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Lakewood Drive Reconstruction

STORMWATER STUDY

Town of The Blue Mountains

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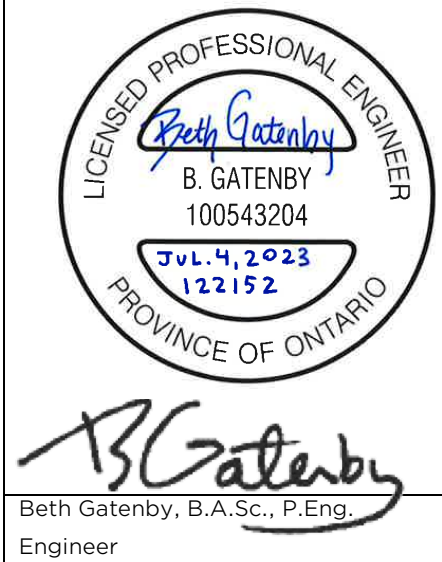	
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Issue	Date	Description
1	July 4, 2023	Final Report

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1 Introduction

Tatham Engineering Limited (Tatham) has been retained by the Town of The Blue Mountains (TOBM) at the request of the residents of Lakewood Drive and the Shore Acres Property Owners Association (SAPOA) to complete a Stormwater Study to identify existing drainage deficiencies along Lakewood Drive and through the adjacent private properties and provide recommended solutions to address these deficiencies. This report will provide a summary of the existing drainage deficiencies and will recommend drainage improvements to be implemented on private property as well as within the Lakewood Drive road allowance.

1.1 STUDY AREA

The study area consists of Lakewood Drive and the private properties fronting Lakewood Drive, as shown on Figure 1 enclosed. The study area is bound by Highway 26 to the south, Eastwind Lane and residential property to the west, Georgian Bay to the north, and residential property to the east.

1.2 BACKGROUND INFORMATION

Lakewood Drive was originally constructed in the 1970s as part of the Shore Acres residential development. It appears the original design gave little consideration to drainage and did not allow for property dedications for drainage outlets to Georgian Bay. We understand that the residents of Lakewood Drive have submitted complaints to the Town of flooding on Lakewood Drive and surface runoff flowing across private property.

The Town is currently undertaking the Lakewood Drive Reconstruction project which will include infrastructure renewal, road reconstruction, and drainage improvements within the municipal road allowance. The residents of Lakewood Drive have requested that this Stormwater Study be completed in conjunction with the Lakewood Drive Reconstruction project to provide a consolidated solution for drainage improvements on private property and within the municipal road allowance.

A field investigation of the study area was conducted by Tatham staff in July 2022 to confirm the study area drainage patterns, identify key drainage features and outlets, and consult with residents and Town staff regarding various drainage deficiencies observed throughout the study area.

1.3 DESIGN CRITERIA

This report was prepared recognizing the pertinent Municipal and Provincial guidelines on municipal design, water resources, and the environment, as well as other relevant background reports and data including the following:

- *The Blue Mountains Engineering Standards*. Town of The Blue Mountains, (April 2009);
- *Stormwater Management Practices Planning and Design Manual.* Ministry of Environment [now Ministry of the Environment, Conservation and Parks (MECP)], (2003); and
- *Soil Survey of Grey County*. J. E. Gillespie (Experimental Farms Service) and N. R. Richards (Ontario Agricultural College), (January 1954).

1.4 OBJECTIVES

The primary objectives of this report are as follows:

- Assess the existing drainage conditions throughout the study area and identify existing drainage deficiencies and issues;
- Propose alternative drainage solutions and summarize the assessment and evaluation of each alternative;
- Present the recommended drainage solutions for the study area; and
- Provide recommendations for drainage improvements on private property and incorporate the recommended drainage solutions into the Lakewood Drive Reconstruction design.

1.5 STUDY METHODOLOGY

The following steps were completed to assess the existing drainage conditions, develop alternative solutions, and identify the recommended solutions described herein:

1. A field investigation was completed to review the existing drainage conditions in the study area and discuss existing drainage deficiencies with local residents and Town staff;
2. A topographic survey was conducted for the Lakewood Drive road allowance and across select private properties which were identified as being critical to the existing conditions analysis and the design of potential drainage solutions;
3. Drainage catchments were delineated from the available topographic survey and mapping to establish local drainage patterns;
4. A Visual OTTHYMO (VO) hydrologic model was prepared to quantify the runoff peak flow rates to the various drainage outlets and other key locations within the study area;

5. A hydraulic analysis was completed to assess the existing drainage features and identify drainage deficiencies;
6. Alternative drainage solutions were developed to address the drainage issues and convey the required design flow rates; and
7. The alternative solutions were evaluated, the recommended alternatives were identified, and conceptual designs were provided for the recommended solutions.

2 Existing Conditions

The existing drainage conditions for the study area were established via field investigation of the existing drainage features on Town and private property, review of available background information and aerial photos, consultation with residents and Town staff, and interpretation of topographic survey and LiDAR data. The existing drainage conditions in the study area are illustrated on the Existing Conditions Map (Map 1) enclosed.

The existing conditions assessment identified five main drainage outlets within the study area as summarized in Table 1.

Table 1: Summary of Study Area Drainage Outlets

ID	LOCATION	DRAINAGE AREA (ha)	DESCRIPTION
Outlet 1	184 Lakewood Drive	1.4	Overland flow outlet receiving drainage from Lakewood Drive and swale adjacent to Eastwind Lane and private driveway. Background information indicates there was previously a culvert outlet at this location which could no longer be observed. Consultation with residents determined wave action has deposited additional sand at the culvert outlet to Georgian Bay in recent years.
Outlet 2	185/165/163 Lakewood Drive	0.6	Culvert outlet along south property line of 185 Lakewood Drive. Background information and consultation with residents determined the culvert outlet is currently buried in the beach sand and a subdrain system was previously installed in an attempt to convey discharge from the buried culvert outlet to Georgian Bay.
Outlet 3	Plan 925, Block B (SAPOA Beach)	4.5	Culvert crossing Lakewood Drive discharges to the beach where water infiltrates into the sand under low flow conditions or flows across the beach during high flow events. A significant area of standing water was observed during our July 2022 field investigation.

ID	LOCATION	DRAINAGE AREA (ha)	DESCRIPTION
Outlet 4	131/129 Lakewood Drive	2.2	Culvert outlet along property line between 131 and 129 Lakewood Drive. Culvert outlet is currently approximately 75% obstructed and resident at 131 Lakewood has dug a small outlet swale from the downstream end of the culvert to the shoreline. Consultation with residents determined downstream sections of the culvert have been lost to wave action in recent years and a potential break in the culvert resulted in water upwelling from the ground approximately halfway along the culvert during a recent high flow event.
Outlet 5	Plan 925, Block A (Council Beach Park)	0.2	Culvert crossing Lakewood Drive outlets to an overland flow route across Council Beach. There are no visible deficiencies at this outlet and no issues have been reported by residents.

2.1 HYDROLOGIC ANALYSIS

A VO hydrologic model was created to quantify peak flows throughout the study area. Catchments were delineated using topographic contours to key points of interest. The governing flows from the 24-hour SCS Type II and 4-hour Chicago design storms for the 1:5, 1:25, and 1:100-year return frequency design storms are summarized in Table 2 at each main drainage outlet.

Table 2: Existing Condition Peak Flow Summary

LOCATION & DESCRIPTION (CULVERT ID#)	DRAINAGE AREA (ha)	PEAK FLOW (m^3/s)			
		1:5-YEAR	1:25-YEAR	1:100-YEAR	TIMMINS
176 Lakewood Dr. Driveway Culvert (CUL-1)	0.32	0.03	0.05	0.06	0.02
182 Lakewood Dr. Driveway Culvert (CUL-2)	0.57	0.07	0.09	0.11	0.04
North of 184 Lakewood Dr. Outlet Culvert (OUT-1)	1.39	0.07	0.09	0.12	0.08
169 Lakewood Dr. Road Crossing Culvert (CUL-3)	0.28	0.05	0.07	0.08	0.02
185 Lakewood Dr. Outlet Culvert (CUL-4)	0.59	0.05	0.07	0.09	0.04

LOCATION & DESCRIPTION (CULVERT ID#)	DRAINAGE AREA (ha)	PEAK FLOW (m^3/s)			
		1:5-YEAR	1:25-YEAR	1:100-YEAR	TIMMINS
Highway 26, 141 Woodland Park Rd. Road Crossing Culvert (CUL-5)	1.85	0.10	0.16	0.21	0.12
SAPOA Beach Road Crossing & Outlet Culvert (CUL-6)	4.5	0.30	0.43	0.57	0.30
Highway 26, 133 Woodland Park Rd. Road Crossing Culvert (CUL-7)	1.91	0.11	0.17	0.22	0.12
129 Lakewood Dr. Road Crossing Culvert (CUL-8)	2.03	0.06	0.11	0.15	0.11
129 Lakewood Dr. Outlet Culvert (CUL-9)	2.21	0.08	0.14	0.19	0.13
Council Beach Park Road Crossing & Outlet Culvert (CUL-10)	0.21	0.01	0.02	0.02	0.02
Lakewood Dr. (South) & Highway 26 Road Crossing Culvert (CUL-11)	0.34	0.05	0.07	0.09	0.03

Note: Maximum peak flow of 24-hour SCS Type II and 4-hour Chicago design storms are listed.

2.2 HYDRAULIC ANALYSIS

A hydraulic analysis was completed to establish the capacity of the existing drainage features and the level of service provided. The HY-8 Culvert Hydraulic Analysis Program was used to assess the existing culverts using the peak flows from the hydrologic analysis.

The existing conveyance capacity and level of service provided has been compared against the required capacity and level of service specified in the Town's Engineering Standards. As per Town Standards (Sections 4.2.5 and 4.2.7):

- Driveway culverts shall be sized to convey the 1:5-year return frequency design storm peak flow;
- Local (Lakewood Drive) and collector road crossing culverts shall be designed to convey the 1:25-year return frequency design storm peak flow;

- Arterial road (Highway 26) crossing culverts shall be designed to convey the 1:100-year return frequency design storm peak flow; and
- A combination of the overland flow system and minor system (outlets) shall be designed for the greater of the 1:100-year return frequency design storm or Regional storm peak flow.

The reported actual culvert capacities do not account for existing obstructions or damages. During site visits, the following culverts were observed as damaged and/or obstructed, resulting in a significant reduction in capacity: CUL-2, CUL-4, CUL-9, and CUL-11. Outlet 1 (OUT-1) was not found during site visits as described in Table 1. Therefore, it is assumed all drainage flows overland overtop the existing culvert and floods private property.

Table 3: Existing Condition Culvert Capacity Summary

LOCATION & DESCRIPTION (CULVERT ID#)	EXISTING CULVERT DESCRIPTION	REQUIRED LEVEL OF SERVICE (RFDSE)	REQUIRED CAPACITY (m^3/s)	ACTUAL LEVEL OF SERVICE (RFDSE)	ACTUAL CAPACITY (m^3/s)
176 Lakewood Dr. Driveway Culvert (CUL-1)	450 mm Dia. CSP	1:5-Year	0.03	> 1:100-Year	0.27
182 Lakewood Dr. Driveway Culvert (CUL-2)	400 mm Dia. CSP	1:5-Year	0.07	> 1:100-Year*	0.13*
North of 184 Lakewood Dr. Outlet Culvert (OUT-1)	N/A	Greater of 1:100-Year or Regional	0.12	None	0.00
169 Lakewood Dr. Road Crossing Culvert (CUL-3)	750 mm Dia. CSP	1:25-Year	0.07	> 1:100-Year	0.92
185 Lakewood Dr. Outlet Culvert (CUL-4)	400 mm Dia. CSP	Greater of 1:100-Year or Regional	0.09	> 1:100-Year*	0.20*
Highway 26, 141 Woodland Park Rd. Road Crossing Culvert (CUL-5)	800 mm Dia. CSP	1:100-Year	0.21	> 1:100-Year	1.66
SAPOA Beach Road Crossing & Outlet Culvert (CUL-6)	600 mm Dia. CSP	Greater of 1:100-Year or Regional	0.57	1:50-Year	0.49

LOCATION & DESCRIPTION (CULVERT ID#)	EXISTING CULVERT DESCRIPTION	REQUIRED LEVEL OF SERVICE (RFDSE)	REQUIRED CAPACITY (m^3/s)	ACTUAL LEVEL OF SERVICE (RFDSE)	ACTUAL CAPACITY (m^3/s)
Highway 26, 133 Woodland Park Rd. Road Crossing Culvert (CUL-7)	800 mm Dia. CSP	1:100-Year	0.22	> 1:100-Year	1.83
129 Lakewood Dr. Road Crossing Culvert (CUL-8)	600 mm Dia. CSP	1:25-Year	0.11	> 1:100-Year	0.39
129 Lakewood Dr. Outlet Culvert (CUL-9)	300 mm Dia. CSP/HDPE	Greater of 1:100-Year or Regional	0.19	1:2-Year*	0.06*
Council Beach Park Road Crossing & Outlet Culvert (CUL-10)	600 mm Dia. CSP	Greater of 1:100-Year or Regional	0.02	> 1:100-Year	0.43
Lakewood Dr. (South) & Highway 26 Road Crossing Culvert (CUL-11)	600 mm Dia. CSP	1:100-Year	0.09	> 1:100-Year*	0.34*

Note: RFDSE represents "return frequency design storm event"

*Note: * represents actual capacity does not account for culvert obstructions or damages.*

2.3 EXISTING DRAINAGE ISSUES

The drainage issues identified through the study area are described on an area-by-area basis in the following sections. Refer to Map 2 in Appendix A for reference.

Area A: Lakewood Drive & Highway 26 West Intersection

Runoff from Area A drains to Outlets 1 and 2 in Area B (Lakewood Drive cul-de-sac). During a recent high intensity storm event, it was reported that drainage from Lakewood Drive flowed across the private driveway at 163 Lakewood Drive and continued toward Outlet 2. There is currently no roadside ditch along the north side of this section of Lakewood Drive. There is an opportunity to redirect drainage away from Area B using the municipal ditch between Highway 26 and Lakewood Drive to reduce flows at Outlet 1 and Outlet 2.

Area B: Lakewood Drive Cul-De-Sac

Ponding issues have been observed between 182 and 184 Lakewood Drive and at the rear of 184 Lakewood Drive upstream of Outlet 1. Properties fronting the Lakewood Drive cul-de-sac have also reported issues with drainage flowing across and ponding at the end of driveways. The

downstream end of the Outlet 2 culvert is buried in the beach sand and can not discharge freely to Georgian Bay. Detailed descriptions of Outlets 1 and 2 are provided in Table 1. It is noted Outlets 1 and 2 are both located on private property and therefore are currently the responsibility of the property owners to maintain.

Area C: Lakewood Drive (Central Portion) and Outlet to SAPOA Beach

As shown in Table 3, the 600 mm diameter culvert (CUL-6) crossing Lakewood Drive upstream of Outlet 3 has sufficient capacity to convey the 1:25-year return frequency design storm peak flow and therefore satisfies Town standards. However, there are two 800 mm diameter culverts crossing Highway 26 (CUL-5 and CUL-7) immediately upstream of CUL-6 which have greater capacity than CUL-6. There is no defined outlet channel from CUL-6 to Georgian Bay and significant ponding occurs in the wooded area between Lakewood Drive and the SAPOA common beach. It is noted Outlet 3 is located on private property and therefore is currently the responsibility of the property owner (SAPOA) to maintain.

Area D: Lakewood Drive (Eastern Portion) and Outlet at 129/131 Lakewood Drive

As shown in Table 3, the culvert (CUL-9) upstream of Outlet 4 is undersized and only has capacity to convey the 1:2-year return frequency design storm peak flow. The 600 mm diameter culvert (CUL-8) crossing Lakewood Drive immediately upstream has greater capacity than CUL-9. The existing CUL-9 is also in a deteriorated condition, has an obstructed outlet, and is potentially damaged. For the reasons described above, it is expected during major storm events, flooding would occur at 129 and 131 Lakewood Drive adjacent to CUL-9. It is noted Outlet 4 is located on private property and therefore is currently the responsibility of the property owner to maintain.

Additional Areas

The following general drainage deficiencies were also noted at various locations within the study area during field investigations.

- Many driveway culverts have inlets and/or outlets either partially blocked or fully obstructed/buried which reduces the drainage system's ability to safely convey flow;
- Several sections of roadside ditch require re-grading to resolve ponding issues; and
- Side-yard swales have not been maintained and in some cases have been blocked with landscaping which obstructs drainage.

3 Proposed Alternative Solutions

Based on our understanding of the existing drainage conditions and the drainage deficiencies identified herein, proposed alternative solutions were developed and assessed via a proposed conditions hydraulic model of the study area. This section of the report describes the proposed alternative solutions on an area-by-area basis and provides a brief assessment of each alternative.

3.1 AREA A: LAKEWOOD DRIVE & HIGHWAY 26 WEST INTERSECTION

Refer to Map 3 showing Options A1 and A2 in Appendix A.

Option A1 – New Road Crossing Culvert at Lakewood Drive & Highway 26 West Intersection

This option involves redirecting the runoff from catchments 101 and 104 from Area B to Area C and Outlet 3. Under this option, the Highway 26 ditch west of Lakewood Drive would be regraded to direct runoff southeast through a new 600 mm diameter culvert crossing (PROP-1) under Lakewood Drive at its intersection with Highway 26. The Lakewood Drive road crossing culvert fronting 169 Lakewood Drive (CUL-3) would be removed. The ditch between Highway 26 and Lakewood Drive is to be regraded to drain towards Outlet 3 in Area C. Area C drainage improvement options, described in Section 3.3, have considered the additional runoff from catchments 101 and 104. Vegetation removal in the ditch will be required to regrade the ditch and there may be a potential conflict with an existing streetlight in the boulevard.

Option A2 – Construct Roadside Ditch Along North Side of Lakewood Drive

This option involves construction of a roadside ditch along the north side of Lakewood Drive 169 Lakewood Drive to Outlet 3 at the SAPOA beach. There is currently no roadside ditch along the north side of this section of Lakewood Drive. The proposed roadside ditch would collect and convey local surface runoff to Outlet 3 and would improve the drainage of the Lakewood Drive road base. This option would include installation of Town standard driveway culverts at 165 and 163 Lakewood Drive (PROP-2 and PROP-3, respectively).

3.2 AREA B: LAKEWOOD DRIVE CUL-DE-SAC

Refer to Map 4 showing Options B1 through B6 in Appendix A.

Option B1 – 182-187 Lakewood Drive Side Yard Swales

This option involves the property owners of 182 to 187 Lakewood Drive grading defined and unobstructed side yard swales draining towards the Bay along each property line. This will allow

runoff to be directed away from the homes and driveways and instead conveyed to the Bay, minimizing ponding on private property.

The area between and behind 182/184 Lakewood Drive should also be improved with swales to direct drainage towards Outlet 1. If during construction the Outlet 1 culvert is located, this should be removed.

Option B2 – Lakewood Drive Cul-De-Sac Regrading

This option involves regrading the Lakewood Drive cul-de-sac to direct overland flows towards Outlet 2 at 185 Lakewood Drive. The north side of the cul-de-sac would be raised and the south side would be lowered to create fall to the south property line of 185 Lakewood Drive. Partial regrading of the driveways fronting the cul-de-sac may be required to accommodate cul-de-sac grade changes to direct runoff to new side yard swales (Option B1).

Cul-de-sac regarding will reduce runoff contributing to the surface ponding at 184-187 Lakewood Drive. Outlet 2 can be improved (Options B4 or B5) to accommodate this additional roadway drainage.

Option B3 – New Road Crossing Culvert under Lakewood Drive, West of Cul-De-Sac

This option involves redirecting flows from Outlet 1 to Outlet 2 to alleviate ponding concerns between and behind 182 and 184 Lakewood Drive. Under this option, a 400 mm diameter culvert (PROP-4) would be installed under Lakewood Drive to convey runoff from the northwest roadside ditch to the southeast roadside ditch and ultimately to Outlet 2. Outlet 2 can be improved (Options B4 or B5) to accommodate this additional roadway drainage. The driveway culverts at 178 and 180 Lakewood Drive culvert would be replaced and the ditch would be regraded fronting these properties. The driveway culvert at 182 would be removed.

Option B4 – Improve 185 Lakewood Drive Outlet with New Culvert

This option involves replacing the existing Outlet 2 culvert (CUL-4) with a 500 mm diameter culvert which is sufficient to convey the 1:100-year return frequency design storm peak flow. Additional fill and regrading on private properties may be required to raise existing grades and provide adequate cover over the culvert. An outlet channel would also be constructed from the downstream end of the proposed culvert to the Bay. The culvert outlet would be set back from the existing shoreline and the outlet channel would be armored to limit the potential impact of wave action on the proposed culvert and channel.

Under this option it is recommended the Town acquire an easement over the proposed outlet for access and maintenance as this outlet conveys private and municipal drainage from Lakewood Drive to the Bay.

Option B5 – Improve 185 Lakewood Drive Outlet with New Channel

This option involves removing the existing Outlet 2 culvert (CUL-4) and constructing a new outlet channel from Lakewood Drive to the Bay. The outlet channel would be sized to convey the 1:100-year return frequency design storm peak flow. With an open channel outlet there is less risk of the outlet becoming obstructed or damaged compared to a piped outlet. It is also easier to identify blockages in an open channel and to perform maintenance. The downstream end of the outlet channel would be armored to limit the potential impact of wave action on the proposed channel.

Under this option it is recommended the Town acquire an easement over the proposed outlet for access and maintenance as this outlet conveys private and municipal drainage from Lakewood Drive to the Bay.

Option B6 – New Driveway Culverts, Ditch, & Outlet on Northwest Side of Lakewood Drive

This option involves redirecting the Lakewood Drive north roadside ditch drainage from away from Outlet 1 to a new outlet between 186/188 Lakewood Drive. The 182 Lakewood Drive driveway culvert would need to be replaced and new driveway culverts and ditches would be required at 184 and 186 Lakewood Drive. Preliminary analysis of the existing ditch grades on the north side of Lakewood Drive and the cul-de-sac determined the ditches and culverts upstream of 182 Lakewood Drive would need to be regraded to provide slope for new ditches and culverts proposed from 182 Lakewood Drive to the Bay. Vegetation and fence removal would be required to complete the works. Additionally, hydro poles and/or utility services would likely need to be relocated to avoid conflict with the proposed ditch. The downstream end of the outlet channel would be armored to limit the potential impact of wave action on the proposed channel.

Under this option it is recommended the Town acquire an easement over the proposed outlet area for access and maintenance as this outlet conveys private and municipal drainage from Lakewood Drive to the Bay.

3.3 AREA C: LAKEWOOD DRIVE (CENTRAL PORTION) AND OUTLET TO SAPOA BEACH

Refer to Map 5 showing Options C1 through C6 in Appendix A.

Option C1 – Ex. Culvert to Remain, Install Additional Culvert

This option involves maintaining the existing 600 mm diameter culvert (CUL-6) and installing an additional 600 mm diameter crossing culvert (PROP-8) at the same location to provide increased capacity to convey flow exceeding the 1:100-year return frequency design storm peak flow. The outlet area at the SAPOA beach is to remain “as is” under this option.

Option C2 – Ex. Culvert to Remain, Install Additional Culvert, & Construct Outlet Channel through Middle of SAPOA Beach

This option involves maintaining the existing 600 mm diameter culvert (CUL-6) and installing an additional 600 mm diameter crossing culvert (PROP-8) at the same location to provide increased capacity to convey flows exceeding the 1:100-year return frequency design storm peak flow. The outlet area at the SAPOA beach is to be improved with an outlet channel from CUL-6 to the beach. Vegetation and fence removal/reinstatement would be required to accommodate the new drainage outlet. The outlet would extend directly in line with the culverts and cut through the middle of the beach. The outlet channel would be armored to limit the potential impact of wave action on the proposed channel.

Under this option it is recommended the Town acquire an easement over the proposed outlet for access and maintenance as this outlet conveys municipal drainage from Lakewood Drive and Highway 26 to the Bay.

Option C3 – Ex. Culvert to Remain, Install Additional Culvert, Re-grade North Roadside Ditch, & Construct Outlet Channel at East Limit of SAPOA Beach

This option involves maintaining the existing 600 mm diameter culvert (CUL-6) and installing an additional 600 mm diameter crossing culvert (PROP-8) at the same location to provide increased capacity to convey flow exceeding the 1:100-year return frequency design storm peak flow. The Lakewood Drive north roadside ditch is to be regraded to direct flow eastward. An outlet channel is to be constructed along the east limit of the SAPOA beach property. Vegetation and fence removal/reinstatement would be required to accommodate ditching works and the new outlet. The outlet channel would be armored to limit the potential impact of wave action on the proposed channel.

Under this option it is recommended the Town acquire an easement over the proposed outlet for access and maintenance as this outlet conveys municipal drainage from Lakewood Drive and Highway 26 to the Bay.

Option C4 – Ex. Culvert to Remain, Re-grade North Roadside Ditch, Install Culvert at East End of SAPOA Beach, & Construct Outlet Channel at East Limit of SAPOA Beach

This option involves maintaining the existing 600 mm diameter culvert (CUL-6) and installing an additional 600 mm diameter crossing culvert (PROP-9) at the east end of the SAPOA property to provide increased capacity to convey flow exceeding the 1:100-year return frequency design storm peak flow. The Lakewood Drive north roadside ditch is to be regraded to direct flow eastward. An outlet channel is to be constructed along the east limit of the SAPOA beach property. Vegetation and fence removal/reinstatement would be required to accommodate

ditching works and the new outlet. The outlet channel would be armored to limit the potential impact of wave action on the proposed channel.

Under this option it is recommended the Town acquire an easement over the proposed outlet for access and maintenance as this outlet conveys municipal drainage from Lakewood Drive and Highway 26 to the Bay.

Option C5 – Remove Ex. Culvert, Re-grade South Roadside Ditch, Install 2 New Culverts at East End of SAPOA Beach, & Construct Outlet Channel at East Limit of SAPOA Beach

This option involves removing the existing Lakewood Drive culvert crossing (CUL-6) and installing two 600 mm diameter crossing culverts (PROP-9) at the east end of the SAPOA property to provide increased capacity to convey flow exceeding the 1:100-year return frequency design storm peak flow. The ditch between Highway 26 and Lakewood Drive would be regraded to drain from the location of the existing culvert crossing (CUL-6) to the location of the proposed culvert crossing (PROP-9). An outlet channel is to be constructed along the east limit of the SAPOA beach property. This configuration allows for improved outlet characteristics from the southside ditch to northside ditch of Lakewood Drive. Vegetation removal would be required to accommodate ditching works and minor removal/reinstatement of an existing fence would be required to accommodate the new outlet. The outlet channel would be armored to limit the potential impact of wave action on the proposed channel.

Under this option it is recommended the Town acquire an easement over the proposed outlet for access and maintenance as this outlet conveys municipal drainage from Lakewood Drive and Highway 26 to the Bay.

Option C6 – Regrade Section of Lakewood Drive South Roadside Ditch

This option involves regrading the Lakewood Drive south roadside ditch to drain from 134 Lakewood Drive to the existing culvert crossing (CUL-6) or the new culvert crossing (PROP-9) proposed under Options C4 and C5 (subject to selection of the preferred solution).

3.4 AREA D: LAKEWOOD DRIVE (EASTERN PORTION) AND OUTLET AT 129/131 LAKEWOOD DRIVE

Refer to Map 6 showing Options D1 through D6 in Appendix A.

Option D1 – Improve 129/131 Lakewood Drive Outlet with New Culvert

This option involves replacing the existing Outlet 4 culvert (CUL-9) with a new 400 mm diameter culvert and constructing an outlet channel from the proposed culvert to the Bay. The proposed culvert will have capacity to convey the 1:50-year return frequency design storm peak flow. Regrading of the area above the proposed culvert will be required. Minor tree and vegetation

removal would be required to complete the works. The outlet channel would be armored to limit the potential impact of wave action on the proposed channel.

Under this option it is recommended the Town acquire an easement over the proposed culvert and channel outlet for access and maintenance as this outlet conveys municipal drainage from Lakewood Drive to the Bay.

Option D2 – Improve 129/131 Lakewood Drive Outlet with New Channel

This option involves removing the existing Outlet 4 culvert (CUL-9) between 129 and 131 Lakewood Drive and constructing an open channel at the same location. The proposed channel would have a width of approximately 3.0 m which would fit between the houses at 131 and 129 Lakewood Drive and leave space for a 1.0 m wide walkway along the channel. Minor tree and vegetation removal would be required to complete the works. With an open channel outlet there is less risk of the outlet becoming obstructed or damaged compared to a pipe outlet. It is also easier to identify blockages in an open channel and to perform maintenance. The downstream end of the outlet channel would be armored to limit the potential impact of wave action on the proposed channel.

Under this option it is recommended the Town acquire an easement over the proposed culvert and channel outlet for access and maintenance as this outlet conveys municipal drainage from Lakewood Drive to the Bay.

Option D3 – Relocate Outlet to 125/129 Lakewood Drive & Install Open Channel and Storm Sewer

This option involves relocating Outlet 4 to between 125 and 129 Lakewood Drive. The Lakewood Drive crossing culvert (CUL-9) fronting 129 Lakewood Drive would be removed. The Lakewood Drive south roadside ditch would be regraded to drain to the new crossing location (PROP-11). A 500 mm diameter culvert crossing (PROP-11) Lakewood Drive would be installed between 125 and 129 Lakewood Drive. An open channel would be constructed from the culvert outlet to a low area between 125 and 129 Lakewood Drive partway down the slope to the bay. Due to grading constraints between and north of the existing residences, the remaining conveyance system would consist of a ditch inlet catch basin and a 525 mm diameter storm sewer to outlet to the Bay. The outlet is to be fitted with shoreline protection measures to prevent damage and erosion from wave action. To complete this work, significant grading and rock and tree removal would be required.

The existing outlet culvert on 129 Lakewood Drive would be abandoned in place to reduce construction costs and disturbance to the private properties with mature trees.

Under this option it is recommended the Town acquire an easement over the proposed channel and sewer outlet for access and maintenance as this outlet would convey municipal drainage from Lakewood Drive to the Bay.

Option D4 – Relocate Outlet to 125/129 Lakewood Drive & Install Storm Sewer

This option involves relocating Outlet 4 to between 125 and 129 Lakewood Drive and installing a storm sewer system. The Lakewood Drive crossing culvert (CUL-9) fronting 129 Lakewood Drive would be removed. The Lakewood Drive south roadside ditch would be regraded to drain to the new crossing location. A storm sewer would be installed between 125 and 129 Lakewood Drive to its proposed outlet to the Bay. A maintenance hole would be required partway down the slope to the Bay. The outlet is to be fitted with shoreline protection measures to prevent damage and erosion from wave action. To complete this work, significant rock and tree removal would be required.

The existing outlet culvert on 129 Lakewood Drive would be abandoned to reduce construction costs and disturbance to the private properties with mature trees.

Under this option it is recommended the Town acquire an easement over the proposed channel and sewer outlet for access and maintenance as this outlet would convey municipal drainage from Lakewood Drive to the Bay.

Option D5 – Construct Well Defined Outlet Channel through Council Beach Park Downstream of Lakewood Drive Culvert Crossing (Outlet 5)

As mentioned in Table 1, Outlet 5 is reported to have no issues and therefore may not require further action. However, to prevent erosion and/or future issues, this option consists of constructing a proper outlet channel from the culvert outlet to the Bay.

Option D6 – Re-Grade Lakewood Drive South Ditch to Remove Low Area

This option involves regrading the southside ditch of Lakewood Drive fronting 122 Lakewood Drive to provide positive slope to CUL-8. A low area was observed in this ditch which may cause ponding.

4 Cost Estimates

An estimate of the probable construction costs has been prepared for each drainage improvement option. Each cost estimate includes construction works, provisional items, and allowances.

The cost estimates have been prepared independent of the Lakewood Drive reconstruction project works. However, mobilization costs have been excluded as it is assumed there will not be additional cost to mobilize for these works.

Detailed cost estimates are included in Appendix B for reference. A summary of the preliminary cost estimates is provided in Table 4.

Table 4: Summary of Alternative Solutions Estimated Probable Construction Costs

OPTION	ESTIMATED COST
Area A: Lakewood Drive & Highway 26 West Intersection	
Option A1 – New Road Crossing Culvert at Lakewood Drive & Highway 26 West Intersection	$146,000
Option A2 – Construct Roadside Ditch Along North Side of Lakewood Drive	$30,000
Area B: Lakewood Drive Cul-De-Sac	
Option B1 – 182-187 Lakewood Drive Side Yard Swales	$72,000
Option B2 – Lakewood Drive Cul-De-Sac Regrading	$93,000
Option B3 – New Road Crossing Culvert under Lakewood Drive, West of Cul-De-Sac	$65,000
Option B4 – Improve 185 Lakewood Drive Outlet with New Culvert	$134,000
Option B5 – Improve 185 Lakewood Drive Outlet with New Channel	$95,000
Option B6 – New Driveway Culverts, Ditch, & Outlet on Northwest Side of Lakewood Drive	$145,000
Area C: Lakewood Drive (Central Portion) and Outlet to SAPOA Beach	
Option C1 – Ex. Culvert to Remain, Install Additional Culvert	$37,000
Option C2 – Ex. Culvert to Remain, Install Additional Culvert, & Construct Outlet Channel through Middle of SAPOA Beach	$90,000

OPTION	ESTIMATED COST
Option C3 – Ex. Culvert to Remain, Install Additional Culvert, Re-grade North Roadside Ditch, & Construct Outlet Channel at East Limit of SAPOA Beach	$192,000
Option C4 – Ex. Culvert to Remain, Re-grade North Roadside Ditch, Install Culvert at East End of SAPOA Beach, & Construct Outlet Channel at East Limit of SAPOA Beach	$204,000
Option C5 – Remove Ex. Culvert, Re-grade South Roadside Ditch, Install 2 New Culverts at East End of SAPOA Beach, & Construct Outlet Channel at East Limit of SAPOA Beach	$223,000
Option C6 – Regrade Section of Lakewood Drive South Roadside Ditch	$41,000
Area D: Lakewood Drive (Eastern Portion) and Outlet at 129/131 Lakewood Drive	
Option D1 – Improve 129/131 Lakewood Drive Outlet with New Culvert	$126,000
Option D2 – Improve 129/131 Lakewood Drive Outlet with New Channel	$50,000
Option D3 – Relocate Outlet to 125/129 Lakewood Drive & Install Open Channel and Storm Sewer	$177,000
Option D4 – Relocate Outlet to 125/129 Lakewood Drive & Install Storm Sewer	$242,000
Option D5 – Construct Well Defined Outlet Channel through Council Beach Park Downstream of Lakewood Drive Culvert Crossing (Outlet 5)	$64,000
Option D6 – Re-Grade Lakewood Drive South Ditch to Remove Low Area	$11,000

5 Recommended Solutions

5.1 RECOMMENDED DRAINAGE IMPROVEMENTS

Each of the proposed drainage improvement alternatives were assessed with respect to feasibility, magnitude of improvement, and cost. The options recommended for implementation to improve the existing drainage conditions in the study area are summarized in Table 5 and illustrated on Map 7 enclosed. In general, the current drainage patterns will be maintained by the recommended alternatives except in some cases where drainage will be directed to the main outlet (Outlet 3) at the SAPOA beach property.

Table 5: Summary of Recommended Options

LOCATION	OPTION	RECOMMENDATION COMMENTS
Area A	A1	This option is recommended to be implemented in conjunction with Option C5 which includes improvements to the downstream outlet.
	A2	This option is recommended to be implemented as described in Section 3.1 and shown conceptually on Map 3.
Area B	B1	This option is recommended to be implemented as described in Section 3.2 and shown conceptually on Map 4.
	B2	This option is recommended to be implemented as described in Section 3.2 and shown conceptually on Map 4.
	B3	This option is recommended to be implemented in conjunction with Option B5 which includes improvements to the existing outlet.
	B5	This option is recommended to be implemented as described in Section 3.2 and shown conceptually on Map 4.
Area C	C5	This option is recommended to be implemented as described in Section 3.3 and shown conceptually on Map 5.
	C6	This option is recommended to be implemented as described in Section 3.3 and shown conceptually on Map 5.
Area D	D2	This option is recommended to be implemented as described in Section 3.4 and shown conceptually on Map 6.
	D6	This option is recommended to be implemented as described in Section 3.4 and shown conceptually on Map 6.

Some of the recommended drainage improvements require works on private property, including Options B5, C5, and D1, which are improvements to three of the drainage system outlets. If one or several of the owners of the private properties upon which improvements are recommended is not amenable to said improvements, the overall improvement recommendations may need to be adjusted accordingly. Should property owners not prefer an open channel or an open channel is deemed unsuitable for the proposed area, the culvert options can be recommended for improvement.

5.2 RECOMMENDED ORDER OF IMPLEMENTATION

It is anticipated drainage improvements works will be constructed during or in conjunction with the Lakewood Drive Reconstruction project. Recognizing there are different areas for drainage within the study area, there is flexibility to the order in which improvements can be implemented. However, the general procedure for implementing drainage improvements is to begin with improving the downstream end of the system, starting at the outlet, and work towards the upstream end. This will ensure the downstream sections have sufficient capacity as the drainage system is improved upstream. Options B5, C5, and D2 should be the first drainage improvements completed as they involve improvements to the drainage system outlets.

5.3 RECOMMENDED SOLUTIONS COST ESTIMATE

The cost estimates for the recommended solutions have been compiled and summarized in Table 6.

Table 6: Summary of Recommended Solutions Estimated Probable Construction Costs

RECOMMENDED OPTIONS	ESTIMATED COST
Option A1 – New Road Crossing Culvert at Lakewood Drive & Highway 26 West Intersection	$146,000
Option A2 – Construct Roadside Ditch Along North Side of Lakewood Drive	$30,000
Option B1 – 182-187 Lakewood Drive Side Yard Swales	$72,000
Option B2 – Lakewood Drive Cul-De-Sac Regrading	$93,000
Option B3 – New Road Crossing Culvert under Lakewood Drive, West of Cul-De-Sac	$65,000
Option B5 – Improve 185 Lakewood Drive Outlet with New Channel	$95,000
Option C5 – Remove Ex. Culvert, Re-grade South Roadside Ditch, Install 2 New Culverts at East End of SAPOA Beach, & Construct Outlet Channel at East Limit of SAPOA Beach	$223,000

RECOMMENDED OPTIONS	ESTIMATED COST
Option C6 – Regrade Section of Lakewood Drive South Roadside Ditch	$41,000
Option D2 – Improve 129/131 Lakewood Drive Outlet with New Channel	$50,000
Option D6 – Re-Grade Lakewood Drive South Ditch to Remove Low Area	$11,000
Total Drainage Improvement Works Cost for Lakewood Drive	**$826,000**

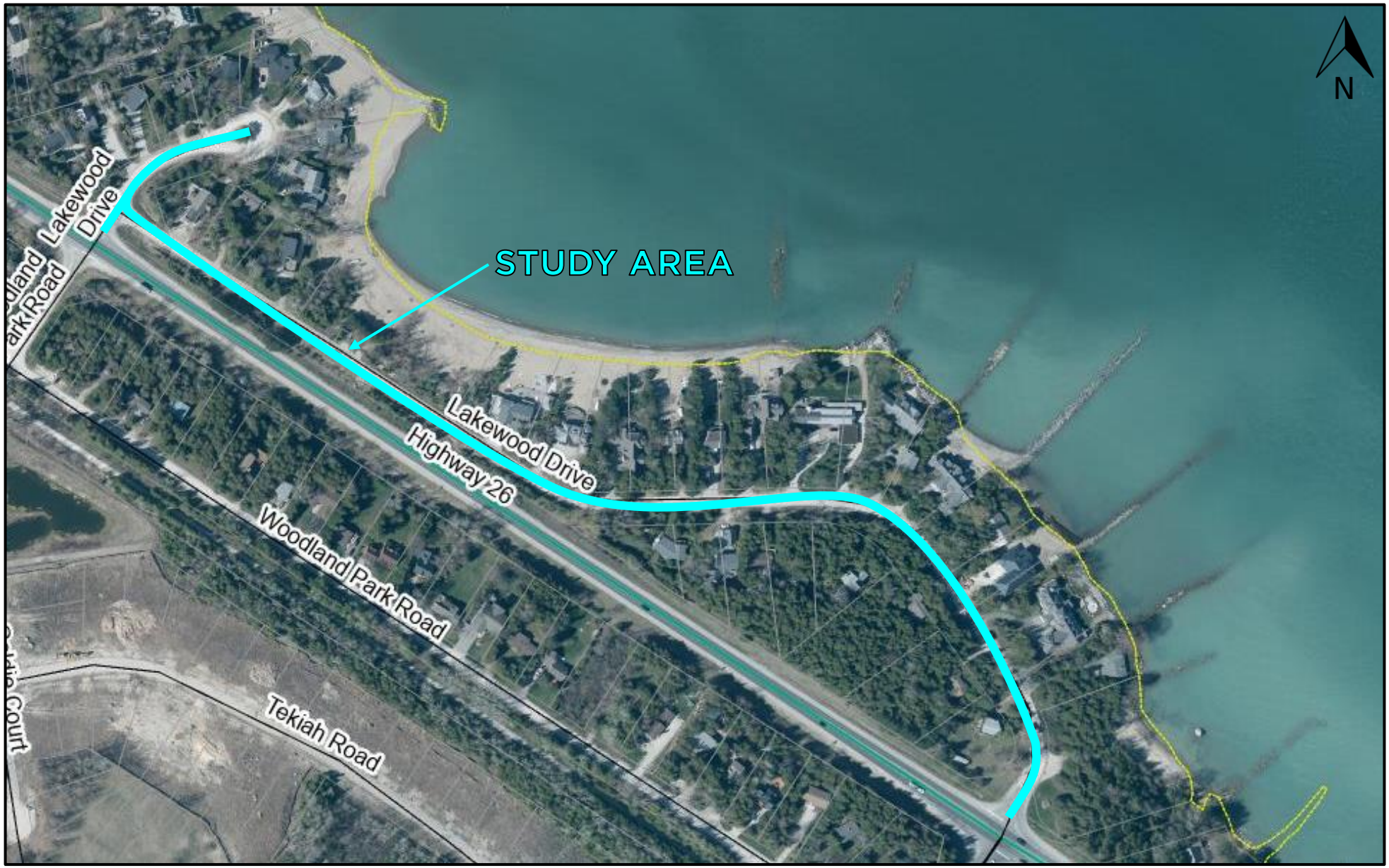
The above cost estimates are independent of the Lakewood Drive reconstruction project works. It is anticipated drainage improvement works would be incorporated into the reconstruction works to have one contractor complete all works concurrently under the one mobilization. Completing the drainage improvements in conjunction with the road reconstruction works will save drainage improvement costs.

6 Summary

As part of the Lakewood Drive Reconstruction project, Tatham has undertaken a detailed assessment of the drainage systems in the Lakewood Drive area for the Town at the request of the SAPOA/residents of Lakewood Drive.

The existing drainage area for Lakewood Drive has been assessed through hydrologic and hydraulic modeling. Based on the results of the analysis, drainage improvement options were developed and assessed as described in the report. Each option was evaluated for feasibility, cost, and level of improvement. Maps illustrating the existing conditions and proposed options are included in this report. The recommended options were selected and are summarized herein.

Following review of this report by the Town and the SAPOA/residents of Lakewood Drive, the drainage improvement options that are agreed upon for implementation will be incorporated into the Lakewood Drive road reconstruction project where appropriate.



122152 Lakewood Drive Reconstruction – SWM Study

Figure 1 – Study Area

(Imagery Source: Grey County Maps)

Appendix A: Conceptual Drainage Improvement Option Maps

LEGEND

- EX. DRAINAGE DIRECTION
- EX. CULVERT
- 500 — EX. CULVERT SIZE (mm)
- CUL-1 — EX. CULVERT ID
- 112 — MUNICIPAL ADDRESS NO.
- SUBCATCHMENT BOUNDARY
- 101 / 0.32 / 36% — SUBCATCHMENT ID; SUBCATCHMENT CN/% IMPERVIOUS; SUBCATCHMENT AREA

EXISTING CONDITIONS INFORMATION:

TATHAM DRAINAGE INVESTIGATION SITE VISIT - JULY 7, 2022

TATHAM TOPOGRAPHIC SURVEY AUGUST 2022

0 0.05 0.1 0.2 KILOMETERS

TATHAM ENGINEERING

LAKEWOOD DRIVE RECONSTRUCTION DRAINAGE IMPROVEMENTS STUDY EXISTING CONDITIONS

DWG. No. **MAP-1**

SCALE: 1:4000	DRAWN: CW	DATE: DEC. 2022	JOB NO. 122152

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LEGEND

- EX. DRAINAGE DIRECTION
- EX. CULVERT
- 500 — EX. CULVERT SIZE (mm)
- CUL-1 — EX. CULVERT ID
- 112 — MUNICIPAL ADDRESS NO.
- STUDY AREA
- 101 / 0.32 / 36% — SUBCATCHMENT ID; SUBCATCHMENT CN/% IMPERVIOUS; SUBCATCHMENT AREA

0 0.07 0.15 0.3 KILOMETERS

TATHAM ENGINEERING

LAKEWOOD DRIVE RECONSTRUCTION
DRAINAGE IMPROVEMENTS STUDY
IMPROVEMENT AREA MAP

DWG. No. **MAP-2**

SCALE: 1:5000 | DRAWN: CW | DATE: DEC. 2022 | JOB NO. 122152

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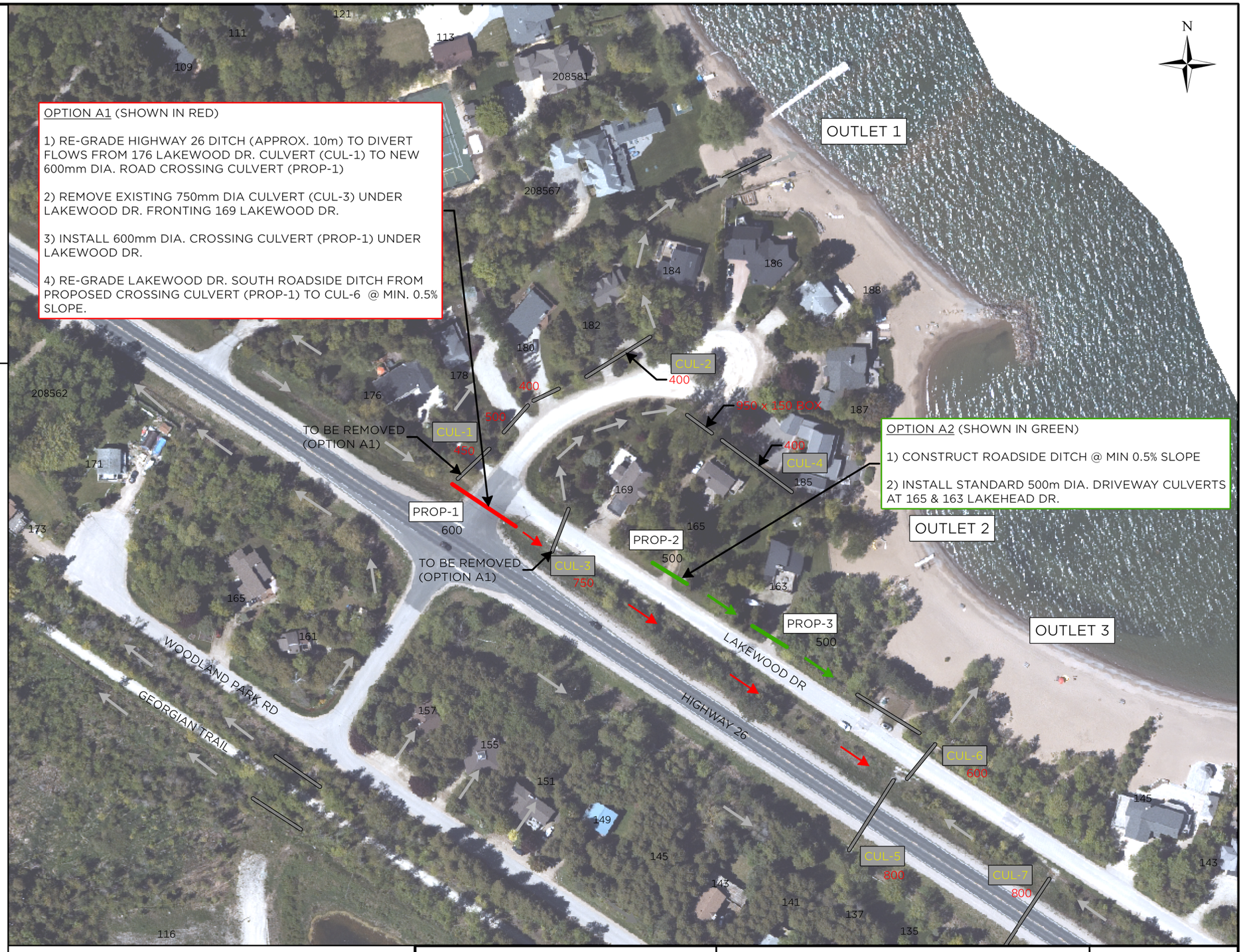
LEGEND

- EX. DRAINAGE DIRECTION
- EX. CULVERT
- 500 — EX. CULVERT SIZE (mm)
- CUL-1 — EX. CULVERT ID
- PROP-1 — PROP. CULVERT ID
- 500 — PROP. CULVERT SIZE (mm)
- 112 — MUNICIPAL ADDRESS NO.
- SUBCATCHMENT BOUNDARY
- 101 (0.32 | 36%) — SUBCATCHMENT ID; SUBCATCHMENT CN/% IMPERVIOUS; SUBCATCHMENT AREA

AREA A: PROPOSED IMPROVEMENT OPTIONS



0 0.03 0.05 0.1 KILOMETERS

TATHAM ENGINEERING

LAKEWOOD DRIVE RECONSTRUCTION DRAINAGE IMPROVEMENTS STUDY AREA A OPTIONS

DWG. No. **MAP-3**

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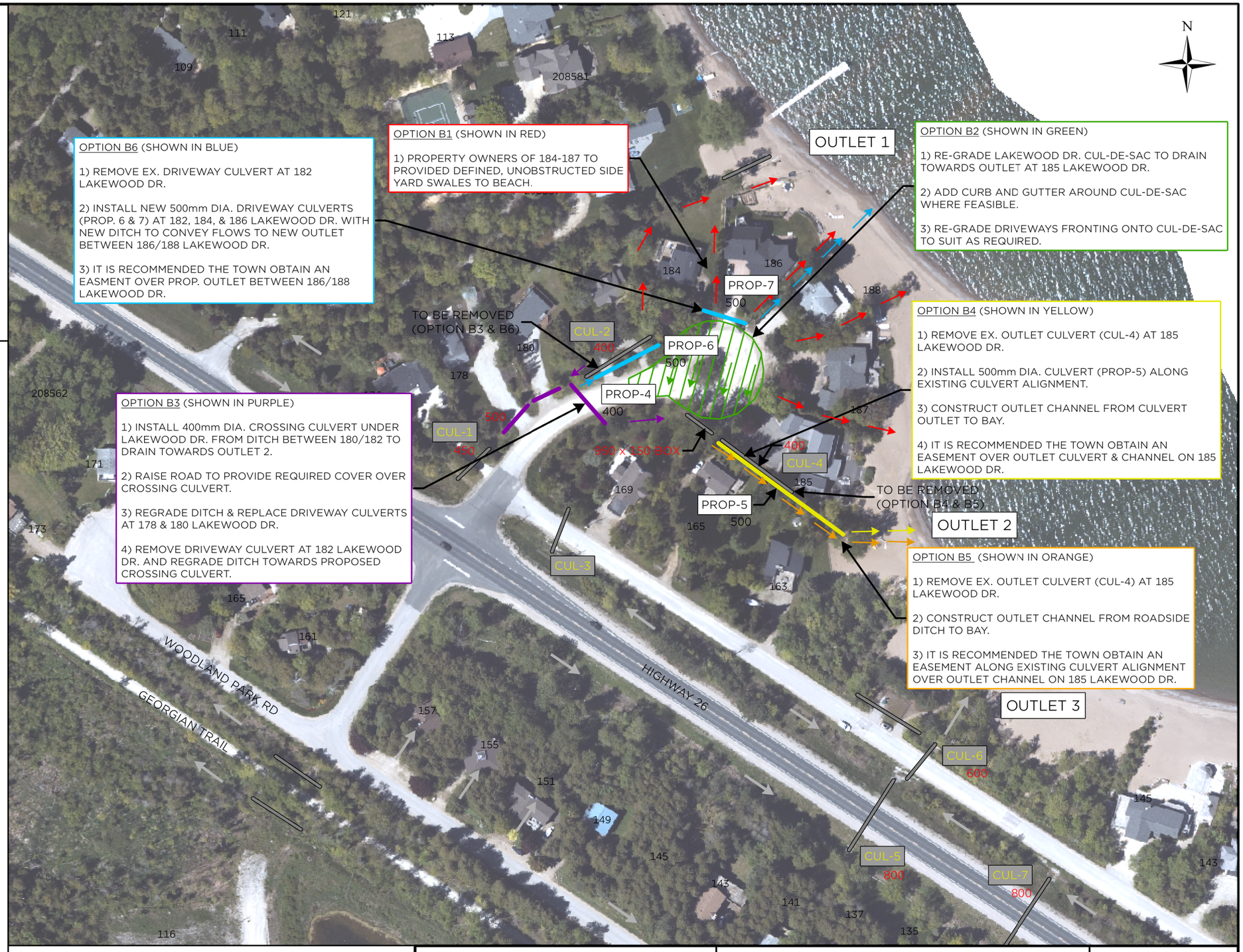
LEGEND

- EX. DRAINAGE DIRECTION
- EX. CULVERT
- 500 — EX. CULVERT SIZE (mm)
- CUL-1 — EX. CULVERT ID
- PROP-1 — PROP. CULVERT ID
- 500 — PROP. CULVERT SIZE (mm)
- 112 — MUNICIPAL ADDRESS NO.
- SUBCATCHMENT BOUNDARY
- 101 (0.32 | 36%) — SUBCATCHMENT ID; SUBCATCHMENT CN/% IMPERVIOUS; SUBCATCHMENT AREA

AREA B: PROPOSED IMPROVEMENT OPTIONS



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LAKEWOOD DRIVE RECONSTRUCTION DRAINAGE IMPROVEMENTS STUDY AREA B OPTIONS

DWG. No. **MAP-4**

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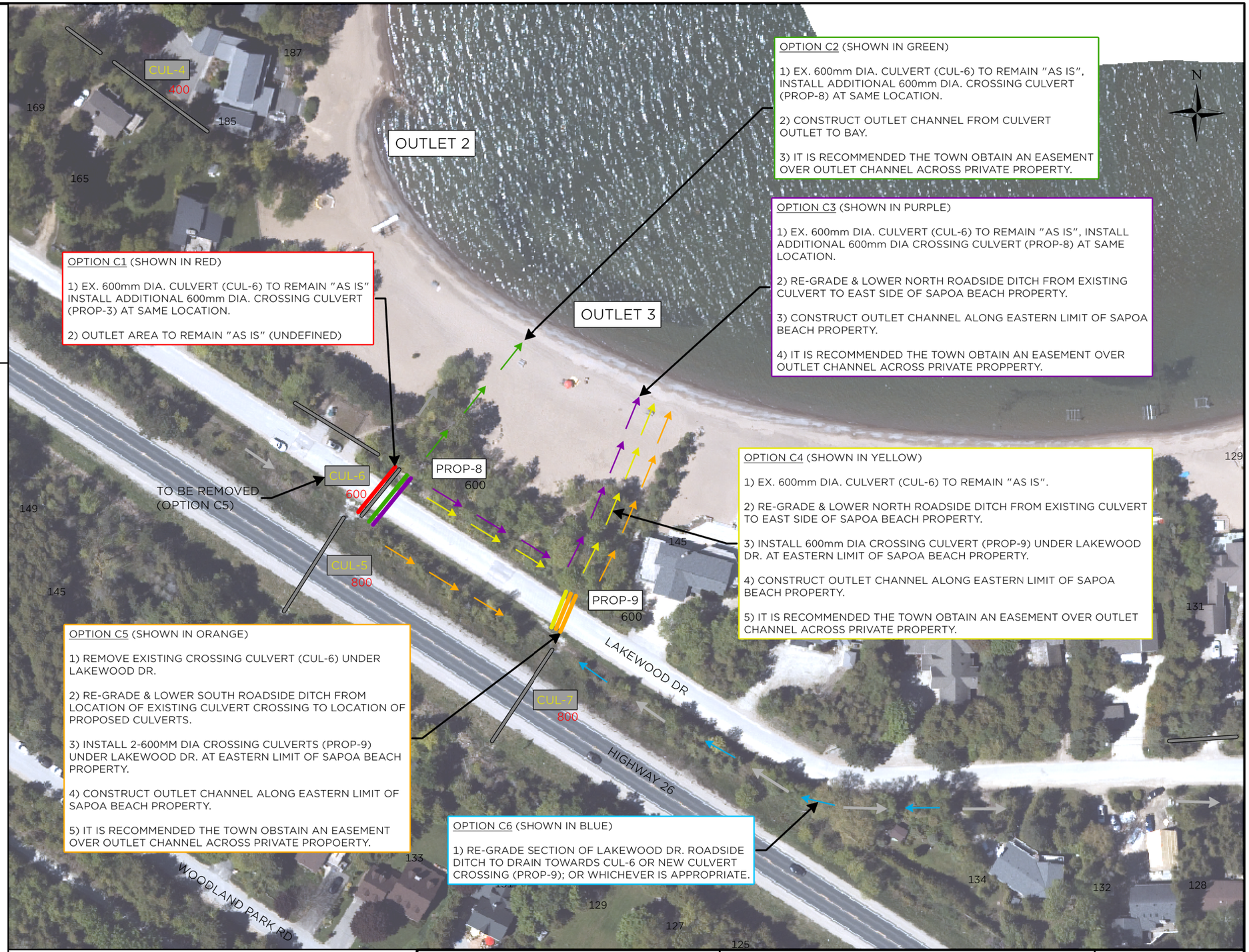
LEGEND

- EX. DRAINAGE DIRECTION
- EX. CULVERT
- 500 — EX. CULVERT SIZE (mm)
- CUL-1 — EX. CULVERT ID
- PROP-1 — PROP. CULVERT ID
- 500 — PROP. CULVERT SIZE (mm)
- 112 — MUNICIPAL ADDRESS NO.
- SUBCATCHMENT BOUNDARY
- 101 (0.32 | 36%) — SUBCATCHMENT ID; SUBCATCHMENT CN/% IMPERVIOUS; SUBCATCHMENT AREA

AREA C: PROPOSED IMPROVEMENT OPTIONS



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LAKEWOOD DRIVE RECONSTRUCTION DRAINAGE IMPROVEMENTS STUDY AREA C OPTIONS

DWG. No. **MAP-5**

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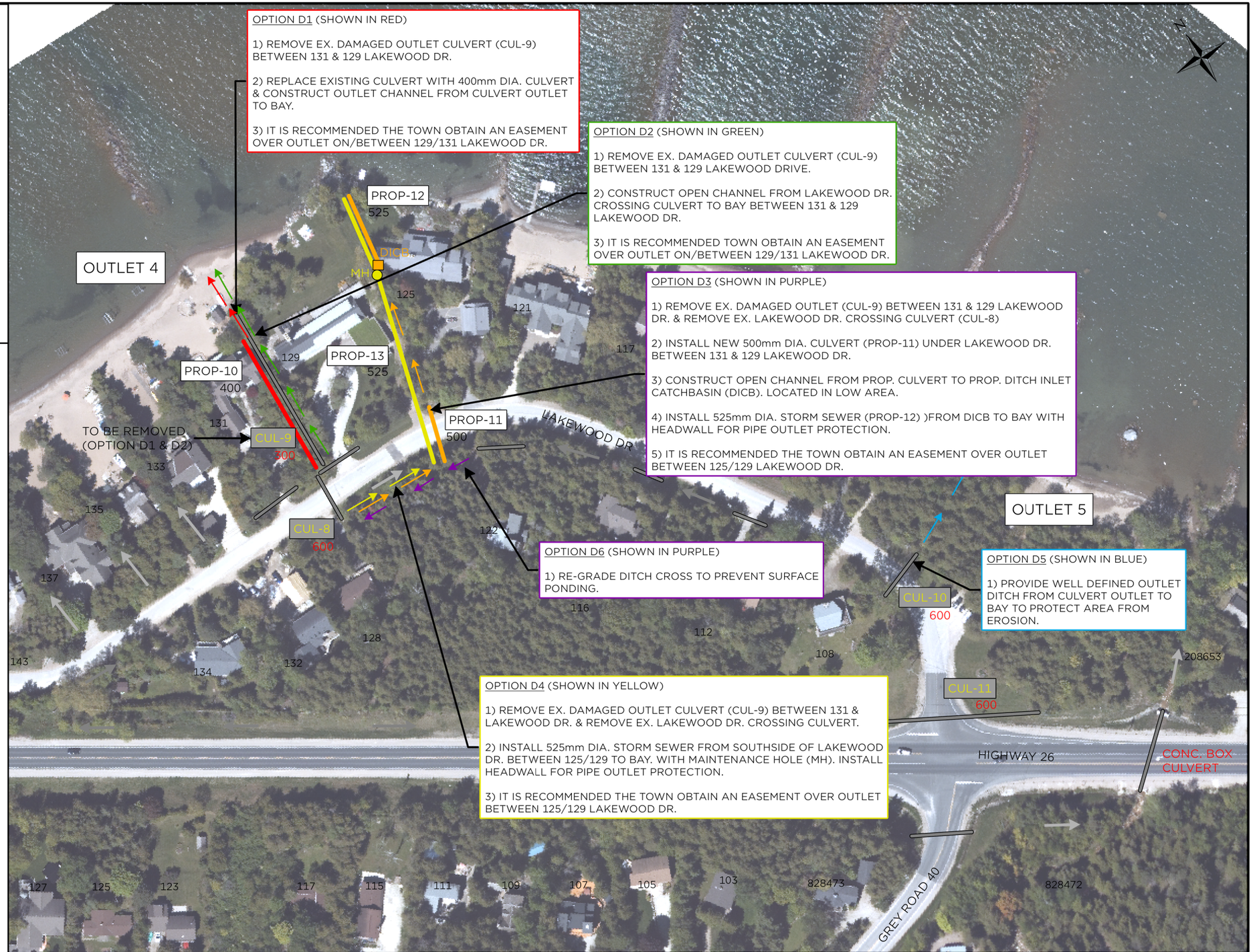
LEGEND

- EX. DRAINAGE DIRECTION
- EX. CULVERT
- 500 — EX. CULVERT SIZE (mm)
- CUL-1 — EX. CULVERT ID
- PROP-1 — PROP. CULVERT ID
- 500 — PROP. CULVERT SIZE (mm)
- 112 — MUNICIPAL ADDRESS NO.
- SUBCATCHMENT BOUNDARY
- 101 / 0.32 / 36% — SUBCATCHMENT ID; SUBCATCHMENT CN/% IMPERVIOUS; SUBCATCHMENT AREA

AREA D: PROPOSED IMPROVEMENT OPTIONS



OPTION D1 (SHOWN IN RED)

1) REMOVE EX. DAMAGED OUTLET CULVERT (CUL-9) BETWEEN 131 & 129 LAKEWOOD DR.

2) REPLACE EXISTING CULVERT WITH 400mm DIA. CULVERT & CONSTRUCT OUTLET CHANNEL FROM CULVERT OUTLET TO BAY.

3) IT IS RECOMMENDED THE TOWN OBTAIN AN EASEMENT OVER OUTLET ON/BETWEEN 129/131 LAKEWOOD DR.

OPTION D2 (SHOWN IN GREEN)

1) REMOVE EX. DAMAGED OUTLET CULVERT (CUL-9) BETWEEN 131 & 129 LAKEWOOD DRIVE.

2) CONSTRUCT OPEN CHANNEL FROM LAKEWOOD DR. CROSSING CULVERT TO BAY BETWEEN 131 & 129 LAKEWOOD DR.

3) IT IS RECOMMENDED TOWN OBTAIN AN EASEMENT OVER OUTLET ON/BETWEEN 129/131 LAKEWOOD DR.

OPTION D3 (SHOWN IN PURPLE)

1) REMOVE EX. DAMAGED OUTLET (CUL-9) BETWEEN 131 & 129 LAKEWOOD DR. & REMOVE EX. LAKEWOOD DR. CROSSING CULVERT (CUL-8)

2) INSTALL NEW 500mm DIA. CULVERT (PROP-11) UNDER LAKEWOOD DR. BETWEEN 131 & 129 LAKEWOOD DR.

3) CONSTRUCT OPEN CHANNEL FROM PROP. CULVERT TO PROP. DITCH INLET CATCHBASIN (DICB). LOCATED IN LOW AREA.

4) INSTALL 525mm DIA. STORM SEWER (PROP-12))FROM DICB TO BAY WITH HEADWALL FOR PIPE OUTLET PROTECTION.

5) IT IS RECOMMENDED THE TOWN OBTAIN AN EASEMENT OVER OUTLET BETWEEN 125/129 LAKEWOOD DR.

OPTION D6 (SHOWN IN PURPLE)

1) RE-GRADE DITCH CROSS TO PREVENT SURFACE PONDING.

OPTION D5 (SHOWN IN BLUE)

1) PROVIDE WELL DEFINED OUTLET DITCH FROM CULVERT OUTLET TO BAY TO PROTECT AREA FROM EROSION.

OPTION D4 (SHOWN IN YELLOW)

1) REMOVE EX. DAMAGED OUTLET CULVERT (CUL-9) BETWEEN 131 & LAKEWOOD DR. & REMOVE EX. LAKEWOOD DR. CROSSING CULVERT.

2) INSTALL 525mm DIA. STORM SEWER FROM SOUTHSIDE OF LAKEWOOD DR. BETWEEN 125/129 TO BAY. WITH MAINTENANCE HOLE (MH). INSTALL HEADWALL FOR PIPE OUTLET PROTECTION.

3) IT IS RECOMMENDED THE TOWN OBTAIN AN EASEMENT OVER OUTLET BETWEEN 125/129 LAKEWOOD DR.

0 0.03 0.05 0.1 KILOMETERS

TATHAM ENGINEERING

LAKEWOOD DRIVE RECONSTRUCTION DRAINAGE IMPROVEMENTS STUDY AREA D OPTIONS

DWG. No. **MAP-6**

SCALE: 1:2000 | DRAWN: CW | DATE: DEC. 2022 | JOB NO. 122152

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LEGEND

- EX. DRAINAGE DIRECTION
- EX. CULVERT
- 500 — EX. CULVERT SIZE (mm)
- CUL-1 — EX. CULVERT ID
- PROP-1 — PROP. CULVERT ID
- 500 — PROP. CULVERT SIZE (mm)
- 112 — MUNICIPAL ADDRESS NO.
- SUBCATCHMENT BOUNDARY
- 101 (0.32 | 36%) — SUBCATCHMENT ID; SUBCATCHMENT CN/% IMPERVIOUS; SUBCATCHMENT AREA

RECOMMENDED IMPROVEMENT OPTIONS

0 0.04 0.07 0.15 KILOMETERS

TATHAM ENGINEERING

LAKEWOOD DRIVE RECONSTRUCTION DRAINAGE IMPROVEMENTS STUDY RECOMMENDED IMPROVEMENTS

DWG. No. **MAP-7**

SCALE: 1:5000	DRAWN: CW	DATE: DEC. 2022	JOB NO. 122152

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Appendix B: Preliminary Opinion of Probable Costs

LAKEWOOD DR. RECONSTRUCTION - STORMWATER STUDY

OPINION OF PROBABLE PROJECT COSTS

DECEMBER 23, 2022

TATHAM ENGINEERING

PROJECT: 122152

AREA A

ITEM NO.	DESCRIPTION	UNIT	QTY	UNIT PRICE		AMOUNT
1.0	**OPTION A1 – NEW ROAD CROSSING CULVERT AT LAKEWOOD DRIVE& HIGHWAY 26 WEST INTERSECTION**				**$**	**78,000**
1.01	Straw Bale Check Dam	ea	4	$ 500	$	2,000
1.02	Remove & Dispose of Existing Asphalt	sq.m	165	$ 12	$	1,980
1.03	Remove & Dispose of Existing Granular Road Base	sq.m	165	$ 20	$	3,300
1.04	Remove & Dispose of Existing Granular Shoulder	sq.m	31	$ 17	$	529
1.05	Remove & Dispose of Excess Material	cu.m	130	$ 40	$	5,200
1.06	Remove & Dispose of Existing Culvert	m	13	$ 105	$	1,407
1.07	600 mm Dia. Culvert	m	40	$ 800	$	32,320
1.08	R-50 Rip Rap (450mm Depth)	sq.m	8	$ 85	$	689
1.09	Reinstate Local Roadway	sq.m.	113	$ 66	$	7,458
1.10	Reinstate Granular Shoulders	sq.m.	31	$ 14	$	435
1.11	Reinstate Gravel Driveway	sq.m	52	$ 20	$	1,040
1.12	Excavate, Grade, Topsoil, & Vegetate Drainage Ditch	m	170	$ 125	$	21,250
				SUBTOTAL - OPTION A1	**$**	**77,608**
2.0	**OPTION A1 - PROVISIONAL ITEMS**				**$**	**23,000**
2.01	Geotechnical Sampling for Off-site Disposal	per sample	3	$ 1,500	$	4,500
2.02	Remove & Dispose of Contaminated Excess Material	cu.m	130	$ 140	$	18,200
				SUBTOTAL - OPTION A1 PROVISIONAL ITEMS	**$**	**22,700**
3.0	**OPTION A1 - ALLOWANCE ITEMS**				**$**	**46,000**
3.01	Construction Contingency			30%	$	30,092
3.02	Utilities / Services Relocation Cost			15%	$	15,046
				SUBTOTAL - OPTION A1 ALLOWANCE ITEMS	**$**	**45,138**
	TOTAL COSTS EXCLUDING HST - OPTION A1 (INCLUDING GENERAL, PROVISIONAL, & ALLOWANCE ITEMS)				**$**	**146,000**

LAKEWOOD DR. RECONSTRUCTION - STORMWATER STUDY

OPINION OF PROBABLE PROJECT COSTS

DECEMBER 23, 2022

TATHAM ENGINEERING

PROJECT: 122152

AREA A

ITEM NO.	DESCRIPTION	UNIT	QTY	UNIT PRICE		AMOUNT
1.0	**OPTION A2 – CONSTRUCT ROADSIDE DITCH ALONG NORTH SIDE OF LAKEWOOD DRIVE**				**$**	**22,000**
1.01	Excavate, Grade, Topsoil, & Vegetate Drainage Ditch	m	95	$ 125	$	11,875
1.02	Remove & Dispose of Existing Gravel Driveway	sq.m.	40	$ 8	$	320
1.03	500 mm Dia. Culvert	m	15	$ 600	$	9,000
1.04	Reinstate Gravel Driveway	sq.m	40	$ 20	$	800
1.05	Remove & Dispose of Excess Material	cu.m	60	$ 40	$	2,400
				SUBTOTAL - OPTION A2	**$**	**21,995**
2.0	**OPTION A2 - PROVISIONAL ITEMS**				**$**	**13,000**
2.01	Geotechnical Sampling for Off-site Disposal	per sample	3	$ 1,500	$	4,500
2.02	Remove & Dispose of Contaminated Excess Material	cu.m	60	$ 140	$	8,400
				SUBTOTAL - OPTION A2 PROVISIONAL ITEMS	**$**	**12,900**
3.0	**OPTION A2 - ALLOWANCE ITEMS**				**$**	**16,000**
3.01	Construction Contingency			30%	$	10,469
3.02	Utilities / Services Relocation Cost			15%	$	5,234
				SUBTOTAL - OPTION A2 ALLOWANCE ITEMS	**$**	**15,703**
	TOTAL COSTS EXCLUDING HST - OPTION A2 (INCLUDING GENERAL, PROVISIONAL, & ALLOWANCE ITEMS)				**$**	**30,000**

LAKEWOOD DR. RECONSTRUCTION - STORMWATER STUDY

OPINION OF PROBABLE PROJECT COSTS

DECEMBER 23, 2022

TATHAM ENGINEERING

PROJECT: 122152

AREA B

ITEM NO.	DESCRIPTION	UNIT	QTY	UNIT PRICE		AMOUNT
1.0	**OPTION B1 – 182-187 LAKEWOOD DRIVE SIDE YARD SWALES**				**$**	**39,000**
1.01	Excavate, Grade, Topsoil, & Vegetate Drainage Ditch	m	225	$ 125	$	28,125
1.02	Remove & Dispose of Excess Material	cu.m	45	$ 40	$	1,800
1.03	Reinstate Area with Topsoil & Seed	sq.m	560	$ 15	$	8,400
				SUBTOTAL - OPTION B1	**$**	**38,325**
2.0	**OPTION B1 - PROVISIONAL ITEMS**				**$**	**11,000**
2.01	Geotechnical Sampling for Off-site Disposal	per sample	3	$ 1,500	$	4,500
2.02	Remove & Dispose of Contaminated Excess Material	cu.m	45	$ 140	$	6,300
				SUBTOTAL - OPTION B1 PROVISIONAL ITEMS	**$**	**10,800**
3.0	**OPTION B1 - ALLOWANCE ITEMS**				**$**	**23,000**
3.01	Construction Contingency			30%	$	14,738
3.02	Utilities / Services Relocation Cost			15%	$	7,369
				SUBTOTAL - OPTION B1 ALLOWANCE ITEMS	**$**	**22,106**
	TOTAL COSTS EXCLUDING HST - OPTION B1 (INCLUDING GENERAL, PROVISIONAL, & ALLOWANCE ITEMS)				**$**	**72,000**

LAKEWOOD DR. RECONSTRUCTION - STORMWATER STUDY

OPINION OF PROBABLE PROJECT COSTS

DECEMBER 23, 2022

TATHAM ENGINEERING

PROJECT: 122152

AREA B

ITEM NO.	DESCRIPTION	UNIT	QTY	UNIT PRICE	AMOUNT
1.0	**OPTION B2 – LAKEWOOD DRIVE CUL-DE-SAC REGRADING**				**$ 56,000**
1.01	Heavy Duty Silt Fence	m	65	$ 26	$ 1,690
1.02	Remove & Dispose of Existing Asphalt	sq.m	616	$ 12	$ 7,392
1.03	Remove & Dispose of Excess Material	cu.m	31	$ 40	$ 1,232
1.04	Reinstate Local Roadway	sq.m.	616	$ 66	$ 40,656
1.05	Reinstate Gravel Driveway	sq.m	100	$ 20	$ 2,000
1.06	Reinstate Granular Shoulders	sq.m.	168	$ 14	$ 2,352
				SUBTOTAL - OPTION B2	**$ 55,322**
2.0	**OPTION B2 - PROVISIONAL ITEMS**				**$ 9,000**
2.01	Geotechnical Sampling for Off-site Disposal	per sample	3	$ 1,500	$ 4,500
2.02	Remove & Dispose of Contaminated Excess Material	cu.m	31	$ 140	$ 4,312
				SUBTOTAL - OPTION B2 PROVISIONAL ITEMS	**$ 8,812**
3.0	**OPTION B2 - ALLOWANCE ITEMS**				**$ 29,000**
3.01	Construction Contingency			30%	$ 19,240
3.02	Utilities / Services Relocation Cost			15%	$ 9,620
				SUBTOTAL - OPTION B2 ALLOWANCE ITEMS	**$ 28,860**
	TOTAL COSTS EXCLUDING HST - OPTION B2 (INCLUDING GENERAL, PROVISIONAL, & ALLOWANCE ITEMS)				**$ 93,000**

LAKEWOOD DR. RECONSTRUCTION - STORMWATER STUDY

OPINION OF PROBABLE PROJECT COSTS

DECEMBER 23, 2022

TATHAM ENGINEERING

PROJECT: 122152

AREA B

ITEM NO.	DESCRIPTION	UNIT	QTY	UNIT PRICE		AMOUNT
1.0	**OPTION B3 – NEW ROAD CROSSING CULVERT UNDER LAKEWOOD DRIVE, WEST OF CUL-DE-SAC**				**$**	**24,000**
1.01	Heavy Duty Silt Fence	m	20	$ 26	$	520
1.02	Straw Bale Check Dam	ea	3	$ 500	$	1,500
1.03	Remove & Dispose of Existing Asphalt	sq.m	58	$ 12	$	696
1.04	Remove & Dispose of Existing Granular Shoulder	sq.m	25	$ 17	$	425
1.05	Remove & Dispose of Existing Granular Road Base	sq.m	58	$ 20	$	1,160
1.06	Remove & Dispose of Excess Material	cu.m	33	$ 40	$	1,335
1.07	400 mm Dia. Culvert	m	20	$ 500	$	9,900
1.08	R-50 Rip Rap (450mm Depth)	sq.m	11	$ 85	$	918
1.09	Reinstate Local Roadway	sq.m.	58	$ 66	$	3,828
1.10	Reinstate Granular Shoulders	sq.m.	25	$ 14	$	350
1.11	Excavate, Grade, Topsoil, & Vegetate Drainage Ditch	m	20	$ 125	$	2,500
				SUBTOTAL - OPTION B3	**$**	**23,132**
2.0	**OPTION B3 - PROVISIONAL ITEMS**				**$**	**22,000**
2.01	Flow Diversion - Install/Uninstall	LS	1	$ 10,000	$	10,000
2.02	Flow Diversion - Operation and Maintenance	day	2	$ 1,250	$	2,500
2.03	Geotechnical Sampling for Off-site Disposal	per sample	3	$ 1,500	$	4,500
2.04	Remove & Dispose of Contaminated Excess Material	cu.m	33	$ 140	$	4,671
				SUBTOTAL - OPTION B3 PROVISIONAL ITEMS	**$**	**21,671**
3.0	**OPTION B3 - ALLOWANCE ITEMS**				**$**	**21,000**
3.01	Construction Contingency			30%	$	13,441
3.02	Utilities / Services Relocation Cost			15%	$	6,720
				SUBTOTAL - OPTION B3 ALLOWANCE ITEMS	**$**	**20,161**
	TOTAL COSTS EXCLUDING HST - OPTION B3 (INCLUDING GENERAL, PROVISIONAL, & ALLOWANCE ITEMS)				**$**	**65,000**

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AREA B

ITEM NO.	DESCRIPTION	UNIT	QTY	UNIT PRICE		AMOUNT
1.0	**OPTION B4 – IMPROVE 185 LAKEWOOD DRIVE OUTLET WITH NEW CULVERT**				**$**	**70,000**
1.01	Heavy Duty Silt Fence	m	156	$ 26	$	4,056
1.02	Straw Bale Check Dam	ea	3	$ 500	$	1,500
1.03	Clearing and Grubbing	sq.m	450	$ 35	$	15,750
1.04	Remove & Dispose of Existing Culvert	m	20	$ 105	$	2,100
1.05	Remove & Dispose of Excess Material	cu.m	35	$ 40	$	1,413
1.06	500 mm Dia. Culvert	m	55	$ 600	$	32,700
1.07	R-50 Rip Rap (450mm Depth)	sq.m	9	$ 85	$	765
1.08	Excavate, Grade, Topsoil, & Vegetate Drainage Ditch	m	22	$ 125	$	2,750
1.09	Reinstate Area with Topsoil & Seed	sq.m	218	$ 15	$	3,270
1.10	Channel Armouring	m	22	$ 250	$	5,500
				SUBTOTAL - OPTION B4	**$**	**69,804**
2.0	**OPTION B4 - PROVISIONAL ITEMS**				**$**	**22,000**
2.01	Flow Diversion - Install/Uninstall	LS	1	$ 10,000	$	10,000
2.02	Flow Diversion - Operation and Maintenance	day	2	$ 1,250	$	2,500
2.03	Geotechnical Sampling for Off-site Disposal	per sample	3	$ 1,500	$	4,500
2.04	Remove & Dispose of Contaminated Excess Material	cu.m	35	$ 140	$	4,947
				SUBTOTAL - OPTION B4 PROVISIONAL ITEMS	**$**	**21,947**
3.0	**OPTION B4 - ALLOWANCE ITEMS**				**$**	**42,000**
3.01	Construction Contingency			30%	$	27,525
3.02	Utilities / Services Relocation Cost			15%	$	13,763
				SUBTOTAL - OPTION B4 ALLOWANCE ITEMS	**$**	**41,288**
	TOTAL COSTS EXCLUDING HST - OPTION B4 (INCLUDING GENERAL, PROVISIONAL, & ALLOWANCE ITEMS)				**$**	**134,000**

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OPINION OF PROBABLE PROJECT COSTS

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AREA B

ITEM NO.	DESCRIPTION	UNIT	QTY	UNIT PRICE	AMOUNT
1.0	**OPTION B5 – IMPROVE 185 LAKEWOOD DRIVE OUTLET WITH NEW CHANNEL**				**$ 42,000**
1.01	Heavy Duty Silt Fence	m	156	$ 26	$ 4,056
1.02	Straw Bale Check Dam	ea	3	$ 500	$ 1,500
1.03	Clearing and Grubbing	sq.m	450	$ 35	$ 15,750
1.04	Remove & Dispose of Existing Culvert	m	20	$ 105	$ 2,100
1.05	Remove & Dispose of Excess Material	cu.m	50	$ 40	$ 1,997
1.06	Excavate, Grade, Topsoil, & Vegetate Drainage Ditch	m	77	$ 125	$ 9,563
1.07	R-50 Rip Rap (450mm Depth)	sq.m	9	$ 85	$ 765
1.08	Channel Armouring	m	22	$ 250	$ 5,500
				SUBTOTAL - OPTION B5	**$ 41,230**
2.0	**OPTION B5 - PROVISIONAL ITEMS**				**$ 24,000**
2.01	Flow Diversion - Install/Uninstall	LS	1	$ 10,000	$ 10,000
2.02	Flow Diversion - Operation and Maintenance	day	2	$ 1,250	$ 2,500
2.03	Geotechnical Sampling for Off-site Disposal	per sample	3	$ 1,500	$ 4,500
2.04	Remove & Dispose of Contaminated Excess Material	cu.m	50	$ 140	$ 6,988
				SUBTOTAL - OPTION B5 PROVISIONAL ITEMS	**$ 23,988**
3.0	**OPTION B5 - ALLOWANCE ITEMS**				**$ 30,000**
3.01	Construction Contingency			30%	$ 19,565
3.02	Utilities / Services Relocation Cost			15%	$ 9,783
				SUBTOTAL - OPTION B5 ALLOWANCE ITEMS	**$ 29,348**
	TOTAL COSTS EXCLUDING HST - OPTION B5 (INCLUDING GENERAL, PROVISIONAL, & ALLOWANCE ITEMS)				**$ 95,000**

LAKEWOOD DR. RECONSTRUCTION - STORMWATER STUDY

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AREA B

ITEM NO.	DESCRIPTION	UNIT	QTY	UNIT PRICE	AMOUNT
1.0	**OPTION B6 – NEW DRIVEWAY CULVERTS, DITCH, & OUTLET ON NORTHWEST SIDE OF LAKEWOOD DRIVE**				**$ 71,000**
1.01	Heavy Duty Silt Fence	m	112	$ 26	$ 2,912
1.02	Straw Bale Check Dam	ea	3	$ 500	$ 1,500
1.03	Clearing and Grubbing	sq.m	292	$ 35	$ 10,234
1.04	Remove & Dispose of Existing Fence	m	25	$ 25	$ 613
1.05	Remove & Dispose of Existing Culvert	m	19	$ 105	$ 1,974
1.06	Remove & Dispose of Existing Gravel Driveway	sq.m.	101	$ 8	$ 810
1.07	Remove & Dispose of Excess Material	cu.m	60	$ 40	$ 2,418
1.08	500 mm Dia. Culvert	m	63	$ 600	$ 38,040
1.09	R-50 Rip Rap (450mm Depth)	sq.m	9	$ 85	$ 765
1.10	Reinstate Gravel Driveway	sq.m	101	$ 20	$ 2,025
1.11	Excavate, Grade, Topsoil, & Vegetate Drainage Ditch	m	73	$ 125	$ 9,138
1.12	Channel Armouring	m	35	$ 250	$ 8,750
				SUBTOTAL - OPTION B6	**$ 70,428**
2.0	**OPTION B6 - PROVISIONAL ITEMS**				**$ 30,000**
2.01	Flow Diversion - Install/Uninstall	LS	1	$ 10,000	$ 10,000
2.02	Flow Diversion - Operation and Maintenance	day	5	$ 1,250	$ 6,250
2.03	Geotechnical Sampling for Off-site Disposal	per sample	3	$ 1,500	$ 4,500
2.04	Remove & Dispose of Contaminated Excess Material	cu.m	60	$ 140	$ 8,464
				SUBTOTAL - OPTION B6 PROVISIONAL ITEMS	**$ 29,214**
3.0	**OPTION B6 - ALLOWANCE ITEMS**				**$ 45,000**
3.01	Construction Contingency			30%	$ 29,893
3.02	Utilities / Services Relocation Cost			15%	$ 14,946
				SUBTOTAL - OPTION B6 ALLOWANCE ITEMS	**$ 44,839**
	TOTAL COSTS EXCLUDING HST - OPTION B6 (INCLUDING GENERAL, PROVISIONAL, & ALLOWANCE ITEMS)				**$ 145,000**

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AREA C

ITEM NO.	DESCRIPTION	UNIT	QTY	UNIT PRICE		AMOUNT
1.0	**OPTION C1 – EX. CULVERT TO REMAIN, INSTALL ADDITIONAL CULVERT**				**$**	**19,000**
1.01	Heavy Duty Silt Fence	m	28	$ 26	$	728
1.02	Straw Bale Check Dam	ea	2	$ 500	$	1,000
1.03	Remove & Dispose of Existing Asphalt	sq.m	38	$ 12	$	461
1.04	Remove & Dispose of Existing Granular Road Base	sq.m	38	$ 20	$	768
1.05	Remove & Dispose of Existing Granular Shoulder	sq.m	12	$ 17	$	204
1.06	Remove & Dispose of Excess Material	cu.m	21	$ 40	$	833
1.07	600 mm Dia. Culvert	m	12	$ 800	$	9,920
1.08	R-50 Rip Rap (450mm Depth)	sq.m	14	$ 85	$	1,224
1.09	Reinstate Local Roadway	sq.m.	38	$ 66	$	2,534
1.10	Reinstate Granular Shoulders	sq.m.	12	$ 14	$	168
1.11	Reinstate Area with Topsoil & Seed	sq.m	14	$ 15	$	210
				SUBTOTAL - OPTION C1	**$**	**18,050**
2.0	**OPTION C1 - PROVISIONAL ITEMS**				**$**	**8,000**
2.01	Geotechnical Sampling for Off-site Disposal	per sample	3	$ 1,500	$	4,500
2.02	Remove & Dispose of Contaminated Excess Material	cu.m	21	$ 140	$	2,916
				SUBTOTAL - OPTION C1 PROVISIONAL ITEMS	**$**	**7,416**
3.0	**OPTION C1 - ALLOWANCE ITEMS**				**$**	**12,000**
3.01	Construction Contingency			30%	$	7,640
3.02	Utilities / Services Relocation Cost			15%	$	3,820
				SUBTOTAL - OPTION C1 ALLOWANCE ITEMS	**$**	**11,460**
	TOTAL COSTS EXCLUDING HST - OPTION C1 (INCLUDING GENERAL, PROVISIONAL, & ALLOWANCE ITEMS)				**$**	**37,000**

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AREA C

ITEM NO.	DESCRIPTION	UNIT	QTY	UNIT PRICE	AMOUNT
1.0	**OPTION C2 – EX. CULVERT TO REMAIN, INSTALL ADDITIONAL CULVERT, & CONSTRUCT OUTLET CHANNEL THROUGH MIDDLE OF SAPOA BEACH**				**$ 49,000**
1.01	Heavy Duty Silt Fence	m	124	$ 26	$ 3,224
1.02	Straw Bale Check Dam	ea	3	$ 500	$ 1,500
1.03	Clearing and Grubbing	sq.m	200	$ 35	$ 7,000
1.04	Remove & Dispose of Existing Asphalt	sq.m	38	$ 12	$ 461
1.05	Remove & Dispose of Existing Granular Road Base	sq.m	38	$ 20	$ 768
1.06	Remove & Dispose of Existing Granular Shoulder	sq.m	12	$ 17	$ 204
1.07	Remove & Dispose of Excess Material	cu.m	91	$ 40	$ 3,641
1.08	600 mm Dia. Culvert	m	12	$ 800	$ 9,920
1.09	R-50 Rip Rap (450mm Depth)	sq.m	14	$ 85	$ 1,224
1.10	Excavate, Grade, Topsoil, & Vegetate Drainage Ditch	m	65	$ 125	$ 8,125
1.11	Reinstate Local Roadway	sq.m.	38	$ 66	$ 2,534
1.12	Reinstate Granular Shoulders	sq.m.	12	$ 14	$ 168
1.13	Reinstate Area with Topsoil & Seed	sq.m	14	$ 15	$ 210
1.14	Channel Armouring	m	40	$ 250	$ 10,000
				SUBTOTAL - OPTION C2	**$ 48,979**
2.0	**OPTION C2 - PROVISIONAL ITEMS**				**$ 40,000**
2.01	Flow Diversion - Install/Uninstall	LS	1	$ 10,000	$ 10,000
2.02	Flow Diversion - Operation and Maintenance	day	10	$ 1,250	$ 12,500
2.03	Geotechnical Sampling for Off-site Disposal	per sample	3	$ 1,500	$ 4,500
2.04	Remove & Dispose of Contaminated Excess Material	cu.m	91	$ 140	$ 12,744
				SUBTOTAL - OPTION C2 PROVISIONAL ITEMS	**$ 39,744**
3.0	**OPTION C2 - ALLOWANCE ITEMS**				**$ 40,000**
3.01	Construction Contingency			30%	$ 26,617
3.02	Utilities / Services Relocation Cost			15%	$ 13,309
				SUBTOTAL - OPTION C2 ALLOWANCE ITEMS	**$ 39,926**
	TOTAL COSTS EXCLUDING HST - OPTION C2 (INCLUDING GENERAL, PROVISIONAL, & ALLOWANCE ITEMS)				**$ 90,000**

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AREA C

ITEM NO.	DESCRIPTION	UNIT	QTY	UNIT PRICE	AMOUNT
1.0	**OPTION C3 – EX. CULVERT TO REMAIN, INSTALL ADDITIONAL CULVERT, RE-GRADE NORTH ROADSIDE DITCH, & CONSTRUCT OUTLET CHANNEL AT EAST LIMIT OF SAPOA BEACH**				**$ 75,000**
1.01	Heavy Duty Silt Fence	m	290	$ 26	$ 7,540
1.02	Straw Bale Check Dam	ea	4	$ 500	$ 2,000
1.03	Clearing and Grubbing	sq.m	400	$ 35	$ 14,000
1.04	Remove & Dispose of Existing Asphalt	sq.m	38	$ 12	$ 461
1.05	Remove & Dispose of Existing Granular Road Base	sq.m	38	$ 20	$ 768
1.06	Remove & Dispose of Existing Granular Shoulder	sq.m	12	$ 17	$ 204
1.07	Remove & Dispose of Excess Material	cu.m	219	$ 40	$ 8,771
1.08	600 mm Dia. Culvert	m	12	$ 800	$ 9,920
1.09	R-50 Rip Rap (450mm Depth)	sq.m	14	$ 85	$ 1,224
1.10	Excavate, Grade, Topsoil, & Vegetate Drainage Ditch	m	135	$ 125	$ 16,875
1.11	Reinstate Local Roadway	sq.m.	38	$ 66	$ 2,534
1.12	Reinstate Granular Shoulders	sq.m.	12	$ 14	$ 168
1.13	Reinstate Area with Topsoil & Seed	sq.m	14	$ 15	$ 210
1.14	Channel Armouring	m	40	$ 250	$ 10,000
				SUBTOTAL - OPTION C3	**$ 74,675**
2.0	**OPTION C3 - PROVISIONAL ITEMS**				**$ 58,000**
2.01	Flow Diversion - Install/Uninstall	LS	1	$ 10,000	$ 10,000
2.02	Flow Diversion - Operation and Maintenance	day	10	$ 1,250	$ 12,500
2.03	Geotechnical Sampling for Off-site Disposal	per sample	3	$ 1,500	$ 4,500
2.04	Remove & Dispose of Contaminated Excess Material	cu.m	219	$ 140	$ 30,699
				SUBTOTAL - OPTION C3 PROVISIONAL ITEMS	**$ 57,699**
3.0	**OPTION C3 - ALLOWANCE ITEMS**				**$ 60,000**
3.01	Construction Contingency			30%	$ 39,712
3.02	Utilities / Services Relocation Cost			15%	$ 19,856
				SUBTOTAL - OPTION C3 ALLOWANCE ITEMS	**$ 59,569**
	TOTAL COSTS EXCLUDING HST - OPTION C3 (INCLUDING GENERAL, PROVISIONAL, & ALLOWANCE ITEMS)				**$ 192,000**

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AREA C

ITEM NO.	DESCRIPTION	UNIT	QTY	UNIT PRICE	AMOUNT
1.0	**OPTION C4 – EX. CULVERT TO REMAIN, RE-GRADE NORTH ROADSIDE DITCH, INSTALL CULVERT AT EAST END OF SAPOA BEACH, & CONSTRUCT OUTLET CHANNEL AT EAST LIMIT OF SAPOA BEACH**				**$ 77,000**
1.01	Heavy Duty Silt Fence	m	304	$ 26	$ 7,904
1.02	Straw Bale Check Dam	ea	5	$ 500	$ 2,500
1.03	Clearing and Grubbing	sq.m	400	$ 35	$ 14,000
1.04	Remove & Dispose of Existing Asphalt	sq.m	38	$ 12	$ 461
1.05	Remove & Dispose of Existing Granular Road Base	sq.m	38	$ 20	$ 768
1.06	Remove & Dispose of Existing Granular Shoulder	sq.m	12	$ 17	$ 204
1.07	Remove & Dispose of Excess Material	cu.m	219	$ 40	$ 8,771
1.08	600 mm Dia. Culvert	m	13	$ 800	$ 10,320
1.09	R-50 Rip Rap (450mm Depth)	sq.m	14	$ 85	$ 1,224
1.10	Excavate, Grade, Topsoil, & Vegetate Drainage Ditch	m	135	$ 125	$ 16,875
1.11	Reinstate Local Roadway	sq.m.	38	$ 66	$ 2,534
1.12	Reinstate Granular Shoulders	sq.m.	12	$ 14	$ 168
1.13	Reinstate Area with Topsoil & Seed	sq.m	28	$ 15	$ 420
1.14	Channel Armouring	m	40	$ 250	$ 10,000
				SUBTOTAL - OPTION C4	**$ 76,149**
2.0	**OPTION C4 - PROVISIONAL ITEMS**				**$ 64,000**
2.01	Flow Diversion - Install/Uninstall	LS	1	$ 10,000	$ 10,000
2.02	Flow Diversion - Operation and Maintenance	day	15	$ 1,250	$ 18,750
2.03	Geotechnical Sampling for Off-site Disposal	per sample	3	$ 1,500	$ 4,500
2.04	Remove & Dispose of Contaminated Excess Material	cu.m	219	$ 140	$ 30,699
				SUBTOTAL - OPTION C4 PROVISIONAL ITEMS	**$ 63,949**
3.0	**OPTION C4 - ALLOWANCE ITEMS**				**$ 64,000**
3.01	Construction Contingency			30%	$ 42,030
3.02	Utilities / Services Relocation Cost			15%	$ 21,015
				SUBTOTAL - OPTION C4 ALLOWANCE ITEMS	**$ 63,045**
	TOTAL COSTS EXCLUDING HST - OPTION C4 (INCLUDING GENERAL, PROVISIONAL, & ALLOWANCE ITEMS)				**$ 204,000**

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AREA C

ITEM NO.	DESCRIPTION	UNIT	QTY	UNIT PRICE	AMOUNT
1.0	**OPTION C5 – REMOVE EX. CULVERT, RE-GRADE SOUTH ROADSIDE DITCH, INSTALL 2 NEW CULVERTS AT EAST END OF SAPOA BEACH, & CONSTRUCT OUTLET CHANNEL AT EAST LIMIT OF SAPOA BEACH**				**$ 90,000**
1.01	Heavy Duty Silt Fence	m	254	$ 26	$ 6,604
1.02	Straw Bale Check Dam	ea	3	$ 500	$ 1,500
1.03	Clearing and Grubbing	sq.m	338	$ 35	$ 11,813
1.04	Remove & Dispose of Existing Asphalt	sq.m	92	$ 12	$ 1,105
1.05	Remove & Dispose of Existing Granular Road Base	sq.m	92	$ 20	$ 1,842
1.06	Remove & Dispose of Existing Granular Shoulder	sq.m	28	$ 17	$ 476
1.07	Remove & Dispose of Excess Material	cu.m	219	$ 40	$ 8,771
1.08	Remove & Dispose of Existing Culvert	m	12	$ 105	$ 1,302
1.09	600 mm Dia. Culvert	m	26	$ 800	$ 20,640
1.10	R-50 Rip Rap (450mm Depth)	sq.m	14	$ 85	$ 1,224
1.11	Excavate, Grade, Topsoil, & Vegetate Drainage Ditch	m	135	$ 125	$ 16,875
1.12	Reinstate Local Roadway	sq.m.	92	$ 66	$ 6,079
1.13	Reinstate Granular Shoulders	sq.m.	28	$ 14	$ 392
1.14	Reinstate Area with Topsoil & Seed	sq.m	80	$ 15	$ 1,200
1.15	Channel Armouring	m	40	$ 250	$ 10,000
				SUBTOTAL - OPTION C5	**$ 89,823**
2.0	**OPTION C5 - PROVISIONAL ITEMS**				**$ 64,000**
2.01	Flow Diversion - Install/Uninstall	LS	1	$ 10,000	$ 10,000
2.02	Flow Diversion - Operation and Maintenance	day	15	$ 1,250	$ 18,750
2.03	Geotechnical Sampling for Off-site Disposal	per sample	3	$ 1,500	$ 4,500
2.04	Remove & Dispose of Contaminated Excess Material	cu.m	219	$ 140	$ 30,699
				SUBTOTAL - OPTION C5 PROVISIONAL ITEMS	**$ 63,949**
3.0	**OPTION C5 - ALLOWANCE ITEMS**				**$ 70,000**
3.01	Construction Contingency			30%	$ 46,132
3.02	Utilities / Services Relocation Cost			15%	$ 23,066
				SUBTOTAL - OPTION C5 ALLOWANCE ITEMS	**$ 69,197**
	TOTAL COSTS EXCLUDING HST - OPTION C5 (INCLUDING GENERAL, PROVISIONAL, & ALLOWANCE ITEMS)				**$ 223,000**

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AREA C

ITEM NO.	DESCRIPTION	UNIT	QTY	UNIT PRICE	AMOUNT
1.0	**OPTION C6 – REGRADE SECTION OF LAKEWOOD DRIVE SOUTH ROADSIDE DITCH**				**$ 19,000**
1.01	Straw Bale Check Dam	ea	2	$ 500	$ 1,000
1.02	Ditching	m	125	$ 80	$ 10,000
1.03	Reinstate Area with Topsoil & Seed	sq.m	375	$ 15	$ 5,625
1.04	Remove & Dispose of Excess Material	cu.m	38	$ 40	$ 1,500
				SUBTOTAL - OPTION C6	**$ 18,125**
2.0	**OPTION C6 - PROVISIONAL ITEMS**				**$ 10,000**
2.01	Geotechnical Sampling for Off-site Disposal	per sample	3	$ 1,500	$ 4,500
2.02	Remove & Dispose of Contaminated Excess Material	cu.m	38	$ 140	$ 5,250
				SUBTOTAL - OPTION C6 PROVISIONAL ITEMS	**$ 9,750**
3.0	**OPTION C6 - ALLOWANCE ITEMS**				**$ 13,000**
3.01	Construction Contingency			30%	$ 8,363
3.02	Utilities / Services Relocation Cost			15%	$ 4,181
				SUBTOTAL - OPTION C6 ALLOWANCE ITEMS	**$ 12,544**
	TOTAL COSTS EXCLUDING HST - OPTION C6 (INCLUDING GENERAL, PROVISIONAL, & ALLOWANCE ITEMS)				**$ 41,000**

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AREA D

ITEM NO.	DESCRIPTION	UNIT	QTY	UNIT PRICE		AMOUNT
1.0	**OPTION D1 – IMPROVE 129/131 LAKEWOOD DRIVE OUTLET WITH NEW CULVERT**				**$**	**64,000**
1.01	Heavy Duty Silt Fence	m	156	$ 26	$	4,056
1.02	Straw Bale Check Dam	ea	2	$ 500	$	1,000
1.03	Clearing and Grubbing	sq.m	100	$ 35	$	3,500
1.04	Remove & Dispose of Existing Culvert	m	71	$ 105	$	7,434
1.05	Remove & Dispose of Excess Material	cu.m	15	$ 40	$	608
1.06	400 mm Dia. Culvert	m	60	$ 500	$	30,000
1.07	R-50 Rip Rap (450mm Depth)	sq.m	6	$ 85	$	536
1.08	Ditching	m	40	$ 80	$	3,200
1.09	Reinstate Area with Topsoil & Seed	sq.m	240	$ 15	$	3,600
1.10	Channel Armouring	m	40	$ 250	$	10,000
				SUBTOTAL - OPTION D1	**$**	**63,934**
2.0	**OPTION D1 - PROVISIONAL ITEMS**				**$**	**23,000**
2.01	Flow Diversion - Install/Uninstall	LS	1	$ 10,000	$	10,000
2.02	Flow Diversion - Operation and Maintenance	day	5	$ 1,250	$	6,250
2.03	Geotechnical Sampling for Off-site Disposal	per sample	3	$ 1,500	$	4,500
2.04	Remove & Dispose of Contaminated Excess Material	cu.m	15	$ 140	$	2,128
				SUBTOTAL - OPTION D1 PROVISIONAL ITEMS	**$**	**22,878**
3.0	**OPTION D1 - ALLOWANCE ITEMS**				**$**	**40,000**
3.01	Construction Contingency			30%	$	26,043
3.02	Utilities / Services Relocation Cost			15%	$	13,022
				SUBTOTAL - OPTION D1 ALLOWANCE ITEMS	**$**	**39,065**
	TOTAL COSTS EXCLUDING HST - OPTION D1 (INCLUDING GENERAL, PROVISIONAL, & ALLOWANCE ITEMS)				**$**	**126,000**

LAKEWOOD DR. RECONSTRUCTION - STORMWATER STUDY

OPINION OF PROBABLE PROJECT COSTS

DECEMBER 23, 2022

TATHAM ENGINEERING

PROJECT: 122152

AREA D

ITEM NO.	DESCRIPTION	UNIT	QTY	UNIT PRICE	AMOUNT
1.0	**OPTION D2 – IMPROVE 129/131 LAKEWOOD DRIVE OUTLET WITH NEW CHANNEL**				**$ 35,000**
1.01	Heavy Duty Silt Fence	m	156	$ 26	$ 4,056
1.02	Straw Bale Check Dam	ea	2	$ 500	$ 1,000
1.03	Clearing and Grubbing	sq.m	100	$ 35	$ 3,500
1.04	Remove & Dispose of Existing Culvert	m	71	$ 105	$ 7,434
1.05	Remove & Dispose of Excess Material	cu.m	20	$ 40	$ 800
1.06	Excavate, Grade, Topsoil, & Vegetate Drainage Ditch	m	60	$ 125	$ 7,500
1.07	R-50 Rip Rap (450mm Depth)	sq.m	4	$ 85	$ 306
1.08	Channel Armouring	m	40	$ 250	$ 10,000
				SUBTOTAL - OPTION D2	**$ 34,596**
2.0	**OPTION D2 - PROVISIONAL ITEMS**				**$ 24,000**
2.01	Flow Diversion - Install/Uninstall	LS	1	$ 10,000	$ 10,000
2.02	Flow Diversion - Operation and Maintenance	day	5	$ 1,250	$ 6,250
2.03	Geotechnical Sampling for Off-site Disposal	per sample	3	$ 1,500	$ 4,500
2.04	Remove & Dispose of Contaminated Excess Material	cu.m	20	$ 140	$ 2,800
				SUBTOTAL - OPTION D2 PROVISIONAL ITEMS	**$ 23,550**
3.0	**OPTION D2 - ALLOWANCE ITEMS**				**$ 27,000**
3.01	Construction Contingency			30%	$ 17,444
3.02	Utilities / Services Relocation Cost			15%	$ 8,722
				SUBTOTAL - OPTION D2 ALLOWANCE ITEMS	**$ 26,166**
	TOTAL COSTS EXCLUDING HST - OPTION D2 (INCLUDING GENERAL, PROVISIONAL, & ALLOWANCE ITEMS)				**$ 50,000**

LAKEWOOD DR. RECONSTRUCTION - STORMWATER STUDY

OPINION OF PROBABLE PROJECT COSTS

DECEMBER 23, 2022

TATHAM ENGINEERING

PROJECT: 122152

AREA D

ITEM NO.	DESCRIPTION	UNIT	QTY	UNIT PRICE	AMOUNT
1.0	**OPTION D3 – RELOCATE OUTLET TO 125/129 LAKEWOOD DRIVE & INSTALL OPEN CHANNEL AND STORM SEWER**				**$ 98,000**
1.01	Heavy Duty Silt Fence	m	210	$ 26	$ 5,460
1.02	Straw Bale Check Dam	ea	3	$ 500	$ 1,500
1.03	Clearing and Grubbing	sq.m	300	$ 35	$ 10,500
1.04	Remove & Dispose of Existing Asphalt	sq.m	69	$ 12	$ 824
1.05	Remove & Dispose of Existing Granular Road Base	sq.m	69	$ 20	$ 1,373
1.06	Remove & Dispose of Existing Granular Shoulder	sq.m	26	$ 17	$ 449
1.07	Remove & Dispose of Existing Culvert	m	12	$ 105	$ 1,271
1.08	Remove & Dispose of Excess Material	cu.m	137	$ 40	$ 5,478
1.09	Remove, Stockpile, & Reinstate Rock	sq.m.	15	$ 500	$ 7,500
1.10	Excavate, Grade, Topsoil, & Vegetate Drainage Ditch	m	84	$ 125	$ 10,475
1.11	500 mm Dia. Culvert	m	12	$ 600	$ 7,260
1.12	525 mm Dia. Storm Sewer	m	37	$ 590	$ 22,007
1.13	Concrete Headwall - 525 mm Dia.	ea	1	$ 9,750	$ 9,750
1.14	600 x 600 mm Ditch Inlet Catchbasin	ea	1	$ 4,800	$ 4,800
1.15	Reinstate Local Roadway	sq.m.	69	$ 66	$ 4,530
1.16	Reinstate Granular Shoulders	sq.m.	69	$ 14	$ 961
1.17	Reinstate Area with Topsoil & Seed	sq.m	149	$ 15	$ 2,238
1.18	Shoreline Protection	sq.m	3	$ 400	$ 1,350
				SUBTOTAL - OPTION D3	**$ 97,725**
2.0	**OPTION D3 - PROVISIONAL ITEMS**				**$ 24,000**
2.01	Geotechnical Sampling for Off-site Disposal	per sample	3	$ 1,500	$ 4,500
2.02	Remove & Dispose of Contaminated Excess Material	cu.m	137	$ 140	$ 19,174
				SUBTOTAL - OPTION D3 PROVISIONAL ITEMS	**$ 23,674**
3.0	**OPTION D3 - ALLOWANCE ITEMS**				**$ 55,000**
3.01	Construction Contingency			30%	$ 36,420
3.02	Utilities / Services Relocation Cost			15%	$ 18,210
				SUBTOTAL - OPTION D3 ALLOWANCE ITEMS	**$ 54,630**
	TOTAL COSTS EXCLUDING HST - OPTION D3 (INCLUDING GENERAL, PROVISIONAL, & ALLOWANCE ITEMS)				**$ 177,000**

LAKEWOOD DR. RECONSTRUCTION - STORMWATER STUDY

OPINION OF PROBABLE PROJECT COSTS

DECEMBER 23, 2022

TATHAM ENGINEERING

PROJECT: 122152

AREA D

ITEM NO.	DESCRIPTION	UNIT	QTY	UNIT PRICE		AMOUNT
1.0	**OPTION D4 – RELOCATE OUTLET TO 125/129 LAKEWOOD DRIVE & INSTALL STORM SEWER**				**$**	**132,000**
1.01	Heavy Duty Silt Fence	m	210	$ 26	$	5,460
1.02	Straw Bale Check Dam	ea	3	$ 500	$	1,500
1.03	Clearing and Grubbing	sq.m	300	$ 35	$	10,500
1.04	Remove & Dispose of Existing Asphalt	sq.m	69	$ 12	$	824
1.05	Remove & Dispose of Existing Granular Road Base	sq.m	69	$ 20	$	1,373
1.06	Remove & Dispose of Existing Granular Shoulder	sq.m	26	$ 17	$	449
1.07	Remove & Dispose of Existing Culvert	m	12	$ 105	$	1,271
1.08	Remove & Dispose of Excess Material	cu.m	216	$ 40	$	8,650
1.09	Remove, Stockpile, & Reinstate Rock	sq.m.	15	$ 500	$	7,500
1.10	Excavate, Grade, Topsoil, & Vegetate Drainage Ditch	m	40	$ 125	$	5,000
1.11	525 mm Dia. Storm Sewer	m	100	$ 590	$	59,000
1.12	1200 mm Dia. Maintenance Hole	ea	1	$ 9,400	$	9,400
1.13	Concrete Headwall - 525 mm Dia.	ea	1	$ 9,750	$	9,750
1.14	Reinstate Local Roadway	sq.m.	69	$ 66	$	4,530
1.15	Reinstate Granular Shoulders	sq.m.	26	$ 14	$	370
1.16	Reinstate Area with Topsoil & Seed	sq.m	324	$ 15	$	4,866
1.17	Shoreline Protection	sq.m	3	$ 400	$	1,350
				SUBTOTAL - OPTION D4	**$**	**131,792**
2.0	**OPTION D4 - PROVISIONAL ITEMS**				**$**	**35,000**
2.01	Geotechnical Sampling for Off-site Disposal	per sample	3	$ 1,500	$	4,500
2.02	Remove & Dispose of Contaminated Excess Material	cu.m	216	$ 140	$	30,275
				SUBTOTAL - OPTION D4 PROVISIONAL ITEMS	**$**	**34,775**
3.0	**OPTION D4 - ALLOWANCE ITEMS**				**$**	**75,000**
3.01	Construction Contingency			30%	$	49,970
3.02	Utilities / Services Relocation Cost			15%	$	24,985
				SUBTOTAL - OPTION D4 ALLOWANCE ITEMS	**$**	**74,955**
	TOTAL COSTS EXCLUDING HST - OPTION D4 (INCLUDING GENERAL, PROVISIONAL, & ALLOWANCE ITEMS)				**$**	**242,000**

LAKEWOOD DR. RECONSTRUCTION - STORMWATER STUDY

OPINION OF PROBABLE PROJECT COSTS

DECEMBER 23, 2022

TATHAM ENGINEERING

PROJECT: 122152

AREA D

ITEM NO.	DESCRIPTION	UNIT	QTY	UNIT PRICE		AMOUNT
1.0	**OPTION D5 – CONSTRUCT WELL DEFINED OUTLET CHANNEL THROUGH COUNCIL BEACH PARK DOWNSTREAM OF LAKEWOOD DRIVE CULVERT CROSSING (OUTLET 5)**				**$**	**35,000**
1.01	Heavy Duty Silt Fence	m	130	$ 26	$	3,380
1.02	Straw Bale Check Dam	ea	3	$ 500	$	1,500
1.03	Clearing and Grubbing	sq.m	360	$ 35	$	12,586
1.04	Excavate, Grade, Topsoil, & Vegetate Drainage Ditch	m	62	$ 125	$	7,750
1.05	Remove & Dispose of Excess Material	cu.m	33	$ 40	$	1,339
1.06	Channel Armouring	m	31	$ 250	$	7,750
				SUBTOTAL - OPTION D5	**$**	**34,305**
2.0	**OPTION D5 - PROVISIONAL ITEMS**				**$**	**10,000**
2.01	Geotechnical Sampling for Off-site Disposal	per sample	3	$ 1,500	$	4,500
2.02	Remove & Dispose of Contaminated Excess Material	cu.m	33	$ 140	$	4,687
				SUBTOTAL - OPTION D5 PROVISIONAL ITEMS	**$**	**9,187**
3.0	**OPTION D5 - ALLOWANCE ITEMS**				**$**	**20,000**
3.01	Construction Contingency			30%	$	13,048
3.02	Utilities / Services Relocation Cost			15%	$	6,524
				SUBTOTAL - OPTION D5 ALLOWANCE ITEMS	**$**	**19,572**
	TOTAL COSTS EXCLUDING HST - OPTION D5 (INCLUDING GENERAL, PROVISIONAL, & ALLOWANCE ITEMS)				**$**	**64,000**

LAKEWOOD DR. RECONSTRUCTION - STORMWATER STUDY

OPINION OF PROBABLE PROJECT COSTS

DECEMBER 23, 2022

TATHAM ENGINEERING

PROJECT: 122152

AREA D

ITEM NO.	DESCRIPTION	UNIT	QTY	UNIT PRICE		AMOUNT
1.0	**OPTION D6 – RE-GRADE LAKEWOOD DRIVE SOUTH DITCH TO REMOVE LOW AREA**				**$**	**8,000**
1.01	Straw Bale Check Dam	ea	2	$ 500	$	1,000
1.02	Ditching	m	45	$ 80	$	3,600
1.03	Reinstate Area with Topsoil & Seed	sq.m	135	$ 15	$	2,025
1.04	Remove & Dispose of Excess Material	cu.m	14	$ 40	$	540
				SUBTOTAL - OPTION D6	**$**	**7,165**
2.0	**OPTION D6 - PROVISIONAL ITEMS**				**$**	**-**
2.01	Geotechnical Sampling for Off-site Disposal	per sample		$ 1,500	$	-
2.02	Remove & Dispose of Contaminated Excess Material	cu.m		$ 140	$	-
				SUBTOTAL - OPTION D6 PROVISIONAL ITEMS	**$**	**-**
3.0	**OPTION D6 - ALLOWANCE ITEMS**				**$**	**4,000**
3.01	Construction Contingency			30%	$	2,150
3.02	Utilities / Services Relocation Cost			15%	$	1,075
				SUBTOTAL - OPTION D6 ALLOWANCE ITEMS	**$**	**3,224**
	TOTAL COSTS EXCLUDING HST - OPTION D6 (INCLUDING GENERAL, PROVISIONAL, & ALLOWANCE ITEMS)				**$**	**11,000**

Appendix C:
Existing Conditions Hydrologic Analysis

TATHAM ENGINEERING

PROJECT	Lakewood Dr. Recon. SWM Study	FILE	122152
		DATE	Dec 2022
SUBJECT	Impervious Area Calculations	NAME	BG
		PAGE	1 OF 5

Existing Conditions

Catchment 101		**0.32**	ha
Road & Shoulder Area	=	0.10	ha
Driveway Area	=	0.01	ha
Parking Area	=	0.00	ha
Building Area	=	0.00	ha
Waterbody/SWMF	=	0.00	ha
Forest	=	0.13	ha
Landscaped	=	0.07	ha

% Impervious	=	35.5%
Directly Connected % Impervious	=	35.5%

Catchment 102		**0.25**	ha
Road & Shoulder Area	=	0.03	ha
Driveway Area	=	0.07	ha
Parking Area	=	0.00	ha
Building Area	=	0.04	ha
Waterbody/SWMF	=	0.00	ha
Forest	=	0.05	ha
Landscaped	=	0.05	ha

% Impervious	=	57.3%
Directly Connected % Impervious	=	42.5%

Catchment 103		**0.31**	ha
Road & Shoulder Area	=	0.02	ha
Driveway Area	=	0.01	ha
Parking Area	=	0.00	ha
Building Area	=	0.03	ha
Waterbody/SWMF	=	0.00	ha
Forest	=	0.17	ha
Landscaped	=	0.08	ha

% Impervious	=	20.0%
Directly Connected % Impervious	=	10.9%

Existing Conditions

Catchment 104		**0.28**	ha
Road & Shoulder Area	=	0.16	ha
Driveway Area	=	0.00	ha
Parking Area	=	0.00	ha
Building Area	=	0.00	ha
Waterbody/SWMF	=	0.00	ha
Forest	=	0.08	ha
Landscaped	=	0.04	ha

% Impervious	=	57.1%
Directly Connected % Impervious	=	57.1%

Catchment 105		**1.85**	ha
Road & Shoulder Area	=	0.26	ha
Driveway Area	=	0.08	ha
Parking Area	=	0.00	ha
Building Area	=	0.14	ha
Waterbody/SWMF	=	0.00	ha
Forest	=	0.91	ha
Landscaped	=	0.46	ha

% Impervious	=	25.6%
Directly Connected % Impervious	=	18.2%

Catchment 106		**1.91**	ha
Road & Shoulder Area	=	0.26	ha
Driveway Area	=	0.12	ha
Parking Area	=	0.00	ha
Building Area	=	0.16	ha
Waterbody/SWMF	=	0.00	ha
Forest	=	0.91	ha
Landscaped	=	0.46	ha

% Impervious	=	28.2%
Directly Connected % Impervious	=	19.7%

Existing Conditions

Catchment 107		**0.74**	ha
Road & Shoulder Area	=	0.32	ha
Driveway Area	=	0.00	ha
Parking Area	=	0.00	ha
Building Area	=	0.00	ha
Waterbody/SWMF	=	0.00	ha
Forest	=	0.28	ha
Landscaped	=	0.14	ha

% Impervious	=	42.6%
Directly Connected % Impervious	=	42.6%

Catchment 108		**0.18**	ha
Road & Shoulder Area	=	0.07	ha
Driveway Area	=	0.02	ha
Parking Area	=	0.00	ha
Building Area	=	0.00	ha
Waterbody/SWMF	=	0.00	ha
Forest	=	0.00	ha
Landscaped	=	0.09	ha

% Impervious	=	50.3%
Directly Connected % Impervious	=	50.3%

Catchment 109		**0.34**	ha
Road & Shoulder Area	=	0.17	ha
Driveway Area	=	0.00	ha
Parking Area	=	0.00	ha
Building Area	=	0.00	ha
Waterbody/SWMF	=	0.00	ha
Forest	=	0.00	ha
Landscaped	=	0.17	ha

% Impervious	=	49.9%
Directly Connected % Impervious	=	49.9%

Existing Conditions

Catchment 110		**2.03**	ha
Road & Shoulder Area	=	0.13	ha
Driveway Area	=	0.10	ha
Parking Area	=	0.00	ha
Building Area	=	0.15	ha
Waterbody/SWMF	=	0.00	ha
Forest	=	1.33	ha
Landscaped	=	0.32	ha

% Impervious	=	18.7%
Directly Connected % Impervious	=	11.3%

Catchment 111		**0.21**	ha
Road & Shoulder Area	=	0.03	ha
Driveway Area	=	0.00	ha
Parking Area	=	0.00	ha
Building Area	=	0.01	ha
Waterbody/SWMF	=	0.00	ha
Forest	=	0.00	ha
Landscaped	=	0.17	ha

% Impervious	=	19.4%
Directly Connected % Impervious	=	15.4%

Catchment 112		**0.82**	ha
Road & Shoulder Area	=	0.02	ha
Driveway Area	=	0.02	ha
Parking Area	=	0.00	ha
Building Area	=	0.09	ha
Waterbody/SWMF	=	0.00	ha
Forest	=	0.51	ha
Landscaped	=	0.17	ha

% Impervious	=	16.5%
Directly Connected % Impervious	=	5.8%

Proposed Conditions

Catchment 113		**0.07**	ha
Road & Shoulder Area	=	0.06	ha
Driveway Area	=	0.00	ha
Parking Area	=	0.00	ha
Building Area	=	0.00	ha
Waterbody/SWMF	=	0.00	ha
Forest	=	0.00	ha
Landscaped	=	0.01	ha

% Impervious	=	85.7%
Directly Connected % Impervious	=	85.7%

Catchment 114		**0.17**	ha
Road & Shoulder Area	=	0.08	ha
Driveway Area	=	0.01	ha
Parking Area	=	0.00	ha
Building Area	=	0.00	ha
Waterbody/SWMF	=	0.00	ha
Forest	=	0.00	ha
Landscaped	=	0.08	ha

% Impervious	=	53.9%
Directly Connected % Impervious	=	53.9%

TATHAM ENGINEERING

Visual OTTHYMO Model Parameter Calculations (StandHYD)

Project Details

Lakewood Dr. SWM Study	122152

Prepared By

BG	Dec 2022

Data Sources

Detailed Soil Survey Reports for Ontario, GSCA Policies for the Administration of the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation (2010), MTO Drainage Management Manual (1997)

Pre-Development Condition

Watershed:	GSCA
Catchment ID:	101
Catchment Area (ha):	0.32
Impervious %:	36%
Pervious Area (ha):	0.20

Average Curve Number (CN) and Initial Abstraction (IA) for Pervious Area

Soil Symbol		**Wsl**							
Soil Series		Waterloo							
Hydrologic Soils Group		A							
Soil Texture		Sandy Loam							
Runoff Coefficient Type		1							
Area (ha)		0.20							
Percentage of Catchment		100%							
Land Cover Category	**IA**	**A (ha)**	**CN**	**A (ha)**	**CN**	**A (ha)**	**CN**	**A (ha)**	**CN**
Impervious	2		100						
Gravel	3		89						
Woodland	10	0.13	32						
Pasture/Lawns	5	0.07	49						
Meadows	8		38						
Cultivated	7		62						
Waterbody	12		50						
Average CN		37.06							
Average IA		8.06							

Notes

CN and IA values have been calculated for the pervious area of the catchment only.

Summary

Catchment CN:	37.1
Catchment IA (mm):	8.06

TATHAM ENGINEERING

Visual OTTHYMO Model Parameter Calculations (StandHYD)

Project Details

Lakewood Dr. SWM Study	122152

Prepared By

BG	Dec 2022

Data Sources

Detailed Soil Survey Reports for Ontario, GSCA Policies for the Administration of the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation (2010), MTO Drainage Management Manual (1997)

Pre-Development Condition

Watershed:	GSCA
Catchment ID:	102
Catchment Area (ha):	0.25
Impervious %:	57%
Pervious Area (ha):	0.11

Average Curve Number (CN) and Initial Abstraction (IA) for Pervious Area

Soil Symbol		**Wsl**						
Soil Series		Waterloo						
Hydrologic Soils Group		A						
Soil Texture		Sandy Loam						
Runoff Coefficient Type		1						
Area (ha)		0.11						
Percentage of Catchment		100%						
Land Cover Category	**IA**	**A (ha)**	**CN**	**A (ha)**	**CN**	**A (ha)**	**CN**	**A (ha)**	**CN**
Impervious	2		100						
Gravel	3		89						
Woodland	10	0.05	32						
Pasture/Lawns	5	0.05	49						
Meadows	8		38						
Cultivated	7		62						
Waterbody	12		50						
Average CN		37.67							
Average IA		6.98							

Notes

CN and IA values have been calculated for the pervious area of the catchment only.

Summary

Catchment CN:	37.7
Catchment IA (mm):	6.98

TATHAM ENGINEERING

Visual OTTHYMO Model Parameter Calculations (NasHYD)

Project Details

Lakewood Dr. SWM Study	122152

Prepared By

BG	Dec 2022

Data Sources

Detailed Soil Survey Reports for Ontario, GSCA Policies for the Administration of the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation (2010), MTO Drainage Management Manual (1997)

Pre-Development Condition

Watershed:	GSCA
Catchment ID:	103
Catchment Area (ha):	0.31
Impervious %:	20%

Average Curve Number (CN), Runoff Coefficient (C) and Initial Abstraction (IA)

Soil Symbol		**Wsl**											
Soil Series		Waterloo											
Hydrologic Soils Group		A											
Soil Texture		Sandy Loam											
Runoff Coefficient Type		1											
Area (ha)		0.31											
Percentage of Catchment		100%											
Land Cover Category	**IA**	**A (ha)**	**CN**	**C**	**A (ha)**	**CN**	**C**	**A (ha)**	**CN**	**C**	**A (ha)**	**CN**	**C**
Impervious	2	0.06	100	0.95									
Gravel	3		89	0.09									
Woodland	10	0.17	32	0.08									
Pasture/Lawns	5	0.08	49	0.10									
Meadows	8		38	0.09									
Cultivated	7		62	0.22									
Waterbody	12		50	0.05									
Average CN		49.55											
Average C		0.25											
Average IA		7.16											

Time to Peak Calculations

Max. Catchment Elev. (m):	181.50
Min. Catchment Elev. (m):	179.00
Catchment Length (m):	86
Catchment Slope (%):	2.91%
Method: Airport Method	
Time of Concentration (mins):	17.99

Summary

Catchment CN:	49.5
Catchment C:	0.25
Catchment IA (mm):	7.16
Time of Concentration (hrs):	0.30
Catchment Time to Peak (hrs):	0.20
Catchment Time Step (mins):	2.40

TATHAM ENGINEERING

Visual OTTHYMO Model Parameter Calculations (StandHYD)

Project Details

Lakewood Dr. SWM Study	122152

Prepared By

BG	Dec 2022

Data Sources

Detailed Soil Survey Reports for Ontario, GSCA Policies for the Administration of the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation (2010), MTO Drainage Management Manual (1997)

Pre-Development Condition

Watershed:	GSCA
Catchment ID:	104
Catchment Area (ha):	0.28
Impervious %:	57%
Pervious Area (ha):	0.12

Average Curve Number (CN) and Initial Abstraction (IA) for Pervious Area

Soil Symbol		**Wsl**						
Soil Series		Waterloo						
Hydrologic Soils Group		A						
Soil Texture		Sandy Loam						
Runoff Coefficient Type		1						
Area (ha)		0.12						
Percentage of Catchment		100%						
Land Cover Category	**IA**	**A (ha)**	**CN**	**A (ha)**	**CN**	**A (ha)**	**CN**	**A (ha)**	**CN**
Impervious	2		100						
Gravel	3		89						
Woodland	10	0.08	32						
Pasture/Lawns	5	0.04	49						
Meadows	8		38						
Cultivated	7		62						
Waterbody	12		50						
Average CN		37.54							
Average IA		8.31							

Notes

CN and IA values have been calculated for the pervious area of the catchment only.

Summary

Catchment CN:	37.5
Catchment IA (mm):	8.31

TATHAM ENGINEERING

Visual OTTHYMO Model Parameter Calculations (StandHYD)

Project Details

Lakewood Dr. SWM Study	122152

Prepared By

BG	Dec 2022

Data Sources

Detailed Soil Survey Reports for Ontario, GSCA Policies for the Administration of the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation (2010), MTO Drainage Management Manual (1997)

Pre-Development Condition

Watershed:	GSCA
Catchment ID:	105
Catchment Area (ha):	1.85
Impervious %:	26%
Pervious Area (ha):	1.37

Average Curve Number (CN) and Initial Abstraction (IA) for Pervious Area

Soil Symbol		**Wsl**		**Ts**					
Soil Series		Waterloo		Tecumseth					
Hydrologic Soils Group		A		B					
Soil Texture		Sandy Loam		Sand					
Runoff Coefficient Type		1		2					
Area (ha)		0.82		0.55					
Percentage of Catchment		60%		40%					
Land Cover Category	**IA**	**A (ha)**	**CN**	**A (ha)**	**CN**	**A (ha)**	**CN**	**A (ha)**	**CN**
Impervious	2		100		100				
Gravel	3		89		89				
Woodland	10	0.73	32	0.18	60				
Pasture/Lawns	5	0.09	49	0.37	69				
Meadows	8		38		65				
Cultivated	7		62		74				
Waterbody	12		50		50				
Average CN		33.87		66.05					
Average IA		9.45		6.64					

Notes

CN and IA values have been calculated for the pervious area of the catchment only.

Summary

Catchment CN:	46.8
Catchment IA (mm):	8.33

TATHAM ENGINEERING

Visual OTTHYMO Model Parameter Calculations (StandHYD)

Project Details

Lakewood Dr. SWM Study	122152

Prepared By

BG	Dec 2022

Data Sources

Detailed Soil Survey Reports for Ontario, GSCA Policies for the Administration of the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation (2010), MTO Drainage Management Manual (1997)

Pre-Development Condition

Watershed:	GSCA
Catchment ID:	106
Catchment Area (ha):	1.91
Impervious %:	28%
Pervious Area (ha):	1.38

Average Curve Number (CN) and Initial Abstraction (IA) for Pervious Area

Soil Symbol		**Wsl**		**Ts**					
Soil Series		Waterloo		Tecumseth					
Hydrologic Soils Group		A		B					
Soil Texture		Sandy Loam		Sand					
Runoff Coefficient Type		1		2					
Area (ha)		0.98		0.39					
Percentage of Catchment		71%		28%					
Land Cover Category	**IA**	**A (ha)**	**CN**	**A (ha)**	**CN**	**A (ha)**	**CN**	**A (ha)**	**CN**
Impervious	2		100		100				
Gravel	3		89		89				
Woodland	10	0.78	32	0.13	60				
Pasture/Lawns	5	0.20	49	0.26	69				
Meadows	8		38		65				
Cultivated	7		62		74				
Waterbody	12		50		50				
Average CN		35.47		66.00					
Average IA		8.98		6.67					

Notes

CN and IA values have been calculated for the pervious area of the catchment only.

Summary

Catchment CN:	44.0
Catchment IA (mm):	8.29

TATHAM ENGINEERING

Visual OTTHYMO Model Parameter Calculations (StandHYD)

Project Details

Lakewood Dr. SWM Study	122152

Prepared By

BG	Dec 2022

Data Sources

Detailed Soil Survey Reports for Ontario, GSCA Policies for the Administration of the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation (2010), MTO Drainage Management Manual (1997)

Pre-Development Condition

Watershed:	GSCA
Catchment ID:	107
Catchment Area (ha):	0.74
Impervious %:	43%
Pervious Area (ha):	0.42

Average Curve Number (CN) and Initial Abstraction (IA) for Pervious Area

Soil Symbol		**Wsl**							
Soil Series		Waterloo							
Hydrologic Soils Group		A							
Soil Texture		Sandy Loam							
Runoff Coefficient Type		1							
Area (ha)		0.42							
Percentage of Catchment		100%							
Land Cover Category	**IA**	**A (ha)**	**CN**	**A (ha)**	**CN**	**A (ha)**	**CN**	**A (ha)**	**CN**
Impervious	2		100						
Gravel	3		89						
Woodland	10	0.28	32						
Pasture/Lawns	5	0.14	49						
Meadows	8		38						
Cultivated	7		62						
Waterbody	12		50						
Average CN		37.51							
Average IA		8.30							

Notes

CN and IA values have been calculated for the pervious area of the catchment only.

Summary

Catchment CN:	37.5
Catchment IA (mm):	8.30

TATHAM ENGINEERING

Visual OTTHYMO Model Parameter Calculations (StandHYD)

Project Details

Lakewood Dr. SWM Study	122152

Prepared By

BG	Dec 2022

Data Sources

Detailed Soil Survey Reports for Ontario, GSCA Policies for the Administration of the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation (2010), MTO Drainage Management Manual (1997)

Pre-Development Condition

Watershed:	GSCA
Catchment ID:	108
Catchment Area (ha):	0.18
Impervious %:	50%
Pervious Area (ha):	0.09

Average Curve Number (CN) and Initial Abstraction (IA) for Pervious Area

Soil Symbol		**Wsl**							
Soil Series		Waterloo							
Hydrologic Soils Group		A							
Soil Texture		Sandy Loam							
Runoff Coefficient Type		1							
Area (ha)		0.09							
Percentage of Catchment		100%							
Land Cover Category	**IA**	**A (ha)**	**CN**	**A (ha)**	**CN**	**A (ha)**	**CN**	**A (ha)**	**CN**
Impervious	2		100						
Gravel	3		89						
Woodland	10		32						
Pasture/Lawns	5	0.09	49						
Meadows	8		38						
Cultivated	7		62						
Waterbody	12		50						
Average CN		49.30							
Average IA		5.03							

Notes

CN and IA values have been calculated for the pervious area of the catchment only.

Summary

Catchment CN:	49.3
Catchment IA (mm):	5.03

TATHAM ENGINEERING

Visual OTTHYMO Model Parameter Calculations (StandHYD)

Project Details

Lakewood Dr. SWM Study	122152

Prepared By

BG	Dec 2022

Data Sources

Detailed Soil Survey Reports for Ontario, GSCA Policies for the Administration of the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation (2010), MTO Drainage Management Manual (1997)

Pre-Development Condition

Watershed:	GSCA
Catchment ID:	109
Catchment Area (ha):	0.34
Impervious %:	50%
Pervious Area (ha):	0.17

Average Curve Number (CN) and Initial Abstraction (IA) for Pervious Area

Soil Symbol		**Wsl**							
Soil Series		Waterloo							
Hydrologic Soils Group		A							
Soil Texture		Sandy Loam							
Runoff Coefficient Type		1							
Area (ha)		0.17							
Percentage of Catchment		100%							
Land Cover Category	**IA**	**A (ha)**	**CN**	**A (ha)**	**CN**	**A (ha)**	**CN**	**A (ha)**	**CN**
Impervious	2		100						
Gravel	3		89						
Woodland	10		32						
Pasture/Lawns	5	0.17	49						
Meadows	8		38						
Cultivated	7		62						
Waterbody	12		50						
Average CN		49.00							
Average IA		5.00							

Notes

CN and IA values have been calculated for the pervious area of the catchment only.

Summary

Catchment CN:	49.0
Catchment IA (mm):	5.00

TATHAM ENGINEERING

Visual OTTHYMO Model Parameter Calculations (NasHYD)

Project Details

Lakewood Dr. SWM Study	122152

Prepared By

BG	Dec 2022

Data Sources

Detailed Soil Survey Reports for Ontario, GSCA Policies for the Administration of the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation (2010), MTO Drainage Management Manual (1997)

Pre-Development Condition

Watershed:	GSCA
Catchment ID:	110
Catchment Area (ha):	2.03
Impervious %:	19%

Average Curve Number (CN), Runoff Coefficient (C) and Initial Abstraction (IA)

Soil Symbol		**Wsl**											
Soil Series		Waterloo											
Hydrologic Soils Group		A											
Soil Texture		Sandy Loam											
Runoff Coefficient Type		1											
Area (ha)		2.03											
Percentage of Catchment		100%											
Land Cover Category	**IA**	**A (ha)**	**CN**	**C**	**A (ha)**	**CN**	**C**	**A (ha)**	**CN**	**C**	**A (ha)**	**CN**	**C**
Impervious	2	0.38	100	0.95									
Gravel	3		89	0.14									
Woodland	10	1.33	32	0.12									
Pasture/Lawns	5	0.32	49	0.15									
Meadows	8		38	0.14									
Cultivated	7		62	0.30									
Waterbody	12		50	0.05									
Average CN		47.41											
Average C		0.28											
Average IA		7.71											

Time to Peak Calculations

Max. Catchment Elev. (m):	185.50
Min. Catchment Elev. (m):	179.50
Catchment Length (m):	100
Catchment Slope (%):	6.00%
Method: Airport Method	
Time of Concentration (mins):	14.80

Summary

Catchment CN:	47.4
Catchment C:	0.28
Catchment IA (mm):	7.71
Time of Concentration (hrs):	0.25
Catchment Time to Peak (hrs):	0.16
Catchment Time Step (mins):	1.97

TATHAM ENGINEERING

Visual OTTHYMO Model Parameter Calculations (NasHYD)

Project Details

Lakewood Dr. SWM Study	122152

Prepared By

BG	Dec 2022

Data Sources

Detailed Soil Survey Reports for Ontario, GSCA Policies for the Administration of the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation (2010), MTO Drainage Management Manual (1997)

Pre-Development Condition

Watershed:	GSCA
Catchment ID:	111
Catchment Area (ha):	0.21
Impervious %:	19%

Average Curve Number (CN), Runoff Coefficient (C) and Initial Abstraction (IA)

Soil Symbol		**Wsl**											
Soil Series		Waterloo											
Hydrologic Soils Group		A											
Soil Texture		Sandy Loam											
Runoff Coefficient Type		1											
Area (ha)		0.21											
Percentage of Catchment		100%											
Land Cover Category	**IA**	**A (ha)**	**CN**	**C**	**A (ha)**	**CN**	**C**	**A (ha)**	**CN**	**C**	**A (ha)**	**CN**	**C**
Impervious	2	0.04	100	0.95									
Gravel	3		89	0.09									
Woodland	10		32	0.08									
Pasture/Lawns	5	0.17	49	0.10									
Meadows	8		38	0.09									
Cultivated	7		62	0.22									
Waterbody	12		50	0.05									
Average CN		58.71											
Average C		0.26											
Average IA		4.43											

Time to Peak Calculations

Max. Catchment Elev. (m):	183.20
Min. Catchment Elev. (m):	181.70
Catchment Length (m):	60
Catchment Slope (%):	2.50%
Method: Airport Method	
Time of Concentration (mins):	15.64

Summary

Catchment CN:	58.7
Catchment C:	0.26
Catchment IA (mm):	4.43
Time of Concentration (hrs):	0.26
Catchment Time to Peak (hrs):	0.17
Catchment Time Step (mins):	2.09

TATHAM ENGINEERING

Visual OTTHYMO Model Parameter Calculations (NasHYD)

Project Details

Lakewood Dr. SWM Study	122152

Prepared By

BG	Dec 2022

Data Sources

Detailed Soil Survey Reports for Ontario, GSCA Policies for the Administration of the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation (2010), MTO Drainage Management Manual (1997)

Pre-Development Condition

Watershed:	GSCA
Catchment ID:	112
Catchment Area (ha):	0.82
Impervious %:	17%

Average Curve Number (CN), Runoff Coefficient (C) and Initial Abstraction (IA)

Soil Symbol		**Wsl**											
Soil Series		Waterloo											
Hydrologic Soils Group		A											
Soil Texture		Sandy Loam											
Runoff Coefficient Type		1											
Area (ha)		0.82											
Percentage of Catchment		100%											
Land Cover Category	**IA**	**A (ha)**	**CN**	**C**	**A (ha)**	**CN**	**C**	**A (ha)**	**CN**	**C**	**A (ha)**	**CN**	**C**
Impervious	2	0.13	100	0.95									
Gravel	3		89	0.09									
Woodland	10	0.51	32	0.08									
Pasture/Lawns	5	0.17	49	0.10									
Meadows	8		38	0.09									
Cultivated	7		62	0.22									
Waterbody	12		50	0.05									
Average CN		46.14											
Average C		0.22											
Average IA		7.61											

Time to Peak Calculations

Max. Catchment Elev. (m):	180.90
Min. Catchment Elev. (m):	178.50
Catchment Length (m):	168
Catchment Slope (%):	1.43%
Method: Airport Method	
Time of Concentration (mins):	32.97

Summary

Catchment CN:	46.1
Catchment C:	0.22
Catchment IA (mm):	7.61
Time of Concentration (hrs):	0.55
Catchment Time to Peak (hrs):	0.37
Catchment Time Step (mins):	4.40

TATHAM ENGINEERING

Visual OTTHYMO Model Parameter Calculations (StandHYD)

Project Details

Lakewood Dr. SWM Study	122152

Prepared By

BG	Dec 2022

Data Sources

Detailed Soil Survey Reports for Ontario, GSCA Policies for the Administration of the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation (2010), MTO Drainage Management Manual (1997)

Pre-Development Condition

Watershed:	GSCA
Catchment ID:	113
Catchment Area (ha):	0.07
Impervious %:	86%
Pervious Area (ha):	0.01

Average Curve Number (CN) and Initial Abstraction (IA) for Pervious Area

Soil Symbol		**Wsl**							
Soil Series		Waterloo							
Hydrologic Soils Group		A							
Soil Texture		Sandy Loam							
Runoff Coefficient Type		1							
Area (ha)		0.01							
Percentage of Catchment		100%							
Land Cover Category	**IA**	**A (ha)**	**CN**	**A (ha)**	**CN**	**A (ha)**	**CN**	**A (ha)**	**CN**
Impervious	2		100						
Gravel	3		89						
Woodland	10		32						
Pasture/Lawns	5	0.01	49						
Meadows	8		38						
Cultivated	7		62						
Waterbody	12		50						
Average CN		48.95							
Average IA		5.00							

Notes

CN and IA values have been calculated for the pervious area of the catchment only.

Summary

Catchment CN:	49.0
Catchment IA (mm):	5.00

TATHAM ENGINEERING

Visual OTTHYMO Model Parameter Calculations (StandHYD)

Project Details

Lakewood Dr. SWM Study	122152

Prepared By

BG	Dec 2022

Data Sources

Detailed Soil Survey Reports for Ontario, GSCA Policies for the Administration of the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation (2010), MTO Drainage Management Manual (1997)

Pre-Development Condition

Watershed:	GSCA
Catchment ID:	114
Catchment Area (ha):	0.17
Impervious %:	54%
Pervious Area (ha):	0.08

Average Curve Number (CN) and Initial Abstraction (IA) for Pervious Area

Soil Symbol		**Wsl**							
Soil Series		Waterloo							
Hydrologic Soils Group		A							
Soil Texture		Sandy Loam							
Runoff Coefficient Type		1							
Area (ha)		0.08							
Percentage of Catchment		100%							
Land Cover Category	**IA**	**A (ha)**	**CN**	**A (ha)**	**CN**	**A (ha)**	**CN**	**A (ha)**	**CN**
Impervious	2		100						
Gravel	3		89						
Woodland	10		32						
Pasture/Lawns	5	0.08	49						
Meadows	8		38						
Cultivated	7		62						
Waterbody	12		50						
Average CN		50.02							
Average IA		5.10							

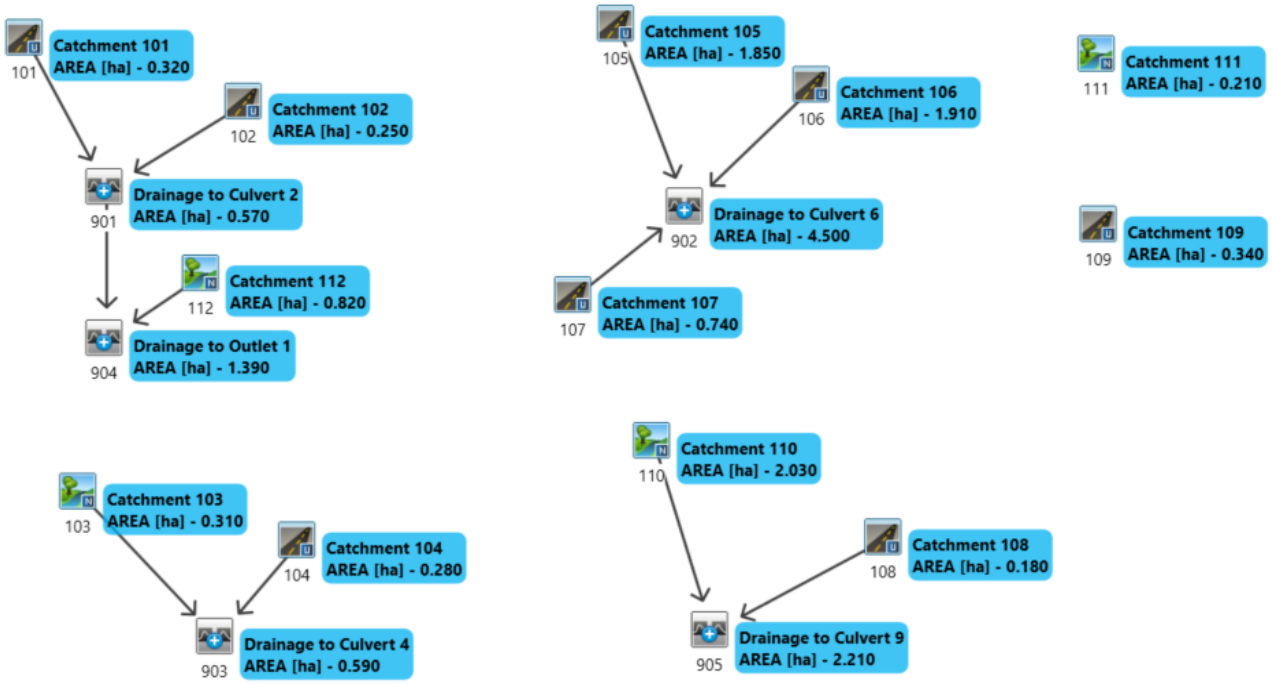
Notes

CN and IA values have been calculated for the pervious area of the catchment only.

Summary

Catchment CN:	50.0
Catchment IA (mm):	5.10

PROJECT	Lakewood Dr. Reconstruction	FILE	122152
	SWM Study	DATE	Dec 2022
SUBJECT	VO Model Schematic	NAME	BG
	Existing Conditions	PAGE	1 OF 1




NASHYD


ROUTE PIPE


DUHYD


STANDHYD


ROUTE CHANNEL


DIVERT HYD


ADDHYD


ROUTE RESERVOIR


SHIFTHYD

VO DETAILED OUTPUT - EX. CONDITIONS - 100-YEAR STORM

```
================================================================================================================

       V    V   I    SSSSS  U   U    A    L              (v 6.2.2011)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  D E T A I L E D   O U T P U T *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\b18d321c-bc1b-4584-87e7-64379b5f169c
\sce
  Summary filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\b18d321c-bc1b-4584-87e7-64379b5f169c
\sce


DATE: 09/21/2022                          TIME: 02:26:11

USER:



COMMENTS: _____________________________________________________


----------------------------------------------------------------------------------------------------------------
  ************************************************
  ** SIMULATION : RUN 18 - 100yr 24hr 15min SCS **
  ************************************************


--------------------
|    READ STORM    |    Filename: C:\Users\BGatenby\AppD
|                  |              ata\Local\Temp\
|                  |              30519500-9f83-4838-af46-1ac00e03db94\2bbcb388
| Ptotal=109.68 mm |    Comments: 100yr 24hr 15min SCS Type II (MTO)
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.00    0.00 |  6.25    1.97 | 12.50   15.79 | 18.75    1.97
                0.25    1.21 |  6.50    1.97 | 12.75    8.12 | 19.00    1.97
                0.50    1.21 |  6.75    1.97 | 13.00    8.12 | 19.25    1.97
                0.75    1.21 |  7.00    1.97 | 13.25    5.92 | 19.50    1.97
                1.00    1.21 |  7.25    2.41 | 13.50    5.92 | 19.75    1.97
                1.25    1.21 |  7.50    2.41 | 13.75    4.61 | 20.00    1.97
                1.50    1.21 |  7.75    2.41 | 14.00    4.61 | 20.25    1.32
                1.75    1.21 |  8.00    2.41 | 14.25    3.29 | 20.50    1.32
                2.00    1.21 |  8.25    2.85 | 14.50    3.29 | 20.75    1.32
                2.25    1.43 |  8.50    2.85 | 14.75    3.29 | 21.00    1.32
                2.50    1.43 |  8.75    3.07 | 15.00    3.29 | 21.25    1.32
                2.75    1.43 |  9.00    3.07 | 15.25    3.29 | 21.50    1.32
                3.00    1.43 |  9.25    3.51 | 15.50    3.29 | 21.75    1.32
                3.25    1.43 |  9.50    3.51 | 15.75    3.29 | 22.00    1.32
                3.50    1.43 |  9.75    3.95 | 16.00    3.29 | 22.25    1.32
                3.75    1.43 | 10.00    3.95 | 16.25    1.97 | 22.50    1.32
                4.00    1.43 | 10.25    5.05 | 16.50    1.97 | 22.75    1.32
                4.25    1.75 | 10.50    5.05 | 16.75    1.97 | 23.00    1.32
                4.50    1.75 | 10.75    6.80 | 17.00    1.97 | 23.25    1.32
                4.75    1.75 | 11.00    6.80 | 17.25    1.97 | 23.50    1.32
                5.00    1.75 | 11.25   10.53 | 17.50    1.97 | 23.75    1.32
                5.25    1.75 | 11.50   10.53 | 17.75    1.97 | 24.00    1.32
                5.50    1.75 | 11.75   32.47 | 18.00    1.97 |
                5.75    1.75 | 12.00  134.25 | 18.25    1.97 |
                6.00    1.75 | 12.25   15.79 | 18.50    1.97 |

--------------------------------------------------------------------------------

--------------------
| CALIB            |
| STANDHYD (  0109)|   Area    (ha)=   0.34
|ID= 1 DT= 5.0 min |   Total Imp(%)=  49.90   Dir. Conn.(%)=  49.90
--------------------
                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.17          0.17
     Dep. Storage     (mm)=       1.00          5.00
     Average Slope     (%)=       1.00          2.00
     Length            (m)=      47.61         40.00
     Mannings n             =     0.013         0.250

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                          ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    0.00 | 6.167    1.75 |12.250  134.25 | 18.33    1.97
               0.167    0.00 | 6.250    1.75 |12.333   15.81 | 18.42    1.97
               0.250    0.00 | 6.333    1.97 |12.417   15.79 | 18.50    1.97
               0.333    1.21 | 6.417    1.97 |12.500   15.79 | 18.58    1.97
               0.417    1.21 | 6.500    1.97 |12.583   15.79 | 18.67    1.97
               0.500    1.21 | 6.583    1.97 |12.667   15.79 | 18.75    1.97
               0.583    1.21 | 6.667    1.97 |12.750   15.79 | 18.83    1.97
               0.667    1.21 | 6.750    1.97 |12.833    8.12 | 18.92    1.97
               0.750    1.21 | 6.833    1.97 |12.917    8.12 | 19.00    1.97
               0.833    1.21 | 6.917    1.97 |13.000    8.12 | 19.08    1.97
               0.917    1.21 | 7.000    1.97 |13.083    8.12 | 19.17    1.97
               1.000    1.21 | 7.083    1.97 |13.167    8.12 | 19.25    1.97
               1.083    1.21 | 7.167    1.97 |13.250    8.12 | 19.33    1.97
               1.167    1.21 | 7.250    1.97 |13.333    5.92 | 19.42    1.97
               1.250    1.21 | 7.333    2.41 |13.417    5.92 | 19.50    1.97
               1.333    1.21 | 7.417    2.41 |13.500    5.92 | 19.58    1.97
               1.417    1.21 | 7.500    2.41 |13.583    5.92 | 19.67    1.97
               1.500    1.21 | 7.583    2.41 |13.667    5.92 | 19.75    1.97
               1.583    1.21 | 7.667    2.41 |13.750    5.92 | 19.83    1.97
               1.667    1.21 | 7.750    2.41 |13.833    4.61 | 19.92    1.97
               1.750    1.21 | 7.833    2.41 |13.917    4.61 | 20.00    1.97
               1.833    1.21 | 7.917    2.41 |14.000    4.61 | 20.08    1.97
               1.917    1.21 | 8.000    2.41 |14.083    4.61 | 20.17    1.97
               2.000    1.21 | 8.083    2.41 |14.167    4.61 | 20.25    1.97
               2.083    1.21 | 8.167    2.41 |14.250    4.61 | 20.33    1.32
               2.167    1.21 | 8.250    2.41 |14.333    3.29 | 20.42    1.32
               2.250    1.21 | 8.333    2.85 |14.417    3.29 | 20.50    1.32
               2.333    1.43 | 8.417    2.85 |14.500    3.29 | 20.58    1.32
               2.417    1.43 | 8.500    2.85 |14.583    3.29 | 20.67    1.32
               2.500    1.43 | 8.583    2.85 |14.667    3.29 | 20.75    1.32
               2.583    1.43 | 8.667    2.85 |14.750    3.29 | 20.83    1.32
               2.667    1.43 | 8.750    2.85 |14.833    3.29 | 20.92    1.32
               2.750    1.43 | 8.833    3.07 |14.917    3.29 | 21.00    1.32
               2.833    1.43 | 8.917    3.07 |15.000    3.29 | 21.08    1.32
               2.917    1.43 | 9.000    3.07 |15.083    3.29 | 21.17    1.32
               3.000    1.43 | 9.083    3.07 |15.167    3.29 | 21.25    1.32
               3.083    1.43 | 9.167    3.07 |15.250    3.29 | 21.33    1.32
               3.167    1.43 | 9.250    3.07 |15.333    3.29 | 21.42    1.32
               3.250    1.43 | 9.333    3.51 |15.417    3.29 | 21.50    1.32
```

3.333	1.43	9.417	3.51	15.500	3.29	21.58	1.32
3.417	1.43	9.500	3.51	15.583	3.29	21.67	1.32
3.500	1.43	9.583	3.51	15.667	3.29	21.75	1.32
3.583	1.43	9.667	3.51	15.750	3.29	21.83	1.32
3.667	1.43	9.750	3.51	15.833	3.29	21.92	1.32
3.750	1.43	9.833	3.95	15.917	3.29	22.00	1.32
3.833	1.43	9.917	3.95	16.000	3.29	22.08	1.32
3.917	1.43	10.000	3.95	16.083	3.29	22.17	1.32
4.000	1.43	10.083	3.95	16.167	3.29	22.25	1.32
4.083	1.43	10.167	3.95	16.250	3.29	22.33	1.32
4.167	1.43	10.250	3.95	16.333	1.97	22.42	1.32
4.250	1.43	10.333	5.05	16.417	1.97	22.50	1.32
4.333	1.75	10.417	5.05	16.500	1.97	22.58	1.32
4.417	1.75	10.500	5.05	16.583	1.97	22.67	1.32
4.500	1.75	10.583	5.05	16.667	1.97	22.75	1.32
4.583	1.75	10.667	5.05	16.750	1.97	22.83	1.32
4.667	1.75	10.750	5.05	16.833	1.97	22.92	1.32
4.750	1.75	10.833	6.80	16.917	1.97	23.00	1.32
4.833	1.75	10.917	6.80	17.000	1.97	23.08	1.32
4.917	1.75	11.000	6.80	17.083	1.97	23.17	1.32
5.000	1.75	11.083	6.80	17.167	1.97	23.25	1.32
5.083	1.75	11.167	6.80	17.250	1.97	23.33	1.32
5.167	1.75	11.250	6.80	17.333	1.97	23.42	1.32
5.250	1.75	11.333	10.53	17.417	1.97	23.50	1.32
5.333	1.75	11.417	10.53	17.500	1.97	23.58	1.32
5.417	1.75	11.500	10.53	17.583	1.97	23.67	1.32
5.500	1.75	11.583	10.53	17.667	1.97	23.75	1.32
5.583	1.75	11.667	10.53	17.750	1.97	23.83	1.32
5.667	1.75	11.750	10.53	17.833	1.97	23.92	1.32
5.750	1.75	11.833	32.46	17.917	1.97	24.00	1.32
5.833	1.75	11.917	32.47	18.000	1.97	24.08	1.32
5.917	1.75	12.000	32.47	18.083	1.97	24.17	1.32
6.000	1.75	12.083	134.24	18.167	1.97	24.25	1.32
6.083	1.75	12.167	134.25	18.250	1.97		

Max.Eff.Inten.(mm/hr)=	134.25	43.02	
over (min)	5.00	15.00	
Storage Coeff. (min)=	1.45 (ii)	11.34 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.33	0.09	
			TOTALS
PEAK FLOW (cms)=	0.06	0.01	0.074 (iii)
TIME TO PEAK (hrs)=	12.25	12.33	12.25
RUNOFF VOLUME (mm)=	108.68	29.69	69.08
TOTAL RAINFALL (mm)=	109.68	109.68	109.68
RUNOFF COEFFICIENT =	0.99	0.27	0.63

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 49.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
NASHYD (0111)	Area (ha)=	0.21	Curve Number (CN)= 58.7
ID= 1 DT= 5.0 min	Ia (mm)=	4.43	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.17	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.75	12.250	134.25	18.33	1.97
0.167	0.00	6.250	1.75	12.333	15.81	18.42	1.97
0.250	0.00	6.333	1.97	12.417	15.79	18.50	1.97
0.333	1.21	6.417	1.97	12.500	15.79	18.58	1.97
0.417	1.21	6.500	1.97	12.583	15.79	18.67	1.97
0.500	1.21	6.583	1.97	12.667	15.79	18.75	1.97
0.583	1.21	6.667	1.97	12.750	15.79	18.83	1.97
0.667	1.21	6.750	1.97	12.833	8.12	18.92	1.97
0.750	1.21	6.833	1.97	12.917	8.12	19.00	1.97
0.833	1.21	6.917	1.97	13.000	8.12	19.08	1.97
0.917	1.21	7.000	1.97	13.083	8.12	19.17	1.97
1.000	1.21	7.083	1.97	13.167	8.12	19.25	1.97
1.083	1.21	7.167	1.97	13.250	8.12	19.33	1.97
1.167	1.21	7.250	1.97	13.333	5.92	19.42	1.97
1.250	1.21	7.333	2.41	13.417	5.92	19.50	1.97
1.333	1.21	7.417	2.41	13.500	5.92	19.58	1.97
1.417	1.21	7.500	2.41	13.583	5.92	19.67	1.97
1.500	1.21	7.583	2.41	13.667	5.92	19.75	1.97
1.583	1.21	7.667	2.41	13.750	5.92	19.83	1.97
1.667	1.21	7.750	2.41	13.833	4.61	19.92	1.97
1.750	1.21	7.833	2.41	13.917	4.61	20.00	1.97
1.833	1.21	7.917	2.41	14.000	4.61	20.08	1.97
1.917	1.21	8.000	2.41	14.083	4.61	20.17	1.97
2.000	1.21	8.083	2.41	14.167	4.61	20.25	1.97
2.083	1.21	8.167	2.41	14.250	4.61	20.33	1.32
2.167	1.21	8.250	2.41	14.333	3.29	20.42	1.32
2.250	1.21	8.333	2.85	14.417	3.29	20.50	1.32
2.333	1.43	8.417	2.85	14.500	3.29	20.58	1.32
2.417	1.43	8.500	2.85	14.583	3.29	20.67	1.32
2.500	1.43	8.583	2.85	14.667	3.29	20.75	1.32
2.583	1.43	8.667	2.85	14.750	3.29	20.83	1.32
2.667	1.43	8.750	2.85	14.833	3.29	20.92	1.32
2.750	1.43	8.833	3.07	14.917	3.29	21.00	1.32
2.833	1.43	8.917	3.07	15.000	3.29	21.08	1.32
2.917	1.43	9.000	3.07	15.083	3.29	21.17	1.32
3.000	1.43	9.083	3.07	15.167	3.29	21.25	1.32
3.083	1.43	9.167	3.07	15.250	3.29	21.33	1.32
3.167	1.43	9.250	3.07	15.333	3.29	21.42	1.32
3.250	1.43	9.333	3.51	15.417	3.29	21.50	1.32
3.333	1.43	9.417	3.51	15.500	3.29	21.58	1.32
3.417	1.43	9.500	3.51	15.583	3.29	21.67	1.32
3.500	1.43	9.583	3.51	15.667	3.29	21.75	1.32
3.583	1.43	9.667	3.51	15.750	3.29	21.83	1.32
3.667	1.43	9.750	3.51	15.833	3.29	21.92	1.32
3.750	1.43	9.833	3.95	15.917	3.29	22.00	1.32
3.833	1.43	9.917	3.95	16.000	3.29	22.08	1.32
3.917	1.43	10.000	3.95	16.083	3.29	22.17	1.32
4.000	1.43	10.083	3.95	16.167	3.29	22.25	1.32
4.083	1.43	10.167	3.95	16.250	3.29	22.33	1.32
4.167	1.43	10.250	3.95	16.333	1.97	22.42	1.32
4.250	1.43	10.333	5.05	16.417	1.97	22.50	1.32
4.333	1.75	10.417	5.05	16.500	1.97	22.58	1.32
4.417	1.75	10.500	5.05	16.583	1.97	22.67	1.32
4.500	1.75	10.583	5.05	16.667	1.97	22.75	1.32
4.583	1.75	10.667	5.05	16.750	1.97	22.83	1.32
4.667	1.75	10.750	5.05	16.833	1.97	22.92	1.32
4.750	1.75	10.833	6.80	16.917	1.97	23.00	1.32
4.833	1.75	10.917	6.80	17.000	1.97	23.08	1.32
4.917	1.75	11.000	6.80	17.083	1.97	23.17	1.32
5.000	1.75	11.083	6.80	17.167	1.97	23.25	1.32
5.083	1.75	11.167	6.80	17.250	1.97	23.33	1.32
5.167	1.75	11.250	6.80	17.333	1.97	23.42	1.32
5.250	1.75	11.333	10.53	17.417	1.97	23.50	1.32
5.333	1.75	11.417	10.53	17.500	1.97	23.58	1.32
5.417	1.75	11.500	10.53	17.583	1.97	23.67	1.32
5.500	1.75	11.583	10.53	17.667	1.97	23.75	1.32
5.583	1.75	11.667	10.53	17.750	1.97	23.83	1.32
5.667	1.75	11.750	10.53	17.833	1.97	23.92	1.32
5.750	1.75	11.833	32.46	17.917	1.97	24.00	1.32
5.833	1.75	11.917	32.47	18.000	1.97	24.08	1.32

5.917	1.75	12.000	32.47	18.083	1.97	24.17	1.32
6.000	1.75	12.083	134.24	18.167	1.97	24.25	1.32
6.083	1.75	12.167	134.25	18.250	1.97		

Unit Hyd Qpeak (cms)= 0.047

PEAK FLOW (cms)= 0.022 (i)
TIME TO PEAK (hrs)= 12.250
RUNOFF VOLUME (mm)= 38.871
TOTAL RAINFALL (mm)= 109.680
RUNOFF COEFFICIENT = 0.354

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
NASHYD (0103)
ID= 1 DT= 5.0 min

Area (ha)= 0.31 Curve Number (CN)= 49.5
Ia (mm)= 7.16 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.20

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.75	12.250	134.25	18.33	1.97
0.167	0.00	6.250	1.75	12.333	15.81	18.42	1.97
0.250	0.00	6.333	1.97	12.417	15.79	18.50	1.97
0.333	1.21	6.417	1.97	12.500	15.79	18.58	1.97
0.417	1.21	6.500	1.97	12.583	15.79	18.67	1.97
0.500	1.21	6.583	1.97	12.667	15.79	18.75	1.97
0.583	1.21	6.667	1.97	12.750	15.79	18.83	1.97
0.667	1.21	6.750	1.97	12.833	8.12	18.92	1.97
0.750	1.21	6.833	1.97	12.917	8.12	19.00	1.97
0.833	1.21	6.917	1.97	13.000	8.12	19.08	1.97
0.917	1.21	7.000	1.97	13.083	8.12	19.17	1.97
1.000	1.21	7.083	1.97	13.167	8.12	19.25	1.97
1.083	1.21	7.167	1.97	13.250	8.12	19.33	1.97
1.167	1.21	7.250	1.97	13.333	5.92	19.42	1.97
1.250	1.21	7.333	2.41	13.417	5.92	19.50	1.97
1.333	1.21	7.417	2.41	13.500	5.92	19.58	1.97
1.417	1.21	7.500	2.41	13.583	5.92	19.67	1.97
1.500	1.21	7.583	2.41	13.667	5.92	19.75	1.97
1.583	1.21	7.667	2.41	13.750	5.92	19.83	1.97
1.667	1.21	7.750	2.41	13.833	4.61	19.92	1.97
1.750	1.21	7.833	2.41	13.917	4.61	20.00	1.97
1.833	1.21	7.917	2.41	14.000	4.61	20.08	1.97
1.917	1.21	8.000	2.41	14.083	4.61	20.17	1.97
2.000	1.21	8.083	2.41	14.167	4.61	20.25	1.97
2.083	1.21	8.167	2.41	14.250	4.61	20.33	1.32
2.167	1.21	8.250	2.41	14.333	3.29	20.42	1.32
2.250	1.21	8.333	2.85	14.417	3.29	20.50	1.32
2.333	1.43	8.417	2.85	14.500	3.29	20.58	1.32
2.417	1.43	8.500	2.85	14.583	3.29	20.67	1.32
2.500	1.43	8.583	2.85	14.667	3.29	20.75	1.32
2.583	1.43	8.667	2.85	14.750	3.29	20.83	1.32
2.667	1.43	8.750	2.85	14.833	3.29	20.92	1.32
2.750	1.43	8.833	3.07	14.917	3.29	21.00	1.32
2.833	1.43	8.917	3.07	15.000	3.29	21.08	1.32
2.917	1.43	9.000	3.07	15.083	3.29	21.17	1.32
3.000	1.43	9.083	3.07	15.167	3.29	21.25	1.32
3.083	1.43	9.167	3.07	15.250	3.29	21.33	1.32
3.167	1.43	9.250	3.07	15.333	3.29	21.42	1.32
3.250	1.43	9.333	3.51	15.417	3.29	21.50	1.32
3.333	1.43	9.417	3.51	15.500	3.29	21.58	1.32
3.417	1.43	9.500	3.51	15.583	3.29	21.67	1.32
3.500	1.43	9.583	3.51	15.667	3.29	21.75	1.32
3.583	1.43	9.667	3.51	15.750	3.29	21.83	1.32
3.667	1.43	9.750	3.51	15.833	3.29	21.92	1.32
3.750	1.43	9.833	3.95	15.917	3.29	22.00	1.32
3.833	1.43	9.917	3.95	16.000	3.29	22.08	1.32
3.917	1.43	10.000	3.95	16.083	3.29	22.17	1.32
4.000	1.43	10.083	3.95	16.167	3.29	22.25	1.32
4.083	1.43	10.167	3.95	16.250	3.29	22.33	1.32
4.167	1.43	10.250	3.95	16.333	1.97	22.42	1.32
4.250	1.43	10.333	5.05	16.417	1.97	22.50	1.32
4.333	1.75	10.417	5.05	16.500	1.97	22.58	1.32
4.417	1.75	10.500	5.05	16.583	1.97	22.67	1.32
4.500	1.75	10.583	5.05	16.667	1.97	22.75	1.32
4.583	1.75	10.667	5.05	16.750	1.97	22.83	1.32
4.667	1.75	10.750	5.05	16.833	1.97	22.92	1.32
4.750	1.75	10.833	6.80	16.917	1.97	23.00	1.32
4.833	1.75	10.917	6.80	17.000	1.97	23.08	1.32
4.917	1.75	11.000	6.80	17.083	1.97	23.17	1.32
5.000	1.75	11.083	6.80	17.167	1.97	23.25	1.32
5.083	1.75	11.167	6.80	17.250	1.97	23.33	1.32
5.167	1.75	11.250	6.80	17.333	1.97	23.42	1.32
5.250	1.75	11.333	10.53	17.417	1.97	23.50	1.32
5.333	1.75	11.417	10.53	17.500	1.97	23.58	1.32
5.417	1.75	11.500	10.53	17.583	1.97	23.67	1.32
5.500	1.75	11.583	10.53	17.667	1.97	23.75	1.32
5.583	1.75	11.667	10.53	17.750	1.97	23.83	1.32
5.667	1.75	11.750	10.53	17.833	1.97	23.92	1.32
5.750	1.75	11.833	32.46	17.917	1.97	24.00	1.32
5.833	1.75	11.917	32.47	18.000	1.97	24.08	1.32
5.917	1.75	12.000	32.47	18.083	1.97	24.17	1.32
6.000	1.75	12.083	134.24	18.167	1.97	24.25	1.32
6.083	1.75	12.167	134.25	18.250	1.97		

Unit Hyd Qpeak (cms)= 0.059

PEAK FLOW (cms)= 0.022 (i)
TIME TO PEAK (hrs)= 12.333
RUNOFF VOLUME (mm)= 29.005
TOTAL RAINFALL (mm)= 109.680
RUNOFF COEFFICIENT = 0.264

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
STANDHYD (0104)
ID= 1 DT= 5.0 min

Area (ha)= 0.28
Total Imp(%)= 57.10 Dir. Conn.(%)= 57.10

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.16	0.12
Dep. Storage	(mm)=	1.00	8.31
Average Slope	(%)=	1.00	2.00
Length	(m)=	43.20	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.75	12.250	134.25	18.33	1.97
0.167	0.00	6.250	1.75	12.333	15.81	18.42	1.97
0.250	0.00	6.333	1.97	12.417	15.79	18.50	1.97
0.333	1.21	6.417	1.97	12.500	15.79	18.58	1.97
0.417	1.21	6.500	1.97	12.583	15.79	18.67	1.97
0.500	1.21	6.583	1.97	12.667	15.79	18.75	1.97
0.583	1.21	6.667	1.97	12.750	15.79	18.83	1.97
0.667	1.21	6.750	1.97	12.833	8.12	18.92	1.97

0.750	1.21	6.833	1.97	12.917	8.12	19.00	1.97
0.833	1.21	6.917	1.97	13.000	8.12	19.08	1.97
0.917	1.21	7.000	1.97	13.083	8.12	19.17	1.97
1.000	1.21	7.083	1.97	13.167	8.12	19.25	1.97
1.083	1.21	7.167	1.97	13.250	8.12	19.33	1.97
1.167	1.21	7.250	1.97	13.333	5.92	19.42	1.97
1.250	1.21	7.333	2.41	13.417	5.92	19.50	1.97
1.333	1.21	7.417	2.41	13.500	5.92	19.58	1.97
1.417	1.21	7.500	2.41	13.583	5.92	19.67	1.97
1.500	1.21	7.583	2.41	13.667	5.92	19.75	1.97
1.583	1.21	7.667	2.41	13.750	5.92	19.83	1.97
1.667	1.21	7.750	2.41	13.833	4.61	19.92	1.97
1.750	1.21	7.833	2.41	13.917	4.61	20.00	1.97
1.833	1.21	7.917	2.41	14.000	4.61	20.08	1.97
1.917	1.21	8.000	2.41	14.083	4.61	20.17	1.97
2.000	1.21	8.083	2.41	14.167	4.61	20.25	1.97
2.083	1.21	8.167	2.41	14.250	4.61	20.33	1.32
2.167	1.21	8.250	2.41	14.333	3.29	20.42	1.32
2.250	1.21	8.333	2.85	14.417	3.29	20.50	1.32
2.333	1.43	8.417	2.85	14.500	3.29	20.58	1.32
2.417	1.43	8.500	2.85	14.583	3.29	20.67	1.32
2.500	1.43	8.583	2.85	14.667	3.29	20.75	1.32
2.583	1.43	8.667	2.85	14.750	3.29	20.83	1.32
2.667	1.43	8.750	2.85	14.833	3.29	20.92	1.32
2.750	1.43	8.833	3.07	14.917	3.29	21.00	1.32
2.833	1.43	8.917	3.07	15.000	3.29	21.08	1.32
2.917	1.43	9.000	3.07	15.083	3.29	21.17	1.32
3.000	1.43	9.083	3.07	15.167	3.29	21.25	1.32
3.083	1.43	9.167	3.07	15.250	3.29	21.33	1.32
3.167	1.43	9.250	3.07	15.333	3.29	21.42	1.32
3.250	1.43	9.333	3.51	15.417	3.29	21.50	1.32
3.333	1.43	9.417	3.51	15.500	3.29	21.58	1.32
3.417	1.43	9.500	3.51	15.583	3.29	21.67	1.32
3.500	1.43	9.583	3.51	15.667	3.29	21.75	1.32
3.583	1.43	9.667	3.51	15.750	3.29	21.83	1.32
3.667	1.43	9.750	3.51	15.833	3.29	21.92	1.32
3.750	1.43	9.833	3.95	15.917	3.29	22.00	1.32
3.833	1.43	9.917	3.95	16.000	3.29	22.08	1.32
3.917	1.43	10.000	3.95	16.083	3.29	22.17	1.32
4.000	1.43	10.083	3.95	16.167	3.29	22.25	1.32
4.083	1.43	10.167	3.95	16.250	3.29	22.33	1.32
4.167	1.43	10.250	3.95	16.333	1.97	22.42	1.32
4.250	1.43	10.333	5.05	16.417	1.97	22.50	1.32
4.333	1.75	10.417	5.05	16.500	1.97	22.58	1.32
4.417	1.75	10.500	5.05	16.583	1.97	22.67	1.32
4.500	1.75	10.583	5.05	16.667	1.97	22.75	1.32
4.583	1.75	10.667	5.05	16.750	1.97	22.83	1.32
4.667	1.75	10.750	5.05	16.833	1.97	22.92	1.32
4.750	1.75	10.833	6.80	16.917	1.97	23.00	1.32
4.833	1.75	10.917	6.80	17.000	1.97	23.08	1.32
4.917	1.75	11.000	6.80	17.083	1.97	23.17	1.32
5.000	1.75	11.083	6.80	17.167	1.97	23.25	1.32
5.083	1.75	11.167	6.80	17.250	1.97	23.33	1.32
5.167	1.75	11.250	6.80	17.333	1.97	23.42	1.32
5.250	1.75	11.333	10.53	17.417	1.97	23.50	1.32
5.333	1.75	11.417	10.53	17.500	1.97	23.58	1.32
5.417	1.75	11.500	10.53	17.583	1.97	23.67	1.32
5.500	1.75	11.583	10.53	17.667	1.97	23.75	1.32
5.583	1.75	11.667	10.53	17.750	1.97	23.83	1.32
5.667	1.75	11.750	10.53	17.833	1.97	23.92	1.32
5.750	1.75	11.833	32.46	17.917	1.97	24.00	1.32
5.833	1.75	11.917	32.47	18.000	1.97	24.08	1.32
5.917	1.75	12.000	32.47	18.083	1.97	24.17	1.32
6.000	1.75	12.083	134.24	18.167	1.97	24.25	1.32
6.083	1.75	12.167	134.25	18.250	1.97		

Max.Eff.Inten.(mm/hr)=	134.25	25.64	
over (min)	5.00	15.00	
Storage Coeff. (min)=	1.37 (ii)	13.54 (ii)	

Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.33	0.08	
			TOTALS
PEAK FLOW (cms)=	0.06	0.01	0.064 (iii)
TIME TO PEAK (hrs)=	12.25	12.33	12.25
RUNOFF VOLUME (mm)=	108.68	19.58	70.43
TOTAL RAINFALL (mm)=	109.68	109.68	109.68
RUNOFF COEFFICIENT =	0.99	0.18	0.64

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 37.5 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0903)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0103):	0.31	0.022	12.33	29.01
+ ID2= 2 (0104):	0.28	0.064	12.25	70.43
ID = 3 (0903):	0.59	0.084	12.25	48.66

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
STANDHYD (0105)	Area (ha)= 1.85			
ID= 1 DT= 5.0 min	Total Imp(%)= 25.60	Dir. Conn.(%)= 18.20		

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.47	1.38
Dep. Storage	(mm)=	1.00	8.33
Average Slope	(%)=	1.00	2.00
Length	(m)=	111.06	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.75	12.250	134.25	18.33	1.97
0.167	0.00	6.250	1.75	12.333	15.81	18.42	1.97
0.250	0.00	6.333	1.97	12.417	15.79	18.50	1.97
0.333	1.21	6.417	1.97	12.500	15.79	18.58	1.97
0.417	1.21	6.500	1.97	12.583	15.79	18.67	1.97
0.500	1.21	6.583	1.97	12.667	15.79	18.75	1.97
0.583	1.21	6.667	1.97	12.750	15.79	18.83	1.97
0.667	1.21	6.750	1.97	12.833	8.12	18.92	1.97
0.750	1.21	6.833	1.97	12.917	8.12	19.00	1.97
0.833	1.21	6.917	1.97	13.000	8.12	19.08	1.97
0.917	1.21	7.000	1.97	13.083	8.12	19.17	1.97
1.000	1.21	7.083	1.97	13.167	8.12	19.25	1.97
1.083	1.21	7.167	1.97	13.250	8.12	19.33	1.97
1.167	1.21	7.250	1.97	13.333	5.92	19.42	1.97
1.250	1.21	7.333	2.41	13.417	5.92	19.50	1.97
1.333	1.21	7.417	2.41	13.500	5.92	19.58	1.97
1.417	1.21	7.500	2.41	13.583	5.92	19.67	1.97
1.500	1.21	7.583	2.41	13.667	5.92	19.75	1.97
1.583	1.21	7.667	2.41	13.750	5.92	19.83	1.97
1.667	1.21	7.750	2.41	13.833	4.61	19.92	1.97
1.750	1.21	7.833	2.41	13.917	4.61	20.00	1.97

1.833	1.21	7.917	2.41	14.000	4.61	20.08	1.97
1.917	1.21	8.000	2.41	14.083	4.61	20.17	1.97
2.000	1.21	8.083	2.41	14.167	4.61	20.25	1.97
2.083	1.21	8.167	2.41	14.250	4.61	20.33	1.32
2.167	1.21	8.250	2.41	14.333	3.29	20.42	1.32
2.250	1.21	8.333	2.85	14.417	3.29	20.50	1.32
2.333	1.43	8.417	2.85	14.500	3.29	20.58	1.32
2.417	1.43	8.500	2.85	14.583	3.29	20.67	1.32
2.500	1.43	8.583	2.85	14.667	3.29	20.75	1.32
2.583	1.43	8.667	2.85	14.750	3.29	20.83	1.32
2.667	1.43	8.750	2.85	14.833	3.29	20.92	1.32
2.750	1.43	8.833	3.07	14.917	3.29	21.00	1.32
2.833	1.43	8.917	3.07	15.000	3.29	21.08	1.32
2.917	1.43	9.000	3.07	15.083	3.29	21.17	1.32
3.000	1.43	9.083	3.07	15.167	3.29	21.25	1.32
3.083	1.43	9.167	3.07	15.250	3.29	21.33	1.32
3.167	1.43	9.250	3.07	15.333	3.29	21.42	1.32
3.250	1.43	9.333	3.51	15.417	3.29	21.50	1.32
3.333	1.43	9.417	3.51	15.500	3.29	21.58	1.32
3.417	1.43	9.500	3.51	15.583	3.29	21.67	1.32
3.500	1.43	9.583	3.51	15.667	3.29	21.75	1.32
3.583	1.43	9.667	3.51	15.750	3.29	21.83	1.32
3.667	1.43	9.750	3.51	15.833	3.29	21.92	1.32
3.750	1.43	9.833	3.95	15.917	3.29	22.00	1.32
3.833	1.43	9.917	3.95	16.000	3.29	22.08	1.32
3.917	1.43	10.000	3.95	16.083	3.29	22.17	1.32
4.000	1.43	10.083	3.95	16.167	3.29	22.25	1.32
4.083	1.43	10.167	3.95	16.250	3.29	22.33	1.32
4.167	1.43	10.250	3.95	16.333	1.97	22.42	1.32
4.250	1.43	10.333	5.05	16.417	1.97	22.50	1.32
4.333	1.75	10.417	5.05	16.500	1.97	22.58	1.32
4.417	1.75	10.500	5.05	16.583	1.97	22.67	1.32
4.500	1.75	10.583	5.05	16.667	1.97	22.75	1.32
4.583	1.75	10.667	5.05	16.750	1.97	22.83	1.32
4.667	1.75	10.750	5.05	16.833	1.97	22.92	1.32
4.750	1.75	10.833	6.80	16.917	1.97	23.00	1.32
4.833	1.75	10.917	6.80	17.000	1.97	23.08	1.32
4.917	1.75	11.000	6.80	17.083	1.97	23.17	1.32
5.000	1.75	11.083	6.80	17.167	1.97	23.25	1.32
5.083	1.75	11.167	6.80	17.250	1.97	23.33	1.32
5.167	1.75	11.250	6.80	17.333	1.97	23.42	1.32
5.250	1.75	11.333	10.53	17.417	1.97	23.50	1.32
5.333	1.75	11.417	10.53	17.500	1.97	23.58	1.32
5.417	1.75	11.500	10.53	17.583	1.97	23.67	1.32
5.500	1.75	11.583	10.53	17.667	1.97	23.75	1.32
5.583	1.75	11.667	10.53	17.750	1.97	23.83	1.32
5.667	1.75	11.750	10.53	17.833	1.97	23.92	1.32
5.750	1.75	11.833	32.46	17.917	1.97	24.00	1.32
5.833	1.75	11.917	32.47	18.000	1.97	24.08	1.32
5.917	1.75	12.000	32.47	18.083	1.97	24.17	1.32
6.000	1.75	12.083	134.24	18.167	1.97	24.25	1.32
6.083	1.75	12.167	134.25	18.250	1.97		

Max.Eff.Inten.(mm/hr)=	134.25	45.90	
over (min)	5.00	15.00	
Storage Coeff. (min)=	2.42 (ii)	12.06 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.30	0.09	
			TOTALS
PEAK FLOW (cms)=	0.13	0.10	0.212 (iii)
TIME TO PEAK (hrs)=	12.25	12.33	12.25
RUNOFF VOLUME (mm)=	108.68	28.58	43.16
TOTAL RAINFALL (mm)=	109.68	109.68	109.68
RUNOFF COEFFICIENT =	0.99	0.26	0.39

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
YOU SHOULD CONSIDER SPLITTING THE AREA.

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 46.8 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
STANDHYD (0106) | Area (ha)= 1.91
ID= 1 DT= 5.0 min | Total Imp(%)= 28.20 Dir. Conn.(%)= 19.70

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.54	1.37
Dep. Storage	(mm)=	1.00	8.29
Average Slope	(%)=	1.00	2.00
Length	(m)=	112.84	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.75	12.250	134.25	18.33	1.97
0.167	0.00	6.250	1.75	12.333	15.81	18.42	1.97
0.250	0.00	6.333	1.97	12.417	15.79	18.50	1.97
0.333	1.21	6.417	1.97	12.500	15.79	18.58	1.97
0.417	1.21	6.500	1.97	12.583	15.79	18.67	1.97
0.500	1.21	6.583	1.97	12.667	15.79	18.75	1.97
0.583	1.21	6.667	1.97	12.750	15.79	18.83	1.97
0.667	1.21	6.750	1.97	12.833	8.12	18.92	1.97
0.750	1.21	6.833	1.97	12.917	8.12	19.00	1.97
0.833	1.21	6.917	1.97	13.000	8.12	19.08	1.97
0.917	1.21	7.000	1.97	13.083	8.12	19.17	1.97
1.000	1.21	7.083	1.97	13.167	8.12	19.25	1.97
1.083	1.21	7.167	1.97	13.250	8.12	19.33	1.97
1.167	1.21	7.250	1.97	13.333	5.92	19.42	1.97
1.250	1.21	7.333	2.41	13.417	5.92	19.50	1.97
1.333	1.21	7.417	2.41	13.500	5.92	19.58	1.97
1.417	1.21	7.500	2.41	13.583	5.92	19.67	1.97
1.500	1.21	7.583	2.41	13.667	5.92	19.75	1.97
1.583	1.21	7.667	2.41	13.750	5.92	19.83	1.97
1.667	1.21	7.750	2.41	13.833	4.61	19.92	1.97
1.750	1.21	7.833	2.41	13.917	4.61	20.00	1.97
1.833	1.21	7.917	2.41	14.000	4.61	20.08	1.97
1.917	1.21	8.000	2.41	14.083	4.61	20.17	1.97
2.000	1.21	8.083	2.41	14.167	4.61	20.25	1.97
2.083	1.21	8.167	2.41	14.250	4.61	20.33	1.32
2.167	1.21	8.250	2.41	14.333	3.29	20.42	1.32
2.250	1.21	8.333	2.85	14.417	3.29	20.50	1.32
2.333	1.43	8.417	2.85	14.500	3.29	20.58	1.32
2.417	1.43	8.500	2.85	14.583	3.29	20.67	1.32
2.500	1.43	8.583	2.85	14.667	3.29	20.75	1.32
2.583	1.43	8.667	2.85	14.750	3.29	20.83	1.32
2.667	1.43	8.750	2.85	14.833	3.29	20.92	1.32
2.750	1.43	8.833	3.07	14.917	3.29	21.00	1.32
2.833	1.43	8.917	3.07	15.000	3.29	21.08	1.32
2.917	1.43	9.000	3.07	15.083	3.29	21.17	1.32
3.000	1.43	9.083	3.07	15.167	3.29	21.25	1.32
3.083	1.43	9.167	3.07	15.250	3.29	21.33	1.32
3.167	1.43	9.250	3.07	15.333	3.29	21.42	1.32
3.250	1.43	9.333	3.51	15.417	3.29	21.50	1.32
3.333	1.43	9.417	3.51	15.500	3.29	21.58	1.32
3.417	1.43	9.500	3.51	15.583	3.29	21.67	1.32
3.500	1.43	9.583	3.51	15.667	3.29	21.75	1.32
3.583	1.43	9.667	3.51	15.750	3.29	21.83	1.32
3.667	1.43	9.750	3.51	15.833	3.29	21.92	1.32

3.750	1.43	9.833	3.95	15.917	3.29	22.00	1.32
3.833	1.43	9.917	3.95	16.000	3.29	22.08	1.32
3.917	1.43	10.000	3.95	16.083	3.29	22.17	1.32
4.000	1.43	10.083	3.95	16.167	3.29	22.25	1.32
4.083	1.43	10.167	3.95	16.250	3.29	22.33	1.32
4.167	1.43	10.250	3.95	16.333	1.97	22.42	1.32
4.250	1.43	10.333	5.05	16.417	1.97	22.50	1.32
4.333	1.75	10.417	5.05	16.500	1.97	22.58	1.32
4.417	1.75	10.500	5.05	16.583	1.97	22.67	1.32
4.500	1.75	10.583	5.05	16.667	1.97	22.75	1.32
4.583	1.75	10.667	5.05	16.750	1.97	22.83	1.32
4.667	1.75	10.750	5.05	16.833	1.97	22.92	1.32
4.750	1.75	10.833	6.80	16.917	1.97	23.00	1.32
4.833	1.75	10.917	6.80	17.000	1.97	23.08	1.32
4.917	1.75	11.000	6.80	17.083	1.97	23.17	1.32
5.000	1.75	11.083	6.80	17.167	1.97	23.25	1.32
5.083	1.75	11.167	6.80	17.250	1.97	23.33	1.32
5.167	1.75	11.250	6.80	17.333	1.97	23.42	1.32
5.250	1.75	11.333	10.53	17.417	1.97	23.50	1.32
5.333	1.75	11.417	10.53	17.500	1.97	23.58	1.32
5.417	1.75	11.500	10.53	17.583	1.97	23.67	1.32
5.500	1.75	11.583	10.53	17.667	1.97	23.75	1.32
5.583	1.75	11.667	10.53	17.750	1.97	23.83	1.32
5.667	1.75	11.750	10.53	17.833	1.97	23.92	1.32
5.750	1.75	11.833	32.46	17.917	1.97	24.00	1.32
5.833	1.75	11.917	32.47	18.000	1.97	24.08	1.32
5.917	1.75	12.000	32.47	18.083	1.97	24.17	1.32
6.000	1.75	12.083	134.24	18.167	1.97	24.25	1.32
6.083	1.75	12.167	134.25	18.250	1.97		

Max.Eff.Inten.(mm/hr)=	134.25	43.51	
over (min)	5.00	15.00	
Storage Coeff. (min)=	2.44 (ii)	12.29 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.30	0.09	
			TOTALS
PEAK FLOW (cms)=	0.14	0.10	0.221 (iii)
TIME TO PEAK (hrs)=	12.25	12.33	12.25
RUNOFF VOLUME (mm)=	108.68	26.73	42.87
TOTAL RAINFALL (mm)=	109.68	109.68	109.68
RUNOFF COEFFICIENT =	0.99	0.24	0.39

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
YOU SHOULD CONSIDER SPLITTING THE AREA.

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 44.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
STANDHYD (0107) | Area (ha)= 0.74
ID= 1 DT= 5.0 min | Total Imp(%)= 42.60 Dir. Conn.(%)= 42.60

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.32	0.42
Dep. Storage	(mm)=	1.00	8.30
Average Slope	(%)=	1.00	2.00
Length	(m)=	70.24	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.75	12.250	134.25	18.33	1.97
0.167	0.00	6.250	1.75	12.333	15.81	18.42	1.97
0.250	0.00	6.333	1.97	12.417	15.79	18.50	1.97
0.333	1.21	6.417	1.97	12.500	15.79	18.58	1.97
0.417	1.21	6.500	1.97	12.583	15.79	18.67	1.97
0.500	1.21	6.583	1.97	12.667	15.79	18.75	1.97
0.583	1.21	6.667	1.97	12.750	15.79	18.83	1.97
0.667	1.21	6.750	1.97	12.833	8.12	18.92	1.97
0.750	1.21	6.833	1.97	12.917	8.12	19.00	1.97
0.833	1.21	6.917	1.97	13.000	8.12	19.08	1.97
0.917	1.21	7.000	1.97	13.083	8.12	19.17	1.97
1.000	1.21	7.083	1.97	13.167	8.12	19.25	1.97
1.083	1.21	7.167	1.97	13.250	8.12	19.33	1.97
1.167	1.21	7.250	1.97	13.333	5.92	19.42	1.97
1.250	1.21	7.333	2.41	13.417	5.92	19.50	1.97
1.333	1.21	7.417	2.41	13.500	5.92	19.58	1.97
1.417	1.21	7.500	2.41	13.583	5.92	19.67	1.97
1.500	1.21	7.583	2.41	13.667	5.92	19.75	1.97
1.583	1.21	7.667	2.41	13.750	5.92	19.83	1.97
1.667	1.21	7.750	2.41	13.833	4.61	19.92	1.97
1.750	1.21	7.833	2.41	13.917	4.61	20.00	1.97
1.833	1.21	7.917	2.41	14.000	4.61	20.08	1.97
1.917	1.21	8.000	2.41	14.083	4.61	20.17	1.97
2.000	1.21	8.083	2.41	14.167	4.61	20.25	1.97
2.083	1.21	8.167	2.41	14.250	4.61	20.33	1.32
2.167	1.21	8.250	2.41	14.333	3.29	20.42	1.32
2.250	1.21	8.333	2.85	14.417	3.29	20.50	1.32
2.333	1.43	8.417	2.85	14.500	3.29	20.58	1.32
2.417	1.43	8.500	2.85	14.583	3.29	20.67	1.32
2.500	1.43	8.583	2.85	14.667	3.29	20.75	1.32
2.583	1.43	8.667	2.85	14.750	3.29	20.83	1.32
2.667	1.43	8.750	2.85	14.833	3.29	20.92	1.32
2.750	1.43	8.833	3.07	14.917	3.29	21.00	1.32
2.833	1.43	8.917	3.07	15.000	3.29	21.08	1.32
2.917	1.43	9.000	3.07	15.083	3.29	21.17	1.32
3.000	1.43	9.083	3.07	15.167	3.29	21.25	1.32
3.083	1.43	9.167	3.07	15.250	3.29	21.33	1.32
3.167	1.43	9.250	3.07	15.333	3.29	21.42	1.32
3.250	1.43	9.333	3.51	15.417	3.29	21.50	1.32
3.333	1.43	9.417	3.51	15.500	3.29	21.58	1.32
3.417	1.43	9.500	3.51	15.583	3.29	21.67	1.32
3.500	1.43	9.583	3.51	15.667	3.29	21.75	1.32
3.583	1.43	9.667	3.51	15.750	3.29	21.83	1.32
3.667	1.43	9.750	3.51	15.833	3.29	21.92	1.32
3.750	1.43	9.833	3.95	15.917	3.29	22.00	1.32
3.833	1.43	9.917	3.95	16.000	3.29	22.08	1.32
3.917	1.43	10.000	3.95	16.083	3.29	22.17	1.32
4.000	1.43	10.083	3.95	16.167	3.29	22.25	1.32
4.083	1.43	10.167	3.95	16.250	3.29	22.33	1.32
4.167	1.43	10.250	3.95	16.333	1.97	22.42	1.32
4.250	1.43	10.333	5.05	16.417	1.97	22.50	1.32
4.333	1.75	10.417	5.05	16.500	1.97	22.58	1.32
4.417	1.75	10.500	5.05	16.583	1.97	22.67	1.32
4.500	1.75	10.583	5.05	16.667	1.97	22.75	1.32
4.583	1.75	10.667	5.05	16.750	1.97	22.83	1.32
4.667	1.75	10.750	5.05	16.833	1.97	22.92	1.32
4.750	1.75	10.833	6.80	16.917	1.97	23.00	1.32
4.833	1.75	10.917	6.80	17.000	1.97	23.08	1.32
4.917	1.75	11.000	6.80	17.083	1.97	23.17	1.32
5.000	1.75	11.083	6.80	17.167	1.97	23.25	1.32
5.083	1.75	11.167	6.80	17.250	1.97	23.33	1.32
5.167	1.75	11.250	6.80	17.333	1.97	23.42	1.32
5.250	1.75	11.333	10.53	17.417	1.97	23.50	1.32
5.333	1.75	11.417	10.53	17.500	1.97	23.58	1.32
5.417	1.75	11.500	10.53	17.583	1.97	23.67	1.32
5.500	1.75	11.583	10.53	17.667	1.97	23.75	1.32
5.583	1.75	11.667	10.53	17.750	1.97	23.83	1.32

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              5.667    1.75 |11.750   10.53 |17.833    1.97 | 23.92    1.32
              5.750    1.75 |11.833   32.46 |17.917    1.97 | 24.00    1.32
              5.833    1.75 |11.917   32.47 |18.000    1.97 | 24.08    1.32
              5.917    1.75 |12.000   32.47 |18.083    1.97 | 24.17    1.32
              6.000    1.75 |12.083  134.24 |18.167    1.97 | 24.25    1.32
              6.083    1.75 |12.167  134.25 |18.250    1.97 |

    Max.Eff.Inten.(mm/hr)=     134.25        25.64
               over (min)        5.00        15.00
    Storage Coeff.  (min)=       1.84 (ii)   14.00 (ii)
    Unit Hyd. Tpeak (min)=       5.00        15.00
    Unit Hyd. peak  (cms)=       0.32         0.08
                                                        *TOTALS*
    PEAK FLOW       (cms)=       0.12         0.02          0.132 (iii)
    TIME TO PEAK    (hrs)=      12.25        12.33          12.25
    RUNOFF VOLUME    (mm)=     108.68        19.59          57.53
    TOTAL RAINFALL   (mm)=     109.68       109.68         109.68
    RUNOFF COEFFICIENT   =       0.99         0.18           0.52

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

      (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  37.5    Ia = Dep. Storage  (Above)
     (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
          THAN THE STORAGE COEFFICIENT.
    (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------

-------------------
| ADD HYD  (  0902)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
-------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0105):     1.85   0.212    12.25    43.16
     + ID2= 2 (  0106):     1.91   0.221    12.25    42.87
       ====================================================
       ID = 3 (  0902):     3.76   0.432    12.25    43.01

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

-------------------
| ADD HYD  (  0902)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
-------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0902):     3.76   0.432    12.25    43.01
     + ID2= 2 (  0107):     0.74   0.132    12.25    57.53
       ====================================================
       ID = 1 (  0902):     4.50   0.565    12.25    45.40

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
-------------------
| CALIB            |
| STANDHYD (  0101)|   Area    (ha)=   0.32
|ID= 1 DT= 5.0 min |   Total Imp(%)=  35.50   Dir. Conn.(%)=  35.50
-------------------
                          IMPERVIOUS    PERVIOUS (i)
    Surface Area     (ha)=       0.11         0.21
    Dep. Storage     (mm)=       1.00         8.06
    Average Slope     (%)=       1.00         2.00
    Length            (m)=      46.19        40.00
    Mannings n           =      0.013        0.250

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                          ---- TRANSFORMED HYETOGRAPH ----
               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    0.00 | 6.167    1.75 |12.250  134.25 | 18.33    1.97
               0.167    0.00 | 6.250    1.75 |12.333   15.81 | 18.42    1.97
               0.250    0.00 | 6.333    1.97 |12.417   15.79 | 18.50    1.97
               0.333    1.21 | 6.417    1.97 |12.500   15.79 | 18.58    1.97
               0.417    1.21 | 6.500    1.97 |12.583   15.79 | 18.67    1.97
               0.500    1.21 | 6.583    1.97 |12.667   15.79 | 18.75    1.97
               0.583    1.21 | 6.667    1.97 |12.750   15.79 | 18.83    1.97
               0.667    1.21 | 6.750    1.97 |12.833    8.12 | 18.92    1.97
               0.750    1.21 | 6.833    1.97 |12.917    8.12 | 19.00    1.97
               0.833    1.21 | 6.917    1.97 |13.000    8.12 | 19.08    1.97
               0.917    1.21 | 7.000    1.97 |13.083    8.12 | 19.17    1.97
               1.000    1.21 | 7.083    1.97 |13.167    8.12 | 19.25    1.97
               1.083    1.21 | 7.167    1.97 |13.250    8.12 | 19.33    1.97
               1.167    1.21 | 7.250    1.97 |13.333    5.92 | 19.42    1.97
               1.250    1.21 | 7.333    2.41 |13.417    5.92 | 19.50    1.97
               1.333    1.21 | 7.417    2.41 |13.500    5.92 | 19.58    1.97
               1.417    1.21 | 7.500    2.41 |13.583    5.92 | 19.67    1.97
               1.500    1.21 | 7.583    2.41 |13.667    5.92 | 19.75    1.97
               1.583    1.21 | 7.667    2.41 |13.750    5.92 | 19.83    1.97
               1.667    1.21 | 7.750    2.41 |13.833    4.61 | 19.92    1.97
               1.750    1.21 | 7.833    2.41 |13.917    4.61 | 20.00    1.97
               1.833    1.21 | 7.917    2.41 |14.000    4.61 | 20.08    1.97
               1.917    1.21 | 8.000    2.41 |14.083    4.61 | 20.17    1.97
               2.000    1.21 | 8.083    2.41 |14.167    4.61 | 20.25    1.97
               2.083    1.21 | 8.167    2.41 |14.250    4.61 | 20.33    1.32
               2.167    1.21 | 8.250    2.41 |14.333    3.29 | 20.42    1.32
               2.250    1.21 | 8.333    2.85 |14.417    3.29 | 20.50    1.32
               2.333    1.43 | 8.417    2.85 |14.500    3.29 | 20.58    1.32
               2.417    1.43 | 8.500    2.85 |14.583    3.29 | 20.67    1.32
               2.500    1.43 | 8.583    2.85 |14.667    3.29 | 20.75    1.32
               2.583    1.43 | 8.667    2.85 |14.750    3.29 | 20.83    1.32
               2.667    1.43 | 8.750    2.85 |14.833    3.29 | 20.92    1.32
               2.750    1.43 | 8.833    3.07 |14.917    3.29 | 21.00    1.32
               2.833    1.43 | 8.917    3.07 |15.000    3.29 | 21.08    1.32
               2.917    1.43 | 9.000    3.07 |15.083    3.29 | 21.17    1.32
               3.000    1.43 | 9.083    3.07 |15.167    3.29 | 21.25    1.32
               3.083    1.43 | 9.167    3.07 |15.250    3.29 | 21.33    1.32
               3.167    1.43 | 9.250    3.07 |15.333    3.29 | 21.42    1.32
               3.250    1.43 | 9.333    3.51 |15.417    3.29 | 21.50    1.32
               3.333    1.43 | 9.417    3.51 |15.500    3.29 | 21.58    1.32
               3.417    1.43 | 9.500    3.51 |15.583    3.29 | 21.67    1.32
               3.500    1.43 | 9.583    3.51 |15.667    3.29 | 21.75    1.32
               3.583    1.43 | 9.667    3.51 |15.750    3.29 | 21.83    1.32
               3.667    1.43 | 9.750    3.51 |15.833    3.29 | 21.92    1.32
               3.750    1.43 | 9.833    3.95 |15.917    3.29 | 22.00    1.32
               3.833    1.43 | 9.917    3.95 |16.000    3.29 | 22.08    1.32
               3.917    1.43 |10.000    3.95 |16.083    3.29 | 22.17    1.32
               4.000    1.43 |10.083    3.95 |16.167    3.29 | 22.25    1.32
               4.083    1.43 |10.167    3.95 |16.250    3.29 | 22.33    1.32
               4.167    1.43 |10.250    3.95 |16.333    1.97 | 22.42    1.32
               4.250    1.43 |10.333    5.05 |16.417    1.97 | 22.50    1.32
               4.333    1.75 |10.417    5.05 |16.500    1.97 | 22.58    1.32
               4.417    1.75 |10.500    5.05 |16.583    1.97 | 22.67    1.32
               4.500    1.75 |10.583    5.05 |16.667    1.97 | 22.75    1.32
               4.583    1.75 |10.667    5.05 |16.750    1.97 | 22.83    1.32
               4.667    1.75 |10.750    5.05 |16.833    1.97 | 22.92    1.32
               4.750    1.75 |10.833    6.80 |16.917    1.97 | 23.00    1.32
               4.833    1.75 |10.917    6.80 |17.000    1.97 | 23.08    1.32
               4.917    1.75 |11.000    6.80 |17.083    1.97 | 23.17    1.32
               5.000    1.75 |11.083    6.80 |17.167    1.97 | 23.25    1.32
               5.083    1.75 |11.167    6.80 |17.250    1.97 | 23.33    1.32
               5.167    1.75 |11.250    6.80 |17.333    1.97 | 23.42    1.32
               5.250    1.75 |11.333   10.53 |17.417    1.97 | 23.50    1.32
               5.333    1.75 |11.417   10.53 |17.500    1.97 | 23.58    1.32
               5.417    1.75 |11.500   10.53 |17.583    1.97 | 23.67    1.32
               5.500    1.75 |11.583   10.53 |17.667    1.97 | 23.75    1.32
               5.583    1.75 |11.667   10.53 |17.750    1.97 | 23.83    1.32
               5.667    1.75 |11.750   10.53 |17.833    1.97 | 23.92    1.32
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5.750	1.75	11.833	32.46	17.917	1.97	24.00	1.32
5.833	1.75	11.917	32.47	18.000	1.97	24.08	1.32
5.917	1.75	12.000	32.47	18.083	1.97	24.17	1.32
6.000	1.75	12.083	134.24	18.167	1.97	24.25	1.32
6.083	1.75	12.167	134.25	18.250	1.97		

Max.Eff.Inten.(mm/hr)=	134.25	25.39	
over (min)	5.00	15.00	
Storage Coeff. (min)=	1.43 (ii)	13.64 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.33	0.08	
			TOTALS
PEAK FLOW (cms)=	0.04	0.01	0.050 (iii)
TIME TO PEAK (hrs)=	12.25	12.33	12.25
RUNOFF VOLUME (mm)=	108.68	19.40	51.07
TOTAL RAINFALL (mm)=	109.68	109.68	109.68
RUNOFF COEFFICIENT =	0.99	0.18	0.47

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 37.1 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
STANDHYD (0102) | Area (ha)= 0.25
ID= 1 DT= 5.0 min | Total Imp(%)= 57.30 Dir. Conn.(%)= 42.50

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.14	0.11
Dep. Storage	(mm)=	1.00	6.98
Average Slope	(%)=	1.00	2.00
Length	(m)=	40.82	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.75	12.250	134.25	18.33	1.97
0.167	0.00	6.250	1.75	12.333	15.81	18.42	1.97
0.250	0.00	6.333	1.97	12.417	15.79	18.50	1.97
0.333	1.21	6.417	1.97	12.500	15.79	18.58	1.97
0.417	1.21	6.500	1.97	12.583	15.79	18.67	1.97
0.500	1.21	6.583	1.97	12.667	15.79	18.75	1.97
0.583	1.21	6.667	1.97	12.750	15.79	18.83	1.97
0.667	1.21	6.750	1.97	12.833	8.12	18.92	1.97
0.750	1.21	6.833	1.97	12.917	8.12	19.00	1.97
0.833	1.21	6.917	1.97	13.000	8.12	19.08	1.97
0.917	1.21	7.000	1.97	13.083	8.12	19.17	1.97
1.000	1.21	7.083	1.97	13.167	8.12	19.25	1.97
1.083	1.21	7.167	1.97	13.250	8.12	19.33	1.97
1.167	1.21	7.250	1.97	13.333	5.92	19.42	1.97
1.250	1.21	7.333	2.41	13.417	5.92	19.50	1.97
1.333	1.21	7.417	2.41	13.500	5.92	19.58	1.97
1.417	1.21	7.500	2.41	13.583	5.92	19.67	1.97
1.500	1.21	7.583	2.41	13.667	5.92	19.75	1.97
1.583	1.21	7.667	2.41	13.750	5.92	19.83	1.97
1.667	1.21	7.750	2.41	13.833	4.61	19.92	1.97
1.750	1.21	7.833	2.41	13.917	4.61	20.00	1.97
1.833	1.21	7.917	2.41	14.000	4.61	20.08	1.97
1.917	1.21	8.000	2.41	14.083	4.61	20.17	1.97
2.000	1.21	8.083	2.41	14.167	4.61	20.25	1.97
2.083	1.21	8.167	2.41	14.250	4.61	20.33	1.32
2.167	1.21	8.250	2.41	14.333	3.29	20.42	1.32
2.250	1.21	8.333	2.85	14.417	3.29	20.50	1.32
2.333	1.43	8.417	2.85	14.500	3.29	20.58	1.32
2.417	1.43	8.500	2.85	14.583	3.29	20.67	1.32
2.500	1.43	8.583	2.85	14.667	3.29	20.75	1.32
2.583	1.43	8.667	2.85	14.750	3.29	20.83	1.32
2.667	1.43	8.750	2.85	14.833	3.29	20.92	1.32
2.750	1.43	8.833	3.07	14.917	3.29	21.00	1.32
2.833	1.43	8.917	3.07	15.000	3.29	21.08	1.32
2.917	1.43	9.000	3.07	15.083	3.29	21.17	1.32
3.000	1.43	9.083	3.07	15.167	3.29	21.25	1.32
3.083	1.43	9.167	3.07	15.250	3.29	21.33	1.32
3.167	1.43	9.250	3.07	15.333	3.29	21.42	1.32
3.250	1.43	9.333	3.51	15.417	3.29	21.50	1.32
3.333	1.43	9.417	3.51	15.500	3.29	21.58	1.32
3.417	1.43	9.500	3.51	15.583	3.29	21.67	1.32
3.500	1.43	9.583	3.51	15.667	3.29	21.75	1.32
3.583	1.43	9.667	3.51	15.750	3.29	21.83	1.32
3.667	1.43	9.750	3.51	15.833	3.29	21.92	1.32
3.750	1.43	9.833	3.95	15.917	3.29	22.00	1.32
3.833	1.43	9.917	3.95	16.000	3.29	22.08	1.32
3.917	1.43	10.000	3.95	16.083	3.29	22.17	1.32
4.000	1.43	10.083	3.95	16.167	3.29	22.25	1.32
4.083	1.43	10.167	3.95	16.250	3.29	22.33	1.32
4.167	1.43	10.250	3.95	16.333	1.97	22.42	1.32
4.250	1.43	10.333	5.05	16.417	1.97	22.50	1.32
4.333	1.75	10.417	5.05	16.500	1.97	22.58	1.32
4.417	1.75	10.500	5.05	16.583	1.97	22.67	1.32
4.500	1.75	10.583	5.05	16.667	1.97	22.75	1.32
4.583	1.75	10.667	5.05	16.750	1.97	22.83	1.32
4.667	1.75	10.750	5.05	16.833	1.97	22.92	1.32
4.750	1.75	10.833	6.80	16.917	1.97	23.00	1.32
4.833	1.75	10.917	6.80	17.000	1.97	23.08	1.32
4.917	1.75	11.000	6.80	17.083	1.97	23.17	1.32
5.000	1.75	11.083	6.80	17.167	1.97	23.25	1.32
5.083	1.75	11.167	6.80	17.250	1.97	23.33	1.32
5.167	1.75	11.250	6.80	17.333	1.97	23.42	1.32
5.250	1.75	11.333	10.53	17.417	1.97	23.50	1.32
5.333	1.75	11.417	10.53	17.500	1.97	23.58	1.32
5.417	1.75	11.500	10.53	17.583	1.97	23.67	1.32
5.500	1.75	11.583	10.53	17.667	1.97	23.75	1.32
5.583	1.75	11.667	10.53	17.750	1.97	23.83	1.32
5.667	1.75	11.750	10.53	17.833	1.97	23.92	1.32
5.750	1.75	11.833	32.46	17.917	1.97	24.00	1.32
5.833	1.75	11.917	32.47	18.000	1.97	24.08	1.32
5.917	1.75	12.000	32.47	18.083	1.97	24.17	1.32
6.000	1.75	12.083	134.24	18.167	1.97	24.25	1.32
6.083	1.75	12.167	134.25	18.250	1.97		

Max.Eff.Inten.(mm/hr)=	134.25	51.00	
over (min)	5.00	15.00	
Storage Coeff. (min)=	1.33 (ii)	10.57 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.33	0.09	
			TOTALS
PEAK FLOW (cms)=	0.04	0.01	0.048 (iii)
TIME TO PEAK (hrs)=	12.25	12.33	12.25
RUNOFF VOLUME (mm)=	108.68	26.24	61.25
TOTAL RAINFALL (mm)=	109.68	109.68	109.68
RUNOFF COEFFICIENT =	0.99	0.24	0.56

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 37.7 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD  (  0901)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0101):     0.32   0.050    12.25    51.07
     + ID2= 2 (  0102):     0.25   0.048    12.25    61.25
       ================================================
       ID = 3 (  0901):     0.57   0.097    12.25    55.53

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| CALIB            |
| NASHYD   (  0112)|   Area    (ha)=   0.82   Curve Number   (CN)= 46.1
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.61   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.37

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.75	12.250	134.25	18.33	1.97
0.167	0.00	6.250	1.75	12.333	15.81	18.42	1.97
0.250	0.00	6.333	1.97	12.417	15.79	18.50	1.97
0.333	1.21	6.417	1.97	12.500	15.79	18.58	1.97
0.417	1.21	6.500	1.97	12.583	15.79	18.67	1.97
0.500	1.21	6.583	1.97	12.667	15.79	18.75	1.97
0.583	1.21	6.667	1.97	12.750	15.79	18.83	1.97
0.667	1.21	6.750	1.97	12.833	8.12	18.92	1.97
0.750	1.21	6.833	1.97	12.917	8.12	19.00	1.97
0.833	1.21	6.917	1.97	13.000	8.12	19.08	1.97
0.917	1.21	7.000	1.97	13.083	8.12	19.17	1.97
1.000	1.21	7.083	1.97	13.167	8.12	19.25	1.97
1.083	1.21	7.167	1.97	13.250	8.12	19.33	1.97
1.167	1.21	7.250	1.97	13.333	5.92	19.42	1.97
1.250	1.21	7.333	2.41	13.417	5.92	19.50	1.97
1.333	1.21	7.417	2.41	13.500	5.92	19.58	1.97
1.417	1.21	7.500	2.41	13.583	5.92	19.67	1.97
1.500	1.21	7.583	2.41	13.667	5.92	19.75	1.97
1.583	1.21	7.667	2.41	13.750	5.92	19.83	1.97
1.667	1.21	7.750	2.41	13.833	4.61	19.92	1.97
1.750	1.21	7.833	2.41	13.917	4.61	20.00	1.97
1.833	1.21	7.917	2.41	14.000	4.61	20.08	1.97
1.917	1.21	8.000	2.41	14.083	4.61	20.17	1.97
2.000	1.21	8.083	2.41	14.167	4.61	20.25	1.97
2.083	1.21	8.167	2.41	14.250	4.61	20.33	1.32
2.167	1.21	8.250	2.41	14.333	3.29	20.42	1.32
2.250	1.21	8.333	2.85	14.417	3.29	20.50	1.32
2.333	1.43	8.417	2.85	14.500	3.29	20.58	1.32
2.417	1.43	8.500	2.85	14.583	3.29	20.67	1.32
2.500	1.43	8.583	2.85	14.667	3.29	20.75	1.32
2.583	1.43	8.667	2.85	14.750	3.29	20.83	1.32
2.667	1.43	8.750	2.85	14.833	3.29	20.92	1.32
2.750	1.43	8.833	3.07	14.917	3.29	21.00	1.32
2.833	1.43	8.917	3.07	15.000	3.29	21.08	1.32
2.917	1.43	9.000	3.07	15.083	3.29	21.17	1.32
3.000	1.43	9.083	3.07	15.167	3.29	21.25	1.32
3.083	1.43	9.167	3.07	15.250	3.29	21.33	1.32
3.167	1.43	9.250	3.07	15.333	3.29	21.42	1.32
3.250	1.43	9.333	3.51	15.417	3.29	21.50	1.32
3.333	1.43	9.417	3.51	15.500	3.29	21.58	1.32
3.417	1.43	9.500	3.51	15.583	3.29	21.67	1.32
3.500	1.43	9.583	3.51	15.667	3.29	21.75	1.32
3.583	1.43	9.667	3.51	15.750	3.29	21.83	1.32
3.667	1.43	9.750	3.51	15.833	3.29	21.92	1.32
3.750	1.43	9.833	3.95	15.917	3.29	22.00	1.32
3.833	1.43	9.917	3.95	16.000	3.29	22.08	1.32
3.917	1.43	10.000	3.95	16.083	3.29	22.17	1.32
4.000	1.43	10.083	3.95	16.167	3.29	22.25	1.32
4.083	1.43	10.167	3.95	16.250	3.29	22.33	1.32
4.167	1.43	10.250	3.95	16.333	1.97	22.42	1.32
4.250	1.43	10.333	5.05	16.417	1.97	22.50	1.32
4.333	1.75	10.417	5.05	16.500	1.97	22.58	1.32
4.417	1.75	10.500	5.05	16.583	1.97	22.67	1.32
4.500	1.75	10.583	5.05	16.667	1.97	22.75	1.32
4.583	1.75	10.667	5.05	16.750	1.97	22.83	1.32
4.667	1.75	10.750	5.05	16.833	1.97	22.92	1.32
4.750	1.75	10.833	6.80	16.917	1.97	23.00	1.32
4.833	1.75	10.917	6.80	17.000	1.97	23.08	1.32
4.917	1.75	11.000	6.80	17.083	1.97	23.17	1.32
5.000	1.75	11.083	6.80	17.167	1.97	23.25	1.32
5.083	1.75	11.167	6.80	17.250	1.97	23.33	1.32
5.167	1.75	11.250	6.80	17.333	1.97	23.42	1.32
5.250	1.75	11.333	10.53	17.417	1.97	23.50	1.32
5.333	1.75	11.417	10.53	17.500	1.97	23.58	1.32
5.417	1.75	11.500	10.53	17.583	1.97	23.67	1.32
5.500	1.75	11.583	10.53	17.667	1.97	23.75	1.32
5.583	1.75	11.667	10.53	17.750	1.97	23.83	1.32
5.667	1.75	11.750	10.53	17.833	1.97	23.92	1.32
5.750	1.75	11.833	32.46	17.917	1.97	24.00	1.32
5.833	1.75	11.917	32.47	18.000	1.97	24.08	1.32
5.917	1.75	12.000	32.47	18.083	1.97	24.17	1.32
6.000	1.75	12.083	134.24	18.167	1.97	24.25	1.32
6.083	1.75	12.167	134.25	18.250	1.97		

```
    Unit Hyd Qpeak  (cms)=   0.085

    PEAK FLOW       (cms)=   0.034 (i)
    TIME TO PEAK    (hrs)=  12.500
    RUNOFF VOLUME    (mm)=  26.103
    TOTAL RAINFALL   (mm)= 109.680
    RUNOFF COEFFICIENT   =   0.238

    (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
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--------------------
| ADD HYD  (  0904)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0112):     0.82   0.034    12.50    26.10
     + ID2= 2 (  0901):     0.57   0.097    12.25    55.53
       ================================================
       ID = 3 (  0904):     1.39   0.118    12.25    38.17

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| CALIB            |
| NASHYD   (  0110)|   Area    (ha)=   2.03   Curve Number   (CN)= 47.4
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.71   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.16

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.75	12.250	134.25	18.33	1.97
0.167	0.00	6.250	1.75	12.333	15.81	18.42	1.97
0.250	0.00	6.333	1.97	12.417	15.79	18.50	1.97

0.333	1.21	6.417	1.97	12.500	15.79	18.58	1.97
0.417	1.21	6.500	1.97	12.583	15.79	18.67	1.97
0.500	1.21	6.583	1.97	12.667	15.79	18.75	1.97
0.583	1.21	6.667	1.97	12.750	15.79	18.83	1.97
0.667	1.21	6.750	1.97	12.833	8.12	18.92	1.97
0.750	1.21	6.833	1.97	12.917	8.12	19.00	1.97
0.833	1.21	6.917	1.97	13.000	8.12	19.08	1.97
0.917	1.21	7.000	1.97	13.083	8.12	19.17	1.97
1.000	1.21	7.083	1.97	13.167	8.12	19.25	1.97
1.083	1.21	7.167	1.97	13.250	8.12	19.33	1.97
1.167	1.21	7.250	1.97	13.333	5.92	19.42	1.97
1.250	1.21	7.333	2.41	13.417	5.92	19.50	1.97
1.333	1.21	7.417	2.41	13.500	5.92	19.58	1.97
1.417	1.21	7.500	2.41	13.583	5.92	19.67	1.97
1.500	1.21	7.583	2.41	13.667	5.92	19.75	1.97
1.583	1.21	7.667	2.41	13.750	5.92	19.83	1.97
1.667	1.21	7.750	2.41	13.833	4.61	19.92	1.97
1.750	1.21	7.833	2.41	13.917	4.61	20.00	1.97
1.833	1.21	7.917	2.41	14.000	4.61	20.08	1.97
1.917	1.21	8.000	2.41	14.083	4.61	20.17	1.97
2.000	1.21	8.083	2.41	14.167	4.61	20.25	1.97
2.083	1.21	8.167	2.41	14.250	4.61	20.33	1.32
2.167	1.21	8.250	2.41	14.333	3.29	20.42	1.32
2.250	1.21	8.333	2.85	14.417	3.29	20.50	1.32
2.333	1.43	8.417	2.85	14.500	3.29	20.58	1.32
2.417	1.43	8.500	2.85	14.583	3.29	20.67	1.32
2.500	1.43	8.583	2.85	14.667	3.29	20.75	1.32
2.583	1.43	8.667	2.85	14.750	3.29	20.83	1.32
2.667	1.43	8.750	2.85	14.833	3.29	20.92	1.32
2.750	1.43	8.833	3.07	14.917	3.29	21.00	1.32
2.833	1.43	8.917	3.07	15.000	3.29	21.08	1.32
2.917	1.43	9.000	3.07	15.083	3.29	21.17	1.32
3.000	1.43	9.083	3.07	15.167	3.29	21.25	1.32
3.083	1.43	9.167	3.07	15.250	3.29	21.33	1.32
3.167	1.43	9.250	3.07	15.333	3.29	21.42	1.32
3.250	1.43	9.333	3.51	15.417	3.29	21.50	1.32
3.333	1.43	9.417	3.51	15.500	3.29	21.58	1.32
3.417	1.43	9.500	3.51	15.583	3.29	21.67	1.32
3.500	1.43	9.583	3.51	15.667	3.29	21.75	1.32
3.583	1.43	9.667	3.51	15.750	3.29	21.83	1.32
3.667	1.43	9.750	3.51	15.833	3.29	21.92	1.32
3.750	1.43	9.833	3.95	15.917	3.29	22.00	1.32
3.833	1.43	9.917	3.95	16.000	3.29	22.08	1.32
3.917	1.43	10.000	3.95	16.083	3.29	22.17	1.32
4.000	1.43	10.083	3.95	16.167	3.29	22.25	1.32
4.083	1.43	10.167	3.95	16.250	3.29	22.33	1.32
4.167	1.43	10.250	3.95	16.333	1.97	22.42	1.32
4.250	1.43	10.333	5.05	16.417	1.97	22.50	1.32
4.333	1.75	10.417	5.05	16.500	1.97	22.58	1.32
4.417	1.75	10.500	5.05	16.583	1.97	22.67	1.32
4.500	1.75	10.583	5.05	16.667	1.97	22.75	1.32
4.583	1.75	10.667	5.05	16.750	1.97	22.83	1.32
4.667	1.75	10.750	5.05	16.833	1.97	22.92	1.32
4.750	1.75	10.833	6.80	16.917	1.97	23.00	1.32
4.833	1.75	10.917	6.80	17.000	1.97	23.08	1.32
4.917	1.75	11.000	6.80	17.083	1.97	23.17	1.32
5.000	1.75	11.083	6.80	17.167	1.97	23.25	1.32
5.083	1.75	11.167	6.80	17.250	1.97	23.33	1.32
5.167	1.75	11.250	6.80	17.333	1.97	23.42	1.32
5.250	1.75	11.333	10.53	17.417	1.97	23.50	1.32
5.333	1.75	11.417	10.53	17.500	1.97	23.58	1.32
5.417	1.75	11.500	10.53	17.583	1.97	23.67	1.32
5.500	1.75	11.583	10.53	17.667	1.97	23.75	1.32
5.583	1.75	11.667	10.53	17.750	1.97	23.83	1.32
5.667	1.75	11.750	10.53	17.833	1.97	23.92	1.32
5.750	1.75	11.833	32.46	17.917	1.97	24.00	1.32
5.833	1.75	11.917	32.47	18.000	1.97	24.08	1.32
5.917	1.75	12.000	32.47	18.083	1.97	24.17	1.32
6.000	1.75	12.083	134.24	18.167	1.97	24.25	1.32
6.083	1.75	12.167	134.25	18.250	1.97		

Unit Hyd Qpeak (cms)= 0.485

PEAK FLOW (cms)= 0.151 (i)
TIME TO PEAK (hrs)= 12.250
RUNOFF VOLUME (mm)= 26.967
TOTAL RAINFALL (mm)= 109.680
RUNOFF COEFFICIENT = 0.246

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB					
STANDHYD (0108)	Area (ha)=	0.18			
ID= 1 DT= 5.0 min	Total Imp(%)=	50.30	Dir. Conn.(%)=	50.30	

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.09	0.09
Dep. Storage	(mm)=	1.00	5.03
Average Slope	(%)=	1.00	2.00
Length	(m)=	34.64	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.75	12.250	134.25	18.33	1.97
0.167	0.00	6.250	1.75	12.333	15.81	18.42	1.97
0.250	0.00	6.333	1.97	12.417	15.79	18.50	1.97
0.333	1.21	6.417	1.97	12.500	15.79	18.58	1.97
0.417	1.21	6.500	1.97	12.583	15.79	18.67	1.97
0.500	1.21	6.583	1.97	12.667	15.79	18.75	1.97
0.583	1.21	6.667	1.97	12.750	15.79	18.83	1.97
0.667	1.21	6.750	1.97	12.833	8.12	18.92	1.97
0.750	1.21	6.833	1.97	12.917	8.12	19.00	1.97
0.833	1.21	6.917	1.97	13.000	8.12	19.08	1.97
0.917	1.21	7.000	1.97	13.083	8.12	19.17	1.97
1.000	1.21	7.083	1.97	13.167	8.12	19.25	1.97
1.083	1.21	7.167	1.97	13.250	8.12	19.33	1.97
1.167	1.21	7.250	1.97	13.333	5.92	19.42	1.97
1.250	1.21	7.333	2.41	13.417	5.92	19.50	1.97
1.333	1.21	7.417	2.41	13.500	5.92	19.58	1.97
1.417	1.21	7.500	2.41	13.583	5.92	19.67	1.97
1.500	1.21	7.583	2.41	13.667	5.92	19.75	1.97
1.583	1.21	7.667	2.41	13.750	5.92	19.83	1.97
1.667	1.21	7.750	2.41	13.833	4.61	19.92	1.97
1.750	1.21	7.833	2.41	13.917	4.61	20.00	1.97
1.833	1.21	7.917	2.41	14.000	4.61	20.08	1.97
1.917	1.21	8.000	2.41	14.083	4.61	20.17	1.97
2.000	1.21	8.083	2.41	14.167	4.61	20.25	1.97
2.083	1.21	8.167	2.41	14.250	4.61	20.33	1.32
2.167	1.21	8.250	2.41	14.333	3.29	20.42	1.32
2.250	1.21	8.333	2.85	14.417	3.29	20.50	1.32
2.333	1.43	8.417	2.85	14.500	3.29	20.58	1.32
2.417	1.43	8.500	2.85	14.583	3.29	20.67	1.32
2.500	1.43	8.583	2.85	14.667	3.29	20.75	1.32
2.583	1.43	8.667	2.85	14.750	3.29	20.83	1.32
2.667	1.43	8.750	2.85	14.833	3.29	20.92	1.32
2.750	1.43	8.833	3.07	14.917	3.29	21.00	1.32
2.833	1.43	8.917	3.07	15.000	3.29	21.08	1.32
2.917	1.43	9.000	3.07	15.083	3.29	21.17	1.32
3.000	1.43	9.083	3.07	15.167	3.29	21.25	1.32
3.083	1.43	9.167	3.07	15.250	3.29	21.33	1.32
3.167	1.43	9.250	3.07	15.333	3.29	21.42	1.32

3.250	1.43	9.333	3.51	15.417	3.29	21.50	1.32
3.333	1.43	9.417	3.51	15.500	3.29	21.58	1.32
3.417	1.43	9.500	3.51	15.583	3.29	21.67	1.32
3.500	1.43	9.583	3.51	15.667	3.29	21.75	1.32
3.583	1.43	9.667	3.51	15.750	3.29	21.83	1.32
3.667	1.43	9.750	3.51	15.833	3.29	21.92	1.32
3.750	1.43	9.833	3.95	15.917	3.29	22.00	1.32
3.833	1.43	9.917	3.95	16.000	3.29	22.08	1.32
3.917	1.43	10.000	3.95	16.083	3.29	22.17	1.32
4.000	1.43	10.083	3.95	16.167	3.29	22.25	1.32
4.083	1.43	10.167	3.95	16.250	3.29	22.33	1.32
4.167	1.43	10.250	3.95	16.333	1.97	22.42	1.32
4.250	1.43	10.333	5.05	16.417	1.97	22.50	1.32
4.333	1.75	10.417	5.05	16.500	1.97	22.58	1.32
4.417	1.75	10.500	5.05	16.583	1.97	22.67	1.32
4.500	1.75	10.583	5.05	16.667	1.97	22.75	1.32
4.583	1.75	10.667	5.05	16.750	1.97	22.83	1.32
4.667	1.75	10.750	5.05	16.833	1.97	22.92	1.32
4.750	1.75	10.833	6.80	16.917	1.97	23.00	1.32
4.833	1.75	10.917	6.80	17.000	1.97	23.08	1.32
4.917	1.75	11.000	6.80	17.083	1.97	23.17	1.32
5.000	1.75	11.083	6.80	17.167	1.97	23.25	1.32
5.083	1.75	11.167	6.80	17.250	1.97	23.33	1.32
5.167	1.75	11.250	6.80	17.333	1.97	23.42	1.32
5.250	1.75	11.333	10.53	17.417	1.97	23.50	1.32
5.333	1.75	11.417	10.53	17.500	1.97	23.58	1.32
5.417	1.75	11.500	10.53	17.583	1.97	23.67	1.32
5.500	1.75	11.583	10.53	17.667	1.97	23.75	1.32
5.583	1.75	11.667	10.53	17.750	1.97	23.83	1.32
5.667	1.75	11.750	10.53	17.833	1.97	23.92	1.32
5.750	1.75	11.833	32.46	17.917	1.97	24.00	1.32
5.833	1.75	11.917	32.47	18.000	1.97	24.08	1.32
5.917	1.75	12.000	32.47	18.083	1.97	24.17	1.32
6.000	1.75	12.083	134.24	18.167	1.97	24.25	1.32
6.083	1.75	12.167	134.25	18.250	1.97		

Max.Eff.Inten.(mm/hr)=	134.25	43.39	
over (min)	5.00	15.00	
Storage Coeff. (min)=	1.20 (ii)	11.06 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.33	0.09	
			TOTALS
PEAK FLOW (cms)=	0.03	0.01	0.039 (iii)
TIME TO PEAK (hrs)=	12.25	12.33	12.25
RUNOFF VOLUME (mm)=	108.68	29.93	69.51
TOTAL RAINFALL (mm)=	109.68	109.68	109.68
RUNOFF COEFFICIENT =	0.99	0.27	0.63

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 49.3 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0905)					
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 1 (0108):	0.18	0.039	12.25	69.51	
+ ID2= 2 (0110):	2.03	0.151	12.25	26.97	
ID = 3 (0905):	2.21	0.190	12.25	30.43	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

FINISH

==========

VO SUMMARY OUTPUT - EX. CONDITIONS - ALL STORMS

```
================================================================================================================

       V    V   I    SSSSS  U   U    A    L             (v 6.2.2011)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
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  Summary filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\b6be28b0-c8de-47bd-bbed-68e77053b1a1
\sce


DATE: 09/21/2022                          TIME: 02:26:10

USER:


COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : RUN 01 - 2yr 4hr 10min Chicag **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     --------------------
    CHIC STORM                10.0
    [ Ptot= 33.14 mm ]
*
 *  CALIB STANDHYD       0109  1  5.0    0.34    0.04  1.33  17.34 0.52   0.000
    [I%=49.9:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 33.14 mm ]
*
 *  CALIB NASHYD         0111  1  5.0    0.21    0.00  1.42   3.96 0.12   0.000
    [CN=58.7         ]
    [ N = 3.0:Tp 0.17]
*
    CHIC STORM                10.0
    [ Ptot= 33.14 mm ]
*
 *  CALIB NASHYD         0103  1  5.0    0.31    0.00  1.50   2.36 0.07   0.000
    [CN=49.5         ]
    [ N = 3.0:Tp 0.20]
*
    CHIC STORM                10.0
    [ Ptot= 33.14 mm ]
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.04  1.33  18.82 0.57   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0103+  0104]  0903  3  5.0    0.59    0.04  1.33  10.17  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 33.14 mm ]
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.07  1.33   7.69 0.23   0.000
    [I%=18.2:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 33.14 mm ]
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.08  1.33   8.01 0.24   0.000
    [I%=19.7:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 33.14 mm ]
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.07  1.33  14.44 0.44   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0105+  0106]  0902  3  5.0    3.76    0.15  1.33   7.85  n/a   0.000
*
    ADD [  0902+  0107]  0902  1  5.0    4.50    0.22  1.33   8.94  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 33.14 mm ]
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.03  1.33  12.21 0.37   0.000
    [I%=35.5:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 33.14 mm ]
*
 *  CALIB STANDHYD       0102  1  5.0    0.25    0.02  1.33  14.90 0.45   0.000
    [I%=42.5:S%= 2.00]
*
    ADD [  0101+  0102]  0901  3  5.0    0.57    0.05  1.33  13.39  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 33.14 mm ]
*
 *  CALIB NASHYD         0112  1  5.0    0.82    0.00  1.83   2.02 0.06   0.000
    [CN=46.1         ]
    [ N = 3.0:Tp 0.37]
*
    ADD [  0112+  0901]  0904  3  5.0    1.39    0.05  1.33   6.68  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 33.14 mm ]
*
 *  CALIB NASHYD         0110  1  5.0    2.03    0.01  1.50   2.09 0.06   0.000
    [CN=47.4         ]
    [ N = 3.0:Tp 0.16]
*
    CHIC STORM                10.0
    [ Ptot= 33.14 mm ]
*
 *  CALIB STANDHYD       0108  1  5.0    0.18    0.02  1.33  17.40 0.53   0.000
    [I%=50.3:S%= 2.00]
*
    ADD [  0108+  0110]  0905  3  5.0    2.21    0.03  1.33   3.34  n/a   0.000
*
================================================================================================================
```

```
       V    V   I    SSSSS  U   U    A    L             (v 6.2.2011)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
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  Summary filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\2c0996f8-034c-43ec-beac-872d94a433e1
\sce


DATE: 09/21/2022                          TIME: 02:26:10

USER:


COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : RUN 02 - 5yr 4hr 10min Chicag **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha    '  cms   hrs     mm          cms

      START @  0.00 hrs
      -------------------
    CHIC STORM                10.0
    [ Ptot= 42.65 mm ]
*
 *  CALIB STANDHYD       0109  1  5.0    0.34    0.05  1.33  23.09 0.54   0.000
    [I%=49.9:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 42.65 mm ]
*
 *  CALIB NASHYD         0111  1  5.0    0.21    0.00  1.42   6.71 0.16   0.000
    [CN=58.7         ]
    [ N = 3.0:Tp 0.17]
*
    CHIC STORM                10.0
    [ Ptot= 42.65 mm ]
*
 *  CALIB NASHYD         0103  1  5.0    0.31    0.00  1.50   4.27 0.10   0.000
    [CN=49.5         ]
    [ N = 3.0:Tp 0.20]
*
    CHIC STORM                10.0
    [ Ptot= 42.65 mm ]
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.05  1.33  24.82 0.58   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0103+  0104]  0903  3  5.0    0.59    0.05  1.33  14.02  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 42.65 mm ]
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.10  1.33  10.95 0.26   0.000
    [I%=18.2:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 42.65 mm ]
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.11  1.33  11.27 0.26   0.000
    [I%=19.7:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 42.65 mm ]
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.09  1.33  19.19 0.45   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0105+  0106]  0902  3  5.0    3.76    0.21  1.33  11.11  n/a   0.000
*
    ADD [  0902+  0107]  0902  1  5.0    4.50    0.30  1.33  12.44  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 42.65 mm ]
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.03  1.33  16.38 0.38   0.000
    [I%=35.5:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 42.65 mm ]
*
 *  CALIB STANDHYD       0102  1  5.0    0.25    0.03  1.33  19.95 0.47   0.000
    [I%=42.5:S%= 2.00]
*
    ADD [  0101+  0102]  0901  3  5.0    0.57    0.07  1.33  17.95  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 42.65 mm ]
*
 *  CALIB NASHYD         0112  1  5.0    0.82    0.01  1.75   3.70 0.09   0.000
    [CN=46.1         ]
    [ N = 3.0:Tp 0.37]
*
    ADD [  0112+  0901]  0904  3  5.0    1.39    0.07  1.33   9.54  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 42.65 mm ]
*
 *  CALIB NASHYD         0110  1  5.0    2.03    0.02  1.42   3.84 0.09   0.000
    [CN=47.4         ]
    [ N = 3.0:Tp 0.16]
*
    CHIC STORM                10.0
    [ Ptot= 42.65 mm ]
*
 *  CALIB STANDHYD       0108  1  5.0    0.18    0.03  1.33  23.22 0.54   0.000
    [I%=50.3:S%= 2.00]
*
    ADD [  0108+  0110]  0905  3  5.0    2.21    0.04  1.33   5.41  n/a   0.000
*
================================================================================================================


       V    V   I    SSSSS  U   U    A    L             (v 6.2.2011)
```

```
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
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\sce
  Summary filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\636337e3-8aec-4f41-b15e-244c25b11c4d
\sce


DATE: 09/21/2022                          TIME: 02:26:10

USER:


COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : RUN 03 -10yr 4hr 10min Chicag **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms

      START @  0.00 hrs
      -------------------
    CHIC STORM                10.0
    [ Ptot= 48.90 mm ]
*
 *  CALIB STANDHYD       0109  1  5.0    0.34    0.06  1.33  27.00 0.55   0.000
    [I%=49.9:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 48.90 mm ]
*
 *  CALIB NASHYD         0111  1  5.0    0.21    0.01  1.42   8.83 0.18   0.000
    [CN=58.7         ]
    [ N = 3.0:Tp 0.17]
*
    CHIC STORM                10.0
    [ Ptot= 48.90 mm ]
*
 *  CALIB NASHYD         0103  1  5.0    0.31    0.00  1.50   5.78 0.12   0.000
    [CN=49.5         ]
    [ N = 3.0:Tp 0.20]
*
    CHIC STORM                10.0
    [ Ptot= 48.90 mm ]
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.06  1.33  28.82 0.59   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0103+  0104]  0903  3  5.0    0.59    0.06  1.33  16.71  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 48.90 mm ]
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.12  1.33  13.31 0.27   0.000
    [I%=18.2:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 48.90 mm ]
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.13  1.33  13.61 0.28   0.000
    [I%=19.7:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 48.90 mm ]
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.11  1.33  22.42 0.46   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0105+  0106]  0902  3  5.0    3.76    0.25  1.33  13.46  n/a   0.000
*
    ADD [  0902+  0107]  0902  1  5.0    4.50    0.36  1.33  14.94  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 48.90 mm ]
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.04  1.33  19.24 0.39   0.000
    [I%=35.5:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 48.90 mm ]
*
 *  CALIB STANDHYD       0102  1  5.0    0.25    0.04  1.33  23.41 0.48   0.000
    [I%=42.5:S%= 2.00]
*
    ADD [  0101+  0102]  0901  3  5.0    0.57    0.08  1.33  21.07  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 48.90 mm ]
*
 *  CALIB NASHYD         0112  1  5.0    0.82    0.01  1.75   5.04 0.10   0.000
    [CN=46.1         ]
    [ N = 3.0:Tp 0.37]
*
    ADD [  0112+  0901]  0904  3  5.0    1.39    0.08  1.33  11.61  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 48.90 mm ]
*
 *  CALIB NASHYD         0110  1  5.0    2.03    0.03  1.42   5.23 0.11   0.000
    [CN=47.4         ]
    [ N = 3.0:Tp 0.16]
*
    CHIC STORM                10.0
    [ Ptot= 48.90 mm ]
*
 *  CALIB STANDHYD       0108  1  5.0    0.18    0.03  1.33  27.16 0.56   0.000
    [I%=50.3:S%= 2.00]
*
    ADD [  0108+  0110]  0905  3  5.0    2.21    0.06  1.33   7.01  n/a   0.000
*
================================================================================================================


       V    V   I    SSSSS  U   U    A    L             (v 6.2.2011)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
```

```
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\41414ba9-9e60-46b4-a696-c5f6bd4032f5
\sce
  Summary filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\41414ba9-9e60-46b4-a696-c5f6bd4032f5
\sce


DATE: 09/21/2022                          TIME: 02:26:10

USER:


COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : RUN 04 - 25yr 4hr 10min Chica **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms

      START @  0.00 hrs
      --------------------
    CHIC STORM                10.0
    [ Ptot= 56.81 mm ]
*
 *  CALIB STANDHYD       0109  1  5.0    0.34    0.07  1.33  32.07 0.56   0.000
    [I%=49.9:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 56.81 mm ]
*
 *  CALIB NASHYD         0111  1  5.0    0.21    0.01  1.42  11.83 0.21   0.000
    [CN=58.7         ]
    [ N = 3.0:Tp 0.17]
*
    CHIC STORM                10.0
    [ Ptot= 56.81 mm ]
*
 *  CALIB NASHYD         0103  1  5.0    0.31    0.01  1.50   7.97 0.14   0.000
    [CN=49.5         ]
    [ N = 3.0:Tp 0.20]
*
    CHIC STORM                10.0
    [ Ptot= 56.81 mm ]
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.07  1.33  33.96 0.60   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0103+  0104]  0903  3  5.0    0.59    0.07  1.33  20.30  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 56.81 mm ]
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.14  1.33  16.51 0.29   0.000
    [I%=18.2:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 56.81 mm ]
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.16  1.33  16.78 0.30   0.000
    [I%=19.7:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 56.81 mm ]
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.13  1.33  26.62 0.47   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0105+  0106]  0902  3  5.0    3.76    0.30  1.33  16.64  n/a   0.000
*
    ADD [  0902+  0107]  0902  1  5.0    4.50    0.43  1.33  18.28  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 56.81 mm ]
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.05  1.33  22.96 0.40   0.000
    [I%=35.5:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 56.81 mm ]
*
 *  CALIB STANDHYD       0102  1  5.0    0.25    0.04  1.33  27.90 0.49   0.000
    [I%=42.5:S%= 2.00]
*
    ADD [  0101+  0102]  0901  3  5.0    0.57    0.09  1.33  25.13  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 56.81 mm ]
*
 *  CALIB NASHYD         0112  1  5.0    0.82    0.01  1.75   6.99 0.12   0.000
    [CN=46.1         ]
    [ N = 3.0:Tp 0.37]
*
    ADD [  0112+  0901]  0904  3  5.0    1.39    0.09  1.33  14.43  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 56.81 mm ]
*
 *  CALIB NASHYD         0110  1  5.0    2.03    0.05  1.42   7.25 0.13   0.000
    [CN=47.4         ]
    [ N = 3.0:Tp 0.16]
*
    CHIC STORM                10.0
    [ Ptot= 56.81 mm ]
*
 *  CALIB STANDHYD       0108  1  5.0    0.18    0.04  1.33  32.26 0.57   0.000
    [I%=50.3:S%= 2.00]
*
    ADD [  0108+  0110]  0905  3  5.0    2.21    0.07  1.33   9.29  n/a   0.000
*
================================================================================================================


       V    V   I    SSSSS  U   U    A    L             (v 6.2.2011)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL
```

```
        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\07d5887a-5aa0-4264-9e44-b7afb304a1cb
\sce
  Summary filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\07d5887a-5aa0-4264-9e44-b7afb304a1cb
\sce


DATE: 09/21/2022                          TIME: 02:26:09

USER:


COMMENTS: _____________________________________________________________


  ************************************************
  ** SIMULATION : RUN 05 - 50yr 4hr 10min Chica **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

      START @  0.00 hrs
      --------------------
    CHIC STORM                10.0
    [ Ptot= 62.70 mm ]
*
 *  CALIB STANDHYD       0109  1  5.0    0.34    0.08  1.33  35.94 0.57   0.000
    [I%=49.9:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 62.70 mm ]
*
 *  CALIB NASHYD         0111  1  5.0    0.21    0.01  1.42  14.28 0.23   0.000
    [CN=58.7         ]
    [ N = 3.0:Tp 0.17]
*
    CHIC STORM                10.0
    [ Ptot= 62.70 mm ]
*
 *  CALIB NASHYD         0103  1  5.0    0.31    0.01  1.50   9.78 0.16   0.000
    [CN=49.5         ]
    [ N = 3.0:Tp 0.20]
*
    CHIC STORM                10.0
    [ Ptot= 62.70 mm ]
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.07  1.33  37.85 0.60   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0103+  0104]  0903  3  5.0    0.59    0.08  1.33  23.10  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 62.70 mm ]
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.16  1.33  19.05 0.30   0.000
    [I%=18.2:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 62.70 mm ]
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.18  1.33  19.28 0.31   0.000
    [I%=19.7:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 62.70 mm ]
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.14  1.33  29.82 0.48   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0105+  0106]  0902  3  5.0    3.76    0.34  1.33  19.17  n/a   0.000
*
    ADD [  0902+  0107]  0902  1  5.0    4.50    0.48  1.33  20.92  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 62.70 mm ]
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.05  1.33  25.83 0.41   0.000
    [I%=35.5:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 62.70 mm ]
*
 *  CALIB STANDHYD       0102  1  5.0    0.25    0.05  1.33  31.33 0.50   0.000
    [I%=42.5:S%= 2.00]
*
    ADD [  0101+  0102]  0901  3  5.0    0.57    0.10  1.33  28.25  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 62.70 mm ]
*
 *  CALIB NASHYD         0112  1  5.0    0.82    0.01  1.75   8.62 0.14   0.000
    [CN=46.1         ]
    [ N = 3.0:Tp 0.37]
*
    ADD [  0112+  0901]  0904  3  5.0    1.39    0.10  1.33  16.67  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 62.70 mm ]
*
 *  CALIB NASHYD         0110  1  5.0    2.03    0.06  1.42   8.94 0.14   0.000
    [CN=47.4         ]
    [ N = 3.0:Tp 0.16]
*
    CHIC STORM                10.0
    [ Ptot= 62.70 mm ]
*
 *  CALIB STANDHYD       0108  1  5.0    0.18    0.04  1.33  36.16 0.58   0.000
    [I%=50.3:S%= 2.00]
*
    ADD [  0108+  0110]  0905  3  5.0    2.21    0.09  1.33  11.15  n/a   0.000
*
================================================================================================================


      V    V   I    SSSSS  U   U    A    L             (v 6.2.2011)
      V    V   I    SS     U   U   A A   L
       V  V    I     SS    U   U  AAAAA  L
       V  V    I      SS   U   U  A   A  L
        VV     I    SSSSS  UUUUU  A   A  LLLLL

       OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
```

```
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\1b10c10f-cf98-4e2e-86fb-ec0fae52d4ea
\sce
  Summary filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\1b10c10f-cf98-4e2e-86fb-ec0fae52d4ea
\sce


DATE: 09/21/2022                          TIME: 02:26:10

USER:


COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : RUN 06 - 100yr 4hr 10min Chic **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     --------------------
    CHIC STORM                10.0
    [ Ptot= 68.57 mm ]
*
 *  CALIB STANDHYD       0109  1  5.0    0.34    0.09  1.33  39.87 0.58   0.000
    [I%=49.9:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 68.57 mm ]
*
 *  CALIB NASHYD         0111  1  5.0    0.21    0.01  1.42  16.88 0.25   0.000
    [CN=58.7         ]
    [ N = 3.0:Tp 0.17]
*
    CHIC STORM                10.0
    [ Ptot= 68.57 mm ]
*
 *  CALIB NASHYD         0103  1  5.0    0.31    0.01  1.50  11.74 0.17   0.000
    [CN=49.5         ]
    [ N = 3.0:Tp 0.20]
*
    CHIC STORM                10.0
    [ Ptot= 68.57 mm ]
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.08  1.33  41.79 0.61   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0103+  0104]  0903  3  5.0    0.59    0.09  1.33  26.00  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 68.57 mm ]
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.18  1.33  21.70 0.32   0.000
    [I%=18.2:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 68.57 mm ]
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.20  1.33  21.88 0.32   0.000
    [I%=19.7:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 68.57 mm ]
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.16  1.33  33.08 0.48   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0105+  0106]  0902  3  5.0    3.76    0.38  1.33  21.79  n/a   0.000
*
    ADD [  0902+  0107]  0902  1  5.0    4.50    0.54  1.33  23.65  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 68.57 mm ]
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.06  1.33  28.75 0.42   0.000
    [I%=35.5:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 68.57 mm ]
*
 *  CALIB STANDHYD       0102  1  5.0    0.25    0.05  1.33  34.85 0.51   0.000
    [I%=42.5:S%= 2.00]
*
    ADD [  0101+  0102]  0901  3  5.0    0.57    0.11  1.33  31.43  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 68.57 mm ]
*
 *  CALIB NASHYD         0112  1  5.0    0.82    0.02  1.75  10.38 0.15   0.000
    [CN=46.1         ]
    [ N = 3.0:Tp 0.37]
*
    ADD [  0112+  0901]  0904  3  5.0    1.39    0.12  1.33  19.01  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 68.57 mm ]
*
 *  CALIB NASHYD         0110  1  5.0    2.03    0.07  1.42  10.76 0.16   0.000
    [CN=47.4         ]
    [ N = 3.0:Tp 0.16]
*
    CHIC STORM                10.0
    [ Ptot= 68.57 mm ]
*
 *  CALIB STANDHYD       0108  1  5.0    0.18    0.05  1.33  40.12 0.59   0.000
    [I%=50.3:S%= 2.00]
*
    ADD [  0108+  0110]  0905  3  5.0    2.21    0.10  1.33  13.15  n/a   0.000
*
================================================================================================


      V    V   I    SSSSS  U   U    A    L              (v 6.2.2011)
      V    V   I    SS     U   U   A A   L
       V  V    I     SS    U   U  AAAAA  L
       V  V    I      SS   U   U  A   A  L
        VV     I    SSSSS  UUUUU  A   A  LLLLL

       OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
      O   O    T      T    H   H   Y Y   MM MM  O   O
      O   O    T      T    H   H    Y    M   M  O   O
```

```
       OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\1f041918-e2ae-4c81-981a-40da94a4ffc9
\sce
  Summary filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\1f041918-e2ae-4c81-981a-40da94a4ffc9
\sce


DATE: 09/21/2022                          TIME: 02:26:10

USER:


COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : RUN 07 - 2yr 12hr 15min SCS T **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     --------------------
    READ STORM                15.0
    [ Ptot= 45.39 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\fb264ff9-bd71-457f-bdbe-6c
    remark: 2yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0109  1  5.0    0.34    0.03  6.25  24.79 0.55   0.000
    [I%=49.9:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 45.39 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\fb264ff9-bd71-457f-bdbe-6c
    remark: 2yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0111  1  5.0    0.21    0.00  6.33   7.61 0.17   0.000
    [CN=58.7         ]
    [ N = 3.0:Tp 0.17]
*
    READ STORM                15.0
    [ Ptot= 45.39 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\fb264ff9-bd71-457f-bdbe-6c
    remark: 2yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0103  1  5.0    0.31    0.00  6.33   4.90 0.11   0.000
    [CN=49.5         ]
    [ N = 3.0:Tp 0.20]
*
    READ STORM                15.0
    [ Ptot= 45.39 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\fb264ff9-bd71-457f-bdbe-6c
    remark: 2yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.03  6.25  26.58 0.59   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0103+  0104]  0903  3  5.0    0.59    0.03  6.25  15.19  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 45.39 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\fb264ff9-bd71-457f-bdbe-6c
    remark: 2yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.06  6.25  11.96 0.26   0.000
    [I%=18.2:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 45.39 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\fb264ff9-bd71-457f-bdbe-6c
    remark: 2yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.07  6.25  12.28 0.27   0.000
    [I%=19.7:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 45.39 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\fb264ff9-bd71-457f-bdbe-6c
    remark: 2yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.05  6.25  20.60 0.45   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0105+  0106]  0902  3  5.0    3.76    0.13  6.25  12.12  n/a   0.000
*
    ADD [  0902+  0107]  0902  1  5.0    4.50    0.18  6.25  13.52  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 45.39 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\fb264ff9-bd71-457f-bdbe-6c
    remark: 2yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.02  6.25  17.61 0.39   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 45.39 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\fb264ff9-bd71-457f-bdbe-6c
    remark: 2yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0102  1  5.0    0.25    0.02  6.25  21.44 0.47   0.000
    [I%=42.5:S%= 2.00]
*
    ADD [  0101+  0102]  0901  3  5.0    0.57    0.04  6.25  19.29  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 45.39 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\fb264ff9-bd71-457f-bdbe-6c
    remark: 2yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0112  1  5.0    0.82    0.01  6.50   4.26 0.09   0.000
    [CN=46.1         ]
    [ N = 3.0:Tp 0.37]
*
    ADD [  0112+  0901]  0904  3  5.0    1.39    0.04  6.25  10.43  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 45.39 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\fb264ff9-bd71-457f-bdbe-6c
    remark: 2yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0110  1  5.0    2.03    0.03  6.33   4.42 0.10   0.000
    [CN=47.4         ]
    [ N = 3.0:Tp 0.16]
*
```

```
    READ STORM                15.0
    [ Ptot= 45.39 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\fb264ff9-bd71-457f-bdbe-6c
    remark: 2yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0108  1  5.0    0.18    0.02  6.25  24.95 0.55   0.000
    [I%=50.3:S%= 2.00]
*
    ADD [  0108+  0110]  0905  3  5.0    2.21    0.04  6.25   6.09  n/a   0.000
*
================================================================================================


       V    V   I    SSSSS  U   U    A    L              (v 6.2.2011)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\9b5a4c3a-f01e-465c-9013-4193e7dd97d6
\sce
  Summary filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\9b5a4c3a-f01e-465c-9013-4193e7dd97d6
\sce


DATE: 09/21/2022                          TIME: 02:26:10

USER:


COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : RUN 08 - 5yr 12hr 15min SCS T **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     --------------------
    READ STORM                15.0
    [ Ptot= 57.78 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\9136eb3b-bdfa-4599-a3b7-d6
    remark: 5yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0109  1  5.0    0.34    0.04  6.25  32.70 0.57   0.000
    [I%=49.9:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 57.78 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\9136eb3b-bdfa-4599-a3b7-d6
    remark: 5yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0111  1  5.0    0.21    0.01  6.33  12.22 0.21   0.000
    [CN=58.7         ]
    [ N = 3.0:Tp 0.17]
*
    READ STORM                15.0
    [ Ptot= 57.78 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\9136eb3b-bdfa-4599-a3b7-d6
    remark: 5yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0103  1  5.0    0.31    0.01  6.33   8.25 0.14   0.000
    [CN=49.5         ]
    [ N = 3.0:Tp 0.20]
*
    READ STORM                15.0
    [ Ptot= 57.78 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\9136eb3b-bdfa-4599-a3b7-d6
    remark: 5yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.03  6.25  34.59 0.60   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0103+  0104]  0903  3  5.0    0.59    0.04  6.25  20.76  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 57.78 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\9136eb3b-bdfa-4599-a3b7-d6
    remark: 5yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.08  6.25  16.92 0.29   0.000
    [I%=18.2:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 57.78 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\9136eb3b-bdfa-4599-a3b7-d6
    remark: 5yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.09  6.25  17.18 0.30   0.000
    [I%=19.7:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 57.78 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\9136eb3b-bdfa-4599-a3b7-d6
    remark: 5yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.07  6.25  27.14 0.47   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0105+  0106]  0902  3  5.0    3.76    0.17  6.25  17.05  n/a   0.000
*
    ADD [  0902+  0107]  0902  1  5.0    4.50    0.24  6.25  18.71  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 57.78 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\9136eb3b-bdfa-4599-a3b7-d6
    remark: 5yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.02  6.25  23.43 0.41   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 57.78 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\9136eb3b-bdfa-4599-a3b7-d6
    remark: 5yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0102  1  5.0    0.25    0.02  6.25  28.45 0.49   0.000
    [I%=42.5:S%= 2.00]
*
```

```
    ADD [  0101+  0102]  0901  3  5.0    0.57    0.05  6.25  25.63  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 57.78 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\9136eb3b-bdfa-4599-a3b7-d6
    remark: 5yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0112  1  5.0    0.82    0.01  6.50   7.25 0.13   0.000
    [CN=46.1         ]
    [ N = 3.0:Tp 0.37]
*
    ADD [  0112+  0901]  0904  3  5.0    1.39    0.06  6.25  14.79  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 57.78 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\9136eb3b-bdfa-4599-a3b7-d6
    remark: 5yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0110  1  5.0    2.03    0.05  6.25   7.52 0.13   0.000
    [CN=47.4         ]
    [ N = 3.0:Tp 0.16]
*
    READ STORM                15.0
    [ Ptot= 57.78 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\9136eb3b-bdfa-4599-a3b7-d6
    remark: 5yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0108  1  5.0    0.18    0.02  6.25  32.89 0.57   0.000
    [I%=50.3:S%= 2.00]
*
    ADD [  0108+  0110]  0905  3  5.0    2.21    0.07  6.25   9.58  n/a   0.000
*
================================================================================================================


       V    V   I    SSSSS  U   U    A    L              (v 6.2.2011)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\b4f4a54c-087d-4002-ae79-4a1e4463f9fb
\sce
  Summary filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\b4f4a54c-087d-4002-ae79-4a1e4463f9fb
\sce


DATE: 09/21/2022                          TIME: 02:26:10

USER:


COMMENTS: _____________________________________________________________
```

```
 ************************************************
 ** SIMULATION : RUN 09 - 10yr 12hr 15min SCS  **
 ************************************************

 W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms


     START @  0.00 hrs
     --------------------
    READ STORM                15.0
    [ Ptot= 65.89 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\1f824f5f-3508-491c-9d9e-d3
    remark: 10yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0109  1  5.0    0.34    0.04  6.25  38.06 0.58   0.000
    [I%=49.9:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 65.89 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\1f824f5f-3508-491c-9d9e-d3
    remark: 10yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0111  1  5.0    0.21    0.01  6.33  15.67 0.24   0.000
    [CN=58.7         ]
    [ N = 3.0:Tp 0.17]
*
    READ STORM                15.0
    [ Ptot= 65.89 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\1f824f5f-3508-491c-9d9e-d3
    remark: 10yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0103  1  5.0    0.31    0.01  6.33  10.83 0.16   0.000
    [CN=49.5         ]
    [ N = 3.0:Tp 0.20]
*
    READ STORM                15.0
    [ Ptot= 65.89 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\1f824f5f-3508-491c-9d9e-d3
    remark: 10yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.04  6.25  39.96 0.61   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0103+  0104]  0903  3  5.0    0.59    0.05  6.25  24.65  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 65.89 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\1f824f5f-3508-491c-9d9e-d3
    remark: 10yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.10  6.25  20.47 0.31   0.000
    [I%=18.2:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 65.89 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\1f824f5f-3508-491c-9d9e-d3
    remark: 10yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.11  6.25  20.68 0.31   0.000
    [I%=19.7:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 65.89 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\1f824f5f-3508-491c-9d9e-d3
    remark: 10yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.08  6.25  31.58 0.48   0.000
```

```
    [I%=42.6:S%= 2.00]
*
    ADD [  0105+  0106]  0902  3  5.0    3.76    0.22  6.25  20.58  n/a   0.000
*
    ADD [  0902+  0107]  0902  1  5.0    4.50    0.29  6.25  22.39  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 65.89 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\1f824f5f-3508-491c-9d9e-d3
    remark: 10yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.03  6.25  27.41 0.42   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 65.89 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\1f824f5f-3508-491c-9d9e-d3
    remark: 10yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0102  1  5.0    0.25    0.03  6.25  33.23 0.50   0.000
    [I%=42.5:S%= 2.00]
*
    ADD [  0101+  0102]  0901  3  5.0    0.57    0.06  6.25  29.97  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 65.89 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\1f824f5f-3508-491c-9d9e-d3
    remark: 10yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0112  1  5.0    0.82    0.01  6.50   9.56 0.15   0.000
    [CN=46.1         ]
    [ N = 3.0:Tp 0.37]
*
    ADD [  0112+  0901]  0904  3  5.0    1.39    0.07  6.25  17.93  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 65.89 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\1f824f5f-3508-491c-9d9e-d3
    remark: 10yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0110  1  5.0    2.03    0.06  6.25   9.91 0.15   0.000
    [CN=47.4         ]
    [ N = 3.0:Tp 0.16]
*
    READ STORM                15.0
    [ Ptot= 65.89 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\1f824f5f-3508-491c-9d9e-d3
    remark: 10yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0108  1  5.0    0.18    0.02  6.25  38.29 0.58   0.000
    [I%=50.3:S%= 2.00]
*
    ADD [  0108+  0110]  0905  3  5.0    2.21    0.09  6.25  12.22  n/a   0.000
*
================================================================================================================


       V    V   I    SSSSS  U   U    A    L              (v 6.2.2011)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\c93c2abd-419b-4890-a124-866f01c2a978
\sce
  Summary filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\c93c2abd-419b-4890-a124-866f01c2a978
\sce


DATE: 09/21/2022                          TIME: 02:26:10

USER:


COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : RUN 10 - 25yr 12hr 15min SCS  **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     ---------------------
    READ STORM                15.0
    [ Ptot= 76.11 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\dda72685-972a-479d-a529-0e
    remark: 25yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0109  1  5.0    0.34    0.05  6.25  45.01 0.59   0.000
    [I%=49.9:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 76.11 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\dda72685-972a-479d-a529-0e
    remark: 25yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0111  1  5.0    0.21    0.01  6.33  20.44 0.27   0.000
    [CN=58.7         ]
    [ N = 3.0:Tp 0.17]
*
    READ STORM                15.0
    [ Ptot= 76.11 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\dda72685-972a-479d-a529-0e
    remark: 25yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0103  1  5.0    0.31    0.01  6.33  14.46 0.19   0.000
    [CN=49.5         ]
    [ N = 3.0:Tp 0.20]
*
    READ STORM                15.0
    [ Ptot= 76.11 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\dda72685-972a-479d-a529-0e
    remark: 25yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.05  6.25  46.86 0.62   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0103+  0104]  0903  3  5.0    0.59    0.06  6.25  29.84  n/a   0.000
*
```

```
    READ STORM                15.0
    [ Ptot= 76.11 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\dda72685-972a-479d-a529-0e
    remark: 25yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.13  6.25  25.27 0.33   0.000
    [I%=18.2:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 76.11 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\dda72685-972a-479d-a529-0e
    remark: 25yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.14  6.25  25.38 0.33   0.000
    [I%=19.7:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 76.11 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\dda72685-972a-479d-a529-0e
    remark: 25yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.09  6.25  37.35 0.49   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0105+  0106]  0902  3  5.0    3.76    0.26  6.25  25.33  n/a   0.000
*
    ADD [  0902+  0107]  0902  1  5.0    4.50    0.35  6.25  27.30  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 76.11 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\dda72685-972a-479d-a529-0e
    remark: 25yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.03  6.25  32.62 0.43   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 76.11 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\dda72685-972a-479d-a529-0e
    remark: 25yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0102  1  5.0    0.25    0.03  6.25  39.45 0.52   0.000
    [I%=42.5:S%= 2.00]
*
    ADD [  0101+  0102]  0901  3  5.0    0.57    0.07  6.25  35.61  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 76.11 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\dda72685-972a-479d-a529-0e
    remark: 25yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0112  1  5.0    0.82    0.02  6.50  12.84 0.17   0.000
    [CN=46.1         ]
    [ N = 3.0:Tp 0.37]
*
    ADD [  0112+  0901]  0904  3  5.0    1.39    0.08  6.25  22.18  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 76.11 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\dda72685-972a-479d-a529-0e
    remark: 25yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0110  1  5.0    2.03    0.08  6.25  13.30 0.17   0.000
    [CN=47.4         ]
    [ N = 3.0:Tp 0.16]
*
    READ STORM                15.0
    [ Ptot= 76.11 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\dda72685-972a-479d-a529-0e
    remark: 25yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0108  1  5.0    0.18    0.03  6.25  45.29 0.60   0.000
    [I%=50.3:S%= 2.00]
*
    ADD [  0108+  0110]  0905  3  5.0    2.21    0.11  6.25  15.90  n/a   0.000
*
================================================================================================================


       V    V   I    SSSSS  U   U    A    L             (v 6.2.2011)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
         V V    I      SS   U   U  A   A  L
          VV    I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\1b7eb33f-5ebf-4220-8fff-8ecbc015d087
\sce
  Summary filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\1b7eb33f-5ebf-4220-8fff-8ecbc015d087
\sce


DATE: 09/21/2022                          TIME: 02:26:10

USER:


COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : RUN 11 - 50yr 12hr 15min SCS  **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms


     START @  0.00 hrs
     --------------------
    READ STORM                15.0
    [ Ptot= 83.83 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\84195784-c130-4926-97ae-bf
    remark: 50yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0109  1  5.0    0.34    0.06  6.25  50.38 0.60   0.000
    [I%=49.9:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 83.83 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\84195784-c130-4926-97ae-bf
    remark: 50yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0111  1  5.0    0.21    0.02  6.25  24.34 0.29   0.000
```

```
    [CN=58.7         ]
    [ N = 3.0:Tp 0.17]
*
    READ STORM                15.0
    [ Ptot= 83.83 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\84195784-c130-4926-97ae-bf
    remark: 50yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0103  1  5.0    0.31    0.02  6.33  17.47 0.21   0.000
    [CN=49.5         ]
    [ N = 3.0:Tp 0.20]
*
    READ STORM                15.0
    [ Ptot= 83.83 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\84195784-c130-4926-97ae-bf
    remark: 50yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.05  6.25  52.17 0.62   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0103+  0104]  0903  3  5.0    0.59    0.07  6.25  33.94  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 83.83 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\84195784-c130-4926-97ae-bf
    remark: 50yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.16  6.25  29.11 0.35   0.000
    [I%=18.2:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 83.83 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\84195784-c130-4926-97ae-bf
    remark: 50yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.17  6.25  29.14 0.35   0.000
    [I%=19.7:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 83.83 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\84195784-c130-4926-97ae-bf
    remark: 50yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.10  6.25  41.84 0.50   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0105+  0106]  0902  3  5.0    3.76    0.32  6.25  29.12  n/a   0.000
*
    ADD [  0902+  0107]  0902  1  5.0    4.50    0.43  6.25  31.22  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 83.83 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\84195784-c130-4926-97ae-bf
    remark: 50yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.04  6.25  36.69 0.44   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 83.83 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\84195784-c130-4926-97ae-bf
    remark: 50yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0102  1  5.0    0.25    0.04  6.25  44.28 0.53   0.000
    [I%=42.5:S%= 2.00]
*
    ADD [  0101+  0102]  0901  3  5.0    0.57    0.08  6.25  40.02  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 83.83 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\84195784-c130-4926-97ae-bf
    remark: 50yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0112  1  5.0    0.82    0.02  6.50  15.56 0.19   0.000
    [CN=46.1         ]
    [ N = 3.0:Tp 0.37]
*
    ADD [  0112+  0901]  0904  3  5.0    1.39    0.09  6.25  25.59  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 83.83 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\84195784-c130-4926-97ae-bf
    remark: 50yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0110  1  5.0    2.03    0.10  6.25  16.11 0.19   0.000
    [CN=47.4         ]
    [ N = 3.0:Tp 0.16]
*
    READ STORM                15.0
    [ Ptot= 83.83 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\84195784-c130-4926-97ae-bf
    remark: 50yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0108  1  5.0    0.18    0.03  6.25  50.69 0.60   0.000
    [I%=50.3:S%= 2.00]
*
    ADD [  0108+  0110]  0905  3  5.0    2.21    0.13  6.25  18.93  n/a   0.000
*
================================================================================================================


       V    V   I    SSSSS  U   U    A    L             (v 6.2.2011)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\9fb904af-4523-49ea-8f67-7d0a09103ae5
\sce
   Summary filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\9fb904af-4523-49ea-8f67-7d0a09103ae5
\sce


DATE: 09/21/2022                          TIME: 02:26:10

USER:


COMMENTS: _____________________________________________________


  ************************************************
```

```
  ** SIMULATION : RUN 12 - 100yr 12hr 15min SCS **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms

      START @  0.00 hrs
      --------------------
    READ STORM                15.0
    [ Ptot= 91.47 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\6eefda4f-fdae-4cde-ad34-96
    remark: 100yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0109  1  5.0    0.34    0.07  6.25  55.80 0.61   0.000
    [I%=49.9:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 91.47 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\6eefda4f-fdae-4cde-ad34-96
    remark: 100yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0111  1  5.0    0.21    0.02  6.25  28.40 0.31   0.000
    [CN=58.7         ]
    [ N = 3.0:Tp 0.17]
*
    READ STORM                15.0
    [ Ptot= 91.47 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\6eefda4f-fdae-4cde-ad34-96
    remark: 100yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0103  1  5.0    0.31    0.02  6.33  20.66 0.23   0.000
    [CN=49.5         ]
    [ N = 3.0:Tp 0.20]
*
    READ STORM                15.0
    [ Ptot= 91.47 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\6eefda4f-fdae-4cde-ad34-96
    remark: 100yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.06  6.25  57.49 0.63   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0103+  0104]  0903  3  5.0    0.59    0.07  6.25  38.14  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 91.47 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\6eefda4f-fdae-4cde-ad34-96
    remark: 100yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.18  6.25  33.08 0.36   0.000
    [I%=18.2:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 91.47 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\6eefda4f-fdae-4cde-ad34-96
    remark: 100yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.19  6.25  33.02 0.36   0.000
    [I%=19.7:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 91.47 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\6eefda4f-fdae-4cde-ad34-96
    remark: 100yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.11  6.25  46.37 0.51   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0105+  0106]  0902  3  5.0    3.76    0.37  6.25  33.05  n/a   0.000
*
    ADD [  0902+  0107]  0902  1  5.0    4.50    0.48  6.25  35.24  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 91.47 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\6eefda4f-fdae-4cde-ad34-96
    remark: 100yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.04  6.25  40.82 0.45   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 91.47 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\6eefda4f-fdae-4cde-ad34-96
    remark: 100yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0102  1  5.0    0.25    0.04  6.25  49.18 0.54   0.000
    [I%=42.5:S%= 2.00]
*
    ADD [  0101+  0102]  0901  3  5.0    0.57    0.09  6.25  44.48  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 91.47 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\6eefda4f-fdae-4cde-ad34-96
    remark: 100yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0112  1  5.0    0.82    0.03  6.50  18.46 0.20   0.000
    [CN=46.1         ]
    [ N = 3.0:Tp 0.37]
*
    ADD [  0112+  0901]  0904  3  5.0    1.39    0.10  6.25  29.13  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 91.47 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\6eefda4f-fdae-4cde-ad34-96
    remark: 100yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0110  1  5.0    2.03    0.12  6.25  19.10 0.21   0.000
    [CN=47.4         ]
    [ N = 3.0:Tp 0.16]
*
    READ STORM                15.0
    [ Ptot= 91.47 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\6eefda4f-fdae-4cde-ad34-96
    remark: 100yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0108  1  5.0    0.18    0.03  6.25  56.14 0.61   0.000
    [I%=50.3:S%= 2.00]
*
    ADD [  0108+  0110]  0905  3  5.0    2.21    0.16  6.25  22.12  n/a   0.000
*
================================================================================================================


       V    V   I    SSSSS  U   U    A    L             (v 6.2.2011)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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```

```
                *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\9e6db82c-336a-4f7b-ba68-979605666cfe
\sce
  Summary filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\9e6db82c-336a-4f7b-ba68-979605666cfe
\sce


DATE: 09/21/2022                          TIME: 02:26:11

USER:


COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : RUN 13 - 2yr 24hr 15min SCS T **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

      START @  0.00 hrs
      --------------------
    READ STORM                15.0
    [ Ptot= 55.34 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\861ba7ff-f228-4827-b065-05
    remark: 2yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0109  1  5.0    0.34    0.03 12.25  31.11 0.56   0.000
    [I%=49.9:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 55.34 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\861ba7ff-f228-4827-b065-05
    remark: 2yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0111  1  5.0    0.21    0.01 12.33  11.25 0.20   0.000
    [CN=58.7         ]
    [ N = 3.0:Tp 0.17]
*
    READ STORM                15.0
    [ Ptot= 55.34 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\861ba7ff-f228-4827-b065-05
    remark: 2yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0103  1  5.0    0.31    0.01 12.33   7.54 0.14   0.000
    [CN=49.5         ]
    [ N = 3.0:Tp 0.20]
*
    READ STORM                15.0
    [ Ptot= 55.34 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\861ba7ff-f228-4827-b065-05
    remark: 2yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.03 12.25  33.01 0.60   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0103+  0104]  0903  3  5.0    0.59    0.04 12.25  19.62  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 55.34 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\861ba7ff-f228-4827-b065-05
    remark: 2yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.07 12.25  15.89 0.29   0.000
    [I%=18.2:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 55.34 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\861ba7ff-f228-4827-b065-05
    remark: 2yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.08 12.25  16.17 0.29   0.000
    [I%=19.7:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 55.34 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\861ba7ff-f228-4827-b065-05
    remark: 2yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.06 12.25  25.83 0.47   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0105+  0106]  0902  3  5.0    3.76    0.15 12.25  16.04  n/a   0.000
*
    ADD [  0902+  0107]  0902  1  5.0    4.50    0.21 12.25  17.65  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 55.34 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\861ba7ff-f228-4827-b065-05
    remark: 2yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.02 12.25  22.25 0.40   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 55.34 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\861ba7ff-f228-4827-b065-05
    remark: 2yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0102  1  5.0    0.25    0.02 12.25  27.05 0.49   0.000
    [I%=42.5:S%= 2.00]
*
    ADD [  0101+  0102]  0901  3  5.0    0.57    0.04 12.25  24.36  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 55.34 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\861ba7ff-f228-4827-b065-05
    remark: 2yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0112  1  5.0    0.82    0.01 12.50   6.61 0.12   0.000
    [CN=46.1         ]
    [ N = 3.0:Tp 0.37]
*
    ADD [  0112+  0901]  0904  3  5.0    1.39    0.05 12.25  13.89  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 55.34 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\861ba7ff-f228-4827-b065-05
    remark: 2yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0110  1  5.0    2.03    0.04 12.25   6.85 0.12   0.000
    [CN=47.4         ]
    [ N = 3.0:Tp 0.16]
*
    READ STORM                15.0
    [ Ptot= 55.34 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\861ba7ff-f228-4827-b065-05
    remark: 2yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0108  1  5.0    0.18    0.02 12.25  31.32 0.57   0.000
```

```
    [I%=50.3:S%= 2.00]
*
    ADD [  0108+  0110]  0905  3  5.0    2.21    0.05 12.25   8.85  n/a   0.000
*
================================================================================================


       V    V   I    SSSSS  U   U    A    L              (v 6.2.2011)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\86f3a639-7bfe-44a4-9283-3dfeb842439e
\sce
  Summary filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\86f3a639-7bfe-44a4-9283-3dfeb842439e
\sce


DATE: 09/21/2022                          TIME: 02:26:10

USER:


COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : RUN 14 - 5yr 24hr 15min SCS T **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     --------------------
    READ STORM                15.0
    [ Ptot= 69.96 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\586dce84-101b-4e90-8f87-8f
    remark: 5yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0109  1  5.0    0.34    0.04 12.25  40.81 0.58   0.000
    [I%=49.9:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 69.96 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\586dce84-101b-4e90-8f87-8f
    remark: 5yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0111  1  5.0    0.21    0.01 12.33  17.52 0.25   0.000
    [CN=58.7         ]
    [ N = 3.0:Tp 0.17]
*
    READ STORM                15.0
    [ Ptot= 69.96 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\586dce84-101b-4e90-8f87-8f
    remark: 5yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0103  1  5.0    0.31    0.01 12.33  12.23 0.17   0.000
    [CN=49.5         ]
    [ N = 3.0:Tp 0.20]
*
    READ STORM                15.0
    [ Ptot= 69.96 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\586dce84-101b-4e90-8f87-8f
    remark: 5yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.04 12.25  42.69 0.61   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0103+  0104]  0903  3  5.0    0.59    0.05 12.25  26.69  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 69.96 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\586dce84-101b-4e90-8f87-8f
    remark: 5yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.10 12.25  22.34 0.32   0.000
    [I%=18.2:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 69.96 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\586dce84-101b-4e90-8f87-8f
    remark: 5yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.11 12.25  22.51 0.32   0.000
    [I%=19.7:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 69.96 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\586dce84-101b-4e90-8f87-8f
    remark: 5yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.08 12.25  33.86 0.48   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0105+  0106]  0902  3  5.0    3.76    0.21 12.25  22.43  n/a   0.000
*
    ADD [  0902+  0107]  0902  1  5.0    4.50    0.29 12.25  24.31  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 69.96 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\586dce84-101b-4e90-8f87-8f
    remark: 5yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.03 12.25  29.45 0.42   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 69.96 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\586dce84-101b-4e90-8f87-8f
    remark: 5yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0102  1  5.0    0.25    0.03 12.25  35.67 0.51   0.000
    [I%=42.5:S%= 2.00]
*
    ADD [  0101+  0102]  0901  3  5.0    0.57    0.06 12.25  32.18  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 69.96 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\586dce84-101b-4e90-8f87-8f
    remark: 5yr 24hr 15min SCS Type II (MTO)
```

```
*
 *  CALIB NASHYD         0112  1  5.0    0.82    0.01 12.50  10.82 0.15   0.000
    [CN=46.1         ]
    [ N = 3.0:Tp 0.37]
*
    ADD [  0112+  0901]  0904  3  5.0    1.39    0.06 12.25  19.58  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 69.96 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\586dce84-101b-4e90-8f87-8f
    remark: 5yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0110  1  5.0    2.03    0.06 12.25  11.21 0.16   0.000
    [CN=47.4         ]
    [ N = 3.0:Tp 0.16]
*
    READ STORM                15.0
    [ Ptot= 69.96 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\586dce84-101b-4e90-8f87-8f
    remark: 5yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0108  1  5.0    0.18    0.02 12.25  41.06 0.59   0.000
    [I%=50.3:S%= 2.00]
*
    ADD [  0108+  0110]  0905  3  5.0    2.21    0.08 12.25  13.64  n/a   0.000
*
================================================================================================


       V    V   I    SSSSS  U   U    A    L              (v 6.2.2011)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\9a122ac3-082d-44af-abb6-ec624f93db22
\sce
  Summary filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\9a122ac3-082d-44af-abb6-ec624f93db22
\sce


DATE: 09/21/2022                          TIME: 02:26:10

USER:


COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : RUN 15 - 10yr 24hr 15min SCS  **
  ************************************************
```

```
 W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     --------------------
    READ STORM                15.0
    [ Ptot= 79.50 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\779489d4-1e48-4de7-b61f-3b
    remark: 10yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0109  1  5.0    0.34    0.05 12.25  47.35 0.60   0.000
    [I%=49.9:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 79.50 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\779489d4-1e48-4de7-b61f-3b
    remark: 10yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0111  1  5.0    0.21    0.01 12.33  22.13 0.28   0.000
    [CN=58.7         ]
    [ N = 3.0:Tp 0.17]
*
    READ STORM                15.0
    [ Ptot= 79.50 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\779489d4-1e48-4de7-b61f-3b
    remark: 10yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0103  1  5.0    0.31    0.01 12.33  15.76 0.20   0.000
    [CN=49.5         ]
    [ N = 3.0:Tp 0.20]
*
    READ STORM                15.0
    [ Ptot= 79.50 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\779489d4-1e48-4de7-b61f-3b
    remark: 10yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.04 12.25  49.17 0.62   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0103+  0104]  0903  3  5.0    0.59    0.06 12.25  31.61  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 79.50 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\779489d4-1e48-4de7-b61f-3b
    remark: 10yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.12 12.25  26.93 0.34   0.000
    [I%=18.2:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 79.50 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\779489d4-1e48-4de7-b61f-3b
    remark: 10yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.13 12.25  27.01 0.34   0.000
    [I%=19.7:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 79.50 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\779489d4-1e48-4de7-b61f-3b
    remark: 10yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.09 12.25  39.31 0.49   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0105+  0106]  0902  3  5.0    3.76    0.25 12.25  26.97  n/a   0.000
*
    ADD [  0902+  0107]  0902  1  5.0    4.50    0.34 12.25  29.00  n/a   0.000
*
```

```
    READ STORM                15.0
    [ Ptot= 79.50 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\779489d4-1e48-4de7-b61f-3b
    remark: 10yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.03 12.25  34.39 0.43   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 79.50 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\779489d4-1e48-4de7-b61f-3b
    remark: 10yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0102  1  5.0    0.25    0.03 12.25  41.56 0.52   0.000
    [I%=42.5:S%= 2.00]
*
    ADD [  0101+  0102]  0901  3  5.0    0.57    0.07 12.25  37.54  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 79.50 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\779489d4-1e48-4de7-b61f-3b
    remark: 10yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0112  1  5.0    0.82    0.02 12.50  14.01 0.18   0.000
    [CN=46.1        ]
    [ N = 3.0:Tp 0.37]
*
    ADD [  0112+  0901]  0904  3  5.0    1.39    0.08 12.25  23.66  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 79.50 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\779489d4-1e48-4de7-b61f-3b
    remark: 10yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0110  1  5.0    2.03    0.08 12.25  14.51 0.18   0.000
    [CN=47.4        ]
    [ N = 3.0:Tp 0.16]
*
    READ STORM                15.0
    [ Ptot= 79.50 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\779489d4-1e48-4de7-b61f-3b
    remark: 10yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0108  1  5.0    0.18    0.03 12.25  47.64 0.60   0.000
    [I%=50.3:S%= 2.00]
*
    ADD [  0108+  0110]  0905  3  5.0    2.21    0.11 12.25  17.21  n/a   0.000
*
================================================================================================================


       V    V   I    SSSSS  U   U    A    L              (v 6.2.2011)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****

  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\80de5827-400b-49ce-8a9f-891b396ca5a3
\sce
  Summary filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\80de5827-400b-49ce-8a9f-891b396ca5a3
\sce


DATE: 09/21/2022                          TIME: 02:26:09

USER:


COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : RUN 16 - 25yr 24hr 15min SCS  **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     --------------------
    READ STORM                15.0
    [ Ptot= 91.52 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\d25d3693-076f-48ae-ba4c-23
    remark: 25yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0109  1  5.0    0.34    0.06 12.25  55.84 0.61   0.000
    [I%=49.9:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 91.52 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\d25d3693-076f-48ae-ba4c-23
    remark: 25yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0111  1  5.0    0.21    0.02 12.33  28.43 0.31   0.000
    [CN=58.7        ]
    [ N = 3.0:Tp 0.17]
*
    READ STORM                15.0
    [ Ptot= 91.52 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\d25d3693-076f-48ae-ba4c-23
    remark: 25yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0103  1  5.0    0.31    0.02 12.33  20.68 0.23   0.000
    [CN=49.5        ]
    [ N = 3.0:Tp 0.20]
*
    READ STORM                15.0
    [ Ptot= 91.52 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\d25d3693-076f-48ae-ba4c-23
    remark: 25yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.05 12.25  57.51 0.63   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0103+  0104]  0903  3  5.0    0.59    0.07 12.25  38.16  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 91.52 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\d25d3693-076f-48ae-ba4c-23
    remark: 25yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.16 12.25  33.10 0.36   0.000
```

```
    [I%=18.2:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 91.52 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\d25d3693-076f-48ae-ba4c-23
    remark: 25yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.17 12.25  33.05 0.36   0.000
    [I%=19.7:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 91.52 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\d25d3693-076f-48ae-ba4c-23
    remark: 25yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.11 12.25  46.40 0.51   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0105+  0106]  0902  3  5.0    3.76    0.33 12.25  33.08  n/a   0.000
*
    ADD [  0902+  0107]  0902  1  5.0    4.50    0.43 12.25  35.27  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 91.52 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\d25d3693-076f-48ae-ba4c-23
    remark: 25yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.04 12.25  40.84 0.45   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 91.52 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\d25d3693-076f-48ae-ba4c-23
    remark: 25yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0102  1  5.0    0.25    0.04 12.25  49.21 0.54   0.000
    [I%=42.5:S%= 2.00]
*
    ADD [  0101+  0102]  0901  3  5.0    0.57    0.08 12.25  44.51  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 91.52 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\d25d3693-076f-48ae-ba4c-23
    remark: 25yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0112  1  5.0    0.82    0.02 12.50  18.48 0.20   0.000
    [CN=46.1         ]
    [ N = 3.0:Tp 0.37]
*
    ADD [  0112+  0901]  0904  3  5.0    1.39    0.09 12.25  29.16  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 91.52 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\d25d3693-076f-48ae-ba4c-23
    remark: 25yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0110  1  5.0    2.03    0.11 12.25  19.12 0.21   0.000
    [CN=47.4         ]
    [ N = 3.0:Tp 0.16]
*
    READ STORM                15.0
    [ Ptot= 91.52 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\d25d3693-076f-48ae-ba4c-23
    remark: 25yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0108  1  5.0    0.18    0.03 12.25  56.18 0.61   0.000
    [I%=50.3:S%= 2.00]
*
    ADD [  0108+  0110]  0905  3  5.0    2.21    0.14 12.25  22.14  n/a   0.000
*
================================================================================================


       V    V   I    SSSSS  U   U    A    L             (v 6.2.2011)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\24fae809-ef20-4ae9-ad0b-447586f593e7
\sce
  Summary filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\24fae809-ef20-4ae9-ad0b-447586f593e7
\sce


DATE: 09/21/2022                          TIME: 02:26:10

USER:


COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : RUN 17 - 50yr 24hr 15min SCS  **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     ---------------------
    READ STORM                15.0
    [ Ptot=100.66 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\e217d06d-1dbf-4630-bd89-61
    remark: 50yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0109  1  5.0    0.34    0.07 12.25  62.44 0.62   0.000
    [I%=49.9:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot=100.66 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\e217d06d-1dbf-4630-bd89-61
    remark: 50yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0111  1  5.0    0.21    0.02 12.33  33.56 0.33   0.000
    [CN=58.7         ]
    [ N = 3.0:Tp 0.17]
*
    READ STORM                15.0
    [ Ptot=100.66 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\e217d06d-1dbf-4630-bd89-61
```

```
    remark: 50yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0103  1  5.0    0.31    0.02 12.33  24.74 0.25   0.000
    [CN=49.5         ]
    [ N = 3.0:Tp 0.20]
*
    READ STORM                15.0
    [ Ptot=100.66 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\e217d06d-1dbf-4630-bd89-61
    remark: 50yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.06 12.25  63.97 0.64   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0103+  0104]  0903  3  5.0    0.59    0.08 12.25  43.36  n/a   0.000
*
    READ STORM                15.0
    [ Ptot=100.66 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\e217d06d-1dbf-4630-bd89-61
    remark: 50yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.18 12.25  38.06 0.38   0.000
    [I%=18.2:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot=100.66 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\e217d06d-1dbf-4630-bd89-61
    remark: 50yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.19 12.25  37.89 0.38   0.000
    [I%=19.7:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot=100.66 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\e217d06d-1dbf-4630-bd89-61
    remark: 50yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.12 12.25  51.94 0.52   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0105+  0106]  0902  3  5.0    3.76    0.38 12.25  37.97  n/a   0.000
*
    ADD [  0902+  0107]  0902  1  5.0    4.50    0.50 12.25  40.27  n/a   0.000
*
    READ STORM                15.0
    [ Ptot=100.66 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\e217d06d-1dbf-4630-bd89-61
    remark: 50yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.04 12.25  45.92 0.46   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot=100.66 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\e217d06d-1dbf-4630-bd89-61
    remark: 50yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0102  1  5.0    0.25    0.04 12.25  55.20 0.55   0.000
    [I%=42.5:S%= 2.00]
*
    ADD [  0101+  0102]  0901  3  5.0    0.57    0.09 12.25  49.99  n/a   0.000
*
    READ STORM                15.0
    [ Ptot=100.66 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\e217d06d-1dbf-4630-bd89-61
    remark: 50yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0112  1  5.0    0.82    0.03 12.50  22.19 0.22   0.000
    [CN=46.1         ]
    [ N = 3.0:Tp 0.37]
*
    ADD [  0112+  0901]  0904  3  5.0    1.39    0.11 12.25  33.59  n/a   0.000
*
    READ STORM                15.0
    [ Ptot=100.66 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\e217d06d-1dbf-4630-bd89-61
    remark: 50yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0110  1  5.0    2.03    0.13 12.25  22.95 0.23   0.000
    [CN=47.4         ]
    [ N = 3.0:Tp 0.16]
*
    READ STORM                15.0
    [ Ptot=100.66 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\e217d06d-1dbf-4630-bd89-61
    remark: 50yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0108  1  5.0    0.18    0.04 12.25  62.83 0.62   0.000
    [I%=50.3:S%= 2.00]
*
    ADD [  0108+  0110]  0905  3  5.0    2.21    0.16 12.25  26.20  n/a   0.000
*
================================================================================================

       V    V   I    SSSSS  U   U    A    L             (v 6.2.2011)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\b18d321c-bc1b-4584-87e7-64379b5f169c
\sce
  Summary filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\b18d321c-bc1b-4584-87e7-64379b5f169c
\sce


DATE: 09/21/2022                          TIME: 02:26:11

USER:


COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : RUN 18 - 100yr 24hr 15min SCS **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms
```

```
      START @  0.00 hrs
      ----------------------
    READ STORM                15.0
    [ Ptot=109.68 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\2bbcb388-acb7-4527-ae9b-c7
    remark: 100yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0109  1  5.0    0.34    0.07 12.25  69.08 0.63   0.000
    [I%=49.9:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot=109.68 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\2bbcb388-acb7-4527-ae9b-c7
    remark: 100yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0111  1  5.0    0.21    0.02 12.25  38.87 0.35   0.000
    [CN=58.7         ]
    [ N = 3.0:Tp 0.17]
*
    READ STORM                15.0
    [ Ptot=109.68 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\2bbcb388-acb7-4527-ae9b-c7
    remark: 100yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0103  1  5.0    0.31    0.02 12.33  29.01 0.26   0.000
    [CN=49.5         ]
    [ N = 3.0:Tp 0.20]
*
    READ STORM                15.0
    [ Ptot=109.68 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\2bbcb388-acb7-4527-ae9b-c7
    remark: 100yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.06 12.25  70.43 0.64   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0103+  0104]  0903  3  5.0    0.59    0.08 12.25  48.66  n/a   0.000
*
    READ STORM                15.0
    [ Ptot=109.68 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\2bbcb388-acb7-4527-ae9b-c7
    remark: 100yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.21 12.25  43.16 0.39   0.000
    [I%=18.2:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot=109.68 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\2bbcb388-acb7-4527-ae9b-c7
    remark: 100yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.22 12.25  42.87 0.39   0.000
    [I%=19.7:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot=109.68 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\2bbcb388-acb7-4527-ae9b-c7
    remark: 100yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.13 12.25  57.53 0.52   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0105+  0106]  0902  3  5.0    3.76    0.43 12.25  43.01  n/a   0.000
*
    ADD [  0902+  0107]  0902  1  5.0    4.50    0.56 12.25  45.40  n/a   0.000
*
    READ STORM                15.0
    [ Ptot=109.68 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\2bbcb388-acb7-4527-ae9b-c7
    remark: 100yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.05 12.25  51.07 0.47   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot=109.68 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\2bbcb388-acb7-4527-ae9b-c7
    remark: 100yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0102  1  5.0    0.25    0.05 12.25  61.25 0.56   0.000
    [I%=42.5:S%= 2.00]
*
    ADD [  0101+  0102]  0901  3  5.0    0.57    0.10 12.25  55.53  n/a   0.000
*
    READ STORM                15.0
    [ Ptot=109.68 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\2bbcb388-acb7-4527-ae9b-c7
    remark: 100yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0112  1  5.0    0.82    0.03 12.50  26.10 0.24   0.000
    [CN=46.1         ]
    [ N = 3.0:Tp 0.37]
*
    ADD [  0112+  0901]  0904  3  5.0    1.39    0.12 12.25  38.17  n/a   0.000
*
    READ STORM                15.0
    [ Ptot=109.68 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\2bbcb388-acb7-4527-ae9b-c7
    remark: 100yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0110  1  5.0    2.03    0.15 12.25  26.97 0.25   0.000
    [CN=47.4         ]
    [ N = 3.0:Tp 0.16]
*
    READ STORM                15.0
    [ Ptot=109.68 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\2bbcb388-acb7-4527-ae9b-c7
    remark: 100yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0108  1  5.0    0.18    0.04 12.25  69.51 0.63   0.000
    [I%=50.3:S%= 2.00]
*
    ADD [  0108+  0110]  0905  3  5.0    2.21    0.19 12.25  30.43  n/a   0.000
*
 FINISH

================================================================================================================

================================================================================================================


       V    V   I    SSSSS  U   U    A    L             (v 6.2.2011)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****
```

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  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
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\sce
  Summary filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\8e9c0bd3-841b-4f56-8b07-b6b89ad82b48
\sce


DATE: 09/21/2022                          TIME: 02:26:09

USER:


COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : RUN 19 - OWEN SOUND CHIC25MM  **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                    min     ha   '  cms   hrs     mm          cms

      START @  0.00 hrs
      -------------------
    READ STORM                  6.0
    [ Ptot= 24.97 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\af5c06c6-9c2d-483e-bb9d-cb
    remark: OWEN SOUND CHIC25MM
*
 *  CALIB STANDHYD       0109  1  5.0    0.34    0.03  1.92  12.59 0.50   0.000
    [I%=49.9:S%= 2.00]
*
    READ STORM                  6.0
    [ Ptot= 24.97 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\af5c06c6-9c2d-483e-bb9d-cb
    remark: OWEN SOUND CHIC25MM
*
 *  CALIB NASHYD         0111  1  5.0    0.21    0.00  2.08   2.11 0.08   0.000
    [CN=58.7         ]
    [ N = 3.0:Tp 0.17]
*
    READ STORM                  6.0
    [ Ptot= 24.97 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\af5c06c6-9c2d-483e-bb9d-cb
    remark: OWEN SOUND CHIC25MM
*
 *  CALIB NASHYD         0103  1  5.0    0.31    0.00  2.17   1.14 0.05   0.000
    [CN=49.5         ]
    [ N = 3.0:Tp 0.20]
*
    READ STORM                  6.0
    [ Ptot= 24.97 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\af5c06c6-9c2d-483e-bb9d-cb
    remark: OWEN SOUND CHIC25MM
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.03  1.92  13.85 0.55   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0103+  0104]  0903  3  5.0    0.59    0.03  1.92   7.17  n/a   0.000
*
    READ STORM                  6.0
    [ Ptot= 24.97 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\af5c06c6-9c2d-483e-bb9d-cb
    remark: OWEN SOUND CHIC25MM
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.05  1.92   5.23 0.21   0.000
    [I%=18.2:S%= 2.00]
*
    READ STORM                  6.0
    [ Ptot= 24.97 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\af5c06c6-9c2d-483e-bb9d-cb
    remark: OWEN SOUND CHIC25MM
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.06  1.92   5.51 0.22   0.000
    [I%=19.7:S%= 2.00]
*
    READ STORM                  6.0
    [ Ptot= 24.97 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\af5c06c6-9c2d-483e-bb9d-cb
    remark: OWEN SOUND CHIC25MM
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.05  1.92  10.52 0.42   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0105+  0106]  0902  3  5.0    3.76    0.12  1.92   5.38  n/a   0.000
*
    ADD [  0902+  0107]  0902  1  5.0    4.50    0.17  1.92   6.22  n/a   0.000
*
    READ STORM                  6.0
    [ Ptot= 24.97 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\af5c06c6-9c2d-483e-bb9d-cb
    remark: OWEN SOUND CHIC25MM
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.02  1.92   8.79 0.35   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                  6.0
    [ Ptot= 24.97 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\af5c06c6-9c2d-483e-bb9d-cb
    remark: OWEN SOUND CHIC25MM
*
 *  CALIB STANDHYD       0102  1  5.0    0.25    0.02  1.92  10.76 0.43   0.000
    [I%=42.5:S%= 2.00]
*
    ADD [  0101+  0102]  0901  3  5.0    0.57    0.04  1.92   9.65  n/a   0.000
*
    READ STORM                  6.0
    [ Ptot= 24.97 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\af5c06c6-9c2d-483e-bb9d-cb
    remark: OWEN SOUND CHIC25MM
*
 *  CALIB NASHYD         0112  1  5.0    0.82    0.00  2.42   0.96 0.04   0.000
    [CN=46.1         ]
    [ N = 3.0:Tp 0.37]
*
    ADD [  0112+  0901]  0904  3  5.0    1.39    0.04  1.92   4.52  n/a   0.000
*
    READ STORM                  6.0
    [ Ptot= 24.97 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\af5c06c6-9c2d-483e-bb9d-cb
    remark: OWEN SOUND CHIC25MM
*
 *  CALIB NASHYD         0110  1  5.0    2.03    0.01  2.08   0.99 0.04   0.000
    [CN=47.4         ]
    [ N = 3.0:Tp 0.16]
*
    READ STORM                  6.0
    [ Ptot= 24.97 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\af5c06c6-9c2d-483e-bb9d-cb
    remark: OWEN SOUND CHIC25MM
*
 *  CALIB STANDHYD       0108  1  5.0    0.18    0.02  1.92  12.63 0.51   0.000
    [I%=50.3:S%= 2.00]
*
```

```
    ADD [  0108+  0110]  0905  3  5.0    2.21    0.02  1.92   1.94  n/a   0.000
*
================================================================================================================


       V    V   I    SSSSS  U   U    A    L              (v 6.2.2011)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\435d5402-8f43-4095-b812-ad998a863524
\sce
  Summary filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\435d5402-8f43-4095-b812-ad998a863524
\sce


DATE: 09/21/2022                          TIME: 02:26:09

USER:


COMMENTS: _____


  ************************************************
  ** SIMULATION : RUN 20 - TIMMINS              **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     --------------------
    READ STORM                15.0
    [ Ptot=193.00 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\81b8db86-9849-46ff-a3ec-d0
    remark: TIMMINS
*
 *  CALIB STANDHYD       0109  1  5.0    0.34    0.03  7.00 134.92 0.70   0.000
    [I%=49.9:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot=193.00 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\81b8db86-9849-46ff-a3ec-d0
    remark: TIMMINS
*
 *  CALIB NASHYD         0111  1  5.0    0.21    0.01  7.00  96.47 0.50   0.000
    [CN=58.7        ]
    [ N = 3.0:Tp 0.17]
*
    READ STORM                15.0
    [ Ptot=193.00 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\81b8db86-9849-46ff-a3ec-d0
    remark: TIMMINS
*
 *  CALIB NASHYD         0103  1  5.0    0.31    0.02  7.00  77.47 0.40   0.000
    [CN=49.5        ]
    [ N = 3.0:Tp 0.20]
*
    READ STORM                15.0
    [ Ptot=193.00 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\81b8db86-9849-46ff-a3ec-d0
    remark: TIMMINS
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.02  7.00 133.66 0.69   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0103+  0104]  0903  3  5.0    0.59    0.04  7.00 104.13  n/a   0.000
*
    READ STORM                15.0
    [ Ptot=193.00 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\81b8db86-9849-46ff-a3ec-d0
    remark: TIMMINS
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.12  7.00  97.71 0.51   0.000
    [I%=18.2:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot=193.00 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\81b8db86-9849-46ff-a3ec-d0
    remark: TIMMINS
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.12  7.00  96.09 0.50   0.000
    [I%=19.7:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot=193.00 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\81b8db86-9849-46ff-a3ec-d0
    remark: TIMMINS
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.05  7.00 113.98 0.59   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0105+  0106]  0902  3  5.0    3.76    0.24  7.00  96.89  n/a   0.000
*
    ADD [  0902+  0107]  0902  1  5.0    4.50    0.29  7.00  99.70  n/a   0.000
*
    READ STORM                15.0
    [ Ptot=193.00 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\81b8db86-9849-46ff-a3ec-d0
    remark: TIMMINS
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.02  7.00 103.96 0.54   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot=193.00 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\81b8db86-9849-46ff-a3ec-d0
    remark: TIMMINS
*
 *  CALIB STANDHYD       0102  1  5.0    0.25    0.02  7.00 122.17 0.63   0.000
    [I%=42.5:S%= 2.00]
*
    ADD [  0101+  0102]  0901  3  5.0    0.57    0.04  7.00 111.95  n/a   0.000
*
    READ STORM                15.0
    [ Ptot=193.00 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\81b8db86-9849-46ff-a3ec-d0
    remark: TIMMINS
*
 *  CALIB NASHYD         0112  1  5.0    0.82    0.04  7.08  71.24 0.37   0.000
```

```
    [CN=46.1         ]
    [ N = 3.0:Tp 0.37]
*
    ADD [  0112+  0901]  0904  3  5.0    1.39    0.08  7.00  87.93  n/a   0.000
*
    READ STORM                 15.0
    [ Ptot=193.00 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\81b8db86-9849-46ff-a3ec-d0
    remark: TIMMINS
*
 *  CALIB NASHYD         0110  1  5.0    2.03    0.11  7.00  73.16 0.38   0.000
    [CN=47.4         ]
    [ N = 3.0:Tp 0.16]
*
    READ STORM                 15.0
    [ Ptot=193.00 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\30519500-9f83-4838-af46-1ac00e03db94\81b8db86-9849-46ff-a3ec-d0
    remark: TIMMINS
*
 *  CALIB STANDHYD       0108  1  5.0    0.18    0.02  7.00 135.62 0.70   0.000
    [I%=50.3:S%= 2.00]
*
    ADD [  0108+  0110]  0905  3  5.0    2.21    0.13  7.00  78.25  n/a   0.000
*
```

Appendix D:
Existing Conditions Hydraulic Analysis

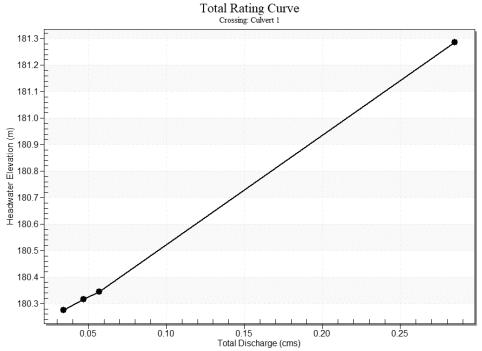
CULVERT 1

Crossing Discharge Data
Discharge Selection Method: User Defined

Table 1 - Summary of Culvert Flows at Crossing: Culvert 1

Headwater Elevation (m)	Discharge Names	Total Discharge (cms)	Ex. Culvert 1 Discharge (cms)	Roadway Discharge (cms)	Iterations
180.28	5-year	0.03	0.03	0.00	1
180.32	25-year	0.05	0.05	0.00	1
180.35	100-year	0.06	0.06	0.00	1
181.27	Overtopping	0.27	0.27	0.00	Overtopping

Rating Curve Plot for Crossing: Culvert 1



Culvert Data: Ex. Culvert 1

Table 2 - Culvert Summary Table: Ex. Culvert 1

Discharge Names	Total Discharge (cms)	Culvert Discharge (cms)	Headwater Elevation (m)	Inlet Control Depth (m)	Outlet Control Depth (m)	Flow Type	Normal Depth (m)	Critical Depth (m)	Outlet Depth (m)	Tailwater Depth (m)	Outlet Velocity (m/s)	Tailwater Velocity (m/s)
5-year	0.03 cms	0.03 cms	180.28	0.19	0.216	2-M2c	0.19	0.13	0.13	0.02	0.94	0.45
25-year	0.05 cms	0.05 cms	180.32	0.22	0.257	2-M2c	0.23	0.15	0.15	0.03	1.03	0.51
100-year	0.06 cms	0.06 cms	180.35	0.25	0.285	2-M2c	0.26	0.16	0.16	0.03	1.09	0.55

Culvert Barrel Data
Culvert Barrel Type Straight Culvert

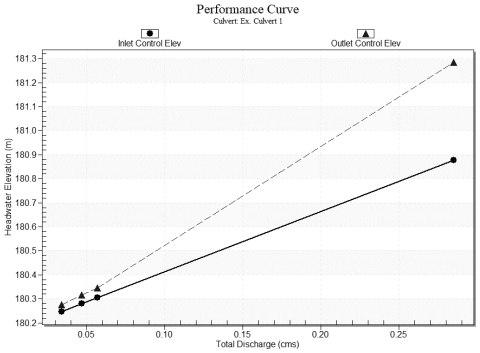
Inlet Elevation (invert): 180.06 m,

Outlet Elevation (invert): 180.00 m

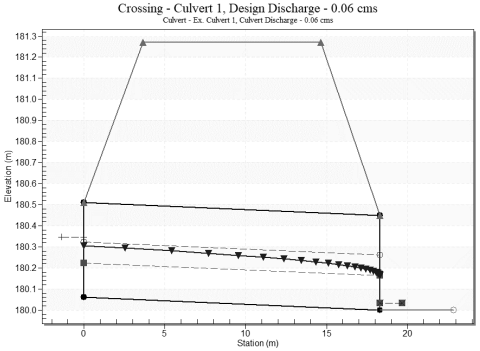
Culvert Length: 18.30 m,

Culvert Slope: 0.0033

Culvert Performance Curve Plot: Ex. Culvert 1



Water Surface Profile Plot for Culvert: Ex. Culvert 1



Site Data - Ex. Culvert 1
Site Data Option: Culvert Invert Data

Inlet Station: 0.00 m

Inlet Elevation: 180.06 m

Outlet Station: 18.30 m

Outlet Elevation: 180.00 m

Number of Barrels: 1

Culvert Data Summary - Ex. Culvert 1
Barrel Shape: Circular

Barrel Diameter: 450.00 mm

Barrel Material: Corrugated Steel

Embedment: 0.00 mm

Barrel Manning's n: 0.0240

Culvert Type: Straight

Inlet Configuration: Thin Edge Projecting

Inlet Depression: None

Tailwater Data for Crossing: Culvert 1

Table 3 - Downstream Channel Rating Curve (Crossing: Culvert 1)

Flow (cms)	Water Surface Elev (m)	Velocity (m/s)	Depth (m)	Shear (Pa)	Froude Number
0.03	180.02	0.02	0.45	8.51	0.92
0.05	180.03	0.03	0.51	10.34	0.95
0.06	180.03	0.03	0.55	11.60	0.96

Tailwater Channel Data - Culvert 1
Tailwater Channel Option: Trapezoidal Channel

Bottom Width: 3.00 m

Side Slope (H:V): 2.30 (_:1)

Channel Slope: 0.0350

Channel Manning's n: 0.0350

Channel Invert Elevation: 180.00 m

Roadway Data for Crossing: Culvert 1
Roadway Profile Shape: Constant Roadway Elevation

Crest Length: 3.00 m

Crest Elevation: 181.27 m

Roadway Surface: Gravel

Roadway Top Width: 11.00 m

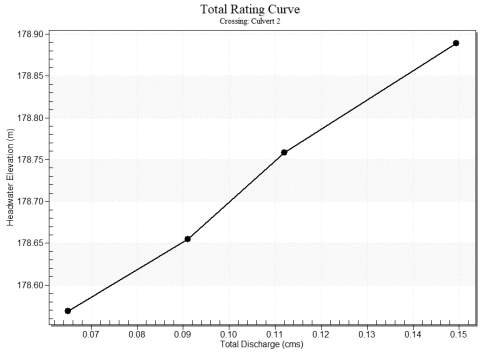
CULVERT 2

Crossing Discharge Data
Discharge Selection Method: User Defined

Table 4 - Summary of Culvert Flows at Crossing: Culvert 2

Headwater Elevation (m)	Discharge Names	Total Discharge (cms)	Ex. Culvert 2 Discharge (cms)	Roadway Discharge (cms)	Iterations
178.57	5-year	0.06	0.06	0.00	1
178.65	25-year	0.09	0.09	0.00	1
178.76	100-year	0.11	0.11	0.00	1
178.86	Overtopping	0.13	0.13	0.00	Overtopping

Rating Curve Plot for Crossing: Culvert 2



Culvert Data: Ex. Culvert 2

Table 5 - Culvert Summary Table: Ex. Culvert 2

Discharge Names	Total Discharge (cms)	Culvert Discharge (cms)	Headwater Elevation (m)	Inlet Control Depth (m)	Outlet Control Depth (m)	Flow Type	Normal Depth (m)	Critical Depth (m)	Outlet Depth (m)	Tailwater Depth (m)	Outlet Velocity (m/s)	Tailwater Velocity (m/s)
5-year	0.06 cms	0.06 cms	178.57	0.28	0.339	2-M2c	0.40	0.18	0.18	0.16	1.17	0.33
25-year	0.09 cms	0.09 cms	178.65	0.35	0.425	7-M2c	0.40	0.22	0.22	0.18	1.31	0.36
100-year	0.11 cms	0.11 cms	178.76	0.40	0.528	7-M2c	0.40	0.24	0.24	0.19	1.41	0.38

Culvert Barrel Data
Culvert Barrel Type Straight Culvert

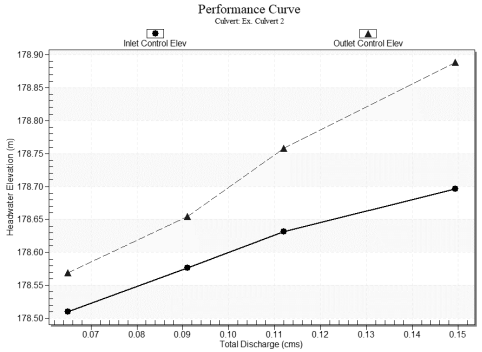
Inlet Elevation (invert): 178.23 m,

Outlet Elevation (invert): 178.19 m

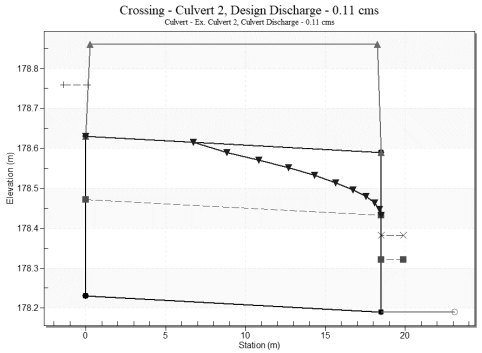
Culvert Length: 18.50 m,

Culvert Slope: 0.0022

Culvert Performance Curve Plot: Ex. Culvert 2



Water Surface Profile Plot for Culvert: Ex. Culvert 2



Site Data - Ex. Culvert 2
Site Data Option: Culvert Invert Data

Inlet Station: 0.00 m

Inlet Elevation: 178.23 m

Outlet Station: 18.50 m

Outlet Elevation: 178.19 m

Number of Barrels: 1

Culvert Data Summary - Ex. Culvert 2
Barrel Shape: Circular

Barrel Diameter: 400.00 mm

Barrel Material: Corrugated Steel

Embedment: 0.00 mm

Barrel Manning's n: 0.0240

Culvert Type: Straight

Inlet Configuration: Thin Edge Projecting

Inlet Depression: None

Tailwater Data for Crossing: Culvert 2

Table 6 - Downstream Channel Rating Curve (Crossing: Culvert 2)

Flow (cms)	Water Surface Elev (m)	Velocity (m/s)	Depth (m)	Shear (Pa)	Froude Number
0.06	178.35	0.16	0.33	6.13	0.38
0.09	178.37	0.18	0.36	6.95	0.38
0.11	178.38	0.19	0.38	7.51	0.39

Tailwater Channel Data - Culvert 2
Tailwater Channel Option: Triangular Channel

Side Slope (H:V): 8.10 (_:1)

Channel Slope: 0.0040

Channel Manning's n: 0.0350

Channel Invert Elevation: 178.19 m

Roadway Data for Crossing: Culvert 2
Roadway Profile Shape: Constant Roadway Elevation

Crest Length: 2.00 m

Crest Elevation: 178.86 m

Roadway Surface: Gravel

Roadway Top Width: 18.00 m

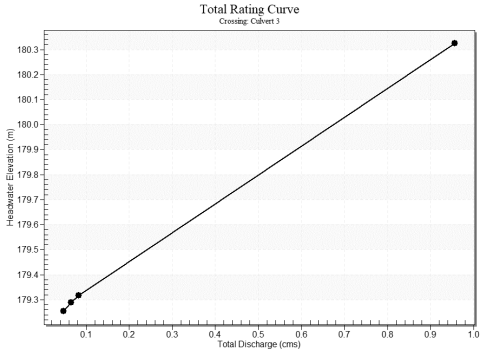
CULVERT 3

Crossing Discharge Data
Discharge Selection Method: User Defined

Table 7 - Summary of Culvert Flows at Crossing: Culvert 3

Headwater Elevation (m)	Discharge Names	Total Discharge (cms)	Ex. Culvert 3 Discharge (cms)	Roadway Discharge (cms)	Iterations
179.25	5-year	0.05	0.05	0.00	1
179.29	25-year	0.06	0.06	0.00	1
179.32	100-year	0.08	0.08	0.00	1
180.30	Overtopping	0.92	0.92	0.00	Overtopping

Rating Curve Plot for Crossing: Culvert 3



Culvert Data: Ex. Culvert 3

Table 8 - Culvert Summary Table: Ex. Culvert 3

Discharge Names	Total Discharge (cms)	Culvert Discharge (cms)	Headwater Elevation (m)	Inlet Control Depth (m)	Outlet Control Depth (m)	Flow Type	Normal Depth (m)	Critical Depth (m)	Outlet Depth (m)	Tailwater Depth (m)	Outlet Velocity (m/s)	Tailwater Velocity (m/s)
5-year	0.05 cms	0.05 cms	179.25	0.18	0.0*	1-S2n	0.12	0.13	0.12	0.09	1.05	0.37
25-year	0.06 cms	0.06 cms	179.29	0.22	0.0*	1-S2n	0.14	0.15	0.14	0.11	1.16	0.41
100-year	0.08 cms	0.08 cms	179.32	0.25	0.0*	1-S2n	0.16	0.17	0.16	0.12	1.24	0.44

* Full Flow Headwater elevation is below inlet invert.

Culvert Barrel Data
Culvert Barrel Type Straight Culvert

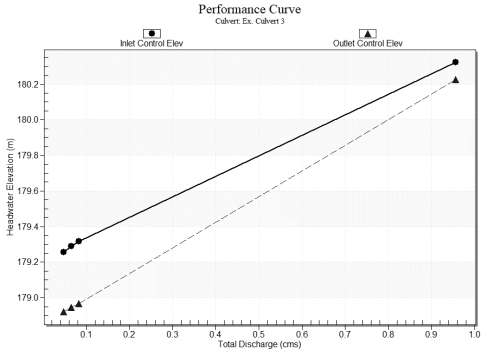
Inlet Elevation (invert): 179.07 m,

Outlet Elevation (invert): 178.79 m

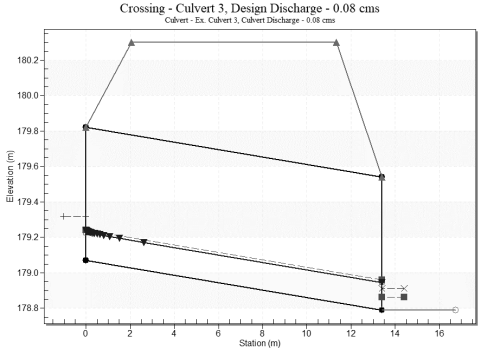
Culvert Length: 13.40 m,

Culvert Slope: 0.0209

Culvert Performance Curve Plot: Ex. Culvert 3



Water Surface Profile Plot for Culvert: Ex. Culvert 3



Site Data - Ex. Culvert 3
Site Data Option: Culvert Invert Data

Inlet Station: 0.00 m

Inlet Elevation: 179.07 m

Outlet Station: 13.40 m

Outlet Elevation: 178.79 m

Number of Barrels: 1

Culvert Data Summary - Ex. Culvert 3
Barrel Shape: Circular

Barrel Diameter: 750.00 mm

Barrel Material: Corrugated Steel

Embedment: 0.00 mm

Barrel Manning's n: 0.0240

Culvert Type: Straight

Inlet Configuration: Thin Edge Projecting

Inlet Depression: None

Tailwater Data for Crossing: Culvert 3

Table 9 - Downstream Channel Rating Curve (Crossing: Culvert 3)

Flow (cms)	Water Surface Elev (m)	Velocity (m/s)	Depth (m)	Shear (Pa)	Froude Number
0.05	178.88	0.09	0.37	4.30	0.41
0.06	178.90	0.11	0.41	5.20	0.43
0.08	178.91	0.12	0.44	5.95	0.43

Tailwater Channel Data - Culvert 3
Tailwater Channel Option: Trapezoidal Channel

Bottom Width: 1.30 m

Side Slope (H:V): 1.90 (_:1)

Channel Slope: 0.0050

Channel Manning's n: 0.0350

Channel Invert Elevation: 178.79 m

Roadway Data for Crossing: Culvert 3
Roadway Profile Shape: Constant Roadway Elevation

Crest Length: 4.00 m

Crest Elevation: 180.30 m

Roadway Surface: Paved

Roadway Top Width: 9.30 m

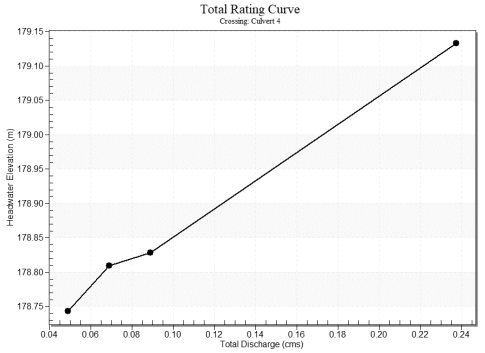
CULVERT 4

Crossing Discharge Data
Discharge Selection Method: User Defined

Table 10 - Summary of Culvert Flows at Crossing: Culvert 4

Headwater Elevation (m)	Discharge Names	Total Discharge (cms)	Ex. Culvert 4 Discharge (cms)	Roadway Discharge (cms)	Iterations
178.74	5-year	0.05	0.05	0.00	1
178.81	25-year	0.07	0.07	0.00	1
178.83	100-year	0.09	0.09	0.00	1
179.08	Overtopping	0.20	0.20	0.00	Overtopping

Rating Curve Plot for Crossing: Culvert 4



Culvert Data: Ex. Culvert 4

Table 11 - Culvert Summary Table: Ex. Culvert 4

Discharge Names	Total Discharge (cms)	Culvert Discharge (cms)	Headwater Elevation (m)	Inlet Control Depth (m)	Outlet Control Depth (m)	Flow Type	Normal Depth (m)	Critical Depth (m)	Outlet Depth (m)	Tailwater Depth (m)	Outlet Velocity (m/s)	Tailwater Velocity (m/s)
5-year	0.05 cms	0.05 cms	178.74	0.24	0.363	7-A2c	-0.30	0.16	0.16	0.14	1.07	0.26
25-year	0.07 cms	0.07 cms	178.81	0.29	0.429	7-A2c	-0.30	0.19	0.19	0.16	1.19	0.28
100-year	0.09 cms	0.09 cms	178.83	0.34	0.449	7-A2c	-0.30	0.21	0.21	0.17	1.30	0.30

Culvert Barrel Data
Culvert Barrel Type Straight Culvert

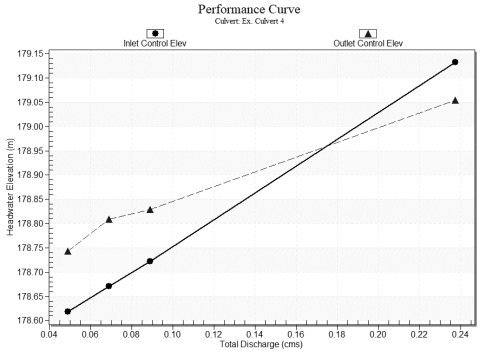
Inlet Elevation (invert): 178.38 m,

Outlet Elevation (invert): 178.45 m

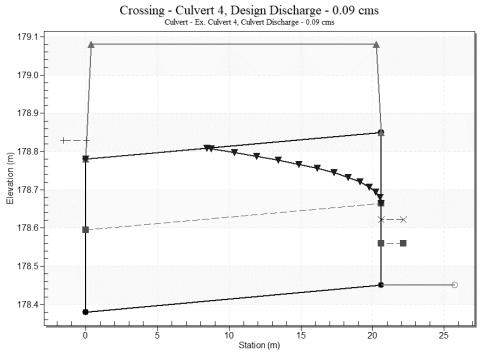
Culvert Length: 20.60 m,

Culvert Slope: -0.0034

Culvert Performance Curve Plot: Ex. Culvert 4



Water Surface Profile Plot for Culvert: Ex. Culvert 4



Site Data - Ex. Culvert 4
Site Data Option: Culvert Invert Data

Inlet Station: 0.00 m

Inlet Elevation: 178.38 m

Outlet Station: 20.60 m

Outlet Elevation: 178.45 m

Number of Barrels: 1

Culvert Data Summary - Ex. Culvert 4
Barrel Shape: Circular

Barrel Diameter: 400.00 mm

Barrel Material: Corrugated Steel

Embedment: 0.00 mm

Barrel Manning's n: 0.0240

Culvert Type: Straight

Inlet Configuration: Thin Edge Projecting

Inlet Depression: None

Tailwater Data for Crossing: Culvert 4

Table 12 - Downstream Channel Rating Curve (Crossing: Culvert 4)

Flow (cms)	Water Surface Elev (m)	Velocity (m/s)	Depth (m)	Shear (Pa)	Froude Number
0.05	178.59	0.14	0.26	4.03	0.32
0.07	178.61	0.16	0.28	4.58	0.33
0.09	178.62	0.17	0.30	5.04	0.33

Tailwater Channel Data - Culvert 4
Tailwater Channel Option: Triangular Channel

Side Slope (H:V): 10.00 (_:1)

Channel Slope: 0.0030

Channel Manning's n: 0.0350

Channel Invert Elevation: 178.45 m

Roadway Data for Crossing: Culvert 4
Roadway Profile Shape: Constant Roadway Elevation

Crest Length: 1.50 m

Crest Elevation: 179.08 m

Roadway Surface: Gravel

Roadway Top Width: 19.90 m

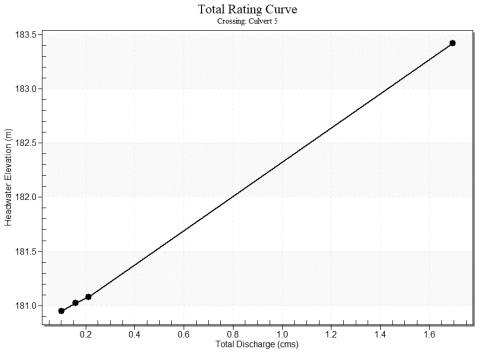
CUVERT 5

Crossing Discharge Data
Discharge Selection Method: User Defined

Table 13 - Summary of Culvert Flows at Crossing: Culvert 5

Headwater Elevation (m)	Discharge Names	Total Discharge (cms)	Ex. Culvert 5 Discharge (cms)	Roadway Discharge (cms)	Iterations
180.95	5-year	0.10	0.10	0.00	1
181.02	25-year	0.16	0.16	0.00	1
181.08	100-year	0.21	0.21	0.00	1
183.40	Overtopping	1.66	1.66	0.00	Overtopping

Rating Curve Plot for Crossing: Culvert 5



Culvert Data: Ex. Culvert 5

Table 14 - Culvert Summary Table: Ex. Culvert 5

Discharge Names	Total Discharge (cms)	Culvert Discharge (cms)	Headwater Elevation (m)	Inlet Control Depth (m)	Outlet Control Depth (m)	Flow Type	Normal Depth (m)	Critical Depth (m)	Outlet Depth (m)	Tailwater Depth (m)	Outlet Velocity (m/s)	Tailwater Velocity (m/s)
5-year	0.10 cms	0.10 cms	180.95	0.27	0.0*	1-S2n	0.16	0.19	0.16	0.04	1.36	1.49
25-year	0.16 cms	0.16 cms	181.02	0.34	0.0*	1-S2n	0.21	0.24	0.21	0.06	1.56	1.76
100-year	0.21 cms	0.21 cms	181.08	0.40	0.0*	1-S2n	0.24	0.27	0.24	0.07	1.69	1.94

* Full Flow Headwater elevation is below inlet invert.

Culvert Barrel Data
Culvert Barrel Type Straight Culvert

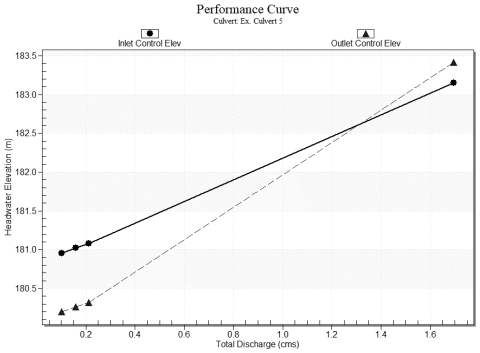
Inlet Elevation (invert): 180.68 m,

Outlet Elevation (invert): 180.00 m

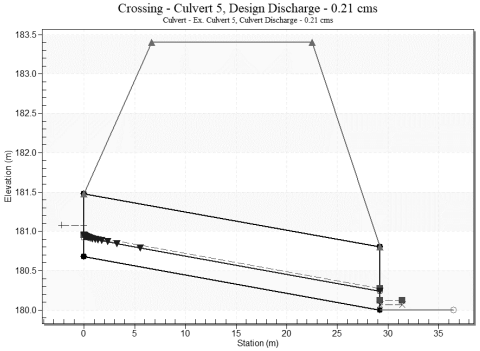
Culvert Length: 29.21 m,

Culvert Slope: 0.0233

Culvert Performance Curve Plot: Ex. Culvert 5



Water Surface Profile Plot for Culvert: Ex. Culvert 5



Site Data - Ex. Culvert 5
Site Data Option: Culvert Invert Data

Inlet Station: 0.00 m

Inlet Elevation: 180.68 m

Outlet Station: 29.20 m

Outlet Elevation: 180.00 m

Number of Barrels: 1

Culvert Data Summary - Ex. Culvert 5
Barrel Shape: Circular

Barrel Diameter: 800.00 mm

Barrel Material: Corrugated Steel

Embedment: 0.00 mm

Barrel Manning's n: 0.0240

Culvert Type: Straight

Inlet Configuration: Thin Edge Projecting

Inlet Depression: None

Tailwater Data for Crossing: Culvert 5

Table 15 - Downstream Channel Rating Curve (Crossing: Culvert 5)

Flow (cms)	Water Surface Elev (m)	Velocity (m/s)	Depth (m)	Shear (Pa)	Froude Number
0.10	180.04	0.04	1.49	109.82	2.34
0.16	180.06	0.06	1.76	143.93	2.43
0.21	180.07	0.07	1.94	169.72	2.49

Tailwater Channel Data - Culvert 5
Tailwater Channel Option: Trapezoidal Channel

Bottom Width: 1.40 m

Side Slope (H:V): 2.70 (_:1)

Channel Slope: 0.2510

Channel Manning's n: 0.0400

Channel Invert Elevation: 180.00 m

Roadway Data for Crossing: Culvert 5
Roadway Profile Shape: Constant Roadway Elevation

Crest Length: 6.00 m

Crest Elevation: 183.40 m

Roadway Surface: Paved

Roadway Top Width: 15.80 m

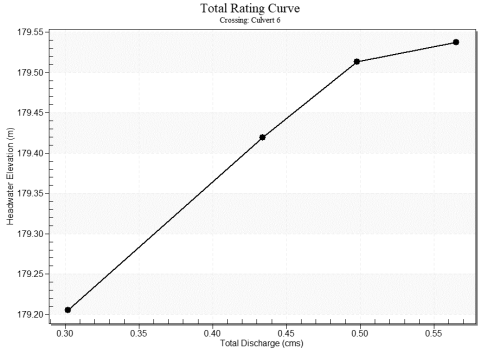
CULVERT 6

Crossing Discharge Data
Discharge Selection Method: User Defined

Table 16 - Summary of Culvert Flows at Crossing: Culvert 6

Headwater Elevation (m)	Discharge Names	Total Discharge (cms)	Ex. Culvert 6 Discharge (cms)	Roadway Discharge (cms)	Iterations
179.21	5-year	0.30	0.30	0.00	1
179.42	25-year	0.43	0.43	0.00	1
179.51	50-year	0.50	0.48	0.01	14
179.54	100-year	0.57	0.49	0.07	5
179.50	Overtopping	0.48	0.48	0.00	Overtopping

Rating Curve Plot for Crossing: Culvert 6



Culvert Data: Ex. Culvert 6

Table 17 - Culvert Summary Table: Ex. Culvert 6

Discharge Names	Total Discharge (cms)	Culvert Discharge (cms)	Headwater Elevation (m)	Inlet Control Depth (m)	Outlet Control Depth (m)	Flow Type	Normal Depth (m)	Critical Depth (m)	Outlet Depth (m)	Tailwater Depth (m)	Outlet Velocity (m/s)	Tailwater Velocity (m/s)
5-year	0.30 cms	0.30 cms	179.21	0.59	0.270	1-S2n	0.33	0.36	0.33	0.14	1.90	0.92
25-year	0.43 cms	0.43 cms	179.42	0.80	0.570	5-S2n	0.42	0.43	0.42	0.16	2.05	1.02
50-year	0.50 cms	0.48 cms	179.51	0.89	0.878	7-M2c	0.46	0.46	0.46	0.17	2.10	1.06
100-year	0.57 cms	0.49 cms	179.54	0.92	0.890	7-M2c	0.47	0.46	0.46	0.19	2.12	1.10

Culvert Barrel Data
Culvert Barrel Type Straight Culvert

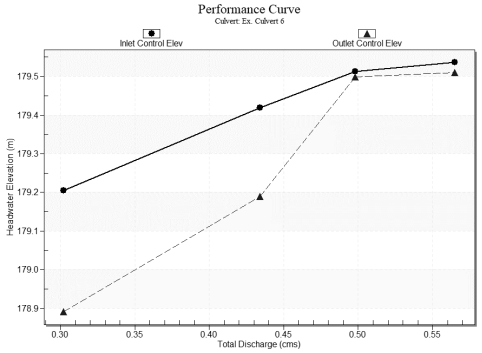
Inlet Elevation (invert): 178.62 m,

Outlet Elevation (invert): 178.32 m

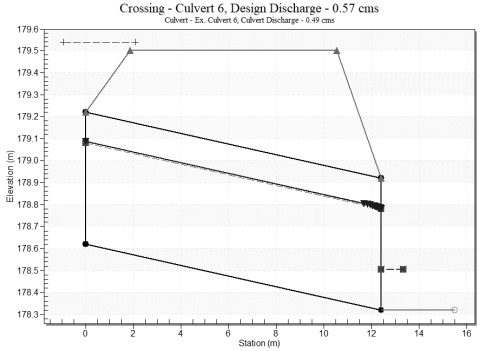
Culvert Length: 12.40 m,

Culvert Slope: 0.0242

Culvert Performance Curve Plot: Ex. Culvert 6



Water Surface Profile Plot for Culvert: Ex. Culvert 6



Site Data - Ex. Culvert 6
Site Data Option: Culvert Invert Data

Inlet Station: 0.00 m

Inlet Elevation: 178.62 m

Outlet Station: 12.40 m

Outlet Elevation: 178.32 m

Number of Barrels: 1

Culvert Data Summary - Ex. Culvert 6
Barrel Shape: Circular

Barrel Diameter: 600.00 mm

Barrel Material: Corrugated Steel

Embedment: 0.00 mm

Barrel Manning's n: 0.0240

Culvert Type: Straight

Inlet Configuration: Thin Edge Projecting

Inlet Depression: None

Tailwater Data for Crossing: Culvert 6

Table 18 - Downstream Channel Rating Curve (Crossing: Culvert 6)

Flow (cms)	Water Surface Elev (m)	Velocity (m/s)	Depth (m)	Shear (Pa)	Froude Number
0.30	178.46	0.14	0.92	31.97	0.95
0.43	178.48	0.16	1.02	38.35	0.98
0.50	178.49	0.17	1.06	41.06	0.99
0.57	178.51	0.19	1.10	43.67	0.99

Tailwater Channel Data - Culvert 6
Tailwater Channel Option: Trapezoidal Channel

Bottom Width: 1.40 m

Side Slope (H:V): 7.40 (_:1)

Channel Slope: 0.0240

Channel Manning's n: 0.0350

Channel Invert Elevation: 178.32 m

Roadway Data for Crossing: Culvert 6
Roadway Profile Shape: Constant Roadway Elevation

Crest Length: 6.00 m

Crest Elevation: 179.50 m

Roadway Surface: Paved

Roadway Top Width: 8.70 m

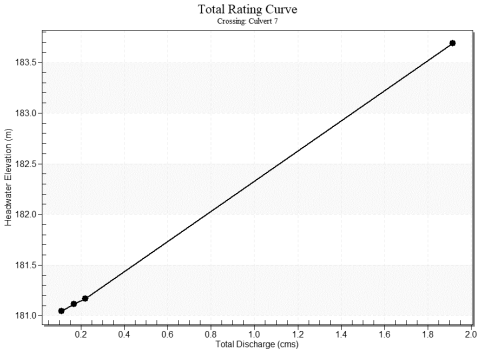
CULVERT 7

Crossing Discharge Data
Discharge Selection Method: User Defined

Table 19 - Summary of Culvert Flows at Crossing: Culvert 7

Headwater Elevation (m)	Discharge Names	Total Discharge (cms)	Ex. Culvert 7 Discharge (cms)	Roadway Discharge (cms)	Iterations
181.05	5-year	0.11	0.11	0.00	1
181.12	25-year	0.17	0.17	0.00	1
181.17	100-year	0.22	0.22	0.00	1
183.65	Overtopping	1.83	1.83	0.00	Overtopping

Rating Curve Plot for Crossing: Culvert 7



Culvert Data: Ex. Culvert 7

Table 20 - Culvert Summary Table: Ex. Culvert 7

Discharge Names	Total Discharge (cms)	Culvert Discharge (cms)	Headwater Elevation (m)	Inlet Control Depth (m)	Outlet Control Depth (m)	Flow Type	Normal Depth (m)	Critical Depth (m)	Outlet Depth (m)	Tailwater Depth (m)	Outlet Velocity (m/s)	Tailwater Velocity (m/s)
5-year	0.11 cms	0.11 cms	181.05	0.28	0.0*	1-S2n	0.15	0.19	0.15	0.14	1.75	0.62
25-year	0.17 cms	0.17 cms	181.12	0.35	0.0*	1-S2n	0.18	0.24	0.18	0.17	1.98	0.70
100-year	0.22 cms	0.22 cms	181.17	0.40	0.0*	1-S2n	0.21	0.28	0.21	0.20	2.14	0.76

* Full Flow Headwater elevation is below inlet invert.

Culvert Barrel Data
Culvert Barrel Type Straight Culvert

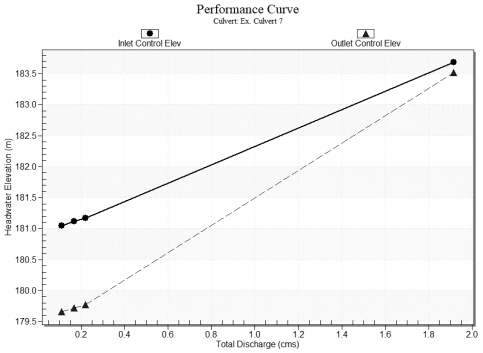
Inlet Elevation (invert): 180.77 m,

Outlet Elevation (invert): 179.45 m

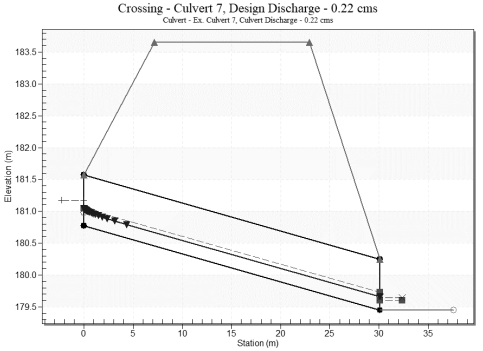
Culvert Length: 30.13 m,

Culvert Slope: 0.0439

Culvert Performance Curve Plot: Ex. Culvert 7



Water Surface Profile Plot for Culvert: Ex. Culvert 7



Site Data - Ex. Culvert 7
Site Data Option: Culvert Invert Data

Inlet Station: 0.00 m

Inlet Elevation: 180.77 m

Outlet Station: 30.10 m

Outlet Elevation: 179.45 m

Number of Barrels: 1

Culvert Data Summary - Ex. Culvert 7
Barrel Shape: Circular

Barrel Diameter: 800.00 mm

Barrel Material: Corrugated Steel

Embedment: 0.00 mm

Barrel Manning's n: 0.0240

Culvert Type: Straight

Inlet Configuration: Thin Edge Projecting

Inlet Depression: None

Tailwater Data for Crossing: Culvert 7

Table 21 - Downstream Channel Rating Curve (Crossing: Culvert 7)

Flow (cms)	Water Surface Elev (m)	Velocity (m/s)	Depth (m)	Shear (Pa)	Froude Number
0.11	179.59	0.14	0.62	17.40	0.61
0.17	179.62	0.17	0.70	21.81	0.63
0.22	179.65	0.20	0.76	25.16	0.64

Tailwater Channel Data - Culvert 7
Tailwater Channel Option: Trapezoidal Channel

Bottom Width: 0.90 m

Side Slope (H:V): 2.90 (_:1)

Channel Slope: 0.0130

Channel Manning's n: 0.0400

Channel Invert Elevation: 179.45 m

Roadway Data for Crossing: Culvert 7
Roadway Profile Shape: Constant Roadway Elevation

Crest Length: 6.00 m

Crest Elevation: 183.65 m

Roadway Surface: Paved

Roadway Top Width: 15.80 m

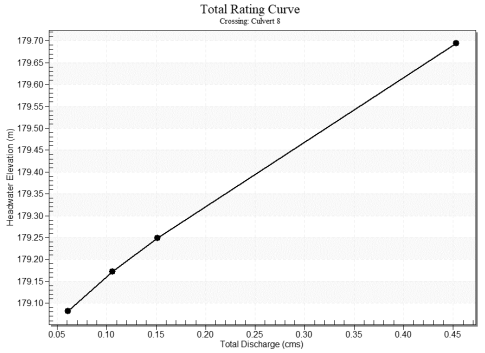
CULVERT 8

Crossing Discharge Data
Discharge Selection Method: User Defined

Table 22 - Summary of Culvert Flows at Crossing: Culvert 8

Headwater Elevation (m)	Discharge Names	Total Discharge (cms)	Ex. Culvert 8 Discharge (cms)	Roadway Discharge (cms)	Iterations
179.08	5-year	0.06	0.06	0.00	1
179.17	25-year	0.11	0.11	0.00	1
179.25	100-year	0.15	0.15	0.00	1
179.66	Overtopping	0.39	0.39	0.00	Overtopping

Rating Curve Plot for Crossing: Culvert 8



Culvert Data: Ex. Culvert 8

Table 23 - Culvert Summary Table: Ex. Culvert 8

Discharge Names	Total Discharge (cms)	Culvert Discharge (cms)	Headwater Elevation (m)	Inlet Control Depth (m)	Outlet Control Depth (m)	Flow Type	Normal Depth (m)	Critical Depth (m)	Outlet Depth (m)	Tailwater Depth (m)	Outlet Velocity (m/s)	Tailwater Velocity (m/s)
5-year	0.06 cms	0.06 cms	179.08	0.23	0.252	3-M1t	0.18	0.16	0.28	0.28	0.47	0.08
25-year	0.11 cms	0.11 cms	179.17	0.31	0.342	3-M1t	0.24	0.21	0.35	0.35	0.61	0.10
100-year	0.15 cms	0.15 cms	179.25	0.38	0.419	3-M1t	0.29	0.25	0.41	0.41	0.73	0.10

Culvert Barrel Data
Culvert Barrel Type Straight Culvert

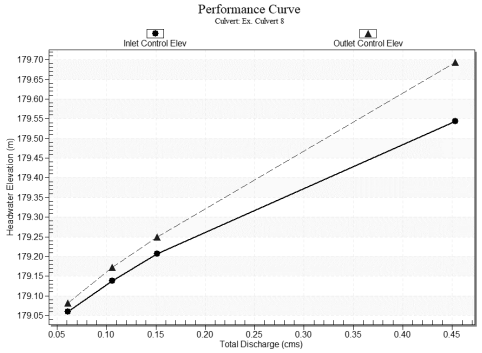
Inlet Elevation (invert): 178.83 m,

Outlet Elevation (invert): 178.72 m

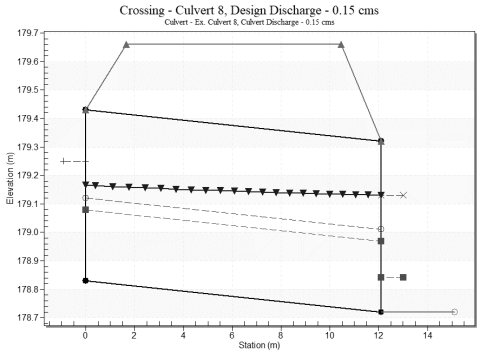
Culvert Length: 12.10 m,

Culvert Slope: 0.0091

Culvert Performance Curve Plot: Ex. Culvert 8



Water Surface Profile Plot for Culvert: Ex. Culvert 8



Site Data - Ex. Culvert 8
Site Data Option: Culvert Invert Data

Inlet Station: 0.00 m

Inlet Elevation: 178.83 m

Outlet Station: 12.10 m

Outlet Elevation: 178.72 m

Number of Barrels: 1

Culvert Data Summary - Ex. Culvert 8
Barrel Shape: Circular

Barrel Diameter: 600.00 mm

Barrel Material: Corrugated Steel

Embedment: 0.00 mm

Barrel Manning's n: 0.0240

Culvert Type: Straight

Inlet Configuration: Thin Edge Projecting

Inlet Depression: None

Tailwater Data for Crossing: Culvert 8

Table 24 - Downstream Channel Rating Curve (Crossing: Culvert 8)

Flow (cms)	Water Surface Elev (m)	Velocity (m/s)	Depth (m)	Shear (Pa)	Froude Number
0.06	179.00	0.28	0.08	0.28	0.07
0.11	179.07	0.35	0.10	0.35	0.07
0.15	179.13	0.41	0.10	0.40	0.07

Tailwater Channel Data - Culvert 8
Tailwater Channel Option: Trapezoidal Channel

Bottom Width: 0.60 m

Side Slope (H:V): 7.10 (_:1)

Channel Slope: 0.0001

Channel Manning's n: 0.0350

Channel Invert Elevation: 178.72 m

Roadway Data for Crossing: Culvert 8
Roadway Profile Shape: Constant Roadway Elevation

Crest Length: 7.00 m

Crest Elevation: 179.66 m

Roadway Surface: Paved

Roadway Top Width: 8.80 m

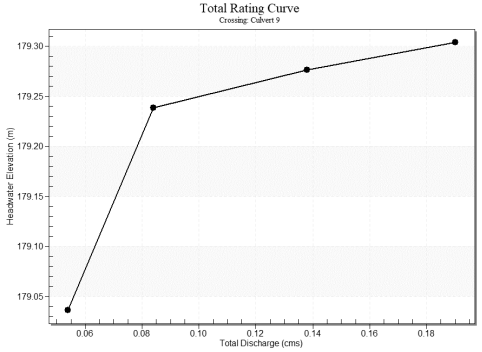
CULVERT 9

Crossing Discharge Data
Discharge Selection Method: User Defined

Table 25 - Summary of Culvert Flows at Crossing: Culvert 9

Headwater Elevation (m)	Discharge Names	Total Discharge (cms)	Ex. Culvert 9 Discharge (cms)	Roadway Discharge (cms)	Iterations
179.04	2-year	0.05	0.05	0.00	1
179.24	5-year	0.08	0.06	0.02	13
179.28	25-year	0.14	0.06	0.07	4
179.30	100-year	0.19	0.06	0.13	3
179.21	Overtopping	0.06	0.06	0.00	Overtopping

Rating Curve Plot for Crossing: Culvert 9



Culvert Data: Ex. Culvert 9

Table 26 - Culvert Summary Table: Ex. Culvert 9

Discharge Names	Total Discharge (cms)	Culvert Discharge (cms)	Headwater Elevation (m)	Inlet Control Depth (m)	Outlet Control Depth (m)	Flow Type	Normal Depth (m)	Critical Depth (m)	Outlet Depth (m)	Tailwater Depth (m)	Outlet Velocity (m/s)	Tailwater Velocity (m/s)
2-year	0.05 cms	0.05 cms	179.04	0.30	0.317	7-M2c	0.24	0.18	0.18	0.14	1.22	0.90
5-year	0.08 cms	0.06 cms	179.24	0.34	0.519	7-M2c	0.30	0.20	0.20	0.16	1.29	1.00
25-year	0.14 cms	0.06 cms	179.28	0.34	0.556	7-M2c	0.30	0.20	0.20	0.19	1.30	1.13
100-year	0.19 cms	0.06 cms	179.30	0.34	0.584	7-M2t	0.30	0.20	0.22	0.22	1.18	1.23

Culvert Barrel Data
Culvert Barrel Type Straight Culvert

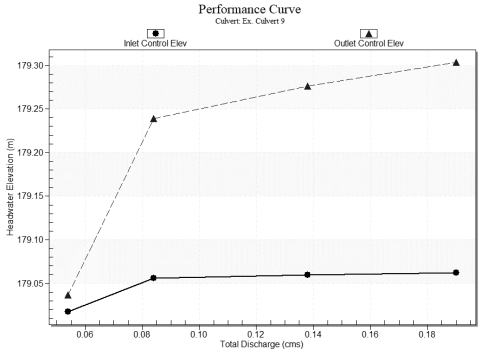
Inlet Elevation (invert): 178.72 m,

Outlet Elevation (invert): 177.93 m

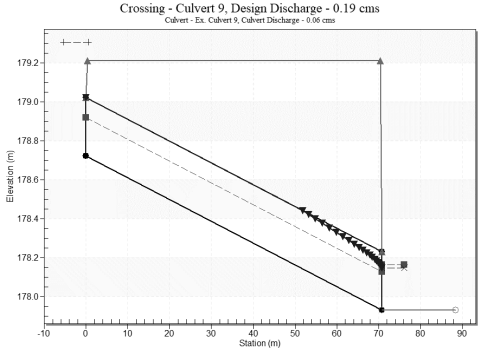
Culvert Length: 70.80 m,

Culvert Slope: 0.0112

Culvert Performance Curve Plot: Ex. Culvert 9



Water Surface Profile Plot for Culvert: Ex. Culvert 9



Site Data - Ex. Culvert 9
Site Data Option: Culvert Invert Data

Inlet Station: 0.00 m

Inlet Elevation: 178.72 m

Outlet Station: 70.80 m

Outlet Elevation: 177.93 m

Number of Barrels: 1

Culvert Data Summary - Ex. Culvert 9
Barrel Shape: Circular

Barrel Diameter: 300.00 mm

Barrel Material: Corrugated Steel

Embedment: 0.00 mm

Barrel Manning's n: 0.0240

Culvert Type: Straight

Inlet Configuration: Thin Edge Projecting

Inlet Depression: None

Tailwater Data for Crossing: Culvert 9

Table 27 - Downstream Channel Rating Curve (Crossing: Culvert 9)

Flow (cms)	Water Surface Elev (m)	Velocity (m/s)	Depth (m)	Shear (Pa)	Froude Number
0.05	178.07	0.14	0.90	50.31	1.10
0.08	178.09	0.16	1.00	59.37	1.13
0.14	178.12	0.19	1.13	71.52	1.17
0.19	178.15	0.22	1.23	80.64	1.19

Tailwater Channel Data - Culvert 9
Tailwater Channel Option: Triangular Channel

Side Slope (H:V): 3.30 (_:1)

Channel Slope: 0.0380

Channel Manning's n: 0.0350

Channel Invert Elevation: 177.93 m

Roadway Data for Crossing: Culvert 9
Roadway Profile Shape: Constant Roadway Elevation

Crest Length: 3.00 m

Crest Elevation: 179.21 m

Roadway Surface: Gravel

Roadway Top Width: 70.00 m

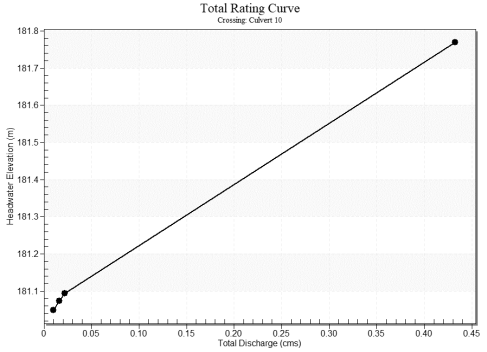
CULVERT 10

Crossing Discharge Data
Discharge Selection Method: User Defined

Table 28 - Summary of Culvert Flows at Crossing: Culvert 10

Headwater Elevation (m)	Discharge Names	Total Discharge (cms)	Ex. Culvert 10 Discharge (cms)	Roadway Discharge (cms)	Iterations
181.05	5-year	0.01	0.01	0.00	1
181.07	25-year	0.02	0.02	0.00	1
181.09	100-year	0.02	0.02	0.00	1
181.75	Overtopping	0.43	0.43	0.00	Overtopping

Rating Curve Plot for Crossing: Culvert 10



Culvert Data: Ex. Culvert 10

Table 29 - Culvert Summary Table: Ex. Culvert 10

Discharge Names	Total Discharge (cms)	Culvert Discharge (cms)	Headwater Elevation (m)	Inlet Control Depth (m)	Outlet Control Depth (m)	Flow Type	Normal Depth (m)	Critical Depth (m)	Outlet Depth (m)	Tailwater Depth (m)	Outlet Velocity (m/s)	Tailwater Velocity (m/s)
5-year	0.01 cms	0.01 cms	181.05	0.09	0.0*	1-S2n	0.06	0.06	0.06	0.03	0.70	0.48
25-year	0.02 cms	0.02 cms	181.07	0.11	0.0*	1-S2n	0.07	0.08	0.07	0.03	0.81	0.54
100-year	0.02 cms	0.02 cms	181.09	0.13	0.0*	1-S2n	0.09	0.09	0.09	0.04	0.89	0.59

* Full Flow Headwater elevation is below inlet invert.

Culvert Barrel Data
Culvert Barrel Type Straight Culvert

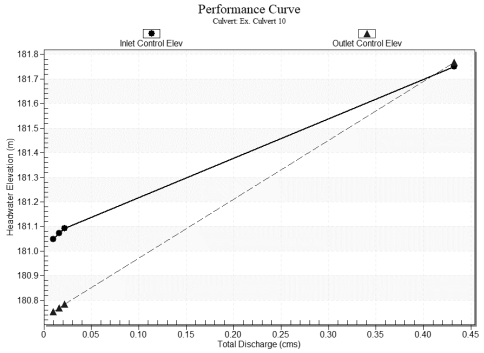
Inlet Elevation (invert): 180.96 m,

Outlet Elevation (invert): 180.69 m

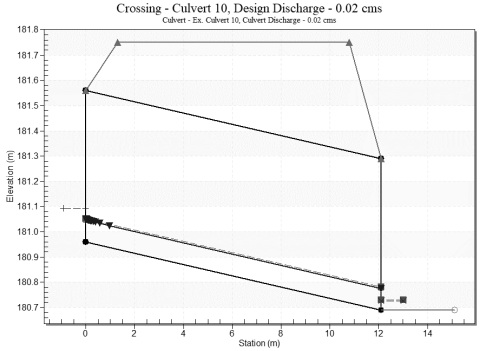
Culvert Length: 12.10 m,

Culvert Slope: 0.0223

Culvert Performance Curve Plot: Ex. Culvert 10



Water Surface Profile Plot for Culvert: Ex. Culvert 10



Site Data - Ex. Culvert 10
Site Data Option: Culvert Invert Data

Inlet Station: 0.00 m

Inlet Elevation: 180.96 m

Outlet Station: 12.10 m

Outlet Elevation: 180.69 m

Number of Barrels: 1

Culvert Data Summary - Ex. Culvert 10
Barrel Shape: Circular

Barrel Diameter: 600.00 mm

Barrel Material: Corrugated Steel

Embedment: 0.00 mm

Barrel Manning's n: 0.0240

Culvert Type: Straight

Inlet Configuration: Thin Edge Projecting

Inlet Depression: None

Tailwater Data for Crossing: Culvert 10

Table 30 - Downstream Channel Rating Curve (Crossing: Culvert 10)

Flow (cms)	Water Surface Elev (m)	Velocity (m/s)	Depth (m)	Shear (Pa)	Froude Number
0.01	180.72	0.03	0.48	23.49	1.34
0.02	180.72	0.03	0.54	28.02	1.38
0.02	180.73	0.04	0.59	31.58	1.40

Tailwater Channel Data - Culvert 10
Tailwater Channel Option: Triangular Channel

Side Slope (H:V): 30.00 (_:1)

Channel Slope: 0.0910

Channel Manning's n: 0.0350

Channel Invert Elevation: 180.69 m

Roadway Data for Crossing: Culvert 10
Roadway Profile Shape: Constant Roadway Elevation

Crest Length: 8.00 m

Crest Elevation: 181.75 m

Roadway Surface: Paved

Roadway Top Width: 9.50 m

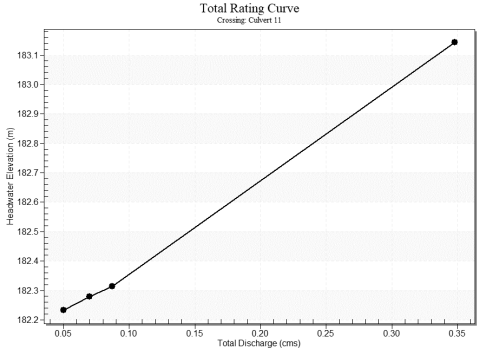
CULVERT 11

Crossing Discharge Data
Discharge Selection Method: User Defined

Table 31 - Summary of Culvert Flows at Crossing: Culvert 11

Headwater Elevation (m)	Discharge Names	Total Discharge (cms)	Ex. Culvert 11 Discharge (cms)	Roadway Discharge (cms)	Iterations
182.23	5-year	0.05	0.05	0.00	1
182.28	25-year	0.07	0.07	0.00	1
182.31	100-year	0.09	0.09	0.00	1
183.14	Overtopping	0.34	0.34	0.00	Overtopping

Rating Curve Plot for Crossing: Culvert 11



Culvert Data: Ex. Culvert 11

Table 32 - Culvert Summary Table: Ex. Culvert 11

Discharge Names	Total Discharge (cms)	Culvert Discharge (cms)	Headwater Elevation (m)	Inlet Control Depth (m)	Outlet Control Depth (m)	Flow Type	Normal Depth (m)	Critical Depth (m)	Outlet Depth (m)	Tailwater Depth (m)	Outlet Velocity (m/s)	Tailwater Velocity (m/s)
5-year	0.05 cms	0.05 cms	182.23	0.21	0.233	2-M2c	0.16	0.14	0.14	0.05	1.00	1.06
25-year	0.07 cms	0.07 cms	182.28	0.25	0.279	2-M2c	0.19	0.17	0.17	0.06	1.10	1.19
100-year	0.09 cms	0.09 cms	182.31	0.29	0.314	2-M2c	0.21	0.19	0.19	0.07	1.18	1.29

Culvert Barrel Data
Culvert Barrel Type Straight Culvert

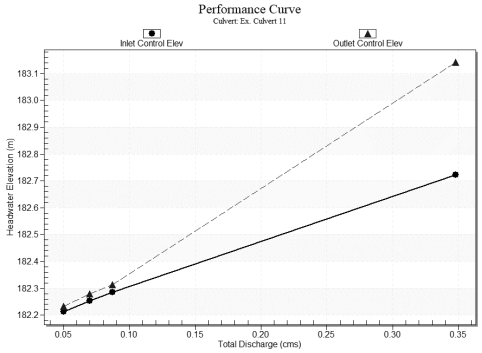
Inlet Elevation (invert): 182.00 m,

Outlet Elevation (invert): 181.18 m

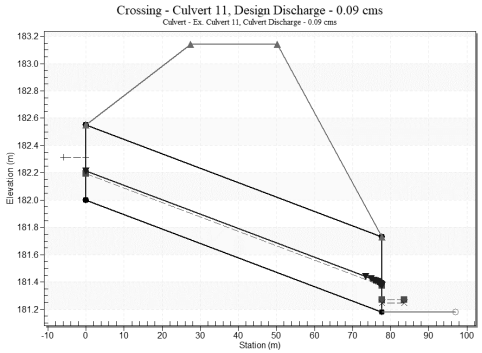
Culvert Length: 77.70 m,

Culvert Slope: 0.0106

Culvert Performance Curve Plot: Ex. Culvert 11



Water Surface Profile Plot for Culvert: Ex. Culvert 11



Site Data - Ex. Culvert 11
Site Data Option: Culvert Invert Data

Inlet Station: 0.00 m

Inlet Elevation: 182.00 m

Outlet Station: 77.70 m

Outlet Elevation: 181.18 m

Number of Barrels: 1

Culvert Data Summary - Ex. Culvert 11
Barrel Shape: Circular

Barrel Diameter: 550.00 mm

Barrel Material: Corrugated Steel

Embedment: 0.00 mm

Barrel Manning's n: 0.0240

Culvert Type: Straight

Inlet Configuration: Thin Edge Projecting

Inlet Depression: None

Tailwater Data for Crossing: Culvert 11

Table 33 - Downstream Channel Rating Curve (Crossing: Culvert 11)

Flow (cms)	Water Surface Elev (m)	Velocity (m/s)	Depth (m)	Shear (Pa)	Froude Number
0.05	181.23	0.05	1.06	56.06	1.62
0.07	181.24	0.06	1.19	68.38	1.66
0.09	181.25	0.07	1.29	77.62	1.69

Tailwater Channel Data - Culvert 11
Tailwater Channel Option: Trapezoidal Channel

Bottom Width: 0.90 m

Side Slope (H:V): 1.90 (_:1)

Channel Slope: 0.1200

Channel Manning's n: 0.0400

Channel Invert Elevation: 181.18 m

Roadway Data for Crossing: Culvert 11
Roadway Profile Shape: Constant Roadway Elevation

Crest Length: 15.00 m

Crest Elevation: 183.14 m

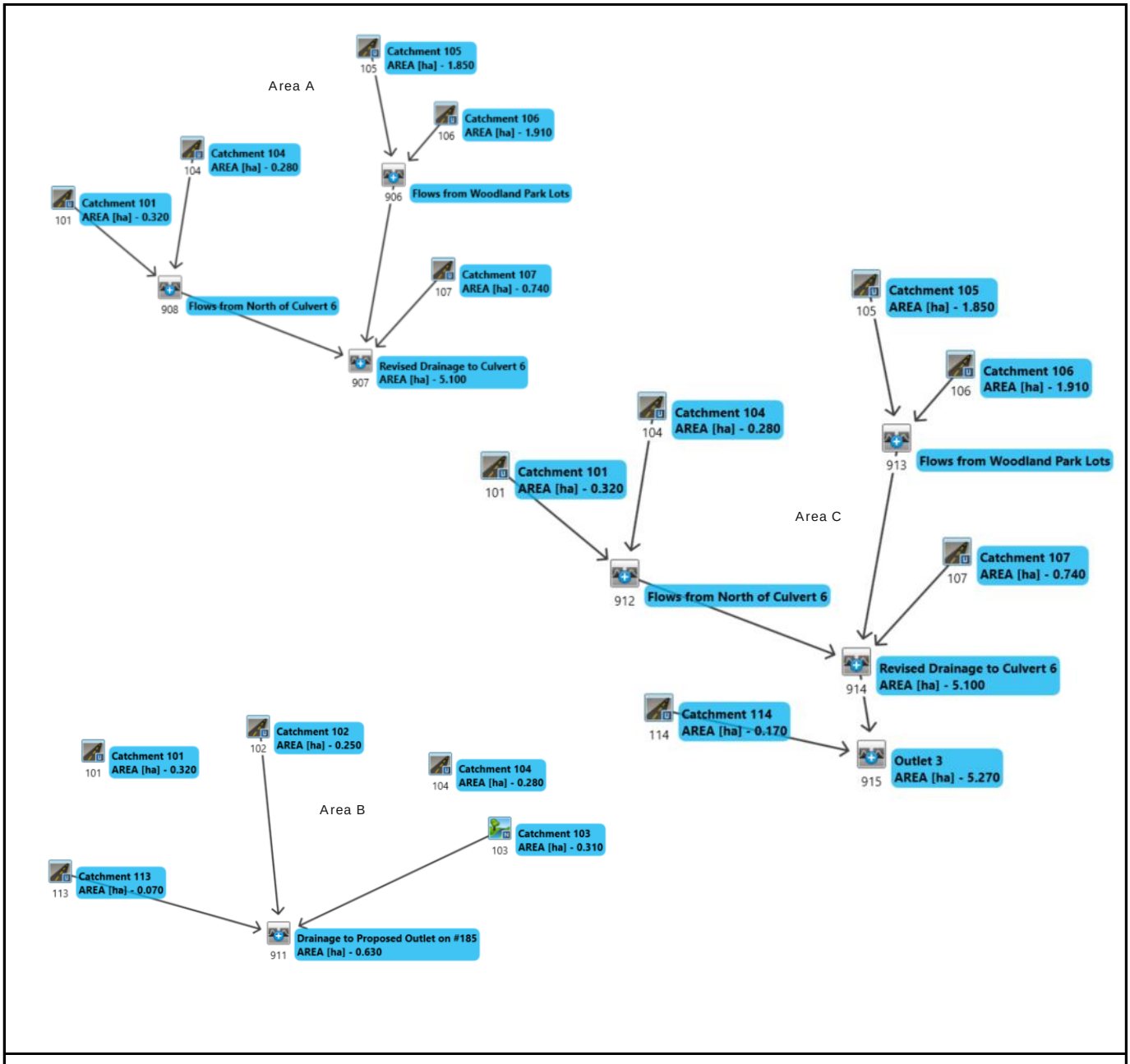
Roadway Surface: Paved

Roadway Top Width: 22.80 m

Appendix E:
Proposed Options
Hydrologic Analysis

TATHAM ENGINEERING

PROJECT	Lakewood Dr. Reconstruction	FILE	122152
	SWM Study	DATE	Dec 2022
SUBJECT	VO Model Schematic	NAME	BG
	Proposed Conditions	PAGE	1 OF 1



NASHYD

ROUTE PIPE

DUHYD

STANDHYD

ROUTE CHANNEL

DIVERT HYD

ADDHYD

ROUTE RESERVOIR

SHIFTHYD

VO SUMMARY OUTPUT - PROP. CONDITIONS FOR AREA A - ALL STORMS

```
================================================================================================================

       V    V   I    SSSSS  U   U    A    L             (v 6.2.2011)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


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DATE: 10/13/2022                          TIME: 01:17:31

USER:


COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : RUN 01 - 2yr 4hr 10min Chicag **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms

      START @  0.00 hrs
      --------------------
    CHIC STORM                10.0
    [ Ptot= 33.14 mm ]
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.03  1.33  12.21 0.37   0.000
    [I%=35.5:S%= 2.00]
*
    CHIC STORM                10.0
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       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


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C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\80409aa7-055b-426d-b393-1c6fc7208468
\sce
  Summary filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\80409aa7-055b-426d-b393-1c6fc7208468
\sce


DATE: 10/13/2022                          TIME: 01:17:30

USER:


COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : RUN 02 - 5yr 4hr 10min Chicag **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms

      START @  0.00 hrs
      --------------------
    CHIC STORM                10.0
    [ Ptot= 42.65 mm ]
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.03  1.33  16.38 0.38   0.000
```

```
    [I%=35.5:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 42.65 mm ]
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.05  1.33  24.82 0.58   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0101+  0104]  0908  3  5.0    0.60    0.08  1.33  20.32  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 42.65 mm ]
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.10  1.33  10.95 0.26   0.000
    [I%=18.2:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 42.65 mm ]
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.11  1.33  11.27 0.26   0.000
    [I%=19.7:S%= 2.00]
*
    ADD [  0105+  0106]  0906  3  5.0    3.76    0.21  1.33  11.11  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 42.65 mm ]
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.09  1.33  19.19 0.45   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0107+  0906]  0907  3  5.0    4.50    0.30  1.33  12.44  n/a   0.000
*
    ADD [  0907+  0908]  0907  1  5.0    5.10    0.38  1.33  13.37  n/a   0.000
*
================================================================================================


       V    V   I    SSSSS  U   U    A    L             (v 6.2.2011)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\d2c74c40-9914-460c-bd8a-3e4b9ff3d59c
\sce
  Summary filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\d2c74c40-9914-460c-bd8a-3e4b9ff3d59c
\sce


DATE: 10/13/2022                          TIME: 01:17:31

USER:
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COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : RUN 03 -10yr 4hr 10min Chicag **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     --------------------
    CHIC STORM                10.0
    [ Ptot= 48.90 mm ]
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.04  1.33  19.24 0.39   0.000
    [I%=35.5:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 48.90 mm ]
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.06  1.33  28.82 0.59   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0101+  0104]  0908  3  5.0    0.60    0.09  1.33  23.71  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 48.90 mm ]
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.12  1.33  13.31 0.27   0.000
    [I%=18.2:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 48.90 mm ]
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.13  1.33  13.61 0.28   0.000
    [I%=19.7:S%= 2.00]
*
    ADD [  0105+  0106]  0906  3  5.0    3.76    0.25  1.33  13.46  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 48.90 mm ]
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.11  1.33  22.42 0.46   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0107+  0906]  0907  3  5.0    4.50    0.36  1.33  14.94  n/a   0.000
*
    ADD [  0907+  0908]  0907  1  5.0    5.10    0.45  1.33  15.97  n/a   0.000
*
================================================================================================


       V    V   I    SSSSS  U   U    A    L             (v 6.2.2011)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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```

```
                ***** S U M M A R Y   O U T P U T *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\3e5d1510-cd10-4a7f-8906-306eefaee5b6
\sce
  Summary filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\3e5d1510-cd10-4a7f-8906-306eefaee5b6
\sce


DATE: 10/13/2022                          TIME: 01:17:30

USER:


COMMENTS: _____________________________________________________________


  ************************************************
  ** SIMULATION : RUN 04 - 25yr 4hr 10min Chica **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     --------------------
    CHIC STORM                10.0
    [ Ptot= 56.81 mm ]
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.05  1.33  22.96 0.40   0.000
    [I%=35.5:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 56.81 mm ]
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.07  1.33  33.96 0.60   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0101+  0104]  0908  3  5.0    0.60    0.11  1.33  28.09  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 56.81 mm ]
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.14  1.33  16.51 0.29   0.000
    [I%=18.2:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 56.81 mm ]
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.16  1.33  16.78 0.30   0.000
    [I%=19.7:S%= 2.00]
*
    ADD [  0105+  0106]  0906  3  5.0    3.76    0.30  1.33  16.64  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 56.81 mm ]
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.13  1.33  26.62 0.47   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0107+  0906]  0907  3  5.0    4.50    0.43  1.33  18.28  n/a   0.000
*
    ADD [  0907+  0908]  0907  1  5.0    5.10    0.54  1.33  19.44  n/a   0.000
*
================================================================================================================
```

```
       V    V   I    SSSSS  U   U    A    L             (v 6.2.2011)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                ***** S U M M A R Y   O U T P U T *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\ab3092ed-9b74-4d38-8720-45d378a775a7
\sce
  Summary filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\ab3092ed-9b74-4d38-8720-45d378a775a7
\sce


DATE: 10/13/2022                          TIME: 01:17:31

USER:


COMMENTS: _____________________________________________________________


  ************************************************
  ** SIMULATION : RUN 05 - 50yr 4hr 10min Chica **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     --------------------
    CHIC STORM                10.0
    [ Ptot= 62.70 mm ]
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.05  1.33  25.83 0.41   0.000
    [I%=35.5:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 62.70 mm ]
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.07  1.33  37.85 0.60   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0101+  0104]  0908  3  5.0    0.60    0.12  1.33  31.44  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 62.70 mm ]
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.16  1.33  19.05 0.30   0.000
    [I%=18.2:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 62.70 mm ]
```

```
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.18  1.33  19.28 0.31   0.000
    [I%=19.7:S%= 2.00]
*
    ADD [  0105+  0106]  0906  3  5.0    3.76    0.34  1.33  19.17  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 62.70 mm ]
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.14  1.33  29.82 0.48   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0107+  0906]  0907  3  5.0    4.50    0.48  1.33  20.92  n/a   0.000
*
    ADD [  0907+  0908]  0907  1  5.0    5.10    0.61  1.33  22.16  n/a   0.000
*
================================================================================================


       V    V   I    SSSSS  U   U    A    L             (v 6.2.2011)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\767cbdcd-996f-49db-bc32-127cd12c2611
\sce
  Summary filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\767cbdcd-996f-49db-bc32-127cd12c2611
\sce


DATE: 10/13/2022                          TIME: 01:17:30

USER:


COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : RUN 06 - 100yr 4hr 10min Chic **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms

      START @  0.00 hrs
      --------------------
    CHIC STORM                10.0
    [ Ptot= 68.57 mm ]
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.06  1.33  28.75 0.42   0.000
    [I%=35.5:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 68.57 mm ]
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.08  1.33  41.79 0.61   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0101+  0104]  0908  3  5.0    0.60    0.14  1.33  34.84  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 68.57 mm ]
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.18  1.33  21.70 0.32   0.000
    [I%=18.2:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 68.57 mm ]
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.20  1.33  21.88 0.32   0.000
    [I%=19.7:S%= 2.00]
*
    ADD [  0105+  0106]  0906  3  5.0    3.76    0.38  1.33  21.79  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 68.57 mm ]
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.16  1.33  33.08 0.48   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0107+  0906]  0907  3  5.0    4.50    0.54  1.33  23.65  n/a   0.000
*
    ADD [  0907+  0908]  0907  1  5.0    5.10    0.68  1.33  24.96  n/a   0.000
*
================================================================================================


       V    V   I    SSSSS  U   U    A    L             (v 6.2.2011)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\eee29e4f-f79f-4712-9efb-f6ddce8bc6e0
\sce
  Summary filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\eee29e4f-f79f-4712-9efb-f6ddce8bc6e0
\sce


DATE: 10/13/2022                          TIME: 01:17:31

USER:
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COMMENTS: _____________________________________________________________


  ************************************************
  ** SIMULATION : RUN 07 - 2yr 12hr 15min SCS T **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms

      START @  0.00 hrs
      --------------------
    READ STORM                 15.0
    [ Ptot= 45.39 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\fb264ff9-bd71-457f-bdbe-6c
    remark: 2yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.02  6.25  17.61 0.39   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                 15.0
    [ Ptot= 45.39 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\fb264ff9-bd71-457f-bdbe-6c
    remark: 2yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.03  6.25  26.58 0.59   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0101+  0104]  0908  3  5.0    0.60    0.05  6.25  21.80  n/a   0.000
*
    READ STORM                 15.0
    [ Ptot= 45.39 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\fb264ff9-bd71-457f-bdbe-6c
    remark: 2yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.06  6.25  11.96 0.26   0.000
    [I%=18.2:S%= 2.00]
*
    READ STORM                 15.0
    [ Ptot= 45.39 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\fb264ff9-bd71-457f-bdbe-6c
    remark: 2yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.07  6.25  12.28 0.27   0.000
    [I%=19.7:S%= 2.00]
*
    ADD [  0105+  0106]  0906  3  5.0    3.76    0.13  6.25  12.12  n/a   0.000
*
    READ STORM                 15.0
    [ Ptot= 45.39 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\fb264ff9-bd71-457f-bdbe-6c
    remark: 2yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.05  6.25  20.60 0.45   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0107+  0906]  0907  3  5.0    4.50    0.18  6.25  13.52  n/a   0.000
*
    ADD [  0907+  0908]  0907  1  5.0    5.10    0.23  6.25  14.49  n/a   0.000
*
================================================================================================


       V    V   I    SSSSS  U   U    A    L             (v 6.2.2011)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL


        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\a7575658-bb70-4153-b5c4-11f7aaa700b2
\sce
  Summary filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\a7575658-bb70-4153-b5c4-11f7aaa700b2
\sce


DATE: 10/13/2022                          TIME: 01:17:31

USER:


COMMENTS: _____________________________________________________________


  ************************************************
  ** SIMULATION : RUN 08 - 5yr 12hr 15min SCS T **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms

      START @  0.00 hrs
      --------------------
    READ STORM                 15.0
    [ Ptot= 57.78 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\9136eb3b-bdfa-4599-a3b7-d6
    remark: 5yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.02  6.25  23.43 0.41   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                 15.0
    [ Ptot= 57.78 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\9136eb3b-bdfa-4599-a3b7-d6
    remark: 5yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.03  6.25  34.59 0.60   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0101+  0104]  0908  3  5.0    0.60    0.06  6.25  28.64  n/a   0.000
*
    READ STORM                 15.0
    [ Ptot= 57.78 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\9136eb3b-bdfa-4599-a3b7-d6
    remark: 5yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.08  6.25  16.92 0.29   0.000
    [I%=18.2:S%= 2.00]
*
    READ STORM                 15.0
    [ Ptot= 57.78 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\9136eb3b-bdfa-4599-a3b7-d6
    remark: 5yr 12hr 15min SCS Type II (MTO)
```

```
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.09  6.25  17.18 0.30   0.000
    [I%=19.7:S%= 2.00]
*
    ADD [  0105+  0106]  0906  3  5.0    3.76    0.17  6.25  17.05  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 57.78 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\9136eb3b-bdfa-4599-a3b7-d6
    remark: 5yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.07  6.25  27.14 0.47   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0107+  0906]  0907  3  5.0    4.50    0.24  6.25  18.71  n/a   0.000
*
    ADD [  0907+  0908]  0907  1  5.0    5.10    0.30  6.25  19.88  n/a   0.000
*
================================================================================================


       V    V   I    SSSSS  U   U    A    L              (v 6.2.2011)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\76f7a897-2d5e-4229-a8a4-3d2bd5bb4556
\sce
  Summary filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\76f7a897-2d5e-4229-a8a4-3d2bd5bb4556
\sce


DATE: 10/13/2022                          TIME: 01:17:30

USER:


COMMENTS: _____________________________________________________________


  ************************************************
  ** SIMULATION : RUN 09 - 10yr 12hr 15min SCS  **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     --------------------
    READ STORM                15.0
    [ Ptot= 65.89 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\1f824f5f-3508-491c-9d9e-d3
    remark: 10yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.03  6.25  27.41 0.42   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 65.89 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\1f824f5f-3508-491c-9d9e-d3
    remark: 10yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.04  6.25  39.96 0.61   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0101+  0104]  0908  3  5.0    0.60    0.07  6.25  33.27  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 65.89 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\1f824f5f-3508-491c-9d9e-d3
    remark: 10yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.10  6.25  20.47 0.31   0.000
    [I%=18.2:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 65.89 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\1f824f5f-3508-491c-9d9e-d3
    remark: 10yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.11  6.25  20.68 0.31   0.000
    [I%=19.7:S%= 2.00]
*
    ADD [  0105+  0106]  0906  3  5.0    3.76    0.22  6.25  20.58  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 65.89 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\1f824f5f-3508-491c-9d9e-d3
    remark: 10yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.08  6.25  31.58 0.48   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0107+  0906]  0907  3  5.0    4.50    0.29  6.25  22.39  n/a   0.000
*
    ADD [  0907+  0908]  0907  1  5.0    5.10    0.36  6.25  23.67  n/a   0.000
*
================================================================================================


       V    V   I    SSSSS  U   U    A    L              (v 6.2.2011)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
```

```
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\8b9dd0ad-aa79-43eb-acf3-1517f21e00a8
\sce
  Summary filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\8b9dd0ad-aa79-43eb-acf3-1517f21e00a8
\sce


DATE: 10/13/2022                          TIME: 01:17:31

USER:


COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : RUN 10 - 25yr 12hr 15min SCS  **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

      START @  0.00 hrs
      --------------------
    READ STORM                15.0
    [ Ptot= 76.11 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\dda72685-972a-479d-a529-0e
    remark: 25yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.03  6.25  32.62 0.43   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 76.11 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\dda72685-972a-479d-a529-0e
    remark: 25yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.05  6.25  46.86 0.62   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0101+  0104]  0908  3  5.0    0.60    0.08  6.25  39.26  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 76.11 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\dda72685-972a-479d-a529-0e
    remark: 25yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.13  6.25  25.27 0.33   0.000
    [I%=18.2:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 76.11 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\dda72685-972a-479d-a529-0e
    remark: 25yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.14  6.25  25.38 0.33   0.000
    [I%=19.7:S%= 2.00]
*
    ADD [  0105+  0106]  0906  3  5.0    3.76    0.26  6.25  25.33  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 76.11 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\dda72685-972a-479d-a529-0e
    remark: 25yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.09  6.25  37.35 0.49   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0107+  0906]  0907  3  5.0    4.50    0.35  6.25  27.30  n/a   0.000
*
    ADD [  0907+  0908]  0907  1  5.0    5.10    0.43  6.25  28.71  n/a   0.000
*
================================================================================================================


       V    V   I    SSSSS  U   U    A    L             (v 6.2.2011)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\71f171ec-8e57-4051-8776-703453d1dde1
\sce
  Summary filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\71f171ec-8e57-4051-8776-703453d1dde1
\sce


DATE: 10/13/2022                          TIME: 01:17:30

USER:


COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : RUN 11 - 50yr 12hr 15min SCS  **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

      START @  0.00 hrs
      --------------------
    READ STORM                15.0
    [ Ptot= 83.83 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\84195784-c130-4926-97ae-bf
    remark: 50yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.04  6.25  36.69 0.44   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 83.83 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\84195784-c130-4926-97ae-bf
    remark: 50yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.05  6.25  52.17 0.62   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0101+  0104]  0908  3  5.0    0.60    0.09  6.25  43.91  n/a   0.000
*
```

```
    READ STORM                15.0
    [ Ptot= 83.83 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\84195784-c130-4926-97ae-bf
    remark: 50yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.16  6.25  29.11 0.35   0.000
    [I%=18.2:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 83.83 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\84195784-c130-4926-97ae-bf
    remark: 50yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.17  6.25  29.14 0.35   0.000
    [I%=19.7:S%= 2.00]
*
    ADD [  0105+  0106]  0906  3  5.0    3.76    0.32  6.25  29.12  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 83.83 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\84195784-c130-4926-97ae-bf
    remark: 50yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.10  6.25  41.84 0.50   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0107+  0906]  0907  3  5.0    4.50    0.43  6.25  31.22  n/a   0.000
*
    ADD [  0907+  0908]  0907  1  5.0    5.10    0.52  6.25  32.71  n/a   0.000
*
================================================================================================


       V    V   I    SSSSS  U   U    A    L             (v 6.2.2011)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\e377e02d-d900-431d-9f63-bc5095d239f3
\sce
  Summary filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\e377e02d-d900-431d-9f63-bc5095d239f3
\sce


DATE: 10/13/2022                          TIME: 01:17:31

USER:


COMMENTS: _____________________________________________________________
```

```
 ***********************************************
 ** SIMULATION : RUN 12 - 100yr 12hr 15min SCS **
 ***********************************************

 W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms


     START @  0.00 hrs
     --------------------
    READ STORM                15.0
    [ Ptot= 91.47 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\6eefda4f-fdae-4cde-ad34-96
    remark: 100yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.04  6.25  40.82 0.45   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 91.47 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\6eefda4f-fdae-4cde-ad34-96
    remark: 100yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.06  6.25  57.49 0.63   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0101+  0104]  0908  3  5.0    0.60    0.10  6.25  48.60  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 91.47 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\6eefda4f-fdae-4cde-ad34-96
    remark: 100yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.18  6.25  33.08 0.36   0.000
    [I%=18.2:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 91.47 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\6eefda4f-fdae-4cde-ad34-96
    remark: 100yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.19  6.25  33.02 0.36   0.000
    [I%=19.7:S%= 2.00]
*
    ADD [  0105+  0106]  0906  3  5.0    3.76    0.37  6.25  33.05  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 91.47 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\6eefda4f-fdae-4cde-ad34-96
    remark: 100yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.11  6.25  46.37 0.51   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0107+  0906]  0907  3  5.0    4.50    0.48  6.25  35.24  n/a   0.000
*
    ADD [  0907+  0908]  0907  1  5.0    5.10    0.58  6.25  36.81  n/a   0.000
*
================================================================================================


       V    V   I    SSSSS  U   U    A    L             (v 6.2.2011)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
```

```
       OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\4dce98aa-9239-49b5-87c5-ee3b7ad213b2
\sce
  Summary filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\4dce98aa-9239-49b5-87c5-ee3b7ad213b2
\sce


DATE: 10/13/2022                          TIME: 01:17:30

USER:


COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : RUN 13 - 2yr 24hr 15min SCS T **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     --------------------
    READ STORM                15.0
    [ Ptot= 55.34 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\861ba7ff-f228-4827-b065-05
    remark: 2yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.02 12.25  22.25 0.40   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 55.34 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\861ba7ff-f228-4827-b065-05
    remark: 2yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.03 12.25  33.01 0.60   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0101+  0104]  0908  3  5.0    0.60    0.05 12.25  27.27  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 55.34 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\861ba7ff-f228-4827-b065-05
    remark: 2yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.07 12.25  15.89 0.29   0.000
    [I%=18.2:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 55.34 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\861ba7ff-f228-4827-b065-05
    remark: 2yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.08 12.25  16.17 0.29   0.000
    [I%=19.7:S%= 2.00]
*
    ADD [  0105+  0106]  0906  3  5.0    3.76    0.15 12.25  16.04  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 55.34 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\861ba7ff-f228-4827-b065-05
    remark: 2yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.06 12.25  25.83 0.47   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0107+  0906]  0907  3  5.0    4.50    0.21 12.25  17.65  n/a   0.000
*
    ADD [  0907+  0908]  0907  1  5.0    5.10    0.26 12.25  18.78  n/a   0.000
*
================================================================================================================


       V    V   I    SSSSS  U   U    A    L             (v 6.2.2011)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

       OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
      O   O    T      T    H   H   Y Y   MM MM  O   O
      O   O    T      T    H   H    Y    M   M  O   O
       OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\fe3e905c-0653-4414-b7a7-f1827f923b6f
\sce
  Summary filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\fe3e905c-0653-4414-b7a7-f1827f923b6f
\sce


DATE: 10/13/2022                          TIME: 01:17:31

USER:


COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : RUN 14 - 5yr 24hr 15min SCS T **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     --------------------
    READ STORM                15.0
    [ Ptot= 69.96 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\586dce84-101b-4e90-8f87-8f
    remark: 5yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.03 12.25  29.45 0.42   0.000
```

```
    [I%=35.5:S%= 2.00]
*
    READ STORM                 15.0
    [ Ptot= 69.96 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\586dce84-101b-4e90-8f87-8f
    remark: 5yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.04 12.25  42.69 0.61   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0101+  0104]  0908  3  5.0    0.60    0.07 12.25  35.63  n/a   0.000
*
    READ STORM                 15.0
    [ Ptot= 69.96 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\586dce84-101b-4e90-8f87-8f
    remark: 5yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.10 12.25  22.34 0.32   0.000
    [I%=18.2:S%= 2.00]
*
    READ STORM                 15.0
    [ Ptot= 69.96 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\586dce84-101b-4e90-8f87-8f
    remark: 5yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.11 12.25  22.51 0.32   0.000
    [I%=19.7:S%= 2.00]
*
    ADD [  0105+  0106]  0906  3  5.0    3.76    0.21 12.25  22.43  n/a   0.000
*
    READ STORM                 15.0
    [ Ptot= 69.96 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\586dce84-101b-4e90-8f87-8f
    remark: 5yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.08 12.25  33.86 0.48   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0107+  0906]  0907  3  5.0    4.50    0.29 12.25  24.31  n/a   0.000
*
    ADD [  0907+  0908]  0907  1  5.0    5.10    0.35 12.25  25.64  n/a   0.000
*
 FINISH

================================================================================================

================================================================================================


       V    V   I    SSSSS  U   U    A    L              (v 6.2.2011)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\05a1ca2e-9300-4d0b-be7b-ce1a84da5748
\sce
  Summary filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\05a1ca2e-9300-4d0b-be7b-ce1a84da5748
\sce


DATE: 10/13/2022                          TIME: 01:17:30

USER:


COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : RUN 15 - 10yr 24hr 15min SCS  **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms


     START @  0.00 hrs
     ---------------------
    READ STORM                 15.0
    [ Ptot= 79.50 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\779489d4-1e48-4de7-b61f-3b
    remark: 10yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.03 12.25  34.39 0.43   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                 15.0
    [ Ptot= 79.50 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\779489d4-1e48-4de7-b61f-3b
    remark: 10yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.04 12.25  49.17 0.62   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0101+  0104]  0908  3  5.0    0.60    0.08 12.25  41.29  n/a   0.000
*
    READ STORM                 15.0
    [ Ptot= 79.50 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\779489d4-1e48-4de7-b61f-3b
    remark: 10yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.12 12.25  26.93 0.34   0.000
    [I%=18.2:S%= 2.00]
*
    READ STORM                 15.0
    [ Ptot= 79.50 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\779489d4-1e48-4de7-b61f-3b
    remark: 10yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.13 12.25  27.01 0.34   0.000
    [I%=19.7:S%= 2.00]
*
    ADD [  0105+  0106]  0906  3  5.0    3.76    0.25 12.25  26.97  n/a   0.000
*
    READ STORM                 15.0
    [ Ptot= 79.50 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\779489d4-1e48-4de7-b61f-3b
    remark: 10yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.09 12.25  39.31 0.49   0.000
    [I%=42.6:S%= 2.00]
*
```

```
    ADD [  0107+  0906]  0907  3  5.0    4.50    0.34 12.25  29.00  n/a   0.000
*
    ADD [  0907+  0908]  0907  1  5.0    5.10    0.42 12.25  30.45  n/a   0.000
*
================================================================================================


       V    V   I    SSSSS  U   U    A    L             (v 6.2.2011)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\5b03ac1a-3577-408c-a5e0-54560f43b396
\sce
  Summary filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\5b03ac1a-3577-408c-a5e0-54560f43b396
\sce


DATE: 10/13/2022                          TIME: 01:17:30

USER:


COMMENTS: _____________________________________________________________


  ************************************************
  ** SIMULATION : RUN 16 - 25yr 24hr 15min SCS  **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms

      START @  0.00 hrs
      --------------------
    READ STORM                15.0
    [ Ptot= 91.52 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\d25d3693-076f-48ae-ba4c-23
    remark: 25yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.04 12.25  40.84 0.45   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 91.52 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\d25d3693-076f-48ae-ba4c-23
    remark: 25yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.05 12.25  57.51 0.63   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0101+  0104]  0908  3  5.0    0.60    0.09 12.25  48.62  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 91.52 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\d25d3693-076f-48ae-ba4c-23
    remark: 25yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.16 12.25  33.10 0.36   0.000
    [I%=18.2:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 91.52 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\d25d3693-076f-48ae-ba4c-23
    remark: 25yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.17 12.25  33.05 0.36   0.000
    [I%=19.7:S%= 2.00]
*
    ADD [  0105+  0106]  0906  3  5.0    3.76    0.33 12.25  33.08  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 91.52 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\d25d3693-076f-48ae-ba4c-23
    remark: 25yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.11 12.25  46.40 0.51   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0107+  0906]  0907  3  5.0    4.50    0.43 12.25  35.27  n/a   0.000
*
    ADD [  0907+  0908]  0907  1  5.0    5.10    0.52 12.25  36.84  n/a   0.000
*
================================================================================================


       V    V   I    SSSSS  U   U    A    L             (v 6.2.2011)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\1bac4a88-8735-40de-82d9-7f6d5c5aa4a6
\sce
  Summary filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\1bac4a88-8735-40de-82d9-7f6d5c5aa4a6
\sce


DATE: 10/13/2022                          TIME: 01:17:30

USER:


COMMENTS: _____________________________________________________________
```

```
  ************************************************
  ** SIMULATION : RUN 17 - 50yr 24hr 15min SCS  **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

      START @  0.00 hrs
      --------------------
    READ STORM                 15.0
    [ Ptot=100.66 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\e217d06d-1dbf-4630-bd89-61
    remark: 50yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.04 12.25  45.92 0.46   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                 15.0
    [ Ptot=100.66 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\e217d06d-1dbf-4630-bd89-61
    remark: 50yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.06 12.25  63.97 0.64   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0101+  0104]  0908  3  5.0    0.60    0.10 12.25  54.35  n/a   0.000
*
    READ STORM                 15.0
    [ Ptot=100.66 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\e217d06d-1dbf-4630-bd89-61
    remark: 50yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.18 12.25  38.06 0.38   0.000
    [I%=18.2:S%= 2.00]
*
    READ STORM                 15.0
    [ Ptot=100.66 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\e217d06d-1dbf-4630-bd89-61
    remark: 50yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.19 12.25  37.89 0.38   0.000
    [I%=19.7:S%= 2.00]
*
    ADD [  0105+  0106]  0906  3  5.0    3.76    0.38 12.25  37.97  n/a   0.000
*
    READ STORM                 15.0
    [ Ptot=100.66 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\e217d06d-1dbf-4630-bd89-61
    remark: 50yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.12 12.25  51.94 0.52   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0107+  0906]  0907  3  5.0    4.50    0.50 12.25  40.27  n/a   0.000
*
    ADD [  0907+  0908]  0907  1  5.0    5.10    0.60 12.25  41.93  n/a   0.000
*
================================================================================================

       V    V   I    SSSSS  U   U    A    L             (v 6.2.2011)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
```

```
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\f62ebbc3-fdc9-4d19-9c6d-1cba82e9a312
\sce
  Summary filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\f62ebbc3-fdc9-4d19-9c6d-1cba82e9a312
\sce


DATE: 10/13/2022                          TIME: 01:17:31

USER:


COMMENTS: _____________________________________________________________


  ************************************************
  ** SIMULATION : RUN 18 - 100yr 24hr 15min SCS **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

      START @  0.00 hrs
      --------------------
    READ STORM                 15.0
    [ Ptot=109.68 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\2bbcb388-acb7-4527-ae9b-c7
    remark: 100yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.05 12.25  51.07 0.47   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                 15.0
    [ Ptot=109.68 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\2bbcb388-acb7-4527-ae9b-c7
    remark: 100yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.06 12.25  70.43 0.64   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0101+  0104]  0908  3  5.0    0.60    0.11 12.25  60.10  n/a   0.000
*
    READ STORM                 15.0
    [ Ptot=109.68 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\2bbcb388-acb7-4527-ae9b-c7
    remark: 100yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.21 12.25  43.16 0.39   0.000
    [I%=18.2:S%= 2.00]
*
    READ STORM                 15.0
    [ Ptot=109.68 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\2bbcb388-acb7-4527-ae9b-c7
    remark: 100yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.22 12.25  42.87 0.39   0.000
```

```
    [I%=19.7:S%= 2.00]
*
    ADD [  0105+  0106]  0906  3  5.0    3.76    0.43 12.25  43.01  n/a   0.000
*
    READ STORM                15.0
    [ Ptot=109.68 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\2bbcb388-acb7-4527-ae9b-c7
    remark: 100yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.13 12.25  57.53 0.52   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0107+  0906]  0907  3  5.0    4.50    0.56 12.25  45.40  n/a   0.000
*
    ADD [  0907+  0908]  0907  1  5.0    5.10    0.68 12.25  47.13  n/a   0.000
*
================================================================================================


       V    V   I    SSSSS  U   U    A    L              (v 6.2.2011)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\3085fe46-da2b-4afb-a33d-4096ed414aca
\sce
  Summary filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\3085fe46-da2b-4afb-a33d-4096ed414aca
\sce


DATE: 10/13/2022                          TIME: 01:17:30

USER:


COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : RUN 19 - OWEN SOUND CHIC25MM  **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     --------------------
    READ STORM                6.0
    [ Ptot= 24.97 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\af5c06c6-9c2d-483e-bb9d-cb
    remark: OWEN SOUND CHIC25MM
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.02  1.92   8.79 0.35   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                6.0
    [ Ptot= 24.97 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\af5c06c6-9c2d-483e-bb9d-cb
    remark: OWEN SOUND CHIC25MM
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.03  1.92  13.85 0.55   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0101+  0104]  0908  3  5.0    0.60    0.05  1.92  11.15  n/a   0.000
*
    READ STORM                6.0
    [ Ptot= 24.97 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\af5c06c6-9c2d-483e-bb9d-cb
    remark: OWEN SOUND CHIC25MM
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.05  1.92   5.23 0.21   0.000
    [I%=18.2:S%= 2.00]
*
    READ STORM                6.0
    [ Ptot= 24.97 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\af5c06c6-9c2d-483e-bb9d-cb
    remark: OWEN SOUND CHIC25MM
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.06  1.92   5.51 0.22   0.000
    [I%=19.7:S%= 2.00]
*
    ADD [  0105+  0106]  0906  3  5.0    3.76    0.12  1.92   5.38  n/a   0.000
*
    READ STORM                6.0
    [ Ptot= 24.97 mm ]
    fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\af5c06c6-9c2d-483e-bb9d-cb
    remark: OWEN SOUND CHIC25MM
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.05  1.92  10.52 0.42   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0107+  0906]  0907  3  5.0    4.50    0.17  1.92   6.22  n/a   0.000
*
    ADD [  0907+  0908]  0907  1  5.0    5.10    0.22  1.92   6.80  n/a   0.000
*
================================================================================================


       V    V   I    SSSSS  U   U    A    L              (v 6.2.2011)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\9350f8f2-2b6e-4592-bdd1-652dd05d0321
\sce
```

Summary filename: *
C:\Users\BGatenby\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\9350f8f2-2b6e-4592-bdd1-652dd05d0321
\sce

DATE: 10/13/2022 TIME: 01:17:31

USER:

COMMENTS: _____

****
** SIMULATION : RUN 20 - TIMMINS **
****

W/E	COMMAND	HYD ID	DT min	AREA ha	' Qpeak cms	Tpeak hrs	R.V. mm	R.C.	Qbase cms
	START @ 0.00 hrs								
	READ STORM		15.0						
	[Ptot=193.00 mm]								
	fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\81b8db86-9849-46ff-a3ec-d0								
	remark: TIMMINS								
*	CALIB STANDHYD	0101	1 5.0	0.32	0.02	7.00	103.96	0.54	0.000
	[I%=35.5:S%= 2.00]								
*	READ STORM		15.0						
	[Ptot=193.00 mm]								
	fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\81b8db86-9849-46ff-a3ec-d0								
	remark: TIMMINS								
*	CALIB STANDHYD	0104	1 5.0	0.28	0.02	7.00	133.66	0.69	0.000
	[I%=57.1:S%= 2.00]								
*	ADD [0101+ 0104]	0908	3 5.0	0.60	0.04	7.00	117.82	n/a	0.000
*	READ STORM		15.0						
	[Ptot=193.00 mm]								
	fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\81b8db86-9849-46ff-a3ec-d0								
	remark: TIMMINS								
*	CALIB STANDHYD	0105	1 5.0	1.85	0.12	7.00	97.71	0.51	0.000
	[I%=18.2:S%= 2.00]								
*	READ STORM		15.0						
	[Ptot=193.00 mm]								
	fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\81b8db86-9849-46ff-a3ec-d0								
	remark: TIMMINS								
*	CALIB STANDHYD	0106	1 5.0	1.91	0.12	7.00	96.09	0.50	0.000
	[I%=19.7:S%= 2.00]								
*	ADD [0105+ 0106]	0906	3 5.0	3.76	0.24	7.00	96.89	n/a	0.000
*	READ STORM		15.0						
	[Ptot=193.00 mm]								
	fname : C:\Users\BGatenby\AppData\Local\Temp\78699a1f-625e-471c-80f4-f9a6f3104b3d\81b8db86-9849-46ff-a3ec-d0								
	remark: TIMMINS								
*	CALIB STANDHYD	0107	1 5.0	0.74	0.05	7.00	113.98	0.59	0.000
	[I%=42.6:S%= 2.00]								
*	ADD [0107+ 0906]	0907	3 5.0	4.50	0.29	7.00	99.70	n/a	0.000
*	ADD [0907+ 0908]	0907	1 5.0	5.10	0.34	7.00	101.83	n/a	0.000

VO SUMMARY OUTPUT - PROP. CONDITIONS FOR AREA B - ALL STORMS

```
================================================================================================================

       V    V   I    SSSSS  U   U    A    L             (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\8c04edbd-f2c2-4eaa-a948-1b8677769f
22\s
  Summary filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\8c04edbd-f2c2-4eaa-a948-1b8677769f
22\s


DATE: 10-27-2022                          TIME: 04:45:52

USER:


COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : RUN 01 - 2yr 4hr 10min Chicag **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms

      START @  0.00 hrs
      --------------------
    CHIC STORM                10.0
    [ Ptot= 33.14 mm ]
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.03  1.33  12.21 0.37   0.000
    [I%=35.5:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 33.14 mm ]
*
 *  CALIB STANDHYD       0113  1  5.0    0.07    0.01  1.33  27.93 0.84   0.000
    [I%=85.7:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 33.14 mm ]
*
 *  CALIB STANDHYD       0102  1  5.0    0.25    0.02  1.33  14.90 0.45   0.000
    [I%=42.5:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 33.14 mm ]
*
 *  CALIB NASHYD         0103  1  5.0    0.31    0.00  1.50   2.36 0.07   0.000
    [CN=49.5       ]
    [ N = 3.0:Tp 0.20]
*
    ADD [  0102+  0103]  0911  3  5.0    0.56    0.02  1.33   7.96  n/a   0.000
*
    ADD [  0911+  0113]  0911  1  5.0    0.63    0.04  1.33  10.18  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 33.14 mm ]
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.04  1.33  18.82 0.57   0.000
    [I%=57.1:S%= 2.00]
*
================================================================================================================


       V    V   I    SSSSS  U   U    A    L             (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\8bb91fef-ae82-40e2-bea7-60d22f27e3
2f\s
  Summary filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\8bb91fef-ae82-40e2-bea7-60d22f27e3
2f\s


DATE: 10-27-2022                          TIME: 04:45:52

USER:


COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : RUN 02 - 5yr 4hr 10min Chicag **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms

      START @  0.00 hrs
      --------------------
    CHIC STORM                10.0
    [ Ptot= 42.65 mm ]
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.03  1.33  16.38 0.38   0.000
    [I%=35.5:S%= 2.00]
*
    CHIC STORM                10.0
```

```
    [ Ptot= 42.65 mm ]
*
 *  CALIB STANDHYD       0113  1  5.0    0.07    0.02  1.33  36.36 0.85   0.000
    [I%=85.7:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 42.65 mm ]
*
 *  CALIB STANDHYD       0102  1  5.0    0.25    0.03  1.33  19.95 0.47   0.000
    [I%=42.5:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 42.65 mm ]
*
 *  CALIB NASHYD         0103  1  5.0    0.31    0.00  1.50   4.27 0.10   0.000
    [CN=49.5         ]
    [ N = 3.0:Tp 0.20]
*
    ADD [  0102+  0103]  0911  3  5.0    0.56    0.03  1.33  11.27  n/a   0.000
*
    ADD [  0911+  0113]  0911  1  5.0    0.63    0.05  1.33  14.06  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 42.65 mm ]
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.05  1.33  24.82 0.58   0.000
    [I%=57.1:S%= 2.00]
*
================================================================================================

       V    V   I    SSSSS  U   U    A    L             (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\7a6b171d-96ae-4a58-bfff-28bd46c55a
4a\s
  Summary filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\7a6b171d-96ae-4a58-bfff-28bd46c55a
4a\s


DATE: 10-27-2022                          TIME: 04:45:52

USER:


COMMENTS: _____________________________________________________________


  ************************************************
  ** SIMULATION : RUN 03 -10yr 4hr 10min Chicag **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms


     START @  0.00 hrs
     --------------------
    CHIC STORM                10.0
    [ Ptot= 48.90 mm ]
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.04  1.33  19.24 0.39   0.000
    [I%=35.5:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 48.90 mm ]
*
 *  CALIB STANDHYD       0113  1  5.0    0.07    0.02  1.33  41.94 0.86   0.000
    [I%=85.7:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 48.90 mm ]
*
 *  CALIB STANDHYD       0102  1  5.0    0.25    0.04  1.33  23.41 0.48   0.000
    [I%=42.5:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 48.90 mm ]
*
 *  CALIB NASHYD         0103  1  5.0    0.31    0.00  1.50   5.78 0.12   0.000
    [CN=49.5         ]
    [ N = 3.0:Tp 0.20]
*
    ADD [  0102+  0103]  0911  3  5.0    0.56    0.04  1.33  13.65  n/a   0.000
*
    ADD [  0911+  0113]  0911  1  5.0    0.63    0.06  1.33  16.79  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 48.90 mm ]
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.06  1.33  28.82 0.59   0.000
    [I%=57.1:S%= 2.00]
*
================================================================================================

       V    V   I    SSSSS  U   U    A    L             (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\5fd72d29-f75b-4eef-ab34-be8d49077a
41\s
  Summary filename:
```

C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\5fd72d29-f75b-4eef-ab34-be8d49077a41\s

DATE: 10-27-2022 TIME: 04:45:51

USER:

COMMENTS: _____

```
  ************************************************
  ** SIMULATION : RUN 04 - 25yr 4hr 10min Chica **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms

      START @  0.00 hrs
      --------------------
    CHIC STORM                10.0
    [ Ptot= 56.81 mm ]
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.05  1.33  22.96 0.40   0.000
    [I%=35.5:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 56.81 mm ]
*
 *  CALIB STANDHYD       0113  1  5.0    0.07    0.02  1.33  49.03 0.86   0.000
    [I%=85.7:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 56.81 mm ]
*
 *  CALIB STANDHYD       0102  1  5.0    0.25    0.04  1.33  27.90 0.49   0.000
    [I%=42.5:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 56.81 mm ]
*
 *  CALIB NASHYD         0103  1  5.0    0.31    0.01  1.50   7.97 0.14   0.000
    [CN=49.5         ]
    [ N = 3.0:Tp 0.20]
*
    ADD [  0102+  0103]  0911  3  5.0    0.56    0.05  1.33  16.86  n/a   0.000
*
    ADD [  0911+  0113]  0911  1  5.0    0.63    0.07  1.33  20.44  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 56.81 mm ]
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.07  1.33  33.96 0.60   0.000
    [I%=57.1:S%= 2.00]
*
================================================================================================

       V    V   I    SSSSS  U   U    A    L              (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
```

```
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                  *****  S U M M A R Y   O U T P U T  *****

  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\1324f86f-2204-4806-9030-fa2b9209a6a0\s
  Summary filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\1324f86f-2204-4806-9030-fa2b9209a6a0\s

DATE: 10-27-2022 TIME: 04:45:51

USER:

COMMENTS: _____

  ************************************************
  ** SIMULATION : RUN 05 - 50yr 4hr 10min Chica **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms

      START @  0.00 hrs
      --------------------
    CHIC STORM                10.0
    [ Ptot= 62.70 mm ]
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.05  1.33  25.83 0.41   0.000
    [I%=35.5:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 62.70 mm ]
*
 *  CALIB STANDHYD       0113  1  5.0    0.07    0.03  1.33  54.35 0.87   0.000
    [I%=85.7:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 62.70 mm ]
*
 *  CALIB STANDHYD       0102  1  5.0    0.25    0.05  1.33  31.33 0.50   0.000
    [I%=42.5:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 62.70 mm ]
*
 *  CALIB NASHYD         0103  1  5.0    0.31    0.01  1.50   9.78 0.16   0.000
    [CN=49.5         ]
    [ N = 3.0:Tp 0.20]
*
    ADD [  0102+  0103]  0911  3  5.0    0.56    0.06  1.33  19.40  n/a   0.000
*
    ADD [  0911+  0113]  0911  1  5.0    0.63    0.08  1.33  23.29  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 62.70 mm ]
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.07  1.33  37.85 0.60   0.000
    [I%=57.1:S%= 2.00]
```

```
*
==========================================================================================

       V    V   I    SSSSS  U   U    A    L             (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\e5550ab2-0413-4a87-868c-d71eb8c202
40\s
  Summary filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\e5550ab2-0413-4a87-868c-d71eb8c202
40\s


DATE: 10-27-2022                          TIME: 04:45:52

USER:


COMMENTS: _____________________________________________________________


  ************************************************
  ** SIMULATION : RUN 06 - 100yr 4hr 10min Chic **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms

      START @  0.00 hrs
      --------------------
    CHIC STORM                10.0
    [ Ptot= 68.57 mm ]
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.06  1.33  28.75 0.42   0.000
    [I%=35.5:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 68.57 mm ]
*
 *  CALIB STANDHYD       0113  1  5.0    0.07    0.03  1.33  59.66 0.87   0.000
    [I%=85.7:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 68.57 mm ]
*
 *  CALIB STANDHYD       0102  1  5.0    0.25    0.05  1.33  34.85 0.51   0.000
    [I%=42.5:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 68.57 mm ]
*
 *  CALIB NASHYD         0103  1  5.0    0.31    0.01  1.50  11.74 0.17   0.000
    [CN=49.5       ]
    [ N = 3.0:Tp 0.20]
*
    ADD [  0102+  0103]  0911  3  5.0    0.56    0.06  1.33  22.06  n/a   0.000
*
    ADD [  0911+  0113]  0911  1  5.0    0.63    0.09  1.33  26.23  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 68.57 mm ]
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.08  1.33  41.79 0.61   0.000
    [I%=57.1:S%= 2.00]
*
 FINISH

==========================================================================================

==========================================================================================

       V    V   I    SSSSS  U   U    A    L             (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\34c86828-872f-43bf-8917-e770878c4d
f5\s
  Summary filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\34c86828-872f-43bf-8917-e770878c4d
f5\s


DATE: 10-27-2022                          TIME: 04:45:51

USER:


COMMENTS: _____________________________________________________________


  ************************************************
  ** SIMULATION : RUN 07 - 2yr 12hr 15min SCS T **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms

      START @  0.00 hrs
      --------------------
    READ STORM                15.0
    [ Ptot= 45.39 mm ]
```

```
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\fb264ff9-bd71-457f-bdbe-
    remark: 2yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.02  6.25  17.61 0.39   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 45.39 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\fb264ff9-bd71-457f-bdbe-
    remark: 2yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0113  1  5.0    0.07    0.01  6.25  38.80 0.85   0.000
    [I%=85.7:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 45.39 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\fb264ff9-bd71-457f-bdbe-
    remark: 2yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0102  1  5.0    0.25    0.02  6.25  21.44 0.47   0.000
    [I%=42.5:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 45.39 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\fb264ff9-bd71-457f-bdbe-
    remark: 2yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0103  1  5.0    0.31    0.00  6.33   4.90 0.11   0.000
    [CN=49.5         ]
    [ N = 3.0:Tp 0.20]
*
    ADD [  0102+  0103]  0911  3  5.0    0.56    0.02  6.25  12.29  n/a   0.000
*
    ADD [  0911+  0113]  0911  1  5.0    0.63    0.03  6.25  15.23  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 45.39 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\fb264ff9-bd71-457f-bdbe-
    remark: 2yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.03  6.25  26.58 0.59   0.000
    [I%=57.1:S%= 2.00]
*
================================================================================================

       V    V   I    SSSSS  U   U    A    L             (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\969e5087-dc28-4e83-9769-ecfcf43300
ef\s

  Summary filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\969e5087-dc28-4e83-9769-ecfcf43300
ef\s


DATE: 10-27-2022                          TIME: 04:45:52

USER:


COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : RUN 08 - 5yr 12hr 15min SCS T **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     --------------------
    READ STORM                15.0
    [ Ptot= 57.78 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\9136eb3b-bdfa-4599-a3b7-
    remark: 5yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.02  6.25  23.43 0.41   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 57.78 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\9136eb3b-bdfa-4599-a3b7-
    remark: 5yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0113  1  5.0    0.07    0.01  6.25  49.91 0.86   0.000
    [I%=85.7:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 57.78 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\9136eb3b-bdfa-4599-a3b7-
    remark: 5yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0102  1  5.0    0.25    0.02  6.25  28.45 0.49   0.000
    [I%=42.5:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 57.78 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\9136eb3b-bdfa-4599-a3b7-
    remark: 5yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0103  1  5.0    0.31    0.01  6.33   8.25 0.14   0.000
    [CN=49.5         ]
    [ N = 3.0:Tp 0.20]
*
    ADD [  0102+  0103]  0911  3  5.0    0.56    0.03  6.25  17.27  n/a   0.000
*
    ADD [  0911+  0113]  0911  1  5.0    0.63    0.04  6.25  20.90  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 57.78 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\9136eb3b-bdfa-4599-a3b7-
    remark: 5yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.03  6.25  34.59 0.60   0.000
    [I%=57.1:S%= 2.00]
*
================================================================================================
```

```
       V    V   I    SSSSS  U   U    A    L              (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\a8a2e3c1-3487-47d5-9c88-8641cf0f23
f5\s
  Summary filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\a8a2e3c1-3487-47d5-9c88-8641cf0f23
f5\s


DATE: 10-27-2022                          TIME: 04:45:52

USER:


COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : RUN 09 - 10yr 12hr 15min SCS  **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     --------------------
    READ STORM                15.0
    [ Ptot= 65.89 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\1f824f5f-3508-491c-9d9e-
    remark: 10yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.03  6.25  27.41 0.42   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 65.89 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\1f824f5f-3508-491c-9d9e-
    remark: 10yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0113  1  5.0    0.07    0.02  6.25  57.24 0.87   0.000
    [I%=85.7:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 65.89 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\1f824f5f-3508-491c-9d9e-
    remark: 10yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0102  1  5.0    0.25    0.03  6.25  33.23 0.50   0.000
    [I%=42.5:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 65.89 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\1f824f5f-3508-491c-9d9e-
    remark: 10yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0103  1  5.0    0.31    0.01  6.33  10.83 0.16   0.000
    [CN=49.5         ]
    [ N = 3.0:Tp 0.20]
*
    ADD [  0102+  0103]  0911  3  5.0    0.56    0.04  6.25  20.83  n/a   0.000
*
    ADD [  0911+  0113]  0911  1  5.0    0.63    0.05  6.25  24.88  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 65.89 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\1f824f5f-3508-491c-9d9e-
    remark: 10yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.04  6.25  39.96 0.61   0.000
    [I%=57.1:S%= 2.00]
*
==============================================================================================================


       V    V   I    SSSSS  U   U    A    L              (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\1c64684e-ffda-497e-8b8a-65fee58561
10\s
  Summary filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\1c64684e-ffda-497e-8b8a-65fee58561
10\s


DATE: 10-27-2022                          TIME: 04:45:51

USER:


COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : RUN 10 - 25yr 12hr 15min SCS  **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
```

```
     --------------------
    READ STORM                15.0
    [ Ptot= 76.11 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\dda72685-972a-479d-a529-
    remark: 25yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.03  6.25  32.62 0.43   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 76.11 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\dda72685-972a-479d-a529-
    remark: 25yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0113  1  5.0    0.07    0.02  6.25  66.52 0.87   0.000
    [I%=85.7:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 76.11 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\dda72685-972a-479d-a529-
    remark: 25yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0102  1  5.0    0.25    0.03  6.25  39.45 0.52   0.000
    [I%=42.5:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 76.11 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\dda72685-972a-479d-a529-
    remark: 25yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0103  1  5.0    0.31    0.01  6.33  14.46 0.19   0.000
    [CN=49.5         ]
    [ N = 3.0:Tp 0.20]
*
    ADD [  0102+  0103]  0911  3  5.0    0.56    0.05  6.25  25.62  n/a   0.000
*
    ADD [  0911+  0113]  0911  1  5.0    0.63    0.06  6.25  30.16  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 76.11 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\dda72685-972a-479d-a529-
    remark: 25yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.05  6.25  46.86 0.62   0.000
    [I%=57.1:S%= 2.00]
*
================================================================================================


       V    V   I    SSSSS  U   U    A    L              (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\69e6d926-faca-4dae-9630-02fe70736f
a7\s
  Summary filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\69e6d926-faca-4dae-9630-02fe70736f
a7\s


DATE: 10-27-2022                          TIME: 04:45:51

USER:


COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : RUN 11 - 50yr 12hr 15min SCS  **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms


     START @  0.00 hrs
     --------------------
    READ STORM                15.0
    [ Ptot= 83.83 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\84195784-c130-4926-97ae-
    remark: 50yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.04  6.25  36.69 0.44   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 83.83 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\84195784-c130-4926-97ae-
    remark: 50yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0113  1  5.0    0.07    0.02  6.25  73.57 0.88   0.000
    [I%=85.7:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 83.83 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\84195784-c130-4926-97ae-
    remark: 50yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0102  1  5.0    0.25    0.04  6.25  44.28 0.53   0.000
    [I%=42.5:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 83.83 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\84195784-c130-4926-97ae-
    remark: 50yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0103  1  5.0    0.31    0.02  6.33  17.47 0.21   0.000
    [CN=49.5         ]
    [ N = 3.0:Tp 0.20]
*
    ADD [  0102+  0103]  0911  3  5.0    0.56    0.05  6.25  29.44  n/a   0.000
*
    ADD [  0911+  0113]  0911  1  5.0    0.63    0.07  6.25  34.34  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 83.83 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\84195784-c130-4926-97ae-
    remark: 50yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.05  6.25  52.17 0.62   0.000
    [I%=57.1:S%= 2.00]
```

```
*
==========================================================================================================


       V    V   I    SSSSS  U   U    A    L             (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\aab2f1a2-1cd9-4722-bf27-7c4b57dae4
93\s
  Summary filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\aab2f1a2-1cd9-4722-bf27-7c4b57dae4
93\s


DATE: 10-27-2022                          TIME: 04:45:52

USER:


COMMENTS: _____________________________________________________________


  ************************************************
  ** SIMULATION : RUN 12 - 100yr 12hr 15min SCS **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms

      START @  0.00 hrs
      ---------------------
    READ STORM                 15.0
    [ Ptot= 91.47 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\6eefda4f-fdae-4cde-ad34-
    remark: 100yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.04  6.25  40.82 0.45   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                 15.0
    [ Ptot= 91.47 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\6eefda4f-fdae-4cde-ad34-
    remark: 100yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0113  1  5.0    0.07    0.02  6.25  80.58 0.88   0.000
    [I%=85.7:S%= 2.00]
*
    READ STORM                 15.0
    [ Ptot= 91.47 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\6eefda4f-fdae-4cde-ad34-
    remark: 100yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0102  1  5.0    0.25    0.04  6.25  49.18 0.54   0.000
    [I%=42.5:S%= 2.00]
*
    READ STORM                 15.0
    [ Ptot= 91.47 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\6eefda4f-fdae-4cde-ad34-
    remark: 100yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0103  1  5.0    0.31    0.02  6.33  20.66 0.23   0.000
    [CN=49.5          ]
    [ N = 3.0:Tp 0.20]
*
    ADD [  0102+  0103]  0911  3  5.0    0.56    0.06  6.25  33.39  n/a   0.000
*
    ADD [  0911+  0113]  0911  1  5.0    0.63    0.08  6.25  38.63  n/a   0.000
*
    READ STORM                 15.0
    [ Ptot= 91.47 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\6eefda4f-fdae-4cde-ad34-
    remark: 100yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.06  6.25  57.49 0.63   0.000
    [I%=57.1:S%= 2.00]
*
==========================================================================================================


       V    V   I    SSSSS  U   U    A    L             (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\536614d9-5316-4d4e-97aa-88f7605b8a
88\s
  Summary filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\536614d9-5316-4d4e-97aa-88f7605b8a
88\s


DATE: 10-27-2022                          TIME: 04:45:51

USER:


COMMENTS: _____________________________________________________________


  ************************************************
  ** SIMULATION : RUN 13 - 2yr 24hr 15min SCS T **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
```

```
                                min     ha    '  cms   hrs     mm          cms

      START @  0.00 hrs
      --------------------
    READ STORM                 15.0
    [ Ptot= 55.34 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\861ba7ff-f228-4827-b065-
    remark: 2yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.02 12.25  22.25 0.40   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                 15.0
    [ Ptot= 55.34 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\861ba7ff-f228-4827-b065-
    remark: 2yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0113  1  5.0    0.07    0.01 12.25  47.72 0.86   0.000
    [I%=85.7:S%= 2.00]
*
    READ STORM                 15.0
    [ Ptot= 55.34 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\861ba7ff-f228-4827-b065-
    remark: 2yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0102  1  5.0    0.25    0.02 12.25  27.05 0.49   0.000
    [I%=42.5:S%= 2.00]
*
    READ STORM                 15.0
    [ Ptot= 55.34 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\861ba7ff-f228-4827-b065-
    remark: 2yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0103  1  5.0    0.31    0.01 12.33   7.54 0.14   0.000
    [CN=49.5         ]
    [ N = 3.0:Tp 0.20]
*
    ADD [  0102+  0103]  0911  3  5.0    0.56    0.03 12.25  16.25  n/a   0.000
*
    ADD [  0911+  0113]  0911  1  5.0    0.63    0.04 12.25  19.74  n/a   0.000
*
    READ STORM                 15.0
    [ Ptot= 55.34 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\861ba7ff-f228-4827-b065-
    remark: 2yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.03 12.25  33.01 0.60   0.000
    [I%=57.1:S%= 2.00]
*
================================================================================================

       V    V   I    SSSSS  U   U    A    L              (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****

  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\8c6bbfe1-d76b-432d-a536-17dd5f2577
64\s
  Summary filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\8c6bbfe1-d76b-432d-a536-17dd5f2577
64\s


DATE: 10-27-2022                          TIME: 04:45:52

USER:


COMMENTS: ____________________________________________________________


  ************************************************
  ** SIMULATION : RUN 14 - 5yr 24hr 15min SCS T **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     --------------------
    READ STORM                 15.0
    [ Ptot= 69.96 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\586dce84-101b-4e90-8f87-
    remark: 5yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.03 12.25  29.45 0.42   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                 15.0
    [ Ptot= 69.96 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\586dce84-101b-4e90-8f87-
    remark: 5yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0113  1  5.0    0.07    0.01 12.25  60.93 0.87   0.000
    [I%=85.7:S%= 2.00]
*
    READ STORM                 15.0
    [ Ptot= 69.96 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\586dce84-101b-4e90-8f87-
    remark: 5yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0102  1  5.0    0.25    0.03 12.25  35.67 0.51   0.000
    [I%=42.5:S%= 2.00]
*
    READ STORM                 15.0
    [ Ptot= 69.96 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\586dce84-101b-4e90-8f87-
    remark: 5yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0103  1  5.0    0.31    0.01 12.33  12.23 0.17   0.000
    [CN=49.5         ]
    [ N = 3.0:Tp 0.20]
*
    ADD [  0102+  0103]  0911  3  5.0    0.56    0.04 12.25  22.69  n/a   0.000
*
    ADD [  0911+  0113]  0911  1  5.0    0.63    0.05 12.25  26.94  n/a   0.000
*
    READ STORM                 15.0
    [ Ptot= 69.96 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\586dce84-101b-4e90-8f87-
    remark: 5yr 24hr 15min SCS Type II (MTO)
```

```
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.04 12.25  42.69 0.61   0.000
    [I%=57.1:S%= 2.00]
*
================================================================================================


       V    V   I    SSSSS  U   U    A    L             (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\39fe4ae3-efe2-414c-bfa2-e20f230f03
6e\s
  Summary filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\39fe4ae3-efe2-414c-bfa2-e20f230f03
6e\s


DATE: 10-27-2022                          TIME: 04:45:51

USER:


COMMENTS: _____________________________________________________________


  ************************************************
  ** SIMULATION : RUN 15 - 10yr 24hr 15min SCS  **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

      START @  0.00 hrs
      --------------------
    READ STORM                15.0
    [ Ptot= 79.50 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\779489d4-1e48-4de7-b61f-
    remark: 10yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.03 12.25  34.39 0.43   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 79.50 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\779489d4-1e48-4de7-b61f-
    remark: 10yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0113  1  5.0    0.07    0.02 12.25  69.61 0.88   0.000
    [I%=85.7:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 79.50 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\779489d4-1e48-4de7-b61f-
    remark: 10yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0102  1  5.0    0.25    0.03 12.25  41.56 0.52   0.000
    [I%=42.5:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 79.50 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\779489d4-1e48-4de7-b61f-
    remark: 10yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0103  1  5.0    0.31    0.01 12.33  15.76 0.20   0.000
    [CN=49.5         ]
    [ N = 3.0:Tp 0.20]
*
    ADD [  0102+  0103]  0911  3  5.0    0.56    0.04 12.25  27.28  n/a   0.000
*
    ADD [  0911+  0113]  0911  1  5.0    0.63    0.06 12.25  31.98  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 79.50 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\779489d4-1e48-4de7-b61f-
    remark: 10yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.04 12.25  49.17 0.62   0.000
    [I%=57.1:S%= 2.00]
*
================================================================================================


       V    V   I    SSSSS  U   U    A    L             (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\09f81b62-1b90-4e2c-a49c-67646ca718
47\s
  Summary filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\09f81b62-1b90-4e2c-a49c-67646ca718
47\s


DATE: 10-27-2022                          TIME: 04:45:51

USER:


COMMENTS: _____________________________________________________________


  ************************************************
  ** SIMULATION : RUN 16 - 25yr 24hr 15min SCS  **
```

```
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms

      START @  0.00 hrs
      --------------------
    READ STORM                15.0
    [ Ptot= 91.52 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\d25d3693-076f-48ae-ba4c-
    remark: 25yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.04 12.25  40.84 0.45   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 91.52 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\d25d3693-076f-48ae-ba4c-
    remark: 25yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0113  1  5.0    0.07    0.02 12.25  80.62 0.88   0.000
    [I%=85.7:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 91.52 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\d25d3693-076f-48ae-ba4c-
    remark: 25yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0102  1  5.0    0.25    0.04 12.25  49.21 0.54   0.000
    [I%=42.5:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 91.52 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\d25d3693-076f-48ae-ba4c-
    remark: 25yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0103  1  5.0    0.31    0.02 12.33  20.68 0.23   0.000
    [CN=49.5         ]
    [ N = 3.0:Tp 0.20]
*
    ADD [  0102+  0103]  0911  3  5.0    0.56    0.05 12.25  33.41  n/a   0.000
*
    ADD [  0911+  0113]  0911  1  5.0    0.63    0.07 12.25  38.66  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 91.52 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\d25d3693-076f-48ae-ba4c-
    remark: 25yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.05 12.25  57.51 0.63   0.000
    [I%=57.1:S%= 2.00]
*
================================================================================================================


       V    V   I    SSSSS  U   U    A    L              (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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```

```
                    *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\c6ee865a-db44-44db-bdc2-cb84a9c337
6d\s
  Summary filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\c6ee865a-db44-44db-bdc2-cb84a9c337
6d\s


DATE: 10-27-2022                          TIME: 04:45:52

USER:


COMMENTS: _____________________________________________________________


  ************************************************
  ** SIMULATION : RUN 17 - 50yr 24hr 15min SCS  **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms


     START @  0.00 hrs
     --------------------
    READ STORM                15.0
    [ Ptot=100.66 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\e217d06d-1dbf-4630-bd89-
    remark: 50yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.04 12.25  45.92 0.46   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot=100.66 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\e217d06d-1dbf-4630-bd89-
    remark: 50yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0113  1  5.0    0.07    0.02 12.25  89.04 0.88   0.000
    [I%=85.7:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot=100.66 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\e217d06d-1dbf-4630-bd89-
    remark: 50yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0102  1  5.0    0.25    0.04 12.25  55.20 0.55   0.000
    [I%=42.5:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot=100.66 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\e217d06d-1dbf-4630-bd89-
    remark: 50yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0103  1  5.0    0.31    0.02 12.33  24.74 0.25   0.000
    [CN=49.5         ]
    [ N = 3.0:Tp 0.20]
*
    ADD [  0102+  0103]  0911  3  5.0    0.56    0.06 12.25  38.34  n/a   0.000
*
    ADD [  0911+  0113]  0911  1  5.0    0.63    0.08 12.25  43.97  n/a   0.000
*
    READ STORM                15.0
```

```
    [ Ptot=100.66 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\e217d06d-1dbf-4630-bd89-
    remark: 50yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.06 12.25  63.97 0.64   0.000
    [I%=57.1:S%= 2.00]
*
================================================================================================


       V    V   I    SSSSS  U   U    A    L              (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\9be87287-1024-4c31-a0c1-8f732489dc
a5\s
  Summary filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\9be87287-1024-4c31-a0c1-8f732489dc
a5\s


DATE: 10-27-2022                          TIME: 04:45:52

USER:


COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : RUN 18 - 100yr 24hr 15min SCS **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     --------------------
   READ STORM                15.0
   [ Ptot=109.68 mm ]
   fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\2bbcb388-acb7-4527-ae9b-
   remark: 100yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.05 12.25  51.07 0.47   0.000
   [I%=35.5:S%= 2.00]
*
   READ STORM                15.0
   [ Ptot=109.68 mm ]
   fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\2bbcb388-acb7-4527-ae9b-
   remark: 100yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0113  1  5.0    0.07    0.02 12.25  97.38 0.89   0.000
    [I%=85.7:S%= 2.00]
*
   READ STORM                15.0
   [ Ptot=109.68 mm ]
   fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\2bbcb388-acb7-4527-ae9b-
   remark: 100yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0102  1  5.0    0.25    0.05 12.25  61.25 0.56   0.000
   [I%=42.5:S%= 2.00]
*
   READ STORM                15.0
   [ Ptot=109.68 mm ]
   fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\2bbcb388-acb7-4527-ae9b-
   remark: 100yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB NASHYD         0103  1  5.0    0.31    0.02 12.33  29.01 0.26   0.000
   [CN=49.5         ]
   [ N = 3.0:Tp 0.20]
*
   ADD [  0102+  0103]  0911  3  5.0    0.56    0.07 12.25  43.40  n/a   0.000
*
   ADD [  0911+  0113]  0911  1  5.0    0.63    0.09 12.25  49.40  n/a   0.000
*
   READ STORM                15.0
   [ Ptot=109.68 mm ]
   fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\2bbcb388-acb7-4527-ae9b-
   remark: 100yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.06 12.25  70.43 0.64   0.000
   [I%=57.1:S%= 2.00]
*
================================================================================================


       V    V   I    SSSSS  U   U    A    L              (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\3985a023-7b38-404b-a40e-e43869d4b3
4a\s
  Summary filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\3985a023-7b38-404b-a40e-e43869d4b3
4a\s


DATE: 10-27-2022                          TIME: 04:45:51

USER:


COMMENTS: _____________________________________________________
```

```
  ************************************************
  ** SIMULATION : RUN 19 - OWEN SOUND CHIC25MM  **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

      START @  0.00 hrs
      ---------------------
    READ STORM                    6.0
    [ Ptot= 24.97 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\af5c06c6-9c2d-483e-bb9d-
    remark: OWEN SOUND CHIC25MM
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.02  1.92   8.79 0.35   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                    6.0
    [ Ptot= 24.97 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\af5c06c6-9c2d-483e-bb9d-
    remark: OWEN SOUND CHIC25MM
*
 *  CALIB STANDHYD       0113  1  5.0    0.07    0.01  1.92  20.74 0.83   0.000
    [I%=85.7:S%= 2.00]
*
    READ STORM                    6.0
    [ Ptot= 24.97 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\af5c06c6-9c2d-483e-bb9d-
    remark: OWEN SOUND CHIC25MM
*
 *  CALIB STANDHYD       0102  1  5.0    0.25    0.02  1.92  10.76 0.43   0.000
    [I%=42.5:S%= 2.00]
*
    READ STORM                    6.0
    [ Ptot= 24.97 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\af5c06c6-9c2d-483e-bb9d-
    remark: OWEN SOUND CHIC25MM
*
 *  CALIB NASHYD         0103  1  5.0    0.31    0.00  2.17   1.14 0.05   0.000
    [CN=49.5       ]
    [ N = 3.0:Tp 0.20]
*
    ADD [  0102+  0103]  0911  3  5.0    0.56    0.02  1.92   5.43  n/a   0.000
*
    ADD [  0911+  0113]  0911  1  5.0    0.63    0.03  1.92   7.13  n/a   0.000
*
    READ STORM                    6.0
    [ Ptot= 24.97 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\af5c06c6-9c2d-483e-bb9d-
    remark: OWEN SOUND CHIC25MM
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.03  1.92  13.85 0.55   0.000
    [I%=57.1:S%= 2.00]
*
================================================================================================================


       V    V   I    SSSSS  U   U    A    L              (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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```



```
                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\94fe9cc3-00af-4bae-82b0-e055cfa9c6
28\s
  Summary filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\94fe9cc3-00af-4bae-82b0-e055cfa9c6
28\s


DATE: 10-27-2022                          TIME: 04:45:52

USER:


COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : RUN 20 - TIMMINS              **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

      START @  0.00 hrs
      ---------------------
    READ STORM                   15.0
    [ Ptot=193.00 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\81b8db86-9849-46ff-a3ec-
    remark: TIMMINS
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.02  7.00 103.96 0.54   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                   15.0
    [ Ptot=193.00 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\81b8db86-9849-46ff-a3ec-
    remark: TIMMINS
*
 *  CALIB STANDHYD       0113  1  5.0    0.07    0.01  7.00 175.68 0.91   0.000
    [I%=85.7:S%= 2.00]
*
    READ STORM                   15.0
    [ Ptot=193.00 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\81b8db86-9849-46ff-a3ec-
    remark: TIMMINS
*
 *  CALIB STANDHYD       0102  1  5.0    0.25    0.02  7.00 122.17 0.63   0.000
    [I%=42.5:S%= 2.00]
*
    READ STORM                   15.0
    [ Ptot=193.00 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\81b8db86-9849-46ff-a3ec-
    remark: TIMMINS
*
 *  CALIB NASHYD         0103  1  5.0    0.31    0.02  7.00  77.47 0.40   0.000
    [CN=49.5       ]
    [ N = 3.0:Tp 0.20]
*
    ADD [  0102+  0103]  0911  3  5.0    0.56    0.04  7.00  97.42  n/a   0.000
*
```

```
    ADD [  0911+  0113]  0911  1  5.0    0.63    0.04  7.00 106.12  n/a   0.000
*
    READ STORM                 15.0
    [ Ptot=193.00 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\8242291d-c955-4ea5-87d4-b328917aec9d\81b8db86-9849-46ff-a3ec-
    remark: TIMMINS
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.02  7.00 133.66 0.69   0.000
    [I%=57.1:S%= 2.00]
*
```

VO SUMMARY OUTPUT - PROP. CONDITIONS FOR AREA C - ALL STORMS

```
==============================================================================================================

       V    V   I    SSSSS  U   U    A    L             (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\32089c1c-0826-4b83-9c0e-44e800d19c
b0\s
  Summary filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\32089c1c-0826-4b83-9c0e-44e800d19c
b0\s


DATE: 10-28-2022                          TIME: 11:15:54

USER:


COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : RUN 01 - 2yr 4hr 10min Chicag **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     --------------------
    CHIC STORM                10.0
    [ Ptot= 33.14 mm ]
*
 *  CALIB STANDHYD       0114  1  5.0    0.17    0.02  1.33  18.48 0.56   0.000
    [I%=53.9:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 33.14 mm ]
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.03  1.33  12.21 0.37   0.000
    [I%=35.5:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 33.14 mm ]
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.04  1.33  18.82 0.57   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0101+  0104]  0912  3  5.0    0.60    0.06  1.33  15.29  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 33.14 mm ]
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.07  1.33   7.69 0.23   0.000
    [I%=18.2:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 33.14 mm ]
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.08  1.33   8.01 0.24   0.000
    [I%=19.7:S%= 2.00]
*
    ADD [  0105+  0106]  0913  3  5.0    3.76    0.15  1.33   7.85  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 33.14 mm ]
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.07  1.33  14.44 0.44   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0107+  0912]  0914  3  5.0    1.34    0.13  1.33  14.82  n/a   0.000
*
    ADD [  0914+  0913]  0914  1  5.0    5.10    0.29  1.33   9.68  n/a   0.000
*
    ADD [  0114+  0914]  0915  3  5.0    5.27    0.31  1.33   9.97  n/a   0.000
*
==============================================================================================================


       V    V   I    SSSSS  U   U    A    L             (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\8501be93-7233-4a79-be2f-4d1690ca24
39\s
  Summary filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\8501be93-7233-4a79-be2f-4d1690ca24
39\s


DATE: 10-28-2022                          TIME: 11:15:54

USER:


COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : RUN 02 - 5yr 4hr 10min Chicag **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
```

```
                                 min     ha    '  cms   hrs     mm          cms

      START @  0.00 hrs
      --------------------
     CHIC STORM                 10.0
     [ Ptot= 42.65 mm ]
*
 *   CALIB STANDHYD       0114  1  5.0    0.17    0.03  1.33  24.59 0.58   0.000
     [I%=53.9:S%= 2.00]
*
     CHIC STORM                 10.0
     [ Ptot= 42.65 mm ]
*
 *   CALIB STANDHYD       0101  1  5.0    0.32    0.03  1.33  16.38 0.38   0.000
     [I%=35.5:S%= 2.00]
*
     CHIC STORM                 10.0
     [ Ptot= 42.65 mm ]
*
 *   CALIB STANDHYD       0104  1  5.0    0.28    0.05  1.33  24.82 0.58   0.000
     [I%=57.1:S%= 2.00]
*
     ADD [  0101+  0104]  0912  3  5.0    0.60    0.08  1.33  20.32  n/a   0.000
*
     CHIC STORM                 10.0
     [ Ptot= 42.65 mm ]
*
 *   CALIB STANDHYD       0105  1  5.0    1.85    0.10  1.33  10.95 0.26   0.000
     [I%=18.2:S%= 2.00]
*
     CHIC STORM                 10.0
     [ Ptot= 42.65 mm ]
*
 *   CALIB STANDHYD       0106  1  5.0    1.91    0.11  1.33  11.27 0.26   0.000
     [I%=19.7:S%= 2.00]
*
     ADD [  0105+  0106]  0913  3  5.0    3.76    0.21  1.33  11.11  n/a   0.000
*
     CHIC STORM                 10.0
     [ Ptot= 42.65 mm ]
*
 *   CALIB STANDHYD       0107  1  5.0    0.74    0.09  1.33  19.19 0.45   0.000
     [I%=42.6:S%= 2.00]
*
     ADD [  0107+  0912]  0914  3  5.0    1.34    0.17  1.33  19.70  n/a   0.000
*
     ADD [  0914+  0913]  0914  1  5.0    5.10    0.38  1.33  13.37  n/a   0.000
*
     ADD [  0114+  0914]  0915  3  5.0    5.27    0.41  1.33  13.73  n/a   0.000
*
================================================================================================


       V    V   I    SSSSS  U   U    A    L              (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****

  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\d65a4c68-103d-423c-a0a0-bde521a6d6
c0\s
  Summary filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\d65a4c68-103d-423c-a0a0-bde521a6d6
c0\s

DATE: 10-28-2022                          TIME: 11:15:55

USER:

COMMENTS: _____________________________________________________

  ************************************************
  ** SIMULATION : RUN 03 -10yr 4hr 10min Chicag **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     --------------------
    CHIC STORM                 10.0
    [ Ptot= 48.90 mm ]
*
 *  CALIB STANDHYD       0114  1  5.0    0.17    0.03  1.33  28.72 0.59   0.000
    [I%=53.9:S%= 2.00]
*
    CHIC STORM                 10.0
    [ Ptot= 48.90 mm ]
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.04  1.33  19.24 0.39   0.000
    [I%=35.5:S%= 2.00]
*
    CHIC STORM                 10.0
    [ Ptot= 48.90 mm ]
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.06  1.33  28.82 0.59   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0101+  0104]  0912  3  5.0    0.60    0.09  1.33  23.71  n/a   0.000
*
    CHIC STORM                 10.0
    [ Ptot= 48.90 mm ]
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.12  1.33  13.31 0.27   0.000
    [I%=18.2:S%= 2.00]
*
    CHIC STORM                 10.0
    [ Ptot= 48.90 mm ]
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.13  1.33  13.61 0.28   0.000
    [I%=19.7:S%= 2.00]
*
    ADD [  0105+  0106]  0913  3  5.0    3.76    0.25  1.33  13.46  n/a   0.000
*
    CHIC STORM                 10.0
    [ Ptot= 48.90 mm ]
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.11  1.33  22.42 0.46   0.000
    [I%=42.6:S%= 2.00]
*
```

```
    ADD [  0107+  0912]  0914  3  5.0    1.34    0.20  1.33  23.00  n/a   0.000
*
    ADD [  0914+  0913]  0914  1  5.0    5.10    0.45  1.33  15.97  n/a   0.000
*
    ADD [  0114+  0914]  0915  3  5.0    5.27    0.48  1.33  16.38  n/a   0.000
*
================================================================================================================


       V    V   I    SSSSS  U   U    A    L             (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\c2cdd470-197d-421e-bd90-3ba1e76383
d7\s
  Summary filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\c2cdd470-197d-421e-bd90-3ba1e76383
d7\s


DATE: 10-28-2022                          TIME: 11:15:55

USER:


COMMENTS: _____________________________________________________________


  ************************************************
  ** SIMULATION : RUN 04 - 25yr 4hr 10min Chica **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     --------------------
    CHIC STORM                10.0
    [ Ptot= 56.81 mm ]
*
 *  CALIB STANDHYD       0114  1  5.0    0.17    0.04  1.33  34.05 0.60   0.000
    [I%=53.9:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 56.81 mm ]
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.05  1.33  22.96 0.40   0.000
    [I%=35.5:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 56.81 mm ]
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.07  1.33  33.96 0.60   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0101+  0104]  0912  3  5.0    0.60    0.11  1.33  28.09  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 56.81 mm ]
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.14  1.33  16.51 0.29   0.000
    [I%=18.2:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 56.81 mm ]
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.16  1.33  16.78 0.30   0.000
    [I%=19.7:S%= 2.00]
*
    ADD [  0105+  0106]  0913  3  5.0    3.76    0.30  1.33  16.64  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 56.81 mm ]
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.13  1.33  26.62 0.47   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0107+  0912]  0914  3  5.0    1.34    0.24  1.33  27.28  n/a   0.000
*
    ADD [  0914+  0913]  0914  1  5.0    5.10    0.54  1.33  19.44  n/a   0.000
*
    ADD [  0114+  0914]  0915  3  5.0    5.27    0.58  1.33  19.91  n/a   0.000
*
================================================================================================================


       V    V   I    SSSSS  U   U    A    L             (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\056ad3f5-a528-4f73-bbd3-913f4de53d
24\s
  Summary filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\056ad3f5-a528-4f73-bbd3-913f4de53d
24\s


DATE: 10-28-2022                          TIME: 11:15:54

USER:


COMMENTS: _____________________________________________________________
```

```
  ************************************************
  ** SIMULATION : RUN 05 - 50yr 4hr 10min Chica **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms

      START @  0.00 hrs
      ---------------------
    CHIC STORM                10.0
    [ Ptot= 62.70 mm ]
*
 *  CALIB STANDHYD       0114  1  5.0    0.17    0.04  1.33  38.11 0.61   0.000
    [I%=53.9:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 62.70 mm ]
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.05  1.33  25.83 0.41   0.000
    [I%=35.5:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 62.70 mm ]
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.07  1.33  37.85 0.60   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0101+  0104]  0912  3  5.0    0.60    0.12  1.33  31.44  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 62.70 mm ]
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.16  1.33  19.05 0.30   0.000
    [I%=18.2:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 62.70 mm ]
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.18  1.33  19.28 0.31   0.000
    [I%=19.7:S%= 2.00]
*
    ADD [  0105+  0106]  0913  3  5.0    3.76    0.34  1.33  19.17  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 62.70 mm ]
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.14  1.33  29.82 0.48   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0107+  0912]  0914  3  5.0    1.34    0.27  1.33  30.55  n/a   0.000
*
    ADD [  0914+  0913]  0914  1  5.0    5.10    0.61  1.33  22.16  n/a   0.000
*
    ADD [  0114+  0914]  0915  3  5.0    5.27    0.65  1.33  22.67  n/a   0.000
*
================================================================================================

       V    V   I    SSSSS  U   U    A    L              (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
```

```
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                  *****  S U M M A R Y   O U T P U T  *****

  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\e7cf2c14-68b0-4b7d-8f3f-c0d6871c8e
4f\s
  Summary filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\e7cf2c14-68b0-4b7d-8f3f-c0d6871c8e
4f\s

DATE: 10-28-2022                          TIME: 11:15:55

USER:

COMMENTS: _____________________________________________________

  ************************************************
  ** SIMULATION : RUN 06 - 100yr 4hr 10min Chic **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms

      START @  0.00 hrs
      ---------------------
    CHIC STORM                10.0
    [ Ptot= 68.57 mm ]
*
 *  CALIB STANDHYD       0114  1  5.0    0.17    0.05  1.33  42.21 0.62   0.000
    [I%=53.9:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 68.57 mm ]
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.06  1.33  28.75 0.42   0.000
    [I%=35.5:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 68.57 mm ]
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.08  1.33  41.79 0.61   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0101+  0104]  0912  3  5.0    0.60    0.14  1.33  34.84  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 68.57 mm ]
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.18  1.33  21.70 0.32   0.000
    [I%=18.2:S%= 2.00]
*
    CHIC STORM                10.0
    [ Ptot= 68.57 mm ]
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.20  1.33  21.88 0.32   0.000
    [I%=19.7:S%= 2.00]
*
    ADD [  0105+  0106]  0913  3  5.0    3.76    0.38  1.33  21.79  n/a   0.000
*
```

```
    CHIC STORM                10.0
    [ Ptot= 68.57 mm ]
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.16  1.33  33.08 0.48   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0107+  0912]  0914  3  5.0    1.34    0.30  1.33  33.87  n/a   0.000
*
    ADD [  0914+  0913]  0914  1  5.0    5.10    0.68  1.33  24.96  n/a   0.000
*
    ADD [  0114+  0914]  0915  3  5.0    5.27    0.72  1.33  25.52  n/a   0.000
*
================================================================================================


       V    V   I    SSSSS  U   U    A    L             (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\3f7708f4-ad29-46c3-af04-15c76bf688
45\s
  Summary filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\3f7708f4-ad29-46c3-af04-15c76bf688
45\s


DATE: 10-28-2022                          TIME: 11:15:54

USER:


COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : RUN 07 - 2yr 12hr 15min SCS T **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     --------------------
    READ STORM                15.0
    [ Ptot= 45.39 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\fb264ff9-bd71-457f-bdbe-
    remark: 2yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0114  1  5.0    0.17    0.02  6.25  26.41 0.58   0.000
    [I%=53.9:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 45.39 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\fb264ff9-bd71-457f-bdbe-
    remark: 2yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.02  6.25  17.61 0.39   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 45.39 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\fb264ff9-bd71-457f-bdbe-
    remark: 2yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.03  6.25  26.58 0.59   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0101+  0104]  0912  3  5.0    0.60    0.05  6.25  21.80  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 45.39 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\fb264ff9-bd71-457f-bdbe-
    remark: 2yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.06  6.25  11.96 0.26   0.000
    [I%=18.2:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 45.39 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\fb264ff9-bd71-457f-bdbe-
    remark: 2yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.07  6.25  12.28 0.27   0.000
    [I%=19.7:S%= 2.00]
*
    ADD [  0105+  0106]  0913  3  5.0    3.76    0.13  6.25  12.12  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 45.39 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\fb264ff9-bd71-457f-bdbe-
    remark: 2yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.05  6.25  20.60 0.45   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0107+  0912]  0914  3  5.0    1.34    0.10  6.25  21.13  n/a   0.000
*
    ADD [  0914+  0913]  0914  1  5.0    5.10    0.23  6.25  14.49  n/a   0.000
*
    ADD [  0114+  0914]  0915  3  5.0    5.27    0.24  6.25  14.88  n/a   0.000
*
================================================================================================


       V    V   I    SSSSS  U   U    A    L             (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****
```

```
  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\1299e1f7-29d2-4c3f-8a1e-390f97318f
52\s
  Summary filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\1299e1f7-29d2-4c3f-8a1e-390f97318f
52\s


DATE: 10-28-2022                          TIME: 11:15:54

USER:


COMMENTS: _____________________________________________________________


  ************************************************
  ** SIMULATION : RUN 08 - 5yr 12hr 15min SCS T **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms

      START @  0.00 hrs
      -------------------
    READ STORM                15.0
    [ Ptot= 57.78 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\9136eb3b-bdfa-4599-a3b7-
    remark: 5yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0114  1  5.0    0.17    0.02  6.25  34.71 0.60   0.000
    [I%=53.9:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 57.78 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\9136eb3b-bdfa-4599-a3b7-
    remark: 5yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.02  6.25  23.43 0.41   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 57.78 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\9136eb3b-bdfa-4599-a3b7-
    remark: 5yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.03  6.25  34.59 0.60   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0101+  0104]  0912  3  5.0    0.60    0.06  6.25  28.64  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 57.78 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\9136eb3b-bdfa-4599-a3b7-
    remark: 5yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.08  6.25  16.92 0.29   0.000
    [I%=18.2:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 57.78 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\9136eb3b-bdfa-4599-a3b7-
    remark: 5yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.09  6.25  17.18 0.30   0.000
    [I%=19.7:S%= 2.00]
*
    ADD [  0105+  0106]  0913  3  5.0    3.76    0.17  6.25  17.05  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 57.78 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\9136eb3b-bdfa-4599-a3b7-
    remark: 5yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.07  6.25  27.14 0.47   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0107+  0912]  0914  3  5.0    1.34    0.13  6.25  27.81  n/a   0.000
*
    ADD [  0914+  0913]  0914  1  5.0    5.10    0.30  6.25  19.88  n/a   0.000
*
    ADD [  0114+  0914]  0915  3  5.0    5.27    0.32  6.25  20.36  n/a   0.000
*
================================================================================================


      V    V   I    SSSSS  U   U    A    L             (v 6.2.2008)
      V    V   I    SS     U   U   A A   L
       V  V    I     SS    U   U  AAAAA  L
        V  V   I      SS   U   U  A   A  L
         VV    I    SSSSS  UUUUU  A   A  LLLLL

       OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
      O   O    T      T    H   H   Y Y   MM MM  O   O
      O   O    T      T    H   H    Y    M   M  O   O
       OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\0aead5f4-c20c-4b9c-80af-71927d3276
3e\s
  Summary filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\0aead5f4-c20c-4b9c-80af-71927d3276
3e\s


DATE: 10-28-2022                          TIME: 11:15:54

USER:


COMMENTS: _____________________________________________________________


  ************************************************
  ** SIMULATION : RUN 09 - 10yr 12hr 15min SCS  **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms

      START @  0.00 hrs
      --------------------
    READ STORM                15.0
    [ Ptot= 65.89 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\1f824f5f-3508-491c-9d9e-
    remark: 10yr 12hr 15min SCS Type II (MTO)
```

```
*
 *  CALIB STANDHYD       0114  1  5.0    0.17    0.02  6.25  40.33 0.61   0.000
    [I%=53.9:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 65.89 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\1f824f5f-3508-491c-9d9e-
    remark: 10yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.03  6.25  27.41 0.42   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 65.89 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\1f824f5f-3508-491c-9d9e-
    remark: 10yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.04  6.25  39.96 0.61   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0101+  0104]  0912  3  5.0    0.60    0.07  6.25  33.27  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 65.89 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\1f824f5f-3508-491c-9d9e-
    remark: 10yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.10  6.25  20.47 0.31   0.000
    [I%=18.2:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 65.89 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\1f824f5f-3508-491c-9d9e-
    remark: 10yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.11  6.25  20.68 0.31   0.000
    [I%=19.7:S%= 2.00]
*
    ADD [  0105+  0106]  0913  3  5.0    3.76    0.22  6.25  20.58  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 65.89 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\1f824f5f-3508-491c-9d9e-
    remark: 10yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.08  6.25  31.58 0.48   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0107+  0912]  0914  3  5.0    1.34    0.15  6.25  32.34  n/a   0.000
*
    ADD [  0914+  0913]  0914  1  5.0    5.10    0.36  6.25  23.67  n/a   0.000
*
    ADD [  0114+  0914]  0915  3  5.0    5.27    0.39  6.25  24.20  n/a   0.000
*
================================================================================================================


       V    V   I    SSSSS  U   U    A    L              (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\fc6b94f0-c8fd-4388-b8bf-9c3ebc4104
a8\s
  Summary filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\fc6b94f0-c8fd-4388-b8bf-9c3ebc4104
a8\s


DATE: 10-28-2022                          TIME: 11:15:55

USER:


COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : RUN 10 - 25yr 12hr 15min SCS  **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     ---------------------
    READ STORM                15.0
    [ Ptot= 76.11 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\dda72685-972a-479d-a529-
    remark: 25yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0114  1  5.0    0.17    0.03  6.25  47.58 0.63   0.000
    [I%=53.9:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 76.11 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\dda72685-972a-479d-a529-
    remark: 25yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.03  6.25  32.62 0.43   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 76.11 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\dda72685-972a-479d-a529-
    remark: 25yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.05  6.25  46.86 0.62   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0101+  0104]  0912  3  5.0    0.60    0.08  6.25  39.26  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 76.11 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\dda72685-972a-479d-a529-
    remark: 25yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.13  6.25  25.27 0.33   0.000
    [I%=18.2:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 76.11 mm ]
```

```
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\dda72685-972a-479d-a529-
    remark: 25yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.14  6.25  25.38 0.33   0.000
    [I%=19.7:S%= 2.00]
*
    ADD [  0105+  0106]  0913  3  5.0    3.76    0.26  6.25  25.33  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 76.11 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\dda72685-972a-479d-a529-
    remark: 25yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.09  6.25  37.35 0.49   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0107+  0912]  0914  3  5.0    1.34    0.17  6.25  38.21  n/a   0.000
*
    ADD [  0914+  0913]  0914  1  5.0    5.10    0.43  6.25  28.71  n/a   0.000
*
    ADD [  0114+  0914]  0915  3  5.0    5.27    0.46  6.25  29.32  n/a   0.000
*
 FINISH

================================================================================================

================================================================================================


       V    V   I    SSSSS  U   U    A    L              (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\0f336e42-5429-4fad-9b99-63fca8a38d
82\s
  Summary filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\0f336e42-5429-4fad-9b99-63fca8a38d
82\s


DATE: 10-28-2022                          TIME: 11:15:54

USER:


COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : RUN 11 - 50yr 12hr 15min SCS  **
  ************************************************
```

```
  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     --------------------
    READ STORM                15.0
    [ Ptot= 83.83 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\84195784-c130-4926-97ae-
    remark: 50yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0114  1  5.0    0.17    0.03  6.25  53.19 0.63   0.000
    [I%=53.9:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 83.83 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\84195784-c130-4926-97ae-
    remark: 50yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.04  6.25  36.69 0.44   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 83.83 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\84195784-c130-4926-97ae-
    remark: 50yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.05  6.25  52.17 0.62   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0101+  0104]  0912  3  5.0    0.60    0.09  6.25  43.91  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 83.83 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\84195784-c130-4926-97ae-
    remark: 50yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.16  6.25  29.11 0.35   0.000
    [I%=18.2:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 83.83 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\84195784-c130-4926-97ae-
    remark: 50yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.17  6.25  29.14 0.35   0.000
    [I%=19.7:S%= 2.00]
*
    ADD [  0105+  0106]  0913  3  5.0    3.76    0.32  6.25  29.12  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 83.83 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\84195784-c130-4926-97ae-
    remark: 50yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.10  6.25  41.84 0.50   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0107+  0912]  0914  3  5.0    1.34    0.19  6.25  42.77  n/a   0.000
*
    ADD [  0914+  0913]  0914  1  5.0    5.10    0.52  6.25  32.71  n/a   0.000
*
    ADD [  0114+  0914]  0915  3  5.0    5.27    0.55  6.25  33.37  n/a   0.000
*
================================================================================================


       V    V   I    SSSSS  U   U    A    L              (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
```

```
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\5d100c98-ab14-4e84-adc1-e866d3e8ac
4d\s
  Summary filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\5d100c98-ab14-4e84-adc1-e866d3e8ac
4d\s


DATE: 10-28-2022                          TIME: 11:15:54

USER:


COMMENTS: _____________________________________________________________


  ************************************************
  ** SIMULATION : RUN 12 - 100yr 12hr 15min SCS **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

      START @  0.00 hrs
      --------------------
    READ STORM                15.0
    [ Ptot= 91.47 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\6eefda4f-fdae-4cde-ad34-
    remark: 100yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0114  1  5.0    0.17    0.03  6.25  58.82 0.64   0.000
    [I%=53.9:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 91.47 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\6eefda4f-fdae-4cde-ad34-
    remark: 100yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.04  6.25  40.82 0.45   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 91.47 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\6eefda4f-fdae-4cde-ad34-
    remark: 100yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.06  6.25  57.49 0.63   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0101+  0104]  0912  3  5.0    0.60    0.10  6.25  48.60  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 91.47 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\6eefda4f-fdae-4cde-ad34-
    remark: 100yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.18  6.25  33.08 0.36   0.000
    [I%=18.2:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 91.47 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\6eefda4f-fdae-4cde-ad34-
    remark: 100yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.19  6.25  33.02 0.36   0.000
    [I%=19.7:S%= 2.00]
*
    ADD [  0105+  0106]  0913  3  5.0    3.76    0.37  6.25  33.05  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 91.47 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\6eefda4f-fdae-4cde-ad34-
    remark: 100yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.11  6.25  46.37 0.51   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0107+  0912]  0914  3  5.0    1.34    0.22  6.25  47.37  n/a   0.000
*
    ADD [  0914+  0913]  0914  1  5.0    5.10    0.58  6.25  36.81  n/a   0.000
*
    ADD [  0114+  0914]  0915  3  5.0    5.27    0.62  6.25  37.52  n/a   0.000
*
================================================================================================================


       V    V   I    SSSSS  U   U    A    L             (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\5c0e5bda-6fbb-4281-b487-d3141f9359
cd\s
  Summary filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\5c0e5bda-6fbb-4281-b487-d3141f9359
cd\s


DATE: 10-28-2022                          TIME: 11:15:54

USER:


COMMENTS: _____________________________________________________________
```

```
  ************************************************
  ** SIMULATION : RUN 13 - 2yr 24hr 15min SCS T **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

      START @  0.00 hrs
      --------------------
    READ STORM                15.0
    [ Ptot= 55.34 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\861ba7ff-f228-4827-b065-
    remark: 2yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0114  1  5.0    0.17    0.02 12.25  33.07 0.60   0.000
    [I%=53.9:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 55.34 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\861ba7ff-f228-4827-b065-
    remark: 2yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.02 12.25  22.25 0.40   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 55.34 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\861ba7ff-f228-4827-b065-
    remark: 2yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.03 12.25  33.01 0.60   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0101+  0104]  0912  3  5.0    0.60    0.05 12.25  27.27  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 55.34 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\861ba7ff-f228-4827-b065-
    remark: 2yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.07 12.25  15.89 0.29   0.000
    [I%=18.2:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 55.34 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\861ba7ff-f228-4827-b065-
    remark: 2yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.08 12.25  16.17 0.29   0.000
    [I%=19.7:S%= 2.00]
*
    ADD [  0105+  0106]  0913  3  5.0    3.76    0.15 12.25  16.04  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 55.34 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\861ba7ff-f228-4827-b065-
    remark: 2yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.06 12.25  25.83 0.47   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0107+  0912]  0914  3  5.0    1.34    0.11 12.25  26.47  n/a   0.000
*
    ADD [  0914+  0913]  0914  1  5.0    5.10    0.26 12.25  18.78  n/a   0.000
*
    ADD [  0114+  0914]  0915  3  5.0    5.27    0.28 12.25  19.24  n/a   0.000
*
================================================================================================================
```

```
       V    V   I    SSSSS  U   U    A    L             (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\75dfd537-d26b-4013-bf84-01c349a0c1
3b\s
  Summary filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\75dfd537-d26b-4013-bf84-01c349a0c1
3b\s


DATE: 10-28-2022                          TIME: 11:15:54

USER:


COMMENTS: _____________________________________________________________


  ************************************************
  ** SIMULATION : RUN 14 - 5yr 24hr 15min SCS T **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

      START @  0.00 hrs
      --------------------
    READ STORM                15.0
    [ Ptot= 69.96 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\586dce84-101b-4e90-8f87-
    remark: 5yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0114  1  5.0    0.17    0.02 12.25  43.20 0.62   0.000
    [I%=53.9:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 69.96 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\586dce84-101b-4e90-8f87-
    remark: 5yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.03 12.25  29.45 0.42   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 69.96 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\586dce84-101b-4e90-8f87-
    remark: 5yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.04 12.25  42.69 0.61   0.000
```

```
    [I%=57.1:S%= 2.00]
*
    ADD [  0101+  0104]  0912  3  5.0    0.60    0.07 12.25  35.63  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 69.96 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\586dce84-101b-4e90-8f87-
    remark: 5yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.10 12.25  22.34 0.32   0.000
    [I%=18.2:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 69.96 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\586dce84-101b-4e90-8f87-
    remark: 5yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.11 12.25  22.51 0.32   0.000
    [I%=19.7:S%= 2.00]
*
    ADD [  0105+  0106]  0913  3  5.0    3.76    0.21 12.25  22.43  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 69.96 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\586dce84-101b-4e90-8f87-
    remark: 5yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.08 12.25  33.86 0.48   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0107+  0912]  0914  3  5.0    1.34    0.14 12.25  34.65  n/a   0.000
*
    ADD [  0914+  0913]  0914  1  5.0    5.10    0.35 12.25  25.64  n/a   0.000
*
    ADD [  0114+  0914]  0915  3  5.0    5.27    0.38 12.25  26.21  n/a   0.000
*
================================================================================================================


       V    V   I    SSSSS  U   U    A    L              (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\5d5dc319-1653-4c20-a259-d655f38cd7
4c\s
  Summary filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\5d5dc319-1653-4c20-a259-d655f38cd7
4c\s


DATE: 10-28-2022                          TIME: 11:15:54

USER:


COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : RUN 15 - 10yr 24hr 15min SCS  **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms


     START @  0.00 hrs
     --------------------
    READ STORM                15.0
    [ Ptot= 79.50 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\779489d4-1e48-4de7-b61f-
    remark: 10yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0114  1  5.0    0.17    0.03 12.25  50.03 0.63   0.000
    [I%=53.9:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 79.50 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\779489d4-1e48-4de7-b61f-
    remark: 10yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.03 12.25  34.39 0.43   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 79.50 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\779489d4-1e48-4de7-b61f-
    remark: 10yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.04 12.25  49.17 0.62   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0101+  0104]  0912  3  5.0    0.60    0.08 12.25  41.29  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 79.50 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\779489d4-1e48-4de7-b61f-
    remark: 10yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.12 12.25  26.93 0.34   0.000
    [I%=18.2:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 79.50 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\779489d4-1e48-4de7-b61f-
    remark: 10yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.13 12.25  27.01 0.34   0.000
    [I%=19.7:S%= 2.00]
*
    ADD [  0105+  0106]  0913  3  5.0    3.76    0.25 12.25  26.97  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 79.50 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\779489d4-1e48-4de7-b61f-
    remark: 10yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.09 12.25  39.31 0.49   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0107+  0912]  0914  3  5.0    1.34    0.17 12.25  40.20  n/a   0.000
*
```

```
    ADD [  0914+  0913]  0914  1  5.0    5.10    0.42 12.25  30.45  n/a   0.000
*
    ADD [  0114+  0914]  0915  3  5.0    5.27    0.44 12.25  31.08  n/a   0.000
*
================================================================================================


       V    V   I    SSSSS  U   U    A    L             (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\a9dc26c0-1755-4efc-a2bc-1bb9431d3d
aa\s
  Summary filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\a9dc26c0-1755-4efc-a2bc-1bb9431d3d
aa\s


DATE: 10-28-2022                          TIME: 11:15:54

USER:


COMMENTS: _____


  ************************************************
  ** SIMULATION : RUN 16 - 25yr 24hr 15min SCS  **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     --------------------
    READ STORM                15.0
    [ Ptot= 91.52 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\d25d3693-076f-48ae-ba4c-
    remark: 25yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0114  1  5.0    0.17    0.03 12.25  58.86 0.64   0.000
    [I%=53.9:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 91.52 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\d25d3693-076f-48ae-ba4c-
    remark: 25yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.04 12.25  40.84 0.45   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 91.52 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\d25d3693-076f-48ae-ba4c-
    remark: 25yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.05 12.25  57.51 0.63   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0101+  0104]  0912  3  5.0    0.60    0.09 12.25  48.62  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 91.52 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\d25d3693-076f-48ae-ba4c-
    remark: 25yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.16 12.25  33.10 0.36   0.000
    [I%=18.2:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot= 91.52 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\d25d3693-076f-48ae-ba4c-
    remark: 25yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.17 12.25  33.05 0.36   0.000
    [I%=19.7:S%= 2.00]
*
    ADD [  0105+  0106]  0913  3  5.0    3.76    0.33 12.25  33.08  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 91.52 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\d25d3693-076f-48ae-ba4c-
    remark: 25yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.11 12.25  46.40 0.51   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0107+  0912]  0914  3  5.0    1.34    0.20 12.25  47.39  n/a   0.000
*
    ADD [  0914+  0913]  0914  1  5.0    5.10    0.52 12.25  36.84  n/a   0.000
*
    ADD [  0114+  0914]  0915  3  5.0    5.27    0.56 12.25  37.55  n/a   0.000
*
================================================================================================


       V    V   I    SSSSS  U   U    A    L             (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\cbbcdf4e-c43b-469f-a694-7ea70b21db
e3\s
  Summary filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\cbbcdf4e-c43b-469f-a694-7ea70b21db
```

```
e3\s

DATE: 10-28-2022                          TIME: 11:15:55

USER:

COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : RUN 17 - 50yr 24hr 15min SCS  **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

      START @  0.00 hrs
      --------------------
    READ STORM                15.0
    [ Ptot=100.66 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\e217d06d-1dbf-4630-bd89-
    remark: 50yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0114  1  5.0    0.17    0.04 12.25  65.71 0.65   0.000
    [I%=53.9:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot=100.66 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\e217d06d-1dbf-4630-bd89-
    remark: 50yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.04 12.25  45.92 0.46   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot=100.66 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\e217d06d-1dbf-4630-bd89-
    remark: 50yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.06 12.25  63.97 0.64   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0101+  0104]  0912  3  5.0    0.60    0.10 12.25  54.35  n/a   0.000
*
    READ STORM                15.0
    [ Ptot=100.66 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\e217d06d-1dbf-4630-bd89-
    remark: 50yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.18 12.25  38.06 0.38   0.000
    [I%=18.2:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot=100.66 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\e217d06d-1dbf-4630-bd89-
    remark: 50yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.19 12.25  37.89 0.38   0.000
    [I%=19.7:S%= 2.00]
*
    ADD [  0105+  0106]  0913  3  5.0    3.76    0.38 12.25  37.97  n/a   0.000
*
    READ STORM                15.0
    [ Ptot=100.66 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\e217d06d-1dbf-4630-bd89-
    remark: 50yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.12 12.25  51.94 0.52   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0107+  0912]  0914  3  5.0    1.34    0.22 12.25  53.02  n/a   0.000
*
    ADD [  0914+  0913]  0914  1  5.0    5.10    0.60 12.25  41.93  n/a   0.000
*
    ADD [  0114+  0914]  0915  3  5.0    5.27    0.64 12.25  42.69  n/a   0.000
*
================================================================================================


       V    V   I    SSSSS  U   U    A    L              (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\43165cbb-6fce-4887-b22e-19fc81e50f
e6\s
  Summary filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\43165cbb-6fce-4887-b22e-19fc81e50f
e6\s


DATE: 10-28-2022                          TIME: 11:15:54

USER:


COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : RUN 18 - 100yr 24hr 15min SCS **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

      START @  0.00 hrs
      ---------------------
    READ STORM                15.0
    [ Ptot=109.68 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\2bbcb388-acb7-4527-ae9b-
    remark: 100yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0114  1  5.0    0.17    0.04 12.25  72.61 0.66   0.000
    [I%=53.9:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot=109.68 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\2bbcb388-acb7-4527-ae9b-
    remark: 100yr 24hr 15min SCS Type II (MTO)
```

```
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.05 12.25  51.07 0.47   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot=109.68 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\2bbcb388-acb7-4527-ae9b-
    remark: 100yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.06 12.25  70.43 0.64   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0101+  0104]  0912  3  5.0    0.60    0.11 12.25  60.10  n/a   0.000
*
    READ STORM                15.0
    [ Ptot=109.68 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\2bbcb388-acb7-4527-ae9b-
    remark: 100yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.21 12.25  43.16 0.39   0.000
    [I%=18.2:S%= 2.00]
*
    READ STORM                15.0
    [ Ptot=109.68 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\2bbcb388-acb7-4527-ae9b-
    remark: 100yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.22 12.25  42.87 0.39   0.000
    [I%=19.7:S%= 2.00]
*
    ADD [  0105+  0106]  0913  3  5.0    3.76    0.43 12.25  43.01  n/a   0.000
*
    READ STORM                15.0
    [ Ptot=109.68 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\2bbcb388-acb7-4527-ae9b-
    remark: 100yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.13 12.25  57.53 0.52   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0107+  0912]  0914  3  5.0    1.34    0.25 12.25  58.68  n/a   0.000
*
    ADD [  0914+  0913]  0914  1  5.0    5.10    0.68 12.25  47.13  n/a   0.000
*
    ADD [  0114+  0914]  0915  3  5.0    5.27    0.72 12.25  47.95  n/a   0.000
*
================================================================================================


       V    V   I    SSSSS  U   U    A    L              (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\af98694d-2503-4232-a1cf-006ea60eea
1e\s
  Summary filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\af98694d-2503-4232-a1cf-006ea60eea
1e\s


DATE: 10-28-2022                          TIME: 11:15:54

USER:


COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : RUN 19 - OWEN SOUND CHIC25MM  **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms


     START @  0.00 hrs
     ---------------------
    READ STORM                6.0
    [ Ptot= 24.97 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\af5c06c6-9c2d-483e-bb9d-
    remark: OWEN SOUND CHIC25MM
*
 *  CALIB STANDHYD       0114  1  5.0    0.17    0.02  1.92  13.46 0.54   0.000
    [I%=53.9:S%= 2.00]
*
    READ STORM                6.0
    [ Ptot= 24.97 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\af5c06c6-9c2d-483e-bb9d-
    remark: OWEN SOUND CHIC25MM
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.02  1.92   8.79 0.35   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                6.0
    [ Ptot= 24.97 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\af5c06c6-9c2d-483e-bb9d-
    remark: OWEN SOUND CHIC25MM
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.03  1.92  13.85 0.55   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0101+  0104]  0912  3  5.0    0.60    0.05  1.92  11.15  n/a   0.000
*
    READ STORM                6.0
    [ Ptot= 24.97 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\af5c06c6-9c2d-483e-bb9d-
    remark: OWEN SOUND CHIC25MM
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.05  1.92   5.23 0.21   0.000
    [I%=18.2:S%= 2.00]
*
    READ STORM                6.0
    [ Ptot= 24.97 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\af5c06c6-9c2d-483e-bb9d-
    remark: OWEN SOUND CHIC25MM
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.06  1.92   5.51 0.22   0.000
    [I%=19.7:S%= 2.00]
*
    ADD [  0105+  0106]  0913  3  5.0    3.76    0.12  1.92   5.38  n/a   0.000
*
```

```
    READ STORM                 6.0
    [ Ptot= 24.97 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\af5c06c6-9c2d-483e-bb9d-
    remark: OWEN SOUND CHIC25MM
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.05  1.92  10.52 0.42   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0107+  0912]  0914  3  5.0    1.34    0.10  1.92  10.80  n/a   0.000
*
    ADD [  0914+  0913]  0914  1  5.0    5.10    0.22  1.92   6.80  n/a   0.000
*
    ADD [  0114+  0914]  0915  3  5.0    5.27    0.23  1.92   7.02  n/a   0.000
*
================================================================================================


       V    V   I    SSSSS  U   U    A    L              (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\e19d0517-163e-43b4-b8a1-f8805fe43a
c4\s
  Summary filename:
C:\Users\jmacdonald\AppData\Local\Civica\VH5\8d2f356b-15f4-4a5b-8d81-a0c5ffebeb13\e19d0517-163e-43b4-b8a1-f8805fe43a
c4\s


DATE: 10-28-2022                          TIME: 11:15:55

USER:


COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : RUN 20 - TIMMINS              **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     --------------------
   READ STORM                 15.0
    [ Ptot=193.00 mm ]
    fname : C:\Users\jmacdonald\AppData\Local\Temp\b0ce4e59-783b-49ee-ab6a-5421ab0f8fc8\81b8db86-9849-46ff-a3ec-
    remark: TIMMINS
*
 *  CALIB STANDHYD       0114  1  5.0    0.17    0.02  7.00 140.27 0.73   0.000
    [I%=53.9:S%= 2.00]
*
    READ STORM                 15.0
    [ Ptot=193.00 mm ]
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    remark: TIMMINS
*
 *  CALIB STANDHYD       0101  1  5.0    0.32    0.02  7.00 103.96 0.54   0.000
    [I%=35.5:S%= 2.00]
*
    READ STORM                 15.0
    [ Ptot=193.00 mm ]
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    remark: TIMMINS
*
 *  CALIB STANDHYD       0104  1  5.0    0.28    0.02  7.00 133.66 0.69   0.000
    [I%=57.1:S%= 2.00]
*
    ADD [  0101+  0104]  0912  3  5.0    0.60    0.04  7.00 117.82  n/a   0.000
*
    READ STORM                 15.0
    [ Ptot=193.00 mm ]
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    remark: TIMMINS
*
 *  CALIB STANDHYD       0105  1  5.0    1.85    0.12  7.00  97.71 0.51   0.000
    [I%=18.2:S%= 2.00]
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    READ STORM                 15.0
    [ Ptot=193.00 mm ]
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    remark: TIMMINS
*
 *  CALIB STANDHYD       0106  1  5.0    1.91    0.12  7.00  96.09 0.50   0.000
    [I%=19.7:S%= 2.00]
*
    ADD [  0105+  0106]  0913  3  5.0    3.76    0.24  7.00  96.89  n/a   0.000
*
    READ STORM                 15.0
    [ Ptot=193.00 mm ]
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    remark: TIMMINS
*
 *  CALIB STANDHYD       0107  1  5.0    0.74    0.05  7.00 113.98 0.59   0.000
    [I%=42.6:S%= 2.00]
*
    ADD [  0107+  0912]  0914  3  5.0    1.34    0.10  7.00 115.70  n/a   0.000
*
    ADD [  0914+  0913]  0914  1  5.0    5.10    0.34  7.00 101.83  n/a   0.000
*
    ADD [  0114+  0914]  0915  3  5.0    5.27    0.35  7.00 103.07  n/a   0.000
*
```

Appendix F: Proposed Options Hydraulic Analysis

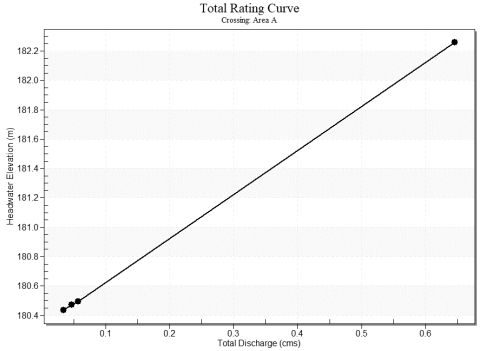
AREA A – OPTION A1

Crossing Discharge Data
Discharge Selection Method: User Defined

Table 1 - Summary of Culvert Flows at Crossing: Area A

Headwater Elevation (m)	Discharge Names	Total Discharge (cms)	Option A1 Discharge (cms)	Roadway Discharge (cms)	Iterations
180.44	5-year	0.03	0.03	0.00	1
180.47	25-year	0.05	0.05	0.00	1
180.49	100-year	0.06	0.06	0.00	1
182.24	Overtopping	0.62	0.62	0.00	Overtopping

Rating Curve Plot for Crossing: Area A



Culvert Data: Option A1

Table 2 - Culvert Summary Table: Option A1

Discharge Names	Total Discharge (cms)	Culvert Discharge (cms)	Headwater Elevation (m)	Inlet Control Depth (m)	Outlet Control Depth (m)	Flow Type	Normal Depth (m)	Critical Depth (m)	Outlet Depth (m)	Tailwater Depth (m)	Outlet Velocity (m/s)	Tailwater Velocity (m/s)
5-year	0.03 cms	0.03 cms	180.44	0.17	0.186	3-M1t	0.13	0.12	0.13	0.13	0.73	0.43
25-year	0.05 cms	0.05 cms	180.47	0.20	0.221	3-M1t	0.15	0.14	0.15	0.15	0.83	0.47
100-year	0.06 cms	0.06 cms	180.49	0.22	0.244	3-M1t	0.16	0.15	0.17	0.17	0.89	0.49

Culvert Barrel Data
Culvert Barrel Type Straight Culvert

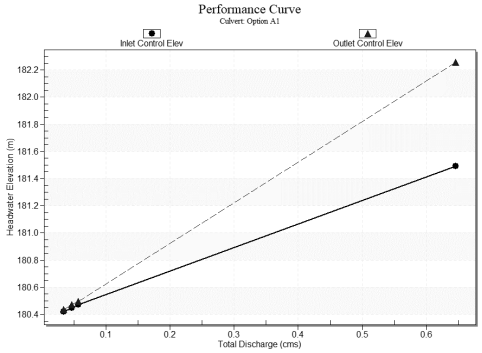
Inlet Elevation (invert): 180.25 m,

Outlet Elevation (invert): 179.80 m

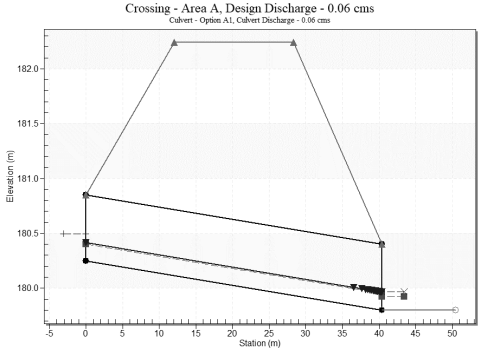
Culvert Length: 40.40 m,

Culvert Slope: 0.0111

Culvert Performance Curve Plot: Option A1



Water Surface Profile Plot for Culvert: Option A1



Site Data - Option A1
Site Data Option: Culvert Invert Data

Inlet Station: 0.00 m

Inlet Elevation: 180.25 m

Outlet Station: 40.40 m

Outlet Elevation: 179.80 m

Number of Barrels: 1

Culvert Data Summary - Option A1
Barrel Shape: Circular

Barrel Diameter: 600.00 mm

Barrel Material: Corrugated Steel

Embedment: 0.00 mm

Barrel Manning's n: 0.0240

Culvert Type: Straight

Inlet Configuration: Thin Edge Projecting (Ke=0.9)

Inlet Depression: None

Tailwater Data for Crossing: Area A

Table 3 - Downstream Channel Rating Curve (Crossing: Area A)

Flow (cms)	Water Surface Elev (m)	Velocity (m/s)	Depth (m)	Shear (Pa)	Froude Number
0.03	179.93	0.13	0.43	9.09	0.49
0.05	179.95	0.15	0.47	10.49	0.50
0.06	179.97	0.17	0.49	11.41	0.50

Tailwater Channel Data - Area A
Tailwater Channel Option: Trapezoidal Channel

Bottom Width: 0.20 m

Side Slope (H:V): 3.00 (_:1)

Channel Slope: 0.0070

Channel Manning's n: 0.0350

Channel Invert Elevation: 179.80 m

Roadway Data for Crossing: Area A
Roadway Profile Shape: Constant Roadway Elevation

Crest Length: 6.40 m

Crest Elevation: 182.24 m

Roadway Surface: Paved

Roadway Top Width: 16.30 m

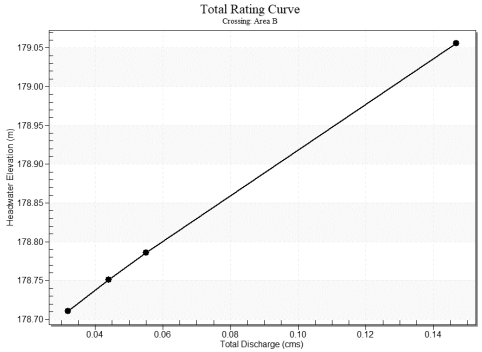
AREA B – OPTION B3

Crossing Discharge Data
Discharge Selection Method: User Defined

Table 7 - Summary of Culvert Flows at Crossing: Area B

Headwater Elevation (m)	Discharge Names	Total Discharge (cms)	Option B3 Discharge (cms)	Roadway Discharge (cms)	Iterations
178.71	5-year	0.03	0.03	0.00	1
178.75	25-year	0.04	0.04	0.00	1
178.79	100-year	0.06	0.06	0.00	1
179.02	Overtopping	0.12	0.12	0.00	Overtopping

Rating Curve Plot for Crossing: Area B



Culvert Data: Option B3

Table 8 - Culvert Summary Table: Option B3

Discharge Names	Total Discharge (cms)	Culvert Discharge (cms)	Headwater Elevation (m)	Inlet Control Depth (m)	Outlet Control Depth (m)	Flow Type	Normal Depth (m)	Critical Depth (m)	Outlet Depth (m)	Tailwater Depth (m)	Outlet Velocity (m/s)	Tailwater Velocity (m/s)
5-year	0.03 cms	0.03 cms	178.71	0.19	0.211	2-M2c	0.18	0.13	0.13	0.09	0.95	0.25
25-year	0.04 cms	0.04 cms	178.75	0.22	0.251	2-M2c	0.21	0.15	0.15	0.11	1.04	0.28
100-year	0.06 cms	0.06 cms	178.79	0.25	0.286	2-M2c	0.24	0.17	0.17	0.12	1.11	0.30

Culvert Barrel Data
Culvert Barrel Type Straight Culvert

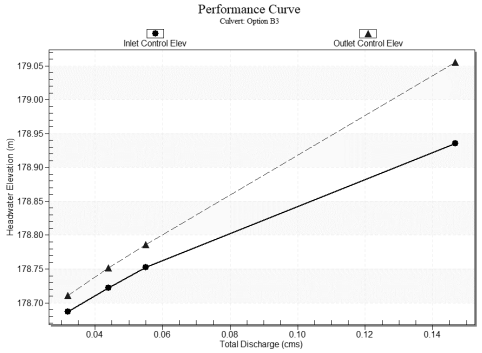
Inlet Elevation (invert): 178.50 m,

Outlet Elevation (invert): 178.40 m

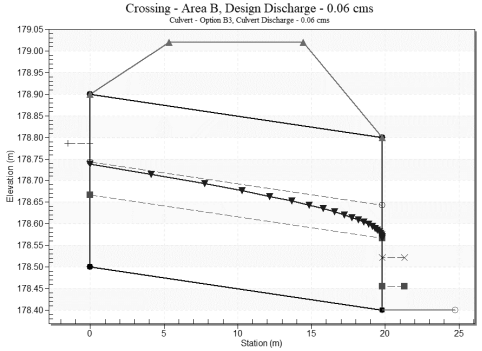
Culvert Length: 19.80 m,

Culvert Slope: 0.0051

Culvert Performance Curve Plot: Option B3



Water Surface Profile Plot for Culvert: Option B3



Site Data - Option B3
Site Data Option: Culvert Invert Data

Inlet Station: 0.00 m

Inlet Elevation: 178.50 m

Outlet Station: 19.80 m

Outlet Elevation: 178.40 m

Number of Barrels: 1

Culvert Data Summary - Option B3
Barrel Shape: Circular

Barrel Diameter: 400.00 mm

Barrel Material: Corrugated Steel

Embedment: 0.00 mm

Barrel Manning's n: 0.0240

Culvert Type: Straight

Inlet Configuration: Thin Edge Projecting (Ke=0.9)

Inlet Depression: None

Tailwater Data for Crossing: Area B

Table 9 - Downstream Channel Rating Curve (Crossing: Area B)

Flow (cms)	Water Surface Elev (m)	Velocity (m/s)	Depth (m)	Shear (Pa)	Froude Number
0.03	178.49	0.09	0.25	2.59	0.28
0.04	178.51	0.11	0.28	3.12	0.29
0.06	178.52	0.12	0.30	3.55	0.29

Tailwater Channel Data - Area B
Tailwater Channel Option: Trapezoidal Channel

Bottom Width: 1.30 m

Side Slope (H:V): 1.90 (_:1)

Channel Slope: 0.0030

Channel Manning's n: 0.0400

Channel Invert Elevation: 178.40 m

Roadway Data for Crossing: Area B
Roadway Profile Shape: Constant Roadway Elevation

Crest Length: 2.00 m

Crest Elevation: 179.02 m

Roadway Surface: Paved

Roadway Top Width: 9.10 m

AREA B – OPTION B4

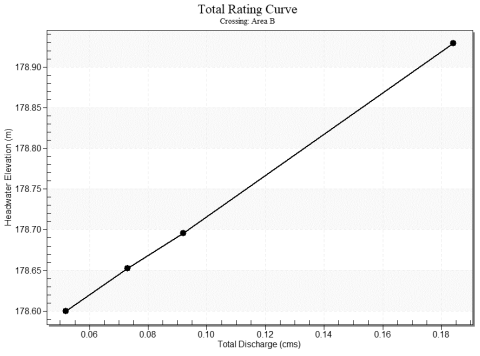
Crossing Discharge Data

Discharge Selection Method: User Defined

Table 10 - Summary of Culvert Flows at Crossing: Area B

Headwater Elevation (m)	Discharge Names	Total Discharge (cms)	Option B4 Discharge (cms)	Roadway Discharge (cms)	Iterations
178.60	5-Year	0.05	0.05	0.00	1
178.65	25-Year	0.07	0.07	0.00	1
178.70	100-Year	0.09	0.09	0.00	1
178.92	Overtopping	0.18	0.18	0.00	Overtopping

Rating Curve Plot for Crossing: Area B



Culvert Data: Option B4

Table 11 - Culvert Summary Table: Option B4

Discharge Names	Total Discharge (cms)	Culvert Discharge (cms)	Headwater Elevation (m)	Inlet Control Depth (m)	Outlet Control Depth (m)	Flow Type	Normal Depth (m)	Critical Depth (m)	Outlet Depth (m)	Tailwater Depth (m)	Outlet Velocity (m/s)	Tailwater Velocity (m/s)
5-Year	0.05 cms	0.05 cms	178.60	0.22	0.250	2-M2c	0.20	0.15	0.15	0.12	1.04	0.53
25-Year	0.07 cms	0.07 cms	178.65	0.27	0.302	2-M2c	0.25	0.18	0.18	0.14	1.14	0.58
100-Year	0.09 cms	0.09 cms	178.70	0.31	0.346	2-M2c	0.28	0.20	0.20	0.15	1.23	0.62

Culvert Barrel Data

Culvert Barrel Type Straight Culvert

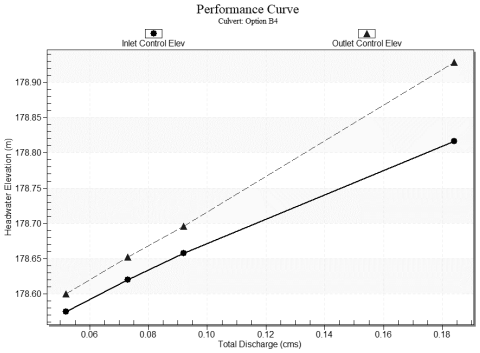
Inlet Elevation (invert): 178.35 m,

Outlet Elevation (invert): 178.00 m

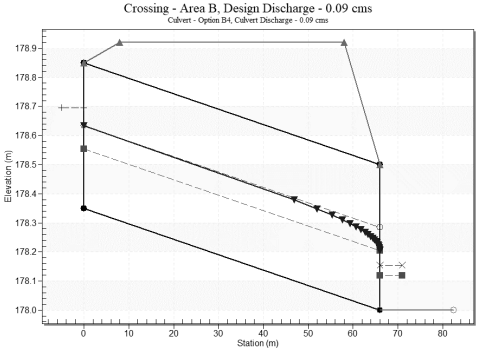
Culvert Length: 66.00 m,

Culvert Slope: 0.0053

Culvert Performance Curve Plot: Option B4



Water Surface Profile Plot for Culvert: Option B4



Site Data - Option B4

Site Data Option: Culvert Invert Data

Inlet Station: 0.00 m

Inlet Elevation: 178.35 m

Outlet Station: 66.00 m

Outlet Elevation: 178.00 m

Number of Barrels: 1

Culvert Data Summary - Option B4

Barrel Shape: Circular

Barrel Diameter: 500.00 mm

Barrel Material: Corrugated Steel

Embedment: 0.00 mm

Barrel Manning's n: 0.0240

Culvert Type: Straight

Inlet Configuration: Thin Edge Projecting

Inlet Depression: None

Tailwater Data for Crossing: Area B

Table 12 - Downstream Channel Rating Curve (Crossing: Area B)

Flow (cms)	Water Surface Elev (m)	Velocity (m/s)	Depth (m)	Shear (Pa)	Froude Number
0.05	178.12	0.12	0.53	11.36	0.59
0.07	178.14	0.14	0.58	13.49	0.60
0.09	178.15	0.15	0.62	15.13	0.61

Tailwater Channel Data - Area B
Tailwater Channel Option: Trapezoidal Channel

Bottom Width: 0.50 m

Side Slope (H:V): 3.00 (_:1)

Channel Slope: 0.0100

Channel Manning's n: 0.0350

Channel Invert Elevation: 178.00 m

Roadway Data for Crossing: Area B
Roadway Profile Shape: Constant Roadway Elevation

Crest Length: 5.00 m

Crest Elevation: 178.92 m

Roadway Surface: Gravel

Roadway Top Width: 50.00 m

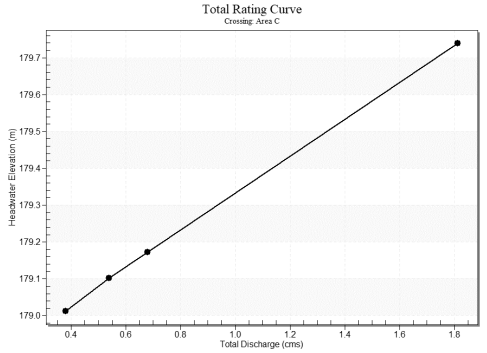
AREA C – OPTIONS C1, C2, & C3

Crossing Discharge Data
Discharge Selection Method: User Defined

Table 13 - Summary of Culvert Flows at Crossing: Area C

Headwater Elevation (m)	Discharge Names	Total Discharge (cms)	Option C1 C2 C3 Discharge (cms)	Roadway Discharge (cms)	Iterations
179.01	5-Year	0.38	0.38	0.00	1
179.10	25-Year	0.54	0.54	0.00	1
179.17	100-Year	0.68	0.68	0.00	1
179.49	Overtopping	1.20	1.20	0.00	Overtopping

Rating Curve Plot for Crossing: Area C



Culvert Data: Option C1 C2 C3

Table 14 - Culvert Summary Table: Option C1 C2 C3

Discharge Names	Total Discharge (cms)	Culvert Discharge (cms)	Headwater Elevation (m)	Inlet Control Depth (m)	Outlet Control Depth (m)	Flow Type	Normal Depth (m)	Critical Depth (m)	Outlet Depth (m)	Tailwater Depth (m)	Outlet Velocity (m/s)	Tailwater Velocity (m/s)
5-Year	0.38 cms	0.38 cms	179.01	0.39	0.019	1-S2n	0.17	0.28	0.19	0.15	2.56	0.98
25-Year	0.54 cms	0.54 cms	179.10	0.48	0.114	1-S2n	0.21	0.34	0.23	0.18	2.75	1.08
100-Year	0.68 cms	0.68 cms	179.17	0.55	0.202	1-S2n	0.24	0.38	0.26	0.20	2.89	1.15

Culvert Barrel Data
Culvert Barrel Type Straight Culvert

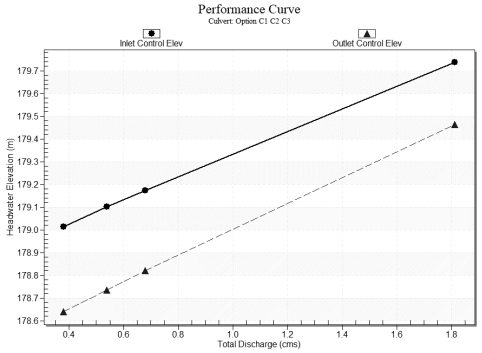
Inlet Elevation (invert): 178.62 m,

Outlet Elevation (invert): 178.32 m

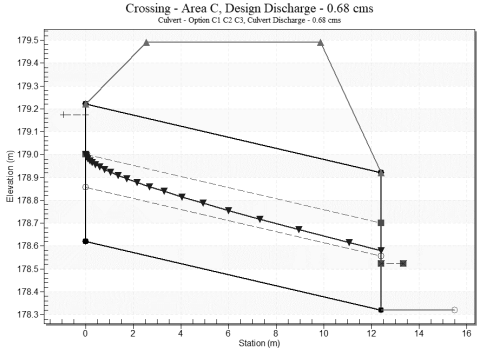
Culvert Length: 12.40 m,

Culvert Slope: 0.0242

Culvert Performance Curve Plot: Option C1 C2 C3



Water Surface Profile Plot for Culvert: Option C1 C2 C3



Site Data - Option C1 C2 C3
Site Data Option: Culvert Invert Data

Inlet Station: 0.00 m

Inlet Elevation: 178.62 m

Outlet Station: 12.40 m

Outlet Elevation: 178.32 m

Number of Barrels: 2

Culvert Data Summary - Option C1 C2 C3
Barrel Shape: Circular

Barrel Diameter: 600.00 mm

Barrel Material: Concrete

Embedment: 0.00 mm

Barrel Manning's n: 0.0120

Culvert Type: Straight

Inlet Configuration: Grooved End Projecting

Inlet Depression: None

Tailwater Data for Crossing: Area C

Table 15 - Downstream Channel Rating Curve (Crossing: Area C)

Flow (cms)	Water Surface Elev (m)	Velocity (m/s)	Depth (m)	Shear (Pa)	Froude Number
0.38	178.47	0.15	0.98	35.90	0.97
0.54	178.50	0.18	1.08	42.72	0.99
0.68	178.52	0.20	1.15	47.78	1.01

Tailwater Channel Data - Area C
Tailwater Channel Option: Trapezoidal Channel

Bottom Width: 1.40 m

Side Slope (H:V): 7.40 (_:1)

Channel Slope: 0.0240

Channel Manning's n: 0.0350

Channel Invert Elevation: 178.32 m

Roadway Data for Crossing: Area C
Roadway Profile Shape: Constant Roadway Elevation

Crest Length: 1.20 m

Crest Elevation: 179.49 m

Roadway Surface: Paved

Roadway Top Width: 7.30 m

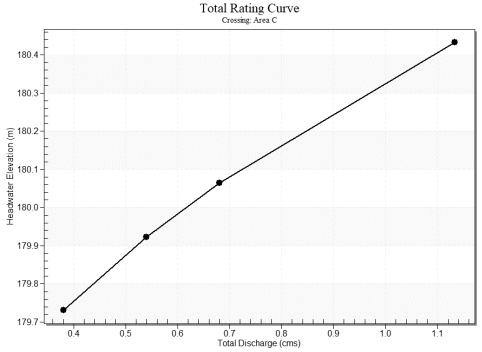
AREA C – OPTION C4

Crossing Discharge Data
Discharge Selection Method: User Defined

Table 16 - Summary of Culvert Flows at Crossing: Area C

Headwater Elevation (m)	Discharge Names	Total Discharge (cms)	Option C4 (Prop.) Discharge (cms)	Roadway Discharge (cms)	Iterations
179.73	5-Year	0.38	0.38	0.00	1
179.92	25-Year	0.54	0.54	0.00	5
180.06	100-Year	0.68	0.63	0.05	4
179.92	Overtopping	0.54	0.54	0.00	Overtopping

Rating Curve Plot for Crossing: Area C



Culvert Data: Option C4 (Prop.)

Table 17 - Culvert Summary Table: Option C4 (Prop.)

Discharge Names	Total Discharge (cms)	Culvert Discharge (cms)	Headwater Elevation (m)	Inlet Control Depth (m)	Outlet Control Depth (m)	Flow Type	Normal Depth (m)	Critical Depth (m)	Outlet Depth (m)	Tailwater Depth (m)	Outlet Velocity (m/s)	Tailwater Velocity (m/s)
5-Year	0.38 cms	0.38 cms	179.73	0.58	0.0*	1-S2n	0.19	0.40	0.22	0.44	4.12	0.34
25-Year	0.54 cms	0.54 cms	179.92	0.77	0.0*	5-S2n	0.23	0.48	0.27	0.52	4.41	0.37
100-Year	0.68 cms	0.63 cms	180.06	0.91	0.148	5-S2n	0.25	0.51	0.30	0.58	4.54	0.39

* Full Flow Headwater elevation is below inlet invert.

Culvert Barrel Data
Culvert Barrel Type Straight Culvert

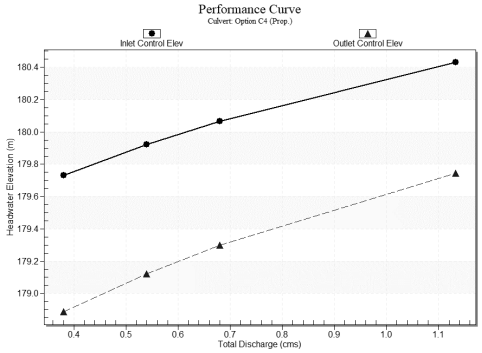
Inlet Elevation (invert): 179.15 m,

Outlet Elevation (invert): 178.29 m

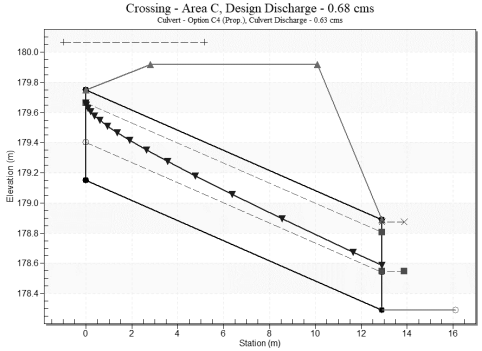
Culvert Length: 12.93 m,

Culvert Slope: 0.0667

Culvert Performance Curve Plot: Option C4 (Prop.)



Water Surface Profile Plot for Culvert: Option C4 (Prop.)



Site Data - Option C4 (Prop.)
Site Data Option: Culvert Invert Data

Inlet Station: 0.00 m

Inlet Elevation: 179.15 m

Outlet Station: 12.90 m

Outlet Elevation: 178.29 m

Number of Barrels: 1

Culvert Data Summary - Option C4 (Prop.)
Barrel Shape: Circular

Barrel Diameter: 600.00 mm

Barrel Material: Concrete

Embedment: 0.00 mm

Barrel Manning's n: 0.0120

Culvert Type: Straight

Inlet Configuration: Grooved End Projecting (Ke=0.2)

Inlet Depression: None

Tailwater Data for Crossing: Area C

Table 18 - Downstream Channel Rating Curve (Crossing: Area C)

Flow (cms)	Water Surface Elev (m)	Velocity (m/s)	Depth (m)	Shear (Pa)	Froude Number
0.38	178.73	0.44	0.34	4.35	0.20
0.54	178.81	0.52	0.37	5.14	0.20
0.68	178.87	0.58	0.39	5.72	0.21

Tailwater Channel Data - Area C
Tailwater Channel Option: Trapezoidal Channel

Bottom Width: 1.20 m

Side Slope (H:V): 3.00 (_:1)

Channel Slope: 0.0010

Channel Manning's n: 0.0400

Channel Invert Elevation: 178.29 m

Roadway Data for Crossing: Area C
Roadway Profile Shape: Constant Roadway Elevation

Crest Length: 1.60 m

Crest Elevation: 179.92 m

Roadway Surface: Paved

Roadway Top Width: 7.30 m

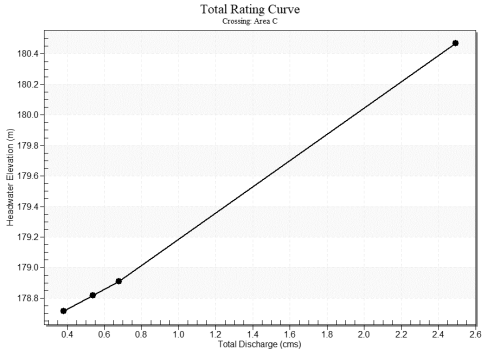
AREA C – OPTION C5

Crossing Discharge Data
Discharge Selection Method: User Defined

Table 19 - Summary of Culvert Flows at Crossing: Area C

Headwater Elevation (m)	Discharge Names	Total Discharge (cms)	Option C5 Discharge (cms)	Roadway Discharge (cms)	Iterations
178.72	5-Year	0.38	0.38	0.00	1
178.82	25-Year	0.54	0.54	0.00	1
178.91	100-Year	0.68	0.68	0.00	1
179.92	Overtopping	1.76	1.76	0.00	Overtopping

Rating Curve Plot for Crossing: Area C



Culvert Data: Option C5

Table 20 - Culvert Summary Table: Option C5

Discharge Names	Total Discharge (cms)	Culvert Discharge (cms)	Headwater Elevation (m)	Inlet Control Depth (m)	Outlet Control Depth (m)	Flow Type	Normal Depth (m)	Critical Depth (m)	Outlet Depth (m)	Tailwater Depth (m)	Outlet Velocity (m/s)	Tailwater Velocity (m/s)
5-Year	0.38 cms	0.38 cms	178.72	0.40	0.415	1-S1t	0.23	0.28	0.44	0.44	0.85	0.34
25-Year	0.54 cms	0.54 cms	178.82	0.49	0.519	1-S1t	0.29	0.34	0.52	0.52	1.03	0.37
100-Year	0.68 cms	0.68 cms	178.91	0.56	0.608	1-S1t	0.33	0.38	0.58	0.58	1.21	0.39

Culvert Barrel Data
Culvert Barrel Type Straight Culvert

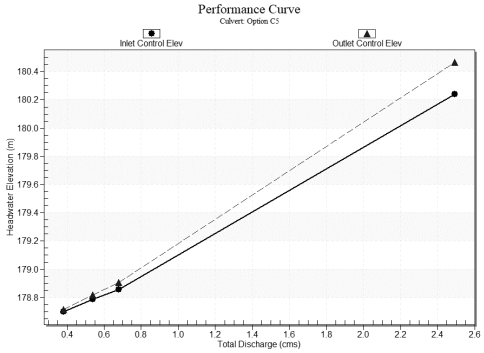
Inlet Elevation (invert): 178.30 m,

Outlet Elevation (invert): 178.20 m

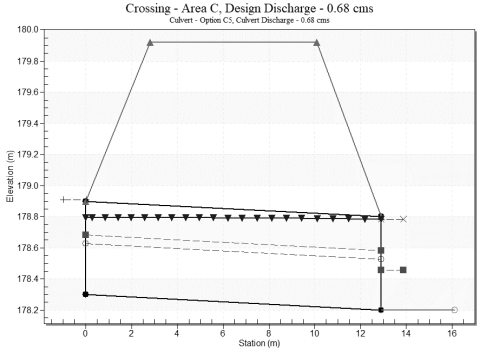
Culvert Length: 12.90 m,

Culvert Slope: 0.0078

Culvert Performance Curve Plot: Option C5



Water Surface Profile Plot for Culvert: Option C5



Site Data - Option C5
Site Data Option: Culvert Invert Data

Inlet Station: 0.00 m

Inlet Elevation: 178.30 m

Outlet Station: 12.90 m

Outlet Elevation: 178.20 m

Number of Barrels: 2

Culvert Data Summary - Option C5
Barrel Shape: Circular

Barrel Diameter: 600.00 mm

Barrel Material: Concrete

Embedment: 0.00 mm

Barrel Manning's n: 0.0120

Culvert Type: Straight

Inlet Configuration: Grooved End Projecting (Ke=0.2)

Inlet Depression: None

Tailwater Data for Crossing: Area C

Table 21 - Downstream Channel Rating Curve (Crossing: Area C)

Flow (cms)	Water Surface Elev (m)	Velocity (m/s)	Depth (m)	Shear (Pa)	Froude Number
0.38	178.64	0.44	0.34	4.35	0.20
0.54	178.72	0.52	0.37	5.14	0.20
0.68	178.78	0.58	0.39	5.72	0.21

Tailwater Channel Data - Area C
Tailwater Channel Option: Trapezoidal Channel

Bottom Width: 1.20 m

Side Slope (H:V): 3.00 (_:1)

Channel Slope: 0.0010

Channel Manning's n: 0.0400

Channel Invert Elevation: 178.20 m

Roadway Data for Crossing: Area C
Roadway Profile Shape: Constant Roadway Elevation

Crest Length: 1.60 m

Crest Elevation: 179.92 m

Roadway Surface: Paved

Roadway Top Width: 7.30 m

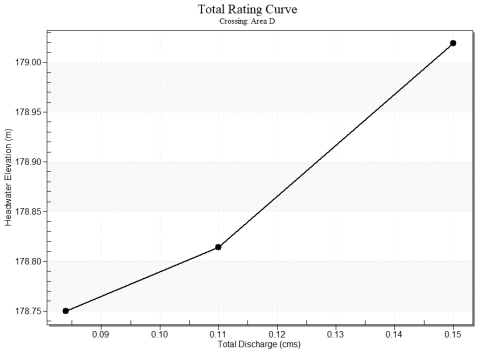
AREA D – OPTION D1

Crossing Discharge Data
Discharge Selection Method: User Defined

Table 22 - Summary of Culvert Flows at Crossing: Area D

Headwater Elevation (m)	Discharge Names	Total Discharge (cms)	Option D1 Discharge (cms)	Roadway Discharge (cms)	Iterations
178.75	5-year	0.08	0.08	0.00	1
178.81	25-year	0.11	0.11	0.00	1
179.02	100-year	0.15	0.14	0.01	15
179.00	Overtopping	0.14	0.14	0.00	Overtopping

Rating Curve Plot for Crossing: Area D



Culvert Data: Option D1

Table 23 - Culvert Summary Table: Option D1

Discharge Names	Total Discharge (cms)	Culvert Discharge (cms)	Headwater Elevation (m)	Inlet Control Depth (m)	Outlet Control Depth (m)	Flow Type	Normal Depth (m)	Critical Depth (m)	Outlet Depth (m)	Tailwater Depth (m)	Outlet Velocity (m/s)	Tailwater Velocity (m/s)
5-year	0.08 cms	0.08 cms	178.75	0.33	0.350	3-M2t	0.24	0.21	0.22	0.22	1.17	0.68
25-year	0.11 cms	0.11 cms	178.81	0.39	0.414	3-M2t	0.30	0.24	0.25	0.25	1.35	0.72
100-year	0.15 cms	0.14 cms	179.02	0.48	0.619	7-M2t	0.40	0.27	0.28	0.28	1.49	0.78

Culvert Barrel Data
Culvert Barrel Type Straight Culvert

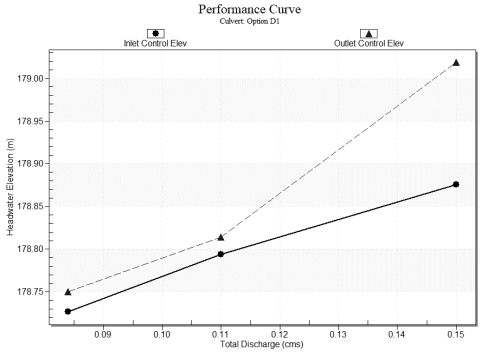
Inlet Elevation (invert): 178.40 m,

Outlet Elevation (invert): 177.70 m

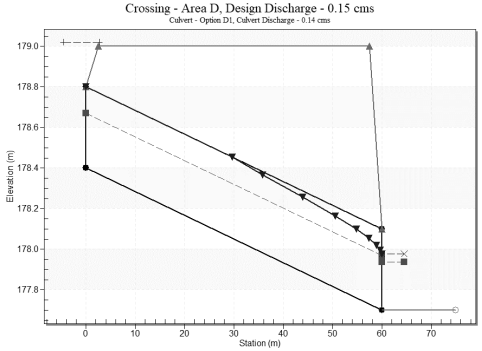
Culvert Length: 60.00 m,

Culvert Slope: 0.0117

Culvert Performance Curve Plot: Option D1



Water Surface Profile Plot for Culvert: Option D1



Site Data - Option D1
Site Data Option: Culvert Invert Data

Inlet Station: 0.00 m

Inlet Elevation: 178.40 m

Outlet Station: 60.00 m

Outlet Elevation: 177.70 m

Number of Barrels: 1

Culvert Data Summary - Option D1
Barrel Shape: Circular

Barrel Diameter: 400.00 mm

Barrel Material: Corrugated Steel

Embedment: 0.00 mm

Barrel Manning's n: 0.0240

Culvert Type: Straight

Inlet Configuration: Thin Edge Projecting

Inlet Depression: None

Tailwater Data for Crossing: Area D

Table 24 - Downstream Channel Rating Curve (Crossing: Area D)

Flow (cms)	Water Surface Elev (m)	Velocity (m/s)	Depth (m)	Shear (Pa)	Froude Number
0.08	177.92	0.22	0.68	32.80	0.65
0.11	177.95	0.25	0.72	36.29	0.66
0.15	177.98	0.28	0.78	40.76	0.67

Tailwater Channel Data - Area D
Tailwater Channel Option: Triangular Channel

Side Slope (H:V): 2.50 (_:1)

Channel Slope: 0.0150

Channel Manning's n: 0.0400

Channel Invert Elevation: 177.70 m

Roadway Data for Crossing: Area D
Roadway Profile Shape: Constant Roadway Elevation

Crest Length: 4.00 m

Crest Elevation: 179.00 m

Roadway Surface: Gravel

Roadway Top Width: 55.00 m

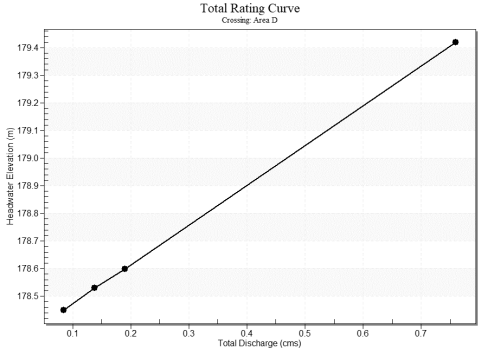
AREA D – OPTION D4

Crossing Discharge Data
Discharge Selection Method: User Defined

Table 4 - Summary of Culvert Flows at Crossing: Area D

Headwater Elevation (m)	Discharge Names	Total Discharge (cms)	Option D4 Discharge (cms)	Roadway Discharge (cms)	Iterations
178.45	5-year	0.08	0.08	0.00	1
178.53	25-year	0.14	0.14	0.00	1
178.60	100-year	0.19	0.19	0.00	1
179.35	Overtopping	0.69	0.69	0.00	Overtopping

Rating Curve Plot for Crossing: Area D



Culvert Data: Option D4

Table 5 - Culvert Summary Table: Option D4

Discharge Names	Total Discharge (cms)	Culvert Discharge (cms)	Headwater Elevation (m)	Inlet Control Depth (m)	Outlet Control Depth (m)	Flow Type	Normal Depth (m)	Critical Depth (m)	Outlet Depth (m)	Tailwater Depth (m)	Outlet Velocity (m/s)	Tailwater Velocity (m/s)
5-year	0.08 cms	0.08 cms	178.45	0.25	0.0*	1-S2n	0.15	0.18	0.15	0.20	1.46	0.54
25-year	0.14 cms	0.14 cms	178.53	0.33	0.0*	1-S2n	0.20	0.24	0.20	0.26	1.68	0.62
100-year	0.19 cms	0.19 cms	178.60	0.40	0.0*	1-S2n	0.24	0.28	0.24	0.31	1.84	0.68

* Full Flow Headwater elevation is below inlet invert.

Culvert Barrel Data
Culvert Barrel Type Straight Culvert

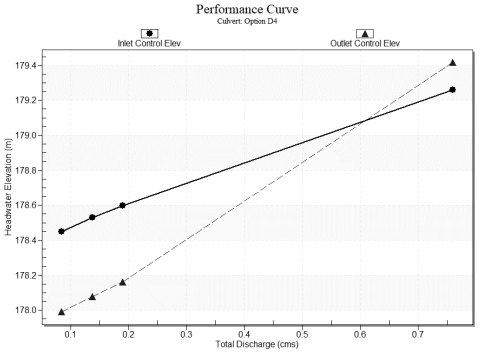
Inlet Elevation (invert): 178.20 m,

Outlet Elevation (invert): 177.78 m

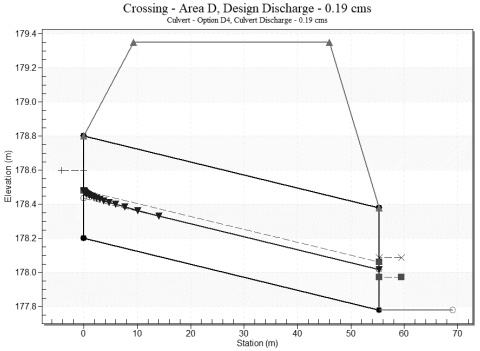
Culvert Length: 55.30 m,

Culvert Slope: 0.0076

Culvert Performance Curve Plot: Option D4



Water Surface Profile Plot for Culvert: Option D4



Site Data - Option D4
Site Data Option: Culvert Invert Data

Inlet Station: 0.00 m

Inlet Elevation: 178.20 m

Outlet Station: 55.30 m

Outlet Elevation: 177.78 m

Number of Barrels: 1

Culvert Data Summary - Option D4
Barrel Shape: Circular

Barrel Diameter: 600.00 mm

Barrel Material: Concrete

Embedment: 0.00 mm

Barrel Manning's n: 0.0120

Culvert Type: Straight

Inlet Configuration: Grooved End Projecting (Ke=0.2)

Inlet Depression: None

Tailwater Data for Crossing: Area D

Table 6 - Downstream Channel Rating Curve (Crossing: Area D)

Flow (cms)	Water Surface Elev (m)	Velocity (m/s)	Depth (m)	Shear (Pa)	Froude Number
0.08	177.98	0.20	0.54	12.87	0.43
0.14	178.04	0.26	0.62	17.01	0.44
0.19	178.09	0.31	0.68	20.27	0.45

Tailwater Channel Data - Area D
Tailwater Channel Option: Trapezoidal Channel

Bottom Width: 0.60 m

Side Slope (H:V): 1.00 (_:1)

Channel Slope: 0.0067

Channel Manning's n: 0.0400

Channel Invert Elevation: 177.78 m

Roadway Data for Crossing: Area D
Roadway Profile Shape: Constant Roadway Elevation

Crest Length: 5.00 m

Crest Elevation: 179.35 m

Roadway Surface: Gravel

Roadway Top Width: 36.70 m