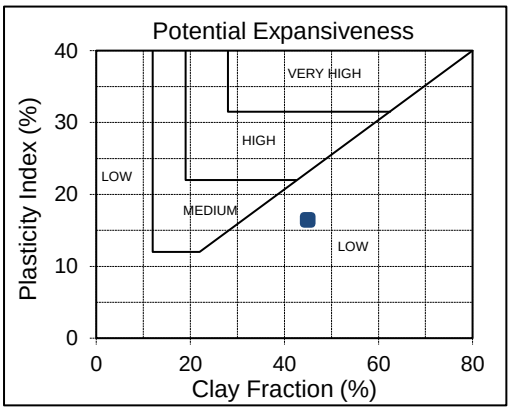


Liquid Limit (%)	38
Plasticity Index (%)	18
Linear Shrinkage (%)	9
Moisture Content (%)	21.8

% Clay	45
% Silt	21
% Sand	34
% Gravel	0

Unified Soil Classification	CL
AASHTO Soil Classification	A-6





- **Specimen sampled by Outeniqua Lab according to sampling Plan TMH 5 Methods MA2 (Trial Pit).**
- **Specimens sampled by Boss Sangwe**
- **The weather conditions were such that there was no detrimental effect on the sample/s taken.**

Llewelyn Heathcote
Technical Signatory
For Outeniqua Lab (Pty) Ltd.

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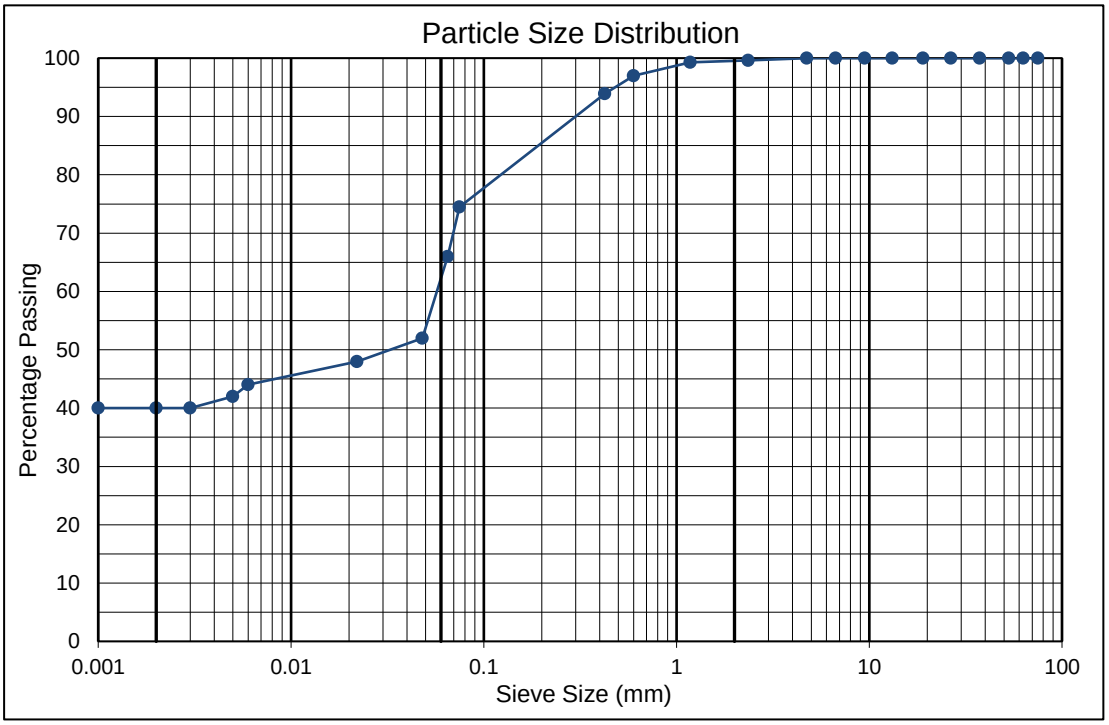
Customer :	Neil Lyners P O Box 757 George 6530	Project :	24052CG Rosemore Street & Stormwater Upgrade
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		Req. Number :	2265/24
Attention :	Francois van Eck	No. of Pages :	4 of 10

TEST REPORT

FOUNDATION INDICATOR - (ASTM Method D422)

Sample Position (SV)		TP 4
Depth (mm):		2800-3000
Sample No.:		88754
Materials Description	Source	Trial Pit
	Colour	Light Reddish Orange
	Soil Type	Silt/Silty Clay
	Classification	Insitu

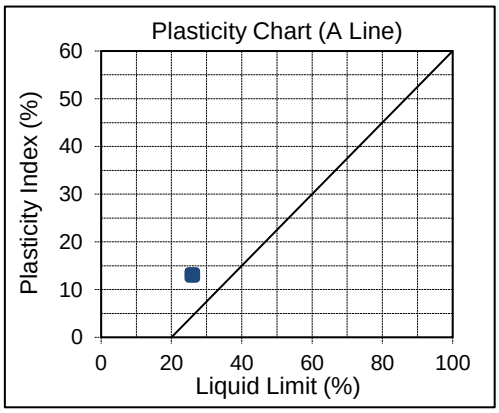
Percentage Passing	
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53.0mm	100
37.5mm	100
26.5mm	100
19mm	100
13.2mm	100
9.5mm	100
6.7mm	100
4.75mm	100
2.36mm	100
1.18mm	99
0.6mm	97
0.425mm	94
0.075mm	75
0.065mm	66
0.048mm	52
0.022mm	48
0.006mm	44
0.005mm	42
0.003mm	40
0.002mm	40
0.001mm	40

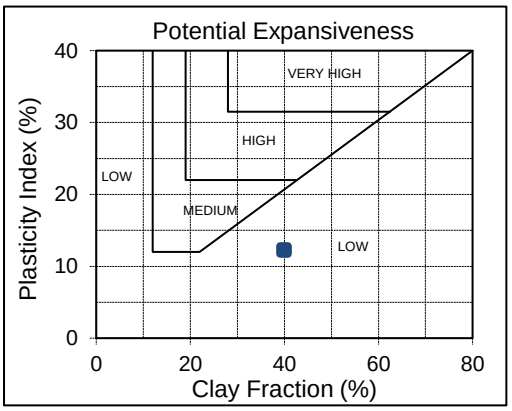


Liquid Limit (%)	26
Plasticity Index (%)	13
Linear Shrinkage (%)	7
Moisture Content (%)	20.9

% Clay	40
% Silt	22
% Sand	38
% Gravel	0

Unified Soil Classification	CL
AASHTO Soil Classification	A-6





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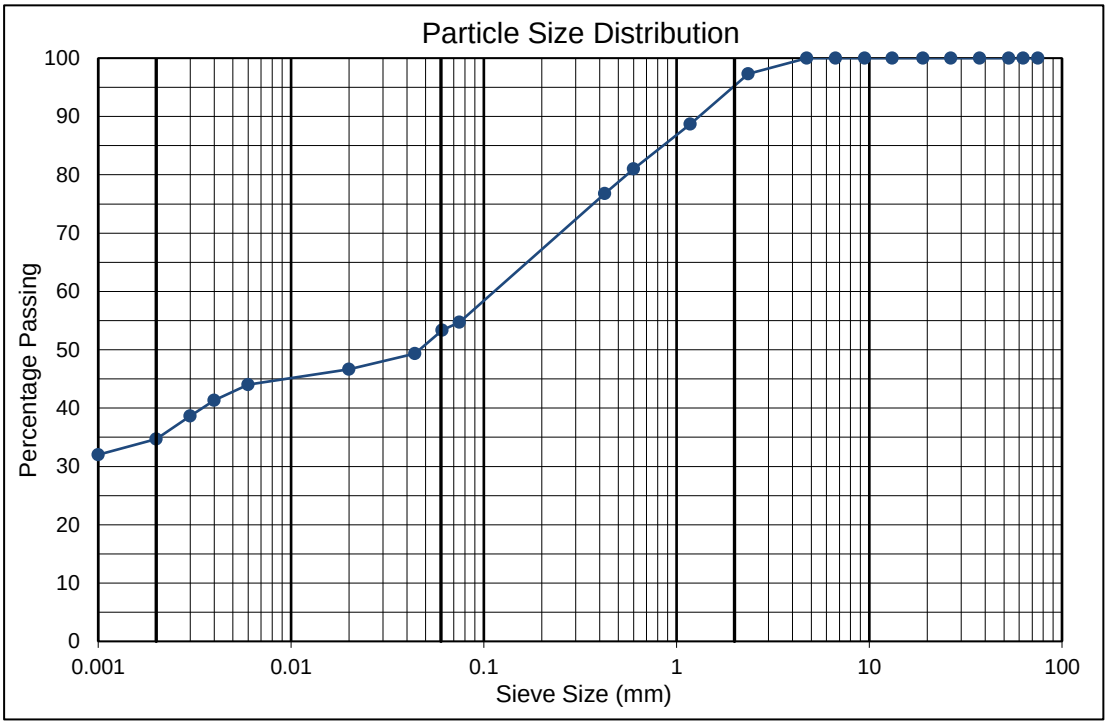
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		Req. Number :	2265/24
Attention :	Francois van Eck	No. of Pages :	5 of 10

TEST REPORT

FOUNDATION INDICATOR - (ASTM Method D422)

Sample Position (SV)		TP 6
Depth (mm):		1300-1700
Sample No.:		88755
Materials Description	Source	Trial Pit
	Colour	Dark Red Mottled Light Yellowish Orange
	Soil Type	Silt/Silty Clay
	Classification	Insitu

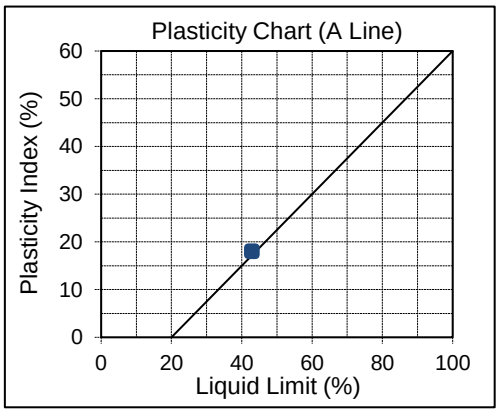
Percentage Passing	
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63.0mm	100
53.0mm	100
37.5mm	100
26.5mm	100
19mm	100
13.2mm	100
9.5mm	100
6.7mm	100
4.75mm	100
2.36mm	97
1.18mm	89
0.6mm	81
0.425mm	77
0.075mm	55
0.061mm	53
0.044mm	49
0.02mm	47
0.006mm	44
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0.003mm	39
0.002mm	35
0.001mm	32

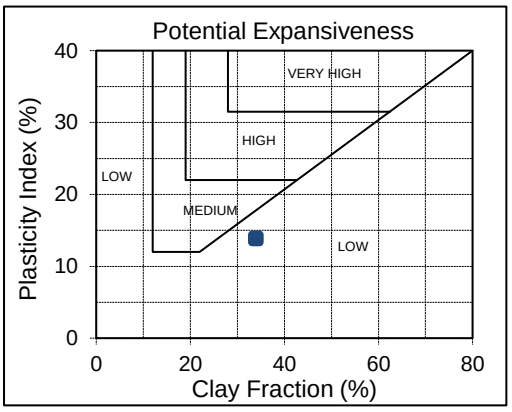


Liquid Limit (%)	43
Plasticity Index (%)	18
Linear Shrinkage (%)	9
Moisture Content (%)	27.8

% Clay	34
% Silt	19
% Sand	42
% Gravel	5

Unified Soil Classification	CL
AASHTO Soil Classification	A-7-6





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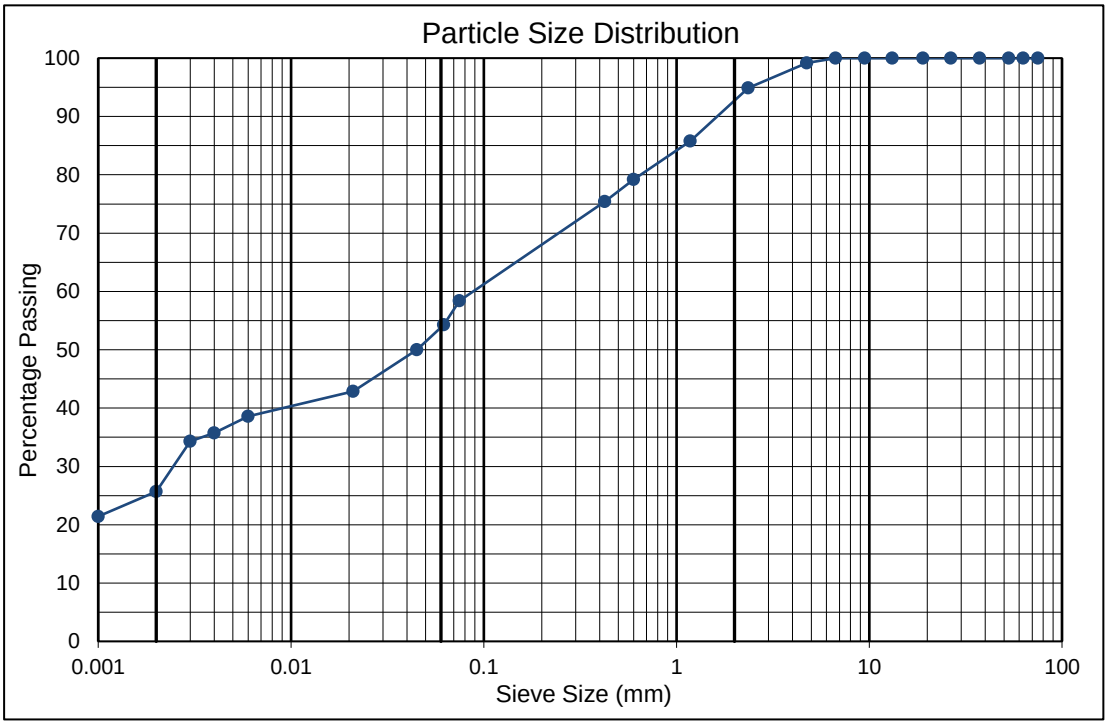
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TEST REPORT

FOUNDATION INDICATOR - (ASTM Method D422)

Sample Position (SV)		TP 6
Depth (mm):		1700-2400
Sample No.:		88756
Materials Description	Source	Trial Pit
	Colour	Light Reddish Orange
	Soil Type	Silt/Silty Clay
	Classification	Insitu

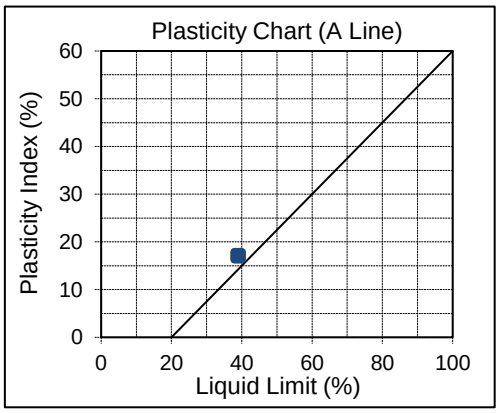
Percentage Passing	
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63.0mm	100
53.0mm	100
37.5mm	100
26.5mm	100
19mm	100
13.2mm	100
9.5mm	100
6.7mm	100
4.75mm	99
2.36mm	95
1.18mm	86
0.6mm	79
0.425mm	75
0.075mm	58
0.062mm	54
0.045mm	50
0.021mm	43
0.006mm	39
0.004mm	36
0.003mm	34
0.002mm	26
0.001mm	21

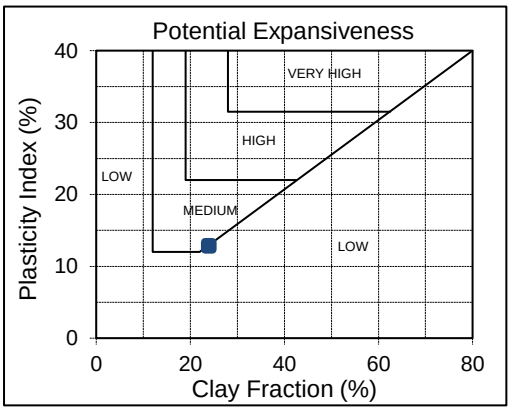


Liquid Limit (%)	39
Plasticity Index (%)	17
Linear Shrinkage (%)	9
Moisture Content (%)	21.7

% Clay	24
% Silt	30
% Sand	38
% Gravel	8

Unified Soil Classification	CL
AASHTO Soil Classification	A-6





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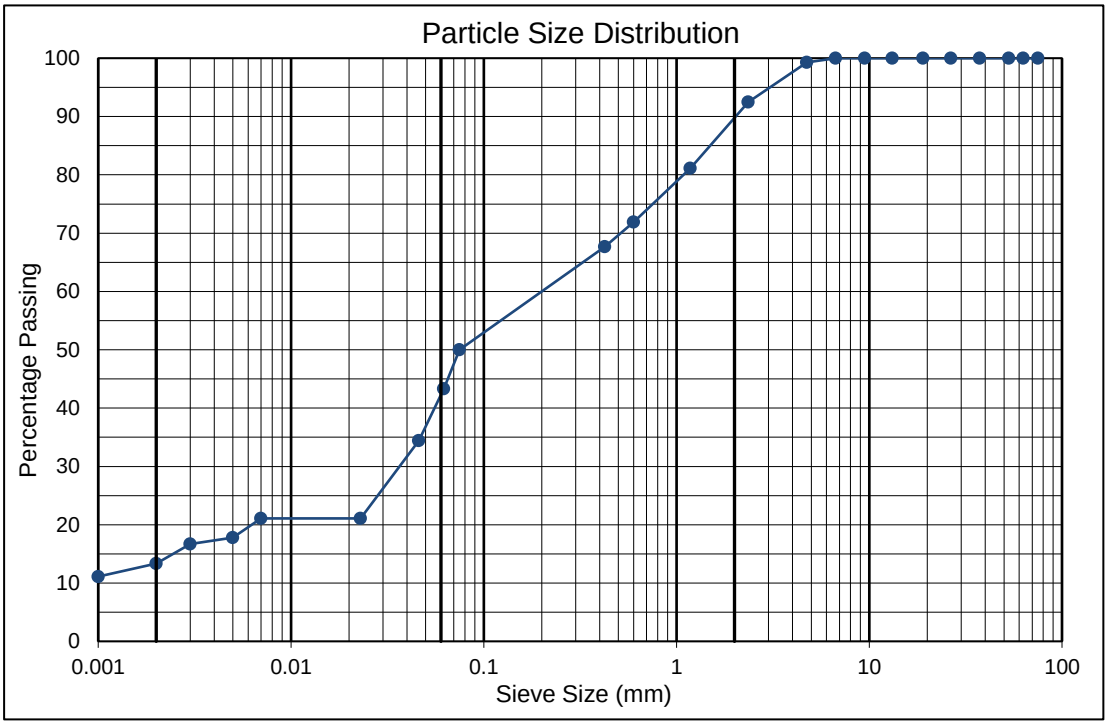
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TEST REPORT

FOUNDATION INDICATOR - (ASTM Method D422)

Sample Position (SV)		TP 7
Depth (mm):		1700-2500
Sample No.:		88757
Materials Description	Source	Trial Pit
	Colour	Light Yellow
	Soil Type	Clayey Gravel
	Classification	Insitu

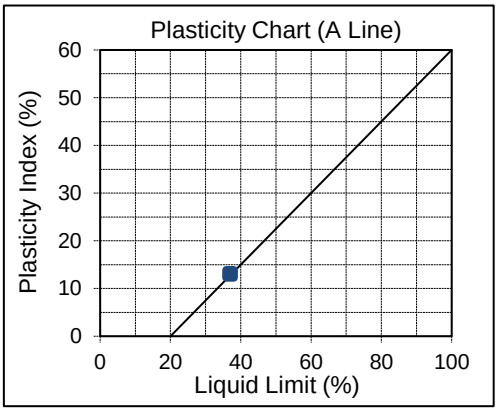
Percentage Passing	
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53.0mm	100
37.5mm	100
26.5mm	100
19mm	100
13.2mm	100
9.5mm	100
6.7mm	100
4.75mm	99
2.36mm	93
1.18mm	81
0.6mm	72
0.425mm	68
0.075mm	50
0.062mm	43
0.046mm	34
0.023mm	21
0.007mm	21
0.005mm	18
0.003mm	17
0.002mm	13
0.001mm	11

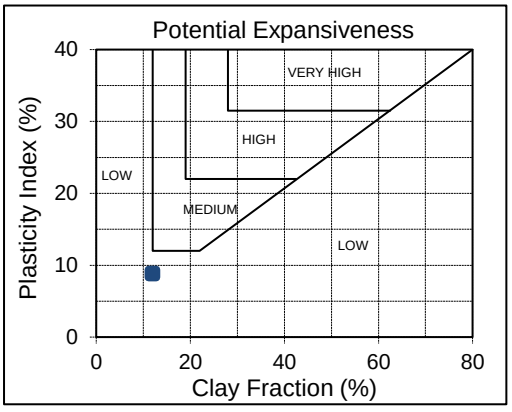


Liquid Limit (%)	37
Plasticity Index (%)	13
Linear Shrinkage (%)	7
Moisture Content (%)	17.8

% Clay	12
% Silt	30
% Sand	47
% Gravel	11

Unified Soil Classification	SC
AASHTO Soil Classification	A-6





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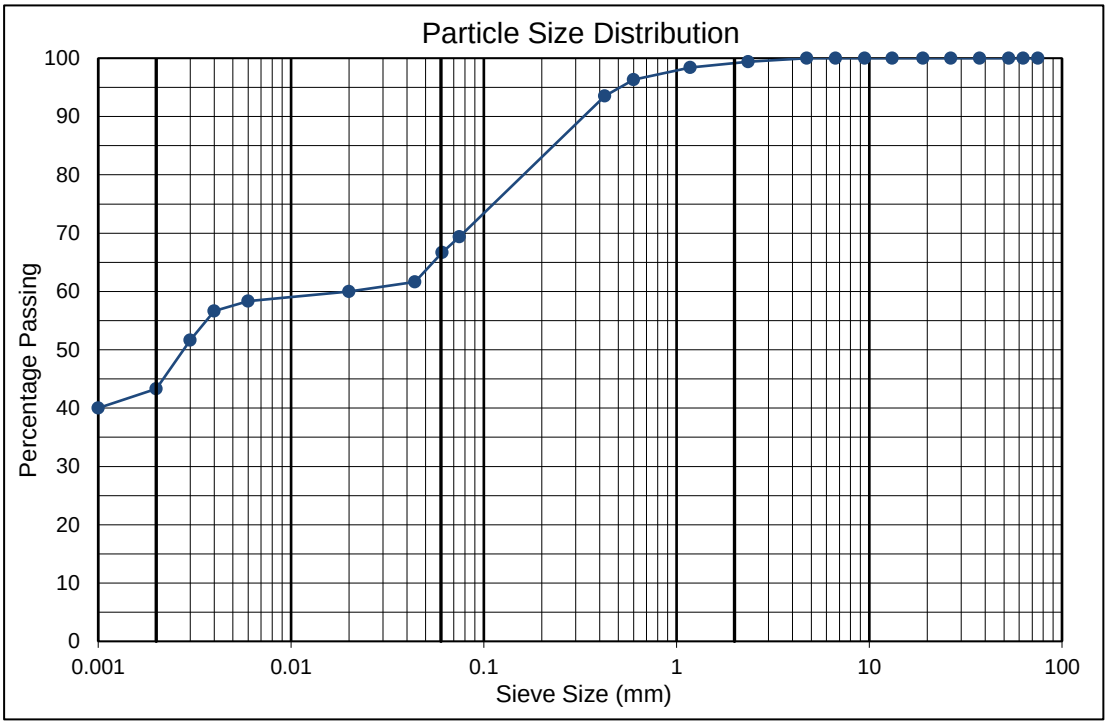
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TEST REPORT

FOUNDATION INDICATOR - (ASTM Method D422)

Sample Position (SV)		TP 8
Depth (mm):		1700-2400
Sample No.:		88758
Materials Description	Source	Trial Pit
	Colour	Light Yellow
	Soil Type	Clayey Gravel
	Classification	Insitu

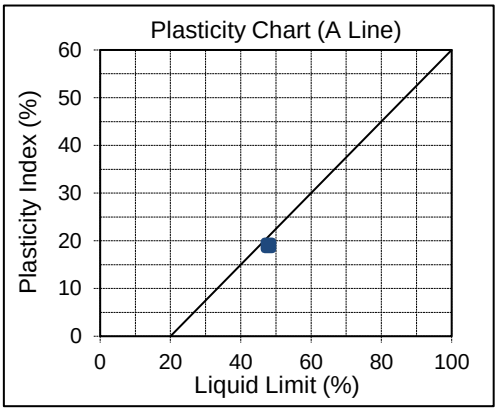
Percentage Passing	
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53.0mm	100
37.5mm	100
26.5mm	100
19mm	100
13.2mm	100
9.5mm	100
6.7mm	100
4.75mm	100
2.36mm	99
1.18mm	98
0.6mm	96
0.425mm	94
0.075mm	69
0.061mm	67
0.044mm	62
0.02mm	60
0.006mm	58
0.004mm	57
0.003mm	52
0.002mm	43
0.001mm	40

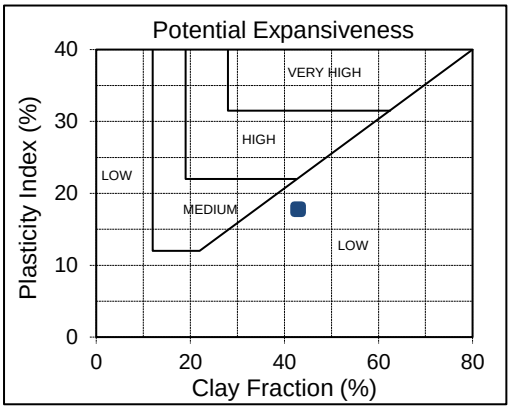


Liquid Limit (%)	48
Plasticity Index (%)	19
Linear Shrinkage (%)	10
Moisture Content (%)	28.1

% Clay	43
% Silt	23
% Sand	33
% Gravel	1

Unified Soil Classification	ML
AASHTO Soil Classification	A-7-6





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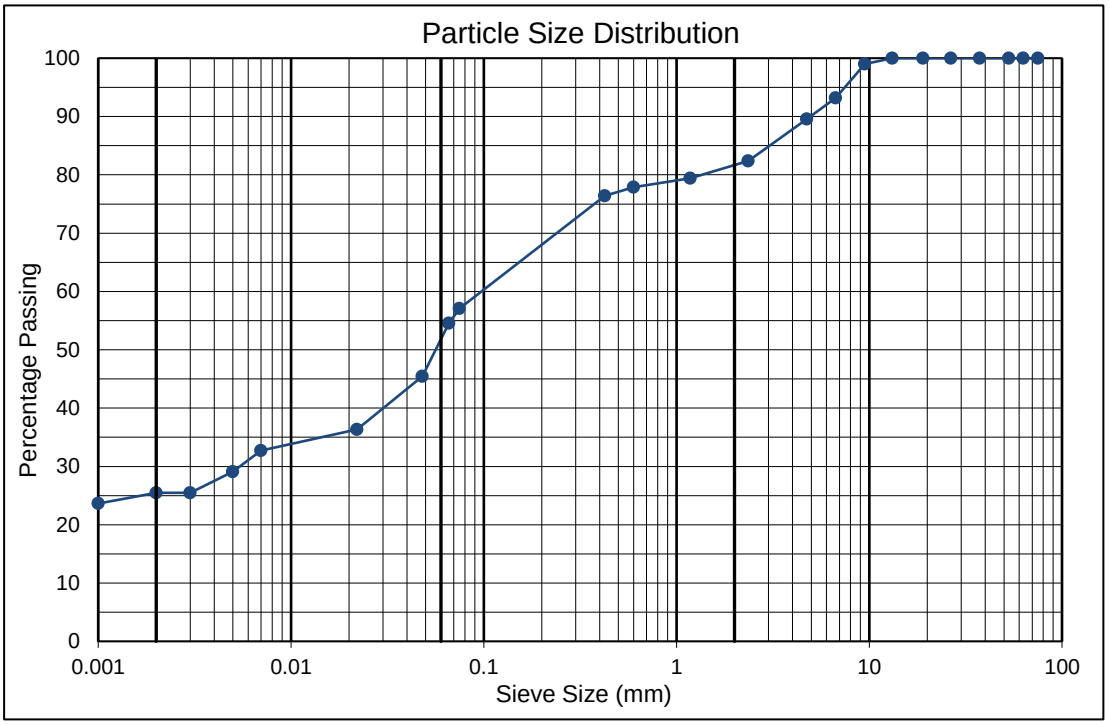
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		Date Reported :	06/08/24
		Req. Number :	2265/24
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TEST REPORT

FOUNDATION INDICATOR - (ASTM Method D422)

Sample Position (SV)		TP 9
Depth (mm):		1800-2300
Sample No.:		88759
Materials Description	Source	Trial Pit
	Colour	Dark Red Mottled Light Yellowish Orange
	Soil Type	Silt/Silty Clay
	Classification	Insitu

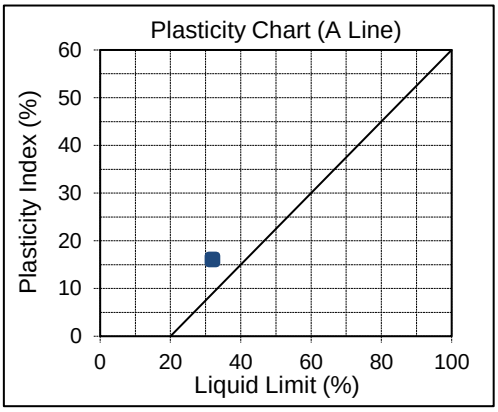
Percentage Passing	
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63.0mm	100
53.0mm	100
37.5mm	100
26.5mm	100
19mm	100
13.2mm	100
9.5mm	99
6.7mm	93
4.75mm	90
2.36mm	82
1.18mm	79
0.6mm	78
0.425mm	76
0.075mm	57
0.066mm	55
0.048mm	45
0.022mm	36
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0.005mm	29
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0.001mm	24

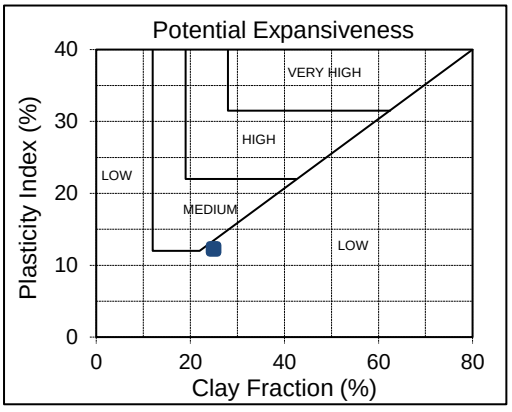


Liquid Limit (%)	32
Plasticity Index (%)	16
Linear Shrinkage (%)	8
Moisture Content (%)	19.8

% Clay	25
% Silt	26
% Sand	30
% Gravel	19

Unified Soil Classification	CL
AASHTO Soil Classification	A-6





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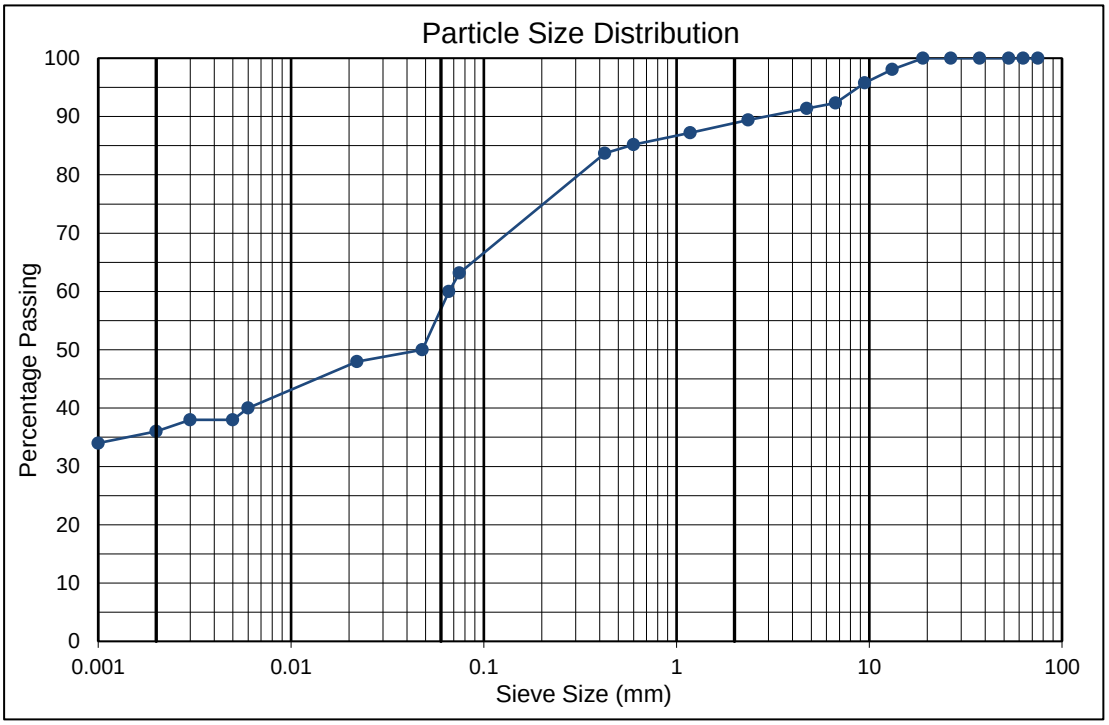
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TEST REPORT

FOUNDATION INDICATOR - (ASTM Method D422)

Sample Position (SV)		TP 10
Depth (mm):		1900-2400
Sample No.:		88760
Materials Description	Source	Trial Pit
	Colour	Dark Red Mottled Light Yellowish Orange
	Soil Type	Silt/Silty Clay
	Classification	Insitu

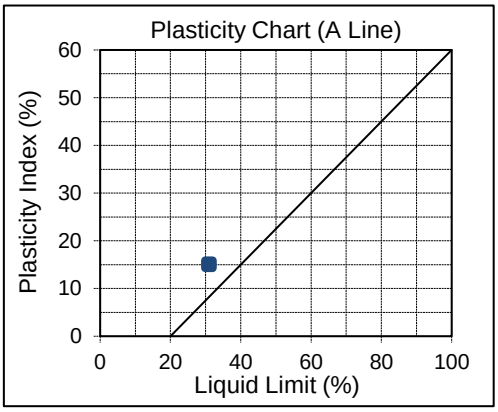
Percentage Passing	
75.0mm	100
63.0mm	100
53.0mm	100
37.5mm	100
26.5mm	100
19mm	100
13.2mm	98
9.5mm	96
6.7mm	92
4.75mm	91
2.36mm	89
1.18mm	87
0.6mm	85
0.425mm	84
0.075mm	63
0.066mm	60
0.048mm	50
0.022mm	48
0.006mm	40
0.005mm	38
0.003mm	38
0.002mm	36
0.001mm	34

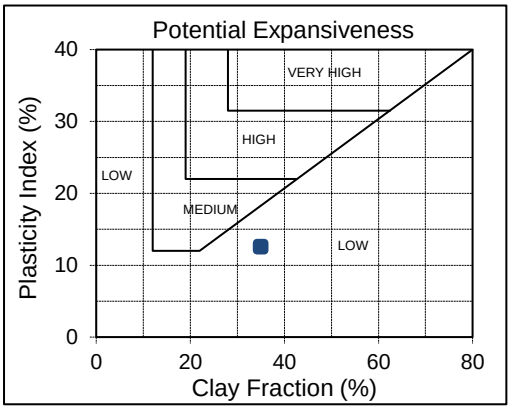


Liquid Limit (%)	31
Plasticity Index (%)	15
Linear Shrinkage (%)	8
Moisture Content (%)	22.4

% Clay	35
% Silt	22
% Sand	32
% Gravel	11

Unified Soil Classification	CL
AASHTO Soil Classification	A-6





- **Specimen sampled by Outeniqua Lab according to sampling Plan TMH 5 Methods MA2 (Trial Pit).**
- **Specimens sampled by Boss Sangwe**
- **The weather conditions were such that there was no detrimental effect on the sample/s taken.**

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Technical Signatory
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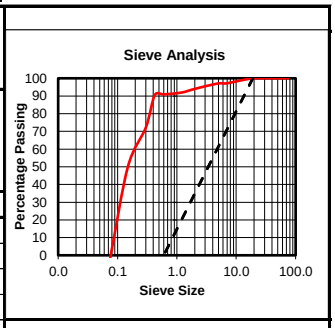
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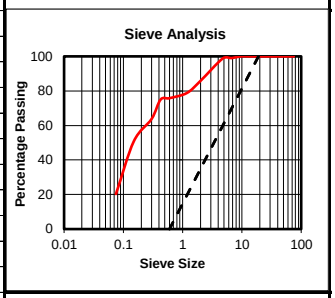
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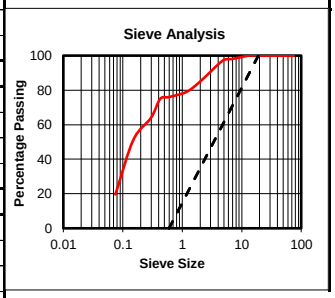
TEST REPORT

MATERIAL PROPERTIES OF SOILS / GRAVELS / AGGREGATES

Sample Position (SV)		TP1	SABS 1200 LB		TP2	SABS 1200 LB		TP10	SABS 1200 LB		
Depth (mm)		0-400	Pipe Bedding		400-1000	Pipe Bedding		1100-1500	Pipe Bedding		
Sample No		88746			88747			88750			
Materials Description	Source	Trial Pit			Trial Pit			Trial Pit			
	Colour	Grey			Dark Brown			Light Brown			
	Soil Type	Silty Sand			Silty Sand			Silty Sand			
	Classification	Insitu			Insitu			Insitu			
Material Indicators - (TMH1 Method B4)											
Percentage Passing	75.0mm										
	63.0mm										
	53.0mm										
	37.5mm										
	26.5mm										
	19.0mm	100	100 - 100	∗	100	100 - 100	∗	100	100 - 100	∗	
	13.2mm										
	9.5mm										
	6.7mm										
	4.75mm										
	2.36mm										
	1.18mm										
	0.600mm	90.9	0 - 0	×	75.8	0 - 0	×	76.0	0 - 0	×	
	0.425mm										
	0.300mm										
	0.150mm										
	0.075mm										
Fineness Modulus											
Moisture Content (%)											
Atterberg Limits - (TMH1 Method A2, A3, A4)											
Liquid Limit		Undetermined			Undetermined			Undetermined			
Plasticity Index 0,425mm (%)		NP	NP	✓	SP	NP	×	NP	NP	✓	
Plasticity Index 0,075mm (%)											
Linear Shrinkage (%)		NP			0.5			NP			
Material Strength											
ACV (%) Dry											
ACV (%) Wet											
10%FACT (kN) Dry											
10%FACT (kN) Wet											
Wet/Dry Relationship (%)											
Material Shape											
Flakiness Index (%)											
ALD - Direct Measurement (mm)											
ALD - Computation (mm) *											
Material Properties - (SABS 0120 Section LB Part 3)											
Relative Density (kg/m^3) *											
LBD (kg/m^3)											
CBD (kg/m^3)											
Water Absorption (%) *											
Compactability Factor *		0.4	≤ 0.4	∗	0.5	≤ 0.4	×	0.5	≤ 0.4	×	
Material Impurities											
Organic Impurities *											
Soluble Deleterious (%) *											
Material Classification											
AASHTO System		A-3 / A-2-4			A-2-4			A-2-4			
Unified System		SP			SM			SM			
Coefficient of Uniformity (Cu)		2.4			0.0			0.0			
Coefficient of Curvature (Cc)		0.7			0.0			0.0			
(D_{10})	(D_{30}) (D_{60})	0.1	0.1	0.2	0.0	0.1	0.3	0.0	0.1	0.3	







- **Tests marked with a (*) are NOT SANAS Accredited results.**
- **Specimens sampled by Outeniqua Lab according to sampling Plan TMH 5 Methods MB1 (Stockpiles).**
- **Specimens sampled by Boss Sangwe**
- **The weather conditions were such that there was no detrimental effect on the sample/s taken.**

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2. The uncertain (∗) indicates that the test result is either equal to or is above / below the specified limit by a margin less than the measurement uncertainty; it is therefore not possible to state compliant (✓) or non compliant (×) based on a 95% level of confidence with reference to SAMM GUIDANCE 1, Issue 2 : 20 June 2007 Section 2.
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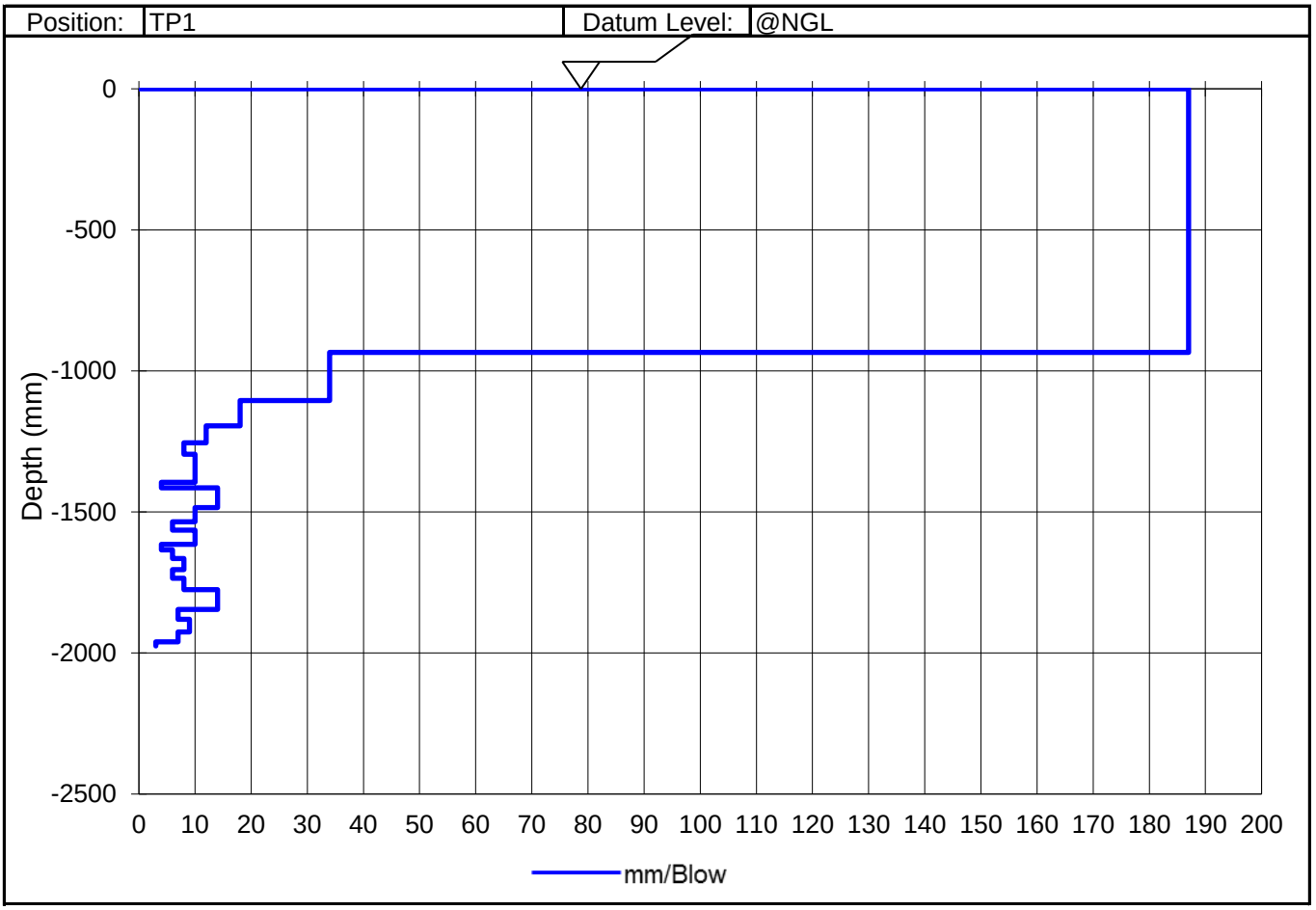
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TEST REPORT

DYNAMIC CONE PENETROMETER (DCP) - (TMH 6 Method ST6)

Position: TP1 Datum Level: @NGL



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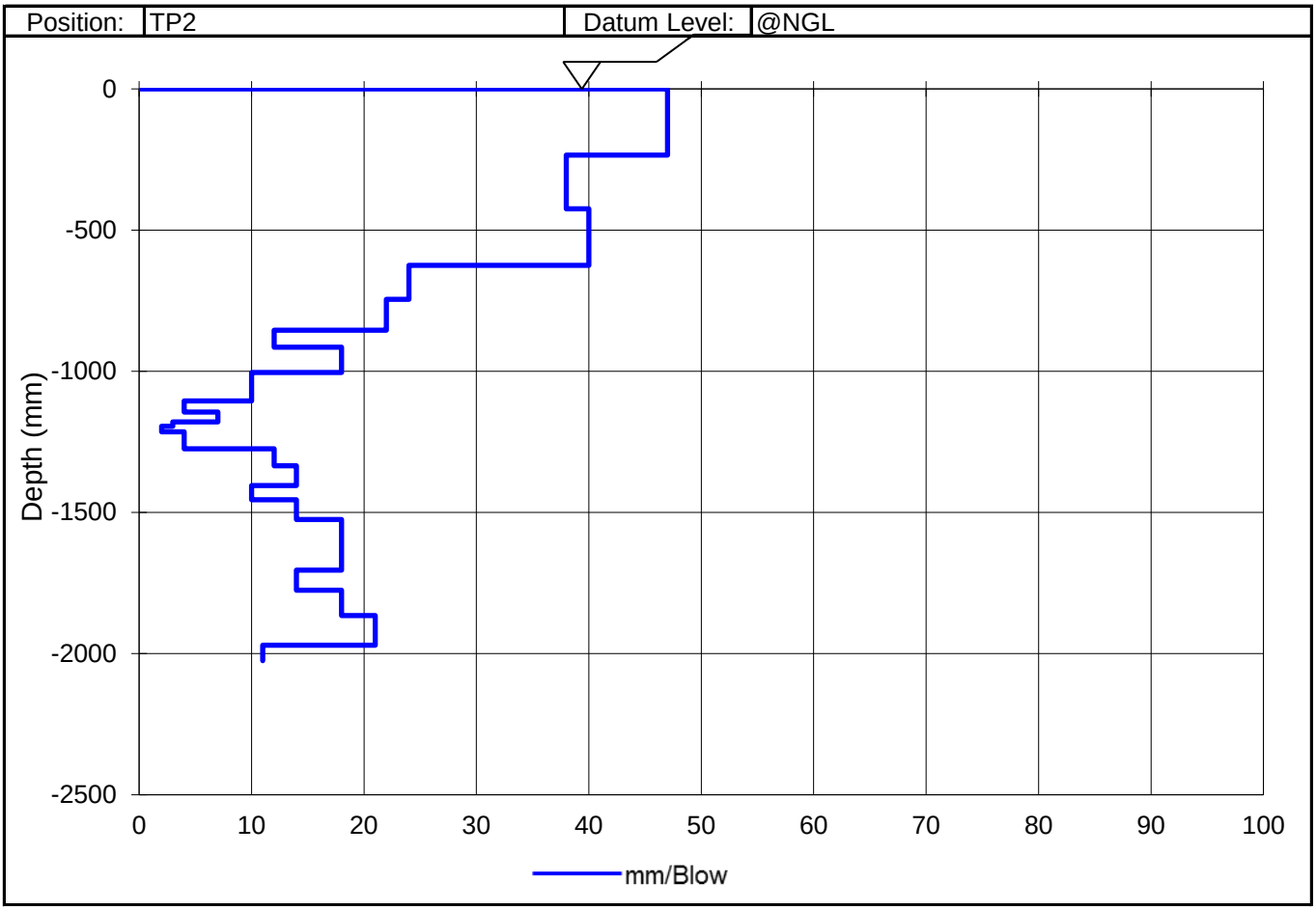
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TEST REPORT

DYNAMIC CONE PENETROMETER (DCP) - (TMH 6 Method ST6)

Position: TP2 Datum Level: @NGL



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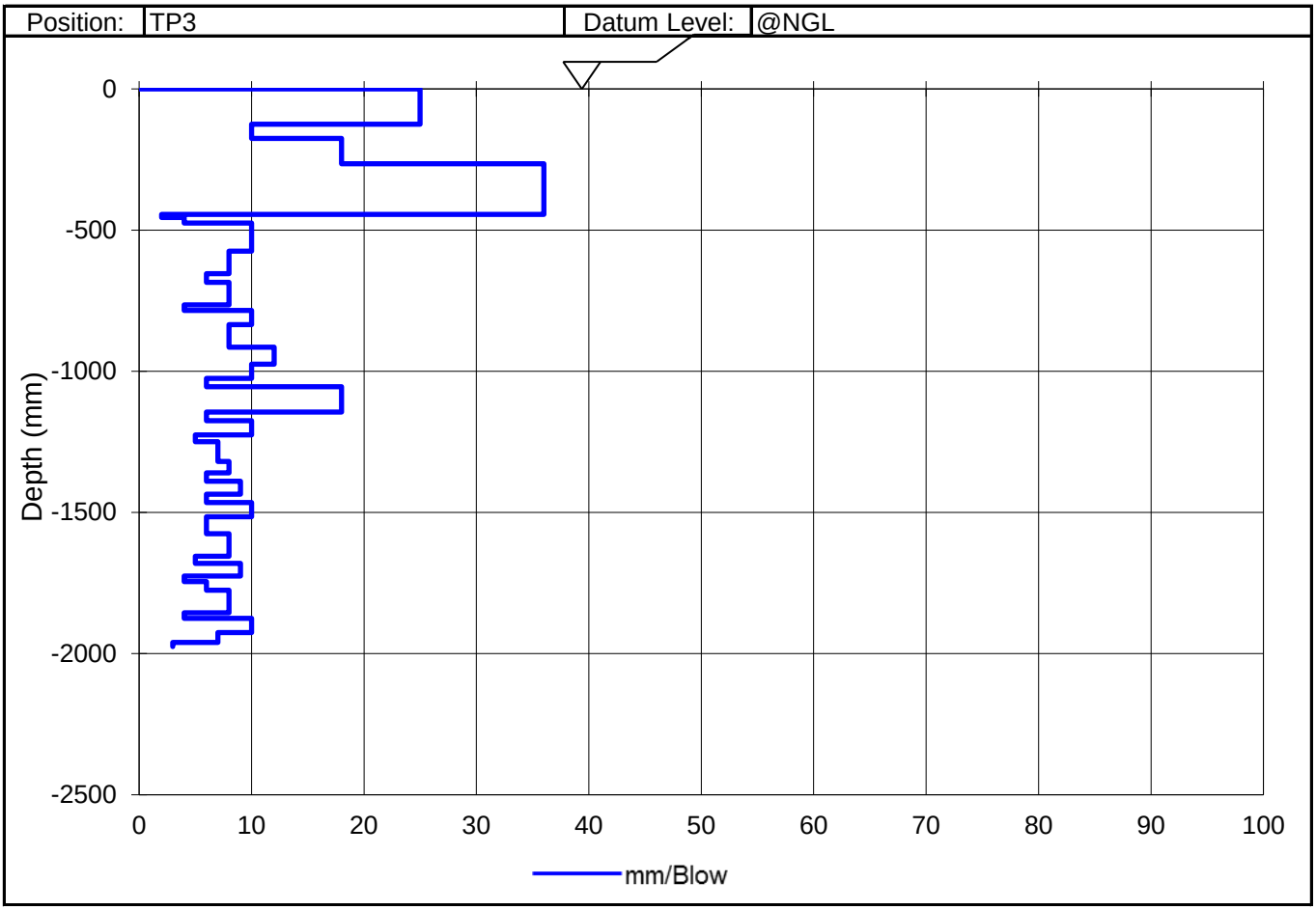
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TEST REPORT

DYNAMIC CONE PENETROMETER (DCP) - (TMH 6 Method ST6)

Position: TP3 Datum Level: @NGL



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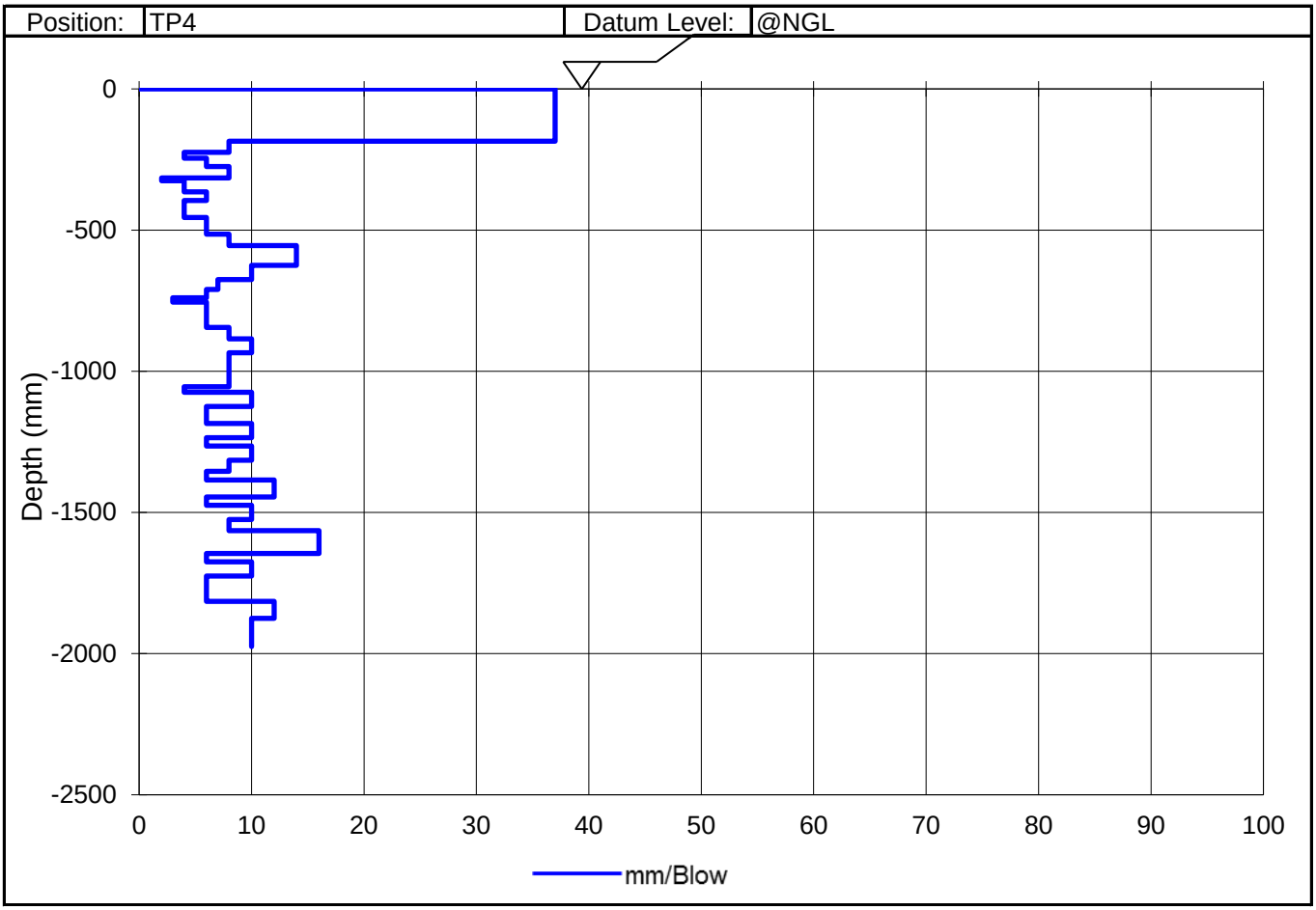
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TEST REPORT

DYNAMIC CONE PENETROMETER (DCP) - (TMH 6 Method ST6)

Position: TP4 Datum Level: @NGL



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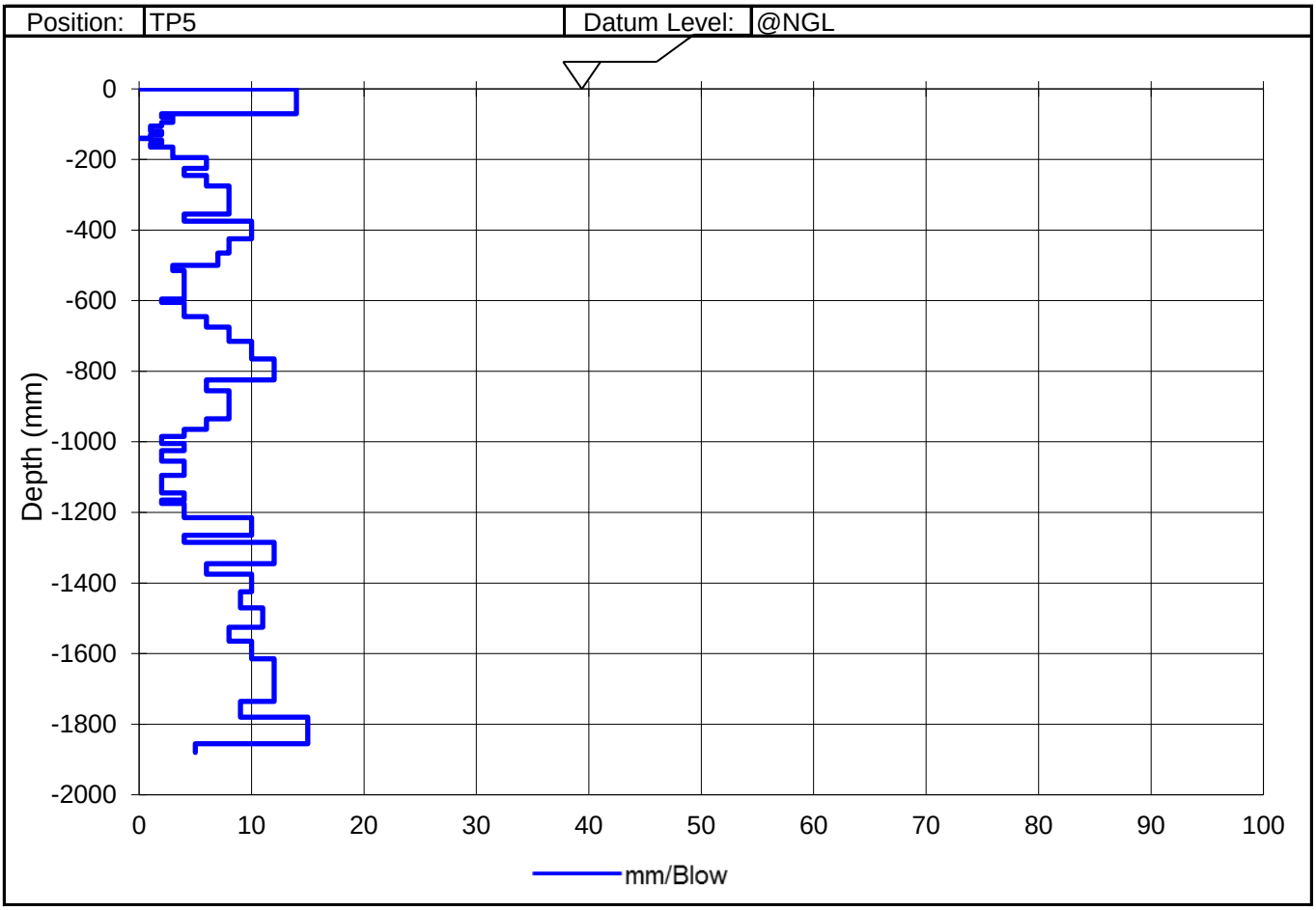
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TEST REPORT

DYNAMIC CONE PENETROMETER (DCP) - (TMH 6 Method ST6)

Position: TP5 Datum Level: @NGL



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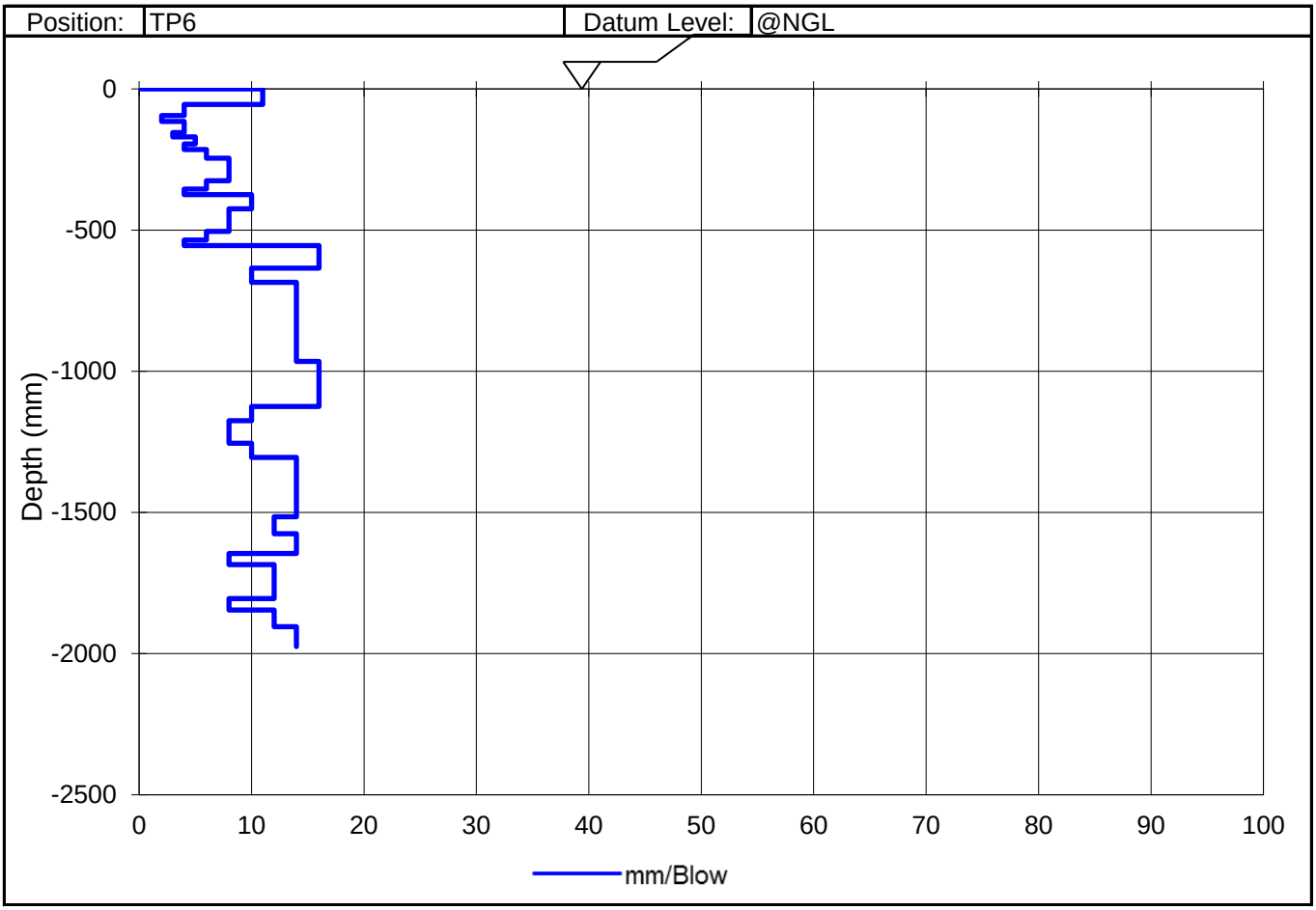
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TEST REPORT

DYNAMIC CONE PENETROMETER (DCP) - (TMH 6 Method ST6)

Position: TP6 Datum Level: @NGL



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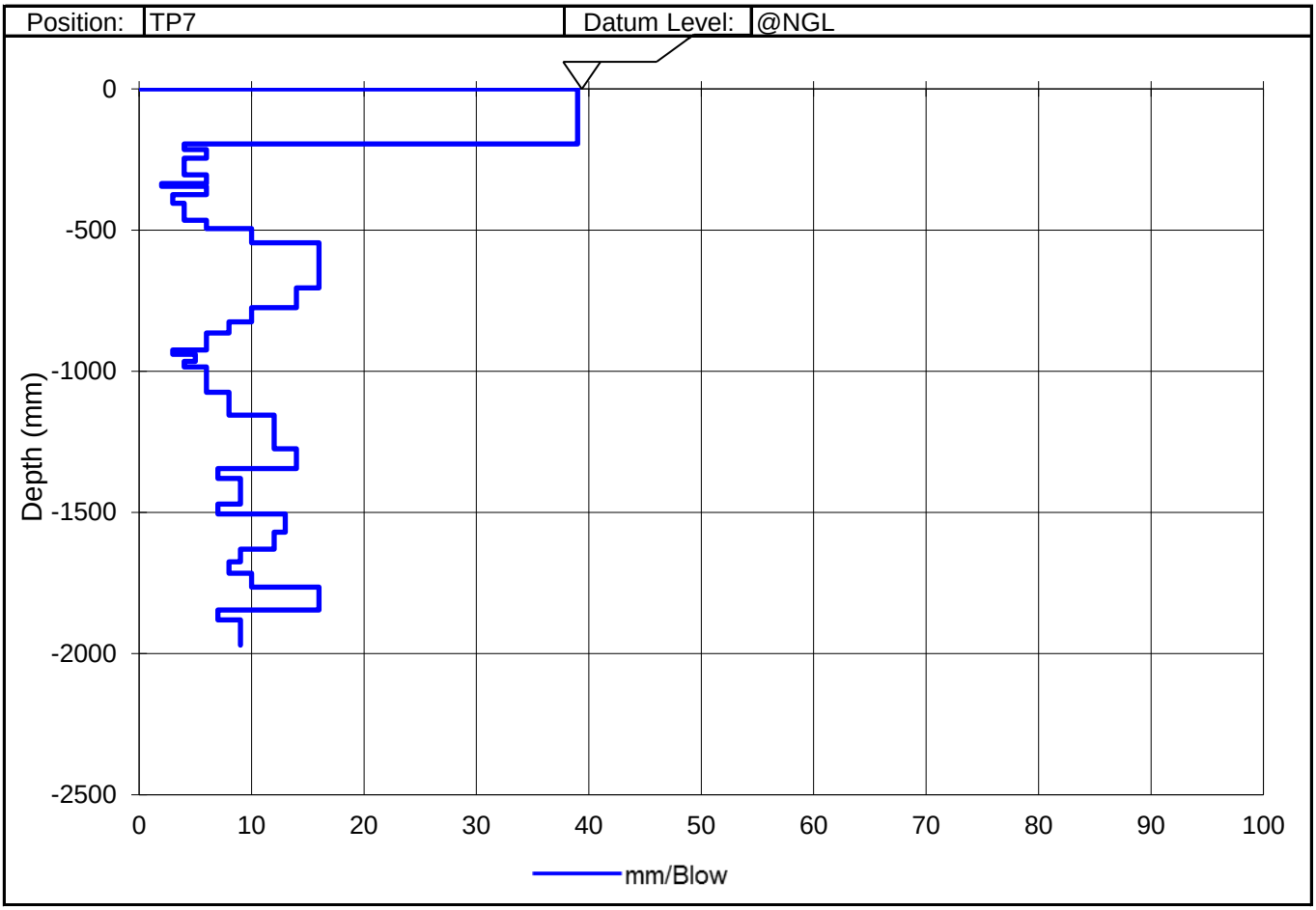
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TEST REPORT

DYNAMIC CONE PENETROMETER (DCP) - (TMH 6 Method ST6)

Position: TP7 Datum Level: @NGL



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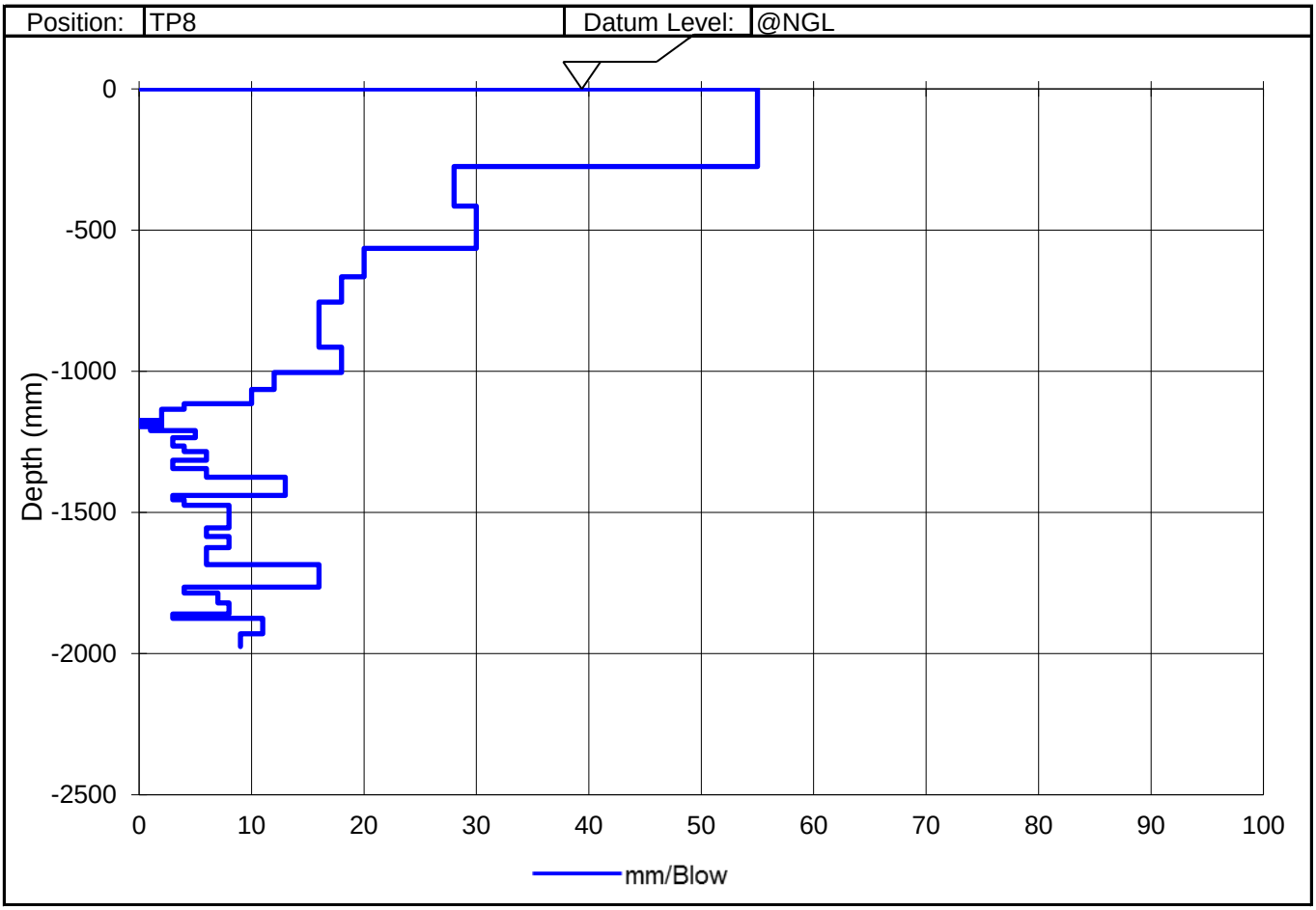
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TEST REPORT

DYNAMIC CONE PENETROMETER (DCP) - (TMH 6 Method ST6)

Position:	TP8	Datum Level:	@NGL



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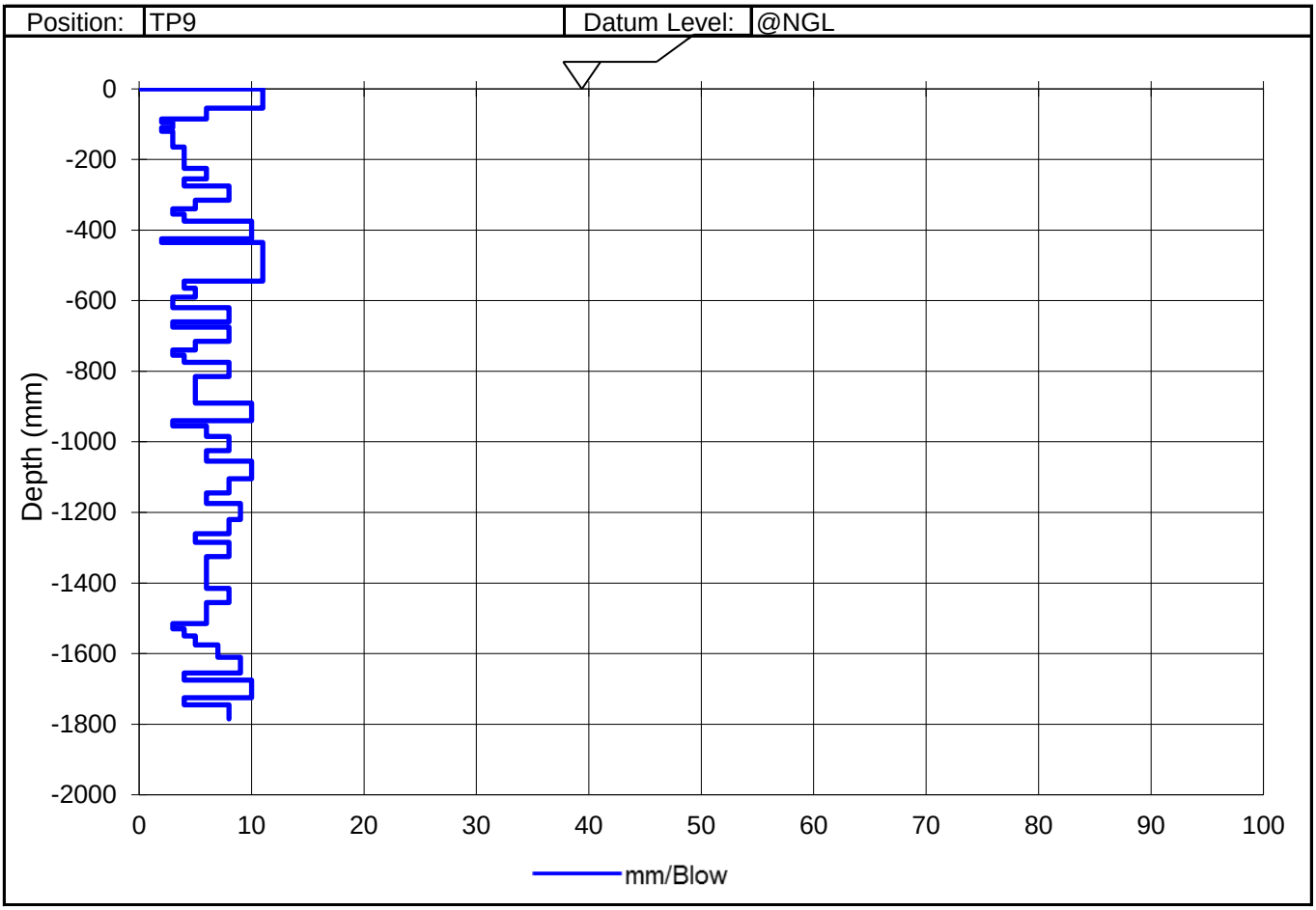
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TEST REPORT

DYNAMIC CONE PENETROMETER (DCP) - (TMH 6 Method ST6)

Position: TP9 Datum Level: @NGL



Notes:

Llewelyn Heathcote
Technical Signatory
For Outeniqua Lab (Pty) Ltd.

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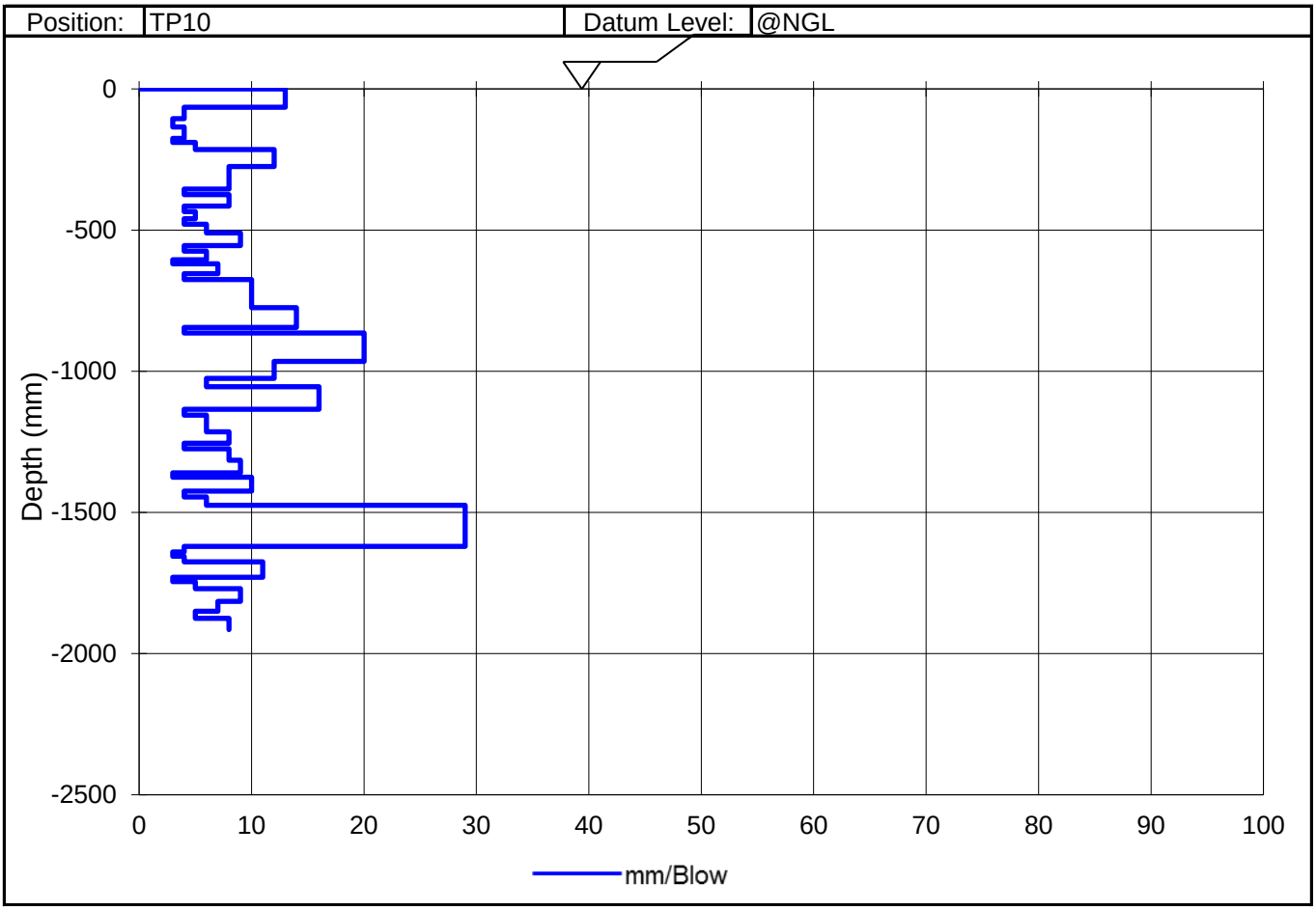
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		Date Received :	25/06/24
		Date Reported :	06/08/24
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TEST REPORT

DYNAMIC CONE PENETROMETER (DCP) - (TMH 6 Method ST6)

Position: TP10 Datum Level: @NGL



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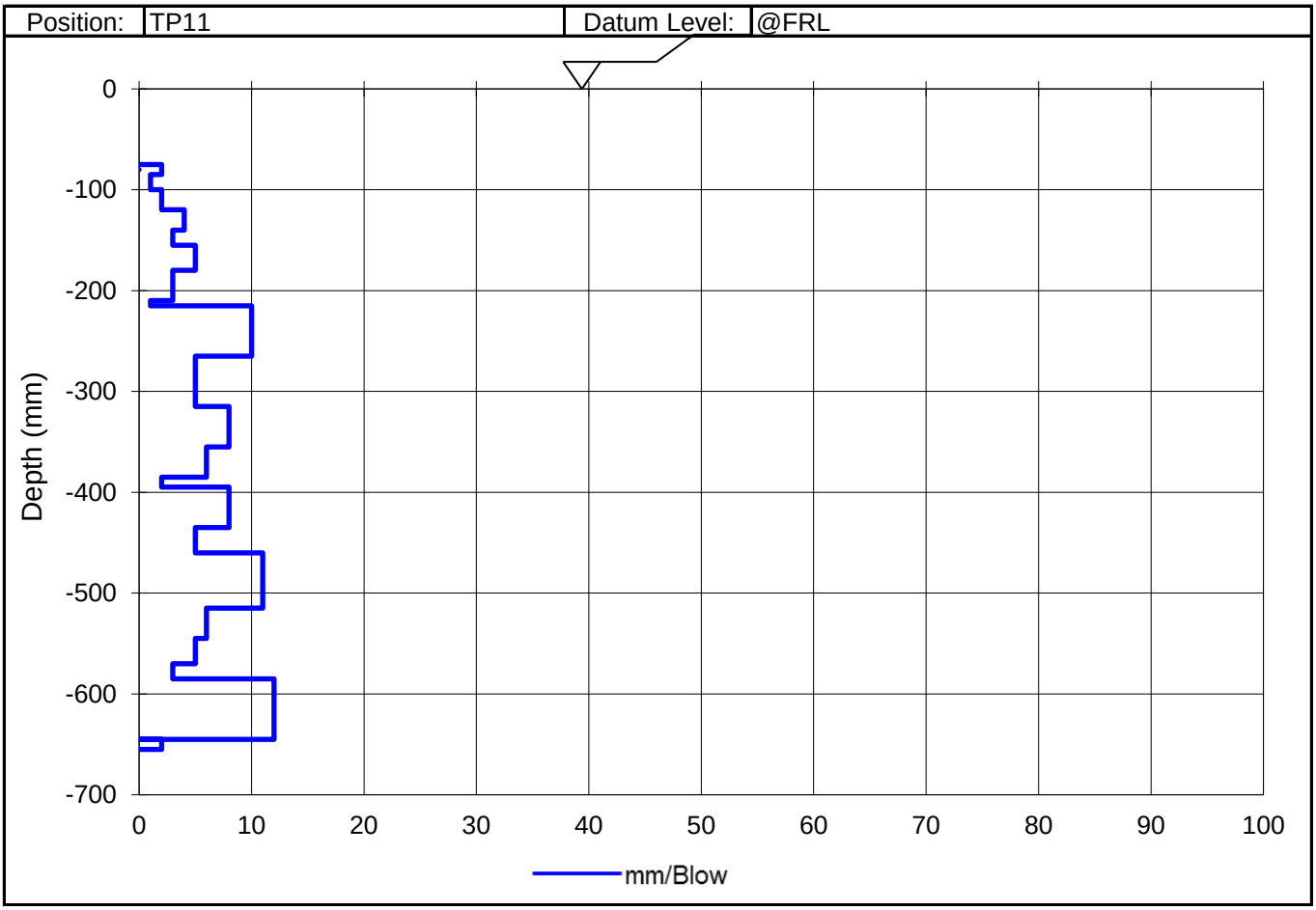
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TEST REPORT

DYNAMIC CONE PENETROMETER (DCP) - (TMH 6 Method ST6)

Position: TP11 Datum Level: @FRL



Notes:

- **The DCP test was started 80mm below the Datum Level.**

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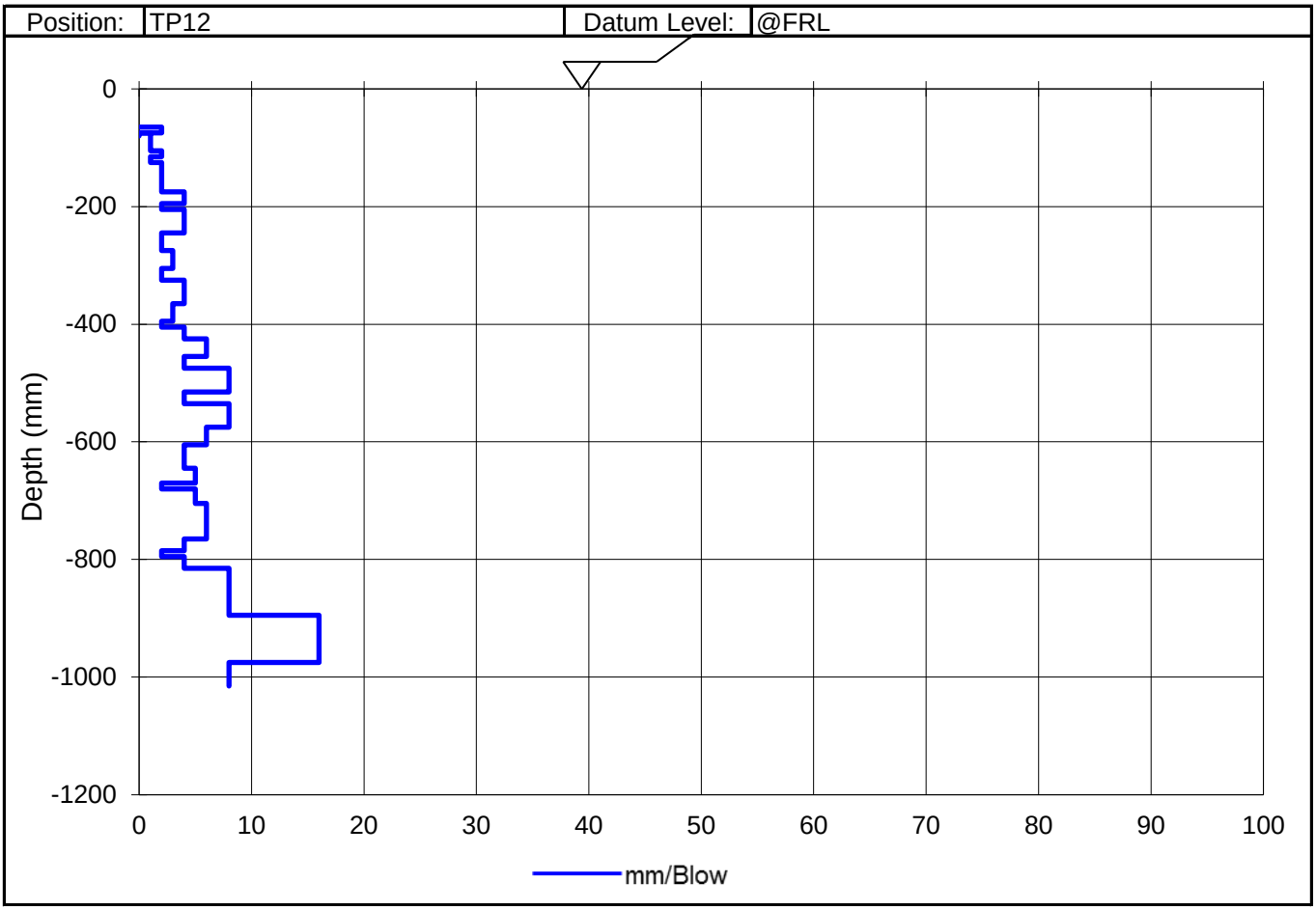
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TEST REPORT

DYNAMIC CONE PENETROMETER (DCP) - (TMH 6 Method ST6)

Position: TP12 Datum Level: @FRL



Notes:

- **The DCP test was started 80mm below the Datum Level.**

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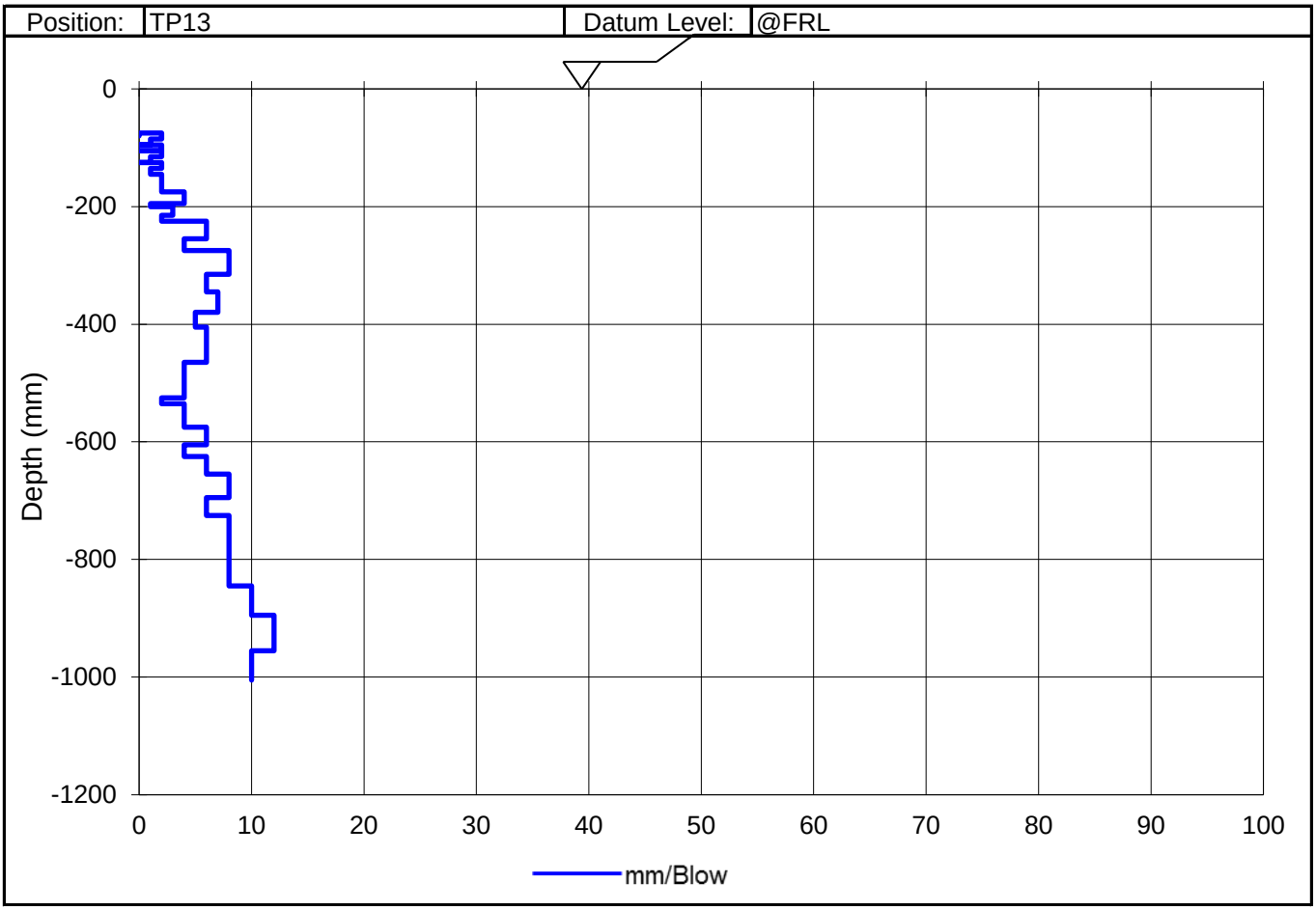
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TEST REPORT

DYNAMIC CONE PENETROMETER (DCP) - (TMH 6 Method ST6)

Position: TP13 Datum Level: @FRL



Notes:

- **The DCP test was started 80mm below the Datum Level.**

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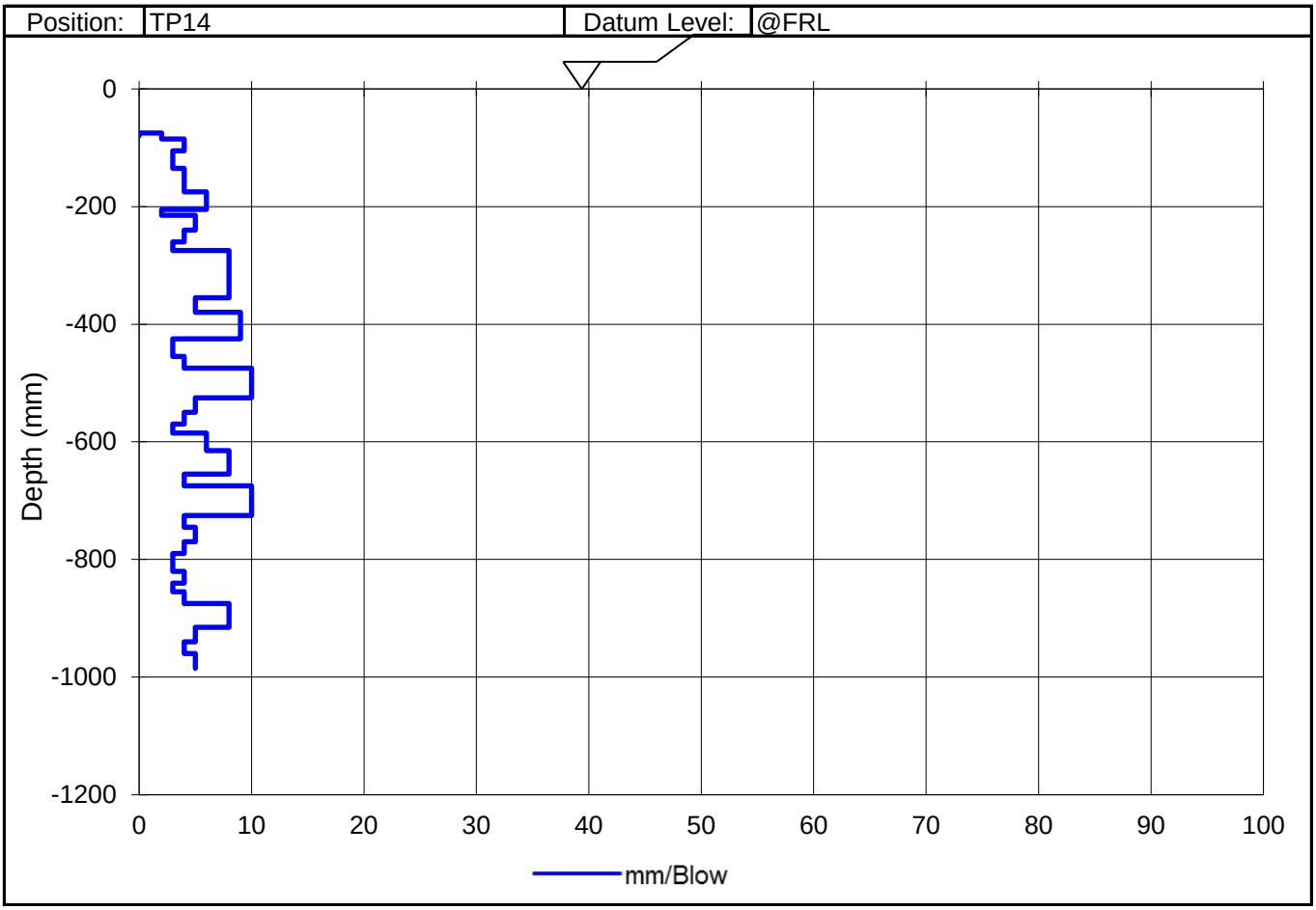
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TEST REPORT

DYNAMIC CONE PENETROMETER (DCP) - (TMH 6 Method ST6)

Position: TP14 Datum Level: @FRL



Notes:

- **The DCP test was started 80mm below the Datum Level.**

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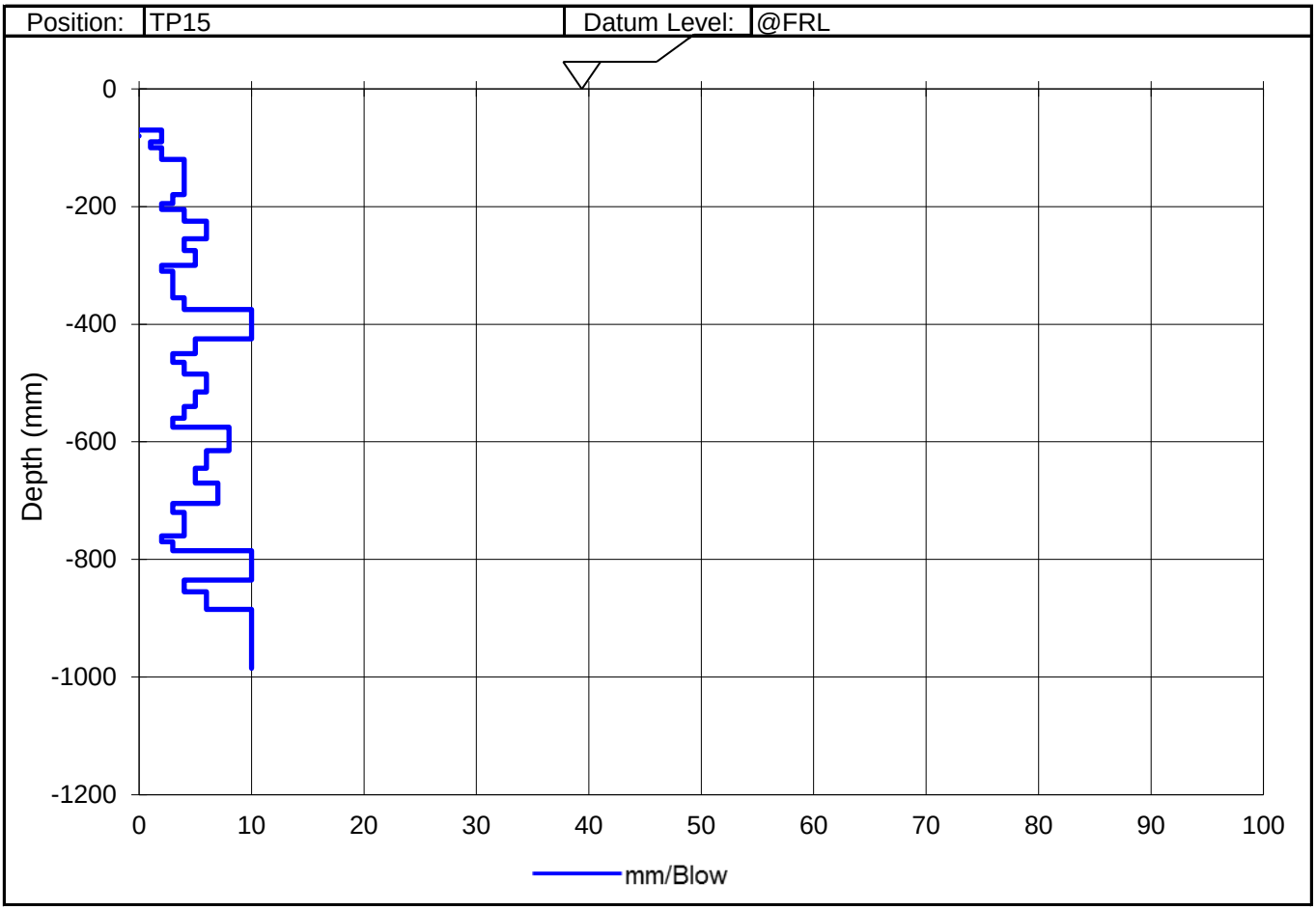
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TEST REPORT

DYNAMIC CONE PENETROMETER (DCP) - (TMH 6 Method ST6)

Position:	TP15	Datum Level:	@FRL



Notes:

- **The DCP test was started 80mm below the Datum Level.**

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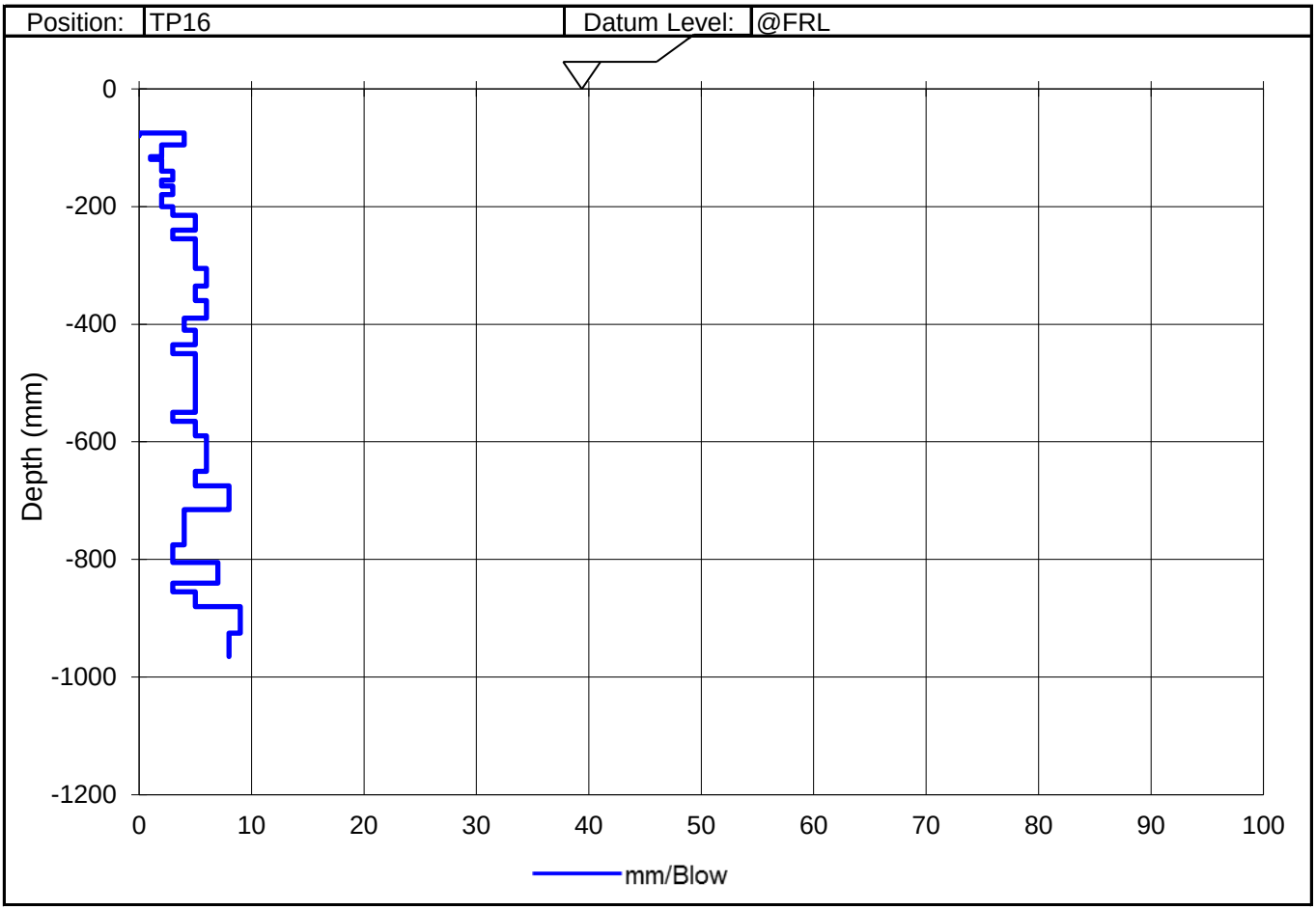
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TEST REPORT

DYNAMIC CONE PENETROMETER (DCP) - (TMH 6 Method ST6)

Position:	TP16	Datum Level:	@FRL



Notes:

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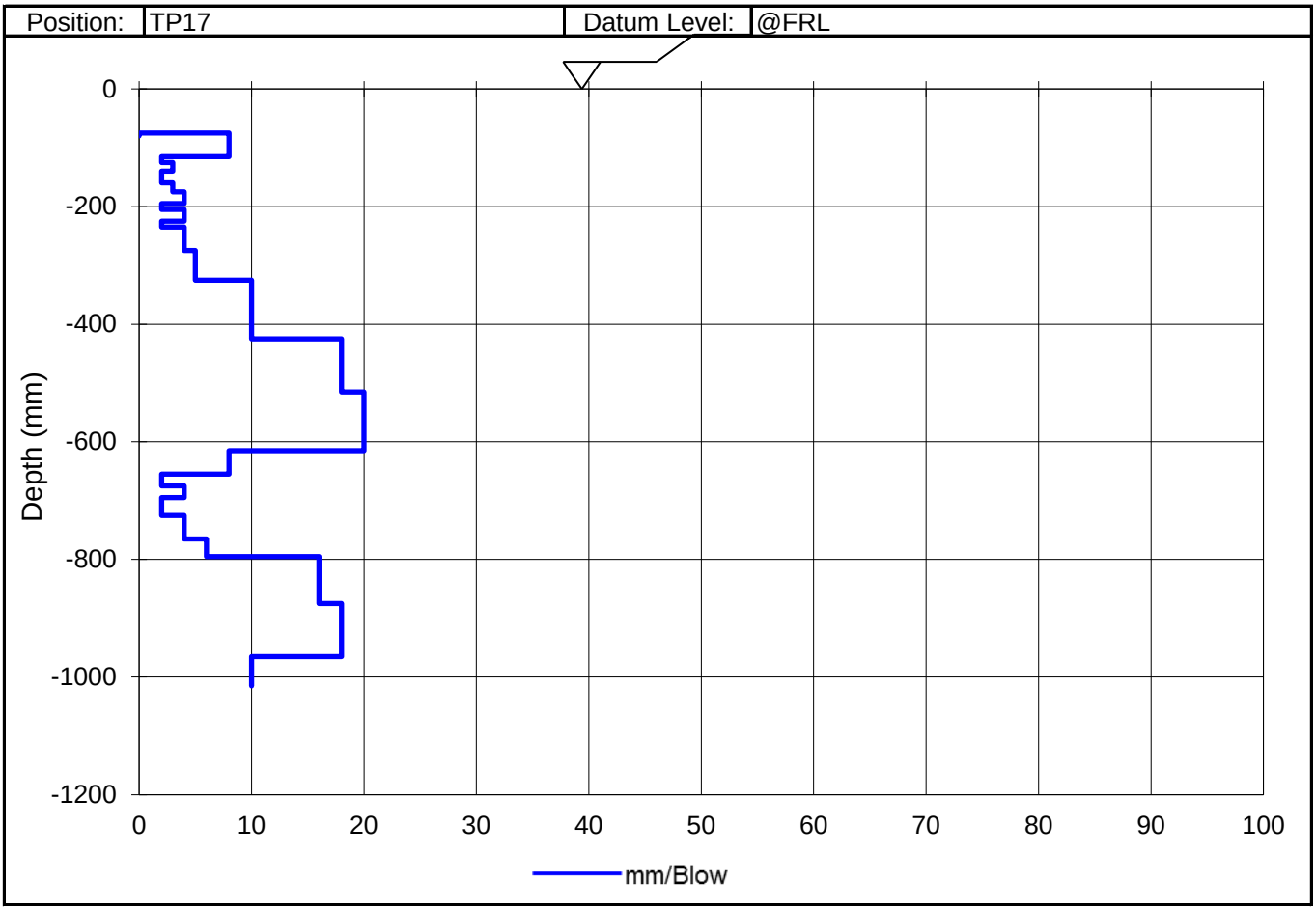
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TEST REPORT

DYNAMIC CONE PENETROMETER (DCP) - (TMH 6 Method ST6)

Position: TP17 Datum Level: @FRL



Notes:

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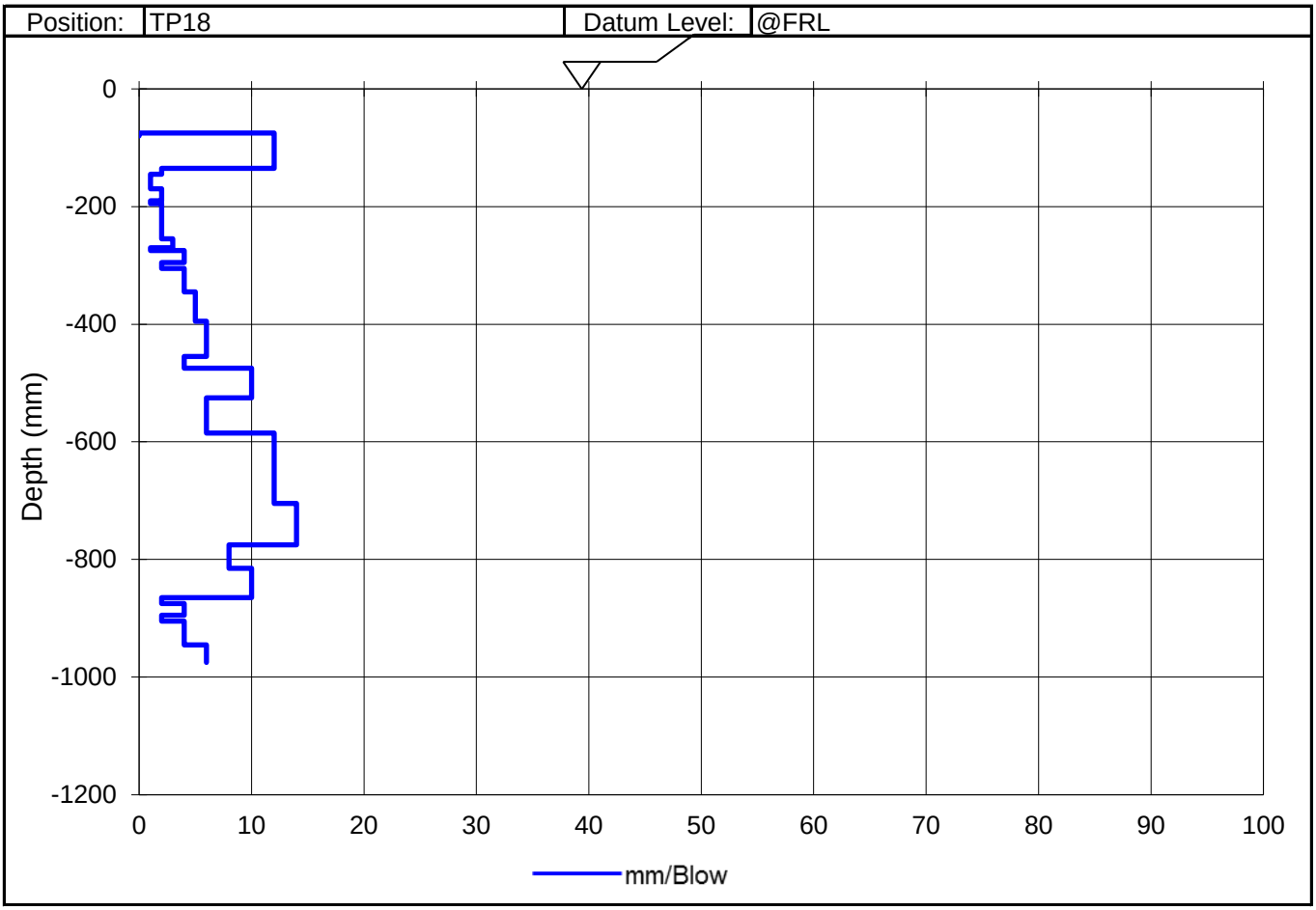
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TEST REPORT

DYNAMIC CONE PENETROMETER (DCP) - (TMH 6 Method ST6)

Position: TP18 Datum Level: @FRL



Notes:

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