ACORN VALLEY SUBDIVISION

DORCHESTER
MUNICIPALITY OF THAMES CENTRE
COUNTY OF MIDDLESEX

STORMWATER MANAGEMENT REPORT

CJDL
Consulting Engineers

18010
08 January 2026

EXECUTIVE SUMMARY

The enclosed stormwater management report is prepared in support of the Draft Plan of Subdivision, Official Plan Amendment and Zoning By-Law Amendment applications for the Acorn Valley Subdivision development in the community of Dorchester. This stormwater management report proposes a practical stormwater management design. The following is a summary of the findings presented within the report:

i. The Acorn Valley Subdivision lands are located within the Community of Dorchester, in the Municipality of Thames Centre, in the County of Middlesex. The subject site is within the Upper Thames Conservation Authority (UTRCA) regulation area. The area proposed for draft plan approval is 44.28ha and is located on the north and south side of the existing untraveled Christie Drive right-of-way (ROW). The area to be developed south of Christie Drive is part of a larger parcel, but only a portion is proposed with the current Draft Plan of Subdivision. The remaining lands to the south are referred to as the Harris Road lands.

ii. The Acorn Valley Subdivision lands are tributary to four pre-development stormwater outlets;
    a. Rath-Harris Municipal Drain & Southeasterly Ravine
    b. Northerly Wetland (Tamarack Swamp) – Provincially Significant
    c. Shaw Municipal Drain
    d. Westerly Wetland – Locally Significant

iii. The majority of the post-development flows from the development and the existing Christie Drive ROW will be directed towards a proposed stormwater management wet pond in the southeast corner of the site. The proposed SWM pond will discharge to the existing ravine directly adjacent to the southeast corner of the property. This ravine is ultimately tributary to Mill Pond, approx. 350m east of the subject site.

iv. Loss of groundwater recharge for the site under post-development conditions will be mitigated through the implementation of the central open channel to encourage surface contact area and subsequently infiltration, as well as the grassed rear yards of future lots at the north limit of the site that will offer direct sheet flow to the northerly wetland.

v. The stormwater management facility (SWMF) has been designed in accordance with the Stormwater Management Planning and Design Manual (MECP, 2003) and the Municipality of Thames Centre Engineering Design Standards (2023). The proposed wet pond will provide enhanced (80% TSS removal) quality control and will restrict post-development outflows to pre-development levels to the southeasterly ravine up to 250-year design storm. The proposed SWMF design will drain the 25.4mm – 4hr quality storm event over a minimum period of 24 hours.

vi. All four stormwater outlets for the site will experience equal to or less than pre-development peak outflows under post-development conditions, apart from a slight excess for the 2 to 25-year storm event to the Tamarack Swamp, but consist of only grassed rear yard drainage that is considered acceptable to ensure surface water recharge to the Swamp is approximately consistent to pre-development levels for larger major storm events.

vii. Vegetative plantings will be provided along the pond banks and surrounding areas to provide erosion and scouring protection. Native species will be selected to compliment the surrounding ecological communities, including grasses, bushes and trees in strategic locations to provide habitat enhancement within the SWMF.

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STORMWATER MANAGEMENT REPORT

1. INTRODUCTION

The Acorn Valley Subdivision, hereafter referred to as the subject site, is approximately 44.28ha (109.4 ac.) in size and consists of two parcels separated by an untraveled road allowance (Christie Drive). The site is within the Dorchester Settlement Area in the Municipality of Thames Centre in the County of Middlesex, and is municipally known as 83 Christie Drive. Doug Tarry Developments (DTD) has proposed to develop the site as a residential subdivision consisting of low, medium and high-density built forms.

The portion of the site north of Christie Drive is 22.70ha (56.1 ac.). The portion of the development south of Christie Drive is part of a larger parcel that is 68.24ha (168.6 ac.), but only 21.58ha (53.3 ac.) of this southerly parcel is included within the Acorn Valley Subdivision. The remaining 46.66ha (115.3 ac.), hereafter referred to as the Harris Road lands, may be developed in the future, but will be required to undergo future planning applications. The stormwater management design within this report has consideration for the Harris Road lands being developed in the future, but does not provide a full stormwater management plan for this potential future development. A subsequent stormwater management report will be required in the future upon development of the Harris Road lands.

The northerly portion of the Acorn Valley Subdivision is legally described as Part 1 of Plan 33R-21574, Part of Lot 19 and 20, Concession A, South of the River Thames, Geographic Township of North Dorchester, Municipality of Thames Centre, County of Middlesex. The southerly portion of the site is legally described as Part 1 of Plan 33R-21717, Part of Lots 19 and 20, Concession B, South of the River Thames, Geographic Township of North Dorchester, Municipality of Thames Centre, County of Middlesex.

The entirety of the Acorn Valley Subdivision (46.2ha incl. Christie Drive ROW) is within the Dorchester Settlement Area and is designated residential in the Thames Centre Official Plan. A portion of the Harris Road lands to the south are outside of the Dorchester Settlement Area, and are currently designated agricultural. The Acorn Valley lands are zoned Future Development (FD) and Environmental Protection (EP) in the Thames Centre Zoning By-Law. The subject site is also within the regulation area of the Upper Thames Conservation Authority (UTRCA).

The Acorn Valley Subdivision is bounded by a Provincially Significant Wetland to the north (Tamarack Swamp) and existing residential to the east on Wheeler Avenue. The southerly boundary of the site abuts existing agricultural, residential and an existing ravine containing a locally significant wetland. West of the site is Harris Road and existing agricultural and residential usages, as well as a locally significant wetland. Mill Pond is located approximately 350m east of the site. There is an adjacent residential development to the south/east, referred to as the Boardwalk Development, which has draft approval for 500 freehold lots and 80 medium-density units on the east and west side of Mill Road.

Construction of the Boardwalk Development is partially completed on the east side of Mill Road with approx. 160 homes built to date.

There are two municipal drains in proximity to the Acorn Valley Subdivision. The Rath-Harris Drain (1989) is approximately 300m south of the south Subdivision limit, and crosses the Harris Road lands. The Rath-Harris Drain outlets to the existing ravine abutting the southeast limit of the Subdivision, which carries flows northeast to Mill Pond. The Shaw Drain (1977) is approximately 100m west of the proposed development and outlets to an existing flow path that carries flows north to the Thames River.

The Acorn Valley Subdivision development is proposed to consist of 214 freehold lots (147 single-detached, 46 semi-detached, 21 townhome units) and 1 high-density block (393 units - 100 units/ha), for a potential 605 residential units. This stormwater management report has conservatively carried a density of 150 units/ha for the high-density block, yielding 589 high-density units and a potential 803 total units in the stormwater design. The proposed Draft Plan of Subdivision also provides for a northerly development block (30 units/ha maximum) for a potential 540 future units. One SWM pond block is proposed in the southeast corner of the site, an open space block is proposed north of Christie Drive for a proposed open-channel and multi-use trail. Additional open space blocks are proposed for natural heritage, multi-use trails and parkland usages.

The Subdivision is proposed to be developed in multiple phases, with Phase 1 including Christie Drive, Street 'B', the proposed SWM pond and open channel, high-density block 175, and abutting residential lots and parkland. Subsequent phases may be subject to change in the future but are generally shown within Figure 1 appended to this report.

The purpose of this Stormwater Management Report is to provide an overview of the proposed Acorn Valley Subdivision stormwater management design in support of the Draft Plan of Subdivision (DPA), Zoning By-Law Amendment (ZBA), and Official Plan Amendment (OPA) applications for the property.

2. STORMWATER MANAGEMENT PLAN (SWMP) DESIGN REVIEW

2.1. Best Practice Overview

The proposed SWM design for the Acorn Valley Subdivision closely follows the recommended SWM practices and requirements in the Stormwater Management Planning and Design manual (MECP, 2003), the Engineering Design Standards of the Municipality of Thames Centre (2023), and the Environmental Planning Policy Manual of the Upper Thames Region Conservation Authority (UTRCA) (2017) to ensure that;

- Groundwater and baseflow characteristics are preserved;
- Water quality will be protected;
- Receiving watercourses will not undergo undesirable and costly geomorphic change;
- There will not be any increase in flood damage potential, and ultimately;
- That an appropriate diversity of aquatic life and opportunities for human uses will be maintained.

Controls are not required to restrict 250-year storms under the Thames Centre Engineering Standards, but are required under the UTRCA Environmental Planning Policy Manual. The stormwater conveyance design will allow for minor ponding to occur during some major storm events within local street right-of-ways with a maximum depth of 300mm.

2.2. Hydraulic Modelling Design Overview

A detailed hydraulic analysis of the pre- and post-development conditions were completed using Autodesk ® Storm and Sanitary Analysis (SSA) 2024. The following options were selected;

- Single Event Analysis
- Design Model Storms – 24-hr SCS Type II Distribution Based on Thames Centre Engineering Design Standards (2023)
- Subbasin Hydrograph Method – EPA SWMM
- Infiltration Method – SCS Curve Number
- Link Routing method – Hydrodynamic

All design storms are based on IDF parameters provided within the Thames Centre Engineering Design Standards (2023). A 24-hour SCS Type II storm distribution was used for all design storms due to the large, rural catchment area. The synthetic 25mm event was modelled using a 4-hour storm duration.

All models were run for a minimum duration of 48 hours to ensure steady state conditions were achieved after the 24-hour storm event.

Table 1 IDF Design Storm Parameters

	25mm (Quality Storm)	2-Year	5-Year	10-Year	25-Year	50-Year	100-Year	250-Year (Regional Storm)
a	538.85	1290.00	1183.74	1574.382	2019.372	2270.665	2619.363	3048.22
b	6.331	8.500	7.641	9.025	9.824	9.984	10.500	10.030
c	0.809	0.860	0.838	0.860	0.875	0.876	0.884	0.888

Complete pre- and post-development SSA modelling results have been included in Appendix 'C', which outlines a detailed description of all input parameters, output results and modelling schematics.

3. PRE-DEVELOPMENT CONDITIONS

The Acorn Valley Subdivision has a rolling topography with contours ranging from 254.00 – 267.00±m with localized ravine contours extending down to 251.00±m.

The Acorn Valley development has four (4) main surface drainage outlet locations under pre-development conditions, as shown in the Pre-Development Stormwater Tributaries Figure appended to this report. The stormwater outlet locations are as follows;

1) Rath-Harris Drain & Southeast Ravine/Wetland
2) Northerly Wetland (Tamarack Swamp)
3) Shaw Drain
4) Westerly Wetland

The majority of the property is defined by a north-south drainage divide where flows east of this peak fall towards the Rath-Harris Drain and existing ravine/wetland to the southeast. Flows west of the divide either fall to the northerly wetland (Tamarack Swamp), the westerly wetland, or the Shaw Drain/westerly flow path.

3.1. Rath-Harris Drain & Southeasterly Ravine/Wetland

The Rath-Harris Municipal Drain – Main Branch is approximately 1.5km long and consists of 600mmø – 750mmø concrete pipe, starting at Donnybrook Drive flowing northeast across Harris Road and the Harris Road lands before outletting to the existing southeasterly ravine upstream of the Acorn Valley Subdivision lands (W.J. Bartlett & Associates Ltd., 1989). There are four (4) branches of the Rath-Harris Drain (Branch A, Branch B, Branch C and Branch D) which convey flows to the Main Branch. This municipal drain serves a tributary of approximately 153.6ha, of which the Acorn Valley Subdivision is not tributary (upstream of site). There is approx. 29.0ha of the Harris Road lands that are tributary to the Rath-Harris Drain, but are proposed to remain under pre-development conditions with the proposed Acorn Valley Subdivision. The Rath-Harris Drain outlets to the southeasterly ravine/wetland.

The southeast ravine/locally significant wetland, that the Rath-Harris Drain discharges to, serves a total tributary of 201.4ha for minor storms, which consists of the Rath-Harris Drain tributary, the southeast portion of the Acorn Valley Subdivision and a small portion of the Boardwalk Development proposed to remain undeveloped at this time. The easterly adjacent Tiner Estates subdivision consisting of Wheeler Ave., Tiner Ave., and Mill Road has municipal storm sewers to provide drainage during minor storms, but under major storm events, this additional 7.9ha area flows along the roadways into the Acorn Valley lands and eventually to the southeast ravine/wetland. In the southeast corner of the Acorn Valley property, there is an existing irrigation pond, which is currently on-line within the southeasterly ravine.

The land tributary to the southeast ravine consists of mainly agricultural land usage, but does include a residential-industrial Subdivision (Silvermoon Subdivision) and existing residential lots on Donnybrook Drive to the south. It is understood there is an approved draft plan of subdivision for an expansion to the residential-industrial development on Donnybrook Drive, but stormwater management quantity controls are proposed to restrict post-development peak flows to pre-development levels.

The table below provides a summary of the areas tributary to the Rath-Harris Drain & southeasterly ravine in accordance with the Pre-Development Stormwater Tributaries Figure appended to this report.

Table 2 Rath-Harris Drain & Southeast Ravine Pre-Development Catchments

	Acorn Valley Subdivision Lands		Harris Road Lands		External Lands		TOTAL
	Area (ha)	%	Area (ha)	%	Area (ha)	%	Area (ha)
Rath-Harris Municipal Drain	-	-	29.00	18.9 %	124.63	81.1 %	153.63
Southeast Ravine (Minor Storm)	23.95	11.9 %	34.60	17.2 %	142.81	70.9 %	201.36
Southeast Ravine (Major Storm)	23.95	11.4 %	34.60	16.5 %	150.67	72.1 %	209.22

The pre-development peak outflows to the southeast ravine are shown in the table below. These results are based on an SCS Type II storm distribution using the Thames Centre Design Storms from the Municipality's Engineering Design Standards (2023).

Table 3 Southeast Ravine Pre-Development Peak Outflows

Design Storm	Southeast Ravine Pre-Development Peak Outflow (m^3/s)
25.4mm – 4 Hour (Quality)	1.33
2-Year	2.51
5-Year	2.90
10-Year	3.74
25-Year	5.01
50-Year	6.39
100-Year	7.73
250-Year (Regional)	10.20

Post-development outflows to this location will need to be restricted to the above pre-development levels after build-out of the Acorn Valley Subdivision. Detailed Autodesk ® Storm and Sanitary Analysis (SSA) modelling results are provided in Appendix 'C'.

3.2. Northerly Wetland (Tamarack Swamp)

The northerly wetland, referred to as the Tamarack Swamp, is approximately 17.89ha in size and is considered a Provincially Significant Wetland (PSW). The Tamarack Swamp lies at the bottom of an embankment 5 - 6±m lower than the Acorn Valley site. The north limit of the Acorn Valley Subdivision (8.64ha) is tributary to the Tamarack Swamp, as well as 0.12ha of external inflow through the subject lands from easterly adjacent rear yards on Wheeler Avenue. The northerly portion of the site tributary to the Tamarack Swamp consists of agricultural land usage.

The pre-development peak outflows to the Tamarack Swamp are provided in the table below. Post-Development outflows from the Acorn Valley Subdivision will be required to approximately match pre-development conditions, to ensure there is sufficient surface water recharge to the northerly wetland.

Table 4 Northerly Wetland (Tamarack Swamp) Pre-Development Peak Outflows

Design Storm	Northerly Wetland Pre-Development Peak Outflow (m^3/s)
25.4mm – 4 Hour (Quality)	0.05
2-Year	0.09
5-Year	0.11
10-Year	0.17
25-Year	0.26
50-Year	0.37
100-Year	0.47
250-Year (Regional)	0.65

3.3. Shaw Drain

The Shaw Municipal Drain is a closed/tiled drain that is approx. 9km long, starting north of Donnybrook Drive and flowing northeast before crossing Harris Road and changing to an open drain that continues north for 1.5km before outletting to the Thames River north of Hamilton Road (H.M. Gibson & Associates Ltd., 1977). There are two (2) branches of the Shaw Drain (Branch A and Branch B) that convey flows to the Main Drain.

There is 9.03ha at the west limit of the Acorn Valley Subdivision that is tributary to an existing irrigation pond, which outlets to the Shaw Drain open portion, as well as the west limit of the untraveled Christie Drive ROW (0.66ha), for a total drainage area of 9.69ha. This westerly portion of the subject site is entirely agricultural land usage.

There is an additional 4.24ha of the subject site which drains towards the locally significant wetland to the west. This wetland outlets to the north towards the Shaw Drain open portion.

The pre-development peak outflows from the westerly 9.03ha of the site directly tributary to the Shaw Drain are listed below. The post-development peak outflows from the site will need to be limited to the pre-development peak flows provided.

Table 5 Shaw Drain Pre-Development Peak Outflows

Design Storm	Shaw Drain Pre-Development Peak Outflow (m^3/s)
25.4mm – 4 Hour (Quality)	0.05
2-Year	0.07
5-Year	0.09
10-Year	0.12
25-Year	0.18
50-Year	0.25
100-Year	0.31
250-Year (Regional)	0.43

3.4. Westerly Wetland

The westerly wetland is considered locally/regionally significant and is approx. 5.8ha in size. This wetland lies approximately 5 - 10±m lower than the west limit of the Acorn Valley Subdivision, but is approximately 1m lower than the west extension of the Christie Drive roadway. As mentioned above, there is 4.24ha on the west limit of the Acorn Valley Subdivision that is tributary to the westerly wetland, which is mostly agricultural usage with some woodlands.

This westerly wetland ultimately outlets to the Shaw Drain further north, but to more accurately evaluate site outflows, it has been considered as a separate outlet. The pre-development peak outflows to the westerly wetland are provided in the table below. Detailed SSA modelling results are included in Appendix 'C' for reference.

Table 6 Westerly Wetland Pre-Development Peak Outflows

Design Storm	Westerly Wetland Pre-Development Peak Outflow (m^3/s)
25.4mm – 4 Hour (Quality)	0.06
2-Year	0.09
5-Year	0.10
10-Year	0.12
25-Year	0.16
50-Year	0.19
100-Year	0.23
250-Year (Regional)	0.30

3.5. Pre-Development Summary

The Acorn Valley Subdivision property is 44.28ha in area, with an additional 1.90ha from the untraveled Christie Drive right-of-way that will be incorporated into this development. A summary of the pre-development drainage split for the site is provided in the table below.

Table 7 Acorn Valley Pre-Development Drainage Area Summary

	Acorn Valley Subdivision				
	Area (ha)	Area %	Runoff Coefficient (C)	% Impervious	Curve Number (CN)
Rath-Harris Drain & Southeasterly Ravine	23.65	51.2 %	0.20	2 %	67
Northerly Wetland (Tamarack Swamp)	8.64	18.7 %	0.20	2 %	67
Shaw Drain	9.69	21.0 %	0.20	2 %	67
Westerly Wetland	4.20	9.1 %	0.20	2 %	67
TOTAL	46.18	100.0 %	0.20	2 %	67

Further to the above drainage area summary, the table below summarizes the pre-development peak outflows to the various site outlets. Post-development peak outflows from the site will need to restrict flows to pre-development levels.

Table 8 Pre-Development Peak Outflow Summary

	Pre-Development Peak Outflow (m^3/s)							
	25.4mm – 4 Hour (Quality)	2-Year	5-Year	10-Year	25-Year	50-Year	100-Year	250-Year (Regional)
Rath-Harris Drain & Southeasterly Ravine	1.33	2.51	2.90	3.74	5.01	6.39	7.73	10.20
Northerly Wetland (Tamarack Swamp)	0.05	0.09	0.11	0.17	0.26	0.37	0.47	0.65
Shaw Drain	0.05	0.07	0.09	0.12	0.18	0.25	0.31	0.43
Westerly Wetland	0.06	0.09	0.10	0.12	0.16	0.19	0.23	0.30

4. POST-DEVELOPMENT CONDITIONS

4.1. Stormwater Management System Overview

Under post-development conditions, the majority of runoff from the Acorn Valley Subdivision is proposed to be routed towards one stormwater management wet pond in the southeast corner of the site. The wet pond will provide enhanced (80% TSS removal) quality control and full quantity control up to the 250-year design storm. The wet pond will outlet to the existing ravine adjacent to the southeast corner of the site, downstream of the limit of the Rath-Harris Drain.

An open channel is proposed on the north side of Christie Drive to act as a stormwater conveyance feature that will encourage infiltration to supplement groundwater recharge efforts. The open channel will receive inflows from the northwesterly portion of the site, as well as adjacent rear yards (7.5ha estimated, to be confirmed upon development of northern block), and will convey flows easterly across the property, where flows will enter the storm sewer system for release into the wet pond. The open channel is designed with a low-flow channel to handle the 25.4mm – 4 hour quality storm event, and an upper channel to handle up to the 250-year design storm.

The easterly adjacent residential subdivision consisting of Wheeler Ave., Tiner Ave., and Mill Road has municipal storm sewers to provide drainage during minor storms, but under major storm events, this additional 7.9ha area flows along the roadways into the Acorn Valley lands and eventually to the southeast ravine. The proposed wet pond will convey these additional major flows through the SWM facility.

Under post-development conditions, the proposed wet pond will serve a total tributary area of 45.6ha during minor storm events, of which 42.6ha is within the site limits, and 3.0ha is external (from the easterly adjacent subdivision and potential future development on the lands south of Street ‘B’/east of Street ‘C’ and a portion of the Harris Road lands south of Street ‘C’ & ‘D’). During major storm events, the total pond tributary area is 54.3ha, as shown in the enclosed Post-Development Storm Drainage System and Areas Figure.

The northerly wetland will receive surface water inflows from the rear yards of lots adjacent to the wetland (2.28ha estimated, to be confirmed upon development of northern block), as well as the existing easterly rear yards that flow through the site (0.12ha), providing a total estimated post-development drainage area of 2.40ha.

Post-development flows westerly to the Shaw Drain will be limited to major flows from the Christie Drive roadway extension at the west limit of the site (0.75ha). Under minor storm events all flow from the west side of the site will be routed towards the proposed wet pond.

The westerly wetland will only receive drainage from the Acorn Valley lands through 0.42ha of adjacent rear yards, at the south limit of Street 'D'.

The proposed high-density block will have all storm drainage routed towards the proposed wet pond.

The table below summarizes the post-development drainage areas to each respective site outlet. The areas below are based on minor storm drainage areas. The only change for major storms is 0.75ha of runoff from the west end of the Christie Drive roadway, which is tributary in major storms to the Shaw Drain tributary. Tributaries for the northern development blocks will potentially be refined upon build-out of that portion of the site in the future.

Table 9 Acorn Valley Post-Development Drainage Area Summary

	Acorn Valley Subdivision				
	Area (ha)	Area %	Runoff Coefficient (C)	% Impervious	Curve Number (CN)
Rath-Harris Drain & Southeasterly Ravine	43.48	94.2 %	0.60	55 %	76
Northerly Wetland (Tamarack Swamp)	2.28	4.9 %	0.40	20 %	59
Shaw Drain	0.00	0.00 %	-	-	-
Westerly Wetland	0.42	0.9 %	0.40	20 %	59
TOTAL	46.18	100.0 %	0.59	53 %	75

The proposed stormwater collection system will be sized to accommodate the 2-year design storm with an initial time of concentration of 19.0 minutes, as per the Thames Centre Engineering Design Standards (2023).

Each housing unit will be provided with an individual 150mmø storm PDC.

4.2. Open Channel Design

The proposed open channel on the north side of Christie Drive is approximately 550m in length and has a longitudinal slope of 0.3 – 0.4%. The open channel is a 2-tier design, with a low-flow channel to handle the quality storm event, and an upper channel to handle up to the 250-year design storm. Major flow during the 250-year (Regional) design storm for the north half of the subdivision will be directed towards the proposed open channel, where flows will travel east and will overtop towards Street 'B' and Christie Drive into the SWM pond.

The low-flow channel consists of a 0.6m wide flat-bottom channel with a depth of 0.3m and 3H:1V side slopes. This lower channel will convey the 25.4mm – 4 hour quality storm. The upper channel has a 3.4m wide flat-bottom section, with a total depth of 0.7m and 4H:1V side slopes. The total channel depth is 1.0m with an overall width of 9.0m.

The table below summarizes the post-development peak flows within the open channel at the crossing of Street 'D', the multi-use trail crossing between Street 'D'/'B', and the channel outlet at Street 'B'. All flows are contained within the open channel with a minimum 0.26m freeboard to the top of channel during the 100-year storm event, and 0.12m freeboard during the 250-year storm event, before overtopping onto Street 'B' and into the SWM pond.

Table 10 Open Channel Post-Development Results

Design Storm	Street 'D' Crossing		Multi-Use Trail Crossing		Street 'B' Outlet	
	Peak Flow (m^3/s)	Flow Depth (m)	Peak Flow (m^3/s)	Flow Depth (m)	Peak Flow (m^3/s)	Flow Depth (m)
25.4mm – 4 Hour	0.23	0.34	0.26	0.34	0.26	0.34
2-Year	0.52	0.50	0.54	0.50	0.54	0.50
5-Year	0.56	0.53	0.60	0.53	0.63	0.53
10-Year	0.64	0.56	0.70	0.56	0.70	0.56
25-Year	0.76	0.61	0.79	0.61	0.93	0.61
50-Year	0.87	0.66	0.91	0.66	1.23	0.66
100-Year	0.97	0.70	1.02	0.70	1.34	0.74
250-Year (Regional)	1.12	0.76	1.18	0.76	1.56	0.88

The road centerline of Street 'D' is approximately 1.7m above the bottom of the open channel, and is the overflow point for this upper portion of the channel if the road crossing was blocked. A 1050mmø precast concrete culvert is proposed to convey channel flows underneath Street 'D'. The 1050mmø culvert is able to convey the 250-year (Regional) storm event with 0.83m of upstream ponding, providing 0.87m of freeboard depth before overtopping the roadway and into the next section of the channel further downstream. Autodesk Hydraflow Express was used to model the culvert hydraulics under Regional Storm conditions to verify the headwater conditions and flow levels, as noted above. Please see the results for the Regional Storm event culvert hydraulics in Appendix 'A'.

The centerline of the multi-use trail crossing between Street 'D'/Street 'B' is approximately 1.7m above the bottom of the open channel. A 1200mmø precast concrete culvert is proposed to carry flows below the multi-use trail crossing, which provides 1.0m of freeboard during the 250-year (Regional) storm

event before overtopping the multi-use trail. Autodesk Hydraflow Express results for the Regional Storm event are provided in Appendix 'A'.

The centerline of Street 'B' at the channel outlet is approximately 1.8m above the bottom of the open channel, and is the lowest overflow point for the open channel if the outlet is blocked. The 250-year (Regional) storm event is able to be conveyed through the proposed 1500mmø storm sewer inlet with a flow depth of 0.87m, providing 0.93m of freeboard depth before overtopping the roadway towards the wet pond.

4.3. SWM Pond Design

The stormwater management wet pond is designed to serve a total tributary area of 45.6ha for minor storms, and 53.4ha for major storms (additional 7.9ha major storm inflow from existing subdivision to the east). The pond tributary catchments are summarized in the table below.

Table 11 SWM Pond Tributary Area Summary

		Proposed SWM Pond					
		Area (ha)	Area % (Minor)	Area % (Major)	Runoff Coefficient (C)	% Impervious	Curve Number (CN)
Internal	Open Space	4.57	10.0 %	8.5 %	0.25	5 %	51
	Low-Density Residential	31.82	69.9 %	59.6 %	0.60	55 %	76
	Future Medium-Density Residential	2.27	5.0 %	4.3 %	0.70	65 %	81
	High-Density Residential	3.93	8.6 %	7.4 %	0.80	75 %	86
External (Minor)	Existing Low-Density Residential	1.49	3.3 %	2.8 %	0.55	45 %	71
	Future Low-Density Residential	1.47	3.2 %	2.7 %	0.60	55 %	76
External (Major)	Existing Low-Density Residential	7.86	-	14.7 %	0.55	45 %	71
TOTAL (MINOR)		45.55	100.0 %	-	0.59	52 %	74
TOTAL (MAJOR)		53.41	-	100.0 %	0.58	51%	73

The proposed wet pond consists of a forebay for collection of sediment, before entering the main pond cell. An earthen berm separates the forebay and main pond cell. The top of the berm (Elev. = 254.35m) is set to 0.15m below the permanent water level elevation (Elev. = 254.50m).

The forebay was sized to adhere to Section 4.6.2 of the MECP SWM Planning and Design Manual (2003).

The settling distance required for the forebay is a function of the length-to-width ratio of the forebay, the peak flow rate from the pond during quality storm event, and the settling velocity of the sediment particles (typically 0.0003 m/s) (MECP, 2003). The settling distance required can be expressed by the following equation;

$$\text{Dist} = \sqrt{\frac{rQ_p}{V_s}} \qquad \text{(MECP, 2003)}$$

r = length-to-width ratio of forebay = $\frac{50.0\ m}{6.5\ m}$ = 7.85:1
Q_P = peak flow rate from the pond during the quality storm event = 0.05 m^3/s
V_S = settling velocity of sediment particles = 0.0003 m/s

The resulting settling distance required is 36.2m. The proposed forebay bottom is 51.0m in length, sufficiently exceeding the required settling distance.

The dispersion length required for the forebay is a function of the inlet flowrate (based on 10-year design storm for quantity and quality control facility), the depth of the permanent pool, and the desired outlet velocity from the forebay (0.5 m/s maximum recommended) (MECP, 2003). The dispersion length required can be expressed by the following equation;

$$\text{Dist} = \frac{8Q}{dV_f} \qquad \text{(MECP, 2003)}$$

Q = inlet flowrate (10-year design storm) = 4.71 m^3/s
d = depth of permanent pool in the forebay = 1.50 m
V_f = desired velocity at the forebay outlet = 0.5 m/s

The resulting dispersion length required in the forebay is 50.2m. The proposed forebay bottom is 51.0m in length, meeting the calculated dispersion length requirement.

The minimum forebay bottom width is stated in the MECP SWM Planning and Design Manual to be 1/8th of the forebay length. The proposed forebay bottom length is 51.0m, resulting in a minimum bottom width of 6.4m. The proposed forebay bottom is 6.5m, which satisfies this requirement.

The cleanout frequency of the forebay is required to be a minimum of 10 years (MECP, 2003). Table 6.3 of the MECP SWM Planning and Design Manual indicates a sediment accumulation of 1.7 m^3/ha, annually for a catchment of 52% imperviousness (MECP, 2003). The total pond tributary of 45.6ha results in a sediment accumulation of 77.3 m^3/year. The total forebay permanent pool volume provided is 1,110 m^3, resulting in a cleanout frequency of 14.4 years, which sufficiently exceeds the minimum 10-year requirement.

The permanent pool volume within the SWM pond consists of passive (permanent storage) for quality control purposes. The passive storage volume was determined in accordance with Table 3.2 of the MECP

SWM Planning and Design Manual (2003) based on enhanced (80% TSS removal) quality control. The required passive storage is as follows;

Table 12 SWM Pond Passive Storage

	Tributary Area (Minor Storms)	% Imperviousness	Passive Storage (Table 3.2, MECP 2003)	Total Passive Storage
Permanent Storage	45.55 ha	52 %	141.5 m^3/ha	6,447 m^3

The proposed SWM pond provides 6,460 m^3 of passive storage, which adequately exceeds the required storage (6,447 m^3) as outlined in the table above.

The proposed forebay permanent pool area is 1,350 m^2 and is 20.8% of the overall pond permanent pool area of 6,485 m^2 which is sufficiently below the maximum forebay area of 33% of the overall pond permanent pool, as specified in Table 4.6 of the MECP SWM Planning and Design Manual (2003).

The passive storage within the forebay is 1,110 m^3 and is 17.2% of the overall pond passive storage (6,447 m^3) which adheres to the preferred maximum forebay volume of 20% of the overall pond permanent storage, as specified in Table 4.6 of the MECP SWM Planning and Design Manual (2003).

A 3.5m wide maintenance access/walking trail is proposed to be constructed around the south, east and west sides of the SWM pond. The north side of the pond and a portion of the east are adjacent to roadways (Christie Drive and Street 'B'), which can be utilized for maintenance access.

Pond side slopes will be 7H:1V for 0.5m in height above and below the permanent water level. Side slopes more than 0.5m below the permanent water level will be 4H:1V, with 5H:1V side slopes used above the permanent water level.

The pond outlet structure has been designed to restrict post-development peak outflows to pre-development levels up to the 250-year design storm. The proposed outlet structure will consist of an 1800mm wide x 900mm deep rectangular precast concrete structure. A 1000mmø corrugated metal standpipe complete with a 300mmø pipe connection to the outlet structure is proposed, completed with a stone cone to filter sediment while allowing for water inflow. The 300mmø standpipe connection will be set to the permanent water elevation (254.50m) at the outlet structure. A 170mmø circular outlet orifice will restrict outflows from this standpipe connection for minor storms. An upper weir is proposed to be constructed in the precast outlet structure complete with horizontal grating to mitigate any debris entering the outlet structure. The upper weir will be trapezoidal in shape and consist of a 0.9m wide bottom at an elevation 255.90m and have 1H:4V side slopes. The top of the outlet structure will be set to 256.60m.

The pond outlet structure will drain through a 750mmø outlet pipe releasing to the southeasterly ravine, downstream of the existing on-line pond in the southeast corner of the site. Cable-concrete matting will be used at the storm pipe outlet to create a 0.3m deep plunge pool to protect the existing ravine from erosion.

A 0.25m deep emergency overflow will be provided above the 250-year ponding level, to act as an emergency spillway. This 0.25m deep overflow will be graded across the proposed maintenance

access/walking trail, and will continue down the existing slope to the bottom of the existing on-line pond. The emergency overflow path will be concentrated to contain flows and will be complete with cable-concrete matting to mitigate any erosion concerns.

The proposed outlet structure design allows for a total draw down time of 48 hours for the 25.4mm – 4 Hour Quality storm, with 50% of the pond active storage being dissipated within the first 24 hours.

Complete post-development Autodesk ® Storm and Sanitary Analysis (SSA) modelling results have been included in Appendix 'C'. The table below provides a summary of the modelling results for all storm events for the proposed SWM pond.

Table 13 SWM Pond Post-Development Modelling Results

Design Storm	Controlled Pond Outflow (m^3/s)	Pond Water Level (m)	Pond Emergency Overflow Freeboard (m)	Pond Top of Bank Freeboard (m)
25.4mm – 4 Hour (Quality)	0.05	255.18	1.67	1.92
2-Year	0.12	255.98	0.87	1.12
5-Year	0.17	256.04	0.81	1.06
10-Year	0.29	256.14	0.71	0.96
25-Year	0.49	256.28	0.57	0.82
50-Year	0.75	256.41	0.44	0.69
100-Year	1.00	256.53	0.32	0.57
250-Year (Regional)	1.34	256.70	0.15	0.40

The stage-storage discharge relationship for the proposed SWM pond design is shown on the table below.

Table 14 SWM Pond Stage-Storage Discharge

WATER ELEV. (m)	DEPTH			STORAGE PROVIDED					PEAK DISCHARGE				NOTES
				PASSIVE	ACTIVE								
	PASSIVE (m)	ACTIVE (m)	TOTAL (m)	PERMANENT POOL (m3)	QUALITY (m3)	QUANTITY (m3)	TOTAL ACTIVE (m3)	TOTAL (m3)	ORIFICE (m3/s)	WEIR (m3/s)	TOP OF OUTLET CONTROL STRUCTURE (m3/s)	TOTAL (m3/s)	
253.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-	POND & FOREBAY BOTTOM
254.50	1.50	0.0	1.50	6460	0.0	0.0	0.0	6460	-	-	-	-	TOP OF PERMANENT POOL
255.18	1.50	0.68	2.18	6460	5251	0.0	5251	11711	0.05	0.00	-	0.05	STREAM BANK EROSION / QUALITY STORM
255.98	1.50	1.48	2.98	6460	5251	7861	13112	19572	0.07	0.05	-	0.12	2-YEAR STORM
256.04	1.50	1.54	3.04	6460	5251	8488	13739	20199	0.08	0.09	-	0.17	5-YEAR STORM
256.28	1.50	1.78	3.28	6460	5251	11173	16424	22884	0.08	0.41	-	0.49	25-YEAR STORM
256.53	1.50	2.03	3.53	6460	5251	14153	19404	25864	0.08	0.92	-	1.00	100-YEAR STORM
256.70	1.50	2.20	3.70	6460	5251	14514	19765	26225	0.08	1.01	0.25	1.34	250-YEAR STORM (REGIONAL)

TYPE	REQUIRED STORAGE (m^3/ha)	TRIBUTARY AREA (ha)	REQUIRED STORAGE (m^3)
PASSIVE	141.5	45.55	6447
ACTIVE (QUALITY/EROSION)	40	45.55	1822
ACTIVE	434	45.55	19765
TOTAL	576	45.55	26225

4.4. Rath-Harris Drain & Southeasterly Ravine/Wetland

The Rath-Harris Drain, as discussed in Section 3.1 above, is upstream of the Acorn Valley Subdivision site. After development of the subdivision, the Rath-Harris Drain will remain in place under pre-development conditions.

The proposed SWM pond will outlet to the southeasterly ravine, downstream of the outlet of the Rath-Harris Drain, and downstream of the existing on-line pond in the southeast corner of the site. A total of 45.55ha will be tributary to the southeast ravine from the SWM pond during minor storm events, and 53.41ha under major storm events. The SWM pond outlet will restrict post-development outflows from the site to ensure that when combined with the existing pre-development outflows, the overall peak flows the southeasterly ravine experiences are not exceeded after development of the subdivision.

Table 15 Southeasterly Ravine Post-Development Peak Flows

Design Storm	Southeast Ravine Pre-Development Peak Outflow (m^3/s)	Southeast Ravine Post-Development Peak Outflow (m^3/s)
25.4mm – 4 Hour (Quality)	1.33	1.33
2-Year	2.51	2.50
5-Year	2.90	2.88
10-Year	3.74	3.67
25-Year	5.01	4.91
50-Year	6.39	6.26
100-Year	7.73	7.61
250-Year (Regional)	10.20	10.18

4.5. Northerly Wetland (Tamarack Swamp)

Under post-development conditions, the northerly wetland will receive inflows from existing and proposed rear yards of the residential dwellings that back onto the wetland area (2.4ha). This post-development drainage will mainly consist of grassed rear yards, which are not anticipated to provide surface water quality concerns. The table below demonstrates that post-development drainage from adjacent rear yards will approximately match, but slightly exceed, pre-development levels up to the 25-year storm. For larger storm events, post-development flows are approximately equal, but slightly less than pre-development levels.

Table 16 Northerly Wetland (Tamarack Swamp) Post-Development Peak Flows

Design Storm	Northerly Wetland Pre-Development Peak Outflow (m^3/s)	Northerly Wetland Post-Development Peak Outflow (m^3/s)
25.4mm – 4 Hour (Quality)	0.05	0.11
2-Year	0.09	0.14
5-Year	0.11	0.16
10-Year	0.17	0.21
25-Year	0.26	0.28
50-Year	0.37	0.35
100-Year	0.47	0.41
250-Year (Regional)	0.65	0.52

4.6. Shaw Drain

Under post-development conditions the portion of the Acorn Valley Subdivision site tributary to the Shaw Drain will be redirected towards the proposed SWM pond and ultimately the southeasterly ravine outlet. The existing irrigation pond on the northwest side of the site is proposed to be decommissioned in the future to allow for full build-out of the northerly development block. The westerly portion of the Harris Road lands will remain tributary to the Shaw Drain, matching pre-development conditions, after build-out of the Acorn Valley Subdivision. The table below summarizes the results of the pre- and post-development stormwater modelling, verifying that pre-development peak flows will not be exceeded after development of the subdivision.

Table 17 Shaw Drain Post-Development Peak Flows

Design Storm	Shaw Drain Pre-Development Peak Outflow (m^3/s)	Shaw Drain Pre-Development Peak Outflow (m^3/s)
25.4mm – 4 Hour (Quality)	0.05	0.01
2-Year	0.07	0.01
5-Year	0.09	0.02
10-Year	0.12	0.02
25-Year	0.18	0.04
50-Year	0.25	0.05
100-Year	0.31	0.06
250-Year (Regional)	0.43	0.08

4.7. Westerly Wetland

The westerly wetland, as discussed in Section 3.4 above, is considered locally significant. Under post-development conditions, the portion of the Acorn Valley Subdivision site that is tributary to this outlet will become part of the high-density development block, and will have all runoff directed towards the proposed SWM pond and ultimately the southeast ravine outlet. The portion of the Harris Road lands currently tributary to this wetland will remain under pre-development conditions after build-out of the Acorn Valley site. The table below demonstrates that post-development peak flows to the westerly wetland are less than pre-development levels, but similar in magnitude for surface runoff.

Table 18 Westerly Wetland Post-Development Peak Flows

Design Storm	Westerly Wetland Pre-Development Peak Outflow (m^3/s)	Westerly Wetland Post-Development Peak Outflow (m^3/s)
25.4mm – 4 Hour (Quality)	0.06	0.04
2-Year	0.09	0.06
5-Year	0.10	0.06
10-Year	0.12	0.07
25-Year	0.16	0.08
50-Year	0.19	0.09
100-Year	0.23	0.10
250-Year (Regional)	0.30	0.12

4.8. Post-Development Summary

The table below summarizes the pre- and post-development peak flows to each stormwater outlet for the Acorn Valley Subdivision site. All post-development peak outflows have been restricted to pre-development levels, apart from the 2 to 25-year storm events to the Northerly Wetland (Tamarack Swamp). These minor exceedances are considered acceptable to keep as much clean surface water runoff as possible towards the wetland under post-development conditions.

Table 19 Post-Development Peak Outflow Summary

		Peak Outflow (m^3/s)							
		25.4mm – 4 Hour (Quality)	2 Year	5 Year	10 Year	25 Year	50 Year	100 Year	250 Year (Regional)
Rath-Harris Drain & Southeasterly Ravine	Pre-Development	1.33	2.51	2.90	3.74	5.01	6.39	7.73	10.20
	Post-Development	1.33	2.50	2.88	3.67	4.91	6.26	7.61	10.18
	SWM Pond Outlet	0.05	0.12	0.17	0.29	0.59	0.75	1.00	1.34
Northerly Wetland (Tamarack Swamp)	Pre-Development	0.05	0.09	0.11	0.17	0.26	0.37	0.47	0.65
	Post-Development	0.11	0.14	0.16	0.21	0.28	0.35	0.41	0.52
Shaw Drain	Pre-Development	0.05	0.07	0.09	0.12	0.18	0.25	0.31	0.43
	Post-Development	0.01	0.01	0.02	0.02	0.04	0.05	0.06	0.08
Westerly Wetland	Pre-Development	0.06	0.09	0.10	0.12	0.16	0.19	0.23	0.30
	Post-Development	0.04	0.06	0.06	0.07	0.08	0.09	0.10	0.12

5. WATER BALANCE

The Hydrogeological Investigation for the site included a preliminary water balance including a pre- to post-development comparison of infiltration rates. The analysis concluded that without any mitigation measures, the groundwater infiltration could potentially be reduced to approx. 39% of pre-development levels. Englobe further conducted a preliminary assessment of the proposed open-channel to increase surface contact area and encourage infiltration. It was indicated that the proposed open channel has the potential to provide a balance of pre- to post-development infiltration rates for the site to ensure no negative impacts to the surrounding environment.

In order to ensure runoff draining to the open channel is of high quality, roadway runoff desired to be infiltrated should be reviewed to determine if a pre-treatment unit such as an oil grit separator or other quality control measure may be required. The remainder of the tributary to the open channel consists of grassed yards and roof drainage, which are considered to be of higher quality than roadway areas.

Grassed rear yard runoff from the future lots at the north limit of the site will also supplement flows to the northerly wetland through direct sheet flow runoff.

6. EROSION AND SEDIMENTATION CONTROL

6.1. Subdivision/SWM Design

Proposed road surfaces will be hot-mix asphalt with concrete curb and gutter to prevent erosion in the roadway areas. The SWM pond inlet will be protected from erosion by the use of a reinforced concrete headwall and cable concrete matting. The pond outlet chamber will be reinforced concrete protected by cable concrete matting and graded to blend with the surrounding slopes. The pond, and surrounding area will be restored with topsoil and seed. Catchbasins will contain 600mm minimum deep sumps which will collect sediment.

Quantity control provided by the wet pond facility combined with the proposed outlet headwall and plunge pool will ensure erosion protection of the receiving southeasterly ravine. The wet pond is provided with a sediment forebay to facilitate maintenance by capturing suspended sediment at the inlet of the pond, which in turn will decrease flow velocity through the remainder of the pond.

Vegetative plantings along the pond banks and bottoms will be placed to provide scouring protection and further erosion protection. Natural species will be selected to compliment the surrounding ecological communities, including grasses, bushes, and trees in strategic locations to provide habitat enhancement within the SWMF. A detailed planting plan will be developed during the detailed design phase of this project.

All finished earth surfaces will be topsoiled and seeded. Areas susceptible to erosion will be protected with sod, staked sod, riprap and/or cable concrete as conditions warrant. The SWM area will be unfenced.

Trees and shrubs will be planted in conjunction with subdivision development. Species tolerant to more frequent and prolonged submergence will be selected for the lower wet pond area, while species less tolerant to submergence will be selected for the upper area. An emphasis will be placed on reduced maintenance and compatibility with the adjoining ecosystems.

6.2. Construction Practices

Topsoil stripping and bulk grading will be completed prior to underground servicing. Areas that do not have active housing construction will be seeded and allowed to re-vegetate. Silt fence will be placed at surface runoff locations and across drainage courses. As servicing progresses, silt fence (with straw bales, if required) will be placed across all drainage swales at 100m maximum intervals, including catchbasins and piped outlets and/or as directed on site.

Topsoil piles will be located for suitable access, but will be removed as far as practical from drainage courses and the stormwater management area. Topsoil stockpiles will be shaped to allow for easy maintenance (mowing) by the Developer. Site access during construction will be restricted as much as possible.

Storm sewers and initial granular roadbase will be installed by a General Contractor. In addition to the silt fence, the Contractor will place geotextile under all catchbasin and manhole castings to prevent the flow of construction silt into the storm sewers and to the receiving water courses. The Contractor will also place silt fence around the stormwater management pond inlets and outlets.

All silt will be removed as accumulated and/or as directed by the Engineer on site. Catchbasins will be cleaned by the Contractor during construction to remove any silt which may accumulate.

All finished earth surfaces will be topsoiled and seeded. Areas susceptible to erosion will be protected by sod, staked sod, riprap and/or cable concrete as conditions warrant. The Contractor will be required to return within the guaranteed maintenance period to remedy any areas of erosion which develop.

6.3. Maintenance

The storm sewers and technical aspects of the stormwater management pond area will be maintained by the Municipality of Thames Centre, upon final inspection and acceptance.

Accumulation of sediment in the pond will be monitored by Thames Centre following assumption and removed on an as-needed basis, with disposal to appropriate sites after testing of the material to be removed. Catchbasin sumps shall also be cleaned by Thames Centre on a regular basis after assumption to remove any accumulated sediment.

7. CONCLUSIONS

Stormwater management within the Acorn Valley Subdivision has been designed to reduce environmental, quality, and quantity impacts on downstream receptors by restricting peak outflows to pre-development levels through implementation of a SWM wet pond providing enhanced quality control for the development.

Loss of groundwater recharge for the site under post-development conditions will be mitigated through the implementation of the central open channel to encourage surface contact area and subsequently infiltration, as well as the grassed rear yards of future lots at the north limit of the site that will offer direct sheet flow to the northerly wetland.

Storm sewers will be installed to convey minor flows from within the subdivision to the proposed SWM wet pond facility. Subdivision grading design has been advanced to ensure major flows can be safely conveyed to the SWM facility, with an emergency overflow to the southeasterly ravine.

** ** **

All of which is respectfully submitted by,

Alex Muirhead, P. Eng.

Deren Lyle, P. Eng.

AM/kc

References

1. Stormwater Management Planning and Design Manual (Ministry of the Environment, Conservation and Parks, March 2003).
2. Municipality of Thames Centre Engineering Design Standards – 2023 Edition (Municipality of Thames Centre, March 2023).
3. Low Impact Development Stormwater Management Planning and Design Guide (Toronto and Region Conservation Authority, Credit Valley Conservation Authority, Lake Simcoe Region Conservation Authority, 2010)
4. Scoped Environmental Impact Study (Vroom + Associates, June 2025).
5. Geotechnical Engineering Report (Englobe, April 2025).
6. Hydrogeology Study Report (Englobe, April 2024).
7. Rath-Harris Municipal Drain Improvement, Township of North Dorchester (W.J. Bartlett & Associates Ltd., September 1989).
8. Shaw Municipal Drain Repair & Improvement, Township of North Dorchester (H.M. Gibson & Associates Ltd., December, 1977).

FIGURES

Figure 1: Phasing Plan

Figure 2: Pre-Development Stormwater Tributaries

Figure 3: Post-Development Stormwater Tributaries

Figure 4: SWM Pond Preliminary Plan & Profiles

Figure 5: Christie Drive Preliminary Plan & Profiles

Figure 6: Open Channel Preliminary Plan & Profiles

Figure 7: Open Channel Preliminary Cross-Section

LOT/UNIT COUNT		
PHASE	# OF LOTS	# OF UNITS
1	86	101
	BLOCK 175	589 (MAX.)
SUB-TOTAL	86	690 (MAX.)
2	26	26
SUB-TOTAL	26	26
3	62	87
SUB-TOTAL	62	87
FUTURE	–	390 (MAX.)
	–	150 (MAX.)
SUB-TOTAL	–	540 (MAX.)
TOTAL	174	1343 (MAX.)

LEGEND

SITE BOUNDARY

NOTE:

- SOME PHASES MAY BE FURTHER SUBDIVIDED OR ALTERED.

CONSULTANT:
CJDL Consulting Engineers
Thames Centre

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PRELIMINARY JAN 2026

REVISION			
#	DESCRIPTION	DD/MM/YYYY	BY

PHASING PLAN

CONTRACT #:	18010	SCALE:	1:2000
PROJECT NAME:	ACORN VALLEY SUBDIVISION RP 11M-XXX DOUG TARRY LIMITED	DRAWING #:	F1

T:\ACAD Projects\2018\18010\01-Model\18010_Phasing Plan.dwg, 2026-01-07 4:00:04 PM, CJDLPC48, 1:25.4

TRIBUTARY AREAS LEGEND

- TRIBUTARY TO RATH HARRIS DRAIN/EXISTING RAVINE + WETLAND (201.36ha MINOR, 209.22ha MAJOR)
- TRIBUTARY TO NORTHERLY WETLAND (TAMARACK SWAMP) (8.76ha)
- TRIBUTARY TO WESTERLY FLOW PATH + SHAW DRAIN (9.74ha)
- TRIBUTARY TO WESTERLY WETLAND (15.78ha)

NOTES:

1. TRIBUTARY LIMITS EXTERNAL TO SITE BASED ON MUNICIPAL. DRAIN TRIBUTARY LIMITS
2. DRAIN LENGTHS BASED ON MUNICIPAL DRAIN PLAN & PROFILES
3. INVERTS BASED ON CJDL SURVEY, IF RECORDED, OR DRAIN PLAN & PROFILES
4. TRIBUTARY LIMITS INTERNAL TO SITE BASED ON CJDL SURVEY, 2019

LEGEND

- PROPOSED STORM SEWER
- EXISTING STORM SEWER
- FUTURE STORM SEWER
- CL EXISTING WATERCOURSE
- SUBDIVISION LIMITS
- LIMIT OF DRAINAGE AREA

250.0 — METRIC CONTOUR ELEVATIONS IN METRES (BY CJDL SITE SURVEY)

MAJOR OVERLAND FLOW ROUTE

MINOR FLOW

A4 0.550.57 C | ha

- AREA NUMBER
- AREA IN HECTARES
- RUN-OFF COEFFICIENT

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PRELIMINARY JAN 2026

REVISION			
#	DESCRIPTION	DD/MM/YYYY	BY

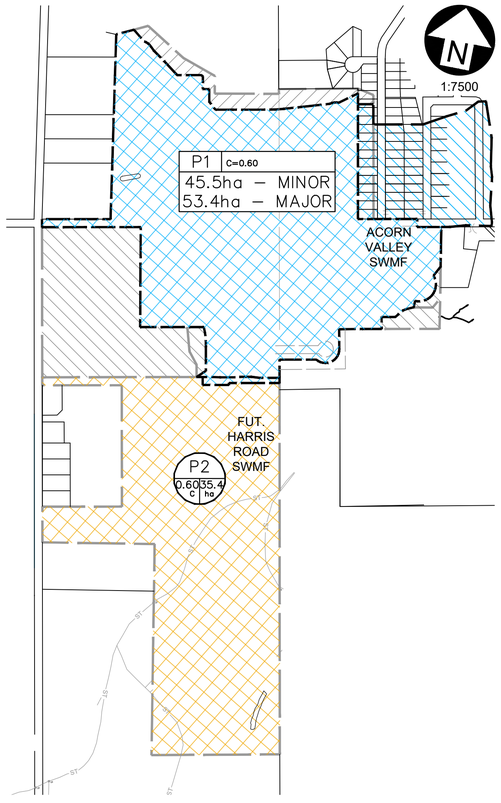
PRE-DEVELOPMENT STORMWATER TRIBUTARIES

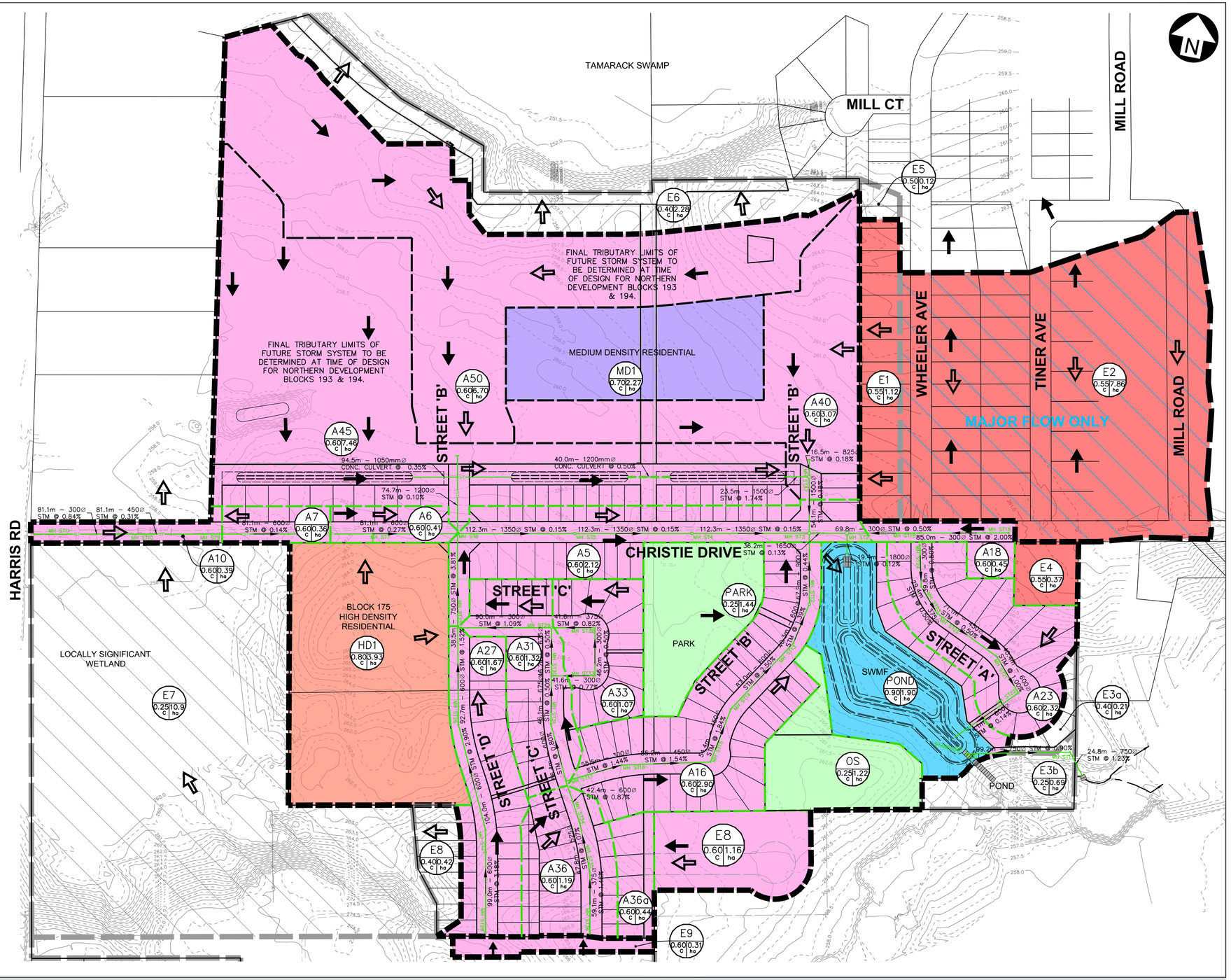
CONTRACT #:	18010	SCALE:	1:5000
PROJECT NAME:	ACORN VALLEY SUBDIVISION RP 11M-XXX DOUG TARRY LIMITED	DRAWING #:	F2

T:\ACAD Projects\2018\18010\04-Layouts\18010_Storm Trib Pre Dev.dwg, 2026-01-07 4:22:07 PM, CJDLPC48, 1:25.4

SWM POND TRIBUTARY (45.5ha MINOR, 53.4 ha MAJOR)

- 9.36 ha LOW-DENSITY RESIDENTIAL (C = 0.55)
- 33.29 ha LOW-DENSITY RESIDENTIAL (C = 0.60)
- 2.27 ha MEDIUM DENSITY RESIDENTIAL (C = 0.70)
- 3.93 ha HIGH-DENSITY RESIDENTIAL (C = 0.80)
- 1.90 ha STORMWATER MANAGEMENT POND (C = 0.90)
- 2.66 ha OPEN SPACE (C = 0.25)





LEGEND

- PROPOSED STORM SEWER
- EXISTING STORM SEWER
- FUTURE STORM SEWER
- PROPOSED MANHOLE, EXISTING/FUTURE
- PROPOSED CATCHBASIN, EXISTING/FUTURE
- LIMIT OF DRAINAGE AREA

250.0 → 2.1Ac (0.85ha)

METRIC CONTOUR ELEVATIONS IN METRES (BY CJDL SITE SURVEY)

MAJOR OVERLAND FLOW ROUTE

STORM WATER DRAINAGE TO SWM FACILITY

A27 | 0.55 | 35.7 | C | ha

- AREA NUMBER
- AREA IN HECTARES
- RUN-OFF COEFFICIENT

CONSULTANT:
CJDL Consulting Engineers
Thames Centre
Cyril J. Demeyere Limited
P.O. Box 460, 281 Broadway
Tillsonburg, Ontario, N4G 4H8
Tel: 519-688-1000
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STAMP:
D.J. LYLE 100177 PROFESSIONAL ENGINEER PROVINCE OF ONTARIO
D. MUIRHEAD 100543499 PROFESSIONAL ENGINEER PROVINCE OF ONTARIO
PRELIMINARY JAN 2026

REVISION			
#	DESCRIPTION	DD/MM/YYYY	BY

STORM DRAINAGE SYSTEM AND AREAS

CONTRACT #:	18010	SCALE:	1:2000
PROJECT NAME:	ACORN VALLEY SUBDIVISION RP 11M-XXX DOUG TARRY LIMITED	DRAWING #:	F3

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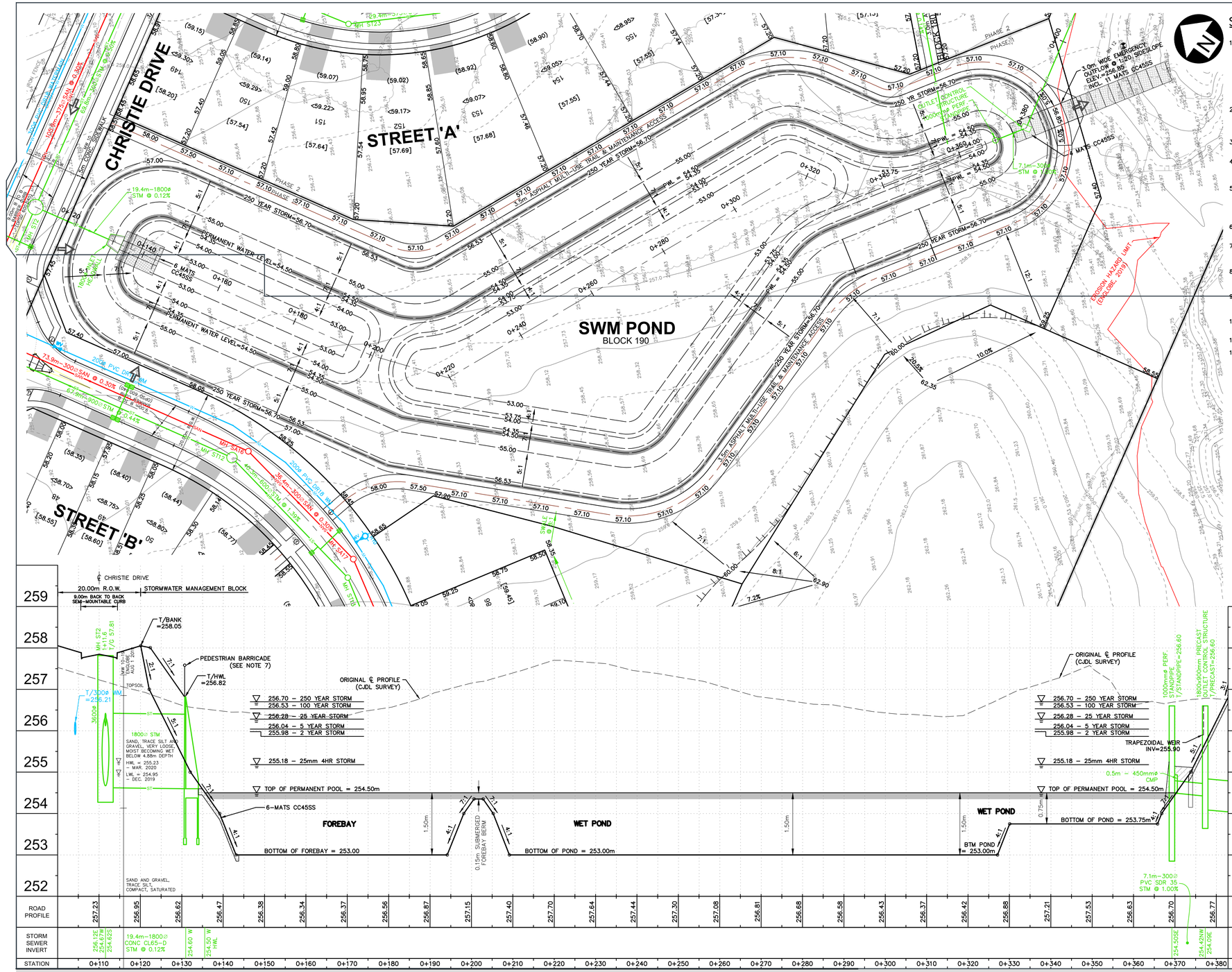
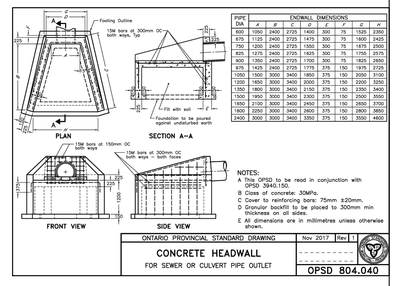


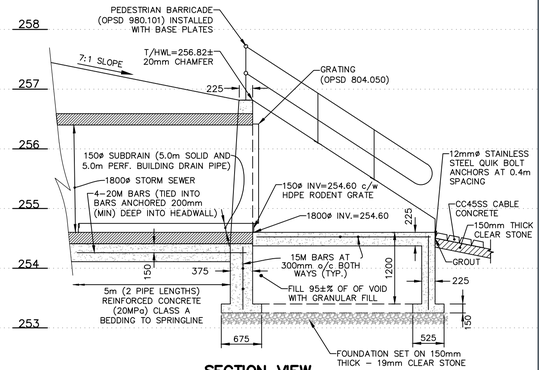
STORMWATER MANAGEMENT NOTES

1. SEDIMENT LOADING TO RECEIVING SEWERS AND WATER COURSES MUST BE MINIMIZED AT ALL TIMES. THE CONTRACTOR SHALL INSTALL FENCES AND PLACE STRAW BALES AS NECESSARY TO ADDRESS SILT MIGRATION TO THE SATISFACTION OF THE MINISTRY OF NATURAL RESOURCES, KETTLE CREEK CONSERVATION AUTHORITY, MINISTRY OF THE ENVIRONMENT OR ANY OTHER REGULATORY AGENCY OR MINISTRY AND, IN PARTICULAR, TO THE GUIDELINES ON EROSION AND SEDIMENT CONTROL FOR URBAN CONSTRUCTION SITES (MNR). THE CONTRACTOR SHALL ASSUME THE DEFENCE OF AND INDEMNIFY AND SAVE HARMLESS LAND RISE DEVELOPMENTS INC., LECRAM INC., AND CYRIL J. DEMEYERE LIMITED FROM ALL FINES, CHARGES AND CLAIMS RELATING TO THE PROJECT FOR ANY REGULATORY AGENCY OR MINISTRY. THE CONTRACTOR SHALL RETURN TO REMOVE THE SILT FENCES AND/OR STRAW BALES UPON ESTABLISHMENT OF GROWTH AT NO EXTRA COST. ANY ACCUMULATED SILT SHALL BE REMOVED AT REGULAR INTERVALS AT NO ADDITIONAL COST TO THIS PROJECT.
2. THE CONTRACTOR SHALL RESTRICT HIS OPERATIONS TO MINIMIZE IMPACT ON EXISTING WESTERLY DEVELOPMENT INCLUDING PROVISION OF A SNOW FENCE IF DEEMED NECESSARY. CONTRACTOR SHALL PROPOSE A METHOD OF CONSTRUCTION, DEBRIS AND BRUSH REMOVAL SUBJECT TO THE APPROVAL OF THE ENGINEER. RESTORATION SHALL BE COMPLETED IMMEDIATELY FOLLOWING PIPE, ETC. INSTALLATION.
3. ALL POURED CONCRETE MUST BE FORMED AND SHALL BE IN ACCORDANCE WITH SPECIFICATIONS. ALL EXPOSED CORNERS SHALL BE CHAMFERED 20mm.
4. REINFORCING STEEL SHALL BE EPOXY COATED GRADE 400, CSA TSD. 630–12. MINIMUM SPLICE LAP SHALL BE 30 BAR DIAMETERS UNLESS OTHERWISE SHOWN. BENDING AND FABRICATION TO BE IN ACCORDANCE WITH A.C.I. SPECIFICATIONS. CLEAR COVER ON REINFORCING STEEL SHALL BE 75mm.
5. CABLE CONCRETE SHALL BE AS MANUFACTURED BY INTERNATIONAL EROSION CONTROL SYSTEMS (800–821–7462). CABLES SHALL BE STAINLESS STEEL. MATS SHALL BE ANCHORED TO OUTLET STRUCTURES, ALL IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS. ANCHORAGES SHALL BE AT 1000 mm MAXIMUM SPACING. CABLE CONCRETE SHALL BE UNDERLAIN WITH GEOTEXTILE FILTER FABRIC; OVERLAP JOINTS 500mm. CONTRACTOR SHALL FILL CABLE JOINTS WITH CONCRETE GROUT WITHIN 2.0m OF HEADWALLS, OTHERWISE TOPSOIL AND SEED ABOVE PERMANENT WATER LEVEL.
6. THE 2100x900mm SWM POND OUTLET CONTROL STRUCTURE SHALL BE FABRICATED WITH PREFABRICATED GRATE AS DESCRIBED, SEE DETAILS DRAWING 35.
7. THE 1800mmø INLET HEADWALL SHALL BE OPSD 804.040 (MODIFIED) c/w WITH OPSD 804.050 GRATING. THE 675mmø OUTLET HEADWALL SHALL BE OPSD 804.030 (MODIFIED) c/w WITH OPSD 804.050 GRATING. THE PEDESTRIAN BARRICADES SHALL BE OPSD 980.101 EXTENDING ALONG TOP OF WALL UNTIL GRADE DIFFERENCE IS LESS THAN 0.60m.
8. THE ENTIRE 1000mm PERFORATED CMP STANDPIPE INLET SHALL BE DOUBLE HOT DIPPED GALVANIZED AFTER FABRICATION. PERFORATIONS SHALL BE 25mmø AT CENTRES AND ROWS 100 mm APART. STANDPIPE SHALL BE PROTECTED BY A 50mmø STONE CONE AS SHOWN ON THIS DRAWING.
9. ~~THE POND~~, SIDE SLOPES AND ALL ABUTTING LIMITS DISTURBED SHALL RECEIVE 100mm TOPSOIL AND SEED. CONTRACTOR SHALL RETURN TO CORRECT ANY EROSION AND SHALL BE RESPONSIBLE FOR MAINTENANCE UNTIL GROWTH IS ESTABLISHED. THE CONTRACTOR IS REQUIRED TO PROVIDE TEMPORARY EROSION CONTROL MEASURES SUCH AS STRAW MATTING, IF REQUIRED TO ESTABLISH GROWTH.
10. SLOPE STABILIZATION WORKS FOR ADDRESSING RESTORATION OF THE EMBANKMENT SLOPE SHALL USE SLOPE NATURAUZATION METHODS TO ASSIST IN RESTORING THE SLOPES IN A WAY CONSISTENT WITH THE SURROUNDING NATURAL HERITAGE FEATURES.
11. ONE CABLE CONCRETE MAT = 2.44x4.88m
12. SHOP DRAWINGS ARE REQUIRED TO BE SUBMITTED FOR APPROVAL FOR THE FOLLOWING:
    - HEADWALLS
    - OUTLET CONTROL STRUCTURE (OCS)
    - POND APRON
    - OCS GRATE



PIPE DIA	ENDWALL DIMENSIONS							
	A	B	C	D	E	F	G	H
600	1080	2400	2725	1400	300	75	1500	2300
675	1125	2400	2725	1475	300	75	1600	2425
750	1200	2400	2725	1550	300	75	1675	2500
825	1275	2400	2725	1625	300	75	1755	2575
900	1350	2400	2725	1700	300	75	1825	2650
975	1425	2400	2725	1775	375	150	1975	2725
1050	1500	3000	3400	1850	375	150	2050	3100
1200	1650	3000	3400	2000	375	150	2200	3250
1350	1800	3000	3400	2150	375	150	2350	3400
1500	1950	3000	3400	2300	375	150	2500	3550
1650	2100	3000	3400	2450	375	150	2650	3700
1800	2250	3000	3400	2600	375	150	2800	3850
2400	3000	3000	3400	3350	375	150	3550	4600

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2017	Rev 1
CONCRETE HEADWALL		
FOR SEWER OR CULVERT PIPE OUTLET		OPSD 804.040



SECTION VIEW

1800mmø POND INLET HEADWALL
(MODIFIED FROM OPSD–804.040)
SCALE 1:50

SEE DRAWING No. 41 FOR GENERAL NOTES

LEGEND

- SANITARY SEWER
- STORM SEWER
- WATERMAIN
- WATER SERVICE
- NATURAL GAS LINE
- UNDERGROUND POWER LINE
- OVERHEAD POWER LINE
- UNDERGROUND FIBRE OPTIC LINE
- UNDERGROUND BELL LINE
- UNDERGROUND CABLE LINE
- DITCH/SWALE
- TOE OF SLOPE, TOP OF BANK
- FENCE
- EDGE OF GRAVEL
- CURB, DROPPED CURB
- EDGE OF PAVEMENT
- MAINTENANCE HOLE
- CLEAN OUT
- CATCH BASIN
- WATER VALVE
- WATER SERVICE CURB STOP
- HYDRANT
- GUY WIRE, UTILITY POLE
- LIGHT STANDARD
- TRAFFIC SIGNAL
- SIGN
- GAS VALVE
- UTILITY PEDESTAL
- TRANSFORMER
- SURVEY BARS
- CONIFEROUS, DECIDUOUS TREE
- SHRUB
- EDGE OF BUSH/DRIP LINE
- GEOTECHNICAL BORE HOLE

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cjdl@cjdleng.com

Municipality of Thames Centre
ACORN Valley

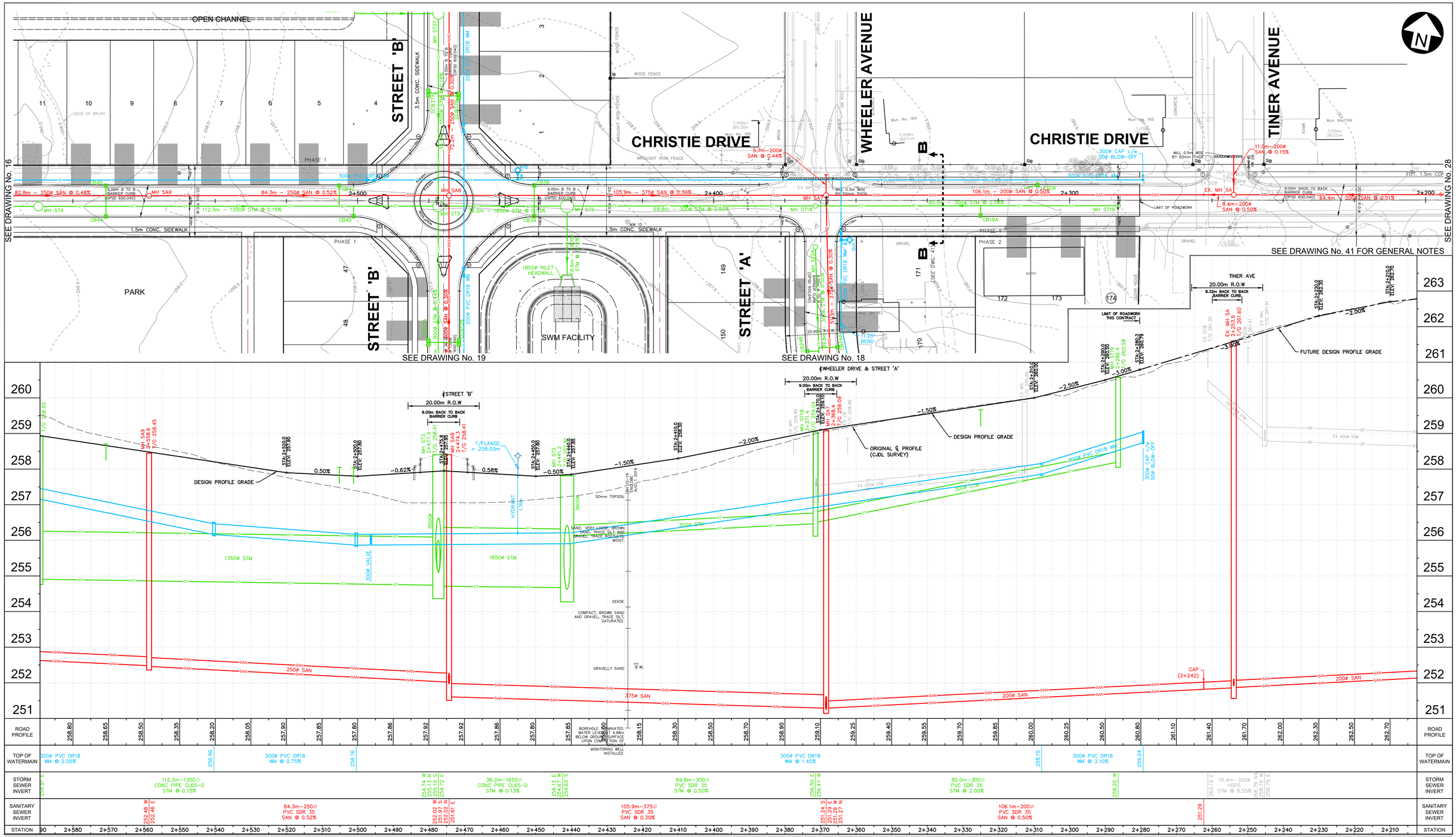
STAMP:
PROFESSIONAL ENGINEER – LICENSED – D.J. WYLIE – 100177 – PROVINCE OF ONTARIO
PROFESSIONAL ENGINEER – LICENSED – A.V. MUIRHEAD – 100429 – PROVINCE OF ONTARIO
PRELIMINARY NOT FOR CONSTRUCTION

REVISION			
#	DESCRIPTION	DD/MM/YYYY	BY

SWM1 - STORMWATER MANAGEMENT AREA

CONTRACT #:	18010	SCALE:	HOR. 1:500 VER. 1:50
PROJECT NAME:	ACORN VALLEY SUBDIVISION 11M-XXX DOUG TARRY LIMITED	DRAWING #:	F4

T:\ACAD Projects\2018\18010\04-Layouts\18010_Plan and Profile - SWM.dwg, 2026-01-08 8:08:34 AM, CJDLPC48, 1:25.4



LEGEND

- SANITARY SEWER
- STORM SEWER
- WATERMAIN
- WATER SERVICE
- NATURAL GAS LINE
- UNDERGROUND POWER LINE
- OVERHEAD POWER LINE
- UNDERGROUND FIBRE OPTIC LINE
- UNDERGROUND BELL LINE
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- HYDRANT
- BLOW-OFF
- GUY WIRE, UTILITY POLE
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Tel: 519-688-1000
866-302-9886
cjdl@cjdleng.com

Municipality of Thames Centre

ACORN Valley

STAMP:
PROFESSIONAL ENGINEER — LICENSED — PROVINCE OF ONTARIO
D. J. WYLL — 100177777
A.V. MUIRHEAD — 100147169
PRELIMINARY — NOT FOR CONSTRUCTION — JAN 2026

REVISION			
#	DESCRIPTION	DD/MM/YYYY	BY

CHRISTIE DRIVE (2+220 - 2+570)

CONTRACT #: 18010
PROJECT NAME: ACORN VALLEY SUBDIVISION 11M-XXX DOUG TARRY LIMITED
SCALE: HOR. 1:500 VER. 1:50
DRAWING #: F5-1

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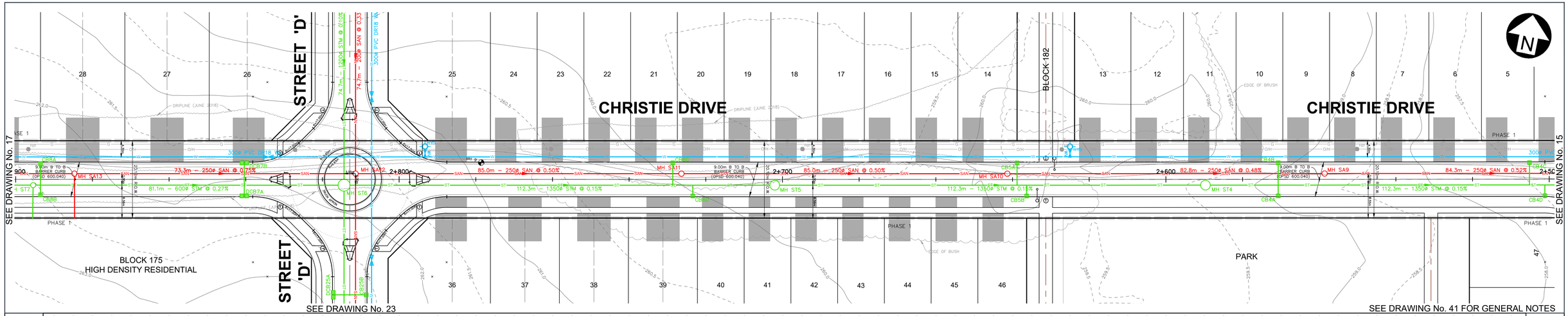

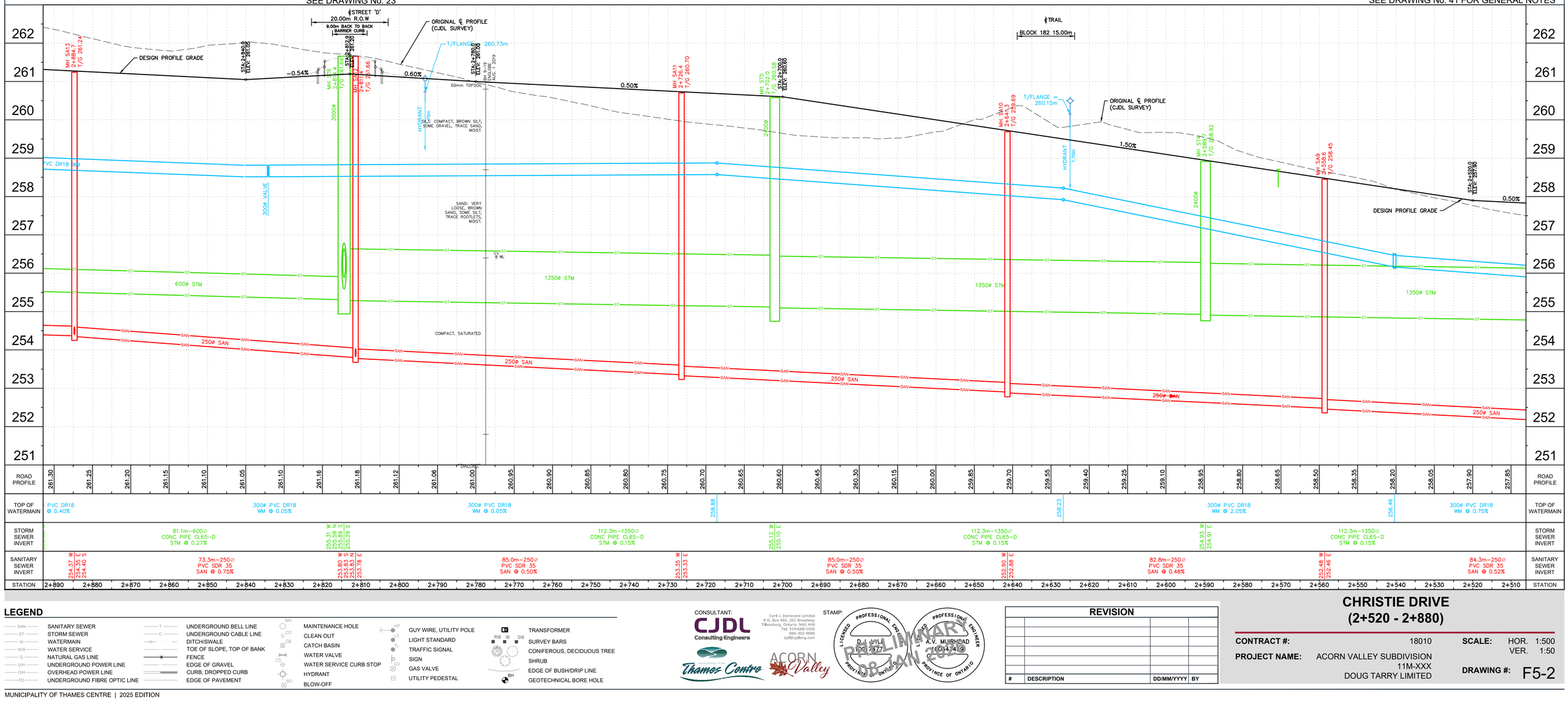

LEGEND

- SAN — SANITARY SEWER
- ST — STORM SEWER
- W — WATERMAIN
- WS — WATER SERVICE
- G — NATURAL GAS LINE
- UP — UNDERGROUND POWER LINE
- OH — OVERHEAD POWER LINE
- FO — UNDERGROUND FIBRE OPTIC LINE
- T — UNDERGROUND BELL LINE
- C — UNDERGROUND CABLE LINE
- DITCH/SWALE
- TOE OF SLOPE, TOP OF BANK
- FENCE
- EDGE OF GRAVEL
- CURB, DROPPED CURB
- EDGE OF PAVEMENT
- MH — MAINTENANCE HOLE
- CO — CLEAN OUT
- CB — CATCH BASIN
- WV — WATER VALVE
- WSC — WATER SERVICE CURB STOP
- HY — HYDRANT
- BO — BLOW-OFF
- GP — GUY WIRE, UTILITY POLE
- LS — LIGHT STANDARD
- TL — TRAFFIC SIGNAL
- SN — SIGN
- GV — GAS VALVE
- UP — UTILITY PEDESTAL
- TX — TRANSFORMER
- RB IB SB — SURVEY BARS
- CONIFEROUS, DECIDUOUS TREE
- SHRUB
- BH — EDGE OF BUSH/DRIP LINE
- GEOTECHNICAL BORE HOLE

CONSULTANT:
CJDL Consulting Engineers
Thames Centre
ACORN Valley

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cjd@cjdeng.com

STAMP:
PROFESSIONAL ENGINEER — LICENSED — D.J. WYLE — 100177777 — PROVINCE OF ONTARIO
PROFESSIONAL ENGINEER — LICENSED — K.V. MUIRHEAD — 100424149 — PROVINCE OF ONTARIO
PRELIMINARY — NOT FOR CONSTRUCTION — 2025

REVISION			
#	DESCRIPTION	DD/MM/YYYY	BY

CHRISTIE DRIVE (2+520 - 2+880)

CONTRACT #: 18010
PROJECT NAME: ACORN VALLEY SUBDIVISION 11M-XXX DOUG TARRY LIMITED
SCALE: HOR. 1:500 VER. 1:50
DRAWING #: F5-2

MUNICIPALITY OF THAMES CENTRE | 2025 EDITION

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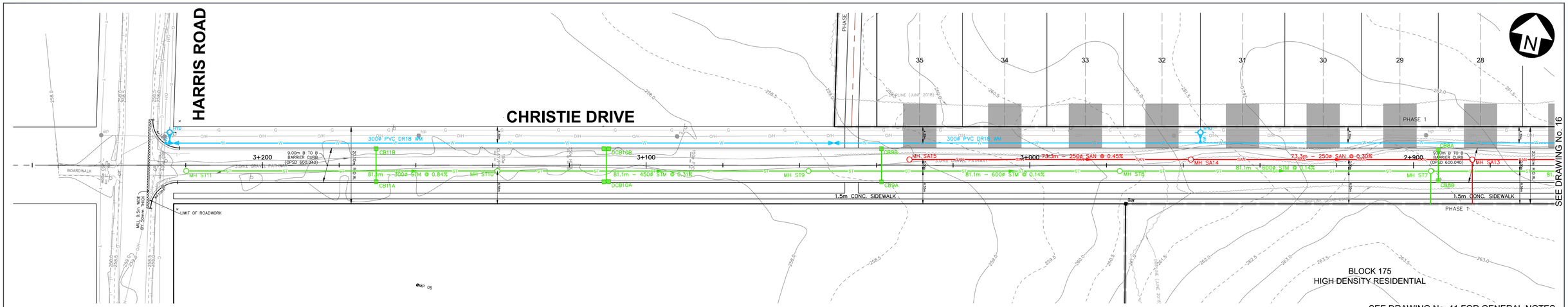
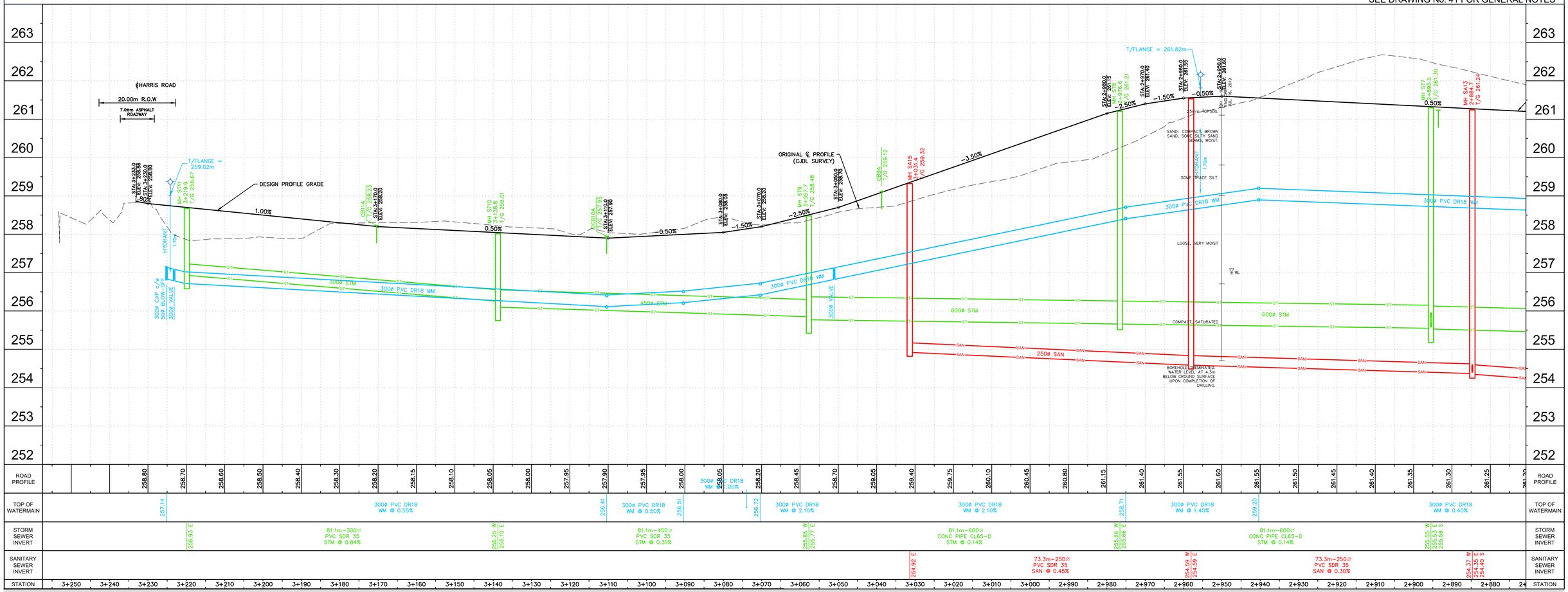
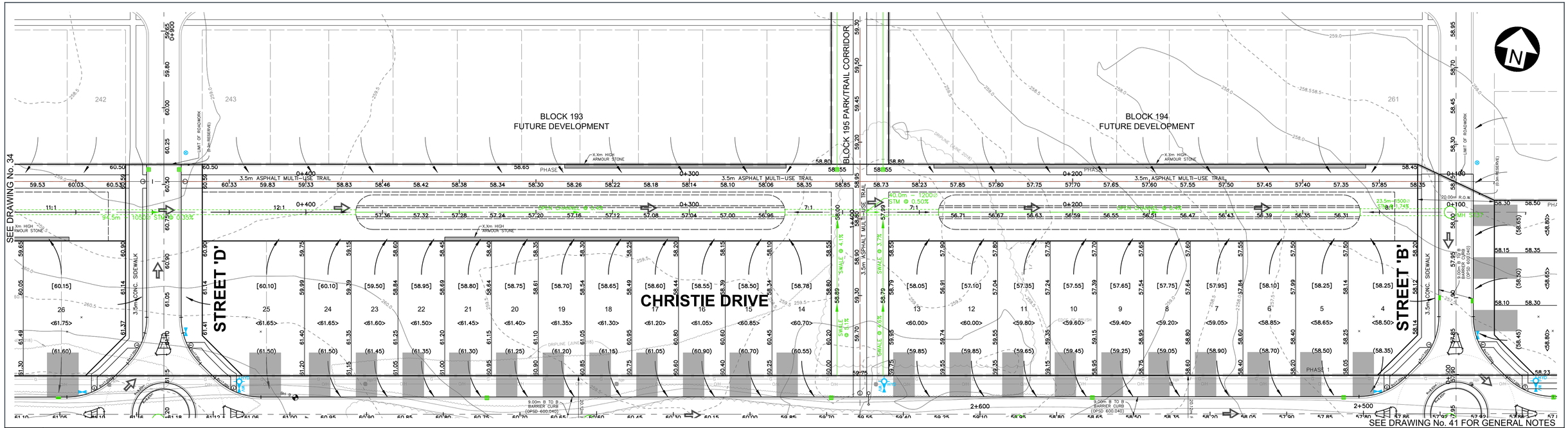
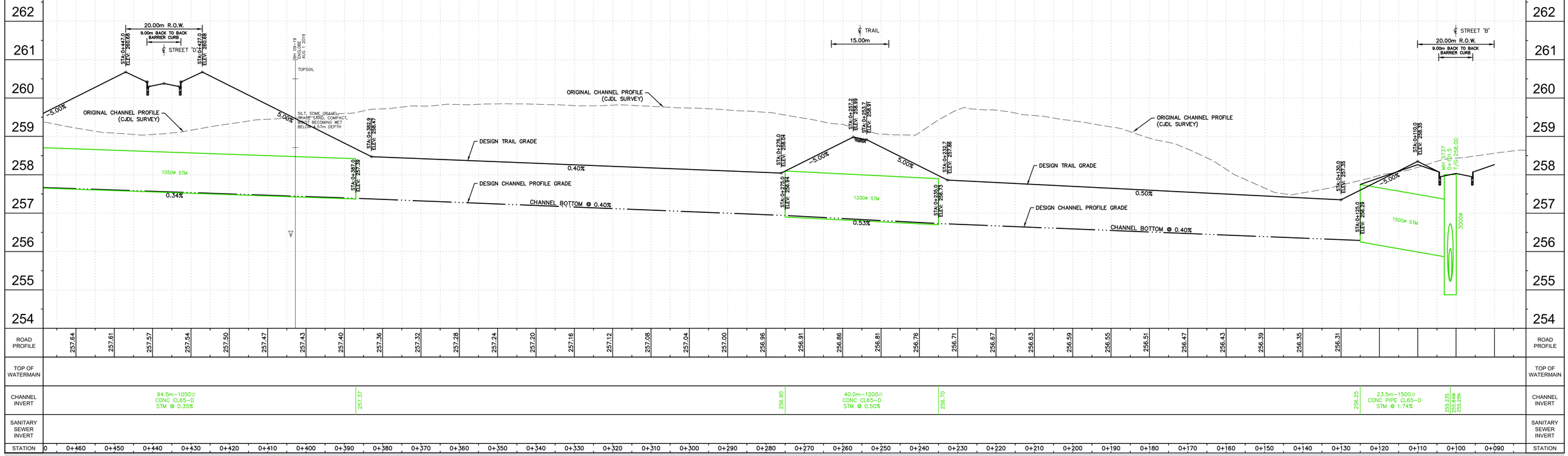

HARRIS ROAD
CHRISTIE DRIVE
PHASE 1
PHASE
300ø PVC DR18 WM
MH ST11
MH ST10
MH ST9
MH ST8
MH ST7
MH SA15
MH SA14
MH SA13
CB11B
CB11A
DCB10B
DCB10A
CB9B
CB9A
CB8B
CB8A
81.1m – 300ø STM @ 0.84%
81.1m – 450ø STM @ 0.31%
81.1m – 600ø STM @ 0.14%
73.3m – 250ø SAN @ 0.45%
73.3m – 250ø SAN @ 0.30%
3+200
3+100
3+000
2+900
9.00m B TO B BARRIER CURB (OPSD 600.040)
1.5m CONC. SIDEWALK
BOARDWALK
LIMIT OF ROADWORK
MILL 0.5m WIDE ASPHALT
BLOCK 175
HIGH DENSITY RESIDENTIAL
SEE DRAWING No. 16
SEE DRAWING No. 41 FOR GENERAL NOTES


HARRIS ROAD
20.00m R.O.W
7.0±m ASPHALT ROADWAY
DESIGN PROFILE GRADE
ORIGINAL G. PROFILE (CJDL SURVEY)
T/FLANGE = 259.02m
T/FLANGE = 261.82m
MH ST11 3+219.9 T/G 258.67
MH ST10 3+138.8 T/G 258.01
MH ST9 3+057.7 T/G 258.48
MH SA15 3+031.4 T/G 259.32
MH ST7 2+895.9 T/G 261.30
MH SA13 2+884.7 T/G 261.24
CB11A 3+258.23
CB11B 3+258.33
DCB10A 3+157.95
DCB10B 3+158.05
CB9A T/G 259.12
CB8A T/G 261.60
HYDRANT 1.70m
300ø CAP c/w 50ø DRILL HOLE
50ø VALVE
300ø STM
300ø PVC DR18 WM
450ø STM
600ø STM
250ø SAN
SAND: COMPACT, BROWN SAND, SOME SILTY SAND SEAMS, MOIST.
SOME TRACE SILT.
LOOSE, VERY MOIST
COMPACT, SATURATED
BOREHOLE ELIMINATED. WATER LEVEL AT 4.3m BELOW GROUND SURFACE UPON COMPLETION OF DRILLING.
25mm TOPSOIL
1.00%
0.50%
-0.50%
-1.50%
-2.50%
-3.50%

| | | |





LEGEND

- SANITARY SEWER
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- WATER SERVICE
- NATURAL GAS LINE
- UNDERGROUND POWER LINE
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- CURB, DROPPED CURB
- EDGE OF PAVEMENT
- MAINTENANCE HOLE
- CLEAN OUT
- CATCH BASIN
- WATER VALVE
- WATER SERVICE CURB STOP
- HYDRANT
- GUY WIRE, UTILITY POLE
- LIGHT STANDARD
- TRAFFIC SIGNAL
- SIGN
- GAS VALVE
- UTILITY PEDESTAL
- TRANSFORMER
- SURVEY BARS
- CONIFEROUS, DECIDUOUS TREE
- SHRUB
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- GEOTECHNICAL BORE HOLE

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Tel: 519-688-1000
866-262-9896
Fax: 519-842-5235
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Thames Centre
ACORN Valley

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D.J. WYLIE 100127477 PROFESSIONAL ENGINEER LICENSED PROVINCE OF ONTARIO
K.V. MUIRHEAD 100424.9 PROFESSIONAL ENGINEER LICENSED PROVINCE OF ONTARIO
PRELIMINARY NOT FOR CONSTRUCTION 2025

REVISION			
#	DESCRIPTION	DD/MM/YYYY	BY

OPEN CHANNEL & TRAIL - EAST (0+440 - 0+090)

CONTRACT #: 18010
PROJECT NAME: ACORN VALLEY SUBDIVISION 11M-XXX DOUG TARRY LIMITED
SCALE: HOR. 1:500 VER. 1:50
DRAWING #: F6-1

MUNICIPALITY OF THAMES CENTRE | 2025 EDITION

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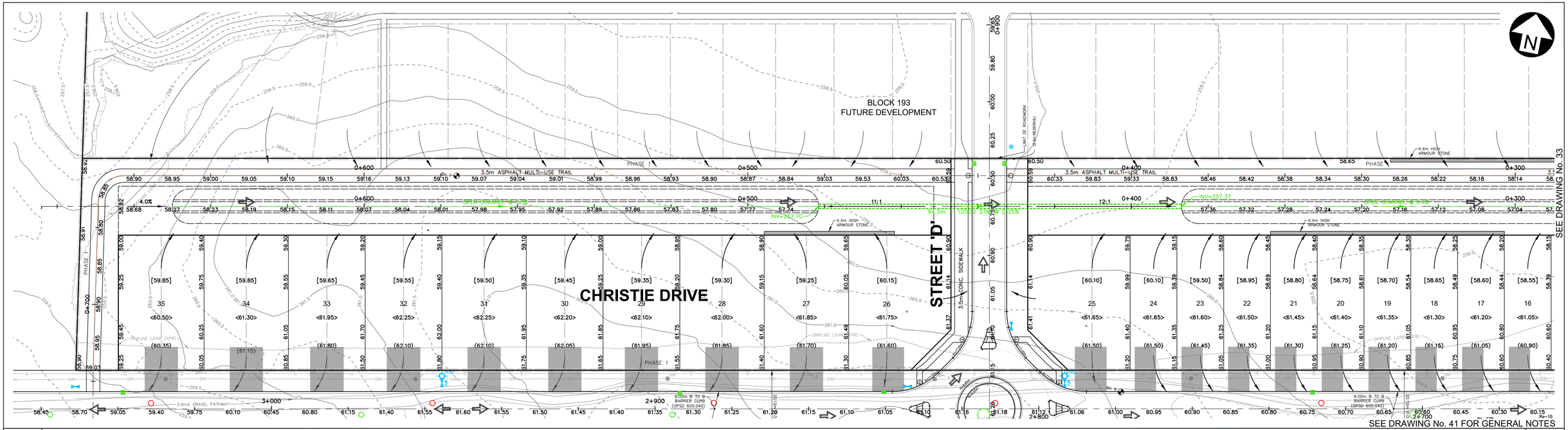

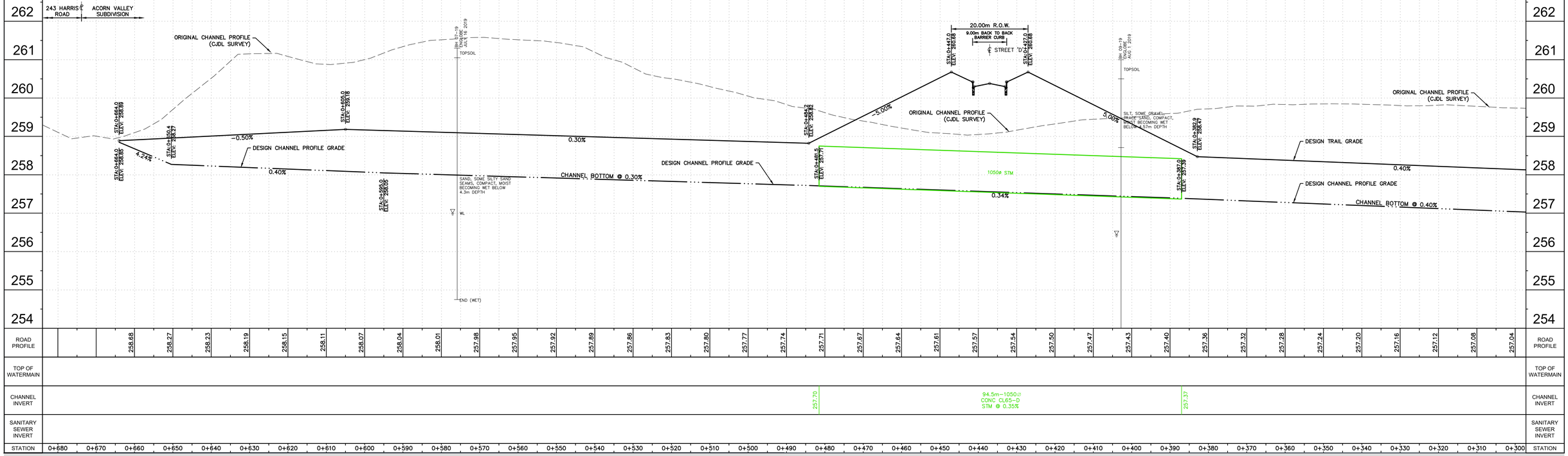

LEGEND

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- UTILITY PEDESTAL
- TRANSFORMER
- SURVEY BARS
- CONIFEROUS, DECIDUOUS TREE
- SHRUB
- EDGE OF BUSH/DRIP LINE
- GEOTECHNICAL BORE HOLE

CONSULTANT:
CJDL Consulting Engineers
Cyril J. Demeyere Limited
P.O. Box 460, 261 Broadway
Tillsonburg, Ontario, N4G 4H8
Tel: 519-688-1000
866-262-9866
Fax: 519-842-5235
cjdl@cjdleng.com

Thames Centre

ACORN Valley

STAMP:
D.J. WYLIE 100127477 PROFESSIONAL ENGINEER LICENSED PROVINCE OF ONTARIO
PRELIMINARY NOT FOR CONSTRUCTION 2025
K.V. MUIRHEAD 100424.9 PROFESSIONAL ENGINEER LICENSED PROVINCE OF ONTARIO

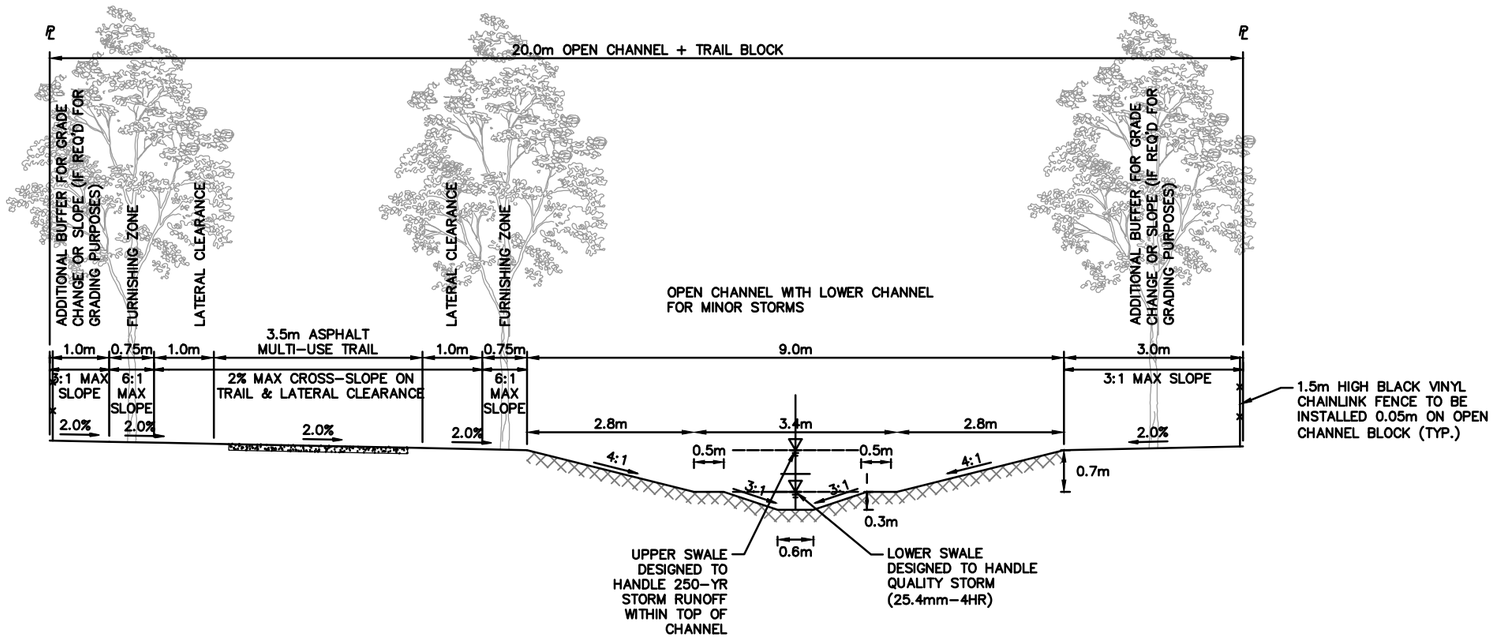
REVISION			
#	DESCRIPTION	DD/MM/YYYY	BY

OPEN CHANNEL & TRAIL - WEST (0+320 - 0+660)

CONTRACT #: 18010
PROJECT NAME: ACORN VALLEY SUBDIVISION 11M-XXX DOUG TARRY LIMITED
SCALE: HOR. 1:500 VER. 1:50
DRAWING #: F6-2

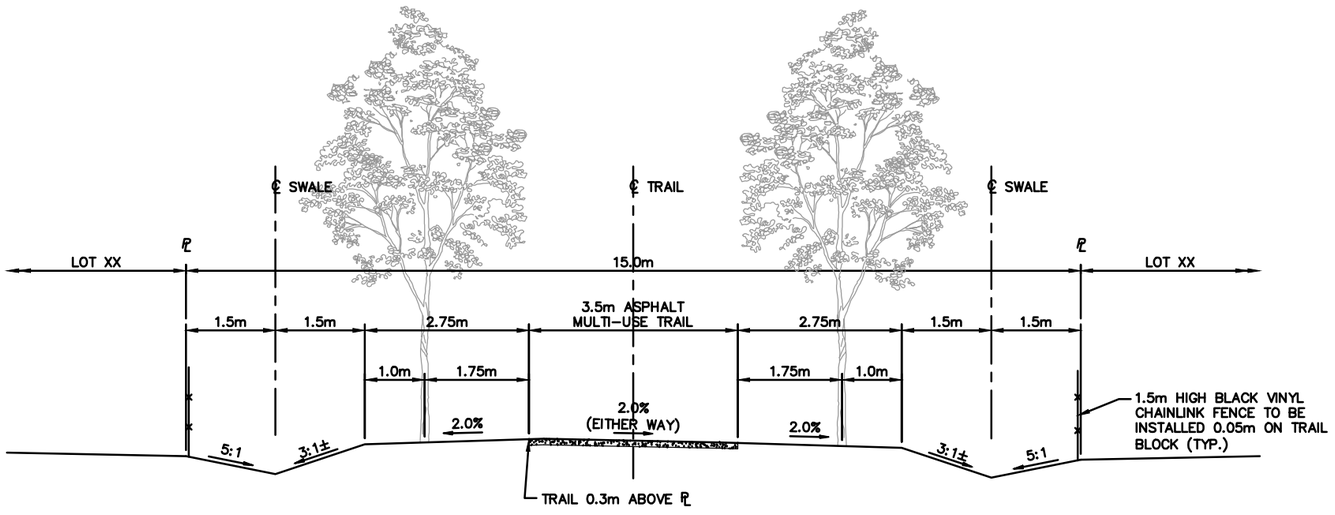
MUNICIPALITY OF THAMES CENTRE | 2025 EDITION

T:\ACAD Projects\2018\18010\04-Layouts\18010_Plan and Profile - Open Channel.dwg, 2026-01-08 8:21:30 AM, CJDLPC48, 1:25.4



TYPICAL X-SECTION – 20m TRAIL/OPEN CHANNEL BLOCK

SCALE : 1:100



TYPICAL X-SECTION – 15m TRAIL CORRIDOR

SCALE : 1:100

83 CHRISTIE DRIVE

MUNICIPALITY OF THAMES CENTRE

TRAIL AND CHANNEL CROSS-SECTION SCHEMATIC

PLAN PREPARED BY:

CJDL Consulting Engineers

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JOB NUMBER: 18010

DATE: 08 JAN 2026

FIGURE 7

I:\ACAD Projects\2018\18010\04-Layouts\18010_Sections.dwg, 2026-01-08 8:13:35 AM, CJDLPC48

APPENDIX 'A'

Pre-Development SSA Model Schematic

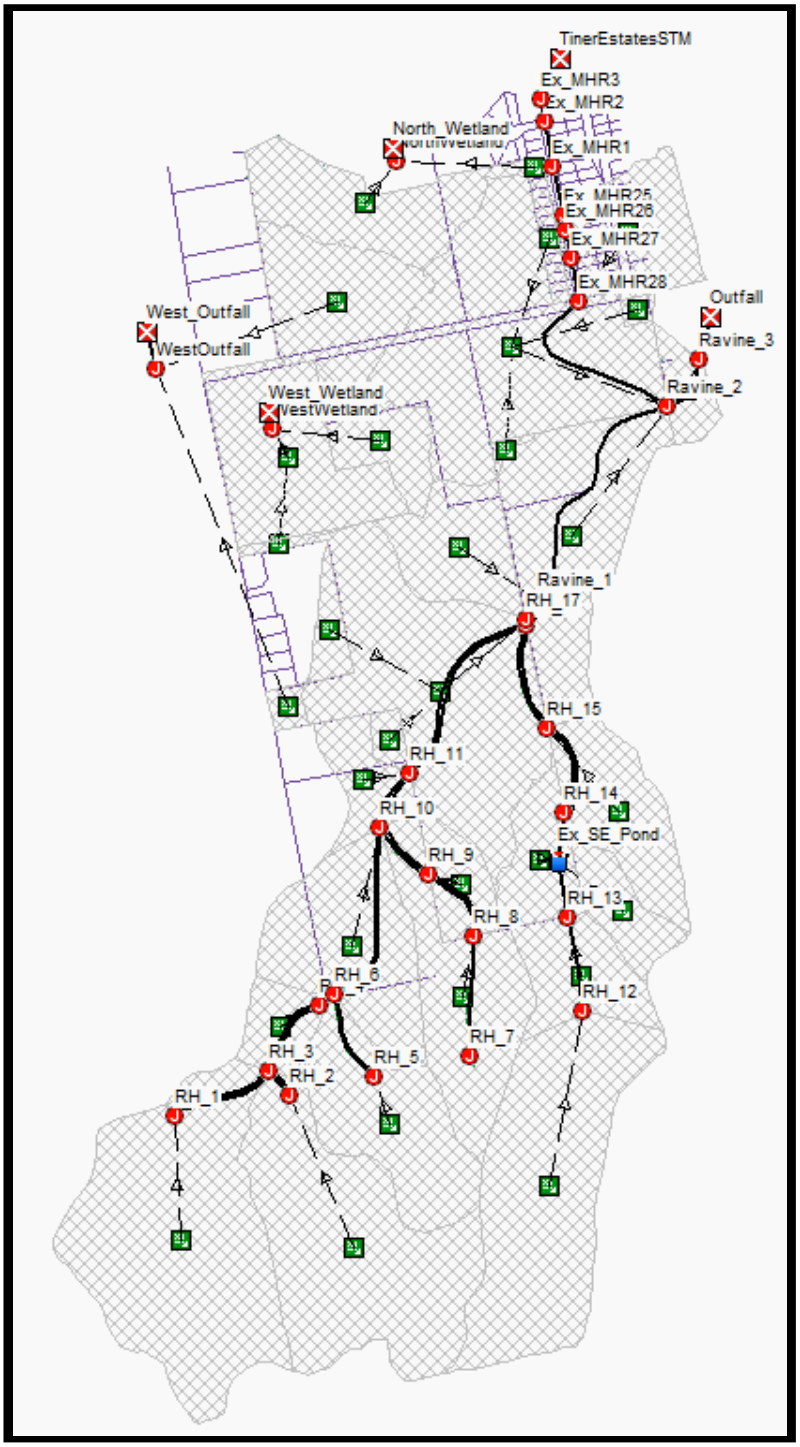
Post-Development SSA Model Schematic

Open Channel Upper Culvert Hydraflow Results

Open Channel Multi-Use Trail Culvert Hydraflow Results

Rath-Harris Municipal Drain Plan & Profile (W.J. Bartlett & Associates Ltd., Sept. 1989)

Shaw Municipal Drain (H.M. Gibson & Associates Ltd., Dec. 1977)



ACORN VALLEY SUBDIVISION
PRE-DEVELOPMENT MODEL

08 JAN 2026
JOB No. 18010

CJDL
Consulting Engineers

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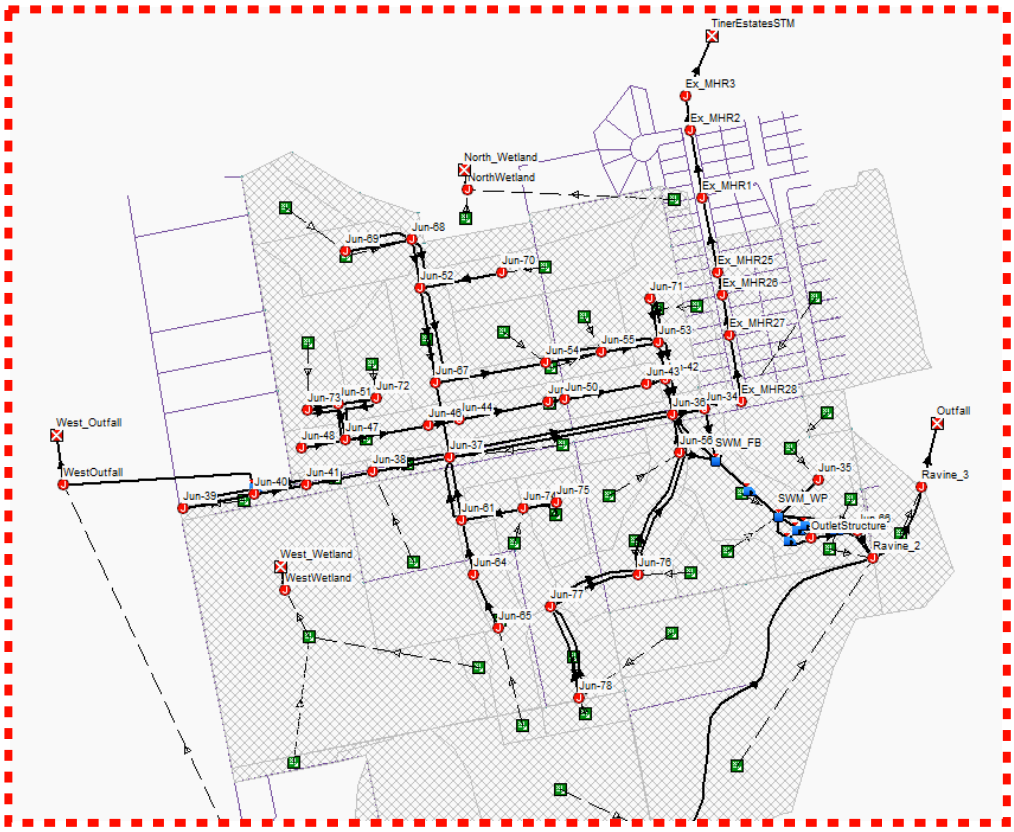

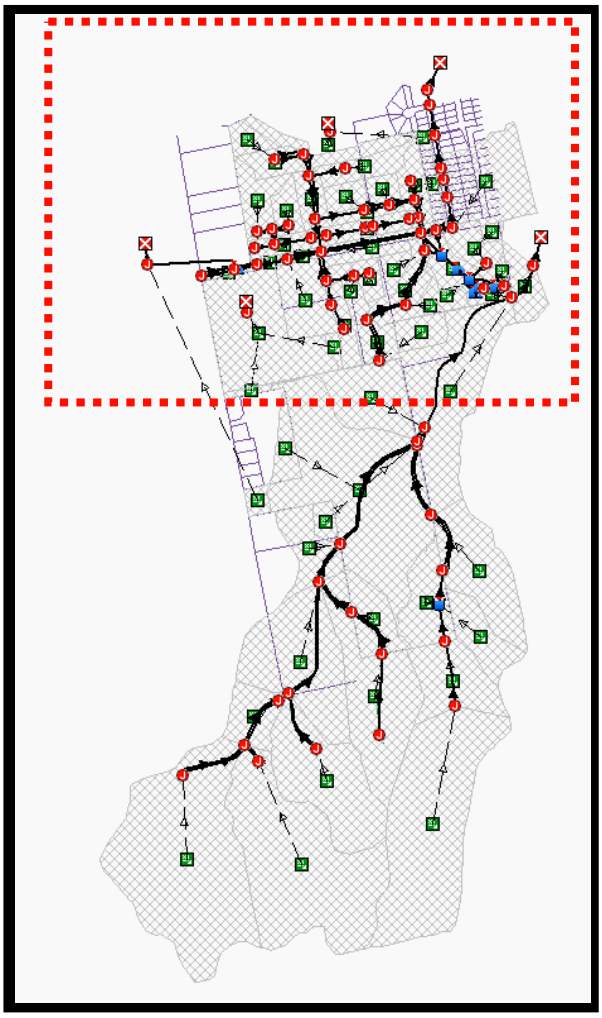

ACORN VALLEY SUBDIVISION
POST-DEVELOPMENT MODEL

08 JAN 2026
JOB No. 18010

CJDL
Consulting Engineers

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cjdl@cjdleng.com

Culvert Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Tuesday, Jun 24 2025

1050mm Culvert - Street 'D' Crossing

Invert Elev Dn (m)	=	57.5500
Pipe Length (m)	=	30.0000
Slope (%)	=	0.5000
Invert Elev Up (m)	=	57.7000
Rise (mm)	=	1050.0
Shape	=	Circular
Span (mm)	=	1050.0
No. Barrels	=	1
n-Value	=	0.013
Culvert Type	=	Circular Concrete
Culvert Entrance	=	Square edge w/headwall (C)
Coeff. K,M,c,Y,k	=	0.0098, 2, 0.0398, 0.67, 0.5

Embankment

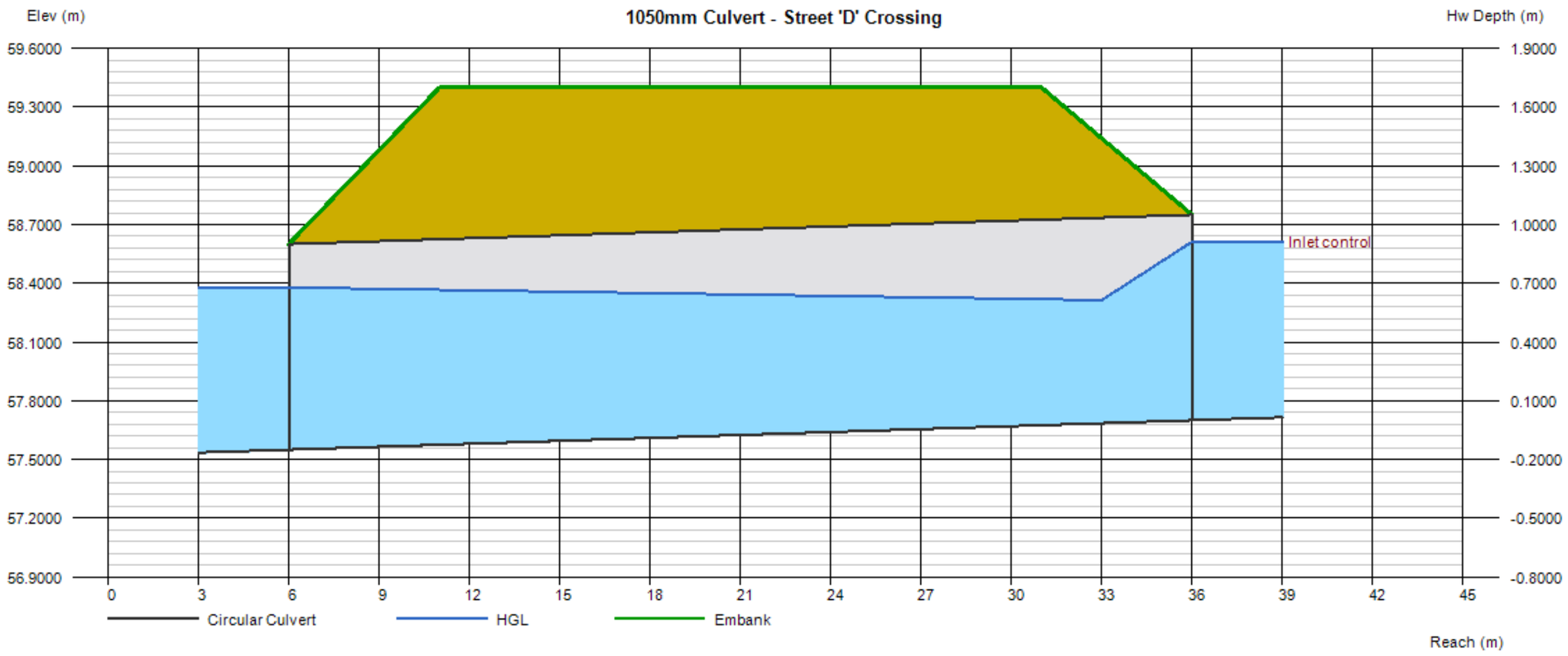
Top Elevation (m)	=	59.4000
Top Width (m)	=	20.0000
Crest Width (m)	=	20.0000

Calculations

Qmin (cms)	=	0.0000
Qmax (cms)	=	4.5000
Tailwater Elev (m)	=	(dc+D)/2

Highlighted

Qtotal (cms)	=	1.1500
Qpipe (cms)	=	1.1500
Qovertop (cms)	=	0.0000
Veloc Dn (m/s)	=	1.5695
Veloc Up (m/s)	=	2.2186
HGL Dn (m)	=	58.3783
HGL Up (m)	=	58.3067
Hw Elev (m)	=	58.6118
Hw/D (m)	=	0.8684
Flow Regime	=	Inlet Control



Culvert Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Tuesday, Jun 24 2025

1200mm Culvert - Pedestrian Crossing

Invert Elev Dn (m)	=	56.7500
Pipe Length (m)	=	25.0000
Slope (%)	=	0.6000
Invert Elev Up (m)	=	56.9000
Rise (mm)	=	1200.0
Shape	=	Circular
Span (mm)	=	1200.0
No. Barrels	=	1
n-Value	=	0.013
Culvert Type	=	Circular Concrete
Culvert Entrance	=	Square edge w/headwall (C)
Coeff. K,M,c,Y,k	=	0.0098, 2, 0.0398, 0.67, 0.5

Embankment

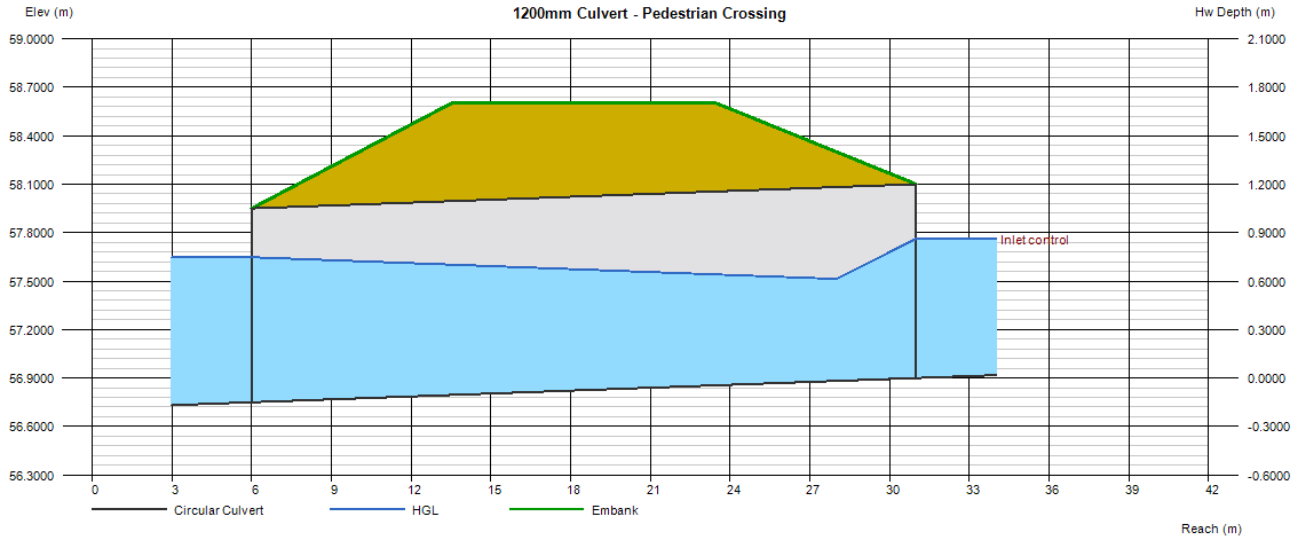
Top Elevation (m)	=	58.6000
Top Width (m)	=	10.0000
Crest Width (m)	=	10.0000

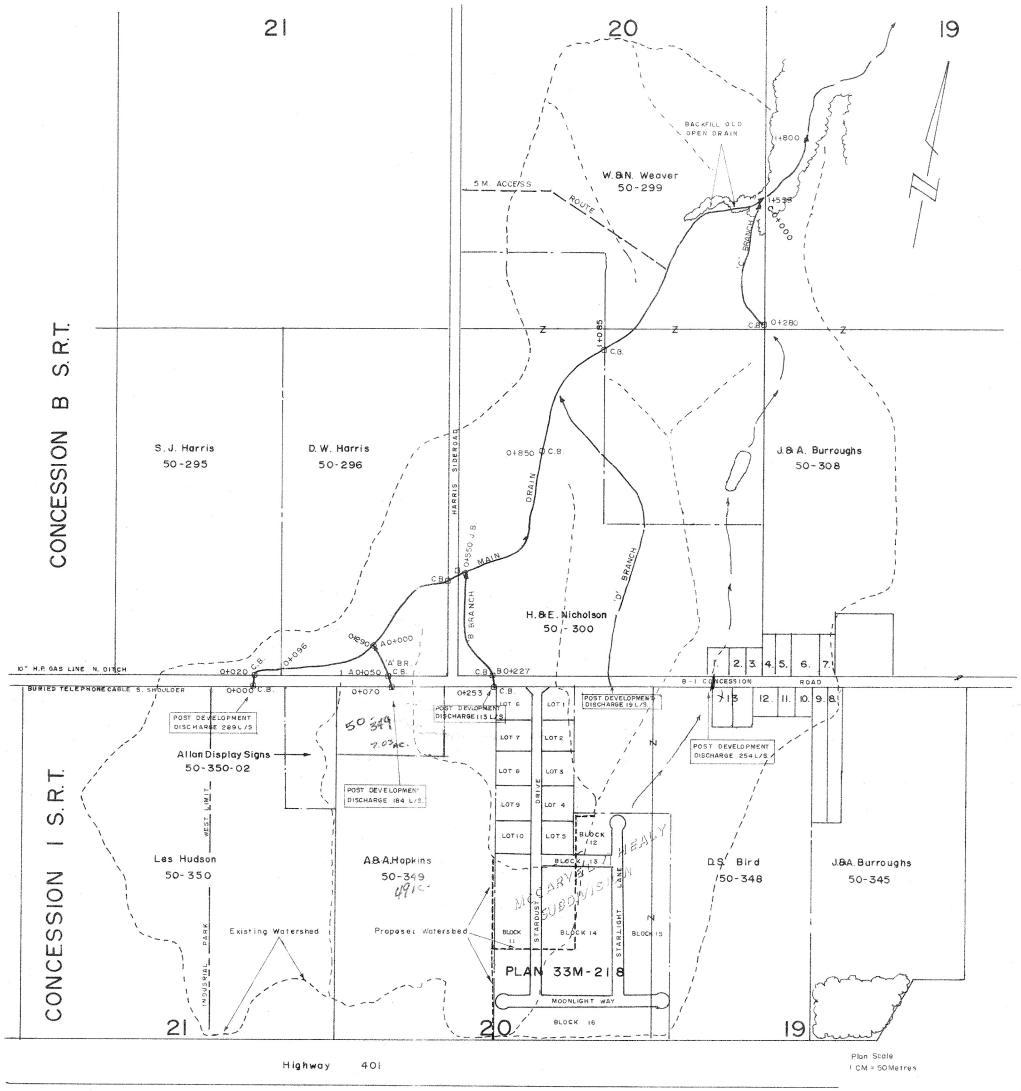
Calculations

Qmin (cms)	=	0.0000
Qmax (cms)	=	4.5000
Tailwater Elev (m)	=	(dc+D)/2

Highlighted

Qtotal (cms)	=	1.2000
Qpipe (cms)	=	1.2000
Qovertop (cms)	=	0.0000
Veloc Dn (m/s)	=	1.3224
Veloc Up (m/s)	=	2.1434
HGL Dn (m)	=	57.6477
HGL Up (m)	=	57.4953
Hw Elev (m)	=	57.7622
Hw/D (m)	=	0.7185
Flow Regime	=	Inlet Control





1	50-300-01	P.& S. Nicholson
2	50-301	W.& I. Laidlaw
3	50-302	W.& B. Bell
4	50-303	H. Schliewinsky
5	50-304	R.& H. Anderson
6	50-305	P.& S. Baker
7	50-306	G.& I. Schliewinsky
8	50-346	S.D. Driver
9	50-347	J.& K. McConnell
10	50-347-02	J.& J. Perfera
11	50-347-04	J.& A. Drake
12	50-347-06	N.L. Bird
13	50-347-08	J.& S. Teeple

McCarvel/Healy Subdivision
Plan 33M-218

Lot 1	50-348-12	722998 Ontario Ltd.
Lot 2	50-348-14	" " "
Lot 3	50-348-18	Jack Baribeau
Lot 4	50-348-20	H.Matte & G.Bernardi
Lot 5	50-348-22	Frank Prato
Lot 6	50-348-52	722998 Ontario Ltd.
Lot 7	50-348-54	D.& R. Melvin
Lot 8	50-348-56	722998 Ontario Ltd.
Lot 9	50-348-58	D.LaRose & E. Allender
Lot 10	50-348-60	722998 Ontario Ltd.
Blk 11	50-348-92	722998 Ontario Ltd.
Blk 12	50-348-50	" " "
Blk 13	50-348-24	" " "
Blk 14	50-348-28	" " "
Blk 15	50-348-52	" " "
Blk 16	50-348-64	" " "

TILE SIZES

Main Drain

0+000 - 0+020	20 Lin. M.	700 mm. dia. 2.0 mm. wall c.m.p.
0+020 - 0+290	270 Lin. M.	600 mm. dia. concrete drain tile
0+290 - 0+512	222 Lin. M.	675 mm. dia. concrete drain tile
0+512 - 0+530	18 Lin. M.	750 mm. dia. 2.0 mm. wall c.m.p.
0+530 - 1+085	555 Lin. M.	675 mm. dia. concrete drain tile
1+085 - 1+549	464 Lin. M.	750 mm. dia. concrete drain tile
1+549 - 1+555	6 Lin. M.	1000 mm. dia. 1.6 mm. wall c.m.p.

Branch A

0+000 - 0+250	50 Lin. M.	300 mm. dia. concrete drain tile
0+250 - 0+270	20 Lin. M.	375 mm. dia. 2.0 mm. wall c.m.p.

Branch B

0+000 - 0+227	227 Lin. M.	300 mm. dia. concrete drain tile
0+227 - 0+253	26 Lin. M.	375 mm. dia. 2.0 mm. wall c.m.p.

Branch C

0+000 - 0+006	6 Lin. M.	700 mm. dia. 1.6 mm. wall c.m.p.
0+006 - 0+280	274 Lin. M.	525 mm. dia. concrete drain tile

CATCHBASINS and JUNCTION BOXES

Main Drain

900 mm X 1200 mm inline ditch inlet catchbasins - 0+000, 0+020, 0+513, 0+850, & 1+085.
600 mm X 600 mm offset ditch inlet catchbasin - 0+530
900 mm X 1200 mm junction boxes - 0+290 & 0+550

Branch A

900 mm X 1200 mm inline ditch inlet catchbasin 0+070
600 mm X 600 mm offset ditch inlet catchbasin 0+050

Branch B

900 mm X 1200 mm inline ditch inlet catchbasin 0+253
600 mm X 600 mm offset ditch inlet catchbasin 0+227

Branch C

900 mm X 1200 mm inline ditch inlet catchbasin 0+280

NOTES

1. Deep Excavation: Station 0+020 to sta 0+513 will require compaction of backf as noted on the accompanying detail drawings
2. Stripping of Topsoil: In areas requir stripping of topsoil, station 0+150 to stati 0+450, 0+550 to 1+050 and 1+225 to 1+37 the topsoil shall be stripped, stockpile and replaced after the tile have been installed. The stripped area shall not be less than 10 metres in width.
3. Wrapping of Joints: All tile joints sha be completely wrapped with a double layer of geotextile filter fabric. T joint wrap shall be not less than 40 cm. in width and shall overlap at the ends n less than 40 cm.
4. Rip Rap:
Catchbasin protection - 300mm dia. 20 cub metres.
Stilling Basin - 350 mm. dia. 33 cub metres.

BENCH MARKS

Main Drain

0+018	Spike in hydro pole 25 M. East	270.38
0+530	Spike in hydro pole 10 M. North	268.99
0+850	Spike in 600 mm. dia. Ash tree 30 Meters West	265.76

A Branch

0+050	Spike in hydro pole 10 M. East	272.86

B Branch

0+227	Spike in hydro pole 5 M. East	272.61

C Branch

0+280	Spike in 650 mm dia. Maple 40 Metres North.	261.31

WORKING SPACE

The working space for the construction, maintenance and repair shall be an average width of 20 metres along the course of the drain excepting from 0+150 to 0+450, 0+050 to 1+050 and 1+225 to 1+375 where the width shall be 35 metres.

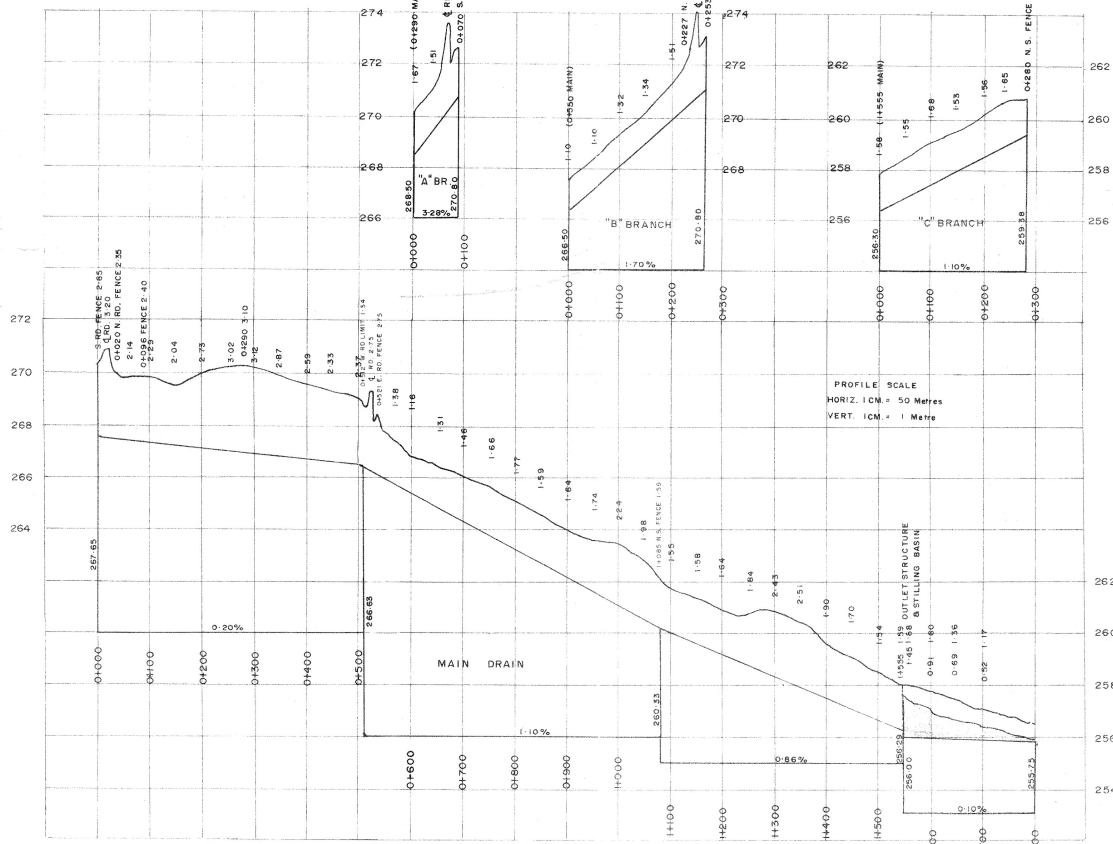
Access to the working space shall be gained from the Harris sideroad, the Concession road and via the 5 metre wide access route shown on the plan.

SEED MIX

Kentucky Tall Fescue	30 Kg. / Ha.
Birdsfoot Trefoil	20 Kg. / Ha.
10:10:10: Fertilizer	450 Kg. / Ha.

CLEARING

All trees, brush, logs and stumps shall be cleared back an average width of 25 metres. All trees larger than 150mm. (6") in dia. shall be cut and piled for the use or disposal by the owner. No cleared material to buried by spoil.



NO.	REVISION	BY	DATE

W. J. BARTLETT & ASSOCIATES LTD.
CONSULTING CIVIL ENGINEERS
DORCHESTER 519-268-7091 ONTARIO

DESIGN	R.B.H.
CHECKED	W.J.B.
DRAWN	R.B.H.
SCALE	AS NOTED

RATH-HARRIS
MUNICIPAL DRAIN IMPROVEMENT
TOWNSHIP OF NORTH DORCHESTER
PLAN AND PROFILE

DATE SEPTEMBER 14, 1989
SHEET 1 OF 3
FILE NO. 890906-9

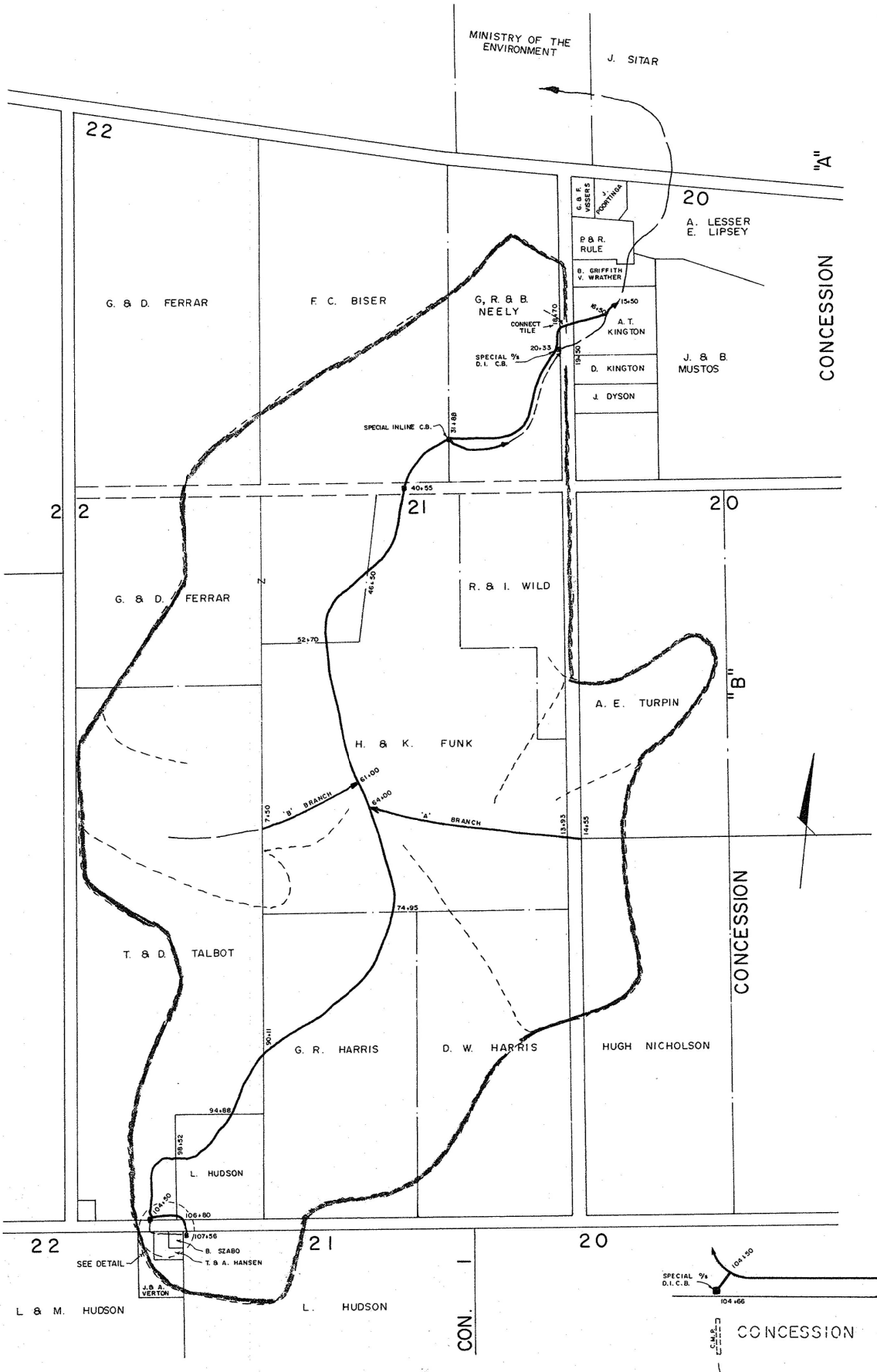
TC- 1333

SHAW MUNICIPAL DRAIN REPAIR & IMPROVEMENT

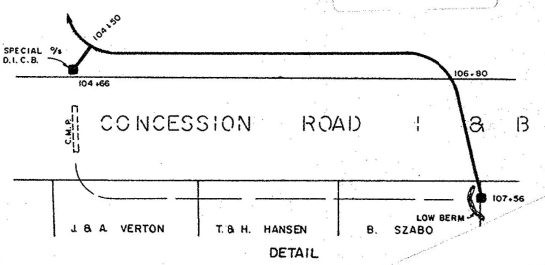
TOWNSHIP OF NORTH DORCHESTER

H. M. GIBSON AND ASSOCIATES LIMITED
CONSULTING ENGINEERS
LONDON

DESIGN BY R.B.H.	
DRAWN BY R.D.F	CHECKED BY H.M.G.
SCALE 1" = 500'	FILE NO. 35-107
DATE 23 DEC. 1977	



TC- 1333



APPENDIX ‘B’

Peer Review Comment Response Matrix

STORMWATER MANAGEMENT REPORT
PEER REVIEW COMMENT RESPONSE MATRIX

ACORN VALLEY SUBDIVISION
83 CHRISTIE DRIVE, DORCHESTER

CJDL Consulting Engineers

Project No. 18010
Date: 08-Jan-26
Completed By: AVM

#	Comments	Date	Response	Date
	Peer Review Comments (Stantec)			
1	Hydrogeological report speaks of the possible need for a pond liner but makes no recommendations. It is our opinion that the pond be lined and given that the pond bottom is below the high-ground water elevation, consideration be given for the possibility of that liner to float. Please have the liner designed by a qualified person. This can be done as part of detail design.	29-09-2025	Confirmed. The pond liner requirements have been specified within the revised Geotechnical Report and will be incorporated into the detailed design of the SWM pond.	08-01-2026
2	The model schematics in the SWM Report are not labelled for component parts, please label the schematics appropriately.	29-09-2025	Component labels have been added to the model schematic.	08-01-2026
3	Model outputs in the SWM Report seem to be cutoff in certain sections, with rows and columns of data missing. Please check and confirm that all data was submitted.	29-09-2025	The modelling result outputs have been updated to avoid any cutoff data.	08-01-2026
4	While we are in agreement that the overages to the Tamarack Swamp are minor in nature, efforts should be made during detail design to intercept and infiltrate the minor flows of the rear lots so that the peak flows are more in line in the minor events. Otherwise, the Scoped EIS should speak to the minor increases and expected impacts.	29-09-2025	Confirmed. Efforts will be made during detailed design to evaluate infiltration of rear yard runoff for lots backing on to Tamarack Swamp.	08-01-2026
	Peer Review Comments (Upper Thames River Conservation Authority)			
3	The Stormwater Management Report proposes controls to the 100-year storm and conveyance to the 250-year storm. The UTRCA strongly encourages controls to the 250-year storm. While controls to the 100-year storm is not preferred and does not reflect UTRCA's standard practice, it may be accepted in this case due to the local topography and drainage conditions. As part of this consideration, confirmation is required to ensure that the minor increase will not exacerbate flooding or erosion issues. Please address our technical review comment S1 included in Appendix C as part of the next submission. We encourage the Applicant to scope the analysis with UTRCA staff.	29-09-2025	The proposed SWM design has been altered to ensure post-development peak outflows are controlled to pre-development levels up to and including the 250-year event.	08-01-2026
4	Dry access should be provided to the Future Development Blocks (Block 192 and 193) across the conveyance channel during a regulatory (250-year) storm. At a minimum safe access must be demonstrated. The UTRCA will review access to the Future Development Blocks as part of the engineering submission as a condition of draft plan approval.	29-09-2025	The original Stormwater Management Report, and the revised Stormwater Management Report, have included hydaulic modelling of the proposed piped culverts below the roadway and trail accesses to the future development blocks (Blocks 192 & 193) to demonstrate that they will have dry access during the regulatory (250-year) storm event. It is acknowledged that this will be further reviewed by the UTRCA during the detailed engineering design process.	08-01-2026
7	A Feature-based Water Balance Assessment may be required if future development proposes works within 30 m of a regulated wetland. UTRCA strongly recommends that the entire 30 m buffer be included within the proposed Open Space blocks to ensure that future development will not require a Feature-based Water Balance Assessment.	29-09-2025	Acknowledged. All development is proposed outside of the 30m wetland buffer. There is only minor encoachment into the high-density residential block (Block 175), but that area already cannot be developed due to required zoning setbacks, so will be protected. Feature-based water balance assessment requirements are clarified and scoped specifically to the Tamarack Swamp, consistent with the Hydrogeological Assessment. Buffer inclusion within Open Space blocks is acknowledged and supported as part of detailed design.	08-01-2026

STORMWATER MANAGEMENT REPORT
PEER REVIEW COMMENT RESPONSE MATRIX

ACORN VALLEY SUBDIVISION
83 CHRISTIE DRIVE, DORCHESTER

CJDL Consulting Engineers

Project No. 18010
Date: 08-Jan-26
Completed By: AVM

S1	The UTRCA's flood event standard is the 1 in 250-year return period. Generally, for stormwater management, post-development peak flows are required to be less than or equal to pre-development levels for all design storms up to and including the 250-year event. In this instance, a minor increase in peak flows for the 250-year event is being considered as an exception. While this approach is not preferred and does not reflect UTRCA's standard practice, it may be accepted in this case due to the local topography and drainage conditions. As part of this consideration, confirmation is requested that the minor increase will not exacerbate flooding or erosion issues. The analysis must demonstrate that there will be no negative upstream or downstream impacts, taking into account the downstream receiving watercourses and ponds, as well as any watercourse crossings that may be affected by larger flows.	29-09-2025	The proposed SWM design has been altered to ensure post-development peak outflows are controlled to pre-development levels up to and including the 250-year event.	08-01-2026
S2	Please consider revising Figure 3 to improve clarity of the proposed post-development catchment areas, consistent with Figure 2 and the tributary areas legend.	29-09-2025	Figure 3 has been updated to add colour-coding for the various post-development areas and a summarizing table, similar to Figure 2.	08-01-2026
S3	The UTRCA will defer the review of the Water Balance to the Municipality as it is understood all development is proposed outside of the 30m wetland buffer.	29-09-2025	Acknowledged.	08-01-2026
S4	Please provide specifications and design sheets of the proposed OGS unit a.	29-09-2025	It is not yet confirmed if an OGS will be required in the northerly development block for areas being directed to the proposed infiltration channel. When the northerly blocks are developed, the areas tributary to the channel will need to be reviewed to determine if an OGS is required and then subsequently sized.	08-01-2026
S5	The UTRCA recommends directing only clean runoff to the wetland features.	29-09-2025	Acknowledged. During detailed design, efforts will be made to ensure clean water is directed towards the wetland features.	08-01-2026
S6	Please ensure that the proposed plunge pool, emergency overflow path, and outlet are designed such that no erosion is expected along the ravine and Rath-Harris Drain.	29-09-2025	Confirmed. These items will be explicity looked at in further detail during the detailed design process to ensure no erosion potential.	08-01-2026
S7	Please note that most of the site north of Christie Dr and the southeastern corner are estimated to be within a significant groundwater recharge area. Consideration should be given during design of the SWM plan/infrastructure at the detailed design stage.	29-09-2025	Acknowledged. This will be reviewed during detailed design.	08-01-2026
S8	Please confirm with Englobe if any pond liner is required due to the high groundwater levels, and if so, request geotechnical recommendations and adjust the pond design accordingly.	29-09-2025	The revised Geotechnical Report has included specifications for the required pond liner. This will be further reviewed as part of detailed design.	08-01-2026
S9	Please provide a Site Grading plan at the detailed design stage and ensure that all proposed grading and development is located outside of the greatest hazard extent (including erosion access allowance), as determined through the various technical studies.	29-09-2025	Confirmed. This will be provided during the detailed design stage.	08-01-2026
S10	At the detailed design stage please provide a detailed Erosion and Sediment Control (ESC) drawing supported by notes, standards, inspection, reporting, monitoring, and maintenance signed, sealed, and dated by a P.Eng.	29-09-2025	Confirmed. This will be provided during the detailed design stage.	08-01-2026

APPENDIX 'C'

Pre-Development Autodesk SSA Modelling Results

Post-Development Autodesk SSA Modelling Results

Project Description

File Name	18010_Pre-Development Rev.0.SPF
Description	I:\ACAD Projects\2018\18010\03-Ref\18010_Pre-Dev. Storm Parcels.dwg
	I:\ACAD Projects\2018\18010\03-Ref\18010_Pre-Dev. Storm Parcels.dwg

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	00:00:00	0:00:00
End Analysis On	00:00:00	0:00:00
Start Reporting On	00:00:00	0:00:00
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	31
Nodes	36
Junctions	30
Outfalls	5
Flow Diversions	0
Inlets	0
Storage Nodes	1
Links	44
Channels	18
Pipes	26
Pumps	0
Orifices	0
Weirs	0
Outlets	0
Pollutants	0
Land Uses	0

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	{Survey Site}.Standard : 10	0.92	2.00	67.00	2.0000	125.00	0.0130	0.2000	25.05	23.3740	0.50	0.46	0.00	0 00:47:56
2	{Survey Site}.Standard : 11	21.38	2.00	67.00	2.0000	360.00	0.0130	0.2000	25.05	21.0520	0.52	11.14	0.09	0 02:48:01
3	{Survey Site}.Standard : 12	0.71	5.00	67.00	2.0000	90.00	0.0130	0.2000	25.05	22.6590	1.26	0.89	0.01	0 00:49:07
4	{Survey Site}.Standard : 13	1.65	45.00	71.05	2.0000	220.00	0.0130	0.2000	25.05	13.0940	11.20	18.46	0.13	0 00:34:18
5	{Survey Site}.Standard : 14	4.32	2.00	67.00	2.0000	350.00	0.0130	0.2000	25.05	23.3740	0.50	2.17	0.02	0 01:05:27
6	{Survey Site}.Standard : 16	6.33	2.00	67.00	2.0000	215.00	0.0130	0.2000	25.05	23.3740	0.50	3.18	0.03	0 01:50:16
7	{Survey Site}.Standard : 17	0.36	5.00	67.00	5.0000	20.00	0.0130	0.2000	25.05	22.6590	1.26	0.45	0.00	0 01:00:47
8	{Survey Site}.Standard : 18	14.15	5.00	48.00	10.0000	300.00	0.0130	0.2000	25.05	22.6020	1.26	17.82	0.15	0 01:28:37
9	{Survey Site}.Standard : 19	0.26	2.00	67.00	2.0000	90.00	0.0130	0.2000	25.05	23.3740	0.50	0.13	0.00	0 00:27:38
10	{Survey Site}.Standard : 2	20.86	45.00	71.05	2.0000	300.00	0.0130	0.2000	25.05	13.0940	10.72	223.72	0.62	0 02:10:36
11	{Survey Site}.Standard : 20	11.33	2.00	36.00	0.5000	240.00	0.0130	0.2000	25.05	23.2930	0.50	5.70	0.04	0 03:41:50
12	{Survey Site}.Standard : 21	4.24	2.00	67.00	2.0000	155.00	0.0130	0.2000	25.05	23.3740	0.50	2.13	0.02	0 01:45:28
13	{Survey Site}.Standard : 22	23.21	2.00	67.00	2.0000	330.00	0.0130	0.2000	25.05	20.9530	0.52	12.02	0.09	0 03:05:58
14	{Survey Site}.Standard : 23	2.20	5.00	48.00	10.0000	100.00	0.0130	0.2000	25.05	22.6020	1.26	2.76	0.02	0 00:56:02
15	{Survey Site}.Standard : 24	9.04	2.00	67.00	2.0000	275.00	0.0130	0.2000	25.05	23.3740	0.50	4.55	0.04	0 01:57:50
16	{Survey Site}.Standard : 25	8.64	2.00	67.00	5.0000	390.00	0.0130	0.2000	25.05	23.3740	0.50	4.34	0.04	0 01:10:38
17	{Survey Site}.Standard : 26	1.12	45.00	71.05	2.0000	40.00	0.0130	0.2000	25.05	13.0940	10.87	12.21	0.05	0 01:15:49
18	{Survey Site}.Standard : 27	0.43	45.00	71.05	2.0000	60.00	0.0130	0.2000	25.05	13.0940	11.21	4.79	0.03	0 00:33:15
19	{Survey Site}.Standard : 28	0.12	45.00	71.05	2.0000	40.00	0.0130	0.2000	25.05	13.0940	11.32	1.39	0.01	0 00:20:06
20	{Survey Site}.Standard : 29	7.86	45.00	71.05	2.0000	110.00	0.0130	0.2000	25.05	13.0940	10.72	84.28	0.23	0 02:12:45
21	{Survey Site}.Standard : 3	25.14	45.00	71.05	2.0000	370.00	0.0130	0.2000	25.05	13.0940	10.73	269.64	0.76	0 02:08:47
22	{Survey Site}.Standard : 30	20.00	30.00	63.70	2.0000	225.00	0.0130	0.2000	25.05	16.6840	7.16	143.18	0.43	0 02:54:51
23	{Survey Site}.Standard : 31	5.54	5.00	57.00	2.0000	245.00	0.0130	0.2000	25.05	22.6000	1.26	6.98	0.06	0 01:32:25
24	{Survey Site}.Standard : 32	3.34	2.00	67.00	2.0000	95.00	0.0130	0.2000	25.05	23.3740	0.50	1.68	0.01	0 02:02:33
25	{Survey Site}.Standard : 33	7.71	2.00	67.00	2.0000	215.00	0.0130	0.2000	25.05	23.3740	0.50	3.88	0.03	0 02:04:05
26	{Survey Site}.Standard : 4	3.13	2.00	67.00	2.0000	155.00	0.0130	0.2000	25.05	23.3740	0.50	1.57	0.01	0 01:27:58
27	{Survey Site}.Standard : 5	10.46	45.00	71.05	0.5000	235.00	0.0130	0.2000	25.05	13.0940	10.70	111.89	0.28	0 02:31:27
28	{Survey Site}.Standard : 6	11.54	2.00	67.00	2.0000	280.00	0.0130	0.2000	25.05	23.3740	0.50	5.81	0.05	0 02:14:57
29	{Survey Site}.Standard : 7	10.98	5.00	67.00	2.0000	225.00	0.0130	0.2000	25.05	22.6590	1.25	13.74	0.10	0 02:26:32
30	{Survey Site}.Standard : 8	3.30	2.00	67.00	2.0000	125.00	0.0130	0.2000	25.05	23.3740	0.50	1.66	0.01	0 01:43:22
31	{Survey Site}.Standard : 9	3.53	2.00	67.00	2.0000	100.00	0.0130	0.2000	25.05	23.3740	0.50	1.78	0.01	0 02:03:00

Node Summary

SN	Element ID	Element Type	Invert Elevation (m)	Ground/Rim (Max) Elevation (m)	Initial Water Elevation (m)	Surcharge Elevation (m)	Ponded Area (m^2)	Peak Inflow (cms)	Max HGL Elevation Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ha-mm)	Total Time Flooded (min)
1	Ex_MHR1	Junction	255.88	262.50	0.00	0.00	0.00	0.22	256.28	0.00	6.22	0 00:00	0.00	0.00
2	Ex_MHR2	Junction	255.48	259.65	0.00	0.00	0.00	0.22	255.87	0.00	3.78	0 00:00	0.00	0.00
3	Ex_MHR25	Junction	256.48	263.35	0.00	0.00	0.00	0.22	256.93	0.00	6.42	0 00:00	0.00	0.00
4	Ex_MHR26	Junction	256.64	262.75	0.00	0.00	0.00	0.22	257.19	0.00	5.56	0 00:00	0.00	0.00
5	Ex_MHR27	Junction	256.94	261.00	0.00	0.00	0.00	0.22	257.74	0.00	3.26	0 00:00	0.00	0.00
6	Ex_MHR28	Junction	257.37	259.30	0.00	0.00	0.00	0.23	258.50	0.00	0.80	0 00:00	0.00	0.00
7	Ex_MHR3	Junction	255.23	259.00	0.00	0.00	0.00	0.22	255.58	0.00	3.42	0 00:00	0.00	0.00
8	NorthWetland	Junction	252.00	258.00	0.00	0.00	0.00	0.05	252.00	0.00	6.00	0 00:00	0.00	0.00
9	Ravine_1	Junction	256.10	260.10	0.00	0.00	0.00	1.22	256.42	0.00	3.68	0 00:00	0.00	0.00
10	Ravine_2	Junction	253.00	257.00	0.00	0.00	0.00	1.33	253.29	0.00	3.71	0 00:00	0.00	0.00
11	Ravine_3	Junction	252.45	256.45	0.00	0.00	0.00	1.12	252.67	0.00	3.78	0 00:00	0.00	0.00
12	RH_1	Junction	267.60	271.70	0.00	0.00	0.00	0.76	271.43	0.00	0.27	0 00:00	0.00	0.00
13	RH_10	Junction	261.90	263.90	0.00	0.00	0.00	0.99	263.04	0.00	0.86	0 00:00	0.00	0.00
14	RH_11	Junction	260.33	262.55	0.00	0.00	0.00	0.94	260.90	0.00	1.65	0 00:00	0.00	0.00
15	RH_12	Junction	269.00	270.50	0.00	0.00	0.00	0.43	269.21	0.00	1.29	0 00:00	0.00	0.00
16	RH_13	Junction	264.00	266.50	0.00	0.00	0.00	0.45	264.31	0.00	2.19	0 00:00	0.00	0.00
17	RH_14	Junction	261.70	263.50	0.00	0.00	0.00	0.27	262.03	0.00	1.47	0 00:00	0.00	0.00
18	RH_15	Junction	259.38	261.00	0.00	0.00	0.00	0.27	259.67	0.00	1.33	0 00:00	0.00	0.00
19	RH_16	Junction	256.36	258.00	0.00	0.00	0.00	0.27	256.82	0.00	1.18	0 00:00	0.00	0.00
20	RH_17	Junction	256.42	258.00	0.00	0.00	0.00	0.95	257.31	0.00	0.69	0 00:00	0.00	0.00
21	RH_2	Junction	270.14	272.45	0.00	0.00	0.00	0.62	272.21	0.00	0.24	0 00:00	0.00	0.00
22	RH_3	Junction	267.07	270.25	0.00	0.00	0.00	1.54	269.70	0.00	0.55	0 00:00	0.00	0.00
23	RH_4	Junction	266.63	268.60	0.00	0.00	0.00	0.85	268.21	0.00	0.39	0 00:00	0.00	0.00
24	RH_5	Junction	270.35	272.10	0.00	0.00	0.00	0.28	271.82	0.00	0.28	0 00:00	0.00	0.00
25	RH_6	Junction	266.50	268.20	0.00	0.00	0.00	1.06	267.92	0.00	0.28	0 00:00	0.00	0.00
26	RH_7	Junction	272.00	273.50	0.00	0.00	0.00	0.00	272.00	0.00	1.50	0 00:00	0.00	0.00
27	RH_8	Junction	267.75	269.85	0.00	0.00	0.00	0.10	267.93	0.00	1.92	0 00:00	0.00	0.00
28	RH_9	Junction	264.00	265.80	0.00	0.00	0.00	0.10	264.18	0.00	1.62	0 00:00	0.00	0.00
29	WestOutfall	Junction	257.00	258.00	0.00	0.00	0.00	0.05	257.00	0.00	1.00	0 00:00	0.00	0.00
30	WestWetland	Junction	258.00	259.00	0.00	0.00	0.00	0.06	258.00	0.00	1.00	0 00:00	0.00	0.00
31	North_Wetland	Outfall	252.00					0.05	252.00					
32	Outfall	Outfall	252.00					1.12	252.17					
33	TinerEstatesSTM	Outfall	254.82					0.22	255.12					
34	West_Outfall	Outfall	257.00					0.05	257.00					
35	West_Wetland	Outfall	258.00					0.06	258.00					
36	Ex_SE_Pond	Storage Node	262.00	266.00	0.00		0.00	0.44	262.30				0.00	0.00

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length (m)	Inlet Invert Elevation (m)	Outlet Invert Elevation (m)	Average Slope (%)	Diameter or Height (m)	Manning's Roughness	Peak Flow (cms)	Design Flow Capacity (cms)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (m/sec)	Peak Flow Depth (m)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Reported Condition
1	Ex.STM_1	Pipe	Ex_MHR28	Ex_MHR27	107.00	257.37	256.94	0.4000	0.450	0.0130	0.22	0.18	1.24	1.41	0.45	1.00	16.00	SURCHARGED
2	Ex.STM_2	Pipe	Ex_MHR27	Ex_MHR26	73.00	256.94	256.64	0.4100	0.450	0.0130	0.22	0.18	1.23	1.41	0.45	1.00	11.00	SURCHARGED
3	Ex.STM_3	Pipe	Ex_MHR26	Ex_MHR25	27.00	256.64	256.48	0.5900	0.450	0.0130	0.22	0.22	1.02	1.41	0.44	1.00	0.00	> CAPACITY
4	Ex.STM_4	Pipe	Ex_MHR25	Ex_MHR1	100.00	256.48	255.88	0.6000	0.450	0.0130	0.22	0.22	1.01	1.47	0.41	0.94	0.00	> CAPACITY
5	Ex.STM_5	Pipe	Ex_MHR1	Ex_MHR2	100.00	255.88	255.48	0.4000	0.525	0.0130	0.22	0.27	0.82	1.29	0.39	0.75	0.00	Calculated
6	Ex.STM_6	Pipe	Ex_MHR2	Ex_MHR3	50.00	255.48	255.23	0.5000	0.525	0.0130	0.22	0.30	0.73	1.36	0.37	0.70	0.00	Calculated
7	Ex.STM_7	Pipe	Ex_MHR3	TinerEstatesSTM	102.00	255.23	254.82	0.4000	0.600	0.0130	0.22	0.39	0.57	1.40	0.33	0.55	0.00	Calculated
8	RH_A1	Pipe	RH_2	RH_3	50.00	270.14	268.50	3.2800	0.300	0.0130	0.23	0.18	1.32	3.27	0.30	1.00	68.00	SURCHARGED
9	RH_B1	Pipe	RH_5	RH_6	227.00	270.35	266.50	1.7000	0.300	0.0130	0.14	0.13	1.10	2.43	0.30	1.00	63.00	SURCHARGED
10	RH_C3	Pipe	Ex_SE_Pond	RH_14	15.00	262.00	261.70	2.0000	0.600	0.0130	0.27	0.87	0.31	1.79	0.31	0.52	0.00	Calculated
11	RH_C4	Pipe	RH_14	RH_15	195.00	261.70	259.38	1.1900	0.525	0.0150	0.27	0.41	0.66	2.02	0.31	0.59	0.00	Calculated
12	RH_C5	Pipe	RH_15	RH_16	274.00	259.38	256.36	1.1000	0.525	0.0130	0.27	0.45	0.60	1.66	0.38	0.71	0.00	Calculated
13	RH_C6	Pipe	RH_16	Ravine_1	6.00	256.36	256.24	2.0000	0.700	0.0130	0.28	1.31	0.21	1.54	0.34	0.49	0.00	Calculated
14	RH_D1	Pipe	RH_7	RH_8	275.00	272.00	267.75	1.5500	0.300	0.0130	0.00	0.12	0.00	0.00	0.08	0.30	0.00	Calculated
15	RH_D2	Pipe	RH_8	RH_9	180.00	267.75	264.00	2.0800	0.300	0.0130	0.09	0.14	0.64	2.06	0.16	0.60	0.00	Calculated
16	RH_D3	Pipe	RH_9	RH_10	155.00	264.00	261.90	1.3500	0.375	0.0130	0.10	0.20	0.48	1.67	0.27	0.74	0.00	Calculated
17	RH_M1	Pipe	RH_1	RH_3	270.00	267.60	267.07	0.2000	0.600	0.0130	0.50	0.27	1.82	1.75	0.60	1.00	76.00	SURCHARGED
18	RH_M2	Pipe	RH_3	RH_4	222.00	267.07	266.63	0.2000	0.675	0.0130	0.80	0.37	2.13	2.23	0.68	1.00	68.00	SURCHARGED
19	RH_M3	Pipe	RH_4	RH_6	18.00	266.63	266.50	0.7200	0.750	0.0130	0.85	0.95	0.90	2.05	0.75	1.00	62.00	SURCHARGED
20	RH_M4	Pipe	RH_6	RH_10	415.00	266.50	261.90	1.1100	0.675	0.0130	0.91	0.89	1.03	2.64	0.68	1.00	63.00	SURCHARGED
21	RH_M5	Pipe	RH_10	RH_11	140.00	261.90	260.33	1.1200	0.675	0.0130	0.94	0.89	1.06	2.82	0.62	0.92	0.00	> CAPACITY
22	RH_M6	Pipe	RH_11	RH_17	464.00	260.33	256.42	0.8400	0.750	0.0130	0.94	1.02	0.92	2.29	0.66	0.88	0.00	Calculated
23	RH_M7	Pipe	RH_17	Ravine_1	6.00	256.42	256.37	0.8300	1.000	0.0130	0.95	2.19	0.43	1.68	0.67	0.67	0.00	Calculated
24	West_Link	Pipe	WestOutfall	West_Outfall	33.73	256.00	257.00	-2.9600	0.000	0.0130	0.05	0.00	0.01	0.00	0.27	0.07	0.00	Calculated
25	WestWetland_Link	Pipe	WestWetland	West_Wetland	37.13	258.00	258.00	0.0000	0.000	0.0130	0.06	0.00	0.01	0.00	0.27	0.07	0.00	Calculated
26	Wetland_Link	Pipe	NorthWetland	North_Wetland	41.51	252.00	252.00	0.0000	0.000	0.0130	0.05	0.00	0.01	0.00	0.27	0.07	0.00	Calculated
27	Ex.STM_Overland	Channel	Ex_MHR28	Ravine_2	400.00	259.00	253.00	1.5000	0.300	0.0320	0.00	10.09	0.00	0.00	0.15	0.49	0.00	
28	Link-34	Channel	RH_1	RH_3	270.00	271.40	269.65	0.6500	0.300	0.0320	0.18	6.63	0.03	0.26	0.04	0.12	0.00	
29	Link-35	Channel	RH_2	RH_3	50.00	272.15	269.65	5.0000	0.300	0.0320	0.97	18.43	0.05	0.94	0.05	0.18	0.00	
30	Link-36	Channel	RH_3	RH_4	222.00	269.65	268.30	0.6100	0.300	0.0320	0.20	6.43	0.03	0.27	0.04	0.12	0.00	
31	Link-37	Channel	RH_4	RH_6	18.00	268.30	267.90	2.2200	0.300	0.0320	0.00	12.28	0.00	0.00	0.01	0.03	0.00	
32	Link-38	Channel	RH_5	RH_6	227.00	271.80	267.90	1.7200	0.300	0.0320	0.09	10.80	0.01	0.29	0.02	0.05	0.00	
33	Link-39	Channel	RH_6	RH_10	415.00	267.90	263.50	1.0600	0.300	0.0320	0.05	8.48	0.01	0.18	0.01	0.04	0.00	
34	Link-41	Channel	RH_8	RH_9	180.00	269.55	265.50	2.2500	0.300	0.0320	0.00	12.36	0.00	0.00	0.00	0.00	0.00	
35	Link-42	Channel	RH_9	RH_10	155.00	265.50	263.50	1.2900	0.300	0.0320	0.00	9.36	0.00	0.00	0.00	0.00	0.00	
36	Link-43	Channel	RH_10	RH_11	140.00	263.50	262.25	0.8900	0.300	0.0320	0.00	7.79	0.00	0.00	0.00	0.00	0.00	
37	Link-44	Channel	RH_11	Ravine_1	470.00	262.25	258.00	0.9000	0.300	0.0320	0.00	7.84	0.00	0.00	0.00	0.00	0.00	
38	Link-45	Channel	RH_14	RH_15	195.00	263.20	260.70	1.2800	0.300	0.0320	0.00	9.33	0.00	0.00	0.00	0.00	0.00	
39	Link-46	Channel	RH_15	Ravine_1	280.00	260.70	258.00	0.9600	0.300	0.0320	0.00	8.09	0.00	0.00	0.00	0.00	0.00	
40	LowerRavine	Channel	Ravine_2	Ravine_3	124.00	253.00	252.45	0.4400	4.000	0.0320	1.12	157.98	0.01	0.81	0.26	0.06	0.00	
41	OutletRavine	Channel	Ravine_3	Outfall	45.00	252.45	252.00	1.0000	4.000	0.0320	1.12	237.22	0.00	1.08	0.20	0.05	0.00	
42	RH_C1	Channel	RH_12	RH_13	215.00	269.00	264.00	2.3300	1.500	0.0320	0.43	24.20	0.02	1.23	0.26	0.18	0.00	
43	RH_C2	Channel	RH_13	Ex_SE_Pond	60.00	264.00	263.50	0.8300	1.500	0.0320	0.43	14.49	0.03	1.04	0.27	0.18	0.00	
44	UpperRavine	Channel	Ravine_1	Ravine_2	553.00	256.10	253.00	0.5600	4.000	0.0320	1.31	177.61	0.01	0.96	0.27	0.07	0.00	

Junction Input

SN	Element ID	Invert Elevation (m)	Ground/Rim (Max) Elevation (m)	Ground/Rim (Max) Offset (m)	Initial Water Elevation (m)	Initial Water Depth (m)	Surcharge Elevation (m)	Surcharge Depth (m)	Ponded Area (m²)	Minimum Pipe Cover (m)
1	Ex_MHR1	255.88	262.50	6.62	0.00	-255.88	0.00	-262.50	0.00	0.00
2	Ex_MHR2	255.48	259.65	4.17	0.00	-255.48	0.00	-259.65	0.00	0.00
3	Ex_MHR25	256.48	263.35	6.87	0.00	-256.48	0.00	-263.35	0.00	0.00
4	Ex_MHR26	256.64	262.75	6.11	0.00	-256.64	0.00	-262.75	0.00	0.00
5	Ex_MHR27	256.94	261.00	4.06	0.00	-256.94	0.00	-261.00	0.00	0.00
6	Ex_MHR28	257.37	259.30	1.93	0.00	-257.37	0.00	-259.30	0.00	0.00
7	Ex_MHR3	255.23	259.00	3.77	0.00	-255.23	0.00	-259.00	0.00	0.00
8	NorthWetland	252.00	258.00	6.00	0.00	-252.00	0.00	-258.00	0.00	0.00
9	Ravine_1	256.10	260.10	4.00	0.00	-256.10	0.00	-260.10	0.00	0.00
10	Ravine_2	253.00	257.00	4.00	0.00	-253.00	0.00	-257.00	0.00	0.00
11	Ravine_3	252.45	256.45	4.00	0.00	-252.45	0.00	-256.45	0.00	0.00
12	RH_1	267.60	271.70	4.10	0.00	-267.60	0.00	-271.70	0.00	0.00
13	RH_10	261.90	263.90	2.00	0.00	-261.90	0.00	-263.90	0.00	0.00
14	RH_11	260.33	262.55	2.22	0.00	-260.33	0.00	-262.55	0.00	0.00
15	RH_12	269.00	270.50	1.50	0.00	-269.00	0.00	-270.50	0.00	0.00
16	RH_13	264.00	266.50	2.50	0.00	-264.00	0.00	-266.50	0.00	0.00
17	RH_14	261.70	263.50	1.80	0.00	-261.70	0.00	-263.50	0.00	0.00
18	RH_15	259.38	261.00	1.62	0.00	-259.38	0.00	-261.00	0.00	0.00
19	RH_16	256.36	258.00	1.64	0.00	-256.36	0.00	-258.00	0.00	0.00
20	RH_17	256.42	258.00	1.58	0.00	-256.42	0.00	-258.00	0.00	0.00
21	RH_2	270.14	272.45	2.31	0.00	-270.14	0.00	-272.45	0.00	0.00
22	RH_3	267.07	270.25	3.18	0.00	-267.07	0.00	-270.25	0.00	0.00
23	RH_4	266.63	268.60	1.97	0.00	-266.63	0.00	-268.60	0.00	0.00
24	RH_5	270.35	272.10	1.75	0.00	-270.35	0.00	-272.10	0.00	0.00
25	RH_6	266.50	268.20	1.70	0.00	-266.50	0.00	-268.20	0.00	0.00
26	RH_7	272.00	273.50	1.50	0.00	-272.00	0.00	-273.50	0.00	0.00
27	RH_8	267.75	269.85	2.10	0.00	-267.75	0.00	-269.85	0.00	0.00
28	RH_9	264.00	265.80	1.80	0.00	-264.00	0.00	-265.80	0.00	0.00
29	WestOutfall	257.00	258.00	1.00	0.00	-257.00	0.00	-258.00	0.00	0.00
30	WestWetland	258.00	259.00	1.00	0.00	-258.00	0.00	-259.00	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)	Total Time Flooded (min)
1	Ex_MHR1	0.22	0.00	256.28	0.40	0.00	6.22	255.99	0.11	0 00:22	0 00:00	0.00	0.00
2	Ex_MHR2	0.22	0.00	255.87	0.39	0.00	3.78	255.59	0.11	0 00:23	0 00:00	0.00	0.00
3	Ex_MHR25	0.22	0.00	256.93	0.45	0.00	6.42	256.59	0.11	0 00:22	0 00:00	0.00	0.00
4	Ex_MHR26	0.22	0.00	257.19	0.55	0.00	5.56	256.76	0.12	0 00:21	0 00:00	0.00	0.00
5	Ex_MHR27	0.22	0.00	257.74	0.80	0.00	3.26	257.08	0.14	0 00:21	0 00:00	0.00	0.00
6	Ex_MHR28	0.23	0.23	258.50	1.13	0.00	0.80	257.52	0.15	0 00:21	0 00:00	0.00	0.00
7	Ex_MHR3	0.22	0.00	255.58	0.35	0.00	3.42	255.34	0.11	0 00:24	0 00:00	0.00	0.00
8	NorthWetland	0.05	0.05	252.00	0.00	0.00	6.00	252.00	0.00	0 00:00	0 00:00	0.00	0.00
9	Ravine_1	1.22	0.03	256.42	0.32	0.00	3.68	256.21	0.11	0 00:37	0 00:00	0.00	0.00
10	Ravine_2	1.33	0.24	253.29	0.29	0.00	3.71	253.12	0.12	0 01:16	0 00:00	0.00	0.00
11	Ravine_3	1.12	0.02	252.67	0.22	0.00	3.78	252.54	0.09	0 01:17	0 00:00	0.00	0.00
12	RH_1	0.76	0.76	271.43	3.83	0.00	0.27	268.46	0.86	0 00:25	0 00:00	0.00	0.00
13	RH_10	0.99	0.05	263.04	1.14	0.00	0.86	262.26	0.36	0 00:56	0 00:00	0.00	0.00
14	RH_11	0.94	0.01	260.90	0.57	0.00	1.65	260.57	0.24	0 00:57	0 00:00	0.00	0.00
15	RH_12	0.43	0.43	269.21	0.21	0.00	1.29	269.06	0.06	0 00:16	0 00:00	0.00	0.00
16	RH_13	0.45	0.06	264.31	0.31	0.00	2.19	264.09	0.09	0 00:20	0 00:00	0.00	0.00
17	RH_14	0.27	0.00	262.03	0.33	0.00	1.47	261.82	0.12	0 00:38	0 00:00	0.00	0.00
18	RH_15	0.27	0.03	259.67	0.29	0.00	1.33	259.50	0.12	0 00:39	0 00:00	0.00	0.00
19	RH_16	0.27	0.00	256.82	0.46	0.00	1.18	256.53	0.17	0 00:41	0 00:00	0.00	0.00
20	RH_17	0.95	0.09	257.31	0.89	0.00	0.69	256.79	0.37	0 00:58	0 00:00	0.00	0.00
21	RH_2	0.62	0.62	272.21	2.07	0.00	0.24	270.63	0.49	0 00:09	0 00:00	0.00	0.00
22	RH_3	1.54	0.00	269.70	2.63	0.00	0.55	267.83	0.76	0 00:39	0 00:00	0.00	0.00
23	RH_4	0.85	0.01	268.21	1.58	0.00	0.39	267.08	0.45	0 00:40	0 00:00	0.00	0.00
24	RH_5	0.28	0.28	271.82	1.47	0.00	0.28	270.70	0.35	0 00:31	0 00:00	0.00	0.00
25	RH_6	1.06	0.00	267.92	1.42	0.00	0.28	266.91	0.41	0 00:53	0 00:00	0.00	0.00
26	RH_7	0.00	0.00	272.00	0.00	0.00	1.50	272.00	0.00	0 00:00	0 00:00	0.00	0.00
27	RH_8	0.10	0.10	267.93	0.18	0.00	1.92	267.78	0.03	0 00:11	0 00:00	0.00	0.00
28	RH_9	0.10	0.01	264.18	0.18	0.00	1.62	264.03	0.03	0 00:12	0 00:00	0.00	0.00
29	WestOutfall	0.05	0.05	257.00	0.00	0.00	1.00	257.00	0.00	0 00:00	0 00:00	0.00	0.00
30	WestWetland	0.06	0.06	258.00	0.00	0.00	1.00	258.00	0.00	0 00:00	0 00:00	0.00	0.00

Channel Input

SN	Element ID	Length (m)	Inlet Invert Elevation (m)	Inlet Invert Offset (m)	Outlet Invert Elevation (m)	Outlet Invert Offset (m)	Total Drop (m)	Average Slope (%)	Shape	Height (m)	Width (m)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cms)	Flap Gate
1	Ex.STM_Overland	400.00	259.00	1.63	253.00	0.00	6.00	1.5000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
2	Link-34	270.00	271.40	3.80	269.65	2.58	1.75	0.6500	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
3	Link-35	50.00	272.15	2.01	269.65	2.58	2.50	5.0000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
4	Link-36	222.00	269.65	2.58	268.30	1.67	1.35	0.6100	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
5	Link-37	18.00	268.30	1.67	267.90	1.40	0.40	2.2200	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
6	Link-38	227.00	271.80	1.45	267.90	1.40	3.90	1.7200	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
7	Link-39	415.00	267.90	1.40	263.50	1.60	4.40	1.0600	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
8	Link-41	180.00	269.55	1.80	265.50	1.50	4.05	2.2500	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
9	Link-42	155.00	265.50	1.50	263.50	1.60	2.00	1.2900	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
10	Link-43	140.00	263.50	1.60	262.25	1.92	1.25	0.8900	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
11	Link-44	470.00	262.25	1.92	258.00	1.90	4.25	0.9000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
12	Link-45	195.00	263.20	1.50	260.70	1.32	2.50	1.2800	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
13	Link-46	280.00	260.70	1.32	258.00	1.90	2.70	0.9600	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
14	LowerRavine	124.00	253.00	0.00	252.45	0.00	0.55	0.4400	Trapezoidal	4.000	17.000	0.0320	0.5000	0.5000	0.0000	0.00	No
15	OutletRavine	45.00	252.45	0.00	252.00	0.00	0.45	1.0000	Trapezoidal	4.000	17.000	0.0320	0.5000	0.5000	0.0000	0.00	No
16	RH_C1	215.00	269.00	0.00	264.00	0.00	5.00	2.3300	Trapezoidal	1.500	7.000	0.0320	0.5000	0.5000	0.0000	0.00	No
17	RH_C2	60.00	264.00	0.00	263.50	1.50	0.50	0.8300	Trapezoidal	1.500	7.000	0.0320	0.5000	0.5000	0.0000	0.00	No
18	UpperRavine	553.00	256.10	0.00	253.00	0.00	3.10	0.5600	Trapezoidal	4.000	17.000	0.0320	0.5000	0.5000	0.0000	0.00	No

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
1	Ex.STM_Overland	0.00	0 00:00	10.09	0.00	0.00		0.15	0.49	0.00	0.00	
2	Link-34	0.18	0 00:26	6.63	0.03	0.26	17.31	0.04	0.12	0.00	0.03	
3	Link-35	0.97	0 00:10	18.43	0.05	0.94	0.89	0.05	0.18	0.00	0.10	
4	Link-36	0.20	0 00:39	6.43	0.03	0.27	13.70	0.04	0.12	0.00	0.08	
5	Link-37	0.00	0 00:00	12.28	0.00	0.00		0.01	0.03	0.00	0.00	
6	Link-38	0.09	0 00:31	10.80	0.01	0.29	13.05	0.02	0.05	0.00	0.09	
7	Link-39	0.05	0 00:53	8.48	0.01	0.18	38.43	0.01	0.04	0.00	0.08	
8	Link-41	0.00	0 00:00	12.36	0.00	0.00		0.00	0.00	0.00	0.00	
9	Link-42	0.00	0 00:00	9.36	0.00	0.00		0.00	0.00	0.00	0.00	
10	Link-43	0.00	0 00:00	7.79	0.00	0.00		0.00	0.00	0.00	0.00	
11	Link-44	0.00	0 00:00	7.84	0.00	0.00		0.00	0.00	0.00	0.00	
12	Link-45	0.00	0 00:00	9.33	0.00	0.00		0.00	0.00	0.00	0.00	
13	Link-46	0.00	0 00:00	8.09	0.00	0.00		0.00	0.00	0.00	0.00	
14	LowerRavine	1.12	0 01:16	157.98	0.01	0.81	2.55	0.26	0.06	0.00	0.39	
15	OutletRavine	1.12	0 01:17	237.22	0.00	1.08	0.69	0.20	0.05	0.00	0.61	
16	RH_C1	0.43	0 00:17	24.20	0.02	1.23	2.91	0.26	0.18	0.00	0.47	
17	RH_C2	0.43	0 00:20	14.49	0.03	1.04	0.96	0.27	0.18	0.00	0.53	
18	UpperRavine	1.31	0 00:48	177.61	0.01	0.96	9.60	0.27	0.07	0.00	0.35	

Pipe Input

SN	Element ID	Length (m)	Inlet Invert Elevation (m)	Inlet Invert Offset (m)	Outlet Invert Elevation (m)	Outlet Invert Offset (m)	Total Drop (m)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (m)	Pipe Width (m)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cms)	Flap Gate
1	Ex.STM_1	107.00	257.37	0.00	256.94	0.00	0.43	0.4000	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
2	Ex.STM_2	73.00	256.94	0.00	256.64	0.00	0.30	0.4100	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
3	Ex.STM_3	27.00	256.64	0.00	256.48	0.00	0.16	0.5900	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
4	Ex.STM_4	100.00	256.48	0.00	255.88	0.00	0.60	0.6000	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
5	Ex.STM_5	100.00	255.88	0.00	255.48	0.00	0.40	0.4000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
6	Ex.STM_6	50.00	255.48	0.00	255.23	0.00	0.25	0.5000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
7	Ex.STM_7	102.00	255.23	0.00	254.82	0.00	0.41	0.4000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
8	RH_A1	50.00	270.14	0.00	268.50	1.43	1.64	3.2800	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
9	RH_B1	227.00	270.35	0.00	266.50	0.00	3.85	1.7000	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
10	RH_C3	15.00	262.00	0.00	261.70	0.00	0.30	2.0000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
11	RH_C4	195.00	261.70	0.00	259.38	0.00	2.32	1.1900	CIRCULAR	0.530	0.530	0.0150	0.5000	0.5000	0.0000	0.00	No
12	RH_C5	274.00	259.38	0.00	256.36	0.00	3.02	1.1000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
13	RH_C6	6.00	256.36	0.00	256.24	0.14	0.12	2.0000	CIRCULAR	0.700	0.700	0.0130	0.5000	0.5000	0.0000	0.00	No
14	RH_D1	275.00	272.00	0.00	267.75	0.00	4.25	1.5500	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
15	RH_D2	180.00	267.75	0.00	264.00	0.00	3.75	2.0800	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
16	RH_D3	155.00	264.00	0.00	261.90	0.00	2.10	1.3500	CIRCULAR	0.380	0.380	0.0130	0.5000	0.5000	0.0000	0.00	No
17	RH_M1	270.00	267.60	0.00	267.07	0.00	0.53	0.2000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
18	RH_M2	222.00	267.07	0.00	266.63	0.00	0.44	0.2000	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
19	RH_M3	18.00	266.63	0.00	266.50	0.00	0.13	0.7200	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
20	RH_M4	415.00	266.50	0.00	261.90	0.00	4.60	1.1100	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
21	RH_M5	140.00	261.90	0.00	260.33	0.00	1.57	1.1200	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
22	RH_M6	464.00	260.33	0.00	256.42	0.00	3.91	0.8400	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
23	RH_M7	6.00	256.42	0.00	256.37	0.27	0.05	0.8300	CIRCULAR	1.000	1.000	0.0130	0.5000	0.5000	0.0000	0.00	No
24	West_Link	33.73	256.00	-1.00	257.00	0.00	-1.00	-2.9600	Dummy	0.000	0.000	0.0130	0.5000	0.5000	0.0000	0.00	No
25	WestWetland_Link	37.13	258.00	0.00	258.00	0.00	0.00	0.0000	Dummy	0.000	0.000	0.0130	0.5000	0.5000	0.0000	0.00	No
26	Wetland_Link	41.51	252.00	0.00	252.00	0.00	0.00	0.0000	Dummy	0.000	0.000	0.0130	0.5000	0.5000	0.0000	0.00	No

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	Ex.STM_1	0.22	0 00:20	0.18	1.24	1.41	1.26	0.45	1.00	16.00	0.65	SURCHARGED
2	Ex.STM_2	0.22	0 00:20	0.18	1.23	1.41	0.86	0.45	1.00	11.00	0.69	SURCHARGED
3	Ex.STM_3	0.22	0 00:20	0.22	1.02	1.41	0.32	0.44	1.00	0.00	0.81	> CAPACITY
4	Ex.STM_4	0.22	0 00:22	0.22	1.01	1.47	1.13	0.41	0.94	0.00	0.81	> CAPACITY
5	Ex.STM_5	0.22	0 00:23	0.27	0.82	1.29	1.29	0.39	0.75	0.00	0.73	Calculated
6	Ex.STM_6	0.22	0 00:24	0.30	0.73	1.36	0.61	0.37	0.70	0.00	0.73	Calculated
7	Ex.STM_7	0.22	0 00:24	0.39	0.57	1.40	1.21	0.33	0.55	0.00	0.80	Calculated
8	RH_A1	0.23	0 00:10	0.18	1.32	3.27	0.25	0.30	1.00	68.00	1.57	SURCHARGED
9	RH_B1	0.14	0 00:14	0.13	1.10	2.43	1.56	0.30	1.00	63.00	0.57	SURCHARGED
10	RH_C3	0.27	0 00:37	0.87	0.31	1.79	0.14	0.31	0.52	0.00	1.23	Calculated
11	RH_C4	0.27	0 00:38	0.41	0.66	2.02	1.61	0.31	0.59	0.00	1.20	Calculated
12	RH_C5	0.27	0 00:39	0.45	0.60	1.66	2.75	0.38	0.71	0.00	0.99	Calculated
13	RH_C6	0.28	0 00:41	1.31	0.21	1.54	0.06	0.34	0.49	0.00	1.15	Calculated
14	RH_D1	0.00	0 00:00	0.12	0.00	0.00		0.08	0.30	0.00	0.00	Calculated
15	RH_D2	0.09	0 00:11	0.14	0.64	2.06	1.46	0.16	0.60	0.00	1.10	Calculated
16	RH_D3	0.10	0 00:12	0.20	0.48	1.67	1.55	0.27	0.74	0.00	0.10	Calculated
17	RH_M1	0.50	0 00:16	0.27	1.82	1.75	2.57	0.60	1.00	76.00	0.25	SURCHARGED
18	RH_M2	0.80	0 00:17	0.37	2.13	2.23	1.66	0.68	1.00	68.00	0.44	SURCHARGED
19	RH_M3	0.85	0 00:39	0.95	0.90	2.05	0.15	0.75	1.00	62.00	0.67	SURCHARGED
20	RH_M4	0.91	0 00:18	0.89	1.03	2.64	2.62	0.68	1.00	63.00	0.93	SURCHARGED
21	RH_M5	0.94	0 00:56	0.89	1.06	2.82	0.83	0.62	0.92	0.00	1.14	> CAPACITY
22	RH_M6	0.94	0 00:57	1.02	0.92	2.29	3.38	0.66	0.88	0.00	0.83	Calculated
23	RH_M7	0.95	0 00:58	2.19	0.43	1.68	0.06	0.67	0.67	0.00	0.86	Calculated
24	West_Link	0.05	0 00:10	0.00	0.01	0.00		0.27	0.07	0.00	0.35	Calculated
25	WestWetland_Link	0.06	0 00:10	0.00	0.01	0.00		0.27	0.07	0.00	0.35	Calculated
26	Wetland_Link	0.05	0 00:10	0.00	0.01	0.00		0.27	0.07	0.00	0.35	Calculated

Project Description

File Name	18010_Pre-Development Rev.0.SPF
Description	I:\ACAD Projects\2018\18010\03-Ref\18010_Pre-Dev. Storm Parcels.dwg
	I:\ACAD Projects\2018\18010\03-Ref\18010_Pre-Dev. Storm Parcels.dwg

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	00:00:00	0:00:00
End Analysis On	00:00:00	0:00:00
Start Reporting On	00:00:00	0:00:00
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	31
Nodes	36
Junctions	30
Outfalls	5
Flow Diversions	0
Inlets	0
Storage Nodes	1
Links	44
Channels	18
Pipes	26
Pumps	0
Orifices	0
Weirs	0
Outlets	0
Pollutants	0
Land Uses	0

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	{Survey Site}.Standard : 10	0.92	2.00	67.00	2.0000	125.00	0.0130	0.2000	59.19	43.7930	14.16	13.00	0.01	0 01:18:05
2	{Survey Site}.Standard : 11	21.38	2.00	67.00	2.0000	360.00	0.0130	0.2000	59.19	40.8400	15.82	338.20	0.13	0 04:33:43
3	{Survey Site}.Standard : 12	0.71	5.00	67.00	2.0000	90.00	0.0130	0.2000	59.19	42.4520	15.47	10.99	0.01	0 01:20:01
4	{Survey Site}.Standard : 13	1.65	45.00	71.05	2.0000	220.00	0.0130	0.2000	59.19	23.0560	34.85	57.43	0.20	0 00:55:52
5	{Survey Site}.Standard : 14	4.32	2.00	67.00	2.0000	350.00	0.0130	0.2000	59.19	44.0630	13.87	59.90	0.04	0 01:46:38
6	{Survey Site}.Standard : 16	6.33	2.00	67.00	2.0000	215.00	0.0130	0.2000	59.19	44.8480	13.07	82.73	0.04	0 02:59:38
7	{Survey Site}.Standard : 17	0.36	5.00	67.00	5.0000	20.00	0.0130	0.2000	59.19	42.6430	15.28	5.44	0.01	0 01:39:02
8	{Survey Site}.Standard : 18	14.15	5.00	48.00	10.0000	300.00	0.0130	0.2000	59.19	51.0660	6.88	97.34	0.18	0 02:24:23
9	{Survey Site}.Standard : 19	0.26	2.00	67.00	2.0000	90.00	0.0130	0.2000	59.19	43.4740	14.49	3.83	0.01	0 00:45:01
10	{Survey Site}.Standard : 2	20.86	45.00	71.05	2.0000	300.00	0.0130	0.2000	59.19	23.9870	33.88	706.81	1.84	0 03:32:46
11	{Survey Site}.Standard : 20	11.33	2.00	36.00	0.5000	240.00	0.0130	0.2000	59.19	51.6540	2.30	26.07	0.06	0 06:01:24
12	{Survey Site}.Standard : 21	4.24	2.00	67.00	2.0000	155.00	0.0130	0.2000	59.19	44.7740	13.16	55.76	0.03	0 02:51:50
13	{Survey Site}.Standard : 22	23.21	2.00	67.00	2.0000	330.00	0.0130	0.2000	59.19	40.4820	15.16	351.87	0.14	0 05:02:58
14	{Survey Site}.Standard : 23	2.20	5.00	48.00	10.0000	100.00	0.0130	0.2000	59.19	50.5770	7.35	16.16	0.03	0 01:31:18
15	{Survey Site}.Standard : 24	9.04	2.00	67.00	2.0000	275.00	0.0130	0.2000	59.19	44.9950	12.93	116.94	0.06	0 03:11:58
16	{Survey Site}.Standard : 25	8.64	2.00	67.00	5.0000	390.00	0.0130	0.2000	59.19	44.1610	13.78	119.06	0.07	0 01:55:04
17	{Survey Site}.Standard : 26	1.12	45.00	71.05	2.0000	40.00	0.0130	0.2000	59.19	23.4430	34.46	38.74	0.12	0 02:03:32
18	{Survey Site}.Standard : 27	0.43	45.00	71.05	2.0000	60.00	0.0130	0.2000	59.19	23.0560	34.85	14.88	0.05	0 00:54:11
19	{Survey Site}.Standard : 28	0.12	45.00	71.05	2.0000	40.00	0.0130	0.2000	59.19	22.9350	34.94	4.30	0.02	0 00:32:45
20	{Survey Site}.Standard : 29	7.86	45.00	71.05	2.0000	110.00	0.0130	0.2000	59.19	24.0110	33.85	266.16	0.69	0 03:36:17
21	{Survey Site}.Standard : 3	25.14	45.00	71.05	2.0000	370.00	0.0130	0.2000	59.19	23.9750	33.90	852.14	2.23	0 03:29:49
22	{Survey Site}.Standard : 30	20.00	30.00	63.70	2.0000	225.00	0.0130	0.2000	59.19	34.1590	23.75	474.80	1.21	0 04:44:52
23	{Survey Site}.Standard : 31	5.54	5.00	57.00	2.0000	245.00	0.0130	0.2000	59.19	47.9010	10.02	55.55	0.07	0 02:30:34
24	{Survey Site}.Standard : 32	3.34	2.00	67.00	2.0000	95.00	0.0130	0.2000	59.19	45.0930	12.85	42.84	0.02	0 03:19:39
25	{Survey Site}.Standard : 33	7.71	2.00	67.00	2.0000	215.00	0.0130	0.2000	59.19	45.1170	12.82	98.78	0.05	0 03:22:10
26	{Survey Site}.Standard : 4	3.13	2.00	67.00	2.0000	155.00	0.0130	0.2000	59.19	44.4550	13.48	42.19	0.02	0 02:23:18
27	{Survey Site}.Standard : 5	10.46	45.00	71.05	0.5000	235.00	0.0130	0.2000	59.19	24.1810	33.65	351.95	0.85	0 04:06:44
28	{Survey Site}.Standard : 6	11.54	2.00	67.00	2.0000	280.00	0.0130	0.2000	59.19	45.3140	12.62	145.63	0.07	0 03:39:51
29	{Survey Site}.Standard : 7	10.98	5.00	67.00	2.0000	225.00	0.0130	0.2000	59.19	44.1410	13.80	151.40	0.15	0 03:58:43
30	{Survey Site}.Standard : 8	3.30	2.00	67.00	2.0000	125.00	0.0130	0.2000	59.19	44.7250	13.20	43.61	0.02	0 02:48:24
31	{Survey Site}.Standard : 9	3.53	2.00	67.00	2.0000	100.00	0.0130	0.2000	59.19	45.0930	12.84	45.34	0.02	0 03:20:23

Node Summary

SN	Element ID	Element Type	Invert Elevation (m)	Ground/Rim (Max) Elevation (m)	Initial Water Elevation (m)	Surcharge Elevation (m)	Ponded Area (m^2)	Peak Inflow (cms)	Max HGL Elevation Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ha-mm)	Total Time Flooded (min)
1	Ex_MHR1	Junction	255.88	262.50	0.00	0.00	0.00	0.25	256.32	0.00	6.18	0 00:00	0.00	0.00
2	Ex_MHR2	Junction	255.48	259.65	0.00	0.00	0.00	0.25	255.90	0.00	3.75	0 00:00	0.00	0.00
3	Ex_MHR25	Junction	256.48	263.35	0.00	0.00	0.00	0.25	257.50	0.00	5.85	0 00:00	0.00	0.00
4	Ex_MHR26	Junction	256.64	262.75	0.00	0.00	0.00	0.25	257.83	0.00	4.92	0 00:00	0.00	0.00
5	Ex_MHR27	Junction	256.94	261.00	0.00	0.00	0.00	0.25	258.26	0.00	2.74	0 00:00	0.00	0.00
6	Ex_MHR28	Junction	257.37	259.30	0.00	0.00	0.00	0.69	259.03	0.00	0.27	0 00:00	0.00	0.00
7	Ex_MHR3	Junction	255.23	259.00	0.00	0.00	0.00	0.25	255.61	0.00	3.39	0 00:00	0.00	0.00
8	NorthWetland	Junction	252.00	258.00	0.00	0.00	0.00	0.09	252.00	0.00	6.00	0 00:00	0.00	0.00
9	Ravine_1	Junction	256.10	260.10	0.00	0.00	0.00	2.44	256.48	0.00	3.62	0 00:00	0.00	0.00
10	Ravine_2	Junction	253.00	257.00	0.00	0.00	0.00	2.50	253.45	0.00	3.55	0 00:00	0.00	0.00
11	Ravine_3	Junction	252.45	256.45	0.00	0.00	0.00	2.35	252.80	0.00	3.65	0 00:00	0.00	0.00
12	RH_1	Junction	267.60	271.70	0.00	0.00	0.00	2.23	271.53	0.00	0.17	0 00:00	0.00	0.00
13	RH_10	Junction	261.90	263.90	0.00	0.00	0.00	2.72	263.63	0.00	0.27	0 00:00	0.00	0.00
14	RH_11	Junction	260.33	262.55	0.00	0.00	0.00	2.32	262.34	0.00	0.21	0 00:00	0.00	0.00
15	RH_12	Junction	269.00	270.50	0.00	0.00	0.00	1.21	269.37	0.00	1.13	0 00:00	0.00	0.00
16	RH_13	Junction	264.00	266.50	0.00	0.00	0.00	1.24	264.51	0.00	1.99	0 00:00	0.00	0.00
17	RH_14	Junction	261.70	263.50	0.00	0.00	0.00	0.47	262.58	0.00	0.92	0 00:00	0.00	0.00
18	RH_15	Junction	259.38	261.00	0.00	0.00	0.00	0.46	260.05	0.00	0.95	0 00:00	0.00	0.00
19	RH_16	Junction	256.36	258.00	0.00	0.00	0.00	0.45	257.05	0.00	0.95	0 00:00	0.00	0.00
20	RH_17	Junction	256.42	258.00	0.00	0.00	0.00	1.17	257.47	0.00	0.53	0 00:00	0.00	0.00
21	RH_2	Junction	270.14	272.45	0.00	0.00	0.00	1.84	272.22	0.00	0.23	0 00:00	0.00	0.00
22	RH_3	Junction	267.07	270.25	0.00	0.00	0.00	3.85	269.83	0.00	0.42	0 00:00	0.00	0.00
23	RH_4	Junction	266.63	268.60	0.00	0.00	0.00	2.61	268.39	0.00	0.21	0 00:00	0.00	0.00
24	RH_5	Junction	270.35	272.10	0.00	0.00	0.00	0.85	271.85	0.00	0.25	0 00:00	0.00	0.00
25	RH_6	Junction	266.50	268.20	0.00	0.00	0.00	3.22	268.02	0.00	0.18	0 00:00	0.00	0.00
26	RH_7	Junction	272.00	273.50	0.00	0.00	0.00	0.00	272.00	0.00	1.50	0 00:00	0.00	0.00
27	RH_8	Junction	267.75	269.85	0.00	0.00	0.00	0.15	268.00	0.00	1.85	0 00:00	0.00	0.00
28	RH_9	Junction	264.00	265.80	0.00	0.00	0.00	0.16	264.31	0.00	1.49	0 00:00	0.00	0.00
29	WestOutfall	Junction	257.00	258.00	0.00	0.00	0.00	0.07	257.00	0.00	1.00	0 00:00	0.00	0.00
30	WestWetland	Junction	258.00	259.00	0.00	0.00	0.00	0.09	258.00	0.00	1.00	0 00:00	0.00	0.00
31	North_Wetland	Outfall	252.00					0.09	252.00					
32	Outfall	Outfall	252.00					2.35	252.27					
33	TinerEstatesSTM	Outfall	254.82					0.25	255.14					
34	West_Outfall	Outfall	257.00					0.07	257.00					
35	West_Wetland	Outfall	258.00					0.09	258.00					
36	Ex_SE_Pond	Storage Node	262.00	266.00	0.00		0.00	1.22	262.75				0.00	0.00

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(m)	(m)	(m)	(%)	(m)		(cms)	(cms)		(m/sec)	(m)		(min)	
1	Ex.STM_1	Pipe	Ex_MHR28	Ex_MHR27	107.00	257.37	256.94	0.4000	0.450	0.0130	0.25	0.18	1.37	1.55	0.45	1.00	41.00	SURCHARGED
2	Ex.STM_2	Pipe	Ex_MHR27	Ex_MHR26	73.00	256.94	256.64	0.4100	0.450	0.0130	0.25	0.18	1.35	1.55	0.45	1.00	39.00	SURCHARGED
3	Ex.STM_3	Pipe	Ex_MHR26	Ex_MHR25	27.00	256.64	256.48	0.5900	0.450	0.0130	0.25	0.22	1.12	1.55	0.45	1.00	37.00	SURCHARGED
4	Ex.STM_4	Pipe	Ex_MHR25	Ex_MHR1	100.00	256.48	255.88	0.6000	0.450	0.0130	0.25	0.22	1.12	1.58	0.44	0.99	0.00	> CAPACITY
5	Ex.STM_5	Pipe	Ex_MHR1	Ex_MHR2	100.00	255.88	255.48	0.4000	0.525	0.0130	0.25	0.27	0.90	1.32	0.43	0.82	0.00	Calculated
6	Ex.STM_6	Pipe	Ex_MHR2	Ex_MHR3	50.00	255.48	255.23	0.5000	0.525	0.0130	0.25	0.30	0.81	1.40	0.40	0.76	0.00	Calculated
7	Ex.STM_7	Pipe	Ex_MHR3	TinerEstatesSTM	102.00	255.23	254.82	0.4000	0.600	0.0130	0.25	0.39	0.63	1.43	0.35	0.58	0.00	Calculated
8	RH_A1	Pipe	RH_2	RH_3	50.00	270.14	268.50	3.2800	0.300	0.0130	0.23	0.18	1.31	3.26	0.30	1.00	100.00	SURCHARGED
9	RH_B1	Pipe	RH_5	RH_6	227.00	270.35	266.50	1.7000	0.300	0.0130	0.14	0.13	1.10	1.96	0.30	1.00	87.00	SURCHARGED
10	RH_C3	Pipe	Ex_SE_Pond	RH_14	15.00	262.00	261.70	2.0000	0.600	0.0130	0.47	0.87	0.54	1.90	0.60	1.00	41.00	SURCHARGED
11	RH_C4	Pipe	RH_14	RH_15	195.00	261.70	259.38	1.1900	0.525	0.0150	0.44	0.41	1.07	2.12	0.52	1.00	54.00	SURCHARGED
12	RH_C5	Pipe	RH_15	RH_16	274.00	259.38	256.36	1.1000	0.525	0.0130	0.45	0.45	1.00	2.13	0.52	1.00	58.00	SURCHARGED
13	RH_C6	Pipe	RH_16	Ravine_1	6.00	256.36	256.24	2.0000	0.700	0.0130	0.45	1.31	0.34	1.63	0.49	0.70	0.00	Calculated
14	RH_D1	Pipe	RH_7	RH_8	275.00	272.00	267.75	1.5500	0.300	0.0130	0.00	0.12	0.00	0.00	0.12	0.42	0.00	Calculated
15	RH_D2	Pipe	RH_8	RH_9	180.00	267.75	264.00	2.0800	0.300	0.0130	0.14	0.14	1.00	2.18	0.25	0.90	0.00	> CAPACITY
16	RH_D3	Pipe	RH_9	RH_10	155.00	264.00	261.90	1.3500	0.375	0.0130	0.15	0.20	0.71	1.39	0.33	0.91	0.00	Calculated
17	RH_M1	Pipe	RH_1	RH_3	270.00	267.60	267.07	0.2000	0.600	0.0130	0.51	0.27	1.86	1.79	0.60	1.00	109.00	SURCHARGED
18	RH_M2	Pipe	RH_3	RH_4	222.00	267.07	266.63	0.2000	0.675	0.0130	0.80	0.37	2.14	2.23	0.68	1.00	96.00	SURCHARGED
19	RH_M3	Pipe	RH_4	RH_6	18.00	266.63	266.50	0.7200	0.750	0.0130	1.04	0.95	1.09	2.34	0.75	1.00	91.00	SURCHARGED
20	RH_M4	Pipe	RH_6	RH_10	415.00	266.50	261.90	1.1100	0.675	0.0130	0.91	0.89	1.03	2.62	0.68	1.00	92.00	SURCHARGED
21	RH_M5	Pipe	RH_10	RH_11	140.00	261.90	260.33	1.1200	0.675	0.0130	1.06	0.89	1.19	2.96	0.68	1.00	109.00	SURCHARGED
22	RH_M6	Pipe	RH_11	RH_17	464.00	260.33	256.42	0.8400	0.750	0.0130	1.10	1.02	1.08	2.50	0.75	1.00	106.00	SURCHARGED
23	RH_M7	Pipe	RH_17	Ravine_1	6.00	256.42	256.37	0.8300	1.000	0.0130	1.17	2.19	0.54	1.83	0.76	0.76	0.00	Calculated
24	West_Link	Pipe	WestOutfall	West_Outfall	33.73	256.00	257.00	-2.9600	0.000	0.0130	0.07	0.00	0.01	0.00	0.41	0.10	0.00	Calculated
25	WestWetland_Link	Pipe	WestWetland	West_Wetland	37.13	258.00	258.00	0.0000	0.000	0.0130	0.09	0.00	0.01	0.00	0.41	0.10	0.00	Calculated
26	Wetland_Link	Pipe	NorthWetland	North_Wetland	41.51	252.00	252.00	0.0000	0.000	0.0130	0.09	0.00	0.01	0.00	0.41	0.10	0.00	Calculated
27	Ex.STM_Overland	Channel	Ex_MHR28	Ravine_2	400.00	259.00	253.00	1.5000	0.300	0.0320	0.26	10.09	0.03	0.09	0.16	0.55	0.00	
28	Link-34	Channel	RH_1	RH_3	270.00	271.40	269.65	0.6500	0.300	0.0320	1.70	6.63	0.26	0.64	0.14	0.48	0.00	
29	Link-35	Channel	RH_2	RH_3	50.00	272.15	269.65	5.0000	0.300	0.0320	1.63	18.43	0.09	1.11	0.11	0.38	0.00	
30	Link-36	Channel	RH_3	RH_4	222.00	269.65	268.30	0.6100	0.300	0.0320	1.95	6.43	0.30	0.70	0.14	0.46	0.00	
31	Link-37	Channel	RH_4	RH_6	18.00	268.30	267.90	2.2200	0.300	0.0320	1.62	12.28	0.13	0.90	0.10	0.33	0.00	
32	Link-38	Channel	RH_5	RH_6	227.00	271.80	267.90	1.7200	0.300	0.0320	0.58	10.80	0.05	0.57	0.08	0.25	0.00	
33	Link-39	Channel	RH_6	RH_10	415.00	267.90	263.50	1.0600	0.300	0.0320	1.79	8.48	0.21	0.77	0.12	0.39	0.00	
34	Link-41	Channel	RH_8	RH_9	180.00	269.55	265.50	2.2500	0.300	0.0320	0.00	12.36	0.00	0.00	0.00	0.00	0.00	
35	Link-42	Channel	RH_9	RH_10	155.00	265.50	263.50	1.2900	0.300	0.0320	0.00	9.36	0.00	0.00	0.06	0.21	0.00	
36	Link-43	Channel	RH_10	RH_11	140.00	263.50	262.25	0.8900	0.300	0.0320	1.56	7.79	0.20	0.73	0.11	0.36	0.00	
37	Link-44	Channel	RH_11	Ravine_1	470.00	262.25	258.00	0.9000	0.300	0.0320	0.81	7.84	0.10	0.56	0.07	0.24	0.00	
38	Link-45	Channel	RH_14	RH_15	195.00	263.20	260.70	1.2800	0.300	0.0320	0.00	9.33	0.00	0.00	0.00	0.00	0.00	
39	Link-46	Channel	RH_15	Ravine_1	280.00	260.70	258.00	0.9600	0.300	0.0320	0.00	8.09	0.00	0.00	0.00	0.00	0.00	
40	LowerRavine	Channel	Ravine_2	Ravine_3	124.00	253.00	252.45	0.4400	4.000	0.0320	2.35	157.98	0.01	1.06	0.40	0.10	0.00	
41	OutletRavine	Channel	Ravine_3	Outfall	45.00	252.45	252.00	1.0000	4.000	0.0320	2.35	237.22	0.01	1.39	0.31	0.08	0.00	
42	RH_C1	Channel	RH_12	RH_13	215.00	269.00	264.00	2.3300	1.500	0.0320	1.18	24.20	0.05	1.47	0.43	0.29	0.00	
43	RH_C2	Channel	RH_13	Ex_SE_Pond	60.00	264.00	263.50	0.8300	1.500	0.0320	1.17	14.49	0.08	1.35	0.43	0.30	0.00	
44	UpperRavine	Channel	Ravine_1	Ravine_2	553.00	256.10	253.00	0.5600	4.000	0.0320	2.43	177.61	0.01	1.07	0.41	0.10	0.00	

Junction Input

SN	Element ID	Invert Elevation (m)	Ground/Rim (Max) Elevation (m)	Ground/Rim (Max) Offset (m)	Initial Water Elevation (m)	Initial Water Depth (m)	Surcharge Elevation (m)	Surcharge Depth (m)	Ponded Area (m²)	Minimum Pipe Cover (m)
1	Ex_MHR1	255.88	262.50	6.62	0.00	-255.88	0.00	-262.50	0.00	0.00
2	Ex_MHR2	255.48	259.65	4.17	0.00	-255.48	0.00	-259.65	0.00	0.00
3	Ex_MHR25	256.48	263.35	6.87	0.00	-256.48	0.00	-263.35	0.00	0.00
4	Ex_MHR26	256.64	262.75	6.11	0.00	-256.64	0.00	-262.75	0.00	0.00
5	Ex_MHR27	256.94	261.00	4.06	0.00	-256.94	0.00	-261.00	0.00	0.00
6	Ex_MHR28	257.37	259.30	1.93	0.00	-257.37	0.00	-259.30	0.00	0.00
7	Ex_MHR3	255.23	259.00	3.77	0.00	-255.23	0.00	-259.00	0.00	0.00
8	NorthWetland	252.00	258.00	6.00	0.00	-252.00	0.00	-258.00	0.00	0.00
9	Ravine_1	256.10	260.10	4.00	0.00	-256.10	0.00	-260.10	0.00	0.00
10	Ravine_2	253.00	257.00	4.00	0.00	-253.00	0.00	-257.00	0.00	0.00
11	Ravine_3	252.45	256.45	4.00	0.00	-252.45	0.00	-256.45	0.00	0.00
12	RH_1	267.60	271.70	4.10	0.00	-267.60	0.00	-271.70	0.00	0.00
13	RH_10	261.90	263.90	2.00	0.00	-261.90	0.00	-263.90	0.00	0.00
14	RH_11	260.33	262.55	2.22	0.00	-260.33	0.00	-262.55	0.00	0.00
15	RH_12	269.00	270.50	1.50	0.00	-269.00	0.00	-270.50	0.00	0.00
16	RH_13	264.00	266.50	2.50	0.00	-264.00	0.00	-266.50	0.00	0.00
17	RH_14	261.70	263.50	1.80	0.00	-261.70	0.00	-263.50	0.00	0.00
18	RH_15	259.38	261.00	1.62	0.00	-259.38	0.00	-261.00	0.00	0.00
19	RH_16	256.36	258.00	1.64	0.00	-256.36	0.00	-258.00	0.00	0.00
20	RH_17	256.42	258.00	1.58	0.00	-256.42	0.00	-258.00	0.00	0.00
21	RH_2	270.14	272.45	2.31	0.00	-270.14	0.00	-272.45	0.00	0.00
22	RH_3	267.07	270.25	3.18	0.00	-267.07	0.00	-270.25	0.00	0.00
23	RH_4	266.63	268.60	1.97	0.00	-266.63	0.00	-268.60	0.00	0.00
24	RH_5	270.35	272.10	1.75	0.00	-270.35	0.00	-272.10	0.00	0.00
25	RH_6	266.50	268.20	1.70	0.00	-266.50	0.00	-268.20	0.00	0.00
26	RH_7	272.00	273.50	1.50	0.00	-272.00	0.00	-273.50	0.00	0.00
27	RH_8	267.75	269.85	2.10	0.00	-267.75	0.00	-269.85	0.00	0.00
28	RH_9	264.00	265.80	1.80	0.00	-264.00	0.00	-265.80	0.00	0.00
29	WestOutfall	257.00	258.00	1.00	0.00	-257.00	0.00	-258.00	0.00	0.00
30	WestWetland	258.00	259.00	1.00	0.00	-258.00	0.00	-259.00	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)	Total Time Flooded (min)
1	Ex_MHR1	0.25	0.00	256.32	0.44	0.00	6.18	256.01	0.13	0 12:05	0 00:00	0.00	0.00
2	Ex_MHR2	0.25	0.00	255.90	0.42	0.00	3.75	255.60	0.12	0 12:06	0 00:00	0.00	0.00
3	Ex_MHR25	0.25	0.00	257.50	1.02	0.00	5.85	256.61	0.13	0 11:52	0 00:00	0.00	0.00
4	Ex_MHR26	0.25	0.00	257.83	1.19	0.00	4.92	256.79	0.15	0 11:52	0 00:00	0.00	0.00
5	Ex_MHR27	0.25	0.00	258.26	1.32	0.00	2.74	257.11	0.17	0 11:52	0 00:00	0.00	0.00
6	Ex_MHR28	0.69	0.69	259.03	1.66	0.00	0.27	257.57	0.20	0 12:04	0 00:00	0.00	0.00
7	Ex_MHR3	0.25	0.00	255.61	0.38	0.00	3.39	255.35	0.12	0 12:07	0 00:00	0.00	0.00
8	NorthWetland	0.09	0.09	252.00	0.00	0.00	6.00	252.00	0.00	0 00:00	0 00:00	0.00	0.00
9	Ravine_1	2.44	0.04	256.48	0.38	0.00	3.62	256.25	0.15	0 12:41	0 00:00	0.00	0.00
10	Ravine_2	2.50	0.32	253.45	0.45	0.00	3.55	253.19	0.19	0 12:52	0 00:00	0.00	0.00
11	Ravine_3	2.35	0.03	252.80	0.35	0.00	3.65	252.60	0.15	0 12:53	0 00:00	0.00	0.00
12	RH_1	2.23	2.23	271.53	3.93	0.00	0.17	268.21	0.61	0 12:01	0 00:00	0.00	0.00
13	RH_10	2.72	0.07	263.63	1.73	0.00	0.27	262.36	0.46	0 12:23	0 00:00	0.00	0.00
14	RH_11	2.32	0.02	262.34	2.01	0.00	0.21	260.81	0.48	0 12:38	0 00:00	0.00	0.00
15	RH_12	1.21	1.21	269.37	0.37	0.00	1.13	269.07	0.07	0 12:00	0 00:00	0.00	0.00
16	RH_13	1.24	0.07	264.51	0.51	0.00	1.99	264.12	0.12	0 12:02	0 00:00	0.00	0.00
17	RH_14	0.47	0.00	262.58	0.88	0.00	0.92	261.90	0.20	0 12:20	0 00:00	0.00	0.00
18	RH_15	0.46	0.05	260.05	0.67	0.00	0.95	259.57	0.19	0 12:31	0 00:00	0.00	0.00
19	RH_16	0.45	0.00	257.05	0.69	0.00	0.95	256.63	0.27	0 12:10	0 00:00	0.00	0.00
20	RH_17	1.17	0.13	257.47	1.05	0.00	0.53	256.90	0.48	0 13:00	0 00:00	0.00	0.00
21	RH_2	1.84	1.84	272.22	2.08	0.00	0.23	270.51	0.37	0 12:00	0 00:00	0.00	0.00
22	RH_3	3.85	0.00	269.83	2.76	0.00	0.42	267.68	0.61	0 12:08	0 00:00	0.00	0.00
23	RH_4	2.61	0.02	268.39	1.76	0.00	0.21	267.03	0.40	0 12:08	0 00:00	0.00	0.00
24	RH_5	0.85	0.85	271.85	1.50	0.00	0.25	270.60	0.25	0 12:04	0 00:00	0.00	0.00
25	RH_6	3.22	0.00	268.02	1.52	0.00	0.18	266.85	0.35	0 12:15	0 00:00	0.00	0.00
26	RH_7	0.00	0.00	272.00	0.00	0.00	1.50	272.00	0.00	0 00:00	0 00:00	0.00	0.00
27	RH_8	0.15	0.15	268.00	0.25	0.00	1.85	267.83	0.08	0 12:00	0 00:00	0.00	0.00
28	RH_9	0.16	0.02	264.31	0.31	0.00	1.49	264.09	0.09	0 12:03	0 00:00	0.00	0.00
29	WestOutfall	0.07	0.07	257.00	0.00	0.00	1.00	257.00	0.00	0 00:00	0 00:00	0.00	0.00
30	WestWetland	0.09	0.09	258.00	0.00	0.00	1.00	258.00	0.00	0 00:00	0 00:00	0.00	0.00

Channel Input

SN	Element ID	Length (m)	Inlet Invert Elevation (m)	Inlet Invert Offset (m)	Outlet Invert Elevation (m)	Outlet Invert Offset (m)	Total Drop (m)	Average Slope (%)	Shape	Height (m)	Width (m)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cms)	Flap Gate
1	Ex.STM_Overland	400.00	259.00	1.63	253.00	0.00	6.00	1.5000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
2	Link-34	270.00	271.40	3.80	269.65	2.58	1.75	0.6500	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
3	Link-35	50.00	272.15	2.01	269.65	2.58	2.50	5.0000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
4	Link-36	222.00	269.65	2.58	268.30	1.67	1.35	0.6100	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
5	Link-37	18.00	268.30	1.67	267.90	1.40	0.40	2.2200	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
6	Link-38	227.00	271.80	1.45	267.90	1.40	3.90	1.7200	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
7	Link-39	415.00	267.90	1.40	263.50	1.60	4.40	1.0600	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
8	Link-41	180.00	269.55	1.80	265.50	1.50	4.05	2.2500	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
9	Link-42	155.00	265.50	1.50	263.50	1.60	2.00	1.2900	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
10	Link-43	140.00	263.50	1.60	262.25	1.92	1.25	0.8900	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
11	Link-44	470.00	262.25	1.92	258.00	1.90	4.25	0.9000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
12	Link-45	195.00	263.20	1.50	260.70	1.32	2.50	1.2800	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
13	Link-46	280.00	260.70	1.32	258.00	1.90	2.70	0.9600	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
14	LowerRavine	124.00	253.00	0.00	252.45	0.00	0.55	0.4400	Trapezoidal	4.000	17.000	0.0320	0.5000	0.5000	0.0000	0.00	No
15	OutletRavine	45.00	252.45	0.00	252.00	0.00	0.45	1.0000	Trapezoidal	4.000	17.000	0.0320	0.5000	0.5000	0.0000	0.00	No
16	RH_C1	215.00	269.00	0.00	264.00	0.00	5.00	2.3300	Trapezoidal	1.500	7.000	0.0320	0.5000	0.5000	0.0000	0.00	No
17	RH_C2	60.00	264.00	0.00	263.50	1.50	0.50	0.8300	Trapezoidal	1.500	7.000	0.0320	0.5000	0.5000	0.0000	0.00	No
18	UpperRavine	553.00	256.10	0.00	253.00	0.00	3.10	0.5600	Trapezoidal	4.000	17.000	0.0320	0.5000	0.5000	0.0000	0.00	No

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	Ex.STM_Overland	0.26	0 12:04	10.09	0.03	0.09	74.07	0.16	0.55	0.00	0.00	
2	Link-34	1.70	0 12:01	6.63	0.26	0.64	7.03	0.14	0.48	0.00	0.02	
3	Link-35	1.63	0 12:00	18.43	0.09	1.11	0.75	0.11	0.38	0.00	0.04	
4	Link-36	1.95	0 12:08	6.43	0.30	0.70	5.29	0.14	0.46	0.00	0.05	
5	Link-37	1.62	0 12:09	12.28	0.13	0.90	0.33	0.10	0.33	0.00	0.04	
6	Link-38	0.58	0 12:04	10.80	0.05	0.57	6.64	0.08	0.25	0.00	0.03	
7	Link-39	1.79	0 12:17	8.48	0.21	0.77	8.98	0.12	0.39	0.00	0.05	
8	Link-41	0.00	0 00:00	12.36	0.00	0.00		0.00	0.00	0.00	0.00	
9	Link-42	0.00	0 00:00	9.36	0.00	0.00		0.06	0.21	0.00	0.00	
10	Link-43	1.56	0 12:23	7.79	0.20	0.73	3.20	0.11	0.36	0.00	0.09	
11	Link-44	0.81	0 12:38	7.84	0.10	0.56	13.99	0.07	0.24	0.00	0.07	
12	Link-45	0.00	0 00:00	9.33	0.00	0.00		0.00	0.00	0.00	0.00	
13	Link-46	0.00	0 00:00	8.09	0.00	0.00		0.00	0.00	0.00	0.00	
14	LowerRavine	2.35	0 12:52	157.98	0.01	1.06	1.95	0.40	0.10	0.00	0.47	
15	OutletRavine	2.35	0 12:53	237.22	0.01	1.39	0.54	0.31	0.08	0.00	0.73	
16	RH_C1	1.18	0 12:00	24.20	0.05	1.47	2.44	0.43	0.29	0.00	0.55	
17	RH_C2	1.17	0 12:02	14.49	0.08	1.35	0.74	0.43	0.30	0.00	0.62	
18	UpperRavine	2.43	0 12:41	177.61	0.01	1.07	8.61	0.41	0.10	0.00	0.42	

Pipe Input

SN	Element ID	Length (m)	Inlet Invert Elevation (m)	Inlet Invert Offset (m)	Outlet Invert Elevation (m)	Outlet Invert Offset (m)	Total Drop (m)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (m)	Pipe Width (m)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cms)	Flap Gate
1	Ex.STM_1	107.00	257.37	0.00	256.94	0.00	0.43	0.4000	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
2	Ex.STM_2	73.00	256.94	0.00	256.64	0.00	0.30	0.4100	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
3	Ex.STM_3	27.00	256.64	0.00	256.48	0.00	0.16	0.5900	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
4	Ex.STM_4	100.00	256.48	0.00	255.88	0.00	0.60	0.6000	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
5	Ex.STM_5	100.00	255.88	0.00	255.48	0.00	0.40	0.4000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
6	Ex.STM_6	50.00	255.48	0.00	255.23	0.00	0.25	0.5000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
7	Ex.STM_7	102.00	255.23	0.00	254.82	0.00	0.41	0.4000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
8	RH_A1	50.00	270.14	0.00	268.50	1.43	1.64	3.2800	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
9	RH_B1	227.00	270.35	0.00	266.50	0.00	3.85	1.7000	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
10	RH_C3	15.00	262.00	0.00	261.70	0.00	0.30	2.0000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
11	RH_C4	195.00	261.70	0.00	259.38	0.00	2.32	1.1900	CIRCULAR	0.530	0.530	0.0150	0.5000	0.5000	0.0000	0.00	No
12	RH_C5	274.00	259.38	0.00	256.36	0.00	3.02	1.1000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
13	RH_C6	6.00	256.36	0.00	256.24	0.14	0.12	2.0000	CIRCULAR	0.700	0.700	0.0130	0.5000	0.5000	0.0000	0.00	No
14	RH_D1	275.00	272.00	0.00	267.75	0.00	4.25	1.5500	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
15	RH_D2	180.00	267.75	0.00	264.00	0.00	3.75	2.0800	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
16	RH_D3	155.00	264.00	0.00	261.90	0.00	2.10	1.3500	CIRCULAR	0.380	0.380	0.0130	0.5000	0.5000	0.0000	0.00	No
17	RH_M1	270.00	267.60	0.00	267.07	0.00	0.53	0.2000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
18	RH_M2	222.00	267.07	0.00	266.63	0.00	0.44	0.2000	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
19	RH_M3	18.00	266.63	0.00	266.50	0.00	0.13	0.7200	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
20	RH_M4	415.00	266.50	0.00	261.90	0.00	4.60	1.1100	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
21	RH_M5	140.00	261.90	0.00	260.33	0.00	1.57	1.1200	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
22	RH_M6	464.00	260.33	0.00	256.42	0.00	3.91	0.8400	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
23	RH_M7	6.00	256.42	0.00	256.37	0.27	0.05	0.8300	CIRCULAR	1.000	1.000	0.0130	0.5000	0.5000	0.0000	0.00	No
24	West_Link	33.73	256.00	-1.00	257.00	0.00	-1.00	-2.9600	Dummy	0.000	0.000	0.0130	0.5000	0.5000	0.0000	0.00	No
25	WestWetland_Link	37.13	258.00	0.00	258.00	0.00	0.00	0.0000	Dummy	0.000	0.000	0.0130	0.5000	0.5000	0.0000	0.00	No
26	Wetland_Link	41.51	252.00	0.00	252.00	0.00	0.00	0.0000	Dummy	0.000	0.000	0.0130	0.5000	0.5000	0.0000	0.00	No

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	Ex.STM_1	0.25	0 11:53	0.18	1.37	1.55	1.15	0.45	1.00	41.00	0.78	SURCHARGED
2	Ex.STM_2	0.25	0 11:53	0.18	1.35	1.55	0.78	0.45	1.00	39.00	0.82	SURCHARGED
3	Ex.STM_3	0.25	0 11:53	0.22	1.12	1.55	0.29	0.45	1.00	37.00	0.93	SURCHARGED
4	Ex.STM_4	0.25	0 11:53	0.22	1.12	1.58	1.05	0.44	0.99	0.00	0.94	> CAPACITY
5	Ex.STM_5	0.25	0 12:05	0.27	0.90	1.32	1.26	0.43	0.82	0.00	0.86	Calculated
6	Ex.STM_6	0.25	0 12:06	0.30	0.81	1.40	0.60	0.40	0.76	0.00	0.89	Calculated
7	Ex.STM_7	0.25	0 12:07	0.39	0.63	1.43	1.19	0.35	0.58	0.00	0.91	Calculated
8	RH_A1	0.23	0 11:49	0.18	1.31	3.26	0.26	0.30	1.00	100.00	1.89	SURCHARGED
9	RH_B1	0.14	0 11:48	0.13	1.10	1.96	1.93	0.30	1.00	87.00	0.69	SURCHARGED
10	RH_C3	0.47	0 12:02	0.87	0.54	1.90	0.13	0.60	1.00	41.00	1.28	SURCHARGED
11	RH_C4	0.44	0 12:11	0.41	1.07	2.12	1.53	0.52	1.00	54.00	1.17	SURCHARGED
12	RH_C5	0.45	0 12:09	0.45	1.00	2.13	2.14	0.52	1.00	58.00	0.91	SURCHARGED
13	RH_C6	0.45	0 12:10	1.31	0.34	1.63	0.06	0.49	0.70	0.00	1.01	Calculated
14	RH_D1	0.00	0 00:00	0.12	0.00	0.00		0.12	0.42	0.00	0.00	Calculated
15	RH_D2	0.14	0 12:01	0.14	1.00	2.18	1.38	0.25	0.90	0.00	1.54	> CAPACITY
16	RH_D3	0.15	0 12:01	0.20	0.71	1.39	1.86	0.33	0.91	0.00	0.46	Calculated
17	RH_M1	0.51	0 11:51	0.27	1.86	1.79	2.51	0.60	1.00	109.00	0.36	SURCHARGED
18	RH_M2	0.80	0 11:52	0.37	2.14	2.23	1.66	0.68	1.00	96.00	0.60	SURCHARGED
19	RH_M3	1.04	0 12:02	0.95	1.09	2.34	0.13	0.75	1.00	91.00	0.91	SURCHARGED
20	RH_M4	0.91	0 11:53	0.89	1.03	2.62	2.64	0.68	1.00	92.00	1.13	SURCHARGED
21	RH_M5	1.06	0 12:04	0.89	1.19	2.96	0.79	0.68	1.00	109.00	1.20	SURCHARGED
22	RH_M6	1.10	0 12:37	1.02	1.08	2.50	3.09	0.75	1.00	106.00	0.68	SURCHARGED
23	RH_M7	1.17	0 13:00	2.19	0.54	1.83	0.05	0.76	0.76	0.00	0.82	Calculated
24	West_Link	0.07	0 12:00	0.00	0.01	0.00		0.41	0.10	0.00	0.42	Calculated
25	WestWetland_Link	0.09	0 12:00	0.00	0.01	0.00		0.41	0.10	0.00	0.42	Calculated
26	Wetland_Link	0.09	0 12:00	0.00	0.01	0.00		0.41	0.10	0.00	0.42	Calculated

Project Description

File Name	18010_Pre-Development Rev.0.SPF
Description	I:\ACAD Projects\2018\18010\03-Ref\18010_Pre-Dev. Storm Parcels.dwg
	I:\ACAD Projects\2018\18010\03-Ref\18010_Pre-Dev. Storm Parcels.dwg

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	00:00:00	0:00:00
End Analysis On	00:00:00	0:00:00
Start Reporting On	00:00:00	0:00:00
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	31
Nodes	36
Junctions	30
Outfalls	5
Flow Diversions	0
Inlets	0
Storage Nodes	1
Links	44
Channels	18
Pipes	26
Pumps	0
Orifices	0
Weirs	0
Outlets	0
Pollutants	0
Land Uses	0

Subbasin Summary

SN	Subbasin ID	Area (ha)	Impervious Area (%)	Weighted Curve Number	Average Slope (%)	Equivalent Width (m)	Impervious Area Manning's Roughness	Pervious Area Manning's Roughness	Total Rainfall (mm)	Total Infiltration (mm)	Total Runoff (mm)	Total Runoff Volume (ha-mm)	Peak Runoff (cms)	Time of Concentration (days hh:mm:ss)
1	{Survey Site}.Standard : 10	0.92	2.00	67.00	2.0000	125.00	0.0130	0.2000	63.79	45.8330	16.69	15.32	0.02	0 01:15:47
2	{Survey Site}.Standard : 11	21.38	2.00	67.00	2.0000	360.00	0.0130	0.2000	63.79	42.9570	18.67	399.08	0.15	0 04:25:38
3	{Survey Site}.Standard : 12	0.71	5.00	67.00	2.0000	90.00	0.0130	0.2000	63.79	44.4540	18.07	12.83	0.02	0 01:17:39
4	{Survey Site}.Standard : 13	1.65	45.00	71.05	2.0000	220.00	0.0130	0.2000	63.79	24.0720	38.45	63.36	0.22	0 00:54:14
5	{Survey Site}.Standard : 14	4.32	2.00	67.00	2.0000	350.00	0.0130	0.2000	63.79	46.1350	16.39	70.80	0.05	0 01:43:29
6	{Survey Site}.Standard : 16	6.33	2.00	67.00	2.0000	215.00	0.0130	0.2000	63.79	46.9650	15.57	98.52	0.05	0 02:54:20
7	{Survey Site}.Standard : 17	0.36	5.00	67.00	5.0000	20.00	0.0130	0.2000	63.79	44.6490	17.88	6.36	0.01	0 01:36:07
8	{Survey Site}.Standard : 18	14.15	5.00	48.00	10.0000	300.00	0.0130	0.2000	63.79	54.0720	8.47	119.92	0.19	0 02:20:07
9	{Survey Site}.Standard : 19	0.26	2.00	67.00	2.0000	90.00	0.0130	0.2000	63.79	45.5060	17.04	4.50	0.01	0 00:43:42
10	{Survey Site}.Standard : 2	20.86	45.00	71.05	2.0000	300.00	0.0130	0.2000	63.79	25.0340	37.44	781.17	2.02	0 03:26:30
11	{Survey Site}.Standard : 20	11.33	2.00	36.00	0.5000	240.00	0.0130	0.2000	63.79	55.2010	3.26	36.96	0.06	0 05:50:44
12	{Survey Site}.Standard : 21	4.24	2.00	67.00	2.0000	155.00	0.0130	0.2000	63.79	46.8650	15.66	66.34	0.04	0 02:46:46
13	{Survey Site}.Standard : 22	23.21	2.00	67.00	2.0000	330.00	0.0130	0.2000	63.79	42.5680	17.91	415.75	0.16	0 04:54:01
14	{Survey Site}.Standard : 23	2.20	5.00	48.00	10.0000	100.00	0.0130	0.2000	63.79	53.5590	8.98	19.75	0.03	0 01:28:36
15	{Survey Site}.Standard : 24	9.04	2.00	67.00	2.0000	275.00	0.0130	0.2000	63.79	47.1160	15.42	139.44	0.07	0 03:06:18
16	{Survey Site}.Standard : 25	8.64	2.00	67.00	5.0000	390.00	0.0130	0.2000	63.79	46.2360	16.30	140.84	0.09	0 01:51:41
17	{Survey Site}.Standard : 26	1.12	45.00	71.05	2.0000	40.00	0.0130	0.2000	63.79	24.4670	38.05	42.77	0.13	0 01:59:53
18	{Survey Site}.Standard : 27	0.43	45.00	71.05	2.0000	60.00	0.0130	0.2000	63.79	24.0600	38.45	16.42	0.06	0 00:52:35
19	{Survey Site}.Standard : 28	0.12	45.00	71.05	2.0000	40.00	0.0130	0.2000	63.79	23.9370	38.55	4.74	0.02	0 00:31:47
20	{Survey Site}.Standard : 29	7.86	45.00	71.05	2.0000	110.00	0.0130	0.2000	63.79	25.0580	37.42	294.17	0.75	0 03:29:54
21	{Survey Site}.Standard : 3	25.14	45.00	71.05	2.0000	370.00	0.0130	0.2000	63.79	25.0090	37.46	941.76	2.45	0 03:23:37
22	{Survey Site}.Standard : 30	20.00	30.00	63.70	2.0000	225.00	0.0130	0.2000	63.79	35.8510	26.65	532.81	1.33	0 04:36:27
23	{Survey Site}.Standard : 31	5.54	5.00	57.00	2.0000	245.00	0.0130	0.2000	63.79	50.5060	12.04	66.74	0.08	0 02:26:08
24	{Survey Site}.Standard : 32	3.34	2.00	67.00	2.0000	95.00	0.0130	0.2000	63.79	47.1920	15.33	51.13	0.03	0 03:13:46
25	{Survey Site}.Standard : 33	7.71	2.00	67.00	2.0000	215.00	0.0130	0.2000	63.79	47.2420	15.30	117.90	0.06	0 03:16:12
26	{Survey Site}.Standard : 4	3.13	2.00	67.00	2.0000	155.00	0.0130	0.2000	63.79	46.5380	15.99	50.05	0.03	0 02:19:05
27	{Survey Site}.Standard : 5	10.46	45.00	71.05	0.5000	235.00	0.0130	0.2000	63.79	25.2430	37.20	389.12	0.94	0 03:59:27
28	{Survey Site}.Standard : 6	11.54	2.00	67.00	2.0000	280.00	0.0130	0.2000	63.79	47.4430	15.09	174.16	0.08	0 03:33:22
29	{Survey Site}.Standard : 7	10.98	5.00	67.00	2.0000	225.00	0.0130	0.2000	63.79	46.2110	16.32	179.12	0.17	0 03:51:41
30	{Survey Site}.Standard : 8	3.30	2.00	67.00	2.0000	125.00	0.0130	0.2000	63.79	46.8390	15.70	51.86	0.03	0 02:43:26
31	{Survey Site}.Standard : 9	3.53	2.00	67.00	2.0000	100.00	0.0130	0.2000	63.79	47.2170	15.32	54.11	0.03	0 03:14:29

Node Summary

SN	Element ID	Element Type	Invert Elevation (m)	Ground/Rim (Max) Elevation (m)	Initial Water Elevation (m)	Surcharge Elevation (m)	Ponded Area (m²)	Peak Inflow (cms)	Max HGL Elevation Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ha-mm)	Total Time Flooded (min)
1	Ex_MHR1	Junction	255.88	262.50	0.00	0.00	0.00	0.25	256.32	0.00	6.18	0 00:00	0.00	0.00
2	Ex_MHR2	Junction	255.48	259.65	0.00	0.00	0.00	0.25	255.90	0.00	3.75	0 00:00	0.00	0.00
3	Ex_MHR25	Junction	256.48	263.35	0.00	0.00	0.00	0.25	257.46	0.00	5.89	0 00:00	0.00	0.00
4	Ex_MHR26	Junction	256.64	262.75	0.00	0.00	0.00	0.25	257.85	0.00	4.90	0 00:00	0.00	0.00
5	Ex_MHR27	Junction	256.94	261.00	0.00	0.00	0.00	0.25	258.30	0.00	2.70	0 00:00	0.00	0.00
6	Ex_MHR28	Junction	257.37	259.30	0.00	0.00	0.00	0.75	259.04	0.00	0.26	0 00:00	0.00	0.00
7	Ex_MHR3	Junction	255.23	259.00	0.00	0.00	0.00	0.25	255.61	0.00	3.39	0 00:00	0.00	0.00
8	NorthWetland	Junction	252.00	258.00	0.00	0.00	0.00	0.11	252.00	0.00	6.00	0 00:00	0.00	0.00
9	Ravine_1	Junction	256.10	260.10	0.00	0.00	0.00	2.82	256.52	0.00	3.58	0 00:00	0.00	0.00
10	Ravine_2	Junction	253.00	257.00	0.00	0.00	0.00	2.90	253.48	0.00	3.52	0 00:00	0.00	0.00
11	Ravine_3	Junction	252.45	256.45	0.00	0.00	0.00	2.69	252.83	0.00	3.62	0 00:00	0.00	0.00
12	RH_1	Junction	267.60	271.70	0.00	0.00	0.00	2.45	271.54	0.00	0.16	0 00:00	0.00	0.00
13	RH_10	Junction	261.90	263.90	0.00	0.00	0.00	3.16	263.65	0.00	0.25	0 00:00	0.00	0.00
14	RH_11	Junction	260.33	262.55	0.00	0.00	0.00	2.70	262.36	0.00	0.19	0 00:00	0.00	0.00
15	RH_12	Junction	269.00	270.50	0.00	0.00	0.00	1.33	269.38	0.00	1.12	0 00:00	0.00	0.00
16	RH_13	Junction	264.00	266.50	0.00	0.00	0.00	1.36	264.53	0.00	1.97	0 00:00	0.00	0.00
17	RH_14	Junction	261.70	263.50	0.00	0.00	0.00	0.47	262.69	0.00	0.81	0 00:00	0.00	0.00
18	RH_15	Junction	259.38	261.00	0.00	0.00	0.00	0.47	260.19	0.00	0.81	0 00:00	0.00	0.00
19	RH_16	Junction	256.36	258.00	0.00	0.00	0.00	0.45	257.05	0.00	0.95	0 00:00	0.00	0.00
20	RH_17	Junction	256.42	258.00	0.00	0.00	0.00	1.20	257.48	0.00	0.52	0 00:00	0.00	0.00
21	RH_2	Junction	270.14	272.45	0.00	0.00	0.00	2.02	272.22	0.00	0.23	0 00:00	0.00	0.00
22	RH_3	Junction	267.07	270.25	0.00	0.00	0.00	4.28	269.85	0.00	0.40	0 00:00	0.00	0.00
23	RH_4	Junction	266.63	268.60	0.00	0.00	0.00	2.95	268.40	0.00	0.20	0 00:00	0.00	0.00
24	RH_5	Junction	270.35	272.10	0.00	0.00	0.00	0.94	271.86	0.00	0.24	0 00:00	0.00	0.00
25	RH_6	Junction	266.50	268.20	0.00	0.00	0.00	3.63	268.03	0.00	0.17	0 00:00	0.00	0.00
26	RH_7	Junction	272.00	273.50	0.00	0.00	0.00	0.00	272.00	0.00	1.50	0 00:00	0.00	0.00
27	RH_8	Junction	267.75	269.85	0.00	0.00	0.00	0.17	268.06	0.00	1.79	0 00:00	0.00	0.00
28	RH_9	Junction	264.00	265.80	0.00	0.00	0.00	0.17	264.56	0.00	1.24	0 00:00	0.00	0.00
29	WestOutfall	Junction	257.00	258.00	0.00	0.00	0.00	0.09	257.00	0.00	1.00	0 00:00	0.00	0.00
30	WestWetland	Junction	258.00	259.00	0.00	0.00	0.00	0.10	258.00	0.00	1.00	0 00:00	0.00	0.00
31	North_Wetland	Outfall	252.00					0.11	252.00					
32	Outfall	Outfall	252.00					2.69	252.30					
33	TinerEstatesSTM	Outfall	254.82					0.25	255.14					
34	West_Outfall	Outfall	257.00					0.09	257.00					
35	West_Wetland	Outfall	258.00					0.10	258.00					
36	Ex_SE_Pond	Storage Node	262.00	266.00	0.00		0.00	1.35	262.86				0.00	0.00

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(m)	(m)	(m)	(%)	(m)		(cms)	(cms)		(m/sec)	(m)		(min)	
1	Ex.STM_1	Pipe	Ex_MHR28	Ex_MHR27	107.00	257.37	256.94	0.4000	0.450	0.0130	0.25	0.18	1.37	1.55	0.45	1.00	44.00	SURCHARGED
2	Ex.STM_2	Pipe	Ex_MHR27	Ex_MHR26	73.00	256.94	256.64	0.4100	0.450	0.0130	0.25	0.18	1.35	1.55	0.45	1.00	42.00	SURCHARGED
3	Ex.STM_3	Pipe	Ex_MHR26	Ex_MHR25	27.00	256.64	256.48	0.5900	0.450	0.0130	0.25	0.22	1.12	1.55	0.45	1.00	39.00	SURCHARGED
4	Ex.STM_4	Pipe	Ex_MHR25	Ex_MHR1	100.00	256.48	255.88	0.6000	0.450	0.0130	0.25	0.22	1.12	1.58	0.44	0.99	0.00	> CAPACITY
5	Ex.STM_5	Pipe	Ex_MHR1	Ex_MHR2	100.00	255.88	255.48	0.4000	0.525	0.0130	0.25	0.27	0.90	1.32	0.43	0.82	0.00	Calculated
6	Ex.STM_6	Pipe	Ex_MHR2	Ex_MHR3	50.00	255.48	255.23	0.5000	0.525	0.0130	0.25	0.30	0.81	1.40	0.40	0.76	0.00	Calculated
7	Ex.STM_7	Pipe	Ex_MHR3	TinerEstatesSTM	102.00	255.23	254.82	0.4000	0.600	0.0130	0.25	0.39	0.63	1.43	0.35	0.58	0.00	Calculated
8	RH_A1	Pipe	RH_2	RH_3	50.00	270.14	268.50	3.2800	0.300	0.0130	0.23	0.18	1.31	3.26	0.30	1.00	113.00	SURCHARGED
9	RH_B1	Pipe	RH_5	RH_6	227.00	270.35	266.50	1.7000	0.300	0.0130	0.14	0.13	1.10	1.96	0.30	1.00	98.00	SURCHARGED
10	RH_C3	Pipe	Ex_SE_Pond	RH_14	15.00	262.00	261.70	2.0000	0.600	0.0130	0.47	0.87	0.54	1.91	0.60	1.00	63.00	SURCHARGED
11	RH_C4	Pipe	RH_14	RH_15	195.00	261.70	259.38	1.1900	0.525	0.0150	0.43	0.41	1.06	2.11	0.52	1.00	83.00	SURCHARGED
12	RH_C5	Pipe	RH_15	RH_16	274.00	259.38	256.36	1.1000	0.525	0.0130	0.45	0.45	1.00	2.13	0.52	1.00	88.00	SURCHARGED
13	RH_C6	Pipe	RH_16	Ravine_1	6.00	256.36	256.24	2.0000	0.700	0.0130	0.45	1.31	0.34	1.63	0.49	0.70	0.00	Calculated
14	RH_D1	Pipe	RH_7	RH_8	275.00	272.00	267.75	1.5500	0.300	0.0130	0.00	0.12	0.00	0.00	0.14	0.50	0.00	Calculated
15	RH_D2	Pipe	RH_8	RH_9	180.00	267.75	264.00	2.0800	0.300	0.0130	0.15	0.14	1.05	2.18	0.29	1.00	2.00	SURCHARGED
16	RH_D3	Pipe	RH_9	RH_10	155.00	264.00	261.90	1.3500	0.375	0.0130	0.15	0.20	0.73	1.40	0.38	1.00	8.00	SURCHARGED
17	RH_M1	Pipe	RH_1	RH_3	270.00	267.60	267.07	0.2000	0.600	0.0130	0.51	0.27	1.85	1.78	0.60	1.00	120.00	SURCHARGED
18	RH_M2	Pipe	RH_3	RH_4	222.00	267.07	266.63	0.2000	0.675	0.0130	0.80	0.37	2.14	2.23	0.68	1.00	105.00	SURCHARGED
19	RH_M3	Pipe	RH_4	RH_6	18.00	266.63	266.50	0.7200	0.750	0.0130	1.04	0.95	1.10	2.35	0.75	1.00	100.00	SURCHARGED
20	RH_M4	Pipe	RH_6	RH_10	415.00	266.50	261.90	1.1100	0.675	0.0130	0.91	0.89	1.03	2.62	0.68	1.00	101.00	SURCHARGED
21	RH_M5	Pipe	RH_10	RH_11	140.00	261.90	260.33	1.1200	0.675	0.0130	1.05	0.89	1.18	2.95	0.68	1.00	123.00	SURCHARGED
22	RH_M6	Pipe	RH_11	RH_17	464.00	260.33	256.42	0.8400	0.750	0.0130	1.10	1.02	1.08	2.50	0.75	1.00	120.00	SURCHARGED
23	RH_M7	Pipe	RH_17	Ravine_1	6.00	256.42	256.37	0.8300	1.000	0.0130	1.20	2.19	0.55	1.86	0.76	0.76	0.00	Calculated
24	West_Link	Pipe	WestOutfall	West_Outfall	33.73	256.00	257.00	-2.9600	0.000	0.0130	0.09	0.00	0.02	0.00	0.44	0.11	0.00	Calculated
25	WestWetland_Link	Pipe	WestWetland	West_Wetland	37.13	258.00	258.00	0.0000	0.000	0.0130	0.10	0.00	0.02	0.00	0.44	0.11	0.00	Calculated
26	Wetland_Link	Pipe	NorthWetland	North_Wetland	41.51	252.00	252.00	0.0000	0.000	0.0130	0.11	0.00	0.02	0.00	0.44	0.11	0.00	Calculated
27	Ex.STM_Overland	Channel	Ex_MHR28	Ravine_2	400.00	259.00	253.00	1.5000	0.300	0.0320	0.31	10.09	0.03	0.10	0.17	0.56	0.00	
28	Link-34	Channel	RH_1	RH_3	270.00	271.40	269.65	0.6500	0.300	0.0320	1.91	6.63	0.29	0.67	0.16	0.52	0.00	
29	Link-35	Channel	RH_2	RH_3	50.00	272.15	269.65	5.0000	0.300	0.0320	1.81	18.43	0.10	1.12	0.12	0.42	0.00	
30	Link-36	Channel	RH_3	RH_4	222.00	269.65	268.30	0.6100	0.300	0.0320	2.29	6.43	0.36	0.75	0.15	0.51	0.00	
31	Link-37	Channel	RH_4	RH_6	18.00	268.30	267.90	2.2200	0.300	0.0320	1.96	12.28	0.16	0.97	0.11	0.37	0.00	
32	Link-38	Channel	RH_5	RH_6	227.00	271.80	267.90	1.7200	0.300	0.0320	0.66	10.80	0.06	0.60	0.08	0.29	0.00	
33	Link-39	Channel	RH_6	RH_10	415.00	267.90	263.50	1.0600	0.300	0.0320	2.19	8.48	0.26	0.83	0.13	0.45	0.00	
34	Link-41	Channel	RH_8	RH_9	180.00	269.55	265.50	2.2500	0.300	0.0320	0.00	12.36	0.00	0.00	0.00	0.00	0.00	
35	Link-42	Channel	RH_9	RH_10	155.00	265.50	263.50	1.2900	0.300	0.0320	0.00	9.36	0.00	0.00	0.07	0.24	0.00	
36	Link-43	Channel	RH_10	RH_11	140.00	263.50	262.25	0.8900	0.300	0.0320	1.94	7.79	0.25	0.79	0.12	0.41	0.00	
37	Link-44	Channel	RH_11	Ravine_1	470.00	262.25	258.00	0.9000	0.300	0.0320	1.14	7.84	0.15	0.64	0.09	0.29	0.00	
38	Link-45	Channel	RH_14	RH_15	195.00	263.20	260.70	1.2800	0.300	0.0320	0.00	9.33	0.00	0.00	0.00	0.00	0.00	
39	Link-46	Channel	RH_15	Ravine_1	280.00	260.70	258.00	0.9600	0.300	0.0320	0.00	8.09	0.00	0.00	0.00	0.00	0.00	
40	LowerRavine	Channel	Ravine_2	Ravine_3	124.00	253.00	252.45	0.4400	4.000	0.0320	2.69	157.98	0.02	1.11	0.43	0.11	0.00	
41	OutletRavine	Channel	Ravine_3	Outfall	45.00	252.45	252.00	1.0000	4.000	0.0320	2.69	237.22	0.01	1.45	0.34	0.08	0.00	
42	RH_C1	Channel	RH_12	RH_13	215.00	269.00	264.00	2.3300	1.500	0.0320	1.29	24.20	0.05	1.50	0.45	0.30	0.00	
43	RH_C2	Channel	RH_13	Ex_SE_Pond	60.00	264.00	263.50	0.8300	1.500	0.0320	1.28	14.49	0.09	1.38	0.45	0.32	0.00	
44	UpperRavine	Channel	Ravine_1	Ravine_2	553.00	256.10	253.00	0.5600	4.000	0.0320	2.80	177.61	0.02	1.14	0.44	0.11	0.00	

Junction Input

SN	Element ID	Invert Elevation (m)	Ground/Rim (Max) Elevation (m)	Ground/Rim (Max) Offset (m)	Initial Water Elevation (m)	Initial Water Depth (m)	Surcharge Elevation (m)	Surcharge Depth (m)	Ponded Area (m²)	Minimum Pipe Cover (m)
1	Ex_MHR1	255.88	262.50	6.62	0.00	-255.88	0.00	-262.50	0.00	0.00
2	Ex_MHR2	255.48	259.65	4.17	0.00	-255.48	0.00	-259.65	0.00	0.00
3	Ex_MHR25	256.48	263.35	6.87	0.00	-256.48	0.00	-263.35	0.00	0.00
4	Ex_MHR26	256.64	262.75	6.11	0.00	-256.64	0.00	-262.75	0.00	0.00
5	Ex_MHR27	256.94	261.00	4.06	0.00	-256.94	0.00	-261.00	0.00	0.00
6	Ex_MHR28	257.37	259.30	1.93	0.00	-257.37	0.00	-259.30	0.00	0.00
7	Ex_MHR3	255.23	259.00	3.77	0.00	-255.23	0.00	-259.00	0.00	0.00
8	NorthWetland	252.00	258.00	6.00	0.00	-252.00	0.00	-258.00	0.00	0.00
9	Ravine_1	256.10	260.10	4.00	0.00	-256.10	0.00	-260.10	0.00	0.00
10	Ravine_2	253.00	257.00	4.00	0.00	-253.00	0.00	-257.00	0.00	0.00
11	Ravine_3	252.45	256.45	4.00	0.00	-252.45	0.00	-256.45	0.00	0.00
12	RH_1	267.60	271.70	4.10	0.00	-267.60	0.00	-271.70	0.00	0.00
13	RH_10	261.90	263.90	2.00	0.00	-261.90	0.00	-263.90	0.00	0.00
14	RH_11	260.33	262.55	2.22	0.00	-260.33	0.00	-262.55	0.00	0.00
15	RH_12	269.00	270.50	1.50	0.00	-269.00	0.00	-270.50	0.00	0.00
16	RH_13	264.00	266.50	2.50	0.00	-264.00	0.00	-266.50	0.00	0.00
17	RH_14	261.70	263.50	1.80	0.00	-261.70	0.00	-263.50	0.00	0.00
18	RH_15	259.38	261.00	1.62	0.00	-259.38	0.00	-261.00	0.00	0.00
19	RH_16	256.36	258.00	1.64	0.00	-256.36	0.00	-258.00	0.00	0.00
20	RH_17	256.42	258.00	1.58	0.00	-256.42	0.00	-258.00	0.00	0.00
21	RH_2	270.14	272.45	2.31	0.00	-270.14	0.00	-272.45	0.00	0.00
22	RH_3	267.07	270.25	3.18	0.00	-267.07	0.00	-270.25	0.00	0.00
23	RH_4	266.63	268.60	1.97	0.00	-266.63	0.00	-268.60	0.00	0.00
24	RH_5	270.35	272.10	1.75	0.00	-270.35	0.00	-272.10	0.00	0.00
25	RH_6	266.50	268.20	1.70	0.00	-266.50	0.00	-268.20	0.00	0.00
26	RH_7	272.00	273.50	1.50	0.00	-272.00	0.00	-273.50	0.00	0.00
27	RH_8	267.75	269.85	2.10	0.00	-267.75	0.00	-269.85	0.00	0.00
28	RH_9	264.00	265.80	1.80	0.00	-264.00	0.00	-265.80	0.00	0.00
29	WestOutfall	257.00	258.00	1.00	0.00	-257.00	0.00	-258.00	0.00	0.00
30	WestWetland	258.00	259.00	1.00	0.00	-258.00	0.00	-259.00	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)	Total Time Flooded (min)
1	Ex_MHR1	0.25	0.00	256.32	0.44	0.00	6.18	256.01	0.13	0 12:05	0 00:00	0.00	0.00
2	Ex_MHR2	0.25	0.00	255.90	0.42	0.00	3.75	255.61	0.13	0 12:06	0 00:00	0.00	0.00
3	Ex_MHR25	0.25	0.00	257.46	0.98	0.00	5.89	256.62	0.14	0 11:51	0 00:00	0.00	0.00
4	Ex_MHR26	0.25	0.00	257.85	1.21	0.00	4.90	256.79	0.15	0 11:51	0 00:00	0.00	0.00
5	Ex_MHR27	0.25	0.00	258.30	1.36	0.00	2.70	257.12	0.18	0 11:51	0 00:00	0.00	0.00
6	Ex_MHR28	0.75	0.75	259.04	1.67	0.00	0.26	257.57	0.20	0 12:04	0 00:00	0.00	0.00
7	Ex_MHR3	0.25	0.00	255.61	0.38	0.00	3.39	255.36	0.13	0 12:07	0 00:00	0.00	0.00
8	NorthWetland	0.11	0.11	252.00	0.00	0.00	6.00	252.00	0.00	0 00:00	0 00:00	0.00	0.00
9	Ravine_1	2.82	0.05	256.52	0.42	0.00	3.58	256.26	0.16	0 12:37	0 00:00	0.00	0.00
10	Ravine_2	2.90	0.35	253.48	0.48	0.00	3.52	253.20	0.20	0 12:48	0 00:00	0.00	0.00
11	Ravine_3	2.69	0.03	252.83	0.38	0.00	3.62	252.61	0.16	0 12:49	0 00:00	0.00	0.00
12	RH_1	2.45	2.45	271.54	3.94	0.00	0.16	268.25	0.65	0 12:00	0 00:00	0.00	0.00
13	RH_10	3.16	0.08	263.65	1.75	0.00	0.25	262.38	0.48	0 12:21	0 00:00	0.00	0.00
14	RH_11	2.70	0.03	262.36	2.03	0.00	0.19	260.84	0.51	0 12:34	0 00:00	0.00	0.00
15	RH_12	1.33	1.33	269.38	0.38	0.00	1.12	269.07	0.07	0 12:00	0 00:00	0.00	0.00
16	RH_13	1.36	0.08	264.53	0.53	0.00	1.97	264.12	0.12	0 12:01	0 00:00	0.00	0.00
17	RH_14	0.47	0.00	262.69	0.99	0.00	0.81	261.93	0.23	0 12:23	0 00:00	0.00	0.00
18	RH_15	0.47	0.06	260.19	0.81	0.00	0.81	259.60	0.22	0 12:33	0 00:00	0.00	0.00
19	RH_16	0.45	0.00	257.05	0.69	0.00	0.95	256.65	0.29	0 12:04	0 00:00	0.00	0.00
20	RH_17	1.20	0.15	257.48	1.06	0.00	0.52	256.92	0.50	0 12:54	0 00:00	0.00	0.00
21	RH_2	2.02	2.02	272.22	2.08	0.00	0.23	270.54	0.40	0 12:00	0 00:00	0.00	0.00
22	RH_3	4.28	0.00	269.85	2.78	0.00	0.40	267.71	0.64	0 12:07	0 00:00	0.00	0.00
23	RH_4	2.95	0.03	268.40	1.77	0.00	0.20	267.05	0.42	0 12:08	0 00:00	0.00	0.00
24	RH_5	0.94	0.94	271.86	1.51	0.00	0.24	270.61	0.26	0 12:03	0 00:00	0.00	0.00
25	RH_6	3.63	0.00	268.03	1.53	0.00	0.17	266.87	0.37	0 12:14	0 00:00	0.00	0.00
26	RH_7	0.00	0.00	272.00	0.00	0.00	1.50	272.00	0.00	0 00:00	0 00:00	0.00	0.00
27	RH_8	0.17	0.17	268.06	0.31	0.00	1.79	267.83	0.08	0 12:01	0 00:00	0.00	0.00
28	RH_9	0.17	0.03	264.56	0.56	0.00	1.24	264.10	0.10	0 12:05	0 00:00	0.00	0.00
29	WestOutfall	0.09	0.09	257.00	0.00	0.00	1.00	257.00	0.00	0 00:00	0 00:00	0.00	0.00
30	WestWetland	0.10	0.10	258.00	0.00	0.00	1.00	258.00	0.00	0 00:00	0 00:00	0.00	0.00

Channel Input

SN	Element ID	Length (m)	Inlet Invert Elevation (m)	Inlet Invert Offset (m)	Outlet Invert Elevation (m)	Outlet Invert Offset (m)	Total Drop (m)	Average Slope (%)	Shape	Height (m)	Width (m)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cms)	Flap Gate
1	Ex.STM_Overland	400.00	259.00	1.63	253.00	0.00	6.00	1.5000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
2	Link-34	270.00	271.40	3.80	269.65	2.58	1.75	0.6500	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
3	Link-35	50.00	272.15	2.01	269.65	2.58	2.50	5.0000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
4	Link-36	222.00	269.65	2.58	268.30	1.67	1.35	0.6100	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
5	Link-37	18.00	268.30	1.67	267.90	1.40	0.40	2.2200	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
6	Link-38	227.00	271.80	1.45	267.90	1.40	3.90	1.7200	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
7	Link-39	415.00	267.90	1.40	263.50	1.60	4.40	1.0600	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
8	Link-41	180.00	269.55	1.80	265.50	1.50	4.05	2.2500	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
9	Link-42	155.00	265.50	1.50	263.50	1.60	2.00	1.2900	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
10	Link-43	140.00	263.50	1.60	262.25	1.92	1.25	0.8900	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
11	Link-44	470.00	262.25	1.92	258.00	1.90	4.25	0.9000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
12	Link-45	195.00	263.20	1.50	260.70	1.32	2.50	1.2800	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
13	Link-46	280.00	260.70	1.32	258.00	1.90	2.70	0.9600	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
14	LowerRavine	124.00	253.00	0.00	252.45	0.00	0.55	0.4400	Trapezoidal	4.000	17.000	0.0320	0.5000	0.5000	0.0000	0.00	No
15	OutletRavine	45.00	252.45	0.00	252.00	0.00	0.45	1.0000	Trapezoidal	4.000	17.000	0.0320	0.5000	0.5000	0.0000	0.00	No
16	RH_C1	215.00	269.00	0.00	264.00	0.00	5.00	2.3300	Trapezoidal	1.500	7.000	0.0320	0.5000	0.5000	0.0000	0.00	No
17	RH_C2	60.00	264.00	0.00	263.50	1.50	0.50	0.8300	Trapezoidal	1.500	7.000	0.0320	0.5000	0.5000	0.0000	0.00	No
18	UpperRavine	553.00	256.10	0.00	253.00	0.00	3.10	0.5600	Trapezoidal	4.000	17.000	0.0320	0.5000	0.5000	0.0000	0.00	No

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	Ex.STM_Overland	0.31	0 12:04	10.09	0.03	0.10	66.67	0.17	0.56	0.00	0.00	
2	Link-34	1.91	0 12:01	6.63	0.29	0.67	6.72	0.16	0.52	0.00	0.02	
3	Link-35	1.81	0 12:00	18.43	0.10	1.12	0.74	0.12	0.42	0.00	0.05	
4	Link-36	2.29	0 12:08	6.43	0.36	0.75	4.93	0.15	0.51	0.00	0.06	
5	Link-37	1.96	0 12:08	12.28	0.16	0.97	0.31	0.11	0.37	0.00	0.04	
6	Link-38	0.66	0 12:04	10.80	0.06	0.60	6.31	0.08	0.29	0.00	0.03	
7	Link-39	2.19	0 12:16	8.48	0.26	0.83	8.33	0.13	0.45	0.00	0.05	
8	Link-41	0.00	0 00:00	12.36	0.00	0.00		0.00	0.00	0.00	0.00	
9	Link-42	0.00	0 00:00	9.36	0.00	0.00		0.07	0.24	0.00	0.00	
10	Link-43	1.94	0 12:21	7.79	0.25	0.79	2.95	0.12	0.41	0.00	0.09	
11	Link-44	1.14	0 12:34	7.84	0.15	0.64	12.24	0.09	0.29	0.00	0.08	
12	Link-45	0.00	0 00:00	9.33	0.00	0.00		0.00	0.00	0.00	0.00	
13	Link-46	0.00	0 00:00	8.09	0.00	0.00		0.00	0.00	0.00	0.00	
14	LowerRavine	2.69	0 12:48	157.98	0.02	1.11	1.86	0.43	0.11	0.00	0.48	
15	OutletRavine	2.69	0 12:49	237.22	0.01	1.45	0.52	0.34	0.08	0.00	0.74	
16	RH_C1	1.29	0 12:00	24.20	0.05	1.50	2.39	0.45	0.30	0.00	0.56	
17	RH_C2	1.28	0 12:02	14.49	0.09	1.38	0.72	0.45	0.32	0.00	0.63	
18	UpperRavine	2.80	0 12:37	177.61	0.02	1.14	8.08	0.44	0.11	0.00	0.43	

Pipe Input

SN	Element ID	Length (m)	Inlet Invert Elevation (m)	Inlet Invert Offset (m)	Outlet Invert Elevation (m)	Outlet Invert Offset (m)	Total Drop (m)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (m)	Pipe Width (m)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cms)	Flap Gate
1	Ex.STM_1	107.00	257.37	0.00	256.94	0.00	0.43	0.4000	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
2	Ex.STM_2	73.00	256.94	0.00	256.64	0.00	0.30	0.4100	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
3	Ex.STM_3	27.00	256.64	0.00	256.48	0.00	0.16	0.5900	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
4	Ex.STM_4	100.00	256.48	0.00	255.88	0.00	0.60	0.6000	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
5	Ex.STM_5	100.00	255.88	0.00	255.48	0.00	0.40	0.4000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
6	Ex.STM_6	50.00	255.48	0.00	255.23	0.00	0.25	0.5000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
7	Ex.STM_7	102.00	255.23	0.00	254.82	0.00	0.41	0.4000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
8	RH_A1	50.00	270.14	0.00	268.50	1.43	1.64	3.2800	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
9	RH_B1	227.00	270.35	0.00	266.50	0.00	3.85	1.7000	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
10	RH_C3	15.00	262.00	0.00	261.70	0.00	0.30	2.0000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
11	RH_C4	195.00	261.70	0.00	259.38	0.00	2.32	1.1900	CIRCULAR	0.530	0.530	0.0150	0.5000	0.5000	0.0000	0.00	No
12	RH_C5	274.00	259.38	0.00	256.36	0.00	3.02	1.1000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
13	RH_C6	6.00	256.36	0.00	256.24	0.14	0.12	2.0000	CIRCULAR	0.700	0.700	0.0130	0.5000	0.5000	0.0000	0.00	No
14	RH_D1	275.00	272.00	0.00	267.75	0.00	4.25	1.5500	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
15	RH_D2	180.00	267.75	0.00	264.00	0.00	3.75	2.0800	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
16	RH_D3	155.00	264.00	0.00	261.90	0.00	2.10	1.3500	CIRCULAR	0.380	0.380	0.0130	0.5000	0.5000	0.0000	0.00	No
17	RH_M1	270.00	267.60	0.00	267.07	0.00	0.53	0.2000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
18	RH_M2	222.00	267.07	0.00	266.63	0.00	0.44	0.2000	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
19	RH_M3	18.00	266.63	0.00	266.50	0.00	0.13	0.7200	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
20	RH_M4	415.00	266.50	0.00	261.90	0.00	4.60	1.1100	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
21	RH_M5	140.00	261.90	0.00	260.33	0.00	1.57	1.1200	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
22	RH_M6	464.00	260.33	0.00	256.42	0.00	3.91	0.8400	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
23	RH_M7	6.00	256.42	0.00	256.37	0.27	0.05	0.8300	CIRCULAR	1.000	1.000	0.0130	0.5000	0.5000	0.0000	0.00	No
24	West_Link	33.73	256.00	-1.00	257.00	0.00	-1.00	-2.9600	Dummy	0.000	0.000	0.0130	0.5000	0.5000	0.0000	0.00	No
25	WestWetland_Link	37.13	258.00	0.00	258.00	0.00	0.00	0.0000	Dummy	0.000	0.000	0.0130	0.5000	0.5000	0.0000	0.00	No
26	Wetland_Link	41.51	252.00	0.00	252.00	0.00	0.00	0.0000	Dummy	0.000	0.000	0.0130	0.5000	0.5000	0.0000	0.00	No

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	Ex.STM_1	0.25	0 11:52	0.18	1.37	1.55	1.15	0.45	1.00	44.00	0.78	SURCHARGED
2	Ex.STM_2	0.25	0 11:52	0.18	1.35	1.55	0.78	0.45	1.00	42.00	0.81	SURCHARGED
3	Ex.STM_3	0.25	0 11:52	0.22	1.12	1.55	0.29	0.45	1.00	39.00	0.92	SURCHARGED
4	Ex.STM_4	0.25	0 11:52	0.22	1.12	1.58	1.05	0.44	0.99	0.00	0.94	> CAPACITY
5	Ex.STM_5	0.25	0 12:05	0.27	0.90	1.32	1.26	0.43	0.82	0.00	0.86	Calculated
6	Ex.STM_6	0.25	0 12:06	0.30	0.81	1.40	0.60	0.40	0.76	0.00	0.89	Calculated
7	Ex.STM_7	0.25	0 12:07	0.39	0.63	1.43	1.19	0.35	0.58	0.00	0.91	Calculated
8	RH_A1	0.23	0 11:48	0.18	1.31	3.26	0.26	0.30	1.00	113.00	1.85	SURCHARGED
9	RH_B1	0.14	0 11:47	0.13	1.10	1.96	1.93	0.30	1.00	98.00	0.69	SURCHARGED
10	RH_C3	0.47	0 12:01	0.87	0.54	1.91	0.13	0.60	1.00	63.00	1.24	SURCHARGED
11	RH_C4	0.43	0 12:05	0.41	1.06	2.11	1.54	0.52	1.00	83.00	1.13	SURCHARGED
12	RH_C5	0.45	0 12:04	0.45	1.00	2.13	2.14	0.52	1.00	88.00	0.86	SURCHARGED
13	RH_C6	0.45	0 12:04	1.31	0.34	1.63	0.06	0.49	0.70	0.00	0.99	Calculated
14	RH_D1	0.00	0 00:00	0.12	0.00	0.00		0.14	0.50	0.00	0.00	Calculated
15	RH_D2	0.15	0 12:00	0.14	1.05	2.18	1.38	0.29	1.00	2.00	1.53	SURCHARGED
16	RH_D3	0.15	0 12:00	0.20	0.73	1.40	1.85	0.38	1.00	8.00	0.47	SURCHARGED
17	RH_M1	0.51	0 11:50	0.27	1.85	1.78	2.53	0.60	1.00	120.00	0.36	SURCHARGED
18	RH_M2	0.80	0 11:51	0.37	2.14	2.23	1.66	0.68	1.00	105.00	0.59	SURCHARGED
19	RH_M3	1.04	0 12:02	0.95	1.10	2.35	0.13	0.75	1.00	100.00	0.90	SURCHARGED
20	RH_M4	0.91	0 11:52	0.89	1.03	2.62	2.64	0.68	1.00	101.00	1.11	SURCHARGED
21	RH_M5	1.05	0 12:02	0.89	1.18	2.95	0.79	0.68	1.00	123.00	1.18	SURCHARGED
22	RH_M6	1.10	0 12:34	1.02	1.08	2.50	3.09	0.75	1.00	120.00	0.66	SURCHARGED
23	RH_M7	1.20	0 12:54	2.19	0.55	1.86	0.05	0.76	0.76	0.00	0.81	Calculated
24	West_Link	0.09	0 12:00	0.00	0.02	0.00		0.44	0.11	0.00	0.43	Calculated
25	WestWetland_Link	0.10	0 11:59	0.00	0.02	0.00		0.44	0.11	0.00	0.43	Calculated
26	Wetland_Link	0.11	0 12:00	0.00	0.02	0.00		0.44	0.11	0.00	0.43	Calculated

Project Description

File Name	18010_Pre-Development Rev.0.SPF
Description	I:\ACAD Projects\2018\18010\03-Ref\18010_Pre-Dev. Storm Parcels.dwg
	I:\ACAD Projects\2018\18010\03-Ref\18010_Pre-Dev. Storm Parcels.dwg

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	00:00:00	0:00:00
End Analysis On	00:00:00	0:00:00
Start Reporting On	00:00:00	0:00:00
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	31
Nodes	36
Junctions	30
Outfalls	5
Flow Diversions	0
Inlets	0
Storage Nodes	1
Links	44
Channels	18
Pipes	26
Pumps	0
Orifices	0
Weirs	0
Outlets	0
Pollutants	0
Land Uses	0

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	{Survey Site}.Standard : 10	0.92	2.00	67.00	2.0000	125.00	0.0130	0.2000	72.19	49.3510	21.59	19.82	0.03	0 01:12:07
2	{Survey Site}.Standard : 11	21.38	2.00	67.00	2.0000	360.00	0.0130	0.2000	72.19	46.5610	24.16	516.48	0.20	0 04:12:49
3	{Survey Site}.Standard : 12	0.71	5.00	67.00	2.0000	90.00	0.0130	0.2000	72.19	47.8650	23.07	16.38	0.02	0 01:13:54
4	{Survey Site}.Standard : 13	1.65	45.00	71.05	2.0000	220.00	0.0130	0.2000	72.19	25.7800	45.15	74.41	0.27	0 00:51:36
5	{Survey Site}.Standard : 14	4.32	2.00	67.00	2.0000	350.00	0.0130	0.2000	72.19	49.6900	21.26	91.84	0.08	0 01:38:29
6	{Survey Site}.Standard : 16	6.33	2.00	67.00	2.0000	215.00	0.0130	0.2000	72.19	50.5510	20.38	129.00	0.07	0 02:45:55
7	{Survey Site}.Standard : 17	0.36	5.00	67.00	5.0000	20.00	0.0130	0.2000	72.19	48.0680	22.86	8.14	0.01	0 01:31:29
8	{Survey Site}.Standard : 18	14.15	5.00	48.00	10.0000	300.00	0.0130	0.2000	72.19	59.3440	11.60	164.19	0.22	0 02:13:21
9	{Survey Site}.Standard : 19	0.26	2.00	67.00	2.0000	90.00	0.0130	0.2000	72.19	49.0110	21.97	5.80	0.01	0 00:41:35
10	{Survey Site}.Standard : 2	20.86	45.00	71.05	2.0000	300.00	0.0130	0.2000	72.19	26.7910	44.10	920.02	2.36	0 03:16:31
11	{Survey Site}.Standard : 20	11.33	2.00	36.00	0.5000	240.00	0.0130	0.2000	72.19	61.5190	5.29	59.94	0.07	0 05:33:48
12	{Survey Site}.Standard : 21	4.24	2.00	67.00	2.0000	155.00	0.0130	0.2000	72.19	50.4470	20.48	86.78	0.05	0 02:38:42
13	{Survey Site}.Standard : 22	23.21	2.00	67.00	2.0000	330.00	0.0130	0.2000	72.19	46.1210	23.22	538.89	0.20	0 04:39:49
14	{Survey Site}.Standard : 23	2.20	5.00	48.00	10.0000	100.00	0.0130	0.2000	72.19	58.7520	12.17	26.74	0.04	0 01:24:20
15	{Survey Site}.Standard : 24	9.04	2.00	67.00	2.0000	275.00	0.0130	0.2000	72.19	50.7080	20.23	182.91	0.10	0 02:57:18
16	{Survey Site}.Standard : 25	8.64	2.00	67.00	5.0000	390.00	0.0130	0.2000	72.19	49.7680	21.16	182.87	0.15	0 01:46:17
17	{Survey Site}.Standard : 26	1.12	45.00	71.05	2.0000	40.00	0.0130	0.2000	72.19	26.1840	44.74	50.28	0.15	0 01:54:05
18	{Survey Site}.Standard : 27	0.43	45.00	71.05	2.0000	60.00	0.0130	0.2000	72.19	25.7670	45.16	19.28	0.07	0 00:50:03
19	{Survey Site}.Standard : 28	0.12	45.00	71.05	2.0000	40.00	0.0130	0.2000	72.19	25.6410	45.25	5.57	0.02	0 00:30:15
20	{Survey Site}.Standard : 29	7.86	45.00	71.05	2.0000	110.00	0.0130	0.2000	72.19	26.8170	44.07	346.48	0.88	0 03:19:46
21	{Survey Site}.Standard : 3	25.14	45.00	71.05	2.0000	370.00	0.0130	0.2000	72.19	26.7660	44.12	1109.06	2.86	0 03:13:47
22	{Survey Site}.Standard : 30	20.00	30.00	63.70	2.0000	225.00	0.0130	0.2000	72.19	38.7550	32.15	642.82	1.55	0 04:23:06
23	{Survey Site}.Standard : 31	5.54	5.00	57.00	2.0000	245.00	0.0130	0.2000	72.19	54.9610	15.96	88.49	0.10	0 02:19:04
24	{Survey Site}.Standard : 32	3.34	2.00	67.00	2.0000	95.00	0.0130	0.2000	72.19	50.7860	20.13	67.14	0.04	0 03:04:24
25	{Survey Site}.Standard : 33	7.71	2.00	67.00	2.0000	215.00	0.0130	0.2000	72.19	50.8390	20.10	154.88	0.08	0 03:06:43
26	{Survey Site}.Standard : 4	3.13	2.00	67.00	2.0000	155.00	0.0130	0.2000	72.19	50.1080	20.83	65.22	0.04	0 02:12:22
27	{Survey Site}.Standard : 5	10.46	45.00	71.05	0.5000	235.00	0.0130	0.2000	72.19	27.0190	43.84	458.56	1.10	0 03:47:53
28	{Survey Site}.Standard : 6	11.54	2.00	67.00	2.0000	280.00	0.0130	0.2000	72.19	51.0470	19.87	229.37	0.11	0 03:23:04
29	{Survey Site}.Standard : 7	10.98	5.00	67.00	2.0000	225.00	0.0130	0.2000	72.19	49.7380	21.20	232.67	0.20	0 03:40:29
30	{Survey Site}.Standard : 8	3.30	2.00	67.00	2.0000	125.00	0.0130	0.2000	72.19	50.4210	20.52	67.81	0.04	0 02:35:32
31	{Survey Site}.Standard : 9	3.53	2.00	67.00	2.0000	100.00	0.0130	0.2000	72.19	50.8120	20.12	71.07	0.04	0 03:05:05

Node Summary

SN	Element ID	Element Type	Invert Elevation (m)	Ground/Rim (Max) Elevation (m)	Initial Water Elevation (m)	Surcharge Elevation (m)	Ponded Area (m^2)	Peak Inflow (cms)	Max HGL Elevation Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ha-mm)	Total Time Flooded (min)
1	Ex_MHR1	Junction	255.88	262.50	0.00	0.00	0.00	0.25	256.32	0.00	6.18	0 00:00	0.00	0.00
2	Ex_MHR2	Junction	255.48	259.65	0.00	0.00	0.00	0.25	255.90	0.00	3.75	0 00:00	0.00	0.00
3	Ex_MHR25	Junction	256.48	263.35	0.00	0.00	0.00	0.25	257.47	0.00	5.88	0 00:00	0.00	0.00
4	Ex_MHR26	Junction	256.64	262.75	0.00	0.00	0.00	0.25	257.87	0.00	4.88	0 00:00	0.00	0.00
5	Ex_MHR27	Junction	256.94	261.00	0.00	0.00	0.00	0.25	258.31	0.00	2.69	0 00:00	0.00	0.00
6	Ex_MHR28	Junction	257.37	259.30	0.00	0.00	0.00	0.88	259.04	0.00	0.26	0 00:00	0.00	0.00
7	Ex_MHR3	Junction	255.23	259.00	0.00	0.00	0.00	0.25	255.61	0.00	3.39	0 00:00	0.00	0.00
8	NorthWetland	Junction	252.00	258.00	0.00	0.00	0.00	0.17	252.00	0.00	6.00	0 00:00	0.00	0.00
9	Ravine_1	Junction	256.10	260.10	0.00	0.00	0.00	3.59	256.58	0.00	3.52	0 00:00	0.00	0.00
10	Ravine_2	Junction	253.00	257.00	0.00	0.00	0.00	3.73	253.55	0.00	3.45	0 00:00	0.00	0.00
11	Ravine_3	Junction	252.45	256.45	0.00	0.00	0.00	3.41	252.88	0.00	3.57	0 00:00	0.00	0.00
12	RH_1	Junction	267.60	271.70	0.00	0.00	0.00	2.86	271.55	0.00	0.15	0 00:00	0.00	0.00
13	RH_10	Junction	261.90	263.90	0.00	0.00	0.00	4.04	263.68	0.00	0.22	0 00:00	0.00	0.00
14	RH_11	Junction	260.33	262.55	0.00	0.00	0.00	3.48	262.39	0.00	0.16	0 00:00	0.00	0.00
15	RH_12	Junction	269.00	270.50	0.00	0.00	0.00	1.55	269.42	0.00	1.08	0 00:00	0.00	0.00
16	RH_13	Junction	264.00	266.50	0.00	0.00	0.00	1.59	264.58	0.00	1.92	0 00:00	0.00	0.00
17	RH_14	Junction	261.70	263.50	0.00	0.00	0.00	0.47	262.92	0.00	0.58	0 00:00	0.00	0.00
18	RH_15	Junction	259.38	261.00	0.00	0.00	0.00	0.50	260.50	0.00	0.50	0 00:00	0.00	0.00
19	RH_16	Junction	256.36	258.00	0.00	0.00	0.00	0.46	257.07	0.00	0.93	0 00:00	0.00	0.00
20	RH_17	Junction	256.42	258.00	0.00	0.00	0.00	1.25	257.52	0.00	0.48	0 00:00	0.00	0.00
21	RH_2	Junction	270.14	272.45	0.00	0.00	0.00	2.36	272.23	0.00	0.22	0 00:00	0.00	0.00
22	RH_3	Junction	267.07	270.25	0.00	0.00	0.00	4.99	269.87	0.00	0.38	0 00:00	0.00	0.00
23	RH_4	Junction	266.63	268.60	0.00	0.00	0.00	3.61	268.42	0.00	0.18	0 00:00	0.00	0.00
24	RH_5	Junction	270.35	272.10	0.00	0.00	0.00	1.10	271.86	0.00	0.24	0 00:00	0.00	0.00
25	RH_6	Junction	266.50	268.20	0.00	0.00	0.00	4.43	268.06	0.00	0.14	0 00:00	0.00	0.00
26	RH_7	Junction	272.00	273.50	0.00	0.00	0.00	0.00	272.00	0.00	1.50	0 00:00	0.00	0.00
27	RH_8	Junction	267.75	269.85	0.00	0.00	0.00	0.20	268.38	0.00	1.47	0 00:00	0.00	0.00
28	RH_9	Junction	264.00	265.80	0.00	0.00	0.00	0.18	264.96	0.00	0.84	0 00:00	0.00	0.00
29	WestOutfall	Junction	257.00	258.00	0.00	0.00	0.00	0.12	257.00	0.00	1.00	0 00:00	0.00	0.00
30	WestWetland	Junction	258.00	259.00	0.00	0.00	0.00	0.12	258.00	0.00	1.00	0 00:00	0.00	0.00
31	North_Wetland	Outfall	252.00					0.17	252.00					
32	Outfall	Outfall	252.00					3.41	252.35					
33	TinerEstatesSTM	Outfall	254.82					0.25	255.14					
34	West_Outfall	Outfall	257.00					0.12	257.00					
35	West_Wetland	Outfall	258.00					0.12	258.00					
36	Ex_SE_Pond	Storage Node	262.00	266.00	0.00		0.00	1.61	263.09				0.00	0.00

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(m)	(m)	(m)	(%)	(m)		(cms)	(cms)		(m/sec)	(m)		(min)	
1	Ex.STM_1	Pipe	Ex_MHR28	Ex_MHR27	107.00	257.37	256.94	0.4000	0.450	0.0130	0.25	0.18	1.37	1.55	0.45	1.00	50.00	SURCHARGED
2	Ex.STM_2	Pipe	Ex_MHR27	Ex_MHR26	73.00	256.94	256.64	0.4100	0.450	0.0130	0.25	0.18	1.35	1.55	0.45	1.00	47.00	SURCHARGED
3	Ex.STM_3	Pipe	Ex_MHR26	Ex_MHR25	27.00	256.64	256.48	0.5900	0.450	0.0130	0.25	0.22	1.12	1.55	0.45	1.00	45.00	SURCHARGED
4	Ex.STM_4	Pipe	Ex_MHR25	Ex_MHR1	100.00	256.48	255.88	0.6000	0.450	0.0130	0.25	0.22	1.12	1.58	0.44	0.99	0.00	> CAPACITY
5	Ex.STM_5	Pipe	Ex_MHR1	Ex_MHR2	100.00	255.88	255.48	0.4000	0.525	0.0130	0.25	0.27	0.90	1.32	0.43	0.82	0.00	Calculated
6	Ex.STM_6	Pipe	Ex_MHR2	Ex_MHR3	50.00	255.48	255.23	0.5000	0.525	0.0130	0.25	0.30	0.81	1.40	0.40	0.76	0.00	Calculated
7	Ex.STM_7	Pipe	Ex_MHR3	TinerEstatesSTM	102.00	255.23	254.82	0.4000	0.600	0.0130	0.25	0.39	0.63	1.44	0.35	0.58	0.00	Calculated
8	RH_A1	Pipe	RH_2	RH_3	50.00	270.14	268.50	3.2800	0.300	0.0130	0.23	0.18	1.31	3.26	0.30	1.00	151.00	SURCHARGED
9	RH_B1	Pipe	RH_5	RH_6	227.00	270.35	266.50	1.7000	0.300	0.0130	0.14	0.13	1.10	1.96	0.30	1.00	124.00	SURCHARGED
10	RH_C3	Pipe	Ex_SE_Pond	RH_14	15.00	262.00	261.70	2.0000	0.600	0.0130	0.47	0.87	0.54	1.91	0.60	1.00	121.00	SURCHARGED
11	RH_C4	Pipe	RH_14	RH_15	195.00	261.70	259.38	1.1900	0.525	0.0150	0.43	0.41	1.05	2.11	0.52	1.00	145.00	SURCHARGED
12	RH_C5	Pipe	RH_15	RH_16	274.00	259.38	256.36	1.1000	0.525	0.0130	0.46	0.45	1.03	2.14	0.52	1.00	151.00	SURCHARGED
13	RH_C6	Pipe	RH_16	Ravine_1	6.00	256.36	256.24	2.0000	0.700	0.0130	0.46	1.31	0.35	1.63	0.52	0.74	0.00	Calculated
14	RH_D1	Pipe	RH_7	RH_8	275.00	272.00	267.75	1.5500	0.300	0.0130	0.00	0.12	0.00	0.00	0.15	0.50	0.00	Calculated
15	RH_D2	Pipe	RH_8	RH_9	180.00	267.75	264.00	2.0800	0.300	0.0130	0.15	0.14	1.04	2.17	0.30	1.00	14.00	SURCHARGED
16	RH_D3	Pipe	RH_9	RH_10	155.00	264.00	261.90	1.3500	0.375	0.0130	0.16	0.20	0.76	1.41	0.38	1.00	36.00	SURCHARGED
17	RH_M1	Pipe	RH_1	RH_3	270.00	267.60	267.07	0.2000	0.600	0.0130	0.50	0.27	1.85	1.78	0.60	1.00	145.00	SURCHARGED
18	RH_M2	Pipe	RH_3	RH_4	222.00	267.07	266.63	0.2000	0.675	0.0130	0.80	0.37	2.14	2.23	0.68	1.00	126.00	SURCHARGED
19	RH_M3	Pipe	RH_4	RH_6	18.00	266.63	266.50	0.7200	0.750	0.0130	1.05	0.95	1.11	2.37	0.75	1.00	120.00	SURCHARGED
20	RH_M4	Pipe	RH_6	RH_10	415.00	266.50	261.90	1.1100	0.675	0.0130	0.91	0.89	1.03	2.62	0.68	1.00	122.00	SURCHARGED
21	RH_M5	Pipe	RH_10	RH_11	140.00	261.90	260.33	1.1200	0.675	0.0130	1.05	0.89	1.17	2.93	0.68	1.00	154.00	SURCHARGED
22	RH_M6	Pipe	RH_11	RH_17	464.00	260.33	256.42	0.8400	0.750	0.0130	1.10	1.02	1.08	2.50	0.75	1.00	151.00	SURCHARGED
23	RH_M7	Pipe	RH_17	Ravine_1	6.00	256.42	256.37	0.8300	1.000	0.0130	1.25	2.19	0.57	1.92	0.77	0.77	0.00	Calculated
24	West_Link	Pipe	WestOutfall	West_Outfall	33.73	256.00	257.00	-2.9600	0.000	0.0130	0.12	0.00	0.02	0.00	0.51	0.13	0.00	Calculated
25	WestWetland_Link	Pipe	WestWetland	West_Wetland	37.13	258.00	258.00	0.0000	0.000	0.0130	0.12	0.00	0.02	0.00	0.51	0.13	0.00	Calculated
26	Wetland_Link	Pipe	NorthWetland	North_Wetland	41.51	252.00	252.00	0.0000	0.000	0.0130	0.17	0.00	0.02	0.00	0.51	0.13	0.00	Calculated
27	Ex.STM_Overland	Channel	Ex_MHR28	Ravine_2	400.00	259.00	253.00	1.5000	0.300	0.0320	0.43	10.09	0.04	0.12	0.17	0.57	0.00	
28	Link-34	Channel	RH_1	RH_3	270.00	271.40	269.65	0.6500	0.300	0.0320	2.21	6.63	0.33	0.70	0.18	0.60	0.00	
29	Link-35	Channel	RH_2	RH_3	50.00	272.15	269.65	5.0000	0.300	0.0320	2.15	18.43	0.12	1.13	0.14	0.48	0.00	
30	Link-36	Channel	RH_3	RH_4	222.00	269.65	268.30	0.6100	0.300	0.0320	2.93	6.43	0.46	0.83	0.17	0.59	0.00	
31	Link-37	Channel	RH_4	RH_6	18.00	268.30	267.90	2.2200	0.300	0.0320	2.62	12.28	0.21	1.08	0.13	0.45	0.00	
32	Link-38	Channel	RH_5	RH_6	227.00	271.80	267.90	1.7200	0.300	0.0320	0.81	10.80	0.08	0.64	0.10	0.34	0.00	
33	Link-39	Channel	RH_6	RH_10	415.00	267.90	263.50	1.0600	0.300	0.0320	2.96	8.48	0.35	0.93	0.16	0.54	0.00	
34	Link-41	Channel	RH_8	RH_9	180.00	269.55	265.50	2.2500	0.300	0.0320	0.00	12.36	0.00	0.00	0.00	0.00	0.00	
35	Link-42	Channel	RH_9	RH_10	155.00	265.50	263.50	1.2900	0.300	0.0320	0.00	9.36	0.00	0.00	0.09	0.29	0.00	
36	Link-43	Channel	RH_10	RH_11	140.00	263.50	262.25	0.8900	0.300	0.0320	2.70	7.79	0.35	0.91	0.15	0.50	0.00	
37	Link-44	Channel	RH_11	Ravine_1	470.00	262.25	258.00	0.9000	0.300	0.0320	1.82	7.84	0.23	0.78	0.12	0.39	0.00	
38	Link-45	Channel	RH_14	RH_15	195.00	263.20	260.70	1.2800	0.300	0.0320	0.00	9.33	0.00	0.00	0.00	0.00	0.00	
39	Link-46	Channel	RH_15	Ravine_1	280.00	260.70	258.00	0.9600	0.300	0.0320	0.00	8.09	0.00	0.00	0.00	0.00	0.00	
40	LowerRavine	Channel	Ravine_2	Ravine_3	124.00	253.00	252.45	0.4400	4.000	0.0320	3.40	157.98	0.02	1.20	0.49	0.12	0.00	
41	OutletRavine	Channel	Ravine_3	Outfall	45.00	252.45	252.00	1.0000	4.000	0.0320	3.41	237.22	0.01	1.56	0.39	0.10	0.00	
42	RH_C1	Channel	RH_12	RH_13	215.00	269.00	264.00	2.3300	1.500	0.0320	1.50	24.20	0.06	1.56	0.48	0.33	0.00	
43	RH_C2	Channel	RH_13	Ex_SE_Pond	60.00	264.00	263.50	0.8300	1.500	0.0320	1.50	14.49	0.10	1.44	0.49	0.34	0.00	
44	UpperRavine	Channel	Ravine_1	Ravine_2	553.00	256.10	253.00	0.5600	4.000	0.0320	3.55	177.61	0.02	1.26	0.51	0.13	0.00	

Junction Input

SN	Element ID	Invert Elevation (m)	Ground/Rim (Max) Elevation (m)	Ground/Rim (Max) Offset (m)	Initial Water Elevation (m)	Initial Water Depth (m)	Surcharge Elevation (m)	Surcharge Depth (m)	Ponded Area (m²)	Minimum Pipe Cover (m)
1	Ex_MHR1	255.88	262.50	6.62	0.00	-255.88	0.00	-262.50	0.00	0.00
2	Ex_MHR2	255.48	259.65	4.17	0.00	-255.48	0.00	-259.65	0.00	0.00
3	Ex_MHR25	256.48	263.35	6.87	0.00	-256.48	0.00	-263.35	0.00	0.00
4	Ex_MHR26	256.64	262.75	6.11	0.00	-256.64	0.00	-262.75	0.00	0.00
5	Ex_MHR27	256.94	261.00	4.06	0.00	-256.94	0.00	-261.00	0.00	0.00
6	Ex_MHR28	257.37	259.30	1.93	0.00	-257.37	0.00	-259.30	0.00	0.00
7	Ex_MHR3	255.23	259.00	3.77	0.00	-255.23	0.00	-259.00	0.00	0.00
8	NorthWetland	252.00	258.00	6.00	0.00	-252.00	0.00	-258.00	0.00	0.00
9	Ravine_1	256.10	260.10	4.00	0.00	-256.10	0.00	-260.10	0.00	0.00
10	Ravine_2	253.00	257.00	4.00	0.00	-253.00	0.00	-257.00	0.00	0.00
11	Ravine_3	252.45	256.45	4.00	0.00	-252.45	0.00	-256.45	0.00	0.00
12	RH_1	267.60	271.70	4.10	0.00	-267.60	0.00	-271.70	0.00	0.00
13	RH_10	261.90	263.90	2.00	0.00	-261.90	0.00	-263.90	0.00	0.00
14	RH_11	260.33	262.55	2.22	0.00	-260.33	0.00	-262.55	0.00	0.00
15	RH_12	269.00	270.50	1.50	0.00	-269.00	0.00	-270.50	0.00	0.00
16	RH_13	264.00	266.50	2.50	0.00	-264.00	0.00	-266.50	0.00	0.00
17	RH_14	261.70	263.50	1.80	0.00	-261.70	0.00	-263.50	0.00	0.00
18	RH_15	259.38	261.00	1.62	0.00	-259.38	0.00	-261.00	0.00	0.00
19	RH_16	256.36	258.00	1.64	0.00	-256.36	0.00	-258.00	0.00	0.00
20	RH_17	256.42	258.00	1.58	0.00	-256.42	0.00	-258.00	0.00	0.00
21	RH_2	270.14	272.45	2.31	0.00	-270.14	0.00	-272.45	0.00	0.00
22	RH_3	267.07	270.25	3.18	0.00	-267.07	0.00	-270.25	0.00	0.00
23	RH_4	266.63	268.60	1.97	0.00	-266.63	0.00	-268.60	0.00	0.00
24	RH_5	270.35	272.10	1.75	0.00	-270.35	0.00	-272.10	0.00	0.00
25	RH_6	266.50	268.20	1.70	0.00	-266.50	0.00	-268.20	0.00	0.00
26	RH_7	272.00	273.50	1.50	0.00	-272.00	0.00	-273.50	0.00	0.00
27	RH_8	267.75	269.85	2.10	0.00	-267.75	0.00	-269.85	0.00	0.00
28	RH_9	264.00	265.80	1.80	0.00	-264.00	0.00	-265.80	0.00	0.00
29	WestOutfall	257.00	258.00	1.00	0.00	-257.00	0.00	-258.00	0.00	0.00
30	WestWetland	258.00	259.00	1.00	0.00	-258.00	0.00	-259.00	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)	Total Time Flooded (min)
1	Ex_MHR1	0.25	0.00	256.32	0.44	0.00	6.18	256.02	0.14	0 12:04	0 00:00	0.00	0.00
2	Ex_MHR2	0.25	0.00	255.90	0.42	0.00	3.75	255.62	0.14	0 12:05	0 00:00	0.00	0.00
3	Ex_MHR25	0.25	0.00	257.47	0.99	0.00	5.88	256.63	0.15	0 11:50	0 00:00	0.00	0.00
4	Ex_MHR26	0.25	0.00	257.87	1.23	0.00	4.88	256.80	0.16	0 11:50	0 00:00	0.00	0.00
5	Ex_MHR27	0.25	0.00	258.31	1.37	0.00	2.69	257.13	0.19	0 11:50	0 00:00	0.00	0.00
6	Ex_MHR28	0.88	0.88	259.04	1.67	0.00	0.26	257.59	0.22	0 12:04	0 00:00	0.00	0.00
7	Ex_MHR3	0.25	0.00	255.61	0.38	0.00	3.39	255.36	0.13	0 12:06	0 00:00	0.00	0.00
8	NorthWetland	0.17	0.17	252.00	0.00	0.00	6.00	252.00	0.00	0 00:00	0 00:00	0.00	0.00
9	Ravine_1	3.59	0.07	256.58	0.48	0.00	3.52	256.28	0.18	0 12:32	0 00:00	0.00	0.00
10	Ravine_2	3.73	0.43	253.55	0.55	0.00	3.45	253.22	0.22	0 12:43	0 00:00	0.00	0.00
11	Ravine_3	3.41	0.04	252.88	0.43	0.00	3.57	252.62	0.17	0 12:44	0 00:00	0.00	0.00
12	RH_1	2.86	2.86	271.55	3.95	0.00	0.15	268.32	0.72	0 12:01	0 00:00	0.00	0.00
13	RH_10	4.04	0.11	263.68	1.78	0.00	0.22	262.43	0.53	0 12:18	0 00:00	0.00	0.00
14	RH_11	3.48	0.04	262.39	2.06	0.00	0.16	260.89	0.56	0 12:30	0 00:00	0.00	0.00
15	RH_12	1.55	1.55	269.42	0.42	0.00	1.08	269.08	0.08	0 12:00	0 00:00	0.00	0.00
16	RH_13	1.59	0.10	264.58	0.58	0.00	1.92	264.14	0.14	0 12:01	0 00:00	0.00	0.00
17	RH_14	0.47	0.00	262.92	1.22	0.00	0.58	262.01	0.31	0 12:33	0 00:00	0.00	0.00
18	RH_15	0.50	0.08	260.50	1.12	0.00	0.50	259.69	0.31	0 12:40	0 00:00	0.00	0.00
19	RH_16	0.46	0.00	257.07	0.71	0.00	0.93	256.69	0.33	0 12:40	0 00:00	0.00	0.00
20	RH_17	1.25	0.20	257.52	1.10	0.00	0.48	256.97	0.55	0 12:42	0 00:00	0.00	0.00
21	RH_2	2.36	2.36	272.23	2.09	0.00	0.22	270.60	0.46	0 12:00	0 00:00	0.00	0.00
22	RH_3	4.99	0.00	269.87	2.80	0.00	0.38	267.77	0.70	0 12:07	0 00:00	0.00	0.00
23	RH_4	3.61	0.04	268.42	1.79	0.00	0.18	267.08	0.45	0 12:06	0 00:00	0.00	0.00
24	RH_5	1.10	1.10	271.86	1.51	0.00	0.24	270.65	0.30	0 12:03	0 00:00	0.00	0.00
25	RH_6	4.43	0.00	268.06	1.56	0.00	0.14	266.90	0.40	0 12:12	0 00:00	0.00	0.00
26	RH_7	0.00	0.00	272.00	0.00	0.00	1.50	272.00	0.00	0 00:00	0 00:00	0.00	0.00
27	RH_8	0.20	0.20	268.38	0.63	0.00	1.47	267.85	0.10	0 12:03	0 00:00	0.00	0.00
28	RH_9	0.18	0.04	264.96	0.96	0.00	0.84	264.14	0.14	0 12:13	0 00:00	0.00	0.00
29	WestOutfall	0.12	0.12	257.00	0.00	0.00	1.00	257.00	0.00	0 00:00	0 00:00	0.00	0.00
30	WestWetland	0.12	0.12	258.00	0.00	0.00	1.00	258.00	0.00	0 00:00	0 00:00	0.00	0.00

Channel Input

SN	Element ID	Length (m)	Inlet Invert Elevation (m)	Inlet Invert Offset (m)	Outlet Invert Elevation (m)	Outlet Invert Offset (m)	Total Drop (m)	Average Slope (%)	Shape	Height (m)	Width (m)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cms)	Flap Gate
1	Ex.STM_Overland	400.00	259.00	1.63	253.00	0.00	6.00	1.5000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
2	Link-34	270.00	271.40	3.80	269.65	2.58	1.75	0.6500	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
3	Link-35	50.00	272.15	2.01	269.65	2.58	2.50	5.0000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
4	Link-36	222.00	269.65	2.58	268.30	1.67	1.35	0.6100	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
5	Link-37	18.00	268.30	1.67	267.90	1.40	0.40	2.2200	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
6	Link-38	227.00	271.80	1.45	267.90	1.40	3.90	1.7200	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
7	Link-39	415.00	267.90	1.40	263.50	1.60	4.40	1.0600	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
8	Link-41	180.00	269.55	1.80	265.50	1.50	4.05	2.2500	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
9	Link-42	155.00	265.50	1.50	263.50	1.60	2.00	1.2900	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
10	Link-43	140.00	263.50	1.60	262.25	1.92	1.25	0.8900	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
11	Link-44	470.00	262.25	1.92	258.00	1.90	4.25	0.9000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
12	Link-45	195.00	263.20	1.50	260.70	1.32	2.50	1.2800	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
13	Link-46	280.00	260.70	1.32	258.00	1.90	2.70	0.9600	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
14	LowerRavine	124.00	253.00	0.00	252.45	0.00	0.55	0.4400	Trapezoidal	4.000	17.000	0.0320	0.5000	0.5000	0.0000	0.00	No
15	OutletRavine	45.00	252.45	0.00	252.00	0.00	0.45	1.0000	Trapezoidal	4.000	17.000	0.0320	0.5000	0.5000	0.0000	0.00	No
16	RH_C1	215.00	269.00	0.00	264.00	0.00	5.00	2.3300	Trapezoidal	1.500	7.000	0.0320	0.5000	0.5000	0.0000	0.00	No
17	RH_C2	60.00	264.00	0.00	263.50	1.50	0.50	0.8300	Trapezoidal	1.500	7.000	0.0320	0.5000	0.5000	0.0000	0.00	No
18	UpperRavine	553.00	256.10	0.00	253.00	0.00	3.10	0.5600	Trapezoidal	4.000	17.000	0.0320	0.5000	0.5000	0.0000	0.00	No

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	Ex.STM_Overland	0.43	0 12:04	10.09	0.04	0.12	55.56	0.17	0.57	0.00	0.00	
2	Link-34	2.21	0 12:01	6.63	0.33	0.70	6.43	0.18	0.60	0.00	0.02	
3	Link-35	2.15	0 12:00	18.43	0.12	1.13	0.74	0.14	0.48	0.00	0.07	
4	Link-36	2.93	0 12:07	6.43	0.46	0.83	4.46	0.17	0.59	0.00	0.06	
5	Link-37	2.62	0 12:07	12.28	0.21	1.08	0.28	0.13	0.45	0.00	0.04	
6	Link-38	0.81	0 12:03	10.80	0.08	0.64	5.91	0.10	0.34	0.00	0.03	
7	Link-39	2.96	0 12:13	8.48	0.35	0.93	7.44	0.16	0.54	0.00	0.06	
8	Link-41	0.00	0 00:00	12.36	0.00	0.00		0.00	0.00	0.00	0.00	
9	Link-42	0.00	0 00:00	9.36	0.00	0.00		0.09	0.29	0.00	0.00	
10	Link-43	2.70	0 12:19	7.79	0.35	0.91	2.56	0.15	0.50	0.00	0.11	
11	Link-44	1.82	0 12:30	7.84	0.23	0.78	10.04	0.12	0.39	0.00	0.10	
12	Link-45	0.00	0 00:00	9.33	0.00	0.00		0.00	0.00	0.00	0.00	
13	Link-46	0.00	0 00:00	8.09	0.00	0.00		0.00	0.00	0.00	0.00	
14	LowerRavine	3.40	0 12:43	157.98	0.02	1.20	1.72	0.49	0.12	0.00	0.49	
15	OutletRavine	3.41	0 12:44	237.22	0.01	1.56	0.48	0.39	0.10	0.00	0.75	
16	RH_C1	1.50	0 12:00	24.20	0.06	1.56	2.30	0.48	0.33	0.00	0.57	
17	RH_C2	1.50	0 12:01	14.49	0.10	1.44	0.69	0.49	0.34	0.00	0.64	
18	UpperRavine	3.55	0 12:32	177.61	0.02	1.26	7.31	0.51	0.13	0.00	0.43	

Pipe Input

SN	Element ID	Length (m)	Inlet Invert Elevation (m)	Inlet Invert Offset (m)	Outlet Invert Elevation (m)	Outlet Invert Offset (m)	Total Drop (m)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (m)	Pipe Width (m)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cms)	Flap Gate
1	Ex.STM_1	107.00	257.37	0.00	256.94	0.00	0.43	0.4000	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
2	Ex.STM_2	73.00	256.94	0.00	256.64	0.00	0.30	0.4100	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
3	Ex.STM_3	27.00	256.64	0.00	256.48	0.00	0.16	0.5900	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
4	Ex.STM_4	100.00	256.48	0.00	255.88	0.00	0.60	0.6000	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
5	Ex.STM_5	100.00	255.88	0.00	255.48	0.00	0.40	0.4000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
6	Ex.STM_6	50.00	255.48	0.00	255.23	0.00	0.25	0.5000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
7	Ex.STM_7	102.00	255.23	0.00	254.82	0.00	0.41	0.4000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
8	RH_A1	50.00	270.14	0.00	268.50	1.43	1.64	3.2800	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
9	RH_B1	227.00	270.35	0.00	266.50	0.00	3.85	1.7000	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
10	RH_C3	15.00	262.00	0.00	261.70	0.00	0.30	2.0000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
11	RH_C4	195.00	261.70	0.00	259.38	0.00	2.32	1.1900	CIRCULAR	0.530	0.530	0.0150	0.5000	0.5000	0.0000	0.00	No
12	RH_C5	274.00	259.38	0.00	256.36	0.00	3.02	1.1000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
13	RH_C6	6.00	256.36	0.00	256.24	0.14	0.12	2.0000	CIRCULAR	0.700	0.700	0.0130	0.5000	0.5000	0.0000	0.00	No
14	RH_D1	275.00	272.00	0.00	267.75	0.00	4.25	1.5500	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
15	RH_D2	180.00	267.75	0.00	264.00	0.00	3.75	2.0800	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
16	RH_D3	155.00	264.00	0.00	261.90	0.00	2.10	1.3500	CIRCULAR	0.380	0.380	0.0130	0.5000	0.5000	0.0000	0.00	No
17	RH_M1	270.00	267.60	0.00	267.07	0.00	0.53	0.2000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
18	RH_M2	222.00	267.07	0.00	266.63	0.00	0.44	0.2000	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
19	RH_M3	18.00	266.63	0.00	266.50	0.00	0.13	0.7200	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
20	RH_M4	415.00	266.50	0.00	261.90	0.00	4.60	1.1100	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
21	RH_M5	140.00	261.90	0.00	260.33	0.00	1.57	1.1200	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
22	RH_M6	464.00	260.33	0.00	256.42	0.00	3.91	0.8400	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
23	RH_M7	6.00	256.42	0.00	256.37	0.27	0.05	0.8300	CIRCULAR	1.000	1.000	0.0130	0.5000	0.5000	0.0000	0.00	No
24	West_Link	33.73	256.00	-1.00	257.00	0.00	-1.00	-2.9600	Dummy	0.000	0.000	0.0130	0.5000	0.5000	0.0000	0.00	No
25	WestWetland_Link	37.13	258.00	0.00	258.00	0.00	0.00	0.0000	Dummy	0.000	0.000	0.0130	0.5000	0.5000	0.0000	0.00	No
26	Wetland_Link	41.51	252.00	0.00	252.00	0.00	0.00	0.0000	Dummy	0.000	0.000	0.0130	0.5000	0.5000	0.0000	0.00	No

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	Ex.STM_1	0.25	0 11:51	0.18	1.37	1.55	1.15	0.45	1.00	50.00	0.77	SURCHARGED
2	Ex.STM_2	0.25	0 11:51	0.18	1.35	1.55	0.78	0.45	1.00	47.00	0.81	SURCHARGED
3	Ex.STM_3	0.25	0 11:51	0.22	1.12	1.55	0.29	0.45	1.00	45.00	0.92	SURCHARGED
4	Ex.STM_4	0.25	0 11:50	0.22	1.12	1.58	1.05	0.44	0.99	0.00	0.93	> CAPACITY
5	Ex.STM_5	0.25	0 12:05	0.27	0.90	1.32	1.26	0.43	0.82	0.00	0.86	Calculated
6	Ex.STM_6	0.25	0 12:06	0.30	0.81	1.40	0.60	0.40	0.76	0.00	0.89	Calculated
7	Ex.STM_7	0.25	0 12:06	0.39	0.63	1.44	1.18	0.35	0.58	0.00	0.91	Calculated
8	RH_A1	0.23	0 11:46	0.18	1.31	3.26	0.26	0.30	1.00	151.00	1.74	SURCHARGED
9	RH_B1	0.14	0 11:45	0.13	1.10	1.96	1.93	0.30	1.00	124.00	0.67	SURCHARGED
10	RH_C3	0.47	0 11:59	0.87	0.54	1.91	0.13	0.60	1.00	121.00	1.14	SURCHARGED
11	RH_C4	0.43	0 12:01	0.41	1.05	2.11	1.54	0.52	1.00	145.00	1.04	SURCHARGED
12	RH_C5	0.46	0 12:40	0.45	1.03	2.14	2.13	0.52	1.00	151.00	0.78	SURCHARGED
13	RH_C6	0.46	0 12:40	1.31	0.35	1.63	0.06	0.52	0.74	0.00	0.95	Calculated
14	RH_D1	0.00	0 00:00	0.12	0.00	0.00		0.15	0.50	0.00	0.00	Calculated
15	RH_D2	0.15	0 11:58	0.14	1.04	2.17	1.38	0.30	1.00	14.00	1.47	SURCHARGED
16	RH_D3	0.16	0 12:10	0.20	0.76	1.41	1.83	0.38	1.00	36.00	0.47	SURCHARGED
17	RH_M1	0.50	0 11:48	0.27	1.85	1.78	2.53	0.60	1.00	145.00	0.34	SURCHARGED
18	RH_M2	0.80	0 11:49	0.37	2.14	2.23	1.66	0.68	1.00	126.00	0.57	SURCHARGED
19	RH_M3	1.05	0 12:01	0.95	1.11	2.37	0.13	0.75	1.00	120.00	0.88	SURCHARGED
20	RH_M4	0.91	0 11:51	0.89	1.03	2.62	2.64	0.68	1.00	122.00	1.08	SURCHARGED
21	RH_M5	1.05	0 12:00	0.89	1.17	2.93	0.80	0.68	1.00	154.00	1.14	SURCHARGED
22	RH_M6	1.10	0 12:29	1.02	1.08	2.50	3.09	0.75	1.00	151.00	0.64	SURCHARGED
23	RH_M7	1.25	0 12:42	2.19	0.57	1.92	0.05	0.77	0.77	0.00	0.81	Calculated
24	West_Link	0.12	0 12:00	0.00	0.02	0.00		0.51	0.13	0.00	0.43	Calculated
25	WestWetland_Link	0.12	0 12:00	0.00	0.02	0.00		0.51	0.13	0.00	0.43	Calculated
26	Wetland_Link	0.17	0 12:00	0.00	0.02	0.00		0.51	0.13	0.00	0.43	Calculated

Project Description

File Name	18010_Pre-Development Rev.0.SPF
Description	I:\ACAD Projects\2018\18010\03-Ref\18010_Pre-Dev. Storm Parcels.dwg
	I:\ACAD Projects\2018\18010\03-Ref\18010_Pre-Dev. Storm Parcels.dwg

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	00:00:00	0:00:00
End Analysis On	00:00:00	0:00:00
Start Reporting On	00:00:00	0:00:00
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	31
Nodes	36
Junctions	30
Outfalls	5
Flow Diversions	0
Inlets	0
Storage Nodes	1
Links	44
Channels	18
Pipes	26
Pumps	0
Orifices	0
Weirs	0
Outlets	0
Pollutants	0
Land Uses	0

Subbasin Summary

SN	Subbasin ID	Area (ha)	Impervious Area (%)	Weighted Curve Number	Average Slope (%)	Equivalent Width (m)	Impervious Area Manning's Roughness	Pervious Area Manning's Roughness	Total Rainfall (mm)	Total Infiltration (mm)	Total Runoff (mm)	Total Runoff Volume (ha-mm)	Peak Runoff (cms)	Time of Concentration (days hh:mm:ss)
1	{Survey Site}.Standard : 10	0.92	2.00	67.00	2.0000	125.00	0.0130	0.2000	82.99	53.4540	28.29	25.97	0.04	0 01:08:13
2	{Survey Site}.Standard : 11	21.38	2.00	67.00	2.0000	360.00	0.0130	0.2000	82.99	50.7540	31.70	677.76	0.28	0 03:59:06
3	{Survey Site}.Standard : 12	0.71	5.00	67.00	2.0000	90.00	0.0130	0.2000	82.99	51.8440	29.89	21.22	0.04	0 01:09:53
4	{Survey Site}.Standard : 13	1.65	45.00	71.05	2.0000	220.00	0.0130	0.2000	82.99	27.7440	54.00	88.98	0.33	0 00:48:48
5	{Survey Site}.Standard : 14	4.32	2.00	67.00	2.0000	350.00	0.0130	0.2000	82.99	53.8050	27.94	120.70	0.14	0 01:33:09
6	{Survey Site}.Standard : 16	6.33	2.00	67.00	2.0000	215.00	0.0130	0.2000	82.99	54.7220	27.01	170.95	0.11	0 02:36:55
7	{Survey Site}.Standard : 17	0.36	5.00	67.00	5.0000	20.00	0.0130	0.2000	82.99	52.0530	29.67	10.56	0.01	0 01:26:31
8	{Survey Site}.Standard : 18	14.15	5.00	48.00	10.0000	300.00	0.0130	0.2000	82.99	65.7390	16.00	226.45	0.28	0 02:06:07
9	{Survey Site}.Standard : 19	0.26	2.00	67.00	2.0000	90.00	0.0130	0.2000	82.99	53.0760	28.71	7.58	0.02	0 00:39:20
10	{Survey Site}.Standard : 2	20.86	45.00	71.05	2.0000	300.00	0.0130	0.2000	82.99	28.8020	52.89	1103.54	2.82	0 03:05:51
11	{Survey Site}.Standard : 20	11.33	2.00	36.00	0.5000	240.00	0.0130	0.2000	82.99	69.3560	8.30	93.96	0.08	0 05:15:41
12	{Survey Site}.Standard : 21	4.24	2.00	67.00	2.0000	155.00	0.0130	0.2000	82.99	54.6140	27.11	114.88	0.08	0 02:30:06
13	{Survey Site}.Standard : 22	23.21	2.00	67.00	2.0000	330.00	0.0130	0.2000	82.99	50.2570	30.50	707.99	0.28	0 04:24:38
14	{Survey Site}.Standard : 23	2.20	5.00	48.00	10.0000	100.00	0.0130	0.2000	82.99	65.0990	16.63	36.56	0.05	0 01:19:45
15	{Survey Site}.Standard : 24	9.04	2.00	67.00	2.0000	275.00	0.0130	0.2000	82.99	54.8840	26.85	242.74	0.15	0 02:47:41
16	{Survey Site}.Standard : 25	8.64	2.00	67.00	5.0000	390.00	0.0130	0.2000	82.99	53.9120	27.84	240.53	0.25	0 01:40:31
17	{Survey Site}.Standard : 26	1.12	45.00	71.05	2.0000	40.00	0.0130	0.2000	82.99	28.1830	53.57	60.21	0.18	0 01:47:54
18	{Survey Site}.Standard : 27	0.43	45.00	71.05	2.0000	60.00	0.0130	0.2000	82.99	27.7310	54.00	23.06	0.09	0 00:47:20
19	{Survey Site}.Standard : 28	0.12	45.00	71.05	2.0000	40.00	0.0130	0.2000	82.99	27.5890	54.10	6.65	0.03	0 00:28:36
20	{Survey Site}.Standard : 29	7.86	45.00	71.05	2.0000	110.00	0.0130	0.2000	82.99	28.8280	52.87	415.62	1.05	0 03:08:56
21	{Survey Site}.Standard : 3	25.14	45.00	71.05	2.0000	370.00	0.0130	0.2000	82.99	28.7890	52.92	1330.23	3.41	0 03:03:16
22	{Survey Site}.Standard : 30	20.00	30.00	63.70	2.0000	225.00	0.0130	0.2000	82.99	42.1560	39.56	791.06	1.83	0 04:08:50
23	{Survey Site}.Standard : 31	5.54	5.00	57.00	2.0000	245.00	0.0130	0.2000	82.99	60.3330	21.41	118.71	0.13	0 02:11:32
24	{Survey Site}.Standard : 32	3.34	2.00	67.00	2.0000	95.00	0.0130	0.2000	82.99	54.9910	26.74	89.19	0.05	0 02:54:24
25	{Survey Site}.Standard : 33	7.71	2.00	67.00	2.0000	215.00	0.0130	0.2000	82.99	55.0180	26.71	205.82	0.12	0 02:56:35
26	{Survey Site}.Standard : 4	3.13	2.00	67.00	2.0000	155.00	0.0130	0.2000	82.99	54.2630	27.48	86.05	0.07	0 02:05:11
27	{Survey Site}.Standard : 5	10.46	45.00	71.05	0.5000	235.00	0.0130	0.2000	82.99	29.0340	52.63	550.42	1.32	0 03:35:31
28	{Survey Site}.Standard : 6	11.54	2.00	67.00	2.0000	280.00	0.0130	0.2000	82.99	55.2610	26.47	305.51	0.16	0 03:12:03
29	{Survey Site}.Standard : 7	10.98	5.00	67.00	2.0000	225.00	0.0130	0.2000	82.99	53.8310	27.91	306.30	0.26	0 03:28:32
30	{Survey Site}.Standard : 8	3.30	2.00	67.00	2.0000	125.00	0.0130	0.2000	82.99	54.5600	27.16	89.73	0.06	0 02:27:06
31	{Survey Site}.Standard : 9	3.53	2.00	67.00	2.0000	100.00	0.0130	0.2000	82.99	54.9910	26.73	94.42	0.05	0 02:55:02

Node Summary

SN	Element ID	Element Type	Invert Elevation (m)	Ground/Rim (Max) Elevation (m)	Initial Water Elevation (m)	Surcharge Elevation (m)	Ponded Area (m²)	Peak Inflow (cms)	Max HGL Elevation Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ha-mm)	Total Time Flooded (min)
1	Ex_MHR1	Junction	255.88	262.50	0.00	0.00	0.00	0.25	256.32	0.00	6.18	0 00:00	0.00	0.00
2	Ex_MHR2	Junction	255.48	259.65	0.00	0.00	0.00	0.25	255.90	0.00	3.75	0 00:00	0.00	0.00
3	Ex_MHR25	Junction	256.48	263.35	0.00	0.00	0.00	0.25	257.42	0.00	5.93	0 00:00	0.00	0.00
4	Ex_MHR26	Junction	256.64	262.75	0.00	0.00	0.00	0.25	257.79	0.00	4.96	0 00:00	0.00	0.00
5	Ex_MHR27	Junction	256.94	261.00	0.00	0.00	0.00	0.25	258.25	0.00	2.75	0 00:00	0.00	0.00
6	Ex_MHR28	Junction	257.37	259.30	0.00	0.00	0.00	1.05	259.05	0.00	0.25	0 00:00	0.00	0.00
7	Ex_MHR3	Junction	255.23	259.00	0.00	0.00	0.00	0.25	255.61	0.00	3.39	0 00:00	0.00	0.00
8	NorthWetland	Junction	252.00	258.00	0.00	0.00	0.00	0.26	252.00	0.00	6.00	0 00:00	0.00	0.00
9	Ravine_1	Junction	256.10	260.10	0.00	0.00	0.00	4.68	256.66	0.00	3.44	0 00:00	0.00	0.00
10	Ravine_2	Junction	253.00	257.00	0.00	0.00	0.00	5.01	253.64	0.00	3.36	0 00:00	0.00	0.00
11	Ravine_3	Junction	252.45	256.45	0.00	0.00	0.00	4.48	252.96	0.00	3.49	0 00:00	0.00	0.00
12	RH_1	Junction	267.60	271.70	0.00	0.00	0.00	3.41	271.57	0.00	0.13	0 00:00	0.00	0.00
13	RH_10	Junction	261.90	263.90	0.00	0.00	0.00	5.20	263.71	0.00	0.19	0 00:00	0.00	0.00
14	RH_11	Junction	260.33	262.55	0.00	0.00	0.00	4.54	262.43	0.00	0.12	0 00:00	0.00	0.00
15	RH_12	Junction	269.00	270.50	0.00	0.00	0.00	1.83	269.45	0.00	1.05	0 00:00	0.00	0.00
16	RH_13	Junction	264.00	266.50	0.00	0.00	0.00	1.91	264.63	0.00	1.87	0 00:00	0.00	0.00
17	RH_14	Junction	261.70	263.50	0.00	0.00	0.00	0.47	263.21	0.00	0.29	0 00:00	0.00	0.00
18	RH_15	Junction	259.38	261.00	0.00	0.00	0.00	0.55	260.72	0.00	0.28	0 00:00	0.00	0.00
19	RH_16	Junction	256.36	258.00	0.00	0.00	0.00	0.48	257.09	0.00	0.91	0 00:00	0.00	0.00
20	RH_17	Junction	256.42	258.00	0.00	0.00	0.00	1.33	257.57	0.00	0.43	0 00:00	0.00	0.00
21	RH_2	Junction	270.14	272.45	0.00	0.00	0.00	2.82	272.24	0.00	0.21	0 00:00	0.00	0.00
22	RH_3	Junction	267.07	270.25	0.00	0.00	0.00	5.85	269.91	0.00	0.34	0 00:00	0.00	0.00
23	RH_4	Junction	266.63	268.60	0.00	0.00	0.00	4.50	268.45	0.00	0.15	0 00:00	0.00	0.00
24	RH_5	Junction	270.35	272.10	0.00	0.00	0.00	1.31	271.87	0.00	0.23	0 00:00	0.00	0.00
25	RH_6	Junction	266.50	268.20	0.00	0.00	0.00	5.52	268.09	0.00	0.11	0 00:00	0.00	0.00
26	RH_7	Junction	272.00	273.50	0.00	0.00	0.00	0.00	272.00	0.00	1.50	0 00:00	0.00	0.00
27	RH_8	Junction	267.75	269.85	0.00	0.00	0.00	0.26	269.19	0.00	0.66	0 00:00	0.00	0.00
28	RH_9	Junction	264.00	265.80	0.00	0.00	0.00	0.20	265.50	0.00	0.30	0 00:00	0.00	0.00
29	WestOutfall	Junction	257.00	258.00	0.00	0.00	0.00	0.18	257.00	0.00	1.00	0 00:00	0.00	0.00
30	WestWetland	Junction	258.00	259.00	0.00	0.00	0.00	0.16	258.00	0.00	1.00	0 00:00	0.00	0.00
31	North_Wetland	Outfall	252.00					0.26	252.00					
32	Outfall	Outfall	252.00					4.48	252.42					
33	TinerEstatesSTM	Outfall	254.82					0.25	255.14					
34	West_Outfall	Outfall	257.00					0.18	257.00					
35	West_Wetland	Outfall	258.00					0.16	258.00					
36	Ex_SE_Pond	Storage Node	262.00	266.00	0.00		0.00	1.98	263.42				0.00	0.00

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length (m)	Inlet Invert Elevation (m)	Outlet Invert Elevation (m)	Average Slope (%)	Diameter or Height (m)	Manning's Roughness	Peak Flow (cms)	Design Flow Capacity (cms)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (m/sec)	Peak Flow Depth (m)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Reported Condition
1	Ex.STM_1	Pipe	Ex_MHR28	Ex_MHR27	107.00	257.37	256.94	0.4000	0.450	0.0130	0.25	0.18	1.36	1.55	0.45	1.00	58.00	SURCHARGED
2	Ex.STM_2	Pipe	Ex_MHR27	Ex_MHR26	73.00	256.94	256.64	0.4100	0.450	0.0130	0.25	0.18	1.35	1.55	0.45	1.00	55.00	SURCHARGED
3	Ex.STM_3	Pipe	Ex_MHR26	Ex_MHR25	27.00	256.64	256.48	0.5900	0.450	0.0130	0.25	0.22	1.12	1.55	0.45	1.00	53.00	SURCHARGED
4	Ex.STM_4	Pipe	Ex_MHR25	Ex_MHR1	100.00	256.48	255.88	0.6000	0.450	0.0130	0.25	0.22	1.12	1.58	0.44	0.99	0.00	> CAPACITY
5	Ex.STM_5	Pipe	Ex_MHR1	Ex_MHR2	100.00	255.88	255.48	0.4000	0.525	0.0130	0.25	0.27	0.91	1.32	0.43	0.82	0.00	Calculated
6	Ex.STM_6	Pipe	Ex_MHR2	Ex_MHR3	50.00	255.48	255.23	0.5000	0.525	0.0130	0.25	0.30	0.81	1.40	0.40	0.76	0.00	Calculated
7	Ex.STM_7	Pipe	Ex_MHR3	TinerEstatesSTM	102.00	255.23	254.82	0.4000	0.600	0.0130	0.25	0.39	0.63	1.44	0.35	0.58	0.00	Calculated
8	RH_A1	Pipe	RH_2	RH_3	50.00	270.14	268.50	3.2800	0.300	0.0130	0.23	0.18	1.31	3.26	0.30	1.00	208.00	SURCHARGED
9	RH_B1	Pipe	RH_5	RH_6	227.00	270.35	266.50	1.7000	0.300	0.0130	0.14	0.13	1.10	1.96	0.30	1.00	161.00	SURCHARGED
10	RH_C3	Pipe	Ex_SE_Pond	RH_14	15.00	262.00	261.70	2.0000	0.600	0.0130	0.47	0.87	0.54	1.91	0.60	1.00	218.00	SURCHARGED
11	RH_C4	Pipe	RH_14	RH_15	195.00	261.70	259.38	1.1900	0.525	0.0150	0.43	0.41	1.04	2.10	0.52	1.00	241.00	SURCHARGED
12	RH_C5	Pipe	RH_15	RH_16	274.00	259.38	256.36	1.1000	0.525	0.0130	0.48	0.45	1.06	2.21	0.52	1.00	247.00	SURCHARGED
13	RH_C6	Pipe	RH_16	Ravine_1	6.00	256.36	256.24	2.0000	0.700	0.0130	0.48	1.31	0.36	1.64	0.56	0.80	0.00	Calculated
14	RH_D1	Pipe	RH_7	RH_8	275.00	272.00	267.75	1.5500	0.300	0.0130	0.00	0.12	0.00	0.00	0.15	0.50	0.00	Calculated
15	RH_D2	Pipe	RH_8	RH_9	180.00	267.75	264.00	2.0800	0.300	0.0130	0.15	0.14	1.05	2.14	0.30	1.00	97.00	SURCHARGED
16	RH_D3	Pipe	RH_9	RH_10	155.00	264.00	261.90	1.3500	0.375	0.0130	0.19	0.20	0.91	1.69	0.38	1.00	148.00	SURCHARGED
17	RH_M1	Pipe	RH_1	RH_3	270.00	267.60	267.07	0.2000	0.600	0.0130	0.51	0.27	1.85	1.78	0.60	1.00	185.00	SURCHARGED
18	RH_M2	Pipe	RH_3	RH_4	222.00	267.07	266.63	0.2000	0.675	0.0130	0.80	0.37	2.13	2.23	0.68	1.00	158.00	SURCHARGED
19	RH_M3	Pipe	RH_4	RH_6	18.00	266.63	266.50	0.7200	0.750	0.0130	1.05	0.95	1.11	2.37	0.75	1.00	151.00	SURCHARGED
20	RH_M4	Pipe	RH_6	RH_10	415.00	266.50	261.90	1.1100	0.675	0.0130	0.91	0.89	1.03	2.61	0.68	1.00	153.00	SURCHARGED
21	RH_M5	Pipe	RH_10	RH_11	140.00	261.90	260.33	1.1200	0.675	0.0130	1.04	0.89	1.17	2.92	0.68	1.00	198.00	SURCHARGED
22	RH_M6	Pipe	RH_11	RH_17	464.00	260.33	256.42	0.8400	0.750	0.0130	1.10	1.02	1.08	2.49	0.75	1.00	195.00	SURCHARGED
23	RH_M7	Pipe	RH_17	Ravine_1	6.00	256.42	256.37	0.8300	1.000	0.0130	1.33	2.19	0.61	2.02	0.78	0.78	0.00	Calculated
24	West_Link	Pipe	WestOutfall	West_Outfall	33.73	256.00	257.00	-2.9600	0.000	0.0130	0.18	0.00	0.03	0.00	0.59	0.15	0.00	Calculated
25	WestWetland_Link	Pipe	WestWetland	West_Wetland	37.13	258.00	258.00	0.0000	0.000	0.0130	0.16	0.00	0.03	0.00	0.59	0.15	0.00	Calculated
26	Wetland_Link	Pipe	NorthWetland	North_Wetland	41.51	252.00	252.00	0.0000	0.000	0.0130	0.26	0.00	0.03	0.00	0.59	0.15	0.00	Calculated
27	Ex.STM_Overland	Channel	Ex_MHR28	Ravine_2	400.00	259.00	253.00	1.5000	0.300	0.0320	0.58	10.09	0.06	0.16	0.18	0.59	0.00	
28	Link-34	Channel	RH_1	RH_3	270.00	271.40	269.65	0.6500	0.300	0.0320	2.67	6.63	0.40	0.71	0.21	0.69	0.00	
29	Link-35	Channel	RH_2	RH_3	50.00	272.15	269.65	5.0000	0.300	0.0320	2.60	18.43	0.14	1.10	0.17	0.55	0.00	
30	Link-36	Channel	RH_3	RH_4	222.00	269.65	268.30	0.6100	0.300	0.0320	3.79	6.43	0.59	0.92	0.20	0.69	0.00	
31	Link-37	Channel	RH_4	RH_6	18.00	268.30	267.90	2.2200	0.300	0.0320	3.52	12.28	0.29	1.20	0.16	0.54	0.00	
32	Link-38	Channel	RH_5	RH_6	227.00	271.80	267.90	1.7200	0.300	0.0320	1.03	10.80	0.10	0.70	0.12	0.41	0.00	
33	Link-39	Channel	RH_6	RH_10	415.00	267.90	263.50	1.0600	0.300	0.0320	4.05	8.48	0.48	1.06	0.19	0.65	0.00	
34	Link-41	Channel	RH_8	RH_9	180.00	269.55	265.50	2.2500	0.300	0.0320	0.00	12.36	0.00	0.00	0.00	0.00	0.00	
35	Link-42	Channel	RH_9	RH_10	155.00	265.50	263.50	1.2900	0.300	0.0320	0.00	9.36	0.00	0.00	0.10	0.35	0.00	
36	Link-43	Channel	RH_10	RH_11	140.00	263.50	262.25	0.8900	0.300	0.0320	3.74	7.79	0.48	1.03	0.18	0.61	0.00	
37	Link-44	Channel	RH_11	Ravine_1	470.00	262.25	258.00	0.9000	0.300	0.0320	2.77	7.84	0.35	0.92	0.15	0.50	0.00	
38	Link-45	Channel	RH_14	RH_15	195.00	263.20	260.70	1.2800	0.300	0.0320	0.05	9.33	0.00	0.19	0.01	0.04	0.00	
39	Link-46	Channel	RH_15	Ravine_1	280.00	260.70	258.00	0.9600	0.300	0.0320	0.04	8.09	0.00	0.16	0.01	0.04	0.00	
40	LowerRavine	Channel	Ravine_2	Ravine_3	124.00	253.00	252.45	0.4400	4.000	0.0320	4.46	157.98	0.03	1.31	0.58	0.14	0.00	
41	OutletRavine	Channel	Ravine_3	Outfall	45.00	252.45	252.00	1.0000	4.000	0.0320	4.48	237.22	0.02	1.70	0.46	0.12	0.00	
42	RH_C1	Channel	RH_12	RH_13	215.00	269.00	264.00	2.3300	1.500	0.0320	1.78	24.20	0.07	1.63	0.53	0.36	0.00	
43	RH_C2	Channel	RH_13	Ex_SE_Pond	60.00	264.00	263.50	0.8300	1.500	0.0320	1.80	14.49	0.12	1.50	0.54	0.38	0.00	
44	UpperRavine	Channel	Ravine_1	Ravine_2	553.00	256.10	253.00	0.5600	4.000	0.0320	4.65	177.61	0.03	1.39	0.59	0.15	0.00	

Junction Input

SN	Element ID	Invert Elevation (m)	Ground/Rim (Max) Elevation (m)	Ground/Rim (Max) Offset (m)	Initial Water Elevation (m)	Initial Water Depth (m)	Surcharge Elevation (m)	Surcharge Depth (m)	Ponded Area (m²)	Minimum Pipe Cover (m)
1	Ex_MHR1	255.88	262.50	6.62	0.00	-255.88	0.00	-262.50	0.00	0.00
2	Ex_MHR2	255.48	259.65	4.17	0.00	-255.48	0.00	-259.65	0.00	0.00
3	Ex_MHR25	256.48	263.35	6.87	0.00	-256.48	0.00	-263.35	0.00	0.00
4	Ex_MHR26	256.64	262.75	6.11	0.00	-256.64	0.00	-262.75	0.00	0.00
5	Ex_MHR27	256.94	261.00	4.06	0.00	-256.94	0.00	-261.00	0.00	0.00
6	Ex_MHR28	257.37	259.30	1.93	0.00	-257.37	0.00	-259.30	0.00	0.00
7	Ex_MHR3	255.23	259.00	3.77	0.00	-255.23	0.00	-259.00	0.00	0.00
8	NorthWetland	252.00	258.00	6.00	0.00	-252.00	0.00	-258.00	0.00	0.00
9	Ravine_1	256.10	260.10	4.00	0.00	-256.10	0.00	-260.10	0.00	0.00
10	Ravine_2	253.00	257.00	4.00	0.00	-253.00	0.00	-257.00	0.00	0.00
11	Ravine_3	252.45	256.45	4.00	0.00	-252.45	0.00	-256.45	0.00	0.00
12	RH_1	267.60	271.70	4.10	0.00	-267.60	0.00	-271.70	0.00	0.00
13	RH_10	261.90	263.90	2.00	0.00	-261.90	0.00	-263.90	0.00	0.00
14	RH_11	260.33	262.55	2.22	0.00	-260.33	0.00	-262.55	0.00	0.00
15	RH_12	269.00	270.50	1.50	0.00	-269.00	0.00	-270.50	0.00	0.00
16	RH_13	264.00	266.50	2.50	0.00	-264.00	0.00	-266.50	0.00	0.00
17	RH_14	261.70	263.50	1.80	0.00	-261.70	0.00	-263.50	0.00	0.00
18	RH_15	259.38	261.00	1.62	0.00	-259.38	0.00	-261.00	0.00	0.00
19	RH_16	256.36	258.00	1.64	0.00	-256.36	0.00	-258.00	0.00	0.00
20	RH_17	256.42	258.00	1.58	0.00	-256.42	0.00	-258.00	0.00	0.00
21	RH_2	270.14	272.45	2.31	0.00	-270.14	0.00	-272.45	0.00	0.00
22	RH_3	267.07	270.25	3.18	0.00	-267.07	0.00	-270.25	0.00	0.00
23	RH_4	266.63	268.60	1.97	0.00	-266.63	0.00	-268.60	0.00	0.00
24	RH_5	270.35	272.10	1.75	0.00	-270.35	0.00	-272.10	0.00	0.00
25	RH_6	266.50	268.20	1.70	0.00	-266.50	0.00	-268.20	0.00	0.00
26	RH_7	272.00	273.50	1.50	0.00	-272.00	0.00	-273.50	0.00	0.00
27	RH_8	267.75	269.85	2.10	0.00	-267.75	0.00	-269.85	0.00	0.00
28	RH_9	264.00	265.80	1.80	0.00	-264.00	0.00	-265.80	0.00	0.00
29	WestOutfall	257.00	258.00	1.00	0.00	-257.00	0.00	-258.00	0.00	0.00
30	WestWetland	258.00	259.00	1.00	0.00	-258.00	0.00	-259.00	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)	Total Time Flooded (min)
1	Ex_MHR1	0.25	0.00	256.32	0.44	0.00	6.18	256.03	0.15	0 12:04	0 00:00	0.00	0.00
2	Ex_MHR2	0.25	0.00	255.90	0.42	0.00	3.75	255.63	0.15	0 12:05	0 00:00	0.00	0.00
3	Ex_MHR25	0.25	0.00	257.42	0.94	0.00	5.93	256.64	0.16	0 11:48	0 00:00	0.00	0.00
4	Ex_MHR26	0.25	0.00	257.79	1.15	0.00	4.96	256.82	0.18	0 11:48	0 00:00	0.00	0.00
5	Ex_MHR27	0.25	0.00	258.25	1.31	0.00	2.75	257.15	0.21	0 11:48	0 00:00	0.00	0.00
6	Ex_MHR28	1.05	1.05	259.05	1.68	0.00	0.25	257.61	0.24	0 12:03	0 00:00	0.00	0.00
7	Ex_MHR3	0.25	0.00	255.61	0.38	0.00	3.39	255.37	0.14	0 12:06	0 00:00	0.00	0.00
8	NorthWetland	0.26	0.26	252.00	0.00	0.00	6.00	252.00	0.00	0 00:00	0 00:00	0.00	0.00
9	Ravine_1	4.68	0.11	256.66	0.56	0.00	3.44	256.29	0.19	0 12:27	0 00:00	0.00	0.00
10	Ravine_2	5.01	0.56	253.64	0.64	0.00	3.36	253.25	0.25	0 12:37	0 00:00	0.00	0.00
11	Ravine_3	4.48	0.05	252.96	0.51	0.00	3.49	252.65	0.20	0 12:38	0 00:00	0.00	0.00
12	RH_1	3.41	3.41	271.57	3.97	0.00	0.13	268.42	0.82	0 12:01	0 00:00	0.00	0.00
13	RH_10	5.20	0.16	263.71	1.81	0.00	0.19	262.49	0.59	0 12:16	0 00:00	0.00	0.00
14	RH_11	4.54	0.05	262.43	2.10	0.00	0.12	260.96	0.63	0 12:26	0 00:00	0.00	0.00
15	RH_12	1.83	1.83	269.45	0.45	0.00	1.05	269.09	0.09	0 12:00	0 00:00	0.00	0.00
16	RH_13	1.91	0.13	264.63	0.63	0.00	1.87	264.15	0.15	0 12:01	0 00:00	0.00	0.00
17	RH_14	0.47	0.00	263.21	1.51	0.00	0.29	262.16	0.46	0 12:47	0 00:00	0.00	0.00
18	RH_15	0.55	0.12	260.72	1.34	0.00	0.28	259.83	0.45	0 13:11	0 00:00	0.00	0.00
19	RH_16	0.48	0.00	257.09	0.73	0.00	0.91	256.73	0.37	0 13:12	0 00:00	0.00	0.00
20	RH_17	1.33	0.28	257.57	1.15	0.00	0.43	257.01	0.59	0 12:30	0 00:00	0.00	0.00
21	RH_2	2.82	2.82	272.24	2.10	0.00	0.21	270.68	0.54	0 12:00	0 00:00	0.00	0.00
22	RH_3	5.85	0.00	269.91	2.84	0.00	0.34	267.84	0.77	0 12:06	0 00:00	0.00	0.00
23	RH_4	4.50	0.07	268.45	1.82	0.00	0.15	267.13	0.50	0 12:06	0 00:00	0.00	0.00
24	RH_5	1.31	1.31	271.87	1.52	0.00	0.23	270.70	0.35	0 12:02	0 00:00	0.00	0.00
25	RH_6	5.52	0.00	268.09	1.59	0.00	0.11	266.94	0.44	0 12:10	0 00:00	0.00	0.00
26	RH_7	0.00	0.00	272.00	0.00	0.00	1.50	272.00	0.00	0 00:00	0 00:00	0.00	0.00
27	RH_8	0.26	0.26	269.19	1.44	0.00	0.66	267.95	0.20	0 12:09	0 00:00	0.00	0.00
28	RH_9	0.20	0.06	265.50	1.50	0.00	0.30	264.28	0.28	0 12:30	0 00:00	0.00	0.00
29	WestOutfall	0.18	0.18	257.00	0.00	0.00	1.00	257.00	0.00	0 00:00	0 00:00	0.00	0.00
30	WestWetland	0.16	0.16	258.00	0.00	0.00	1.00	258.00	0.00	0 00:00	0 00:00	0.00	0.00

Channel Input

SN	Element ID	Length (m)	Inlet Invert Elevation (m)	Inlet Invert Offset (m)	Outlet Invert Elevation (m)	Outlet Invert Offset (m)	Total Drop (m)	Average Slope (%)	Shape	Height (m)	Width (m)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cms)	Flap Gate
1	Ex.STM_Overland	400.00	259.00	1.63	253.00	0.00	6.00	1.5000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
2	Link-34	270.00	271.40	3.80	269.65	2.58	1.75	0.6500	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
3	Link-35	50.00	272.15	2.01	269.65	2.58	2.50	5.0000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
4	Link-36	222.00	269.65	2.58	268.30	1.67	1.35	0.6100	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
5	Link-37	18.00	268.30	1.67	267.90	1.40	0.40	2.2200	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
6	Link-38	227.00	271.80	1.45	267.90	1.40	3.90	1.7200	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
7	Link-39	415.00	267.90	1.40	263.50	1.60	4.40	1.0600	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
8	Link-41	180.00	269.55	1.80	265.50	1.50	4.05	2.2500	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
9	Link-42	155.00	265.50	1.50	263.50	1.60	2.00	1.2900	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
10	Link-43	140.00	263.50	1.60	262.25	1.92	1.25	0.8900	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
11	Link-44	470.00	262.25	1.92	258.00	1.90	4.25	0.9000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
12	Link-45	195.00	263.20	1.50	260.70	1.32	2.50	1.2800	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
13	Link-46	280.00	260.70	1.32	258.00	1.90	2.70	0.9600	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
14	LowerRavine	124.00	253.00	0.00	252.45	0.00	0.55	0.4400	Trapezoidal	4.000	17.000	0.0320	0.5000	0.5000	0.0000	0.00	No
15	OutletRavine	45.00	252.45	0.00	252.00	0.00	0.45	1.0000	Trapezoidal	4.000	17.000	0.0320	0.5000	0.5000	0.0000	0.00	No
16	RH_C1	215.00	269.00	0.00	264.00	0.00	5.00	2.3300	Trapezoidal	1.500	7.000	0.0320	0.5000	0.5000	0.0000	0.00	No
17	RH_C2	60.00	264.00	0.00	263.50	1.50	0.50	0.8300	Trapezoidal	1.500	7.000	0.0320	0.5000	0.5000	0.0000	0.00	No
18	UpperRavine	553.00	256.10	0.00	253.00	0.00	3.10	0.5600	Trapezoidal	4.000	17.000	0.0320	0.5000	0.5000	0.0000	0.00	No

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	Ex.STM_Overland	0.58	0 12:03	10.09	0.06	0.16	41.67	0.18	0.59	0.00	0.00	
2	Link-34	2.67	0 12:01	6.63	0.40	0.71	6.34	0.21	0.69	0.00	0.02	
3	Link-35	2.60	0 12:00	18.43	0.14	1.10	0.76	0.17	0.55	0.00	0.09	
4	Link-36	3.79	0 12:06	6.43	0.59	0.92	4.02	0.20	0.69	0.00	0.08	
5	Link-37	3.52	0 12:06	12.28	0.29	1.20	0.25	0.16	0.54	0.00	0.05	
6	Link-38	1.03	0 12:02	10.80	0.10	0.70	5.40	0.12	0.41	0.00	0.03	
7	Link-39	4.05	0 12:11	8.48	0.48	1.06	6.53	0.19	0.65	0.00	0.06	
8	Link-41	0.00	0 00:00	12.36	0.00	0.00		0.00	0.00	0.00	0.00	
9	Link-42	0.00	0 12:30	9.36	0.00	0.00		0.10	0.35	0.00	0.00	
10	Link-43	3.74	0 12:16	7.79	0.48	1.03	2.27	0.18	0.61	0.00	0.13	
11	Link-44	2.77	0 12:26	7.84	0.35	0.92	8.51	0.15	0.50	0.00	0.12	
12	Link-45	0.05	0 12:49	9.33	0.00	0.19	17.11	0.01	0.04	0.00	0.02	
13	Link-46	0.04	0 13:11	8.09	0.00	0.16	29.17	0.01	0.04	0.00	0.07	
14	LowerRavine	4.46	0 12:38	157.98	0.03	1.31	1.58	0.58	0.14	0.00	0.50	
15	OutletRavine	4.48	0 12:38	237.22	0.02	1.70	0.44	0.46	0.12	0.00	0.75	
16	RH_C1	1.78	0 12:00	24.20	0.07	1.63	2.20	0.53	0.36	0.00	0.58	
17	RH_C2	1.80	0 12:01	14.49	0.12	1.50	0.67	0.54	0.38	0.00	0.65	
18	UpperRavine	4.65	0 12:27	177.61	0.03	1.39	6.63	0.59	0.15	0.00	0.44	

Pipe Input

SN	Element ID	Length (m)	Inlet Invert Elevation (m)	Inlet Invert Offset (m)	Outlet Invert Elevation (m)	Outlet Invert Offset (m)	Total Drop (m)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (m)	Pipe Width (m)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cms)	Flap Gate
1	Ex.STM_1	107.00	257.37	0.00	256.94	0.00	0.43	0.4000	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
2	Ex.STM_2	73.00	256.94	0.00	256.64	0.00	0.30	0.4100	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
3	Ex.STM_3	27.00	256.64	0.00	256.48	0.00	0.16	0.5900	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
4	Ex.STM_4	100.00	256.48	0.00	255.88	0.00	0.60	0.6000	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
5	Ex.STM_5	100.00	255.88	0.00	255.48	0.00	0.40	0.4000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
6	Ex.STM_6	50.00	255.48	0.00	255.23	0.00	0.25	0.5000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
7	Ex.STM_7	102.00	255.23	0.00	254.82	0.00	0.41	0.4000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
8	RH_A1	50.00	270.14	0.00	268.50	1.43	1.64	3.2800	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
9	RH_B1	227.00	270.35	0.00	266.50	0.00	3.85	1.7000	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
10	RH_C3	15.00	262.00	0.00	261.70	0.00	0.30	2.0000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
11	RH_C4	195.00	261.70	0.00	259.38	0.00	2.32	1.1900	CIRCULAR	0.530	0.530	0.0150	0.5000	0.5000	0.0000	0.00	No
12	RH_C5	274.00	259.38	0.00	256.36	0.00	3.02	1.1000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
13	RH_C6	6.00	256.36	0.00	256.24	0.14	0.12	2.0000	CIRCULAR	0.700	0.700	0.0130	0.5000	0.5000	0.0000	0.00	No
14	RH_D1	275.00	272.00	0.00	267.75	0.00	4.25	1.5500	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
15	RH_D2	180.00	267.75	0.00	264.00	0.00	3.75	2.0800	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
16	RH_D3	155.00	264.00	0.00	261.90	0.00	2.10	1.3500	CIRCULAR	0.380	0.380	0.0130	0.5000	0.5000	0.0000	0.00	No
17	RH_M1	270.00	267.60	0.00	267.07	0.00	0.53	0.2000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
18	RH_M2	222.00	267.07	0.00	266.63	0.00	0.44	0.2000	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
19	RH_M3	18.00	266.63	0.00	266.50	0.00	0.13	0.7200	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
20	RH_M4	415.00	266.50	0.00	261.90	0.00	4.60	1.1100	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
21	RH_M5	140.00	261.90	0.00	260.33	0.00	1.57	1.1200	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
22	RH_M6	464.00	260.33	0.00	256.42	0.00	3.91	0.8400	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
23	RH_M7	6.00	256.42	0.00	256.37	0.27	0.05	0.8300	CIRCULAR	1.000	1.000	0.0130	0.5000	0.5000	0.0000	0.00	No
24	West_Link	33.73	256.00	-1.00	257.00	0.00	-1.00	-2.9600	Dummy	0.000	0.000	0.0130	0.5000	0.5000	0.0000	0.00	No
25	WestWetland_Link	37.13	258.00	0.00	258.00	0.00	0.00	0.0000	Dummy	0.000	0.000	0.0130	0.5000	0.5000	0.0000	0.00	No
26	Wetland_Link	41.51	252.00	0.00	252.00	0.00	0.00	0.0000	Dummy	0.000	0.000	0.0130	0.5000	0.5000	0.0000	0.00	No

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	Ex.STM_1	0.25	0 11:49	0.18	1.36	1.55	1.15	0.45	1.00	58.00	0.76	SURCHARGED
2	Ex.STM_2	0.25	0 11:49	0.18	1.35	1.55	0.78	0.45	1.00	55.00	0.80	SURCHARGED
3	Ex.STM_3	0.25	0 11:49	0.22	1.12	1.55	0.29	0.45	1.00	53.00	0.91	SURCHARGED
4	Ex.STM_4	0.25	0 11:49	0.22	1.12	1.58	1.05	0.44	0.99	0.00	0.93	> CAPACITY
5	Ex.STM_5	0.25	0 12:04	0.27	0.91	1.32	1.26	0.43	0.82	0.00	0.85	Calculated
6	Ex.STM_6	0.25	0 12:05	0.30	0.81	1.40	0.60	0.40	0.76	0.00	0.89	Calculated
7	Ex.STM_7	0.25	0 12:06	0.39	0.63	1.44	1.18	0.35	0.58	0.00	0.91	Calculated
8	RH_A1	0.23	0 11:45	0.18	1.31	3.26	0.26	0.30	1.00	208.00	1.63	SURCHARGED
9	RH_B1	0.14	0 11:44	0.13	1.10	1.96	1.93	0.30	1.00	161.00	0.66	SURCHARGED
10	RH_C3	0.47	0 11:58	0.87	0.54	1.91	0.13	0.60	1.00	218.00	1.01	SURCHARGED
11	RH_C4	0.43	0 11:58	0.41	1.04	2.10	1.55	0.52	1.00	241.00	0.93	SURCHARGED
12	RH_C5	0.48	0 13:12	0.45	1.06	2.21	2.07	0.52	1.00	247.00	0.69	SURCHARGED
13	RH_C6	0.48	0 13:12	1.31	0.36	1.64	0.06	0.56	0.80	0.00	0.93	Calculated
14	RH_D1	0.00	0 00:00	0.12	0.00	0.00		0.15	0.50	0.00	0.00	Calculated
15	RH_D2	0.15	0 11:56	0.14	1.05	2.14	1.40	0.30	1.00	97.00	1.33	SURCHARGED
16	RH_D3	0.19	0 12:48	0.20	0.91	1.69	1.53	0.38	1.00	148.00	0.39	SURCHARGED
17	RH_M1	0.51	0 11:47	0.27	1.85	1.78	2.53	0.60	1.00	185.00	0.33	SURCHARGED
18	RH_M2	0.80	0 11:48	0.37	2.13	2.23	1.66	0.68	1.00	158.00	0.55	SURCHARGED
19	RH_M3	1.05	0 11:59	0.95	1.11	2.37	0.13	0.75	1.00	151.00	0.84	SURCHARGED
20	RH_M4	0.91	0 11:49	0.89	1.03	2.61	2.65	0.68	1.00	153.00	1.04	SURCHARGED
21	RH_M5	1.04	0 11:58	0.89	1.17	2.92	0.80	0.68	1.00	198.00	1.08	SURCHARGED
22	RH_M6	1.10	0 12:25	1.02	1.08	2.49	3.11	0.75	1.00	195.00	0.61	SURCHARGED
23	RH_M7	1.33	0 12:30	2.19	0.61	2.02	0.05	0.78	0.78	0.00	0.81	Calculated
24	West_Link	0.18	0 12:00	0.00	0.03	0.00		0.59	0.15	0.00	0.44	Calculated
25	WestWetland_Link	0.16	0 12:00	0.00	0.03	0.00		0.59	0.15	0.00	0.44	Calculated
26	Wetland_Link	0.26	0 12:06	0.00	0.03	0.00		0.59	0.15	0.00	0.44	Calculated

Project Description

File Name	18010_Pre-Development Rev.0.SPF
Description	I:\ACAD Projects\2018\18010\03-Ref\18010_Pre-Dev. Storm Parcels.dwg
	I:\ACAD Projects\2018\18010\03-Ref\18010_Pre-Dev. Storm Parcels.dwg

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	00:00:00	0:00:00
End Analysis On	00:00:00	0:00:00
Start Reporting On	00:00:00	0:00:00
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	31
Nodes	36
Junctions	30
Outfalls	5
Flow Diversions	0
Inlets	0
Storage Nodes	1
Links	44
Channels	18
Pipes	26
Pumps	0
Orifices	0
Weirs	0
Outlets	0
Pollutants	0
Land Uses	0

Subbasin Summary

SN	Subbasin ID	Area (ha)	Impervious Area (%)	Weighted Curve Number	Average Slope (%)	Equivalent Width (m)	Impervious Area Manning's Roughness	Pervious Area Manning's Roughness	Total Rainfall (mm)	Total Infiltration (mm)	Total Runoff (mm)	Total Runoff Volume (ha-mm)	Peak Runoff (cms)	Time of Concentration (days hh:mm:ss)
1	{Survey Site}.Standard : 10	0.92	2.00	67.00	2.0000	125.00	0.0130	0.2000	92.69	56.7980	34.66	31.82	0.06	0 01:05:16
2	{Survey Site}.Standard : 11	21.38	2.00	67.00	2.0000	360.00	0.0130	0.2000	92.69	54.1530	38.88	831.21	0.37	0 03:48:45
3	{Survey Site}.Standard : 12	0.71	5.00	67.00	2.0000	90.00	0.0130	0.2000	92.69	55.0860	36.37	25.82	0.05	0 01:06:52
4	{Survey Site}.Standard : 13	1.65	45.00	71.05	2.0000	220.00	0.0130	0.2000	92.69	29.3150	62.13	102.38	0.38	0 00:46:42
5	{Survey Site}.Standard : 14	4.32	2.00	67.00	2.0000	350.00	0.0130	0.2000	92.69	57.1560	34.29	148.15	0.19	0 01:29:07
6	{Survey Site}.Standard : 16	6.33	2.00	67.00	2.0000	215.00	0.0130	0.2000	92.69	58.1180	33.32	210.90	0.15	0 02:30:07
7	{Survey Site}.Standard : 17	0.36	5.00	67.00	5.0000	20.00	0.0130	0.2000	92.69	55.2990	36.13	12.86	0.02	0 01:22:46
8	{Survey Site}.Standard : 18	14.15	5.00	48.00	10.0000	300.00	0.0130	0.2000	92.69	71.1570	20.27	286.90	0.34	0 02:00:39
9	{Survey Site}.Standard : 19	0.26	2.00	67.00	2.0000	90.00	0.0130	0.2000	92.69	56.3860	35.09	9.26	0.03	0 00:37:37
10	{Survey Site}.Standard : 2	20.86	45.00	71.05	2.0000	300.00	0.0130	0.2000	92.69	30.4220	60.99	1272.45	3.24	0 02:57:49
11	{Survey Site}.Standard : 20	11.33	2.00	36.00	0.5000	240.00	0.0130	0.2000	92.69	76.1310	11.31	128.12	0.09	0 05:02:01
12	{Survey Site}.Standard : 21	4.24	2.00	67.00	2.0000	155.00	0.0130	0.2000	92.69	58.0080	33.43	141.64	0.11	0 02:23:36
13	{Survey Site}.Standard : 22	23.21	2.00	67.00	2.0000	330.00	0.0130	0.2000	92.69	53.6140	37.43	868.73	0.36	0 04:13:11
14	{Survey Site}.Standard : 23	2.20	5.00	48.00	10.0000	100.00	0.0130	0.2000	92.69	70.4790	20.95	46.04	0.06	0 01:16:18
15	{Survey Site}.Standard : 24	9.04	2.00	67.00	2.0000	275.00	0.0130	0.2000	92.69	58.2830	33.15	299.76	0.20	0 02:40:26
16	{Survey Site}.Standard : 25	8.64	2.00	67.00	5.0000	390.00	0.0130	0.2000	92.69	57.2660	34.18	295.38	0.35	0 01:36:10
17	{Survey Site}.Standard : 26	1.12	45.00	71.05	2.0000	40.00	0.0130	0.2000	92.69	29.7710	61.69	69.33	0.21	0 01:43:14
18	{Survey Site}.Standard : 27	0.43	45.00	71.05	2.0000	60.00	0.0130	0.2000	92.69	29.3020	62.13	26.53	0.10	0 00:45:17
19	{Survey Site}.Standard : 28	0.12	45.00	71.05	2.0000	40.00	0.0130	0.2000	92.69	29.1590	62.24	7.66	0.03	0 00:27:22
20	{Survey Site}.Standard : 29	7.86	45.00	71.05	2.0000	110.00	0.0130	0.2000	92.69	30.4480	60.96	479.27	1.21	0 03:00:45
21	{Survey Site}.Standard : 3	25.14	45.00	71.05	2.0000	370.00	0.0130	0.2000	92.69	30.3960	61.01	1533.78	3.93	0 02:55:21
22	{Survey Site}.Standard : 30	20.00	30.00	63.70	2.0000	225.00	0.0130	0.2000	92.69	44.9310	46.50	929.81	2.10	0 03:58:04
23	{Survey Site}.Standard : 31	5.54	5.00	57.00	2.0000	245.00	0.0130	0.2000	92.69	64.7790	26.66	147.80	0.16	0 02:05:50
24	{Survey Site}.Standard : 32	3.34	2.00	67.00	2.0000	95.00	0.0130	0.2000	92.69	58.3930	33.05	110.21	0.07	0 02:46:51
25	{Survey Site}.Standard : 33	7.71	2.00	67.00	2.0000	215.00	0.0130	0.2000	92.69	58.4210	33.01	254.38	0.16	0 02:48:57
26	{Survey Site}.Standard : 4	3.13	2.00	67.00	2.0000	155.00	0.0130	0.2000	92.69	57.6230	33.81	105.87	0.10	0 01:59:46
27	{Survey Site}.Standard : 5	10.46	45.00	71.05	0.5000	235.00	0.0130	0.2000	92.69	30.6300	60.71	634.99	1.52	0 03:26:12
28	{Survey Site}.Standard : 6	11.54	2.00	67.00	2.0000	280.00	0.0130	0.2000	92.69	58.6680	32.76	378.10	0.22	0 03:03:44
29	{Survey Site}.Standard : 7	10.98	5.00	67.00	2.0000	225.00	0.0130	0.2000	92.69	57.1390	34.29	376.37	0.32	0 03:19:30
30	{Survey Site}.Standard : 8	3.30	2.00	67.00	2.0000	125.00	0.0130	0.2000	92.69	57.9530	33.48	110.61	0.08	0 02:20:44
31	{Survey Site}.Standard : 9	3.53	2.00	67.00	2.0000	100.00	0.0130	0.2000	92.69	58.3930	33.03	116.68	0.07	0 02:47:28

Node Summary

SN	Element ID	Element Type	Invert Elevation (m)	Ground/Rim (Max) Elevation (m)	Initial Water Elevation (m)	Surcharge Elevation (m)	Ponded Area (m^2)	Peak Inflow (cms)	Max HGL Elevation Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ha-mm)	Total Time Flooded (min)
1	Ex_MHR1	Junction	255.88	262.50	0.00	0.00	0.00	0.25	256.32	0.00	6.18	0 00:00	0.00	0.00
2	Ex_MHR2	Junction	255.48	259.65	0.00	0.00	0.00	0.25	255.90	0.00	3.75	0 00:00	0.00	0.00
3	Ex_MHR25	Junction	256.48	263.35	0.00	0.00	0.00	0.25	257.53	0.00	5.82	0 00:00	0.00	0.00
4	Ex_MHR26	Junction	256.64	262.75	0.00	0.00	0.00	0.25	257.86	0.00	4.89	0 00:00	0.00	0.00
5	Ex_MHR27	Junction	256.94	261.00	0.00	0.00	0.00	0.25	258.27	0.00	2.73	0 00:00	0.00	0.00
6	Ex_MHR28	Junction	257.37	259.30	0.00	0.00	0.00	1.21	259.06	0.00	0.24	0 00:00	0.00	0.00
7	Ex_MHR3	Junction	255.23	259.00	0.00	0.00	0.00	0.25	255.61	0.00	3.39	0 00:00	0.00	0.00
8	NorthWetland	Junction	252.00	258.00	0.00	0.00	0.00	0.37	252.00	0.00	6.00	0 00:00	0.00	0.00
9	Ravine_1	Junction	256.10	260.10	0.00	0.00	0.00	5.82	256.74	0.00	3.36	0 00:00	0.00	0.00
10	Ravine_2	Junction	253.00	257.00	0.00	0.00	0.00	6.39	253.74	0.00	3.26	0 00:00	0.00	0.00
11	Ravine_3	Junction	252.45	256.45	0.00	0.00	0.00	5.67	253.04	0.00	3.41	0 00:00	0.00	0.00
12	RH_1	Junction	267.60	271.70	0.00	0.00	0.00	3.93	271.59	0.00	0.11	0 00:00	0.00	0.00
13	RH_10	Junction	261.90	263.90	0.00	0.00	0.00	6.35	263.74	0.00	0.16	0 00:00	0.00	0.00
14	RH_11	Junction	260.33	262.55	0.00	0.00	0.00	5.60	262.46	0.00	0.09	0 00:00	0.00	0.00
15	RH_12	Junction	269.00	270.50	0.00	0.00	0.00	2.10	269.48	0.00	1.02	0 00:00	0.00	0.00
16	RH_13	Junction	264.00	266.50	0.00	0.00	0.00	2.20	264.67	0.00	1.83	0 00:00	0.00	0.00
17	RH_14	Junction	261.70	263.50	0.00	0.00	0.00	0.61	263.23	0.00	0.27	0 00:00	0.00	0.00
18	RH_15	Junction	259.38	261.00	0.00	0.00	0.00	0.76	260.74	0.00	0.26	0 00:00	0.00	0.00
19	RH_16	Junction	256.36	258.00	0.00	0.00	0.00	0.48	257.09	0.00	0.91	0 00:00	0.00	0.00
20	RH_17	Junction	256.42	258.00	0.00	0.00	0.00	1.42	257.63	0.00	0.37	0 00:00	0.00	0.00
21	RH_2	Junction	270.14	272.45	0.00	0.00	0.00	3.24	272.25	0.00	0.20	0 00:00	0.00	0.00
22	RH_3	Junction	267.07	270.25	0.00	0.00	0.00	6.73	269.94	0.00	0.31	0 00:00	0.00	0.00
23	RH_4	Junction	266.63	268.60	0.00	0.00	0.00	5.35	268.47	0.00	0.13	0 00:00	0.00	0.00
24	RH_5	Junction	270.35	272.10	0.00	0.00	0.00	1.52	271.88	0.00	0.22	0 00:00	0.00	0.00
25	RH_6	Junction	266.50	268.20	0.00	0.00	0.00	6.56	268.12	0.00	0.08	0 00:00	0.00	0.00
26	RH_7	Junction	272.00	273.50	0.00	0.00	0.00	0.00	272.00	0.00	1.50	0 00:00	0.00	0.00
27	RH_8	Junction	267.75	269.85	0.00	0.00	0.00	0.32	269.56	0.00	0.29	0 00:00	0.00	0.00
28	RH_9	Junction	264.00	265.80	0.00	0.00	0.00	0.26	265.52	0.00	0.28	0 00:00	0.00	0.00
29	WestOutfall	Junction	257.00	258.00	0.00	0.00	0.00	0.25	257.00	0.00	1.00	0 00:00	0.00	0.00
30	WestWetland	Junction	258.00	259.00	0.00	0.00	0.00	0.19	258.00	0.00	1.00	0 00:00	0.00	0.00
31	North_Wetland	Outfall	252.00					0.37	252.00					
32	Outfall	Outfall	252.00					5.67	252.48					
33	TinerEstatesSTM	Outfall	254.82					0.25	255.14					
34	West_Outfall	Outfall	257.00					0.25	257.00					
35	West_Wetland	Outfall	258.00					0.19	258.00					
36	Ex_SE_Pond	Storage Node	262.00	266.00	0.00		0.00	2.34	263.62				0.00	0.00

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(m)	(m)	(m)	(%)	(m)		(cms)	(cms)		(m/sec)	(m)		(min)	
1	Ex.STM_1	Pipe	Ex_MHR28	Ex_MHR27	107.00	257.37	256.94	0.4000	0.450	0.0130	0.25	0.18	1.37	1.55	0.45	1.00	68.00	SURCHARGED
2	Ex.STM_2	Pipe	Ex_MHR27	Ex_MHR26	73.00	256.94	256.64	0.4100	0.450	0.0130	0.25	0.18	1.35	1.55	0.45	1.00	64.00	SURCHARGED
3	Ex.STM_3	Pipe	Ex_MHR26	Ex_MHR25	27.00	256.64	256.48	0.5900	0.450	0.0130	0.25	0.22	1.12	1.55	0.45	1.00	61.00	SURCHARGED
4	Ex.STM_4	Pipe	Ex_MHR25	Ex_MHR1	100.00	256.48	255.88	0.6000	0.450	0.0130	0.25	0.22	1.12	1.58	0.44	0.99	0.00	> CAPACITY
5	Ex.STM_5	Pipe	Ex_MHR1	Ex_MHR2	100.00	255.88	255.48	0.4000	0.525	0.0130	0.25	0.27	0.91	1.33	0.43	0.82	0.00	Calculated
6	Ex.STM_6	Pipe	Ex_MHR2	Ex_MHR3	50.00	255.48	255.23	0.5000	0.525	0.0130	0.25	0.30	0.81	1.40	0.40	0.76	0.00	Calculated
7	Ex.STM_7	Pipe	Ex_MHR3	TinerEstatesSTM	102.00	255.23	254.82	0.4000	0.600	0.0130	0.25	0.39	0.63	1.44	0.35	0.58	0.00	Calculated
8	RH_A1	Pipe	RH_2	RH_3	50.00	270.14	268.50	3.2800	0.300	0.0130	0.23	0.18	1.31	3.26	0.30	1.00	253.00	SURCHARGED
9	RH_B1	Pipe	RH_5	RH_6	227.00	270.35	266.50	1.7000	0.300	0.0130	0.14	0.13	1.10	1.95	0.30	1.00	193.00	SURCHARGED
10	RH_C3	Pipe	Ex_SE_Pond	RH_14	15.00	262.00	261.70	2.0000	0.600	0.0130	0.61	0.87	0.71	2.17	0.60	1.00	269.00	SURCHARGED
11	RH_C4	Pipe	RH_14	RH_15	195.00	261.70	259.38	1.1900	0.525	0.0150	0.42	0.41	1.04	2.10	0.52	1.00	293.00	SURCHARGED
12	RH_C5	Pipe	RH_15	RH_16	274.00	259.38	256.36	1.1000	0.525	0.0130	0.48	0.45	1.06	2.22	0.52	1.00	299.00	SURCHARGED
13	RH_C6	Pipe	RH_16	Ravine_1	6.00	256.36	256.24	2.0000	0.700	0.0130	0.48	1.31	0.37	1.64	0.60	0.86	0.00	Calculated
14	RH_D1	Pipe	RH_7	RH_8	275.00	272.00	267.75	1.5500	0.300	0.0130	0.00	0.12	0.00	0.00	0.15	0.50	0.00	Calculated
15	RH_D2	Pipe	RH_8	RH_9	180.00	267.75	264.00	2.0800	0.300	0.0130	0.15	0.14	1.04	2.15	0.30	1.00	174.00	SURCHARGED
16	RH_D3	Pipe	RH_9	RH_10	155.00	264.00	261.90	1.3500	0.375	0.0130	0.19	0.20	0.92	1.70	0.38	1.00	203.00	SURCHARGED
17	RH_M1	Pipe	RH_1	RH_3	270.00	267.60	267.07	0.2000	0.600	0.0130	0.50	0.27	1.85	1.78	0.60	1.00	225.00	SURCHARGED
18	RH_M2	Pipe	RH_3	RH_4	222.00	267.07	266.63	0.2000	0.675	0.0130	0.80	0.37	2.13	2.23	0.68	1.00	186.00	SURCHARGED
19	RH_M3	Pipe	RH_4	RH_6	18.00	266.63	266.50	0.7200	0.750	0.0130	1.05	0.95	1.11	2.37	0.75	1.00	180.00	SURCHARGED
20	RH_M4	Pipe	RH_6	RH_10	415.00	266.50	261.90	1.1100	0.675	0.0130	0.91	0.89	1.03	2.61	0.68	1.00	182.00	SURCHARGED
21	RH_M5	Pipe	RH_10	RH_11	140.00	261.90	260.33	1.1200	0.675	0.0130	1.04	0.89	1.17	2.91	0.68	1.00	236.00	SURCHARGED
22	RH_M6	Pipe	RH_11	RH_17	464.00	260.33	256.42	0.8400	0.750	0.0130	1.10	1.02	1.07	2.49	0.75	1.00	233.00	SURCHARGED
23	RH_M7	Pipe	RH_17	Ravine_1	6.00	256.42	256.37	0.8300	1.000	0.0130	1.42	2.19	0.65	2.13	0.79	0.79	0.00	Calculated
24	West_Link	Pipe	WestOutfall	West_Outfall	33.73	256.00	257.00	-2.9600	0.000	0.0130	0.25	0.00	0.03	0.00	0.67	0.17	0.00	Calculated
25	WestWetland_Link	Pipe	WestWetland	West_Wetland	37.13	258.00	258.00	0.0000	0.000	0.0130	0.20	0.00	0.03	0.00	0.67	0.17	0.00	Calculated
26	Wetland_Link	Pipe	NorthWetland	North_Wetland	41.51	252.00	252.00	0.0000	0.000	0.0130	0.37	0.00	0.03	0.00	0.67	0.17	0.00	Calculated
27	Ex.STM_Overland	Channel	Ex_MHR28	Ravine_2	400.00	259.00	253.00	1.5000	0.300	0.0320	0.73	10.09	0.07	0.20	0.18	0.60	0.00	
28	Link-34	Channel	RH_1	RH_3	270.00	271.40	269.65	0.6500	0.300	0.0320	3.15	6.63	0.47	0.73	0.23	0.77	0.00	
29	Link-35	Channel	RH_2	RH_3	50.00	272.15	269.65	5.0000	0.300	0.0320	3.03	18.43	0.16	1.08	0.18	0.62	0.00	
30	Link-36	Channel	RH_3	RH_4	222.00	269.65	268.30	0.6100	0.300	0.0320	4.61	6.43	0.72	1.00	0.23	0.77	0.00	
31	Link-37	Channel	RH_4	RH_6	18.00	268.30	267.90	2.2200	0.300	0.0320	4.38	12.28	0.36	1.30	0.19	0.63	0.00	
32	Link-38	Channel	RH_5	RH_6	227.00	271.80	267.90	1.7200	0.300	0.0320	1.25	10.80	0.12	0.74	0.14	0.48	0.00	
33	Link-39	Channel	RH_6	RH_10	415.00	267.90	263.50	1.0600	0.300	0.0320	5.11	8.48	0.60	1.16	0.22	0.75	0.00	
34	Link-41	Channel	RH_8	RH_9	180.00	269.55	265.50	2.2500	0.300	0.0320	0.04	12.36	0.00	0.22	0.01	0.04	0.00	
35	Link-42	Channel	RH_9	RH_10	155.00	265.50	263.50	1.2900	0.300	0.0320	0.07	9.36	0.01	0.04	0.13	0.43	0.00	
36	Link-43	Channel	RH_10	RH_11	140.00	263.50	262.25	0.8900	0.300	0.0320	4.78	7.79	0.61	1.13	0.21	0.71	0.00	
37	Link-44	Channel	RH_11	Ravine_1	470.00	262.25	258.00	0.9000	0.300	0.0320	3.75	7.84	0.48	1.03	0.18	0.60	0.00	
38	Link-45	Channel	RH_14	RH_15	195.00	263.20	260.70	1.2800	0.300	0.0320	0.21	9.33	0.02	0.35	0.04	0.12	0.00	
39	Link-46	Channel	RH_15	Ravine_1	280.00	260.70	258.00	0.9600	0.300	0.0320	0.24	8.09	0.03	0.34	0.03	0.11	0.00	
40	LowerRavine	Channel	Ravine_2	Ravine_3	124.00	253.00	252.45	0.4400	4.000	0.0320	5.64	157.98	0.04	1.42	0.66	0.17	0.00	
41	OutletRavine	Channel	Ravine_3	Outfall	45.00	252.45	252.00	1.0000	4.000	0.0320	5.67	237.22	0.02	1.82	0.54	0.13	0.00	
42	RH_C1	Channel	RH_12	RH_13	215.00	269.00	264.00	2.3300	1.500	0.0320	2.05	24.20	0.08	1.68	0.57	0.38	0.00	
43	RH_C2	Channel	RH_13	Ex_SE_Pond	60.00	264.00	263.50	0.8300	1.500	0.0320	2.09	14.49	0.14	1.56	0.58	0.40	0.00	
44	UpperRavine	Channel	Ravine_1	Ravine_2	553.00	256.10	253.00	0.5600	4.000	0.0320	5.83	177.61	0.03	1.49	0.67	0.17	0.00	

Junction Input

SN	Element ID	Invert Elevation (m)	Ground/Rim (Max) Elevation (m)	Ground/Rim (Max) Offset (m)	Initial Water Elevation (m)	Initial Water Depth (m)	Surcharge Elevation (m)	Surcharge Depth (m)	Ponded Area (m²)	Minimum Pipe Cover (m)
1	Ex_MHR1	255.88	262.50	6.62	0.00	-255.88	0.00	-262.50	0.00	0.00
2	Ex_MHR2	255.48	259.65	4.17	0.00	-255.48	0.00	-259.65	0.00	0.00
3	Ex_MHR25	256.48	263.35	6.87	0.00	-256.48	0.00	-263.35	0.00	0.00
4	Ex_MHR26	256.64	262.75	6.11	0.00	-256.64	0.00	-262.75	0.00	0.00
5	Ex_MHR27	256.94	261.00	4.06	0.00	-256.94	0.00	-261.00	0.00	0.00
6	Ex_MHR28	257.37	259.30	1.93	0.00	-257.37	0.00	-259.30	0.00	0.00
7	Ex_MHR3	255.23	259.00	3.77	0.00	-255.23	0.00	-259.00	0.00	0.00
8	NorthWetland	252.00	258.00	6.00	0.00	-252.00	0.00	-258.00	0.00	0.00
9	Ravine_1	256.10	260.10	4.00	0.00	-256.10	0.00	-260.10	0.00	0.00
10	Ravine_2	253.00	257.00	4.00	0.00	-253.00	0.00	-257.00	0.00	0.00
11	Ravine_3	252.45	256.45	4.00	0.00	-252.45	0.00	-256.45	0.00	0.00
12	RH_1	267.60	271.70	4.10	0.00	-267.60	0.00	-271.70	0.00	0.00
13	RH_10	261.90	263.90	2.00	0.00	-261.90	0.00	-263.90	0.00	0.00
14	RH_11	260.33	262.55	2.22	0.00	-260.33	0.00	-262.55	0.00	0.00
15	RH_12	269.00	270.50	1.50	0.00	-269.00	0.00	-270.50	0.00	0.00
16	RH_13	264.00	266.50	2.50	0.00	-264.00	0.00	-266.50	0.00	0.00
17	RH_14	261.70	263.50	1.80	0.00	-261.70	0.00	-263.50	0.00	0.00
18	RH_15	259.38	261.00	1.62	0.00	-259.38	0.00	-261.00	0.00	0.00
19	RH_16	256.36	258.00	1.64	0.00	-256.36	0.00	-258.00	0.00	0.00
20	RH_17	256.42	258.00	1.58	0.00	-256.42	0.00	-258.00	0.00	0.00
21	RH_2	270.14	272.45	2.31	0.00	-270.14	0.00	-272.45	0.00	0.00
22	RH_3	267.07	270.25	3.18	0.00	-267.07	0.00	-270.25	0.00	0.00
23	RH_4	266.63	268.60	1.97	0.00	-266.63	0.00	-268.60	0.00	0.00
24	RH_5	270.35	272.10	1.75	0.00	-270.35	0.00	-272.10	0.00	0.00
25	RH_6	266.50	268.20	1.70	0.00	-266.50	0.00	-268.20	0.00	0.00
26	RH_7	272.00	273.50	1.50	0.00	-272.00	0.00	-273.50	0.00	0.00
27	RH_8	267.75	269.85	2.10	0.00	-267.75	0.00	-269.85	0.00	0.00
28	RH_9	264.00	265.80	1.80	0.00	-264.00	0.00	-265.80	0.00	0.00
29	WestOutfall	257.00	258.00	1.00	0.00	-257.00	0.00	-258.00	0.00	0.00
30	WestWetland	258.00	259.00	1.00	0.00	-258.00	0.00	-259.00	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)	Total Time Flooded (min)
1	Ex_MHR1	0.25	0.00	256.32	0.44	0.00	6.18	256.04	0.16	0 12:04	0 00:00	0.00	0.00
2	Ex_MHR2	0.25	0.00	255.90	0.42	0.00	3.75	255.63	0.15	0 12:05	0 00:00	0.00	0.00
3	Ex_MHR25	0.25	0.00	257.53	1.05	0.00	5.82	256.65	0.17	0 11:47	0 00:00	0.00	0.00
4	Ex_MHR26	0.25	0.00	257.86	1.22	0.00	4.89	256.83	0.19	0 11:47	0 00:00	0.00	0.00
5	Ex_MHR27	0.25	0.00	258.27	1.33	0.00	2.73	257.16	0.22	0 11:47	0 00:00	0.00	0.00
6	Ex_MHR28	1.21	1.21	259.06	1.69	0.00	0.24	257.62	0.25	0 12:03	0 00:00	0.00	0.00
7	Ex_MHR3	0.25	0.00	255.61	0.38	0.00	3.39	255.38	0.15	0 12:05	0 00:00	0.00	0.00
8	NorthWetland	0.37	0.37	252.00	0.00	0.00	6.00	252.00	0.00	0 00:00	0 00:00	0.00	0.00
9	Ravine_1	5.82	0.15	256.74	0.64	0.00	3.36	256.31	0.21	0 12:24	0 00:00	0.00	0.00
10	Ravine_2	6.39	0.70	253.74	0.74	0.00	3.26	253.27	0.27	0 12:34	0 00:00	0.00	0.00
11	Ravine_3	5.67	0.06	253.04	0.59	0.00	3.41	252.66	0.21	0 12:35	0 00:00	0.00	0.00
12	RH_1	3.93	3.93	271.59	3.99	0.00	0.11	268.52	0.92	0 12:01	0 00:00	0.00	0.00
13	RH_10	6.35	0.22	263.74	1.84	0.00	0.16	262.54	0.64	0 12:14	0 00:00	0.00	0.00
14	RH_11	5.60	0.07	262.46	2.13	0.00	0.09	261.02	0.69	0 12:23	0 00:00	0.00	0.00
15	RH_12	2.10	2.10	269.48	0.48	0.00	1.02	269.10	0.10	0 12:00	0 00:00	0.00	0.00
16	RH_13	2.20	0.16	264.67	0.67	0.00	1.83	264.16	0.16	0 12:01	0 00:00	0.00	0.00
17	RH_14	0.61	0.00	263.23	1.53	0.00	0.27	262.22	0.52	0 12:31	0 00:00	0.00	0.00
18	RH_15	0.76	0.16	260.74	1.36	0.00	0.26	259.88	0.50	0 13:00	0 00:00	0.00	0.00
19	RH_16	0.48	0.00	257.09	0.73	0.00	0.91	256.76	0.40	0 13:00	0 00:00	0.00	0.00
20	RH_17	1.42	0.37	257.63	1.21	0.00	0.37	257.05	0.63	0 12:30	0 00:00	0.00	0.00
21	RH_2	3.24	3.24	272.25	2.11	0.00	0.20	270.75	0.61	0 12:00	0 00:00	0.00	0.00
22	RH_3	6.73	0.00	269.94	2.87	0.00	0.31	267.91	0.84	0 12:05	0 00:00	0.00	0.00
23	RH_4	5.35	0.10	268.47	1.84	0.00	0.13	267.17	0.54	0 12:05	0 00:00	0.00	0.00
24	RH_5	1.52	1.52	271.88	1.53	0.00	0.22	270.74	0.39	0 12:01	0 00:00	0.00	0.00
25	RH_6	6.56	0.00	268.12	1.62	0.00	0.08	266.98	0.48	0 12:09	0 00:00	0.00	0.00
26	RH_7	0.00	0.00	272.00	0.00	0.00	1.50	272.00	0.00	0 00:00	0 00:00	0.00	0.00
27	RH_8	0.32	0.32	269.56	1.81	0.00	0.29	268.13	0.38	0 12:10	0 00:00	0.00	0.00
28	RH_9	0.26	0.08	265.52	1.52	0.00	0.28	264.38	0.38	0 12:29	0 00:00	0.00	0.00
29	WestOutfall	0.25	0.25	257.00	0.00	0.00	1.00	257.00	0.00	0 00:00	0 00:00	0.00	0.00
30	WestWetland	0.19	0.19	258.00	0.00	0.00	1.00	258.00	0.00	0 00:00	0 00:00	0.00	0.00

Channel Input

SN	Element ID	Length (m)	Inlet Invert Elevation (m)	Inlet Invert Offset (m)	Outlet Invert Elevation (m)	Outlet Invert Offset (m)	Total Drop (m)	Average Slope (%)	Shape	Height (m)	Width (m)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cms)	Flap Gate
1	Ex.STM_Overland	400.00	259.00	1.63	253.00	0.00	6.00	1.5000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
2	Link-34	270.00	271.40	3.80	269.65	2.58	1.75	0.6500	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
3	Link-35	50.00	272.15	2.01	269.65	2.58	2.50	5.0000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
4	Link-36	222.00	269.65	2.58	268.30	1.67	1.35	0.6100	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
5	Link-37	18.00	268.30	1.67	267.90	1.40	0.40	2.2200	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
6	Link-38	227.00	271.80	1.45	267.90	1.40	3.90	1.7200	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
7	Link-39	415.00	267.90	1.40	263.50	1.60	4.40	1.0600	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
8	Link-41	180.00	269.55	1.80	265.50	1.50	4.05	2.2500	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
9	Link-42	155.00	265.50	1.50	263.50	1.60	2.00	1.2900	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
10	Link-43	140.00	263.50	1.60	262.25	1.92	1.25	0.8900	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
11	Link-44	470.00	262.25	1.92	258.00	1.90	4.25	0.9000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
12	Link-45	195.00	263.20	1.50	260.70	1.32	2.50	1.2800	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
13	Link-46	280.00	260.70	1.32	258.00	1.90	2.70	0.9600	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
14	LowerRavine	124.00	253.00	0.00	252.45	0.00	0.55	0.4400	Trapezoidal	4.000	17.000	0.0320	0.5000	0.5000	0.0000	0.00	No
15	OutletRavine	45.00	252.45	0.00	252.00	0.00	0.45	1.0000	Trapezoidal	4.000	17.000	0.0320	0.5000	0.5000	0.0000	0.00	No
16	RH_C1	215.00	269.00	0.00	264.00	0.00	5.00	2.3300	Trapezoidal	1.500	7.000	0.0320	0.5000	0.5000	0.0000	0.00	No
17	RH_C2	60.00	264.00	0.00	263.50	1.50	0.50	0.8300	Trapezoidal	1.500	7.000	0.0320	0.5000	0.5000	0.0000	0.00	No
18	UpperRavine	553.00	256.10	0.00	253.00	0.00	3.10	0.5600	Trapezoidal	4.000	17.000	0.0320	0.5000	0.5000	0.0000	0.00	No

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
1	Ex.STM_Overland	0.73	0 12:03	10.09	0.07	0.20	33.33	0.18	0.60	0.00	0.00	
2	Link-34	3.15	0 12:01	6.63	0.47	0.73	6.16	0.23	0.77	0.00	0.02	
3	Link-35	3.03	0 12:00	18.43	0.16	1.08	0.77	0.18	0.62	0.00	0.10	
4	Link-36	4.61	0 12:05	6.43	0.72	1.00	3.70	0.23	0.77	0.00	0.09	
5	Link-37	4.38	0 12:06	12.28	0.36	1.30	0.23	0.19	0.63	0.00	0.06	
6	Link-38	1.25	0 12:01	10.80	0.12	0.74	5.11	0.14	0.48	0.00	0.04	
7	Link-39	5.11	0 12:10	8.48	0.60	1.16	5.96	0.22	0.75	0.00	0.07	
8	Link-41	0.04	0 12:11	12.36	0.00	0.22	13.64	0.01	0.04	0.00	0.05	
9	Link-42	0.07	0 12:29	9.36	0.01	0.04	64.58	0.13	0.43	0.00	0.00	
10	Link-43	4.78	0 12:14	7.79	0.61	1.13	2.06	0.21	0.71	0.00	0.15	
11	Link-44	3.75	0 12:23	7.84	0.48	1.03	7.61	0.18	0.60	0.00	0.14	
12	Link-45	0.21	0 12:33	9.33	0.02	0.35	9.29	0.04	0.12	0.00	0.05	
13	Link-46	0.24	0 13:00	8.09	0.03	0.34	13.73	0.03	0.11	0.00	0.12	
14	LowerRavine	5.64	0 12:34	157.98	0.04	1.42	1.46	0.66	0.17	0.00	0.50	
15	OutletRavine	5.67	0 12:35	237.22	0.02	1.82	0.41	0.54	0.13	0.00	0.76	
16	RH_C1	2.05	0 12:00	24.20	0.08	1.68	2.13	0.57	0.38	0.00	0.59	
17	RH_C2	2.09	0 12:01	14.49	0.14	1.56	0.64	0.58	0.40	0.00	0.65	
18	UpperRavine	5.83	0 12:24	177.61	0.03	1.49	6.19	0.67	0.17	0.00	0.44	

Pipe Input

SN	Element ID	Length (m)	Inlet Invert Elevation (m)	Inlet Invert Offset (m)	Outlet Invert Elevation (m)	Outlet Invert Offset (m)	Total Drop (m)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (m)	Pipe Width (m)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cms)	Flap Gate
1	Ex.STM_1	107.00	257.37	0.00	256.94	0.00	0.43	0.4000	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
2	Ex.STM_2	73.00	256.94	0.00	256.64	0.00	0.30	0.4100	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
3	Ex.STM_3	27.00	256.64	0.00	256.48	0.00	0.16	0.5900	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
4	Ex.STM_4	100.00	256.48	0.00	255.88	0.00	0.60	0.6000	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
5	Ex.STM_5	100.00	255.88	0.00	255.48	0.00	0.40	0.4000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
6	Ex.STM_6	50.00	255.48	0.00	255.23	0.00	0.25	0.5000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
7	Ex.STM_7	102.00	255.23	0.00	254.82	0.00	0.41	0.4000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
8	RH_A1	50.00	270.14	0.00	268.50	1.43	1.64	3.2800	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
9	RH_B1	227.00	270.35	0.00	266.50	0.00	3.85	1.7000	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
10	RH_C3	15.00	262.00	0.00	261.70	0.00	0.30	2.0000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
11	RH_C4	195.00	261.70	0.00	259.38	0.00	2.32	1.1900	CIRCULAR	0.530	0.530	0.0150	0.5000	0.5000	0.0000	0.00	No
12	RH_C5	274.00	259.38	0.00	256.36	0.00	3.02	1.1000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
13	RH_C6	6.00	256.36	0.00	256.24	0.14	0.12	2.0000	CIRCULAR	0.700	0.700	0.0130	0.5000	0.5000	0.0000	0.00	No
14	RH_D1	275.00	272.00	0.00	267.75	0.00	4.25	1.5500	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
15	RH_D2	180.00	267.75	0.00	264.00	0.00	3.75	2.0800	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
16	RH_D3	155.00	264.00	0.00	261.90	0.00	2.10	1.3500	CIRCULAR	0.380	0.380	0.0130	0.5000	0.5000	0.0000	0.00	No
17	RH_M1	270.00	267.60	0.00	267.07	0.00	0.53	0.2000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
18	RH_M2	222.00	267.07	0.00	266.63	0.00	0.44	0.2000	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
19	RH_M3	18.00	266.63	0.00	266.50	0.00	0.13	0.7200	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
20	RH_M4	415.00	266.50	0.00	261.90	0.00	4.60	1.1100	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
21	RH_M5	140.00	261.90	0.00	260.33	0.00	1.57	1.1200	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
22	RH_M6	464.00	260.33	0.00	256.42	0.00	3.91	0.8400	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
23	RH_M7	6.00	256.42	0.00	256.37	0.27	0.05	0.8300	CIRCULAR	1.000	1.000	0.0130	0.5000	0.5000	0.0000	0.00	No
24	West_Link	33.73	256.00	-1.00	257.00	0.00	-1.00	-2.9600	Dummy	0.000	0.000	0.0130	0.5000	0.5000	0.0000	0.00	No
25	WestWetland_Link	37.13	258.00	0.00	258.00	0.00	0.00	0.0000	Dummy	0.000	0.000	0.0130	0.5000	0.5000	0.0000	0.00	No
26	Wetland_Link	41.51	252.00	0.00	252.00	0.00	0.00	0.0000	Dummy	0.000	0.000	0.0130	0.5000	0.5000	0.0000	0.00	No

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	Ex.STM_1	0.25	0 11:48	0.18	1.37	1.55	1.15	0.45	1.00	68.00	0.75	SURCHARGED
2	Ex.STM_2	0.25	0 11:48	0.18	1.35	1.55	0.78	0.45	1.00	64.00	0.79	SURCHARGED
3	Ex.STM_3	0.25	0 11:48	0.22	1.12	1.55	0.29	0.45	1.00	61.00	0.89	SURCHARGED
4	Ex.STM_4	0.25	0 11:48	0.22	1.12	1.58	1.05	0.44	0.99	0.00	0.92	> CAPACITY
5	Ex.STM_5	0.25	0 12:04	0.27	0.91	1.33	1.25	0.43	0.82	0.00	0.85	Calculated
6	Ex.STM_6	0.25	0 12:05	0.30	0.81	1.40	0.60	0.40	0.76	0.00	0.89	Calculated
7	Ex.STM_7	0.25	0 12:05	0.39	0.63	1.44	1.18	0.35	0.58	0.00	0.91	Calculated
8	RH_A1	0.23	0 11:43	0.18	1.31	3.26	0.26	0.30	1.00	253.00	1.55	SURCHARGED
9	RH_B1	0.14	0 11:43	0.13	1.10	1.95	1.94	0.30	1.00	193.00	0.64	SURCHARGED
10	RH_C3	0.61	0 12:38	0.87	0.71	2.17	0.12	0.60	1.00	269.00	0.95	SURCHARGED
11	RH_C4	0.42	0 11:57	0.41	1.04	2.10	1.55	0.52	1.00	293.00	0.88	SURCHARGED
12	RH_C5	0.48	0 13:00	0.45	1.06	2.22	2.06	0.52	1.00	299.00	0.66	SURCHARGED
13	RH_C6	0.48	0 13:00	1.31	0.37	1.64	0.06	0.60	0.86	0.00	0.92	Calculated
14	RH_D1	0.00	0 00:00	0.12	0.00	0.00		0.15	0.50	0.00	0.00	Calculated
15	RH_D2	0.15	0 11:54	0.14	1.04	2.15	1.40	0.30	1.00	174.00	1.23	SURCHARGED
16	RH_D3	0.19	0 14:05	0.20	0.92	1.70	1.52	0.38	1.00	203.00	0.36	SURCHARGED
17	RH_M1	0.50	0 11:45	0.27	1.85	1.78	2.53	0.60	1.00	225.00	0.31	SURCHARGED
18	RH_M2	0.80	0 11:46	0.37	2.13	2.23	1.66	0.68	1.00	186.00	0.53	SURCHARGED
19	RH_M3	1.05	0 11:59	0.95	1.11	2.37	0.13	0.75	1.00	180.00	0.82	SURCHARGED
20	RH_M4	0.91	0 11:47	0.89	1.03	2.61	2.65	0.68	1.00	182.00	1.00	SURCHARGED
21	RH_M5	1.04	0 11:56	0.89	1.17	2.91	0.80	0.68	1.00	236.00	1.04	SURCHARGED
22	RH_M6	1.10	0 12:22	1.02	1.07	2.49	3.11	0.75	1.00	233.00	0.59	SURCHARGED
23	RH_M7	1.42	0 12:30	2.19	0.65	2.13	0.05	0.79	0.79	0.00	0.81	Calculated
24	West_Link	0.25	0 12:00	0.00	0.03	0.00		0.67	0.17	0.00	0.44	Calculated
25	WestWetland_Link	0.20	0 12:00	0.00	0.03	0.00		0.67	0.17	0.00	0.44	Calculated
26	Wetland_Link	0.37	0 12:06	0.00	0.03	0.00		0.67	0.17	0.00	0.44	Calculated

Project Description

File Name	18010_Pre-Development Rev.0.SPF
Description	I:\ACAD Projects\2018\18010\03-Ref\18010_Pre-Dev. Storm Parcels.dwg
	I:\ACAD Projects\2018\18010\03-Ref\18010_Pre-Dev. Storm Parcels.dwg

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	00:00:00	0:00:00
End Analysis On	00:00:00	0:00:00
Start Reporting On	00:00:00	0:00:00
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	31
Nodes	36
Junctions	30
Outfalls	5
Flow Diversions	0
Inlets	0
Storage Nodes	1
Links	44
Channels	18
Pipes	26
Pumps	0
Orifices	0
Weirs	0
Outlets	0
Pollutants	0
Land Uses	0

Subbasin Summary

SN	Subbasin ID	Area (ha)	Impervious Area (%)	Weighted Curve Number	Average Slope (%)	Equivalent Width (m)	Impervious Area Manning's Roughness	Pervious Area Manning's Roughness	Total Rainfall (mm)	Total Infiltration (mm)	Total Runoff (mm)	Total Runoff Volume (ha-mm)	Peak Runoff (cms)	Time of Concentration (days hh:mm:ss)
1	{Survey Site}.Standard : 10	0.92	2.00	67.00	2.0000	125.00	0.0130	0.2000	100.79	59.3450	40.20	36.90	0.07	0 01:03:06
2	{Survey Site}.Standard : 11	21.38	2.00	67.00	2.0000	360.00	0.0130	0.2000	100.79	56.7590	45.12	964.75	0.45	0 03:41:12
3	{Survey Site}.Standard : 12	0.71	5.00	67.00	2.0000	90.00	0.0130	0.2000	100.79	57.5550	41.98	29.81	0.06	0 01:04:40
4	{Survey Site}.Standard : 13	1.65	45.00	71.05	2.0000	220.00	0.0130	0.2000	100.79	30.5130	69.03	113.76	0.43	0 00:45:09
5	{Survey Site}.Standard : 14	4.32	2.00	67.00	2.0000	350.00	0.0130	0.2000	100.79	59.7070	39.82	172.02	0.25	0 01:26:11
6	{Survey Site}.Standard : 16	6.33	2.00	67.00	2.0000	215.00	0.0130	0.2000	100.79	60.7080	38.82	245.70	0.19	0 02:25:10
7	{Survey Site}.Standard : 17	0.36	5.00	67.00	5.0000	20.00	0.0130	0.2000	100.79	57.7980	41.74	14.86	0.02	0 01:20:02
8	{Survey Site}.Standard : 18	14.15	5.00	48.00	10.0000	300.00	0.0130	0.2000	100.79	75.4930	24.06	340.49	0.40	0 01:56:41
9	{Survey Site}.Standard : 19	0.26	2.00	67.00	2.0000	90.00	0.0130	0.2000	100.79	58.9280	40.65	10.73	0.03	0 00:36:23
10	{Survey Site}.Standard : 2	20.86	45.00	71.05	2.0000	300.00	0.0130	0.2000	100.79	31.6480	67.87	1416.04	3.61	0 02:51:57
11	{Survey Site}.Standard : 20	11.33	2.00	36.00	0.5000	240.00	0.0130	0.2000	100.79	81.6080	14.04	158.99	0.10	0 04:52:04
12	{Survey Site}.Standard : 21	4.24	2.00	67.00	2.0000	155.00	0.0130	0.2000	100.79	60.5960	38.93	164.95	0.14	0 02:18:52
13	{Survey Site}.Standard : 22	23.21	2.00	67.00	2.0000	330.00	0.0130	0.2000	100.79	56.1900	43.45	1008.56	0.44	0 04:04:50
14	{Survey Site}.Standard : 23	2.20	5.00	48.00	10.0000	100.00	0.0130	0.2000	100.79	74.7870	24.77	54.45	0.08	0 01:13:47
15	{Survey Site}.Standard : 24	9.04	2.00	67.00	2.0000	275.00	0.0130	0.2000	100.79	60.8740	38.65	349.44	0.25	0 02:35:08
16	{Survey Site}.Standard : 25	8.64	2.00	67.00	5.0000	390.00	0.0130	0.2000	100.79	59.8180	39.71	343.11	0.45	0 01:33:00
17	{Survey Site}.Standard : 26	1.12	45.00	71.05	2.0000	40.00	0.0130	0.2000	100.79	30.9830	68.58	77.09	0.24	0 01:39:50
18	{Survey Site}.Standard : 27	0.43	45.00	71.05	2.0000	60.00	0.0130	0.2000	100.79	30.5130	69.04	29.48	0.11	0 00:43:47
19	{Survey Site}.Standard : 28	0.12	45.00	71.05	2.0000	40.00	0.0130	0.2000	100.79	30.3560	69.14	8.50	0.04	0 00:26:28
20	{Survey Site}.Standard : 29	7.86	45.00	71.05	2.0000	110.00	0.0130	0.2000	100.79	31.6750	67.84	533.37	1.35	0 02:54:48
21	{Survey Site}.Standard : 3	25.14	45.00	71.05	2.0000	370.00	0.0130	0.2000	100.79	31.6220	67.90	1706.81	4.38	0 02:49:34
22	{Survey Site}.Standard : 30	20.00	30.00	63.70	2.0000	225.00	0.0130	0.2000	100.79	47.0590	52.47	1049.16	2.34	0 03:50:13
23	{Survey Site}.Standard : 31	5.54	5.00	57.00	2.0000	245.00	0.0130	0.2000	100.79	68.2540	31.27	173.37	0.19	0 02:01:41
24	{Survey Site}.Standard : 32	3.34	2.00	67.00	2.0000	95.00	0.0130	0.2000	100.79	60.9860	38.54	128.52	0.09	0 02:41:21
25	{Survey Site}.Standard : 33	7.71	2.00	67.00	2.0000	215.00	0.0130	0.2000	100.79	61.0410	38.50	296.68	0.20	0 02:43:23
26	{Survey Site}.Standard : 4	3.13	2.00	67.00	2.0000	155.00	0.0130	0.2000	100.79	60.2070	39.33	123.13	0.13	0 01:55:49
27	{Survey Site}.Standard : 5	10.46	45.00	71.05	0.5000	235.00	0.0130	0.2000	100.79	31.8310	67.59	706.90	1.69	0 03:19:24
28	{Survey Site}.Standard : 6	11.54	2.00	67.00	2.0000	280.00	0.0130	0.2000	100.79	61.2910	38.24	441.40	0.28	0 02:57:41
29	{Survey Site}.Standard : 7	10.98	5.00	67.00	2.0000	225.00	0.0130	0.2000	100.79	59.6850	39.85	437.35	0.38	0 03:12:56
30	{Survey Site}.Standard : 8	3.30	2.00	67.00	2.0000	125.00	0.0130	0.2000	100.79	60.5410	38.98	128.79	0.11	0 02:16:05
31	{Survey Site}.Standard : 9	3.53	2.00	67.00	2.0000	100.00	0.0130	0.2000	100.79	61.0130	38.53	136.07	0.09	0 02:41:57

Node Summary

SN	Element ID	Element Type	Invert Elevation (m)	Ground/Rim (Max) Elevation (m)	Initial Water Elevation (m)	Surcharge Elevation (m)	Ponded Area (m^2)	Peak Inflow (cms)	Max HGL Elevation Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ha-mm)	Total Time Flooded (min)
1	Ex_MHR1	Junction	255.88	262.50	0.00	0.00	0.00	0.25	256.32	0.00	6.18	0 00:00	0.00	0.00
2	Ex_MHR2	Junction	255.48	259.65	0.00	0.00	0.00	0.25	255.90	0.00	3.75	0 00:00	0.00	0.00
3	Ex_MHR25	Junction	256.48	263.35	0.00	0.00	0.00	0.25	257.68	0.00	5.67	0 00:00	0.00	0.00
4	Ex_MHR26	Junction	256.64	262.75	0.00	0.00	0.00	0.25	257.88	0.00	4.87	0 00:00	0.00	0.00
5	Ex_MHR27	Junction	256.94	261.00	0.00	0.00	0.00	0.25	258.31	0.00	2.69	0 00:00	0.00	0.00
6	Ex_MHR28	Junction	257.37	259.30	0.00	0.00	0.00	1.35	259.07	0.00	0.23	0 00:00	0.00	0.00
7	Ex_MHR3	Junction	255.23	259.00	0.00	0.00	0.00	0.25	255.61	0.00	3.39	0 00:00	0.00	0.00
8	NorthWetland	Junction	252.00	258.00	0.00	0.00	0.00	0.47	252.00	0.00	6.00	0 00:00	0.00	0.00
9	Ravine_1	Junction	256.10	260.10	0.00	0.00	0.00	6.93	256.81	0.00	3.29	0 00:00	0.00	0.00
10	Ravine_2	Junction	253.00	257.00	0.00	0.00	0.00	7.73	253.82	0.00	3.18	0 00:00	0.00	0.00
11	Ravine_3	Junction	252.45	256.45	0.00	0.00	0.00	6.85	253.11	0.00	3.34	0 00:00	0.00	0.00
12	RH_1	Junction	267.60	271.70	0.00	0.00	0.00	4.38	271.61	0.00	0.09	0 00:00	0.00	0.00
13	RH_10	Junction	261.90	263.90	0.00	0.00	0.00	7.38	263.77	0.00	0.13	0 00:00	0.00	0.00
14	RH_11	Junction	260.33	262.55	0.00	0.00	0.00	6.59	262.49	0.00	0.06	0 00:00	0.00	0.00
15	RH_12	Junction	269.00	270.50	0.00	0.00	0.00	2.34	269.51	0.00	0.99	0 00:00	0.00	0.00
16	RH_13	Junction	264.00	266.50	0.00	0.00	0.00	2.47	264.71	0.00	1.79	0 00:00	0.00	0.00
17	RH_14	Junction	261.70	263.50	0.00	0.00	0.00	0.73	263.24	0.00	0.26	0 00:00	0.00	0.00
18	RH_15	Junction	259.38	261.00	0.00	0.00	0.00	0.90	260.76	0.00	0.24	0 00:00	0.00	0.00
19	RH_16	Junction	256.36	258.00	0.00	0.00	0.00	0.48	257.09	0.00	0.91	0 00:00	0.00	0.00
20	RH_17	Junction	256.42	258.00	0.00	0.00	0.00	1.51	257.69	0.00	0.31	0 00:00	0.00	0.00
21	RH_2	Junction	270.14	272.45	0.00	0.00	0.00	3.61	272.26	0.00	0.19	0 00:00	0.00	0.00
22	RH_3	Junction	267.07	270.25	0.00	0.00	0.00	7.51	269.98	0.00	0.27	0 00:00	0.00	0.00
23	RH_4	Junction	266.63	268.60	0.00	0.00	0.00	5.88	268.48	0.00	0.12	0 00:00	0.00	0.00
24	RH_5	Junction	270.35	272.10	0.00	0.00	0.00	1.69	271.89	0.00	0.21	0 00:00	0.00	0.00
25	RH_6	Junction	266.50	268.20	0.00	0.00	0.00	7.27	268.14	0.00	0.06	0 00:00	0.00	0.00
26	RH_7	Junction	272.00	273.50	0.00	0.00	0.00	0.00	272.00	0.00	1.50	0 00:00	0.00	0.00
27	RH_8	Junction	267.75	269.85	0.00	0.00	0.00	0.38	269.57	0.00	0.28	0 00:00	0.00	0.00
28	RH_9	Junction	264.00	265.80	0.00	0.00	0.00	0.36	265.52	0.00	0.28	0 00:00	0.00	0.00
29	WestOutfall	Junction	257.00	258.00	0.00	0.00	0.00	0.31	257.00	0.00	1.00	0 00:00	0.00	0.00
30	WestWetland	Junction	258.00	259.00	0.00	0.00	0.00	0.23	258.00	0.00	1.00	0 00:00	0.00	0.00
31	North_Wetland	Outfall	252.00					0.47	252.00					
32	Outfall	Outfall	252.00					6.85	252.54					
33	TinerEstatesSTM	Outfall	254.82					0.25	255.14					
34	West_Outfall	Outfall	257.00					0.31	257.00					
35	West_Wetland	Outfall	258.00					0.23	258.00					
36	Ex_SE_Pond	Storage Node	262.00	266.00	0.00		0.00	2.66	263.78				0.00	0.00

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(m)	(m)	(m)	(%)	(m)		(cms)	(cms)		(m/sec)	(m)		(min)	
1	Ex.STM_1	Pipe	Ex_MHR28	Ex_MHR27	107.00	257.37	256.94	0.4000	0.450	0.0130	0.25	0.18	1.37	1.55	0.45	1.00	78.00	SURCHARGED
2	Ex.STM_2	Pipe	Ex_MHR27	Ex_MHR26	73.00	256.94	256.64	0.4100	0.450	0.0130	0.25	0.18	1.35	1.55	0.45	1.00	73.00	SURCHARGED
3	Ex.STM_3	Pipe	Ex_MHR26	Ex_MHR25	27.00	256.64	256.48	0.5900	0.450	0.0130	0.25	0.22	1.12	1.55	0.45	1.00	70.00	SURCHARGED
4	Ex.STM_4	Pipe	Ex_MHR25	Ex_MHR1	100.00	256.48	255.88	0.6000	0.450	0.0130	0.25	0.22	1.12	1.59	0.44	0.99	0.00	> CAPACITY
5	Ex.STM_5	Pipe	Ex_MHR1	Ex_MHR2	100.00	255.88	255.48	0.4000	0.525	0.0130	0.25	0.27	0.91	1.33	0.43	0.82	0.00	Calculated
6	Ex.STM_6	Pipe	Ex_MHR2	Ex_MHR3	50.00	255.48	255.23	0.5000	0.525	0.0130	0.25	0.30	0.81	1.40	0.40	0.77	0.00	Calculated
7	Ex.STM_7	Pipe	Ex_MHR3	TinerEstatesSTM	102.00	255.23	254.82	0.4000	0.600	0.0130	0.25	0.39	0.63	1.44	0.35	0.59	0.00	Calculated
8	RH_A1	Pipe	RH_2	RH_3	50.00	270.14	268.50	3.2800	0.300	0.0130	0.23	0.18	1.31	3.26	0.30	1.00	284.00	SURCHARGED
9	RH_B1	Pipe	RH_5	RH_6	227.00	270.35	266.50	1.7000	0.300	0.0130	0.14	0.13	1.10	1.95	0.30	1.00	219.00	SURCHARGED
10	RH_C3	Pipe	Ex_SE_Pond	RH_14	15.00	262.00	261.70	2.0000	0.600	0.0130	0.73	0.87	0.84	2.57	0.60	1.00	305.00	SURCHARGED
11	RH_C4	Pipe	RH_14	RH_15	195.00	261.70	259.38	1.1900	0.525	0.0150	0.42	0.41	1.04	2.09	0.52	1.00	329.00	SURCHARGED
12	RH_C5	Pipe	RH_15	RH_16	274.00	259.38	256.36	1.1000	0.525	0.0130	0.48	0.45	1.06	2.22	0.52	1.00	335.00	SURCHARGED
13	RH_C6	Pipe	RH_16	Ravine_1	6.00	256.36	256.24	2.0000	0.700	0.0130	0.48	1.31	0.37	1.64	0.63	0.91	0.00	Calculated
14	RH_D1	Pipe	RH_7	RH_8	275.00	272.00	267.75	1.5500	0.300	0.0130	0.00	0.12	0.00	0.00	0.15	0.50	0.00	Calculated
15	RH_D2	Pipe	RH_8	RH_9	180.00	267.75	264.00	2.0800	0.300	0.0130	0.15	0.14	1.04	2.14	0.30	1.00	212.00	SURCHARGED
16	RH_D3	Pipe	RH_9	RH_10	155.00	264.00	261.90	1.3500	0.375	0.0130	0.19	0.20	0.92	1.71	0.38	1.00	239.00	SURCHARGED
17	RH_M1	Pipe	RH_1	RH_3	270.00	267.60	267.07	0.2000	0.600	0.0130	0.50	0.27	1.84	1.77	0.60	1.00	255.00	SURCHARGED
18	RH_M2	Pipe	RH_3	RH_4	222.00	267.07	266.63	0.2000	0.675	0.0130	0.80	0.37	2.13	2.23	0.68	1.00	209.00	SURCHARGED
19	RH_M3	Pipe	RH_4	RH_6	18.00	266.63	266.50	0.7200	0.750	0.0130	1.05	0.95	1.11	2.37	0.75	1.00	202.00	SURCHARGED
20	RH_M4	Pipe	RH_6	RH_10	415.00	266.50	261.90	1.1100	0.675	0.0130	0.91	0.89	1.02	2.59	0.68	1.00	205.00	SURCHARGED
21	RH_M5	Pipe	RH_10	RH_11	140.00	261.90	260.33	1.1200	0.675	0.0130	1.04	0.89	1.16	2.91	0.68	1.00	263.00	SURCHARGED
22	RH_M6	Pipe	RH_11	RH_17	464.00	260.33	256.42	0.8400	0.750	0.0130	1.10	1.02	1.07	2.48	0.75	1.00	261.00	SURCHARGED
23	RH_M7	Pipe	RH_17	Ravine_1	6.00	256.42	256.37	0.8300	1.000	0.0130	1.51	2.19	0.69	2.23	0.81	0.81	0.00	Calculated
24	West_Link	Pipe	WestOutfall	West_Outfall	33.73	256.00	257.00	-2.9600	0.000	0.0130	0.31	0.00	0.04	0.00	0.75	0.19	0.00	Calculated
25	WestWetland_Link	Pipe	WestWetland	West_Wetland	37.13	258.00	258.00	0.0000	0.000	0.0130	0.23	0.00	0.04	0.00	0.75	0.19	0.00	Calculated
26	Wetland_Link	Pipe	NorthWetland	North_Wetland	41.51	252.00	252.00	0.0000	0.000	0.0130	0.47	0.00	0.04	0.00	0.75	0.19	0.00	Calculated
27	Ex.STM_Overland	Channel	Ex_MHR28	Ravine_2	400.00	259.00	253.00	1.5000	0.300	0.0320	0.86	10.09	0.09	0.23	0.18	0.61	0.00	
28	Link-34	Channel	RH_1	RH_3	270.00	271.40	269.65	0.6500	0.300	0.0320	3.57	6.63	0.54	0.75	0.24	0.84	0.00	
29	Link-35	Channel	RH_2	RH_3	50.00	272.15	269.65	5.0000	0.300	0.0320	3.40	18.43	0.18	1.10	0.19	0.66	0.00	
30	Link-36	Channel	RH_3	RH_4	222.00	269.65	268.30	0.6100	0.300	0.0320	5.10	6.43	0.79	1.05	0.24	0.81	0.00	
31	Link-37	Channel	RH_4	RH_6	18.00	268.30	267.90	2.2200	0.300	0.0320	4.95	12.28	0.40	1.36	0.20	0.70	0.00	
32	Link-38	Channel	RH_5	RH_6	227.00	271.80	267.90	1.7200	0.300	0.0320	1.43	10.80	0.13	0.75	0.15	0.52	0.00	
33	Link-39	Channel	RH_6	RH_10	415.00	267.90	263.50	1.0600	0.300	0.0320	6.01	8.48	0.71	1.22	0.25	0.83	0.00	
34	Link-41	Channel	RH_8	RH_9	180.00	269.55	265.50	2.2500	0.300	0.0320	0.11	12.36	0.01	0.32	0.02	0.07	0.00	
35	Link-42	Channel	RH_9	RH_10	155.00	265.50	263.50	1.2900	0.300	0.0320	0.14	9.36	0.02	0.07	0.15	0.49	0.00	
36	Link-43	Channel	RH_10	RH_11	140.00	263.50	262.25	0.8900	0.300	0.0320	5.75	7.79	0.74	1.21	0.24	0.81	0.00	
37	Link-44	Channel	RH_11	Ravine_1	470.00	262.25	258.00	0.9000	0.300	0.0320	4.67	7.84	0.60	1.13	0.21	0.69	0.00	
38	Link-45	Channel	RH_14	RH_15	195.00	263.20	260.70	1.2800	0.300	0.0320	0.32	9.33	0.03	0.40	0.05	0.16	0.00	
39	Link-46	Channel	RH_15	Ravine_1	280.00	260.70	258.00	0.9600	0.300	0.0320	0.39	8.09	0.05	0.42	0.05	0.15	0.00	
40	LowerRavine	Channel	Ravine_2	Ravine_3	124.00	253.00	252.45	0.4400	4.000	0.0320	6.81	157.98	0.04	1.50	0.74	0.19	0.00	
41	OutletRavine	Channel	Ravine_3	Outfall	45.00	252.45	252.00	1.0000	4.000	0.0320	6.85	237.22	0.03	1.92	0.60	0.15	0.00	
42	RH_C1	Channel	RH_12	RH_13	215.00	269.00	264.00	2.3300	1.500	0.0320	2.28	24.20	0.09	1.72	0.60	0.40	0.00	
43	RH_C2	Channel	RH_13	Ex_SE_Pond	60.00	264.00	263.50	0.8300	1.500	0.0320	2.34	14.49	0.16	1.60	0.62	0.43	0.00	
44	UpperRavine	Channel	Ravine_1	Ravine_2	553.00	256.10	253.00	0.5600	4.000	0.0320	6.98	177.61	0.04	1.58	0.75	0.19	0.00	

Junction Input

SN	Element ID	Invert Elevation (m)	Ground/Rim (Max) Elevation (m)	Ground/Rim (Max) Offset (m)	Initial Water Elevation (m)	Initial Water Depth (m)	Surcharge Elevation (m)	Surcharge Depth (m)	Ponded Area (m²)	Minimum Pipe Cover (m)
1	Ex_MHR1	255.88	262.50	6.62	0.00	-255.88	0.00	-262.50	0.00	0.00
2	Ex_MHR2	255.48	259.65	4.17	0.00	-255.48	0.00	-259.65	0.00	0.00
3	Ex_MHR25	256.48	263.35	6.87	0.00	-256.48	0.00	-263.35	0.00	0.00
4	Ex_MHR26	256.64	262.75	6.11	0.00	-256.64	0.00	-262.75	0.00	0.00
5	Ex_MHR27	256.94	261.00	4.06	0.00	-256.94	0.00	-261.00	0.00	0.00
6	Ex_MHR28	257.37	259.30	1.93	0.00	-257.37	0.00	-259.30	0.00	0.00
7	Ex_MHR3	255.23	259.00	3.77	0.00	-255.23	0.00	-259.00	0.00	0.00
8	NorthWetland	252.00	258.00	6.00	0.00	-252.00	0.00	-258.00	0.00	0.00
9	Ravine_1	256.10	260.10	4.00	0.00	-256.10	0.00	-260.10	0.00	0.00
10	Ravine_2	253.00	257.00	4.00	0.00	-253.00	0.00	-257.00	0.00	0.00
11	Ravine_3	252.45	256.45	4.00	0.00	-252.45	0.00	-256.45	0.00	0.00
12	RH_1	267.60	271.70	4.10	0.00	-267.60	0.00	-271.70	0.00	0.00
13	RH_10	261.90	263.90	2.00	0.00	-261.90	0.00	-263.90	0.00	0.00
14	RH_11	260.33	262.55	2.22	0.00	-260.33	0.00	-262.55	0.00	0.00
15	RH_12	269.00	270.50	1.50	0.00	-269.00	0.00	-270.50	0.00	0.00
16	RH_13	264.00	266.50	2.50	0.00	-264.00	0.00	-266.50	0.00	0.00
17	RH_14	261.70	263.50	1.80	0.00	-261.70	0.00	-263.50	0.00	0.00
18	RH_15	259.38	261.00	1.62	0.00	-259.38	0.00	-261.00	0.00	0.00
19	RH_16	256.36	258.00	1.64	0.00	-256.36	0.00	-258.00	0.00	0.00
20	RH_17	256.42	258.00	1.58	0.00	-256.42	0.00	-258.00	0.00	0.00
21	RH_2	270.14	272.45	2.31	0.00	-270.14	0.00	-272.45	0.00	0.00
22	RH_3	267.07	270.25	3.18	0.00	-267.07	0.00	-270.25	0.00	0.00
23	RH_4	266.63	268.60	1.97	0.00	-266.63	0.00	-268.60	0.00	0.00
24	RH_5	270.35	272.10	1.75	0.00	-270.35	0.00	-272.10	0.00	0.00
25	RH_6	266.50	268.20	1.70	0.00	-266.50	0.00	-268.20	0.00	0.00
26	RH_7	272.00	273.50	1.50	0.00	-272.00	0.00	-273.50	0.00	0.00
27	RH_8	267.75	269.85	2.10	0.00	-267.75	0.00	-269.85	0.00	0.00
28	RH_9	264.00	265.80	1.80	0.00	-264.00	0.00	-265.80	0.00	0.00
29	WestOutfall	257.00	258.00	1.00	0.00	-257.00	0.00	-258.00	0.00	0.00
30	WestWetland	258.00	259.00	1.00	0.00	-258.00	0.00	-259.00	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)	Total Time Flooded (min)
1	Ex_MHR1	0.25	0.00	256.32	0.44	0.00	6.18	256.05	0.17	0 12:03	0 00:00	0.00	0.00
2	Ex_MHR2	0.25	0.00	255.90	0.42	0.00	3.75	255.64	0.16	0 12:04	0 00:00	0.00	0.00
3	Ex_MHR25	0.25	0.00	257.68	1.20	0.00	5.67	256.65	0.17	0 11:46	0 00:00	0.00	0.00
4	Ex_MHR26	0.25	0.00	257.88	1.24	0.00	4.87	256.84	0.20	0 11:46	0 00:00	0.00	0.00
5	Ex_MHR27	0.25	0.00	258.31	1.37	0.00	2.69	257.17	0.23	0 11:46	0 00:00	0.00	0.00
6	Ex_MHR28	1.35	1.35	259.07	1.70	0.00	0.23	257.64	0.27	0 12:02	0 00:00	0.00	0.00
7	Ex_MHR3	0.25	0.00	255.61	0.38	0.00	3.39	255.39	0.16	0 12:05	0 00:00	0.00	0.00
8	NorthWetland	0.47	0.47	252.00	0.00	0.00	6.00	252.00	0.00	0 00:00	0 00:00	0.00	0.00
9	Ravine_1	6.93	0.19	256.81	0.71	0.00	3.29	256.32	0.22	0 12:22	0 00:00	0.00	0.00
10	Ravine_2	7.73	0.84	253.82	0.82	0.00	3.18	253.29	0.29	0 12:32	0 00:00	0.00	0.00
11	Ravine_3	6.85	0.08	253.11	0.66	0.00	3.34	252.68	0.23	0 12:33	0 00:00	0.00	0.00
12	RH_1	4.38	4.38	271.61	4.01	0.00	0.09	268.59	0.99	0 12:01	0 00:00	0.00	0.00
13	RH_10	7.38	0.28	263.77	1.87	0.00	0.13	262.58	0.68	0 12:13	0 00:00	0.00	0.00
14	RH_11	6.59	0.09	262.49	2.16	0.00	0.06	261.06	0.73	0 12:21	0 00:00	0.00	0.00
15	RH_12	2.34	2.34	269.51	0.51	0.00	0.99	269.10	0.10	0 12:00	0 00:00	0.00	0.00
16	RH_13	2.47	0.19	264.71	0.71	0.00	1.79	264.17	0.17	0 12:01	0 00:00	0.00	0.00
17	RH_14	0.73	0.00	263.24	1.54	0.00	0.26	262.26	0.56	0 12:41	0 00:00	0.00	0.00
18	RH_15	0.90	0.20	260.76	1.38	0.00	0.24	259.92	0.54	0 12:55	0 00:00	0.00	0.00
19	RH_16	0.48	0.00	257.09	0.73	0.00	0.91	256.77	0.41	0 12:55	0 00:00	0.00	0.00
20	RH_17	1.51	0.45	257.69	1.27	0.00	0.31	257.08	0.66	0 12:24	0 00:00	0.00	0.00
21	RH_2	3.61	3.61	272.26	2.12	0.00	0.19	270.80	0.66	0 12:00	0 00:00	0.00	0.00
22	RH_3	7.51	0.00	269.98	2.91	0.00	0.27	267.96	0.89	0 12:05	0 00:00	0.00	0.00
23	RH_4	5.88	0.13	268.48	1.85	0.00	0.12	267.20	0.57	0 12:04	0 00:00	0.00	0.00
24	RH_5	1.69	1.69	271.89	1.54	0.00	0.21	270.77	0.42	0 12:01	0 00:00	0.00	0.00
25	RH_6	7.27	0.00	268.14	1.64	0.00	0.06	267.00	0.50	0 12:09	0 00:00	0.00	0.00
26	RH_7	0.00	0.00	272.00	0.00	0.00	1.50	272.00	0.00	0 00:00	0 00:00	0.00	0.00
27	RH_8	0.38	0.38	269.57	1.82	0.00	0.28	268.19	0.44	0 12:08	0 00:00	0.00	0.00
28	RH_9	0.36	0.11	265.52	1.52	0.00	0.28	264.42	0.42	0 12:21	0 00:00	0.00	0.00
29	WestOutfall	0.31	0.31	257.00	0.00	0.00	1.00	257.00	0.00	0 00:00	0 00:00	0.00	0.00
30	WestWetland	0.23	0.23	258.00	0.00	0.00	1.00	258.00	0.00	0 00:00	0 00:00	0.00	0.00

Channel Input

SN	Element ID	Length (m)	Inlet Invert Elevation (m)	Inlet Invert Offset (m)	Outlet Invert Elevation (m)	Outlet Invert Offset (m)	Total Drop (m)	Average Slope (%)	Shape	Height (m)	Width (m)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cms)	Flap Gate
1	Ex.STM_Overland	400.00	259.00	1.63	253.00	0.00	6.00	1.5000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
2	Link-34	270.00	271.40	3.80	269.65	2.58	1.75	0.6500	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
3	Link-35	50.00	272.15	2.01	269.65	2.58	2.50	5.0000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
4	Link-36	222.00	269.65	2.58	268.30	1.67	1.35	0.6100	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
5	Link-37	18.00	268.30	1.67	267.90	1.40	0.40	2.2200	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
6	Link-38	227.00	271.80	1.45	267.90	1.40	3.90	1.7200	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
7	Link-39	415.00	267.90	1.40	263.50	1.60	4.40	1.0600	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
8	Link-41	180.00	269.55	1.80	265.50	1.50	4.05	2.2500	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
9	Link-42	155.00	265.50	1.50	263.50	1.60	2.00	1.2900	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
10	Link-43	140.00	263.50	1.60	262.25	1.92	1.25	0.8900	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
11	Link-44	470.00	262.25	1.92	258.00	1.90	4.25	0.9000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
12	Link-45	195.00	263.20	1.50	260.70	1.32	2.50	1.2800	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
13	Link-46	280.00	260.70	1.32	258.00	1.90	2.70	0.9600	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
14	LowerRavine	124.00	253.00	0.00	252.45	0.00	0.55	0.4400	Trapezoidal	4.000	17.000	0.0320	0.5000	0.5000	0.0000	0.00	No
15	OutletRavine	45.00	252.45	0.00	252.00	0.00	0.45	1.0000	Trapezoidal	4.000	17.000	0.0320	0.5000	0.5000	0.0000	0.00	No
16	RH_C1	215.00	269.00	0.00	264.00	0.00	5.00	2.3300	Trapezoidal	1.500	7.000	0.0320	0.5000	0.5000	0.0000	0.00	No
17	RH_C2	60.00	264.00	0.00	263.50	1.50	0.50	0.8300	Trapezoidal	1.500	7.000	0.0320	0.5000	0.5000	0.0000	0.00	No
18	UpperRavine	553.00	256.10	0.00	253.00	0.00	3.10	0.5600	Trapezoidal	4.000	17.000	0.0320	0.5000	0.5000	0.0000	0.00	No

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
1	Ex.STM_Overland	0.86	0 12:02	10.09	0.09	0.23	28.99	0.18	0.61	0.00	0.00	
2	Link-34	3.57	0 12:01	6.63	0.54	0.75	6.00	0.24	0.84	0.00	0.03	
3	Link-35	3.40	0 12:00	18.43	0.18	1.10	0.76	0.19	0.66	0.00	0.12	
4	Link-36	5.10	0 12:05	6.43	0.79	1.05	3.52	0.24	0.81	0.00	0.10	
5	Link-37	4.95	0 12:06	12.28	0.40	1.36	0.22	0.20	0.70	0.00	0.06	
6	Link-38	1.43	0 12:01	10.80	0.13	0.75	5.04	0.15	0.52	0.00	0.05	
7	Link-39	6.01	0 12:09	8.48	0.71	1.22	5.67	0.25	0.83	0.00	0.08	
8	Link-41	0.11	0 12:08	12.36	0.01	0.32	9.38	0.02	0.07	0.00	0.07	
9	Link-42	0.14	0 12:21	9.36	0.02	0.07	36.90	0.15	0.49	0.00	0.01	
10	Link-43	5.75	0 12:14	7.79	0.74	1.21	1.93	0.24	0.81	0.00	0.17	
11	Link-44	4.67	0 12:21	7.84	0.60	1.13	6.93	0.21	0.69	0.00	0.16	
12	Link-45	0.32	0 12:41	9.33	0.03	0.40	8.13	0.05	0.16	0.00	0.07	
13	Link-46	0.39	0 12:55	8.09	0.05	0.42	11.11	0.05	0.15	0.00	0.14	
14	LowerRavine	6.81	0 12:32	157.98	0.04	1.50	1.38	0.74	0.19	0.00	0.51	
15	OutletRavine	6.85	0 12:33	237.22	0.03	1.92	0.39	0.60	0.15	0.00	0.76	
16	RH_C1	2.28	0 12:00	24.20	0.09	1.72	2.08	0.60	0.40	0.00	0.59	
17	RH_C2	2.34	0 12:01	14.49	0.16	1.60	0.63	0.62	0.43	0.00	0.66	
18	UpperRavine	6.98	0 12:22	177.61	0.04	1.58	5.83	0.75	0.19	0.00	0.44	

Pipe Input

SN	Element ID	Length (m)	Inlet Invert Elevation (m)	Inlet Invert Offset (m)	Outlet Invert Elevation (m)	Outlet Invert Offset (m)	Total Drop (m)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (m)	Pipe Width (m)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cms)	Flap Gate
1	Ex.STM_1	107.00	257.37	0.00	256.94	0.00	0.43	0.4000	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
2	Ex.STM_2	73.00	256.94	0.00	256.64	0.00	0.30	0.4100	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
3	Ex.STM_3	27.00	256.64	0.00	256.48	0.00	0.16	0.5900	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
4	Ex.STM_4	100.00	256.48	0.00	255.88	0.00	0.60	0.6000	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
5	Ex.STM_5	100.00	255.88	0.00	255.48	0.00	0.40	0.4000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
6	Ex.STM_6	50.00	255.48	0.00	255.23	0.00	0.25	0.5000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
7	Ex.STM_7	102.00	255.23	0.00	254.82	0.00	0.41	0.4000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
8	RH_A1	50.00	270.14	0.00	268.50	1.43	1.64	3.2800	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
9	RH_B1	227.00	270.35	0.00	266.50	0.00	3.85	1.7000	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
10	RH_C3	15.00	262.00	0.00	261.70	0.00	0.30	2.0000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
11	RH_C4	195.00	261.70	0.00	259.38	0.00	2.32	1.1900	CIRCULAR	0.530	0.530	0.0150	0.5000	0.5000	0.0000	0.00	No
12	RH_C5	274.00	259.38	0.00	256.36	0.00	3.02	1.1000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
13	RH_C6	6.00	256.36	0.00	256.24	0.14	0.12	2.0000	CIRCULAR	0.700	0.700	0.0130	0.5000	0.5000	0.0000	0.00	No
14	RH_D1	275.00	272.00	0.00	267.75	0.00	4.25	1.5500	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
15	RH_D2	180.00	267.75	0.00	264.00	0.00	3.75	2.0800	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
16	RH_D3	155.00	264.00	0.00	261.90	0.00	2.10	1.3500	CIRCULAR	0.380	0.380	0.0130	0.5000	0.5000	0.0000	0.00	No
17	RH_M1	270.00	267.60	0.00	267.07	0.00	0.53	0.2000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
18	RH_M2	222.00	267.07	0.00	266.63	0.00	0.44	0.2000	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
19	RH_M3	18.00	266.63	0.00	266.50	0.00	0.13	0.7200	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
20	RH_M4	415.00	266.50	0.00	261.90	0.00	4.60	1.1100	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
21	RH_M5	140.00	261.90	0.00	260.33	0.00	1.57	1.1200	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
22	RH_M6	464.00	260.33	0.00	256.42	0.00	3.91	0.8400	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
23	RH_M7	6.00	256.42	0.00	256.37	0.27	0.05	0.8300	CIRCULAR	1.000	1.000	0.0130	0.5000	0.5000	0.0000	0.00	No
24	West_Link	33.73	256.00	-1.00	257.00	0.00	-1.00	-2.9600	Dummy	0.000	0.000	0.0130	0.5000	0.5000	0.0000	0.00	No
25	WestWetland_Link	37.13	258.00	0.00	258.00	0.00	0.00	0.0000	Dummy	0.000	0.000	0.0130	0.5000	0.5000	0.0000	0.00	No
26	Wetland_Link	41.51	252.00	0.00	252.00	0.00	0.00	0.0000	Dummy	0.000	0.000	0.0130	0.5000	0.5000	0.0000	0.00	No

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	Ex.STM_1	0.25	0 12:02	0.18	1.37	1.55	1.15	0.45	1.00	78.00	0.74	SURCHARGED
2	Ex.STM_2	0.25	0 12:02	0.18	1.35	1.55	0.78	0.45	1.00	73.00	0.77	SURCHARGED
3	Ex.STM_3	0.25	0 12:02	0.22	1.12	1.55	0.29	0.45	1.00	70.00	0.88	SURCHARGED
4	Ex.STM_4	0.25	0 12:02	0.22	1.12	1.59	1.05	0.44	0.99	0.00	0.92	> CAPACITY
5	Ex.STM_5	0.25	0 12:03	0.27	0.91	1.33	1.25	0.43	0.82	0.00	0.85	Calculated
6	Ex.STM_6	0.25	0 12:04	0.30	0.81	1.40	0.60	0.40	0.77	0.00	0.89	Calculated
7	Ex.STM_7	0.25	0 12:05	0.39	0.63	1.44	1.18	0.35	0.59	0.00	0.91	Calculated
8	RH_A1	0.23	0 11:42	0.18	1.31	3.26	0.26	0.30	1.00	284.00	1.49	SURCHARGED
9	RH_B1	0.14	0 11:41	0.13	1.10	1.95	1.94	0.30	1.00	219.00	0.62	SURCHARGED
10	RH_C3	0.73	0 12:38	0.87	0.84	2.57	0.10	0.60	1.00	305.00	0.91	SURCHARGED
11	RH_C4	0.42	0 11:55	0.41	1.04	2.09	1.56	0.52	1.00	329.00	0.85	SURCHARGED
12	RH_C5	0.48	0 12:55	0.45	1.06	2.22	2.06	0.52	1.00	335.00	0.63	SURCHARGED
13	RH_C6	0.48	0 12:55	1.31	0.37	1.64	0.06	0.63	0.91	0.00	0.91	Calculated
14	RH_D1	0.00	0 00:00	0.12	0.00	0.00		0.15	0.50	0.00	0.00	Calculated
15	RH_D2	0.15	0 11:53	0.14	1.04	2.14	1.40	0.30	1.00	212.00	1.18	SURCHARGED
16	RH_D3	0.19	0 14:31	0.20	0.92	1.71	1.51	0.38	1.00	239.00	0.34	SURCHARGED
17	RH_M1	0.50	0 11:44	0.27	1.84	1.77	2.54	0.60	1.00	255.00	0.30	SURCHARGED
18	RH_M2	0.80	0 11:45	0.37	2.13	2.23	1.66	0.68	1.00	209.00	0.52	SURCHARGED
19	RH_M3	1.05	0 11:58	0.95	1.11	2.37	0.13	0.75	1.00	202.00	0.79	SURCHARGED
20	RH_M4	0.91	0 11:46	0.89	1.02	2.59	2.67	0.68	1.00	205.00	0.98	SURCHARGED
21	RH_M5	1.04	0 11:55	0.89	1.16	2.91	0.80	0.68	1.00	263.00	1.01	SURCHARGED
22	RH_M6	1.10	0 12:21	1.02	1.07	2.48	3.12	0.75	1.00	261.00	0.57	SURCHARGED
23	RH_M7	1.51	0 12:24	2.19	0.69	2.23	0.04	0.81	0.81	0.00	0.81	Calculated
24	West_Link	0.31	0 12:00	0.00	0.04	0.00		0.75	0.19	0.00	0.44	Calculated
25	WestWetland_Link	0.23	0 12:00	0.00	0.04	0.00		0.75	0.19	0.00	0.44	Calculated
26	Wetland_Link	0.47	0 12:06	0.00	0.04	0.00		0.75	0.19	0.00	0.44	Calculated

Project Description

File Name	18010_Pre-Development Rev.0.SPF
Description	I:\ACAD Projects\2018\18010\03-Ref\18010_Pre-Dev. Storm Parcels.dwg
	I:\ACAD Projects\2018\18010\03-Ref\18010_Pre-Dev. Storm Parcels.dwg

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	00:00:00	0:00:00
End Analysis On	00:00:00	0:00:00
Start Reporting On	00:00:00	0:00:00
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	31
Nodes	36
Junctions	30
Outfalls	5
Flow Diversions	0
Inlets	0
Storage Nodes	1
Links	44
Channels	18
Pipes	26
Pumps	0
Orifices	0
Weirs	0
Outlets	0
Pollutants	0
Land Uses	0

Subbasin Summary

SN	Subbasin ID	Area (ha)	Impervious Area (%)	Weighted Curve Number	Average Slope (%)	Equivalent Width (m)	Impervious Area Manning's Roughness	Pervious Area Manning's Roughness	Total Rainfall (mm)	Total Infiltration (mm)	Total Runoff (mm)	Total Runoff Volume (ha-mm)	Peak Runoff (cms)	Time of Concentration (days hh:mm:ss)
1	{Survey Site}.Standard : 10	0.92	2.00	67.00	2.0000	125.00	0.0130	0.2000	113.99	63.1380	49.61	45.54	0.10	0 01:00:04
2	{Survey Site}.Standard : 11	21.38	2.00	67.00	2.0000	360.00	0.0130	0.2000	113.99	60.6140	55.73	1191.54	0.61	0 03:30:35
3	{Survey Site}.Standard : 12	0.71	5.00	67.00	2.0000	90.00	0.0130	0.2000	113.99	61.2320	51.50	36.57	0.08	0 01:01:33
4	{Survey Site}.Standard : 13	1.65	45.00	71.05	2.0000	220.00	0.0130	0.2000	113.99	32.2840	80.47	132.62	0.51	0 00:42:59
5	{Survey Site}.Standard : 14	4.32	2.00	67.00	2.0000	350.00	0.0130	0.2000	113.99	63.5310	49.21	212.57	0.34	0 01:22:02
6	{Survey Site}.Standard : 16	6.33	2.00	67.00	2.0000	215.00	0.0130	0.2000	113.99	64.5690	48.17	304.85	0.27	0 02:18:12
7	{Survey Site}.Standard : 17	0.36	5.00	67.00	5.0000	20.00	0.0130	0.2000	113.99	61.4770	51.25	18.24	0.03	0 01:16:12
8	{Survey Site}.Standard : 18	14.15	5.00	48.00	10.0000	300.00	0.0130	0.2000	113.99	82.1330	30.61	433.25	0.52	0 01:51:04
9	{Survey Site}.Standard : 19	0.26	2.00	67.00	2.0000	90.00	0.0130	0.2000	113.99	62.7170	50.08	13.22	0.05	0 00:34:38
10	{Survey Site}.Standard : 2	20.86	45.00	71.05	2.0000	300.00	0.0130	0.2000	113.99	33.4560	79.29	1654.24	4.23	0 02:43:41
11	{Survey Site}.Standard : 20	11.33	2.00	36.00	0.5000	240.00	0.0130	0.2000	113.99	90.1970	18.85	213.49	0.12	0 04:38:02
12	{Survey Site}.Standard : 21	4.24	2.00	67.00	2.0000	155.00	0.0130	0.2000	113.99	64.4570	48.28	204.57	0.19	0 02:12:11
13	{Survey Site}.Standard : 22	23.21	2.00	67.00	2.0000	330.00	0.0130	0.2000	113.99	60.0040	53.67	1245.88	0.59	0 03:53:04
14	{Survey Site}.Standard : 23	2.20	5.00	48.00	10.0000	100.00	0.0130	0.2000	113.99	81.3380	31.38	68.98	0.11	0 01:10:14
15	{Survey Site}.Standard : 24	9.04	2.00	67.00	2.0000	275.00	0.0130	0.2000	113.99	64.7380	47.99	433.89	0.36	0 02:27:41
16	{Survey Site}.Standard : 25	8.64	2.00	67.00	5.0000	390.00	0.0130	0.2000	113.99	63.6430	49.09	424.18	0.63	0 01:28:31
17	{Survey Site}.Standard : 26	1.12	45.00	71.05	2.0000	40.00	0.0130	0.2000	113.99	32.7660	80.02	89.94	0.28	0 01:35:02
18	{Survey Site}.Standard : 27	0.43	45.00	71.05	2.0000	60.00	0.0130	0.2000	113.99	32.2700	80.48	34.37	0.13	0 00:41:41
19	{Survey Site}.Standard : 28	0.12	45.00	71.05	2.0000	40.00	0.0130	0.2000	113.99	32.1270	80.59	9.91	0.04	0 00:25:11
20	{Survey Site}.Standard : 29	7.86	45.00	71.05	2.0000	110.00	0.0130	0.2000	113.99	33.4820	79.26	623.12	1.58	0 02:46:24
21	{Survey Site}.Standard : 3	25.14	45.00	71.05	2.0000	370.00	0.0130	0.2000	113.99	33.4300	79.31	1993.85	5.13	0 02:41:25
22	{Survey Site}.Standard : 30	20.00	30.00	63.70	2.0000	225.00	0.0130	0.2000	113.99	50.2530	62.50	1249.67	2.73	0 03:39:09
23	{Survey Site}.Standard : 31	5.54	5.00	57.00	2.0000	245.00	0.0130	0.2000	113.99	73.5620	39.19	217.25	0.26	0 01:55:50
24	{Survey Site}.Standard : 32	3.34	2.00	67.00	2.0000	95.00	0.0130	0.2000	113.99	64.8500	47.87	159.65	0.13	0 02:33:36
25	{Survey Site}.Standard : 33	7.71	2.00	67.00	2.0000	215.00	0.0130	0.2000	113.99	64.9060	47.84	368.62	0.29	0 02:35:32
26	{Survey Site}.Standard : 4	3.13	2.00	67.00	2.0000	155.00	0.0130	0.2000	113.99	64.0360	48.69	152.45	0.18	0 01:50:15
27	{Survey Site}.Standard : 5	10.46	45.00	71.05	0.5000	235.00	0.0130	0.2000	113.99	33.5730	79.00	826.22	1.98	0 03:09:49
28	{Survey Site}.Standard : 6	11.54	2.00	67.00	2.0000	280.00	0.0130	0.2000	113.99	65.1590	47.57	549.04	0.38	0 02:49:08
29	{Survey Site}.Standard : 7	10.98	5.00	67.00	2.0000	225.00	0.0130	0.2000	113.99	63.4360	49.29	540.91	0.48	0 03:03:39
30	{Survey Site}.Standard : 8	3.30	2.00	67.00	2.0000	125.00	0.0130	0.2000	113.99	64.4010	48.33	159.69	0.15	0 02:09:33
31	{Survey Site}.Standard : 9	3.53	2.00	67.00	2.0000	100.00	0.0130	0.2000	113.99	64.8780	47.86	169.05	0.13	0 02:34:10

Node Summary

SN	Element ID	Element Type	Invert Elevation (m)	Ground/Rim (Max) Elevation (m)	Initial Water Elevation (m)	Surcharge Elevation (m)	Ponded Area (m^2)	Peak Inflow (cms)	Max HGL Elevation Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ha-mm)	Total Time Flooded (min)
1	Ex_MHR1	Junction	255.88	262.50	0.00	0.00	0.00	0.25	256.32	0.00	6.18	0 00:00	0.00	0.00
2	Ex_MHR2	Junction	255.48	259.65	0.00	0.00	0.00	0.25	255.90	0.00	3.75	0 00:00	0.00	0.00
3	Ex_MHR25	Junction	256.48	263.35	0.00	0.00	0.00	0.25	257.54	0.00	5.81	0 00:00	0.00	0.00
4	Ex_MHR26	Junction	256.64	262.75	0.00	0.00	0.00	0.25	257.91	0.00	4.84	0 00:00	0.00	0.00
5	Ex_MHR27	Junction	256.94	261.00	0.00	0.00	0.00	0.25	258.39	0.00	2.61	0 00:00	0.00	0.00
6	Ex_MHR28	Junction	257.37	259.30	0.00	0.00	0.00	1.58	259.08	0.00	0.22	0 00:00	0.00	0.00
7	Ex_MHR3	Junction	255.23	259.00	0.00	0.00	0.00	0.25	255.61	0.00	3.39	0 00:00	0.00	0.00
8	NorthWetland	Junction	252.00	258.00	0.00	0.00	0.00	0.65	252.00	0.00	6.00	0 00:00	0.00	0.00
9	Ravine_1	Junction	256.10	260.10	0.00	0.00	0.00	9.10	256.93	0.00	3.17	0 00:00	0.00	0.00
10	Ravine_2	Junction	253.00	257.00	0.00	0.00	0.00	10.20	253.96	0.00	3.04	0 00:00	0.00	0.00
11	Ravine_3	Junction	252.45	256.45	0.00	0.00	0.00	9.10	253.24	0.00	3.21	0 00:00	0.00	0.00
12	RH_1	Junction	267.60	271.70	0.00	0.00	0.00	5.13	271.63	0.00	0.07	0 00:00	0.00	0.00
13	RH_10	Junction	261.90	263.90	0.00	0.00	0.00	8.79	263.84	0.00	0.06	0 00:00	0.00	0.00
14	RH_11	Junction	260.33	262.55	0.00	0.00	0.00	8.15	262.53	0.00	0.02	0 00:00	0.00	0.00
15	RH_12	Junction	269.00	270.50	0.00	0.00	0.00	2.73	269.55	0.00	0.95	0 00:00	0.00	0.00
16	RH_13	Junction	264.00	266.50	0.00	0.00	0.00	2.92	264.77	0.00	1.73	0 00:00	0.00	0.00
17	RH_14	Junction	261.70	263.50	0.00	0.00	0.00	0.89	263.25	0.00	0.25	0 00:00	0.00	0.00
18	RH_15	Junction	259.38	261.00	0.00	0.00	0.00	1.13	260.77	0.00	0.23	0 00:00	0.00	0.00
19	RH_16	Junction	256.36	258.00	0.00	0.00	0.00	0.48	257.09	0.00	0.91	0 00:00	0.00	0.00
20	RH_17	Junction	256.42	258.00	0.00	0.00	0.00	1.68	257.80	0.00	0.20	0 00:00	0.00	0.00
21	RH_2	Junction	270.14	272.45	0.00	0.00	0.00	4.23	272.27	0.00	0.18	0 00:00	0.00	0.00
22	RH_3	Junction	267.07	270.25	0.00	0.00	0.00	8.84	270.23	0.00	0.02	0 00:00	0.00	0.00
23	RH_4	Junction	266.63	268.60	0.00	0.00	0.00	6.76	268.50	0.00	0.10	0 00:00	0.00	0.00
24	RH_5	Junction	270.35	272.10	0.00	0.00	0.00	1.98	271.90	0.00	0.20	0 00:00	0.00	0.00
25	RH_6	Junction	266.50	268.20	0.00	0.00	0.00	8.29	268.17	0.00	0.03	0 00:00	0.00	0.00
26	RH_7	Junction	272.00	273.50	0.00	0.00	0.00	0.00	272.00	0.00	1.50	0 00:00	0.00	0.00
27	RH_8	Junction	267.75	269.85	0.00	0.00	0.00	0.48	269.58	0.00	0.27	0 00:00	0.00	0.00
28	RH_9	Junction	264.00	265.80	0.00	0.00	0.00	0.52	265.54	0.00	0.26	0 00:00	0.00	0.00
29	WestOutfall	Junction	257.00	258.00	0.00	0.00	0.00	0.43	257.00	0.00	1.00	0 00:00	0.00	0.00
30	WestWetland	Junction	258.00	259.00	0.00	0.00	0.00	0.30	258.00	0.00	1.00	0 00:00	0.00	0.00
31	North_Wetland	Outfall	252.00					0.65	252.00					
32	Outfall	Outfall	252.00					9.10	252.65					
33	TinerEstatesSTM	Outfall	254.82					0.25	255.14					
34	West_Outfall	Outfall	257.00					0.43	257.00					
35	West_Wetland	Outfall	258.00					0.30	258.00					
36	Ex_SE_Pond	Storage Node	262.00	266.00	0.00		0.00	3.23	264.07				0.00	0.00

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length (m)	Inlet Invert Elevation (m)	Outlet Invert Elevation (m)	Average Slope (%)	Diameter or Height (m)	Manning's Roughness	Peak Flow (cms)	Design Flow Capacity (cms)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (m/sec)	Peak Flow Depth (m)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Reported Condition
1	Ex.STM_1	Pipe	Ex_MHR28	Ex_MHR27	107.00	257.37	256.94	0.4000	0.450	0.0130	0.25	0.18	1.37	1.55	0.45	1.00	98.00	SURCHARGED
2	Ex.STM_2	Pipe	Ex_MHR27	Ex_MHR26	73.00	256.94	256.64	0.4100	0.450	0.0130	0.25	0.18	1.35	1.55	0.45	1.00	90.00	SURCHARGED
3	Ex.STM_3	Pipe	Ex_MHR26	Ex_MHR25	27.00	256.64	256.48	0.5900	0.450	0.0130	0.25	0.22	1.13	1.55	0.45	1.00	86.00	SURCHARGED
4	Ex.STM_4	Pipe	Ex_MHR25	Ex_MHR1	100.00	256.48	255.88	0.6000	0.450	0.0130	0.25	0.22	1.12	1.59	0.45	0.99	0.00	> CAPACITY
5	Ex.STM_5	Pipe	Ex_MHR1	Ex_MHR2	100.00	255.88	255.48	0.4000	0.525	0.0130	0.25	0.27	0.91	1.33	0.43	0.82	0.00	Calculated
6	Ex.STM_6	Pipe	Ex_MHR2	Ex_MHR3	50.00	255.48	255.23	0.5000	0.525	0.0130	0.25	0.30	0.81	1.40	0.40	0.77	0.00	Calculated
7	Ex.STM_7	Pipe	Ex_MHR3	TinerEstatesSTM	102.00	255.23	254.82	0.4000	0.600	0.0130	0.25	0.39	0.63	1.44	0.35	0.59	0.00	Calculated
8	RH_A1	Pipe	RH_2	RH_3	50.00	270.14	268.50	3.2800	0.300	0.0130	0.23	0.18	1.31	3.26	0.30	1.00	330.00	SURCHARGED
9	RH_B1	Pipe	RH_5	RH_6	227.00	270.35	266.50	1.7000	0.300	0.0130	0.14	0.13	1.09	1.95	0.30	1.00	262.00	SURCHARGED
10	RH_C3	Pipe	Ex_SE_Pond	RH_14	15.00	262.00	261.70	2.0000	0.600	0.0130	0.89	0.87	1.03	3.15	0.60	1.00	356.00	SURCHARGED
11	RH_C4	Pipe	RH_14	RH_15	195.00	261.70	259.38	1.1900	0.525	0.0150	0.42	0.41	1.03	2.07	0.52	1.00	381.00	SURCHARGED
12	RH_C5	Pipe	RH_15	RH_16	274.00	259.38	256.36	1.1000	0.525	0.0130	0.48	0.45	1.07	2.22	0.52	1.00	387.00	SURCHARGED
13	RH_C6	Pipe	RH_16	Ravine_1	6.00	256.36	256.24	2.0000	0.700	0.0130	0.48	1.31	0.37	1.64	0.69	0.99	0.00	Calculated
14	RH_D1	Pipe	RH_7	RH_8	275.00	272.00	267.75	1.5500	0.300	0.0130	0.00	0.12	0.00	0.00	0.15	0.50	0.00	Calculated
15	RH_D2	Pipe	RH_8	RH_9	180.00	267.75	264.00	2.0800	0.300	0.0130	0.15	0.14	1.04	2.11	0.30	1.00	260.00	SURCHARGED
16	RH_D3	Pipe	RH_9	RH_10	155.00	264.00	261.90	1.3500	0.375	0.0130	0.19	0.20	0.93	1.71	0.38	1.00	285.00	SURCHARGED
17	RH_M1	Pipe	RH_1	RH_3	270.00	267.60	267.07	0.2000	0.600	0.0130	0.49	0.27	1.81	1.74	0.60	1.00	297.00	SURCHARGED
18	RH_M2	Pipe	RH_3	RH_4	222.00	267.07	266.63	0.2000	0.675	0.0130	0.80	0.37	2.13	2.23	0.68	1.00	243.00	SURCHARGED
19	RH_M3	Pipe	RH_4	RH_6	18.00	266.63	266.50	0.7200	0.750	0.0130	1.05	0.95	1.11	2.37	0.75	1.00	235.00	SURCHARGED
20	RH_M4	Pipe	RH_6	RH_10	415.00	266.50	261.90	1.1100	0.675	0.0130	0.90	0.89	1.02	2.57	0.68	1.00	238.00	SURCHARGED
21	RH_M5	Pipe	RH_10	RH_11	140.00	261.90	260.33	1.1200	0.675	0.0130	1.03	0.89	1.16	2.90	0.68	1.00	302.00	SURCHARGED
22	RH_M6	Pipe	RH_11	RH_17	464.00	260.33	256.42	0.8400	0.750	0.0130	1.09	1.02	1.06	2.46	0.75	1.00	299.00	SURCHARGED
23	RH_M7	Pipe	RH_17	Ravine_1	6.00	256.42	256.37	0.8300	1.000	0.0130	1.68	2.19	0.77	2.41	0.83	0.83	0.00	Calculated
24	West_Link	Pipe	WestOutfall	West_Outfall	33.73	256.00	257.00	-2.9600	0.000	0.0130	0.43	0.00	0.05	0.00	0.88	0.22	0.00	Calculated
25	WestWetland_Link	Pipe	WestWetland	West_Wetland	37.13	258.00	258.00	0.0000	0.000	0.0130	0.31	0.00	0.05	0.00	0.88	0.22	0.00	Calculated
26	Wetland_Link	Pipe	NorthWetland	North_Wetland	41.51	252.00	252.00	0.0000	0.000	0.0130	0.65	0.00	0.05	0.00	0.88	0.22	0.00	Calculated
27	Ex.STM_Overland	Channel	Ex_MHR28	Ravine_2	400.00	259.00	253.00	1.5000	0.300	0.0320	1.08	10.09	0.11	0.29	0.19	0.63	0.00	
28	Link-34	Channel	RH_1	RH_3	270.00	271.40	269.65	0.6500	0.300	0.0320	4.29	6.63	0.65	0.81	0.26	0.88	0.00	
29	Link-35	Channel	RH_2	RH_3	50.00	272.15	269.65	5.0000	0.300	0.0320	4.02	18.43	0.22	1.10	0.21	0.70	0.00	
30	Link-36	Channel	RH_3	RH_4	222.00	269.65	268.30	0.6100	0.300	0.0320	5.89	6.43	0.92	1.16	0.25	0.84	0.00	
31	Link-37	Channel	RH_4	RH_6	18.00	268.30	267.90	2.2200	0.300	0.0320	5.85	12.28	0.48	1.38	0.23	0.78	0.00	
32	Link-38	Channel	RH_5	RH_6	227.00	271.80	267.90	1.7200	0.300	0.0320	1.73	10.80	0.16	0.75	0.17	0.59	0.00	
33	Link-39	Channel	RH_6	RH_10	415.00	267.90	263.50	1.0600	0.300	0.0320	7.16	8.48	0.84	1.31	0.28	0.94	0.00	
34	Link-41	Channel	RH_8	RH_9	180.00	269.55	265.50	2.2500	0.300	0.0320	0.23	12.36	0.02	0.42	0.03	0.10	0.00	
35	Link-42	Channel	RH_9	RH_10	155.00	265.50	263.50	1.2900	0.300	0.0320	0.29	9.36	0.03	0.12	0.17	0.56	0.00	
36	Link-43	Channel	RH_10	RH_11	140.00	263.50	262.25	0.8900	0.300	0.0320	7.29	7.79	0.94	1.31	0.28	0.96	0.00	
37	Link-44	Channel	RH_11	Ravine_1	470.00	262.25	258.00	0.9000	0.300	0.0320	6.39	7.84	0.82	1.27	0.25	0.84	0.00	
38	Link-45	Channel	RH_14	RH_15	195.00	263.20	260.70	1.2800	0.300	0.0320	0.49	9.33	0.05	0.45	0.06	0.21	0.00	
39	Link-46	Channel	RH_15	Ravine_1	280.00	260.70	258.00	0.9600	0.300	0.0320	0.62	8.09	0.08	0.52	0.06	0.20	0.00	
40	LowerRavine	Channel	Ravine_2	Ravine_3	124.00	253.00	252.45	0.4400	4.000	0.0320	9.05	157.98	0.06	1.63	0.88	0.22	0.00	
41	OutletRavine	Channel	Ravine_3	Outfall	45.00	252.45	252.00	1.0000	4.000	0.0320	9.10	237.22	0.04	2.08	0.72	0.18	0.00	
42	RH_C1	Channel	RH_12	RH_13	215.00	269.00	264.00	2.3300	1.500	0.0320	2.66	24.20	0.11	1.78	0.65	0.44	0.00	
43	RH_C2	Channel	RH_13	Ex_SE_Pond	60.00	264.00	263.50	0.8300	1.500	0.0320	2.78	14.49	0.19	1.67	0.67	0.46	0.00	
44	UpperRavine	Channel	Ravine_1	Ravine_2	553.00	256.10	253.00	0.5600	4.000	0.0320	9.10	177.61	0.05	1.71	0.88	0.22	0.00	

Junction Input

SN	Element ID	Invert Elevation (m)	Ground/Rim (Max) Elevation (m)	Ground/Rim (Max) Offset (m)	Initial Water Elevation (m)	Initial Water Depth (m)	Surcharge Elevation (m)	Surcharge Depth (m)	Ponded Area (m²)	Minimum Pipe Cover (m)
1	Ex_MHR1	255.88	262.50	6.62	0.00	-255.88	0.00	-262.50	0.00	0.00
2	Ex_MHR2	255.48	259.65	4.17	0.00	-255.48	0.00	-259.65	0.00	0.00
3	Ex_MHR25	256.48	263.35	6.87	0.00	-256.48	0.00	-263.35	0.00	0.00
4	Ex_MHR26	256.64	262.75	6.11	0.00	-256.64	0.00	-262.75	0.00	0.00
5	Ex_MHR27	256.94	261.00	4.06	0.00	-256.94	0.00	-261.00	0.00	0.00
6	Ex_MHR28	257.37	259.30	1.93	0.00	-257.37	0.00	-259.30	0.00	0.00
7	Ex_MHR3	255.23	259.00	3.77	0.00	-255.23	0.00	-259.00	0.00	0.00
8	NorthWetland	252.00	258.00	6.00	0.00	-252.00	0.00	-258.00	0.00	0.00
9	Ravine_1	256.10	260.10	4.00	0.00	-256.10	0.00	-260.10	0.00	0.00
10	Ravine_2	253.00	257.00	4.00	0.00	-253.00	0.00	-257.00	0.00	0.00
11	Ravine_3	252.45	256.45	4.00	0.00	-252.45	0.00	-256.45	0.00	0.00
12	RH_1	267.60	271.70	4.10	0.00	-267.60	0.00	-271.70	0.00	0.00
13	RH_10	261.90	263.90	2.00	0.00	-261.90	0.00	-263.90	0.00	0.00
14	RH_11	260.33	262.55	2.22	0.00	-260.33	0.00	-262.55	0.00	0.00
15	RH_12	269.00	270.50	1.50	0.00	-269.00	0.00	-270.50	0.00	0.00
16	RH_13	264.00	266.50	2.50	0.00	-264.00	0.00	-266.50	0.00	0.00
17	RH_14	261.70	263.50	1.80	0.00	-261.70	0.00	-263.50	0.00	0.00
18	RH_15	259.38	261.00	1.62	0.00	-259.38	0.00	-261.00	0.00	0.00
19	RH_16	256.36	258.00	1.64	0.00	-256.36	0.00	-258.00	0.00	0.00
20	RH_17	256.42	258.00	1.58	0.00	-256.42	0.00	-258.00	0.00	0.00
21	RH_2	270.14	272.45	2.31	0.00	-270.14	0.00	-272.45	0.00	0.00
22	RH_3	267.07	270.25	3.18	0.00	-267.07	0.00	-270.25	0.00	0.00
23	RH_4	266.63	268.60	1.97	0.00	-266.63	0.00	-268.60	0.00	0.00
24	RH_5	270.35	272.10	1.75	0.00	-270.35	0.00	-272.10	0.00	0.00
25	RH_6	266.50	268.20	1.70	0.00	-266.50	0.00	-268.20	0.00	0.00
26	RH_7	272.00	273.50	1.50	0.00	-272.00	0.00	-273.50	0.00	0.00
27	RH_8	267.75	269.85	2.10	0.00	-267.75	0.00	-269.85	0.00	0.00
28	RH_9	264.00	265.80	1.80	0.00	-264.00	0.00	-265.80	0.00	0.00
29	WestOutfall	257.00	258.00	1.00	0.00	-257.00	0.00	-258.00	0.00	0.00
30	WestWetland	258.00	259.00	1.00	0.00	-258.00	0.00	-259.00	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)	Total Time Flooded (min)
1	Ex_MHR1	0.25	0.00	256.32	0.44	0.00	6.18	256.06	0.18	0 12:03	0 00:00	0.00	0.00
2	Ex_MHR2	0.25	0.00	255.90	0.42	0.00	3.75	255.65	0.17	0 12:04	0 00:00	0.00	0.00
3	Ex_MHR25	0.25	0.00	257.54	1.06	0.00	5.81	256.67	0.19	0 11:44	0 00:00	0.00	0.00
4	Ex_MHR26	0.25	0.00	257.91	1.27	0.00	4.84	256.86	0.22	0 11:44	0 00:00	0.00	0.00
5	Ex_MHR27	0.25	0.00	258.39	1.45	0.00	2.61	257.20	0.26	0 11:44	0 00:00	0.00	0.00
6	Ex_MHR28	1.58	1.58	259.08	1.71	0.00	0.22	257.67	0.30	0 12:02	0 00:00	0.00	0.00
7	Ex_MHR3	0.25	0.00	255.61	0.38	0.00	3.39	255.39	0.16	0 12:05	0 00:00	0.00	0.00
8	NorthWetland	0.65	0.65	252.00	0.00	0.00	6.00	252.00	0.00	0 00:00	0 00:00	0.00	0.00
9	Ravine_1	9.10	0.27	256.93	0.83	0.00	3.17	256.35	0.25	0 12:21	0 00:00	0.00	0.00
10	Ravine_2	10.20	1.11	253.96	0.96	0.00	3.04	253.32	0.32	0 12:30	0 00:00	0.00	0.00
11	Ravine_3	9.10	0.11	253.24	0.79	0.00	3.21	252.70	0.25	0 12:30	0 00:00	0.00	0.00
12	RH_1	5.13	5.13	271.63	4.03	0.00	0.07	268.70	1.10	0 12:01	0 00:00	0.00	0.00
13	RH_10	8.79	0.38	263.84	1.94	0.00	0.06	262.62	0.72	0 12:14	0 00:00	0.00	0.00
14	RH_11	8.15	0.13	262.53	2.20	0.00	0.02	261.12	0.79	0 12:20	0 00:00	0.00	0.00
15	RH_12	2.73	2.73	269.55	0.55	0.00	0.95	269.11	0.11	0 12:00	0 00:00	0.00	0.00
16	RH_13	2.92	0.26	264.77	0.77	0.00	1.73	264.18	0.18	0 12:01	0 00:00	0.00	0.00
17	RH_14	0.89	0.00	263.25	1.55	0.00	0.25	262.32	0.62	0 12:43	0 00:00	0.00	0.00
18	RH_15	1.13	0.29	260.77	1.39	0.00	0.23	259.96	0.58	0 12:50	0 00:00	0.00	0.00
19	RH_16	0.48	0.00	257.09	0.73	0.00	0.91	256.79	0.43	0 12:50	0 00:00	0.00	0.00
20	RH_17	1.68	0.61	257.80	1.38	0.00	0.20	257.13	0.71	0 12:24	0 00:00	0.00	0.00
21	RH_2	4.23	4.23	272.27	2.13	0.00	0.18	270.86	0.72	0 12:00	0 00:00	0.00	0.00
22	RH_3	8.84	0.00	270.23	3.16	0.00	0.02	268.03	0.96	0 12:05	0 00:00	0.00	0.00
23	RH_4	6.76	0.18	268.50	1.87	0.00	0.10	267.25	0.62	0 12:05	0 00:00	0.00	0.00
24	RH_5	1.98	1.98	271.90	1.55	0.00	0.20	270.82	0.47	0 12:01	0 00:00	0.00	0.00
25	RH_6	8.29	0.00	268.17	1.67	0.00	0.03	267.04	0.54	0 12:07	0 00:00	0.00	0.00
26	RH_7	0.00	0.00	272.00	0.00	0.00	1.50	272.00	0.00	0 00:00	0 00:00	0.00	0.00
27	RH_8	0.48	0.48	269.58	1.83	0.00	0.27	268.27	0.52	0 12:06	0 00:00	0.00	0.00
28	RH_9	0.52	0.15	265.54	1.54	0.00	0.26	264.48	0.48	0 12:14	0 00:00	0.00	0.00
29	WestOutfall	0.43	0.43	257.00	0.00	0.00	1.00	257.00	0.00	0 00:00	0 00:00	0.00	0.00
30	WestWetland	0.30	0.30	258.00	0.00	0.00	1.00	258.00	0.00	0 00:00	0 00:00	0.00	0.00

Channel Input

SN	Element ID	Length (m)	Inlet Invert Elevation (m)	Inlet Invert Offset (m)	Outlet Invert Elevation (m)	Outlet Invert Offset (m)	Total Drop (m)	Average Slope (%)	Shape	Height (m)	Width (m)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cms)	Flap Gate
1	Ex.STM_Overland	400.00	259.00	1.63	253.00	0.00	6.00	1.5000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
2	Link-34	270.00	271.40	3.80	269.65	2.58	1.75	0.6500	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
3	Link-35	50.00	272.15	2.01	269.65	2.58	2.50	5.0000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
4	Link-36	222.00	269.65	2.58	268.30	1.67	1.35	0.6100	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
5	Link-37	18.00	268.30	1.67	267.90	1.40	0.40	2.2200	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
6	Link-38	227.00	271.80	1.45	267.90	1.40	3.90	1.7200	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
7	Link-39	415.00	267.90	1.40	263.50	1.60	4.40	1.0600	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
8	Link-41	180.00	269.55	1.80	265.50	1.50	4.05	2.2500	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
9	Link-42	155.00	265.50	1.50	263.50	1.60	2.00	1.2900	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
10	Link-43	140.00	263.50	1.60	262.25	1.92	1.25	0.8900	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
11	Link-44	470.00	262.25	1.92	258.00	1.90	4.25	0.9000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
12	Link-45	195.00	263.20	1.50	260.70	1.32	2.50	1.2800	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
13	Link-46	280.00	260.70	1.32	258.00	1.90	2.70	0.9600	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
14	LowerRavine	124.00	253.00	0.00	252.45	0.00	0.55	0.4400	Trapezoidal	4.000	17.000	0.0320	0.5000	0.5000	0.0000	0.00	No
15	OutletRavine	45.00	252.45	0.00	252.00	0.00	0.45	1.0000	Trapezoidal	4.000	17.000	0.0320	0.5000	0.5000	0.0000	0.00	No
16	RH_C1	215.00	269.00	0.00	264.00	0.00	5.00	2.3300	Trapezoidal	1.500	7.000	0.0320	0.5000	0.5000	0.0000	0.00	No
17	RH_C2	60.00	264.00	0.00	263.50	1.50	0.50	0.8300	Trapezoidal	1.500	7.000	0.0320	0.5000	0.5000	0.0000	0.00	No
18	UpperRavine	553.00	256.10	0.00	253.00	0.00	3.10	0.5600	Trapezoidal	4.000	17.000	0.0320	0.5000	0.5000	0.0000	0.00	No

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
1	Ex.STM_Overland	1.08	0 12:02	10.09	0.11	0.29	22.99	0.19	0.63	0.00	0.01	
2	Link-34	4.29	0 12:01	6.63	0.65	0.81	5.56	0.26	0.88	0.00	0.03	
3	Link-35	4.02	0 12:00	18.43	0.22	1.10	0.76	0.21	0.70	0.00	0.14	
4	Link-36	5.89	0 12:05	6.43	0.92	1.16	3.19	0.25	0.84	0.00	0.11	
5	Link-37	5.85	0 12:06	12.28	0.48	1.38	0.22	0.23	0.78	0.00	0.08	
6	Link-38	1.73	0 12:01	10.80	0.16	0.75	5.04	0.17	0.59	0.00	0.06	
7	Link-39	7.16	0 12:08	8.48	0.84	1.31	5.28	0.28	0.94	0.00	0.09	
8	Link-41	0.23	0 12:06	12.36	0.02	0.42	7.14	0.03	0.10	0.00	0.11	
9	Link-42	0.29	0 12:14	9.36	0.03	0.12	21.53	0.17	0.56	0.00	0.02	
10	Link-43	7.29	0 12:17	7.79	0.94	1.31	1.78	0.28	0.96	0.00	0.18	
11	Link-44	6.39	0 12:20	7.84	0.82	1.27	6.17	0.25	0.84	0.00	0.18	
12	Link-45	0.49	0 12:43	9.33	0.05	0.45	7.22	0.06	0.21	0.00	0.09	
13	Link-46	0.62	0 12:50	8.09	0.08	0.52	8.97	0.06	0.20	0.00	0.17	
14	LowerRavine	9.05	0 12:30	157.98	0.06	1.63	1.27	0.88	0.22	0.00	0.51	
15	OutletRavine	9.10	0 12:30	237.22	0.04	2.08	0.36	0.72	0.18	0.00	0.77	
16	RH_C1	2.66	0 12:00	24.20	0.11	1.78	2.01	0.65	0.44	0.00	0.61	
17	RH_C2	2.78	0 12:01	14.49	0.19	1.67	0.60	0.67	0.46	0.00	0.64	
18	UpperRavine	9.10	0 12:21	177.61	0.05	1.71	5.39	0.88	0.22	0.00	0.45	

Pipe Input

SN	Element ID	Length (m)	Inlet Invert Elevation (m)	Inlet Invert Offset (m)	Outlet Invert Elevation (m)	Outlet Invert Offset (m)	Total Drop (m)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (m)	Pipe Width (m)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cms)	Flap Gate
1	Ex.STM_1	107.00	257.37	0.00	256.94	0.00	0.43	0.4000	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
2	Ex.STM_2	73.00	256.94	0.00	256.64	0.00	0.30	0.4100	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
3	Ex.STM_3	27.00	256.64	0.00	256.48	0.00	0.16	0.5900	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
4	Ex.STM_4	100.00	256.48	0.00	255.88	0.00	0.60	0.6000	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
5	Ex.STM_5	100.00	255.88	0.00	255.48	0.00	0.40	0.4000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
6	Ex.STM_6	50.00	255.48	0.00	255.23	0.00	0.25	0.5000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
7	Ex.STM_7	102.00	255.23	0.00	254.82	0.00	0.41	0.4000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
8	RH_A1	50.00	270.14	0.00	268.50	1.43	1.64	3.2800	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
9	RH_B1	227.00	270.35	0.00	266.50	0.00	3.85	1.7000	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
10	RH_C3	15.00	262.00	0.00	261.70	0.00	0.30	2.0000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
11	RH_C4	195.00	261.70	0.00	259.38	0.00	2.32	1.1900	CIRCULAR	0.530	0.530	0.0150	0.5000	0.5000	0.0000	0.00	No
12	RH_C5	274.00	259.38	0.00	256.36	0.00	3.02	1.1000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
13	RH_C6	6.00	256.36	0.00	256.24	0.14	0.12	2.0000	CIRCULAR	0.700	0.700	0.0130	0.5000	0.5000	0.0000	0.00	No
14	RH_D1	275.00	272.00	0.00	267.75	0.00	4.25	1.5500	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
15	RH_D2	180.00	267.75	0.00	264.00	0.00	3.75	2.0800	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
16	RH_D3	155.00	264.00	0.00	261.90	0.00	2.10	1.3500	CIRCULAR	0.380	0.380	0.0130	0.5000	0.5000	0.0000	0.00	No
17	RH_M1	270.00	267.60	0.00	267.07	0.00	0.53	0.2000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
18	RH_M2	222.00	267.07	0.00	266.63	0.00	0.44	0.2000	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
19	RH_M3	18.00	266.63	0.00	266.50	0.00	0.13	0.7200	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
20	RH_M4	415.00	266.50	0.00	261.90	0.00	4.60	1.1100	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
21	RH_M5	140.00	261.90	0.00	260.33	0.00	1.57	1.1200	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
22	RH_M6	464.00	260.33	0.00	256.42	0.00	3.91	0.8400	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
23	RH_M7	6.00	256.42	0.00	256.37	0.27	0.05	0.8300	CIRCULAR	1.000	1.000	0.0130	0.5000	0.5000	0.0000	0.00	No
24	West_Link	33.73	256.00	-1.00	257.00	0.00	-1.00	-2.9600	Dummy	0.000	0.000	0.0130	0.5000	0.5000	0.0000	0.00	No
25	WestWetland_Link	37.13	258.00	0.00	258.00	0.00	0.00	0.0000	Dummy	0.000	0.000	0.0130	0.5000	0.5000	0.0000	0.00	No
26	Wetland_Link	41.51	252.00	0.00	252.00	0.00	0.00	0.0000	Dummy	0.000	0.000	0.0130	0.5000	0.5000	0.0000	0.00	No

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	Ex.STM_1	0.25	0 12:02	0.18	1.37	1.55	1.15	0.45	1.00	98.00	0.72	SURCHARGED
2	Ex.STM_2	0.25	0 12:02	0.18	1.35	1.55	0.78	0.45	1.00	90.00	0.75	SURCHARGED
3	Ex.STM_3	0.25	0 12:02	0.22	1.13	1.55	0.29	0.45	1.00	86.00	0.86	SURCHARGED
4	Ex.STM_4	0.25	0 12:02	0.22	1.12	1.59	1.05	0.45	0.99	0.00	0.91	> CAPACITY
5	Ex.STM_5	0.25	0 12:03	0.27	0.91	1.33	1.25	0.43	0.82	0.00	0.84	Calculated
6	Ex.STM_6	0.25	0 12:04	0.30	0.81	1.40	0.60	0.40	0.77	0.00	0.88	Calculated
7	Ex.STM_7	0.25	0 12:05	0.39	0.63	1.44	1.18	0.35	0.59	0.00	0.91	Calculated
8	RH_A1	0.23	0 11:39	0.18	1.31	3.26	0.26	0.30	1.00	330.00	1.41	SURCHARGED
9	RH_B1	0.14	0 11:39	0.13	1.09	1.95	1.94	0.30	1.00	262.00	0.59	SURCHARGED
10	RH_C3	0.89	0 12:41	0.87	1.03	3.15	0.08	0.60	1.00	356.00	0.86	SURCHARGED
11	RH_C4	0.42	0 11:53	0.41	1.03	2.07	1.57	0.52	1.00	381.00	0.81	SURCHARGED
12	RH_C5	0.48	0 12:50	0.45	1.07	2.22	2.06	0.52	1.00	387.00	0.61	SURCHARGED
13	RH_C6	0.48	0 12:50	1.31	0.37	1.64	0.06	0.69	0.99	0.00	0.89	Calculated
14	RH_D1	0.00	0 00:00	0.12	0.00	0.00		0.15	0.50	0.00	0.00	Calculated
15	RH_D2	0.15	0 11:51	0.14	1.04	2.11	1.42	0.30	1.00	260.00	1.12	SURCHARGED
16	RH_D3	0.19	0 11:59	0.20	0.93	1.71	1.51	0.38	1.00	285.00	0.31	SURCHARGED
17	RH_M1	0.49	0 11:42	0.27	1.81	1.74	2.59	0.60	1.00	297.00	0.29	SURCHARGED
18	RH_M2	0.80	0 11:43	0.37	2.13	2.23	1.66	0.68	1.00	243.00	0.49	SURCHARGED
19	RH_M3	1.05	0 11:57	0.95	1.11	2.37	0.13	0.75	1.00	235.00	0.76	SURCHARGED
20	RH_M4	0.90	0 11:44	0.89	1.02	2.57	2.69	0.68	1.00	238.00	0.94	SURCHARGED
21	RH_M5	1.03	0 11:52	0.89	1.16	2.90	0.80	0.68	1.00	302.00	0.96	SURCHARGED
22	RH_M6	1.09	0 12:20	1.02	1.06	2.46	3.14	0.75	1.00	299.00	0.55	SURCHARGED
23	RH_M7	1.68	0 12:24	2.19	0.77	2.41	0.04	0.83	0.83	0.00	0.82	Calculated
24	West_Link	0.43	0 12:06	0.00	0.05	0.00		0.88	0.22	0.00	0.45	Calculated
25	WestWetland_Link	0.31	0 12:00	0.00	0.05	0.00		0.88	0.22	0.00	0.45	Calculated
26	Wetland_Link	0.65	0 12:06	0.00	0.05	0.00		0.88	0.22	0.00	0.45	Calculated

Project Description

File Name	18010_Post-Development Rev.1.SPF
Description	I:\ACAD Projects\2018\18010\03-Ref\18010_Pre-Dev. Storm Parcels.dwg I:\ACAD Projects\2018\18010\03-Ref\18010_Pre-Dev. Storm Parcels.dwg I:\ACAD Projects\2018\18010\03-Ref\18010_Post-Dev.Storm Parcels.dwg I:\ACAD Projects\2018\18010\03-Ref\18010_Post-Dev.Storm Parcels.dwg

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	YES

Analysis Options

Start Analysis On	00:00:00	0:00:00
End Analysis On	00:00:00	0:00:00
Start Reporting On	00:00:00	0:00:00
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	60
Nodes	77
Junctions	69
Outfalls	5
Flow Diversions	0
Inlets	0
Storage Nodes	3
Links	110
Channels	43
Pipes	61
Pumps	0
Orifices	1
Weirs	5
Outlets	0
Pollutants	0
Land Uses	0

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	{Survey Site}.Standard : 10	0.92	2.00	67.00	2.0000	125.00	0.0130	0.2000	25.05	23.3740	0.50	0.46	0.00	0 00:47:56
2	{Survey Site}.Standard : 11	21.38	2.00	67.00	2.0000	360.00	0.0130	0.2000	25.05	21.0520	0.52	11.14	0.09	0 02:48:01
3	{Survey Site}.Standard : 12	0.71	5.00	67.00	2.0000	90.00	0.0130	0.2000	25.05	22.6590	1.26	0.89	0.01	0 00:49:07
4	{Survey Site}.Standard : 13	1.65	45.00	71.05	2.0000	220.00	0.0130	0.2000	25.05	13.0940	11.20	18.46	0.13	0 00:34:18
5	{Survey Site}.Standard : 14	4.32	2.00	67.00	2.0000	350.00	0.0130	0.2000	25.05	23.3740	0.50	2.17	0.02	0 01:05:27
6	{Survey Site}.Standard : 17	0.36	5.00	67.00	5.0000	20.00	0.0130	0.2000	25.05	22.6590	1.26	0.45	0.00	0 01:00:47
7	{Survey Site}.Standard : 18	13.10	5.00	48.00	10.0000	300.00	0.0130	0.2000	25.05	22.6020	1.26	16.49	0.14	0 01:24:35
8	{Survey Site}.Standard : 19	1.16	55.00	78.40	2.0000	90.00	0.0130	0.2000	25.05	10.3700	13.78	15.99	0.08	0 00:42:06
9	{Survey Site}.Standard : 2	20.86	45.00	71.05	2.0000	300.00	0.0130	0.2000	25.05	13.0940	10.72	223.72	0.62	0 02:10:36
10	{Survey Site}.Standard : 23	2.20	5.00	48.00	10.0000	100.00	0.0130	0.2000	25.05	22.6020	1.26	2.76	0.02	0 00:56:02
11	{Survey Site}.Standard : 26	1.12	45.00	71.05	2.0000	40.00	0.0130	0.2000	25.05	13.0940	10.87	12.21	0.05	0 01:15:49
12	{Survey Site}.Standard : 27	0.37	45.00	71.05	2.0000	60.00	0.0130	0.2000	25.05	13.0940	11.24	4.16	0.03	0 00:30:31
13	{Survey Site}.Standard : 28	0.12	45.00	71.05	2.0000	40.00	0.0130	0.2000	25.05	13.0940	11.32	1.39	0.01	0 00:20:06
14	{Survey Site}.Standard : 29	7.86	45.00	71.05	2.0000	110.00	0.0130	0.2000	25.05	13.0940	10.72	84.28	0.23	0 02:12:45
15	{Survey Site}.Standard : 3	25.14	45.00	71.05	2.0000	370.00	0.0130	0.2000	25.05	13.0940	10.73	269.64	0.76	0 02:08:47
16	{Survey Site}.Standard : 30	20.00	30.00	63.70	2.0000	225.00	0.0130	0.2000	25.05	16.6840	7.16	143.18	0.43	0 02:54:51
17	{Survey Site}.Standard : 31	5.54	5.00	57.00	2.0000	245.00	0.0130	0.2000	25.05	22.6000	1.26	6.98	0.06	0 01:32:25
18	{Survey Site}.Standard : 32	3.34	2.00	67.00	2.0000	95.00	0.0130	0.2000	25.05	23.3740	0.50	1.68	0.01	0 02:02:33
19	{Survey Site}.Standard : 33	7.71	2.00	67.00	2.0000	215.00	0.0130	0.2000	25.05	23.3740	0.50	3.88	0.03	0 02:04:05
20	{Survey Site}.Standard : 4	3.13	2.00	67.00	2.0000	155.00	0.0130	0.2000	25.05	23.3740	0.50	1.57	0.01	0 01:27:58
21	{Survey Site}.Standard : 46	5.31	2.00	67.00	2.0000	200.00	0.0130	0.2000	25.05	23.3740	0.50	2.67	0.02	0 01:43:41
22	{Survey Site}.Standard : 5	10.46	45.00	71.05	0.5000	235.00	0.0130	0.2000	25.05	13.0940	10.70	111.89	0.28	0 02:31:27
23	{Survey Site}.Standard : 51	0.39	95.00	95.55	0.5000	20.00	0.0130	0.2000	25.05	0.5920	23.19	8.93	0.02	0 00:24:39
24	{Survey Site}.Standard : 52	10.94	2.00	36.00	0.5000	240.00	0.0130	0.2000	25.05	23.4660	0.51	5.55	0.04	0 03:37:16
25	{Survey Site}.Standard : 53	0.36	75.00	85.75	3.0000	20.00	0.0130	0.2000	25.05	5.0690	19.04	6.93	0.03	0 00:32:14
26	{Survey Site}.Standard : 54	3.94	75.00	85.75	2.0000	150.00	0.0130	0.2000	25.05	5.1450	18.78	73.95	0.25	0 00:45:21
27	{Survey Site}.Standard : 57	0.42	20.00	58.80	2.0000	125.00	0.0130	0.2000	25.05	19.0560	5.03	2.13	0.02	0 00:26:39
28	{Survey Site}.Standard : 6	11.54	2.00	67.00	2.0000	280.00	0.0130	0.2000	25.05	23.3740	0.50	5.81	0.05	0 02:14:57
29	{Survey Site}.Standard : 63	1.63	55.00	75.95	2.0000	90.00	0.0130	0.2000	25.05	10.6120	13.44	21.90	0.09	0 00:51:37
30	{Survey Site}.Standard : 65	1.71	55.00	75.95	2.0000	130.00	0.0130	0.2000	25.05	10.5830	13.56	23.18	0.11	0 00:42:37
31	{Survey Site}.Standard : 68	1.31	55.00	75.95	2.0000	90.00	0.0130	0.2000	25.05	10.6120	13.52	17.74	0.08	0 00:45:20
32	{Survey Site}.Standard : 69	2.53	55.00	75.95	0.5000	85.00	0.0130	0.2000	25.05	10.6700	13.14	33.18	0.09	0 01:45:22
33	{Survey Site}.Standard : 7	10.98	5.00	67.00	2.0000	225.00	0.0130	0.2000	25.05	22.6590	1.25	13.74	0.10	0 02:26:32
34	{Survey Site}.Standard : 71	0.41	75.00	85.75	0.5000	20.00	0.0130	0.2000	25.05	5.2320	18.60	7.59	0.02	0 00:59:05
35	{Survey Site}.Standard : 72	1.08	55.00	75.95	2.0000	75.00	0.0130	0.2000	25.05	10.6120	13.53	14.54	0.07	0 00:44:53
36	{Survey Site}.Standard : 73	1.04	5.00	51.45	1.5000	65.00	0.0130	0.2000	25.05	22.6600	1.26	1.30	0.01	0 01:21:39
37	{Survey Site}.Standard : 74	2.88	55.00	75.95	2.0000	70.00	0.0130	0.2000	25.05	10.6700	13.21	38.04	0.12	0 01:24:30
38	{Survey Site}.Standard : 75	0.35	5.00	51.45	0.5000	35.00	0.0130	0.2000	25.05	22.6600	1.26	0.44	0.00	0 01:26:07
39	{Survey Site}.Standard : 76	0.87	5.00	51.45	25.0000	150.00	0.0130	0.2000	25.05	22.6600	1.25	1.10	0.01	0 00:19:11
40	{Survey Site}.Standard : 77	2.26	95.00	49.00	2.0000	250.00	0.0130	0.2000	25.05	1.1900	23.13	52.17	0.24	0 00:10:19
41	{Survey Site}.Standard : 78	2.38	55.00	75.95	3.0000	75.00	0.0130	0.2000	25.05	9.0450	14.95	35.65	0.13	0 01:04:05
42	{Survey Site}.Standard : 79	0.19	5.00	51.45	2.0000	25.00	0.0130	0.2000	25.05	22.6600	1.26	0.23	0.00	0 00:47:16
43	{Survey Site}.Standard : 8	3.30	2.00	67.00	2.0000	125.00	0.0130	0.2000	25.05	23.3740	0.50	1.66	0.01	0 01:43:22
44	{Survey Site}.Standard : 80	0.72	2.00	48.00	10.0000	55.00	0.0130	0.2000	25.05	22.7660	0.51	0.37	0.00	0 00:41:50
45	{Survey Site}.Standard : 81	1.46	35.00	66.15	2.0000	55.00	0.0130	0.2000	25.05	15.4620	8.50	12.43	0.05	0 01:21:04
46	{Survey Site}.Standard : 82	1.98	35.00	66.15	2.0000	55.00	0.0130	0.2000	25.05	15.4620	8.45	16.71	0.07	0 01:37:10
47	{Survey Site}.Standard : 83	1.98	55.00	75.95	2.0000	75.00	0.0130	0.2000	25.05	10.1180	18.29	36.26	0.12	0 01:04:48

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)
48	{Survey Site}.Standard : 84	1.00	55.00	75.95	2.0000	50.00	0.0130	0.2000	25.05	10.6120	13.41	13.46	0.06	0 00:54:57
49	{Survey Site}.Standard : 85	1.78	55.00	75.95	2.0000	70.00	0.0130	0.2000	25.05	10.6410	13.33	23.77	0.09	0 01:03:22
50	{Survey Site}.Standard : 86	1.43	55.00	75.95	2.0000	100.00	0.0130	0.2000	25.05	10.6120	13.53	19.28	0.09	0 00:44:43
51	{Survey Site}.Standard : 87	2.66	55.00	75.95	2.0000	100.00	0.0130	0.2000	25.05	10.6410	13.32	35.38	0.14	0 01:05:00
52	{Survey Site}.Standard : 88	1.64	55.00	75.95	2.0000	75.00	0.0130	0.2000	25.05	10.6410	13.38	21.91	0.09	0 00:57:47
53	{Survey Site}.Standard : 89	1.11	55.00	75.95	2.0000	100.00	0.0130	0.2000	25.05	10.5830	13.63	15.17	0.08	0 00:38:33
54	{Survey Site}.Standard : 9	3.53	2.00	67.00	2.0000	100.00	0.0130	0.2000	25.05	23.3740	0.50	1.78	0.01	0 02:03:00
55	{Survey Site}.Standard : 90	1.22	65.00	80.85	2.0000	130.00	0.0130	0.2000	25.05	7.7470	16.53	20.09	0.10	0 00:29:52
56	{Survey Site}.Standard : 91	1.00	65.00	80.85	2.0000	130.00	0.0130	0.2000	25.05	7.7270	16.64	16.59	0.09	0 00:26:31
57	{Survey Site}.Standard : 92	2.19	55.00	75.95	2.0000	75.00	0.0130	0.2000	25.05	10.6410	13.29	29.14	0.11	0 01:08:50
58	{Survey Site}.Standard : 93	2.28	20.00	58.80	5.0000	525.00	0.0130	0.2000	25.05	19.0560	5.03	11.44	0.10	0 00:23:29
59	Sub-01	0.13	55.00	75.95	2.0000	40.00	0.0130	0.2000	25.05	10.4680	14.07	1.83	0.01	0 00:18:25
60	Sub-02	0.18	55.00	75.95	2.0000	30.00	0.0130	0.2000	25.05	10.5260	13.89	2.50	0.02	0 00:26:37

Node Summary

SN	Element ID	Element Type	Invert Elevation (m)	Ground/Rim (Max) Elevation (m)	Initial Water Elevation (m)	Surcharge Elevation (m)	Ponded Area (m²)	Peak Inflow (cms)	Max HGL Elevation Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ha-mm)	Total Time Flooded (min)
1	Ex_MHR1	Junction	255.88	262.50	0.00	0.00	0.00	0.22	256.28	0.00	6.22	0 00:00	0.00	0.00
2	Ex_MHR2	Junction	255.48	259.65	0.00	0.00	0.00	0.22	255.87	0.00	3.78	0 00:00	0.00	0.00
3	Ex_MHR25	Junction	256.48	263.35	0.00	0.00	0.00	0.22	256.93	0.00	6.42	0 00:00	0.00	0.00
4	Ex_MHR26	Junction	256.64	262.75	0.00	0.00	0.00	0.22	257.19	0.00	5.56	0 00:00	0.00	0.00
5	Ex_MHR27	Junction	256.94	261.00	0.00	0.00	0.00	0.22	257.74	0.00	3.26	0 00:00	0.00	0.00
6	Ex_MHR28	Junction	257.37	259.30	0.00	0.00	0.00	0.23	258.50	0.00	0.80	0 00:00	0.00	0.00
7	Ex_MHR3	Junction	255.23	259.00	0.00	0.00	0.00	0.22	255.58	0.00	3.42	0 00:00	0.00	0.00
8	Jun-34	Junction	254.62	258.25	0.00	0.00	0.00	1.46	255.40	0.00	2.85	0 00:00	0.00	0.00
9	Jun-35	Junction	254.70	257.50	0.00	0.00	0.00	0.13	255.18	0.00	2.32	0 00:00	0.00	0.00
10	Jun-36	Junction	254.72	258.00	0.00	0.00	0.00	1.49	255.58	0.00	2.77	0 00:00	0.00	0.00
11	Jun-37	Junction	255.29	261.30	0.00	0.00	0.00	0.91	255.89	0.00	5.41	0 00:00	0.00	0.00
12	Jun-38	Junction	255.53	261.80	0.00	0.00	0.00	0.29	256.13	0.00	5.67	0 00:00	0.00	0.00
13	Jun-39	Junction	256.93	259.05	0.00	0.00	0.00	0.02	257.04	0.00	2.01	0 00:00	0.00	0.00
14	Jun-40	Junction	256.10	258.55	0.00	0.00	0.00	0.02	256.22	0.00	2.33	0 00:00	0.00	0.00
15	Jun-41	Junction	255.77	259.65	0.00	0.00	0.00	0.05	256.14	0.00	3.51	0 00:00	0.00	0.00
16	Jun-42	Junction	255.23	258.90	0.00	0.00	0.00	0.43	255.67	0.00	3.23	0 00:00	0.00	0.00
17	Jun-43	Junction	256.25	257.25	0.00	0.00	0.00	0.25	256.43	0.00	1.32	0 00:00	0.00	0.00
18	Jun-44	Junction	257.55	258.55	0.00	0.00	0.00	0.23	257.85	0.00	0.75	0 00:00	0.00	0.00
19	Jun-46	Junction	257.70	258.70	0.00	258.70	0.00	0.24	258.00	0.00	0.75	0 00:00	0.00	0.00
20	Jun-47	Junction	258.10	259.10	0.00	0.00	0.00	0.27	258.48	0.00	0.62	0 00:00	0.00	0.00
21	Jun-48	Junction	258.35	259.35	0.00	0.00	0.00	0.01	258.48	0.00	0.92	0 00:00	0.00	0.00
22	Jun-49	Junction	256.90	257.90	0.00	0.00	0.00	0.26	257.21	0.00	0.89	0 00:00	0.00	0.00
23	Jun-50	Junction	256.75	257.75	0.00	0.00	0.00	0.26	257.16	0.00	0.79	0 00:00	0.00	0.00
24	Jun-51	Junction	258.45	260.50	0.00	0.00	0.00	0.22	258.80	0.00	1.70	0 00:00	0.00	0.00
25	Jun-52	Junction	255.69	260.00	0.00	0.00	0.00	0.26	256.10	0.00	3.90	0 00:00	0.00	0.00
26	Jun-53	Junction	255.35	259.60	0.00	0.00	0.00	0.33	255.82	0.00	3.78	0 00:00	0.00	0.00
27	Jun-54	Junction	255.62	259.80	0.00	0.00	0.00	0.10	256.04	0.00	3.76	0 00:00	0.00	0.00
28	Jun-55	Junction	255.60	259.70	0.00	0.00	0.00	0.24	255.99	0.00	3.71	0 00:00	0.00	0.00
29	Jun-56	Junction	255.79	257.80	0.00	0.00	0.00	0.30	256.05	0.00	1.75	0 00:00	0.00	0.00
30	Jun-61	Junction	258.32	262.00	0.00	0.00	0.00	0.27	258.53	0.00	4.27	0 00:00	0.00	0.00
31	Jun-64	Junction	261.13	263.50	0.00	0.00	0.00	0.13	261.29	0.00	2.21	0 00:00	0.00	0.00
32	Jun-65	Junction	262.69	264.50	0.00	0.00	0.00	0.13	262.87	0.00	1.63	0 00:00	0.00	0.00
33	Jun-66	Junction	253.16	256.00	0.00	0.00	0.00	0.05	253.31	0.00	2.69	0 00:00	0.00	0.00
34	Jun-67	Junction	255.48	259.90	0.00	0.00	0.00	0.35	255.96	0.00	3.94	0 00:00	0.00	0.00
35	Jun-68	Junction	255.86	260.10	0.00	0.00	0.00	0.16	256.21	0.00	3.89	0 00:00	0.00	0.00
36	Jun-69	Junction	256.21	261.20	0.00	0.00	0.00	0.08	256.41	0.00	4.79	0 00:00	0.00	0.00
37	Jun-70	Junction	256.47	263.00	0.00	0.00	0.00	0.11	256.68	0.00	6.32	0 00:00	0.00	0.00
38	Jun-71	Junction	256.79	260.00	0.00	0.00	0.00	0.12	256.99	0.00	3.01	0 00:00	0.00	0.00
39	Jun-72	Junction	258.75	259.95	0.00	0.00	0.00	0.09	259.00	0.00	0.95	0 00:00	0.00	0.00
40	Jun-73	Junction	258.65	259.95	0.00	0.00	0.00	0.14	258.97	0.00	0.98	0 00:00	0.00	0.00
41	Jun-74	Junction	259.54	264.00	0.00	0.00	0.00	0.15	259.73	0.00	4.27	0 00:00	0.00	0.00
42	Jun-75	Junction	260.00	264.50	0.00	0.00	0.00	0.07	260.15	0.00	4.35	0 00:00	0.00	0.00
43	Jun-76	Junction	259.19	262.20	0.00	0.00	0.00	0.30	259.45	0.00	2.75	0 00:00	0.00	0.00
44	Jun-77	Junction	260.46	264.80	0.00	0.00	0.00	0.18	260.70	0.00	4.10	0 00:00	0.00	0.00
45	Jun-78	Junction	261.75	265.30	0.00	0.00	0.00	0.18	262.01	0.00	3.29	0 00:00	0.00	0.00
46	NorthWetland	Junction	252.00	258.00	0.00	0.00	0.00	0.11	252.00	0.00	6.00	0 00:00	0.00	0.00
47	OutletStructure	Junction	254.25	256.80	0.00	0.00	0.00	0.05	254.45	0.00	3.90	0 00:00	0.00	0.00

Node Summary

SN	Element ID	Element Type	Invert Elevation (m)	Ground/Rim (Max) Elevation (m)	Initial Water Elevation (m)	Surcharge Elevation (m)	Ponded Area (m²)	Peak Inflow (cms)	Max HGL Elevation Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ha-mm)	Total Time Flooded (min)
48	Ravine_1	Junction	256.10	260.10	0.00	0.00	0.00	1.22	256.37	0.00	3.73	0 00:00	0.00	0.00
49	Ravine_2	Junction	253.00	257.00	0.00	0.00	0.00	1.33	253.31	0.00	3.79	0 00:00	0.00	0.00
50	Ravine_3	Junction	252.45	256.45	0.00	0.00	0.00	1.25	252.69	0.00	3.76	0 00:00	0.00	0.00
51	RH_1	Junction	267.60	271.70	0.00	0.00	0.00	0.76	271.43	0.00	0.27	0 00:00	0.00	0.00
52	RH_10	Junction	261.90	263.90	0.00	0.00	0.00	0.99	263.02	0.00	0.88	0 00:00	0.00	0.00
53	RH_11	Junction	260.33	262.55	0.00	0.00	0.00	0.94	260.90	0.00	1.65	0 00:00	0.00	0.00
54	RH_12	Junction	269.00	270.50	0.00	0.00	0.00	0.43	269.21	0.00	1.29	0 00:00	0.00	0.00
55	RH_13	Junction	264.00	266.50	0.00	0.00	0.00	0.45	264.31	0.00	2.19	0 00:00	0.00	0.00
56	RH_14	Junction	261.70	263.50	0.00	0.00	0.00	0.27	262.03	0.00	1.47	0 00:00	0.00	0.00
57	RH_15	Junction	259.38	261.00	0.00	0.00	0.00	0.27	259.67	0.00	1.33	0 00:00	0.00	0.00
58	RH_16	Junction	256.36	258.00	0.00	0.00	0.00	0.27	256.82	0.00	1.18	0 00:00	0.00	0.00
59	RH_17	Junction	256.42	258.00	0.00	0.00	0.00	0.95	257.31	0.00	0.69	0 00:00	0.00	0.00
60	RH_2	Junction	270.14	272.45	0.00	0.00	0.00	0.62	272.18	0.00	0.27	0 00:00	0.00	0.00
61	RH_3	Junction	267.07	270.50	0.00	0.00	0.00	1.17	269.70	0.00	0.80	0 00:00	0.00	0.00
62	RH_4	Junction	266.63	268.60	0.00	0.00	0.00	0.85	268.20	0.00	0.40	0 00:00	0.00	0.00
63	RH_5	Junction	270.35	272.10	0.00	0.00	0.00	0.28	271.82	0.00	0.28	0 00:00	0.00	0.00
64	RH_6	Junction	266.50	268.20	0.00	0.00	0.00	1.05	267.92	0.00	0.28	0 00:00	0.00	0.00
65	RH_7	Junction	272.00	273.50	0.00	0.00	0.00	0.00	272.00	0.00	1.50	0 00:00	0.00	0.00
66	RH_8	Junction	267.75	269.85	0.00	0.00	0.00	0.10	267.93	0.00	1.92	0 00:00	0.00	0.00
67	RH_9	Junction	264.00	265.80	0.00	0.00	0.00	0.10	264.18	0.00	1.62	0 00:00	0.00	0.00
68	WestOutfall	Junction	257.00	258.40	0.00	0.00	0.00	0.01	257.00	0.00	2.45	0 00:00	0.00	0.00
69	WestWetland	Junction	258.00	259.00	0.00	0.00	0.00	0.04	258.00	0.00	1.00	0 00:00	0.00	0.00
70	North_Wetland	Outfall	252.00					0.11	252.00					
71	Outfall	Outfall	252.00					1.25	252.18					
72	TinerEstatesSTM	Outfall	254.82					0.22	255.12					
73	West_Outfall	Outfall	257.00					0.01	257.00					
74	West_Wetland	Outfall	258.00					0.04	258.00					
75	Ex_SE_Pond	Storage Node	262.00	266.00	0.00		0.00	0.44	262.30				0.00	0.00
76	SWM_FB	Storage Node	253.00	257.10	254.50		0.00	1.46	255.18				0.00	0.00
77	SWM_WP	Storage Node	253.00	257.10	254.50		0.00	1.48	255.18				0.00	0.00

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(m)	(m)	(m)	(%)	(m)		(cms)	(cms)		(m/sec)	(m)		(min)	
1	Ex.STM_1	Pipe	Ex_MHR28	Ex_MHR27	107.00	257.37	256.94	0.4000	0.450	0.0130	0.22	0.18	1.24	1.41	0.45	1.00	16.00	SURCHARGED
2	Ex.STM_2	Pipe	Ex_MHR27	Ex_MHR26	73.00	256.94	256.64	0.4100	0.450	0.0130	0.22	0.18	1.23	1.41	0.45	1.00	11.00	SURCHARGED
3	Ex.STM_3	Pipe	Ex_MHR26	Ex_MHR25	27.00	256.64	256.48	0.5900	0.450	0.0130	0.22	0.22	1.02	1.41	0.44	1.00	0.00	> CAPACITY
4	Ex.STM_4	Pipe	Ex_MHR25	Ex_MHR1	100.00	256.48	255.88	0.6000	0.450	0.0130	0.22	0.22	1.01	1.47	0.41	0.94	0.00	> CAPACITY
5	Ex.STM_5	Pipe	Ex_MHR1	Ex_MHR2	100.00	255.88	255.48	0.4000	0.525	0.0130	0.22	0.27	0.82	1.29	0.39	0.75	0.00	Calculated
6	Ex.STM_6	Pipe	Ex_MHR2	Ex_MHR3	50.00	255.48	255.23	0.5000	0.525	0.0130	0.22	0.30	0.73	1.36	0.37	0.70	0.00	Calculated
7	Ex.STM_7	Pipe	Ex_MHR3	TinerEstatesSTM	102.00	255.23	254.82	0.4000	0.600	0.0130	0.22	0.39	0.57	1.40	0.33	0.55	0.00	Calculated
8	Link-106	Pipe	Jun-66	Ravine_2	24.80	253.16	252.85	1.2500	0.750	0.0130	0.05	0.89	0.05	1.51	0.23	0.31	0.00	Calculated
9	Link-107	Pipe	OutletStructure	Jun-66	93.20	254.35	253.20	1.2300	0.750	0.0130	0.05	1.24	0.04	1.33	0.10	0.14	0.00	Calculated
10	Link-108	Pipe	Jun-67	Jun-37	110.30	255.48	255.37	0.1000	1.200	0.0130	0.32	1.23	0.26	0.75	0.50	0.42	0.00	Calculated
11	Link-109	Pipe	Jun-46	Jun-44	30.00	257.70	257.55	0.5000	1.050	0.0130	0.23	1.93	0.12	1.76	0.30	0.28	0.00	Calculated
12	Link-110	Pipe	Jun-52	Jun-67	153.00	255.69	255.48	0.1400	0.900	0.0130	0.26	0.67	0.38	0.91	0.44	0.49	0.00	Calculated
13	Link-111	Pipe	Jun-68	Jun-52	66.80	255.86	255.77	0.1300	0.750	0.0130	0.16	0.41	0.38	0.89	0.33	0.45	0.00	Calculated
14	Link-112	Pipe	Jun-69	Jun-68	106.60	256.21	255.91	0.2800	0.600	0.0130	0.08	0.33	0.25	0.85	0.24	0.40	0.00	Calculated
15	Link-113	Pipe	Jun-70	Jun-52	97.50	256.47	255.88	0.6100	0.525	0.0130	0.11	0.33	0.32	1.30	0.21	0.41	0.00	Calculated
16	Link-114	Pipe	Jun-71	Jun-53	85.10	256.79	255.73	1.2500	0.450	0.0130	0.12	0.32	0.36	1.78	0.19	0.43	0.00	Calculated
17	Link-115	Pipe	Jun-73	Jun-51	50.00	258.65	258.50	0.3000	0.525	0.0130	0.14	0.24	0.57	1.01	0.31	0.59	0.00	Calculated
18	Link-116	Pipe	Jun-72	Jun-51	50.00	258.75	258.55	0.4000	0.450	0.0130	0.09	0.18	0.50	1.08	0.24	0.54	0.00	Calculated
19	Link-117	Pipe	Jun-74	Jun-61	90.00	259.54	258.37	1.3000	0.675	0.0130	0.15	0.96	0.15	1.88	0.18	0.27	0.00	Calculated
20	Link-118	Pipe	Jun-75	Jun-74	41.60	260.00	259.56	1.0600	0.525	0.0130	0.07	0.44	0.15	1.28	0.15	0.30	0.00	Calculated
21	Link-119	Pipe	Jun-76	Jun-56	181.70	259.19	256.08	1.7100	0.600	0.0130	0.30	0.80	0.37	2.56	0.25	0.43	0.00	Calculated
22	Link-120	Pipe	Jun-77	Jun-76	140.50	260.46	259.24	0.8700	0.600	0.0130	0.18	0.57	0.31	1.73	0.23	0.39	0.00	Calculated
23	Link-121	Pipe	Jun-78	Jun-77	152.20	261.75	260.51	0.8100	0.525	0.0130	0.18	0.39	0.46	1.71	0.25	0.48	0.00	Calculated
24	Link-49	Pipe	Jun-34	SWM_FB	20.70	254.62	254.60	0.1000	1.800	0.0130	1.46	3.57	0.41	1.66	0.68	0.38	0.00	Calculated
25	Link-50	Pipe	Jun-35	SWM_WP	75.20	254.70	254.60	0.1300	0.600	0.0130	0.13	0.22	0.58	0.97	0.53	0.89	0.00	Calculated
26	Link-52	Pipe	Jun-36	Jun-34	35.00	254.72	254.67	0.1400	1.650	0.0130	1.46	3.45	0.42	1.44	0.79	0.48	0.00	Calculated
27	Link-53	Pipe	Jun-37	Jun-36	336.90	255.29	254.74	0.1600	1.350	0.0130	0.87	2.16	0.40	1.15	0.71	0.53	0.00	Calculated
28	Link-54	Pipe	Jun-38	Jun-37	110.00	255.53	255.31	0.2000	0.600	0.0130	0.27	0.27	1.00	1.04	0.59	0.98	0.00	Calculated
29	Link-56	Pipe	Jun-41	Jun-38	110.00	255.77	255.55	0.2000	0.600	0.0130	0.06	0.27	0.20	0.29	0.48	0.80	0.00	Calculated
30	Link-57	Pipe	Jun-40	Jun-41	95.50	256.10	255.85	0.2600	0.450	0.0130	0.02	0.15	0.15	0.64	0.20	0.46	0.00	Calculated
31	Link-58	Pipe	Jun-39	Jun-40	90.00	256.93	256.25	0.7600	0.300	0.0130	0.02	0.08	0.27	0.99	0.11	0.36	0.00	Calculated
32	Link-59	Pipe	Jun-42	Jun-36	53.10	255.23	255.13	0.1900	1.500	0.0130	0.43	3.07	0.14	1.17	0.44	0.30	0.00	Calculated
33	Link-60	Pipe	Jun-43	Jun-42	13.40	256.25	255.84	3.0600	1.500	0.0130	0.25	12.37	0.02	2.32	0.17	0.11	0.00	Calculated
34	Link-62	Pipe	Jun-49	Jun-50	25.00	256.90	256.75	0.6000	1.200	0.0130	0.26	3.02	0.09	1.22	0.36	0.30	0.00	Calculated
35	Link-68	Pipe	Jun-51	Jun-47	60.00	258.45	258.20	0.4200	0.600	0.0130	0.22	0.40	0.54	1.37	0.32	0.54	0.00	Calculated
36	Link-70	Pipe	Jun-53	Jun-42	57.00	255.35	255.25	0.1800	0.825	0.0130	0.33	0.60	0.55	1.26	0.41	0.50	0.00	Calculated
37	Link-71	Pipe	Jun-55	Jun-53	82.00	255.60	255.43	0.2100	0.750	0.0130	0.23	0.51	0.45	1.08	0.38	0.51	0.00	Calculated
38	Link-72	Pipe	Jun-54	Jun-55	85.00	255.79	255.62	0.2000	0.750	0.0130	0.10	0.50	0.20	0.70	0.30	0.41	0.00	Calculated
39	Link-73	Pipe	Jun-56	Jun-36	67.80	255.78	255.10	1.0000	0.900	0.0130	0.31	1.83	0.17	1.94	0.35	0.39	0.00	Calculated
40	Link-80	Pipe	Jun-61	Jun-37	89.90	258.32	255.97	2.6100	0.750	0.0130	0.27	1.80	0.15	2.82	0.20	0.27	0.00	Calculated
41	Link-81	Pipe	Jun-64	Jun-61	93.20	261.13	259.27	2.0000	0.600	0.0130	0.12	0.87	0.14	2.11	0.15	0.26	0.00	Calculated
42	Link-82	Pipe	Jun-65	Jun-64	103.90	262.69	261.13	1.5000	0.600	0.0130	0.13	0.75	0.17	2.05	0.16	0.28	0.00	Calculated
43	RH_A1	Pipe	RH_2	RH_3	50.00	270.14	268.50	3.2800	0.300	0.0130	0.23	0.18	1.32	3.26	0.30	1.00	68.00	SURCHARGED
44	RH_B1	Pipe	RH_5	RH_6	227.00	270.35	266.50	1.7000	0.300	0.0130	0.14	0.13	1.10	2.44	0.30	1.00	63.00	SURCHARGED
45	RH_C3	Pipe	Ex_SE_Pond	RH_14	15.00	262.00	261.70	2.0000	0.600	0.0130	0.27	0.87	0.31	1.79	0.31	0.52	0.00	Calculated
46	RH_C4	Pipe	RH_14	RH_15	195.00	261.70	259.38	1.1900	0.525	0.0150	0.27	0.41	0.66	2.02	0.31	0.59	0.00	Calculated
47	RH_C5	Pipe	RH_15	RH_16	274.00	259.38	256.36	1.1000	0.525	0.0130	0.27	0.45	0.60	1.66	0.38	0.71	0.00	Calculated

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(m)	(m)	(m)	(%)	(m)		(cms)	(cms)		(m/sec)	(m)		(min)	
48	RH_C6	Pipe	RH_16	Ravine_1	6.00	256.36	256.24	2.0000	0.700	0.0130	0.28	1.31	0.21	1.54	0.34	0.49	0.00	Calculated
49	RH_D1	Pipe	RH_7	RH_8	275.00	272.00	267.75	1.5500	0.300	0.0130	0.00	0.12	0.00	0.00	0.08	0.30	0.00	Calculated
50	RH_D2	Pipe	RH_8	RH_9	180.00	267.75	264.00	2.0800	0.300	0.0130	0.09	0.14	0.64	2.06	0.16	0.60	0.00	Calculated
51	RH_D3	Pipe	RH_9	RH_10	155.00	264.00	261.90	1.3500	0.375	0.0130	0.10	0.20	0.48	1.67	0.27	0.74	0.00	Calculated
52	RH_M1	Pipe	RH_1	RH_3	270.00	267.60	267.07	0.2000	0.600	0.0130	0.50	0.27	1.83	1.76	0.60	1.00	76.00	SURCHARGED
53	RH_M2	Pipe	RH_3	RH_4	222.00	267.07	266.63	0.2000	0.675	0.0130	0.80	0.37	2.13	2.23	0.68	1.00	67.00	SURCHARGED
54	RH_M3	Pipe	RH_4	RH_6	18.00	266.63	266.50	0.7200	0.750	0.0130	0.85	0.95	0.89	1.95	0.75	1.00	61.00	SURCHARGED
55	RH_M4	Pipe	RH_6	RH_10	415.00	266.50	261.90	1.1100	0.675	0.0130	0.91	0.89	1.03	2.63	0.68	1.00	62.00	SURCHARGED
56	RH_M5	Pipe	RH_10	RH_11	140.00	261.90	260.33	1.1200	0.675	0.0130	0.94	0.89	1.05	2.79	0.62	0.92	0.00	> CAPACITY
57	RH_M6	Pipe	RH_11	RH_17	464.00	260.33	256.42	0.8400	0.750	0.0130	0.94	1.02	0.92	2.28	0.66	0.88	0.00	Calculated
58	RH_M7	Pipe	RH_17	Ravine_1	6.00	256.42	256.37	0.8300	1.000	0.0130	0.95	2.19	0.43	1.68	0.67	0.67	0.00	Calculated
59	West_Link	Pipe	WestOutfall	West_Outfall	33.73	256.00	257.00	-2.9600	0.000	0.0130	0.01	0.00	0.01	0.00	0.28	0.07	0.00	Calculated
60	WestWetland_Link	Pipe	WestWetland	West_Wetland	37.13	258.00	258.00	0.0000	0.000	0.0130	0.04	0.00	0.01	0.00	0.28	0.07	0.00	Calculated
61	Wetland_Link	Pipe	NorthWetland	North_Wetland	41.51	252.00	252.00	0.0000	0.000	0.0130	0.11	0.00	0.01	0.00	0.28	0.07	0.00	Calculated
62	Link-103	Channel	Jun-36	SWM_FB	10.00	257.70	257.50	2.0000	0.300	0.0320	0.00	11.65	0.00	0.00	0.00	0.00	0.00	
63	Link-104	Channel	Jun-56	SWM_FB	50.00	257.50	256.50	2.0000	0.300	0.0320	0.00	11.65	0.00	0.00	0.00	0.00	0.00	
64	Link-122	Channel	Jun-53	Jun-42	70.00	259.30	258.60	1.0000	0.300	0.0320	0.00	8.24	0.00	0.00	0.00	0.00	0.00	
65	Link-123	Channel	Jun-55	Jun-53	90.00	259.40	259.30	0.1100	0.300	0.0320	0.00	2.75	0.00	0.00	0.00	0.00	0.00	
66	Link-124	Channel	Jun-54	Jun-55	90.00	259.50	259.40	0.1100	0.300	0.0320	0.00	2.75	0.00	0.00	0.00	0.00	0.00	
67	Link-125	Channel	Jun-73	Jun-47	50.00	259.65	258.70	1.9000	0.300	0.0320	0.00	11.36	0.00	0.00	0.00	0.00	0.00	
68	Link-126	Channel	Jun-72	Jun-47	50.00	259.65	258.70	1.9000	0.300	0.0320	0.00	11.36	0.00	0.00	0.00	0.00	0.00	
69	Link-127	Channel	Jun-67	Jun-54	100.00	259.60	259.50	0.1000	0.300	0.0320	0.00	2.61	0.00	0.00	0.00	0.00	0.00	
70	Link-128	Channel	Jun-52	Jun-67	150.00	259.70	259.60	0.0700	0.300	0.0320	0.00	2.13	0.00	0.00	0.00	0.00	0.00	
71	Link-129	Channel	Jun-68	Jun-52	80.00	259.80	259.70	0.1300	0.300	0.0320	0.00	2.91	0.00	0.00	0.00	0.00	0.00	
72	Link-130	Channel	Jun-69	Jun-68	100.00	259.90	259.80	0.1000	0.300	0.0320	0.00	2.61	0.00	0.00	0.00	0.00	0.00	
73	Link-131	Channel	Jun-71	Jun-53	70.00	259.40	259.30	0.1400	0.300	0.0320	0.00	3.11	0.00	0.00	0.00	0.00	0.00	
74	Link-132	Channel	Jun-78	Jun-77	150.00	265.00	264.50	0.3300	0.300	0.0320	0.00	4.76	0.00	0.00	0.00	0.00	0.00	
75	Link-133	Channel	Jun-77	Jun-76	150.00	264.50	261.90	1.7300	0.300	0.0320	0.00	10.85	0.00	0.00	0.00	0.00	0.00	
76	Link-134	Channel	Jun-76	Jun-36	250.00	261.90	257.70	1.6800	0.300	0.0320	0.00	10.68	0.00	0.00	0.00	0.00	0.00	
77	Link-135	Channel	Jun-61	Jun-37	100.00	262.50	261.00	1.5000	0.300	0.0320	0.00	10.09	0.00	0.00	0.00	0.00	0.00	
78	Link-34	Channel	RH_1	RH_3	270.00	271.40	269.65	0.6500	0.300	0.0320	0.17	6.63	0.03	0.26	0.04	0.12	0.00	
79	Link-35	Channel	RH_2	RH_3	50.00	272.15	269.65	5.0000	0.300	0.0320	0.42	18.43	0.02	0.68	0.03	0.11	0.00	
80	Link-36	Channel	RH_3	RH_4	222.00	269.65	268.30	0.6100	0.300	0.0320	0.19	6.43	0.03	0.27	0.04	0.12	0.00	
81	Link-37	Channel	RH_4	RH_6	18.00	268.30	267.90	2.2200	0.300	0.0320	0.00	12.28	0.00	0.00	0.01	0.03	0.00	
82	Link-38	Channel	RH_5	RH_6	227.00	271.80	267.90	1.7200	0.300	0.0320	0.09	10.80	0.01	0.28	0.02	0.05	0.00	
83	Link-39	Channel	RH_6	RH_10	415.00	267.90	263.50	1.0600	0.300	0.0320	0.04	8.48	0.00	0.17	0.01	0.04	0.00	
84	Link-41	Channel	RH_8	RH_9	180.00	269.55	265.50	2.2500	0.300	0.0320	0.00	12.36	0.00	0.00	0.00	0.00	0.00	
85	Link-42	Channel	RH_9	RH_10	155.00	265.50	263.50	1.2900	0.300	0.0320	0.00	9.36	0.00	0.00	0.00	0.00	0.00	
86	Link-43	Channel	RH_10	RH_11	140.00	263.50	262.25	0.8900	0.300	0.0320	0.00	7.79	0.00	0.00	0.00	0.00	0.00	
87	Link-44	Channel	RH_11	Ravine_1	470.00	262.25	258.00	0.9000	0.300	0.0320	0.00	7.84	0.00	0.00	0.00	0.00	0.00	
88	Link-45	Channel	RH_14	RH_15	195.00	263.20	260.70	1.2800	0.300	0.0320	0.00	9.33	0.00	0.00	0.00	0.00	0.00	
89	Link-46	Channel	RH_15	Ravine_1	280.00	260.70	258.00	0.9600	0.300	0.0320	0.00	8.09	0.00	0.00	0.00	0.00	0.00	
90	Link-51	Channel	Ex_MHR28	Jun-36	65.00	259.00	258.05	1.4600	0.300	0.0320	0.00	4.89	0.00	0.00	0.00	0.00	0.00	
91	Link-61	Channel	Jun-50	Jun-43	125.00	256.75	256.25	0.4000	1.000	0.0320	0.25	4.86	0.05	0.57	0.30	0.30	0.00	
92	Link-63	Channel	Jun-44	Jun-49	162.50	257.55	256.90	0.4000	1.000	0.0320	0.22	4.86	0.05	0.49	0.30	0.30	0.00	
93	Link-66	Channel	Jun-47	Jun-46	133.00	258.10	257.70	0.3000	1.000	0.0320	0.24	4.22	0.06	0.48	0.33	0.34	0.00	
94	Link-67	Channel	Jun-48	Jun-47	75.00	258.40	258.10	0.4000	1.000	0.0320	0.01	4.86	0.00	0.06	0.22	0.23	0.00	

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(m)	(m)	(m)	(%)	(m)		(cms)	(cms)		(m/sec)	(m)		(min)	
95	Link-89	Channel	Jun-42	Jun-36	53.10	258.60	257.70	1.6900	0.300	0.0320	0.00	10.73	0.00	0.00	0.00	0.00	0.00	
96	Link-90	Channel	Jun-39	Jun-40	90.00	258.75	257.75	1.1100	0.300	0.0320	0.00	8.69	0.00	0.00	0.00	0.00	0.00	
97	Link-92	Channel	Jun-38	Jun-37	110.00	261.50	261.00	0.4500	0.300	0.0320	0.00	5.56	0.00	0.00	0.00	0.00	0.00	
98	Link-93	Channel	Jun-37	Jun-36	340.00	261.00	257.70	0.9700	0.300	0.0320	0.00	8.12	0.00	0.00	0.00	0.00	0.00	
99	Link-94	Channel	Jun-41	Jun-40	95.00	259.35	257.75	1.6800	0.300	0.0320	0.00	10.69	0.00	0.00	0.00	0.00	0.00	
100	LowerRavine	Channel	Ravine_2	Ravine_3	124.00	253.00	252.45	0.4400	4.000	0.0320	1.25	157.98	0.01	0.84	0.27	0.07	0.00	
101	OutletRavine	Channel	Ravine_3	Outfall	45.00	252.45	252.00	1.0000	4.000	0.0320	1.25	237.22	0.01	1.12	0.21	0.05	0.00	
102	RH_C1	Channel	RH_12	RH_13	215.00	269.00	264.00	2.3300	1.500	0.0320	0.43	24.20	0.02	1.23	0.26	0.18	0.00	
103	RH_C2	Channel	RH_13	Ex_SE_Pond	60.00	264.00	263.50	0.8300	1.500	0.0320	0.43	14.49	0.03	1.04	0.27	0.18	0.00	
104	UpperRavine	Channel	Ravine_1	Ravine_2	553.00	256.10	253.00	0.5600	4.000	0.0320	1.29	177.61	0.01	0.90	0.28	0.07	0.00	
105	Orifice-01	Orifice	SWM_WP	OutletStructure		253.00	254.25		0.170		0.05							
106	Link-91	Weir	Jun-40	WestOutfall		256.10	257.00				0.00							
107	Weir-01	Weir	SWM_FB	SWM_WP		253.00	253.00				1.24							
108	Weir-04	Weir	SWM_WP	OutletStructure		253.00	254.25				0.00							
109	Weir-05	Weir	SWM_WP	Ravine_2		253.00	253.00				0.00							
110	Weir-06	Weir	SWM_WP	OutletStructure		253.00	254.25				0.00							

Junction Input

SN	Element ID	Invert Elevation (m)	Ground/Rim (Max) Elevation (m)	Ground/Rim (Max) Offset (m)	Initial Water Elevation (m)	Initial Water Depth (m)	Surcharge Elevation (m)	Surcharge Depth (m)	Ponded Area (m²)	Minimum Pipe Cover (m)
1	Ex_MHR1	255.88	262.50	6.62	0.00	-255.88	0.00	-262.50	0.00	0.00
2	Ex_MHR2	255.48	259.65	4.17	0.00	-255.48	0.00	-259.65	0.00	0.00
3	Ex_MHR25	256.48	263.35	6.87	0.00	-256.48	0.00	-263.35	0.00	0.00
4	Ex_MHR26	256.64	262.75	6.11	0.00	-256.64	0.00	-262.75	0.00	0.00
5	Ex_MHR27	256.94	261.00	4.06	0.00	-256.94	0.00	-261.00	0.00	0.00
6	Ex_MHR28	257.37	259.30	1.93	0.00	-257.37	0.00	-259.30	0.00	0.00
7	Ex_MHR3	255.23	259.00	3.77	0.00	-255.23	0.00	-259.00	0.00	0.00
8	Jun-34	254.62	258.25	3.63	0.00	-254.62	0.00	-258.25	0.00	0.00
9	Jun-35	254.70	257.50	2.80	0.00	-254.70	0.00	-257.50	0.00	0.00
10	Jun-36	254.72	258.00	3.28	0.00	-254.72	0.00	-258.00	0.00	0.00
11	Jun-37	255.29	261.30	6.01	0.00	-255.29	0.00	-261.30	0.00	0.00
12	Jun-38	255.53	261.80	6.27	0.00	-255.53	0.00	-261.80	0.00	0.00
13	Jun-39	256.93	259.05	2.12	0.00	-256.93	0.00	-259.05	0.00	0.00
14	Jun-40	256.10	258.55	2.45	0.00	-256.10	0.00	-258.55	0.00	0.00
15	Jun-41	255.77	259.65	3.88	0.00	-255.77	0.00	-259.65	0.00	0.00
16	Jun-42	255.23	258.90	3.67	0.00	-255.23	0.00	-258.90	0.00	0.00
17	Jun-43	256.25	257.25	1.00	0.00	-256.25	0.00	-257.25	0.00	0.00
18	Jun-44	257.55	258.55	1.00	0.00	-257.55	0.00	-258.55	0.00	0.00
19	Jun-46	257.70	258.70	1.00	0.00	-257.70	258.70	0.00	0.00	0.00
20	Jun-47	258.10	259.10	1.00	0.00	-258.10	0.00	-259.10	0.00	0.00
21	Jun-48	258.35	259.35	1.00	0.00	-258.35	0.00	-259.35	0.00	0.00
22	Jun-49	256.90	257.90	1.00	0.00	-256.90	0.00	-257.90	0.00	0.00
23	Jun-50	256.75	257.75	1.00	0.00	-256.75	0.00	-257.75	0.00	0.00
24	Jun-51	258.45	260.50	2.05	0.00	-258.45	0.00	-260.50	0.00	0.00
25	Jun-52	255.69	260.00	4.31	0.00	-255.69	0.00	-260.00	0.00	0.00
26	Jun-53	255.35	259.60	4.25	0.00	-255.35	0.00	-259.60	0.00	0.00
27	Jun-54	255.62	259.80	4.18	0.00	-255.62	0.00	-259.80	0.00	0.00
28	Jun-55	255.60	259.70	4.10	0.00	-255.60	0.00	-259.70	0.00	0.00
29	Jun-56	255.79	257.80	2.01	0.00	-255.79	0.00	-257.80	0.00	0.00
30	Jun-61	258.32	262.00	3.68	0.00	-258.32	0.00	-262.00	0.00	0.00
31	Jun-64	261.13	263.50	2.37	0.00	-261.13	0.00	-263.50	0.00	0.00
32	Jun-65	262.69	264.50	1.81	0.00	-262.69	0.00	-264.50	0.00	0.00
33	Jun-66	253.16	256.00	2.84	0.00	-253.16	0.00	-256.00	0.00	0.00
34	Jun-67	255.48	259.90	4.42	0.00	-255.48	0.00	-259.90	0.00	0.00
35	Jun-68	255.86	260.10	4.24	0.00	-255.86	0.00	-260.10	0.00	0.00
36	Jun-69	256.21	261.20	4.99	0.00	-256.21	0.00	-261.20	0.00	0.00
37	Jun-70	256.47	263.00	6.53	0.00	-256.47	0.00	-263.00	0.00	0.00
38	Jun-71	256.79	260.00	3.21	0.00	-256.79	0.00	-260.00	0.00	0.00
39	Jun-72	258.75	259.95	1.20	0.00	-258.75	0.00	-259.95	0.00	0.00
40	Jun-73	258.65	259.95	1.30	0.00	-258.65	0.00	-259.95	0.00	0.00
41	Jun-74	259.54	264.00	4.46	0.00	-259.54	0.00	-264.00	0.00	0.00
42	Jun-75	260.00	264.50	4.50	0.00	-260.00	0.00	-264.50	0.00	0.00
43	Jun-76	259.19	262.20	3.01	0.00	-259.19	0.00	-262.20	0.00	0.00
44	Jun-77	260.46	264.80	4.34	0.00	-260.46	0.00	-264.80	0.00	0.00
45	Jun-78	261.75	265.30	3.55	0.00	-261.75	0.00	-265.30	0.00	0.00
46	NorthWetland	252.00	258.00	6.00	0.00	-252.00	0.00	-258.00	0.00	0.00
47	OutletStructure	254.25	256.80	2.55	0.00	-254.25	0.00	-256.80	0.00	0.00
48	Ravine_1	256.10	260.10	4.00	0.00	-256.10	0.00	-260.10	0.00	0.00

Junction Input

SN	Element ID	Invert Elevation (m)	Ground/Rim (Max) Elevation (m)	Ground/Rim (Max) Offset (m)	Initial Water Elevation (m)	Initial Water Depth (m)	Surcharge Elevation (m)	Surcharge Depth (m)	Ponded Area (m²)	Minimum Pipe Cover (m)
49	Ravine_2	253.00	257.00	4.00	0.00	-253.00	0.00	-257.00	0.00	0.00
50	Ravine_3	252.45	256.45	4.00	0.00	-252.45	0.00	-256.45	0.00	0.00
51	RH_1	267.60	271.70	4.10	0.00	-267.60	0.00	-271.70	0.00	0.00
52	RH_10	261.90	263.90	2.00	0.00	-261.90	0.00	-263.90	0.00	0.00
53	RH_11	260.33	262.55	2.22	0.00	-260.33	0.00	-262.55	0.00	0.00
54	RH_12	269.00	270.50	1.50	0.00	-269.00	0.00	-270.50	0.00	0.00
55	RH_13	264.00	266.50	2.50	0.00	-264.00	0.00	-266.50	0.00	0.00
56	RH_14	261.70	263.50	1.80	0.00	-261.70	0.00	-263.50	0.00	0.00
57	RH_15	259.38	261.00	1.62	0.00	-259.38	0.00	-261.00	0.00	0.00
58	RH_16	256.36	258.00	1.64	0.00	-256.36	0.00	-258.00	0.00	0.00
59	RH_17	256.42	258.00	1.58	0.00	-256.42	0.00	-258.00	0.00	0.00
60	RH_2	270.14	272.45	2.31	0.00	-270.14	0.00	-272.45	0.00	0.00
61	RH_3	267.07	270.50	3.43	0.00	-267.07	0.00	-270.50	0.00	0.00
62	RH_4	266.63	268.60	1.97	0.00	-266.63	0.00	-268.60	0.00	0.00
63	RH_5	270.35	272.10	1.75	0.00	-270.35	0.00	-272.10	0.00	0.00
64	RH_6	266.50	268.20	1.70	0.00	-266.50	0.00	-268.20	0.00	0.00
65	RH_7	272.00	273.50	1.50	0.00	-272.00	0.00	-273.50	0.00	0.00
66	RH_8	267.75	269.85	2.10	0.00	-267.75	0.00	-269.85	0.00	0.00
67	RH_9	264.00	265.80	1.80	0.00	-264.00	0.00	-265.80	0.00	0.00
68	WestOutfall	257.00	258.40	1.40	0.00	-257.00	0.00	-258.40	0.00	0.00
69	WestWetland	258.00	259.00	1.00	0.00	-258.00	0.00	-259.00	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)	Total Time Flooded (min)
1	Ex_MHR1	0.22	0.00	256.28	0.40	0.00	6.22	255.99	0.11	0 00:22	0 00:00	0.00	0.00
2	Ex_MHR2	0.22	0.00	255.87	0.39	0.00	3.78	255.58	0.10	0 00:23	0 00:00	0.00	0.00
3	Ex_MHR25	0.22	0.00	256.93	0.45	0.00	6.42	256.58	0.10	0 00:22	0 00:00	0.00	0.00
4	Ex_MHR26	0.22	0.00	257.19	0.55	0.00	5.56	256.75	0.11	0 00:21	0 00:00	0.00	0.00
5	Ex_MHR27	0.22	0.00	257.74	0.80	0.00	3.26	257.07	0.13	0 00:21	0 00:00	0.00	0.00
6	Ex_MHR28	0.23	0.23	258.50	1.13	0.00	0.80	257.50	0.13	0 00:21	0 00:00	0.00	0.00
7	Ex_MHR3	0.22	0.00	255.58	0.35	0.00	3.42	255.33	0.10	0 00:24	0 00:00	0.00	0.00
8	Jun-34	1.46	0.00	255.40	0.78	0.00	2.85	255.06	0.44	0 00:22	0 00:00	0.00	0.00
9	Jun-35	0.13	0.13	255.18	0.48	0.00	2.32	255.01	0.31	0 04:37	0 00:00	0.00	0.00
10	Jun-36	1.49	0.00	255.58	0.86	0.00	2.77	255.10	0.38	0 00:22	0 00:00	0.00	0.00
11	Jun-37	0.91	0.09	255.89	0.60	0.00	5.41	255.45	0.16	0 00:19	0 00:00	0.00	0.00
12	Jun-38	0.29	0.27	256.13	0.60	0.00	5.67	255.66	0.13	0 00:19	0 00:00	0.00	0.00
13	Jun-39	0.02	0.02	257.04	0.11	0.00	2.01	256.96	0.03	0 00:20	0 00:00	0.00	0.00
14	Jun-40	0.02	0.00	256.22	0.12	0.00	2.33	256.14	0.04	0 00:21	0 00:00	0.00	0.00
15	Jun-41	0.05	0.03	256.14	0.37	0.00	3.51	255.83	0.06	0 00:20	0 00:00	0.00	0.00
16	Jun-42	0.43	0.00	255.67	0.44	0.00	3.23	255.36	0.13	0 00:26	0 00:00	0.00	0.00
17	Jun-43	0.25	0.00	256.43	0.18	0.00	1.32	256.30	0.05	0 00:30	0 00:00	0.00	0.00
18	Jun-44	0.23	0.00	257.85	0.30	0.00	0.75	257.63	0.08	0 00:25	0 00:00	0.00	0.00
19	Jun-46	0.24	0.00	258.00	0.30	0.00	0.75	257.80	0.10	0 00:22	0 00:00	0.00	0.00
20	Jun-47	0.27	0.05	258.48	0.38	0.00	0.62	258.19	0.09	0 00:18	0 00:00	0.00	0.00
21	Jun-48	0.01	0.00	258.48	0.13	0.00	0.92	258.40	0.05	0 00:19	0 00:00	0.00	0.00
22	Jun-49	0.26	0.07	257.21	0.31	0.00	0.89	257.01	0.11	0 00:26	0 00:00	0.00	0.00
23	Jun-50	0.26	0.00	257.16	0.41	0.00	0.79	256.87	0.12	0 00:28	0 00:00	0.00	0.00
24	Jun-51	0.22	0.00	258.80	0.35	0.00	1.70	258.52	0.07	0 00:15	0 00:00	0.00	0.00
25	Jun-52	0.26	0.00	256.10	0.41	0.00	3.90	255.78	0.09	0 00:16	0 00:00	0.00	0.00
26	Jun-53	0.33	0.00	255.82	0.47	0.00	3.78	255.46	0.11	0 00:15	0 00:00	0.00	0.00
27	Jun-54	0.10	0.10	256.04	0.42	0.00	3.76	255.84	0.22	0 00:12	0 00:00	0.00	0.00
28	Jun-55	0.24	0.15	255.99	0.39	0.00	3.71	255.68	0.08	0 00:12	0 00:00	0.00	0.00
29	Jun-56	0.30	0.01	256.05	0.26	0.00	1.75	255.85	0.06	0 00:14	0 00:00	0.00	0.00
30	Jun-61	0.27	0.00	258.53	0.21	0.00	4.27	258.36	0.04	0 00:12	0 00:00	0.00	0.00
31	Jun-64	0.13	0.00	261.29	0.16	0.00	2.21	261.16	0.03	0 00:11	0 00:00	0.00	0.00
32	Jun-65	0.13	0.13	262.87	0.18	0.00	1.63	262.72	0.03	0 00:10	0 00:00	0.00	0.00
33	Jun-66	0.05	0.00	253.31	0.15	0.00	2.69	253.28	0.12	0 00:50	0 00:00	0.00	0.00
34	Jun-67	0.35	0.09	255.96	0.48	0.00	3.94	255.60	0.12	0 00:19	0 00:00	0.00	0.00
35	Jun-68	0.16	0.09	256.21	0.35	0.00	3.89	255.94	0.08	0 00:15	0 00:00	0.00	0.00
36	Jun-69	0.08	0.08	256.41	0.20	0.00	4.79	256.25	0.04	0 00:10	0 00:00	0.00	0.00
37	Jun-70	0.11	0.11	256.68	0.21	0.00	6.32	256.52	0.05	0 00:15	0 00:00	0.00	0.00
38	Jun-71	0.12	0.12	256.99	0.20	0.00	3.01	256.84	0.05	0 00:15	0 00:00	0.00	0.00
39	Jun-72	0.09	0.09	259.00	0.25	0.00	0.95	258.80	0.05	0 00:10	0 00:00	0.00	0.00
40	Jun-73	0.14	0.14	258.97	0.32	0.00	0.98	258.72	0.07	0 00:15	0 00:00	0.00	0.00
41	Jun-74	0.15	0.08	259.73	0.19	0.00	4.27	259.58	0.04	0 00:11	0 00:00	0.00	0.00
42	Jun-75	0.07	0.07	260.15	0.15	0.00	4.35	260.03	0.03	0 00:10	0 00:00	0.00	0.00
43	Jun-76	0.30	0.13	259.45	0.26	0.00	2.75	259.25	0.06	0 00:15	0 00:00	0.00	0.00
44	Jun-77	0.18	0.00	260.70	0.24	0.00	4.10	260.51	0.05	0 00:14	0 00:00	0.00	0.00
45	Jun-78	0.18	0.18	262.01	0.26	0.00	3.29	261.80	0.05	0 00:12	0 00:00	0.00	0.00
46	NorthWetland	0.11	0.11	252.00	0.00	0.00	6.00	252.00	0.00	0 00:00	0 00:00	0.00	0.00
47	OutletStructure	0.05	0.00	254.45	0.20	0.00	3.90	254.44	0.19	0 04:38	0 00:00	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)	Total Time Flooded (min)
48	Ravine_1	1.22	0.02	256.37	0.27	0.00	3.73	256.20	0.10	0 00:30	0 00:00	0.00	0.00
49	Ravine_2	1.33	0.14	253.31	0.31	0.00	3.79	253.13	0.13	0 00:50	0 00:00	0.00	0.00
50	Ravine_3	1.25	0.02	252.69	0.24	0.00	3.76	252.55	0.10	0 00:51	0 00:00	0.00	0.00
51	RH_1	0.76	0.76	271.43	3.83	0.00	0.27	268.38	0.78	0 00:26	0 00:00	0.00	0.00
52	RH_10	0.99	0.05	263.02	1.12	0.00	0.88	262.23	0.33	0 00:56	0 00:00	0.00	0.00
53	RH_11	0.94	0.01	260.90	0.57	0.00	1.65	260.55	0.22	0 00:57	0 00:00	0.00	0.00
54	RH_12	0.43	0.43	269.21	0.21	0.00	1.29	269.05	0.05	0 00:16	0 00:00	0.00	0.00
55	RH_13	0.45	0.06	264.31	0.31	0.00	2.19	264.09	0.09	0 00:20	0 00:00	0.00	0.00
56	RH_14	0.27	0.00	262.03	0.33	0.00	1.47	261.82	0.12	0 00:38	0 00:00	0.00	0.00
57	RH_15	0.27	0.03	259.67	0.29	0.00	1.33	259.49	0.11	0 00:39	0 00:00	0.00	0.00
58	RH_16	0.27	0.00	256.82	0.46	0.00	1.18	256.52	0.16	0 00:37	0 00:00	0.00	0.00
59	RH_17	0.95	0.09	257.31	0.89	0.00	0.69	256.76	0.34	0 00:57	0 00:00	0.00	0.00
60	RH_2	0.62	0.62	272.18	2.04	0.00	0.27	270.59	0.45	0 00:19	0 00:00	0.00	0.00
61	RH_3	1.17	0.00	269.70	2.63	0.00	0.80	267.77	0.70	0 00:39	0 00:00	0.00	0.00
62	RH_4	0.85	0.01	268.20	1.57	0.00	0.40	267.04	0.41	0 00:41	0 00:00	0.00	0.00
63	RH_5	0.28	0.28	271.82	1.47	0.00	0.28	270.67	0.32	0 00:32	0 00:00	0.00	0.00
64	RH_6	1.05	0.00	267.92	1.42	0.00	0.28	266.88	0.38	0 00:53	0 00:00	0.00	0.00
65	RH_7	0.00	0.00	272.00	0.00	0.00	1.50	272.00	0.00	0 00:00	0 00:00	0.00	0.00
66	RH_8	0.10	0.10	267.93	0.18	0.00	1.92	267.78	0.03	0 00:11	0 00:00	0.00	0.00
67	RH_9	0.10	0.01	264.18	0.18	0.00	1.62	264.03	0.03	0 00:12	0 00:00	0.00	0.00
68	WestOutfall	0.01	0.01	257.00	0.00	0.00	2.45	257.00	0.00	0 00:00	0 00:00	0.00	0.00
69	WestWetland	0.04	0.04	258.00	0.00	0.00	1.00	258.00	0.00	0 00:00	0 00:00	0.00	0.00

Channel Input

SN	Element ID	Length (m)	Inlet Invert Elevation (m)	Inlet Invert Offset (m)	Outlet Invert Elevation (m)	Outlet Invert Offset (m)	Total Drop (m)	Average Slope (%)	Shape	Height (m)	Width (m)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cms)	Flap Gate
1	Link-103	10.00	257.70	2.98	257.50	4.50	0.20	2.0000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
2	Link-104	50.00	257.50	1.71	256.50	3.50	1.00	2.0000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
3	Link-122	70.00	259.30	3.95	258.60	3.37	0.70	1.0000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
4	Link-123	90.00	259.40	3.80	259.30	3.95	0.10	0.1100	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
5	Link-124	90.00	259.50	3.88	259.40	3.80	0.10	0.1100	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
6	Link-125	50.00	259.65	1.00	258.70	0.60	0.95	1.9000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
7	Link-126	50.00	259.65	0.90	258.70	0.60	0.95	1.9000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
8	Link-127	100.00	259.60	4.12	259.50	3.88	0.10	0.1000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
9	Link-128	150.00	259.70	4.01	259.60	4.12	0.10	0.0700	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
10	Link-129	80.00	259.80	3.94	259.70	4.01	0.10	0.1300	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
11	Link-130	100.00	259.90	3.69	259.80	3.94	0.10	0.1000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
12	Link-131	70.00	259.40	2.61	259.30	3.95	0.10	0.1400	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
13	Link-132	150.00	265.00	3.25	264.50	4.04	0.50	0.3300	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
14	Link-133	150.00	264.50	4.04	261.90	2.71	2.60	1.7300	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
15	Link-134	250.00	261.90	2.71	257.70	2.98	4.20	1.6800	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
16	Link-135	100.00	262.50	4.18	261.00	5.71	1.50	1.5000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
17	Link-34	270.00	271.40	3.80	269.65	2.58	1.75	0.6500	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
18	Link-35	50.00	272.15	2.01	269.65	2.58	2.50	5.0000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
19	Link-36	222.00	269.65	2.58	268.30	1.67	1.35	0.6100	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
20	Link-37	18.00	268.30	1.67	267.90	1.40	0.40	2.2200	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
21	Link-38	227.00	271.80	1.45	267.90	1.40	3.90	1.7200	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
22	Link-39	415.00	267.90	1.40	263.50	1.60	4.40	1.0600	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
23	Link-41	180.00	269.55	1.80	265.50	1.50	4.05	2.2500	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
24	Link-42	155.00	265.50	1.50	263.50	1.60	2.00	1.2900	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
25	Link-43	140.00	263.50	1.60	262.25	1.92	1.25	0.8900	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
26	Link-44	470.00	262.25	1.92	258.00	1.90	4.25	0.9000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
27	Link-45	195.00	263.20	1.50	260.70	1.32	2.50	1.2800	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
28	Link-46	280.00	260.70	1.32	258.00	1.90	2.70	0.9600	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
29	Link-51	65.00	259.00	1.63	258.05	3.33	0.95	1.4600	Rectangular	0.300	10.000	0.0320	0.5000	0.5000	0.0000	0.00	No
30	Link-61	125.00	256.75	0.00	256.25	0.00	0.50	0.4000	User-Defined	1.000	9.000	0.0320	0.5000	0.5000	0.0000	0.00	No
31	Link-63	162.50	257.55	0.00	256.90	0.00	0.65	0.4000	User-Defined	1.000	9.000	0.0320	0.5000	0.5000	0.0000	0.00	No
32	Link-66	133.00	258.10	0.00	257.70	0.00	0.40	0.3000	User-Defined	1.000	9.000	0.0320	0.5000	0.5000	0.0000	0.00	No
33	Link-67	75.00	258.40	0.05	258.10	0.00	0.30	0.4000	User-Defined	1.000	9.000	0.0320	0.5000	0.5000	0.0000	0.00	No
34	Link-89	53.10	258.60	3.37	257.70	2.98	0.90	1.6900	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
35	Link-90	90.00	258.75	1.82	257.75	1.65	1.00	1.1100	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
36	Link-92	110.00	261.50	5.97	261.00	5.71	0.50	0.4500	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
37	Link-93	340.00	261.00	5.71	257.70	2.98	3.30	0.9700	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
38	Link-94	95.00	259.35	3.58	257.75	1.65	1.60	1.6800	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
39	LowerRavine	124.00	253.00	0.00	252.45	0.00	0.55	0.4400	Trapezoidal	4.000	17.000	0.0320	0.5000	0.5000	0.0000	0.00	No
40	OutletRavine	45.00	252.45	0.00	252.00	0.00	0.45	1.0000	Trapezoidal	4.000	17.000	0.0320	0.5000	0.5000	0.0000	0.00	No
41	RH_C1	215.00	269.00	0.00	264.00	0.00	5.00	2.3300	Trapezoidal	1.500	7.000	0.0320	0.5000	0.5000	0.0000	0.00	No
42	RH_C2	60.00	264.00	0.00	263.50	1.50	0.50	0.8300	Trapezoidal	1.500	7.000	0.0320	0.5000	0.5000	0.0000	0.00	No
43	UpperRavine	553.00	256.10	0.00	253.00	0.00	3.10	0.5600	Trapezoidal	4.000	17.000	0.0320	0.5000	0.5000	0.0000	0.00	No

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-103	0.00	0 00:00	11.65	0.00	0.00		0.00	0.00	0.00	0.00	
2	Link-104	0.00	0 00:00	11.65	0.00	0.00		0.00	0.00	0.00	0.00	
3	Link-122	0.00	0 00:00	8.24	0.00	0.00		0.00	0.00	0.00	0.00	
4	Link-123	0.00	0 00:00	2.75	0.00	0.00		0.00	0.00	0.00	0.00	
5	Link-124	0.00	0 00:00	2.75	0.00	0.00		0.00	0.00	0.00	0.00	
6	Link-125	0.00	0 00:00	11.36	0.00	0.00		0.00	0.00	0.00	0.00	
7	Link-126	0.00	0 00:00	11.36	0.00	0.00		0.00	0.00	0.00	0.00	
8	Link-127	0.00	0 00:00	2.61	0.00	0.00		0.00	0.00	0.00	0.00	
9	Link-128	0.00	0 00:00	2.13	0.00	0.00		0.00	0.00	0.00	0.00	
10	Link-129	0.00	0 00:00	2.91	0.00	0.00		0.00	0.00	0.00	0.00	
11	Link-130	0.00	0 00:00	2.61	0.00	0.00		0.00	0.00	0.00	0.00	
12	Link-131	0.00	0 00:00	3.11	0.00	0.00		0.00	0.00	0.00	0.00	
13	Link-132	0.00	0 00:00	4.76	0.00	0.00		0.00	0.00	0.00	0.00	
14	Link-133	0.00	0 00:00	10.85	0.00	0.00		0.00	0.00	0.00	0.00	
15	Link-134	0.00	0 00:00	10.68	0.00	0.00		0.00	0.00	0.00	0.00	
16	Link-135	0.00	0 00:00	10.09	0.00	0.00		0.00	0.00	0.00	0.00	
17	Link-34	0.17	0 00:27	6.63	0.03	0.26	17.31	0.04	0.12	0.00	0.02	
18	Link-35	0.42	0 00:19	18.43	0.02	0.68	1.23	0.03	0.11	0.00	0.09	
19	Link-36	0.19	0 00:39	6.43	0.03	0.27	13.70	0.04	0.12	0.00	0.07	
20	Link-37	0.00	0 00:00	12.28	0.00	0.00		0.01	0.03	0.00	0.00	
21	Link-38	0.09	0 00:32	10.80	0.01	0.28	13.51	0.02	0.05	0.00	0.08	
22	Link-39	0.04	0 00:53	8.48	0.00	0.17	40.69	0.01	0.04	0.00	0.07	
23	Link-41	0.00	0 00:00	12.36	0.00	0.00		0.00	0.00	0.00	0.00	
24	Link-42	0.00	0 00:00	9.36	0.00	0.00		0.00	0.00	0.00	0.00	
25	Link-43	0.00	0 00:00	7.79	0.00	0.00		0.00	0.00	0.00	0.00	
26	Link-44	0.00	0 00:00	7.84	0.00	0.00		0.00	0.00	0.00	0.00	
27	Link-45	0.00	0 00:00	9.33	0.00	0.00		0.00	0.00	0.00	0.00	
28	Link-46	0.00	0 00:00	8.09	0.00	0.00		0.00	0.00	0.00	0.00	
29	Link-51	0.00	0 00:00	4.89	0.00	0.00		0.00	0.00	0.00	0.00	
30	Link-61	0.25	0 00:29	4.86	0.05	0.57	3.65	0.30	0.30	0.00	0.29	
31	Link-63	0.22	0 00:25	4.86	0.05	0.49	5.53	0.30	0.30	0.00	0.21	
32	Link-66	0.24	0 00:20	4.22	0.06	0.48	4.62	0.33	0.34	0.00	0.20	
33	Link-67	0.01	0 00:14	4.86	0.00	0.06	20.83	0.22	0.23	0.00	0.00	
34	Link-89	0.00	0 00:00	10.73	0.00	0.00		0.00	0.00	0.00	0.00	
35	Link-90	0.00	0 00:00	8.69	0.00	0.00		0.00	0.00	0.00	0.00	
36	Link-92	0.00	0 00:00	5.56	0.00	0.00		0.00	0.00	0.00	0.00	
37	Link-93	0.00	0 00:00	8.12	0.00	0.00		0.00	0.00	0.00	0.00	
38	Link-94	0.00	0 00:00	10.69	0.00	0.00		0.00	0.00	0.00	0.00	
39	LowerRavine	1.25	0 00:50	157.98	0.01	0.84	2.46	0.27	0.07	0.00	0.44	
40	OutletRavine	1.25	0 00:51	237.22	0.01	1.12	0.67	0.21	0.05	0.00	0.68	
41	RH_C1	0.43	0 00:16	24.20	0.02	1.23	2.91	0.26	0.18	0.00	0.45	
42	RH_C2	0.43	0 00:20	14.49	0.03	1.04	0.96	0.27	0.18	0.00	0.52	
43	UpperRavine	1.29	0 00:34	177.61	0.01	0.90	10.24	0.28	0.07	0.00	0.28	

Pipe Input

SN	Element ID	Length (m)	Inlet Invert Elevation (m)	Inlet Invert Offset (m)	Outlet Invert Elevation (m)	Outlet Invert Offset (m)	Total Drop (m)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (m)	Pipe Width (m)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cms)	Flap Gate
1	Ex.STM_1	107.00	257.37	0.00	256.94	0.00	0.43	0.4000	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
2	Ex.STM_2	73.00	256.94	0.00	256.64	0.00	0.30	0.4100	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
3	Ex.STM_3	27.00	256.64	0.00	256.48	0.00	0.16	0.5900	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
4	Ex.STM_4	100.00	256.48	0.00	255.88	0.00	0.60	0.6000	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
5	Ex.STM_5	100.00	255.88	0.00	255.48	0.00	0.40	0.4000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
6	Ex.STM_6	50.00	255.48	0.00	255.23	0.00	0.25	0.5000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
7	Ex.STM_7	102.00	255.23	0.00	254.82	0.00	0.41	0.4000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
8	Link-106	24.80	253.16	0.00	252.85	-0.15	0.31	1.2500	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
9	Link-107	93.20	254.35	0.10	253.20	0.04	1.15	1.2300	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
10	Link-108	110.30	255.48	0.00	255.37	0.08	0.11	0.1000	CIRCULAR	1.200	1.200	0.0130	0.5000	0.5000	0.0000	0.00	No
11	Link-109	30.00	257.70	0.00	257.55	0.00	0.15	0.5000	CIRCULAR	1.050	1.050	0.0130	0.5000	0.5000	0.0000	0.00	No
12	Link-110	153.00	255.69	0.00	255.48	0.00	0.21	0.1400	CIRCULAR	0.900	0.900	0.0130	0.5000	0.5000	0.0000	0.00	No
13	Link-111	66.80	255.86	0.00	255.77	0.08	0.09	0.1300	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
14	Link-112	106.60	256.21	0.00	255.91	0.05	0.30	0.2800	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
15	Link-113	97.50	256.47	0.00	255.88	0.19	0.59	0.6100	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
16	Link-114	85.10	256.79	0.00	255.73	0.38	1.06	1.2500	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
17	Link-115	50.00	258.65	0.00	258.50	0.05	0.15	0.3000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
18	Link-116	50.00	258.75	0.00	258.55	0.10	0.20	0.4000	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
19	Link-117	90.00	259.54	0.00	258.37	0.05	1.17	1.3000	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
20	Link-118	41.60	260.00	0.00	259.56	0.02	0.44	1.0600	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
21	Link-119	181.70	259.19	0.00	256.08	0.29	3.11	1.7100	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
22	Link-120	140.50	260.46	0.00	259.24	0.05	1.22	0.8700	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
23	Link-121	152.20	261.75	0.00	260.51	0.05	1.24	0.8100	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
24	Link-49	20.70	254.62	0.00	254.60	1.60	0.02	0.1000	CIRCULAR	1.800	1.800	0.0130	0.5000	0.5000	0.0000	0.00	No
25	Link-50	75.20	254.70	0.00	254.60	1.60	0.10	0.1300	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
26	Link-52	35.00	254.72	0.00	254.67	0.05	0.05	0.1400	CIRCULAR	1.650	1.650	0.0130	0.5000	0.5000	0.0000	0.00	No
27	Link-53	336.90	255.29	0.00	254.74	0.02	0.55	0.1600	CIRCULAR	1.350	1.350	0.0130	0.5000	0.5000	0.0000	0.00	No
28	Link-54	110.00	255.53	0.00	255.31	0.02	0.22	0.2000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
29	Link-56	110.00	255.77	0.00	255.55	0.02	0.22	0.2000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
30	Link-57	95.50	256.10	0.00	255.85	0.08	0.25	0.2600	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
31	Link-58	90.00	256.93	0.00	256.25	0.15	0.68	0.7600	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
32	Link-59	53.10	255.23	0.00	255.13	0.41	0.10	0.1900	CIRCULAR	1.500	1.500	0.0130	0.5000	0.5000	0.0000	0.00	No
33	Link-60	13.40	256.25	0.00	255.84	0.61	0.41	3.0600	CIRCULAR	1.500	1.500	0.0130	0.5000	0.5000	0.0000	0.00	No
34	Link-62	25.00	256.90	0.00	256.75	0.00	0.15	0.6000	CIRCULAR	1.200	1.200	0.0130	0.5000	0.5000	0.0000	0.00	No
35	Link-68	60.00	258.45	0.00	258.20	0.10	0.25	0.4200	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
36	Link-70	57.00	255.35	0.00	255.25	0.02	0.10	0.1800	CIRCULAR	0.820	0.820	0.0130	0.5000	0.5000	0.0000	0.00	No
37	Link-71	82.00	255.60	0.00	255.43	0.08	0.17	0.2100	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
38	Link-72	85.00	255.79	0.17	255.62	0.02	0.17	0.2000	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
39	Link-73	67.80	255.78	-0.01	255.10	0.38	0.68	1.0000	CIRCULAR	0.900	0.900	0.0130	0.5000	0.5000	0.0000	0.00	No
40	Link-80	89.90	258.32	0.00	255.97	0.68	2.35	2.6100	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
41	Link-81	93.20	261.13	0.00	259.27	0.95	1.86	2.0000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
42	Link-82	103.90	262.69	0.00	261.13	0.00	1.56	1.5000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
43	RH_A1	50.00	270.14	0.00	268.50	1.43	1.64	3.2800	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
44	RH_B1	227.00	270.35	0.00	266.50	0.00	3.85	1.7000	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
45	RH_C3	15.00	262.00	0.00	261.70	0.00	0.30	2.0000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
46	RH_C4	195.00	261.70	0.00	259.38	0.00	2.32	1.1900	CIRCULAR	0.530	0.530	0.0150	0.5000	0.5000	0.0000	0.00	No
47	RH_C5	274.00	259.38	0.00	256.36	0.00	3.02	1.1000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
48	RH_C6	6.00	256.36	0.00	256.24	0.14	0.12	2.0000	CIRCULAR	0.700	0.700	0.0130	0.5000	0.5000	0.0000	0.00	No

Pipe Input

SN	Element ID	Length (m)	Inlet Invert Elevation (m)	Inlet Invert Offset (m)	Outlet Invert Elevation (m)	Outlet Invert Offset (m)	Total Drop (m)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (m)	Pipe Width (m)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cms)	Flap Gate
49	RH_D1	275.00	272.00	0.00	267.75	0.00	4.25	1.5500	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
50	RH_D2	180.00	267.75	0.00	264.00	0.00	3.75	2.0800	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
51	RH_D3	155.00	264.00	0.00	261.90	0.00	2.10	1.3500	CIRCULAR	0.380	0.380	0.0130	0.5000	0.5000	0.0000	0.00	No
52	RH_M1	270.00	267.60	0.00	267.07	0.00	0.53	0.2000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
53	RH_M2	222.00	267.07	0.00	266.63	0.00	0.44	0.2000	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
54	RH_M3	18.00	266.63	0.00	266.50	0.00	0.13	0.7200	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
55	RH_M4	415.00	266.50	0.00	261.90	0.00	4.60	1.1100	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
56	RH_M5	140.00	261.90	0.00	260.33	0.00	1.57	1.1200	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
57	RH_M6	464.00	260.33	0.00	256.42	0.00	3.91	0.8400	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
58	RH_M7	6.00	256.42	0.00	256.37	0.27	0.05	0.8300	CIRCULAR	1.000	1.000	0.0130	0.5000	0.5000	0.0000	0.00	No
59	West_Link	33.73	256.00	-1.00	257.00	0.00	-1.00	-2.9600	Dummy	0.000	0.000	0.0130	0.5000	0.5000	0.0000	0.00	No
60	WestWetland_Link	37.13	258.00	0.00	258.00	0.00	0.00	0.0000	Dummy	0.000	0.000	0.0130	0.5000	0.5000	0.0000	0.00	No
61	Wetland_Link	41.51	252.00	0.00	252.00	0.00	0.00	0.0000	Dummy	0.000	0.000	0.0130	0.5000	0.5000	0.0000	0.00	No

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	Ex.STM_1	0.22	0 00:20	0.18	1.24	1.41	1.26	0.45	1.00	16.00	0.66	SURCHARGED
2	Ex.STM_2	0.22	0 00:20	0.18	1.23	1.41	0.86	0.45	1.00	11.00	0.70	SURCHARGED
3	Ex.STM_3	0.22	0 00:20	0.22	1.02	1.41	0.32	0.44	1.00	0.00	0.81	> CAPACITY
4	Ex.STM_4	0.22	0 00:22	0.22	1.01	1.47	1.13	0.41	0.94	0.00	0.81	> CAPACITY
5	Ex.STM_5	0.22	0 00:23	0.27	0.82	1.29	1.29	0.39	0.75	0.00	0.74	Calculated
6	Ex.STM_6	0.22	0 00:24	0.30	0.73	1.36	0.61	0.37	0.70	0.00	0.73	Calculated
7	Ex.STM_7	0.22	0 00:24	0.39	0.57	1.40	1.21	0.33	0.55	0.00	0.82	Calculated
8	Link-106	0.05	0 04:39	0.89	0.05	1.51	0.27	0.23	0.31	0.00	1.17	Calculated
9	Link-107	0.05	0 04:38	1.24	0.04	1.33	1.17	0.10	0.14	0.00	1.52	Calculated
10	Link-108	0.32	0 00:17	1.23	0.26	0.75	2.45	0.50	0.42	0.00	0.39	Calculated
11	Link-109	0.23	0 00:22	1.93	0.12	1.76	0.28	0.30	0.28	0.00	0.47	Calculated
12	Link-110	0.26	0 00:15	0.67	0.38	0.91	2.80	0.44	0.49	0.00	0.32	Calculated
13	Link-111	0.16	0 00:15	0.41	0.38	0.89	1.25	0.33	0.45	0.00	0.45	Calculated
14	Link-112	0.08	0 00:10	0.33	0.25	0.85	2.09	0.24	0.40	0.00	0.47	Calculated
15	Link-113	0.11	0 00:15	0.33	0.32	1.30	1.25	0.21	0.41	0.00	0.85	Calculated
16	Link-114	0.12	0 00:15	0.32	0.36	1.78	0.80	0.19	0.43	0.00	1.41	Calculated
17	Link-115	0.14	0 00:15	0.24	0.57	1.01	0.83	0.31	0.59	0.00	0.64	Calculated
18	Link-116	0.09	0 00:11	0.18	0.50	1.08	0.77	0.24	0.54	0.00	0.64	Calculated
19	Link-117	0.15	0 00:11	0.96	0.15	1.88	0.80	0.18	0.27	0.00	1.13	Calculated
20	Link-118	0.07	0 00:10	0.44	0.15	1.28	0.54	0.15	0.30	0.00	0.94	Calculated
21	Link-119	0.30	0 00:16	0.80	0.37	2.56	1.18	0.25	0.43	0.00	1.46	Calculated
22	Link-120	0.18	0 00:14	0.57	0.31	1.73	1.35	0.23	0.39	0.00	0.98	Calculated
23	Link-121	0.18	0 00:12	0.39	0.46	1.71	1.48	0.25	0.48	0.00	0.94	Calculated
24	Link-49	1.46	0 00:22	3.57	0.41	1.66	0.21	0.68	0.38	0.00	0.22	Calculated
25	Link-50	0.13	0 00:16	0.22	0.58	0.97	1.29	0.53	0.89	0.00	0.08	Calculated
26	Link-52	1.46	0 00:22	3.45	0.42	1.44	0.41	0.79	0.48	0.00	0.23	Calculated
27	Link-53	0.87	0 00:19	2.16	0.40	1.15	4.88	0.71	0.53	0.00	0.23	Calculated
28	Link-54	0.27	0 00:22	0.27	1.00	1.04	1.76	0.59	0.98	0.00	0.47	Calculated
29	Link-56	0.06	0 00:24	0.27	0.20	0.29	6.32	0.48	0.80	0.00	0.26	Calculated
30	Link-57	0.02	0 00:21	0.15	0.15	0.64	2.49	0.20	0.46	0.00	0.58	Calculated
31	Link-58	0.02	0 00:20	0.08	0.27	0.99	1.52	0.11	0.36	0.00	0.91	Calculated
32	Link-59	0.43	0 00:28	3.07	0.14	1.17	0.76	0.44	0.30	0.00	0.61	Calculated
33	Link-60	0.25	0 00:30	12.37	0.02	2.32	0.10	0.17	0.11	0.00	1.79	Calculated
34	Link-62	0.26	0 00:26	3.02	0.09	1.22	0.34	0.36	0.30	0.00	0.36	Calculated
35	Link-68	0.22	0 00:15	0.40	0.54	1.37	0.73	0.32	0.54	0.00	0.75	Calculated
36	Link-70	0.33	0 00:15	0.60	0.55	1.26	0.75	0.41	0.50	0.00	0.48	Calculated
37	Link-71	0.23	0 00:11	0.51	0.45	1.08	1.27	0.38	0.51	0.00	0.52	Calculated
38	Link-72	0.10	0 00:10	0.50	0.20	0.70	2.02	0.30	0.41	0.00	0.33	Calculated
39	Link-73	0.31	0 00:16	1.83	0.17	1.94	0.58	0.35	0.39	0.00	0.91	Calculated
40	Link-80	0.27	0 00:12	1.80	0.15	2.82	0.53	0.20	0.27	0.00	1.59	Calculated
41	Link-81	0.12	0 00:12	0.87	0.14	2.11	0.74	0.15	0.26	0.00	1.33	Calculated
42	Link-82	0.13	0 00:10	0.75	0.17	2.05	0.84	0.16	0.28	0.00	1.13	Calculated
43	RH_A1	0.23	0 00:10	0.18	1.32	3.26	0.26	0.30	1.00	68.00	1.62	SURCHARGED
44	RH_B1	0.14	0 00:14	0.13	1.10	2.44	1.55	0.30	1.00	63.00	0.58	SURCHARGED
45	RH_C3	0.27	0 00:37	0.87	0.31	1.79	0.14	0.31	0.52	0.00	1.24	Calculated
46	RH_C4	0.27	0 00:38	0.41	0.66	2.02	1.61	0.31	0.59	0.00	1.20	Calculated
47	RH_C5	0.27	0 00:39	0.45	0.60	1.66	2.75	0.38	0.71	0.00	0.97	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
48	RH_C6	0.28	0 00:37	1.31	0.21	1.54	0.06	0.34	0.49	0.00	1.12	Calculated
49	RH_D1	0.00	0 00:00	0.12	0.00	0.00		0.08	0.30	0.00	0.00	Calculated
50	RH_D2	0.09	0 00:11	0.14	0.64	2.06	1.46	0.16	0.60	0.00	1.08	Calculated
51	RH_D3	0.10	0 00:12	0.20	0.48	1.67	1.55	0.27	0.74	0.00	0.10	Calculated
52	RH_M1	0.50	0 00:16	0.27	1.83	1.76	2.56	0.60	1.00	76.00	0.26	SURCHARGED
53	RH_M2	0.80	0 00:17	0.37	2.13	2.23	1.66	0.68	1.00	67.00	0.46	SURCHARGED
54	RH_M3	0.85	0 00:39	0.95	0.89	1.95	0.15	0.75	1.00	61.00	0.70	SURCHARGED
55	RH_M4	0.91	0 00:19	0.89	1.03	2.63	2.63	0.68	1.00	62.00	0.97	SURCHARGED
56	RH_M5	0.94	0 00:56	0.89	1.05	2.79	0.84	0.62	0.92	0.00	1.15	> CAPACITY
57	RH_M6	0.94	0 00:57	1.02	0.92	2.28	3.39	0.66	0.88	0.00	0.82	Calculated
58	RH_M7	0.95	0 00:57	2.19	0.43	1.68	0.06	0.67	0.67	0.00	0.85	Calculated
59	West_Link	0.01	0 00:09	0.00	0.01	0.00		0.28	0.07	0.00	0.28	Calculated
60	WestWetland_Link	0.04	0 00:09	0.00	0.01	0.00		0.28	0.07	0.00	0.28	Calculated
61	Wetland_Link	0.11	0 00:09	0.00	0.01	0.00		0.28	0.07	0.00	0.28	Calculated

Project Description

File Name	18010_Post-Development Rev.1.SPF
Description	I:\ACAD Projects\2018\18010\03-Ref\18010_Pre-Dev. Storm Parcels.dwg I:\ACAD Projects\2018\18010\03-Ref\18010_Pre-Dev. Storm Parcels.dwg I:\ACAD Projects\2018\18010\03-Ref\18010_Post-Dev.Storm Parcels.dwg I:\ACAD Projects\2018\18010\03-Ref\18010_Post-Dev.Storm Parcels.dwg

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	YES

Analysis Options

Start Analysis On	00:00:00	0:00:00
End Analysis On	00:00:00	0:00:00
Start Reporting On	00:00:00	0:00:00
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	60
Nodes	77
Junctions	69
Outfalls	5
Flow Diversions	0
Inlets	0
Storage Nodes	3
Links	110
Channels	43
Pipes	61
Pumps	0
Orifices	1
Weirs	5
Outlets	0
Pollutants	0
Land Uses	0

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	{Survey Site}.Standard : 10	0.92	2.00	67.00	2.0000	125.00	0.0130	0.2000	59.19	43.7930	14.16	13.00	0.01	0 01:18:05
2	{Survey Site}.Standard : 11	21.38	2.00	67.00	2.0000	360.00	0.0130	0.2000	59.19	40.8400	15.82	338.20	0.13	0 04:33:43
3	{Survey Site}.Standard : 12	0.71	5.00	67.00	2.0000	90.00	0.0130	0.2000	59.19	42.4520	15.47	10.99	0.01	0 01:20:01
4	{Survey Site}.Standard : 13	1.65	45.00	71.05	2.0000	220.00	0.0130	0.2000	59.19	23.0560	34.85	57.43	0.20	0 00:55:52
5	{Survey Site}.Standard : 14	4.32	2.00	67.00	2.0000	350.00	0.0130	0.2000	59.19	44.0630	13.87	59.90	0.04	0 01:46:38
6	{Survey Site}.Standard : 17	0.36	5.00	67.00	5.0000	20.00	0.0130	0.2000	59.19	42.6430	15.28	5.44	0.01	0 01:39:02
7	{Survey Site}.Standard : 18	13.10	5.00	48.00	10.0000	300.00	0.0130	0.2000	59.19	50.9960	6.94	90.85	0.17	0 02:17:49
8	{Survey Site}.Standard : 19	1.16	55.00	78.40	2.0000	90.00	0.0130	0.2000	59.19	16.3960	41.52	48.16	0.17	0 01:08:36
9	{Survey Site}.Standard : 2	20.86	45.00	71.05	2.0000	300.00	0.0130	0.2000	59.19	23.9870	33.88	706.81	1.84	0 03:32:46
10	{Survey Site}.Standard : 23	2.20	5.00	48.00	10.0000	100.00	0.0130	0.2000	59.19	50.5770	7.35	16.16	0.03	0 01:31:18
11	{Survey Site}.Standard : 26	1.12	45.00	71.05	2.0000	40.00	0.0130	0.2000	59.19	23.4430	34.46	38.74	0.12	0 02:03:32
12	{Survey Site}.Standard : 27	0.37	45.00	71.05	2.0000	60.00	0.0130	0.2000	59.19	23.0320	34.87	12.90	0.05	0 00:49:43
13	{Survey Site}.Standard : 28	0.12	45.00	71.05	2.0000	40.00	0.0130	0.2000	59.19	22.9350	34.94	4.30	0.02	0 00:32:45
14	{Survey Site}.Standard : 29	7.86	45.00	71.05	2.0000	110.00	0.0130	0.2000	59.19	24.0110	33.85	266.16	0.69	0 03:36:17
15	{Survey Site}.Standard : 3	25.14	45.00	71.05	2.0000	370.00	0.0130	0.2000	59.19	23.9750	33.90	852.14	2.23	0 03:29:49
16	{Survey Site}.Standard : 30	20.00	30.00	63.70	2.0000	225.00	0.0130	0.2000	59.19	34.1590	23.75	474.80	1.21	0 04:44:52
17	{Survey Site}.Standard : 31	5.54	5.00	57.00	2.0000	245.00	0.0130	0.2000	59.19	47.9010	10.02	55.55	0.07	0 02:30:34
18	{Survey Site}.Standard : 32	3.34	2.00	67.00	2.0000	95.00	0.0130	0.2000	59.19	45.0930	12.85	42.84	0.02	0 03:19:39
19	{Survey Site}.Standard : 33	7.71	2.00	67.00	2.0000	215.00	0.0130	0.2000	59.19	45.1170	12.82	98.78	0.05	0 03:22:10
20	{Survey Site}.Standard : 4	3.13	2.00	67.00	2.0000	155.00	0.0130	0.2000	59.19	44.4550	13.48	42.19	0.02	0 02:23:18
21	{Survey Site}.Standard : 46	5.31	2.00	67.00	2.0000	200.00	0.0130	0.2000	59.19	44.7500	13.19	70.10	0.04	0 02:48:55
22	{Survey Site}.Standard : 5	10.46	45.00	71.05	0.5000	235.00	0.0130	0.2000	59.19	24.1810	33.65	351.95	0.85	0 04:06:44
23	{Survey Site}.Standard : 51	0.39	95.00	95.55	0.5000	20.00	0.0130	0.2000	59.19	0.5150	57.10	21.98	0.07	0 00:40:10
24	{Survey Site}.Standard : 52	10.94	2.00	36.00	0.5000	240.00	0.0130	0.2000	59.19	52.2300	2.47	26.99	0.06	0 05:53:58
25	{Survey Site}.Standard : 53	0.36	75.00	85.75	3.0000	20.00	0.0130	0.2000	59.19	6.8350	50.70	18.45	0.07	0 00:52:31
26	{Survey Site}.Standard : 54	3.94	75.00	85.75	2.0000	150.00	0.0130	0.2000	59.19	6.8350	50.62	199.39	0.69	0 01:13:54
27	{Survey Site}.Standard : 57	0.42	20.00	58.80	2.0000	125.00	0.0130	0.2000	59.19	38.8390	19.05	8.06	0.02	0 00:43:26
28	{Survey Site}.Standard : 6	11.54	2.00	67.00	2.0000	280.00	0.0130	0.2000	59.19	45.3140	12.62	145.63	0.07	0 03:39:51
29	{Survey Site}.Standard : 63	1.63	55.00	75.95	2.0000	90.00	0.0130	0.2000	59.19	17.3880	40.52	66.01	0.22	0 01:24:06
30	{Survey Site}.Standard : 65	1.71	55.00	75.95	2.0000	130.00	0.0130	0.2000	59.19	17.3230	40.59	69.38	0.25	0 01:09:25
31	{Survey Site}.Standard : 68	1.31	55.00	75.95	2.0000	90.00	0.0130	0.2000	59.19	17.3400	40.57	53.23	0.19	0 01:13:52
32	{Survey Site}.Standard : 69	2.53	55.00	75.95	0.5000	85.00	0.0130	0.2000	59.19	17.6720	40.06	101.19	0.27	0 02:51:40
33	{Survey Site}.Standard : 7	10.98	5.00	67.00	2.0000	225.00	0.0130	0.2000	59.19	44.1410	13.80	151.40	0.15	0 03:58:43
34	{Survey Site}.Standard : 71	0.41	75.00	85.75	0.5000	20.00	0.0130	0.2000	59.19	6.8350	50.54	20.62	0.06	0 01:36:16
35	{Survey Site}.Standard : 72	1.08	55.00	75.95	2.0000	75.00	0.0130	0.2000	59.19	17.3400	40.58	43.62	0.15	0 01:13:07
36	{Survey Site}.Standard : 73	1.04	5.00	51.45	1.5000	65.00	0.0130	0.2000	59.19	49.8090	8.12	8.41	0.01	0 02:13:01
37	{Survey Site}.Standard : 74	2.88	55.00	75.95	2.0000	70.00	0.0130	0.2000	59.19	17.6320	40.24	115.89	0.34	0 02:17:40
38	{Survey Site}.Standard : 75	0.35	5.00	51.45	0.5000	35.00	0.0130	0.2000	59.19	49.8750	8.05	2.83	0.00	0 02:20:18
39	{Survey Site}.Standard : 76	0.87	5.00	51.45	25.0000	150.00	0.0130	0.2000	59.19	48.9130	9.03	7.89	0.01	0 00:31:16
40	{Survey Site}.Standard : 77	2.26	95.00	49.00	2.0000	250.00	0.0130	0.2000	59.19	2.6120	55.28	124.70	0.52	0 00:16:49
41	{Survey Site}.Standard : 78	2.38	55.00	75.95	3.0000	75.00	0.0130	0.2000	59.19	16.1230	45.45	108.35	0.33	0 01:44:25
42	{Survey Site}.Standard : 79	0.19	5.00	51.45	2.0000	25.00	0.0130	0.2000	59.19	49.3110	8.63	1.60	0.00	0 01:17:00
43	{Survey Site}.Standard : 8	3.30	2.00	67.00	2.0000	125.00	0.0130	0.2000	59.19	44.7250	13.20	43.61	0.02	0 02:48:24
44	{Survey Site}.Standard : 80	0.72	2.00	48.00	10.0000	55.00	0.0130	0.2000	59.19	49.2030	7.24	5.21	0.00	0 01:08:09
45	{Survey Site}.Standard : 81	1.46	35.00	66.15	2.0000	55.00	0.0130	0.2000	59.19	29.7200	28.19	41.22	0.12	0 02:12:04
46	{Survey Site}.Standard : 82	1.98	35.00	66.15	2.0000	55.00	0.0130	0.2000	59.19	29.9200	28.00	55.35	0.16	0 02:38:17
47	{Survey Site}.Standard : 83	1.98	55.00	75.95	2.0000	75.00	0.0130	0.2000	59.19	17.9060	57.80	114.62	0.31	0 01:45:35

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)
48	{Survey Site}.Standard : 84	1.00	55.00	75.95	2.0000	50.00	0.0130	0.2000	59.19	17.4130	40.49	40.66	0.14	0 01:29:31
49	{Survey Site}.Standard : 85	1.78	55.00	75.95	2.0000	70.00	0.0130	0.2000	59.19	17.4690	40.42	72.07	0.23	0 01:43:15
50	{Survey Site}.Standard : 86	1.43	55.00	75.95	2.0000	100.00	0.0130	0.2000	59.19	17.3400	40.58	57.82	0.20	0 01:12:52
51	{Survey Site}.Standard : 87	2.66	55.00	75.95	2.0000	100.00	0.0130	0.2000	59.19	17.4860	40.41	107.37	0.35	0 01:45:54
52	{Survey Site}.Standard : 88	1.64	55.00	75.95	2.0000	75.00	0.0130	0.2000	59.19	17.4290	40.47	66.29	0.22	0 01:34:09
53	{Survey Site}.Standard : 89	1.11	55.00	75.95	2.0000	100.00	0.0130	0.2000	59.19	17.2910	40.62	45.21	0.16	0 01:02:49
54	{Survey Site}.Standard : 9	3.53	2.00	67.00	2.0000	100.00	0.0130	0.2000	59.19	45.0930	12.84	45.34	0.02	0 03:20:23
55	{Survey Site}.Standard : 90	1.22	65.00	80.85	2.0000	130.00	0.0130	0.2000	59.19	11.8290	46.01	55.91	0.22	0 00:48:39
56	{Survey Site}.Standard : 91	1.00	65.00	80.85	2.0000	130.00	0.0130	0.2000	59.19	11.8290	46.03	45.89	0.18	0 00:43:12
57	{Survey Site}.Standard : 92	2.19	55.00	75.95	2.0000	75.00	0.0130	0.2000	59.19	17.5100	40.38	88.54	0.28	0 01:52:09
58	{Survey Site}.Standard : 93	2.28	20.00	58.80	5.0000	525.00	0.0130	0.2000	59.19	38.8140	19.08	43.43	0.12	0 00:38:17
59	Sub-01	0.13	55.00	75.95	2.0000	40.00	0.0130	0.2000	59.19	17.1530	40.74	5.30	0.02	0 00:30:01
60	Sub-02	0.18	55.00	75.95	2.0000	30.00	0.0130	0.2000	59.19	17.2100	40.70	7.33	0.03	0 00:43:22

Node Summary

SN	Element ID	Element Type	Invert Elevation (m)	Ground/Rim (Max) Elevation (m)	Initial Water Elevation (m)	Surcharge Elevation (m)	Ponded Area (m²)	Peak Inflow (cms)	Max HGL Elevation Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ha-mm)	Total Time Flooded (min)
1	Ex_MHR1	Junction	255.88	262.50	0.00	0.00	0.00	0.25	256.32	0.00	6.18	0 00:00	0.00	0.00
2	Ex_MHR2	Junction	255.48	259.65	0.00	0.00	0.00	0.25	255.90	0.00	3.75	0 00:00	0.00	0.00
3	Ex_MHR25	Junction	256.48	263.35	0.00	0.00	0.00	0.25	257.50	0.00	5.85	0 00:00	0.00	0.00
4	Ex_MHR26	Junction	256.64	262.75	0.00	0.00	0.00	0.25	257.83	0.00	4.92	0 00:00	0.00	0.00
5	Ex_MHR27	Junction	256.94	261.00	0.00	0.00	0.00	0.25	258.26	0.00	2.74	0 00:00	0.00	0.00
6	Ex_MHR28	Junction	257.37	259.30	0.00	0.00	0.00	0.69	259.07	0.00	0.23	0 00:00	0.00	0.00
7	Ex_MHR3	Junction	255.23	259.00	0.00	0.00	0.00	0.25	255.61	0.00	3.39	0 00:00	0.00	0.00
8	Jun-34	Junction	254.62	258.25	0.00	0.00	0.00	3.67	255.99	0.00	2.26	0 00:00	0.00	0.00
9	Jun-35	Junction	254.70	257.50	0.00	0.00	0.00	0.33	255.98	0.00	1.52	0 00:00	0.00	0.00
10	Jun-36	Junction	254.72	258.00	0.00	0.00	0.00	3.70	256.22	0.00	2.13	0 00:00	0.00	0.00
11	Jun-37	Junction	255.29	261.30	0.00	0.00	0.00	2.00	256.65	0.00	4.65	0 00:00	0.00	0.00
12	Jun-38	Junction	255.53	261.80	0.00	0.00	0.00	0.75	257.87	0.00	3.93	0 00:00	0.00	0.00
13	Jun-39	Junction	256.93	259.05	0.00	0.00	0.00	0.07	258.13	0.00	0.92	0 00:00	0.00	0.00
14	Jun-40	Junction	256.10	258.55	0.00	0.00	0.00	0.14	257.77	0.00	0.78	0 00:00	0.00	0.00
15	Jun-41	Junction	255.77	259.65	0.00	0.00	0.00	0.20	257.86	0.00	1.79	0 00:00	0.00	0.00
16	Jun-42	Junction	255.23	258.90	0.00	0.00	0.00	0.99	256.26	0.00	2.64	0 00:00	0.00	0.00
17	Jun-43	Junction	256.25	257.25	0.00	0.00	0.00	0.55	256.53	0.00	1.22	0 00:00	0.00	0.00
18	Jun-44	Junction	257.55	258.55	0.00	0.00	0.00	0.52	257.97	0.00	0.63	0 00:00	0.00	0.00
19	Jun-46	Junction	257.70	258.70	0.00	258.70	0.00	0.64	258.25	0.00	0.50	0 00:00	0.00	0.00
20	Jun-47	Junction	258.10	259.10	0.00	0.00	0.00	0.64	258.58	0.00	0.52	0 00:00	0.00	0.00
21	Jun-48	Junction	258.35	259.35	0.00	0.00	0.00	0.03	258.59	0.00	0.81	0 00:00	0.00	0.00
22	Jun-49	Junction	256.90	257.90	0.00	0.00	0.00	0.56	257.39	0.00	0.71	0 00:00	0.00	0.00
23	Jun-50	Junction	256.75	257.75	0.00	0.00	0.00	0.54	257.29	0.00	0.66	0 00:00	0.00	0.00
24	Jun-51	Junction	258.45	260.50	0.00	0.00	0.00	0.51	259.29	0.00	1.21	0 00:00	0.00	0.00
25	Jun-52	Junction	255.69	260.00	0.00	0.00	0.00	0.58	256.79	0.00	3.21	0 00:00	0.00	0.00
26	Jun-53	Junction	255.35	259.60	0.00	0.00	0.00	0.73	256.45	0.00	3.15	0 00:00	0.00	0.00
27	Jun-54	Junction	255.62	259.80	0.00	0.00	0.00	0.22	256.62	0.00	3.18	0 00:00	0.00	0.00
28	Jun-55	Junction	255.60	259.70	0.00	0.00	0.00	0.49	256.60	0.00	3.10	0 00:00	0.00	0.00
29	Jun-56	Junction	255.79	257.80	0.00	0.00	0.00	0.71	256.34	0.00	1.46	0 00:00	0.00	0.00
30	Jun-61	Junction	258.32	262.00	0.00	0.00	0.00	0.59	258.64	0.00	4.16	0 00:00	0.00	0.00
31	Jun-64	Junction	261.13	263.50	0.00	0.00	0.00	0.27	261.37	0.00	2.13	0 00:00	0.00	0.00
32	Jun-65	Junction	262.69	264.50	0.00	0.00	0.00	0.27	262.95	0.00	1.55	0 00:00	0.00	0.00
33	Jun-66	Junction	253.16	256.00	0.00	0.00	0.00	0.11	253.46	0.00	2.54	0 00:00	0.00	0.00
34	Jun-67	Junction	255.48	259.90	0.00	0.00	0.00	0.70	256.69	0.00	3.21	0 00:00	0.00	0.00
35	Jun-68	Junction	255.86	260.10	0.00	0.00	0.00	0.36	256.83	0.00	3.27	0 00:00	0.00	0.00
36	Jun-69	Junction	256.21	261.20	0.00	0.00	0.00	0.16	256.85	0.00	4.35	0 00:00	0.00	0.00
37	Jun-70	Junction	256.47	263.00	0.00	0.00	0.00	0.28	256.97	0.00	6.03	0 00:00	0.00	0.00
38	Jun-71	Junction	256.79	260.00	0.00	0.00	0.00	0.31	257.39	0.00	2.61	0 00:00	0.00	0.00
39	Jun-72	Junction	258.75	259.95	0.00	0.00	0.00	0.20	259.62	0.00	0.33	0 00:00	0.00	0.00
40	Jun-73	Junction	258.65	259.95	0.00	0.00	0.00	0.34	259.65	0.00	0.30	0 00:00	0.00	0.00
41	Jun-74	Junction	259.54	264.00	0.00	0.00	0.00	0.34	259.84	0.00	4.16	0 00:00	0.00	0.00
42	Jun-75	Junction	260.00	264.50	0.00	0.00	0.00	0.15	260.24	0.00	4.26	0 00:00	0.00	0.00
43	Jun-76	Junction	259.19	262.20	0.00	0.00	0.00	0.72	259.66	0.00	2.54	0 00:00	0.00	0.00
44	Jun-77	Junction	260.46	264.80	0.00	0.00	0.00	0.39	260.84	0.00	3.96	0 00:00	0.00	0.00
45	Jun-78	Junction	261.75	265.30	0.00	0.00	0.00	0.42	262.27	0.00	3.03	0 00:00	0.00	0.00
46	NorthWetland	Junction	252.00	258.00	0.00	0.00	0.00	0.14	252.00	0.00	6.00	0 00:00	0.00	0.00
47	OutletStructure	Junction	254.25	256.80	0.00	0.00	0.00	0.11	254.51	0.00	3.84	0 00:00	0.00	0.00

Node Summary

SN	Element ID	Element Type	Invert Elevation (m)	Ground/Rim (Max) Elevation (m)	Initial Water Elevation (m)	Surcharge Elevation (m)	Ponded Area (m^2)	Peak Inflow (cms)	Max HGL Elevation Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ha-mm)	Total Time Flooded (min)
48	Ravine_1	Junction	256.10	260.10	0.00	0.00	0.00	2.44	256.48	0.00	3.62	0 00:00	0.00	0.00
49	Ravine_2	Junction	253.00	257.00	0.00	0.00	0.00	2.50	253.46	0.00	3.64	0 00:00	0.00	0.00
50	Ravine_3	Junction	252.45	256.45	0.00	0.00	0.00	2.48	252.81	0.00	3.64	0 00:00	0.00	0.00
51	RH_1	Junction	267.60	271.70	0.00	0.00	0.00	2.23	271.53	0.00	0.17	0 00:00	0.00	0.00
52	RH_10	Junction	261.90	263.90	0.00	0.00	0.00	2.72	263.63	0.00	0.27	0 00:00	0.00	0.00
53	RH_11	Junction	260.33	262.55	0.00	0.00	0.00	2.32	262.34	0.00	0.21	0 00:00	0.00	0.00
54	RH_12	Junction	269.00	270.50	0.00	0.00	0.00	1.21	269.37	0.00	1.13	0 00:00	0.00	0.00
55	RH_13	Junction	264.00	266.50	0.00	0.00	0.00	1.24	264.51	0.00	1.99	0 00:00	0.00	0.00
56	RH_14	Junction	261.70	263.50	0.00	0.00	0.00	0.47	262.58	0.00	0.92	0 00:00	0.00	0.00
57	RH_15	Junction	259.38	261.00	0.00	0.00	0.00	0.46	260.05	0.00	0.95	0 00:00	0.00	0.00
58	RH_16	Junction	256.36	258.00	0.00	0.00	0.00	0.45	257.05	0.00	0.95	0 00:00	0.00	0.00
59	RH_17	Junction	256.42	258.00	0.00	0.00	0.00	1.17	257.47	0.00	0.53	0 00:00	0.00	0.00
60	RH_2	Junction	270.14	272.45	0.00	0.00	0.00	1.84	272.22	0.00	0.23	0 00:00	0.00	0.00
61	RH_3	Junction	267.07	270.50	0.00	0.00	0.00	3.85	269.83	0.00	0.67	0 00:00	0.00	0.00
62	RH_4	Junction	266.63	268.60	0.00	0.00	0.00	2.61	268.39	0.00	0.21	0 00:00	0.00	0.00
63	RH_5	Junction	270.35	272.10	0.00	0.00	0.00	0.85	271.85	0.00	0.25	0 00:00	0.00	0.00
64	RH_6	Junction	266.50	268.20	0.00	0.00	0.00	3.22	268.02	0.00	0.18	0 00:00	0.00	0.00
65	RH_7	Junction	272.00	273.50	0.00	0.00	0.00	0.00	272.00	0.00	1.50	0 00:00	0.00	0.00
66	RH_8	Junction	267.75	269.85	0.00	0.00	0.00	0.15	268.00	0.00	1.85	0 00:00	0.00	0.00
67	RH_9	Junction	264.00	265.80	0.00	0.00	0.00	0.16	264.31	0.00	1.49	0 00:00	0.00	0.00
68	WestOutfall	Junction	257.00	258.40	0.00	0.00	0.00	0.01	257.00	0.00	2.45	0 00:00	0.00	0.00
69	WestWetland	Junction	258.00	259.00	0.00	0.00	0.00	0.06	258.00	0.00	1.00	0 00:00	0.00	0.00
70	North_Wetland	Outfall	252.00					0.14	252.00					
71	Outfall	Outfall	252.00					2.48	252.28					
72	TinerEstatesSTM	Outfall	254.82					0.25	255.14					
73	West_Outfall	Outfall	257.00					0.01	257.00					
74	West_Wetland	Outfall	258.00					0.06	258.00					
75	Ex_SE_Pond	Storage Node	262.00	266.00	0.00		0.00	1.22	262.75				0.00	0.00
76	SWM_FB	Storage Node	253.00	257.10	254.50		0.00	3.67	255.99				0.00	0.00
77	SWM_WP	Storage Node	253.00	257.10	254.50		0.00	3.44	255.98				0.00	0.00

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(m)	(m)	(m)	(%)	(m)		(cms)	(cms)		(m/sec)	(m)		(min)	
1	Ex.STM_1	Pipe	Ex_MHR28	Ex_MHR27	107.00	257.37	256.94	0.4000	0.450	0.0130	0.25	0.18	1.37	1.55	0.45	1.00	35.00	SURCHARGED
2	Ex.STM_2	Pipe	Ex_MHR27	Ex_MHR26	73.00	256.94	256.64	0.4100	0.450	0.0130	0.25	0.18	1.35	1.55	0.45	1.00	32.00	SURCHARGED
3	Ex.STM_3	Pipe	Ex_MHR26	Ex_MHR25	27.00	256.64	256.48	0.5900	0.450	0.0130	0.25	0.22	1.13	1.55	0.45	1.00	29.00	SURCHARGED
4	Ex.STM_4	Pipe	Ex_MHR25	Ex_MHR1	100.00	256.48	255.88	0.6000	0.450	0.0130	0.25	0.22	1.12	1.58	0.44	0.99	0.00	> CAPACITY
5	Ex.STM_5	Pipe	Ex_MHR1	Ex_MHR2	100.00	255.88	255.48	0.4000	0.525	0.0130	0.25	0.27	0.91	1.32	0.43	0.82	0.00	Calculated
6	Ex.STM_6	Pipe	Ex_MHR2	Ex_MHR3	50.00	255.48	255.23	0.5000	0.525	0.0130	0.25	0.30	0.81	1.40	0.40	0.77	0.00	Calculated
7	Ex.STM_7	Pipe	Ex_MHR3	TinerEstatesSTM	102.00	255.23	254.82	0.4000	0.600	0.0130	0.25	0.39	0.63	1.44	0.35	0.59	0.00	Calculated
8	Link-106	Pipe	Jun-66	Ravine_2	24.80	253.16	252.85	1.2500	0.750	0.0130	0.12	0.89	0.13	1.65	0.38	0.51	0.00	Calculated
9	Link-107	Pipe	OutletStructure	Jun-66	93.20	254.35	253.20	1.2300	0.750	0.0130	0.12	1.24	0.09	1.64	0.19	0.25	0.00	Calculated
10	Link-108	Pipe	Jun-67	Jun-37	110.30	255.48	255.37	0.1000	1.200	0.0130	0.60	1.23	0.49	0.70	1.20	1.00	1.00	SURCHARGED
11	Link-109	Pipe	Jun-46	Jun-44	30.00	257.70	257.55	0.5000	1.050	0.0130	0.52	1.93	0.27	1.50	0.47	0.46	0.00	Calculated
12	Link-110	Pipe	Jun-52	Jun-67	153.00	255.69	255.48	0.1400	0.900	0.0130	0.46	0.67	0.69	0.83	0.90	1.00	8.00	SURCHARGED
13	Link-111	Pipe	Jun-68	Jun-52	66.80	255.86	255.77	0.1300	0.750	0.0130	0.31	0.41	0.76	0.86	0.75	1.00	8.00	SURCHARGED
14	Link-112	Pipe	Jun-69	Jun-68	106.60	256.21	255.91	0.2800	0.600	0.0130	0.14	0.33	0.43	0.73	0.60	1.00	3.00	SURCHARGED
15	Link-113	Pipe	Jun-70	Jun-52	97.50	256.47	255.88	0.6100	0.525	0.0130	0.27	0.33	0.81	1.41	0.51	0.98	0.00	Calculated
16	Link-114	Pipe	Jun-71	Jun-53	85.10	256.79	255.73	1.2500	0.450	0.0130	0.29	0.32	0.92	2.03	0.43	1.00	4.00	SURCHARGED
17	Link-115	Pipe	Jun-73	Jun-51	50.00	258.65	258.50	0.3000	0.525	0.0130	0.33	0.24	1.40	1.52	0.52	1.00	7.00	SURCHARGED
18	Link-116	Pipe	Jun-72	Jun-51	50.00	258.75	258.55	0.4000	0.450	0.0130	0.20	0.18	1.12	1.27	0.45	1.00	7.00	SURCHARGED
19	Link-117	Pipe	Jun-74	Jun-61	90.00	259.54	258.37	1.3000	0.675	0.0130	0.33	0.96	0.35	2.32	0.28	0.42	0.00	Calculated
20	Link-118	Pipe	Jun-75	Jun-74	41.60	260.00	259.56	1.0600	0.525	0.0130	0.15	0.44	0.34	1.46	0.26	0.49	0.00	Calculated
21	Link-119	Pipe	Jun-76	Jun-56	181.70	259.19	256.08	1.7100	0.600	0.0130	0.70	0.80	0.87	3.07	0.43	0.75	0.00	Calculated
22	Link-120	Pipe	Jun-77	Jun-76	140.50	260.46	259.24	0.8700	0.600	0.0130	0.39	0.57	0.68	1.94	0.39	0.67	0.00	Calculated
23	Link-121	Pipe	Jun-78	Jun-77	152.20	261.75	260.51	0.8100	0.525	0.0130	0.39	0.39	1.00	1.97	0.46	0.89	0.00	Calculated
24	Link-49	Pipe	Jun-34	SWM_FB	20.70	254.62	254.60	0.1000	1.800	0.0130	3.67	3.57	1.03	2.21	1.38	0.76	0.00	> CAPACITY
25	Link-50	Pipe	Jun-35	SWM_WP	75.20	254.70	254.60	0.1300	0.600	0.0130	0.33	0.22	1.48	1.21	0.60	1.00	2157.00	SURCHARGED
26	Link-52	Pipe	Jun-36	Jun-34	35.00	254.72	254.67	0.1400	1.650	0.0130	3.67	3.45	1.07	1.93	1.37	0.83	0.00	> CAPACITY
27	Link-53	Pipe	Jun-37	Jun-36	336.90	255.29	254.74	0.1600	1.350	0.0130	1.76	2.16	0.82	1.24	1.35	1.00	1.00	SURCHARGED
28	Link-54	Pipe	Jun-38	Jun-37	110.00	255.53	255.31	0.2000	0.600	0.0130	0.61	0.27	2.21	2.15	0.60	1.00	30.00	SURCHARGED
29	Link-56	Pipe	Jun-41	Jun-38	110.00	255.77	255.55	0.2000	0.600	0.0130	0.22	0.27	0.81	0.79	0.60	1.00	26.00	SURCHARGED
30	Link-57	Pipe	Jun-40	Jun-41	95.50	256.10	255.85	0.2600	0.450	0.0130	0.18	0.15	1.25	1.14	0.45	1.00	23.00	SURCHARGED
31	Link-58	Pipe	Jun-39	Jun-40	90.00	256.93	256.25	0.7600	0.300	0.0130	0.06	0.08	0.71	1.13	0.30	1.00	18.00	SURCHARGED
32	Link-59	Pipe	Jun-42	Jun-36	53.10	255.23	255.13	0.1900	1.500	0.0130	0.97	3.07	0.31	1.16	1.05	0.71	0.00	Calculated
33	Link-60	Pipe	Jun-43	Jun-42	13.40	256.25	255.84	3.0600	1.500	0.0130	0.54	12.37	0.04	2.78	0.30	0.20	0.00	Calculated
34	Link-62	Pipe	Jun-49	Jun-50	25.00	256.90	256.75	0.6000	1.200	0.0130	0.54	3.02	0.18	1.16	0.52	0.43	0.00	Calculated
35	Link-68	Pipe	Jun-51	Jun-47	60.00	258.45	258.20	0.4200	0.600	0.0130	0.51	0.40	1.29	1.92	0.53	0.89	0.00	> CAPACITY
36	Link-70	Pipe	Jun-53	Jun-42	57.00	255.35	255.25	0.1800	0.825	0.0130	0.70	0.60	1.16	1.30	0.82	1.00	11.00	SURCHARGED
37	Link-71	Pipe	Jun-55	Jun-53	82.00	255.60	255.43	0.2100	0.750	0.0130	0.45	0.51	0.89	1.02	0.75	1.00	8.00	SURCHARGED
38	Link-72	Pipe	Jun-54	Jun-55	85.00	255.79	255.62	0.2000	0.750	0.0130	0.19	0.50	0.39	0.56	0.73	1.00	4.00	SURCHARGED
39	Link-73	Pipe	Jun-56	Jun-36	67.80	255.78	255.10	1.0000	0.900	0.0130	0.69	1.83	0.38	1.68	0.71	0.81	0.00	Calculated
40	Link-80	Pipe	Jun-61	Jun-37	89.90	258.32	255.97	2.6100	0.750	0.0130	0.60	1.80	0.34	3.35	0.46	0.62	0.00	Calculated
41	Link-81	Pipe	Jun-64	Jun-61	93.20	261.13	259.27	2.0000	0.600	0.0130	0.26	0.87	0.30	2.58	0.23	0.39	0.00	Calculated
42	Link-82	Pipe	Jun-65	Jun-64	103.90	262.69	261.13	1.5000	0.600	0.0130	0.27	0.75	0.35	2.38	0.25	0.42	0.00	Calculated
43	RH_A1	Pipe	RH_2	RH_3	50.00	270.14	268.50	3.2800	0.300	0.0130	0.23	0.18	1.31	3.26	0.30	1.00	100.00	SURCHARGED
44	RH_B1	Pipe	RH_5	RH_6	227.00	270.35	266.50	1.7000	0.300	0.0130	0.14	0.13	1.10	1.96	0.30	1.00	87.00	SURCHARGED
45	RH_C3	Pipe	Ex_SE_Pond	RH_14	15.00	262.00	261.70	2.0000	0.600	0.0130	0.47	0.87	0.54	1.90	0.60	1.00	41.00	SURCHARGED
46	RH_C4	Pipe	RH_14	RH_15	195.00	261.70	259.38	1.1900	0.525	0.0150	0.44	0.41	1.07	2.12	0.52	1.00	54.00	SURCHARGED
47	RH_C5	Pipe	RH_15	RH_16	274.00	259.38	256.36	1.1000	0.525	0.0130	0.45	0.45	1.00	2.13	0.52	1.00	58.00	SURCHARGED

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(m)	(m)	(m)	(%)	(m)		(cms)	(cms)		(m/sec)	(m)		(min)	
48	RH_C6	Pipe	RH_16	Ravine_1	6.00	256.36	256.24	2.0000	0.700	0.0130	0.45	1.31	0.34	1.63	0.49	0.70	0.00	Calculated
49	RH_D1	Pipe	RH_7	RH_8	275.00	272.00	267.75	1.5500	0.300	0.0130	0.00	0.12	0.00	0.00	0.12	0.42	0.00	Calculated
50	RH_D2	Pipe	RH_8	RH_9	180.00	267.75	264.00	2.0800	0.300	0.0130	0.14	0.14	1.00	2.18	0.25	0.90	0.00	> CAPACITY
51	RH_D3	Pipe	RH_9	RH_10	155.00	264.00	261.90	1.3500	0.375	0.0130	0.15	0.20	0.71	1.39	0.33	0.92	0.00	Calculated
52	RH_M1	Pipe	RH_1	RH_3	270.00	267.60	267.07	0.2000	0.600	0.0130	0.51	0.27	1.86	1.79	0.60	1.00	109.00	SURCHARGED
53	RH_M2	Pipe	RH_3	RH_4	222.00	267.07	266.63	0.2000	0.675	0.0130	0.80	0.37	2.14	2.23	0.68	1.00	96.00	SURCHARGED
54	RH_M3	Pipe	RH_4	RH_6	18.00	266.63	266.50	0.7200	0.750	0.0130	1.03	0.95	1.09	2.34	0.75	1.00	91.00	SURCHARGED
55	RH_M4	Pipe	RH_6	RH_10	415.00	266.50	261.90	1.1100	0.675	0.0130	0.91	0.89	1.03	2.62	0.68	1.00	92.00	SURCHARGED
56	RH_M5	Pipe	RH_10	RH_11	140.00	261.90	260.33	1.1200	0.675	0.0130	1.06	0.89	1.19	2.96	0.68	1.00	109.00	SURCHARGED
57	RH_M6	Pipe	RH_11	RH_17	464.00	260.33	256.42	0.8400	0.750	0.0130	1.10	1.02	1.08	2.50	0.75	1.00	106.00	SURCHARGED
58	RH_M7	Pipe	RH_17	Ravine_1	6.00	256.42	256.37	0.8300	1.000	0.0130	1.17	2.19	0.54	1.83	0.76	0.76	0.00	Calculated
59	West_Link	Pipe	WestOutfall	West_Outfall	33.73	256.00	257.00	-2.9600	0.000	0.0130	0.01	0.00	0.01	0.00	0.42	0.11	0.00	Calculated
60	WestWetland_Link	Pipe	WestWetland	West_Wetland	37.13	258.00	258.00	0.0000	0.000	0.0130	0.06	0.00	0.01	0.00	0.42	0.11	0.00	Calculated
61	Wetland_Link	Pipe	NorthWetland	North_Wetland	41.51	252.00	252.00	0.0000	0.000	0.0130	0.14	0.00	0.01	0.00	0.42	0.11	0.00	Calculated
62	Link-103	Channel	Jun-36	SWM_FB	10.00	257.70	257.50	2.0000	0.300	0.0320	0.00	11.65	0.00	0.00	0.00	0.00	0.00	
63	Link-104	Channel	Jun-56	SWM_FB	50.00	257.50	256.50	2.0000	0.300	0.0320	0.00	11.65	0.00	0.00	0.00	0.00	0.00	
64	Link-122	Channel	Jun-53	Jun-42	70.00	259.30	258.60	1.0000	0.300	0.0320	0.00	8.24	0.00	0.00	0.00	0.00	0.00	
65	Link-123	Channel	Jun-55	Jun-53	90.00	259.40	259.30	0.1100	0.300	0.0320	0.00	2.75	0.00	0.00	0.00	0.00	0.00	
66	Link-124	Channel	Jun-54	Jun-55	90.00	259.50	259.40	0.1100	0.300	0.0320	0.00	2.75	0.00	0.00	0.00	0.00	0.00	
67	Link-125	Channel	Jun-73	Jun-47	50.00	259.65	258.70	1.9000	0.300	0.0320	0.00	11.36	0.00	0.00	0.00	0.01	0.00	
68	Link-126	Channel	Jun-72	Jun-47	50.00	259.65	258.70	1.9000	0.300	0.0320	0.00	11.36	0.00	0.00	0.00	0.00	0.00	
69	Link-127	Channel	Jun-67	Jun-54	100.00	259.60	259.50	0.1000	0.300	0.0320	0.00	2.61	0.00	0.00	0.00	0.00	0.00	
70	Link-128	Channel	Jun-52	Jun-67	150.00	259.70	259.60	0.0700	0.300	0.0320	0.00	2.13	0.00	0.00	0.00	0.00	0.00	
71	Link-129	Channel	Jun-68	Jun-52	80.00	259.80	259.70	0.1300	0.300	0.0320	0.00	2.91	0.00	0.00	0.00	0.00	0.00	
72	Link-130	Channel	Jun-69	Jun-68	100.00	259.90	259.80	0.1000	0.300	0.0320	0.00	2.61	0.00	0.00	0.00	0.00	0.00	
73	Link-131	Channel	Jun-71	Jun-53	70.00	259.40	259.30	0.1400	0.300	0.0320	0.00	3.11	0.00	0.00	0.00	0.00	0.00	
74	Link-132	Channel	Jun-78	Jun-77	150.00	265.00	264.50	0.3300	0.300	0.0320	0.00	4.76	0.00	0.00	0.00	0.00	0.00	
75	Link-133	Channel	Jun-77	Jun-76	150.00	264.50	261.90	1.7300	0.300	0.0320	0.00	10.85	0.00	0.00	0.00	0.00	0.00	
76	Link-134	Channel	Jun-76	Jun-36	250.00	261.90	257.70	1.6800	0.300	0.0320	0.00	10.68	0.00	0.00	0.00	0.00	0.00	
77	Link-135	Channel	Jun-61	Jun-37	100.00	262.50	261.00	1.5000	0.300	0.0320	0.00	10.09	0.00	0.00	0.00	0.00	0.00	
78	Link-34	Channel	RH_1	RH_3	270.00	271.40	269.65	0.6500	0.300	0.0320	1.70	6.63	0.26	0.64	0.14	0.48	0.00	
79	Link-35	Channel	RH_2	RH_3	50.00	272.15	269.65	5.0000	0.300	0.0320	1.63	18.43	0.09	1.11	0.11	0.38	0.00	
80	Link-36	Channel	RH_3	RH_4	222.00	269.65	268.30	0.6100	0.300	0.0320	1.95	6.43	0.30	0.70	0.14	0.46	0.00	
81	Link-37	Channel	RH_4	RH_6	18.00	268.30	267.90	2.2200	0.300	0.0320	1.62	12.28	0.13	0.90	0.10	0.33	0.00	
82	Link-38	Channel	RH_5	RH_6	227.00	271.80	267.90	1.7200	0.300	0.0320	0.58	10.80	0.05	0.57	0.08	0.25	0.00	
83	Link-39	Channel	RH_6	RH_10	415.00	267.90	263.50	1.0600	0.300	0.0320	1.79	8.48	0.21	0.77	0.12	0.39	0.00	
84	Link-41	Channel	RH_8	RH_9	180.00	269.55	265.50	2.2500	0.300	0.0320	0.00	12.36	0.00	0.00	0.00	0.00	0.00	
85	Link-42	Channel	RH_9	RH_10	155.00	265.50	263.50	1.2900	0.300	0.0320	0.00	9.36	0.00	0.00	0.06	0.22	0.00	
86	Link-43	Channel	RH_10	RH_11	140.00	263.50	262.25	0.8900	0.300	0.0320	1.56	7.79	0.20	0.73	0.11	0.36	0.00	
87	Link-44	Channel	RH_11	Ravine_1	470.00	262.25	258.00	0.9000	0.300	0.0320	0.81	7.84	0.10	0.56	0.07	0.24	0.00	
88	Link-45	Channel	RH_14	RH_15	195.00	263.20	260.70	1.2800	0.300	0.0320	0.00	9.33	0.00	0.00	0.00	0.00	0.00	
89	Link-46	Channel	RH_15	Ravine_1	280.00	260.70	258.00	0.9600	0.300	0.0320	0.00	8.09	0.00	0.00	0.00	0.00	0.00	
90	Link-51	Channel	Ex_MHR28	Jun-36	65.00	259.00	258.05	1.4600	0.300	0.0320	0.40	4.89	0.08	0.64	0.06	0.21	0.00	
91	Link-61	Channel	Jun-50	Jun-43	125.00	256.75	256.25	0.4000	1.000	0.0320	0.55	4.86	0.11	0.63	0.41	0.41	0.00	
92	Link-63	Channel	Jun-44	Jun-49	162.50	257.55	256.90	0.4000	1.000	0.0320	0.49	4.86	0.10	0.48	0.45	0.45	0.00	
93	Link-66	Channel	Jun-47	Jun-46	133.00	258.10	257.70	0.3000	1.000	0.0320	0.64	4.22	0.15	0.53	0.50	0.50	0.00	
94	Link-67	Channel	Jun-48	Jun-47	75.00	258.40	258.10	0.4000	1.000	0.0320	0.03	4.86	0.01	0.07	0.32	0.34	0.00	

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(m)	(m)	(m)	(%)	(m)		(cms)	(cms)		(m/sec)	(m)		(min)	
95	Link-89	Channel	Jun-42	Jun-36	53.10	258.60	257.70	1.6900	0.300	0.0320	0.00	10.73	0.00	0.00	0.00	0.00	0.00	
96	Link-90	Channel	Jun-39	Jun-40	90.00	258.75	257.75	1.1100	0.300	0.0320	0.00	8.69	0.00	0.00	0.01	0.03	0.00	
97	Link-92	Channel	Jun-38	Jun-37	110.00	261.50	261.00	0.4500	0.300	0.0320	0.00	5.56	0.00	0.00	0.00	0.00	0.00	
98	Link-93	Channel	Jun-37	Jun-36	340.00	261.00	257.70	0.9700	0.300	0.0320	0.00	8.12	0.00	0.00	0.00	0.00	0.00	
99	Link-94	Channel	Jun-41	Jun-40	95.00	259.35	257.75	1.6800	0.300	0.0320	0.00	10.69	0.00	0.00	0.01	0.03	0.00	
100	LowerRavine	Channel	Ravine_2	Ravine_3	124.00	253.00	252.45	0.4400	4.000	0.0320	2.48	157.98	0.02	1.08	0.41	0.10	0.00	
101	OutletRavine	Channel	Ravine_3	Outfall	45.00	252.45	252.00	1.0000	4.000	0.0320	2.48	237.22	0.01	1.41	0.32	0.08	0.00	
102	RH_C1	Channel	RH_12	RH_13	215.00	269.00	264.00	2.3300	1.500	0.0320	1.18	24.20	0.05	1.47	0.43	0.29	0.00	
103	RH_C2	Channel	RH_13	Ex_SE_Pond	60.00	264.00	263.50	0.8300	1.500	0.0320	1.17	14.49	0.08	1.35	0.43	0.30	0.00	
104	UpperRavine	Channel	Ravine_1	Ravine_2	553.00	256.10	253.00	0.5600	4.000	0.0320	2.43	177.61	0.01	1.03	0.42	0.11	0.00	
105	Orifice-01	Orifice	SWM_WP	OutletStructure		253.00	254.25		0.170		0.07							
106	Link-91	Weir	Jun-40	WestOutfall		256.10	257.00				0.00							
107	Weir-01	Weir	SWM_FB	SWM_WP		253.00	253.00				3.44							
108	Weir-04	Weir	SWM_WP	OutletStructure		253.00	254.25				0.04							
109	Weir-05	Weir	SWM_WP	Ravine_2		253.00	253.00				0.00							
110	Weir-06	Weir	SWM_WP	OutletStructure		253.00	254.25				0.00							

Junction Input

SN	Element ID	Invert Elevation (m)	Ground/Rim (Max) Elevation (m)	Ground/Rim (Max) Offset (m)	Initial Water Elevation (m)	Initial Water Depth (m)	Surcharge Elevation (m)	Surcharge Depth (m)	Ponded Area (m²)	Minimum Pipe Cover (m)
1	Ex_MHR1	255.88	262.50	6.62	0.00	-255.88	0.00	-262.50	0.00	0.00
2	Ex_MHR2	255.48	259.65	4.17	0.00	-255.48	0.00	-259.65	0.00	0.00
3	Ex_MHR25	256.48	263.35	6.87	0.00	-256.48	0.00	-263.35	0.00	0.00
4	Ex_MHR26	256.64	262.75	6.11	0.00	-256.64	0.00	-262.75	0.00	0.00
5	Ex_MHR27	256.94	261.00	4.06	0.00	-256.94	0.00	-261.00	0.00	0.00
6	Ex_MHR28	257.37	259.30	1.93	0.00	-257.37	0.00	-259.30	0.00	0.00
7	Ex_MHR3	255.23	259.00	3.77	0.00	-255.23	0.00	-259.00	0.00	0.00
8	Jun-34	254.62	258.25	3.63	0.00	-254.62	0.00	-258.25	0.00	0.00
9	Jun-35	254.70	257.50	2.80	0.00	-254.70	0.00	-257.50	0.00	0.00
10	Jun-36	254.72	258.00	3.28	0.00	-254.72	0.00	-258.00	0.00	0.00
11	Jun-37	255.29	261.30	6.01	0.00	-255.29	0.00	-261.30	0.00	0.00
12	Jun-38	255.53	261.80	6.27	0.00	-255.53	0.00	-261.80	0.00	0.00
13	Jun-39	256.93	259.05	2.12	0.00	-256.93	0.00	-259.05	0.00	0.00
14	Jun-40	256.10	258.55	2.45	0.00	-256.10	0.00	-258.55	0.00	0.00
15	Jun-41	255.77	259.65	3.88	0.00	-255.77	0.00	-259.65	0.00	0.00
16	Jun-42	255.23	258.90	3.67	0.00	-255.23	0.00	-258.90	0.00	0.00
17	Jun-43	256.25	257.25	1.00	0.00	-256.25	0.00	-257.25	0.00	0.00
18	Jun-44	257.55	258.55	1.00	0.00	-257.55	0.00	-258.55	0.00	0.00
19	Jun-46	257.70	258.70	1.00	0.00	-257.70	258.70	0.00	0.00	0.00
20	Jun-47	258.10	259.10	1.00	0.00	-258.10	0.00	-259.10	0.00	0.00
21	Jun-48	258.35	259.35	1.00	0.00	-258.35	0.00	-259.35	0.00	0.00
22	Jun-49	256.90	257.90	1.00	0.00	-256.90	0.00	-257.90	0.00	0.00
23	Jun-50	256.75	257.75	1.00	0.00	-256.75	0.00	-257.75	0.00	0.00
24	Jun-51	258.45	260.50	2.05	0.00	-258.45	0.00	-260.50	0.00	0.00
25	Jun-52	255.69	260.00	4.31	0.00	-255.69	0.00	-260.00	0.00	0.00
26	Jun-53	255.35	259.60	4.25	0.00	-255.35	0.00	-259.60	0.00	0.00
27	Jun-54	255.62	259.80	4.18	0.00	-255.62	0.00	-259.80	0.00	0.00
28	Jun-55	255.60	259.70	4.10	0.00	-255.60	0.00	-259.70	0.00	0.00
29	Jun-56	255.79	257.80	2.01	0.00	-255.79	0.00	-257.80	0.00	0.00
30	Jun-61	258.32	262.00	3.68	0.00	-258.32	0.00	-262.00	0.00	0.00
31	Jun-64	261.13	263.50	2.37	0.00	-261.13	0.00	-263.50	0.00	0.00
32	Jun-65	262.69	264.50	1.81	0.00	-262.69	0.00	-264.50	0.00	0.00
33	Jun-66	253.16	256.00	2.84	0.00	-253.16	0.00	-256.00	0.00	0.00
34	Jun-67	255.48	259.90	4.42	0.00	-255.48	0.00	-259.90	0.00	0.00
35	Jun-68	255.86	260.10	4.24	0.00	-255.86	0.00	-260.10	0.00	0.00
36	Jun-69	256.21	261.20	4.99	0.00	-256.21	0.00	-261.20	0.00	0.00
37	Jun-70	256.47	263.00	6.53	0.00	-256.47	0.00	-263.00	0.00	0.00
38	Jun-71	256.79	260.00	3.21	0.00	-256.79	0.00	-260.00	0.00	0.00
39	Jun-72	258.75	259.95	1.20	0.00	-258.75	0.00	-259.95	0.00	0.00
40	Jun-73	258.65	259.95	1.30	0.00	-258.65	0.00	-259.95	0.00	0.00
41	Jun-74	259.54	264.00	4.46	0.00	-259.54	0.00	-264.00	0.00	0.00
42	Jun-75	260.00	264.50	4.50	0.00	-260.00	0.00	-264.50	0.00	0.00
43	Jun-76	259.19	262.20	3.01	0.00	-259.19	0.00	-262.20	0.00	0.00
44	Jun-77	260.46	264.80	4.34	0.00	-260.46	0.00	-264.80	0.00	0.00
45	Jun-78	261.75	265.30	3.55	0.00	-261.75	0.00	-265.30	0.00	0.00
46	NorthWetland	252.00	258.00	6.00	0.00	-252.00	0.00	-258.00	0.00	0.00
47	OutletStructure	254.25	256.80	2.55	0.00	-254.25	0.00	-256.80	0.00	0.00
48	Ravine_1	256.10	260.10	4.00	0.00	-256.10	0.00	-260.10	0.00	0.00

Junction Input

SN	Element ID	Invert Elevation (m)	Ground/Rim (Max) Elevation (m)	Ground/Rim (Max) Offset (m)	Initial Water Elevation (m)	Initial Water Depth (m)	Surcharge Elevation (m)	Surcharge Depth (m)	Ponded Area (m²)	Minimum Pipe Cover (m)
49	Ravine_2	253.00	257.00	4.00	0.00	-253.00	0.00	-257.00	0.00	0.00
50	Ravine_3	252.45	256.45	4.00	0.00	-252.45	0.00	-256.45	0.00	0.00
51	RH_1	267.60	271.70	4.10	0.00	-267.60	0.00	-271.70	0.00	0.00
52	RH_10	261.90	263.90	2.00	0.00	-261.90	0.00	-263.90	0.00	0.00
53	RH_11	260.33	262.55	2.22	0.00	-260.33	0.00	-262.55	0.00	0.00
54	RH_12	269.00	270.50	1.50	0.00	-269.00	0.00	-270.50	0.00	0.00
55	RH_13	264.00	266.50	2.50	0.00	-264.00	0.00	-266.50	0.00	0.00
56	RH_14	261.70	263.50	1.80	0.00	-261.70	0.00	-263.50	0.00	0.00
57	RH_15	259.38	261.00	1.62	0.00	-259.38	0.00	-261.00	0.00	0.00
58	RH_16	256.36	258.00	1.64	0.00	-256.36	0.00	-258.00	0.00	0.00
59	RH_17	256.42	258.00	1.58	0.00	-256.42	0.00	-258.00	0.00	0.00
60	RH_2	270.14	272.45	2.31	0.00	-270.14	0.00	-272.45	0.00	0.00
61	RH_3	267.07	270.50	3.43	0.00	-267.07	0.00	-270.50	0.00	0.00
62	RH_4	266.63	268.60	1.97	0.00	-266.63	0.00	-268.60	0.00	0.00
63	RH_5	270.35	272.10	1.75	0.00	-270.35	0.00	-272.10	0.00	0.00
64	RH_6	266.50	268.20	1.70	0.00	-266.50	0.00	-268.20	0.00	0.00
65	RH_7	272.00	273.50	1.50	0.00	-272.00	0.00	-273.50	0.00	0.00
66	RH_8	267.75	269.85	2.10	0.00	-267.75	0.00	-269.85	0.00	0.00
67	RH_9	264.00	265.80	1.80	0.00	-264.00	0.00	-265.80	0.00	0.00
68	WestOutfall	257.00	258.40	1.40	0.00	-257.00	0.00	-258.40	0.00	0.00
69	WestWetland	258.00	259.00	1.00	0.00	-258.00	0.00	-259.00	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)	Total Time Flooded (min)
1	Ex_MHR1	0.25	0.00	256.32	0.44	0.00	6.18	255.99	0.11	0 12:01	0 00:00	0.00	0.00
2	Ex_MHR2	0.25	0.00	255.90	0.42	0.00	3.75	255.59	0.11	0 12:02	0 00:00	0.00	0.00
3	Ex_MHR25	0.25	0.00	257.50	1.02	0.00	5.85	256.59	0.11	0 11:52	0 00:00	0.00	0.00
4	Ex_MHR26	0.25	0.00	257.83	1.19	0.00	4.92	256.76	0.12	0 11:52	0 00:00	0.00	0.00
5	Ex_MHR27	0.25	0.00	258.26	1.32	0.00	2.74	257.08	0.14	0 11:52	0 00:00	0.00	0.00
6	Ex_MHR28	0.69	0.69	259.07	1.70	0.00	0.23	257.53	0.16	0 12:01	0 00:00	0.00	0.00
7	Ex_MHR3	0.25	0.00	255.61	0.38	0.00	3.39	255.33	0.10	0 12:03	0 00:00	0.00	0.00
8	Jun-34	3.67	0.00	255.99	1.37	0.00	2.26	255.69	1.07	0 18:47	0 00:00	0.00	0.00
9	Jun-35	0.33	0.33	255.98	1.28	0.00	1.52	255.67	0.97	0 18:46	0 00:00	0.00	0.00
10	Jun-36	3.70	0.00	256.22	1.50	0.00	2.13	255.72	1.00	0 12:03	0 00:00	0.00	0.00
11	Jun-37	2.00	0.27	256.65	1.36	0.00	4.65	255.82	0.53	0 12:04	0 00:00	0.00	0.00
12	Jun-38	0.75	0.75	257.87	2.34	0.00	3.93	255.89	0.36	0 12:02	0 00:00	0.00	0.00
13	Jun-39	0.07	0.07	258.13	1.20	0.00	0.92	256.98	0.05	0 12:03	0 00:00	0.00	0.00
14	Jun-40	0.14	0.00	257.77	1.67	0.00	0.78	256.17	0.07	0 12:06	0 00:00	0.00	0.00
15	Jun-41	0.20	0.07	257.86	2.09	0.00	1.79	255.94	0.17	0 12:03	0 00:00	0.00	0.00
16	Jun-42	0.99	0.00	256.26	1.03	0.00	2.64	255.79	0.56	0 12:03	0 00:00	0.00	0.00
17	Jun-43	0.55	0.00	256.53	0.28	0.00	1.22	256.30	0.05	0 12:13	0 00:00	0.00	0.00
18	Jun-44	0.52	0.00	257.97	0.42	0.00	0.63	257.63	0.08	0 12:08	0 00:00	0.00	0.00
19	Jun-46	0.64	0.00	258.25	0.55	0.00	0.50	257.81	0.11	0 12:06	0 00:00	0.00	0.00
20	Jun-47	0.64	0.12	258.58	0.48	0.00	0.52	258.19	0.09	0 12:01	0 00:00	0.00	0.00
21	Jun-48	0.03	0.00	258.59	0.24	0.00	0.81	258.40	0.05	0 12:01	0 00:00	0.00	0.00
22	Jun-49	0.56	0.16	257.39	0.49	0.00	0.71	257.02	0.12	0 12:09	0 00:00	0.00	0.00
23	Jun-50	0.54	0.00	257.29	0.54	0.00	0.66	256.88	0.13	0 12:10	0 00:00	0.00	0.00
24	Jun-51	0.51	0.00	259.29	0.84	0.00	1.21	258.53	0.08	0 12:00	0 00:00	0.00	0.00
25	Jun-52	0.58	0.00	256.79	1.10	0.00	3.21	255.90	0.21	0 12:04	0 00:00	0.00	0.00
26	Jun-53	0.73	0.00	256.45	1.10	0.00	3.15	255.81	0.46	0 12:03	0 00:00	0.00	0.00
27	Jun-54	0.22	0.22	256.62	1.00	0.00	3.18	255.91	0.29	0 12:01	0 00:00	0.00	0.00
28	Jun-55	0.49	0.32	256.60	1.00	0.00	3.10	255.86	0.26	0 12:02	0 00:00	0.00	0.00
29	Jun-56	0.71	0.01	256.34	0.55	0.00	1.46	255.92	0.13	0 12:03	0 00:00	0.00	0.00
30	Jun-61	0.59	0.00	258.64	0.32	0.00	4.16	258.37	0.05	0 11:59	0 00:00	0.00	0.00
31	Jun-64	0.27	0.00	261.37	0.24	0.00	2.13	261.17	0.04	0 12:00	0 00:00	0.00	0.00
32	Jun-65	0.27	0.27	262.95	0.26	0.00	1.55	262.73	0.04	0 12:00	0 00:00	0.00	0.00
33	Jun-66	0.11	0.00	253.46	0.30	0.00	2.54	253.33	0.17	0 12:45	0 00:00	0.00	0.00
34	Jun-67	0.70	0.23	256.69	1.21	0.00	3.21	255.85	0.37	0 12:04	0 00:00	0.00	0.00
35	Jun-68	0.36	0.22	256.83	0.97	0.00	3.27	255.97	0.11	0 12:04	0 00:00	0.00	0.00
36	Jun-69	0.16	0.16	256.85	0.64	0.00	4.35	256.26	0.05	0 12:04	0 00:00	0.00	0.00
37	Jun-70	0.28	0.28	256.97	0.50	0.00	6.03	256.53	0.06	0 12:04	0 00:00	0.00	0.00
38	Jun-71	0.31	0.31	257.39	0.60	0.00	2.61	256.85	0.06	0 12:01	0 00:00	0.00	0.00
39	Jun-72	0.20	0.20	259.62	0.87	0.00	0.33	258.81	0.06	0 12:00	0 00:00	0.00	0.00
40	Jun-73	0.34	0.34	259.65	1.00	0.00	0.30	258.73	0.08	0 12:01	0 00:00	0.00	0.00
41	Jun-74	0.34	0.19	259.84	0.30	0.00	4.16	259.58	0.04	0 12:00	0 00:00	0.00	0.00
42	Jun-75	0.15	0.15	260.24	0.24	0.00	4.26	260.03	0.03	0 12:00	0 00:00	0.00	0.00
43	Jun-76	0.72	0.35	259.66	0.47	0.00	2.54	259.26	0.07	0 12:01	0 00:00	0.00	0.00
44	Jun-77	0.39	0.00	260.84	0.38	0.00	3.96	260.52	0.06	0 12:00	0 00:00	0.00	0.00
45	Jun-78	0.42	0.42	262.27	0.52	0.00	3.03	261.81	0.06	0 12:01	0 00:00	0.00	0.00
46	NorthWetland	0.14	0.14	252.00	0.00	0.00	6.00	252.00	0.00	0 00:00	0 00:00	0.00	0.00
47	OutletStructure	0.11	0.00	254.51	0.26	0.00	3.84	254.47	0.22	0 18:51	0 00:00	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)	Total Time Flooded (min)
48	Ravine_1	2.44	0.04	256.48	0.38	0.00	3.62	256.23	0.13	0 12:41	0 00:00	0.00	0.00
49	Ravine_2	2.50	0.17	253.46	0.46	0.00	3.64	253.18	0.18	0 12:45	0 00:00	0.00	0.00
50	Ravine_3	2.48	0.03	252.81	0.36	0.00	3.64	252.59	0.14	0 12:46	0 00:00	0.00	0.00
51	RH_1	2.23	2.23	271.53	3.93	0.00	0.17	268.13	0.53	0 12:01	0 00:00	0.00	0.00
52	RH_10	2.72	0.07	263.63	1.73	0.00	0.27	262.29	0.39	0 12:23	0 00:00	0.00	0.00
53	RH_11	2.32	0.02	262.34	2.01	0.00	0.21	260.74	0.41	0 12:38	0 00:00	0.00	0.00
54	RH_12	1.21	1.21	269.37	0.37	0.00	1.13	269.06	0.06	0 12:00	0 00:00	0.00	0.00
55	RH_13	1.24	0.07	264.51	0.51	0.00	1.99	264.10	0.10	0 12:02	0 00:00	0.00	0.00
56	RH_14	0.47	0.00	262.58	0.88	0.00	0.92	261.88	0.18	0 12:20	0 00:00	0.00	0.00
57	RH_15	0.46	0.05	260.05	0.67	0.00	0.95	259.55	0.17	0 12:31	0 00:00	0.00	0.00
58	RH_16	0.45	0.00	257.05	0.69	0.00	0.95	256.59	0.23	0 12:10	0 00:00	0.00	0.00
59	RH_17	1.17	0.13	257.47	1.05	0.00	0.53	256.84	0.42	0 13:00	0 00:00	0.00	0.00
60	RH_2	1.84	1.84	272.22	2.08	0.00	0.23	270.46	0.32	0 12:00	0 00:00	0.00	0.00
61	RH_3	3.85	0.00	269.83	2.76	0.00	0.67	267.60	0.53	0 12:08	0 00:00	0.00	0.00
62	RH_4	2.61	0.02	268.39	1.76	0.00	0.21	266.98	0.35	0 12:08	0 00:00	0.00	0.00
63	RH_5	0.85	0.85	271.85	1.50	0.00	0.25	270.56	0.21	0 12:04	0 00:00	0.00	0.00
64	RH_6	3.22	0.00	268.02	1.52	0.00	0.18	266.81	0.31	0 12:15	0 00:00	0.00	0.00
65	RH_7	0.00	0.00	272.00	0.00	0.00	1.50	272.00	0.00	0 00:00	0 00:00	0.00	0.00
66	RH_8	0.15	0.15	268.00	0.25	0.00	1.85	267.82	0.07	0 12:00	0 00:00	0.00	0.00
67	RH_9	0.16	0.02	264.31	0.31	0.00	1.49	264.08	0.08	0 12:03	0 00:00	0.00	0.00
68	WestOutfall	0.01	0.01	257.00	0.00	0.00	2.45	257.00	0.00	0 00:00	0 00:00	0.00	0.00
69	WestWetland	0.06	0.06	258.00	0.00	0.00	1.00	258.00	0.00	0 00:00	0 00:00	0.00	0.00

Channel Input

SN	Element ID	Length (m)	Inlet Invert Elevation (m)	Inlet Invert Offset (m)	Outlet Invert Elevation (m)	Outlet Invert Offset (m)	Total Drop (m)	Average Slope (%)	Shape	Height (m)	Width (m)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cms)	Flap Gate
1	Link-103	10.00	257.70	2.98	257.50	4.50	0.20	2.0000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
2	Link-104	50.00	257.50	1.71	256.50	3.50	1.00	2.0000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
3	Link-122	70.00	259.30	3.95	258.60	3.37	0.70	1.0000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
4	Link-123	90.00	259.40	3.80	259.30	3.95	0.10	0.1100	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
5	Link-124	90.00	259.50	3.88	259.40	3.80	0.10	0.1100	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
6	Link-125	50.00	259.65	1.00	258.70	0.60	0.95	1.9000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
7	Link-126	50.00	259.65	0.90	258.70	0.60	0.95	1.9000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
8	Link-127	100.00	259.60	4.12	259.50	3.88	0.10	0.1000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
9	Link-128	150.00	259.70	4.01	259.60	4.12	0.10	0.0700	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
10	Link-129	80.00	259.80	3.94	259.70	4.01	0.10	0.1300	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
11	Link-130	100.00	259.90	3.69	259.80	3.94	0.10	0.1000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
12	Link-131	70.00	259.40	2.61	259.30	3.95	0.10	0.1400	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
13	Link-132	150.00	265.00	3.25	264.50	4.04	0.50	0.3300	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
14	Link-133	150.00	264.50	4.04	261.90	2.71	2.60	1.7300	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
15	Link-134	250.00	261.90	2.71	257.70	2.98	4.20	1.6800	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
16	Link-135	100.00	262.50	4.18	261.00	5.71	1.50	1.5000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
17	Link-34	270.00	271.40	3.80	269.65	2.58	1.75	0.6500	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
18	Link-35	50.00	272.15	2.01	269.65	2.58	2.50	5.0000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
19	Link-36	222.00	269.65	2.58	268.30	1.67	1.35	0.6100	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
20	Link-37	18.00	268.30	1.67	267.90	1.40	0.40	2.2200	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
21	Link-38	227.00	271.80	1.45	267.90	1.40	3.90	1.7200	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
22	Link-39	415.00	267.90	1.40	263.50	1.60	4.40	1.0600	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
23	Link-41	180.00	269.55	1.80	265.50	1.50	4.05	2.2500	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
24	Link-42	155.00	265.50	1.50	263.50	1.60	2.00	1.2900	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
25	Link-43	140.00	263.50	1.60	262.25	1.92	1.25	0.8900	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
26	Link-44	470.00	262.25	1.92	258.00	1.90	4.25	0.9000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
27	Link-45	195.00	263.20	1.50	260.70	1.32	2.50	1.2800	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
28	Link-46	280.00	260.70	1.32	258.00	1.90	2.70	0.9600	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
29	Link-51	65.00	259.00	1.63	258.05	3.33	0.95	1.4600	Rectangular	0.300	10.000	0.0320	0.5000	0.5000	0.0000	0.00	No
30	Link-61	125.00	256.75	0.00	256.25	0.00	0.50	0.4000	User-Defined	1.000	9.000	0.0320	0.5000	0.5000	0.0000	0.00	No
31	Link-63	162.50	257.55	0.00	256.90	0.00	0.65	0.4000	User-Defined	1.000	9.000	0.0320	0.5000	0.5000	0.0000	0.00	No
32	Link-66	133.00	258.10	0.00	257.70	0.00	0.40	0.3000	User-Defined	1.000	9.000	0.0320	0.5000	0.5000	0.0000	0.00	No
33	Link-67	75.00	258.40	0.05	258.10	0.00	0.30	0.4000	User-Defined	1.000	9.000	0.0320	0.5000	0.5000	0.0000	0.00	No
34	Link-89	53.10	258.60	3.37	257.70	2.98	0.90	1.6900	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
35	Link-90	90.00	258.75	1.82	257.75	1.65	1.00	1.1100	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
36	Link-92	110.00	261.50	5.97	261.00	5.71	0.50	0.4500	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
37	Link-93	340.00	261.00	5.71	257.70	2.98	3.30	0.9700	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
38	Link-94	95.00	259.35	3.58	257.75	1.65	1.60	1.6800	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
39	LowerRavine	124.00	253.00	0.00	252.45	0.00	0.55	0.4400	Trapezoidal	4.000	17.000	0.0320	0.5000	0.5000	0.0000	0.00	No
40	OutletRavine	45.00	252.45	0.00	252.00	0.00	0.45	1.0000	Trapezoidal	4.000	17.000	0.0320	0.5000	0.5000	0.0000	0.00	No
41	RH_C1	215.00	269.00	0.00	264.00	0.00	5.00	2.3300	Trapezoidal	1.500	7.000	0.0320	0.5000	0.5000	0.0000	0.00	No
42	RH_C2	60.00	264.00	0.00	263.50	1.50	0.50	0.8300	Trapezoidal	1.500	7.000	0.0320	0.5000	0.5000	0.0000	0.00	No
43	UpperRavine	553.00	256.10	0.00	253.00	0.00	3.10	0.5600	Trapezoidal	4.000	17.000	0.0320	0.5000	0.5000	0.0000	0.00	No

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-103	0.00	0 00:00	11.65	0.00	0.00		0.00	0.00	0.00	0.00	
2	Link-104	0.00	0 00:00	11.65	0.00	0.00		0.00	0.00	0.00	0.00	
3	Link-122	0.00	0 00:00	8.24	0.00	0.00		0.00	0.00	0.00	0.00	
4	Link-123	0.00	0 00:00	2.75	0.00	0.00		0.00	0.00	0.00	0.00	
5	Link-124	0.00	0 00:00	2.75	0.00	0.00		0.00	0.00	0.00	0.00	
6	Link-125	0.00	0 12:01	11.36	0.00	0.00		0.00	0.01	0.00	0.00	
7	Link-126	0.00	0 00:00	11.36	0.00	0.00		0.00	0.00	0.00	0.00	
8	Link-127	0.00	0 00:00	2.61	0.00	0.00		0.00	0.00	0.00	0.00	
9	Link-128	0.00	0 00:00	2.13	0.00	0.00		0.00	0.00	0.00	0.00	
10	Link-129	0.00	0 00:00	2.91	0.00	0.00		0.00	0.00	0.00	0.00	
11	Link-130	0.00	0 00:00	2.61	0.00	0.00		0.00	0.00	0.00	0.00	
12	Link-131	0.00	0 00:00	3.11	0.00	0.00		0.00	0.00	0.00	0.00	
13	Link-132	0.00	0 00:00	4.76	0.00	0.00		0.00	0.00	0.00	0.00	
14	Link-133	0.00	0 00:00	10.85	0.00	0.00		0.00	0.00	0.00	0.00	
15	Link-134	0.00	0 00:00	10.68	0.00	0.00		0.00	0.00	0.00	0.00	
16	Link-135	0.00	0 00:00	10.09	0.00	0.00		0.00	0.00	0.00	0.00	
17	Link-34	1.70	0 12:01	6.63	0.26	0.64	7.03	0.14	0.48	0.00	0.01	
18	Link-35	1.63	0 12:00	18.43	0.09	1.11	0.75	0.11	0.38	0.00	0.04	
19	Link-36	1.95	0 12:08	6.43	0.30	0.70	5.29	0.14	0.46	0.00	0.05	
20	Link-37	1.62	0 12:09	12.28	0.13	0.90	0.33	0.10	0.33	0.00	0.03	
21	Link-38	0.58	0 12:04	10.80	0.05	0.57	6.64	0.08	0.25	0.00	0.02	
22	Link-39	1.79	0 12:17	8.48	0.21	0.77	8.98	0.12	0.39	0.00	0.04	
23	Link-41	0.00	0 00:00	12.36	0.00	0.00		0.00	0.00	0.00	0.00	
24	Link-42	0.00	0 00:00	9.36	0.00	0.00		0.06	0.22	0.00	0.00	
25	Link-43	1.56	0 12:23	7.79	0.20	0.73	3.20	0.11	0.36	0.00	0.07	
26	Link-44	0.81	0 12:38	7.84	0.10	0.56	13.99	0.07	0.24	0.00	0.06	
27	Link-45	0.00	0 00:00	9.33	0.00	0.00		0.00	0.00	0.00	0.00	
28	Link-46	0.00	0 00:00	8.09	0.00	0.00		0.00	0.00	0.00	0.00	
29	Link-51	0.40	0 12:01	4.89	0.08	0.64	1.69	0.06	0.21	0.00	0.02	
30	Link-61	0.55	0 12:11	4.86	0.11	0.63	3.31	0.41	0.41	0.00	0.32	
31	Link-63	0.49	0 12:08	4.86	0.10	0.48	5.64	0.45	0.45	0.00	0.22	
32	Link-66	0.64	0 12:02	4.22	0.15	0.53	4.18	0.50	0.50	0.00	0.21	
33	Link-67	0.03	0 11:59	4.86	0.01	0.07	17.86	0.32	0.34	0.00	0.00	
34	Link-89	0.00	0 00:00	10.73	0.00	0.00		0.00	0.00	0.00	0.00	
35	Link-90	0.00	0 00:00	8.69	0.00	0.00		0.01	0.03	0.00	0.00	
36	Link-92	0.00	0 00:00	5.56	0.00	0.00		0.00	0.00	0.00	0.00	
37	Link-93	0.00	0 00:00	8.12	0.00	0.00		0.00	0.00	0.00	0.00	
38	Link-94	0.00	0 00:00	10.69	0.00	0.00		0.01	0.03	0.00	0.00	
39	LowerRavine	2.48	0 12:45	157.98	0.02	1.08	1.91	0.41	0.10	0.00	0.47	
40	OutletRavine	2.48	0 12:46	237.22	0.01	1.41	0.53	0.32	0.08	0.00	0.73	
41	RH_C1	1.18	0 12:00	24.20	0.05	1.47	2.44	0.43	0.29	0.00	0.51	
42	RH_C2	1.17	0 12:02	14.49	0.08	1.35	0.74	0.43	0.30	0.00	0.58	
43	UpperRavine	2.43	0 12:41	177.61	0.01	1.03	8.95	0.42	0.11	0.00	0.36	

Pipe Input

SN	Element ID	Length (m)	Inlet Invert Elevation (m)	Inlet Invert Offset (m)	Outlet Invert Elevation (m)	Outlet Invert Offset (m)	Total Drop (m)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (m)	Pipe Width (m)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cms)	Flap Gate
1	Ex.STM_1	107.00	257.37	0.00	256.94	0.00	0.43	0.4000	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
2	Ex.STM_2	73.00	256.94	0.00	256.64	0.00	0.30	0.4100	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
3	Ex.STM_3	27.00	256.64	0.00	256.48	0.00	0.16	0.5900	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
4	Ex.STM_4	100.00	256.48	0.00	255.88	0.00	0.60	0.6000	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
5	Ex.STM_5	100.00	255.88	0.00	255.48	0.00	0.40	0.4000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
6	Ex.STM_6	50.00	255.48	0.00	255.23	0.00	0.25	0.5000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
7	Ex.STM_7	102.00	255.23	0.00	254.82	0.00	0.41	0.4000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
8	Link-106	24.80	253.16	0.00	252.85	-0.15	0.31	1.2500	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
9	Link-107	93.20	254.35	0.10	253.20	0.04	1.15	1.2300	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
10	Link-108	110.30	255.48	0.00	255.37	0.08	0.11	0.1000	CIRCULAR	1.200	1.200	0.0130	0.5000	0.5000	0.0000	0.00	No
11	Link-109	30.00	257.70	0.00	257.55	0.00	0.15	0.5000	CIRCULAR	1.050	1.050	0.0130	0.5000	0.5000	0.0000	0.00	No
12	Link-110	153.00	255.69	0.00	255.48	0.00	0.21	0.1400	CIRCULAR	0.900	0.900	0.0130	0.5000	0.5000	0.0000	0.00	No
13	Link-111	66.80	255.86	0.00	255.77	0.08	0.09	0.1300	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
14	Link-112	106.60	256.21	0.00	255.91	0.05	0.30	0.2800	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
15	Link-113	97.50	256.47	0.00	255.88	0.19	0.59	0.6100	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
16	Link-114	85.10	256.79	0.00	255.73	0.38	1.06	1.2500	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
17	Link-115	50.00	258.65	0.00	258.50	0.05	0.15	0.3000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
18	Link-116	50.00	258.75	0.00	258.55	0.10	0.20	0.4000	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
19	Link-117	90.00	259.54	0.00	258.37	0.05	1.17	1.3000	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
20	Link-118	41.60	260.00	0.00	259.56	0.02	0.44	1.0600	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
21	Link-119	181.70	259.19	0.00	256.08	0.29	3.11	1.7100	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
22	Link-120	140.50	260.46	0.00	259.24	0.05	1.22	0.8700	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
23	Link-121	152.20	261.75	0.00	260.51	0.05	1.24	0.8100	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
24	Link-49	20.70	254.62	0.00	254.60	1.60	0.02	0.1000	CIRCULAR	1.800	1.800	0.0130	0.5000	0.5000	0.0000	0.00	No
25	Link-50	75.20	254.70	0.00	254.60	1.60	0.10	0.1300	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
26	Link-52	35.00	254.72	0.00	254.67	0.05	0.05	0.1400	CIRCULAR	1.650	1.650	0.0130	0.5000	0.5000	0.0000	0.00	No
27	Link-53	336.90	255.29	0.00	254.74	0.02	0.55	0.1600	CIRCULAR	1.350	1.350	0.0130	0.5000	0.5000	0.0000	0.00	No
28	Link-54	110.00	255.53	0.00	255.31	0.02	0.22	0.2000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
29	Link-56	110.00	255.77	0.00	255.55	0.02	0.22	0.2000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
30	Link-57	95.50	256.10	0.00	255.85	0.08	0.25	0.2600	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
31	Link-58	90.00	256.93	0.00	256.25	0.15	0.68	0.7600	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
32	Link-59	53.10	255.23	0.00	255.13	0.41	0.10	0.1900	CIRCULAR	1.500	1.500	0.0130	0.5000	0.5000	0.0000	0.00	No
33	Link-60	13.40	256.25	0.00	255.84	0.61	0.41	3.0600	CIRCULAR	1.500	1.500	0.0130	0.5000	0.5000	0.0000	0.00	No
34	Link-62	25.00	256.90	0.00	256.75	0.00	0.15	0.6000	CIRCULAR	1.200	1.200	0.0130	0.5000	0.5000	0.0000	0.00	No
35	Link-68	60.00	258.45	0.00	258.20	0.10	0.25	0.4200	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
36	Link-70	57.00	255.35	0.00	255.25	0.02	0.10	0.1800	CIRCULAR	0.820	0.820	0.0130	0.5000	0.5000	0.0000	0.00	No
37	Link-71	82.00	255.60	0.00	255.43	0.08	0.17	0.2100	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
38	Link-72	85.00	255.79	0.17	255.62	0.02	0.17	0.2000	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
39	Link-73	67.80	255.78	-0.01	255.10	0.38	0.68	1.0000	CIRCULAR	0.900	0.900	0.0130	0.5000	0.5000	0.0000	0.00	No
40	Link-80	89.90	258.32	0.00	255.97	0.68	2.35	2.6100	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
41	Link-81	93.20	261.13	0.00	259.27	0.95	1.86	2.0000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
42	Link-82	103.90	262.69	0.00	261.13	0.00	1.56	1.5000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
43	RH_A1	50.00	270.14	0.00	268.50	1.43	1.64	3.2800	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
44	RH_B1	227.00	270.35	0.00	266.50	0.00	3.85	1.7000	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
45	RH_C3	15.00	262.00	0.00	261.70	0.00	0.30	2.0000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
46	RH_C4	195.00	261.70	0.00	259.38	0.00	2.32	1.1900	CIRCULAR	0.530	0.530	0.0150	0.5000	0.5000	0.0000	0.00	No
47	RH_C5	274.00	259.38	0.00	256.36	0.00	3.02	1.1000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
48	RH_C6	6.00	256.36	0.00	256.24	0.14	0.12	2.0000	CIRCULAR	0.700	0.700	0.0130	0.5000	0.5000	0.0000	0.00	No

Pipe Input

SN	Element ID	Length (m)	Inlet Invert Elevation (m)	Inlet Invert Offset (m)	Outlet Invert Elevation (m)	Outlet Invert Offset (m)	Total Drop (m)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (m)	Pipe Width (m)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cms)	Flap Gate
49	RH_D1	275.00	272.00	0.00	267.75	0.00	4.25	1.5500	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
50	RH_D2	180.00	267.75	0.00	264.00	0.00	3.75	2.0800	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
51	RH_D3	155.00	264.00	0.00	261.90	0.00	2.10	1.3500	CIRCULAR	0.380	0.380	0.0130	0.5000	0.5000	0.0000	0.00	No
52	RH_M1	270.00	267.60	0.00	267.07	0.00	0.53	0.2000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
53	RH_M2	222.00	267.07	0.00	266.63	0.00	0.44	0.2000	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
54	RH_M3	18.00	266.63	0.00	266.50	0.00	0.13	0.7200	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
55	RH_M4	415.00	266.50	0.00	261.90	0.00	4.60	1.1100	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
56	RH_M5	140.00	261.90	0.00	260.33	0.00	1.57	1.1200	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
57	RH_M6	464.00	260.33	0.00	256.42	0.00	3.91	0.8400	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
58	RH_M7	6.00	256.42	0.00	256.37	0.27	0.05	0.8300	CIRCULAR	1.000	1.000	0.0130	0.5000	0.5000	0.0000	0.00	No
59	West_Link	33.73	256.00	-1.00	257.00	0.00	-1.00	-2.9600	Dummy	0.000	0.000	0.0130	0.5000	0.5000	0.0000	0.00	No
60	WestWetland_Link	37.13	258.00	0.00	258.00	0.00	0.00	0.0000	Dummy	0.000	0.000	0.0130	0.5000	0.5000	0.0000	0.00	No
61	Wetland_Link	41.51	252.00	0.00	252.00	0.00	0.00	0.0000	Dummy	0.000	0.000	0.0130	0.5000	0.5000	0.0000	0.00	No

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	Ex.STM_1	0.25	0 12:00	0.18	1.37	1.55	1.15	0.45	1.00	35.00	0.75	SURCHARGED
2	Ex.STM_2	0.25	0 12:00	0.18	1.35	1.55	0.78	0.45	1.00	32.00	0.79	SURCHARGED
3	Ex.STM_3	0.25	0 12:00	0.22	1.13	1.55	0.29	0.45	1.00	29.00	0.90	SURCHARGED
4	Ex.STM_4	0.25	0 12:00	0.22	1.12	1.58	1.05	0.44	0.99	0.00	0.90	> CAPACITY
5	Ex.STM_5	0.25	0 12:01	0.27	0.91	1.32	1.26	0.43	0.82	0.00	0.82	Calculated
6	Ex.STM_6	0.25	0 12:02	0.30	0.81	1.40	0.60	0.40	0.77	0.00	0.83	Calculated
7	Ex.STM_7	0.25	0 12:03	0.39	0.63	1.44	1.18	0.35	0.59	0.00	0.87	Calculated
8	Link-106	0.12	0 18:47	0.89	0.13	1.65	0.25	0.38	0.51	0.00	1.05	Calculated
9	Link-107	0.12	0 18:46	1.24	0.09	1.64	0.95	0.19	0.25	0.00	1.47	Calculated
10	Link-108	0.60	0 12:07	1.23	0.49	0.70	2.63	1.20	1.00	1.00	0.13	SURCHARGED
11	Link-109	0.52	0 12:03	1.93	0.27	1.50	0.33	0.47	0.46	0.00	0.52	Calculated
12	Link-110	0.46	0 12:00	0.67	0.69	0.83	3.07	0.90	1.00	8.00	0.13	SURCHARGED
13	Link-111	0.31	0 11:59	0.41	0.76	0.86	1.29	0.75	1.00	8.00	0.27	SURCHARGED
14	Link-112	0.14	0 11:59	0.33	0.43	0.73	2.43	0.60	1.00	3.00	0.44	SURCHARGED
15	Link-113	0.27	0 11:59	0.33	0.81	1.41	1.15	0.51	0.98	0.00	0.69	Calculated
16	Link-114	0.29	0 12:00	0.32	0.92	2.03	0.70	0.43	1.00	4.00	0.71	SURCHARGED
17	Link-115	0.33	0 12:02	0.24	1.40	1.52	0.55	0.52	1.00	7.00	0.72	SURCHARGED
18	Link-116	0.20	0 12:00	0.18	1.12	1.27	0.66	0.45	1.00	7.00	0.76	SURCHARGED
19	Link-117	0.33	0 12:00	0.96	0.35	2.32	0.65	0.28	0.42	0.00	1.33	Calculated
20	Link-118	0.15	0 12:00	0.44	0.34	1.46	0.47	0.26	0.49	0.00	1.10	Calculated
21	Link-119	0.70	0 12:01	0.80	0.87	3.07	0.99	0.43	0.75	0.00	1.68	Calculated
22	Link-120	0.39	0 12:01	0.57	0.68	1.94	1.21	0.39	0.67	0.00	1.13	Calculated
23	Link-121	0.39	0 12:00	0.39	1.00	1.97	1.29	0.46	0.89	0.00	1.09	Calculated
24	Link-49	3.67	0 12:04	3.57	1.03	2.21	0.16	1.38	0.76	0.00	0.17	> CAPACITY
25	Link-50	0.33	0 12:00	0.22	1.48	1.21	1.04	0.60	1.00	2157.00	0.06	SURCHARGED
26	Link-52	3.67	0 12:03	3.45	1.07	1.93	0.30	1.37	0.83	0.00	0.16	> CAPACITY
27	Link-53	1.76	0 12:07	2.16	0.82	1.24	4.53	1.35	1.00	1.00	0.12	SURCHARGED
28	Link-54	0.61	0 12:02	0.27	2.21	2.15	0.85	0.60	1.00	30.00	0.13	SURCHARGED
29	Link-56	0.22	0 12:14	0.27	0.81	0.79	2.32	0.60	1.00	26.00	0.08	SURCHARGED
30	Link-57	0.18	0 12:13	0.15	1.25	1.14	1.40	0.45	1.00	23.00	0.33	SURCHARGED
31	Link-58	0.06	0 12:03	0.08	0.71	1.13	1.33	0.30	1.00	18.00	0.98	SURCHARGED
32	Link-59	0.97	0 12:03	3.07	0.31	1.16	0.76	1.05	0.71	0.00	0.17	Calculated
33	Link-60	0.54	0 12:12	12.37	0.04	2.78	0.08	0.30	0.20	0.00	1.33	Calculated
34	Link-62	0.54	0 12:09	3.02	0.18	1.16	0.36	0.52	0.43	0.00	0.39	Calculated
35	Link-68	0.51	0 12:00	0.40	1.29	1.92	0.52	0.53	0.89	0.00	0.84	> CAPACITY
36	Link-70	0.70	0 12:01	0.60	1.16	1.30	0.73	0.82	1.00	11.00	0.13	SURCHARGED
37	Link-71	0.45	0 12:01	0.51	0.89	1.02	1.34	0.75	1.00	8.00	0.16	SURCHARGED
38	Link-72	0.19	0 12:00	0.50	0.39	0.56	2.53	0.73	1.00	4.00	0.13	SURCHARGED
39	Link-73	0.69	0 12:01	1.83	0.38	1.68	0.67	0.71	0.81	0.00	0.29	Calculated
40	Link-80	0.60	0 12:00	1.80	0.34	3.35	0.45	0.46	0.62	0.00	1.85	Calculated
41	Link-81	0.26	0 12:00	0.87	0.30	2.58	0.60	0.23	0.39	0.00	1.54	Calculated
42	Link-82	0.27	0 12:00	0.75	0.35	2.38	0.73	0.25	0.42	0.00	1.41	Calculated
43	RH_A1	0.23	0 11:49	0.18	1.31	3.26	0.26	0.30	1.00	100.00	1.91	SURCHARGED
44	RH_B1	0.14	0 11:48	0.13	1.10	1.96	1.93	0.30	1.00	87.00	0.69	SURCHARGED
45	RH_C3	0.47	0 12:02	0.87	0.54	1.90	0.13	0.60	1.00	41.00	1.27	SURCHARGED
46	RH_C4	0.44	0 12:11	0.41	1.07	2.12	1.53	0.52	1.00	54.00	1.16	SURCHARGED
47	RH_C5	0.45	0 12:09	0.45	1.00	2.13	2.14	0.52	1.00	58.00	0.92	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)		
48	RH_C6	0.45	0 12:10	1.31	0.34	1.63	0.06	0.49	0.70	0.00	1.06	Calculated
49	RH_D1	0.00	0 00:00	0.12	0.00	0.00		0.12	0.42	0.00	0.00	Calculated
50	RH_D2	0.14	0 12:01	0.14	1.00	2.18	1.38	0.25	0.90	0.00	1.39	> CAPACITY
51	RH_D3	0.15	0 12:01	0.20	0.71	1.39	1.86	0.33	0.92	0.00	0.42	Calculated
52	RH_M1	0.51	0 11:51	0.27	1.86	1.79	2.51	0.60	1.00	109.00	0.35	SURCHARGED
53	RH_M2	0.80	0 11:52	0.37	2.14	2.23	1.66	0.68	1.00	96.00	0.59	SURCHARGED
54	RH_M3	1.03	0 12:02	0.95	1.09	2.34	0.13	0.75	1.00	91.00	0.89	SURCHARGED
55	RH_M4	0.91	0 11:53	0.89	1.03	2.62	2.64	0.68	1.00	92.00	1.12	SURCHARGED
56	RH_M5	1.06	0 12:04	0.89	1.19	2.96	0.79	0.68	1.00	109.00	1.18	SURCHARGED
57	RH_M6	1.10	0 12:37	1.02	1.08	2.50	3.09	0.75	1.00	106.00	0.61	SURCHARGED
58	RH_M7	1.17	0 13:00	2.19	0.54	1.83	0.05	0.76	0.76	0.00	0.80	Calculated
59	West_Link	0.01	0 12:00	0.00	0.01	0.00		0.42	0.11	0.00	0.36	Calculated
60	WestWetland_Link	0.06	0 12:00	0.00	0.01	0.00		0.42	0.11	0.00	0.36	Calculated
61	Wetland_Link	0.14	0 12:00	0.00	0.01	0.00		0.42	0.11	0.00	0.36	Calculated

Project Description

File Name	18010_Post-Development Rev.1.SPF
Description	I:\ACAD Projects\2018\18010\03-Ref\18010_Pre-Dev. Storm Parcels.dwg I:\ACAD Projects\2018\18010\03-Ref\18010_Pre-Dev. Storm Parcels.dwg I:\ACAD Projects\2018\18010\03-Ref\18010_Post-Dev.Storm Parcels.dwg I:\ACAD Projects\2018\18010\03-Ref\18010_Post-Dev.Storm Parcels.dwg

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	YES

Analysis Options

Start Analysis On	00:00:00	0:00:00
End Analysis On	00:00:00	0:00:00
Start Reporting On	00:00:00	0:00:00
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	60
Nodes	77
Junctions	69
Outfalls	5
Flow Diversions	0
Inlets	0
Storage Nodes	3
Links	110
Channels	43
Pipes	61
Pumps	0
Orifices	1
Weirs	5
Outlets	0
Pollutants	0
Land Uses	0

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	{Survey Site}.Standard : 10	0.92	2.00	67.00	2.0000	125.00	0.0130	0.2000	63.79	45.8330	16.69	15.32	0.02	0 01:15:47
2	{Survey Site}.Standard : 11	21.38	2.00	67.00	2.0000	360.00	0.0130	0.2000	63.79	42.9570	18.67	399.08	0.15	0 04:25:38
3	{Survey Site}.Standard : 12	0.71	5.00	67.00	2.0000	90.00	0.0130	0.2000	63.79	44.4540	18.07	12.83	0.02	0 01:17:39
4	{Survey Site}.Standard : 13	1.65	45.00	71.05	2.0000	220.00	0.0130	0.2000	63.79	24.0720	38.45	63.36	0.22	0 00:54:14
5	{Survey Site}.Standard : 14	4.32	2.00	67.00	2.0000	350.00	0.0130	0.2000	63.79	46.1350	16.39	70.80	0.05	0 01:43:29
6	{Survey Site}.Standard : 17	0.36	5.00	67.00	5.0000	20.00	0.0130	0.2000	63.79	44.6490	17.88	6.36	0.01	0 01:36:07
7	{Survey Site}.Standard : 18	13.10	5.00	48.00	10.0000	300.00	0.0130	0.2000	63.79	53.9980	8.54	111.82	0.18	0 02:13:45
8	{Survey Site}.Standard : 19	1.16	55.00	78.40	2.0000	90.00	0.0130	0.2000	63.79	16.9920	45.53	52.82	0.19	0 01:06:35
9	{Survey Site}.Standard : 2	20.86	45.00	71.05	2.0000	300.00	0.0130	0.2000	63.79	25.0340	37.44	781.17	2.02	0 03:26:30
10	{Survey Site}.Standard : 23	2.20	5.00	48.00	10.0000	100.00	0.0130	0.2000	63.79	53.5590	8.98	19.75	0.03	0 01:28:36
11	{Survey Site}.Standard : 26	1.12	45.00	71.05	2.0000	40.00	0.0130	0.2000	63.79	24.4670	38.05	42.77	0.13	0 01:59:53
12	{Survey Site}.Standard : 27	0.37	45.00	71.05	2.0000	60.00	0.0130	0.2000	63.79	24.0360	38.47	14.24	0.05	0 00:48:15
13	{Survey Site}.Standard : 28	0.12	45.00	71.05	2.0000	40.00	0.0130	0.2000	63.79	23.9370	38.55	4.74	0.02	0 00:31:47
14	{Survey Site}.Standard : 29	7.86	45.00	71.05	2.0000	110.00	0.0130	0.2000	63.79	25.0580	37.42	294.17	0.75	0 03:29:54
15	{Survey Site}.Standard : 3	25.14	45.00	71.05	2.0000	370.00	0.0130	0.2000	63.79	25.0090	37.46	941.76	2.45	0 03:23:37
16	{Survey Site}.Standard : 30	20.00	30.00	63.70	2.0000	225.00	0.0130	0.2000	63.79	35.8510	26.65	532.81	1.33	0 04:36:27
17	{Survey Site}.Standard : 31	5.54	5.00	57.00	2.0000	245.00	0.0130	0.2000	63.79	50.5060	12.04	66.74	0.08	0 02:26:08
18	{Survey Site}.Standard : 32	3.34	2.00	67.00	2.0000	95.00	0.0130	0.2000	63.79	47.1920	15.33	51.13	0.03	0 03:13:46
19	{Survey Site}.Standard : 33	7.71	2.00	67.00	2.0000	215.00	0.0130	0.2000	63.79	47.2420	15.30	117.90	0.06	0 03:16:12
20	{Survey Site}.Standard : 4	3.13	2.00	67.00	2.0000	155.00	0.0130	0.2000	63.79	46.5380	15.99	50.05	0.03	0 02:19:05
21	{Survey Site}.Standard : 46	5.31	2.00	67.00	2.0000	200.00	0.0130	0.2000	63.79	46.8390	15.69	83.38	0.04	0 02:43:56
22	{Survey Site}.Standard : 5	10.46	45.00	71.05	0.5000	235.00	0.0130	0.2000	63.79	25.2430	37.20	389.12	0.94	0 03:59:27
23	{Survey Site}.Standard : 51	0.39	95.00	95.55	0.5000	20.00	0.0130	0.2000	63.79	0.5200	61.71	23.76	0.08	0 00:38:59
24	{Survey Site}.Standard : 52	10.94	2.00	36.00	0.5000	240.00	0.0130	0.2000	63.79	55.8430	3.48	38.06	0.06	0 05:43:32
25	{Survey Site}.Standard : 53	0.36	75.00	85.75	3.0000	20.00	0.0130	0.2000	63.79	7.0170	55.12	20.06	0.08	0 00:50:58
26	{Survey Site}.Standard : 54	3.94	75.00	85.75	2.0000	150.00	0.0130	0.2000	63.79	7.0170	55.04	216.79	0.75	0 01:11:43
27	{Survey Site}.Standard : 57	0.42	20.00	58.80	2.0000	125.00	0.0130	0.2000	63.79	40.8930	21.61	9.14	0.03	0 00:42:09
28	{Survey Site}.Standard : 6	11.54	2.00	67.00	2.0000	280.00	0.0130	0.2000	63.79	47.4430	15.09	174.16	0.08	0 03:33:22
29	{Survey Site}.Standard : 63	1.63	55.00	75.95	2.0000	90.00	0.0130	0.2000	63.79	18.0660	44.45	72.41	0.25	0 01:21:38
30	{Survey Site}.Standard : 65	1.71	55.00	75.95	2.0000	130.00	0.0130	0.2000	63.79	18.0000	44.53	76.09	0.27	0 01:07:22
31	{Survey Site}.Standard : 68	1.31	55.00	75.95	2.0000	90.00	0.0130	0.2000	63.79	18.0160	44.51	58.39	0.21	0 01:11:41
32	{Survey Site}.Standard : 69	2.53	55.00	75.95	0.5000	85.00	0.0130	0.2000	63.79	18.3610	43.98	111.08	0.30	0 02:46:36
33	{Survey Site}.Standard : 7	10.98	5.00	67.00	2.0000	225.00	0.0130	0.2000	63.79	46.2110	16.32	179.12	0.17	0 03:51:41
34	{Survey Site}.Standard : 71	0.41	75.00	85.75	0.5000	20.00	0.0130	0.2000	63.79	7.0170	54.96	22.42	0.07	0 01:33:25
35	{Survey Site}.Standard : 72	1.08	55.00	75.95	2.0000	75.00	0.0130	0.2000	63.79	18.0160	44.51	47.85	0.17	0 01:10:58
36	{Survey Site}.Standard : 73	1.04	5.00	51.45	1.5000	65.00	0.0130	0.2000	63.79	52.6510	9.88	10.23	0.01	0 02:09:05
37	{Survey Site}.Standard : 74	2.88	55.00	75.95	2.0000	70.00	0.0130	0.2000	63.79	18.3110	44.16	127.19	0.38	0 02:13:36
38	{Survey Site}.Standard : 75	0.35	5.00	51.45	0.5000	35.00	0.0130	0.2000	63.79	52.7200	9.80	3.45	0.00	0 02:16:10
39	{Survey Site}.Standard : 76	0.87	5.00	51.45	25.0000	150.00	0.0130	0.2000	63.79	51.6800	10.83	9.46	0.01	0 00:30:20
40	{Survey Site}.Standard : 77	2.26	95.00	49.00	2.0000	250.00	0.0130	0.2000	63.79	2.7630	59.74	134.77	0.56	0 00:16:19
41	{Survey Site}.Standard : 78	2.38	55.00	75.95	3.0000	75.00	0.0130	0.2000	63.79	16.8120	49.93	119.03	0.36	0 01:41:20
42	{Survey Site}.Standard : 79	0.19	5.00	51.45	2.0000	25.00	0.0130	0.2000	63.79	52.0960	10.42	1.93	0.00	0 01:14:43
43	{Survey Site}.Standard : 8	3.30	2.00	67.00	2.0000	125.00	0.0130	0.2000	63.79	46.8390	15.70	51.86	0.03	0 02:43:26
44	{Survey Site}.Standard : 80	0.72	2.00	48.00	10.0000	55.00	0.0130	0.2000	63.79	52.4690	9.04	6.51	0.00	0 01:06:09
45	{Survey Site}.Standard : 81	1.46	35.00	66.15	2.0000	55.00	0.0130	0.2000	63.79	31.1350	31.38	45.88	0.14	0 02:08:11
46	{Survey Site}.Standard : 82	1.98	35.00	66.15	2.0000	55.00	0.0130	0.2000	63.79	31.3410	31.18	61.64	0.18	0 02:33:37
47	{Survey Site}.Standard : 83	1.98	55.00	75.95	2.0000	75.00	0.0130	0.2000	63.79	18.6380	63.71	126.34	0.34	0 01:42:28

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)
48	{Survey Site}.Standard : 84	1.00	55.00	75.95	2.0000	50.00	0.0130	0.2000	63.79	18.0900	44.43	44.60	0.15	0 01:26:52
49	{Survey Site}.Standard : 85	1.78	55.00	75.95	2.0000	70.00	0.0130	0.2000	63.79	18.1480	44.35	79.08	0.26	0 01:40:12
50	{Survey Site}.Standard : 86	1.43	55.00	75.95	2.0000	100.00	0.0130	0.2000	63.79	18.0080	44.51	63.43	0.22	0 01:10:43
51	{Survey Site}.Standard : 87	2.66	55.00	75.95	2.0000	100.00	0.0130	0.2000	63.79	18.1640	44.34	117.81	0.38	0 01:42:46
52	{Survey Site}.Standard : 88	1.64	55.00	75.95	2.0000	75.00	0.0130	0.2000	63.79	18.1070	44.40	72.73	0.24	0 01:31:22
53	{Survey Site}.Standard : 89	1.11	55.00	75.95	2.0000	100.00	0.0130	0.2000	63.79	17.9670	44.56	49.59	0.18	0 01:00:58
54	{Survey Site}.Standard : 9	3.53	2.00	67.00	2.0000	100.00	0.0130	0.2000	63.79	47.2170	15.32	54.11	0.03	0 03:14:29
55	{Survey Site}.Standard : 90	1.22	65.00	80.85	2.0000	130.00	0.0130	0.2000	63.79	12.2220	50.23	61.02	0.24	0 00:47:13
56	{Survey Site}.Standard : 91	1.00	65.00	80.85	2.0000	130.00	0.0130	0.2000	63.79	12.2220	50.24	50.09	0.20	0 00:41:56
57	{Survey Site}.Standard : 92	2.19	55.00	75.95	2.0000	75.00	0.0130	0.2000	63.79	18.1970	44.30	97.16	0.31	0 01:48:51
58	{Survey Site}.Standard : 93	2.28	20.00	58.80	5.0000	525.00	0.0130	0.2000	63.79	40.8670	21.65	49.28	0.14	0 00:37:09
59	Sub-01	0.13	55.00	75.95	2.0000	40.00	0.0130	0.2000	63.79	17.8200	44.66	5.81	0.02	0 00:29:08
60	Sub-02	0.18	55.00	75.95	2.0000	30.00	0.0130	0.2000	63.79	17.8770	44.63	8.03	0.03	0 00:42:05

Node Summary

SN	Element ID	Element Type	Invert Elevation (m)	Ground/Rim (Max) Elevation (m)	Initial Water Elevation (m)	Surcharge Elevation (m)	Ponded Area (m²)	Peak Inflow (cms)	Max HGL Elevation Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ha-mm)	Total Time Flooded (min)
1	Ex_MHR1	Junction	255.88	262.50	0.00	0.00	0.00	0.25	256.32	0.00	6.18	0 00:00	0.00	0.00
2	Ex_MHR2	Junction	255.48	259.65	0.00	0.00	0.00	0.25	255.90	0.00	3.75	0 00:00	0.00	0.00
3	Ex_MHR25	Junction	256.48	263.35	0.00	0.00	0.00	0.25	257.46	0.00	5.89	0 00:00	0.00	0.00
4	Ex_MHR26	Junction	256.64	262.75	0.00	0.00	0.00	0.25	257.85	0.00	4.90	0 00:00	0.00	0.00
5	Ex_MHR27	Junction	256.94	261.00	0.00	0.00	0.00	0.25	258.30	0.00	2.70	0 00:00	0.00	0.00
6	Ex_MHR28	Junction	257.37	259.30	0.00	0.00	0.00	0.75	259.08	0.00	0.22	0 00:00	0.00	0.00
7	Ex_MHR3	Junction	255.23	259.00	0.00	0.00	0.00	0.25	255.61	0.00	3.39	0 00:00	0.00	0.00
8	Jun-34	Junction	254.62	258.25	0.00	0.00	0.00	4.01	256.04	0.00	2.21	0 00:00	0.00	0.00
9	Jun-35	Junction	254.70	257.50	0.00	0.00	0.00	0.36	256.04	0.00	1.46	0 00:00	0.00	0.00
10	Jun-36	Junction	254.72	258.00	0.00	0.00	0.00	4.03	256.31	0.00	2.04	0 00:00	0.00	0.00
11	Jun-37	Junction	255.29	261.30	0.00	0.00	0.00	2.12	256.85	0.00	4.45	0 00:00	0.00	0.00
12	Jun-38	Junction	255.53	261.80	0.00	0.00	0.00	0.82	258.08	0.00	3.72	0 00:00	0.00	0.00
13	Jun-39	Junction	256.93	259.05	0.00	0.00	0.00	0.08	258.25	0.00	0.80	0 00:00	0.00	0.00
14	Jun-40	Junction	256.10	258.55	0.00	0.00	0.00	0.21	257.79	0.00	0.76	0 00:00	0.00	0.00
15	Jun-41	Junction	255.77	259.65	0.00	0.00	0.00	0.23	258.06	0.00	1.59	0 00:00	0.00	0.00
16	Jun-42	Junction	255.23	258.90	0.00	0.00	0.00	1.10	256.35	0.00	2.55	0 00:00	0.00	0.00
17	Jun-43	Junction	256.25	257.25	0.00	0.00	0.00	0.64	256.56	0.00	1.19	0 00:00	0.00	0.00
18	Jun-44	Junction	257.55	258.55	0.00	0.00	0.00	0.56	257.98	0.00	0.62	0 00:00	0.00	0.00
19	Jun-46	Junction	257.70	258.70	0.00	258.70	0.00	0.67	258.28	0.00	0.47	0 00:00	0.00	0.00
20	Jun-47	Junction	258.10	259.10	0.00	0.00	0.00	0.66	258.59	0.00	0.51	0 00:00	0.00	0.00
21	Jun-48	Junction	258.35	259.35	0.00	0.00	0.00	0.03	258.59	0.00	0.81	0 00:00	0.00	0.00
22	Jun-49	Junction	256.90	257.90	0.00	0.00	0.00	0.62	257.42	0.00	0.68	0 00:00	0.00	0.00
23	Jun-50	Junction	256.75	257.75	0.00	0.00	0.00	0.60	257.32	0.00	0.63	0 00:00	0.00	0.00
24	Jun-51	Junction	258.45	260.50	0.00	0.00	0.00	0.52	259.31	0.00	1.19	0 00:00	0.00	0.00
25	Jun-52	Junction	255.69	260.00	0.00	0.00	0.00	0.59	257.04	0.00	2.96	0 00:00	0.00	0.00
26	Jun-53	Junction	255.35	259.60	0.00	0.00	0.00	0.80	256.59	0.00	3.01	0 00:00	0.00	0.00
27	Jun-54	Junction	255.62	259.80	0.00	0.00	0.00	0.24	256.81	0.00	2.99	0 00:00	0.00	0.00
28	Jun-55	Junction	255.60	259.70	0.00	0.00	0.00	0.56	256.78	0.00	2.92	0 00:00	0.00	0.00
29	Jun-56	Junction	255.79	257.80	0.00	0.00	0.00	0.75	256.46	0.00	1.34	0 00:00	0.00	0.00
30	Jun-61	Junction	258.32	262.00	0.00	0.00	0.00	0.66	258.64	0.00	4.16	0 00:00	0.00	0.00
31	Jun-64	Junction	261.13	263.50	0.00	0.00	0.00	0.29	261.38	0.00	2.12	0 00:00	0.00	0.00
32	Jun-65	Junction	262.69	264.50	0.00	0.00	0.00	0.30	262.97	0.00	1.53	0 00:00	0.00	0.00
33	Jun-66	Junction	253.16	256.00	0.00	0.00	0.00	0.17	253.50	0.00	2.50	0 00:00	0.00	0.00
34	Jun-67	Junction	255.48	259.90	0.00	0.00	0.00	0.72	256.90	0.00	3.00	0 00:00	0.00	0.00
35	Jun-68	Junction	255.86	260.10	0.00	0.00	0.00	0.37	257.09	0.00	3.01	0 00:00	0.00	0.00
36	Jun-69	Junction	256.21	261.20	0.00	0.00	0.00	0.18	257.13	0.00	4.07	0 00:00	0.00	0.00
37	Jun-70	Junction	256.47	263.00	0.00	0.00	0.00	0.31	258.83	0.00	4.17	0 00:00	0.00	0.00
38	Jun-71	Junction	256.79	260.00	0.00	0.00	0.00	0.34	257.76	0.00	2.24	0 00:00	0.00	0.00
39	Jun-72	Junction	258.75	259.95	0.00	0.00	0.00	0.22	259.65	0.00	0.30	0 00:00	0.00	0.00
40	Jun-73	Junction	258.65	259.95	0.00	0.00	0.00	0.38	259.66	0.00	0.29	0 00:00	0.00	0.00
41	Jun-74	Junction	259.54	264.00	0.00	0.00	0.00	0.37	259.86	0.00	4.14	0 00:00	0.00	0.00
42	Jun-75	Junction	260.00	264.50	0.00	0.00	0.00	0.17	260.25	0.00	4.25	0 00:00	0.00	0.00
43	Jun-76	Junction	259.19	262.20	0.00	0.00	0.00	0.77	259.69	0.00	2.51	0 00:00	0.00	0.00
44	Jun-77	Junction	260.46	264.80	0.00	0.00	0.00	0.40	260.85	0.00	3.95	0 00:00	0.00	0.00
45	Jun-78	Junction	261.75	265.30	0.00	0.00	0.00	0.47	262.44	0.00	2.86	0 00:00	0.00	0.00
46	NorthWetland	Junction	252.00	258.00	0.00	0.00	0.00	0.16	252.00	0.00	6.00	0 00:00	0.00	0.00
47	OutletStructure	Junction	254.25	256.80	0.00	0.00	0.00	0.17	254.54	0.00	3.81	0 00:00	0.00	0.00

Node Summary

SN	Element ID	Element Type	Invert Elevation (m)	Ground/Rim (Max) Elevation (m)	Initial Water Elevation (m)	Surcharge Elevation (m)	Ponded Area (m^2)	Peak Inflow (cms)	Max HGL Elevation Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ha-mm)	Total Time Flooded (min)
48	Ravine_1	Junction	256.10	260.10	0.00	0.00	0.00	2.81	256.52	0.00	3.58	0 00:00	0.00	0.00
49	Ravine_2	Junction	253.00	257.00	0.00	0.00	0.00	2.88	253.50	0.00	3.60	0 00:00	0.00	0.00
50	Ravine_3	Junction	252.45	256.45	0.00	0.00	0.00	2.85	252.84	0.00	3.61	0 00:00	0.00	0.00
51	RH_1	Junction	267.60	271.70	0.00	0.00	0.00	2.45	271.54	0.00	0.16	0 00:00	0.00	0.00
52	RH_10	Junction	261.90	263.90	0.00	0.00	0.00	3.16	263.65	0.00	0.25	0 00:00	0.00	0.00
53	RH_11	Junction	260.33	262.55	0.00	0.00	0.00	2.70	262.36	0.00	0.19	0 00:00	0.00	0.00
54	RH_12	Junction	269.00	270.50	0.00	0.00	0.00	1.33	269.38	0.00	1.12	0 00:00	0.00	0.00
55	RH_13	Junction	264.00	266.50	0.00	0.00	0.00	1.36	264.53	0.00	1.97	0 00:00	0.00	0.00
56	RH_14	Junction	261.70	263.50	0.00	0.00	0.00	0.47	262.69	0.00	0.81	0 00:00	0.00	0.00
57	RH_15	Junction	259.38	261.00	0.00	0.00	0.00	0.47	260.19	0.00	0.81	0 00:00	0.00	0.00
58	RH_16	Junction	256.36	258.00	0.00	0.00	0.00	0.45	257.05	0.00	0.95	0 00:00	0.00	0.00
59	RH_17	Junction	256.42	258.00	0.00	0.00	0.00	1.20	257.48	0.00	0.52	0 00:00	0.00	0.00
60	RH_2	Junction	270.14	272.45	0.00	0.00	0.00	2.02	272.22	0.00	0.23	0 00:00	0.00	0.00
61	RH_3	Junction	267.07	270.50	0.00	0.00	0.00	4.28	269.85	0.00	0.65	0 00:00	0.00	0.00
62	RH_4	Junction	266.63	268.60	0.00	0.00	0.00	2.95	268.40	0.00	0.20	0 00:00	0.00	0.00
63	RH_5	Junction	270.35	272.10	0.00	0.00	0.00	0.94	271.86	0.00	0.24	0 00:00	0.00	0.00
64	RH_6	Junction	266.50	268.20	0.00	0.00	0.00	3.63	268.03	0.00	0.17	0 00:00	0.00	0.00
65	RH_7	Junction	272.00	273.50	0.00	0.00	0.00	0.00	272.00	0.00	1.50	0 00:00	0.00	0.00
66	RH_8	Junction	267.75	269.85	0.00	0.00	0.00	0.17	268.06	0.00	1.79	0 00:00	0.00	0.00
67	RH_9	Junction	264.00	265.80	0.00	0.00	0.00	0.17	264.56	0.00	1.24	0 00:00	0.00	0.00
68	WestOutfall	Junction	257.00	258.40	0.00	0.00	0.00	0.02	257.00	0.00	2.45	0 00:00	0.00	0.00
69	WestWetland	Junction	258.00	259.00	0.00	0.00	0.00	0.06	258.00	0.00	1.00	0 00:00	0.00	0.00
70	North_Wetland	Outfall	252.00					0.16	252.00					
71	Outfall	Outfall	252.00					2.85	252.31					
72	TinerEstatesSTM	Outfall	254.82					0.25	255.14					
73	West_Outfall	Outfall	257.00					0.02	257.00					
74	West_Wetland	Outfall	258.00					0.06	258.00					
75	Ex_SE_Pond	Storage Node	262.00	266.00	0.00		0.00	1.35	262.86				0.00	0.00
76	SWM_FB	Storage Node	253.00	257.10	254.50		0.00	4.01	256.04				0.00	0.00
77	SWM_WP	Storage Node	253.00	257.10	254.50		0.00	3.65	256.04				0.00	0.00

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(m)	(m)	(m)	(%)	(m)		(cms)	(cms)		(m/sec)	(m)		(min)	
1	Ex.STM_1	Pipe	Ex_MHR28	Ex_MHR27	107.00	257.37	256.94	0.4000	0.450	0.0130	0.25	0.18	1.37	1.55	0.45	1.00	38.00	SURCHARGED
2	Ex.STM_2	Pipe	Ex_MHR27	Ex_MHR26	73.00	256.94	256.64	0.4100	0.450	0.0130	0.25	0.18	1.35	1.55	0.45	1.00	35.00	SURCHARGED
3	Ex.STM_3	Pipe	Ex_MHR26	Ex_MHR25	27.00	256.64	256.48	0.5900	0.450	0.0130	0.25	0.22	1.13	1.55	0.45	1.00	32.00	SURCHARGED
4	Ex.STM_4	Pipe	Ex_MHR25	Ex_MHR1	100.00	256.48	255.88	0.6000	0.450	0.0130	0.25	0.22	1.12	1.58	0.45	0.99	0.00	> CAPACITY
5	Ex.STM_5	Pipe	Ex_MHR1	Ex_MHR2	100.00	255.88	255.48	0.4000	0.525	0.0130	0.25	0.27	0.91	1.32	0.43	0.82	0.00	Calculated
6	Ex.STM_6	Pipe	Ex_MHR2	Ex_MHR3	50.00	255.48	255.23	0.5000	0.525	0.0130	0.25	0.30	0.81	1.40	0.40	0.77	0.00	Calculated
7	Ex.STM_7	Pipe	Ex_MHR3	TinerEstatesSTM	102.00	255.23	254.82	0.4000	0.600	0.0130	0.25	0.39	0.63	1.44	0.35	0.59	0.00	Calculated
8	Link-106	Pipe	Jun-66	Ravine_2	24.80	253.16	252.85	1.2500	0.750	0.0130	0.17	0.89	0.19	1.65	0.42	0.56	0.00	Calculated
9	Link-107	Pipe	OutletStructure	Jun-66	93.20	254.35	253.20	1.2300	0.750	0.0130	0.17	1.24	0.13	1.73	0.21	0.28	0.00	Calculated
10	Link-108	Pipe	Jun-67	Jun-37	110.30	255.48	255.37	0.1000	1.200	0.0130	0.67	1.23	0.54	0.70	1.20	1.00	7.00	SURCHARGED
11	Link-109	Pipe	Jun-46	Jun-44	30.00	257.70	257.55	0.5000	1.050	0.0130	0.56	1.93	0.29	1.50	0.50	0.48	0.00	Calculated
12	Link-110	Pipe	Jun-52	Jun-67	153.00	255.69	255.48	0.1400	0.900	0.0130	0.48	0.67	0.71	0.83	0.90	1.00	11.00	SURCHARGED
13	Link-111	Pipe	Jun-68	Jun-52	66.80	255.86	255.77	0.1300	0.750	0.0130	0.32	0.41	0.78	0.85	0.75	1.00	11.00	SURCHARGED
14	Link-112	Pipe	Jun-69	Jun-68	106.60	256.21	255.91	0.2800	0.600	0.0130	0.14	0.33	0.43	0.73	0.60	1.00	8.00	SURCHARGED
15	Link-113	Pipe	Jun-70	Jun-52	97.50	256.47	255.88	0.6100	0.525	0.0130	0.30	0.33	0.90	1.41	0.52	1.00	8.00	SURCHARGED
16	Link-114	Pipe	Jun-71	Jun-53	85.10	256.79	255.73	1.2500	0.450	0.0130	0.31	0.32	0.97	2.03	0.45	1.00	7.00	SURCHARGED
17	Link-115	Pipe	Jun-73	Jun-51	50.00	258.65	258.50	0.3000	0.525	0.0130	0.34	0.24	1.44	1.57	0.52	1.00	9.00	SURCHARGED
18	Link-116	Pipe	Jun-72	Jun-51	50.00	258.75	258.55	0.4000	0.450	0.0130	0.21	0.18	1.15	1.31	0.45	1.00	9.00	SURCHARGED
19	Link-117	Pipe	Jun-74	Jun-61	90.00	259.54	258.37	1.3000	0.675	0.0130	0.37	0.96	0.38	2.37	0.30	0.45	0.00	Calculated
20	Link-118	Pipe	Jun-75	Jun-74	41.60	260.00	259.56	1.0600	0.525	0.0130	0.17	0.44	0.38	1.48	0.27	0.52	0.00	Calculated
21	Link-119	Pipe	Jun-76	Jun-56	181.70	259.19	256.08	1.7100	0.600	0.0130	0.74	0.80	0.92	3.08	0.46	0.80	0.00	Calculated
22	Link-120	Pipe	Jun-77	Jun-76	140.50	260.46	259.24	0.8700	0.600	0.0130	0.40	0.57	0.71	1.95	0.41	0.70	0.00	Calculated
23	Link-121	Pipe	Jun-78	Jun-77	152.20	261.75	260.51	0.8100	0.525	0.0130	0.40	0.39	1.04	1.99	0.47	0.91	0.00	> CAPACITY
24	Link-49	Pipe	Jun-34	SWM_FB	20.70	254.62	254.60	0.1000	1.800	0.0130	4.01	3.57	1.12	2.28	1.43	0.80	0.00	> CAPACITY
25	Link-50	Pipe	Jun-35	SWM_WP	75.20	254.70	254.60	0.1300	0.600	0.0130	0.36	0.22	1.63	1.30	0.60	1.00	2159.00	SURCHARGED
26	Link-52	Pipe	Jun-36	Jun-34	35.00	254.72	254.67	0.1400	1.650	0.0130	4.01	3.45	1.16	2.01	1.45	0.88	0.00	> CAPACITY
27	Link-53	Pipe	Jun-37	Jun-36	336.90	255.29	254.74	0.1600	1.350	0.0130	1.92	2.16	0.89	1.34	1.35	1.00	7.00	SURCHARGED
28	Link-54	Pipe	Jun-38	Jun-37	110.00	255.53	255.31	0.2000	0.600	0.0130	0.63	0.27	2.30	2.24	0.60	1.00	34.00	SURCHARGED
29	Link-56	Pipe	Jun-41	Jun-38	110.00	255.77	255.55	0.2000	0.600	0.0130	0.25	0.27	0.90	0.87	0.60	1.00	31.00	SURCHARGED
30	Link-57	Pipe	Jun-40	Jun-41	95.50	256.10	255.85	0.2600	0.450	0.0130	0.22	0.15	1.49	1.36	0.45	1.00	28.00	SURCHARGED
31	Link-58	Pipe	Jun-39	Jun-40	90.00	256.93	256.25	0.7600	0.300	0.0130	0.07	0.08	0.80	1.13	0.30	1.00	23.00	SURCHARGED
32	Link-59	Pipe	Jun-42	Jun-36	53.10	255.23	255.13	0.1900	1.500	0.0130	1.07	3.07	0.35	1.16	1.15	0.77	0.00	Calculated
33	Link-60	Pipe	Jun-43	Jun-42	13.40	256.25	255.84	3.0600	1.500	0.0130	0.63	12.37	0.05	2.77	0.34	0.23	0.00	Calculated
34	Link-62	Pipe	Jun-49	Jun-50	25.00	256.90	256.75	0.6000	1.200	0.0130	0.60	3.02	0.20	1.21	0.54	0.46	0.00	Calculated
35	Link-68	Pipe	Jun-51	Jun-47	60.00	258.45	258.20	0.4200	0.600	0.0130	0.52	0.40	1.30	1.94	0.53	0.89	0.00	> CAPACITY
36	Link-70	Pipe	Jun-53	Jun-42	57.00	255.35	255.25	0.1800	0.825	0.0130	0.77	0.60	1.28	1.44	0.82	1.00	14.00	SURCHARGED
37	Link-71	Pipe	Jun-55	Jun-53	82.00	255.60	255.43	0.2100	0.750	0.0130	0.50	0.51	0.98	1.13	0.75	1.00	11.00	SURCHARGED
38	Link-72	Pipe	Jun-54	Jun-55	85.00	255.79	255.62	0.2000	0.750	0.0130	0.21	0.50	0.43	0.56	0.75	1.00	8.00	SURCHARGED
39	Link-73	Pipe	Jun-56	Jun-36	67.80	255.78	255.10	1.0000	0.900	0.0130	0.74	1.83	0.40	1.66	0.77	0.87	0.00	Calculated
40	Link-80	Pipe	Jun-61	Jun-37	89.90	258.32	255.97	2.6100	0.750	0.0130	0.66	1.80	0.37	3.35	0.50	0.70	0.00	Calculated
41	Link-81	Pipe	Jun-64	Jun-61	93.20	261.13	259.27	2.0000	0.600	0.0130	0.29	0.87	0.33	2.64	0.24	0.41	0.00	Calculated
42	Link-82	Pipe	Jun-65	Jun-64	103.90	262.69	261.13	1.5000	0.600	0.0130	0.29	0.75	0.39	2.43	0.27	0.44	0.00	Calculated
43	RH_A1	Pipe	RH_2	RH_3	50.00	270.14	268.50	3.2800	0.300	0.0130	0.23	0.18	1.31	3.26	0.30	1.00	113.00	SURCHARGED
44	RH_B1	Pipe	RH_5	RH_6	227.00	270.35	266.50	1.7000	0.300	0.0130	0.14	0.13	1.10	1.96	0.30	1.00	98.00	SURCHARGED
45	RH_C3	Pipe	Ex_SE_Pond	RH_14	15.00	262.00	261.70	2.0000	0.600	0.0130	0.47	0.87	0.54	1.91	0.60	1.00	63.00	SURCHARGED
46	RH_C4	Pipe	RH_14	RH_15	195.00	261.70	259.38	1.1900	0.525	0.0150	0.43	0.41	1.06	2.11	0.52	1.00	83.00	SURCHARGED
47	RH_C5	Pipe	RH_15	RH_16	274.00	259.38	256.36	1.1000	0.525	0.0130	0.45	0.45	1.00	2.13	0.52	1.00	88.00	SURCHARGED

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(m)	(m)	(m)	(%)	(m)		(cms)	(cms)		(m/sec)	(m)		(min)	
48	RH_C6	Pipe	RH_16	Ravine_1	6.00	256.36	256.24	2.0000	0.700	0.0130	0.45	1.31	0.34	1.63	0.49	0.70	0.00	Calculated
49	RH_D1	Pipe	RH_7	RH_8	275.00	272.00	267.75	1.5500	0.300	0.0130	0.00	0.12	0.00	0.00	0.14	0.50	0.00	Calculated
50	RH_D2	Pipe	RH_8	RH_9	180.00	267.75	264.00	2.0800	0.300	0.0130	0.15	0.14	1.05	2.18	0.29	1.00	2.00	SURCHARGED
51	RH_D3	Pipe	RH_9	RH_10	155.00	264.00	261.90	1.3500	0.375	0.0130	0.15	0.20	0.73	1.40	0.38	1.00	8.00	SURCHARGED
52	RH_M1	Pipe	RH_1	RH_3	270.00	267.60	267.07	0.2000	0.600	0.0130	0.51	0.27	1.85	1.78	0.60	1.00	120.00	SURCHARGED
53	RH_M2	Pipe	RH_3	RH_4	222.00	267.07	266.63	0.2000	0.675	0.0130	0.80	0.37	2.14	2.23	0.68	1.00	105.00	SURCHARGED
54	RH_M3	Pipe	RH_4	RH_6	18.00	266.63	266.50	0.7200	0.750	0.0130	1.04	0.95	1.10	2.35	0.75	1.00	100.00	SURCHARGED
55	RH_M4	Pipe	RH_6	RH_10	415.00	266.50	261.90	1.1100	0.675	0.0130	0.91	0.89	1.03	2.62	0.68	1.00	101.00	SURCHARGED
56	RH_M5	Pipe	RH_10	RH_11	140.00	261.90	260.33	1.1200	0.675	0.0130	1.05	0.89	1.18	2.95	0.68	1.00	123.00	SURCHARGED
57	RH_M6	Pipe	RH_11	RH_17	464.00	260.33	256.42	0.8400	0.750	0.0130	1.10	1.02	1.08	2.50	0.75	1.00	120.00	SURCHARGED
58	RH_M7	Pipe	RH_17	Ravine_1	6.00	256.42	256.37	0.8300	1.000	0.0130	1.20	2.19	0.55	1.86	0.76	0.76	0.00	Calculated
59	West_Link	Pipe	WestOutfall	West_Outfall	33.73	256.00	257.00	-2.9600	0.000	0.0130	0.02	0.00	0.02	0.00	0.46	0.11	0.00	Calculated
60	WestWetland_Link	Pipe	WestWetland	West_Wetland	37.13	258.00	258.00	0.0000	0.000	0.0130	0.06	0.00	0.02	0.00	0.46	0.11	0.00	Calculated
61	Wetland_Link	Pipe	NorthWetland	North_Wetland	41.51	252.00	252.00	0.0000	0.000	0.0130	0.16	0.00	0.02	0.00	0.46	0.11	0.00	Calculated
62	Link-103	Channel	Jun-36	SWM_FB	10.00	257.70	257.50	2.0000	0.300	0.0320	0.00	11.65	0.00	0.00	0.00	0.00	0.00	
63	Link-104	Channel	Jun-56	SWM_FB	50.00	257.50	256.50	2.0000	0.300	0.0320	0.00	11.65	0.00	0.00	0.00	0.00	0.00	
64	Link-122	Channel	Jun-53	Jun-42	70.00	259.30	258.60	1.0000	0.300	0.0320	0.00	8.24	0.00	0.00	0.00	0.00	0.00	
65	Link-123	Channel	Jun-55	Jun-53	90.00	259.40	259.30	0.1100	0.300	0.0320	0.00	2.75	0.00	0.00	0.00	0.00	0.00	
66	Link-124	Channel	Jun-54	Jun-55	90.00	259.50	259.40	0.1100	0.300	0.0320	0.00	2.75	0.00	0.00	0.00	0.00	0.00	
67	Link-125	Channel	Jun-73	Jun-47	50.00	259.65	258.70	1.9000	0.300	0.0320	0.02	11.36	0.00	0.17	0.00	0.02	0.00	
68	Link-126	Channel	Jun-72	Jun-47	50.00	259.65	258.70	1.9000	0.300	0.0320	0.00	11.36	0.00	0.00	0.00	0.00	0.00	
69	Link-127	Channel	Jun-67	Jun-54	100.00	259.60	259.50	0.1000	0.300	0.0320	0.00	2.61	0.00	0.00	0.00	0.00	0.00	
70	Link-128	Channel	Jun-52	Jun-67	150.00	259.70	259.60	0.0700	0.300	0.0320	0.00	2.13	0.00	0.00	0.00	0.00	0.00	
71	Link-129	Channel	Jun-68	Jun-52	80.00	259.80	259.70	0.1300	0.300	0.0320	0.00	2.91	0.00	0.00	0.00	0.00	0.00	
72	Link-130	Channel	Jun-69	Jun-68	100.00	259.90	259.80	0.1000	0.300	0.0320	0.00	2.61	0.00	0.00	0.00	0.00	0.00	
73	Link-131	Channel	Jun-71	Jun-53	70.00	259.40	259.30	0.1400	0.300	0.0320	0.00	3.11	0.00	0.00	0.00	0.00	0.00	
74	Link-132	Channel	Jun-78	Jun-77	150.00	265.00	264.50	0.3300	0.300	0.0320	0.00	4.76	0.00	0.00	0.00	0.00	0.00	
75	Link-133	Channel	Jun-77	Jun-76	150.00	264.50	261.90	1.7300	0.300	0.0320	0.00	10.85	0.00	0.00	0.00	0.00	0.00	
76	Link-134	Channel	Jun-76	Jun-36	250.00	261.90	257.70	1.6800	0.300	0.0320	0.00	10.68	0.00	0.00	0.00	0.00	0.00	
77	Link-135	Channel	Jun-61	Jun-37	100.00	262.50	261.00	1.5000	0.300	0.0320	0.00	10.09	0.00	0.00	0.00	0.00	0.00	
78	Link-34	Channel	RH_1	RH_3	270.00	271.40	269.65	0.6500	0.300	0.0320	1.91	6.63	0.29	0.67	0.16	0.52	0.00	
79	Link-35	Channel	RH_2	RH_3	50.00	272.15	269.65	5.0000	0.300	0.0320	1.81	18.43	0.10	1.12	0.12	0.42	0.00	
80	Link-36	Channel	RH_3	RH_4	222.00	269.65	268.30	0.6100	0.300	0.0320	2.29	6.43	0.36	0.75	0.15	0.51	0.00	
81	Link-37	Channel	RH_4	RH_6	18.00	268.30	267.90	2.2200	0.300	0.0320	1.96	12.28	0.16	0.97	0.11	0.37	0.00	
82	Link-38	Channel	RH_5	RH_6	227.00	271.80	267.90	1.7200	0.300	0.0320	0.66	10.80	0.06	0.60	0.08	0.29	0.00	
83	Link-39	Channel	RH_6	RH_10	415.00	267.90	263.50	1.0600	0.300	0.0320	2.19	8.48	0.26	0.83	0.13	0.45	0.00	
84	Link-41	Channel	RH_8	RH_9	180.00	269.55	265.50	2.2500	0.300	0.0320	0.00	12.36	0.00	0.00	0.00	0.00	0.00	
85	Link-42	Channel	RH_9	RH_10	155.00	265.50	263.50	1.2900	0.300	0.0320	0.00	9.36	0.00	0.00	0.07	0.24	0.00	
86	Link-43	Channel	RH_10	RH_11	140.00	263.50	262.25	0.8900	0.300	0.0320	1.94	7.79	0.25	0.79	0.12	0.41	0.00	
87	Link-44	Channel	RH_11	Ravine_1	470.00	262.25	258.00	0.9000	0.300	0.0320	1.14	7.84	0.15	0.64	0.09	0.29	0.00	
88	Link-45	Channel	RH_14	RH_15	195.00	263.20	260.70	1.2800	0.300	0.0320	0.00	9.33	0.00	0.00	0.00	0.00	0.00	
89	Link-46	Channel	RH_15	Ravine_1	280.00	260.70	258.00	0.9600	0.300	0.0320	0.00	8.09	0.00	0.00	0.00	0.00	0.00	
90	Link-51	Channel	Ex_MHR28	Jun-36	65.00	259.00	258.05	1.4600	0.300	0.0320	0.47	4.89	0.10	0.68	0.07	0.23	0.00	
91	Link-61	Channel	Jun-50	Jun-43	125.00	256.75	256.25	0.4000	1.000	0.0320	0.64	4.86	0.13	0.66	0.43	0.43	0.00	
92	Link-63	Channel	Jun-44	Jun-49	162.50	257.55	256.90	0.4000	1.000	0.0320	0.54	4.86	0.11	0.47	0.47	0.48	0.00	
93	Link-66	Channel	Jun-47	Jun-46	133.00	258.10	257.70	0.3000	1.000	0.0320	0.67	4.22	0.16	0.53	0.53	0.53	0.00	
94	Link-67	Channel	Jun-48	Jun-47	75.00	258.40	258.10	0.4000	1.000	0.0320	0.03	4.86	0.01	0.08	0.33	0.34	0.00	

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(m)	(m)	(m)	(%)	(m)		(cms)	(cms)		(m/sec)	(m)		(min)	
95	Link-89	Channel	Jun-42	Jun-36	53.10	258.60	257.70	1.6900	0.300	0.0320	0.00	10.73	0.00	0.00	0.00	0.00	0.00	
96	Link-90	Channel	Jun-39	Jun-40	90.00	258.75	257.75	1.1100	0.300	0.0320	0.00	8.69	0.00	0.00	0.02	0.07	0.00	
97	Link-92	Channel	Jun-38	Jun-37	110.00	261.50	261.00	0.4500	0.300	0.0320	0.00	5.56	0.00	0.00	0.00	0.00	0.00	
98	Link-93	Channel	Jun-37	Jun-36	340.00	261.00	257.70	0.9700	0.300	0.0320	0.00	8.12	0.00	0.00	0.00	0.00	0.00	
99	Link-94	Channel	Jun-41	Jun-40	95.00	259.35	257.75	1.6800	0.300	0.0320	0.00	10.69	0.00	0.00	0.02	0.07	0.00	
100	LowerRavine	Channel	Ravine_2	Ravine_3	124.00	253.00	252.45	0.4400	4.000	0.0320	2.85	157.98	0.02	1.13	0.44	0.11	0.00	
101	OutletRavine	Channel	Ravine_3	Outfall	45.00	252.45	252.00	1.0000	4.000	0.0320	2.85	237.22	0.01	1.47	0.35	0.09	0.00	
102	RH_C1	Channel	RH_12	RH_13	215.00	269.00	264.00	2.3300	1.500	0.0320	1.29	24.20	0.05	1.50	0.45	0.30	0.00	
103	RH_C2	Channel	RH_13	Ex_SE_Pond	60.00	264.00	263.50	0.8300	1.500	0.0320	1.28	14.49	0.09	1.38	0.45	0.32	0.00	
104	UpperRavine	Channel	Ravine_1	Ravine_2	553.00	256.10	253.00	0.5600	4.000	0.0320	2.79	177.61	0.02	1.08	0.46	0.11	0.00	
105	Orifice-01	Orifice	SWM_WP	OutletStructure		253.00	254.25		0.170		0.08							
106	Link-91	Weir	Jun-40	WestOutfall		256.10	257.00				0.00							
107	Weir-01	Weir	SWM_FB	SWM_WP		253.00	253.00				3.65							
108	Weir-04	Weir	SWM_WP	OutletStructure		253.00	254.25				0.09							
109	Weir-05	Weir	SWM_WP	Ravine_2		253.00	253.00				0.00							
110	Weir-06	Weir	SWM_WP	OutletStructure		253.00	254.25				0.00							

Junction Input

SN	Element ID	Invert Elevation (m)	Ground/Rim (Max) Elevation (m)	Ground/Rim (Max) Offset (m)	Initial Water Elevation (m)	Initial Water Depth (m)	Surcharge Elevation (m)	Surcharge Depth (m)	Ponded Area (m²)	Minimum Pipe Cover (m)
1	Ex_MHR1	255.88	262.50	6.62	0.00	-255.88	0.00	-262.50	0.00	0.00
2	Ex_MHR2	255.48	259.65	4.17	0.00	-255.48	0.00	-259.65	0.00	0.00
3	Ex_MHR25	256.48	263.35	6.87	0.00	-256.48	0.00	-263.35	0.00	0.00
4	Ex_MHR26	256.64	262.75	6.11	0.00	-256.64	0.00	-262.75	0.00	0.00
5	Ex_MHR27	256.94	261.00	4.06	0.00	-256.94	0.00	-261.00	0.00	0.00
6	Ex_MHR28	257.37	259.30	1.93	0.00	-257.37	0.00	-259.30	0.00	0.00
7	Ex_MHR3	255.23	259.00	3.77	0.00	-255.23	0.00	-259.00	0.00	0.00
8	Jun-34	254.62	258.25	3.63	0.00	-254.62	0.00	-258.25	0.00	0.00
9	Jun-35	254.70	257.50	2.80	0.00	-254.70	0.00	-257.50	0.00	0.00
10	Jun-36	254.72	258.00	3.28	0.00	-254.72	0.00	-258.00	0.00	0.00
11	Jun-37	255.29	261.30	6.01	0.00	-255.29	0.00	-261.30	0.00	0.00
12	Jun-38	255.53	261.80	6.27	0.00	-255.53	0.00	-261.80	0.00	0.00
13	Jun-39	256.93	259.05	2.12	0.00	-256.93	0.00	-259.05	0.00	0.00
14	Jun-40	256.10	258.55	2.45	0.00	-256.10	0.00	-258.55	0.00	0.00
15	Jun-41	255.77	259.65	3.88	0.00	-255.77	0.00	-259.65	0.00	0.00
16	Jun-42	255.23	258.90	3.67	0.00	-255.23	0.00	-258.90	0.00	0.00
17	Jun-43	256.25	257.25	1.00	0.00	-256.25	0.00	-257.25	0.00	0.00
18	Jun-44	257.55	258.55	1.00	0.00	-257.55	0.00	-258.55	0.00	0.00
19	Jun-46	257.70	258.70	1.00	0.00	-257.70	258.70	0.00	0.00	0.00
20	Jun-47	258.10	259.10	1.00	0.00	-258.10	0.00	-259.10	0.00	0.00
21	Jun-48	258.35	259.35	1.00	0.00	-258.35	0.00	-259.35	0.00	0.00
22	Jun-49	256.90	257.90	1.00	0.00	-256.90	0.00	-257.90	0.00	0.00
23	Jun-50	256.75	257.75	1.00	0.00	-256.75	0.00	-257.75	0.00	0.00
24	Jun-51	258.45	260.50	2.05	0.00	-258.45	0.00	-260.50	0.00	0.00
25	Jun-52	255.69	260.00	4.31	0.00	-255.69	0.00	-260.00	0.00	0.00
26	Jun-53	255.35	259.60	4.25	0.00	-255.35	0.00	-259.60	0.00	0.00
27	Jun-54	255.62	259.80	4.18	0.00	-255.62	0.00	-259.80	0.00	0.00
28	Jun-55	255.60	259.70	4.10	0.00	-255.60	0.00	-259.70	0.00	0.00
29	Jun-56	255.79	257.80	2.01	0.00	-255.79	0.00	-257.80	0.00	0.00
30	Jun-61	258.32	262.00	3.68	0.00	-258.32	0.00	-262.00	0.00	0.00
31	Jun-64	261.13	263.50	2.37	0.00	-261.13	0.00	-263.50	0.00	0.00
32	Jun-65	262.69	264.50	1.81	0.00	-262.69	0.00	-264.50	0.00	0.00
33	Jun-66	253.16	256.00	2.84	0.00	-253.16	0.00	-256.00	0.00	0.00
34	Jun-67	255.48	259.90	4.42	0.00	-255.48	0.00	-259.90	0.00	0.00
35	Jun-68	255.86	260.10	4.24	0.00	-255.86	0.00	-260.10	0.00	0.00
36	Jun-69	256.21	261.20	4.99	0.00	-256.21	0.00	-261.20	0.00	0.00
37	Jun-70	256.47	263.00	6.53	0.00	-256.47	0.00	-263.00	0.00	0.00
38	Jun-71	256.79	260.00	3.21	0.00	-256.79	0.00	-260.00	0.00	0.00
39	Jun-72	258.75	259.95	1.20	0.00	-258.75	0.00	-259.95	0.00	0.00
40	Jun-73	258.65	259.95	1.30	0.00	-258.65	0.00	-259.95	0.00	0.00
41	Jun-74	259.54	264.00	4.46	0.00	-259.54	0.00	-264.00	0.00	0.00
42	Jun-75	260.00	264.50	4.50	0.00	-260.00	0.00	-264.50	0.00	0.00
43	Jun-76	259.19	262.20	3.01	0.00	-259.19	0.00	-262.20	0.00	0.00
44	Jun-77	260.46	264.80	4.34	0.00	-260.46	0.00	-264.80	0.00	0.00
45	Jun-78	261.75	265.30	3.55	0.00	-261.75	0.00	-265.30	0.00	0.00
46	NorthWetland	252.00	258.00	6.00	0.00	-252.00	0.00	-258.00	0.00	0.00
47	OutletStructure	254.25	256.80	2.55	0.00	-254.25	0.00	-256.80	0.00	0.00
48	Ravine_1	256.10	260.10	4.00	0.00	-256.10	0.00	-260.10	0.00	0.00

Junction Input

SN	Element ID	Invert Elevation (m)	Ground/Rim (Max) Elevation (m)	Ground/Rim (Max) Offset (m)	Initial Water Elevation (m)	Initial Water Depth (m)	Surcharge Elevation (m)	Surcharge Depth (m)	Ponded Area (m²)	Minimum Pipe Cover (m)
49	Ravine_2	253.00	257.00	4.00	0.00	-253.00	0.00	-257.00	0.00	0.00
50	Ravine_3	252.45	256.45	4.00	0.00	-252.45	0.00	-256.45	0.00	0.00
51	RH_1	267.60	271.70	4.10	0.00	-267.60	0.00	-271.70	0.00	0.00
52	RH_10	261.90	263.90	2.00	0.00	-261.90	0.00	-263.90	0.00	0.00
53	RH_11	260.33	262.55	2.22	0.00	-260.33	0.00	-262.55	0.00	0.00
54	RH_12	269.00	270.50	1.50	0.00	-269.00	0.00	-270.50	0.00	0.00
55	RH_13	264.00	266.50	2.50	0.00	-264.00	0.00	-266.50	0.00	0.00
56	RH_14	261.70	263.50	1.80	0.00	-261.70	0.00	-263.50	0.00	0.00
57	RH_15	259.38	261.00	1.62	0.00	-259.38	0.00	-261.00	0.00	0.00
58	RH_16	256.36	258.00	1.64	0.00	-256.36	0.00	-258.00	0.00	0.00
59	RH_17	256.42	258.00	1.58	0.00	-256.42	0.00	-258.00	0.00	0.00
60	RH_2	270.14	272.45	2.31	0.00	-270.14	0.00	-272.45	0.00	0.00
61	RH_3	267.07	270.50	3.43	0.00	-267.07	0.00	-270.50	0.00	0.00
62	RH_4	266.63	268.60	1.97	0.00	-266.63	0.00	-268.60	0.00	0.00
63	RH_5	270.35	272.10	1.75	0.00	-270.35	0.00	-272.10	0.00	0.00
64	RH_6	266.50	268.20	1.70	0.00	-266.50	0.00	-268.20	0.00	0.00
65	RH_7	272.00	273.50	1.50	0.00	-272.00	0.00	-273.50	0.00	0.00
66	RH_8	267.75	269.85	2.10	0.00	-267.75	0.00	-269.85	0.00	0.00
67	RH_9	264.00	265.80	1.80	0.00	-264.00	0.00	-265.80	0.00	0.00
68	WestOutfall	257.00	258.40	1.40	0.00	-257.00	0.00	-258.40	0.00	0.00
69	WestWetland	258.00	259.00	1.00	0.00	-258.00	0.00	-259.00	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)	Total Time Flooded (min)
1	Ex_MHR1	0.25	0.00	256.32	0.44	0.00	6.18	256.00	0.12	0 12:01	0 00:00	0.00	0.00
2	Ex_MHR2	0.25	0.00	255.90	0.42	0.00	3.75	255.59	0.11	0 12:02	0 00:00	0.00	0.00
3	Ex_MHR25	0.25	0.00	257.46	0.98	0.00	5.89	256.60	0.12	0 11:51	0 00:00	0.00	0.00
4	Ex_MHR26	0.25	0.00	257.85	1.21	0.00	4.90	256.77	0.13	0 11:51	0 00:00	0.00	0.00
5	Ex_MHR27	0.25	0.00	258.30	1.36	0.00	2.70	257.09	0.15	0 11:51	0 00:00	0.00	0.00
6	Ex_MHR28	0.75	0.75	259.08	1.71	0.00	0.22	257.54	0.17	0 12:00	0 00:00	0.00	0.00
7	Ex_MHR3	0.25	0.00	255.61	0.38	0.00	3.39	255.34	0.11	0 12:03	0 00:00	0.00	0.00
8	Jun-34	4.01	0.00	256.04	1.42	0.00	2.21	255.73	1.11	0 16:43	0 00:00	0.00	0.00
9	Jun-35	0.36	0.36	256.04	1.34	0.00	1.46	255.71	1.01	0 16:42	0 00:00	0.00	0.00
10	Jun-36	4.03	0.00	256.31	1.59	0.00	2.04	255.76	1.04	0 12:04	0 00:00	0.00	0.00
11	Jun-37	2.12	0.30	256.85	1.56	0.00	4.45	255.86	0.57	0 12:04	0 00:00	0.00	0.00
12	Jun-38	0.82	0.82	258.08	2.55	0.00	3.72	255.93	0.40	0 12:02	0 00:00	0.00	0.00
13	Jun-39	0.08	0.08	258.25	1.32	0.00	0.80	256.98	0.05	0 12:02	0 00:00	0.00	0.00
14	Jun-40	0.21	0.00	257.79	1.69	0.00	0.76	256.18	0.08	0 12:08	0 00:00	0.00	0.00
15	Jun-41	0.23	0.08	258.06	2.29	0.00	1.59	255.98	0.21	0 12:02	0 00:00	0.00	0.00
16	Jun-42	1.10	0.00	256.35	1.12	0.00	2.55	255.83	0.60	0 12:04	0 00:00	0.00	0.00
17	Jun-43	0.64	0.00	256.56	0.31	0.00	1.19	256.30	0.05	0 12:11	0 00:00	0.00	0.00
18	Jun-44	0.56	0.00	257.98	0.43	0.00	0.62	257.64	0.09	0 12:08	0 00:00	0.00	0.00
19	Jun-46	0.67	0.00	258.28	0.58	0.00	0.47	257.81	0.11	0 12:06	0 00:00	0.00	0.00
20	Jun-47	0.66	0.14	258.59	0.49	0.00	0.51	258.19	0.09	0 12:01	0 00:00	0.00	0.00
21	Jun-48	0.03	0.00	258.59	0.24	0.00	0.81	258.40	0.05	0 12:01	0 00:00	0.00	0.00
22	Jun-49	0.62	0.18	257.42	0.52	0.00	0.68	257.02	0.12	0 12:09	0 00:00	0.00	0.00
23	Jun-50	0.60	0.00	257.32	0.57	0.00	0.63	256.89	0.14	0 12:08	0 00:00	0.00	0.00
24	Jun-51	0.52	0.00	259.31	0.86	0.00	1.19	258.54	0.09	0 12:00	0 00:00	0.00	0.00
25	Jun-52	0.59	0.00	257.04	1.35	0.00	2.96	255.94	0.25	0 12:04	0 00:00	0.00	0.00
26	Jun-53	0.80	0.00	256.59	1.24	0.00	3.01	255.86	0.51	0 12:02	0 00:00	0.00	0.00
27	Jun-54	0.24	0.24	256.81	1.19	0.00	2.99	255.95	0.33	0 12:02	0 00:00	0.00	0.00
28	Jun-55	0.56	0.35	256.78	1.18	0.00	2.92	255.90	0.30	0 12:02	0 00:00	0.00	0.00
29	Jun-56	0.75	0.01	256.46	0.67	0.00	1.34	255.95	0.16	0 12:03	0 00:00	0.00	0.00
30	Jun-61	0.66	0.00	258.64	0.32	0.00	4.16	258.37	0.05	0 11:59	0 00:00	0.00	0.00
31	Jun-64	0.29	0.00	261.38	0.25	0.00	2.12	261.17	0.04	0 12:00	0 00:00	0.00	0.00
32	Jun-65	0.30	0.30	262.97	0.28	0.00	1.53	262.73	0.04	0 12:00	0 00:00	0.00	0.00
33	Jun-66	0.17	0.00	253.50	0.34	0.00	2.50	253.35	0.19	0 12:41	0 00:00	0.00	0.00
34	Jun-67	0.72	0.26	256.90	1.42	0.00	3.00	255.89	0.41	0 12:04	0 00:00	0.00	0.00
35	Jun-68	0.37	0.24	257.09	1.23	0.00	3.01	256.00	0.14	0 12:04	0 00:00	0.00	0.00
36	Jun-69	0.18	0.18	257.13	0.92	0.00	4.07	256.26	0.05	0 12:04	0 00:00	0.00	0.00
37	Jun-70	0.31	0.31	258.83	2.36	0.00	4.17	256.53	0.06	0 12:00	0 00:00	0.00	0.00
38	Jun-71	0.34	0.34	257.76	0.97	0.00	2.24	256.85	0.06	0 12:01	0 00:00	0.00	0.00
39	Jun-72	0.22	0.22	259.65	0.90	0.00	0.30	258.81	0.06	0 12:00	0 00:00	0.00	0.00
40	Jun-73	0.38	0.38	259.66	1.01	0.00	0.29	258.73	0.08	0 12:01	0 00:00	0.00	0.00
41	Jun-74	0.37	0.21	259.86	0.32	0.00	4.14	259.59	0.05	0 12:00	0 00:00	0.00	0.00
42	Jun-75	0.17	0.17	260.25	0.25	0.00	4.25	260.04	0.04	0 12:00	0 00:00	0.00	0.00
43	Jun-76	0.77	0.38	259.69	0.50	0.00	2.51	259.26	0.07	0 12:01	0 00:00	0.00	0.00
44	Jun-77	0.40	0.00	260.85	0.39	0.00	3.95	260.52	0.06	0 12:02	0 00:00	0.00	0.00
45	Jun-78	0.47	0.47	262.44	0.69	0.00	2.86	261.81	0.06	0 12:01	0 00:00	0.00	0.00
46	NorthWetland	0.16	0.16	252.00	0.00	0.00	6.00	252.00	0.00	0 00:00	0 00:00	0.00	0.00
47	OutletStructure	0.17	0.00	254.54	0.29	0.00	3.81	254.49	0.24	0 16:48	0 00:00	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)	Total Time Flooded (min)
48	Ravine_1	2.81	0.04	256.52	0.42	0.00	3.58	256.24	0.14	0 12:37	0 00:00	0.00	0.00
49	Ravine_2	2.88	0.18	253.50	0.50	0.00	3.60	253.19	0.19	0 12:41	0 00:00	0.00	0.00
50	Ravine_3	2.85	0.03	252.84	0.39	0.00	3.61	252.60	0.15	0 12:42	0 00:00	0.00	0.00
51	RH_1	2.45	2.45	271.54	3.94	0.00	0.16	268.16	0.56	0 12:00	0 00:00	0.00	0.00
52	RH_10	3.16	0.08	263.65	1.75	0.00	0.25	262.32	0.42	0 12:21	0 00:00	0.00	0.00
53	RH_11	2.70	0.03	262.36	2.03	0.00	0.19	260.77	0.44	0 12:34	0 00:00	0.00	0.00
54	RH_12	1.33	1.33	269.38	0.38	0.00	1.12	269.06	0.06	0 12:00	0 00:00	0.00	0.00
55	RH_13	1.36	0.08	264.53	0.53	0.00	1.97	264.11	0.11	0 12:01	0 00:00	0.00	0.00
56	RH_14	0.47	0.00	262.69	0.99	0.00	0.81	261.90	0.20	0 12:23	0 00:00	0.00	0.00
57	RH_15	0.47	0.06	260.19	0.81	0.00	0.81	259.58	0.20	0 12:33	0 00:00	0.00	0.00
58	RH_16	0.45	0.00	257.05	0.69	0.00	0.95	256.62	0.26	0 12:04	0 00:00	0.00	0.00
59	RH_17	1.20	0.15	257.48	1.06	0.00	0.52	256.87	0.45	0 12:54	0 00:00	0.00	0.00
60	RH_2	2.02	2.02	272.22	2.08	0.00	0.23	270.49	0.35	0 12:00	0 00:00	0.00	0.00
61	RH_3	4.28	0.00	269.85	2.78	0.00	0.65	267.63	0.56	0 12:07	0 00:00	0.00	0.00
62	RH_4	2.95	0.03	268.40	1.77	0.00	0.20	267.00	0.37	0 12:08	0 00:00	0.00	0.00
63	RH_5	0.94	0.94	271.86	1.51	0.00	0.24	270.58	0.23	0 12:03	0 00:00	0.00	0.00
64	RH_6	3.63	0.00	268.03	1.53	0.00	0.17	266.82	0.32	0 12:14	0 00:00	0.00	0.00
65	RH_7	0.00	0.00	272.00	0.00	0.00	1.50	272.00	0.00	0 00:00	0 00:00	0.00	0.00
66	RH_8	0.17	0.17	268.06	0.31	0.00	1.79	267.82	0.07	0 12:01	0 00:00	0.00	0.00
67	RH_9	0.17	0.03	264.56	0.56	0.00	1.24	264.09	0.09	0 12:05	0 00:00	0.00	0.00
68	WestOutfall	0.02	0.02	257.00	0.00	0.00	2.45	257.00	0.00	0 00:00	0 00:00	0.00	0.00
69	WestWetland	0.06	0.06	258.00	0.00	0.00	1.00	258.00	0.00	0 00:00	0 00:00	0.00	0.00

Channel Input

SN	Element ID	Length (m)	Inlet Invert Elevation (m)	Inlet Invert Offset (m)	Outlet Invert Elevation (m)	Outlet Invert Offset (m)	Total Drop (m)	Average Slope (%)	Shape	Height (m)	Width (m)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cms)	Flap Gate
1	Link-103	10.00	257.70	2.98	257.50	4.50	0.20	2.0000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
2	Link-104	50.00	257.50	1.71	256.50	3.50	1.00	2.0000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
3	Link-122	70.00	259.30	3.95	258.60	3.37	0.70	1.0000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
4	Link-123	90.00	259.40	3.80	259.30	3.95	0.10	0.1100	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
5	Link-124	90.00	259.50	3.88	259.40	3.80	0.10	0.1100	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
6	Link-125	50.00	259.65	1.00	258.70	0.60	0.95	1.9000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
7	Link-126	50.00	259.65	0.90	258.70	0.60	0.95	1.9000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
8	Link-127	100.00	259.60	4.12	259.50	3.88	0.10	0.1000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
9	Link-128	150.00	259.70	4.01	259.60	4.12	0.10	0.0700	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
10	Link-129	80.00	259.80	3.94	259.70	4.01	0.10	0.1300	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
11	Link-130	100.00	259.90	3.69	259.80	3.94	0.10	0.1000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
12	Link-131	70.00	259.40	2.61	259.30	3.95	0.10	0.1400	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
13	Link-132	150.00	265.00	3.25	264.50	4.04	0.50	0.3300	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
14	Link-133	150.00	264.50	4.04	261.90	2.71	2.60	1.7300	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
15	Link-134	250.00	261.90	2.71	257.70	2.98	4.20	1.6800	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
16	Link-135	100.00	262.50	4.18	261.00	5.71	1.50	1.5000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
17	Link-34	270.00	271.40	3.80	269.65	2.58	1.75	0.6500	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
18	Link-35	50.00	272.15	2.01	269.65	2.58	2.50	5.0000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
19	Link-36	222.00	269.65	2.58	268.30	1.67	1.35	0.6100	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
20	Link-37	18.00	268.30	1.67	267.90	1.40	0.40	2.2200	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
21	Link-38	227.00	271.80	1.45	267.90	1.40	3.90	1.7200	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
22	Link-39	415.00	267.90	1.40	263.50	1.60	4.40	1.0600	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
23	Link-41	180.00	269.55	1.80	265.50	1.50	4.05	2.2500	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
24	Link-42	155.00	265.50	1.50	263.50	1.60	2.00	1.2900	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
25	Link-43	140.00	263.50	1.60	262.25	1.92	1.25	0.8900	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
26	Link-44	470.00	262.25	1.92	258.00	1.90	4.25	0.9000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
27	Link-45	195.00	263.20	1.50	260.70	1.32	2.50	1.2800	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
28	Link-46	280.00	260.70	1.32	258.00	1.90	2.70	0.9600	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
29	Link-51	65.00	259.00	1.63	258.05	3.33	0.95	1.4600	Rectangular	0.300	10.000	0.0320	0.5000	0.5000	0.0000	0.00	No
30	Link-61	125.00	256.75	0.00	256.25	0.00	0.50	0.4000	User-Defined	1.000	9.000	0.0320	0.5000	0.5000	0.0000	0.00	No
31	Link-63	162.50	257.55	0.00	256.90	0.00	0.65	0.4000	User-Defined	1.000	9.000	0.0320	0.5000	0.5000	0.0000	0.00	No
32	Link-66	133.00	258.10	0.00	257.70	0.00	0.40	0.3000	User-Defined	1.000	9.000	0.0320	0.5000	0.5000	0.0000	0.00	No
33	Link-67	75.00	258.40	0.05	258.10	0.00	0.30	0.4000	User-Defined	1.000	9.000	0.0320	0.5000	0.5000	0.0000	0.00	No
34	Link-89	53.10	258.60	3.37	257.70	2.98	0.90	1.6900	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
35	Link-90	90.00	258.75	1.82	257.75	1.65	1.00	1.1100	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
36	Link-92	110.00	261.50	5.97	261.00	5.71	0.50	0.4500	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
37	Link-93	340.00	261.00	5.71	257.70	2.98	3.30	0.9700	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
38	Link-94	95.00	259.35	3.58	257.75	1.65	1.60	1.6800	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
39	LowerRavine	124.00	253.00	0.00	252.45	0.00	0.55	0.4400	Trapezoidal	4.000	17.000	0.0320	0.5000	0.5000	0.0000	0.00	No
40	OutletRavine	45.00	252.45	0.00	252.00	0.00	0.45	1.0000	Trapezoidal	4.000	17.000	0.0320	0.5000	0.5000	0.0000	0.00	No
41	RH_C1	215.00	269.00	0.00	264.00	0.00	5.00	2.3300	Trapezoidal	1.500	7.000	0.0320	0.5000	0.5000	0.0000	0.00	No
42	RH_C2	60.00	264.00	0.00	263.50	1.50	0.50	0.8300	Trapezoidal	1.500	7.000	0.0320	0.5000	0.5000	0.0000	0.00	No
43	UpperRavine	553.00	256.10	0.00	253.00	0.00	3.10	0.5600	Trapezoidal	4.000	17.000	0.0320	0.5000	0.5000	0.0000	0.00	No

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-103	0.00	0 00:00	11.65	0.00	0.00		0.00	0.00	0.00	0.00	
2	Link-104	0.00	0 00:00	11.65	0.00	0.00		0.00	0.00	0.00	0.00	
3	Link-122	0.00	0 00:00	8.24	0.00	0.00		0.00	0.00	0.00	0.00	
4	Link-123	0.00	0 00:00	2.75	0.00	0.00		0.00	0.00	0.00	0.00	
5	Link-124	0.00	0 00:00	2.75	0.00	0.00		0.00	0.00	0.00	0.00	
6	Link-125	0.02	0 12:01	11.36	0.00	0.17	4.90	0.00	0.02	0.00	0.00	
7	Link-126	0.00	0 11:58	11.36	0.00	0.00		0.00	0.00	0.00	0.00	
8	Link-127	0.00	0 00:00	2.61	0.00	0.00		0.00	0.00	0.00	0.00	
9	Link-128	0.00	0 00:00	2.13	0.00	0.00		0.00	0.00	0.00	0.00	
10	Link-129	0.00	0 00:00	2.91	0.00	0.00		0.00	0.00	0.00	0.00	
11	Link-130	0.00	0 00:00	2.61	0.00	0.00		0.00	0.00	0.00	0.00	
12	Link-131	0.00	0 00:00	3.11	0.00	0.00		0.00	0.00	0.00	0.00	
13	Link-132	0.00	0 00:00	4.76	0.00	0.00		0.00	0.00	0.00	0.00	
14	Link-133	0.00	0 00:00	10.85	0.00	0.00		0.00	0.00	0.00	0.00	
15	Link-134	0.00	0 00:00	10.68	0.00	0.00		0.00	0.00	0.00	0.00	
16	Link-135	0.00	0 00:00	10.09	0.00	0.00		0.00	0.00	0.00	0.00	
17	Link-34	1.91	0 12:01	6.63	0.29	0.67	6.72	0.16	0.52	0.00	0.01	
18	Link-35	1.81	0 12:00	18.43	0.10	1.12	0.74	0.12	0.42	0.00	0.04	
19	Link-36	2.29	0 12:08	6.43	0.36	0.75	4.93	0.15	0.51	0.00	0.05	
20	Link-37	1.96	0 12:08	12.28	0.16	0.97	0.31	0.11	0.37	0.00	0.03	
21	Link-38	0.66	0 12:04	10.80	0.06	0.60	6.31	0.08	0.29	0.00	0.02	
22	Link-39	2.19	0 12:16	8.48	0.26	0.83	8.33	0.13	0.45	0.00	0.05	
23	Link-41	0.00	0 00:00	12.36	0.00	0.00		0.00	0.00	0.00	0.00	
24	Link-42	0.00	0 00:00	9.36	0.00	0.00		0.07	0.24	0.00	0.00	
25	Link-43	1.94	0 12:21	7.79	0.25	0.79	2.95	0.12	0.41	0.00	0.08	
26	Link-44	1.14	0 12:34	7.84	0.15	0.64	12.24	0.09	0.29	0.00	0.07	
27	Link-45	0.00	0 00:00	9.33	0.00	0.00		0.00	0.00	0.00	0.00	
28	Link-46	0.00	0 00:00	8.09	0.00	0.00		0.00	0.00	0.00	0.00	
29	Link-51	0.47	0 12:00	4.89	0.10	0.68	1.59	0.07	0.23	0.00	0.02	
30	Link-61	0.64	0 12:10	4.86	0.13	0.66	3.16	0.43	0.43	0.00	0.32	
31	Link-63	0.54	0 12:08	4.86	0.11	0.47	5.76	0.47	0.48	0.00	0.22	
32	Link-66	0.67	0 12:01	4.22	0.16	0.53	4.18	0.53	0.53	0.00	0.21	
33	Link-67	0.03	0 11:58	4.86	0.01	0.08	15.63	0.33	0.34	0.00	0.00	
34	Link-89	0.00	0 00:00	10.73	0.00	0.00		0.00	0.00	0.00	0.00	
35	Link-90	0.00	0 00:00	8.69	0.00	0.00		0.02	0.07	0.00	0.00	
36	Link-92	0.00	0 00:00	5.56	0.00	0.00		0.00	0.00	0.00	0.00	
37	Link-93	0.00	0 00:00	8.12	0.00	0.00		0.00	0.00	0.00	0.00	
38	Link-94	0.00	0 00:00	10.69	0.00	0.00		0.02	0.07	0.00	0.00	
39	LowerRavine	2.85	0 12:41	157.98	0.02	1.13	1.83	0.44	0.11	0.00	0.48	
40	OutletRavine	2.85	0 12:42	237.22	0.01	1.47	0.51	0.35	0.09	0.00	0.73	
41	RH_C1	1.29	0 12:00	24.20	0.05	1.50	2.39	0.45	0.30	0.00	0.51	
42	RH_C2	1.28	0 12:02	14.49	0.09	1.38	0.72	0.45	0.32	0.00	0.59	
43	UpperRavine	2.79	0 12:37	177.61	0.02	1.08	8.53	0.46	0.11	0.00	0.36	

Pipe Input

SN	Element ID	Length (m)	Inlet Invert Elevation (m)	Inlet Invert Offset (m)	Outlet Invert Elevation (m)	Outlet Invert Offset (m)	Total Drop (m)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (m)	Pipe Width (m)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cms)	Flap Gate
1	Ex.STM_1	107.00	257.37	0.00	256.94	0.00	0.43	0.4000	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
2	Ex.STM_2	73.00	256.94	0.00	256.64	0.00	0.30	0.4100	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
3	Ex.STM_3	27.00	256.64	0.00	256.48	0.00	0.16	0.5900	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
4	Ex.STM_4	100.00	256.48	0.00	255.88	0.00	0.60	0.6000	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
5	Ex.STM_5	100.00	255.88	0.00	255.48	0.00	0.40	0.4000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
6	Ex.STM_6	50.00	255.48	0.00	255.23	0.00	0.25	0.5000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
7	Ex.STM_7	102.00	255.23	0.00	254.82	0.00	0.41	0.4000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
8	Link-106	24.80	253.16	0.00	252.85	-0.15	0.31	1.2500	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
9	Link-107	93.20	254.35	0.10	253.20	0.04	1.15	1.2300	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
10	Link-108	110.30	255.48	0.00	255.37	0.08	0.11	0.1000	CIRCULAR	1.200	1.200	0.0130	0.5000	0.5000	0.0000	0.00	No
11	Link-109	30.00	257.70	0.00	257.55	0.00	0.15	0.5000	CIRCULAR	1.050	1.050	0.0130	0.5000	0.5000	0.0000	0.00	No
12	Link-110	153.00	255.69	0.00	255.48	0.00	0.21	0.1400	CIRCULAR	0.900	0.900	0.0130	0.5000	0.5000	0.0000	0.00	No
13	Link-111	66.80	255.86	0.00	255.77	0.08	0.09	0.1300	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
14	Link-112	106.60	256.21	0.00	255.91	0.05	0.30	0.2800	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
15	Link-113	97.50	256.47	0.00	255.88	0.19	0.59	0.6100	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
16	Link-114	85.10	256.79	0.00	255.73	0.38	1.06	1.2500	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
17	Link-115	50.00	258.65	0.00	258.50	0.05	0.15	0.3000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
18	Link-116	50.00	258.75	0.00	258.55	0.10	0.20	0.4000	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
19	Link-117	90.00	259.54	0.00	258.37	0.05	1.17	1.3000	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
20	Link-118	41.60	260.00	0.00	259.56	0.02	0.44	1.0600	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
21	Link-119	181.70	259.19	0.00	256.08	0.29	3.11	1.7100	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
22	Link-120	140.50	260.46	0.00	259.24	0.05	1.22	0.8700	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
23	Link-121	152.20	261.75	0.00	260.51	0.05	1.24	0.8100	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
24	Link-49	20.70	254.62	0.00	254.60	1.60	0.02	0.1000	CIRCULAR	1.800	1.800	0.0130	0.5000	0.5000	0.0000	0.00	No
25	Link-50	75.20	254.70	0.00	254.60	1.60	0.10	0.1300	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
26	Link-52	35.00	254.72	0.00	254.67	0.05	0.05	0.1400	CIRCULAR	1.650	1.650	0.0130	0.5000	0.5000	0.0000	0.00	No
27	Link-53	336.90	255.29	0.00	254.74	0.02	0.55	0.1600	CIRCULAR	1.350	1.350	0.0130	0.5000	0.5000	0.0000	0.00	No
28	Link-54	110.00	255.53	0.00	255.31	0.02	0.22	0.2000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
29	Link-56	110.00	255.77	0.00	255.55	0.02	0.22	0.2000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
30	Link-57	95.50	256.10	0.00	255.85	0.08	0.25	0.2600	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
31	Link-58	90.00	256.93	0.00	256.25	0.15	0.68	0.7600	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
32	Link-59	53.10	255.23	0.00	255.13	0.41	0.10	0.1900	CIRCULAR	1.500	1.500	0.0130	0.5000	0.5000	0.0000	0.00	No
33	Link-60	13.40	256.25	0.00	255.84	0.61	0.41	3.0600	CIRCULAR	1.500	1.500	0.0130	0.5000	0.5000	0.0000	0.00	No
34	Link-62	25.00	256.90	0.00	256.75	0.00	0.15	0.6000	CIRCULAR	1.200	1.200	0.0130	0.5000	0.5000	0.0000	0.00	No
35	Link-68	60.00	258.45	0.00	258.20	0.10	0.25	0.4200	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
36	Link-70	57.00	255.35	0.00	255.25	0.02	0.10	0.1800	CIRCULAR	0.820	0.820	0.0130	0.5000	0.5000	0.0000	0.00	No
37	Link-71	82.00	255.60	0.00	255.43	0.08	0.17	0.2100	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
38	Link-72	85.00	255.79	0.17	255.62	0.02	0.17	0.2000	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
39	Link-73	67.80	255.78	-0.01	255.10	0.38	0.68	1.0000	CIRCULAR	0.900	0.900	0.0130	0.5000	0.5000	0.0000	0.00	No
40	Link-80	89.90	258.32	0.00	255.97	0.68	2.35	2.6100	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
41	Link-81	93.20	261.13	0.00	259.27	0.95	1.86	2.0000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
42	Link-82	103.90	262.69	0.00	261.13	0.00	1.56	1.5000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
43	RH_A1	50.00	270.14	0.00	268.50	1.43	1.64	3.2800	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
44	RH_B1	227.00	270.35	0.00	266.50	0.00	3.85	1.7000	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
45	RH_C3	15.00	262.00	0.00	261.70	0.00	0.30	2.0000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
46	RH_C4	195.00	261.70	0.00	259.38	0.00	2.32	1.1900	CIRCULAR	0.530	0.530	0.0150	0.5000	0.5000	0.0000	0.00	No
47	RH_C5	274.00	259.38	0.00	256.36	0.00	3.02	1.1000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
48	RH_C6	6.00	256.36	0.00	256.24	0.14	0.12	2.0000	CIRCULAR	0.700	0.700	0.0130	0.5000	0.5000	0.0000	0.00	No

Pipe Input

SN	Element ID	Length (m)	Inlet Invert Elevation (m)	Inlet Invert Offset (m)	Outlet Invert Elevation (m)	Outlet Invert Offset (m)	Total Drop (m)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (m)	Pipe Width (m)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cms)	Flap Gate
49	RH_D1	275.00	272.00	0.00	267.75	0.00	4.25	1.5500	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
50	RH_D2	180.00	267.75	0.00	264.00	0.00	3.75	2.0800	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
51	RH_D3	155.00	264.00	0.00	261.90	0.00	2.10	1.3500	CIRCULAR	0.380	0.380	0.0130	0.5000	0.5000	0.0000	0.00	No
52	RH_M1	270.00	267.60	0.00	267.07	0.00	0.53	0.2000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
53	RH_M2	222.00	267.07	0.00	266.63	0.00	0.44	0.2000	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
54	RH_M3	18.00	266.63	0.00	266.50	0.00	0.13	0.7200	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
55	RH_M4	415.00	266.50	0.00	261.90	0.00	4.60	1.1100	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
56	RH_M5	140.00	261.90	0.00	260.33	0.00	1.57	1.1200	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
57	RH_M6	464.00	260.33	0.00	256.42	0.00	3.91	0.8400	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
58	RH_M7	6.00	256.42	0.00	256.37	0.27	0.05	0.8300	CIRCULAR	1.000	1.000	0.0130	0.5000	0.5000	0.0000	0.00	No
59	West_Link	33.73	256.00	-1.00	257.00	0.00	-1.00	-2.9600	Dummy	0.000	0.000	0.0130	0.5000	0.5000	0.0000	0.00	No
60	WestWetland_Link	37.13	258.00	0.00	258.00	0.00	0.00	0.0000	Dummy	0.000	0.000	0.0130	0.5000	0.5000	0.0000	0.00	No
61	Wetland_Link	41.51	252.00	0.00	252.00	0.00	0.00	0.0000	Dummy	0.000	0.000	0.0130	0.5000	0.5000	0.0000	0.00	No

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	Ex.STM_1	0.25	0 12:00	0.18	1.37	1.55	1.15	0.45	1.00	38.00	0.75	SURCHARGED
2	Ex.STM_2	0.25	0 12:00	0.18	1.35	1.55	0.78	0.45	1.00	35.00	0.79	SURCHARGED
3	Ex.STM_3	0.25	0 12:00	0.22	1.13	1.55	0.29	0.45	1.00	32.00	0.90	SURCHARGED
4	Ex.STM_4	0.25	0 12:00	0.22	1.12	1.58	1.05	0.45	0.99	0.00	0.90	> CAPACITY
5	Ex.STM_5	0.25	0 12:01	0.27	0.91	1.32	1.26	0.43	0.82	0.00	0.82	Calculated
6	Ex.STM_6	0.25	0 12:02	0.30	0.81	1.40	0.60	0.40	0.77	0.00	0.84	Calculated
7	Ex.STM_7	0.25	0 12:03	0.39	0.63	1.44	1.18	0.35	0.59	0.00	0.88	Calculated
8	Link-106	0.17	0 16:44	0.89	0.19	1.65	0.25	0.42	0.56	0.00	1.06	Calculated
9	Link-107	0.17	0 16:43	1.24	0.13	1.73	0.90	0.21	0.28	0.00	1.43	Calculated
10	Link-108	0.67	0 12:05	1.23	0.54	0.70	2.63	1.20	1.00	7.00	0.12	SURCHARGED
11	Link-109	0.56	0 12:06	1.93	0.29	1.50	0.33	0.50	0.48	0.00	0.52	Calculated
12	Link-110	0.48	0 12:05	0.67	0.71	0.83	3.07	0.90	1.00	11.00	0.12	SURCHARGED
13	Link-111	0.32	0 11:59	0.41	0.78	0.85	1.31	0.75	1.00	11.00	0.23	SURCHARGED
14	Link-112	0.14	0 11:58	0.33	0.43	0.73	2.43	0.60	1.00	8.00	0.34	SURCHARGED
15	Link-113	0.30	0 12:00	0.33	0.90	1.41	1.15	0.52	1.00	8.00	0.57	SURCHARGED
16	Link-114	0.31	0 12:01	0.32	0.97	2.03	0.70	0.45	1.00	7.00	0.62	SURCHARGED
17	Link-115	0.34	0 12:04	0.24	1.44	1.57	0.53	0.52	1.00	9.00	0.73	SURCHARGED
18	Link-116	0.21	0 11:59	0.18	1.15	1.31	0.64	0.45	1.00	9.00	0.77	SURCHARGED
19	Link-117	0.37	0 12:00	0.96	0.38	2.37	0.63	0.30	0.45	0.00	1.34	Calculated
20	Link-118	0.17	0 12:00	0.44	0.38	1.48	0.47	0.27	0.52	0.00	1.11	Calculated
21	Link-119	0.74	0 12:01	0.80	0.92	3.08	0.98	0.46	0.80	0.00	1.69	Calculated
22	Link-120	0.40	0 12:02	0.57	0.71	1.95	1.20	0.41	0.70	0.00	1.13	Calculated
23	Link-121	0.40	0 12:01	0.39	1.04	1.99	1.27	0.47	0.91	0.00	1.09	> CAPACITY
24	Link-49	4.01	0 12:04	3.57	1.12	2.28	0.15	1.43	0.80	0.00	0.17	> CAPACITY
25	Link-50	0.36	0 12:00	0.22	1.63	1.30	0.96	0.60	1.00	2159.00	0.06	SURCHARGED
26	Link-52	4.01	0 12:04	3.45	1.16	2.01	0.29	1.45	0.88	0.00	0.16	> CAPACITY
27	Link-53	1.92	0 12:05	2.16	0.89	1.34	4.19	1.35	1.00	7.00	0.12	SURCHARGED
28	Link-54	0.63	0 12:01	0.27	2.30	2.24	0.82	0.60	1.00	34.00	0.12	SURCHARGED
29	Link-56	0.25	0 12:19	0.27	0.90	0.87	2.11	0.60	1.00	31.00	0.07	SURCHARGED
30	Link-57	0.22	0 12:19	0.15	1.49	1.36	1.17	0.45	1.00	28.00	0.27	SURCHARGED
31	Link-58	0.07	0 12:02	0.08	0.80	1.13	1.33	0.30	1.00	23.00	0.97	SURCHARGED
32	Link-59	1.07	0 12:02	3.07	0.35	1.16	0.76	1.15	0.77	0.00	0.17	Calculated
33	Link-60	0.63	0 12:11	12.37	0.05	2.77	0.08	0.34	0.23	0.00	1.14	Calculated
34	Link-62	0.60	0 12:09	3.02	0.20	1.21	0.34	0.54	0.46	0.00	0.39	Calculated
35	Link-68	0.52	0 12:01	0.40	1.30	1.94	0.52	0.53	0.89	0.00	0.84	> CAPACITY
36	Link-70	0.77	0 12:01	0.60	1.28	1.44	0.66	0.82	1.00	14.00	0.13	SURCHARGED
37	Link-71	0.50	0 12:00	0.51	0.98	1.13	1.21	0.75	1.00	11.00	0.15	SURCHARGED
38	Link-72	0.21	0 11:59	0.50	0.43	0.56	2.53	0.75	1.00	8.00	0.11	SURCHARGED
39	Link-73	0.74	0 12:02	1.83	0.40	1.66	0.68	0.77	0.87	0.00	0.29	Calculated
40	Link-80	0.66	0 12:00	1.80	0.37	3.35	0.45	0.50	0.70	0.00	1.71	Calculated
41	Link-81	0.29	0 12:00	0.87	0.33	2.64	0.59	0.24	0.41	0.00	1.56	Calculated
42	Link-82	0.29	0 12:00	0.75	0.39	2.43	0.71	0.27	0.44	0.00	1.42	Calculated
43	RH_A1	0.23	0 11:48	0.18	1.31	3.26	0.26	0.30	1.00	113.00	1.87	SURCHARGED
44	RH_B1	0.14	0 11:47	0.13	1.10	1.96	1.93	0.30	1.00	98.00	0.69	SURCHARGED
45	RH_C3	0.47	0 12:01	0.87	0.54	1.91	0.13	0.60	1.00	63.00	1.23	SURCHARGED
46	RH_C4	0.43	0 12:05	0.41	1.06	2.11	1.54	0.52	1.00	83.00	1.12	SURCHARGED
47	RH_C5	0.45	0 12:04	0.45	1.00	2.13	2.14	0.52	1.00	88.00	0.88	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)		
48	RH_C6	0.45	0 12:04	1.31	0.34	1.63	0.06	0.49	0.70	0.00	1.04	Calculated
49	RH_D1	0.00	0 00:00	0.12	0.00	0.00		0.14	0.50	0.00	0.00	Calculated
50	RH_D2	0.15	0 12:00	0.14	1.05	2.18	1.38	0.29	1.00	2.00	1.39	SURCHARGED
51	RH_D3	0.15	0 12:00	0.20	0.73	1.40	1.85	0.38	1.00	8.00	0.43	SURCHARGED
52	RH_M1	0.51	0 11:50	0.27	1.85	1.78	2.53	0.60	1.00	120.00	0.35	SURCHARGED
53	RH_M2	0.80	0 11:51	0.37	2.14	2.23	1.66	0.68	1.00	105.00	0.58	SURCHARGED
54	RH_M3	1.04	0 12:02	0.95	1.10	2.35	0.13	0.75	1.00	100.00	0.88	SURCHARGED
55	RH_M4	0.91	0 11:52	0.89	1.03	2.62	2.64	0.68	1.00	101.00	1.10	SURCHARGED
56	RH_M5	1.05	0 12:02	0.89	1.18	2.95	0.79	0.68	1.00	123.00	1.16	SURCHARGED
57	RH_M6	1.10	0 12:34	1.02	1.08	2.50	3.09	0.75	1.00	120.00	0.60	SURCHARGED
58	RH_M7	1.20	0 12:54	2.19	0.55	1.86	0.05	0.76	0.76	0.00	0.80	Calculated
59	West_Link	0.02	0 12:00	0.00	0.02	0.00		0.46	0.11	0.00	0.36	Calculated
60	WestWetland_Link	0.06	0 12:00	0.00	0.02	0.00		0.46	0.11	0.00	0.36	Calculated
61	Wetland_Link	0.16	0 12:00	0.00	0.02	0.00		0.46	0.11	0.00	0.36	Calculated

Project Description

File Name	18010_Post-Development Rev.1.SPF
Description	I:\ACAD Projects\2018\18010\03-Ref\18010_Pre-Dev. Storm Parcels.dwg I:\ACAD Projects\2018\18010\03-Ref\18010_Pre-Dev. Storm Parcels.dwg I:\ACAD Projects\2018\18010\03-Ref\18010_Post-Dev.Storm Parcels.dwg I:\ACAD Projects\2018\18010\03-Ref\18010_Post-Dev.Storm Parcels.dwg

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	YES

Analysis Options

Start Analysis On	00:00:00	0:00:00
End Analysis On	00:00:00	0:00:00
Start Reporting On	00:00:00	0:00:00
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	60
Nodes	77
Junctions	69
Outfalls	5
Flow Diversions	0
Inlets	0
Storage Nodes	3
Links	110
Channels	43
Pipes	61
Pumps	0
Orifices	1
Weirs	5
Outlets	0
Pollutants	0
Land Uses	0

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	{Survey Site}.Standard : 10	0.92	2.00	67.00	2.0000	125.00	0.0130	0.2000	72.19	49.3510	21.59	19.82	0.03	0 01:12:07
2	{Survey Site}.Standard : 11	21.38	2.00	67.00	2.0000	360.00	0.0130	0.2000	72.19	46.5610	24.16	516.48	0.20	0 04:12:49
3	{Survey Site}.Standard : 12	0.71	5.00	67.00	2.0000	90.00	0.0130	0.2000	72.19	47.8650	23.07	16.38	0.02	0 01:13:54
4	{Survey Site}.Standard : 13	1.65	45.00	71.05	2.0000	220.00	0.0130	0.2000	72.19	25.7800	45.15	74.41	0.27	0 00:51:36
5	{Survey Site}.Standard : 14	4.32	2.00	67.00	2.0000	350.00	0.0130	0.2000	72.19	49.6900	21.26	91.84	0.08	0 01:38:29
6	{Survey Site}.Standard : 17	0.36	5.00	67.00	5.0000	20.00	0.0130	0.2000	72.19	48.0680	22.86	8.14	0.01	0 01:31:29
7	{Survey Site}.Standard : 18	13.10	5.00	48.00	10.0000	300.00	0.0130	0.2000	72.19	59.2650	11.67	152.88	0.21	0 02:07:17
8	{Survey Site}.Standard : 19	1.16	55.00	78.40	2.0000	90.00	0.0130	0.2000	72.19	17.9770	52.96	61.43	0.22	0 01:03:22
9	{Survey Site}.Standard : 2	20.86	45.00	71.05	2.0000	300.00	0.0130	0.2000	72.19	26.7910	44.10	920.02	2.36	0 03:16:31
10	{Survey Site}.Standard : 23	2.20	5.00	48.00	10.0000	100.00	0.0130	0.2000	72.19	58.7520	12.17	26.74	0.04	0 01:24:20
11	{Survey Site}.Standard : 26	1.12	45.00	71.05	2.0000	40.00	0.0130	0.2000	72.19	26.1840	44.74	50.28	0.15	0 01:54:05
12	{Survey Site}.Standard : 27	0.37	45.00	71.05	2.0000	60.00	0.0130	0.2000	72.19	25.7420	45.18	16.72	0.06	0 00:45:55
13	{Survey Site}.Standard : 28	0.12	45.00	71.05	2.0000	40.00	0.0130	0.2000	72.19	25.6410	45.25	5.57	0.02	0 00:30:15
14	{Survey Site}.Standard : 29	7.86	45.00	71.05	2.0000	110.00	0.0130	0.2000	72.19	26.8170	44.07	346.48	0.88	0 03:19:46
15	{Survey Site}.Standard : 3	25.14	45.00	71.05	2.0000	370.00	0.0130	0.2000	72.19	26.7660	44.12	1109.06	2.86	0 03:13:47
16	{Survey Site}.Standard : 30	20.00	30.00	63.70	2.0000	225.00	0.0130	0.2000	72.19	38.7550	32.15	642.82	1.55	0 04:23:06
17	{Survey Site}.Standard : 31	5.54	5.00	57.00	2.0000	245.00	0.0130	0.2000	72.19	54.9610	15.96	88.49	0.10	0 02:19:04
18	{Survey Site}.Standard : 32	3.34	2.00	67.00	2.0000	95.00	0.0130	0.2000	72.19	50.7860	20.13	67.14	0.04	0 03:04:24
19	{Survey Site}.Standard : 33	7.71	2.00	67.00	2.0000	215.00	0.0130	0.2000	72.19	50.8390	20.10	154.88	0.08	0 03:06:43
20	{Survey Site}.Standard : 4	3.13	2.00	67.00	2.0000	155.00	0.0130	0.2000	72.19	50.1080	20.83	65.22	0.04	0 02:12:22
21	{Survey Site}.Standard : 46	5.31	2.00	67.00	2.0000	200.00	0.0130	0.2000	72.19	50.4210	20.52	109.03	0.06	0 02:36:01
22	{Survey Site}.Standard : 5	10.46	45.00	71.05	0.5000	235.00	0.0130	0.2000	72.19	27.0190	43.84	458.56	1.10	0 03:47:53
23	{Survey Site}.Standard : 51	0.39	95.00	95.55	0.5000	20.00	0.0130	0.2000	72.19	0.5270	70.12	27.00	0.09	0 00:37:06
24	{Survey Site}.Standard : 52	10.94	2.00	36.00	0.5000	240.00	0.0130	0.2000	72.19	62.2810	5.60	61.25	0.07	0 05:26:56
25	{Survey Site}.Standard : 53	0.36	75.00	85.75	3.0000	20.00	0.0130	0.2000	72.19	7.3060	63.23	23.02	0.09	0 00:48:30
26	{Survey Site}.Standard : 54	3.94	75.00	85.75	2.0000	150.00	0.0130	0.2000	72.19	7.3060	63.15	248.74	0.88	0 01:08:15
27	{Survey Site}.Standard : 57	0.42	20.00	58.80	2.0000	125.00	0.0130	0.2000	72.19	44.4400	26.46	11.19	0.03	0 00:40:07
28	{Survey Site}.Standard : 6	11.54	2.00	67.00	2.0000	280.00	0.0130	0.2000	72.19	51.0470	19.87	229.37	0.11	0 03:23:04
29	{Survey Site}.Standard : 63	1.63	55.00	75.95	2.0000	90.00	0.0130	0.2000	72.19	19.1900	51.74	84.29	0.29	0 01:17:41
30	{Survey Site}.Standard : 65	1.71	55.00	75.95	2.0000	130.00	0.0130	0.2000	72.19	19.1240	51.82	88.56	0.32	0 01:04:07
31	{Survey Site}.Standard : 68	1.31	55.00	75.95	2.0000	90.00	0.0130	0.2000	72.19	19.1480	51.79	67.95	0.24	0 01:08:13
32	{Survey Site}.Standard : 69	2.53	55.00	75.95	0.5000	85.00	0.0130	0.2000	72.19	19.4960	51.24	129.44	0.35	0 02:38:33
33	{Survey Site}.Standard : 7	10.98	5.00	67.00	2.0000	225.00	0.0130	0.2000	72.19	49.7380	21.20	232.67	0.20	0 03:40:29
34	{Survey Site}.Standard : 71	0.41	75.00	85.75	0.5000	20.00	0.0130	0.2000	72.19	7.3060	63.07	25.73	0.08	0 01:28:55
35	{Survey Site}.Standard : 72	1.08	55.00	75.95	2.0000	75.00	0.0130	0.2000	72.19	19.1400	51.80	55.68	0.20	0 01:07:32
36	{Survey Site}.Standard : 73	1.04	5.00	51.45	1.5000	65.00	0.0130	0.2000	72.19	57.6130	13.31	13.79	0.02	0 02:02:51
37	{Survey Site}.Standard : 74	2.88	55.00	75.95	2.0000	70.00	0.0130	0.2000	72.19	19.4550	51.44	148.14	0.44	0 02:07:09
38	{Survey Site}.Standard : 75	0.35	5.00	51.45	0.5000	35.00	0.0130	0.2000	72.19	57.6880	13.23	4.66	0.01	0 02:09:35
39	{Survey Site}.Standard : 76	0.87	5.00	51.45	25.0000	150.00	0.0130	0.2000	72.19	56.5730	14.39	12.58	0.02	0 00:28:53
40	{Survey Site}.Standard : 77	2.26	95.00	49.00	2.0000	250.00	0.0130	0.2000	72.19	3.0290	67.90	153.18	0.64	0 00:15:32
41	{Survey Site}.Standard : 78	2.38	55.00	75.95	3.0000	75.00	0.0130	0.2000	72.19	17.9590	58.24	138.84	0.43	0 01:36:26
42	{Survey Site}.Standard : 79	0.19	5.00	51.45	2.0000	25.00	0.0130	0.2000	72.19	57.0190	13.92	2.57	0.00	0 01:11:07
43	{Survey Site}.Standard : 8	3.30	2.00	67.00	2.0000	125.00	0.0130	0.2000	72.19	50.4210	20.52	67.81	0.04	0 02:35:32
44	{Survey Site}.Standard : 80	0.72	2.00	48.00	10.0000	55.00	0.0130	0.2000	72.19	58.2240	12.58	9.06	0.01	0 01:02:57
45	{Survey Site}.Standard : 81	1.46	35.00	66.15	2.0000	55.00	0.0130	0.2000	72.19	33.5680	37.38	54.64	0.16	0 02:01:59
46	{Survey Site}.Standard : 82	1.98	35.00	66.15	2.0000	55.00	0.0130	0.2000	72.19	33.7640	37.16	73.46	0.21	0 02:26:12
47	{Survey Site}.Standard : 83	1.98	55.00	75.95	2.0000	75.00	0.0130	0.2000	72.19	19.8400	74.72	148.16	0.40	0 01:37:31

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)
48	{Survey Site}.Standard : 84	1.00	55.00	75.95	2.0000	50.00	0.0130	0.2000	72.19	19.2150	51.71	51.92	0.18	0 01:22:41
49	{Survey Site}.Standard : 85	1.78	55.00	75.95	2.0000	70.00	0.0130	0.2000	72.19	19.2810	51.64	92.07	0.30	0 01:35:22
50	{Survey Site}.Standard : 86	1.43	55.00	75.95	2.0000	100.00	0.0130	0.2000	72.19	19.1400	51.80	73.81	0.26	0 01:07:18
51	{Survey Site}.Standard : 87	2.66	55.00	75.95	2.0000	100.00	0.0130	0.2000	72.19	19.2970	51.62	137.15	0.44	0 01:37:48
52	{Survey Site}.Standard : 88	1.64	55.00	75.95	2.0000	75.00	0.0130	0.2000	72.19	19.2390	51.69	84.66	0.28	0 01:26:57
53	{Survey Site}.Standard : 89	1.11	55.00	75.95	2.0000	100.00	0.0130	0.2000	72.19	19.0900	51.85	57.71	0.21	0 00:58:01
54	{Survey Site}.Standard : 9	3.53	2.00	67.00	2.0000	100.00	0.0130	0.2000	72.19	50.8120	20.12	71.07	0.04	0 03:05:05
55	{Survey Site}.Standard : 90	1.22	65.00	80.85	2.0000	130.00	0.0130	0.2000	72.19	12.8600	57.99	70.46	0.28	0 00:44:56
56	{Survey Site}.Standard : 91	1.00	65.00	80.85	2.0000	130.00	0.0130	0.2000	72.19	12.8600	58.00	57.83	0.24	0 00:39:54
57	{Survey Site}.Standard : 92	2.19	55.00	75.95	2.0000	75.00	0.0130	0.2000	72.19	19.3310	51.59	113.13	0.36	0 01:43:35
58	{Survey Site}.Standard : 93	2.28	20.00	58.80	5.0000	525.00	0.0130	0.2000	72.19	44.4130	26.51	60.34	0.18	0 00:35:21
59	Sub-01	0.13	55.00	75.95	2.0000	40.00	0.0130	0.2000	72.19	18.9410	51.96	6.75	0.03	0 00:27:43
60	Sub-02	0.18	55.00	75.95	2.0000	30.00	0.0130	0.2000	72.19	18.9990	51.92	9.35	0.04	0 00:40:03

Node Summary

SN	Element ID	Element Type	Invert Elevation (m)	Ground/Rim (Max) Elevation (m)	Initial Water Elevation (m)	Surcharge Elevation (m)	Ponded Area (m²)	Peak Inflow (cms)	Max HGL Elevation Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ha-mm)	Total Time Flooded (min)
1	Ex_MHR1	Junction	255.88	262.50	0.00	0.00	0.00	0.25	256.32	0.00	6.18	0 00:00	0.00	0.00
2	Ex_MHR2	Junction	255.48	259.65	0.00	0.00	0.00	0.25	255.90	0.00	3.75	0 00:00	0.00	0.00
3	Ex_MHR25	Junction	256.48	263.35	0.00	0.00	0.00	0.25	257.47	0.00	5.88	0 00:00	0.00	0.00
4	Ex_MHR26	Junction	256.64	262.75	0.00	0.00	0.00	0.25	257.87	0.00	4.88	0 00:00	0.00	0.00
5	Ex_MHR27	Junction	256.94	261.00	0.00	0.00	0.00	0.25	258.31	0.00	2.69	0 00:00	0.00	0.00
6	Ex_MHR28	Junction	257.37	259.30	0.00	0.00	0.00	0.88	259.09	0.00	0.21	0 00:00	0.00	0.00
7	Ex_MHR3	Junction	255.23	259.00	0.00	0.00	0.00	0.25	255.61	0.00	3.39	0 00:00	0.00	0.00
8	Jun-34	Junction	254.62	258.25	0.00	0.00	0.00	4.71	256.14	0.00	2.11	0 00:00	0.00	0.00
9	Jun-35	Junction	254.70	257.50	0.00	0.00	0.00	0.43	256.14	0.00	1.36	0 00:00	0.00	0.00
10	Jun-36	Junction	254.72	258.00	0.00	0.00	0.00	4.76	256.50	0.00	1.85	0 00:00	0.00	0.00
11	Jun-37	Junction	255.29	261.30	0.00	0.00	0.00	2.35	257.19	0.00	4.11	0 00:00	0.00	0.00
12	Jun-38	Junction	255.53	261.80	0.00	0.00	0.00	0.96	258.59	0.00	3.21	0 00:00	0.00	0.00
13	Jun-39	Junction	256.93	259.05	0.00	0.00	0.00	0.09	258.46	0.00	0.59	0 00:00	0.00	0.00
14	Jun-40	Junction	256.10	258.55	0.00	0.00	0.00	0.31	257.84	0.00	0.71	0 00:00	0.00	0.00
15	Jun-41	Junction	255.77	259.65	0.00	0.00	0.00	0.27	258.50	0.00	1.15	0 00:00	0.00	0.00
16	Jun-42	Junction	255.23	258.90	0.00	0.00	0.00	1.30	256.55	0.00	2.35	0 00:00	0.00	0.00
17	Jun-43	Junction	256.25	257.25	0.00	0.00	0.00	0.69	256.58	0.00	1.17	0 00:00	0.00	0.00
18	Jun-44	Junction	257.55	258.55	0.00	0.00	0.00	0.64	258.01	0.00	0.59	0 00:00	0.00	0.00
19	Jun-46	Junction	257.70	258.70	0.00	258.70	0.00	0.73	258.34	0.00	0.41	0 00:00	0.00	0.00
20	Jun-47	Junction	258.10	259.10	0.00	0.00	0.00	0.76	258.61	0.00	0.49	0 00:00	0.00	0.00
21	Jun-48	Junction	258.35	259.35	0.00	0.00	0.00	0.03	258.61	0.00	0.79	0 00:00	0.00	0.00
22	Jun-49	Junction	256.90	257.90	0.00	0.00	0.00	0.72	257.50	0.00	0.60	0 00:00	0.00	0.00
23	Jun-50	Junction	256.75	257.75	0.00	0.00	0.00	0.69	257.32	0.00	0.63	0 00:00	0.00	0.00
24	Jun-51	Junction	258.45	260.50	0.00	0.00	0.00	0.52	259.50	0.00	1.00	0 00:00	0.00	0.00
25	Jun-52	Junction	255.69	260.00	0.00	0.00	0.00	0.68	257.47	0.00	2.53	0 00:00	0.00	0.00
26	Jun-53	Junction	255.35	259.60	0.00	0.00	0.00	0.95	256.84	0.00	2.76	0 00:00	0.00	0.00
27	Jun-54	Junction	255.62	259.80	0.00	0.00	0.00	0.28	257.17	0.00	2.63	0 00:00	0.00	0.00
28	Jun-55	Junction	255.60	259.70	0.00	0.00	0.00	0.65	257.12	0.00	2.58	0 00:00	0.00	0.00
29	Jun-56	Junction	255.79	257.80	0.00	0.00	0.00	0.81	256.71	0.00	1.09	0 00:00	0.00	0.00
30	Jun-61	Junction	258.32	262.00	0.00	0.00	0.00	0.77	258.67	0.00	4.13	0 00:00	0.00	0.00
31	Jun-64	Junction	261.13	263.50	0.00	0.00	0.00	0.35	261.41	0.00	2.09	0 00:00	0.00	0.00
32	Jun-65	Junction	262.69	264.50	0.00	0.00	0.00	0.35	263.00	0.00	1.50	0 00:00	0.00	0.00
33	Jun-66	Junction	253.16	256.00	0.00	0.00	0.00	0.28	253.58	0.00	2.42	0 00:00	0.00	0.00
34	Jun-67	Junction	255.48	259.90	0.00	0.00	0.00	0.78	257.26	0.00	2.64	0 00:00	0.00	0.00
35	Jun-68	Junction	255.86	260.10	0.00	0.00	0.00	0.44	257.55	0.00	2.55	0 00:00	0.00	0.00
36	Jun-69	Junction	256.21	261.20	0.00	0.00	0.00	0.21	257.61	0.00	3.59	0 00:00	0.00	0.00
37	Jun-70	Junction	256.47	263.00	0.00	0.00	0.00	0.36	259.79	0.00	3.21	0 00:00	0.00	0.00
38	Jun-71	Junction	256.79	260.00	0.00	0.00	0.00	0.40	258.48	0.00	1.52	0 00:00	0.00	0.00
39	Jun-72	Junction	258.75	259.95	0.00	0.00	0.00	0.26	259.66	0.00	0.29	0 00:00	0.00	0.00
40	Jun-73	Junction	258.65	259.95	0.00	0.00	0.00	0.44	259.67	0.00	0.28	0 00:00	0.00	0.00
41	Jun-74	Junction	259.54	264.00	0.00	0.00	0.00	0.44	259.89	0.00	4.11	0 00:00	0.00	0.00
42	Jun-75	Junction	260.00	264.50	0.00	0.00	0.00	0.20	260.28	0.00	4.22	0 00:00	0.00	0.00
43	Jun-76	Junction	259.19	262.20	0.00	0.00	0.00	0.87	259.94	0.00	2.26	0 00:00	0.00	0.00
44	Jun-77	Junction	260.46	264.80	0.00	0.00	0.00	0.45	260.87	0.00	3.93	0 00:00	0.00	0.00
45	Jun-78	Junction	261.75	265.30	0.00	0.00	0.00	0.55	262.84	0.00	2.46	0 00:00	0.00	0.00
46	NorthWetland	Junction	252.00	258.00	0.00	0.00	0.00	0.21	252.00	0.00	6.00	0 00:00	0.00	0.00
47	OutletStructure	Junction	254.25	256.80	0.00	0.00	0.00	0.28	254.60	0.00	3.75	0 00:00	0.00	0.00

Node Summary

SN	Element ID	Element Type	Invert Elevation (m)	Ground/Rim (Max) Elevation (m)	Initial Water Elevation (m)	Surcharge Elevation (m)	Ponded Area (m^2)	Peak Inflow (cms)	Max HGL Elevation Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ha-mm)	Total Time Flooded (min)
48	Ravine_1	Junction	256.10	260.10	0.00	0.00	0.00	3.59	256.58	0.00	3.52	0 00:00	0.00	0.00
49	Ravine_2	Junction	253.00	257.00	0.00	0.00	0.00	3.67	253.57	0.00	3.53	0 00:00	0.00	0.00
50	Ravine_3	Junction	252.45	256.45	0.00	0.00	0.00	3.63	252.90	0.00	3.55	0 00:00	0.00	0.00
51	RH_1	Junction	267.60	271.70	0.00	0.00	0.00	2.86	271.55	0.00	0.15	0 00:00	0.00	0.00
52	RH_10	Junction	261.90	263.90	0.00	0.00	0.00	4.04	263.68	0.00	0.22	0 00:00	0.00	0.00
53	RH_11	Junction	260.33	262.55	0.00	0.00	0.00	3.48	262.39	0.00	0.16	0 00:00	0.00	0.00
54	RH_12	Junction	269.00	270.50	0.00	0.00	0.00	1.55	269.42	0.00	1.08	0 00:00	0.00	0.00
55	RH_13	Junction	264.00	266.50	0.00	0.00	0.00	1.59	264.58	0.00	1.92	0 00:00	0.00	0.00
56	RH_14	Junction	261.70	263.50	0.00	0.00	0.00	0.47	262.92	0.00	0.58	0 00:00	0.00	0.00
57	RH_15	Junction	259.38	261.00	0.00	0.00	0.00	0.50	260.50	0.00	0.50	0 00:00	0.00	0.00
58	RH_16	Junction	256.36	258.00	0.00	0.00	0.00	0.46	257.07	0.00	0.93	0 00:00	0.00	0.00
59	RH_17	Junction	256.42	258.00	0.00	0.00	0.00	1.25	257.52	0.00	0.48	0 00:00	0.00	0.00
60	RH_2	Junction	270.14	272.45	0.00	0.00	0.00	2.36	272.23	0.00	0.22	0 00:00	0.00	0.00
61	RH_3	Junction	267.07	270.50	0.00	0.00	0.00	4.99	269.87	0.00	0.63	0 00:00	0.00	0.00
62	RH_4	Junction	266.63	268.60	0.00	0.00	0.00	3.61	268.42	0.00	0.18	0 00:00	0.00	0.00
63	RH_5	Junction	270.35	272.10	0.00	0.00	0.00	1.10	271.86	0.00	0.24	0 00:00	0.00	0.00
64	RH_6	Junction	266.50	268.20	0.00	0.00	0.00	4.43	268.06	0.00	0.14	0 00:00	0.00	0.00
65	RH_7	Junction	272.00	273.50	0.00	0.00	0.00	0.00	272.00	0.00	1.50	0 00:00	0.00	0.00
66	RH_8	Junction	267.75	269.85	0.00	0.00	0.00	0.20	268.38	0.00	1.47	0 00:00	0.00	0.00
67	RH_9	Junction	264.00	265.80	0.00	0.00	0.00	0.18	264.96	0.00	0.84	0 00:00	0.00	0.00
68	WestOutfall	Junction	257.00	258.40	0.00	0.00	0.00	0.02	257.00	0.00	2.45	0 00:00	0.00	0.00
69	WestWetland	Junction	258.00	259.00	0.00	0.00	0.00	0.07	258.00	0.00	1.00	0 00:00	0.00	0.00
70	North_Wetland	Outfall	252.00					0.21	252.00					
71	Outfall	Outfall	252.00					3.63	252.36					
72	TinerEstatesSTM	Outfall	254.82					0.25	255.14					
73	West_Outfall	Outfall	257.00					0.02	257.00					
74	West_Wetland	Outfall	258.00					0.07	258.00					
75	Ex_SE_Pond	Storage Node	262.00	266.00	0.00		0.00	1.61	263.09				0.00	0.00
76	SWM_FB	Storage Node	253.00	257.10	254.50		0.00	4.71	256.14				0.00	0.00
77	SWM_WP	Storage Node	253.00	257.10	254.50		0.00	4.10	256.14				0.00	0.00

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(m)	(m)	(m)	(%)	(m)		(cms)	(cms)		(m/sec)	(m)		(min)	
1	Ex.STM_1	Pipe	Ex_MHR28	Ex_MHR27	107.00	257.37	256.94	0.4000	0.450	0.0130	0.25	0.18	1.37	1.56	0.45	1.00	44.00	SURCHARGED
2	Ex.STM_2	Pipe	Ex_MHR27	Ex_MHR26	73.00	256.94	256.64	0.4100	0.450	0.0130	0.25	0.18	1.35	1.56	0.45	1.00	40.00	SURCHARGED
3	Ex.STM_3	Pipe	Ex_MHR26	Ex_MHR25	27.00	256.64	256.48	0.5900	0.450	0.0130	0.25	0.22	1.13	1.56	0.45	1.00	37.00	SURCHARGED
4	Ex.STM_4	Pipe	Ex_MHR25	Ex_MHR1	100.00	256.48	255.88	0.6000	0.450	0.0130	0.25	0.22	1.12	1.58	0.45	0.99	0.00	> CAPACITY
5	Ex.STM_5	Pipe	Ex_MHR1	Ex_MHR2	100.00	255.88	255.48	0.4000	0.525	0.0130	0.25	0.27	0.91	1.32	0.43	0.82	0.00	Calculated
6	Ex.STM_6	Pipe	Ex_MHR2	Ex_MHR3	50.00	255.48	255.23	0.5000	0.525	0.0130	0.25	0.30	0.81	1.40	0.40	0.77	0.00	Calculated
7	Ex.STM_7	Pipe	Ex_MHR3	TinerEstatesSTM	102.00	255.23	254.82	0.4000	0.600	0.0130	0.25	0.39	0.64	1.44	0.35	0.59	0.00	Calculated
8	Link-106	Pipe	Jun-66	Ravine_2	24.80	253.16	252.85	1.2500	0.750	0.0130	0.29	0.89	0.32	1.65	0.49	0.66	0.00	Calculated
9	Link-107	Pipe	OutletStructure	Jun-66	93.20	254.35	253.20	1.2300	0.750	0.0130	0.29	1.24	0.23	1.88	0.29	0.39	0.00	Calculated
10	Link-108	Pipe	Jun-67	Jun-37	110.30	255.48	255.37	0.1000	1.200	0.0130	0.79	1.23	0.64	0.70	1.20	1.00	12.00	SURCHARGED
11	Link-109	Pipe	Jun-46	Jun-44	30.00	257.70	257.55	0.5000	1.050	0.0130	0.64	1.93	0.33	1.51	0.53	0.52	0.00	Calculated
12	Link-110	Pipe	Jun-52	Jun-67	153.00	255.69	255.48	0.1400	0.900	0.0130	0.58	0.67	0.86	0.91	0.90	1.00	15.00	SURCHARGED
13	Link-111	Pipe	Jun-68	Jun-52	66.80	255.86	255.77	0.1300	0.750	0.0130	0.33	0.41	0.81	0.86	0.75	1.00	16.00	SURCHARGED
14	Link-112	Pipe	Jun-69	Jun-68	106.60	256.21	255.91	0.2800	0.600	0.0130	0.16	0.33	0.49	0.72	0.60	1.00	13.00	SURCHARGED
15	Link-113	Pipe	Jun-70	Jun-52	97.50	256.47	255.88	0.6100	0.525	0.0130	0.36	0.33	1.07	1.66	0.52	1.00	13.00	SURCHARGED
16	Link-114	Pipe	Jun-71	Jun-53	85.10	256.79	255.73	1.2500	0.450	0.0130	0.37	0.32	1.15	2.29	0.45	1.00	12.00	SURCHARGED
17	Link-115	Pipe	Jun-73	Jun-51	50.00	258.65	258.50	0.3000	0.525	0.0130	0.34	0.24	1.46	1.58	0.52	1.00	12.00	SURCHARGED
18	Link-116	Pipe	Jun-72	Jun-51	50.00	258.75	258.55	0.4000	0.450	0.0130	0.21	0.18	1.15	1.31	0.45	1.00	12.00	SURCHARGED
19	Link-117	Pipe	Jun-74	Jun-61	90.00	259.54	258.37	1.3000	0.675	0.0130	0.43	0.96	0.45	2.46	0.33	0.49	0.00	Calculated
20	Link-118	Pipe	Jun-75	Jun-74	41.60	260.00	259.56	1.0600	0.525	0.0130	0.20	0.44	0.45	1.53	0.30	0.58	0.00	Calculated
21	Link-119	Pipe	Jun-76	Jun-56	181.70	259.19	256.08	1.7100	0.600	0.0130	0.80	0.80	0.99	3.05	0.60	1.00	2.00	SURCHARGED
22	Link-120	Pipe	Jun-77	Jun-76	140.50	260.46	259.24	0.8700	0.600	0.0130	0.46	0.57	0.80	1.98	0.49	0.84	0.00	Calculated
23	Link-121	Pipe	Jun-78	Jun-77	152.20	261.75	260.51	0.8100	0.525	0.0130	0.45	0.39	1.17	2.17	0.48	0.93	0.00	> CAPACITY
24	Link-49	Pipe	Jun-34	SWM_FB	20.70	254.62	254.60	0.1000	1.800	0.0130	4.71	3.57	1.32	2.41	1.53	0.85	0.00	> CAPACITY
25	Link-50	Pipe	Jun-35	SWM_WP	75.20	254.70	254.60	0.1300	0.600	0.0130	0.43	0.22	1.91	1.51	0.60	1.00	2162.00	SURCHARGED
26	Link-52	Pipe	Jun-36	Jun-34	35.00	254.72	254.67	0.1400	1.650	0.0130	4.71	3.45	1.37	2.26	1.55	0.94	0.00	> CAPACITY
27	Link-53	Pipe	Jun-37	Jun-36	336.90	255.29	254.74	0.1600	1.350	0.0130	2.23	2.16	1.03	1.56	1.35	1.00	12.00	SURCHARGED
28	Link-54	Pipe	Jun-38	Jun-37	110.00	255.53	255.31	0.2000	0.600	0.0130	0.67	0.27	2.44	2.37	0.60	1.00	209.00	SURCHARGED
29	Link-56	Pipe	Jun-41	Jun-38	110.00	255.77	255.55	0.2000	0.600	0.0130	0.26	0.27	0.94	0.91	0.60	1.00	40.00	SURCHARGED
30	Link-57	Pipe	Jun-40	Jun-41	95.50	256.10	255.85	0.2600	0.450	0.0130	0.24	0.15	1.63	1.49	0.45	1.00	37.00	SURCHARGED
31	Link-58	Pipe	Jun-39	Jun-40	90.00	256.93	256.25	0.7600	0.300	0.0130	0.08	0.08	0.96	1.14	0.30	1.00	33.00	SURCHARGED
32	Link-59	Pipe	Jun-42	Jun-36	53.10	255.23	255.13	0.1900	1.500	0.0130	1.30	3.07	0.42	1.17	1.34	0.90	0.00	Calculated
33	Link-60	Pipe	Jun-43	Jun-42	13.40	256.25	255.84	3.0600	1.500	0.0130	0.68	12.37	0.05	2.76	0.49	0.32	0.00	Calculated
34	Link-62	Pipe	Jun-49	Jun-50	25.00	256.90	256.75	0.6000	1.200	0.0130	0.69	3.02	0.23	1.35	0.58	0.49	0.00	Calculated
35	Link-68	Pipe	Jun-51	Jun-47	60.00	258.45	258.20	0.4200	0.600	0.0130	0.52	0.40	1.30	1.94	0.53	0.89	0.00	> CAPACITY
36	Link-70	Pipe	Jun-53	Jun-42	57.00	255.35	255.25	0.1800	0.825	0.0130	0.92	0.60	1.54	1.73	0.82	1.00	20.00	SURCHARGED
37	Link-71	Pipe	Jun-55	Jun-53	82.00	255.60	255.43	0.2100	0.750	0.0130	0.58	0.51	1.15	1.32	0.75	1.00	16.00	SURCHARGED
38	Link-72	Pipe	Jun-54	Jun-55	85.00	255.79	255.62	0.2000	0.750	0.0130	0.24	0.50	0.49	0.57	0.75	1.00	13.00	SURCHARGED
39	Link-73	Pipe	Jun-56	Jun-36	67.80	255.78	255.10	1.0000	0.900	0.0130	0.81	1.83	0.44	1.62	0.90	1.00	2.00	SURCHARGED
40	Link-80	Pipe	Jun-61	Jun-37	89.90	258.32	255.97	2.6100	0.750	0.0130	0.77	1.80	0.43	3.34	0.54	0.73	0.00	Calculated
41	Link-81	Pipe	Jun-64	Jun-61	93.20	261.13	259.27	2.0000	0.600	0.0130	0.34	0.87	0.39	2.75	0.27	0.45	0.00	Calculated
42	Link-82	Pipe	Jun-65	Jun-64	103.90	262.69	261.13	1.5000	0.600	0.0130	0.35	0.75	0.46	2.52	0.29	0.49	0.00	Calculated
43	RH_A1	Pipe	RH_2	RH_3	50.00	270.14	268.50	3.2800	0.300	0.0130	0.23	0.18	1.31	3.26	0.30	1.00	152.00	SURCHARGED
44	RH_B1	Pipe	RH_5	RH_6	227.00	270.35	266.50	1.7000	0.300	0.0130	0.14	0.13	1.10	1.96	0.30	1.00	124.00	SURCHARGED
45	RH_C3	Pipe	Ex_SE_Pond	RH_14	15.00	262.00	261.70	2.0000	0.600	0.0130	0.47	0.87	0.54	1.91	0.60	1.00	121.00	SURCHARGED
46	RH_C4	Pipe	RH_14	RH_15	195.00	261.70	259.38	1.1900	0.525	0.0150	0.43	0.41	1.05	2.11	0.52	1.00	145.00	SURCHARGED
47	RH_C5	Pipe	RH_15	RH_16	274.00	259.38	256.36	1.1000	0.525	0.0130	0.46	0.45	1.03	2.14	0.52	1.00	151.00	SURCHARGED

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(m)	(m)	(m)	(%)	(m)		(cms)	(cms)		(m/sec)	(m)		(min)	
48	RH_C6	Pipe	RH_16	Ravine_1	6.00	256.36	256.24	2.0000	0.700	0.0130	0.46	1.31	0.35	1.63	0.52	0.74	0.00	Calculated
49	RH_D1	Pipe	RH_7	RH_8	275.00	272.00	267.75	1.5500	0.300	0.0130	0.00	0.12	0.00	0.00	0.15	0.50	0.00	Calculated
50	RH_D2	Pipe	RH_8	RH_9	180.00	267.75	264.00	2.0800	0.300	0.0130	0.15	0.14	1.04	2.17	0.30	1.00	14.00	SURCHARGED
51	RH_D3	Pipe	RH_9	RH_10	155.00	264.00	261.90	1.3500	0.375	0.0130	0.16	0.20	0.76	1.41	0.38	1.00	36.00	SURCHARGED
52	RH_M1	Pipe	RH_1	RH_3	270.00	267.60	267.07	0.2000	0.600	0.0130	0.50	0.27	1.85	1.78	0.60	1.00	145.00	SURCHARGED
53	RH_M2	Pipe	RH_3	RH_4	222.00	267.07	266.63	0.2000	0.675	0.0130	0.80	0.37	2.14	2.23	0.68	1.00	126.00	SURCHARGED
54	RH_M3	Pipe	RH_4	RH_6	18.00	266.63	266.50	0.7200	0.750	0.0130	1.05	0.95	1.10	2.37	0.75	1.00	120.00	SURCHARGED
55	RH_M4	Pipe	RH_6	RH_10	415.00	266.50	261.90	1.1100	0.675	0.0130	0.91	0.89	1.03	2.62	0.68	1.00	122.00	SURCHARGED
56	RH_M5	Pipe	RH_10	RH_11	140.00	261.90	260.33	1.1200	0.675	0.0130	1.05	0.89	1.18	2.93	0.68	1.00	154.00	SURCHARGED
57	RH_M6	Pipe	RH_11	RH_17	464.00	260.33	256.42	0.8400	0.750	0.0130	1.10	1.02	1.08	2.50	0.75	1.00	151.00	SURCHARGED
58	RH_M7	Pipe	RH_17	Ravine_1	6.00	256.42	256.37	0.8300	1.000	0.0130	1.25	2.19	0.57	1.92	0.77	0.77	0.00	Calculated
59	West_Link	Pipe	WestOutfall	West_Outfall	33.73	256.00	257.00	-2.9600	0.000	0.0130	0.02	0.00	0.02	0.00	0.53	0.13	0.00	Calculated
60	WestWetland_Link	Pipe	WestWetland	West_Wetland	37.13	258.00	258.00	0.0000	0.000	0.0130	0.07	0.00	0.02	0.00	0.53	0.13	0.00	Calculated
61	Wetland_Link	Pipe	NorthWetland	North_Wetland	41.51	252.00	252.00	0.0000	0.000	0.0130	0.21	0.00	0.02	0.00	0.53	0.13	0.00	Calculated
62	Link-103	Channel	Jun-36	SWM_FB	10.00	257.70	257.50	2.0000	0.300	0.0320	0.00	11.65	0.00	0.00	0.00	0.00	0.00	
63	Link-104	Channel	Jun-56	SWM_FB	50.00	257.50	256.50	2.0000	0.300	0.0320	0.00	11.65	0.00	0.00	0.00	0.00	0.00	
64	Link-122	Channel	Jun-53	Jun-42	70.00	259.30	258.60	1.0000	0.300	0.0320	0.00	8.24	0.00	0.00	0.00	0.00	0.00	
65	Link-123	Channel	Jun-55	Jun-53	90.00	259.40	259.30	0.1100	0.300	0.0320	0.00	2.75	0.00	0.00	0.00	0.00	0.00	
66	Link-124	Channel	Jun-54	Jun-55	90.00	259.50	259.40	0.1100	0.300	0.0320	0.00	2.75	0.00	0.00	0.00	0.00	0.00	
67	Link-125	Channel	Jun-73	Jun-47	50.00	259.65	258.70	1.9000	0.300	0.0320	0.08	11.36	0.01	0.28	0.01	0.05	0.00	
68	Link-126	Channel	Jun-72	Jun-47	50.00	259.65	258.70	1.9000	0.300	0.0320	0.02	11.36	0.00	0.15	0.00	0.02	0.00	
69	Link-127	Channel	Jun-67	Jun-54	100.00	259.60	259.50	0.1000	0.300	0.0320	0.00	2.61	0.00	0.00	0.00	0.00	0.00	
70	Link-128	Channel	Jun-52	Jun-67	150.00	259.70	259.60	0.0700	0.300	0.0320	0.00	2.13	0.00	0.00	0.00	0.00	0.00	
71	Link-129	Channel	Jun-68	Jun-52	80.00	259.80	259.70	0.1300	0.300	0.0320	0.00	2.91	0.00	0.00	0.00	0.00	0.00	
72	Link-130	Channel	Jun-69	Jun-68	100.00	259.90	259.80	0.1000	0.300	0.0320	0.00	2.61	0.00	0.00	0.00	0.00	0.00	
73	Link-131	Channel	Jun-71	Jun-53	70.00	259.40	259.30	0.1400	0.300	0.0320	0.00	3.11	0.00	0.00	0.00	0.00	0.00	
74	Link-132	Channel	Jun-78	Jun-77	150.00	265.00	264.50	0.3300	0.300	0.0320	0.00	4.76	0.00	0.00	0.00	0.00	0.00	
75	Link-133	Channel	Jun-77	Jun-76	150.00	264.50	261.90	1.7300	0.300	0.0320	0.00	10.85	0.00	0.00	0.00	0.00	0.00	
76	Link-134	Channel	Jun-76	Jun-36	250.00	261.90	257.70	1.6800	0.300	0.0320	0.00	10.68	0.00	0.00	0.00	0.00	0.00	
77	Link-135	Channel	Jun-61	Jun-37	100.00	262.50	261.00	1.5000	0.300	0.0320	0.00	10.09	0.00	0.00	0.00	0.00	0.00	
78	Link-34	Channel	RH_1	RH_3	270.00	271.40	269.65	0.6500	0.300	0.0320	2.21	6.63	0.33	0.70	0.18	0.60	0.00	
79	Link-35	Channel	RH_2	RH_3	50.00	272.15	269.65	5.0000	0.300	0.0320	2.15	18.43	0.12	1.13	0.14	0.48	0.00	
80	Link-36	Channel	RH_3	RH_4	222.00	269.65	268.30	0.6100	0.300	0.0320	2.93	6.43	0.46	0.83	0.17	0.59	0.00	
81	Link-37	Channel	RH_4	RH_6	18.00	268.30	267.90	2.2200	0.300	0.0320	2.62	12.28	0.21	1.08	0.13	0.45	0.00	
82	Link-38	Channel	RH_5	RH_6	227.00	271.80	267.90	1.7200	0.300	0.0320	0.81	10.80	0.08	0.64	0.10	0.34	0.00	
83	Link-39	Channel	RH_6	RH_10	415.00	267.90	263.50	1.0600	0.300	0.0320	2.97	8.48	0.35	0.94	0.16	0.54	0.00	
84	Link-41	Channel	RH_8	RH_9	180.00	269.55	265.50	2.2500	0.300	0.0320	0.00	12.36	0.00	0.00	0.00	0.00	0.00	
85	Link-42	Channel	RH_9	RH_10	155.00	265.50	263.50	1.2900	0.300	0.0320	0.00	9.36	0.00	0.00	0.09	0.29	0.00	
86	Link-43	Channel	RH_10	RH_11	140.00	263.50	262.25	0.8900	0.300	0.0320	2.70	7.79	0.35	0.91	0.15	0.50	0.00	
87	Link-44	Channel	RH_11	Ravine_1	470.00	262.25	258.00	0.9000	0.300	0.0320	1.82	7.84	0.23	0.78	0.12	0.39	0.00	
88	Link-45	Channel	RH_14	RH_15	195.00	263.20	260.70	1.2800	0.300	0.0320	0.00	9.33	0.00	0.00	0.00	0.00	0.00	
89	Link-46	Channel	RH_15	Ravine_1	280.00	260.70	258.00	0.9600	0.300	0.0320	0.00	8.09	0.00	0.00	0.00	0.00	0.00	
90	Link-51	Channel	Ex_MHR28	Jun-36	65.00	259.00	258.05	1.4600	0.300	0.0320	0.60	4.89	0.12	0.75	0.08	0.27	0.00	
91	Link-61	Channel	Jun-50	Jun-43	125.00	256.75	256.25	0.4000	1.000	0.0320	0.69	4.86	0.14	0.66	0.44	0.45	0.00	
92	Link-63	Channel	Jun-44	Jun-49	162.50	257.55	256.90	0.4000	1.000	0.0320	0.63	4.86	0.13	0.47	0.52	0.52	0.00	
93	Link-66	Channel	Jun-47	Jun-46	133.00	258.10	257.70	0.3000	1.000	0.0320	0.73	4.22	0.17	0.53	0.56	0.56	0.00	
94	Link-67	Channel	Jun-48	Jun-47	75.00	258.40	258.10	0.4000	1.000	0.0320	0.03	4.86	0.01	0.08	0.35	0.36	0.00	

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(m)	(m)	(m)	(%)	(m)		(cms)	(cms)		(m/sec)	(m)		(min)	
95	Link-89	Channel	Jun-42	Jun-36	53.10	258.60	257.70	1.6900	0.300	0.0320	0.00	10.73	0.00	0.00	0.00	0.00	0.00	
96	Link-90	Channel	Jun-39	Jun-40	90.00	258.75	257.75	1.1100	0.300	0.0320	0.00	8.69	0.00	0.00	0.04	0.14	0.00	
97	Link-92	Channel	Jun-38	Jun-37	110.00	261.50	261.00	0.4500	0.300	0.0320	0.00	5.56	0.00	0.00	0.00	0.00	0.00	
98	Link-93	Channel	Jun-37	Jun-36	340.00	261.00	257.70	0.9700	0.300	0.0320	0.00	8.12	0.00	0.00	0.00	0.00	0.00	
99	Link-94	Channel	Jun-41	Jun-40	95.00	259.35	257.75	1.6800	0.300	0.0320	0.00	10.69	0.00	0.00	0.04	0.14	0.00	
100	LowerRavine	Channel	Ravine_2	Ravine_3	124.00	253.00	252.45	0.4400	4.000	0.0320	3.62	157.98	0.02	1.23	0.51	0.13	0.00	
101	OutletRavine	Channel	Ravine_3	Outfall	45.00	252.45	252.00	1.0000	4.000	0.0320	3.63	237.22	0.02	1.59	0.41	0.10	0.00	
102	RH_C1	Channel	RH_12	RH_13	215.00	269.00	264.00	2.3300	1.500	0.0320	1.50	24.20	0.06	1.56	0.48	0.33	0.00	
103	RH_C2	Channel	RH_13	Ex_SE_Pond	60.00	264.00	263.50	0.8300	1.500	0.0320	1.50	14.49	0.10	1.44	0.49	0.34	0.00	
104	UpperRavine	Channel	Ravine_1	Ravine_2	553.00	256.10	253.00	0.5600	4.000	0.0320	3.55	177.61	0.02	1.18	0.53	0.13	0.00	
105	Orifice-01	Orifice	SWM_WP	OutletStructure		253.00	254.25		0.170		0.08							
106	Link-91	Weir	Jun-40	WestOutfall		256.10	257.00				0.00							
107	Weir-01	Weir	SWM_FB	SWM_WP		253.00	253.00				3.47							
108	Weir-04	Weir	SWM_WP	OutletStructure		253.00	254.25				0.21							
109	Weir-05	Weir	SWM_WP	Ravine_2		253.00	253.00				0.00							
110	Weir-06	Weir	SWM_WP	OutletStructure		253.00	254.25				0.00							

Junction Input

SN	Element ID	Invert Elevation (m)	Ground/Rim (Max) Elevation (m)	Ground/Rim (Max) Offset (m)	Initial Water Elevation (m)	Initial Water Depth (m)	Surcharge Elevation (m)	Surcharge Depth (m)	Ponded Area (m²)	Minimum Pipe Cover (m)
1	Ex_MHR1	255.88	262.50	6.62	0.00	-255.88	0.00	-262.50	0.00	0.00
2	Ex_MHR2	255.48	259.65	4.17	0.00	-255.48	0.00	-259.65	0.00	0.00
3	Ex_MHR25	256.48	263.35	6.87	0.00	-256.48	0.00	-263.35	0.00	0.00
4	Ex_MHR26	256.64	262.75	6.11	0.00	-256.64	0.00	-262.75	0.00	0.00
5	Ex_MHR27	256.94	261.00	4.06	0.00	-256.94	0.00	-261.00	0.00	0.00
6	Ex_MHR28	257.37	259.30	1.93	0.00	-257.37	0.00	-259.30	0.00	0.00
7	Ex_MHR3	255.23	259.00	3.77	0.00	-255.23	0.00	-259.00	0.00	0.00
8	Jun-34	254.62	258.25	3.63	0.00	-254.62	0.00	-258.25	0.00	0.00
9	Jun-35	254.70	257.50	2.80	0.00	-254.70	0.00	-257.50	0.00	0.00
10	Jun-36	254.72	258.00	3.28	0.00	-254.72	0.00	-258.00	0.00	0.00
11	Jun-37	255.29	261.30	6.01	0.00	-255.29	0.00	-261.30	0.00	0.00
12	Jun-38	255.53	261.80	6.27	0.00	-255.53	0.00	-261.80	0.00	0.00
13	Jun-39	256.93	259.05	2.12	0.00	-256.93	0.00	-259.05	0.00	0.00
14	Jun-40	256.10	258.55	2.45	0.00	-256.10	0.00	-258.55	0.00	0.00
15	Jun-41	255.77	259.65	3.88	0.00	-255.77	0.00	-259.65	0.00	0.00
16	Jun-42	255.23	258.90	3.67	0.00	-255.23	0.00	-258.90	0.00	0.00
17	Jun-43	256.25	257.25	1.00	0.00	-256.25	0.00	-257.25	0.00	0.00
18	Jun-44	257.55	258.55	1.00	0.00	-257.55	0.00	-258.55	0.00	0.00
19	Jun-46	257.70	258.70	1.00	0.00	-257.70	258.70	0.00	0.00	0.00
20	Jun-47	258.10	259.10	1.00	0.00	-258.10	0.00	-259.10	0.00	0.00
21	Jun-48	258.35	259.35	1.00	0.00	-258.35	0.00	-259.35	0.00	0.00
22	Jun-49	256.90	257.90	1.00	0.00	-256.90	0.00	-257.90	0.00	0.00
23	Jun-50	256.75	257.75	1.00	0.00	-256.75	0.00	-257.75	0.00	0.00
24	Jun-51	258.45	260.50	2.05	0.00	-258.45	0.00	-260.50	0.00	0.00
25	Jun-52	255.69	260.00	4.31	0.00	-255.69	0.00	-260.00	0.00	0.00
26	Jun-53	255.35	259.60	4.25	0.00	-255.35	0.00	-259.60	0.00	0.00
27	Jun-54	255.62	259.80	4.18	0.00	-255.62	0.00	-259.80	0.00	0.00
28	Jun-55	255.60	259.70	4.10	0.00	-255.60	0.00	-259.70	0.00	0.00
29	Jun-56	255.79	257.80	2.01	0.00	-255.79	0.00	-257.80	0.00	0.00
30	Jun-61	258.32	262.00	3.68	0.00	-258.32	0.00	-262.00	0.00	0.00
31	Jun-64	261.13	263.50	2.37	0.00	-261.13	0.00	-263.50	0.00	0.00
32	Jun-65	262.69	264.50	1.81	0.00	-262.69	0.00	-264.50	0.00	0.00
33	Jun-66	253.16	256.00	2.84	0.00	-253.16	0.00	-256.00	0.00	0.00
34	Jun-67	255.48	259.90	4.42	0.00	-255.48	0.00	-259.90	0.00	0.00
35	Jun-68	255.86	260.10	4.24	0.00	-255.86	0.00	-260.10	0.00	0.00
36	Jun-69	256.21	261.20	4.99	0.00	-256.21	0.00	-261.20	0.00	0.00
37	Jun-70	256.47	263.00	6.53	0.00	-256.47	0.00	-263.00	0.00	0.00
38	Jun-71	256.79	260.00	3.21	0.00	-256.79	0.00	-260.00	0.00	0.00
39	Jun-72	258.75	259.95	1.20	0.00	-258.75	0.00	-259.95	0.00	0.00
40	Jun-73	258.65	259.95	1.30	0.00	-258.65	0.00	-259.95	0.00	0.00
41	Jun-74	259.54	264.00	4.46	0.00	-259.54	0.00	-264.00	0.00	0.00
42	Jun-75	260.00	264.50	4.50	0.00	-260.00	0.00	-264.50	0.00	0.00
43	Jun-76	259.19	262.20	3.01	0.00	-259.19	0.00	-262.20	0.00	0.00
44	Jun-77	260.46	264.80	4.34	0.00	-260.46	0.00	-264.80	0.00	0.00
45	Jun-78	261.75	265.30	3.55	0.00	-261.75	0.00	-265.30	0.00	0.00
46	NorthWetland	252.00	258.00	6.00	0.00	-252.00	0.00	-258.00	0.00	0.00
47	OutletStructure	254.25	256.80	2.55	0.00	-254.25	0.00	-256.80	0.00	0.00
48	Ravine_1	256.10	260.10	4.00	0.00	-256.10	0.00	-260.10	0.00	0.00

Junction Input

SN	Element ID	Invert Elevation (m)	Ground/Rim (Max) Elevation (m)	Ground/Rim (Max) Offset (m)	Initial Water Elevation (m)	Initial Water Depth (m)	Surcharge Elevation (m)	Surcharge Depth (m)	Ponded Area (m²)	Minimum Pipe Cover (m)
49	Ravine_2	253.00	257.00	4.00	0.00	-253.00	0.00	-257.00	0.00	0.00
50	Ravine_3	252.45	256.45	4.00	0.00	-252.45	0.00	-256.45	0.00	0.00
51	RH_1	267.60	271.70	4.10	0.00	-267.60	0.00	-271.70	0.00	0.00
52	RH_10	261.90	263.90	2.00	0.00	-261.90	0.00	-263.90	0.00	0.00
53	RH_11	260.33	262.55	2.22	0.00	-260.33	0.00	-262.55	0.00	0.00
54	RH_12	269.00	270.50	1.50	0.00	-269.00	0.00	-270.50	0.00	0.00
55	RH_13	264.00	266.50	2.50	0.00	-264.00	0.00	-266.50	0.00	0.00
56	RH_14	261.70	263.50	1.80	0.00	-261.70	0.00	-263.50	0.00	0.00
57	RH_15	259.38	261.00	1.62	0.00	-259.38	0.00	-261.00	0.00	0.00
58	RH_16	256.36	258.00	1.64	0.00	-256.36	0.00	-258.00	0.00	0.00
59	RH_17	256.42	258.00	1.58	0.00	-256.42	0.00	-258.00	0.00	0.00
60	RH_2	270.14	272.45	2.31	0.00	-270.14	0.00	-272.45	0.00	0.00
61	RH_3	267.07	270.50	3.43	0.00	-267.07	0.00	-270.50	0.00	0.00
62	RH_4	266.63	268.60	1.97	0.00	-266.63	0.00	-268.60	0.00	0.00
63	RH_5	270.35	272.10	1.75	0.00	-270.35	0.00	-272.10	0.00	0.00
64	RH_6	266.50	268.20	1.70	0.00	-266.50	0.00	-268.20	0.00	0.00
65	RH_7	272.00	273.50	1.50	0.00	-272.00	0.00	-273.50	0.00	0.00
66	RH_8	267.75	269.85	2.10	0.00	-267.75	0.00	-269.85	0.00	0.00
67	RH_9	264.00	265.80	1.80	0.00	-264.00	0.00	-265.80	0.00	0.00
68	WestOutfall	257.00	258.40	1.40	0.00	-257.00	0.00	-258.40	0.00	0.00
69	WestWetland	258.00	259.00	1.00	0.00	-258.00	0.00	-259.00	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)	Total Time Flooded (min)
1	Ex_MHR1	0.25	0.00	256.32	0.44	0.00	6.18	256.00	0.12	0 12:01	0 00:00	0.00	0.00
2	Ex_MHR2	0.25	0.00	255.90	0.42	0.00	3.75	255.60	0.12	0 12:02	0 00:00	0.00	0.00
3	Ex_MHR25	0.25	0.00	257.47	0.99	0.00	5.88	256.61	0.13	0 11:50	0 00:00	0.00	0.00
4	Ex_MHR26	0.25	0.00	257.87	1.23	0.00	4.88	256.78	0.14	0 11:50	0 00:00	0.00	0.00
5	Ex_MHR27	0.25	0.00	258.31	1.37	0.00	2.69	257.10	0.16	0 11:50	0 00:00	0.00	0.00
6	Ex_MHR28	0.88	0.88	259.09	1.72	0.00	0.21	257.55	0.18	0 12:00	0 00:00	0.00	0.00
7	Ex_MHR3	0.25	0.00	255.61	0.38	0.00	3.39	255.35	0.12	0 12:03	0 00:00	0.00	0.00
8	Jun-34	4.71	0.00	256.14	1.52	0.00	2.11	255.78	1.16	0 14:58	0 00:00	0.00	0.00
9	Jun-35	0.43	0.43	256.14	1.44	0.00	1.36	255.76	1.06	0 14:58	0 00:00	0.00	0.00
10	Jun-36	4.76	0.00	256.50	1.78	0.00	1.85	255.81	1.09	0 12:04	0 00:00	0.00	0.00
11	Jun-37	2.35	0.35	257.19	1.90	0.00	4.11	255.92	0.63	0 12:04	0 00:00	0.00	0.00
12	Jun-38	0.96	0.96	258.59	3.06	0.00	3.21	256.00	0.47	0 12:02	0 00:00	0.00	0.00
13	Jun-39	0.09	0.09	258.46	1.53	0.00	0.59	257.00	0.07	0 12:01	0 00:00	0.00	0.00
14	Jun-40	0.31	0.00	257.84	1.74	0.00	0.71	256.20	0.10	0 12:10	0 00:00	0.00	0.00
15	Jun-41	0.27	0.09	258.50	2.73	0.00	1.15	256.05	0.28	0 12:02	0 00:00	0.00	0.00
16	Jun-42	1.30	0.00	256.55	1.32	0.00	2.35	255.88	0.65	0 12:04	0 00:00	0.00	0.00
17	Jun-43	0.69	0.00	256.58	0.33	0.00	1.17	256.31	0.06	0 12:13	0 00:00	0.00	0.00
18	Jun-44	0.64	0.00	258.01	0.46	0.00	0.59	257.64	0.09	0 12:08	0 00:00	0.00	0.00
19	Jun-46	0.73	0.00	258.34	0.64	0.00	0.41	257.82	0.12	0 12:06	0 00:00	0.00	0.00
20	Jun-47	0.76	0.16	258.61	0.51	0.00	0.49	258.20	0.10	0 12:02	0 00:00	0.00	0.00
21	Jun-48	0.03	0.00	258.61	0.26	0.00	0.79	258.40	0.05	0 12:02	0 00:00	0.00	0.00
22	Jun-49	0.72	0.21	257.50	0.60	0.00	0.60	257.03	0.13	0 12:10	0 00:00	0.00	0.00
23	Jun-50	0.69	0.00	257.32	0.57	0.00	0.63	256.90	0.15	0 12:11	0 00:00	0.00	0.00
24	Jun-51	0.52	0.00	259.50	1.05	0.00	1.00	258.54	0.09	0 11:55	0 00:00	0.00	0.00
25	Jun-52	0.68	0.00	257.47	1.78	0.00	2.53	255.99	0.30	0 12:03	0 00:00	0.00	0.00
26	Jun-53	0.95	0.00	256.84	1.49	0.00	2.76	255.91	0.56	0 12:03	0 00:00	0.00	0.00
27	Jun-54	0.28	0.28	257.17	1.55	0.00	2.63	256.00	0.38	0 12:01	0 00:00	0.00	0.00
28	Jun-55	0.65	0.41	257.12	1.52	0.00	2.58	255.96	0.36	0 12:02	0 00:00	0.00	0.00
29	Jun-56	0.81	0.02	256.71	0.92	0.00	1.09	256.00	0.21	0 12:04	0 00:00	0.00	0.00
30	Jun-61	0.77	0.00	258.67	0.35	0.00	4.13	258.37	0.05	0 12:00	0 00:00	0.00	0.00
31	Jun-64	0.35	0.00	261.41	0.28	0.00	2.09	261.17	0.04	0 12:00	0 00:00	0.00	0.00
32	Jun-65	0.35	0.35	263.00	0.31	0.00	1.50	262.73	0.04	0 12:00	0 00:00	0.00	0.00
33	Jun-66	0.28	0.00	253.58	0.42	0.00	2.42	253.39	0.23	0 12:37	0 00:00	0.00	0.00
34	Jun-67	0.78	0.30	257.26	1.78	0.00	2.64	255.95	0.47	0 12:03	0 00:00	0.00	0.00
35	Jun-68	0.44	0.28	257.55	1.69	0.00	2.55	256.05	0.19	0 12:03	0 00:00	0.00	0.00
36	Jun-69	0.21	0.21	257.61	1.40	0.00	3.59	256.27	0.06	0 12:03	0 00:00	0.00	0.00
37	Jun-70	0.36	0.36	259.79	3.32	0.00	3.21	256.54	0.07	0 11:58	0 00:00	0.00	0.00
38	Jun-71	0.40	0.40	258.48	1.69	0.00	1.52	256.86	0.07	0 12:01	0 00:00	0.00	0.00
39	Jun-72	0.26	0.26	259.66	0.91	0.00	0.29	258.82	0.07	0 12:01	0 00:00	0.00	0.00
40	Jun-73	0.44	0.44	259.67	1.02	0.00	0.28	258.74	0.09	0 12:01	0 00:00	0.00	0.00
41	Jun-74	0.44	0.24	259.89	0.35	0.00	4.11	259.59	0.05	0 12:00	0 00:00	0.00	0.00
42	Jun-75	0.20	0.20	260.28	0.28	0.00	4.22	260.04	0.04	0 12:00	0 00:00	0.00	0.00
43	Jun-76	0.87	0.44	259.94	0.75	0.00	2.26	259.27	0.08	0 12:03	0 00:00	0.00	0.00
44	Jun-77	0.45	0.00	260.87	0.41	0.00	3.93	260.52	0.06	0 12:03	0 00:00	0.00	0.00
45	Jun-78	0.55	0.55	262.84	1.09	0.00	2.46	261.82	0.07	0 12:01	0 00:00	0.00	0.00
46	NorthWetland	0.21	0.21	252.00	0.00	0.00	6.00	252.00	0.00	0 00:00	0 00:00	0.00	0.00
47	OutletStructure	0.28	0.00	254.60	0.35	0.00	3.75	254.51	0.26	0 15:08	0 00:00	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)	Total Time Flooded (min)
48	Ravine_1	3.59	0.06	256.58	0.48	0.00	3.52	256.26	0.16	0 12:32	0 00:00	0.00	0.00
49	Ravine_2	3.67	0.21	253.57	0.57	0.00	3.53	253.22	0.22	0 12:36	0 00:00	0.00	0.00
50	Ravine_3	3.63	0.04	252.90	0.45	0.00	3.55	252.62	0.17	0 12:37	0 00:00	0.00	0.00
51	RH_1	2.86	2.86	271.55	3.95	0.00	0.15	268.23	0.63	0 12:01	0 00:00	0.00	0.00
52	RH_10	4.04	0.11	263.68	1.78	0.00	0.22	262.37	0.47	0 12:18	0 00:00	0.00	0.00
53	RH_11	3.48	0.04	262.39	2.06	0.00	0.16	260.83	0.50	0 12:30	0 00:00	0.00	0.00
54	RH_12	1.55	1.55	269.42	0.42	0.00	1.08	269.07	0.07	0 12:00	0 00:00	0.00	0.00
55	RH_13	1.59	0.10	264.58	0.58	0.00	1.92	264.12	0.12	0 12:01	0 00:00	0.00	0.00
56	RH_14	0.47	0.00	262.92	1.22	0.00	0.58	261.98	0.28	0 12:33	0 00:00	0.00	0.00
57	RH_15	0.50	0.08	260.50	1.12	0.00	0.50	259.65	0.27	0 12:40	0 00:00	0.00	0.00
58	RH_16	0.46	0.00	257.07	0.71	0.00	0.93	256.65	0.29	0 12:40	0 00:00	0.00	0.00
59	RH_17	1.25	0.20	257.52	1.10	0.00	0.48	256.91	0.49	0 12:42	0 00:00	0.00	0.00
60	RH_2	2.36	2.36	272.23	2.09	0.00	0.22	270.55	0.41	0 12:00	0 00:00	0.00	0.00
61	RH_3	4.99	0.00	269.87	2.80	0.00	0.63	267.68	0.61	0 12:07	0 00:00	0.00	0.00
62	RH_4	3.61	0.04	268.42	1.79	0.00	0.18	267.03	0.40	0 12:06	0 00:00	0.00	0.00
63	RH_5	1.10	1.10	271.86	1.51	0.00	0.24	270.61	0.26	0 12:03	0 00:00	0.00	0.00
64	RH_6	4.43	0.00	268.06	1.56	0.00	0.14	266.85	0.35	0 12:12	0 00:00	0.00	0.00
65	RH_7	0.00	0.00	272.00	0.00	0.00	1.50	272.00	0.00	0 00:00	0 00:00	0.00	0.00
66	RH_8	0.20	0.20	268.38	0.63	0.00	1.47	267.84	0.09	0 12:03	0 00:00	0.00	0.00
67	RH_9	0.18	0.04	264.96	0.96	0.00	0.84	264.12	0.12	0 12:13	0 00:00	0.00	0.00
68	WestOutfall	0.02	0.02	257.00	0.00	0.00	2.45	257.00	0.00	0 00:00	0 00:00	0.00	0.00
69	WestWetland	0.07	0.07	258.00	0.00	0.00	1.00	258.00	0.00	0 00:00	0 00:00	0.00	0.00

Channel Input

SN	Element ID	Length (m)	Inlet Invert Elevation (m)	Inlet Invert Offset (m)	Outlet Invert Elevation (m)	Outlet Invert Offset (m)	Total Drop (m)	Average Slope (%)	Shape	Height (m)	Width (m)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cms)	Flap Gate
1	Link-103	10.00	257.70	2.98	257.50	4.50	0.20	2.0000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
2	Link-104	50.00	257.50	1.71	256.50	3.50	1.00	2.0000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
3	Link-122	70.00	259.30	3.95	258.60	3.37	0.70	1.0000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
4	Link-123	90.00	259.40	3.80	259.30	3.95	0.10	0.1100	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
5	Link-124	90.00	259.50	3.88	259.40	3.80	0.10	0.1100	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
6	Link-125	50.00	259.65	1.00	258.70	0.60	0.95	1.9000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
7	Link-126	50.00	259.65	0.90	258.70	0.60	0.95	1.9000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
8	Link-127	100.00	259.60	4.12	259.50	3.88	0.10	0.1000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
9	Link-128	150.00	259.70	4.01	259.60	4.12	0.10	0.0700	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
10	Link-129	80.00	259.80	3.94	259.70	4.01	0.10	0.1300	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
11	Link-130	100.00	259.90	3.69	259.80	3.94	0.10	0.1000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
12	Link-131	70.00	259.40	2.61	259.30	3.95	0.10	0.1400	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
13	Link-132	150.00	265.00	3.25	264.50	4.04	0.50	0.3300	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
14	Link-133	150.00	264.50	4.04	261.90	2.71	2.60	1.7300	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
15	Link-134	250.00	261.90	2.71	257.70	2.98	4.20	1.6800	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
16	Link-135	100.00	262.50	4.18	261.00	5.71	1.50	1.5000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
17	Link-34	270.00	271.40	3.80	269.65	2.58	1.75	0.6500	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
18	Link-35	50.00	272.15	2.01	269.65	2.58	2.50	5.0000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
19	Link-36	222.00	269.65	2.58	268.30	1.67	1.35	0.6100	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
20	Link-37	18.00	268.30	1.67	267.90	1.40	0.40	2.2200	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
21	Link-38	227.00	271.80	1.45	267.90	1.40	3.90	1.7200	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
22	Link-39	415.00	267.90	1.40	263.50	1.60	4.40	1.0600	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
23	Link-41	180.00	269.55	1.80	265.50	1.50	4.05	2.2500	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
24	Link-42	155.00	265.50	1.50	263.50	1.60	2.00	1.2900	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
25	Link-43	140.00	263.50	1.60	262.25	1.92	1.25	0.8900	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
26	Link-44	470.00	262.25	1.92	258.00	1.90	4.25	0.9000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
27	Link-45	195.00	263.20	1.50	260.70	1.32	2.50	1.2800	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
28	Link-46	280.00	260.70	1.32	258.00	1.90	2.70	0.9600	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
29	Link-51	65.00	259.00	1.63	258.05	3.33	0.95	1.4600	Rectangular	0.300	10.000	0.0320	0.5000	0.5000	0.0000	0.00	No
30	Link-61	125.00	256.75	0.00	256.25	0.00	0.50	0.4000	User-Defined	1.000	9.000	0.0320	0.5000	0.5000	0.0000	0.00	No
31	Link-63	162.50	257.55	0.00	256.90	0.00	0.65	0.4000	User-Defined	1.000	9.000	0.0320	0.5000	0.5000	0.0000	0.00	No
32	Link-66	133.00	258.10	0.00	257.70	0.00	0.40	0.3000	User-Defined	1.000	9.000	0.0320	0.5000	0.5000	0.0000	0.00	No
33	Link-67	75.00	258.40	0.05	258.10	0.00	0.30	0.4000	User-Defined	1.000	9.000	0.0320	0.5000	0.5000	0.0000	0.00	No
34	Link-89	53.10	258.60	3.37	257.70	2.98	0.90	1.6900	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
35	Link-90	90.00	258.75	1.82	257.75	1.65	1.00	1.1100	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
36	Link-92	110.00	261.50	5.97	261.00	5.71	0.50	0.4500	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
37	Link-93	340.00	261.00	5.71	257.70	2.98	3.30	0.9700	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
38	Link-94	95.00	259.35	3.58	257.75	1.65	1.60	1.6800	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
39	LowerRavine	124.00	253.00	0.00	252.45	0.00	0.55	0.4400	Trapezoidal	4.000	17.000	0.0320	0.5000	0.5000	0.0000	0.00	No
40	OutletRavine	45.00	252.45	0.00	252.00	0.00	0.45	1.0000	Trapezoidal	4.000	17.000	0.0320	0.5000	0.5000	0.0000	0.00	No
41	RH_C1	215.00	269.00	0.00	264.00	0.00	5.00	2.3300	Trapezoidal	1.500	7.000	0.0320	0.5000	0.5000	0.0000	0.00	No
42	RH_C2	60.00	264.00	0.00	263.50	1.50	0.50	0.8300	Trapezoidal	1.500	7.000	0.0320	0.5000	0.5000	0.0000	0.00	No
43	UpperRavine	553.00	256.10	0.00	253.00	0.00	3.10	0.5600	Trapezoidal	4.000	17.000	0.0320	0.5000	0.5000	0.0000	0.00	No

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-103	0.00	0 00:00	11.65	0.00	0.00		0.00	0.00	0.00	0.00	
2	Link-104	0.00	0 00:00	11.65	0.00	0.00		0.00	0.00	0.00	0.00	
3	Link-122	0.00	0 00:00	8.24	0.00	0.00		0.00	0.00	0.00	0.00	
4	Link-123	0.00	0 00:00	2.75	0.00	0.00		0.00	0.00	0.00	0.00	
5	Link-124	0.00	0 00:00	2.75	0.00	0.00		0.00	0.00	0.00	0.00	
6	Link-125	0.08	0 12:01	11.36	0.01	0.28	2.98	0.01	0.05	0.00	0.01	
7	Link-126	0.02	0 12:01	11.36	0.00	0.15	5.56	0.00	0.02	0.00	0.00	
8	Link-127	0.00	0 00:00	2.61	0.00	0.00		0.00	0.00	0.00	0.00	
9	Link-128	0.00	0 00:00	2.13	0.00	0.00		0.00	0.00	0.00	0.00	
10	Link-129	0.00	0 00:00	2.91	0.00	0.00		0.00	0.00	0.00	0.00	
11	Link-130	0.00	0 00:00	2.61	0.00	0.00		0.00	0.00	0.00	0.00	
12	Link-131	0.00	0 00:00	3.11	0.00	0.00		0.00	0.00	0.00	0.00	
13	Link-132	0.00	0 00:00	4.76	0.00	0.00		0.00	0.00	0.00	0.00	
14	Link-133	0.00	0 00:00	10.85	0.00	0.00		0.00	0.00	0.00	0.00	
15	Link-134	0.00	0 00:00	10.68	0.00	0.00		0.00	0.00	0.00	0.00	
16	Link-135	0.00	0 00:00	10.09	0.00	0.00		0.00	0.00	0.00	0.00	
17	Link-34	2.21	0 12:01	6.63	0.33	0.70	6.43	0.18	0.60	0.00	0.02	
18	Link-35	2.15	0 12:00	18.43	0.12	1.13	0.74	0.14	0.48	0.00	0.06	
19	Link-36	2.93	0 12:07	6.43	0.46	0.83	4.46	0.17	0.59	0.00	0.06	
20	Link-37	2.62	0 12:07	12.28	0.21	1.08	0.28	0.13	0.45	0.00	0.04	
21	Link-38	0.81	0 12:03	10.80	0.08	0.64	5.91	0.10	0.34	0.00	0.03	
22	Link-39	2.97	0 12:13	8.48	0.35	0.94	7.36	0.16	0.54	0.00	0.05	
23	Link-41	0.00	0 00:00	12.36	0.00	0.00		0.00	0.00	0.00	0.00	
24	Link-42	0.00	0 00:00	9.36	0.00	0.00		0.09	0.29	0.00	0.00	
25	Link-43	2.70	0 12:19	7.79	0.35	0.91	2.56	0.15	0.50	0.00	0.10	
26	Link-44	1.82	0 12:30	7.84	0.23	0.78	10.04	0.12	0.39	0.00	0.08	
27	Link-45	0.00	0 00:00	9.33	0.00	0.00		0.00	0.00	0.00	0.00	
28	Link-46	0.00	0 00:00	8.09	0.00	0.00		0.00	0.00	0.00	0.00	
29	Link-51	0.60	0 12:00	4.89	0.12	0.75	1.44	0.08	0.27	0.00	0.03	
30	Link-61	0.69	0 12:12	4.86	0.14	0.66	3.16	0.44	0.45	0.00	0.32	
31	Link-63	0.63	0 12:08	4.86	0.13	0.47	5.76	0.52	0.52	0.00	0.22	
32	Link-66	0.73	0 12:02	4.22	0.17	0.53	4.18	0.56	0.56	0.00	0.22	
33	Link-67	0.03	0 11:57	4.86	0.01	0.08	15.63	0.35	0.36	0.00	0.00	
34	Link-89	0.00	0 00:00	10.73	0.00	0.00		0.00	0.00	0.00	0.00	
35	Link-90	0.00	0 00:00	8.69	0.00	0.00		0.04	0.14	0.00	0.00	
36	Link-92	0.00	0 00:00	5.56	0.00	0.00		0.00	0.00	0.00	0.00	
37	Link-93	0.00	0 00:00	8.12	0.00	0.00		0.00	0.00	0.00	0.00	
38	Link-94	0.00	0 00:00	10.69	0.00	0.00		0.04	0.14	0.00	0.00	
39	LowerRavine	3.62	0 12:37	157.98	0.02	1.23	1.68	0.51	0.13	0.00	0.49	
40	OutletRavine	3.63	0 12:37	237.22	0.02	1.59	0.47	0.41	0.10	0.00	0.74	
41	RH_C1	1.50	0 12:00	24.20	0.06	1.56	2.30	0.48	0.33	0.00	0.53	
42	RH_C2	1.50	0 12:01	14.49	0.10	1.44	0.69	0.49	0.34	0.00	0.60	
43	UpperRavine	3.55	0 12:32	177.61	0.02	1.18	7.81	0.53	0.13	0.00	0.36	

Pipe Input

SN	Element ID	Length (m)	Inlet Invert Elevation (m)	Inlet Invert Offset (m)	Outlet Invert Elevation (m)	Outlet Invert Offset (m)	Total Drop (m)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (m)	Pipe Width (m)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cms)	Flap Gate
1	Ex.STM_1	107.00	257.37	0.00	256.94	0.00	0.43	0.4000	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
2	Ex.STM_2	73.00	256.94	0.00	256.64	0.00	0.30	0.4100	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
3	Ex.STM_3	27.00	256.64	0.00	256.48	0.00	0.16	0.5900	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
4	Ex.STM_4	100.00	256.48	0.00	255.88	0.00	0.60	0.6000	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
5	Ex.STM_5	100.00	255.88	0.00	255.48	0.00	0.40	0.4000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
6	Ex.STM_6	50.00	255.48	0.00	255.23	0.00	0.25	0.5000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
7	Ex.STM_7	102.00	255.23	0.00	254.82	0.00	0.41	0.4000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
8	Link-106	24.80	253.16	0.00	252.85	-0.15	0.31	1.2500	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
9	Link-107	93.20	254.35	0.10	253.20	0.04	1.15	1.2300	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
10	Link-108	110.30	255.48	0.00	255.37	0.08	0.11	0.1000	CIRCULAR	1.200	1.200	0.0130	0.5000	0.5000	0.0000	0.00	No
11	Link-109	30.00	257.70	0.00	257.55	0.00	0.15	0.5000	CIRCULAR	1.050	1.050	0.0130	0.5000	0.5000	0.0000	0.00	No
12	Link-110	153.00	255.69	0.00	255.48	0.00	0.21	0.1400	CIRCULAR	0.900	0.900	0.0130	0.5000	0.5000	0.0000	0.00	No
13	Link-111	66.80	255.86	0.00	255.77	0.08	0.09	0.1300	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
14	Link-112	106.60	256.21	0.00	255.91	0.05	0.30	0.2800	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
15	Link-113	97.50	256.47	0.00	255.88	0.19	0.59	0.6100	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
16	Link-114	85.10	256.79	0.00	255.73	0.38	1.06	1.2500	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
17	Link-115	50.00	258.65	0.00	258.50	0.05	0.15	0.3000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
18	Link-116	50.00	258.75	0.00	258.55	0.10	0.20	0.4000	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
19	Link-117	90.00	259.54	0.00	258.37	0.05	1.17	1.3000	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
20	Link-118	41.60	260.00	0.00	259.56	0.02	0.44	1.0600	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
21	Link-119	181.70	259.19	0.00	256.08	0.29	3.11	1.7100	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
22	Link-120	140.50	260.46	0.00	259.24	0.05	1.22	0.8700	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
23	Link-121	152.20	261.75	0.00	260.51	0.05	1.24	0.8100	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
24	Link-49	20.70	254.62	0.00	254.60	1.60	0.02	0.1000	CIRCULAR	1.800	1.800	0.0130	0.5000	0.5000	0.0000	0.00	No
25	Link-50	75.20	254.70	0.00	254.60	1.60	0.10	0.1300	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
26	Link-52	35.00	254.72	0.00	254.67	0.05	0.05	0.1400	CIRCULAR	1.650	1.650	0.0130	0.5000	0.5000	0.0000	0.00	No
27	Link-53	336.90	255.29	0.00	254.74	0.02	0.55	0.1600	CIRCULAR	1.350	1.350	0.0130	0.5000	0.5000	0.0000	0.00	No
28	Link-54	110.00	255.53	0.00	255.31	0.02	0.22	0.2000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
29	Link-56	110.00	255.77	0.00	255.55	0.02	0.22	0.2000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
30	Link-57	95.50	256.10	0.00	255.85	0.08	0.25	0.2600	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
31	Link-58	90.00	256.93	0.00	256.25	0.15	0.68	0.7600	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
32	Link-59	53.10	255.23	0.00	255.13	0.41	0.10	0.1900	CIRCULAR	1.500	1.500	0.0130	0.5000	0.5000	0.0000	0.00	No
33	Link-60	13.40	256.25	0.00	255.84	0.61	0.41	3.0600	CIRCULAR	1.500	1.500	0.0130	0.5000	0.5000	0.0000	0.00	No
34	Link-62	25.00	256.90	0.00	256.75	0.00	0.15	0.6000	CIRCULAR	1.200	1.200	0.0130	0.5000	0.5000	0.0000	0.00	No
35	Link-68	60.00	258.45	0.00	258.20	0.10	0.25	0.4200	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
36	Link-70	57.00	255.35	0.00	255.25	0.02	0.10	0.1800	CIRCULAR	0.820	0.820	0.0130	0.5000	0.5000	0.0000	0.00	No
37	Link-71	82.00	255.60	0.00	255.43	0.08	0.17	0.2100	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
38	Link-72	85.00	255.79	0.17	255.62	0.02	0.17	0.2000	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
39	Link-73	67.80	255.78	-0.01	255.10	0.38	0.68	1.0000	CIRCULAR	0.900	0.900	0.0130	0.5000	0.5000	0.0000	0.00	No
40	Link-80	89.90	258.32	0.00	255.97	0.68	2.35	2.6100	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
41	Link-81	93.20	261.13	0.00	259.27	0.95	1.86	2.0000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
42	Link-82	103.90	262.69	0.00	261.13	0.00	1.56	1.5000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
43	RH_A1	50.00	270.14	0.00	268.50	1.43	1.64	3.2800	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
44	RH_B1	227.00	270.35	0.00	266.50	0.00	3.85	1.7000	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
45	RH_C3	15.00	262.00	0.00	261.70	0.00	0.30	2.0000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
46	RH_C4	195.00	261.70	0.00	259.38	0.00	2.32	1.1900	CIRCULAR	0.530	0.530	0.0150	0.5000	0.5000	0.0000	0.00	No
47	RH_C5	274.00	259.38	0.00	256.36	0.00	3.02	1.1000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
48	RH_C6	6.00	256.36	0.00	256.24	0.14	0.12	2.0000	CIRCULAR	0.700	0.700	0.0130	0.5000	0.5000	0.0000	0.00	No

Pipe Input

SN	Element ID	Length (m)	Inlet Invert Elevation (m)	Inlet Invert Offset (m)	Outlet Invert Elevation (m)	Outlet Invert Offset (m)	Total Drop (m)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (m)	Pipe Width (m)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cms)	Flap Gate
49	RH_D1	275.00	272.00	0.00	267.75	0.00	4.25	1.5500	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
50	RH_D2	180.00	267.75	0.00	264.00	0.00	3.75	2.0800	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
51	RH_D3	155.00	264.00	0.00	261.90	0.00	2.10	1.3500	CIRCULAR	0.380	0.380	0.0130	0.5000	0.5000	0.0000	0.00	No
52	RH_M1	270.00	267.60	0.00	267.07	0.00	0.53	0.2000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
53	RH_M2	222.00	267.07	0.00	266.63	0.00	0.44	0.2000	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
54	RH_M3	18.00	266.63	0.00	266.50	0.00	0.13	0.7200	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
55	RH_M4	415.00	266.50	0.00	261.90	0.00	4.60	1.1100	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
56	RH_M5	140.00	261.90	0.00	260.33	0.00	1.57	1.1200	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
57	RH_M6	464.00	260.33	0.00	256.42	0.00	3.91	0.8400	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
58	RH_M7	6.00	256.42	0.00	256.37	0.27	0.05	0.8300	CIRCULAR	1.000	1.000	0.0130	0.5000	0.5000	0.0000	0.00	No
59	West_Link	33.73	256.00	-1.00	257.00	0.00	-1.00	-2.9600	Dummy	0.000	0.000	0.0130	0.5000	0.5000	0.0000	0.00	No
60	WestWetland_Link	37.13	258.00	0.00	258.00	0.00	0.00	0.0000	Dummy	0.000	0.000	0.0130	0.5000	0.5000	0.0000	0.00	No
61	Wetland_Link	41.51	252.00	0.00	252.00	0.00	0.00	0.0000	Dummy	0.000	0.000	0.0130	0.5000	0.5000	0.0000	0.00	No

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	Ex.STM_1	0.25	0 12:00	0.18	1.37	1.56	1.14	0.45	1.00	44.00	0.75	SURCHARGED
2	Ex.STM_2	0.25	0 12:00	0.18	1.35	1.56	0.78	0.45	1.00	40.00	0.79	SURCHARGED
3	Ex.STM_3	0.25	0 12:00	0.22	1.13	1.56	0.29	0.45	1.00	37.00	0.89	SURCHARGED
4	Ex.STM_4	0.25	0 12:00	0.22	1.12	1.58	1.05	0.45	0.99	0.00	0.90	> CAPACITY
5	Ex.STM_5	0.25	0 12:01	0.27	0.91	1.32	1.26	0.43	0.82	0.00	0.82	Calculated
6	Ex.STM_6	0.25	0 12:02	0.30	0.81	1.40	0.60	0.40	0.77	0.00	0.84	Calculated
7	Ex.STM_7	0.25	0 12:03	0.39	0.64	1.44	1.18	0.35	0.59	0.00	0.88	Calculated
8	Link-106	0.29	0 15:01	0.89	0.32	1.65	0.25	0.49	0.66	0.00	1.07	Calculated
9	Link-107	0.29	0 15:01	1.24	0.23	1.88	0.83	0.29	0.39	0.00	1.40	Calculated
10	Link-108	0.79	0 12:04	1.23	0.64	0.70	2.63	1.20	1.00	12.00	0.12	SURCHARGED
11	Link-109	0.64	0 12:06	1.93	0.33	1.51	0.33	0.53	0.52	0.00	0.52	Calculated
12	Link-110	0.58	0 12:04	0.67	0.86	0.91	2.80	0.90	1.00	15.00	0.11	SURCHARGED
13	Link-111	0.33	0 12:00	0.41	0.81	0.86	1.29	0.75	1.00	16.00	0.19	SURCHARGED
14	Link-112	0.16	0 12:00	0.33	0.49	0.72	2.47	0.60	1.00	13.00	0.27	SURCHARGED
15	Link-113	0.36	0 12:00	0.33	1.07	1.66	0.98	0.52	1.00	13.00	0.45	SURCHARGED
16	Link-114	0.37	0 12:01	0.32	1.15	2.29	0.62	0.45	1.00	12.00	0.53	SURCHARGED
17	Link-115	0.34	0 12:06	0.24	1.46	1.58	0.53	0.52	1.00	12.00	0.73	SURCHARGED
18	Link-116	0.21	0 12:01	0.18	1.15	1.31	0.64	0.45	1.00	12.00	0.77	SURCHARGED
19	Link-117	0.43	0 12:00	0.96	0.45	2.46	0.61	0.33	0.49	0.00	1.36	Calculated
20	Link-118	0.20	0 12:00	0.44	0.45	1.53	0.45	0.30	0.58	0.00	1.13	Calculated
21	Link-119	0.80	0 12:03	0.80	0.99	3.05	0.99	0.60	1.00	2.00	1.69	SURCHARGED
22	Link-120	0.46	0 12:01	0.57	0.80	1.98	1.18	0.49	0.84	0.00	1.14	Calculated
23	Link-121	0.45	0 12:02	0.39	1.17	2.17	1.17	0.48	0.93	0.00	1.10	> CAPACITY
24	Link-49	4.71	0 12:04	3.57	1.32	2.41	0.14	1.53	0.85	0.00	0.17	> CAPACITY
25	Link-50	0.43	0 12:00	0.22	1.91	1.51	0.83	0.60	1.00	2162.00	0.06	SURCHARGED
26	Link-52	4.71	0 12:04	3.45	1.37	2.26	0.26	1.55	0.94	0.00	0.16	> CAPACITY
27	Link-53	2.23	0 12:03	2.16	1.03	1.56	3.60	1.35	1.00	12.00	0.12	SURCHARGED
28	Link-54	0.67	0 12:00	0.27	2.44	2.37	0.77	0.60	1.00	209.00	0.11	SURCHARGED
29	Link-56	0.26	0 12:27	0.27	0.94	0.91	2.01	0.60	1.00	40.00	0.06	SURCHARGED
30	Link-57	0.24	0 12:27	0.15	1.63	1.49	1.07	0.45	1.00	37.00	0.21	SURCHARGED
31	Link-58	0.08	0 12:01	0.08	0.96	1.14	1.32	0.30	1.00	33.00	0.97	SURCHARGED
32	Link-59	1.30	0 12:04	3.07	0.42	1.17	0.76	1.34	0.90	0.00	0.17	Calculated
33	Link-60	0.68	0 12:13	12.37	0.05	2.76	0.08	0.49	0.32	0.00	0.94	Calculated
34	Link-62	0.69	0 12:10	3.02	0.23	1.35	0.31	0.58	0.49	0.00	0.39	Calculated
35	Link-68	0.52	0 12:01	0.40	1.30	1.94	0.52	0.53	0.89	0.00	0.85	> CAPACITY
36	Link-70	0.92	0 12:02	0.60	1.54	1.73	0.55	0.82	1.00	20.00	0.13	SURCHARGED
37	Link-71	0.58	0 12:00	0.51	1.15	1.32	1.04	0.75	1.00	16.00	0.15	SURCHARGED
38	Link-72	0.24	0 12:00	0.50	0.49	0.57	2.49	0.75	1.00	13.00	0.10	SURCHARGED
39	Link-73	0.81	0 12:07	1.83	0.44	1.62	0.70	0.90	1.00	2.00	0.30	SURCHARGED
40	Link-80	0.77	0 12:00	1.80	0.43	3.34	0.45	0.54	0.73	0.00	1.30	Calculated
41	Link-81	0.34	0 12:00	0.87	0.39	2.75	0.56	0.27	0.45	0.00	1.58	Calculated
42	Link-82	0.35	0 12:00	0.75	0.46	2.52	0.69	0.29	0.49	0.00	1.44	Calculated
43	RH_A1	0.23	0 11:46	0.18	1.31	3.26	0.26	0.30	1.00	152.00	1.78	SURCHARGED
44	RH_B1	0.14	0 11:45	0.13	1.10	1.96	1.93	0.30	1.00	124.00	0.68	SURCHARGED
45	RH_C3	0.47	0 11:59	0.87	0.54	1.91	0.13	0.60	1.00	121.00	1.14	SURCHARGED
46	RH_C4	0.43	0 12:01	0.41	1.05	2.11	1.54	0.52	1.00	145.00	1.04	SURCHARGED
47	RH_C5	0.46	0 12:40	0.45	1.03	2.14	2.13	0.52	1.00	151.00	0.80	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)		
48	RH_C6	0.46	0 12:40	1.31	0.35	1.63	0.06	0.52	0.74	0.00	1.00	Calculated
49	RH_D1	0.00	0 00:00	0.12	0.00	0.00		0.15	0.50	0.00	0.00	Calculated
50	RH_D2	0.15	0 11:58	0.14	1.04	2.17	1.38	0.30	1.00	14.00	1.35	SURCHARGED
51	RH_D3	0.16	0 12:10	0.20	0.76	1.41	1.83	0.38	1.00	36.00	0.43	SURCHARGED
52	RH_M1	0.50	0 11:48	0.27	1.85	1.78	2.53	0.60	1.00	145.00	0.34	SURCHARGED
53	RH_M2	0.80	0 11:49	0.37	2.14	2.23	1.66	0.68	1.00	126.00	0.57	SURCHARGED
54	RH_M3	1.05	0 12:01	0.95	1.10	2.37	0.13	0.75	1.00	120.00	0.86	SURCHARGED
55	RH_M4	0.91	0 11:51	0.89	1.03	2.62	2.64	0.68	1.00	122.00	1.07	SURCHARGED
56	RH_M5	1.05	0 12:00	0.89	1.18	2.93	0.80	0.68	1.00	154.00	1.13	SURCHARGED
57	RH_M6	1.10	0 12:29	1.02	1.08	2.50	3.09	0.75	1.00	151.00	0.58	SURCHARGED
58	RH_M7	1.25	0 12:42	2.19	0.57	1.92	0.05	0.77	0.77	0.00	0.80	Calculated
59	West_Link	0.02	0 12:00	0.00	0.02	0.00		0.53	0.13	0.00	0.36	Calculated
60	WestWetland_Link	0.07	0 12:00	0.00	0.02	0.00		0.53	0.13	0.00	0.36	Calculated
61	Wetland_Link	0.21	0 12:00	0.00	0.02	0.00		0.53	0.13	0.00	0.36	Calculated

Project Description

File Name	18010_Post-Development Rev.1.SPF
Description	I:\ACAD Projects\2018\18010\03-Ref\18010_Pre-Dev. Storm Parcels.dwg I:\ACAD Projects\2018\18010\03-Ref\18010_Pre-Dev. Storm Parcels.dwg I:\ACAD Projects\2018\18010\03-Ref\18010_Post-Dev.Storm Parcels.dwg I:\ACAD Projects\2018\18010\03-Ref\18010_Post-Dev.Storm Parcels.dwg

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	YES

Analysis Options

Start Analysis On	00:00:00	0:00:00
End Analysis On	00:00:00	0:00:00
Start Reporting On	00:00:00	0:00:00
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	60
Nodes	77
Junctions	69
Outfalls	5
Flow Diversions	0
Inlets	0
Storage Nodes	3
Links	110
Channels	43
Pipes	61
Pumps	0
Orifices	1
Weirs	5
Outlets	0
Pollutants	0
Land Uses	0

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	{Survey Site}.Standard : 10	0.92	2.00	67.00	2.0000	125.00	0.0130	0.2000	82.99	53.4540	28.29	25.97	0.04	0 01:08:13
2	{Survey Site}.Standard : 11	21.38	2.00	67.00	2.0000	360.00	0.0130	0.2000	82.99	50.7540	31.70	677.76	0.28	0 03:59:06
3	{Survey Site}.Standard : 12	0.71	5.00	67.00	2.0000	90.00	0.0130	0.2000	82.99	51.8440	29.89	21.22	0.04	0 01:09:53
4	{Survey Site}.Standard : 13	1.65	45.00	71.05	2.0000	220.00	0.0130	0.2000	82.99	27.7440	54.00	88.98	0.33	0 00:48:48
5	{Survey Site}.Standard : 14	4.32	2.00	67.00	2.0000	350.00	0.0130	0.2000	82.99	53.8050	27.94	120.70	0.14	0 01:33:09
6	{Survey Site}.Standard : 17	0.36	5.00	67.00	5.0000	20.00	0.0130	0.2000	82.99	52.0530	29.67	10.56	0.01	0 01:26:31
7	{Survey Site}.Standard : 18	13.10	5.00	48.00	10.0000	300.00	0.0130	0.2000	82.99	65.6540	16.08	210.60	0.26	0 02:00:23
8	{Survey Site}.Standard : 19	1.16	55.00	78.40	2.0000	90.00	0.0130	0.2000	82.99	19.0860	62.67	72.70	0.27	0 00:59:56
9	{Survey Site}.Standard : 2	20.86	45.00	71.05	2.0000	300.00	0.0130	0.2000	82.99	28.8020	52.89	1103.54	2.82	0 03:05:51
10	{Survey Site}.Standard : 23	2.20	5.00	48.00	10.0000	100.00	0.0130	0.2000	82.99	65.0990	16.63	36.56	0.05	0 01:19:45
11	{Survey Site}.Standard : 26	1.12	45.00	71.05	2.0000	40.00	0.0130	0.2000	82.99	28.1830	53.57	60.21	0.18	0 01:47:54
12	{Survey Site}.Standard : 27	0.37	45.00	71.05	2.0000	60.00	0.0130	0.2000	82.99	27.7050	54.03	19.99	0.08	0 00:43:26
13	{Survey Site}.Standard : 28	0.12	45.00	71.05	2.0000	40.00	0.0130	0.2000	82.99	27.5890	54.10	6.65	0.03	0 00:28:36
14	{Survey Site}.Standard : 29	7.86	45.00	71.05	2.0000	110.00	0.0130	0.2000	82.99	28.8280	52.87	415.62	1.05	0 03:08:56
15	{Survey Site}.Standard : 3	25.14	45.00	71.05	2.0000	370.00	0.0130	0.2000	82.99	28.7890	52.92	1330.23	3.41	0 03:03:16
16	{Survey Site}.Standard : 30	20.00	30.00	63.70	2.0000	225.00	0.0130	0.2000	82.99	42.1560	39.56	791.06	1.83	0 04:08:50
17	{Survey Site}.Standard : 31	5.54	5.00	57.00	2.0000	245.00	0.0130	0.2000	82.99	60.3330	21.41	118.71	0.13	0 02:11:32
18	{Survey Site}.Standard : 32	3.34	2.00	67.00	2.0000	95.00	0.0130	0.2000	82.99	54.9910	26.74	89.19	0.05	0 02:54:24
19	{Survey Site}.Standard : 33	7.71	2.00	67.00	2.0000	215.00	0.0130	0.2000	82.99	55.0180	26.71	205.82	0.12	0 02:56:35
20	{Survey Site}.Standard : 4	3.13	2.00	67.00	2.0000	155.00	0.0130	0.2000	82.99	54.2630	27.48	86.05	0.07	0 02:05:11
21	{Survey Site}.Standard : 46	5.31	2.00	67.00	2.0000	200.00	0.0130	0.2000	82.99	54.5870	27.15	144.28	0.10	0 02:27:33
22	{Survey Site}.Standard : 5	10.46	45.00	71.05	0.5000	235.00	0.0130	0.2000	82.99	29.0340	52.63	550.42	1.32	0 03:35:31
23	{Survey Site}.Standard : 51	0.39	95.00	95.55	0.5000	20.00	0.0130	0.2000	82.99	0.5350	80.94	31.16	0.11	0 00:35:05
24	{Survey Site}.Standard : 52	10.94	2.00	36.00	0.5000	240.00	0.0130	0.2000	82.99	70.2690	8.73	95.47	0.08	0 05:09:12
25	{Survey Site}.Standard : 53	0.36	75.00	85.75	3.0000	20.00	0.0130	0.2000	82.99	7.6160	73.73	26.84	0.11	0 00:45:52
26	{Survey Site}.Standard : 54	3.94	75.00	85.75	2.0000	150.00	0.0130	0.2000	82.99	7.6160	73.64	290.07	1.04	0 01:04:33
27	{Survey Site}.Standard : 57	0.42	20.00	58.80	2.0000	125.00	0.0130	0.2000	82.99	48.6790	33.05	13.98	0.04	0 00:37:56
28	{Survey Site}.Standard : 6	11.54	2.00	67.00	2.0000	280.00	0.0130	0.2000	82.99	55.2610	26.47	305.51	0.16	0 03:12:03
29	{Survey Site}.Standard : 63	1.63	55.00	75.95	2.0000	90.00	0.0130	0.2000	82.99	20.4720	61.28	99.83	0.35	0 01:13:28
30	{Survey Site}.Standard : 65	1.71	55.00	75.95	2.0000	130.00	0.0130	0.2000	82.99	20.3980	61.36	104.86	0.38	0 01:00:38
31	{Survey Site}.Standard : 68	1.31	55.00	75.95	2.0000	90.00	0.0130	0.2000	82.99	20.4230	61.34	80.47	0.29	0 01:04:31
32	{Survey Site}.Standard : 69	2.53	55.00	75.95	0.5000	85.00	0.0130	0.2000	82.99	20.7630	60.76	153.48	0.42	0 02:29:57
33	{Survey Site}.Standard : 7	10.98	5.00	67.00	2.0000	225.00	0.0130	0.2000	82.99	53.8310	27.91	306.30	0.26	0 03:28:32
34	{Survey Site}.Standard : 71	0.41	75.00	85.75	0.5000	20.00	0.0130	0.2000	82.99	7.6160	73.55	30.01	0.10	0 01:24:05
35	{Survey Site}.Standard : 72	1.08	55.00	75.95	2.0000	75.00	0.0130	0.2000	82.99	20.4140	61.34	65.94	0.24	0 01:03:52
36	{Survey Site}.Standard : 73	1.04	5.00	51.45	1.5000	65.00	0.0130	0.2000	82.99	63.6330	18.12	18.77	0.02	0 01:56:11
37	{Survey Site}.Standard : 74	2.88	55.00	75.95	2.0000	70.00	0.0130	0.2000	82.99	20.7460	60.97	175.59	0.52	0 02:00:15
38	{Survey Site}.Standard : 75	0.35	5.00	51.45	0.5000	35.00	0.0130	0.2000	82.99	63.7130	18.03	6.35	0.01	0 02:02:33
39	{Survey Site}.Standard : 76	0.87	5.00	51.45	25.0000	150.00	0.0130	0.2000	82.99	62.4750	19.32	16.88	0.04	0 00:27:18
40	{Survey Site}.Standard : 77	2.26	95.00	49.00	2.0000	250.00	0.0130	0.2000	82.99	3.3540	78.42	176.91	0.74	0 00:14:41
41	{Survey Site}.Standard : 78	2.38	55.00	75.95	3.0000	75.00	0.0130	0.2000	82.99	19.2510	69.14	164.83	0.51	0 01:31:12
42	{Survey Site}.Standard : 79	0.19	5.00	51.45	2.0000	25.00	0.0130	0.2000	82.99	62.9540	18.78	3.47	0.00	0 01:07:15
43	{Survey Site}.Standard : 8	3.30	2.00	67.00	2.0000	125.00	0.0130	0.2000	82.99	54.5600	27.16	89.73	0.06	0 02:27:06
44	{Survey Site}.Standard : 80	0.72	2.00	48.00	10.0000	55.00	0.0130	0.2000	82.99	65.2430	17.62	12.69	0.01	0 00:59:32
45	{Survey Site}.Standard : 81	1.46	35.00	66.15	2.0000	55.00	0.0130	0.2000	82.99	36.3890	45.36	66.32	0.19	0 01:55:22
46	{Survey Site}.Standard : 82	1.98	35.00	66.15	2.0000	55.00	0.0130	0.2000	82.99	36.6100	45.13	89.23	0.25	0 02:18:16
47	{Survey Site}.Standard : 83	1.98	55.00	75.95	2.0000	75.00	0.0130	0.2000	82.99	21.1740	89.21	176.90	0.49	0 01:32:14

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)
48	{Survey Site}.Standard : 84	1.00	55.00	75.95	2.0000	50.00	0.0130	0.2000	82.99	20.4970	61.25	61.50	0.21	0 01:18:11
49	{Survey Site}.Standard : 85	1.78	55.00	75.95	2.0000	70.00	0.0130	0.2000	82.99	20.5720	61.17	109.07	0.36	0 01:30:11
50	{Survey Site}.Standard : 86	1.43	55.00	75.95	2.0000	100.00	0.0130	0.2000	82.99	20.4140	61.34	87.41	0.32	0 01:03:39
51	{Survey Site}.Standard : 87	2.66	55.00	75.95	2.0000	100.00	0.0130	0.2000	82.99	20.5800	61.16	162.49	0.53	0 01:32:30
52	{Survey Site}.Standard : 88	1.64	55.00	75.95	2.0000	75.00	0.0130	0.2000	82.99	20.5220	61.23	100.29	0.34	0 01:22:14
53	{Survey Site}.Standard : 89	1.11	55.00	75.95	2.0000	100.00	0.0130	0.2000	82.99	20.3640	61.39	68.33	0.26	0 00:54:52
54	{Survey Site}.Standard : 9	3.53	2.00	67.00	2.0000	100.00	0.0130	0.2000	82.99	54.9910	26.73	94.42	0.05	0 02:55:02
55	{Survey Site}.Standard : 90	1.22	65.00	80.85	2.0000	130.00	0.0130	0.2000	82.99	13.5590	68.08	82.72	0.33	0 00:42:30
56	{Survey Site}.Standard : 91	1.00	65.00	80.85	2.0000	130.00	0.0130	0.2000	82.99	13.5590	68.10	67.89	0.28	0 00:37:44
57	{Survey Site}.Standard : 92	2.19	55.00	75.95	2.0000	75.00	0.0130	0.2000	82.99	20.6130	61.12	134.04	0.43	0 01:37:58
58	{Survey Site}.Standard : 93	2.28	20.00	58.80	5.0000	525.00	0.0130	0.2000	82.99	48.6220	33.10	75.34	0.25	0 00:33:26
59	Sub-01	0.13	55.00	75.95	2.0000	40.00	0.0130	0.2000	82.99	20.2070	61.49	7.99	0.03	0 00:26:13
60	Sub-02	0.18	55.00	75.95	2.0000	30.00	0.0130	0.2000	82.99	20.2730	61.46	11.06	0.04	0 00:37:52

Node Summary

SN	Element ID	Element Type	Invert Elevation (m)	Ground/Rim (Max) Elevation (m)	Initial Water Elevation (m)	Surcharge Elevation (m)	Ponded Area (m²)	Peak Inflow (cms)	Max HGL Elevation Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ha-mm)	Total Time Flooded (min)
1	Ex_MHR1	Junction	255.88	262.50	0.00	0.00	0.00	0.25	256.32	0.00	6.18	0 00:00	0.00	0.00
2	Ex_MHR2	Junction	255.48	259.65	0.00	0.00	0.00	0.25	255.91	0.00	3.74	0 00:00	0.00	0.00
3	Ex_MHR25	Junction	256.48	263.35	0.00	0.00	0.00	0.25	257.52	0.00	5.83	0 00:00	0.00	0.00
4	Ex_MHR26	Junction	256.64	262.75	0.00	0.00	0.00	0.25	257.75	0.00	5.00	0 00:00	0.00	0.00
5	Ex_MHR27	Junction	256.94	261.00	0.00	0.00	0.00	0.25	258.20	0.00	2.80	0 00:00	0.00	0.00
6	Ex_MHR28	Junction	257.37	259.30	0.00	0.00	0.00	1.05	259.10	0.00	0.20	0 00:00	0.00	0.00
7	Ex_MHR3	Junction	255.23	259.00	0.00	0.00	0.00	0.25	255.61	0.00	3.39	0 00:00	0.00	0.00
8	Jun-34	Junction	254.62	258.25	0.00	0.00	0.00	5.45	256.28	0.00	1.97	0 00:00	0.00	0.00
9	Jun-35	Junction	254.70	257.50	0.00	0.00	0.00	0.51	256.28	0.00	1.22	0 00:00	0.00	0.00
10	Jun-36	Junction	254.72	258.00	0.00	0.00	0.00	5.47	256.73	0.00	1.62	0 00:00	0.00	0.00
11	Jun-37	Junction	255.29	261.30	0.00	0.00	0.00	2.81	257.67	0.00	3.63	0 00:00	0.00	0.00
12	Jun-38	Junction	255.53	261.80	0.00	0.00	0.00	1.14	259.34	0.00	2.46	0 00:00	0.00	0.00
13	Jun-39	Junction	256.93	259.05	0.00	0.00	0.00	0.11	258.75	0.00	0.30	0 00:00	0.00	0.00
14	Jun-40	Junction	256.10	258.55	0.00	0.00	0.00	0.41	257.90	0.00	0.65	0 00:00	0.00	0.00
15	Jun-41	Junction	255.77	259.65	0.00	0.00	0.00	0.38	259.15	0.00	0.50	0 00:00	0.00	0.00
16	Jun-42	Junction	255.23	258.90	0.00	0.00	0.00	1.66	256.80	0.00	2.10	0 00:00	0.00	0.00
17	Jun-43	Junction	256.25	257.25	0.00	0.00	0.00	0.76	256.80	0.00	0.95	0 00:00	0.00	0.00
18	Jun-44	Junction	257.55	258.55	0.00	0.00	0.00	0.76	258.03	0.00	0.57	0 00:00	0.00	0.00
19	Jun-46	Junction	257.70	258.70	0.00	258.70	0.00	0.86	258.40	0.00	0.35	0 00:00	0.00	0.00
20	Jun-47	Junction	258.10	259.10	0.00	0.00	0.00	0.93	258.64	0.00	0.46	0 00:00	0.00	0.00
21	Jun-48	Junction	258.35	259.35	0.00	0.00	0.00	0.03	258.64	0.00	0.76	0 00:00	0.00	0.00
22	Jun-49	Junction	256.90	257.90	0.00	0.00	0.00	0.85	257.57	0.00	0.53	0 00:00	0.00	0.00
23	Jun-50	Junction	256.75	257.75	0.00	0.00	0.00	0.79	257.33	0.00	0.62	0 00:00	0.00	0.00
24	Jun-51	Junction	258.45	260.50	0.00	0.00	0.00	0.52	259.31	0.00	1.19	0 00:00	0.00	0.00
25	Jun-52	Junction	255.69	260.00	0.00	0.00	0.00	0.81	258.04	0.00	1.96	0 00:00	0.00	0.00
26	Jun-53	Junction	255.35	259.60	0.00	0.00	0.00	1.14	257.21	0.00	2.39	0 00:00	0.00	0.00
27	Jun-54	Junction	255.62	259.80	0.00	0.00	0.00	0.33	257.63	0.00	2.17	0 00:00	0.00	0.00
28	Jun-55	Junction	255.60	259.70	0.00	0.00	0.00	0.77	257.56	0.00	2.14	0 00:00	0.00	0.00
29	Jun-56	Junction	255.79	257.80	0.00	0.00	0.00	0.83	256.95	0.00	0.85	0 00:00	0.00	0.00
30	Jun-61	Junction	258.32	262.00	0.00	0.00	0.00	0.93	258.77	0.00	4.03	0 00:00	0.00	0.00
31	Jun-64	Junction	261.13	263.50	0.00	0.00	0.00	0.42	261.44	0.00	2.06	0 00:00	0.00	0.00
32	Jun-65	Junction	262.69	264.50	0.00	0.00	0.00	0.42	263.04	0.00	1.46	0 00:00	0.00	0.00
33	Jun-66	Junction	253.16	256.00	0.00	0.00	0.00	0.49	253.70	0.00	2.30	0 00:00	0.00	0.00
34	Jun-67	Junction	255.48	259.90	0.00	0.00	0.00	0.97	257.76	0.00	2.14	0 00:00	0.00	0.00
35	Jun-68	Junction	255.86	260.10	0.00	0.00	0.00	0.51	258.16	0.00	1.94	0 00:00	0.00	0.00
36	Jun-69	Junction	256.21	261.20	0.00	0.00	0.00	0.26	258.25	0.00	2.95	0 00:00	0.00	0.00
37	Jun-70	Junction	256.47	263.00	0.00	0.00	0.00	0.43	260.01	0.00	2.99	0 00:00	0.00	0.00
38	Jun-71	Junction	256.79	260.00	0.00	0.00	0.00	0.49	259.40	0.00	0.60	0 00:00	0.00	0.00
39	Jun-72	Junction	258.75	259.95	0.00	0.00	0.00	0.32	259.67	0.00	0.28	0 00:00	0.00	0.00
40	Jun-73	Junction	258.65	259.95	0.00	0.00	0.00	0.53	259.68	0.00	0.27	0 00:00	0.00	0.00
41	Jun-74	Junction	259.54	264.00	0.00	0.00	0.00	0.53	259.93	0.00	4.07	0 00:00	0.00	0.00
42	Jun-75	Junction	260.00	264.50	0.00	0.00	0.00	0.24	260.31	0.00	4.19	0 00:00	0.00	0.00
43	Jun-76	Junction	259.19	262.20	0.00	0.00	0.00	0.99	260.53	0.00	1.67	0 00:00	0.00	0.00
44	Jun-77	Junction	260.46	264.80	0.00	0.00	0.00	0.53	261.42	0.00	3.38	0 00:00	0.00	0.00
45	Jun-78	Junction	261.75	265.30	0.00	0.00	0.00	0.66	263.62	0.00	1.68	0 00:00	0.00	0.00
46	NorthWetland	Junction	252.00	258.00	0.00	0.00	0.00	0.28	252.00	0.00	6.00	0 00:00	0.00	0.00
47	OutletStructure	Junction	254.25	256.80	0.00	0.00	0.00	0.49	254.70	0.00	3.65	0 00:00	0.00	0.00

Node Summary

SN	Element ID	Element Type	Invert Elevation (m)	Ground/Rim (Max) Elevation (m)	Initial Water Elevation (m)	Surcharge Elevation (m)	Ponded Area (m^2)	Peak Inflow (cms)	Max HGL Elevation Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ha-mm)	Total Time Flooded (min)
48	Ravine_1	Junction	256.10	260.10	0.00	0.00	0.00	4.67	256.66	0.00	3.44	0 00:00	0.00	0.00
49	Ravine_2	Junction	253.00	257.00	0.00	0.00	0.00	4.91	253.67	0.00	3.43	0 00:00	0.00	0.00
50	Ravine_3	Junction	252.45	256.45	0.00	0.00	0.00	4.84	252.99	0.00	3.46	0 00:00	0.00	0.00
51	RH_1	Junction	267.60	271.70	0.00	0.00	0.00	3.41	271.57	0.00	0.13	0 00:00	0.00	0.00
52	RH_10	Junction	261.90	263.90	0.00	0.00	0.00	5.21	263.71	0.00	0.19	0 00:00	0.00	0.00
53	RH_11	Junction	260.33	262.55	0.00	0.00	0.00	4.54	262.43	0.00	0.12	0 00:00	0.00	0.00
54	RH_12	Junction	269.00	270.50	0.00	0.00	0.00	1.83	269.45	0.00	1.05	0 00:00	0.00	0.00
55	RH_13	Junction	264.00	266.50	0.00	0.00	0.00	1.91	264.63	0.00	1.87	0 00:00	0.00	0.00
56	RH_14	Junction	261.70	263.50	0.00	0.00	0.00	0.47	263.21	0.00	0.29	0 00:00	0.00	0.00
57	RH_15	Junction	259.38	261.00	0.00	0.00	0.00	0.55	260.72	0.00	0.28	0 00:00	0.00	0.00
58	RH_16	Junction	256.36	258.00	0.00	0.00	0.00	0.48	257.09	0.00	0.91	0 00:00	0.00	0.00
59	RH_17	Junction	256.42	258.00	0.00	0.00	0.00	1.33	257.57	0.00	0.43	0 00:00	0.00	0.00
60	RH_2	Junction	270.14	272.45	0.00	0.00	0.00	2.82	272.24	0.00	0.21	0 00:00	0.00	0.00
61	RH_3	Junction	267.07	270.50	0.00	0.00	0.00	5.85	269.91	0.00	0.59	0 00:00	0.00	0.00
62	RH_4	Junction	266.63	268.60	0.00	0.00	0.00	4.50	268.45	0.00	0.15	0 00:00	0.00	0.00
63	RH_5	Junction	270.35	272.10	0.00	0.00	0.00	1.32	271.87	0.00	0.23	0 00:00	0.00	0.00
64	RH_6	Junction	266.50	268.20	0.00	0.00	0.00	5.52	268.09	0.00	0.11	0 00:00	0.00	0.00
65	RH_7	Junction	272.00	273.50	0.00	0.00	0.00	0.00	272.00	0.00	1.50	0 00:00	0.00	0.00
66	RH_8	Junction	267.75	269.85	0.00	0.00	0.00	0.26	269.19	0.00	0.66	0 00:00	0.00	0.00
67	RH_9	Junction	264.00	265.80	0.00	0.00	0.00	0.20	265.50	0.00	0.30	0 00:00	0.00	0.00
68	WestOutfall	Junction	257.00	258.40	0.00	0.00	0.00	0.04	257.00	0.00	2.45	0 00:00	0.00	0.00
69	WestWetland	Junction	258.00	259.00	0.00	0.00	0.00	0.08	258.00	0.00	1.00	0 00:00	0.00	0.00
70	North_Wetland	Outfall	252.00					0.28	252.00					
71	Outfall	Outfall	252.00					4.84	252.44					
72	TinerEstatesSTM	Outfall	254.82					0.25	255.14					
73	West_Outfall	Outfall	257.00					0.04	257.00					
74	West_Wetland	Outfall	258.00					0.08	258.00					
75	Ex_SE_Pond	Storage Node	262.00	266.00	0.00		0.00	1.98	263.42				0.00	0.00
76	SWM_FB	Storage Node	253.00	257.10	254.50		0.00	5.45	256.28				0.00	0.00
77	SWM_WP	Storage Node	253.00	257.10	254.50		0.00	4.76	256.28				0.00	0.00

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(m)	(m)	(m)	(%)	(m)		(cms)	(cms)		(m/sec)	(m)		(min)	
1	Ex.STM_1	Pipe	Ex_MHR28	Ex_MHR27	107.00	257.37	256.94	0.4000	0.450	0.0130	0.25	0.18	1.37	1.56	0.45	1.00	53.00	SURCHARGED
2	Ex.STM_2	Pipe	Ex_MHR27	Ex_MHR26	73.00	256.94	256.64	0.4100	0.450	0.0130	0.25	0.18	1.36	1.56	0.45	1.00	49.00	SURCHARGED
3	Ex.STM_3	Pipe	Ex_MHR26	Ex_MHR25	27.00	256.64	256.48	0.5900	0.450	0.0130	0.25	0.22	1.13	1.56	0.45	1.00	45.00	SURCHARGED
4	Ex.STM_4	Pipe	Ex_MHR25	Ex_MHR1	100.00	256.48	255.88	0.6000	0.450	0.0130	0.25	0.22	1.12	1.58	0.45	0.99	0.00	> CAPACITY
5	Ex.STM_5	Pipe	Ex_MHR1	Ex_MHR2	100.00	255.88	255.48	0.4000	0.525	0.0130	0.25	0.27	0.91	1.32	0.43	0.83	0.00	Calculated
6	Ex.STM_6	Pipe	Ex_MHR2	Ex_MHR3	50.00	255.48	255.23	0.5000	0.525	0.0130	0.25	0.30	0.81	1.40	0.40	0.77	0.00	Calculated
7	Ex.STM_7	Pipe	Ex_MHR3	TinerEstatesSTM	102.00	255.23	254.82	0.4000	0.600	0.0130	0.25	0.39	0.64	1.44	0.35	0.59	0.00	Calculated
8	Link-106	Pipe	Jun-66	Ravine_2	24.80	253.16	252.85	1.2500	0.750	0.0130	0.49	0.89	0.55	1.71	0.61	0.81	0.00	Calculated
9	Link-107	Pipe	OutletStructure	Jun-66	93.20	254.35	253.20	1.2300	0.750	0.0130	0.49	1.24	0.40	1.98	0.42	0.56	0.00	Calculated
10	Link-108	Pipe	Jun-67	Jun-37	110.30	255.48	255.37	0.1000	1.200	0.0130	0.93	1.23	0.76	0.82	1.20	1.00	18.00	SURCHARGED
11	Link-109	Pipe	Jun-46	Jun-44	30.00	257.70	257.55	0.5000	1.050	0.0130	0.76	1.93	0.39	1.51	0.58	0.56	0.00	Calculated
12	Link-110	Pipe	Jun-52	Jun-67	153.00	255.69	255.48	0.1400	0.900	0.0130	0.69	0.67	1.02	1.08	0.90	1.00	21.00	SURCHARGED
13	Link-111	Pipe	Jun-68	Jun-52	66.80	255.86	255.77	0.1300	0.750	0.0130	0.41	0.41	1.01	0.93	0.75	1.00	21.00	SURCHARGED
14	Link-112	Pipe	Jun-69	Jun-68	106.60	256.21	255.91	0.2800	0.600	0.0130	0.18	0.33	0.57	0.72	0.60	1.00	18.00	SURCHARGED
15	Link-113	Pipe	Jun-70	Jun-52	97.50	256.47	255.88	0.6100	0.525	0.0130	0.43	0.33	1.28	1.98	0.52	1.00	18.00	SURCHARGED
16	Link-114	Pipe	Jun-71	Jun-53	85.10	256.79	255.73	1.2500	0.450	0.0130	0.43	0.32	1.36	2.72	0.45	1.00	17.00	SURCHARGED
17	Link-115	Pipe	Jun-73	Jun-51	50.00	258.65	258.50	0.3000	0.525	0.0130	0.35	0.24	1.47	1.60	0.52	1.00	16.00	SURCHARGED
18	Link-116	Pipe	Jun-72	Jun-51	50.00	258.75	258.55	0.4000	0.450	0.0130	0.21	0.18	1.16	1.31	0.45	1.00	16.00	SURCHARGED
19	Link-117	Pipe	Jun-74	Jun-61	90.00	259.54	258.37	1.3000	0.675	0.0130	0.53	0.96	0.55	2.52	0.38	0.58	0.00	Calculated
20	Link-118	Pipe	Jun-75	Jun-74	41.60	260.00	259.56	1.0600	0.525	0.0130	0.24	0.44	0.54	1.58	0.34	0.66	0.00	Calculated
21	Link-119	Pipe	Jun-76	Jun-56	181.70	259.19	256.08	1.7100	0.600	0.0130	0.81	0.80	1.01	3.05	0.60	1.00	11.00	SURCHARGED
22	Link-120	Pipe	Jun-77	Jun-76	140.50	260.46	259.24	0.8700	0.600	0.0130	0.46	0.57	0.81	1.93	0.60	1.00	8.00	SURCHARGED
23	Link-121	Pipe	Jun-78	Jun-77	152.20	261.75	260.51	0.8100	0.525	0.0130	0.53	0.39	1.36	2.44	0.52	1.00	7.00	SURCHARGED
24	Link-49	Pipe	Jun-34	SWM_FB	20.70	254.62	254.60	0.1000	1.800	0.0130	5.45	3.57	1.52	2.55	1.67	0.93	0.00	> CAPACITY
25	Link-50	Pipe	Jun-35	SWM_WP	75.20	254.70	254.60	0.1300	0.600	0.0130	0.51	0.22	2.29	1.82	0.60	1.00	2166.00	SURCHARGED
26	Link-52	Pipe	Jun-36	Jun-34	35.00	254.72	254.67	0.1400	1.650	0.0130	5.45	3.45	1.58	2.55	1.63	0.99	0.00	> CAPACITY
27	Link-53	Pipe	Jun-37	Jun-36	336.90	255.29	254.74	0.1600	1.350	0.0130	2.58	2.16	1.20	1.80	1.35	1.00	18.00	SURCHARGED
28	Link-54	Pipe	Jun-38	Jun-37	110.00	255.53	255.31	0.2000	0.600	0.0130	0.72	0.27	2.63	2.55	0.60	1.00	412.00	SURCHARGED
29	Link-56	Pipe	Jun-41	Jun-38	110.00	255.77	255.55	0.2000	0.600	0.0130	0.28	0.27	1.00	0.98	0.60	1.00	54.00	SURCHARGED
30	Link-57	Pipe	Jun-40	Jun-41	95.50	256.10	255.85	0.2600	0.450	0.0130	0.31	0.15	2.14	1.96	0.45	1.00	51.00	SURCHARGED
31	Link-58	Pipe	Jun-39	Jun-40	90.00	256.93	256.25	0.7600	0.300	0.0130	0.10	0.08	1.13	1.34	0.30	1.00	46.00	SURCHARGED
32	Link-59	Pipe	Jun-42	Jun-36	53.10	255.23	255.13	0.1900	1.500	0.0130	1.68	3.07	0.55	1.17	1.50	1.00	6.00	SURCHARGED
33	Link-60	Pipe	Jun-43	Jun-42	13.40	256.25	255.84	3.0600	1.500	0.0130	0.93	12.37	0.08	2.32	0.75	0.50	0.00	Calculated
34	Link-62	Pipe	Jun-49	Jun-50	25.00	256.90	256.75	0.6000	1.200	0.0130	0.79	3.02	0.26	1.60	0.61	0.51	0.00	Calculated
35	Link-68	Pipe	Jun-51	Jun-47	60.00	258.45	258.20	0.4200	0.600	0.0130	0.52	0.40	1.31	1.95	0.54	0.89	0.00	> CAPACITY
36	Link-70	Pipe	Jun-53	Jun-42	57.00	255.35	255.25	0.1800	0.825	0.0130	1.09	0.60	1.81	2.03	0.82	1.00	316.00	SURCHARGED
37	Link-71	Pipe	Jun-55	Jun-53	82.00	255.60	255.43	0.2100	0.750	0.0130	0.71	0.51	1.40	1.61	0.75	1.00	23.00	SURCHARGED
38	Link-72	Pipe	Jun-54	Jun-55	85.00	255.79	255.62	0.2000	0.750	0.0130	0.29	0.50	0.59	0.66	0.75	1.00	18.00	SURCHARGED
39	Link-73	Pipe	Jun-56	Jun-36	67.80	255.78	255.10	1.0000	0.900	0.0130	0.83	1.83	0.45	1.54	0.90	1.00	11.00	SURCHARGED
40	Link-80	Pipe	Jun-61	Jun-37	89.90	258.32	255.97	2.6100	0.750	0.0130	0.91	1.80	0.51	3.30	0.58	0.80	0.00	Calculated
41	Link-81	Pipe	Jun-64	Jun-61	93.20	261.13	259.27	2.0000	0.600	0.0130	0.41	0.87	0.47	2.87	0.30	0.50	0.00	Calculated
42	Link-82	Pipe	Jun-65	Jun-64	103.90	262.69	261.13	1.5000	0.600	0.0130	0.42	0.75	0.55	2.61	0.33	0.55	0.00	Calculated
43	RH_A1	Pipe	RH_2	RH_3	50.00	270.14	268.50	3.2800	0.300	0.0130	0.23	0.18	1.31	3.26	0.30	1.00	208.00	SURCHARGED
44	RH_B1	Pipe	RH_5	RH_6	227.00	270.35	266.50	1.7000	0.300	0.0130	0.14	0.13	1.10	1.96	0.30	1.00	161.00	SURCHARGED
45	RH_C3	Pipe	Ex_SE_Pond	RH_14	15.00	262.00	261.70	2.0000	0.600	0.0130	0.47	0.87	0.54	1.91	0.60	1.00	218.00	SURCHARGED
46	RH_C4	Pipe	RH_14	RH_15	195.00	261.70	259.38	1.1900	0.525	0.0150	0.43	0.41	1.04	2.10	0.52	1.00	241.00	SURCHARGED
47	RH_C5	Pipe	RH_15	RH_16	274.00	259.38	256.36	1.1000	0.525	0.0130	0.48	0.45	1.06	2.21	0.52	1.00	247.00	SURCHARGED

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(m)	(m)	(m)	(%)	(m)		(cms)	(cms)		(m/sec)	(m)		(min)	
48	RH_C6	Pipe	RH_16	Ravine_1	6.00	256.36	256.24	2.0000	0.700	0.0130	0.48	1.31	0.36	1.64	0.56	0.80	0.00	Calculated
49	RH_D1	Pipe	RH_7	RH_8	275.00	272.00	267.75	1.5500	0.300	0.0130	0.00	0.12	0.00	0.00	0.15	0.50	0.00	Calculated
50	RH_D2	Pipe	RH_8	RH_9	180.00	267.75	264.00	2.0800	0.300	0.0130	0.15	0.14	1.05	2.14	0.30	1.00	97.00	SURCHARGED
51	RH_D3	Pipe	RH_9	RH_10	155.00	264.00	261.90	1.3500	0.375	0.0130	0.19	0.20	0.91	1.69	0.38	1.00	148.00	SURCHARGED
52	RH_M1	Pipe	RH_1	RH_3	270.00	267.60	267.07	0.2000	0.600	0.0130	0.51	0.27	1.85	1.78	0.60	1.00	185.00	SURCHARGED
53	RH_M2	Pipe	RH_3	RH_4	222.00	267.07	266.63	0.2000	0.675	0.0130	0.80	0.37	2.13	2.23	0.68	1.00	158.00	SURCHARGED
54	RH_M3	Pipe	RH_4	RH_6	18.00	266.63	266.50	0.7200	0.750	0.0130	1.05	0.95	1.11	2.37	0.75	1.00	151.00	SURCHARGED
55	RH_M4	Pipe	RH_6	RH_10	415.00	266.50	261.90	1.1100	0.675	0.0130	0.91	0.89	1.03	2.61	0.68	1.00	153.00	SURCHARGED
56	RH_M5	Pipe	RH_10	RH_11	140.00	261.90	260.33	1.1200	0.675	0.0130	1.04	0.89	1.17	2.92	0.68	1.00	198.00	SURCHARGED
57	RH_M6	Pipe	RH_11	RH_17	464.00	260.33	256.42	0.8400	0.750	0.0130	1.10	1.02	1.08	2.49	0.75	1.00	195.00	SURCHARGED
58	RH_M7	Pipe	RH_17	Ravine_1	6.00	256.42	256.37	0.8300	1.000	0.0130	1.33	2.19	0.61	2.02	0.78	0.78	0.00	Calculated
59	West_Link	Pipe	WestOutfall	West_Outfall	33.73	256.00	257.00	-2.9600	0.000	0.0130	0.04	0.00	0.03	0.00	0.61	0.15	0.00	Calculated
60	WestWetland_Link	Pipe	WestWetland	West_Wetland	37.13	258.00	258.00	0.0000	0.000	0.0130	0.08	0.00	0.03	0.00	0.61	0.15	0.00	Calculated
61	Wetland_Link	Pipe	NorthWetland	North_Wetland	41.51	252.00	252.00	0.0000	0.000	0.0130	0.28	0.00	0.03	0.00	0.61	0.15	0.00	Calculated
62	Link-103	Channel	Jun-36	SWM_FB	10.00	257.70	257.50	2.0000	0.300	0.0320	0.00	11.65	0.00	0.00	0.00	0.00	0.00	
63	Link-104	Channel	Jun-56	SWM_FB	50.00	257.50	256.50	2.0000	0.300	0.0320	0.00	11.65	0.00	0.00	0.00	0.00	0.00	
64	Link-122	Channel	Jun-53	Jun-42	70.00	259.30	258.60	1.0000	0.300	0.0320	0.00	8.24	0.00	0.00	0.00	0.00	0.00	
65	Link-123	Channel	Jun-55	Jun-53	90.00	259.40	259.30	0.1100	0.300	0.0320	0.00	2.75	0.00	0.00	0.00	0.00	0.00	
66	Link-124	Channel	Jun-54	Jun-55	90.00	259.50	259.40	0.1100	0.300	0.0320	0.00	2.75	0.00	0.00	0.00	0.00	0.00	
67	Link-125	Channel	Jun-73	Jun-47	50.00	259.65	258.70	1.9000	0.300	0.0320	0.17	11.36	0.02	0.38	0.02	0.08	0.00	
68	Link-126	Channel	Jun-72	Jun-47	50.00	259.65	258.70	1.9000	0.300	0.0320	0.07	11.36	0.01	0.26	0.01	0.04	0.00	
69	Link-127	Channel	Jun-67	Jun-54	100.00	259.60	259.50	0.1000	0.300	0.0320	0.00	2.61	0.00	0.00	0.00	0.00	0.00	
70	Link-128	Channel	Jun-52	Jun-67	150.00	259.70	259.60	0.0700	0.300	0.0320	0.00	2.13	0.00	0.00	0.00	0.00	0.00	
71	Link-129	Channel	Jun-68	Jun-52	80.00	259.80	259.70	0.1300	0.300	0.0320	0.00	2.91	0.00	0.00	0.00	0.00	0.00	
72	Link-130	Channel	Jun-69	Jun-68	100.00	259.90	259.80	0.1000	0.300	0.0320	0.00	2.61	0.00	0.00	0.00	0.00	0.00	
73	Link-131	Channel	Jun-71	Jun-53	70.00	259.40	259.30	0.1400	0.300	0.0320	0.00	3.11	0.00	0.00	0.00	0.00	0.00	
74	Link-132	Channel	Jun-78	Jun-77	150.00	265.00	264.50	0.3300	0.300	0.0320	0.00	4.76	0.00	0.00	0.00	0.00	0.00	
75	Link-133	Channel	Jun-77	Jun-76	150.00	264.50	261.90	1.7300	0.300	0.0320	0.00	10.85	0.00	0.00	0.00	0.00	0.00	
76	Link-134	Channel	Jun-76	Jun-36	250.00	261.90	257.70	1.6800	0.300	0.0320	0.00	10.68	0.00	0.00	0.00	0.00	0.00	
77	Link-135	Channel	Jun-61	Jun-37	100.00	262.50	261.00	1.5000	0.300	0.0320	0.00	10.09	0.00	0.00	0.00	0.00	0.00	
78	Link-34	Channel	RH_1	RH_3	270.00	271.40	269.65	0.6500	0.300	0.0320	2.67	6.63	0.40	0.71	0.21	0.69	0.00	
79	Link-35	Channel	RH_2	RH_3	50.00	272.15	269.65	5.0000	0.300	0.0320	2.60	18.43	0.14	1.10	0.17	0.55	0.00	
80	Link-36	Channel	RH_3	RH_4	222.00	269.65	268.30	0.6100	0.300	0.0320	3.79	6.43	0.59	0.92	0.20	0.69	0.00	
81	Link-37	Channel	RH_4	RH_6	18.00	268.30	267.90	2.2200	0.300	0.0320	3.52	12.28	0.29	1.20	0.16	0.54	0.00	
82	Link-38	Channel	RH_5	RH_6	227.00	271.80	267.90	1.7200	0.300	0.0320	1.03	10.80	0.10	0.70	0.12	0.41	0.00	
83	Link-39	Channel	RH_6	RH_10	415.00	267.90	263.50	1.0600	0.300	0.0320	4.05	8.48	0.48	1.06	0.19	0.65	0.00	
84	Link-41	Channel	RH_8	RH_9	180.00	269.55	265.50	2.2500	0.300	0.0320	0.00	12.36	0.00	0.00	0.00	0.00	0.00	
85	Link-42	Channel	RH_9	RH_10	155.00	265.50	263.50	1.2900	0.300	0.0320	0.00	9.36	0.00	0.00	0.11	0.35	0.00	
86	Link-43	Channel	RH_10	RH_11	140.00	263.50	262.25	0.8900	0.300	0.0320	3.74	7.79	0.48	1.03	0.18	0.61	0.00	
87	Link-44	Channel	RH_11	Ravine_1	470.00	262.25	258.00	0.9000	0.300	0.0320	2.78	7.84	0.35	0.92	0.15	0.50	0.00	
88	Link-45	Channel	RH_14	RH_15	195.00	263.20	260.70	1.2800	0.300	0.0320	0.05	9.33	0.00	0.19	0.01	0.04	0.00	
89	Link-46	Channel	RH_15	Ravine_1	280.00	260.70	258.00	0.9600	0.300	0.0320	0.04	8.09	0.00	0.16	0.01	0.04	0.00	
90	Link-51	Channel	Ex_MHR28	Jun-36	65.00	259.00	258.05	1.4600	0.300	0.0320	0.77	4.89	0.16	0.82	0.09	0.31	0.00	
91	Link-61	Channel	Jun-50	Jun-43	125.00	256.75	256.25	0.4000	1.000	0.0320	0.76	4.86	0.16	0.68	0.50	0.50	0.00	
92	Link-63	Channel	Jun-44	Jun-49	162.50	257.55	256.90	0.4000	1.000	0.0320	0.74	4.86	0.15	0.47	0.57	0.57	0.00	
93	Link-66	Channel	Jun-47	Jun-46	133.00	258.10	257.70	0.3000	1.000	0.0320	0.86	4.22	0.20	0.53	0.61	0.61	0.00	
94	Link-67	Channel	Jun-48	Jun-47	75.00	258.40	258.10	0.4000	1.000	0.0320	0.03	4.86	0.01	0.08	0.38	0.39	0.00	

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(m)	(m)	(m)	(%)	(m)		(cms)	(cms)		(m/sec)	(m)		(min)	
95	Link-89	Channel	Jun-42	Jun-36	53.10	258.60	257.70	1.6900	0.300	0.0320	0.00	10.73	0.00	0.00	0.00	0.00	0.00	
96	Link-90	Channel	Jun-39	Jun-40	90.00	258.75	257.75	1.1100	0.300	0.0320	0.00	8.69	0.00	0.00	0.07	0.24	0.00	
97	Link-92	Channel	Jun-38	Jun-37	110.00	261.50	261.00	0.4500	0.300	0.0320	0.00	5.56	0.00	0.00	0.00	0.00	0.00	
98	Link-93	Channel	Jun-37	Jun-36	340.00	261.00	257.70	0.9700	0.300	0.0320	0.00	8.12	0.00	0.00	0.00	0.00	0.00	
99	Link-94	Channel	Jun-41	Jun-40	95.00	259.35	257.75	1.6800	0.300	0.0320	0.00	10.69	0.00	0.00	0.07	0.24	0.00	
100	LowerRavine	Channel	Ravine_2	Ravine_3	124.00	253.00	252.45	0.4400	4.000	0.0320	4.82	157.98	0.03	1.35	0.60	0.15	0.00	
101	OutletRavine	Channel	Ravine_3	Outfall	45.00	252.45	252.00	1.0000	4.000	0.0320	4.84	237.22	0.02	1.73	0.49	0.12	0.00	
102	RH_C1	Channel	RH_12	RH_13	215.00	269.00	264.00	2.3300	1.500	0.0320	1.78	24.20	0.07	1.63	0.53	0.36	0.00	
103	RH_C2	Channel	RH_13	Ex_SE_Pond	60.00	264.00	263.50	0.8300	1.500	0.0320	1.80	14.49	0.12	1.50	0.54	0.38	0.00	
104	UpperRavine	Channel	Ravine_1	Ravine_2	553.00	256.10	253.00	0.5600	4.000	0.0320	4.61	177.61	0.03	1.30	0.61	0.15	0.00	
105	Orifice-01	Orifice	SWM_WP	OutletStructure		253.00	254.25		0.170		0.08							
106	Link-91	Weir	Jun-40	WestOutfall		256.10	257.00				0.00							
107	Weir-01	Weir	SWM_FB	SWM_WP		253.00	253.00				3.99							
108	Weir-04	Weir	SWM_WP	OutletStructure		253.00	254.25				0.42							
109	Weir-05	Weir	SWM_WP	Ravine_2		253.00	253.00				0.00							
110	Weir-06	Weir	SWM_WP	OutletStructure		253.00	254.25				0.00							

Junction Input

SN	Element ID	Invert Elevation (m)	Ground/Rim (Max) Elevation (m)	Ground/Rim (Max) Offset (m)	Initial Water Elevation (m)	Initial Water Depth (m)	Surcharge Elevation (m)	Surcharge Depth (m)	Ponded Area (m²)	Minimum Pipe Cover (m)
1	Ex_MHR1	255.88	262.50	6.62	0.00	-255.88	0.00	-262.50	0.00	0.00
2	Ex_MHR2	255.48	259.65	4.17	0.00	-255.48	0.00	-259.65	0.00	0.00
3	Ex_MHR25	256.48	263.35	6.87	0.00	-256.48	0.00	-263.35	0.00	0.00
4	Ex_MHR26	256.64	262.75	6.11	0.00	-256.64	0.00	-262.75	0.00	0.00
5	Ex_MHR27	256.94	261.00	4.06	0.00	-256.94	0.00	-261.00	0.00	0.00
6	Ex_MHR28	257.37	259.30	1.93	0.00	-257.37	0.00	-259.30	0.00	0.00
7	Ex_MHR3	255.23	259.00	3.77	0.00	-255.23	0.00	-259.00	0.00	0.00
8	Jun-34	254.62	258.25	3.63	0.00	-254.62	0.00	-258.25	0.00	0.00
9	Jun-35	254.70	257.50	2.80	0.00	-254.70	0.00	-257.50	0.00	0.00
10	Jun-36	254.72	258.00	3.28	0.00	-254.72	0.00	-258.00	0.00	0.00
11	Jun-37	255.29	261.30	6.01	0.00	-255.29	0.00	-261.30	0.00	0.00
12	Jun-38	255.53	261.80	6.27	0.00	-255.53	0.00	-261.80	0.00	0.00
13	Jun-39	256.93	259.05	2.12	0.00	-256.93	0.00	-259.05	0.00	0.00
14	Jun-40	256.10	258.55	2.45	0.00	-256.10	0.00	-258.55	0.00	0.00
15	Jun-41	255.77	259.65	3.88	0.00	-255.77	0.00	-259.65	0.00	0.00
16	Jun-42	255.23	258.90	3.67	0.00	-255.23	0.00	-258.90	0.00	0.00
17	Jun-43	256.25	257.25	1.00	0.00	-256.25	0.00	-257.25	0.00	0.00
18	Jun-44	257.55	258.55	1.00	0.00	-257.55	0.00	-258.55	0.00	0.00
19	Jun-46	257.70	258.70	1.00	0.00	-257.70	258.70	0.00	0.00	0.00
20	Jun-47	258.10	259.10	1.00	0.00	-258.10	0.00	-259.10	0.00	0.00
21	Jun-48	258.35	259.35	1.00	0.00	-258.35	0.00	-259.35	0.00	0.00
22	Jun-49	256.90	257.90	1.00	0.00	-256.90	0.00	-257.90	0.00	0.00
23	Jun-50	256.75	257.75	1.00	0.00	-256.75	0.00	-257.75	0.00	0.00
24	Jun-51	258.45	260.50	2.05	0.00	-258.45	0.00	-260.50	0.00	0.00
25	Jun-52	255.69	260.00	4.31	0.00	-255.69	0.00	-260.00	0.00	0.00
26	Jun-53	255.35	259.60	4.25	0.00	-255.35	0.00	-259.60	0.00	0.00
27	Jun-54	255.62	259.80	4.18	0.00	-255.62	0.00	-259.80	0.00	0.00
28	Jun-55	255.60	259.70	4.10	0.00	-255.60	0.00	-259.70	0.00	0.00
29	Jun-56	255.79	257.80	2.01	0.00	-255.79	0.00	-257.80	0.00	0.00
30	Jun-61	258.32	262.00	3.68	0.00	-258.32	0.00	-262.00	0.00	0.00
31	Jun-64	261.13	263.50	2.37	0.00	-261.13	0.00	-263.50	0.00	0.00
32	Jun-65	262.69	264.50	1.81	0.00	-262.69	0.00	-264.50	0.00	0.00
33	Jun-66	253.16	256.00	2.84	0.00	-253.16	0.00	-256.00	0.00	0.00
34	Jun-67	255.48	259.90	4.42	0.00	-255.48	0.00	-259.90	0.00	0.00
35	Jun-68	255.86	260.10	4.24	0.00	-255.86	0.00	-260.10	0.00	0.00
36	Jun-69	256.21	261.20	4.99	0.00	-256.21	0.00	-261.20	0.00	0.00
37	Jun-70	256.47	263.00	6.53	0.00	-256.47	0.00	-263.00	0.00	0.00
38	Jun-71	256.79	260.00	3.21	0.00	-256.79	0.00	-260.00	0.00	0.00
39	Jun-72	258.75	259.95	1.20	0.00	-258.75	0.00	-259.95	0.00	0.00
40	Jun-73	258.65	259.95	1.30	0.00	-258.65	0.00	-259.95	0.00	0.00
41	Jun-74	259.54	264.00	4.46	0.00	-259.54	0.00	-264.00	0.00	0.00
42	Jun-75	260.00	264.50	4.50	0.00	-260.00	0.00	-264.50	0.00	0.00
43	Jun-76	259.19	262.20	3.01	0.00	-259.19	0.00	-262.20	0.00	0.00
44	Jun-77	260.46	264.80	4.34	0.00	-260.46	0.00	-264.80	0.00	0.00
45	Jun-78	261.75	265.30	3.55	0.00	-261.75	0.00	-265.30	0.00	0.00
46	NorthWetland	252.00	258.00	6.00	0.00	-252.00	0.00	-258.00	0.00	0.00
47	OutletStructure	254.25	256.80	2.55	0.00	-254.25	0.00	-256.80	0.00	0.00
48	Ravine_1	256.10	260.10	4.00	0.00	-256.10	0.00	-260.10	0.00	0.00

Junction Input

SN	Element ID	Invert Elevation (m)	Ground/Rim (Max) Elevation (m)	Ground/Rim (Max) Offset (m)	Initial Water Elevation (m)	Initial Water Depth (m)	Surcharge Elevation (m)	Surcharge Depth (m)	Ponded Area (m²)	Minimum Pipe Cover (m)
49	Ravine_2	253.00	257.00	4.00	0.00	-253.00	0.00	-257.00	0.00	0.00
50	Ravine_3	252.45	256.45	4.00	0.00	-252.45	0.00	-256.45	0.00	0.00
51	RH_1	267.60	271.70	4.10	0.00	-267.60	0.00	-271.70	0.00	0.00
52	RH_10	261.90	263.90	2.00	0.00	-261.90	0.00	-263.90	0.00	0.00
53	RH_11	260.33	262.55	2.22	0.00	-260.33	0.00	-262.55	0.00	0.00
54	RH_12	269.00	270.50	1.50	0.00	-269.00	0.00	-270.50	0.00	0.00
55	RH_13	264.00	266.50	2.50	0.00	-264.00	0.00	-266.50	0.00	0.00
56	RH_14	261.70	263.50	1.80	0.00	-261.70	0.00	-263.50	0.00	0.00
57	RH_15	259.38	261.00	1.62	0.00	-259.38	0.00	-261.00	0.00	0.00
58	RH_16	256.36	258.00	1.64	0.00	-256.36	0.00	-258.00	0.00	0.00
59	RH_17	256.42	258.00	1.58	0.00	-256.42	0.00	-258.00	0.00	0.00
60	RH_2	270.14	272.45	2.31	0.00	-270.14	0.00	-272.45	0.00	0.00
61	RH_3	267.07	270.50	3.43	0.00	-267.07	0.00	-270.50	0.00	0.00
62	RH_4	266.63	268.60	1.97	0.00	-266.63	0.00	-268.60	0.00	0.00
63	RH_5	270.35	272.10	1.75	0.00	-270.35	0.00	-272.10	0.00	0.00
64	RH_6	266.50	268.20	1.70	0.00	-266.50	0.00	-268.20	0.00	0.00
65	RH_7	272.00	273.50	1.50	0.00	-272.00	0.00	-273.50	0.00	0.00
66	RH_8	267.75	269.85	2.10	0.00	-267.75	0.00	-269.85	0.00	0.00
67	RH_9	264.00	265.80	1.80	0.00	-264.00	0.00	-265.80	0.00	0.00
68	WestOutfall	257.00	258.40	1.40	0.00	-257.00	0.00	-258.40	0.00	0.00
69	WestWetland	258.00	259.00	1.00	0.00	-258.00	0.00	-259.00	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)	Total Time Flooded (min)
1	Ex_MHR1	0.25	0.00	256.32	0.44	0.00	6.18	256.01	0.13	0 12:01	0 00:00	0.00	0.00
2	Ex_MHR2	0.25	0.00	255.91	0.43	0.00	3.74	255.61	0.13	0 12:02	0 00:00	0.00	0.00
3	Ex_MHR25	0.25	0.00	257.52	1.04	0.00	5.83	256.62	0.14	0 11:48	0 00:00	0.00	0.00
4	Ex_MHR26	0.25	0.00	257.75	1.11	0.00	5.00	256.79	0.15	0 11:48	0 00:00	0.00	0.00
5	Ex_MHR27	0.25	0.00	258.20	1.26	0.00	2.80	257.12	0.18	0 11:48	0 00:00	0.00	0.00
6	Ex_MHR28	1.05	1.05	259.10	1.73	0.00	0.20	257.57	0.20	0 12:00	0 00:00	0.00	0.00
7	Ex_MHR3	0.25	0.00	255.61	0.38	0.00	3.39	255.36	0.13	0 12:03	0 00:00	0.00	0.00
8	Jun-34	5.45	0.00	256.28	1.66	0.00	1.97	255.82	1.20	0 13:53	0 00:00	0.00	0.00
9	Jun-35	0.51	0.51	256.28	1.58	0.00	1.22	255.80	1.10	0 13:53	0 00:00	0.00	0.00
10	Jun-36	5.47	0.00	256.73	2.01	0.00	1.62	255.85	1.13	0 12:05	0 00:00	0.00	0.00
11	Jun-37	2.81	0.42	257.67	2.38	0.00	3.63	255.97	0.68	0 12:04	0 00:00	0.00	0.00
12	Jun-38	1.14	1.14	259.34	3.81	0.00	2.46	256.07	0.54	0 12:02	0 00:00	0.00	0.00
13	Jun-39	0.11	0.11	258.75	1.82	0.00	0.30	257.01	0.08	0 12:01	0 00:00	0.00	0.00
14	Jun-40	0.41	0.00	257.90	1.80	0.00	0.65	256.25	0.15	0 12:12	0 00:00	0.00	0.00
15	Jun-41	0.38	0.11	259.15	3.38	0.00	0.50	256.11	0.34	0 12:02	0 00:00	0.00	0.00
16	Jun-42	1.66	0.00	256.80	1.57	0.00	2.10	255.93	0.70	0 12:05	0 00:00	0.00	0.00
17	Jun-43	0.76	0.00	256.80	0.55	0.00	0.95	256.31	0.06	0 12:05	0 00:00	0.00	0.00
18	Jun-44	0.76	0.00	258.03	0.48	0.00	0.57	257.65	0.10	0 12:08	0 00:00	0.00	0.00
19	Jun-46	0.86	0.00	258.40	0.70	0.00	0.35	257.83	0.13	0 12:06	0 00:00	0.00	0.00
20	Jun-47	0.93	0.19	258.64	0.54	0.00	0.46	258.21	0.11	0 12:02	0 00:00	0.00	0.00
21	Jun-48	0.03	0.00	258.64	0.29	0.00	0.76	258.40	0.05	0 12:02	0 00:00	0.00	0.00
22	Jun-49	0.85	0.25	257.57	0.67	0.00	0.53	257.04	0.14	0 12:11	0 00:00	0.00	0.00
23	Jun-50	0.79	0.00	257.33	0.58	0.00	0.62	256.91	0.16	0 12:14	0 00:00	0.00	0.00
24	Jun-51	0.52	0.00	259.31	0.86	0.00	1.19	258.55	0.10	0 11:59	0 00:00	0.00	0.00
25	Jun-52	0.81	0.00	258.04	2.35	0.00	1.96	256.05	0.36	0 12:04	0 00:00	0.00	0.00
26	Jun-53	1.14	0.00	257.21	1.86	0.00	2.39	255.96	0.61	0 12:03	0 00:00	0.00	0.00
27	Jun-54	0.33	0.33	257.63	2.01	0.00	2.17	256.06	0.44	0 12:01	0 00:00	0.00	0.00
28	Jun-55	0.77	0.49	257.56	1.96	0.00	2.14	256.02	0.42	0 12:01	0 00:00	0.00	0.00
29	Jun-56	0.83	0.02	256.95	1.16	0.00	0.85	256.05	0.26	0 12:05	0 00:00	0.00	0.00
30	Jun-61	0.93	0.00	258.77	0.45	0.00	4.03	258.38	0.06	0 12:01	0 00:00	0.00	0.00
31	Jun-64	0.42	0.00	261.44	0.31	0.00	2.06	261.17	0.04	0 12:00	0 00:00	0.00	0.00
32	Jun-65	0.42	0.42	263.04	0.35	0.00	1.46	262.74	0.05	0 12:00	0 00:00	0.00	0.00
33	Jun-66	0.49	0.00	253.70	0.54	0.00	2.30	253.44	0.28	0 12:35	0 00:00	0.00	0.00
34	Jun-67	0.97	0.36	257.76	2.28	0.00	2.14	256.00	0.52	0 12:04	0 00:00	0.00	0.00
35	Jun-68	0.51	0.34	258.16	2.30	0.00	1.94	256.11	0.25	0 12:03	0 00:00	0.00	0.00
36	Jun-69	0.26	0.26	258.25	2.04	0.00	2.95	256.29	0.08	0 12:03	0 00:00	0.00	0.00
37	Jun-70	0.43	0.43	260.01	3.54	0.00	2.99	256.56	0.09	0 11:56	0 00:00	0.00	0.00
38	Jun-71	0.49	0.49	259.40	2.61	0.00	0.60	256.88	0.09	0 12:02	0 00:00	0.00	0.00
39	Jun-72	0.32	0.32	259.67	0.92	0.00	0.28	258.82	0.07	0 12:01	0 00:00	0.00	0.00
40	Jun-73	0.53	0.53	259.68	1.03	0.00	0.27	258.75	0.10	0 12:01	0 00:00	0.00	0.00
41	Jun-74	0.53	0.29	259.93	0.39	0.00	4.07	259.59	0.05	0 12:00	0 00:00	0.00	0.00
42	Jun-75	0.24	0.24	260.31	0.31	0.00	4.19	260.04	0.04	0 12:00	0 00:00	0.00	0.00
43	Jun-76	0.99	0.53	260.53	1.34	0.00	1.67	259.28	0.09	0 12:04	0 00:00	0.00	0.00
44	Jun-77	0.53	0.00	261.42	0.96	0.00	3.38	260.53	0.07	0 12:04	0 00:00	0.00	0.00
45	Jun-78	0.66	0.66	263.62	1.87	0.00	1.68	261.83	0.08	0 12:02	0 00:00	0.00	0.00
46	NorthWetland	0.28	0.28	252.00	0.00	0.00	6.00	252.00	0.00	0 00:00	0 00:00	0.00	0.00
47	OutletStructure	0.49	0.00	254.70	0.45	0.00	3.65	254.54	0.29	0 13:55	0 00:00	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)	Total Time Flooded (min)
48	Ravine_1	4.67	0.10	256.66	0.56	0.00	3.44	256.27	0.17	0 12:28	0 00:00	0.00	0.00
49	Ravine_2	4.91	0.27	253.67	0.67	0.00	3.43	253.25	0.25	0 12:32	0 00:00	0.00	0.00
50	Ravine_3	4.84	0.05	252.99	0.54	0.00	3.46	252.64	0.19	0 12:33	0 00:00	0.00	0.00
51	RH_1	3.41	3.41	271.57	3.97	0.00	0.13	268.33	0.73	0 12:01	0 00:00	0.00	0.00
52	RH_10	5.21	0.16	263.71	1.81	0.00	0.19	262.43	0.53	0 12:16	0 00:00	0.00	0.00
53	RH_11	4.54	0.05	262.43	2.10	0.00	0.12	260.90	0.57	0 12:26	0 00:00	0.00	0.00
54	RH_12	1.83	1.83	269.45	0.45	0.00	1.05	269.08	0.08	0 12:00	0 00:00	0.00	0.00
55	RH_13	1.91	0.13	264.63	0.63	0.00	1.87	264.14	0.14	0 12:01	0 00:00	0.00	0.00
56	RH_14	0.47	0.00	263.21	1.51	0.00	0.29	262.11	0.41	0 12:47	0 00:00	0.00	0.00
57	RH_15	0.55	0.12	260.72	1.34	0.00	0.28	259.78	0.40	0 13:12	0 00:00	0.00	0.00
58	RH_16	0.48	0.00	257.09	0.73	0.00	0.91	256.70	0.34	0 13:12	0 00:00	0.00	0.00
59	RH_17	1.33	0.28	257.57	1.15	0.00	0.43	256.96	0.54	0 12:30	0 00:00	0.00	0.00
60	RH_2	2.82	2.82	272.24	2.10	0.00	0.21	270.62	0.48	0 12:00	0 00:00	0.00	0.00
61	RH_3	5.85	0.00	269.91	2.84	0.00	0.59	267.76	0.69	0 12:06	0 00:00	0.00	0.00
62	RH_4	4.50	0.07	268.45	1.82	0.00	0.15	267.08	0.45	0 12:06	0 00:00	0.00	0.00
63	RH_5	1.32	1.32	271.87	1.52	0.00	0.23	270.66	0.31	0 12:02	0 00:00	0.00	0.00
64	RH_6	5.52	0.00	268.09	1.59	0.00	0.11	266.90	0.40	0 12:10	0 00:00	0.00	0.00
65	RH_7	0.00	0.00	272.00	0.00	0.00	1.50	272.00	0.00	0 00:00	0 00:00	0.00	0.00
66	RH_8	0.26	0.26	269.19	1.44	0.00	0.66	267.93	0.18	0 12:09	0 00:00	0.00	0.00
67	RH_9	0.20	0.06	265.50	1.50	0.00	0.30	264.25	0.25	0 12:30	0 00:00	0.00	0.00
68	WestOutfall	0.04	0.04	257.00	0.00	0.00	2.45	257.00	0.00	0 00:00	0 00:00	0.00	0.00
69	WestWetland	0.08	0.08	258.00	0.00	0.00	1.00	258.00	0.00	0 00:00	0 00:00	0.00	0.00

Channel Input

SN	Element ID	Length (m)	Inlet Invert Elevation (m)	Inlet Invert Offset (m)	Outlet Invert Elevation (m)	Outlet Invert Offset (m)	Total Drop (m)	Average Slope (%)	Shape	Height (m)	Width (m)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cms)	Flap Gate
1	Link-103	10.00	257.70	2.98	257.50	4.50	0.20	2.0000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
2	Link-104	50.00	257.50	1.71	256.50	3.50	1.00	2.0000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
3	Link-122	70.00	259.30	3.95	258.60	3.37	0.70	1.0000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
4	Link-123	90.00	259.40	3.80	259.30	3.95	0.10	0.1100	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
5	Link-124	90.00	259.50	3.88	259.40	3.80	0.10	0.1100	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
6	Link-125	50.00	259.65	1.00	258.70	0.60	0.95	1.9000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
7	Link-126	50.00	259.65	0.90	258.70	0.60	0.95	1.9000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
8	Link-127	100.00	259.60	4.12	259.50	3.88	0.10	0.1000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
9	Link-128	150.00	259.70	4.01	259.60	4.12	0.10	0.0700	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
10	Link-129	80.00	259.80	3.94	259.70	4.01	0.10	0.1300	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
11	Link-130	100.00	259.90	3.69	259.80	3.94	0.10	0.1000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
12	Link-131	70.00	259.40	2.61	259.30	3.95	0.10	0.1400	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
13	Link-132	150.00	265.00	3.25	264.50	4.04	0.50	0.3300	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
14	Link-133	150.00	264.50	4.04	261.90	2.71	2.60	1.7300	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
15	Link-134	250.00	261.90	2.71	257.70	2.98	4.20	1.6800	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
16	Link-135	100.00	262.50	4.18	261.00	5.71	1.50	1.5000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
17	Link-34	270.00	271.40	3.80	269.65	2.58	1.75	0.6500	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
18	Link-35	50.00	272.15	2.01	269.65	2.58	2.50	5.0000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
19	Link-36	222.00	269.65	2.58	268.30	1.67	1.35	0.6100	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
20	Link-37	18.00	268.30	1.67	267.90	1.40	0.40	2.2200	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
21	Link-38	227.00	271.80	1.45	267.90	1.40	3.90	1.7200	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
22	Link-39	415.00	267.90	1.40	263.50	1.60	4.40	1.0600	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
23	Link-41	180.00	269.55	1.80	265.50	1.50	4.05	2.2500	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
24	Link-42	155.00	265.50	1.50	263.50	1.60	2.00	1.2900	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
25	Link-43	140.00	263.50	1.60	262.25	1.92	1.25	0.8900	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
26	Link-44	470.00	262.25	1.92	258.00	1.90	4.25	0.9000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
27	Link-45	195.00	263.20	1.50	260.70	1.32	2.50	1.2800	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
28	Link-46	280.00	260.70	1.32	258.00	1.90	2.70	0.9600	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
29	Link-51	65.00	259.00	1.63	258.05	3.33	0.95	1.4600	Rectangular	0.300	10.000	0.0320	0.5000	0.5000	0.0000	0.00	No
30	Link-61	125.00	256.75	0.00	256.25	0.00	0.50	0.4000	User-Defined	1.000	9.000	0.0320	0.5000	0.5000	0.0000	0.00	No
31	Link-63	162.50	257.55	0.00	256.90	0.00	0.65	0.4000	User-Defined	1.000	9.000	0.0320	0.5000	0.5000	0.0000	0.00	No
32	Link-66	133.00	258.10	0.00	257.70	0.00	0.40	0.3000	User-Defined	1.000	9.000	0.0320	0.5000	0.5000	0.0000	0.00	No
33	Link-67	75.00	258.40	0.05	258.10	0.00	0.30	0.4000	User-Defined	1.000	9.000	0.0320	0.5000	0.5000	0.0000	0.00	No
34	Link-89	53.10	258.60	3.37	257.70	2.98	0.90	1.6900	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
35	Link-90	90.00	258.75	1.82	257.75	1.65	1.00	1.1100	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
36	Link-92	110.00	261.50	5.97	261.00	5.71	0.50	0.4500	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
37	Link-93	340.00	261.00	5.71	257.70	2.98	3.30	0.9700	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
38	Link-94	95.00	259.35	3.58	257.75	1.65	1.60	1.6800	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
39	LowerRavine	124.00	253.00	0.00	252.45	0.00	0.55	0.4400	Trapezoidal	4.000	17.000	0.0320	0.5000	0.5000	0.0000	0.00	No
40	OutletRavine	45.00	252.45	0.00	252.00	0.00	0.45	1.0000	Trapezoidal	4.000	17.000	0.0320	0.5000	0.5000	0.0000	0.00	No
41	RH_C1	215.00	269.00	0.00	264.00	0.00	5.00	2.3300	Trapezoidal	1.500	7.000	0.0320	0.5000	0.5000	0.0000	0.00	No
42	RH_C2	60.00	264.00	0.00	263.50	1.50	0.50	0.8300	Trapezoidal	1.500	7.000	0.0320	0.5000	0.5000	0.0000	0.00	No
43	UpperRavine	553.00	256.10	0.00	253.00	0.00	3.10	0.5600	Trapezoidal	4.000	17.000	0.0320	0.5000	0.5000	0.0000	0.00	No

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-103	0.00	0 00:00	11.65	0.00	0.00		0.00	0.00	0.00	0.00	
2	Link-104	0.00	0 00:00	11.65	0.00	0.00		0.00	0.00	0.00	0.00	
3	Link-122	0.00	0 00:00	8.24	0.00	0.00		0.00	0.00	0.00	0.00	
4	Link-123	0.00	0 00:00	2.75	0.00	0.00		0.00	0.00	0.00	0.00	
5	Link-124	0.00	0 00:00	2.75	0.00	0.00		0.00	0.00	0.00	0.00	
6	Link-125	0.17	0 12:01	11.36	0.02	0.38	2.19	0.02	0.08	0.00	0.01	
7	Link-126	0.07	0 12:01	11.36	0.01	0.26	3.21	0.01	0.04	0.00	0.01	
8	Link-127	0.00	0 00:00	2.61	0.00	0.00		0.00	0.00	0.00	0.00	
9	Link-128	0.00	0 00:00	2.13	0.00	0.00		0.00	0.00	0.00	0.00	
10	Link-129	0.00	0 00:00	2.91	0.00	0.00		0.00	0.00	0.00	0.00	
11	Link-130	0.00	0 00:00	2.61	0.00	0.00		0.00	0.00	0.00	0.00	
12	Link-131	0.00	0 12:02	3.11	0.00	0.00		0.00	0.00	0.00	0.00	
13	Link-132	0.00	0 00:00	4.76	0.00	0.00		0.00	0.00	0.00	0.00	
14	Link-133	0.00	0 00:00	10.85	0.00	0.00		0.00	0.00	0.00	0.00	
15	Link-134	0.00	0 00:00	10.68	0.00	0.00		0.00	0.00	0.00	0.00	
16	Link-135	0.00	0 00:00	10.09	0.00	0.00		0.00	0.00	0.00	0.00	
17	Link-34	2.67	0 12:01	6.63	0.40	0.71	6.34	0.21	0.69	0.00	0.02	
18	Link-35	2.60	0 12:00	18.43	0.14	1.10	0.76	0.17	0.55	0.00	0.08	
19	Link-36	3.79	0 12:06	6.43	0.59	0.92	4.02	0.20	0.69	0.00	0.07	
20	Link-37	3.52	0 12:06	12.28	0.29	1.20	0.25	0.16	0.54	0.00	0.04	
21	Link-38	1.03	0 12:02	10.80	0.10	0.70	5.40	0.12	0.41	0.00	0.03	
22	Link-39	4.05	0 12:11	8.48	0.48	1.06	6.53	0.19	0.65	0.00	0.06	
23	Link-41	0.00	0 00:00	12.36	0.00	0.00		0.00	0.00	0.00	0.00	
24	Link-42	0.00	0 12:30	9.36	0.00	0.00		0.11	0.35	0.00	0.00	
25	Link-43	3.74	0 12:16	7.79	0.48	1.03	2.27	0.18	0.61	0.00	0.12	
26	Link-44	2.78	0 12:26	7.84	0.35	0.92	8.51	0.15	0.50	0.00	0.11	
27	Link-45	0.05	0 12:49	9.33	0.00	0.19	17.11	0.01	0.04	0.00	0.02	
28	Link-46	0.04	0 13:12	8.09	0.00	0.16	29.17	0.01	0.04	0.00	0.07	
29	Link-51	0.77	0 12:00	4.89	0.16	0.82	1.32	0.09	0.31	0.00	0.03	
30	Link-61	0.76	0 12:15	4.86	0.16	0.68	3.06	0.50	0.50	0.00	0.33	
31	Link-63	0.74	0 12:08	4.86	0.15	0.47	5.76	0.57	0.57	0.00	0.22	
32	Link-66	0.86	0 12:02	4.22	0.20	0.53	4.18	0.61	0.61	0.00	0.22	
33	Link-67	0.03	0 12:00	4.86	0.01	0.08	15.63	0.38	0.39	0.00	0.00	
34	Link-89	0.00	0 00:00	10.73	0.00	0.00		0.00	0.00	0.00	0.00	
35	Link-90	0.00	0 12:01	8.69	0.00	0.00		0.07	0.24	0.00	0.00	
36	Link-92	0.00	0 00:00	5.56	0.00	0.00		0.00	0.00	0.00	0.00	
37	Link-93	0.00	0 00:00	8.12	0.00	0.00		0.00	0.00	0.00	0.00	
38	Link-94	0.00	0 00:00	10.69	0.00	0.00		0.07	0.24	0.00	0.00	
39	LowerRavine	4.82	0 12:33	157.98	0.03	1.35	1.53	0.60	0.15	0.00	0.49	
40	OutletRavine	4.84	0 12:33	237.22	0.02	1.73	0.43	0.49	0.12	0.00	0.75	
41	RH_C1	1.78	0 12:00	24.20	0.07	1.63	2.20	0.53	0.36	0.00	0.54	
42	RH_C2	1.80	0 12:01	14.49	0.12	1.50	0.67	0.54	0.38	0.00	0.61	
43	UpperRavine	4.61	0 12:28	177.61	0.03	1.30	7.09	0.61	0.15	0.00	0.37	

Pipe Input

SN	Element ID	Length (m)	Inlet Invert Elevation (m)	Inlet Invert Offset (m)	Outlet Invert Elevation (m)	Outlet Invert Offset (m)	Total Drop (m)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (m)	Pipe Width (m)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cms)	Flap Gate
1	Ex.STM_1	107.00	257.37	0.00	256.94	0.00	0.43	0.4000	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
2	Ex.STM_2	73.00	256.94	0.00	256.64	0.00	0.30	0.4100	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
3	Ex.STM_3	27.00	256.64	0.00	256.48	0.00	0.16	0.5900	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
4	Ex.STM_4	100.00	256.48	0.00	255.88	0.00	0.60	0.6000	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
5	Ex.STM_5	100.00	255.88	0.00	255.48	0.00	0.40	0.4000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
6	Ex.STM_6	50.00	255.48	0.00	255.23	0.00	0.25	0.5000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
7	Ex.STM_7	102.00	255.23	0.00	254.82	0.00	0.41	0.4000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
8	Link-106	24.80	253.16	0.00	252.85	-0.15	0.31	1.2500	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
9	Link-107	93.20	254.35	0.10	253.20	0.04	1.15	1.2300	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
10	Link-108	110.30	255.48	0.00	255.37	0.08	0.11	0.1000	CIRCULAR	1.200	1.200	0.0130	0.5000	0.5000	0.0000	0.00	No
11	Link-109	30.00	257.70	0.00	257.55	0.00	0.15	0.5000	CIRCULAR	1.050	1.050	0.0130	0.5000	0.5000	0.0000	0.00	No
12	Link-110	153.00	255.69	0.00	255.48	0.00	0.21	0.1400	CIRCULAR	0.900	0.900	0.0130	0.5000	0.5000	0.0000	0.00	No
13	Link-111	66.80	255.86	0.00	255.77	0.08	0.09	0.1300	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
14	Link-112	106.60	256.21	0.00	255.91	0.05	0.30	0.2800	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
15	Link-113	97.50	256.47	0.00	255.88	0.19	0.59	0.6100	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
16	Link-114	85.10	256.79	0.00	255.73	0.38	1.06	1.2500	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
17	Link-115	50.00	258.65	0.00	258.50	0.05	0.15	0.3000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
18	Link-116	50.00	258.75	0.00	258.55	0.10	0.20	0.4000	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
19	Link-117	90.00	259.54	0.00	258.37	0.05	1.17	1.3000	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
20	Link-118	41.60	260.00	0.00	259.56	0.02	0.44	1.0600	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
21	Link-119	181.70	259.19	0.00	256.08	0.29	3.11	1.7100	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
22	Link-120	140.50	260.46	0.00	259.24	0.05	1.22	0.8700	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
23	Link-121	152.20	261.75	0.00	260.51	0.05	1.24	0.8100	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
24	Link-49	20.70	254.62	0.00	254.60	1.60	0.02	0.1000	CIRCULAR	1.800	1.800	0.0130	0.5000	0.5000	0.0000	0.00	No
25	Link-50	75.20	254.70	0.00	254.60	1.60	0.10	0.1300	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
26	Link-52	35.00	254.72	0.00	254.67	0.05	0.05	0.1400	CIRCULAR	1.650	1.650	0.0130	0.5000	0.5000	0.0000	0.00	No
27	Link-53	336.90	255.29	0.00	254.74	0.02	0.55	0.1600	CIRCULAR	1.350	1.350	0.0130	0.5000	0.5000	0.0000	0.00	No
28	Link-54	110.00	255.53	0.00	255.31	0.02	0.22	0.2000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
29	Link-56	110.00	255.77	0.00	255.55	0.02	0.22	0.2000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
30	Link-57	95.50	256.10	0.00	255.85	0.08	0.25	0.2600	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
31	Link-58	90.00	256.93	0.00	256.25	0.15	0.68	0.7600	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
32	Link-59	53.10	255.23	0.00	255.13	0.41	0.10	0.1900	CIRCULAR	1.500	1.500	0.0130	0.5000	0.5000	0.0000	0.00	No
33	Link-60	13.40	256.25	0.00	255.84	0.61	0.41	3.0600	CIRCULAR	1.500	1.500	0.0130	0.5000	0.5000	0.0000	0.00	No
34	Link-62	25.00	256.90	0.00	256.75	0.00	0.15	0.6000	CIRCULAR	1.200	1.200	0.0130	0.5000	0.5000	0.0000	0.00	No
35	Link-68	60.00	258.45	0.00	258.20	0.10	0.25	0.4200	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
36	Link-70	57.00	255.35	0.00	255.25	0.02	0.10	0.1800	CIRCULAR	0.820	0.820	0.0130	0.5000	0.5000	0.0000	0.00	No
37	Link-71	82.00	255.60	0.00	255.43	0.08	0.17	0.2100	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
38	Link-72	85.00	255.79	0.17	255.62	0.02	0.17	0.2000	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
39	Link-73	67.80	255.78	-0.01	255.10	0.38	0.68	1.0000	CIRCULAR	0.900	0.900	0.0130	0.5000	0.5000	0.0000	0.00	No
40	Link-80	89.90	258.32	0.00	255.97	0.68	2.35	2.6100	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
41	Link-81	93.20	261.13	0.00	259.27	0.95	1.86	2.0000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
42	Link-82	103.90	262.69	0.00	261.13	0.00	1.56	1.5000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
43	RH_A1	50.00	270.14	0.00	268.50	1.43	1.64	3.2800	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
44	RH_B1	227.00	270.35	0.00	266.50	0.00	3.85	1.7000	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
45	RH_C3	15.00	262.00	0.00	261.70	0.00	0.30	2.0000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
46	RH_C4	195.00	261.70	0.00	259.38	0.00	2.32	1.1900	CIRCULAR	0.530	0.530	0.0150	0.5000	0.5000	0.0000	0.00	No
47	RH_C5	274.00	259.38	0.00	256.36	0.00	3.02	1.1000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
48	RH_C6	6.00	256.36	0.00	256.24	0.14	0.12	2.0000	CIRCULAR	0.700	0.700	0.0130	0.5000	0.5000	0.0000	0.00	No

Pipe Input

SN	Element ID	Length (m)	Inlet Invert Elevation (m)	Inlet Invert Offset (m)	Outlet Invert Elevation (m)	Outlet Invert Offset (m)	Total Drop (m)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (m)	Pipe Width (m)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cms)	Flap Gate
49	RH_D1	275.00	272.00	0.00	267.75	0.00	4.25	1.5500	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
50	RH_D2	180.00	267.75	0.00	264.00	0.00	3.75	2.0800	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
51	RH_D3	155.00	264.00	0.00	261.90	0.00	2.10	1.3500	CIRCULAR	0.380	0.380	0.0130	0.5000	0.5000	0.0000	0.00	No
52	RH_M1	270.00	267.60	0.00	267.07	0.00	0.53	0.2000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
53	RH_M2	222.00	267.07	0.00	266.63	0.00	0.44	0.2000	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
54	RH_M3	18.00	266.63	0.00	266.50	0.00	0.13	0.7200	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
55	RH_M4	415.00	266.50	0.00	261.90	0.00	4.60	1.1100	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
56	RH_M5	140.00	261.90	0.00	260.33	0.00	1.57	1.1200	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
57	RH_M6	464.00	260.33	0.00	256.42	0.00	3.91	0.8400	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
58	RH_M7	6.00	256.42	0.00	256.37	0.27	0.05	0.8300	CIRCULAR	1.000	1.000	0.0130	0.5000	0.5000	0.0000	0.00	No
59	West_Link	33.73	256.00	-1.00	257.00	0.00	-1.00	-2.9600	Dummy	0.000	0.000	0.0130	0.5000	0.5000	0.0000	0.00	No
60	WestWetland_Link	37.13	258.00	0.00	258.00	0.00	0.00	0.0000	Dummy	0.000	0.000	0.0130	0.5000	0.5000	0.0000	0.00	No
61	Wetland_Link	41.51	252.00	0.00	252.00	0.00	0.00	0.0000	Dummy	0.000	0.000	0.0130	0.5000	0.5000	0.0000	0.00	No

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	Ex.STM_1	0.25	0 12:00	0.18	1.37	1.56	1.14	0.45	1.00	53.00	0.74	SURCHARGED
2	Ex.STM_2	0.25	0 12:00	0.18	1.36	1.56	0.78	0.45	1.00	49.00	0.78	SURCHARGED
3	Ex.STM_3	0.25	0 12:00	0.22	1.13	1.56	0.29	0.45	1.00	45.00	0.89	SURCHARGED
4	Ex.STM_4	0.25	0 12:00	0.22	1.12	1.58	1.05	0.45	0.99	0.00	0.90	> CAPACITY
5	Ex.STM_5	0.25	0 12:01	0.27	0.91	1.32	1.26	0.43	0.83	0.00	0.82	Calculated
6	Ex.STM_6	0.25	0 12:02	0.30	0.81	1.40	0.60	0.40	0.77	0.00	0.85	Calculated
7	Ex.STM_7	0.25	0 12:03	0.39	0.64	1.44	1.18	0.35	0.59	0.00	0.88	Calculated
8	Link-106	0.49	0 13:55	0.89	0.55	1.71	0.24	0.61	0.81	0.00	1.06	Calculated
9	Link-107	0.49	0 13:54	1.24	0.40	1.98	0.78	0.42	0.56	0.00	1.36	Calculated
10	Link-108	0.93	0 12:06	1.23	0.76	0.82	2.24	1.20	1.00	18.00	0.12	SURCHARGED
11	Link-109	0.76	0 12:06	1.93	0.39	1.51	0.33	0.58	0.56	0.00	0.53	Calculated
12	Link-110	0.69	0 12:03	0.67	1.02	1.08	2.36	0.90	1.00	21.00	0.11	SURCHARGED
13	Link-111	0.41	0 12:01	0.41	1.01	0.93	1.20	0.75	1.00	21.00	0.18	SURCHARGED
14	Link-112	0.18	0 12:00	0.33	0.57	0.72	2.47	0.60	1.00	18.00	0.24	SURCHARGED
15	Link-113	0.43	0 12:00	0.33	1.28	1.98	0.82	0.52	1.00	18.00	0.40	SURCHARGED
16	Link-114	0.43	0 12:00	0.32	1.36	2.72	0.52	0.45	1.00	17.00	0.52	SURCHARGED
17	Link-115	0.35	0 12:08	0.24	1.47	1.60	0.52	0.52	1.00	16.00	0.73	SURCHARGED
18	Link-116	0.21	0 12:02	0.18	1.16	1.31	0.64	0.45	1.00	16.00	0.78	SURCHARGED
19	Link-117	0.53	0 12:00	0.96	0.55	2.52	0.60	0.38	0.58	0.00	1.38	Calculated
20	Link-118	0.24	0 12:00	0.44	0.54	1.58	0.44	0.34	0.66	0.00	1.14	Calculated
21	Link-119	0.81	0 12:00	0.80	1.01	3.05	0.99	0.60	1.00	11.00	1.51	SURCHARGED
22	Link-120	0.46	0 11:59	0.57	0.81	1.93	1.21	0.60	1.00	8.00	1.15	SURCHARGED
23	Link-121	0.53	0 12:01	0.39	1.36	2.44	1.04	0.52	1.00	7.00	1.11	SURCHARGED
24	Link-49	5.45	0 12:05	3.57	1.52	2.55	0.14	1.67	0.93	0.00	0.17	> CAPACITY
25	Link-50	0.51	0 12:00	0.22	2.29	1.82	0.69	0.60	1.00	2166.00	0.05	SURCHARGED
26	Link-52	5.45	0 12:05	3.45	1.58	2.55	0.23	1.63	0.99	0.00	0.17	> CAPACITY
27	Link-53	2.58	0 12:03	2.16	1.20	1.80	3.12	1.35	1.00	18.00	0.12	SURCHARGED
28	Link-54	0.72	0 12:00	0.27	2.63	2.55	0.72	0.60	1.00	412.00	0.12	SURCHARGED
29	Link-56	0.28	0 12:00	0.27	1.00	0.98	1.87	0.60	1.00	54.00	0.06	SURCHARGED
30	Link-57	0.31	0 12:02	0.15	2.14	1.96	0.81	0.45	1.00	51.00	0.21	SURCHARGED
31	Link-58	0.10	0 12:01	0.08	1.13	1.34	1.12	0.30	1.00	46.00	0.96	SURCHARGED
32	Link-59	1.68	0 12:08	3.07	0.55	1.17	0.76	1.50	1.00	6.00	0.18	SURCHARGED
33	Link-60	0.93	0 12:08	12.37	0.08	2.32	0.10	0.75	0.50	0.00	0.85	Calculated
34	Link-62	0.79	0 12:11	3.02	0.26	1.60	0.26	0.61	0.51	0.00	0.39	Calculated
35	Link-68	0.52	0 12:01	0.40	1.31	1.95	0.51	0.54	0.89	0.00	0.85	> CAPACITY
36	Link-70	1.09	0 12:01	0.60	1.81	2.03	0.47	0.82	1.00	316.00	0.13	SURCHARGED
37	Link-71	0.71	0 12:00	0.51	1.40	1.61	0.85	0.75	1.00	23.00	0.16	SURCHARGED
38	Link-72	0.29	0 12:00	0.50	0.59	0.66	2.15	0.75	1.00	18.00	0.11	SURCHARGED
39	Link-73	0.83	0 12:07	1.83	0.45	1.54	0.73	0.90	1.00	11.00	0.32	SURCHARGED
40	Link-80	0.91	0 12:00	1.80	0.51	3.30	0.45	0.58	0.80	0.00	1.03	Calculated
41	Link-81	0.41	0 12:00	0.87	0.47	2.87	0.54	0.30	0.50	0.00	1.61	Calculated
42	Link-82	0.42	0 12:00	0.75	0.55	2.61	0.66	0.33	0.55	0.00	1.47	Calculated
43	RH_A1	0.23	0 11:45	0.18	1.31	3.26	0.26	0.30	1.00	208.00	1.67	SURCHARGED
44	RH_B1	0.14	0 11:44	0.13	1.10	1.96	1.93	0.30	1.00	161.00	0.66	SURCHARGED
45	RH_C3	0.47	0 11:58	0.87	0.54	1.91	0.13	0.60	1.00	218.00	1.03	SURCHARGED
46	RH_C4	0.43	0 11:58	0.41	1.04	2.10	1.55	0.52	1.00	241.00	0.95	SURCHARGED
47	RH_C5	0.48	0 13:12	0.45	1.06	2.21	2.07	0.52	1.00	247.00	0.72	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)		
48	RH_C6	0.48	0 13:12	1.31	0.36	1.64	0.06	0.56	0.80	0.00	0.97	Calculated
49	RH_D1	0.00	0 00:00	0.12	0.00	0.00		0.15	0.50	0.00	0.00	Calculated
50	RH_D2	0.15	0 11:56	0.14	1.05	2.14	1.40	0.30	1.00	97.00	1.24	SURCHARGED
51	RH_D3	0.19	0 12:48	0.20	0.91	1.69	1.53	0.38	1.00	148.00	0.37	SURCHARGED
52	RH_M1	0.51	0 11:47	0.27	1.85	1.78	2.53	0.60	1.00	185.00	0.32	SURCHARGED
53	RH_M2	0.80	0 11:48	0.37	2.13	2.23	1.66	0.68	1.00	158.00	0.55	SURCHARGED
54	RH_M3	1.05	0 11:59	0.95	1.11	2.37	0.13	0.75	1.00	151.00	0.84	SURCHARGED
55	RH_M4	0.91	0 11:49	0.89	1.03	2.61	2.65	0.68	1.00	153.00	1.03	SURCHARGED
56	RH_M5	1.04	0 11:58	0.89	1.17	2.92	0.80	0.68	1.00	198.00	1.08	SURCHARGED
57	RH_M6	1.10	0 12:25	1.02	1.08	2.49	3.11	0.75	1.00	195.00	0.56	SURCHARGED
58	RH_M7	1.33	0 12:30	2.19	0.61	2.02	0.05	0.78	0.78	0.00	0.80	Calculated
59	West_Link	0.04	0 12:00	0.00	0.03	0.00		0.61	0.15	0.00	0.37	Calculated
60	WestWetland_Link	0.08	0 11:59	0.00	0.03	0.00		0.61	0.15	0.00	0.37	Calculated
61	Wetland_Link	0.28	0 12:00	0.00	0.03	0.00		0.61	0.15	0.00	0.37	Calculated

Project Description

File Name	18010_Post-Development Rev.1.SPF
Description	I:\ACAD Projects\2018\18010\03-Ref\18010_Pre-Dev. Storm Parcels.dwg I:\ACAD Projects\2018\18010\03-Ref\18010_Pre-Dev. Storm Parcels.dwg I:\ACAD Projects\2018\18010\03-Ref\18010_Post-Dev.Storm Parcels.dwg I:\ACAD Projects\2018\18010\03-Ref\18010_Post-Dev.Storm Parcels.dwg

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	YES

Analysis Options

Start Analysis On	00:00:00	0:00:00
End Analysis On	00:00:00	0:00:00
Start Reporting On	00:00:00	0:00:00
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	60
Nodes	77
Junctions	69
Outfalls	5
Flow Diversions	0
Inlets	0
Storage Nodes	3
Links	110
Channels	43
Pipes	61
Pumps	0
Orifices	1
Weirs	5
Outlets	0
Pollutants	0
Land Uses	0

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	{Survey Site}.Standard : 10	0.92	2.00	67.00	2.0000	125.00	0.0130	0.2000	92.69	56.7980	34.66	31.82	0.06	0 01:05:16
2	{Survey Site}.Standard : 11	21.38	2.00	67.00	2.0000	360.00	0.0130	0.2000	92.69	54.1530	38.88	831.21	0.37	0 03:48:45
3	{Survey Site}.Standard : 12	0.71	5.00	67.00	2.0000	90.00	0.0130	0.2000	92.69	55.0860	36.37	25.82	0.05	0 01:06:52
4	{Survey Site}.Standard : 13	1.65	45.00	71.05	2.0000	220.00	0.0130	0.2000	92.69	29.3150	62.13	102.38	0.38	0 00:46:42
5	{Survey Site}.Standard : 14	4.32	2.00	67.00	2.0000	350.00	0.0130	0.2000	92.69	57.1560	34.29	148.15	0.19	0 01:29:07
6	{Survey Site}.Standard : 17	0.36	5.00	67.00	5.0000	20.00	0.0130	0.2000	92.69	55.2990	36.13	12.86	0.02	0 01:22:46
7	{Survey Site}.Standard : 18	13.10	5.00	48.00	10.0000	300.00	0.0130	0.2000	92.69	71.0670	20.36	266.63	0.32	0 01:55:10
8	{Survey Site}.Standard : 19	1.16	55.00	78.40	2.0000	90.00	0.0130	0.2000	92.69	19.9550	71.52	82.97	0.31	0 00:57:20
9	{Survey Site}.Standard : 2	20.86	45.00	71.05	2.0000	300.00	0.0130	0.2000	92.69	30.4220	60.99	1272.45	3.24	0 02:57:49
10	{Survey Site}.Standard : 23	2.20	5.00	48.00	10.0000	100.00	0.0130	0.2000	92.69	70.4790	20.95	46.04	0.06	0 01:16:18
11	{Survey Site}.Standard : 26	1.12	45.00	71.05	2.0000	40.00	0.0130	0.2000	92.69	29.7710	61.69	69.33	0.21	0 01:43:14
12	{Survey Site}.Standard : 27	0.37	45.00	71.05	2.0000	60.00	0.0130	0.2000	92.69	29.2760	62.16	23.00	0.09	0 00:41:33
13	{Survey Site}.Standard : 28	0.12	45.00	71.05	2.0000	40.00	0.0130	0.2000	92.69	29.1590	62.24	7.66	0.03	0 00:27:22
14	{Survey Site}.Standard : 29	7.86	45.00	71.05	2.0000	110.00	0.0130	0.2000	92.69	30.4480	60.96	479.27	1.21	0 03:00:45
15	{Survey Site}.Standard : 3	25.14	45.00	71.05	2.0000	370.00	0.0130	0.2000	92.69	30.3960	61.01	1533.78	3.93	0 02:55:21
16	{Survey Site}.Standard : 30	20.00	30.00	63.70	2.0000	225.00	0.0130	0.2000	92.69	44.9310	46.50	929.81	2.10	0 03:58:04
17	{Survey Site}.Standard : 31	5.54	5.00	57.00	2.0000	245.00	0.0130	0.2000	92.69	64.7790	26.66	147.80	0.16	0 02:05:50
18	{Survey Site}.Standard : 32	3.34	2.00	67.00	2.0000	95.00	0.0130	0.2000	92.69	58.3930	33.05	110.21	0.07	0 02:46:51
19	{Survey Site}.Standard : 33	7.71	2.00	67.00	2.0000	215.00	0.0130	0.2000	92.69	58.4210	33.01	254.38	0.16	0 02:48:57
20	{Survey Site}.Standard : 4	3.13	2.00	67.00	2.0000	155.00	0.0130	0.2000	92.69	57.6230	33.81	105.87	0.10	0 01:59:46
21	{Survey Site}.Standard : 46	5.31	2.00	67.00	2.0000	200.00	0.0130	0.2000	92.69	57.9530	33.47	177.86	0.13	0 02:21:10
22	{Survey Site}.Standard : 5	10.46	45.00	71.05	0.5000	235.00	0.0130	0.2000	92.69	30.6300	60.71	634.99	1.52	0 03:26:12
23	{Survey Site}.Standard : 51	0.39	95.00	95.55	0.5000	20.00	0.0130	0.2000	92.69	0.5400	90.66	34.90	0.12	0 00:33:34
24	{Survey Site}.Standard : 52	10.94	2.00	36.00	0.5000	240.00	0.0130	0.2000	92.69	77.1770	11.87	129.81	0.09	0 04:55:49
25	{Survey Site}.Standard : 53	0.36	75.00	85.75	3.0000	20.00	0.0130	0.2000	92.69	7.8480	83.20	30.28	0.12	0 00:43:53
26	{Survey Site}.Standard : 54	3.94	75.00	85.75	2.0000	150.00	0.0130	0.2000	92.69	7.8480	83.11	327.37	1.19	0 01:01:45
27	{Survey Site}.Standard : 57	0.42	20.00	58.80	2.0000	125.00	0.0130	0.2000	92.69	52.2000	39.24	16.60	0.06	0 00:36:18
28	{Survey Site}.Standard : 6	11.54	2.00	67.00	2.0000	280.00	0.0130	0.2000	92.69	58.6680	32.76	378.10	0.22	0 03:03:44
29	{Survey Site}.Standard : 63	1.63	55.00	75.95	2.0000	90.00	0.0130	0.2000	92.69	21.4850	69.99	114.01	0.40	0 01:10:17
30	{Survey Site}.Standard : 65	1.71	55.00	75.95	2.0000	130.00	0.0130	0.2000	92.69	21.4110	70.07	119.75	0.44	0 00:58:01
31	{Survey Site}.Standard : 68	1.31	55.00	75.95	2.0000	90.00	0.0130	0.2000	92.69	21.4360	70.05	91.90	0.33	0 01:01:44
32	{Survey Site}.Standard : 69	2.53	55.00	75.95	0.5000	85.00	0.0130	0.2000	92.69	21.7500	69.45	175.44	0.48	0 02:23:28
33	{Survey Site}.Standard : 7	10.98	5.00	67.00	2.0000	225.00	0.0130	0.2000	92.69	57.1390	34.29	376.37	0.32	0 03:19:30
34	{Survey Site}.Standard : 71	0.41	75.00	85.75	0.5000	20.00	0.0130	0.2000	92.69	7.8480	83.02	33.87	0.11	0 01:20:27
35	{Survey Site}.Standard : 72	1.08	55.00	75.95	2.0000	75.00	0.0130	0.2000	92.69	21.4270	70.05	75.30	0.27	0 01:01:06
36	{Survey Site}.Standard : 73	1.04	5.00	51.45	1.5000	65.00	0.0130	0.2000	92.69	68.6670	22.76	23.58	0.03	0 01:51:10
37	{Survey Site}.Standard : 74	2.88	55.00	75.95	2.0000	70.00	0.0130	0.2000	92.69	21.7500	69.67	200.64	0.60	0 01:55:03
38	{Survey Site}.Standard : 75	0.35	5.00	51.45	0.5000	35.00	0.0130	0.2000	92.69	68.7510	22.67	7.98	0.01	0 01:57:15
39	{Survey Site}.Standard : 76	0.87	5.00	51.45	25.0000	150.00	0.0130	0.2000	92.69	67.4070	24.07	21.03	0.07	0 00:26:08
40	{Survey Site}.Standard : 77	2.26	95.00	49.00	2.0000	250.00	0.0130	0.2000	92.69	3.6270	87.87	198.23	0.83	0 00:14:03
41	{Survey Site}.Standard : 78	2.38	55.00	75.95	3.0000	75.00	0.0130	0.2000	92.69	20.2670	79.11	188.59	0.59	0 01:27:16
42	{Survey Site}.Standard : 79	0.19	5.00	51.45	2.0000	25.00	0.0130	0.2000	92.69	67.9530	23.48	4.34	0.01	0 01:04:21
43	{Survey Site}.Standard : 8	3.30	2.00	67.00	2.0000	125.00	0.0130	0.2000	92.69	57.9530	33.48	110.61	0.08	0 02:20:44
44	{Survey Site}.Standard : 80	0.72	2.00	48.00	10.0000	55.00	0.0130	0.2000	92.69	71.2080	22.56	16.24	0.02	0 00:56:58
45	{Survey Site}.Standard : 81	1.46	35.00	66.15	2.0000	55.00	0.0130	0.2000	92.69	38.6910	52.77	77.15	0.22	0 01:50:22
46	{Survey Site}.Standard : 82	1.98	35.00	66.15	2.0000	55.00	0.0130	0.2000	92.69	38.9170	52.54	103.86	0.28	0 02:12:17
47	{Survey Site}.Standard : 83	1.98	55.00	75.95	2.0000	75.00	0.0130	0.2000	92.69	22.2060	102.50	203.25	0.56	0 01:28:14

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)
48	{Survey Site}.Standard : 84	1.00	55.00	75.95	2.0000	50.00	0.0130	0.2000	92.69	21.5100	69.96	70.24	0.24	0 01:14:48
49	{Survey Site}.Standard : 85	1.78	55.00	75.95	2.0000	70.00	0.0130	0.2000	92.69	21.5840	69.88	124.59	0.41	0 01:26:17
50	{Survey Site}.Standard : 86	1.43	55.00	75.95	2.0000	100.00	0.0130	0.2000	92.69	21.4270	70.05	99.82	0.36	0 01:00:54
51	{Survey Site}.Standard : 87	2.66	55.00	75.95	2.0000	100.00	0.0130	0.2000	92.69	21.6010	69.86	185.62	0.61	0 01:28:30
52	{Survey Site}.Standard : 88	1.64	55.00	75.95	2.0000	75.00	0.0130	0.2000	92.69	21.5350	69.93	114.55	0.39	0 01:18:40
53	{Survey Site}.Standard : 89	1.11	55.00	75.95	2.0000	100.00	0.0130	0.2000	92.69	21.3780	70.10	78.02	0.29	0 00:52:30
54	{Survey Site}.Standard : 9	3.53	2.00	67.00	2.0000	100.00	0.0130	0.2000	92.69	58.3930	33.03	116.68	0.07	0 02:47:28
55	{Survey Site}.Standard : 90	1.22	65.00	80.85	2.0000	130.00	0.0130	0.2000	92.69	14.0930	77.64	94.33	0.39	0 00:40:39
56	{Survey Site}.Standard : 91	1.00	65.00	80.85	2.0000	130.00	0.0130	0.2000	92.69	14.0930	77.25	77.02	0.32	0 00:36:06
57	{Survey Site}.Standard : 92	2.19	55.00	75.95	2.0000	75.00	0.0130	0.2000	92.69	21.6260	69.82	153.12	0.49	0 01:33:44
58	{Survey Site}.Standard : 93	2.28	20.00	58.80	5.0000	525.00	0.0130	0.2000	92.69	52.1410	39.29	89.43	0.32	0 00:31:59
59	Sub-01	0.13	55.00	75.95	2.0000	40.00	0.0130	0.2000	92.69	21.2120	70.19	9.12	0.04	0 00:25:05
60	Sub-02	0.18	55.00	75.95	2.0000	30.00	0.0130	0.2000	92.69	21.2790	70.17	12.63	0.05	0 00:36:14

Node Summary

SN	Element ID	Element Type	Invert Elevation (m)	Ground/Rim (Max) Elevation (m)	Initial Water Elevation (m)	Surcharge Elevation (m)	Ponded Area (m²)	Peak Inflow (cms)	Max HGL Elevation Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ha-mm)	Total Time Flooded (min)
1	Ex_MHR1	Junction	255.88	262.50	0.00	0.00	0.00	0.25	256.32	0.00	6.18	0 00:00	0.00	0.00
2	Ex_MHR2	Junction	255.48	259.65	0.00	0.00	0.00	0.25	255.91	0.00	3.74	0 00:00	0.00	0.00
3	Ex_MHR25	Junction	256.48	263.35	0.00	0.00	0.00	0.25	257.53	0.00	5.82	0 00:00	0.00	0.00
4	Ex_MHR26	Junction	256.64	262.75	0.00	0.00	0.00	0.25	257.86	0.00	4.89	0 00:00	0.00	0.00
5	Ex_MHR27	Junction	256.94	261.00	0.00	0.00	0.00	0.25	258.27	0.00	2.73	0 00:00	0.00	0.00
6	Ex_MHR28	Junction	257.37	259.30	0.00	0.00	0.00	1.21	259.11	0.00	0.19	0 00:00	0.00	0.00
7	Ex_MHR3	Junction	255.23	259.00	0.00	0.00	0.00	0.25	255.61	0.00	3.39	0 00:00	0.00	0.00
8	Jun-34	Junction	254.62	258.25	0.00	0.00	0.00	5.95	256.42	0.00	1.83	0 00:00	0.00	0.00
9	Jun-35	Junction	254.70	257.50	0.00	0.00	0.00	0.59	256.43	0.00	1.07	0 00:00	0.00	0.00
10	Jun-36	Junction	254.72	258.00	0.00	0.00	0.00	5.96	256.92	0.00	1.43	0 00:00	0.00	0.00
11	Jun-37	Junction	255.29	261.30	0.00	0.00	0.00	3.20	258.09	0.00	3.21	0 00:00	0.00	0.00
12	Jun-38	Junction	255.53	261.80	0.00	0.00	0.00	1.30	259.95	0.00	1.85	0 00:00	0.00	0.00
13	Jun-39	Junction	256.93	259.05	0.00	0.00	0.00	0.12	258.75	0.00	0.30	0 00:00	0.00	0.00
14	Jun-40	Junction	256.10	258.55	0.00	0.00	0.00	0.53	257.96	0.00	0.59	0 00:00	0.00	0.00
15	Jun-41	Junction	255.77	259.65	0.00	0.00	0.00	0.51	259.37	0.00	0.28	0 00:00	0.00	0.00
16	Jun-42	Junction	255.23	258.90	0.00	0.00	0.00	1.88	257.00	0.00	1.90	0 00:00	0.00	0.00
17	Jun-43	Junction	256.25	257.25	0.00	0.00	0.00	0.90	257.01	0.00	0.74	0 00:00	0.00	0.00
18	Jun-44	Junction	257.55	258.55	0.00	0.00	0.00	0.87	258.06	0.00	0.54	0 00:00	0.00	0.00
19	Jun-46	Junction	257.70	258.70	0.00	258.70	0.00	0.99	258.47	0.00	0.28	0 00:00	0.00	0.00
20	Jun-47	Junction	258.10	259.10	0.00	0.00	0.00	1.10	258.67	0.00	0.43	0 00:00	0.00	0.00
21	Jun-48	Junction	258.35	259.35	0.00	0.00	0.00	0.04	258.67	0.00	0.73	0 00:00	0.00	0.00
22	Jun-49	Junction	256.90	257.90	0.00	0.00	0.00	0.98	257.63	0.00	0.47	0 00:00	0.00	0.00
23	Jun-50	Junction	256.75	257.75	0.00	0.00	0.00	0.91	257.31	0.00	0.64	0 00:00	0.00	0.00
24	Jun-51	Junction	258.45	260.50	0.00	0.00	0.00	0.52	259.32	0.00	1.18	0 00:00	0.00	0.00
25	Jun-52	Junction	255.69	260.00	0.00	0.00	0.00	0.96	258.59	0.00	1.41	0 00:00	0.00	0.00
26	Jun-53	Junction	255.35	259.60	0.00	0.00	0.00	1.24	257.48	0.00	2.12	0 00:00	0.00	0.00
27	Jun-54	Junction	255.62	259.80	0.00	0.00	0.00	0.39	258.08	0.00	1.72	0 00:00	0.00	0.00
28	Jun-55	Junction	255.60	259.70	0.00	0.00	0.00	0.90	257.99	0.00	1.71	0 00:00	0.00	0.00
29	Jun-56	Junction	255.79	257.80	0.00	0.00	0.00	0.88	257.18	0.00	0.62	0 00:00	0.00	0.00
30	Jun-61	Junction	258.32	262.00	0.00	0.00	0.00	1.08	258.89	0.00	3.91	0 00:00	0.00	0.00
31	Jun-64	Junction	261.13	263.50	0.00	0.00	0.00	0.48	261.48	0.00	2.02	0 00:00	0.00	0.00
32	Jun-65	Junction	262.69	264.50	0.00	0.00	0.00	0.48	263.07	0.00	1.43	0 00:00	0.00	0.00
33	Jun-66	Junction	253.16	256.00	0.00	0.00	0.00	0.75	253.91	0.00	2.09	0 00:00	0.00	0.00
34	Jun-67	Junction	255.48	259.90	0.00	0.00	0.00	1.13	258.22	0.00	1.68	0 00:00	0.00	0.00
35	Jun-68	Junction	255.86	260.10	0.00	0.00	0.00	0.60	258.75	0.00	1.35	0 00:00	0.00	0.00
36	Jun-69	Junction	256.21	261.20	0.00	0.00	0.00	0.29	258.87	0.00	2.33	0 00:00	0.00	0.00
37	Jun-70	Junction	256.47	263.00	0.00	0.00	0.00	0.49	260.24	0.00	2.76	0 00:00	0.00	0.00
38	Jun-71	Junction	256.79	260.00	0.00	0.00	0.00	0.56	259.42	0.00	0.58	0 00:00	0.00	0.00
39	Jun-72	Junction	258.75	259.95	0.00	0.00	0.00	0.36	259.67	0.00	0.28	0 00:00	0.00	0.00
40	Jun-73	Junction	258.65	259.95	0.00	0.00	0.00	0.61	259.68	0.00	0.27	0 00:00	0.00	0.00
41	Jun-74	Junction	259.54	264.00	0.00	0.00	0.00	0.61	259.97	0.00	4.03	0 00:00	0.00	0.00
42	Jun-75	Junction	260.00	264.50	0.00	0.00	0.00	0.27	260.35	0.00	4.15	0 00:00	0.00	0.00
43	Jun-76	Junction	259.19	262.20	0.00	0.00	0.00	1.04	261.22	0.00	0.98	0 00:00	0.00	0.00
44	Jun-77	Junction	260.46	264.80	0.00	0.00	0.00	0.58	262.22	0.00	2.58	0 00:00	0.00	0.00
45	Jun-78	Junction	261.75	265.30	0.00	0.00	0.00	0.76	264.87	0.00	0.43	0 00:00	0.00	0.00
46	NorthWetland	Junction	252.00	258.00	0.00	0.00	0.00	0.35	252.00	0.00	6.00	0 00:00	0.00	0.00
47	OutletStructure	Junction	254.25	256.80	0.00	0.00	0.00	0.75	254.79	0.00	3.56	0 00:00	0.00	0.00

Node Summary

SN	Element ID	Element Type	Invert Elevation (m)	Ground/Rim (Max) Elevation (m)	Initial Water Elevation (m)	Surcharge Elevation (m)	Ponded Area (m^2)	Peak Inflow (cms)	Max HGL Elevation Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ha-mm)	Total Time Flooded (min)
48	Ravine_1	Junction	256.10	260.10	0.00	0.00	0.00	5.80	256.74	0.00	3.36	0 00:00	0.00	0.00
49	Ravine_2	Junction	253.00	257.00	0.00	0.00	0.00	6.26	253.77	0.00	3.33	0 00:00	0.00	0.00
50	Ravine_3	Junction	252.45	256.45	0.00	0.00	0.00	6.18	253.07	0.00	3.38	0 00:00	0.00	0.00
51	RH_1	Junction	267.60	271.70	0.00	0.00	0.00	3.93	271.59	0.00	0.11	0 00:00	0.00	0.00
52	RH_10	Junction	261.90	263.90	0.00	0.00	0.00	6.34	263.74	0.00	0.16	0 00:00	0.00	0.00
53	RH_11	Junction	260.33	262.55	0.00	0.00	0.00	5.59	262.46	0.00	0.09	0 00:00	0.00	0.00
54	RH_12	Junction	269.00	270.50	0.00	0.00	0.00	2.10	269.48	0.00	1.02	0 00:00	0.00	0.00
55	RH_13	Junction	264.00	266.50	0.00	0.00	0.00	2.20	264.67	0.00	1.83	0 00:00	0.00	0.00
56	RH_14	Junction	261.70	263.50	0.00	0.00	0.00	0.61	263.23	0.00	0.27	0 00:00	0.00	0.00
57	RH_15	Junction	259.38	261.00	0.00	0.00	0.00	0.76	260.74	0.00	0.26	0 00:00	0.00	0.00
58	RH_16	Junction	256.36	258.00	0.00	0.00	0.00	0.48	257.09	0.00	0.91	0 00:00	0.00	0.00
59	RH_17	Junction	256.42	258.00	0.00	0.00	0.00	1.42	257.63	0.00	0.37	0 00:00	0.00	0.00
60	RH_2	Junction	270.14	272.45	0.00	0.00	0.00	3.24	272.25	0.00	0.20	0 00:00	0.00	0.00
61	RH_3	Junction	267.07	270.50	0.00	0.00	0.00	6.73	269.94	0.00	0.56	0 00:00	0.00	0.00
62	RH_4	Junction	266.63	268.60	0.00	0.00	0.00	5.35	268.47	0.00	0.13	0 00:00	0.00	0.00
63	RH_5	Junction	270.35	272.10	0.00	0.00	0.00	1.52	271.88	0.00	0.22	0 00:00	0.00	0.00
64	RH_6	Junction	266.50	268.20	0.00	0.00	0.00	6.56	268.12	0.00	0.08	0 00:00	0.00	0.00
65	RH_7	Junction	272.00	273.50	0.00	0.00	0.00	0.00	272.00	0.00	1.50	0 00:00	0.00	0.00
66	RH_8	Junction	267.75	269.85	0.00	0.00	0.00	0.32	269.56	0.00	0.29	0 00:00	0.00	0.00
67	RH_9	Junction	264.00	265.80	0.00	0.00	0.00	0.26	265.52	0.00	0.28	0 00:00	0.00	0.00
68	WestOutfall	Junction	257.00	258.40	0.00	0.00	0.00	0.05	257.00	0.00	2.45	0 00:00	0.00	0.00
69	WestWetland	Junction	258.00	259.00	0.00	0.00	0.00	0.09	258.00	0.00	1.00	0 00:00	0.00	0.00
70	North_Wetland	Outfall	252.00					0.35	252.00					
71	Outfall	Outfall	252.00					6.17	252.51					
72	TinerEstatesSTM	Outfall	254.82					0.25	255.14					
73	West_Outfall	Outfall	257.00					0.05	257.00					
74	West_Wetland	Outfall	258.00					0.09	258.00					
75	Ex_SE_Pond	Storage Node	262.00	266.00	0.00		0.00	2.34	263.62				0.00	0.00
76	SWM_FB	Storage Node	253.00	257.10	254.50		0.00	5.95	256.41				0.00	0.00
77	SWM_WP	Storage Node	253.00	257.10	254.50		0.00	5.21	256.41				0.00	0.00

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(m)	(m)	(m)	(%)	(m)		(cms)	(cms)		(m/sec)	(m)		(min)	
1	Ex.STM_1	Pipe	Ex_MHR28	Ex_MHR27	107.00	257.37	256.94	0.4000	0.450	0.0130	0.25	0.18	1.37	1.56	0.45	1.00	64.00	SURCHARGED
2	Ex.STM_2	Pipe	Ex_MHR27	Ex_MHR26	73.00	256.94	256.64	0.4100	0.450	0.0130	0.25	0.18	1.36	1.56	0.45	1.00	58.00	SURCHARGED
3	Ex.STM_3	Pipe	Ex_MHR26	Ex_MHR25	27.00	256.64	256.48	0.5900	0.450	0.0130	0.25	0.22	1.13	1.56	0.45	1.00	53.00	SURCHARGED
4	Ex.STM_4	Pipe	Ex_MHR25	Ex_MHR1	100.00	256.48	255.88	0.6000	0.450	0.0130	0.25	0.22	1.12	1.58	0.45	0.99	0.00	> CAPACITY
5	Ex.STM_5	Pipe	Ex_MHR1	Ex_MHR2	100.00	255.88	255.48	0.4000	0.525	0.0130	0.25	0.27	0.91	1.33	0.43	0.83	0.00	Calculated
6	Ex.STM_6	Pipe	Ex_MHR2	Ex_MHR3	50.00	255.48	255.23	0.5000	0.525	0.0130	0.25	0.30	0.82	1.40	0.40	0.77	0.00	Calculated
7	Ex.STM_7	Pipe	Ex_MHR3	TinerEstatesSTM	102.00	255.23	254.82	0.4000	0.600	0.0130	0.25	0.39	0.64	1.44	0.35	0.59	0.00	Calculated
8	Link-106	Pipe	Jun-66	Ravine_2	24.80	253.16	252.85	1.2500	0.750	0.0130	0.75	0.89	0.83	1.84	0.74	0.98	0.00	Calculated
9	Link-107	Pipe	OutletStructure	Jun-66	93.20	254.35	253.20	1.2300	0.750	0.0130	0.75	1.24	0.60	2.08	0.57	0.76	0.00	Calculated
10	Link-108	Pipe	Jun-67	Jun-37	110.30	255.48	255.37	0.1000	1.200	0.0130	1.07	1.23	0.87	0.94	1.20	1.00	24.00	SURCHARGED
11	Link-109	Pipe	Jun-46	Jun-44	30.00	257.70	257.55	0.5000	1.050	0.0130	0.87	1.93	0.45	1.59	0.63	0.61	0.00	Calculated
12	Link-110	Pipe	Jun-52	Jun-67	153.00	255.69	255.48	0.1400	0.900	0.0130	0.79	0.67	1.18	1.24	0.90	1.00	28.00	SURCHARGED
13	Link-111	Pipe	Jun-68	Jun-52	66.80	255.86	255.77	0.1300	0.750	0.0130	0.48	0.41	1.18	1.09	0.75	1.00	29.00	SURCHARGED
14	Link-112	Pipe	Jun-69	Jun-68	106.60	256.21	255.91	0.2800	0.600	0.0130	0.22	0.33	0.66	0.77	0.60	1.00	24.00	SURCHARGED
15	Link-113	Pipe	Jun-70	Jun-52	97.50	256.47	255.88	0.6100	0.525	0.0130	0.50	0.33	1.48	2.29	0.52	1.00	23.00	SURCHARGED
16	Link-114	Pipe	Jun-71	Jun-53	85.10	256.79	255.73	1.2500	0.450	0.0130	0.43	0.32	1.36	2.73	0.45	1.00	22.00	SURCHARGED
17	Link-115	Pipe	Jun-73	Jun-51	50.00	258.65	258.50	0.3000	0.525	0.0130	0.35	0.24	1.48	1.61	0.52	1.00	19.00	SURCHARGED
18	Link-116	Pipe	Jun-72	Jun-51	50.00	258.75	258.55	0.4000	0.450	0.0130	0.21	0.18	1.16	1.31	0.45	1.00	19.00	SURCHARGED
19	Link-117	Pipe	Jun-74	Jun-61	90.00	259.54	258.37	1.3000	0.675	0.0130	0.61	0.96	0.63	2.53	0.45	0.69	0.00	Calculated
20	Link-118	Pipe	Jun-75	Jun-74	41.60	260.00	259.56	1.0600	0.525	0.0130	0.27	0.44	0.62	1.63	0.38	0.72	0.00	Calculated
21	Link-119	Pipe	Jun-76	Jun-56	181.70	259.19	256.08	1.7100	0.600	0.0130	0.86	0.80	1.07	3.05	0.60	1.00	16.00	SURCHARGED
22	Link-120	Pipe	Jun-77	Jun-76	140.50	260.46	259.24	0.8700	0.600	0.0130	0.48	0.57	0.84	1.94	0.60	1.00	14.00	SURCHARGED
23	Link-121	Pipe	Jun-78	Jun-77	152.20	261.75	260.51	0.8100	0.525	0.0130	0.58	0.39	1.49	2.67	0.52	1.00	12.00	SURCHARGED
24	Link-49	Pipe	Jun-34	SWM_FB	20.70	254.62	254.60	0.1000	1.800	0.0130	5.95	3.57	1.67	2.65	1.80	1.00	0.00	> CAPACITY
25	Link-50	Pipe	Jun-35	SWM_WP	75.20	254.70	254.60	0.1300	0.600	0.0130	0.59	0.22	2.65	2.10	0.60	1.00	2171.00	SURCHARGED
26	Link-52	Pipe	Jun-36	Jun-34	35.00	254.72	254.67	0.1400	1.650	0.0130	5.95	3.45	1.73	2.78	1.65	1.00	121.00	SURCHARGED
27	Link-53	Pipe	Jun-37	Jun-36	336.90	255.29	254.74	0.1600	1.350	0.0130	2.89	2.16	1.34	2.02	1.35	1.00	24.00	SURCHARGED
28	Link-54	Pipe	Jun-38	Jun-37	110.00	255.53	255.31	0.2000	0.600	0.0130	0.78	0.27	2.85	2.76	0.60	1.00	473.00	SURCHARGED
29	Link-56	Pipe	Jun-41	Jun-38	110.00	255.77	255.55	0.2000	0.600	0.0130	0.40	0.27	1.47	1.43	0.60	1.00	170.00	SURCHARGED
30	Link-57	Pipe	Jun-40	Jun-41	95.50	256.10	255.85	0.2600	0.450	0.0130	0.34	0.15	2.30	2.11	0.45	1.00	66.00	SURCHARGED
31	Link-58	Pipe	Jun-39	Jun-40	90.00	256.93	256.25	0.7600	0.300	0.0130	0.10	0.08	1.13	1.35	0.30	1.00	60.00	SURCHARGED
32	Link-59	Pipe	Jun-42	Jun-36	53.10	255.23	255.13	0.1900	1.500	0.0130	1.91	3.07	0.62	1.15	1.50	1.00	14.00	SURCHARGED
33	Link-60	Pipe	Jun-43	Jun-42	13.40	256.25	255.84	3.0600	1.500	0.0130	1.23	12.37	0.10	2.32	0.95	0.64	0.00	Calculated
34	Link-62	Pipe	Jun-49	Jun-50	25.00	256.90	256.75	0.6000	1.200	0.0130	0.91	3.02	0.30	1.54	0.62	0.52	0.00	Calculated
35	Link-68	Pipe	Jun-51	Jun-47	60.00	258.45	258.20	0.4200	0.600	0.0130	0.52	0.40	1.31	1.95	0.54	0.89	0.00	> CAPACITY
36	Link-70	Pipe	Jun-53	Jun-42	57.00	255.35	255.25	0.1800	0.825	0.0130	1.17	0.60	1.94	2.18	0.82	1.00	380.00	SURCHARGED
37	Link-71	Pipe	Jun-55	Jun-53	82.00	255.60	255.43	0.2100	0.750	0.0130	0.82	0.51	1.61	1.85	0.75	1.00	175.00	SURCHARGED
38	Link-72	Pipe	Jun-54	Jun-55	85.00	255.79	255.62	0.2000	0.750	0.0130	0.34	0.50	0.68	0.77	0.75	1.00	24.00	SURCHARGED
39	Link-73	Pipe	Jun-56	Jun-36	67.80	255.78	255.10	1.0000	0.900	0.0130	0.88	1.83	0.48	1.41	0.90	1.00	17.00	SURCHARGED
40	Link-80	Pipe	Jun-61	Jun-37	89.90	258.32	255.97	2.6100	0.750	0.0130	1.05	1.80	0.58	3.34	0.64	0.88	0.00	Calculated
41	Link-81	Pipe	Jun-64	Jun-61	93.20	261.13	259.27	2.0000	0.600	0.0130	0.47	0.87	0.54	2.96	0.33	0.55	0.00	Calculated
42	Link-82	Pipe	Jun-65	Jun-64	103.90	262.69	261.13	1.5000	0.600	0.0130	0.48	0.75	0.64	2.68	0.36	0.60	0.00	Calculated
43	RH_A1	Pipe	RH_2	RH_3	50.00	270.14	268.50	3.2800	0.300	0.0130	0.23	0.18	1.31	3.26	0.30	1.00	253.00	SURCHARGED
44	RH_B1	Pipe	RH_5	RH_6	227.00	270.35	266.50	1.7000	0.300	0.0130	0.14	0.13	1.10	1.95	0.30	1.00	193.00	SURCHARGED
45	RH_C3	Pipe	Ex_SE_Pond	RH_14	15.00	262.00	261.70	2.0000	0.600	0.0130	0.61	0.87	0.71	2.17	0.60	1.00	269.00	SURCHARGED
46	RH_C4	Pipe	RH_14	RH_15	195.00	261.70	259.38	1.1900	0.525	0.0150	0.42	0.41	1.04	2.10	0.52	1.00	293.00	SURCHARGED
47	RH_C5	Pipe	RH_15	RH_16	274.00	259.38	256.36	1.1000	0.525	0.0130	0.48	0.45	1.06	2.22	0.52	1.00	299.00	SURCHARGED

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(m)	(m)	(m)	(%)	(m)		(cms)	(cms)		(m/sec)	(m)		(min)	
48	RH_C6	Pipe	RH_16	Ravine_1	6.00	256.36	256.24	2.0000	0.700	0.0130	0.48	1.31	0.37	1.64	0.60	0.85	0.00	Calculated
49	RH_D1	Pipe	RH_7	RH_8	275.00	272.00	267.75	1.5500	0.300	0.0130	0.00	0.12	0.00	0.00	0.15	0.50	0.00	Calculated
50	RH_D2	Pipe	RH_8	RH_9	180.00	267.75	264.00	2.0800	0.300	0.0130	0.15	0.14	1.04	2.15	0.30	1.00	174.00	SURCHARGED
51	RH_D3	Pipe	RH_9	RH_10	155.00	264.00	261.90	1.3500	0.375	0.0130	0.19	0.20	0.92	1.70	0.38	1.00	203.00	SURCHARGED
52	RH_M1	Pipe	RH_1	RH_3	270.00	267.60	267.07	0.2000	0.600	0.0130	0.50	0.27	1.85	1.78	0.60	1.00	225.00	SURCHARGED
53	RH_M2	Pipe	RH_3	RH_4	222.00	267.07	266.63	0.2000	0.675	0.0130	0.80	0.37	2.13	2.23	0.68	1.00	186.00	SURCHARGED
54	RH_M3	Pipe	RH_4	RH_6	18.00	266.63	266.50	0.7200	0.750	0.0130	1.05	0.95	1.11	2.37	0.75	1.00	180.00	SURCHARGED
55	RH_M4	Pipe	RH_6	RH_10	415.00	266.50	261.90	1.1100	0.675	0.0130	0.91	0.89	1.03	2.61	0.68	1.00	182.00	SURCHARGED
56	RH_M5	Pipe	RH_10	RH_11	140.00	261.90	260.33	1.1200	0.675	0.0130	1.04	0.89	1.17	2.91	0.68	1.00	236.00	SURCHARGED
57	RH_M6	Pipe	RH_11	RH_17	464.00	260.33	256.42	0.8400	0.750	0.0130	1.10	1.02	1.07	2.49	0.75	1.00	233.00	SURCHARGED
58	RH_M7	Pipe	RH_17	Ravine_1	6.00	256.42	256.37	0.8300	1.000	0.0130	1.42	2.19	0.65	2.13	0.79	0.79	0.00	Calculated
59	West_Link	Pipe	WestOutfall	West_Outfall	33.73	256.00	257.00	-2.9600	0.000	0.0130	0.05	0.00	0.03	0.00	0.70	0.18	0.00	Calculated
60	WestWetland_Link	Pipe	WestWetland	West_Wetland	37.13	258.00	258.00	0.0000	0.000	0.0130	0.09	0.00	0.03	0.00	0.70	0.18	0.00	Calculated
61	Wetland_Link	Pipe	NorthWetland	North_Wetland	41.51	252.00	252.00	0.0000	0.000	0.0130	0.35	0.00	0.03	0.00	0.70	0.18	0.00	Calculated
62	Link-103	Channel	Jun-36	SWM_FB	10.00	257.70	257.50	2.0000	0.300	0.0320	0.00	11.65	0.00	0.00	0.00	0.00	0.00	
63	Link-104	Channel	Jun-56	SWM_FB	50.00	257.50	256.50	2.0000	0.300	0.0320	0.00	11.65	0.00	0.00	0.00	0.00	0.00	
64	Link-122	Channel	Jun-53	Jun-42	70.00	259.30	258.60	1.0000	0.300	0.0320	0.00	8.24	0.00	0.00	0.00	0.00	0.00	
65	Link-123	Channel	Jun-55	Jun-53	90.00	259.40	259.30	0.1100	0.300	0.0320	0.00	2.75	0.00	0.00	0.00	0.00	0.00	
66	Link-124	Channel	Jun-54	Jun-55	90.00	259.50	259.40	0.1100	0.300	0.0320	0.00	2.75	0.00	0.00	0.00	0.00	0.00	
67	Link-125	Channel	Jun-73	Jun-47	50.00	259.65	258.70	1.9000	0.300	0.0320	0.26	11.36	0.02	0.44	0.03	0.10	0.00	
68	Link-126	Channel	Jun-72	Jun-47	50.00	259.65	258.70	1.9000	0.300	0.0320	0.12	11.36	0.01	0.32	0.02	0.06	0.00	
69	Link-127	Channel	Jun-67	Jun-54	100.00	259.60	259.50	0.1000	0.300	0.0320	0.00	2.61	0.00	0.00	0.00	0.00	0.00	
70	Link-128	Channel	Jun-52	Jun-67	150.00	259.70	259.60	0.0700	0.300	0.0320	0.00	2.13	0.00	0.00	0.00	0.00	0.00	
71	Link-129	Channel	Jun-68	Jun-52	80.00	259.80	259.70	0.1300	0.300	0.0320	0.00	2.91	0.00	0.00	0.00	0.00	0.00	
72	Link-130	Channel	Jun-69	Jun-68	100.00	259.90	259.80	0.1000	0.300	0.0320	0.00	2.61	0.00	0.00	0.00	0.00	0.00	
73	Link-131	Channel	Jun-71	Jun-53	70.00	259.40	259.30	0.1400	0.300	0.0320	0.02	3.11	0.01	0.07	0.01	0.05	0.00	
74	Link-132	Channel	Jun-78	Jun-77	150.00	265.00	264.50	0.3300	0.300	0.0320	0.00	4.76	0.00	0.00	0.00	0.00	0.00	
75	Link-133	Channel	Jun-77	Jun-76	150.00	264.50	261.90	1.7300	0.300	0.0320	0.00	10.85	0.00	0.00	0.00	0.00	0.00	
76	Link-134	Channel	Jun-76	Jun-36	250.00	261.90	257.70	1.6800	0.300	0.0320	0.00	10.68	0.00	0.00	0.00	0.00	0.00	
77	Link-135	Channel	Jun-61	Jun-37	100.00	262.50	261.00	1.5000	0.300	0.0320	0.00	10.09	0.00	0.00	0.00	0.00	0.00	
78	Link-34	Channel	RH_1	RH_3	270.00	271.40	269.65	0.6500	0.300	0.0320	3.15	6.63	0.47	0.73	0.23	0.77	0.00	
79	Link-35	Channel	RH_2	RH_3	50.00	272.15	269.65	5.0000	0.300	0.0320	3.03	18.43	0.16	1.08	0.18	0.62	0.00	
80	Link-36	Channel	RH_3	RH_4	222.00	269.65	268.30	0.6100	0.300	0.0320	4.61	6.43	0.72	1.00	0.23	0.77	0.00	
81	Link-37	Channel	RH_4	RH_6	18.00	268.30	267.90	2.2200	0.300	0.0320	4.38	12.28	0.36	1.30	0.19	0.63	0.00	
82	Link-38	Channel	RH_5	RH_6	227.00	271.80	267.90	1.7200	0.300	0.0320	1.25	10.80	0.12	0.74	0.14	0.48	0.00	
83	Link-39	Channel	RH_6	RH_10	415.00	267.90	263.50	1.0600	0.300	0.0320	5.11	8.48	0.60	1.15	0.22	0.75	0.00	
84	Link-41	Channel	RH_8	RH_9	180.00	269.55	265.50	2.2500	0.300	0.0320	0.04	12.36	0.00	0.22	0.01	0.04	0.00	
85	Link-42	Channel	RH_9	RH_10	155.00	265.50	263.50	1.2900	0.300	0.0320	0.07	9.36	0.01	0.04	0.13	0.43	0.00	
86	Link-43	Channel	RH_10	RH_11	140.00	263.50	262.25	0.8900	0.300	0.0320	4.78	7.79	0.61	1.13	0.21	0.71	0.00	
87	Link-44	Channel	RH_11	Ravine_1	470.00	262.25	258.00	0.9000	0.300	0.0320	3.75	7.84	0.48	1.03	0.18	0.60	0.00	
88	Link-45	Channel	RH_14	RH_15	195.00	263.20	260.70	1.2800	0.300	0.0320	0.22	9.33	0.02	0.35	0.04	0.12	0.00	
89	Link-46	Channel	RH_15	Ravine_1	280.00	260.70	258.00	0.9600	0.300	0.0320	0.23	8.09	0.03	0.34	0.03	0.11	0.00	
90	Link-51	Channel	Ex_MHR28	Jun-36	65.00	259.00	258.05	1.4600	0.300	0.0320	0.92	4.89	0.19	0.88	0.10	0.35	0.00	
91	Link-61	Channel	Jun-50	Jun-43	125.00	256.75	256.25	0.4000	1.000	0.0320	0.90	4.86	0.19	0.66	0.61	0.63	0.00	
92	Link-63	Channel	Jun-44	Jun-49	162.50	257.55	256.90	0.4000	1.000	0.0320	0.85	4.86	0.17	0.46	0.62	0.62	0.00	
93	Link-66	Channel	Jun-47	Jun-46	133.00	258.10	257.70	0.3000	1.000	0.0320	0.99	4.22	0.24	0.53	0.66	0.66	0.00	
94	Link-67	Channel	Jun-48	Jun-47	75.00	258.40	258.10	0.4000	1.000	0.0320	0.04	4.86	0.01	0.08	0.41	0.42	0.00	

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(m)	(m)	(m)	(%)	(m)		(cms)	(cms)		(m/sec)	(m)		(min)	
95	Link-89	Channel	Jun-42	Jun-36	53.10	258.60	257.70	1.6900	0.300	0.0320	0.00	10.73	0.00	0.00	0.00	0.00	0.00	
96	Link-90	Channel	Jun-39	Jun-40	90.00	258.75	257.75	1.1100	0.300	0.0320	0.01	8.69	0.00	0.01	0.10	0.35	0.00	
97	Link-92	Channel	Jun-38	Jun-37	110.00	261.50	261.00	0.4500	0.300	0.0320	0.00	5.56	0.00	0.00	0.00	0.00	0.00	
98	Link-93	Channel	Jun-37	Jun-36	340.00	261.00	257.70	0.9700	0.300	0.0320	0.00	8.12	0.00	0.00	0.00	0.00	0.00	
99	Link-94	Channel	Jun-41	Jun-40	95.00	259.35	257.75	1.6800	0.300	0.0320	0.10	10.69	0.01	0.09	0.10	0.35	0.00	
100	LowerRavine	Channel	Ravine_2	Ravine_3	124.00	253.00	252.45	0.4400	4.000	0.0320	6.14	157.98	0.04	1.45	0.70	0.17	0.00	
101	OutletRavine	Channel	Ravine_3	Outfall	45.00	252.45	252.00	1.0000	4.000	0.0320	6.17	237.22	0.03	1.86	0.57	0.14	0.00	
102	RH_C1	Channel	RH_12	RH_13	215.00	269.00	264.00	2.3300	1.500	0.0320	2.05	24.20	0.08	1.68	0.57	0.38	0.00	
103	RH_C2	Channel	RH_13	Ex_SE_Pond	60.00	264.00	263.50	0.8300	1.500	0.0320	2.09	14.49	0.14	1.56	0.58	0.40	0.00	
104	UpperRavine	Channel	Ravine_1	Ravine_2	553.00	256.10	253.00	0.5600	4.000	0.0320	5.72	177.61	0.03	1.38	0.70	0.18	0.00	
105	Orifice-01	Orifice	SWM_WP	OutletStructure		253.00	254.25		0.170		0.08							
106	Link-91	Weir	Jun-40	WestOutfall		256.10	257.00				0.00							
107	Weir-01	Weir	SWM_FB	SWM_WP		253.00	253.00				4.34							
108	Weir-04	Weir	SWM_WP	OutletStructure		253.00	254.25				0.67							
109	Weir-05	Weir	SWM_WP	Ravine_2		253.00	253.00				0.00							
110	Weir-06	Weir	SWM_WP	OutletStructure		253.00	254.25				0.00							

Junction Input

SN	Element ID	Invert Elevation (m)	Ground/Rim (Max) Elevation (m)	Ground/Rim (Max) Offset (m)	Initial Water Elevation (m)	Initial Water Depth (m)	Surcharge Elevation (m)	Surcharge Depth (m)	Ponded Area (m²)	Minimum Pipe Cover (m)
1	Ex_MHR1	255.88	262.50	6.62	0.00	-255.88	0.00	-262.50	0.00	0.00
2	Ex_MHR2	255.48	259.65	4.17	0.00	-255.48	0.00	-259.65	0.00	0.00
3	Ex_MHR25	256.48	263.35	6.87	0.00	-256.48	0.00	-263.35	0.00	0.00
4	Ex_MHR26	256.64	262.75	6.11	0.00	-256.64	0.00	-262.75	0.00	0.00
5	Ex_MHR27	256.94	261.00	4.06	0.00	-256.94	0.00	-261.00	0.00	0.00
6	Ex_MHR28	257.37	259.30	1.93	0.00	-257.37	0.00	-259.30	0.00	0.00
7	Ex_MHR3	255.23	259.00	3.77	0.00	-255.23	0.00	-259.00	0.00	0.00
8	Jun-34	254.62	258.25	3.63	0.00	-254.62	0.00	-258.25	0.00	0.00
9	Jun-35	254.70	257.50	2.80	0.00	-254.70	0.00	-257.50	0.00	0.00
10	Jun-36	254.72	258.00	3.28	0.00	-254.72	0.00	-258.00	0.00	0.00
11	Jun-37	255.29	261.30	6.01	0.00	-255.29	0.00	-261.30	0.00	0.00
12	Jun-38	255.53	261.80	6.27	0.00	-255.53	0.00	-261.80	0.00	0.00
13	Jun-39	256.93	259.05	2.12	0.00	-256.93	0.00	-259.05	0.00	0.00
14	Jun-40	256.10	258.55	2.45	0.00	-256.10	0.00	-258.55	0.00	0.00
15	Jun-41	255.77	259.65	3.88	0.00	-255.77	0.00	-259.65	0.00	0.00
16	Jun-42	255.23	258.90	3.67	0.00	-255.23	0.00	-258.90	0.00	0.00
17	Jun-43	256.25	257.25	1.00	0.00	-256.25	0.00	-257.25	0.00	0.00
18	Jun-44	257.55	258.55	1.00	0.00	-257.55	0.00	-258.55	0.00	0.00
19	Jun-46	257.70	258.70	1.00	0.00	-257.70	258.70	0.00	0.00	0.00
20	Jun-47	258.10	259.10	1.00	0.00	-258.10	0.00	-259.10	0.00	0.00
21	Jun-48	258.35	259.35	1.00	0.00	-258.35	0.00	-259.35	0.00	0.00
22	Jun-49	256.90	257.90	1.00	0.00	-256.90	0.00	-257.90	0.00	0.00
23	Jun-50	256.75	257.75	1.00	0.00	-256.75	0.00	-257.75	0.00	0.00
24	Jun-51	258.45	260.50	2.05	0.00	-258.45	0.00	-260.50	0.00	0.00
25	Jun-52	255.69	260.00	4.31	0.00	-255.69	0.00	-260.00	0.00	0.00
26	Jun-53	255.35	259.60	4.25	0.00	-255.35	0.00	-259.60	0.00	0.00
27	Jun-54	255.62	259.80	4.18	0.00	-255.62	0.00	-259.80	0.00	0.00
28	Jun-55	255.60	259.70	4.10	0.00	-255.60	0.00	-259.70	0.00	0.00
29	Jun-56	255.79	257.80	2.01	0.00	-255.79	0.00	-257.80	0.00	0.00
30	Jun-61	258.32	262.00	3.68	0.00	-258.32	0.00	-262.00	0.00	0.00
31	Jun-64	261.13	263.50	2.37	0.00	-261.13	0.00	-263.50	0.00	0.00
32	Jun-65	262.69	264.50	1.81	0.00	-262.69	0.00	-264.50	0.00	0.00
33	Jun-66	253.16	256.00	2.84	0.00	-253.16	0.00	-256.00	0.00	0.00
34	Jun-67	255.48	259.90	4.42	0.00	-255.48	0.00	-259.90	0.00	0.00
35	Jun-68	255.86	260.10	4.24	0.00	-255.86	0.00	-260.10	0.00	0.00
36	Jun-69	256.21	261.20	4.99	0.00	-256.21	0.00	-261.20	0.00	0.00
37	Jun-70	256.47	263.00	6.53	0.00	-256.47	0.00	-263.00	0.00	0.00
38	Jun-71	256.79	260.00	3.21	0.00	-256.79	0.00	-260.00	0.00	0.00
39	Jun-72	258.75	259.95	1.20	0.00	-258.75	0.00	-259.95	0.00	0.00
40	Jun-73	258.65	259.95	1.30	0.00	-258.65	0.00	-259.95	0.00	0.00
41	Jun-74	259.54	264.00	4.46	0.00	-259.54	0.00	-264.00	0.00	0.00
42	Jun-75	260.00	264.50	4.50	0.00	-260.00	0.00	-264.50	0.00	0.00
43	Jun-76	259.19	262.20	3.01	0.00	-259.19	0.00	-262.20	0.00	0.00
44	Jun-77	260.46	264.80	4.34	0.00	-260.46	0.00	-264.80	0.00	0.00
45	Jun-78	261.75	265.30	3.55	0.00	-261.75	0.00	-265.30	0.00	0.00
46	NorthWetland	252.00	258.00	6.00	0.00	-252.00	0.00	-258.00	0.00	0.00
47	OutletStructure	254.25	256.80	2.55	0.00	-254.25	0.00	-256.80	0.00	0.00
48	Ravine_1	256.10	260.10	4.00	0.00	-256.10	0.00	-260.10	0.00	0.00

Junction Input

SN	Element ID	Invert Elevation (m)	Ground/Rim (Max) Elevation (m)	Ground/Rim (Max) Offset (m)	Initial Water Elevation (m)	Initial Water Depth (m)	Surcharge Elevation (m)	Surcharge Depth (m)	Ponded Area (m²)	Minimum Pipe Cover (m)
49	Ravine_2	253.00	257.00	4.00	0.00	-253.00	0.00	-257.00	0.00	0.00
50	Ravine_3	252.45	256.45	4.00	0.00	-252.45	0.00	-256.45	0.00	0.00
51	RH_1	267.60	271.70	4.10	0.00	-267.60	0.00	-271.70	0.00	0.00
52	RH_10	261.90	263.90	2.00	0.00	-261.90	0.00	-263.90	0.00	0.00
53	RH_11	260.33	262.55	2.22	0.00	-260.33	0.00	-262.55	0.00	0.00
54	RH_12	269.00	270.50	1.50	0.00	-269.00	0.00	-270.50	0.00	0.00
55	RH_13	264.00	266.50	2.50	0.00	-264.00	0.00	-266.50	0.00	0.00
56	RH_14	261.70	263.50	1.80	0.00	-261.70	0.00	-263.50	0.00	0.00
57	RH_15	259.38	261.00	1.62	0.00	-259.38	0.00	-261.00	0.00	0.00
58	RH_16	256.36	258.00	1.64	0.00	-256.36	0.00	-258.00	0.00	0.00
59	RH_17	256.42	258.00	1.58	0.00	-256.42	0.00	-258.00	0.00	0.00
60	RH_2	270.14	272.45	2.31	0.00	-270.14	0.00	-272.45	0.00	0.00
61	RH_3	267.07	270.50	3.43	0.00	-267.07	0.00	-270.50	0.00	0.00
62	RH_4	266.63	268.60	1.97	0.00	-266.63	0.00	-268.60	0.00	0.00
63	RH_5	270.35	272.10	1.75	0.00	-270.35	0.00	-272.10	0.00	0.00
64	RH_6	266.50	268.20	1.70	0.00	-266.50	0.00	-268.20	0.00	0.00
65	RH_7	272.00	273.50	1.50	0.00	-272.00	0.00	-273.50	0.00	0.00
66	RH_8	267.75	269.85	2.10	0.00	-267.75	0.00	-269.85	0.00	0.00
67	RH_9	264.00	265.80	1.80	0.00	-264.00	0.00	-265.80	0.00	0.00
68	WestOutfall	257.00	258.40	1.40	0.00	-257.00	0.00	-258.40	0.00	0.00
69	WestWetland	258.00	259.00	1.00	0.00	-258.00	0.00	-259.00	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)	Total Time Flooded (min)
1	Ex_MHR1	0.25	0.00	256.32	0.44	0.00	6.18	256.02	0.14	0 12:01	0 00:00	0.00	0.00
2	Ex_MHR2	0.25	0.00	255.91	0.43	0.00	3.74	255.62	0.14	0 12:02	0 00:00	0.00	0.00
3	Ex_MHR25	0.25	0.00	257.53	1.05	0.00	5.82	256.63	0.15	0 11:47	0 00:00	0.00	0.00
4	Ex_MHR26	0.25	0.00	257.86	1.22	0.00	4.89	256.81	0.17	0 11:47	0 00:00	0.00	0.00
5	Ex_MHR27	0.25	0.00	258.27	1.33	0.00	2.73	257.14	0.20	0 11:47	0 00:00	0.00	0.00
6	Ex_MHR28	1.21	1.21	259.11	1.74	0.00	0.19	257.59	0.22	0 12:00	0 00:00	0.00	0.00
7	Ex_MHR3	0.25	0.00	255.61	0.38	0.00	3.39	255.37	0.14	0 12:02	0 00:00	0.00	0.00
8	Jun-34	5.95	0.00	256.42	1.80	0.00	1.83	255.85	1.23	0 13:19	0 00:00	0.00	0.00
9	Jun-35	0.59	0.59	256.43	1.73	0.00	1.07	255.84	1.14	0 11:59	0 00:00	0.00	0.00
10	Jun-36	5.96	0.00	256.92	2.20	0.00	1.43	255.89	1.17	0 12:05	0 00:00	0.00	0.00
11	Jun-37	3.20	0.48	258.09	2.80	0.00	3.21	256.02	0.73	0 12:04	0 00:00	0.00	0.00
12	Jun-38	1.30	1.30	259.95	4.42	0.00	1.85	256.12	0.59	0 12:01	0 00:00	0.00	0.00
13	Jun-39	0.12	0.12	258.75	1.82	0.00	0.30	257.03	0.10	0 12:02	0 00:00	0.00	0.00
14	Jun-40	0.53	0.00	257.96	1.86	0.00	0.59	256.30	0.20	0 12:14	0 00:00	0.00	0.00
15	Jun-41	0.51	0.12	259.37	3.60	0.00	0.28	256.17	0.40	0 12:03	0 00:00	0.00	0.00
16	Jun-42	1.88	0.00	257.00	1.77	0.00	1.90	255.97	0.74	0 12:06	0 00:00	0.00	0.00
17	Jun-43	0.90	0.00	257.01	0.76	0.00	0.74	256.33	0.08	0 12:06	0 00:00	0.00	0.00
18	Jun-44	0.87	0.00	258.06	0.51	0.00	0.54	257.66	0.11	0 12:08	0 00:00	0.00	0.00
19	Jun-46	0.99	0.00	258.47	0.77	0.00	0.28	257.84	0.14	0 12:06	0 00:00	0.00	0.00
20	Jun-47	1.10	0.22	258.67	0.57	0.00	0.43	258.22	0.12	0 12:02	0 00:00	0.00	0.00
21	Jun-48	0.04	0.00	258.67	0.32	0.00	0.73	258.40	0.05	0 12:02	0 00:00	0.00	0.00
22	Jun-49	0.98	0.28	257.63	0.73	0.00	0.47	257.05	0.15	0 12:11	0 00:00	0.00	0.00
23	Jun-50	0.91	0.00	257.31	0.56	0.00	0.64	256.92	0.17	0 12:19	0 00:00	0.00	0.00
24	Jun-51	0.52	0.00	259.32	0.87	0.00	1.18	258.56	0.11	0 11:59	0 00:00	0.00	0.00
25	Jun-52	0.96	0.00	258.59	2.90	0.00	1.41	256.10	0.41	0 12:04	0 00:00	0.00	0.00
26	Jun-53	1.24	0.00	257.48	2.13	0.00	2.12	256.01	0.66	0 12:03	0 00:00	0.00	0.00
27	Jun-54	0.39	0.39	258.08	2.46	0.00	1.72	256.11	0.49	0 12:01	0 00:00	0.00	0.00
28	Jun-55	0.90	0.56	257.99	2.39	0.00	1.71	256.06	0.46	0 12:01	0 00:00	0.00	0.00
29	Jun-56	0.88	0.03	257.18	1.39	0.00	0.62	256.10	0.31	0 12:06	0 00:00	0.00	0.00
30	Jun-61	1.08	0.00	258.89	0.57	0.00	3.91	258.38	0.06	0 12:01	0 00:00	0.00	0.00
31	Jun-64	0.48	0.00	261.48	0.35	0.00	2.02	261.18	0.05	0 12:00	0 00:00	0.00	0.00
32	Jun-65	0.48	0.48	263.07	0.38	0.00	1.43	262.74	0.05	0 12:00	0 00:00	0.00	0.00
33	Jun-66	0.75	0.00	253.91	0.75	0.00	2.09	253.48	0.32	0 13:01	0 00:00	0.00	0.00
34	Jun-67	1.13	0.41	258.22	2.74	0.00	1.68	256.05	0.57	0 12:04	0 00:00	0.00	0.00
35	Jun-68	0.60	0.39	258.75	2.89	0.00	1.35	256.16	0.30	0 12:03	0 00:00	0.00	0.00
36	Jun-69	0.29	0.29	258.87	2.66	0.00	2.33	256.33	0.12	0 12:03	0 00:00	0.00	0.00
37	Jun-70	0.49	0.49	260.24	3.77	0.00	2.76	256.58	0.11	0 11:55	0 00:00	0.00	0.00
38	Jun-71	0.56	0.56	259.42	2.63	0.00	0.58	256.90	0.11	0 12:04	0 00:00	0.00	0.00
39	Jun-72	0.36	0.36	259.67	0.92	0.00	0.28	258.83	0.08	0 12:01	0 00:00	0.00	0.00
40	Jun-73	0.61	0.61	259.68	1.03	0.00	0.27	258.76	0.11	0 12:00	0 00:00	0.00	0.00
41	Jun-74	0.61	0.33	259.97	0.43	0.00	4.03	259.60	0.06	0 12:00	0 00:00	0.00	0.00
42	Jun-75	0.27	0.27	260.35	0.35	0.00	4.15	260.04	0.04	0 12:00	0 00:00	0.00	0.00
43	Jun-76	1.04	0.61	261.22	2.03	0.00	0.98	259.29	0.10	0 12:06	0 00:00	0.00	0.00
44	Jun-77	0.58	0.00	262.22	1.76	0.00	2.58	260.54	0.08	0 12:05	0 00:00	0.00	0.00
45	Jun-78	0.76	0.76	264.87	3.12	0.00	0.43	261.85	0.10	0 12:02	0 00:00	0.00	0.00
46	NorthWetland	0.35	0.35	252.00	0.00	0.00	6.00	252.00	0.00	0 00:00	0 00:00	0.00	0.00
47	OutletStructure	0.75	0.00	254.79	0.54	0.00	3.56	254.57	0.32	0 13:32	0 00:00	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)	Total Time Flooded (min)
48	Ravine_1	5.80	0.13	256.74	0.64	0.00	3.36	256.29	0.19	0 12:25	0 00:00	0.00	0.00
49	Ravine_2	6.26	0.34	253.77	0.77	0.00	3.33	253.27	0.27	0 12:30	0 00:00	0.00	0.00
50	Ravine_3	6.18	0.06	253.07	0.62	0.00	3.38	252.66	0.21	0 12:30	0 00:00	0.00	0.00
51	RH_1	3.93	3.93	271.59	3.99	0.00	0.11	268.44	0.84	0 12:01	0 00:00	0.00	0.00
52	RH_10	6.34	0.22	263.74	1.84	0.00	0.16	262.48	0.58	0 12:14	0 00:00	0.00	0.00
53	RH_11	5.59	0.07	262.46	2.13	0.00	0.09	260.96	0.63	0 12:23	0 00:00	0.00	0.00
54	RH_12	2.10	2.10	269.48	0.48	0.00	1.02	269.09	0.09	0 12:00	0 00:00	0.00	0.00
55	RH_13	2.20	0.16	264.67	0.67	0.00	1.83	264.15	0.15	0 12:01	0 00:00	0.00	0.00
56	RH_14	0.61	0.00	263.23	1.53	0.00	0.27	262.18	0.48	0 12:31	0 00:00	0.00	0.00
57	RH_15	0.76	0.16	260.74	1.36	0.00	0.26	259.84	0.46	0 13:00	0 00:00	0.00	0.00
58	RH_16	0.48	0.00	257.09	0.73	0.00	0.91	256.72	0.36	0 13:00	0 00:00	0.00	0.00
59	RH_17	1.42	0.37	257.63	1.21	0.00	0.37	257.00	0.58	0 12:30	0 00:00	0.00	0.00
60	RH_2	3.24	3.24	272.25	2.11	0.00	0.20	270.69	0.55	0 12:00	0 00:00	0.00	0.00
61	RH_3	6.73	0.00	269.94	2.87	0.00	0.56	267.83	0.76	0 12:05	0 00:00	0.00	0.00
62	RH_4	5.35	0.10	268.47	1.84	0.00	0.13	267.12	0.49	0 12:05	0 00:00	0.00	0.00
63	RH_5	1.52	1.52	271.88	1.53	0.00	0.22	270.71	0.36	0 12:01	0 00:00	0.00	0.00
64	RH_6	6.56	0.00	268.12	1.62	0.00	0.08	266.93	0.43	0 12:09	0 00:00	0.00	0.00
65	RH_7	0.00	0.00	272.00	0.00	0.00	1.50	272.00	0.00	0 00:00	0 00:00	0.00	0.00
66	RH_8	0.32	0.32	269.56	1.81	0.00	0.29	268.10	0.35	0 12:10	0 00:00	0.00	0.00
67	RH_9	0.26	0.08	265.52	1.52	0.00	0.28	264.34	0.34	0 12:29	0 00:00	0.00	0.00
68	WestOutfall	0.05	0.05	257.00	0.00	0.00	2.45	257.00	0.00	0 00:00	0 00:00	0.00	0.00
69	WestWetland	0.09	0.09	258.00	0.00	0.00	1.00	258.00	0.00	0 00:00	0 00:00	0.00	0.00

Channel Input

SN	Element ID	Length (m)	Inlet Invert Elevation (m)	Inlet Invert Offset (m)	Outlet Invert Elevation (m)	Outlet Invert Offset (m)	Total Drop (m)	Average Slope (%)	Shape	Height (m)	Width (m)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cms)	Flap Gate
1	Link-103	10.00	257.70	2.98	257.50	4.50	0.20	2.0000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
2	Link-104	50.00	257.50	1.71	256.50	3.50	1.00	2.0000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
3	Link-122	70.00	259.30	3.95	258.60	3.37	0.70	1.0000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
4	Link-123	90.00	259.40	3.80	259.30	3.95	0.10	0.1100	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
5	Link-124	90.00	259.50	3.88	259.40	3.80	0.10	0.1100	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
6	Link-125	50.00	259.65	1.00	258.70	0.60	0.95	1.9000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
7	Link-126	50.00	259.65	0.90	258.70	0.60	0.95	1.9000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
8	Link-127	100.00	259.60	4.12	259.50	3.88	0.10	0.1000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
9	Link-128	150.00	259.70	4.01	259.60	4.12	0.10	0.0700	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
10	Link-129	80.00	259.80	3.94	259.70	4.01	0.10	0.1300	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
11	Link-130	100.00	259.90	3.69	259.80	3.94	0.10	0.1000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
12	Link-131	70.00	259.40	2.61	259.30	3.95	0.10	0.1400	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
13	Link-132	150.00	265.00	3.25	264.50	4.04	0.50	0.3300	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
14	Link-133	150.00	264.50	4.04	261.90	2.71	2.60	1.7300	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
15	Link-134	250.00	261.90	2.71	257.70	2.98	4.20	1.6800	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
16	Link-135	100.00	262.50	4.18	261.00	5.71	1.50	1.5000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
17	Link-34	270.00	271.40	3.80	269.65	2.58	1.75	0.6500	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
18	Link-35	50.00	272.15	2.01	269.65	2.58	2.50	5.0000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
19	Link-36	222.00	269.65	2.58	268.30	1.67	1.35	0.6100	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
20	Link-37	18.00	268.30	1.67	267.90	1.40	0.40	2.2200	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
21	Link-38	227.00	271.80	1.45	267.90	1.40	3.90	1.7200	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
22	Link-39	415.00	267.90	1.40	263.50	1.60	4.40	1.0600	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
23	Link-41	180.00	269.55	1.80	265.50	1.50	4.05	2.2500	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
24	Link-42	155.00	265.50	1.50	263.50	1.60	2.00	1.2900	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
25	Link-43	140.00	263.50	1.60	262.25	1.92	1.25	0.8900	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
26	Link-44	470.00	262.25	1.92	258.00	1.90	4.25	0.9000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
27	Link-45	195.00	263.20	1.50	260.70	1.32	2.50	1.2800	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
28	Link-46	280.00	260.70	1.32	258.00	1.90	2.70	0.9600	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
29	Link-51	65.00	259.00	1.63	258.05	3.33	0.95	1.4600	Rectangular	0.300	10.000	0.0320	0.5000	0.5000	0.0000	0.00	No
30	Link-61	125.00	256.75	0.00	256.25	0.00	0.50	0.4000	User-Defined	1.000	9.000	0.0320	0.5000	0.5000	0.0000	0.00	No
31	Link-63	162.50	257.55	0.00	256.90	0.00	0.65	0.4000	User-Defined	1.000	9.000	0.0320	0.5000	0.5000	0.0000	0.00	No
32	Link-66	133.00	258.10	0.00	257.70	0.00	0.40	0.3000	User-Defined	1.000	9.000	0.0320	0.5000	0.5000	0.0000	0.00	No
33	Link-67	75.00	258.40	0.05	258.10	0.00	0.30	0.4000	User-Defined	1.000	9.000	0.0320	0.5000	0.5000	0.0000	0.00	No
34	Link-89	53.10	258.60	3.37	257.70	2.98	0.90	1.6900	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
35	Link-90	90.00	258.75	1.82	257.75	1.65	1.00	1.1100	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
36	Link-92	110.00	261.50	5.97	261.00	5.71	0.50	0.4500	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
37	Link-93	340.00	261.00	5.71	257.70	2.98	3.30	0.9700	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
38	Link-94	95.00	259.35	3.58	257.75	1.65	1.60	1.6800	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
39	LowerRavine	124.00	253.00	0.00	252.45	0.00	0.55	0.4400	Trapezoidal	4.000	17.000	0.0320	0.5000	0.5000	0.0000	0.00	No
40	OutletRavine	45.00	252.45	0.00	252.00	0.00	0.45	1.0000	Trapezoidal	4.000	17.000	0.0320	0.5000	0.5000	0.0000	0.00	No
41	RH_C1	215.00	269.00	0.00	264.00	0.00	5.00	2.3300	Trapezoidal	1.500	7.000	0.0320	0.5000	0.5000	0.0000	0.00	No
42	RH_C2	60.00	264.00	0.00	263.50	1.50	0.50	0.8300	Trapezoidal	1.500	7.000	0.0320	0.5000	0.5000	0.0000	0.00	No
43	UpperRavine	553.00	256.10	0.00	253.00	0.00	3.10	0.5600	Trapezoidal	4.000	17.000	0.0320	0.5000	0.5000	0.0000	0.00	No

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-103	0.00	0 00:00	11.65	0.00	0.00		0.00	0.00	0.00	0.00	
2	Link-104	0.00	0 00:00	11.65	0.00	0.00		0.00	0.00	0.00	0.00	
3	Link-122	0.00	0 00:00	8.24	0.00	0.00		0.00	0.00	0.00	0.00	
4	Link-123	0.00	0 00:00	2.75	0.00	0.00		0.00	0.00	0.00	0.00	
5	Link-124	0.00	0 00:00	2.75	0.00	0.00		0.00	0.00	0.00	0.00	
6	Link-125	0.26	0 12:00	11.36	0.02	0.44	1.89	0.03	0.10	0.00	0.01	
7	Link-126	0.12	0 12:01	11.36	0.01	0.32	2.60	0.02	0.06	0.00	0.01	
8	Link-127	0.00	0 00:00	2.61	0.00	0.00		0.00	0.00	0.00	0.00	
9	Link-128	0.00	0 00:00	2.13	0.00	0.00		0.00	0.00	0.00	0.00	
10	Link-129	0.00	0 00:00	2.91	0.00	0.00		0.00	0.00	0.00	0.00	
11	Link-130	0.00	0 00:00	2.61	0.00	0.00		0.00	0.00	0.00	0.00	
12	Link-131	0.02	0 12:04	3.11	0.01	0.07	16.67	0.01	0.05	0.00	0.00	
13	Link-132	0.00	0 00:00	4.76	0.00	0.00		0.00	0.00	0.00	0.00	
14	Link-133	0.00	0 00:00	10.85	0.00	0.00		0.00	0.00	0.00	0.00	
15	Link-134	0.00	0 00:00	10.68	0.00	0.00		0.00	0.00	0.00	0.00	
16	Link-135	0.00	0 00:00	10.09	0.00	0.00		0.00	0.00	0.00	0.00	
17	Link-34	3.15	0 12:01	6.63	0.47	0.73	6.16	0.23	0.77	0.00	0.02	
18	Link-35	3.03	0 12:00	18.43	0.16	1.08	0.77	0.18	0.62	0.00	0.09	
19	Link-36	4.61	0 12:05	6.43	0.72	1.00	3.70	0.23	0.77	0.00	0.08	
20	Link-37	4.38	0 12:06	12.28	0.36	1.30	0.23	0.19	0.63	0.00	0.05	
21	Link-38	1.25	0 12:01	10.80	0.12	0.74	5.11	0.14	0.48	0.00	0.04	
22	Link-39	5.11	0 12:10	8.48	0.60	1.15	6.01	0.22	0.75	0.00	0.07	
23	Link-41	0.04	0 12:11	12.36	0.00	0.22	13.64	0.01	0.04	0.00	0.04	
24	Link-42	0.07	0 12:29	9.36	0.01	0.04	64.58	0.13	0.43	0.00	0.00	
25	Link-43	4.78	0 12:14	7.79	0.61	1.13	2.06	0.21	0.71	0.00	0.14	
26	Link-44	3.75	0 12:23	7.84	0.48	1.03	7.61	0.18	0.60	0.00	0.13	
27	Link-45	0.22	0 12:33	9.33	0.02	0.35	9.29	0.04	0.12	0.00	0.05	
28	Link-46	0.23	0 13:00	8.09	0.03	0.34	13.73	0.03	0.11	0.00	0.11	
29	Link-51	0.92	0 12:00	4.89	0.19	0.88	1.23	0.10	0.35	0.00	0.04	
30	Link-61	0.90	0 12:12	4.86	0.19	0.66	3.16	0.61	0.63	0.00	0.33	
31	Link-63	0.85	0 12:08	4.86	0.17	0.46	5.89	0.62	0.62	0.00	0.22	
32	Link-66	0.99	0 12:02	4.22	0.24	0.53	4.18	0.66	0.66	0.00	0.22	
33	Link-67	0.04	0 12:00	4.86	0.01	0.08	15.63	0.41	0.42	0.00	0.00	
34	Link-89	0.00	0 00:00	10.73	0.00	0.00		0.00	0.00	0.00	0.00	
35	Link-90	0.01	0 12:02	8.69	0.00	0.01	150.00	0.10	0.35	0.00	0.00	
36	Link-92	0.00	0 00:00	5.56	0.00	0.00		0.00	0.00	0.00	0.00	
37	Link-93	0.00	0 00:00	8.12	0.00	0.00		0.00	0.00	0.00	0.00	
38	Link-94	0.10	0 12:03	10.69	0.01	0.09	17.59	0.10	0.35	0.00	0.00	
39	LowerRavine	6.14	0 12:30	157.98	0.04	1.45	1.43	0.70	0.17	0.00	0.50	
40	OutletRavine	6.17	0 12:30	237.22	0.03	1.86	0.40	0.57	0.14	0.00	0.76	
41	RH_C1	2.05	0 12:00	24.20	0.08	1.68	2.13	0.57	0.38	0.00	0.55	
42	RH_C2	2.09	0 12:01	14.49	0.14	1.56	0.64	0.58	0.40	0.00	0.62	
43	UpperRavine	5.72	0 12:25	177.61	0.03	1.38	6.68	0.70	0.18	0.00	0.38	

Pipe Input

SN	Element ID	Length (m)	Inlet Invert Elevation (m)	Inlet Invert Offset (m)	Outlet Invert Elevation (m)	Outlet Invert Offset (m)	Total Drop (m)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (m)	Pipe Width (m)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cms)	Flap Gate
1	Ex.STM_1	107.00	257.37	0.00	256.94	0.00	0.43	0.4000	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
2	Ex.STM_2	73.00	256.94	0.00	256.64	0.00	0.30	0.4100	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
3	Ex.STM_3	27.00	256.64	0.00	256.48	0.00	0.16	0.5900	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
4	Ex.STM_4	100.00	256.48	0.00	255.88	0.00	0.60	0.6000	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
5	Ex.STM_5	100.00	255.88	0.00	255.48	0.00	0.40	0.4000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
6	Ex.STM_6	50.00	255.48	0.00	255.23	0.00	0.25	0.5000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
7	Ex.STM_7	102.00	255.23	0.00	254.82	0.00	0.41	0.4000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
8	Link-106	24.80	253.16	0.00	252.85	-0.15	0.31	1.2500	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
9	Link-107	93.20	254.35	0.10	253.20	0.04	1.15	1.2300	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
10	Link-108	110.30	255.48	0.00	255.37	0.08	0.11	0.1000	CIRCULAR	1.200	1.200	0.0130	0.5000	0.5000	0.0000	0.00	No
11	Link-109	30.00	257.70	0.00	257.55	0.00	0.15	0.5000	CIRCULAR	1.050	1.050	0.0130	0.5000	0.5000	0.0000	0.00	No
12	Link-110	153.00	255.69	0.00	255.48	0.00	0.21	0.1400	CIRCULAR	0.900	0.900	0.0130	0.5000	0.5000	0.0000	0.00	No
13	Link-111	66.80	255.86	0.00	255.77	0.08	0.09	0.1300	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
14	Link-112	106.60	256.21	0.00	255.91	0.05	0.30	0.2800	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
15	Link-113	97.50	256.47	0.00	255.88	0.19	0.59	0.6100	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
16	Link-114	85.10	256.79	0.00	255.73	0.38	1.06	1.2500	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
17	Link-115	50.00	258.65	0.00	258.50	0.05	0.15	0.3000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
18	Link-116	50.00	258.75	0.00	258.55	0.10	0.20	0.4000	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
19	Link-117	90.00	259.54	0.00	258.37	0.05	1.17	1.3000	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
20	Link-118	41.60	260.00	0.00	259.56	0.02	0.44	1.0600	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
21	Link-119	181.70	259.19	0.00	256.08	0.29	3.11	1.7100	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
22	Link-120	140.50	260.46	0.00	259.24	0.05	1.22	0.8700	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
23	Link-121	152.20	261.75	0.00	260.51	0.05	1.24	0.8100	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
24	Link-49	20.70	254.62	0.00	254.60	1.60	0.02	0.1000	CIRCULAR	1.800	1.800	0.0130	0.5000	0.5000	0.0000	0.00	No
25	Link-50	75.20	254.70	0.00	254.60	1.60	0.10	0.1300	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
26	Link-52	35.00	254.72	0.00	254.67	0.05	0.05	0.1400	CIRCULAR	1.650	1.650	0.0130	0.5000	0.5000	0.0000	0.00	No
27	Link-53	336.90	255.29	0.00	254.74	0.02	0.55	0.1600	CIRCULAR	1.350	1.350	0.0130	0.5000	0.5000	0.0000	0.00	No
28	Link-54	110.00	255.53	0.00	255.31	0.02	0.22	0.2000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
29	Link-56	110.00	255.77	0.00	255.55	0.02	0.22	0.2000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
30	Link-57	95.50	256.10	0.00	255.85	0.08	0.25	0.2600	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
31	Link-58	90.00	256.93	0.00	256.25	0.15	0.68	0.7600	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
32	Link-59	53.10	255.23	0.00	255.13	0.41	0.10	0.1900	CIRCULAR	1.500	1.500	0.0130	0.5000	0.5000	0.0000	0.00	No
33	Link-60	13.40	256.25	0.00	255.84	0.61	0.41	3.0600	CIRCULAR	1.500	1.500	0.0130	0.5000	0.5000	0.0000	0.00	No
34	Link-62	25.00	256.90	0.00	256.75	0.00	0.15	0.6000	CIRCULAR	1.200	1.200	0.0130	0.5000	0.5000	0.0000	0.00	No
35	Link-68	60.00	258.45	0.00	258.20	0.10	0.25	0.4200	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
36	Link-70	57.00	255.35	0.00	255.25	0.02	0.10	0.1800	CIRCULAR	0.820	0.820	0.0130	0.5000	0.5000	0.0000	0.00	No
37	Link-71	82.00	255.60	0.00	255.43	0.08	0.17	0.2100	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
38	Link-72	85.00	255.79	0.17	255.62	0.02	0.17	0.2000	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
39	Link-73	67.80	255.78	-0.01	255.10	0.38	0.68	1.0000	CIRCULAR	0.900	0.900	0.0130	0.5000	0.5000	0.0000	0.00	No
40	Link-80	89.90	258.32	0.00	255.97	0.68	2.35	2.6100	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
41	Link-81	93.20	261.13	0.00	259.27	0.95	1.86	2.0000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
42	Link-82	103.90	262.69	0.00	261.13	0.00	1.56	1.5000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
43	RH_A1	50.00	270.14	0.00	268.50	1.43	1.64	3.2800	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
44	RH_B1	227.00	270.35	0.00	266.50	0.00	3.85	1.7000	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
45	RH_C3	15.00	262.00	0.00	261.70	0.00	0.30	2.0000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
46	RH_C4	195.00	261.70	0.00	259.38	0.00	2.32	1.1900	CIRCULAR	0.530	0.530	0.0150	0.5000	0.5000	0.0000	0.00	No
47	RH_C5	274.00	259.38	0.00	256.36	0.00	3.02	1.1000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
48	RH_C6	6.00	256.36	0.00	256.24	0.14	0.12	2.0000	CIRCULAR	0.700	0.700	0.0130	0.5000	0.5000	0.0000	0.00	No

Pipe Input

SN	Element ID	Length (m)	Inlet Invert Elevation (m)	Inlet Invert Offset (m)	Outlet Invert Elevation (m)	Outlet Invert Offset (m)	Total Drop (m)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (m)	Pipe Width (m)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cms)	Flap Gate
49	RH_D1	275.00	272.00	0.00	267.75	0.00	4.25	1.5500	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
50	RH_D2	180.00	267.75	0.00	264.00	0.00	3.75	2.0800	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
51	RH_D3	155.00	264.00	0.00	261.90	0.00	2.10	1.3500	CIRCULAR	0.380	0.380	0.0130	0.5000	0.5000	0.0000	0.00	No
52	RH_M1	270.00	267.60	0.00	267.07	0.00	0.53	0.2000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
53	RH_M2	222.00	267.07	0.00	266.63	0.00	0.44	0.2000	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
54	RH_M3	18.00	266.63	0.00	266.50	0.00	0.13	0.7200	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
55	RH_M4	415.00	266.50	0.00	261.90	0.00	4.60	1.1100	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
56	RH_M5	140.00	261.90	0.00	260.33	0.00	1.57	1.1200	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
57	RH_M6	464.00	260.33	0.00	256.42	0.00	3.91	0.8400	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
58	RH_M7	6.00	256.42	0.00	256.37	0.27	0.05	0.8300	CIRCULAR	1.000	1.000	0.0130	0.5000	0.5000	0.0000	0.00	No
59	West_Link	33.73	256.00	-1.00	257.00	0.00	-1.00	-2.9600	Dummy	0.000	0.000	0.0130	0.5000	0.5000	0.0000	0.00	No
60	WestWetland_Link	37.13	258.00	0.00	258.00	0.00	0.00	0.0000	Dummy	0.000	0.000	0.0130	0.5000	0.5000	0.0000	0.00	No
61	Wetland_Link	41.51	252.00	0.00	252.00	0.00	0.00	0.0000	Dummy	0.000	0.000	0.0130	0.5000	0.5000	0.0000	0.00	No

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	Ex.STM_1	0.25	0 12:00	0.18	1.37	1.56	1.14	0.45	1.00	64.00	0.73	SURCHARGED
2	Ex.STM_2	0.25	0 12:00	0.18	1.36	1.56	0.78	0.45	1.00	58.00	0.77	SURCHARGED
3	Ex.STM_3	0.25	0 11:59	0.22	1.13	1.56	0.29	0.45	1.00	53.00	0.88	SURCHARGED
4	Ex.STM_4	0.25	0 12:00	0.22	1.12	1.58	1.05	0.45	0.99	0.00	0.90	> CAPACITY
5	Ex.STM_5	0.25	0 12:01	0.27	0.91	1.33	1.25	0.43	0.83	0.00	0.82	Calculated
6	Ex.STM_6	0.25	0 12:02	0.30	0.82	1.40	0.60	0.40	0.77	0.00	0.85	Calculated
7	Ex.STM_7	0.25	0 12:03	0.39	0.64	1.44	1.18	0.35	0.59	0.00	0.89	Calculated
8	Link-106	0.75	0 13:20	0.89	0.83	1.84	0.22	0.74	0.98	0.00	1.03	Calculated
9	Link-107	0.75	0 13:20	1.24	0.60	2.08	0.75	0.57	0.76	0.00	1.33	Calculated
10	Link-108	1.07	0 12:04	1.23	0.87	0.94	1.96	1.20	1.00	24.00	0.13	SURCHARGED
11	Link-109	0.87	0 12:06	1.93	0.45	1.59	0.31	0.63	0.61	0.00	0.53	Calculated
12	Link-110	0.79	0 12:04	0.67	1.18	1.24	2.06	0.90	1.00	28.00	0.11	SURCHARGED
13	Link-111	0.48	0 12:01	0.41	1.18	1.09	1.02	0.75	1.00	29.00	0.18	SURCHARGED
14	Link-112	0.22	0 12:00	0.33	0.66	0.77	2.31	0.60	1.00	24.00	0.23	SURCHARGED
15	Link-113	0.50	0 12:00	0.33	1.48	2.29	0.71	0.52	1.00	23.00	0.38	SURCHARGED
16	Link-114	0.43	0 11:59	0.32	1.36	2.73	0.52	0.45	1.00	22.00	0.53	SURCHARGED
17	Link-115	0.35	0 12:10	0.24	1.48	1.61	0.52	0.52	1.00	19.00	0.74	SURCHARGED
18	Link-116	0.21	0 12:01	0.18	1.16	1.31	0.64	0.45	1.00	19.00	0.79	SURCHARGED
19	Link-117	0.61	0 12:00	0.96	0.63	2.53	0.59	0.45	0.69	0.00	1.40	Calculated
20	Link-118	0.27	0 12:00	0.44	0.62	1.63	0.43	0.38	0.72	0.00	1.16	Calculated
21	Link-119	0.86	0 12:06	0.80	1.07	3.05	0.99	0.60	1.00	16.00	1.36	SURCHARGED
22	Link-120	0.48	0 12:05	0.57	0.84	1.94	1.21	0.60	1.00	14.00	1.15	SURCHARGED
23	Link-121	0.58	0 12:01	0.39	1.49	2.67	0.95	0.52	1.00	12.00	1.11	SURCHARGED
24	Link-49	5.95	0 12:06	3.57	1.67	2.65	0.13	1.80	1.00	0.00	0.16	> CAPACITY
25	Link-50	0.59	0 12:00	0.22	2.65	2.10	0.60	0.60	1.00	2171.00	0.05	SURCHARGED
26	Link-52	5.95	0 12:06	3.45	1.73	2.78	0.21	1.65	1.00	121.00	0.16	SURCHARGED
27	Link-53	2.89	0 12:03	2.16	1.34	2.02	2.78	1.35	1.00	24.00	0.13	SURCHARGED
28	Link-54	0.78	0 12:00	0.27	2.85	2.76	0.66	0.60	1.00	473.00	0.12	SURCHARGED
29	Link-56	0.40	0 12:01	0.27	1.47	1.43	1.28	0.60	1.00	170.00	0.06	SURCHARGED
30	Link-57	0.34	0 12:00	0.15	2.30	2.11	0.75	0.45	1.00	66.00	0.21	SURCHARGED
31	Link-58	0.10	0 11:59	0.08	1.13	1.35	1.11	0.30	1.00	60.00	0.82	SURCHARGED
32	Link-59	1.91	0 12:11	3.07	0.62	1.15	0.77	1.50	1.00	14.00	0.19	SURCHARGED
33	Link-60	1.23	0 12:12	12.37	0.10	2.32	0.10	0.95	0.64	0.00	0.82	Calculated
34	Link-62	0.91	0 12:11	3.02	0.30	1.54	0.27	0.62	0.52	0.00	0.39	Calculated
35	Link-68	0.52	0 12:01	0.40	1.31	1.95	0.51	0.54	0.89	0.00	0.86	> CAPACITY
36	Link-70	1.17	0 12:01	0.60	1.94	2.18	0.44	0.82	1.00	380.00	0.13	SURCHARGED
37	Link-71	0.82	0 12:00	0.51	1.61	1.85	0.74	0.75	1.00	175.00	0.16	SURCHARGED
38	Link-72	0.34	0 12:00	0.50	0.68	0.77	1.84	0.75	1.00	24.00	0.11	SURCHARGED
39	Link-73	0.88	0 12:07	1.83	0.48	1.41	0.80	0.90	1.00	17.00	0.33	SURCHARGED
40	Link-80	1.05	0 12:00	1.80	0.58	3.34	0.45	0.64	0.88	0.00	0.93	Calculated
41	Link-81	0.47	0 12:00	0.87	0.54	2.96	0.52	0.33	0.55	0.00	1.64	Calculated
42	Link-82	0.48	0 12:00	0.75	0.64	2.68	0.65	0.36	0.60	0.00	1.48	Calculated
43	RH_A1	0.23	0 11:43	0.18	1.31	3.26	0.26	0.30	1.00	253.00	1.59	SURCHARGED
44	RH_B1	0.14	0 11:43	0.13	1.10	1.95	1.94	0.30	1.00	193.00	0.64	SURCHARGED
45	RH_C3	0.61	0 12:38	0.87	0.71	2.17	0.12	0.60	1.00	269.00	0.97	SURCHARGED
46	RH_C4	0.42	0 11:57	0.41	1.04	2.10	1.55	0.52	1.00	293.00	0.90	SURCHARGED
47	RH_C5	0.48	0 13:00	0.45	1.06	2.22	2.06	0.52	1.00	299.00	0.69	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)		
48	RH_C6	0.48	0 13:00	1.31	0.37	1.64	0.06	0.60	0.85	0.00	0.96	Calculated
49	RH_D1	0.00	0 00:00	0.12	0.00	0.00		0.15	0.50	0.00	0.00	Calculated
50	RH_D2	0.15	0 11:54	0.14	1.04	2.15	1.40	0.30	1.00	174.00	1.15	SURCHARGED
51	RH_D3	0.19	0 14:05	0.20	0.92	1.70	1.52	0.38	1.00	203.00	0.34	SURCHARGED
52	RH_M1	0.50	0 11:45	0.27	1.85	1.78	2.53	0.60	1.00	225.00	0.31	SURCHARGED
53	RH_M2	0.80	0 11:46	0.37	2.13	2.23	1.66	0.68	1.00	186.00	0.53	SURCHARGED
54	RH_M3	1.05	0 11:59	0.95	1.11	2.37	0.13	0.75	1.00	180.00	0.81	SURCHARGED
55	RH_M4	0.91	0 11:47	0.89	1.03	2.61	2.65	0.68	1.00	182.00	1.00	SURCHARGED
56	RH_M5	1.04	0 11:56	0.89	1.17	2.91	0.80	0.68	1.00	236.00	1.03	SURCHARGED
57	RH_M6	1.10	0 12:22	1.02	1.07	2.49	3.11	0.75	1.00	233.00	0.54	SURCHARGED
58	RH_M7	1.42	0 12:30	2.19	0.65	2.13	0.05	0.79	0.79	0.00	0.80	Calculated
59	West_Link	0.05	0 12:00	0.00	0.03	0.00		0.70	0.18	0.00	0.38	Calculated
60	WestWetland_Link	0.09	0 11:59	0.00	0.03	0.00		0.70	0.18	0.00	0.38	Calculated
61	Wetland_Link	0.35	0 12:00	0.00	0.03	0.00		0.70	0.18	0.00	0.38	Calculated

Project Description

File Name	18010_Post-Development Rev.1.SPF
Description	I:\ACAD Projects\2018\18010\03-Ref\18010_Pre-Dev. Storm Parcels.dwg I:\ACAD Projects\2018\18010\03-Ref\18010_Pre-Dev. Storm Parcels.dwg I:\ACAD Projects\2018\18010\03-Ref\18010_Post-Dev.Storm Parcels.dwg I:\ACAD Projects\2018\18010\03-Ref\18010_Post-Dev.Storm Parcels.dwg

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	YES

Analysis Options

Start Analysis On	00:00:00	0:00:00
End Analysis On	00:00:00	0:00:00
Start Reporting On	00:00:00	0:00:00
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	60
Nodes	77
Junctions	69
Outfalls	5
Flow Diversions	0
Inlets	0
Storage Nodes	3
Links	110
Channels	43
Pipes	61
Pumps	0
Orifices	1
Weirs	5
Outlets	0
Pollutants	0
Land Uses	0

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	{Survey Site}.Standard : 10	0.92	2.00	67.00	2.0000	125.00	0.0130	0.2000	100.79	59.3450	40.20	36.90	0.07	0 01:03:06
2	{Survey Site}.Standard : 11	21.38	2.00	67.00	2.0000	360.00	0.0130	0.2000	100.79	56.7590	45.12	964.75	0.45	0 03:41:12
3	{Survey Site}.Standard : 12	0.71	5.00	67.00	2.0000	90.00	0.0130	0.2000	100.79	57.5550	41.98	29.81	0.06	0 01:04:40
4	{Survey Site}.Standard : 13	1.65	45.00	71.05	2.0000	220.00	0.0130	0.2000	100.79	30.5130	69.03	113.76	0.43	0 00:45:09
5	{Survey Site}.Standard : 14	4.32	2.00	67.00	2.0000	350.00	0.0130	0.2000	100.79	59.7070	39.82	172.02	0.25	0 01:26:11
6	{Survey Site}.Standard : 17	0.36	5.00	67.00	5.0000	20.00	0.0130	0.2000	100.79	57.7980	41.74	14.86	0.02	0 01:20:02
7	{Survey Site}.Standard : 18	13.10	5.00	48.00	10.0000	300.00	0.0130	0.2000	100.79	75.3990	24.15	316.28	0.38	0 01:51:22
8	{Survey Site}.Standard : 19	1.16	55.00	78.40	2.0000	90.00	0.0130	0.2000	100.79	20.5920	78.99	91.63	0.34	0 00:55:26
9	{Survey Site}.Standard : 2	20.86	45.00	71.05	2.0000	300.00	0.0130	0.2000	100.79	31.6480	67.87	1416.04	3.61	0 02:51:57
10	{Survey Site}.Standard : 23	2.20	5.00	48.00	10.0000	100.00	0.0130	0.2000	100.79	74.7870	24.77	54.45	0.08	0 01:13:47
11	{Survey Site}.Standard : 26	1.12	45.00	71.05	2.0000	40.00	0.0130	0.2000	100.79	30.9830	68.58	77.09	0.24	0 01:39:50
12	{Survey Site}.Standard : 27	0.37	45.00	71.05	2.0000	60.00	0.0130	0.2000	100.79	30.4730	69.06	25.55	0.10	0 00:40:11
13	{Survey Site}.Standard : 28	0.12	45.00	71.05	2.0000	40.00	0.0130	0.2000	100.79	30.3560	69.14	8.50	0.04	0 00:26:28
14	{Survey Site}.Standard : 29	7.86	45.00	71.05	2.0000	110.00	0.0130	0.2000	100.79	31.6750	67.84	533.37	1.35	0 02:54:48
15	{Survey Site}.Standard : 3	25.14	45.00	71.05	2.0000	370.00	0.0130	0.2000	100.79	31.6220	67.90	1706.81	4.38	0 02:49:34
16	{Survey Site}.Standard : 30	20.00	30.00	63.70	2.0000	225.00	0.0130	0.2000	100.79	47.0590	52.47	1049.16	2.34	0 03:50:13
17	{Survey Site}.Standard : 31	5.54	5.00	57.00	2.0000	245.00	0.0130	0.2000	100.79	68.2540	31.27	173.37	0.19	0 02:01:41
18	{Survey Site}.Standard : 32	3.34	2.00	67.00	2.0000	95.00	0.0130	0.2000	100.79	60.9860	38.54	128.52	0.09	0 02:41:21
19	{Survey Site}.Standard : 33	7.71	2.00	67.00	2.0000	215.00	0.0130	0.2000	100.79	61.0410	38.50	296.68	0.20	0 02:43:23
20	{Survey Site}.Standard : 4	3.13	2.00	67.00	2.0000	155.00	0.0130	0.2000	100.79	60.2070	39.33	123.13	0.13	0 01:55:49
21	{Survey Site}.Standard : 46	5.31	2.00	67.00	2.0000	200.00	0.0130	0.2000	100.79	60.5690	38.97	207.10	0.17	0 02:16:31
22	{Survey Site}.Standard : 5	10.46	45.00	71.05	0.5000	235.00	0.0130	0.2000	100.79	31.8310	67.59	706.90	1.69	0 03:19:24
23	{Survey Site}.Standard : 51	0.39	95.00	95.55	0.5000	20.00	0.0130	0.2000	100.79	0.5440	98.78	38.03	0.13	0 00:32:28
24	{Survey Site}.Standard : 52	10.94	2.00	36.00	0.5000	240.00	0.0130	0.2000	100.79	82.7610	14.70	160.86	0.10	0 04:46:04
25	{Survey Site}.Standard : 53	0.36	75.00	85.75	3.0000	20.00	0.0130	0.2000	100.79	8.0160	91.14	33.17	0.13	0 00:42:26
26	{Survey Site}.Standard : 54	3.94	75.00	85.75	2.0000	150.00	0.0130	0.2000	100.79	8.0160	91.05	358.63	1.32	0 00:59:43
27	{Survey Site}.Standard : 57	0.42	20.00	58.80	2.0000	125.00	0.0130	0.2000	100.79	54.9460	44.60	18.87	0.07	0 00:35:06
28	{Survey Site}.Standard : 6	11.54	2.00	67.00	2.0000	280.00	0.0130	0.2000	100.79	61.2910	38.24	441.40	0.28	0 02:57:41
29	{Survey Site}.Standard : 63	1.63	55.00	75.95	2.0000	90.00	0.0130	0.2000	100.79	22.2450	77.35	126.00	0.45	0 01:07:58
30	{Survey Site}.Standard : 65	1.71	55.00	75.95	2.0000	130.00	0.0130	0.2000	100.79	22.1710	77.42	132.32	0.49	0 00:56:06
31	{Survey Site}.Standard : 68	1.31	55.00	75.95	2.0000	90.00	0.0130	0.2000	100.79	22.1880	77.40	101.55	0.37	0 00:59:42
32	{Survey Site}.Standard : 69	2.53	55.00	75.95	0.5000	85.00	0.0130	0.2000	100.79	22.4830	76.80	193.99	0.54	0 02:18:44
33	{Survey Site}.Standard : 7	10.98	5.00	67.00	2.0000	225.00	0.0130	0.2000	100.79	59.6850	39.85	437.35	0.38	0 03:12:56
34	{Survey Site}.Standard : 71	0.41	75.00	85.75	0.5000	20.00	0.0130	0.2000	100.79	8.0160	90.95	37.11	0.12	0 01:17:48
35	{Survey Site}.Standard : 72	1.08	55.00	75.95	2.0000	75.00	0.0130	0.2000	100.79	22.1880	77.41	83.21	0.31	0 00:59:05
36	{Survey Site}.Standard : 73	1.04	5.00	51.45	1.5000	65.00	0.0130	0.2000	100.79	72.6730	26.87	27.84	0.03	0 01:47:30
37	{Survey Site}.Standard : 74	2.88	55.00	75.95	2.0000	70.00	0.0130	0.2000	100.79	22.4830	77.02	221.81	0.67	0 01:51:15
38	{Survey Site}.Standard : 75	0.35	5.00	51.45	0.5000	35.00	0.0130	0.2000	100.79	72.7610	26.77	9.42	0.01	0 01:53:23
39	{Survey Site}.Standard : 76	0.87	5.00	51.45	25.0000	150.00	0.0130	0.2000	100.79	71.3670	28.25	24.69	0.09	0 00:25:16
40	{Survey Site}.Standard : 77	2.26	95.00	49.00	2.0000	250.00	0.0130	0.2000	100.79	3.8450	95.78	216.08	0.91	0 00:13:35
41	{Survey Site}.Standard : 78	2.38	55.00	75.95	3.0000	75.00	0.0130	0.2000	100.79	21.0280	87.53	208.68	0.66	0 01:24:23
42	{Survey Site}.Standard : 79	0.19	5.00	51.45	2.0000	25.00	0.0130	0.2000	100.79	71.9330	27.62	5.11	0.01	0 01:02:13
43	{Survey Site}.Standard : 8	3.30	2.00	67.00	2.0000	125.00	0.0130	0.2000	100.79	60.5410	38.98	128.79	0.11	0 02:16:05
44	{Survey Site}.Standard : 80	0.72	2.00	48.00	10.0000	55.00	0.0130	0.2000	100.79	75.9560	26.99	19.43	0.03	0 00:55:05
45	{Survey Site}.Standard : 81	1.46	35.00	66.15	2.0000	55.00	0.0130	0.2000	100.79	40.4660	59.11	86.42	0.24	0 01:46:44
46	{Survey Site}.Standard : 82	1.98	35.00	66.15	2.0000	55.00	0.0130	0.2000	100.79	40.6950	58.87	116.38	0.31	0 02:07:55
47	{Survey Site}.Standard : 83	1.98	55.00	75.95	2.0000	75.00	0.0130	0.2000	100.79	22.9700	113.76	225.59	0.63	0 01:25:20

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)
48	{Survey Site}.Standard : 84	1.00	55.00	75.95	2.0000	50.00	0.0130	0.2000	100.79	22.2700	77.31	77.62	0.27	0 01:12:20
49	{Survey Site}.Standard : 85	1.78	55.00	75.95	2.0000	70.00	0.0130	0.2000	100.79	22.3440	77.23	137.70	0.46	0 01:23:26
50	{Survey Site}.Standard : 86	1.43	55.00	75.95	2.0000	100.00	0.0130	0.2000	100.79	22.1880	77.41	110.30	0.41	0 00:58:53
51	{Survey Site}.Standard : 87	2.66	55.00	75.95	2.0000	100.00	0.0130	0.2000	100.79	22.3600	77.22	205.16	0.68	0 01:25:35
52	{Survey Site}.Standard : 88	1.64	55.00	75.95	2.0000	75.00	0.0130	0.2000	100.79	22.2940	77.29	126.60	0.43	0 01:16:05
53	{Survey Site}.Standard : 89	1.11	55.00	75.95	2.0000	100.00	0.0130	0.2000	100.79	22.1390	77.45	86.21	0.33	0 00:50:46
54	{Survey Site}.Standard : 9	3.53	2.00	67.00	2.0000	100.00	0.0130	0.2000	100.79	61.0130	38.53	136.07	0.09	0 02:41:57
55	{Survey Site}.Standard : 90	1.22	65.00	80.85	2.0000	130.00	0.0130	0.2000	100.79	14.4840	84.94	103.20	0.42	0 00:39:19
56	{Survey Site}.Standard : 91	1.00	65.00	80.85	2.0000	130.00	0.0130	0.2000	100.79	14.4840	84.95	84.69	0.35	0 00:34:55
57	{Survey Site}.Standard : 92	2.19	55.00	75.95	2.0000	75.00	0.0130	0.2000	100.79	22.3930	77.18	169.25	0.55	0 01:30:38
58	{Survey Site}.Standard : 93	2.28	20.00	58.80	5.0000	525.00	0.0130	0.2000	100.79	54.8860	44.66	101.66	0.38	0 00:30:56
59	Sub-01	0.13	55.00	75.95	2.0000	40.00	0.0130	0.2000	100.79	21.9660	77.54	10.08	0.04	0 00:24:15
60	Sub-02	0.18	55.00	75.95	2.0000	30.00	0.0130	0.2000	100.79	22.0320	77.52	13.95	0.06	0 00:35:02

Node Summary

SN	Element ID	Element Type	Invert Elevation (m)	Ground/Rim (Max) Elevation (m)	Initial Water Elevation (m)	Surcharge Elevation (m)	Ponded Area (m²)	Peak Inflow (cms)	Max HGL Elevation Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ha-mm)	Total Time Flooded (min)
1	Ex_MHR1	Junction	255.88	262.50	0.00	0.00	0.00	0.25	256.32	0.00	6.18	0 00:00	0.00	0.00
2	Ex_MHR2	Junction	255.48	259.65	0.00	0.00	0.00	0.25	255.91	0.00	3.74	0 00:00	0.00	0.00
3	Ex_MHR25	Junction	256.48	263.35	0.00	0.00	0.00	0.25	257.60	0.00	5.75	0 00:00	0.00	0.00
4	Ex_MHR26	Junction	256.64	262.75	0.00	0.00	0.00	0.25	257.94	0.00	4.81	0 00:00	0.00	0.00
5	Ex_MHR27	Junction	256.94	261.00	0.00	0.00	0.00	0.25	258.33	0.00	2.67	0 00:00	0.00	0.00
6	Ex_MHR28	Junction	257.37	259.30	0.00	0.00	0.00	1.35	259.12	0.00	0.18	0 00:00	0.00	0.00
7	Ex_MHR3	Junction	255.23	259.00	0.00	0.00	0.00	0.25	255.61	0.00	3.39	0 00:00	0.00	0.00
8	Jun-34	Junction	254.62	258.25	0.00	0.00	0.00	6.37	256.54	0.00	1.71	0 00:00	0.00	0.00
9	Jun-35	Junction	254.70	257.50	0.00	0.00	0.00	0.66	256.75	0.00	0.75	0 00:00	0.00	0.00
10	Jun-36	Junction	254.72	258.00	0.00	0.00	0.00	6.38	257.09	0.00	1.26	0 00:00	0.00	0.00
11	Jun-37	Junction	255.29	261.30	0.00	0.00	0.00	3.43	258.44	0.00	2.86	0 00:00	0.00	0.00
12	Jun-38	Junction	255.53	261.80	0.00	0.00	0.00	1.44	260.36	0.00	1.44	0 00:00	0.00	0.00
13	Jun-39	Junction	256.93	259.05	0.00	0.00	0.00	0.13	258.76	0.00	0.29	0 00:00	0.00	0.00
14	Jun-40	Junction	256.10	258.55	0.00	0.00	0.00	0.69	258.02	0.00	0.53	0 00:00	0.00	0.00
15	Jun-41	Junction	255.77	259.65	0.00	0.00	0.00	0.65	259.38	0.00	0.27	0 00:00	0.00	0.00
16	Jun-42	Junction	255.23	258.90	0.00	0.00	0.00	2.05	257.18	0.00	1.72	0 00:00	0.00	0.00
17	Jun-43	Junction	256.25	257.25	0.00	0.00	0.00	1.01	257.19	0.00	0.56	0 00:00	0.00	0.00
18	Jun-44	Junction	257.55	258.55	0.00	0.00	0.00	0.97	258.08	0.00	0.52	0 00:00	0.00	0.00
19	Jun-46	Junction	257.70	258.70	0.00	258.70	0.00	1.11	258.52	0.00	0.23	0 00:00	0.00	0.00
20	Jun-47	Junction	258.10	259.10	0.00	0.00	0.00	1.24	258.70	0.00	0.40	0 00:00	0.00	0.00
21	Jun-48	Junction	258.35	259.35	0.00	0.00	0.00	0.05	258.70	0.00	0.70	0 00:00	0.00	0.00
22	Jun-49	Junction	256.90	257.90	0.00	0.00	0.00	1.10	257.68	0.00	0.42	0 00:00	0.00	0.00
23	Jun-50	Junction	256.75	257.75	0.00	0.00	0.00	1.02	257.29	0.00	0.66	0 00:00	0.00	0.00
24	Jun-51	Junction	258.45	260.50	0.00	0.00	0.00	0.52	259.32	0.00	1.18	0 00:00	0.00	0.00
25	Jun-52	Junction	255.69	260.00	0.00	0.00	0.00	1.07	259.05	0.00	0.95	0 00:00	0.00	0.00
26	Jun-53	Junction	255.35	259.60	0.00	0.00	0.00	1.30	257.71	0.00	1.89	0 00:00	0.00	0.00
27	Jun-54	Junction	255.62	259.80	0.00	0.00	0.00	0.42	258.43	0.00	1.37	0 00:00	0.00	0.00
28	Jun-55	Junction	255.60	259.70	0.00	0.00	0.00	0.98	258.32	0.00	1.38	0 00:00	0.00	0.00
29	Jun-56	Junction	255.79	257.80	0.00	0.00	0.00	0.92	257.37	0.00	0.43	0 00:00	0.00	0.00
30	Jun-61	Junction	258.32	262.00	0.00	0.00	0.00	1.21	259.32	0.00	3.48	0 00:00	0.00	0.00
31	Jun-64	Junction	261.13	263.50	0.00	0.00	0.00	0.53	261.50	0.00	2.00	0 00:00	0.00	0.00
32	Jun-65	Junction	262.69	264.50	0.00	0.00	0.00	0.54	263.10	0.00	1.40	0 00:00	0.00	0.00
33	Jun-66	Junction	253.16	256.00	0.00	0.00	0.00	1.00	254.16	0.00	1.84	0 00:00	0.00	0.00
34	Jun-67	Junction	255.48	259.90	0.00	0.00	0.00	1.26	258.59	0.00	1.31	0 00:00	0.00	0.00
35	Jun-68	Junction	255.86	260.10	0.00	0.00	0.00	0.67	259.25	0.00	0.85	0 00:00	0.00	0.00
36	Jun-69	Junction	256.21	261.20	0.00	0.00	0.00	0.33	259.40	0.00	1.80	0 00:00	0.00	0.00
37	Jun-70	Junction	256.47	263.00	0.00	0.00	0.00	0.55	260.30	0.00	2.70	0 00:00	0.00	0.00
38	Jun-71	Junction	256.79	260.00	0.00	0.00	0.00	0.63	259.44	0.00	0.56	0 00:00	0.00	0.00
39	Jun-72	Junction	258.75	259.95	0.00	0.00	0.00	0.41	259.67	0.00	0.28	0 00:00	0.00	0.00
40	Jun-73	Junction	258.65	259.95	0.00	0.00	0.00	0.68	259.69	0.00	0.26	0 00:00	0.00	0.00
41	Jun-74	Junction	259.54	264.00	0.00	0.00	0.00	0.68	260.01	0.00	3.99	0 00:00	0.00	0.00
42	Jun-75	Junction	260.00	264.50	0.00	0.00	0.00	0.31	260.38	0.00	4.12	0 00:00	0.00	0.00
43	Jun-76	Junction	259.19	262.20	0.00	0.00	0.00	1.07	261.72	0.00	0.48	0 00:00	0.00	0.00
44	Jun-77	Junction	260.46	264.80	0.00	0.00	0.00	0.61	262.76	0.00	2.04	0 00:00	0.00	0.00
45	Jun-78	Junction	261.75	265.30	0.00	0.00	0.00	0.85	265.01	0.00	0.29	0 00:00	0.00	0.00
46	NorthWetland	Junction	252.00	258.00	0.00	0.00	0.00	0.41	252.00	0.00	6.00	0 00:00	0.00	0.00
47	OutletStructure	Junction	254.25	256.80	0.00	0.00	0.00	1.00	255.17	0.00	3.18	0 00:00	0.00	0.00

Node Summary

SN	Element ID	Element Type	Invert Elevation (m)	Ground/Rim (Max) Elevation (m)	Initial Water Elevation (m)	Surcharge Elevation (m)	Ponded Area (m^2)	Peak Inflow (cms)	Max HGL Elevation Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ha-mm)	Total Time Flooded (min)
48	Ravine_1	Junction	256.10	260.10	0.00	0.00	0.00	6.90	256.80	0.00	3.30	0 00:00	0.00	0.00
49	Ravine_2	Junction	253.00	257.00	0.00	0.00	0.00	7.61	253.86	0.00	3.24	0 00:00	0.00	0.00
50	Ravine_3	Junction	252.45	256.45	0.00	0.00	0.00	7.51	253.15	0.00	3.30	0 00:00	0.00	0.00
51	RH_1	Junction	267.60	271.70	0.00	0.00	0.00	4.38	271.61	0.00	0.09	0 00:00	0.00	0.00
52	RH_10	Junction	261.90	263.90	0.00	0.00	0.00	7.37	263.77	0.00	0.13	0 00:00	0.00	0.00
53	RH_11	Junction	260.33	262.55	0.00	0.00	0.00	6.57	262.49	0.00	0.06	0 00:00	0.00	0.00
54	RH_12	Junction	269.00	270.50	0.00	0.00	0.00	2.34	269.51	0.00	0.99	0 00:00	0.00	0.00
55	RH_13	Junction	264.00	266.50	0.00	0.00	0.00	2.47	264.71	0.00	1.79	0 00:00	0.00	0.00
56	RH_14	Junction	261.70	263.50	0.00	0.00	0.00	0.73	263.24	0.00	0.26	0 00:00	0.00	0.00
57	RH_15	Junction	259.38	261.00	0.00	0.00	0.00	0.90	260.76	0.00	0.24	0 00:00	0.00	0.00
58	RH_16	Junction	256.36	258.00	0.00	0.00	0.00	0.48	257.09	0.00	0.91	0 00:00	0.00	0.00
59	RH_17	Junction	256.42	258.00	0.00	0.00	0.00	1.51	257.69	0.00	0.31	0 00:00	0.00	0.00
60	RH_2	Junction	270.14	272.45	0.00	0.00	0.00	3.61	272.26	0.00	0.19	0 00:00	0.00	0.00
61	RH_3	Junction	267.07	270.50	0.00	0.00	0.00	7.51	269.98	0.00	0.52	0 00:00	0.00	0.00
62	RH_4	Junction	266.63	268.60	0.00	0.00	0.00	5.88	268.48	0.00	0.12	0 00:00	0.00	0.00
63	RH_5	Junction	270.35	272.10	0.00	0.00	0.00	1.69	271.89	0.00	0.21	0 00:00	0.00	0.00
64	RH_6	Junction	266.50	268.20	0.00	0.00	0.00	7.27	268.14	0.00	0.06	0 00:00	0.00	0.00
65	RH_7	Junction	272.00	273.50	0.00	0.00	0.00	0.00	272.00	0.00	1.50	0 00:00	0.00	0.00
66	RH_8	Junction	267.75	269.85	0.00	0.00	0.00	0.38	269.57	0.00	0.28	0 00:00	0.00	0.00
67	RH_9	Junction	264.00	265.80	0.00	0.00	0.00	0.36	265.52	0.00	0.28	0 00:00	0.00	0.00
68	WestOutfall	Junction	257.00	258.40	0.00	0.00	0.00	0.06	257.00	0.00	2.45	0 00:00	0.00	0.00
69	WestWetland	Junction	258.00	259.00	0.00	0.00	0.00	0.10	258.00	0.00	1.00	0 00:00	0.00	0.00
70	North_Wetland	Outfall	252.00					0.41	252.00					
71	Outfall	Outfall	252.00					7.51	252.58					
72	TinerEstatesSTM	Outfall	254.82					0.25	255.14					
73	West_Outfall	Outfall	257.00					0.06	257.00					
74	West_Wetland	Outfall	258.00					0.10	258.00					
75	Ex_SE_Pond	Storage Node	262.00	266.00	0.00		0.00	2.66	263.78				0.00	0.00
76	SWM_FB	Storage Node	253.00	257.10	254.50		0.00	6.37	256.53				0.00	0.00
77	SWM_WP	Storage Node	253.00	257.10	254.50		0.00	5.56	256.53				0.00	0.00

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(m)	(m)	(m)	(%)	(m)		(cms)	(cms)		(m/sec)	(m)		(min)	
1	Ex.STM_1	Pipe	Ex_MHR28	Ex_MHR27	107.00	257.37	256.94	0.4000	0.450	0.0130	0.25	0.18	1.38	1.56	0.45	1.00	76.00	SURCHARGED
2	Ex.STM_2	Pipe	Ex_MHR27	Ex_MHR26	73.00	256.94	256.64	0.4100	0.450	0.0130	0.25	0.18	1.36	1.56	0.45	1.00	67.00	SURCHARGED
3	Ex.STM_3	Pipe	Ex_MHR26	Ex_MHR25	27.00	256.64	256.48	0.5900	0.450	0.0130	0.25	0.22	1.13	1.56	0.45	1.00	61.00	SURCHARGED
4	Ex.STM_4	Pipe	Ex_MHR25	Ex_MHR1	100.00	256.48	255.88	0.6000	0.450	0.0130	0.25	0.22	1.13	1.59	0.45	0.99	0.00	> CAPACITY
5	Ex.STM_5	Pipe	Ex_MHR1	Ex_MHR2	100.00	255.88	255.48	0.4000	0.525	0.0130	0.25	0.27	0.91	1.33	0.43	0.83	0.00	Calculated
6	Ex.STM_6	Pipe	Ex_MHR2	Ex_MHR3	50.00	255.48	255.23	0.5000	0.525	0.0130	0.25	0.30	0.82	1.40	0.40	0.77	0.00	Calculated
7	Ex.STM_7	Pipe	Ex_MHR3	TinerEstatesSTM	102.00	255.23	254.82	0.4000	0.600	0.0130	0.25	0.39	0.64	1.44	0.35	0.59	0.00	Calculated
8	Link-106	Pipe	Jun-66	Ravine_2	24.80	253.16	252.85	1.2500	0.750	0.0130	1.00	0.89	1.12	2.32	0.75	1.00	31.00	SURCHARGED
9	Link-107	Pipe	OutletStructure	Jun-66	93.20	254.35	253.20	1.2300	0.750	0.0130	1.00	1.24	0.81	2.30	0.75	1.00	20.00	SURCHARGED
10	Link-108	Pipe	Jun-67	Jun-37	110.30	255.48	255.37	0.1000	1.200	0.0130	1.18	1.23	0.95	1.04	1.20	1.00	33.00	SURCHARGED
11	Link-109	Pipe	Jun-46	Jun-44	30.00	257.70	257.55	0.5000	1.050	0.0130	0.97	1.93	0.50	1.67	0.66	0.64	0.00	Calculated
12	Link-110	Pipe	Jun-52	Jun-67	153.00	255.69	255.48	0.1400	0.900	0.0130	0.88	0.67	1.31	1.38	0.90	1.00	74.00	SURCHARGED
13	Link-111	Pipe	Jun-68	Jun-52	66.80	255.86	255.77	0.1300	0.750	0.0130	0.54	0.41	1.31	1.21	0.75	1.00	72.00	SURCHARGED
14	Link-112	Pipe	Jun-69	Jun-68	106.60	256.21	255.91	0.2800	0.600	0.0130	0.24	0.33	0.74	0.85	0.60	1.00	31.00	SURCHARGED
15	Link-113	Pipe	Jun-70	Jun-52	97.50	256.47	255.88	0.6100	0.525	0.0130	0.55	0.33	1.65	2.54	0.52	1.00	28.00	SURCHARGED
16	Link-114	Pipe	Jun-71	Jun-53	85.10	256.79	255.73	1.2500	0.450	0.0130	0.44	0.32	1.37	2.74	0.45	1.00	27.00	SURCHARGED
17	Link-115	Pipe	Jun-73	Jun-51	50.00	258.65	258.50	0.3000	0.525	0.0130	0.35	0.24	1.49	1.62	0.52	1.00	21.00	SURCHARGED
18	Link-116	Pipe	Jun-72	Jun-51	50.00	258.75	258.55	0.4000	0.450	0.0130	0.21	0.18	1.16	1.32	0.45	1.00	21.00	SURCHARGED
19	Link-117	Pipe	Jun-74	Jun-61	90.00	259.54	258.37	1.3000	0.675	0.0130	0.68	0.96	0.71	2.53	0.52	0.83	0.00	Calculated
20	Link-118	Pipe	Jun-75	Jun-74	41.60	260.00	259.56	1.0600	0.525	0.0130	0.30	0.44	0.69	1.68	0.41	0.79	0.00	Calculated
21	Link-119	Pipe	Jun-76	Jun-56	181.70	259.19	256.08	1.7100	0.600	0.0130	0.89	0.80	1.11	3.16	0.60	1.00	21.00	SURCHARGED
22	Link-120	Pipe	Jun-77	Jun-76	140.50	260.46	259.24	0.8700	0.600	0.0130	0.53	0.57	0.92	1.94	0.60	1.00	18.00	SURCHARGED
23	Link-121	Pipe	Jun-78	Jun-77	152.20	261.75	260.51	0.8100	0.525	0.0130	0.61	0.39	1.57	2.82	0.52	1.00	17.00	SURCHARGED
24	Link-49	Pipe	Jun-34	SWM_FB	20.70	254.62	254.60	0.1000	1.800	0.0130	6.37	3.57	1.78	2.77	1.80	1.00	129.00	SURCHARGED
25	Link-50	Pipe	Jun-35	SWM_WP	75.20	254.70	254.60	0.1300	0.600	0.0130	0.66	0.22	2.96	2.34	0.60	1.00	2174.00	SURCHARGED
26	Link-52	Pipe	Jun-36	Jun-34	35.00	254.72	254.67	0.1400	1.650	0.0130	6.37	3.45	1.85	2.98	1.65	1.00	196.00	SURCHARGED
27	Link-53	Pipe	Jun-37	Jun-36	336.90	255.29	254.74	0.1600	1.350	0.0130	3.12	2.16	1.45	2.18	1.35	1.00	38.00	SURCHARGED
28	Link-54	Pipe	Jun-38	Jun-37	110.00	255.53	255.31	0.2000	0.600	0.0130	0.82	0.27	2.97	2.88	0.60	1.00	511.00	SURCHARGED
29	Link-56	Pipe	Jun-41	Jun-38	110.00	255.77	255.55	0.2000	0.600	0.0130	0.53	0.27	1.92	1.86	0.60	1.00	217.00	SURCHARGED
30	Link-57	Pipe	Jun-40	Jun-41	95.50	256.10	255.85	0.2600	0.450	0.0130	0.34	0.15	2.31	2.11	0.45	1.00	107.00	SURCHARGED
31	Link-58	Pipe	Jun-39	Jun-40	90.00	256.93	256.25	0.7600	0.300	0.0130	0.10	0.08	1.13	1.35	0.30	1.00	74.00	SURCHARGED
32	Link-59	Pipe	Jun-42	Jun-36	53.10	255.23	255.13	0.1900	1.500	0.0130	2.08	3.07	0.68	1.17	1.50	1.00	20.00	SURCHARGED
33	Link-60	Pipe	Jun-43	Jun-42	13.40	256.25	255.84	3.0600	1.500	0.0130	1.34	12.37	0.11	2.32	1.12	0.76	0.00	Calculated
34	Link-62	Pipe	Jun-49	Jun-50	25.00	256.90	256.75	0.6000	1.200	0.0130	1.02	3.02	0.34	1.59	0.66	0.55	0.00	Calculated
35	Link-68	Pipe	Jun-51	Jun-47	60.00	258.45	258.20	0.4200	0.600	0.0130	0.52	0.40	1.32	1.96	0.54	0.91	0.00	> CAPACITY
36	Link-70	Pipe	Jun-53	Jun-42	57.00	255.35	255.25	0.1800	0.825	0.0130	1.24	0.60	2.06	2.31	0.82	1.00	419.00	SURCHARGED
37	Link-71	Pipe	Jun-55	Jun-53	82.00	255.60	255.43	0.2100	0.750	0.0130	0.89	0.51	1.75	2.01	0.75	1.00	223.00	SURCHARGED
38	Link-72	Pipe	Jun-54	Jun-55	85.00	255.79	255.62	0.2000	0.750	0.0130	0.37	0.50	0.73	0.83	0.75	1.00	93.00	SURCHARGED
39	Link-73	Pipe	Jun-56	Jun-36	67.80	255.78	255.10	1.0000	0.900	0.0130	0.92	1.83	0.50	1.44	0.90	1.00	22.00	SURCHARGED
40	Link-80	Pipe	Jun-61	Jun-37	89.90	258.32	255.97	2.6100	0.750	0.0130	1.10	1.80	0.61	3.35	0.75	1.00	4.00	SURCHARGED
41	Link-81	Pipe	Jun-64	Jun-61	93.20	261.13	259.27	2.0000	0.600	0.0130	0.53	0.87	0.61	3.03	0.35	0.59	0.00	Calculated
42	Link-82	Pipe	Jun-65	Jun-64	103.90	262.69	261.13	1.5000	0.600	0.0130	0.53	0.75	0.71	2.73	0.39	0.65	0.00	Calculated
43	RH_A1	Pipe	RH_2	RH_3	50.00	270.14	268.50	3.2800	0.300	0.0130	0.23	0.18	1.31	3.26	0.30	1.00	284.00	SURCHARGED
44	RH_B1	Pipe	RH_5	RH_6	227.00	270.35	266.50	1.7000	0.300	0.0130	0.14	0.13	1.10	1.95	0.30	1.00	219.00	SURCHARGED
45	RH_C3	Pipe	Ex_SE_Pond	RH_14	15.00	262.00	261.70	2.0000	0.600	0.0130	0.73	0.87	0.84	2.57	0.60	1.00	305.00	SURCHARGED
46	RH_C4	Pipe	RH_14	RH_15	195.00	261.70	259.38	1.1900	0.525	0.0150	0.42	0.41	1.04	2.09	0.52	1.00	329.00	SURCHARGED
47	RH_C5	Pipe	RH_15	RH_16	274.00	259.38	256.36	1.1000	0.525	0.0130	0.48	0.45	1.06	2.22	0.52	1.00	335.00	SURCHARGED

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(m)	(m)	(m)	(%)	(m)		(cms)	(cms)		(m/sec)	(m)		(min)	
48	RH_C6	Pipe	RH_16	Ravine_1	6.00	256.36	256.24	2.0000	0.700	0.0130	0.48	1.31	0.37	1.64	0.63	0.90	0.00	Calculated
49	RH_D1	Pipe	RH_7	RH_8	275.00	272.00	267.75	1.5500	0.300	0.0130	0.00	0.12	0.00	0.00	0.15	0.50	0.00	Calculated
50	RH_D2	Pipe	RH_8	RH_9	180.00	267.75	264.00	2.0800	0.300	0.0130	0.15	0.14	1.04	2.14	0.30	1.00	212.00	SURCHARGED
51	RH_D3	Pipe	RH_9	RH_10	155.00	264.00	261.90	1.3500	0.375	0.0130	0.19	0.20	0.92	1.71	0.38	1.00	239.00	SURCHARGED
52	RH_M1	Pipe	RH_1	RH_3	270.00	267.60	267.07	0.2000	0.600	0.0130	0.50	0.27	1.84	1.77	0.60	1.00	255.00	SURCHARGED
53	RH_M2	Pipe	RH_3	RH_4	222.00	267.07	266.63	0.2000	0.675	0.0130	0.80	0.37	2.13	2.23	0.68	1.00	209.00	SURCHARGED
54	RH_M3	Pipe	RH_4	RH_6	18.00	266.63	266.50	0.7200	0.750	0.0130	1.05	0.95	1.11	2.37	0.75	1.00	202.00	SURCHARGED
55	RH_M4	Pipe	RH_6	RH_10	415.00	266.50	261.90	1.1100	0.675	0.0130	0.91	0.89	1.02	2.59	0.68	1.00	205.00	SURCHARGED
56	RH_M5	Pipe	RH_10	RH_11	140.00	261.90	260.33	1.1200	0.675	0.0130	1.04	0.89	1.16	2.91	0.68	1.00	263.00	SURCHARGED
57	RH_M6	Pipe	RH_11	RH_17	464.00	260.33	256.42	0.8400	0.750	0.0130	1.10	1.02	1.07	2.48	0.75	1.00	261.00	SURCHARGED
58	RH_M7	Pipe	RH_17	Ravine_1	6.00	256.42	256.37	0.8300	1.000	0.0130	1.51	2.19	0.69	2.23	0.81	0.81	0.00	Calculated
59	West_Link	Pipe	WestOutfall	West_Outfall	33.73	256.00	257.00	-2.9600	0.000	0.0130	0.06	0.00	0.04	0.00	0.78	0.19	0.00	Calculated
60	WestWetland_Link	Pipe	WestWetland	West_Wetland	37.13	258.00	258.00	0.0000	0.000	0.0130	0.10	0.00	0.04	0.00	0.78	0.19	0.00	Calculated
61	Wetland_Link	Pipe	NorthWetland	North_Wetland	41.51	252.00	252.00	0.0000	0.000	0.0130	0.41	0.00	0.04	0.00	0.78	0.19	0.00	Calculated
62	Link-103	Channel	Jun-36	SWM_FB	10.00	257.70	257.50	2.0000	0.300	0.0320	0.00	11.65	0.00	0.00	0.00	0.00	0.00	
63	Link-104	Channel	Jun-56	SWM_FB	50.00	257.50	256.50	2.0000	0.300	0.0320	0.00	11.65	0.00	0.00	0.01	0.04	0.00	
64	Link-122	Channel	Jun-53	Jun-42	70.00	259.30	258.60	1.0000	0.300	0.0320	0.00	8.24	0.00	0.00	0.00	0.00	0.00	
65	Link-123	Channel	Jun-55	Jun-53	90.00	259.40	259.30	0.1100	0.300	0.0320	0.00	2.75	0.00	0.00	0.00	0.00	0.00	
66	Link-124	Channel	Jun-54	Jun-55	90.00	259.50	259.40	0.1100	0.300	0.0320	0.00	2.75	0.00	0.00	0.00	0.00	0.00	
67	Link-125	Channel	Jun-73	Jun-47	50.00	259.65	258.70	1.9000	0.300	0.0320	0.33	11.36	0.03	0.49	0.03	0.11	0.00	
68	Link-126	Channel	Jun-72	Jun-47	50.00	259.65	258.70	1.9000	0.300	0.0320	0.16	11.36	0.01	0.37	0.02	0.07	0.00	
69	Link-127	Channel	Jun-67	Jun-54	100.00	259.60	259.50	0.1000	0.300	0.0320	0.00	2.61	0.00	0.00	0.00	0.00	0.00	
70	Link-128	Channel	Jun-52	Jun-67	150.00	259.70	259.60	0.0700	0.300	0.0320	0.00	2.13	0.00	0.00	0.00	0.00	0.00	
71	Link-129	Channel	Jun-68	Jun-52	80.00	259.80	259.70	0.1300	0.300	0.0320	0.00	2.91	0.00	0.00	0.00	0.00	0.00	
72	Link-130	Channel	Jun-69	Jun-68	100.00	259.90	259.80	0.1000	0.300	0.0320	0.00	2.61	0.00	0.00	0.00	0.00	0.00	
73	Link-131	Channel	Jun-71	Jun-53	70.00	259.40	259.30	0.1400	0.300	0.0320	0.06	3.11	0.02	0.12	0.03	0.09	0.00	
74	Link-132	Channel	Jun-78	Jun-77	150.00	265.00	264.50	0.3300	0.300	0.0320	0.01	4.76	0.00	0.07	0.01	0.02	0.00	
75	Link-133	Channel	Jun-77	Jun-76	150.00	264.50	261.90	1.7300	0.300	0.0320	0.00	10.85	0.00	0.00	0.00	0.00	0.00	
76	Link-134	Channel	Jun-76	Jun-36	250.00	261.90	257.70	1.6800	0.300	0.0320	0.00	10.68	0.00	0.00	0.00	0.00	0.00	
77	Link-135	Channel	Jun-61	Jun-37	100.00	262.50	261.00	1.5000	0.300	0.0320	0.00	10.09	0.00	0.00	0.00	0.00	0.00	
78	Link-34	Channel	RH_1	RH_3	270.00	271.40	269.65	0.6500	0.300	0.0320	3.57	6.63	0.54	0.75	0.24	0.84	0.00	
79	Link-35	Channel	RH_2	RH_3	50.00	272.15	269.65	5.0000	0.300	0.0320	3.40	18.43	0.18	1.10	0.19	0.66	0.00	
80	Link-36	Channel	RH_3	RH_4	222.00	269.65	268.30	0.6100	0.300	0.0320	5.10	6.43	0.79	1.05	0.24	0.81	0.00	
81	Link-37	Channel	RH_4	RH_6	18.00	268.30	267.90	2.2200	0.300	0.0320	4.95	12.28	0.40	1.36	0.20	0.70	0.00	
82	Link-38	Channel	RH_5	RH_6	227.00	271.80	267.90	1.7200	0.300	0.0320	1.43	10.80	0.13	0.75	0.15	0.52	0.00	
83	Link-39	Channel	RH_6	RH_10	415.00	267.90	263.50	1.0600	0.300	0.0320	6.00	8.48	0.71	1.22	0.25	0.83	0.00	
84	Link-41	Channel	RH_8	RH_9	180.00	269.55	265.50	2.2500	0.300	0.0320	0.11	12.36	0.01	0.32	0.02	0.07	0.00	
85	Link-42	Channel	RH_9	RH_10	155.00	265.50	263.50	1.2900	0.300	0.0320	0.14	9.36	0.02	0.07	0.15	0.49	0.00	
86	Link-43	Channel	RH_10	RH_11	140.00	263.50	262.25	0.8900	0.300	0.0320	5.74	7.79	0.74	1.21	0.24	0.81	0.00	
87	Link-44	Channel	RH_11	Ravine_1	470.00	262.25	258.00	0.9000	0.300	0.0320	4.66	7.84	0.59	1.12	0.21	0.69	0.00	
88	Link-45	Channel	RH_14	RH_15	195.00	263.20	260.70	1.2800	0.300	0.0320	0.32	9.33	0.03	0.40	0.05	0.16	0.00	
89	Link-46	Channel	RH_15	Ravine_1	280.00	260.70	258.00	0.9600	0.300	0.0320	0.39	8.09	0.05	0.43	0.05	0.15	0.00	
90	Link-51	Channel	Ex_MHR28	Jun-36	65.00	259.00	258.05	1.4600	0.300	0.0320	1.06	4.89	0.22	0.93	0.11	0.38	0.00	
91	Link-61	Channel	Jun-50	Jun-43	125.00	256.75	256.25	0.4000	1.000	0.0320	1.01	4.86	0.21	0.63	0.73	0.74	0.00	
92	Link-63	Channel	Jun-44	Jun-49	162.50	257.55	256.90	0.4000	1.000	0.0320	0.95	4.86	0.19	0.46	0.65	0.65	0.00	
93	Link-66	Channel	Jun-47	Jun-46	133.00	258.10	257.70	0.3000	1.000	0.0320	1.12	4.22	0.26	0.53	0.70	0.70	0.00	
94	Link-67	Channel	Jun-48	Jun-47	75.00	258.40	258.10	0.4000	1.000	0.0320	0.05	4.86	0.01	0.08	0.43	0.45	0.00	

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(m)	(m)	(m)	(%)	(m)		(cms)	(cms)		(m/sec)	(m)		(min)	
95	Link-89	Channel	Jun-42	Jun-36	53.10	258.60	257.70	1.6900	0.300	0.0320	0.00	10.73	0.00	0.00	0.00	0.00	0.00	
96	Link-90	Channel	Jun-39	Jun-40	90.00	258.75	257.75	1.1100	0.300	0.0320	0.02	8.69	0.00	0.01	0.13	0.45	0.00	
97	Link-92	Channel	Jun-38	Jun-37	110.00	261.50	261.00	0.4500	0.300	0.0320	0.00	5.56	0.00	0.00	0.00	0.00	0.00	
98	Link-93	Channel	Jun-37	Jun-36	340.00	261.00	257.70	0.9700	0.300	0.0320	0.00	8.12	0.00	0.00	0.00	0.00	0.00	
99	Link-94	Channel	Jun-41	Jun-40	95.00	259.35	257.75	1.6800	0.300	0.0320	0.25	10.69	0.02	0.19	0.13	0.45	0.00	
100	LowerRavine	Channel	Ravine_2	Ravine_3	124.00	253.00	252.45	0.4400	4.000	0.0320	7.47	157.98	0.05	1.54	0.78	0.20	0.00	
101	OutletRavine	Channel	Ravine_3	Outfall	45.00	252.45	252.00	1.0000	4.000	0.0320	7.51	237.22	0.03	1.97	0.64	0.16	0.00	
102	RH_C1	Channel	RH_12	RH_13	215.00	269.00	264.00	2.3300	1.500	0.0320	2.28	24.20	0.09	1.72	0.60	0.40	0.00	
103	RH_C2	Channel	RH_13	Ex_SE_Pond	60.00	264.00	263.50	0.8300	1.500	0.0320	2.34	14.49	0.16	1.60	0.62	0.43	0.00	
104	UpperRavine	Channel	Ravine_1	Ravine_2	553.00	256.10	253.00	0.5600	4.000	0.0320	6.81	177.61	0.04	1.46	0.78	0.19	0.00	
105	Orifice-01	Orifice	SWM_WP	OutletStructure		253.00	254.25		0.170		0.08							
106	Link-91	Weir	Jun-40	WestOutfall		256.10	257.00				0.00							
107	Weir-01	Weir	SWM_FB	SWM_WP		253.00	253.00				4.62							
108	Weir-04	Weir	SWM_WP	OutletStructure		253.00	254.25				0.93							
109	Weir-05	Weir	SWM_WP	Ravine_2		253.00	253.00				0.00							
110	Weir-06	Weir	SWM_WP	OutletStructure		253.00	254.25				0.00							

Junction Input

SN	Element ID	Invert Elevation (m)	Ground/Rim (Max) Elevation (m)	Ground/Rim (Max) Offset (m)	Initial Water Elevation (m)	Initial Water Depth (m)	Surcharge Elevation (m)	Surcharge Depth (m)	Ponded Area (m²)	Minimum Pipe Cover (m)
1	Ex_MHR1	255.88	262.50	6.62	0.00	-255.88	0.00	-262.50	0.00	0.00
2	Ex_MHR2	255.48	259.65	4.17	0.00	-255.48	0.00	-259.65	0.00	0.00
3	Ex_MHR25	256.48	263.35	6.87	0.00	-256.48	0.00	-263.35	0.00	0.00
4	Ex_MHR26	256.64	262.75	6.11	0.00	-256.64	0.00	-262.75	0.00	0.00
5	Ex_MHR27	256.94	261.00	4.06	0.00	-256.94	0.00	-261.00	0.00	0.00
6	Ex_MHR28	257.37	259.30	1.93	0.00	-257.37	0.00	-259.30	0.00	0.00
7	Ex_MHR3	255.23	259.00	3.77	0.00	-255.23	0.00	-259.00	0.00	0.00
8	Jun-34	254.62	258.25	3.63	0.00	-254.62	0.00	-258.25	0.00	0.00
9	Jun-35	254.70	257.50	2.80	0.00	-254.70	0.00	-257.50	0.00	0.00
10	Jun-36	254.72	258.00	3.28	0.00	-254.72	0.00	-258.00	0.00	0.00
11	Jun-37	255.29	261.30	6.01	0.00	-255.29	0.00	-261.30	0.00	0.00
12	Jun-38	255.53	261.80	6.27	0.00	-255.53	0.00	-261.80	0.00	0.00
13	Jun-39	256.93	259.05	2.12	0.00	-256.93	0.00	-259.05	0.00	0.00
14	Jun-40	256.10	258.55	2.45	0.00	-256.10	0.00	-258.55	0.00	0.00
15	Jun-41	255.77	259.65	3.88	0.00	-255.77	0.00	-259.65	0.00	0.00
16	Jun-42	255.23	258.90	3.67	0.00	-255.23	0.00	-258.90	0.00	0.00
17	Jun-43	256.25	257.25	1.00	0.00	-256.25	0.00	-257.25	0.00	0.00
18	Jun-44	257.55	258.55	1.00	0.00	-257.55	0.00	-258.55	0.00	0.00
19	Jun-46	257.70	258.70	1.00	0.00	-257.70	258.70	0.00	0.00	0.00
20	Jun-47	258.10	259.10	1.00	0.00	-258.10	0.00	-259.10	0.00	0.00
21	Jun-48	258.35	259.35	1.00	0.00	-258.35	0.00	-259.35	0.00	0.00
22	Jun-49	256.90	257.90	1.00	0.00	-256.90	0.00	-257.90	0.00	0.00
23	Jun-50	256.75	257.75	1.00	0.00	-256.75	0.00	-257.75	0.00	0.00
24	Jun-51	258.45	260.50	2.05	0.00	-258.45	0.00	-260.50	0.00	0.00
25	Jun-52	255.69	260.00	4.31	0.00	-255.69	0.00	-260.00	0.00	0.00
26	Jun-53	255.35	259.60	4.25	0.00	-255.35	0.00	-259.60	0.00	0.00
27	Jun-54	255.62	259.80	4.18	0.00	-255.62	0.00	-259.80	0.00	0.00
28	Jun-55	255.60	259.70	4.10	0.00	-255.60	0.00	-259.70	0.00	0.00
29	Jun-56	255.79	257.80	2.01	0.00	-255.79	0.00	-257.80	0.00	0.00
30	Jun-61	258.32	262.00	3.68	0.00	-258.32	0.00	-262.00	0.00	0.00
31	Jun-64	261.13	263.50	2.37	0.00	-261.13	0.00	-263.50	0.00	0.00
32	Jun-65	262.69	264.50	1.81	0.00	-262.69	0.00	-264.50	0.00	0.00
33	Jun-66	253.16	256.00	2.84	0.00	-253.16	0.00	-256.00	0.00	0.00
34	Jun-67	255.48	259.90	4.42	0.00	-255.48	0.00	-259.90	0.00	0.00
35	Jun-68	255.86	260.10	4.24	0.00	-255.86	0.00	-260.10	0.00	0.00
36	Jun-69	256.21	261.20	4.99	0.00	-256.21	0.00	-261.20	0.00	0.00
37	Jun-70	256.47	263.00	6.53	0.00	-256.47	0.00	-263.00	0.00	0.00
38	Jun-71	256.79	260.00	3.21	0.00	-256.79	0.00	-260.00	0.00	0.00
39	Jun-72	258.75	259.95	1.20	0.00	-258.75	0.00	-259.95	0.00	0.00
40	Jun-73	258.65	259.95	1.30	0.00	-258.65	0.00	-259.95	0.00	0.00
41	Jun-74	259.54	264.00	4.46	0.00	-259.54	0.00	-264.00	0.00	0.00
42	Jun-75	260.00	264.50	4.50	0.00	-260.00	0.00	-264.50	0.00	0.00
43	Jun-76	259.19	262.20	3.01	0.00	-259.19	0.00	-262.20	0.00	0.00
44	Jun-77	260.46	264.80	4.34	0.00	-260.46	0.00	-264.80	0.00	0.00
45	Jun-78	261.75	265.30	3.55	0.00	-261.75	0.00	-265.30	0.00	0.00
46	NorthWetland	252.00	258.00	6.00	0.00	-252.00	0.00	-258.00	0.00	0.00
47	OutletStructure	254.25	256.80	2.55	0.00	-254.25	0.00	-256.80	0.00	0.00
48	Ravine_1	256.10	260.10	4.00	0.00	-256.10	0.00	-260.10	0.00	0.00

Junction Input

SN	Element ID	Invert Elevation (m)	Ground/Rim (Max) Elevation (m)	Ground/Rim (Max) Offset (m)	Initial Water Elevation (m)	Initial Water Depth (m)	Surcharge Elevation (m)	Surcharge Depth (m)	Ponded Area (m²)	Minimum Pipe Cover (m)
49	Ravine_2	253.00	257.00	4.00	0.00	-253.00	0.00	-257.00	0.00	0.00
50	Ravine_3	252.45	256.45	4.00	0.00	-252.45	0.00	-256.45	0.00	0.00
51	RH_1	267.60	271.70	4.10	0.00	-267.60	0.00	-271.70	0.00	0.00
52	RH_10	261.90	263.90	2.00	0.00	-261.90	0.00	-263.90	0.00	0.00
53	RH_11	260.33	262.55	2.22	0.00	-260.33	0.00	-262.55	0.00	0.00
54	RH_12	269.00	270.50	1.50	0.00	-269.00	0.00	-270.50	0.00	0.00
55	RH_13	264.00	266.50	2.50	0.00	-264.00	0.00	-266.50	0.00	0.00
56	RH_14	261.70	263.50	1.80	0.00	-261.70	0.00	-263.50	0.00	0.00
57	RH_15	259.38	261.00	1.62	0.00	-259.38	0.00	-261.00	0.00	0.00
58	RH_16	256.36	258.00	1.64	0.00	-256.36	0.00	-258.00	0.00	0.00
59	RH_17	256.42	258.00	1.58	0.00	-256.42	0.00	-258.00	0.00	0.00
60	RH_2	270.14	272.45	2.31	0.00	-270.14	0.00	-272.45	0.00	0.00
61	RH_3	267.07	270.50	3.43	0.00	-267.07	0.00	-270.50	0.00	0.00
62	RH_4	266.63	268.60	1.97	0.00	-266.63	0.00	-268.60	0.00	0.00
63	RH_5	270.35	272.10	1.75	0.00	-270.35	0.00	-272.10	0.00	0.00
64	RH_6	266.50	268.20	1.70	0.00	-266.50	0.00	-268.20	0.00	0.00
65	RH_7	272.00	273.50	1.50	0.00	-272.00	0.00	-273.50	0.00	0.00
66	RH_8	267.75	269.85	2.10	0.00	-267.75	0.00	-269.85	0.00	0.00
67	RH_9	264.00	265.80	1.80	0.00	-264.00	0.00	-265.80	0.00	0.00
68	WestOutfall	257.00	258.40	1.40	0.00	-257.00	0.00	-258.40	0.00	0.00
69	WestWetland	258.00	259.00	1.00	0.00	-258.00	0.00	-259.00	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)	Total Time Flooded (min)
1	Ex_MHR1	0.25	0.00	256.32	0.44	0.00	6.18	256.03	0.15	0 12:01	0 00:00	0.00	0.00
2	Ex_MHR2	0.25	0.00	255.91	0.43	0.00	3.74	255.63	0.15	0 12:02	0 00:00	0.00	0.00
3	Ex_MHR25	0.25	0.00	257.60	1.12	0.00	5.75	256.64	0.16	0 11:46	0 00:00	0.00	0.00
4	Ex_MHR26	0.25	0.00	257.94	1.30	0.00	4.81	256.82	0.18	0 11:46	0 00:00	0.00	0.00
5	Ex_MHR27	0.25	0.00	258.33	1.39	0.00	2.67	257.15	0.21	0 11:46	0 00:00	0.00	0.00
6	Ex_MHR28	1.35	1.35	259.12	1.75	0.00	0.18	257.61	0.24	0 12:00	0 00:00	0.00	0.00
7	Ex_MHR3	0.25	0.00	255.61	0.38	0.00	3.39	255.37	0.14	0 12:02	0 00:00	0.00	0.00
8	Jun-34	6.37	0.00	256.54	1.92	0.00	1.71	255.88	1.26	0 13:07	0 00:00	0.00	0.00
9	Jun-35	0.66	0.66	256.75	2.05	0.00	0.75	255.86	1.16	0 12:00	0 00:00	0.00	0.00
10	Jun-36	6.38	0.00	257.09	2.37	0.00	1.26	255.91	1.19	0 12:06	0 00:00	0.00	0.00
11	Jun-37	3.43	0.54	258.44	3.15	0.00	2.86	256.05	0.76	0 12:04	0 00:00	0.00	0.00
12	Jun-38	1.44	1.44	260.36	4.83	0.00	1.44	256.16	0.63	0 12:01	0 00:00	0.00	0.00
13	Jun-39	0.13	0.13	258.76	1.83	0.00	0.29	257.05	0.12	0 12:03	0 00:00	0.00	0.00
14	Jun-40	0.69	0.00	258.02	1.92	0.00	0.53	256.34	0.24	0 12:16	0 00:00	0.00	0.00
15	Jun-41	0.65	0.13	259.38	3.61	0.00	0.27	256.21	0.44	0 12:02	0 00:00	0.00	0.00
16	Jun-42	2.05	0.00	257.18	1.95	0.00	1.72	256.00	0.77	0 12:07	0 00:00	0.00	0.00
17	Jun-43	1.01	0.00	257.19	0.94	0.00	0.56	256.34	0.09	0 12:07	0 00:00	0.00	0.00
18	Jun-44	0.97	0.00	258.08	0.53	0.00	0.52	257.66	0.11	0 12:08	0 00:00	0.00	0.00
19	Jun-46	1.11	0.00	258.52	0.82	0.00	0.23	257.84	0.14	0 12:06	0 00:00	0.00	0.00
20	Jun-47	1.24	0.24	258.70	0.60	0.00	0.40	258.22	0.12	0 12:02	0 00:00	0.00	0.00
21	Jun-48	0.05	0.00	258.70	0.35	0.00	0.70	258.40	0.05	0 12:02	0 00:00	0.00	0.00
22	Jun-49	1.10	0.31	257.68	0.78	0.00	0.42	257.06	0.16	0 12:10	0 00:00	0.00	0.00
23	Jun-50	1.02	0.00	257.29	0.54	0.00	0.66	256.91	0.16	0 12:26	0 00:00	0.00	0.00
24	Jun-51	0.52	0.00	259.32	0.87	0.00	1.18	258.56	0.11	0 11:59	0 00:00	0.00	0.00
25	Jun-52	1.07	0.00	259.05	3.36	0.00	0.95	256.14	0.45	0 12:04	0 00:00	0.00	0.00
26	Jun-53	1.30	0.00	257.71	2.36	0.00	1.89	256.04	0.69	0 12:03	0 00:00	0.00	0.00
27	Jun-54	0.42	0.42	258.43	2.81	0.00	1.37	256.14	0.52	0 12:01	0 00:00	0.00	0.00
28	Jun-55	0.98	0.62	258.32	2.72	0.00	1.38	256.10	0.50	0 12:01	0 00:00	0.00	0.00
29	Jun-56	0.92	0.03	257.37	1.58	0.00	0.43	256.13	0.34	0 12:06	0 00:00	0.00	0.00
30	Jun-61	1.21	0.00	259.32	1.00	0.00	3.48	258.38	0.06	0 12:02	0 00:00	0.00	0.00
31	Jun-64	0.53	0.00	261.50	0.37	0.00	2.00	261.18	0.05	0 12:00	0 00:00	0.00	0.00
32	Jun-65	0.54	0.54	263.10	0.41	0.00	1.40	262.74	0.05	0 12:00	0 00:00	0.00	0.00
33	Jun-66	1.00	0.00	254.16	1.00	0.00	1.84	253.52	0.36	0 12:52	0 00:00	0.00	0.00
34	Jun-67	1.26	0.46	258.59	3.11	0.00	1.31	256.09	0.61	0 12:04	0 00:00	0.00	0.00
35	Jun-68	0.67	0.43	259.25	3.39	0.00	0.85	256.19	0.33	0 12:03	0 00:00	0.00	0.00
36	Jun-69	0.33	0.33	259.40	3.19	0.00	1.80	256.36	0.15	0 12:03	0 00:00	0.00	0.00
37	Jun-70	0.55	0.55	260.30	3.83	0.00	2.70	256.60	0.13	0 12:00	0 00:00	0.00	0.00
38	Jun-71	0.63	0.63	259.44	2.65	0.00	0.56	256.91	0.12	0 12:05	0 00:00	0.00	0.00
39	Jun-72	0.41	0.41	259.67	0.92	0.00	0.28	258.83	0.08	0 12:00	0 00:00	0.00	0.00
40	Jun-73	0.68	0.68	259.69	1.04	0.00	0.26	258.76	0.11	0 12:00	0 00:00	0.00	0.00
41	Jun-74	0.68	0.37	260.01	0.47	0.00	3.99	259.60	0.06	0 12:00	0 00:00	0.00	0.00
42	Jun-75	0.31	0.31	260.38	0.38	0.00	4.12	260.04	0.04	0 12:00	0 00:00	0.00	0.00
43	Jun-76	1.07	0.68	261.72	2.53	0.00	0.48	259.31	0.12	0 12:06	0 00:00	0.00	0.00
44	Jun-77	0.61	0.00	262.76	2.30	0.00	2.04	260.56	0.10	0 12:07	0 00:00	0.00	0.00
45	Jun-78	0.85	0.85	265.01	3.26	0.00	0.29	261.87	0.12	0 12:04	0 00:00	0.00	0.00
46	NorthWetland	0.41	0.41	252.00	0.00	0.00	6.00	252.00	0.00	0 00:00	0 00:00	0.00	0.00
47	OutletStructure	1.00	0.00	255.17	0.92	0.00	3.18	254.60	0.35	0 13:11	0 00:00	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)	Total Time Flooded (min)
48	Ravine_1	6.90	0.17	256.80	0.70	0.00	3.30	256.30	0.20	0 12:24	0 00:00	0.00	0.00
49	Ravine_2	7.61	0.40	253.86	0.86	0.00	3.24	253.29	0.29	0 12:28	0 00:00	0.00	0.00
50	Ravine_3	7.51	0.08	253.15	0.70	0.00	3.30	252.68	0.23	0 12:28	0 00:00	0.00	0.00
51	RH_1	4.38	4.38	271.61	4.01	0.00	0.09	268.50	0.90	0 12:01	0 00:00	0.00	0.00
52	RH_10	7.37	0.28	263.77	1.87	0.00	0.13	262.51	0.61	0 12:13	0 00:00	0.00	0.00
53	RH_11	6.57	0.09	262.49	2.16	0.00	0.06	261.00	0.67	0 12:21	0 00:00	0.00	0.00
54	RH_12	2.34	2.34	269.51	0.51	0.00	0.99	269.09	0.09	0 12:00	0 00:00	0.00	0.00
55	RH_13	2.47	0.19	264.71	0.71	0.00	1.79	264.16	0.16	0 12:01	0 00:00	0.00	0.00
56	RH_14	0.73	0.00	263.24	1.54	0.00	0.26	262.21	0.51	0 12:41	0 00:00	0.00	0.00
57	RH_15	0.90	0.20	260.76	1.38	0.00	0.24	259.87	0.49	0 12:55	0 00:00	0.00	0.00
58	RH_16	0.48	0.00	257.09	0.73	0.00	0.91	256.73	0.37	0 12:55	0 00:00	0.00	0.00
59	RH_17	1.51	0.45	257.69	1.27	0.00	0.31	257.03	0.61	0 12:24	0 00:00	0.00	0.00
60	RH_2	3.61	3.61	272.26	2.12	0.00	0.19	270.73	0.59	0 12:00	0 00:00	0.00	0.00
61	RH_3	7.51	0.00	269.98	2.91	0.00	0.52	267.87	0.80	0 12:05	0 00:00	0.00	0.00
62	RH_4	5.88	0.13	268.48	1.85	0.00	0.12	267.15	0.52	0 12:04	0 00:00	0.00	0.00
63	RH_5	1.69	1.69	271.89	1.54	0.00	0.21	270.73	0.38	0 12:01	0 00:00	0.00	0.00
64	RH_6	7.27	0.00	268.14	1.64	0.00	0.06	266.96	0.46	0 12:09	0 00:00	0.00	0.00
65	RH_7	0.00	0.00	272.00	0.00	0.00	1.50	272.00	0.00	0 00:00	0 00:00	0.00	0.00
66	RH_8	0.38	0.38	269.57	1.82	0.00	0.28	268.15	0.40	0 12:08	0 00:00	0.00	0.00
67	RH_9	0.36	0.11	265.52	1.52	0.00	0.28	264.38	0.38	0 12:22	0 00:00	0.00	0.00
68	WestOutfall	0.06	0.06	257.00	0.00	0.00	2.45	257.00	0.00	0 00:00	0 00:00	0.00	0.00
69	WestWetland	0.10	0.10	258.00	0.00	0.00	1.00	258.00	0.00	0 00:00	0 00:00	0.00	0.00

Channel Input

SN	Element ID	Length (m)	Inlet Invert Elevation (m)	Inlet Invert Offset (m)	Outlet Invert Elevation (m)	Outlet Invert Offset (m)	Total Drop (m)	Average Slope (%)	Shape	Height (m)	Width (m)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cms)	Flap Gate
1	Link-103	10.00	257.70	2.98	257.50	4.50	0.20	2.0000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
2	Link-104	50.00	257.50	1.71	256.50	3.50	1.00	2.0000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
3	Link-122	70.00	259.30	3.95	258.60	3.37	0.70	1.0000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
4	Link-123	90.00	259.40	3.80	259.30	3.95	0.10	0.1100	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
5	Link-124	90.00	259.50	3.88	259.40	3.80	0.10	0.1100	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
6	Link-125	50.00	259.65	1.00	258.70	0.60	0.95	1.9000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
7	Link-126	50.00	259.65	0.90	258.70	0.60	0.95	1.9000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
8	Link-127	100.00	259.60	4.12	259.50	3.88	0.10	0.1000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
9	Link-128	150.00	259.70	4.01	259.60	4.12	0.10	0.0700	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
10	Link-129	80.00	259.80	3.94	259.70	4.01	0.10	0.1300	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
11	Link-130	100.00	259.90	3.69	259.80	3.94	0.10	0.1000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
12	Link-131	70.00	259.40	2.61	259.30	3.95	0.10	0.1400	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
13	Link-132	150.00	265.00	3.25	264.50	4.04	0.50	0.3300	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
14	Link-133	150.00	264.50	4.04	261.90	2.71	2.60	1.7300	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
15	Link-134	250.00	261.90	2.71	257.70	2.98	4.20	1.6800	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
16	Link-135	100.00	262.50	4.18	261.00	5.71	1.50	1.5000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
17	Link-34	270.00	271.40	3.80	269.65	2.58	1.75	0.6500	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
18	Link-35	50.00	272.15	2.01	269.65	2.58	2.50	5.0000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
19	Link-36	222.00	269.65	2.58	268.30	1.67	1.35	0.6100	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
20	Link-37	18.00	268.30	1.67	267.90	1.40	0.40	2.2200	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
21	Link-38	227.00	271.80	1.45	267.90	1.40	3.90	1.7200	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
22	Link-39	415.00	267.90	1.40	263.50	1.60	4.40	1.0600	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
23	Link-41	180.00	269.55	1.80	265.50	1.50	4.05	2.2500	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
24	Link-42	155.00	265.50	1.50	263.50	1.60	2.00	1.2900	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
25	Link-43	140.00	263.50	1.60	262.25	1.92	1.25	0.8900	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
26	Link-44	470.00	262.25	1.92	258.00	1.90	4.25	0.9000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
27	Link-45	195.00	263.20	1.50	260.70	1.32	2.50	1.2800	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
28	Link-46	280.00	260.70	1.32	258.00	1.90	2.70	0.9600	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
29	Link-51	65.00	259.00	1.63	258.05	3.33	0.95	1.4600	Rectangular	0.300	10.000	0.0320	0.5000	0.5000	0.0000	0.00	No
30	Link-61	125.00	256.75	0.00	256.25	0.00	0.50	0.4000	User-Defined	1.000	9.000	0.0320	0.5000	0.5000	0.0000	0.00	No
31	Link-63	162.50	257.55	0.00	256.90	0.00	0.65	0.4000	User-Defined	1.000	9.000	0.0320	0.5000	0.5000	0.0000	0.00	No
32	Link-66	133.00	258.10	0.00	257.70	0.00	0.40	0.3000	User-Defined	1.000	9.000	0.0320	0.5000	0.5000	0.0000	0.00	No
33	Link-67	75.00	258.40	0.05	258.10	0.00	0.30	0.4000	User-Defined	1.000	9.000	0.0320	0.5000	0.5000	0.0000	0.00	No
34	Link-89	53.10	258.60	3.37	257.70	2.98	0.90	1.6900	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
35	Link-90	90.00	258.75	1.82	257.75	1.65	1.00	1.1100	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
36	Link-92	110.00	261.50	5.97	261.00	5.71	0.50	0.4500	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
37	Link-93	340.00	261.00	5.71	257.70	2.98	3.30	0.9700	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
38	Link-94	95.00	259.35	3.58	257.75	1.65	1.60	1.6800	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
39	LowerRavine	124.00	253.00	0.00	252.45	0.00	0.55	0.4400	Trapezoidal	4.000	17.000	0.0320	0.5000	0.5000	0.0000	0.00	No
40	OutletRavine	45.00	252.45	0.00	252.00	0.00	0.45	1.0000	Trapezoidal	4.000	17.000	0.0320	0.5000	0.5000	0.0000	0.00	No
41	RH_C1	215.00	269.00	0.00	264.00	0.00	5.00	2.3300	Trapezoidal	1.500	7.000	0.0320	0.5000	0.5000	0.0000	0.00	No
42	RH_C2	60.00	264.00	0.00	263.50	1.50	0.50	0.8300	Trapezoidal	1.500	7.000	0.0320	0.5000	0.5000	0.0000	0.00	No
43	UpperRavine	553.00	256.10	0.00	253.00	0.00	3.10	0.5600	Trapezoidal	4.000	17.000	0.0320	0.5000	0.5000	0.0000	0.00	No

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-103	0.00	0 00:00	11.65	0.00	0.00		0.00	0.00	0.00	0.00	
2	Link-104	0.00	0 00:00	11.65	0.00	0.00		0.01	0.04	0.00	0.00	
3	Link-122	0.00	0 00:00	8.24	0.00	0.00		0.00	0.00	0.00	0.00	
4	Link-123	0.00	0 00:00	2.75	0.00	0.00		0.00	0.00	0.00	0.00	
5	Link-124	0.00	0 00:00	2.75	0.00	0.00		0.00	0.00	0.00	0.00	
6	Link-125	0.33	0 12:00	11.36	0.03	0.49	1.70	0.03	0.11	0.00	0.01	
7	Link-126	0.16	0 12:00	11.36	0.01	0.37	2.25	0.02	0.07	0.00	0.01	
8	Link-127	0.00	0 00:00	2.61	0.00	0.00		0.00	0.00	0.00	0.00	
9	Link-128	0.00	0 00:00	2.13	0.00	0.00		0.00	0.00	0.00	0.00	
10	Link-129	0.00	0 00:00	2.91	0.00	0.00		0.00	0.00	0.00	0.00	
11	Link-130	0.00	0 00:00	2.61	0.00	0.00		0.00	0.00	0.00	0.00	
12	Link-131	0.06	0 12:05	3.11	0.02	0.12	9.72	0.03	0.09	0.00	0.00	
13	Link-132	0.01	0 12:04	4.76	0.00	0.07	35.71	0.01	0.02	0.00	0.00	
14	Link-133	0.00	0 00:00	10.85	0.00	0.00		0.00	0.00	0.00	0.00	
15	Link-134	0.00	0 00:00	10.68	0.00	0.00		0.00	0.00	0.00	0.00	
16	Link-135	0.00	0 00:00	10.09	0.00	0.00		0.00	0.00	0.00	0.00	
17	Link-34	3.57	0 12:01	6.63	0.54	0.75	6.00	0.24	0.84	0.00	0.02	
18	Link-35	3.40	0 12:00	18.43	0.18	1.10	0.76	0.19	0.66	0.00	0.11	
19	Link-36	5.10	0 12:05	6.43	0.79	1.05	3.52	0.24	0.81	0.00	0.09	
20	Link-37	4.95	0 12:06	12.28	0.40	1.36	0.22	0.20	0.70	0.00	0.06	
21	Link-38	1.43	0 12:01	10.80	0.13	0.75	5.04	0.15	0.52	0.00	0.04	
22	Link-39	6.00	0 12:09	8.48	0.71	1.22	5.67	0.25	0.83	0.00	0.07	
23	Link-41	0.11	0 12:08	12.36	0.01	0.32	9.38	0.02	0.07	0.00	0.07	
24	Link-42	0.14	0 12:22	9.36	0.02	0.07	36.90	0.15	0.49	0.00	0.01	
25	Link-43	5.74	0 12:14	7.79	0.74	1.21	1.93	0.24	0.81	0.00	0.15	
26	Link-44	4.66	0 12:21	7.84	0.59	1.12	6.99	0.21	0.69	0.00	0.14	
27	Link-45	0.32	0 12:41	9.33	0.03	0.40	8.13	0.05	0.16	0.00	0.06	
28	Link-46	0.39	0 12:55	8.09	0.05	0.43	10.85	0.05	0.15	0.00	0.13	
29	Link-51	1.06	0 12:00	4.89	0.22	0.93	1.16	0.11	0.38	0.00	0.04	
30	Link-61	1.01	0 12:12	4.86	0.21	0.63	3.31	0.73	0.74	0.00	0.32	
31	Link-63	0.95	0 12:08	4.86	0.19	0.46	5.89	0.65	0.65	0.00	0.22	
32	Link-66	1.12	0 12:02	4.22	0.26	0.53	4.18	0.70	0.70	0.00	0.22	
33	Link-67	0.05	0 12:00	4.86	0.01	0.08	15.63	0.43	0.45	0.00	0.00	
34	Link-89	0.00	0 00:00	10.73	0.00	0.00		0.00	0.00	0.00	0.00	
35	Link-90	0.02	0 12:03	8.69	0.00	0.01	150.00	0.13	0.45	0.00	0.00	
36	Link-92	0.00	0 00:00	5.56	0.00	0.00		0.00	0.00	0.00	0.00	
37	Link-93	0.00	0 00:00	8.12	0.00	0.00		0.00	0.00	0.00	0.00	
38	Link-94	0.25	0 12:02	10.69	0.02	0.19	8.33	0.13	0.45	0.00	0.00	
39	LowerRavine	7.47	0 12:28	157.98	0.05	1.54	1.34	0.78	0.20	0.00	0.50	
40	OutletRavine	7.51	0 12:29	237.22	0.03	1.97	0.38	0.64	0.16	0.00	0.76	
41	RH_C1	2.28	0 12:00	24.20	0.09	1.72	2.08	0.60	0.40	0.00	0.56	
42	RH_C2	2.34	0 12:01	14.49	0.16	1.60	0.63	0.62	0.43	0.00	0.63	
43	UpperRavine	6.81	0 12:24	177.61	0.04	1.46	6.31	0.78	0.19	0.00	0.38	

Pipe Input

SN	Element ID	Length (m)	Inlet Invert Elevation (m)	Inlet Invert Offset (m)	Outlet Invert Elevation (m)	Outlet Invert Offset (m)	Total Drop (m)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (m)	Pipe Width (m)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cms)	Flap Gate
1	Ex.STM_1	107.00	257.37	0.00	256.94	0.00	0.43	0.4000	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
2	Ex.STM_2	73.00	256.94	0.00	256.64	0.00	0.30	0.4100	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
3	Ex.STM_3	27.00	256.64	0.00	256.48	0.00	0.16	0.5900	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
4	Ex.STM_4	100.00	256.48	0.00	255.88	0.00	0.60	0.6000	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
5	Ex.STM_5	100.00	255.88	0.00	255.48	0.00	0.40	0.4000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
6	Ex.STM_6	50.00	255.48	0.00	255.23	0.00	0.25	0.5000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
7	Ex.STM_7	102.00	255.23	0.00	254.82	0.00	0.41	0.4000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
8	Link-106	24.80	253.16	0.00	252.85	-0.15	0.31	1.2500	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
9	Link-107	93.20	254.35	0.10	253.20	0.04	1.15	1.2300	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
10	Link-108	110.30	255.48	0.00	255.37	0.08	0.11	0.1000	CIRCULAR	1.200	1.200	0.0130	0.5000	0.5000	0.0000	0.00	No
11	Link-109	30.00	257.70	0.00	257.55	0.00	0.15	0.5000	CIRCULAR	1.050	1.050	0.0130	0.5000	0.5000	0.0000	0.00	No
12	Link-110	153.00	255.69	0.00	255.48	0.00	0.21	0.1400	CIRCULAR	0.900	0.900	0.0130	0.5000	0.5000	0.0000	0.00	No
13	Link-111	66.80	255.86	0.00	255.77	0.08	0.09	0.1300	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
14	Link-112	106.60	256.21	0.00	255.91	0.05	0.30	0.2800	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
15	Link-113	97.50	256.47	0.00	255.88	0.19	0.59	0.6100	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
16	Link-114	85.10	256.79	0.00	255.73	0.38	1.06	1.2500	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
17	Link-115	50.00	258.65	0.00	258.50	0.05	0.15	0.3000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
18	Link-116	50.00	258.75	0.00	258.55	0.10	0.20	0.4000	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
19	Link-117	90.00	259.54	0.00	258.37	0.05	1.17	1.3000	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
20	Link-118	41.60	260.00	0.00	259.56	0.02	0.44	1.0600	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
21	Link-119	181.70	259.19	0.00	256.08	0.29	3.11	1.7100	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
22	Link-120	140.50	260.46	0.00	259.24	0.05	1.22	0.8700	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
23	Link-121	152.20	261.75	0.00	260.51	0.05	1.24	0.8100	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
24	Link-49	20.70	254.62	0.00	254.60	1.60	0.02	0.1000	CIRCULAR	1.800	1.800	0.0130	0.5000	0.5000	0.0000	0.00	No
25	Link-50	75.20	254.70	0.00	254.60	1.60	0.10	0.1300	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
26	Link-52	35.00	254.72	0.00	254.67	0.05	0.05	0.1400	CIRCULAR	1.650	1.650	0.0130	0.5000	0.5000	0.0000	0.00	No
27	Link-53	336.90	255.29	0.00	254.74	0.02	0.55	0.1600	CIRCULAR	1.350	1.350	0.0130	0.5000	0.5000	0.0000	0.00	No
28	Link-54	110.00	255.53	0.00	255.31	0.02	0.22	0.2000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
29	Link-56	110.00	255.77	0.00	255.55	0.02	0.22	0.2000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
30	Link-57	95.50	256.10	0.00	255.85	0.08	0.25	0.2600	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
31	Link-58	90.00	256.93	0.00	256.25	0.15	0.68	0.7600	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
32	Link-59	53.10	255.23	0.00	255.13	0.41	0.10	0.1900	CIRCULAR	1.500	1.500	0.0130	0.5000	0.5000	0.0000	0.00	No
33	Link-60	13.40	256.25	0.00	255.84	0.61	0.41	3.0600	CIRCULAR	1.500	1.500	0.0130	0.5000	0.5000	0.0000	0.00	No
34	Link-62	25.00	256.90	0.00	256.75	0.00	0.15	0.6000	CIRCULAR	1.200	1.200	0.0130	0.5000	0.5000	0.0000	0.00	No
35	Link-68	60.00	258.45	0.00	258.20	0.10	0.25	0.4200	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
36	Link-70	57.00	255.35	0.00	255.25	0.02	0.10	0.1800	CIRCULAR	0.820	0.820	0.0130	0.5000	0.5000	0.0000	0.00	No
37	Link-71	82.00	255.60	0.00	255.43	0.08	0.17	0.2100	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
38	Link-72	85.00	255.79	0.17	255.62	0.02	0.17	0.2000	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
39	Link-73	67.80	255.78	-0.01	255.10	0.38	0.68	1.0000	CIRCULAR	0.900	0.900	0.0130	0.5000	0.5000	0.0000	0.00	No
40	Link-80	89.90	258.32	0.00	255.97	0.68	2.35	2.6100	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
41	Link-81	93.20	261.13	0.00	259.27	0.95	1.86	2.0000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
42	Link-82	103.90	262.69	0.00	261.13	0.00	1.56	1.5000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
43	RH_A1	50.00	270.14	0.00	268.50	1.43	1.64	3.2800	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
44	RH_B1	227.00	270.35	0.00	266.50	0.00	3.85	1.7000	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
45	RH_C3	15.00	262.00	0.00	261.70	0.00	0.30	2.0000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
46	RH_C4	195.00	261.70	0.00	259.38	0.00	2.32	1.1900	CIRCULAR	0.530	0.530	0.0150	0.5000	0.5000	0.0000	0.00	No
47	RH_C5	274.00	259.38	0.00	256.36	0.00	3.02	1.1000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
48	RH_C6	6.00	256.36	0.00	256.24	0.14	0.12	2.0000	CIRCULAR	0.700	0.700	0.0130	0.5000	0.5000	0.0000	0.00	No

Pipe Input

SN	Element ID	Length (m)	Inlet Invert Elevation (m)	Inlet Invert Offset (m)	Outlet Invert Elevation (m)	Outlet Invert Offset (m)	Total Drop (m)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (m)	Pipe Width (m)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cms)	Flap Gate
49	RH_D1	275.00	272.00	0.00	267.75	0.00	4.25	1.5500	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
50	RH_D2	180.00	267.75	0.00	264.00	0.00	3.75	2.0800	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
51	RH_D3	155.00	264.00	0.00	261.90	0.00	2.10	1.3500	CIRCULAR	0.380	0.380	0.0130	0.5000	0.5000	0.0000	0.00	No
52	RH_M1	270.00	267.60	0.00	267.07	0.00	0.53	0.2000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
53	RH_M2	222.00	267.07	0.00	266.63	0.00	0.44	0.2000	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
54	RH_M3	18.00	266.63	0.00	266.50	0.00	0.13	0.7200	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
55	RH_M4	415.00	266.50	0.00	261.90	0.00	4.60	1.1100	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
56	RH_M5	140.00	261.90	0.00	260.33	0.00	1.57	1.1200	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
57	RH_M6	464.00	260.33	0.00	256.42	0.00	3.91	0.8400	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
58	RH_M7	6.00	256.42	0.00	256.37	0.27	0.05	0.8300	CIRCULAR	1.000	1.000	0.0130	0.5000	0.5000	0.0000	0.00	No
59	West_Link	33.73	256.00	-1.00	257.00	0.00	-1.00	-2.9600	Dummy	0.000	0.000	0.0130	0.5000	0.5000	0.0000	0.00	No
60	WestWetland_Link	37.13	258.00	0.00	258.00	0.00	0.00	0.0000	Dummy	0.000	0.000	0.0130	0.5000	0.5000	0.0000	0.00	No
61	Wetland_Link	41.51	252.00	0.00	252.00	0.00	0.00	0.0000	Dummy	0.000	0.000	0.0130	0.5000	0.5000	0.0000	0.00	No

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	Ex.STM_1	0.25	0 12:00	0.18	1.38	1.56	1.14	0.45	1.00	76.00	0.72	SURCHARGED
2	Ex.STM_2	0.25	0 12:00	0.18	1.36	1.56	0.78	0.45	1.00	67.00	0.76	SURCHARGED
3	Ex.STM_3	0.25	0 12:00	0.22	1.13	1.56	0.29	0.45	1.00	61.00	0.87	SURCHARGED
4	Ex.STM_4	0.25	0 12:00	0.22	1.13	1.59	1.05	0.45	0.99	0.00	0.89	> CAPACITY
5	Ex.STM_5	0.25	0 12:01	0.27	0.91	1.33	1.25	0.43	0.83	0.00	0.82	Calculated
6	Ex.STM_6	0.25	0 12:02	0.30	0.82	1.40	0.60	0.40	0.77	0.00	0.85	Calculated
7	Ex.STM_7	0.25	0 12:03	0.39	0.64	1.44	1.18	0.35	0.59	0.00	0.89	Calculated
8	Link-106	1.00	0 13:12	0.89	1.12	2.32	0.18	0.75	1.00	31.00	1.00	SURCHARGED
9	Link-107	1.00	0 13:12	1.24	0.81	2.30	0.68	0.75	1.00	20.00	1.28	SURCHARGED
10	Link-108	1.18	0 12:04	1.23	0.95	1.04	1.77	1.20	1.00	33.00	0.13	SURCHARGED
11	Link-109	0.97	0 12:06	1.93	0.50	1.67	0.30	0.66	0.64	0.00	0.54	Calculated
12	Link-110	0.88	0 12:03	0.67	1.31	1.38	1.85	0.90	1.00	74.00	0.11	SURCHARGED
13	Link-111	0.54	0 12:01	0.41	1.31	1.21	0.92	0.75	1.00	72.00	0.18	SURCHARGED
14	Link-112	0.24	0 12:00	0.33	0.74	0.85	2.09	0.60	1.00	31.00	0.22	SURCHARGED
15	Link-113	0.55	0 12:00	0.33	1.65	2.54	0.64	0.52	1.00	28.00	0.38	SURCHARGED
16	Link-114	0.44	0 11:58	0.32	1.37	2.74	0.52	0.45	1.00	27.00	0.54	SURCHARGED
17	Link-115	0.35	0 12:11	0.24	1.49	1.62	0.51	0.52	1.00	21.00	0.74	SURCHARGED
18	Link-116	0.21	0 12:01	0.18	1.16	1.32	0.63	0.45	1.00	21.00	0.79	SURCHARGED
19	Link-117	0.68	0 12:00	0.96	0.71	2.53	0.59	0.52	0.83	0.00	1.40	Calculated
20	Link-118	0.30	0 12:00	0.44	0.69	1.68	0.41	0.41	0.79	0.00	1.16	Calculated
21	Link-119	0.89	0 12:06	0.80	1.11	3.16	0.96	0.60	1.00	21.00	1.28	SURCHARGED
22	Link-120	0.53	0 12:10	0.57	0.92	1.94	1.21	0.60	1.00	18.00	1.15	SURCHARGED
23	Link-121	0.61	0 12:00	0.39	1.57	2.82	0.90	0.52	1.00	17.00	1.11	SURCHARGED
24	Link-49	6.37	0 12:06	3.57	1.78	2.77	0.12	1.80	1.00	129.00	0.16	SURCHARGED
25	Link-50	0.66	0 12:00	0.22	2.96	2.34	0.54	0.60	1.00	2174.00	0.05	SURCHARGED
26	Link-52	6.37	0 12:06	3.45	1.85	2.98	0.20	1.65	1.00	196.00	0.15	SURCHARGED
27	Link-53	3.12	0 12:03	2.16	1.45	2.18	2.58	1.35	1.00	38.00	0.13	SURCHARGED
28	Link-54	0.82	0 12:00	0.27	2.97	2.88	0.64	0.60	1.00	511.00	0.12	SURCHARGED
29	Link-56	0.53	0 12:01	0.27	1.92	1.86	0.99	0.60	1.00	217.00	0.06	SURCHARGED
30	Link-57	0.34	0 11:59	0.15	2.31	2.11	0.75	0.45	1.00	107.00	0.21	SURCHARGED
31	Link-58	0.10	0 11:58	0.08	1.13	1.35	1.11	0.30	1.00	74.00	0.78	SURCHARGED
32	Link-59	2.08	0 12:13	3.07	0.68	1.17	0.76	1.50	1.00	20.00	0.19	SURCHARGED
33	Link-60	1.34	0 12:13	12.37	0.11	2.32	0.10	1.12	0.76	0.00	0.82	Calculated
34	Link-62	1.02	0 12:10	3.02	0.34	1.59	0.26	0.66	0.55	0.00	0.41	Calculated
35	Link-68	0.52	0 12:00	0.40	1.32	1.96	0.51	0.54	0.91	0.00	0.86	> CAPACITY
36	Link-70	1.24	0 12:01	0.60	2.06	2.31	0.41	0.82	1.00	419.00	0.14	SURCHARGED
37	Link-71	0.89	0 12:00	0.51	1.75	2.01	0.68	0.75	1.00	223.00	0.17	SURCHARGED
38	Link-72	0.37	0 12:00	0.50	0.73	0.83	1.71	0.75	1.00	93.00	0.11	SURCHARGED
39	Link-73	0.92	0 12:08	1.83	0.50	1.44	0.78	0.90	1.00	22.00	0.34	SURCHARGED
40	Link-80	1.10	0 12:00	1.80	0.61	3.35	0.45	0.75	1.00	4.00	0.89	SURCHARGED
41	Link-81	0.53	0 12:00	0.87	0.61	3.03	0.51	0.35	0.59	0.00	1.65	Calculated
42	Link-82	0.53	0 12:00	0.75	0.71	2.73	0.63	0.39	0.65	0.00	1.50	Calculated
43	RH_A1	0.23	0 11:42	0.18	1.31	3.26	0.26	0.30	1.00	284.00	1.54	SURCHARGED
44	RH_B1	0.14	0 11:41	0.13	1.10	1.95	1.94	0.30	1.00	219.00	0.63	SURCHARGED
45	RH_C3	0.73	0 12:38	0.87	0.84	2.57	0.10	0.60	1.00	305.00	0.94	SURCHARGED
46	RH_C4	0.42	0 11:55	0.41	1.04	2.09	1.56	0.52	1.00	329.00	0.87	SURCHARGED
47	RH_C5	0.48	0 12:55	0.45	1.06	2.22	2.06	0.52	1.00	335.00	0.67	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)		
48	RH_C6	0.48	0 12:55	1.31	0.37	1.64	0.06	0.63	0.90	0.00	0.95	Calculated
49	RH_D1	0.00	0 00:00	0.12	0.00	0.00		0.15	0.50	0.00	0.00	Calculated
50	RH_D2	0.15	0 11:53	0.14	1.04	2.14	1.40	0.30	1.00	212.00	1.11	SURCHARGED
51	RH_D3	0.19	0 14:31	0.20	0.92	1.71	1.51	0.38	1.00	239.00	0.32	SURCHARGED
52	RH_M1	0.50	0 11:44	0.27	1.84	1.77	2.54	0.60	1.00	255.00	0.30	SURCHARGED
53	RH_M2	0.80	0 11:45	0.37	2.13	2.23	1.66	0.68	1.00	209.00	0.52	SURCHARGED
54	RH_M3	1.05	0 11:58	0.95	1.11	2.37	0.13	0.75	1.00	202.00	0.79	SURCHARGED
55	RH_M4	0.91	0 11:46	0.89	1.02	2.59	2.67	0.68	1.00	205.00	0.98	SURCHARGED
56	RH_M5	1.04	0 11:55	0.89	1.16	2.91	0.80	0.68	1.00	263.00	1.01	SURCHARGED
57	RH_M6	1.10	0 12:21	1.02	1.07	2.48	3.12	0.75	1.00	261.00	0.53	SURCHARGED
58	RH_M7	1.51	0 12:24	2.19	0.69	2.23	0.04	0.81	0.81	0.00	0.80	Calculated
59	West_Link	0.06	0 12:00	0.00	0.04	0.00		0.78	0.19	0.00	0.38	Calculated
60	WestWetland_Link	0.10	0 12:00	0.00	0.04	0.00		0.78	0.19	0.00	0.38	Calculated
61	Wetland_Link	0.41	0 12:00	0.00	0.04	0.00		0.78	0.19	0.00	0.38	Calculated

Project Description

File Name	18010_Post-Development Rev.1.SPF
Description	I:\ACAD Projects\2018\18010\03-Ref\18010_Pre-Dev. Storm Parcels.dwg
	I:\ACAD Projects\2018\18010\03-Ref\18010_Pre-Dev. Storm Parcels.dwg
	I:\ACAD Projects\2018\18010\03-Ref\18010_Post-Dev.Storm Parcels.dwg
	I:\ACAD Projects\2018\18010\03-Ref\18010_Post-Dev.Storm Parcels.dwg

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	YES

Analysis Options

Start Analysis On	00:00:00	0:00:00
End Analysis On	00:00:00	0:00:00
Start Reporting On	00:00:00	0:00:00
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	60
Nodes	77
Junctions	69
Outfalls	5
Flow Diversions	0
Inlets	0
Storage Nodes	3
Links	110
Channels	43
Pipes	61
Pumps	0
Orifices	1
Weirs	5
Outlets	0
Pollutants	0
Land Uses	0

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	{Survey Site}.Standard : 10	0.92	2.00	67.00	2.0000	125.00	0.0130	0.2000	113.99	63.1380	49.61	45.54	0.10	0 01:00:04
2	{Survey Site}.Standard : 11	21.38	2.00	67.00	2.0000	360.00	0.0130	0.2000	113.99	60.6140	55.73	1191.54	0.61	0 03:30:35
3	{Survey Site}.Standard : 12	0.71	5.00	67.00	2.0000	90.00	0.0130	0.2000	113.99	61.2320	51.50	36.57	0.08	0 01:01:33
4	{Survey Site}.Standard : 13	1.65	45.00	71.05	2.0000	220.00	0.0130	0.2000	113.99	32.2840	80.47	132.62	0.51	0 00:42:59
5	{Survey Site}.Standard : 14	4.32	2.00	67.00	2.0000	350.00	0.0130	0.2000	113.99	63.5310	49.21	212.57	0.34	0 01:22:02
6	{Survey Site}.Standard : 17	0.36	5.00	67.00	5.0000	20.00	0.0130	0.2000	113.99	61.4770	51.25	18.24	0.03	0 01:16:12
7	{Survey Site}.Standard : 18	13.10	5.00	48.00	10.0000	300.00	0.0130	0.2000	113.99	82.0340	30.71	402.21	0.49	0 01:46:01
8	{Survey Site}.Standard : 19	1.16	55.00	78.40	2.0000	90.00	0.0130	0.2000	113.99	21.4670	91.28	105.89	0.40	0 00:52:47
9	{Survey Site}.Standard : 2	20.86	45.00	71.05	2.0000	300.00	0.0130	0.2000	113.99	33.4560	79.29	1654.24	4.23	0 02:43:41
10	{Survey Site}.Standard : 23	2.20	5.00	48.00	10.0000	100.00	0.0130	0.2000	113.99	81.3380	31.38	68.98	0.11	0 01:10:14
11	{Survey Site}.Standard : 26	1.12	45.00	71.05	2.0000	40.00	0.0130	0.2000	113.99	32.7660	80.02	89.94	0.28	0 01:35:02
12	{Survey Site}.Standard : 27	0.37	45.00	71.05	2.0000	60.00	0.0130	0.2000	113.99	32.2440	80.51	29.79	0.12	0 00:38:15
13	{Survey Site}.Standard : 28	0.12	45.00	71.05	2.0000	40.00	0.0130	0.2000	113.99	32.1270	80.59	9.91	0.04	0 00:25:11
14	{Survey Site}.Standard : 29	7.86	45.00	71.05	2.0000	110.00	0.0130	0.2000	113.99	33.4820	79.26	623.12	1.58	0 02:46:24
15	{Survey Site}.Standard : 3	25.14	45.00	71.05	2.0000	370.00	0.0130	0.2000	113.99	33.4300	79.31	1993.85	5.13	0 02:41:25
16	{Survey Site}.Standard : 30	20.00	30.00	63.70	2.0000	225.00	0.0130	0.2000	113.99	50.2530	62.50	1249.67	2.73	0 03:39:09
17	{Survey Site}.Standard : 31	5.54	5.00	57.00	2.0000	245.00	0.0130	0.2000	113.99	73.5620	39.19	217.25	0.26	0 01:55:50
18	{Survey Site}.Standard : 32	3.34	2.00	67.00	2.0000	95.00	0.0130	0.2000	113.99	64.8500	47.87	159.65	0.13	0 02:33:36
19	{Survey Site}.Standard : 33	7.71	2.00	67.00	2.0000	215.00	0.0130	0.2000	113.99	64.9060	47.84	368.62	0.29	0 02:35:32
20	{Survey Site}.Standard : 4	3.13	2.00	67.00	2.0000	155.00	0.0130	0.2000	113.99	64.0360	48.69	152.45	0.18	0 01:50:15
21	{Survey Site}.Standard : 46	5.31	2.00	67.00	2.0000	200.00	0.0130	0.2000	113.99	64.4010	48.32	256.79	0.25	0 02:09:57
22	{Survey Site}.Standard : 5	10.46	45.00	71.05	0.5000	235.00	0.0130	0.2000	113.99	33.5730	79.00	826.22	1.98	0 03:09:49
23	{Survey Site}.Standard : 51	0.39	95.00	95.55	0.5000	20.00	0.0130	0.2000	113.99	0.5490	112.01	43.12	0.15	0 00:30:54
24	{Survey Site}.Standard : 52	10.94	2.00	36.00	0.5000	240.00	0.0130	0.2000	113.99	91.5200	19.72	215.68	0.12	0 04:32:19
25	{Survey Site}.Standard : 53	0.36	75.00	85.75	3.0000	20.00	0.0130	0.2000	113.99	8.2490	104.11	37.90	0.15	0 00:40:24
26	{Survey Site}.Standard : 54	3.94	75.00	85.75	2.0000	150.00	0.0130	0.2000	113.99	8.2490	104.02	409.74	1.52	0 00:56:51
27	{Survey Site}.Standard : 57	0.42	20.00	58.80	2.0000	125.00	0.0130	0.2000	113.99	59.0700	53.66	22.70	0.08	0 00:33:25
28	{Survey Site}.Standard : 6	11.54	2.00	67.00	2.0000	280.00	0.0130	0.2000	113.99	65.1590	47.57	549.04	0.38	0 02:49:08
29	{Survey Site}.Standard : 63	1.63	55.00	75.95	2.0000	90.00	0.0130	0.2000	113.99	23.3470	89.47	145.75	0.52	0 01:04:42
30	{Survey Site}.Standard : 65	1.71	55.00	75.95	2.0000	130.00	0.0130	0.2000	113.99	23.2670	89.55	153.03	0.57	0 00:53:24
31	{Survey Site}.Standard : 68	1.31	55.00	75.95	2.0000	90.00	0.0130	0.2000	113.99	23.2910	89.53	117.46	0.43	0 00:56:49
32	{Survey Site}.Standard : 69	2.53	55.00	75.95	0.5000	85.00	0.0130	0.2000	113.99	23.5330	88.91	224.59	0.63	0 02:12:04
33	{Survey Site}.Standard : 7	10.98	5.00	67.00	2.0000	225.00	0.0130	0.2000	113.99	63.4360	49.29	540.91	0.48	0 03:03:39
34	{Survey Site}.Standard : 71	0.41	75.00	85.75	0.5000	20.00	0.0130	0.2000	113.99	8.2490	103.92	42.40	0.14	0 01:14:03
35	{Survey Site}.Standard : 72	1.08	55.00	75.95	2.0000	75.00	0.0130	0.2000	113.99	23.2910	89.53	96.24	0.36	0 00:56:15
36	{Survey Site}.Standard : 73	1.04	5.00	51.45	1.5000	65.00	0.0130	0.2000	113.99	78.7720	33.95	35.17	0.04	0 01:42:20
37	{Survey Site}.Standard : 74	2.88	55.00	75.95	2.0000	70.00	0.0130	0.2000	113.99	23.5330	89.13	256.70	0.79	0 01:45:54
38	{Survey Site}.Standard : 75	0.35	5.00	51.45	0.5000	35.00	0.0130	0.2000	113.99	78.9090	33.84	11.91	0.01	0 01:47:56
39	{Survey Site}.Standard : 76	0.87	5.00	51.45	25.0000	150.00	0.0130	0.2000	113.99	77.3570	35.44	30.97	0.12	0 00:24:03
40	{Survey Site}.Standard : 77	2.26	95.00	49.00	2.0000	250.00	0.0130	0.2000	113.99	4.1810	108.68	245.18	1.04	0 00:12:56
41	{Survey Site}.Standard : 78	2.38	55.00	75.95	3.0000	75.00	0.0130	0.2000	113.99	22.1250	101.44	241.83	0.78	0 01:20:20
42	{Survey Site}.Standard : 79	0.19	5.00	51.45	2.0000	25.00	0.0130	0.2000	113.99	77.9960	34.76	6.43	0.01	0 00:59:14
43	{Survey Site}.Standard : 8	3.30	2.00	67.00	2.0000	125.00	0.0130	0.2000	113.99	64.4010	48.33	159.69	0.15	0 02:09:33
44	{Survey Site}.Standard : 80	0.72	2.00	48.00	10.0000	55.00	0.0130	0.2000	113.99	83.2730	34.71	24.99	0.04	0 00:52:26
45	{Survey Site}.Standard : 81	1.46	35.00	66.15	2.0000	55.00	0.0130	0.2000	113.99	43.0830	69.69	101.89	0.29	0 01:41:36
46	{Survey Site}.Standard : 82	1.98	35.00	66.15	2.0000	55.00	0.0130	0.2000	113.99	43.3330	69.44	137.29	0.37	0 02:01:47
47	{Survey Site}.Standard : 83	1.98	55.00	75.95	2.0000	75.00	0.0130	0.2000	113.99	24.0550	132.39	262.52	0.74	0 01:21:14

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)
48	{Survey Site}.Standard : 84	1.00	55.00	75.95	2.0000	50.00	0.0130	0.2000	113.99	23.3790	89.44	89.80	0.32	0 01:08:52
49	{Survey Site}.Standard : 85	1.78	55.00	75.95	2.0000	70.00	0.0130	0.2000	113.99	23.4520	89.36	159.32	0.54	0 01:19:26
50	{Survey Site}.Standard : 86	1.43	55.00	75.95	2.0000	100.00	0.0130	0.2000	113.99	23.2910	89.53	127.58	0.47	0 00:56:03
51	{Survey Site}.Standard : 87	2.66	55.00	75.95	2.0000	100.00	0.0130	0.2000	113.99	23.4680	89.34	237.37	0.80	0 01:21:28
52	{Survey Site}.Standard : 88	1.64	55.00	75.95	2.0000	75.00	0.0130	0.2000	113.99	23.4040	89.41	146.46	0.51	0 01:12:25
53	{Survey Site}.Standard : 89	1.11	55.00	75.95	2.0000	100.00	0.0130	0.2000	113.99	23.2340	89.58	99.70	0.38	0 00:48:20
54	{Survey Site}.Standard : 9	3.53	2.00	67.00	2.0000	100.00	0.0130	0.2000	113.99	64.8780	47.86	169.05	0.13	0 02:34:10
55	{Survey Site}.Standard : 90	1.22	65.00	80.85	2.0000	130.00	0.0130	0.2000	113.99	15.0360	97.57	118.54	0.49	0 00:37:26
56	{Survey Site}.Standard : 91	1.00	65.00	80.85	2.0000	130.00	0.0130	0.2000	113.99	15.0360	97.57	97.28	0.41	0 00:33:14
57	{Survey Site}.Standard : 92	2.19	55.00	75.95	2.0000	75.00	0.0130	0.2000	113.99	23.5000	89.30	195.83	0.64	0 01:26:17
58	{Survey Site}.Standard : 93	2.28	20.00	58.80	5.0000	525.00	0.0130	0.2000	113.99	59.0080	53.73	122.29	0.47	0 00:29:27
59	Sub-01	0.13	55.00	75.95	2.0000	40.00	0.0130	0.2000	113.99	23.0570	89.66	11.66	0.05	0 00:23:05
60	Sub-02	0.18	55.00	75.95	2.0000	30.00	0.0130	0.2000	113.99	23.1300	89.64	16.13	0.07	0 00:33:21

Node Summary

SN	Element ID	Element Type	Invert Elevation (m)	Ground/Rim (Max) Elevation (m)	Initial Water Elevation (m)	Surcharge Elevation (m)	Ponded Area (m²)	Peak Inflow (cms)	Max HGL Elevation Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ha-mm)	Total Time Flooded (min)
1	Ex_MHR1	Junction	255.88	262.50	0.00	0.00	0.00	0.25	256.32	0.00	6.18	0 00:00	0.00	0.00
2	Ex_MHR2	Junction	255.48	259.65	0.00	0.00	0.00	0.25	255.91	0.00	3.74	0 00:00	0.00	0.00
3	Ex_MHR25	Junction	256.48	263.35	0.00	0.00	0.00	0.25	257.54	0.00	5.81	0 00:00	0.00	0.00
4	Ex_MHR26	Junction	256.64	262.75	0.00	0.00	0.00	0.25	257.91	0.00	4.84	0 00:00	0.00	0.00
5	Ex_MHR27	Junction	256.94	261.00	0.00	0.00	0.00	0.25	258.39	0.00	2.61	0 00:00	0.00	0.00
6	Ex_MHR28	Junction	257.37	259.30	0.00	0.00	0.00	1.58	259.14	0.00	0.16	0 00:00	0.00	0.00
7	Ex_MHR3	Junction	255.23	259.00	0.00	0.00	0.00	0.25	255.61	0.00	3.39	0 00:00	0.00	0.00
8	Jun-34	Junction	254.62	258.25	0.00	0.00	0.00	6.78	256.72	0.00	1.53	0 00:00	0.00	0.00
9	Jun-35	Junction	254.70	257.50	0.00	0.00	0.00	0.78	257.34	0.00	0.16	0 00:00	0.00	0.00
10	Jun-36	Junction	254.72	258.00	0.00	0.00	0.00	6.83	257.31	0.00	1.04	0 00:00	0.00	0.00
11	Jun-37	Junction	255.29	261.30	0.00	0.00	0.00	3.82	258.98	0.00	2.32	0 00:00	0.00	0.00
12	Jun-38	Junction	255.53	261.80	0.00	0.00	0.00	1.67	261.09	0.00	0.71	0 00:00	0.00	0.00
13	Jun-39	Junction	256.93	259.05	0.00	0.00	0.00	0.15	258.76	0.00	0.29	0 00:00	0.00	0.00
14	Jun-40	Junction	256.10	258.55	0.00	0.00	0.00	0.91	258.14	0.00	0.41	0 00:00	0.00	0.00
15	Jun-41	Junction	255.77	259.65	0.00	0.00	0.00	0.83	259.39	0.00	0.26	0 00:00	0.00	0.00
16	Jun-42	Junction	255.23	258.90	0.00	0.00	0.00	2.26	257.43	0.00	1.47	0 00:00	0.00	0.00
17	Jun-43	Junction	256.25	257.25	0.00	0.00	0.00	1.30	257.45	0.00	0.30	0 00:00	0.00	0.00
18	Jun-44	Junction	257.55	258.55	0.00	0.00	0.00	1.12	258.11	0.00	0.49	0 00:00	0.00	0.00
19	Jun-46	Junction	257.70	258.70	0.00	258.70	0.00	1.31	258.60	0.00	0.15	0 00:00	0.00	0.00
20	Jun-47	Junction	258.10	259.10	0.00	0.00	0.00	1.48	258.73	0.00	0.37	0 00:00	0.00	0.00
21	Jun-48	Junction	258.35	259.35	0.00	0.00	0.00	0.06	258.74	0.00	0.66	0 00:00	0.00	0.00
22	Jun-49	Junction	256.90	257.90	0.00	0.00	0.00	1.28	257.76	0.00	0.34	0 00:00	0.00	0.00
23	Jun-50	Junction	256.75	257.75	0.00	0.00	0.00	1.18	257.50	0.00	0.45	0 00:00	0.00	0.00
24	Jun-51	Junction	258.45	260.50	0.00	0.00	0.00	0.52	259.33	0.00	1.17	0 00:00	0.00	0.00
25	Jun-52	Junction	255.69	260.00	0.00	0.00	0.00	1.25	259.64	0.00	0.36	0 00:00	0.00	0.00
26	Jun-53	Junction	255.35	259.60	0.00	0.00	0.00	1.45	258.14	0.00	1.46	0 00:00	0.00	0.00
27	Jun-54	Junction	255.62	259.80	0.00	0.00	0.00	0.49	259.08	0.00	0.72	0 00:00	0.00	0.00
28	Jun-55	Junction	255.60	259.70	0.00	0.00	0.00	1.13	258.93	0.00	0.77	0 00:00	0.00	0.00
29	Jun-56	Junction	255.79	257.80	0.00	0.00	0.00	0.96	257.52	0.00	0.28	0 00:00	0.00	0.00
30	Jun-61	Junction	258.32	262.00	0.00	0.00	0.00	1.39	260.10	0.00	2.70	0 00:00	0.00	0.00
31	Jun-64	Junction	261.13	263.50	0.00	0.00	0.00	0.62	261.55	0.00	1.95	0 00:00	0.00	0.00
32	Jun-65	Junction	262.69	264.50	0.00	0.00	0.00	0.63	263.16	0.00	1.34	0 00:00	0.00	0.00
33	Jun-66	Junction	253.16	256.00	0.00	0.00	0.00	1.34	254.68	0.00	1.32	0 00:00	0.00	0.00
34	Jun-67	Junction	255.48	259.90	0.00	0.00	0.00	1.48	259.16	0.00	0.74	0 00:00	0.00	0.00
35	Jun-68	Junction	255.86	260.10	0.00	0.00	0.00	0.78	259.81	0.00	0.29	0 00:00	0.00	0.00
36	Jun-69	Junction	256.21	261.20	0.00	0.00	0.00	0.38	259.92	0.00	1.28	0 00:00	0.00	0.00
37	Jun-70	Junction	256.47	263.00	0.00	0.00	0.00	0.64	261.67	0.00	1.33	0 00:00	0.00	0.00
38	Jun-71	Junction	256.79	260.00	0.00	0.00	0.00	0.74	259.48	0.00	0.52	0 00:00	0.00	0.00
39	Jun-72	Junction	258.75	259.95	0.00	0.00	0.00	0.47	259.68	0.00	0.27	0 00:00	0.00	0.00
40	Jun-73	Junction	258.65	259.95	0.00	0.00	0.00	0.80	259.69	0.00	0.26	0 00:00	0.00	0.00
41	Jun-74	Junction	259.54	264.00	0.00	0.00	0.00	0.79	262.62	0.00	1.38	0 00:00	0.00	0.00
42	Jun-75	Junction	260.00	264.50	0.00	0.00	0.00	0.36	264.50	0.00	0.00	0 12:00	0.00	0.00
43	Jun-76	Junction	259.19	262.20	0.00	0.00	0.00	1.17	261.91	0.00	0.29	0 00:00	0.00	0.00
44	Jun-77	Junction	260.46	264.80	0.00	0.00	0.00	0.61	263.07	0.00	1.73	0 00:00	0.00	0.00
45	Jun-78	Junction	261.75	265.30	0.00	0.00	0.00	0.99	265.03	0.00	0.27	0 00:00	0.00	0.00
46	NorthWetland	Junction	252.00	258.00	0.00	0.00	0.00	0.52	252.00	0.00	6.00	0 00:00	0.00	0.00
47	OutletStructure	Junction	254.25	256.80	0.00	0.00	0.00	1.34	256.42	0.00	1.93	0 00:00	0.00	0.00

Node Summary

SN	Element ID	Element Type	Invert Elevation (m)	Ground/Rim (Max) Elevation (m)	Initial Water Elevation (m)	Surcharge Elevation (m)	Ponded Area (m^2)	Peak Inflow (cms)	Max HGL Elevation Attained (m)	Max Surcharge Depth Attained (m)	Min Freeboard Attained (m)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ha-mm)	Total Time Flooded (min)
48	Ravine_1	Junction	256.10	260.10	0.00	0.00	0.00	9.09	256.92	0.00	3.18	0 00:00	0.00	0.00
49	Ravine_2	Junction	253.00	257.00	0.00	0.00	0.00	10.18	254.02	0.00	3.08	0 00:00	0.00	0.00
50	Ravine_3	Junction	252.45	256.45	0.00	0.00	0.00	10.04	253.29	0.00	3.16	0 00:00	0.00	0.00
51	RH_1	Junction	267.60	271.70	0.00	0.00	0.00	5.13	271.63	0.00	0.07	0 00:00	0.00	0.00
52	RH_10	Junction	261.90	263.90	0.00	0.00	0.00	8.95	263.85	0.00	0.05	0 00:00	0.00	0.00
53	RH_11	Junction	260.33	262.55	0.00	0.00	0.00	8.16	262.54	0.00	0.01	0 00:00	0.00	0.00
54	RH_12	Junction	269.00	270.50	0.00	0.00	0.00	2.73	269.55	0.00	0.95	0 00:00	0.00	0.00
55	RH_13	Junction	264.00	266.50	0.00	0.00	0.00	2.92	264.77	0.00	1.73	0 00:00	0.00	0.00
56	RH_14	Junction	261.70	263.50	0.00	0.00	0.00	0.89	263.25	0.00	0.25	0 00:00	0.00	0.00
57	RH_15	Junction	259.38	261.00	0.00	0.00	0.00	1.13	260.77	0.00	0.23	0 00:00	0.00	0.00
58	RH_16	Junction	256.36	258.00	0.00	0.00	0.00	0.48	257.09	0.00	0.91	0 00:00	0.00	0.00
59	RH_17	Junction	256.42	258.00	0.00	0.00	0.00	1.68	257.80	0.00	0.20	0 00:00	0.00	0.00
60	RH_2	Junction	270.14	272.45	0.00	0.00	0.00	4.23	272.27	0.00	0.18	0 00:00	0.00	0.00
61	RH_3	Junction	267.07	270.50	0.00	0.00	0.00	8.84	270.30	0.00	0.20	0 00:00	0.00	0.00
62	RH_4	Junction	266.63	268.60	0.00	0.00	0.00	6.99	268.51	0.00	0.09	0 00:00	0.00	0.00
63	RH_5	Junction	270.35	272.10	0.00	0.00	0.00	1.98	271.90	0.00	0.20	0 00:00	0.00	0.00
64	RH_6	Junction	266.50	268.20	0.00	0.00	0.00	8.55	268.17	0.00	0.03	0 00:00	0.00	0.00
65	RH_7	Junction	272.00	273.50	0.00	0.00	0.00	0.00	272.00	0.00	1.50	0 00:00	0.00	0.00
66	RH_8	Junction	267.75	269.85	0.00	0.00	0.00	0.48	269.58	0.00	0.27	0 00:00	0.00	0.00
67	RH_9	Junction	264.00	265.80	0.00	0.00	0.00	0.52	265.54	0.00	0.26	0 00:00	0.00	0.00
68	WestOutfall	Junction	257.00	258.40	0.00	0.00	0.00	0.08	257.00	0.00	2.45	0 00:00	0.00	0.00
69	WestWetland	Junction	258.00	259.00	0.00	0.00	0.00	0.12	258.00	0.00	1.00	0 00:00	0.00	0.00
70	North_Wetland	Outfall	252.00					0.52	252.00					
71	Outfall	Outfall	252.00					10.04	252.69					
72	TinerEstatesSTM	Outfall	254.82					0.25	255.14					
73	West_Outfall	Outfall	257.00					0.08	257.00					
74	West_Wetland	Outfall	258.00					0.12	258.00					
75	Ex_SE_Pond	Storage Node	262.00	266.00	0.00		0.00	3.23	264.07				0.00	0.00
76	SWM_FB	Storage Node	253.00	257.10	254.50		0.00	6.83	256.70				0.00	0.00
77	SWM_WP	Storage Node	253.00	257.10	254.50		0.00	6.12	256.70				0.00	0.00

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(m)	(m)	(m)	(%)	(m)		(cms)	(cms)		(m/sec)	(m)		(min)	
1	Ex.STM_1	Pipe	Ex_MHR28	Ex_MHR27	107.00	257.37	256.94	0.4000	0.450	0.0130	0.25	0.18	1.38	1.57	0.45	1.00	98.00	SURCHARGED
2	Ex.STM_2	Pipe	Ex_MHR27	Ex_MHR26	73.00	256.94	256.64	0.4100	0.450	0.0130	0.25	0.18	1.36	1.57	0.45	1.00	86.00	SURCHARGED
3	Ex.STM_3	Pipe	Ex_MHR26	Ex_MHR25	27.00	256.64	256.48	0.5900	0.450	0.0130	0.25	0.22	1.13	1.57	0.45	1.00	78.00	SURCHARGED
4	Ex.STM_4	Pipe	Ex_MHR25	Ex_MHR1	100.00	256.48	255.88	0.6000	0.450	0.0130	0.25	0.22	1.13	1.59	0.45	0.99	0.00	> CAPACITY
5	Ex.STM_5	Pipe	Ex_MHR1	Ex_MHR2	100.00	255.88	255.48	0.4000	0.525	0.0130	0.25	0.27	0.92	1.33	0.44	0.83	0.00	Calculated
6	Ex.STM_6	Pipe	Ex_MHR2	Ex_MHR3	50.00	255.48	255.23	0.5000	0.525	0.0130	0.25	0.30	0.82	1.40	0.40	0.77	0.00	Calculated
7	Ex.STM_7	Pipe	Ex_MHR3	TinerEstatesSTM	102.00	255.23	254.82	0.4000	0.600	0.0130	0.25	0.39	0.64	1.44	0.35	0.59	0.00	Calculated
8	Link-106	Pipe	Jun-66	Ravine_2	24.80	253.16	252.85	1.2500	0.750	0.0130	1.34	0.89	1.50	3.04	0.75	1.00	68.00	SURCHARGED
9	Link-107	Pipe	OutletStructure	Jun-66	93.20	254.35	253.20	1.2300	0.750	0.0130	1.34	1.24	1.08	3.03	0.75	1.00	142.00	SURCHARGED
10	Link-108	Pipe	Jun-67	Jun-37	110.30	255.48	255.37	0.1000	1.200	0.0130	1.31	1.23	1.06	1.16	1.20	1.00	113.00	SURCHARGED
11	Link-109	Pipe	Jun-46	Jun-44	30.00	257.70	257.55	0.5000	1.050	0.0130	1.12	1.93	0.58	1.76	0.72	0.69	0.00	Calculated
12	Link-110	Pipe	Jun-52	Jun-67	153.00	255.69	255.48	0.1400	0.900	0.0130	1.00	0.67	1.50	1.58	0.90	1.00	147.00	SURCHARGED
13	Link-111	Pipe	Jun-68	Jun-52	66.80	255.86	255.77	0.1300	0.750	0.0130	0.63	0.41	1.54	1.42	0.75	1.00	140.00	SURCHARGED
14	Link-112	Pipe	Jun-69	Jun-68	106.60	256.21	255.91	0.2800	0.600	0.0130	0.39	0.33	1.18	1.36	0.60	1.00	74.00	SURCHARGED
15	Link-113	Pipe	Jun-70	Jun-52	97.50	256.47	255.88	0.6100	0.525	0.0130	0.64	0.33	1.93	2.98	0.52	1.00	43.00	SURCHARGED
16	Link-114	Pipe	Jun-71	Jun-53	85.10	256.79	255.73	1.2500	0.450	0.0130	0.44	0.32	1.37	2.74	0.45	1.00	39.00	SURCHARGED
17	Link-115	Pipe	Jun-73	Jun-51	50.00	258.65	258.50	0.3000	0.525	0.0130	0.35	0.24	1.47	1.60	0.52	1.00	25.00	SURCHARGED
18	Link-116	Pipe	Jun-72	Jun-51	50.00	258.75	258.55	0.4000	0.450	0.0130	0.21	0.18	1.16	1.32	0.45	1.00	24.00	SURCHARGED
19	Link-117	Pipe	Jun-74	Jun-61	90.00	259.54	258.37	1.3000	0.675	0.0130	0.79	0.96	0.82	2.53	0.68	1.00	5.00	SURCHARGED
20	Link-118	Pipe	Jun-75	Jun-74	41.60	260.00	259.56	1.0600	0.525	0.0130	0.36	0.44	0.81	1.70	0.51	1.00	4.00	SURCHARGED
21	Link-119	Pipe	Jun-76	Jun-56	181.70	259.19	256.08	1.7100	0.600	0.0130	0.92	0.80	1.14	3.24	0.60	1.00	29.00	SURCHARGED
22	Link-120	Pipe	Jun-77	Jun-76	140.50	260.46	259.24	0.8700	0.600	0.0130	0.52	0.57	0.90	1.93	0.60	1.00	26.00	SURCHARGED
23	Link-121	Pipe	Jun-78	Jun-77	152.20	261.75	260.51	0.8100	0.525	0.0130	0.61	0.39	1.58	2.83	0.52	1.00	25.00	SURCHARGED
24	Link-49	Pipe	Jun-34	SWM_FB	20.70	254.62	254.60	0.1000	1.800	0.0130	6.78	3.57	1.90	2.91	1.80	1.00	199.00	SURCHARGED
25	Link-50	Pipe	Jun-35	SWM_WP	75.20	254.70	254.60	0.1300	0.600	0.0130	0.78	0.22	3.47	2.75	0.60	1.00	2182.00	SURCHARGED
26	Link-52	Pipe	Jun-36	Jun-34	35.00	254.72	254.67	0.1400	1.650	0.0130	6.78	3.45	1.97	3.17	1.65	1.00	250.00	SURCHARGED
27	Link-53	Pipe	Jun-37	Jun-36	336.90	255.29	254.74	0.1600	1.350	0.0130	3.47	2.16	1.61	2.42	1.35	1.00	126.00	SURCHARGED
28	Link-54	Pipe	Jun-38	Jun-37	110.00	255.53	255.31	0.2000	0.600	0.0130	0.86	0.27	3.12	3.03	0.60	1.00	567.00	SURCHARGED
29	Link-56	Pipe	Jun-41	Jun-38	110.00	255.77	255.55	0.2000	0.600	0.0130	0.69	0.27	2.51	2.44	0.60	1.00	269.00	SURCHARGED
30	Link-57	Pipe	Jun-40	Jun-41	95.50	256.10	255.85	0.2600	0.450	0.0130	0.34	0.15	2.31	2.11	0.45	1.00	173.00	SURCHARGED
31	Link-58	Pipe	Jun-39	Jun-40	90.00	256.93	256.25	0.7600	0.300	0.0130	0.10	0.08	1.13	1.35	0.30	1.00	101.00	SURCHARGED
32	Link-59	Pipe	Jun-42	Jun-36	53.10	255.23	255.13	0.1900	1.500	0.0130	2.28	3.07	0.74	1.29	1.50	1.00	83.00	SURCHARGED
33	Link-60	Pipe	Jun-43	Jun-42	13.40	256.25	255.84	3.0600	1.500	0.0130	1.56	12.37	0.13	2.32	1.35	0.90	0.00	Calculated
34	Link-62	Pipe	Jun-49	Jun-50	25.00	256.90	256.75	0.6000	1.200	0.0130	1.18	3.02	0.39	1.52	0.81	0.67	0.00	Calculated
35	Link-68	Pipe	Jun-51	Jun-47	60.00	258.45	258.20	0.4200	0.600	0.0130	0.52	0.40	1.32	1.96	0.56	0.94	0.00	> CAPACITY
36	Link-70	Pipe	Jun-53	Jun-42	57.00	255.35	255.25	0.1800	0.825	0.0130	1.39	0.60	2.30	2.59	0.82	1.00	472.00	SURCHARGED
37	Link-71	Pipe	Jun-55	Jun-53	82.00	255.60	255.43	0.2100	0.750	0.0130	1.02	0.51	2.01	2.31	0.75	1.00	275.00	SURCHARGED
38	Link-72	Pipe	Jun-54	Jun-55	85.00	255.79	255.62	0.2000	0.750	0.0130	0.42	0.50	0.84	0.95	0.75	1.00	168.00	SURCHARGED
39	Link-73	Pipe	Jun-56	Jun-36	67.80	255.78	255.10	1.0000	0.900	0.0130	1.03	1.83	0.56	1.61	0.90	1.00	101.00	SURCHARGED
40	Link-80	Pipe	Jun-61	Jun-37	89.90	258.32	255.97	2.6100	0.750	0.0130	1.15	1.80	0.64	3.34	0.75	1.00	10.00	SURCHARGED
41	Link-81	Pipe	Jun-64	Jun-61	93.20	261.13	259.27	2.0000	0.600	0.0130	0.64	0.87	0.73	3.09	0.44	0.84	0.00	Calculated
42	Link-82	Pipe	Jun-65	Jun-64	103.90	262.69	261.13	1.5000	0.600	0.0130	0.62	0.75	0.83	2.79	0.44	0.74	0.00	Calculated
43	RH_A1	Pipe	RH_2	RH_3	50.00	270.14	268.50	3.2800	0.300	0.0130	0.23	0.18	1.31	3.26	0.30	1.00	330.00	SURCHARGED
44	RH_B1	Pipe	RH_5	RH_6	227.00	270.35	266.50	1.7000	0.300	0.0130	0.14	0.13	1.09	1.95	0.30	1.00	262.00	SURCHARGED
45	RH_C3	Pipe	Ex_SE_Pond	RH_14	15.00	262.00	261.70	2.0000	0.600	0.0130	0.89	0.87	1.03	3.15	0.60	1.00	356.00	SURCHARGED
46	RH_C4	Pipe	RH_14	RH_15	195.00	261.70	259.38	1.1900	0.525	0.0150	0.42	0.41	1.03	2.07	0.52	1.00	381.00	SURCHARGED
47	RH_C5	Pipe	RH_15	RH_16	274.00	259.38	256.36	1.1000	0.525	0.0130	0.48	0.45	1.07	2.22	0.52	1.00	387.00	SURCHARGED

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(m)	(m)	(m)	(%)	(m)		(cms)	(cms)		(m/sec)	(m)		(min)	
48	RH_C6	Pipe	RH_16	Ravine_1	6.00	256.36	256.24	2.0000	0.700	0.0130	0.48	1.31	0.37	1.64	0.69	0.99	0.00	Calculated
49	RH_D1	Pipe	RH_7	RH_8	275.00	272.00	267.75	1.5500	0.300	0.0130	0.00	0.12	0.00	0.00	0.15	0.50	0.00	Calculated
50	RH_D2	Pipe	RH_8	RH_9	180.00	267.75	264.00	2.0800	0.300	0.0130	0.15	0.14	1.04	2.11	0.30	1.00	260.00	SURCHARGED
51	RH_D3	Pipe	RH_9	RH_10	155.00	264.00	261.90	1.3500	0.375	0.0130	0.19	0.20	0.93	1.71	0.38	1.00	285.00	SURCHARGED
52	RH_M1	Pipe	RH_1	RH_3	270.00	267.60	267.07	0.2000	0.600	0.0130	0.49	0.27	1.81	1.74	0.60	1.00	297.00	SURCHARGED
53	RH_M2	Pipe	RH_3	RH_4	222.00	267.07	266.63	0.2000	0.675	0.0130	0.80	0.37	2.13	2.23	0.68	1.00	243.00	SURCHARGED
54	RH_M3	Pipe	RH_4	RH_6	18.00	266.63	266.50	0.7200	0.750	0.0130	1.05	0.95	1.11	2.37	0.75	1.00	235.00	SURCHARGED
55	RH_M4	Pipe	RH_6	RH_10	415.00	266.50	261.90	1.1100	0.675	0.0130	0.90	0.89	1.02	2.57	0.68	1.00	238.00	SURCHARGED
56	RH_M5	Pipe	RH_10	RH_11	140.00	261.90	260.33	1.1200	0.675	0.0130	1.03	0.89	1.16	2.90	0.68	1.00	302.00	SURCHARGED
57	RH_M6	Pipe	RH_11	RH_17	464.00	260.33	256.42	0.8400	0.750	0.0130	1.09	1.02	1.06	2.46	0.75	1.00	299.00	SURCHARGED
58	RH_M7	Pipe	RH_17	Ravine_1	6.00	256.42	256.37	0.8300	1.000	0.0130	1.68	2.19	0.77	2.41	0.83	0.83	0.00	Calculated
59	West_Link	Pipe	WestOutfall	West_Outfall	33.73	256.00	257.00	-2.9600	0.000	0.0130	0.08	0.00	0.05	0.00	0.92	0.23	0.00	Calculated
60	WestWetland_Link	Pipe	WestWetland	West_Wetland	37.13	258.00	258.00	0.0000	0.000	0.0130	0.12	0.00	0.05	0.00	0.92	0.23	0.00	Calculated
61	Wetland_Link	Pipe	NorthWetland	North_Wetland	41.51	252.00	252.00	0.0000	0.000	0.0130	0.52	0.00	0.05	0.00	0.92	0.23	0.00	Calculated
62	Link-103	Channel	Jun-36	SWM_FB	10.00	257.70	257.50	2.0000	0.300	0.0320	0.00	11.65	0.00	0.00	0.00	0.00	0.00	
63	Link-104	Channel	Jun-56	SWM_FB	50.00	257.50	256.50	2.0000	0.300	0.0320	0.12	11.65	0.01	0.33	0.10	0.33	0.00	
64	Link-122	Channel	Jun-53	Jun-42	70.00	259.30	258.60	1.0000	0.300	0.0320	0.00	8.24	0.00	0.00	0.00	0.00	0.00	
65	Link-123	Channel	Jun-55	Jun-53	90.00	259.40	259.30	0.1100	0.300	0.0320	0.00	2.75	0.00	0.00	0.00	0.00	0.00	
66	Link-124	Channel	Jun-54	Jun-55	90.00	259.50	259.40	0.1100	0.300	0.0320	0.00	2.75	0.00	0.00	0.00	0.00	0.00	
67	Link-125	Channel	Jun-73	Jun-47	50.00	259.65	258.70	1.9000	0.300	0.0320	0.45	11.36	0.04	0.55	0.04	0.14	0.00	
68	Link-126	Channel	Jun-72	Jun-47	50.00	259.65	258.70	1.9000	0.300	0.0320	0.24	11.36	0.02	0.43	0.03	0.10	0.00	
69	Link-127	Channel	Jun-67	Jun-54	100.00	259.60	259.50	0.1000	0.300	0.0320	0.00	2.61	0.00	0.00	0.00	0.00	0.00	
70	Link-128	Channel	Jun-52	Jun-67	150.00	259.70	259.60	0.0700	0.300	0.0320	0.00	2.13	0.00	0.00	0.00	0.00	0.00	
71	Link-129	Channel	Jun-68	Jun-52	80.00	259.80	259.70	0.1300	0.300	0.0320	0.00	2.91	0.00	0.03	0.00	0.01	0.00	
72	Link-130	Channel	Jun-69	Jun-68	100.00	259.90	259.80	0.1000	0.300	0.0320	0.01	2.61	0.00	0.05	0.01	0.04	0.00	
73	Link-131	Channel	Jun-71	Jun-53	70.00	259.40	259.30	0.1400	0.300	0.0320	0.18	3.11	0.06	0.19	0.05	0.16	0.00	
74	Link-132	Channel	Jun-78	Jun-77	150.00	265.00	264.50	0.3300	0.300	0.0320	0.06	4.76	0.01	0.14	0.02	0.07	0.00	
75	Link-133	Channel	Jun-77	Jun-76	150.00	264.50	261.90	1.7300	0.300	0.0320	0.00	10.85	0.00	0.00	0.00	0.01	0.00	
76	Link-134	Channel	Jun-76	Jun-36	250.00	261.90	257.70	1.6800	0.300	0.0320	0.02	10.68	0.00	0.16	0.01	0.02	0.00	
77	Link-135	Channel	Jun-61	Jun-37	100.00	262.50	261.00	1.5000	0.300	0.0320	0.00	10.09	0.00	0.00	0.00	0.00	0.00	
78	Link-34	Channel	RH_1	RH_3	270.00	271.40	269.65	0.6500	0.300	0.0320	4.29	6.63	0.65	0.81	0.26	0.88	0.00	
79	Link-35	Channel	RH_2	RH_3	50.00	272.15	269.65	5.0000	0.300	0.0320	4.02	18.43	0.22	1.10	0.21	0.70	0.00	
80	Link-36	Channel	RH_3	RH_4	222.00	269.65	268.30	0.6100	0.300	0.0320	6.10	6.43	0.95	1.19	0.26	0.85	0.00	
81	Link-37	Channel	RH_4	RH_6	18.00	268.30	267.90	2.2200	0.300	0.0320	6.07	12.28	0.49	1.39	0.23	0.79	0.00	
82	Link-38	Channel	RH_5	RH_6	227.00	271.80	267.90	1.7200	0.300	0.0320	1.73	10.80	0.16	0.75	0.17	0.59	0.00	
83	Link-39	Channel	RH_6	RH_10	415.00	267.90	263.50	1.0600	0.300	0.0320	7.32	8.48	0.86	1.32	0.28	0.95	0.00	
84	Link-41	Channel	RH_8	RH_9	180.00	269.55	265.50	2.2500	0.300	0.0320	0.23	12.36	0.02	0.42	0.03	0.10	0.00	
85	Link-42	Channel	RH_9	RH_10	155.00	265.50	263.50	1.2900	0.300	0.0320	0.29	9.36	0.03	0.12	0.17	0.56	0.00	
86	Link-43	Channel	RH_10	RH_11	140.00	263.50	262.25	0.8900	0.300	0.0320	7.31	7.79	0.94	1.32	0.28	0.97	0.00	
87	Link-44	Channel	RH_11	Ravine_1	470.00	262.25	258.00	0.9000	0.300	0.0320	6.41	7.84	0.82	1.27	0.25	0.84	0.00	
88	Link-45	Channel	RH_14	RH_15	195.00	263.20	260.70	1.2800	0.300	0.0320	0.49	9.33	0.05	0.45	0.06	0.21	0.00	
89	Link-46	Channel	RH_15	Ravine_1	280.00	260.70	258.00	0.9600	0.300	0.0320	0.62	8.09	0.08	0.52	0.06	0.20	0.00	
90	Link-51	Channel	Ex_MHR28	Jun-36	65.00	259.00	258.05	1.4600	0.300	0.0320	1.29	4.89	0.26	1.00	0.13	0.43	0.00	
91	Link-61	Channel	Jun-50	Jun-43	125.00	256.75	256.25	0.4000	1.000	0.0320	1.30	4.86	0.27	0.62	0.88	0.88	0.00	
92	Link-63	Channel	Jun-44	Jun-49	162.50	257.55	256.90	0.4000	1.000	0.0320	1.09	4.86	0.22	0.46	0.71	0.71	0.00	
93	Link-66	Channel	Jun-47	Jun-46	133.00	258.10	257.70	0.3000	1.000	0.0320	1.31	4.22	0.31	0.53	0.76	0.76	0.00	
94	Link-67	Channel	Jun-48	Jun-47	75.00	258.40	258.10	0.4000	1.000	0.0320	0.06	4.86	0.01	0.09	0.47	0.48	0.00	

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(m)	(m)	(m)	(%)	(m)		(cms)	(cms)		(m/sec)	(m)		(min)	
95	Link-89	Channel	Jun-42	Jun-36	53.10	258.60	257.70	1.6900	0.300	0.0320	0.00	10.73	0.00	0.00	0.00	0.00	0.00	
96	Link-90	Channel	Jun-39	Jun-40	90.00	258.75	257.75	1.1100	0.300	0.0320	0.04	8.69	0.00	0.03	0.15	0.51	0.00	
97	Link-92	Channel	Jun-38	Jun-37	110.00	261.50	261.00	0.4500	0.300	0.0320	0.00	5.56	0.00	0.00	0.00	0.00	0.00	
98	Link-93	Channel	Jun-37	Jun-36	340.00	261.00	257.70	0.9700	0.300	0.0320	0.00	8.12	0.00	0.00	0.00	0.00	0.00	
99	Link-94	Channel	Jun-41	Jun-40	95.00	259.35	257.75	1.6800	0.300	0.0320	0.46	10.69	0.04	0.27	0.16	0.53	0.00	
100	LowerRavine	Channel	Ravine_2	Ravine_3	124.00	253.00	252.45	0.4400	4.000	0.0320	9.98	157.98	0.06	1.68	0.93	0.23	0.00	
101	OutletRavine	Channel	Ravine_3	Outfall	45.00	252.45	252.00	1.0000	4.000	0.0320	10.04	237.22	0.04	2.13	0.76	0.19	0.00	
102	RH_C1	Channel	RH_12	RH_13	215.00	269.00	264.00	2.3300	1.500	0.0320	2.66	24.20	0.11	1.78	0.65	0.44	0.00	
103	RH_C2	Channel	RH_13	Ex_SE_Pond	60.00	264.00	263.50	0.8300	1.500	0.0320	2.77	14.49	0.19	1.67	0.67	0.46	0.00	
104	UpperRavine	Channel	Ravine_1	Ravine_2	553.00	256.10	253.00	0.5600	4.000	0.0320	8.95	177.61	0.05	1.57	0.92	0.23	0.00	
105	Orifice-01	Orifice	SWM_WP	OutletStructure		253.00	254.25		0.170		0.08							
106	Link-91	Weir	Jun-40	WestOutfall		256.10	257.00				0.00							
107	Weir-01	Weir	SWM_FB	SWM_WP		253.00	253.00				4.96							
108	Weir-04	Weir	SWM_WP	OutletStructure		253.00	254.25				1.19							
109	Weir-05	Weir	SWM_WP	Ravine_2		253.00	253.00				0.00							
110	Weir-06	Weir	SWM_WP	OutletStructure		253.00	254.25				0.30							

Junction Input

SN	Element ID	Invert Elevation (m)	Ground/Rim (Max) Elevation (m)	Ground/Rim (Max) Offset (m)	Initial Water Elevation (m)	Initial Water Depth (m)	Surcharge Elevation (m)	Surcharge Depth (m)	Ponded Area (m²)	Minimum Pipe Cover (m)
1	Ex_MHR1	255.88	262.50	6.62	0.00	-255.88	0.00	-262.50	0.00	0.00
2	Ex_MHR2	255.48	259.65	4.17	0.00	-255.48	0.00	-259.65	0.00	0.00
3	Ex_MHR25	256.48	263.35	6.87	0.00	-256.48	0.00	-263.35	0.00	0.00
4	Ex_MHR26	256.64	262.75	6.11	0.00	-256.64	0.00	-262.75	0.00	0.00
5	Ex_MHR27	256.94	261.00	4.06	0.00	-256.94	0.00	-261.00	0.00	0.00
6	Ex_MHR28	257.37	259.30	1.93	0.00	-257.37	0.00	-259.30	0.00	0.00
7	Ex_MHR3	255.23	259.00	3.77	0.00	-255.23	0.00	-259.00	0.00	0.00
8	Jun-34	254.62	258.25	3.63	0.00	-254.62	0.00	-258.25	0.00	0.00
9	Jun-35	254.70	257.50	2.80	0.00	-254.70	0.00	-257.50	0.00	0.00
10	Jun-36	254.72	258.00	3.28	0.00	-254.72	0.00	-258.00	0.00	0.00
11	Jun-37	255.29	261.30	6.01	0.00	-255.29	0.00	-261.30	0.00	0.00
12	Jun-38	255.53	261.80	6.27	0.00	-255.53	0.00	-261.80	0.00	0.00
13	Jun-39	256.93	259.05	2.12	0.00	-256.93	0.00	-259.05	0.00	0.00
14	Jun-40	256.10	258.55	2.45	0.00	-256.10	0.00	-258.55	0.00	0.00
15	Jun-41	255.77	259.65	3.88	0.00	-255.77	0.00	-259.65	0.00	0.00
16	Jun-42	255.23	258.90	3.67	0.00	-255.23	0.00	-258.90	0.00	0.00
17	Jun-43	256.25	257.25	1.00	0.00	-256.25	0.00	-257.25	0.00	0.00
18	Jun-44	257.55	258.55	1.00	0.00	-257.55	0.00	-258.55	0.00	0.00
19	Jun-46	257.70	258.70	1.00	0.00	-257.70	258.70	0.00	0.00	0.00
20	Jun-47	258.10	259.10	1.00	0.00	-258.10	0.00	-259.10	0.00	0.00
21	Jun-48	258.35	259.35	1.00	0.00	-258.35	0.00	-259.35	0.00	0.00
22	Jun-49	256.90	257.90	1.00	0.00	-256.90	0.00	-257.90	0.00	0.00
23	Jun-50	256.75	257.75	1.00	0.00	-256.75	0.00	-257.75	0.00	0.00
24	Jun-51	258.45	260.50	2.05	0.00	-258.45	0.00	-260.50	0.00	0.00
25	Jun-52	255.69	260.00	4.31	0.00	-255.69	0.00	-260.00	0.00	0.00
26	Jun-53	255.35	259.60	4.25	0.00	-255.35	0.00	-259.60	0.00	0.00
27	Jun-54	255.62	259.80	4.18	0.00	-255.62	0.00	-259.80	0.00	0.00
28	Jun-55	255.60	259.70	4.10	0.00	-255.60	0.00	-259.70	0.00	0.00
29	Jun-56	255.79	257.80	2.01	0.00	-255.79	0.00	-257.80	0.00	0.00
30	Jun-61	258.32	262.00	3.68	0.00	-258.32	0.00	-262.00	0.00	0.00
31	Jun-64	261.13	263.50	2.37	0.00	-261.13	0.00	-263.50	0.00	0.00
32	Jun-65	262.69	264.50	1.81	0.00	-262.69	0.00	-264.50	0.00	0.00
33	Jun-66	253.16	256.00	2.84	0.00	-253.16	0.00	-256.00	0.00	0.00
34	Jun-67	255.48	259.90	4.42	0.00	-255.48	0.00	-259.90	0.00	0.00
35	Jun-68	255.86	260.10	4.24	0.00	-255.86	0.00	-260.10	0.00	0.00
36	Jun-69	256.21	261.20	4.99	0.00	-256.21	0.00	-261.20	0.00	0.00
37	Jun-70	256.47	263.00	6.53	0.00	-256.47	0.00	-263.00	0.00	0.00
38	Jun-71	256.79	260.00	3.21	0.00	-256.79	0.00	-260.00	0.00	0.00
39	Jun-72	258.75	259.95	1.20	0.00	-258.75	0.00	-259.95	0.00	0.00
40	Jun-73	258.65	259.95	1.30	0.00	-258.65	0.00	-259.95	0.00	0.00
41	Jun-74	259.54	264.00	4.46	0.00	-259.54	0.00	-264.00	0.00	0.00
42	Jun-75	260.00	264.50	4.50	0.00	-260.00	0.00	-264.50	0.00	0.00
43	Jun-76	259.19	262.20	3.01	0.00	-259.19	0.00	-262.20	0.00	0.00
44	Jun-77	260.46	264.80	4.34	0.00	-260.46	0.00	-264.80	0.00	0.00
45	Jun-78	261.75	265.30	3.55	0.00	-261.75	0.00	-265.30	0.00	0.00
46	NorthWetland	252.00	258.00	6.00	0.00	-252.00	0.00	-258.00	0.00	0.00
47	OutletStructure	254.25	256.80	2.55	0.00	-254.25	0.00	-256.80	0.00	0.00
48	Ravine_1	256.10	260.10	4.00	0.00	-256.10	0.00	-260.10	0.00	0.00

Junction Input

SN	Element ID	Invert Elevation (m)	Ground/Rim (Max) Elevation (m)	Ground/Rim (Max) Offset (m)	Initial Water Elevation (m)	Initial Water Depth (m)	Surcharge Elevation (m)	Surcharge Depth (m)	Ponded Area (m²)	Minimum Pipe Cover (m)
49	Ravine_2	253.00	257.00	4.00	0.00	-253.00	0.00	-257.00	0.00	0.00
50	Ravine_3	252.45	256.45	4.00	0.00	-252.45	0.00	-256.45	0.00	0.00
51	RH_1	267.60	271.70	4.10	0.00	-267.60	0.00	-271.70	0.00	0.00
52	RH_10	261.90	263.90	2.00	0.00	-261.90	0.00	-263.90	0.00	0.00
53	RH_11	260.33	262.55	2.22	0.00	-260.33	0.00	-262.55	0.00	0.00
54	RH_12	269.00	270.50	1.50	0.00	-269.00	0.00	-270.50	0.00	0.00
55	RH_13	264.00	266.50	2.50	0.00	-264.00	0.00	-266.50	0.00	0.00
56	RH_14	261.70	263.50	1.80	0.00	-261.70	0.00	-263.50	0.00	0.00
57	RH_15	259.38	261.00	1.62	0.00	-259.38	0.00	-261.00	0.00	0.00
58	RH_16	256.36	258.00	1.64	0.00	-256.36	0.00	-258.00	0.00	0.00
59	RH_17	256.42	258.00	1.58	0.00	-256.42	0.00	-258.00	0.00	0.00
60	RH_2	270.14	272.45	2.31	0.00	-270.14	0.00	-272.45	0.00	0.00
61	RH_3	267.07	270.50	3.43	0.00	-267.07	0.00	-270.50	0.00	0.00
62	RH_4	266.63	268.60	1.97	0.00	-266.63	0.00	-268.60	0.00	0.00
63	RH_5	270.35	272.10	1.75	0.00	-270.35	0.00	-272.10	0.00	0.00
64	RH_6	266.50	268.20	1.70	0.00	-266.50	0.00	-268.20	0.00	0.00
65	RH_7	272.00	273.50	1.50	0.00	-272.00	0.00	-273.50	0.00	0.00
66	RH_8	267.75	269.85	2.10	0.00	-267.75	0.00	-269.85	0.00	0.00
67	RH_9	264.00	265.80	1.80	0.00	-264.00	0.00	-265.80	0.00	0.00
68	WestOutfall	257.00	258.40	1.40	0.00	-257.00	0.00	-258.40	0.00	0.00
69	WestWetland	258.00	259.00	1.00	0.00	-258.00	0.00	-259.00	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)	Total Time Flooded (min)
1	Ex_MHR1	0.25	0.00	256.32	0.44	0.00	6.18	256.04	0.16	0 12:01	0 00:00	0.00	0.00
2	Ex_MHR2	0.25	0.00	255.91	0.43	0.00	3.74	255.64	0.16	0 12:02	0 00:00	0.00	0.00
3	Ex_MHR25	0.25	0.00	257.54	1.06	0.00	5.81	256.65	0.17	0 11:44	0 00:00	0.00	0.00
4	Ex_MHR26	0.25	0.00	257.91	1.27	0.00	4.84	256.83	0.19	0 11:44	0 00:00	0.00	0.00
5	Ex_MHR27	0.25	0.00	258.39	1.45	0.00	2.61	257.17	0.23	0 11:44	0 00:00	0.00	0.00
6	Ex_MHR28	1.58	1.58	259.14	1.77	0.00	0.16	257.64	0.27	0 12:00	0 00:00	0.00	0.00
7	Ex_MHR3	0.25	0.00	255.61	0.38	0.00	3.39	255.38	0.15	0 12:02	0 00:00	0.00	0.00
8	Jun-34	6.78	0.00	256.72	2.10	0.00	1.53	255.92	1.30	0 13:08	0 00:00	0.00	0.00
9	Jun-35	0.78	0.78	257.34	2.64	0.00	0.16	255.91	1.21	0 12:00	0 00:00	0.00	0.00
10	Jun-36	6.83	0.00	257.31	2.59	0.00	1.04	255.96	1.24	0 12:08	0 00:00	0.00	0.00
11	Jun-37	3.82	0.63	258.98	3.69	0.00	2.32	256.11	0.82	0 12:04	0 00:00	0.00	0.00
12	Jun-38	1.67	1.67	261.09	5.56	0.00	0.71	256.23	0.70	0 12:01	0 00:00	0.00	0.00
13	Jun-39	0.15	0.15	258.76	1.83	0.00	0.29	257.08	0.15	0 12:02	0 00:00	0.00	0.00
14	Jun-40	0.91	0.00	258.14	2.04	0.00	0.41	256.40	0.30	0 12:19	0 00:00	0.00	0.00
15	Jun-41	0.83	0.15	259.39	3.62	0.00	0.26	256.27	0.50	0 12:02	0 00:00	0.00	0.00
16	Jun-42	2.26	0.00	257.43	2.20	0.00	1.47	256.05	0.82	0 12:09	0 00:00	0.00	0.00
17	Jun-43	1.30	0.00	257.45	1.20	0.00	0.30	256.39	0.14	0 12:09	0 00:00	0.00	0.00
18	Jun-44	1.12	0.00	258.11	0.56	0.00	0.49	257.67	0.12	0 12:08	0 00:00	0.00	0.00
19	Jun-46	1.31	0.00	258.60	0.90	0.00	0.15	257.85	0.15	0 12:05	0 00:00	0.00	0.00
20	Jun-47	1.48	0.29	258.73	0.63	0.00	0.37	258.23	0.13	0 12:02	0 00:00	0.00	0.00
21	Jun-48	0.06	0.00	258.74	0.39	0.00	0.66	258.40	0.05	0 12:02	0 00:00	0.00	0.00
22	Jun-49	1.28	0.37	257.76	0.86	0.00	0.34	257.07	0.17	0 12:10	0 00:00	0.00	0.00
23	Jun-50	1.18	0.00	257.50	0.75	0.00	0.45	256.92	0.17	0 12:10	0 00:00	0.00	0.00
24	Jun-51	0.52	0.00	259.33	0.88	0.00	1.17	258.57	0.12	0 12:00	0 00:00	0.00	0.00
25	Jun-52	1.25	0.00	259.64	3.95	0.00	0.36	256.20	0.51	0 12:03	0 00:00	0.00	0.00
26	Jun-53	1.45	0.00	258.14	2.79	0.00	1.46	256.09	0.74	0 12:03	0 00:00	0.00	0.00
27	Jun-54	0.49	0.49	259.08	3.46	0.00	0.72	256.20	0.58	0 12:01	0 00:00	0.00	0.00
28	Jun-55	1.13	0.72	258.93	3.33	0.00	0.77	256.15	0.55	0 12:01	0 00:00	0.00	0.00
29	Jun-56	0.96	0.04	257.52	1.73	0.00	0.28	256.18	0.39	0 12:09	0 00:00	0.00	0.00
30	Jun-61	1.39	0.00	260.10	1.78	0.00	2.70	258.40	0.08	0 12:02	0 00:00	0.00	0.00
31	Jun-64	0.62	0.00	261.55	0.42	0.00	1.95	261.18	0.05	0 12:00	0 00:00	0.00	0.00
32	Jun-65	0.63	0.63	263.16	0.47	0.00	1.34	262.74	0.05	0 12:00	0 00:00	0.00	0.00
33	Jun-66	1.34	0.00	254.68	1.52	0.00	1.32	253.60	0.44	0 12:34	0 00:00	0.00	0.00
34	Jun-67	1.48	0.54	259.16	3.68	0.00	0.74	256.14	0.66	0 12:04	0 00:00	0.00	0.00
35	Jun-68	0.78	0.51	259.81	3.95	0.00	0.29	256.26	0.40	0 12:05	0 00:00	0.00	0.00
36	Jun-69	0.38	0.38	259.92	3.71	0.00	1.28	256.42	0.21	0 12:06	0 00:00	0.00	0.00
37	Jun-70	0.64	0.64	261.67	5.20	0.00	1.33	256.64	0.17	0 12:00	0 00:00	0.00	0.00
38	Jun-71	0.74	0.74	259.48	2.69	0.00	0.52	256.94	0.15	0 12:05	0 00:00	0.00	0.00
39	Jun-72	0.47	0.47	259.68	0.93	0.00	0.27	258.83	0.08	0 12:00	0 00:00	0.00	0.00
40	Jun-73	0.80	0.80	259.69	1.04	0.00	0.26	258.77	0.12	0 12:00	0 00:00	0.00	0.00
41	Jun-74	0.79	0.43	262.62	3.08	0.00	1.38	259.61	0.07	0 12:00	0 00:00	0.00	0.00
42	Jun-75	0.36	0.36	264.50	4.50	0.00	0.00	260.05	0.05	0 12:00	0 12:00	0.00	0.00
43	Jun-76	1.17	0.80	261.91	2.72	0.00	0.29	259.34	0.15	0 12:08	0 00:00	0.00	0.00
44	Jun-77	0.61	0.00	263.07	2.61	0.00	1.73	260.58	0.12	0 12:07	0 00:00	0.00	0.00
45	Jun-78	0.99	0.99	265.03	3.28	0.00	0.27	261.90	0.15	0 12:06	0 00:00	0.00	0.00
46	NorthWetland	0.52	0.52	252.00	0.00	0.00	6.00	252.00	0.00	0 00:00	0 00:00	0.00	0.00
47	OutletStructure	1.34	0.00	256.42	2.17	0.00	1.93	254.76	0.51	0 13:05	0 00:00	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)	Total Time Flooded (min)
48	Ravine_1	9.09	0.25	256.92	0.82	0.00	3.18	256.32	0.22	0 12:22	0 00:00	0.00	0.00
49	Ravine_2	10.18	0.53	254.02	1.02	0.00	3.08	253.32	0.32	0 12:26	0 00:00	0.00	0.00
50	Ravine_3	10.04	0.11	253.29	0.84	0.00	3.16	252.70	0.25	0 12:26	0 00:00	0.00	0.00
51	RH_1	5.13	5.13	271.63	4.03	0.00	0.07	268.60	1.00	0 12:01	0 00:00	0.00	0.00
52	RH_10	8.95	0.38	263.85	1.95	0.00	0.05	262.56	0.66	0 12:13	0 00:00	0.00	0.00
53	RH_11	8.16	0.13	262.54	2.21	0.00	0.01	261.05	0.72	0 12:20	0 00:00	0.00	0.00
54	RH_12	2.73	2.73	269.55	0.55	0.00	0.95	269.10	0.10	0 12:00	0 00:00	0.00	0.00
55	RH_13	2.92	0.26	264.77	0.77	0.00	1.73	264.17	0.17	0 12:01	0 00:00	0.00	0.00
56	RH_14	0.89	0.00	263.25	1.55	0.00	0.25	262.26	0.56	0 12:43	0 00:00	0.00	0.00
57	RH_15	1.13	0.29	260.77	1.39	0.00	0.23	259.91	0.53	0 12:50	0 00:00	0.00	0.00
58	RH_16	0.48	0.00	257.09	0.73	0.00	0.91	256.75	0.39	0 12:50	0 00:00	0.00	0.00
59	RH_17	1.68	0.61	257.80	1.38	0.00	0.20	257.07	0.65	0 12:24	0 00:00	0.00	0.00
60	RH_2	4.23	4.23	272.27	2.13	0.00	0.18	270.80	0.66	0 12:00	0 00:00	0.00	0.00
61	RH_3	8.84	0.00	270.30	3.23	0.00	0.20	267.95	0.88	0 12:05	0 00:00	0.00	0.00
62	RH_4	6.99	0.18	268.51	1.88	0.00	0.09	267.19	0.56	0 12:04	0 00:00	0.00	0.00
63	RH_5	1.98	1.98	271.90	1.55	0.00	0.20	270.78	0.43	0 12:01	0 00:00	0.00	0.00
64	RH_6	8.55	0.00	268.17	1.67	0.00	0.03	266.99	0.49	0 12:07	0 00:00	0.00	0.00
65	RH_7	0.00	0.00	272.00	0.00	0.00	1.50	272.00	0.00	0 00:00	0 00:00	0.00	0.00
66	RH_8	0.48	0.48	269.58	1.83	0.00	0.27	268.22	0.47	0 12:06	0 00:00	0.00	0.00
67	RH_9	0.52	0.15	265.54	1.54	0.00	0.26	264.43	0.43	0 12:14	0 00:00	0.00	0.00
68	WestOutfall	0.08	0.08	257.00	0.00	0.00	2.45	257.00	0.00	0 00:00	0 00:00	0.00	0.00
69	WestWetland	0.12	0.12	258.00	0.00	0.00	1.00	258.00	0.00	0 00:00	0 00:00	0.00	0.00

Channel Input

SN	Element ID	Length	Inlet Invert Elevation	Inlet Invert Offset	Outlet Invert Elevation	Outlet Invert Offset	Total Drop	Average Slope	Shape	Height	Width	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow	Flap Gate
		(m)	(m)	(m)	(m)	(m)	(m)	(%)		(m)	(m)					(cms)	
1	Link-103	10.00	257.70	2.98	257.50	4.50	0.20	2.0000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
2	Link-104	50.00	257.50	1.71	256.50	3.50	1.00	2.0000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
3	Link-122	70.00	259.30	3.95	258.60	3.37	0.70	1.0000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
4	Link-123	90.00	259.40	3.80	259.30	3.95	0.10	0.1100	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
5	Link-124	90.00	259.50	3.88	259.40	3.80	0.10	0.1100	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
6	Link-125	50.00	259.65	1.00	258.70	0.60	0.95	1.9000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
7	Link-126	50.00	259.65	0.90	258.70	0.60	0.95	1.9000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
8	Link-127	100.00	259.60	4.12	259.50	3.88	0.10	0.1000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
9	Link-128	150.00	259.70	4.01	259.60	4.12	0.10	0.0700	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
10	Link-129	80.00	259.80	3.94	259.70	4.01	0.10	0.1300	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
11	Link-130	100.00	259.90	3.69	259.80	3.94	0.10	0.1000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
12	Link-131	70.00	259.40	2.61	259.30	3.95	0.10	0.1400	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
13	Link-132	150.00	265.00	3.25	264.50	4.04	0.50	0.3300	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
14	Link-133	150.00	264.50	4.04	261.90	2.71	2.60	1.7300	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
15	Link-134	250.00	261.90	2.71	257.70	2.98	4.20	1.6800	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
16	Link-135	100.00	262.50	4.18	261.00	5.71	1.50	1.5000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
17	Link-34	270.00	271.40	3.80	269.65	2.58	1.75	0.6500	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
18	Link-35	50.00	272.15	2.01	269.65	2.58	2.50	5.0000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
19	Link-36	222.00	269.65	2.58	268.30	1.67	1.35	0.6100	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
20	Link-37	18.00	268.30	1.67	267.90	1.40	0.40	2.2200	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
21	Link-38	227.00	271.80	1.45	267.90	1.40	3.90	1.7200	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
22	Link-39	415.00	267.90	1.40	263.50	1.60	4.40	1.0600	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
23	Link-41	180.00	269.55	1.80	265.50	1.50	4.05	2.2500	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
24	Link-42	155.00	265.50	1.50	263.50	1.60	2.00	1.2900	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
25	Link-43	140.00	263.50	1.60	262.25	1.92	1.25	0.8900	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
26	Link-44	470.00	262.25	1.92	258.00	1.90	4.25	0.9000	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
27	Link-45	195.00	263.20	1.50	260.70	1.32	2.50	1.2800	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
28	Link-46	280.00	260.70	1.32	258.00	1.90	2.70	0.9600	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
29	Link-51	65.00	259.00	1.63	258.05	3.33	0.95	1.4600	Rectangular	0.300	10.000	0.0320	0.5000	0.5000	0.0000	0.00	No
30	Link-61	125.00	256.75	0.00	256.25	0.00	0.50	0.4000	User-Defined	1.000	9.000	0.0320	0.5000	0.5000	0.0000	0.00	No
31	Link-63	162.50	257.55	0.00	256.90	0.00	0.65	0.4000	User-Defined	1.000	9.000	0.0320	0.5000	0.5000	0.0000	0.00	No
32	Link-66	133.00	258.10	0.00	257.70	0.00	0.40	0.3000	User-Defined	1.000	9.000	0.0320	0.5000	0.5000	0.0000	0.00	No
33	Link-67	75.00	258.40	0.05	258.10	0.00	0.30	0.4000	User-Defined	1.000	9.000	0.0320	0.5000	0.5000	0.0000	0.00	No
34	Link-89	53.10	258.60	3.37	257.70	2.98	0.90	1.6900	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
35	Link-90	90.00	258.75	1.82	257.75	1.65	1.00	1.1100	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
36	Link-92	110.00	261.50	5.97	261.00	5.71	0.50	0.4500	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
37	Link-93	340.00	261.00	5.71	257.70	2.98	3.30	0.9700	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
38	Link-94	95.00	259.35	3.58	257.75	1.65	1.60	1.6800	Rectangular	0.300	20.000	0.0320	0.5000	0.5000	0.0000	0.00	No
39	LowerRavine	124.00	253.00	0.00	252.45	0.00	0.55	0.4400	Trapezoidal	4.000	17.000	0.0320	0.5000	0.5000	0.0000	0.00	No
40	OutletRavine	45.00	252.45	0.00	252.00	0.00	0.45	1.0000	Trapezoidal	4.000	17.000	0.0320	0.5000	0.5000	0.0000	0.00	No
41	RH_C1	215.00	269.00	0.00	264.00	0.00	5.00	2.3300	Trapezoidal	1.500	7.000	0.0320	0.5000	0.5000	0.0000	0.00	No
42	RH_C2	60.00	264.00	0.00	263.50	1.50	0.50	0.8300	Trapezoidal	1.500	7.000	0.0320	0.5000	0.5000	0.0000	0.00	No
43	UpperRavine	553.00	256.10	0.00	253.00	0.00	3.10	0.5600	Trapezoidal	4.000	17.000	0.0320	0.5000	0.5000	0.0000	0.00	No

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-103	0.00	0 00:00	11.65	0.00	0.00		0.00	0.00	0.00	0.00	
2	Link-104	0.12	0 12:09	11.65	0.01	0.33	2.53	0.10	0.33	0.00	0.01	
3	Link-122	0.00	0 00:00	8.24	0.00	0.00		0.00	0.00	0.00	0.00	
4	Link-123	0.00	0 00:00	2.75	0.00	0.00		0.00	0.00	0.00	0.00	
5	Link-124	0.00	0 00:00	2.75	0.00	0.00		0.00	0.00	0.00	0.00	
6	Link-125	0.45	0 12:00	11.36	0.04	0.55	1.52	0.04	0.14	0.00	0.02	
7	Link-126	0.24	0 12:01	11.36	0.02	0.43	1.94	0.03	0.10	0.00	0.01	
8	Link-127	0.00	0 00:00	2.61	0.00	0.00		0.00	0.00	0.00	0.00	
9	Link-128	0.00	0 00:00	2.13	0.00	0.00		0.00	0.00	0.00	0.00	
10	Link-129	0.00	0 12:05	2.91	0.00	0.03	44.44	0.00	0.01	0.00	0.00	
11	Link-130	0.01	0 12:05	2.61	0.00	0.05	33.33	0.01	0.04	0.00	0.00	
12	Link-131	0.18	0 12:05	3.11	0.06	0.19	6.14	0.05	0.16	0.00	0.01	
13	Link-132	0.06	0 12:06	4.76	0.01	0.14	17.86	0.02	0.07	0.00	0.00	
14	Link-133	0.00	0 00:00	10.85	0.00	0.00		0.00	0.01	0.00	0.00	
15	Link-134	0.02	0 12:08	10.68	0.00	0.16	26.04	0.01	0.02	0.00	0.01	
16	Link-135	0.00	0 00:00	10.09	0.00	0.00		0.00	0.00	0.00	0.00	
17	Link-34	4.29	0 12:01	6.63	0.65	0.81	5.56	0.26	0.88	0.00	0.03	
18	Link-35	4.02	0 12:00	18.43	0.22	1.10	0.76	0.21	0.70	0.00	0.12	
19	Link-36	6.10	0 12:05	6.43	0.95	1.19	3.11	0.26	0.85	0.00	0.10	
20	Link-37	6.07	0 12:05	12.28	0.49	1.39	0.22	0.23	0.79	0.00	0.07	
21	Link-38	1.73	0 12:01	10.80	0.16	0.75	5.04	0.17	0.59	0.00	0.06	
22	Link-39	7.32	0 12:08	8.48	0.86	1.32	5.24	0.28	0.95	0.00	0.08	
23	Link-41	0.23	0 12:06	12.36	0.02	0.42	7.14	0.03	0.10	0.00	0.10	
24	Link-42	0.29	0 12:14	9.36	0.03	0.12	21.53	0.17	0.56	0.00	0.02	
25	Link-43	7.31	0 12:17	7.79	0.94	1.32	1.77	0.28	0.97	0.00	0.17	
26	Link-44	6.41	0 12:20	7.84	0.82	1.27	6.17	0.25	0.84	0.00	0.16	
27	Link-45	0.49	0 12:43	9.33	0.05	0.45	7.22	0.06	0.21	0.00	0.08	
28	Link-46	0.62	0 12:50	8.09	0.08	0.52	8.97	0.06	0.20	0.00	0.15	
29	Link-51	1.29	0 12:00	4.89	0.26	1.00	1.08	0.13	0.43	0.00	0.05	
30	Link-61	1.30	0 12:14	4.86	0.27	0.62	3.36	0.88	0.88	0.00	0.30	
31	Link-63	1.09	0 12:08	4.86	0.22	0.46	5.89	0.71	0.71	0.00	0.22	
32	Link-66	1.31	0 12:02	4.22	0.31	0.53	4.18	0.76	0.76	0.00	0.23	
33	Link-67	0.06	0 11:59	4.86	0.01	0.09	13.89	0.47	0.48	0.00	0.00	
34	Link-89	0.00	0 00:00	10.73	0.00	0.00		0.00	0.00	0.00	0.00	
35	Link-90	0.04	0 12:02	8.69	0.00	0.03	50.00	0.15	0.51	0.00	0.00	
36	Link-92	0.00	0 00:00	5.56	0.00	0.00		0.00	0.00	0.00	0.00	
37	Link-93	0.00	0 00:00	8.12	0.00	0.00		0.00	0.00	0.00	0.00	
38	Link-94	0.46	0 12:02	10.69	0.04	0.27	5.86	0.16	0.53	0.00	0.00	
39	LowerRavine	9.98	0 12:26	157.98	0.06	1.68	1.23	0.93	0.23	0.00	0.51	
40	OutletRavine	10.04	0 12:26	237.22	0.04	2.13	0.35	0.76	0.19	0.00	0.77	
41	RH_C1	2.66	0 12:00	24.20	0.11	1.78	2.01	0.65	0.44	0.00	0.58	
42	RH_C2	2.77	0 12:01	14.49	0.19	1.67	0.60	0.67	0.46	0.00	0.61	
43	UpperRavine	8.95	0 12:22	177.61	0.05	1.57	5.87	0.92	0.23	0.00	0.39	

Pipe Input

SN	Element ID	Length (m)	Inlet Invert Elevation (m)	Inlet Invert Offset (m)	Outlet Invert Elevation (m)	Outlet Invert Offset (m)	Total Drop (m)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (m)	Pipe Width (m)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cms)	Flap Gate
1	Ex.STM_1	107.00	257.37	0.00	256.94	0.00	0.43	0.4000	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
2	Ex.STM_2	73.00	256.94	0.00	256.64	0.00	0.30	0.4100	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
3	Ex.STM_3	27.00	256.64	0.00	256.48	0.00	0.16	0.5900	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
4	Ex.STM_4	100.00	256.48	0.00	255.88	0.00	0.60	0.6000	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
5	Ex.STM_5	100.00	255.88	0.00	255.48	0.00	0.40	0.4000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
6	Ex.STM_6	50.00	255.48	0.00	255.23	0.00	0.25	0.5000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
7	Ex.STM_7	102.00	255.23	0.00	254.82	0.00	0.41	0.4000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
8	Link-106	24.80	253.16	0.00	252.85	-0.15	0.31	1.2500	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
9	Link-107	93.20	254.35	0.10	253.20	0.04	1.15	1.2300	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
10	Link-108	110.30	255.48	0.00	255.37	0.08	0.11	0.1000	CIRCULAR	1.200	1.200	0.0130	0.5000	0.5000	0.0000	0.00	No
11	Link-109	30.00	257.70	0.00	257.55	0.00	0.15	0.5000	CIRCULAR	1.050	1.050	0.0130	0.5000	0.5000	0.0000	0.00	No
12	Link-110	153.00	255.69	0.00	255.48	0.00	0.21	0.1400	CIRCULAR	0.900	0.900	0.0130	0.5000	0.5000	0.0000	0.00	No
13	Link-111	66.80	255.86	0.00	255.77	0.08	0.09	0.1300	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
14	Link-112	106.60	256.21	0.00	255.91	0.05	0.30	0.2800	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
15	Link-113	97.50	256.47	0.00	255.88	0.19	0.59	0.6100	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
16	Link-114	85.10	256.79	0.00	255.73	0.38	1.06	1.2500	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
17	Link-115	50.00	258.65	0.00	258.50	0.05	0.15	0.3000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
18	Link-116	50.00	258.75	0.00	258.55	0.10	0.20	0.4000	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
19	Link-117	90.00	259.54	0.00	258.37	0.05	1.17	1.3000	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
20	Link-118	41.60	260.00	0.00	259.56	0.02	0.44	1.0600	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
21	Link-119	181.70	259.19	0.00	256.08	0.29	3.11	1.7100	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
22	Link-120	140.50	260.46	0.00	259.24	0.05	1.22	0.8700	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
23	Link-121	152.20	261.75	0.00	260.51	0.05	1.24	0.8100	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
24	Link-49	20.70	254.62	0.00	254.60	1.60	0.02	0.1000	CIRCULAR	1.800	1.800	0.0130	0.5000	0.5000	0.0000	0.00	No
25	Link-50	75.20	254.70	0.00	254.60	1.60	0.10	0.1300	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
26	Link-52	35.00	254.72	0.00	254.67	0.05	0.05	0.1400	CIRCULAR	1.650	1.650	0.0130	0.5000	0.5000	0.0000	0.00	No
27	Link-53	336.90	255.29	0.00	254.74	0.02	0.55	0.1600	CIRCULAR	1.350	1.350	0.0130	0.5000	0.5000	0.0000	0.00	No
28	Link-54	110.00	255.53	0.00	255.31	0.02	0.22	0.2000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
29	Link-56	110.00	255.77	0.00	255.55	0.02	0.22	0.2000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
30	Link-57	95.50	256.10	0.00	255.85	0.08	0.25	0.2600	CIRCULAR	0.450	0.450	0.0130	0.5000	0.5000	0.0000	0.00	No
31	Link-58	90.00	256.93	0.00	256.25	0.15	0.68	0.7600	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
32	Link-59	53.10	255.23	0.00	255.13	0.41	0.10	0.1900	CIRCULAR	1.500	1.500	0.0130	0.5000	0.5000	0.0000	0.00	No
33	Link-60	13.40	256.25	0.00	255.84	0.61	0.41	3.0600	CIRCULAR	1.500	1.500	0.0130	0.5000	0.5000	0.0000	0.00	No
34	Link-62	25.00	256.90	0.00	256.75	0.00	0.15	0.6000	CIRCULAR	1.200	1.200	0.0130	0.5000	0.5000	0.0000	0.00	No
35	Link-68	60.00	258.45	0.00	258.20	0.10	0.25	0.4200	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
36	Link-70	57.00	255.35	0.00	255.25	0.02	0.10	0.1800	CIRCULAR	0.820	0.820	0.0130	0.5000	0.5000	0.0000	0.00	No
37	Link-71	82.00	255.60	0.00	255.43	0.08	0.17	0.2100	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
38	Link-72	85.00	255.79	0.17	255.62	0.02	0.17	0.2000	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
39	Link-73	67.80	255.78	-0.01	255.10	0.38	0.68	1.0000	CIRCULAR	0.900	0.900	0.0130	0.5000	0.5000	0.0000	0.00	No
40	Link-80	89.90	258.32	0.00	255.97	0.68	2.35	2.6100	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
41	Link-81	93.20	261.13	0.00	259.27	0.95	1.86	2.0000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
42	Link-82	103.90	262.69	0.00	261.13	0.00	1.56	1.5000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
43	RH_A1	50.00	270.14	0.00	268.50	1.43	1.64	3.2800	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
44	RH_B1	227.00	270.35	0.00	266.50	0.00	3.85	1.7000	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
45	RH_C3	15.00	262.00	0.00	261.70	0.00	0.30	2.0000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
46	RH_C4	195.00	261.70	0.00	259.38	0.00	2.32	1.1900	CIRCULAR	0.530	0.530	0.0150	0.5000	0.5000	0.0000	0.00	No
47	RH_C5	274.00	259.38	0.00	256.36	0.00	3.02	1.1000	CIRCULAR	0.530	0.530	0.0130	0.5000	0.5000	0.0000	0.00	No
48	RH_C6	6.00	256.36	0.00	256.24	0.14	0.12	2.0000	CIRCULAR	0.700	0.700	0.0130	0.5000	0.5000	0.0000	0.00	No

Pipe Input

SN	Element ID	Length (m)	Inlet Invert Elevation (m)	Inlet Invert Offset (m)	Outlet Invert Elevation (m)	Outlet Invert Offset (m)	Total Drop (m)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (m)	Pipe Width (m)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cms)	Flap Gate
49	RH_D1	275.00	272.00	0.00	267.75	0.00	4.25	1.5500	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
50	RH_D2	180.00	267.75	0.00	264.00	0.00	3.75	2.0800	CIRCULAR	0.300	0.300	0.0130	0.5000	0.5000	0.0000	0.00	No
51	RH_D3	155.00	264.00	0.00	261.90	0.00	2.10	1.3500	CIRCULAR	0.380	0.380	0.0130	0.5000	0.5000	0.0000	0.00	No
52	RH_M1	270.00	267.60	0.00	267.07	0.00	0.53	0.2000	CIRCULAR	0.600	0.600	0.0130	0.5000	0.5000	0.0000	0.00	No
53	RH_M2	222.00	267.07	0.00	266.63	0.00	0.44	0.2000	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
54	RH_M3	18.00	266.63	0.00	266.50	0.00	0.13	0.7200	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
55	RH_M4	415.00	266.50	0.00	261.90	0.00	4.60	1.1100	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
56	RH_M5	140.00	261.90	0.00	260.33	0.00	1.57	1.1200	CIRCULAR	0.680	0.680	0.0130	0.5000	0.5000	0.0000	0.00	No
57	RH_M6	464.00	260.33	0.00	256.42	0.00	3.91	0.8400	CIRCULAR	0.750	0.750	0.0130	0.5000	0.5000	0.0000	0.00	No
58	RH_M7	6.00	256.42	0.00	256.37	0.27	0.05	0.8300	CIRCULAR	1.000	1.000	0.0130	0.5000	0.5000	0.0000	0.00	No
59	West_Link	33.73	256.00	-1.00	257.00	0.00	-1.00	-2.9600	Dummy	0.000	0.000	0.0130	0.5000	0.5000	0.0000	0.00	No
60	WestWetland_Link	37.13	258.00	0.00	258.00	0.00	0.00	0.0000	Dummy	0.000	0.000	0.0130	0.5000	0.5000	0.0000	0.00	No
61	Wetland_Link	41.51	252.00	0.00	252.00	0.00	0.00	0.0000	Dummy	0.000	0.000	0.0130	0.5000	0.5000	0.0000	0.00	No

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	Ex.STM_1	0.25	0 12:00	0.18	1.38	1.57	1.14	0.45	1.00	98.00	0.71	SURCHARGED
2	Ex.STM_2	0.25	0 12:00	0.18	1.36	1.57	0.77	0.45	1.00	86.00	0.74	SURCHARGED
3	Ex.STM_3	0.25	0 12:00	0.22	1.13	1.57	0.29	0.45	1.00	78.00	0.85	SURCHARGED
4	Ex.STM_4	0.25	0 12:00	0.22	1.13	1.59	1.05	0.45	0.99	0.00	0.88	> CAPACITY
5	Ex.STM_5	0.25	0 12:01	0.27	0.92	1.33	1.25	0.44	0.83	0.00	0.82	Calculated
6	Ex.STM_6	0.25	0 12:02	0.30	0.82	1.40	0.60	0.40	0.77	0.00	0.85	Calculated
7	Ex.STM_7	0.25	0 12:02	0.39	0.64	1.44	1.18	0.35	0.59	0.00	0.89	Calculated
8	Link-106	1.34	0 13:29	0.89	1.50	3.04	0.14	0.75	1.00	68.00	0.96	SURCHARGED
9	Link-107	1.34	0 13:29	1.24	1.08	3.03	0.51	0.75	1.00	142.00	1.17	SURCHARGED
10	Link-108	1.31	0 12:02	1.23	1.06	1.16	1.58	1.20	1.00	113.00	0.13	SURCHARGED
11	Link-109	1.12	0 12:05	1.93	0.58	1.76	0.28	0.72	0.69	0.00	0.54	Calculated
12	Link-110	1.00	0 12:01	0.67	1.50	1.58	1.61	0.90	1.00	147.00	0.11	SURCHARGED
13	Link-111	0.63	0 12:01	0.41	1.54	1.42	0.78	0.75	1.00	140.00	0.18	SURCHARGED
14	Link-112	0.39	0 12:11	0.33	1.18	1.36	1.31	0.60	1.00	74.00	0.22	SURCHARGED
15	Link-113	0.64	0 12:00	0.33	1.93	2.98	0.55	0.52	1.00	43.00	0.38	SURCHARGED
16	Link-114	0.44	0 11:56	0.32	1.37	2.74	0.52	0.45	1.00	39.00	0.54	SURCHARGED
17	Link-115	0.35	0 12:12	0.24	1.47	1.60	0.52	0.52	1.00	25.00	0.74	SURCHARGED
18	Link-116	0.21	0 12:00	0.18	1.16	1.32	0.63	0.45	1.00	24.00	0.79	SURCHARGED
19	Link-117	0.79	0 12:00	0.96	0.82	2.53	0.59	0.68	1.00	5.00	1.40	SURCHARGED
20	Link-118	0.36	0 12:00	0.44	0.81	1.70	0.41	0.51	1.00	4.00	1.17	SURCHARGED
21	Link-119	0.92	0 12:01	0.80	1.14	3.24	0.93	0.60	1.00	29.00	1.22	SURCHARGED
22	Link-120	0.52	0 12:08	0.57	0.90	1.93	1.21	0.60	1.00	26.00	1.15	SURCHARGED
23	Link-121	0.61	0 11:58	0.39	1.58	2.83	0.90	0.52	1.00	25.00	1.12	SURCHARGED
24	Link-49	6.78	0 12:05	3.57	1.90	2.91	0.12	1.80	1.00	199.00	0.15	SURCHARGED
25	Link-50	0.78	0 12:00	0.22	3.47	2.75	0.46	0.60	1.00	2182.00	0.05	SURCHARGED
26	Link-52	6.78	0 12:05	3.45	1.97	3.17	0.18	1.65	1.00	250.00	0.15	SURCHARGED
27	Link-53	3.47	0 12:04	2.16	1.61	2.42	2.32	1.35	1.00	126.00	0.12	SURCHARGED
28	Link-54	0.86	0 12:00	0.27	3.12	3.03	0.61	0.60	1.00	567.00	0.13	SURCHARGED
29	Link-56	0.69	0 12:01	0.27	2.51	2.44	0.75	0.60	1.00	269.00	0.07	SURCHARGED
30	Link-57	0.34	0 11:58	0.15	2.31	2.11	0.75	0.45	1.00	173.00	0.21	SURCHARGED
31	Link-58	0.10	0 11:57	0.08	1.13	1.35	1.11	0.30	1.00	101.00	0.75	SURCHARGED
32	Link-59	2.28	0 12:14	3.07	0.74	1.29	0.69	1.50	1.00	83.00	0.19	SURCHARGED
33	Link-60	1.56	0 12:18	12.37	0.13	2.32	0.10	1.35	0.90	0.00	0.81	Calculated
34	Link-62	1.18	0 12:10	3.02	0.39	1.52	0.27	0.81	0.67	0.00	0.43	Calculated
35	Link-68	0.52	0 12:00	0.40	1.32	1.96	0.51	0.56	0.94	0.00	0.86	> CAPACITY
36	Link-70	1.39	0 12:01	0.60	2.30	2.59	0.37	0.82	1.00	472.00	0.14	SURCHARGED
37	Link-71	1.02	0 12:00	0.51	2.01	2.31	0.59	0.75	1.00	275.00	0.18	SURCHARGED
38	Link-72	0.42	0 12:00	0.50	0.84	0.95	1.49	0.75	1.00	168.00	0.11	SURCHARGED
39	Link-73	1.03	0 12:16	1.83	0.56	1.61	0.70	0.90	1.00	101.00	0.34	SURCHARGED
40	Link-80	1.15	0 12:01	1.80	0.64	3.34	0.45	0.75	1.00	10.00	0.85	SURCHARGED
41	Link-81	0.64	0 12:00	0.87	0.73	3.09	0.50	0.44	0.84	0.00	1.66	Calculated
42	Link-82	0.62	0 12:00	0.75	0.83	2.79	0.62	0.44	0.74	0.00	1.51	Calculated
43	RH_A1	0.23	0 11:39	0.18	1.31	3.26	0.26	0.30	1.00	330.00	1.47	SURCHARGED
44	RH_B1	0.14	0 11:39	0.13	1.09	1.95	1.94	0.30	1.00	262.00	0.61	SURCHARGED
45	RH_C3	0.89	0 12:41	0.87	1.03	3.15	0.08	0.60	1.00	356.00	0.89	SURCHARGED
46	RH_C4	0.42	0 11:53	0.41	1.03	2.07	1.57	0.52	1.00	381.00	0.83	SURCHARGED
47	RH_C5	0.48	0 12:50	0.45	1.07	2.22	2.06	0.52	1.00	387.00	0.64	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)		
48	RH_C6	0.48	0 12:50	1.31	0.37	1.64	0.06	0.69	0.99	0.00	0.93	Calculated
49	RH_D1	0.00	0 00:00	0.12	0.00	0.00		0.15	0.50	0.00	0.00	Calculated
50	RH_D2	0.15	0 11:51	0.14	1.04	2.11	1.42	0.30	1.00	260.00	1.07	SURCHARGED
51	RH_D3	0.19	0 11:59	0.20	0.93	1.71	1.51	0.38	1.00	285.00	0.30	SURCHARGED
52	RH_M1	0.49	0 11:42	0.27	1.81	1.74	2.59	0.60	1.00	297.00	0.29	SURCHARGED
53	RH_M2	0.80	0 11:43	0.37	2.13	2.23	1.66	0.68	1.00	243.00	0.50	SURCHARGED
54	RH_M3	1.05	0 11:57	0.95	1.11	2.37	0.13	0.75	1.00	235.00	0.77	SURCHARGED
55	RH_M4	0.90	0 11:44	0.89	1.02	2.57	2.69	0.68	1.00	238.00	0.95	SURCHARGED
56	RH_M5	1.03	0 11:52	0.89	1.16	2.90	0.80	0.68	1.00	302.00	0.97	SURCHARGED
57	RH_M6	1.09	0 12:20	1.02	1.06	2.46	3.14	0.75	1.00	299.00	0.52	SURCHARGED
58	RH_M7	1.68	0 12:24	2.19	0.77	2.41	0.04	0.83	0.83	0.00	0.81	Calculated
59	West_Link	0.08	0 12:00	0.00	0.05	0.00		0.92	0.23	0.00	0.39	Calculated
60	WestWetland_Link	0.12	0 12:00	0.00	0.05	0.00		0.92	0.23	0.00	0.39	Calculated
61	Wetland_Link	0.52	0 12:00	0.00	0.05	0.00		0.92	0.23	0.00	0.39	Calculated