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Cedar Run Wakeboard Cable Park

SURFACE WATER MANAGEMENT STRATEGY REPORT

2533827 Ontario Limited

Document Control

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1 Introduction

Tatham Engineering Limited has been retained by 2533827 Ontario Limited to prepare a Surface Water Management Strategy Report in support of the proposed Official Plan Amendment (OPA), Rezoning, and Site Plan Approval for a proposed Cedar Run Wakeboard Cable Park in the Town of The Blue Mountains (Town). Specifically, this report has been prepared to address internal and external servicing requirements related to stormwater management associated with this development and present a water management strategy related to the filling and water level maintenance of the proposed recreational ponds.

1.1 SITE DESCRIPTION

The site is located near the southwest corner of Grey Road 2 and Clark Street as depicted on Figure ODP-1 provided overleaf. The site consists of 35.78 ha of land formerly referred to as the Cedar Run Horse Park property and is bisected southwest to northeast by an intermittent watercourse. The site is primarily grass covered and includes gravel roads and sand event areas from previous development. It is currently zoned as “Recreational Commercial (C4-12h)” zone and “Hazard (H)” zone under the site-specific by-law (By-law 2012-49) applicable to the property. The property is legally described as part Lot 30, Concession 9, Town of the Blue Mountains in Grey County.

1.2 OBJECTIVES

The Cedar Run Wakeboard Cable Park property has been the subject of various development reports and approvals over the past years. The primary objectives of this report are as follows:

- Present a stormwater management (SWM) plan for the development that demonstrates that a plan has been designed considering all past input from approval agencies;
- Present a surface water management strategy that will demonstrate how the recreational ponds are to be filled and water levels maintained in a sustainable manner; and
- Demonstrate that the development can be constructed in accordance with all applicable Municipal, Regional and Provincial guidelines while minimizing the impact of the development on the local drainage systems.

1.3 BACKGROUND AND GUIDELINES

This report was prepared recognizing the pertinent Conservation Authority, Municipality and Provincial guidelines on water resources, including the following publications:

- Stormwater Management Practices Planning and Design Manual. Ministry of the Environment, Conservation and Parks (2003);

- Design Guidelines for Sewage Works. Ministry of the Environment (2008); and
- Engineering Standards. Town of the Blue Mountains (April 2009).

Due to the history of the area it is important to review the applicable background documents. The following summary documents background information pertinent to the SWM planning and development of the area:

- Proposed Thornbury Horse Park Development Functional Servicing Report. C.C. Tatham & Associates Ltd. (July 2006). This report presented an overall analysis demonstrating serviceability of the proposed horse park in terms of traffic, stormwater, sewage flows, water supply and utilities.
- Cedar Run – Thornbury Horse Park 2009-2010 Horse Show Approval Submission and Technical Report. C.C. Tatham & Associates Ltd. (March 2009). This report summarized the grading and drainage work completed on-site for the horse park from 2006-2008 and presented an overall plan summarizing the site servicing works required for the events proposed in 2009-2010.
- Thornbury Horse Park Stormwater Management Report. C.C. Tatham & Associates Ltd. (June 2009). This report presented a SWM Plan for the interim drainage conditions for the Horse Park events planned in 2009 and 2010. The three ponds constructed from 2006-2008 were to provide the required quality and quantity control.
- Thornbury Horse Park Stormwater Design Brief - Addendum. C.C. Tatham & Associates Ltd. (April 2011). This report presented a SWM Plan for a proposed parking area. The parking area was designed to drain to two new proposed SWM ponds. The parking area and ponds did not proceed to construction.
- Thornbury Horse Park Approval Submission and Technical Report: Proposed 2012 Works. C.C. Tatham & Associates Ltd. (March 2012). This report presented the work proposed on-site in 2012. The work presented in this report did not proceed to construction. This report included the design for a proposed diversion channel. This diversion channel has been approved and the key design details are summarized within this report.

1.4 PROPOSED LAND USE

The Cedar Run Wakeboard Cable Park is proposed to consist of a large circular recreational pond (Pond A), a smaller multi-level recreational pond (Pond B), a pro shop/office, a commercial plaza, overnight accommodation cottages, a passive recreation area and associated parking and access roads.

The development is proposed to progress in phases. The proposed interim development plan is to construct the two recreational ponds, the pro shop/office, parking areas and associated

access roads. Commercial and overnight accommodations will be constructed as part of a future phase and at which time will be subject to agency approval.

The existing ponds constructed on-site as part of the previous Cedar Run Horse Park will be retrofitted as required for stormwater management. The intermittent watercourse that currently bisects the site will be realigned to Indian Brook and flows will be split between Indian Brook and the Grey Road 2 roadside ditch as previously approved. The plan has also allowed for lands set aside for Clark Street to be realigned through the site. The realignment option was the subject of previous discussions with the Town and a recent Town initiated EA.

The proposed development plan is illustrated on the Site Plan Drawing SP-1 and included with this report.

2 Existing Drainage Conditions

The site primarily drains to the intermittent watercourse that bisects the site alongside an existing gravel driveway to Grey Road 2. At Grey Road 2, the tributary ties into the roadside ditch drainage system which drains north along Grey Road 2 to Clark Street via a man-made drainage ditch then east across Clark Street and Highway 26 to Georgian Bay. Historically, the base mapping for the site area indicates that this intermittent watercourse drained into Indian Brook approximately 80 m upstream of Grey Road 2. The area's existing drainage characteristics are summarized as follows and illustrated on the Existing Overall Drainage Plan (Figure ODP-1) and the Pre-Development Drainage Plan Drawing DP-1:

- In 2007-2008, grading occurred on-site to create the Thornbury Horse Park event areas and three ponds were constructed on-site alongside the intermittent watercourse. The event areas are grass covered and sand and primarily drain overland to the three ponds and ultimately the intermittent watercourse. Investigations in the spring of 2012 confirmed that two of the existing ponds were functioning on-line with the intermittent watercourse.
- Catchment 101 (5.13 ha) represents the existing drainage area to Pond #1. The catchment is primarily grass covered and includes sand event areas. Pond #1 is currently functioning on-line with the intermittent watercourse.
- Catchment 102 (2.96 ha) represents the existing drainage area to Pond #2 and Pond #3. The catchment is primarily grass covered and includes sand event areas. Pond #2 is currently functioning on-line with the intermittent watercourse.
- Catchment 1 (80.08 ha) represents the remaining drainage area to the intermittent watercourse to its connection to the Grey Road 2 roadside ditch. The catchment consists of a mix of forest and agricultural lands.
- Catchment 2 (16.83 ha) represents the drainage area on the site and adjacent lands that drains directly to the roadside ditch along Grey Road 2 and Clark Street. This catchment is primarily grass covered and conveys surface runoff to the southwest corner of Grey Road 2 and Clark Street.
- Catchment 3 (136 ha) represents the drainage area external to the site north of Clark Street and ultimately ties into the Grey Road 2 roadside ditch system.

2.1 HYDROLOGIC ANALYSIS

In order to quantify pre-development runoff rates to the intermittent watercourse and downstream, a hydrologic analysis of the watershed was completed including development of a pre-development Visual OTTHYMO hydrologic model. The model includes the three ponds

and the grading recently completed on-site. The model is consistent with the original approved design such that the hydrologic properties of each catchment match the approved post-development design from earlier phases. The hydrologic analysis and associated calculations are included in Appendix A and the expected peak flow rates are summarized in Table 1.

Table 1: Pre-Development Peak Flow Summary

DESIGN STORM	INTERMITTENT TRIBUTARY AT GREY ROAD 2 Hydrograph 803 (m³/s)	INTERMITTENT TRIBUTARY AT HIGHWAY 26 Hydrograph 801 (m³/s)
1:2 Year	0.32	0.73
1:5 Year	0.54	1.24
1:10 Year	0.72	1.62
1:25 Year	0.97	1.96
1:50 Year	1.18	2.22
1:100 Year	1.39	2.50
Regional	3.14	4.53

Note: Peak Flows generated by SCS 24 Hour Type II Design Storms

3 Stormwater Management Plan

The stormwater management plan developed for the subject property is in accordance with the criteria set forth in the Ministry of Environment, Conservation and Parks (MECP) Stormwater Management Planning and Design Manual and previous approvals for the site. The stormwater management plan has been designed in accordance with the SWM criteria established for the site and is presented in the following sections.

3.1 DESIGN CRITERIA

Based on the information gathered on-site and the background information collected, a clear understanding of the SWM issues was gained. Consistent with previous SWM plans and approvals for the site, the following items are to be addressed in the proposed SWM plan:

- Indian Brook and Georgian Bay are cold water fisheries requiring Level 1 'Enhanced' water quality treatment to Provincial standards. The proposed SWM plan must achieve 80% total suspended solids (TSS) removal prior to off-site discharge.
- To ensure that the downstream conveyance system is not adversely impacted by increased flows caused by the development, the SWM plan must attenuate post development peak flow rates off-site to existing levels for the 1:2-year through 1:100-year design storms for storm flows to the intermittent watercourse.
- The Grey Road 2 roadside ditch has historically presented flood problems and as a result the intermittent watercourse will be diverted to direct high flows to Indian Brook. This will significantly reduce flows to the Grey Road 2 roadside ditch. This diversion was previously designed and approved but not yet constructed.
- The stormwater management plan must accommodate the flows from the external drainage areas west of the subject property and must provide safe conveyance of the Regulatory storm event peak flows through the site to the downstream drainage system.

3.2 DIVERSION CHANNEL

Under existing conditions, the intermittent watercourse bisecting the site runs alongside the existing gravel driveway off Grey Road 2 through a vegetated ditch. At Grey Road 2, the tributary ties into the roadside ditch drainage system.

As previously approved with the Cedar Run development, it is proposed to divert the existing intermittent watercourse around the area proposed for recreational Pond A to direct flows to the Indian Brook as the primary outlet and the Grey Road 2 ditch as the low flow outlet. Detailed drawings for the phasing of construction are provided on the Creek Construction Phasing Plan Drawing PH-1. The channel realignment Plan and Profile is illustrated on Drawings PP-1 and PP-

2. Additional design details for the channel realignment are illustrated on the Details and Notes Drawings DP-1 and DP-2.

The diversion channel will include a split constructed towards the downstream end. A baseflow channel will be constructed from the split to the Grey Road 2 roadside ditch to maintain low flows in the downstream drainage system. Overflow surface runoff will be diverted to Indian Brook. The design for the channel diversion was completed and approved by the Town of The Blue Mountains, County and GSCA in 2012 but never constructed. The same drawings that were approved in 2012 will be used for this approval.

The proposed diversion channel cross-section has been designed to mimic the natural upstream watercourse cross-section and has a minimum conveyance capacity of 1.4 m³/s, equal to the expected 1:100-year design storm peak flow. The existing culvert outlet to Indian Brook will be removed and replaced with an 890 x 610 mm CSP arch culvert, sized to convey the expected surface runoff downstream to Indian Brook. The baseflow channel has been designed to convey baseflows while allowing for fish passage upstream. Riverstone riffles will be installed in the diversion channel to force baseflows (~10 L/s) through the baseflow channel while allowing surface runoff to spill through the diversion channel to Indian Brook.

It is noted that the intermittent watercourse has been identified as a warm water fishery and the design of the diversion channel follows the principles of natural channel design. Low gradients, in-water structure, overhanging canopy, and erosion controls have all been incorporated into the design of the proposed diversion channel. Similarly, the same features have been included in the design of the baseflow channel. It is noted that the Department of Fisheries and Oceans Canada (DFO) reviewed and approved the proposed channel realignment design on June 13, 2019.

3.3 PROPOSED DRAINAGE CONDITIONS

A stormwater management plan has been developed to achieve the SWM criteria established for the site. The proposed SWM plan maximizes the developed area to drain to the existing Pond #3 as the main quantity and quality control feature for the site. The proposed site drainage characteristics are illustrated on the Post Development Drainage Plan Drawing DP-2 and are summarized as follows:

- Catchment 201 (5.05 ha) represents the proposed drainage area to Pond #1. The existing grassed area will be developed into a passive recreation area with very little change to the land use or drainage area and will continue to be controlled by Pond #1, consistent with existing conditions.
- Catchment 202 (6.35 ha) represents the proposed drainage area to retrofitted Pond #3. The existing grassed area will be developed for the pro shop/office and associated parking and access roads for the interim condition. A commercial plaza and overnight accommodations will be added within this area under ultimate conditions. Retrofitted Pond #3 will provide

quantity and quality control and discharge to the intermittent watercourse upstream of the diversion.

- The recreational ponds will capture all water that falls within their areas and no water will be discharged from the ponds. This water will be used to minimize required water taking.
- Catchment 1 (77.75 ha) will be reduced from pre-development conditions based on the increased drainage to Pond #3 and the watercourse diversion. No development is proposed to this catchment at this time.
- Catchment 2 (10.93 ha) will be reduced from pre-development conditions based on the increased drainage to Pond #3 and the construction of the recreational ponds. This catchment will have a small increased imperviousness based on ultimate development conditions and the potential for the Clark Street realignment. Quantity control for Catchment 2 is not required as the watercourse diversion will significantly reduce the overall flows to Grey Road 2. The impervious areas will drain via grassed swales and ditches to provide the requisite quality control.
- Catchment 3 will remain unchanged from pre-development conditions.

Retrofitted Pond #3 and existing Pond #1 will provide the required level of water quality and quantity control to achieve the SWM criteria established for the entire area and is described in the following subsections.

3.3.1 Water Quantity Control

The existing runoff rates to the intermittent watercourse upstream of the proposed diversion must be maintained under proposed conditions by restricting post development peak flow rates to pre-development levels for the 1:2-year through 1:100-year design storms. Safe conveyance of the Regulatory Timmins storm event must also be provided through the site. This will be achieved through a retrofit of existing Pond #3. The existing water level in Pond #3 is approximately 194.90 m as determined through site survey and will be maintained as the permanent pool elevation. The top of bank will be regraded and set at 196.20 m at the approximate elevation of the trail crossing between Pond #2 and Pond #3. The proposed improvements are illustrated in the Pond Improvements Plan Drawing PND-1. The pond retrofit improvements and existing pond modifications are described as follows:

- Site investigations confirmed that Pond #1 and #2 were functioning on-line with the intermittent watercourse. The pond banks will be re-established such that Pond #1 functions off-line in accordance with its original design and Pond #2 will also be brought off-line;
- An outlet to the existing watercourse from retrofitted Pond #3 will be installed to ensure quantity control occurs from this pond. The outlet will be comprised of a reverse grade pipe,

a primary low flow control orifice, a ditch inlet catchbasin and a secondary low flow control pipe discharging to the existing watercourse;

- The low flow control pipes and the ditch inlet will be constructed to maintain the existing permanent pool of the pond and have been sized to optimize peak flow attenuation under minor storm events; and
- An emergency overflow spillway will be constructed to release major storm peak flows downstream if the primary outlets are blocked.

As previously described, the area draining to Pond #3 will be increased under proposed conditions. Through implementation of the outlet controls described above and as illustrated on Drawing PND-1, control of the 1:2-year through 1:100-year storm events to pre-development levels will be maintained. The associated stage-storage-discharge tables are included in Appendix B. To confirm post-development flows to the channel, a hydrologic analysis using Visual OTTHYMO was completed. The hydrologic analysis and supporting calculations are also included in Appendix B and the results are summarized in Table 2.

Table 2: Post Development Peak Flow Summary

DESIGN STORM	POND OUTFLOWS	INTERMITTENT TRIBUTARY	DOWNSTREAM OF GREY ROAD 2
	Hydrograph 802 (m ³ /s)	Hydrograph 803 (m ³ /s)	Hydrograph 801 (m ³ /s)
1:2 Year	0.02 (0.03)	0.30 (0.32)	0.42 (0.73)
1:5 Year	0.04 (0.04)	0.51 (0.54)	0.70 (1.24)
1:10 Year	0.05 (0.06)	0.67 (0.72)	0.88 (1.62)
1:25 Year	0.06 (0.08)	0.91 (0.97)	1.03 (1.96)
1:50 Year	0.08 (0.10)	1.10 (1.18)	1.14 (2.22)
1:100 Year	0.13 (0.13)	1.32 (1.39)	1.24 (2.50)

Note: (0.03) – equivalent pre-development flow rate.

A comparison of the post and pre-development flow summaries to the intermittent watercourse from Catchments 201 and 202 and at the proposed diversion confirm that the proposed retrofit to Pond #3 can attenuate the 1:2-year through 1:100-year post development peak flows to levels at or below existing conditions. The diversion of the intermittent watercourse will significantly decrease the peak flows at Grey Road 2.

3.3.2 Water Quality Control

As discussed, Level 1 “Enhanced” water quality treatment is required in the form of 80% total suspended solids (TSS) removal and Catchment 202 will be treated on-site through the retrofit

of existing Pond #3. The following elements have been incorporated into the SWM pond retrofit to improve water quality:

- Construction of grassed overland flow routes to provide pre-treatment and sediment removal;
- Extended flow path to further promote sedimentation and pollutant removal; and
- A reverse grade bottom draw pipe and orifice for discharge temperature benefits.

Under proposed conditions, approximately 6.35 ha will drain to the retrofitted Pond #3 at a combined imperviousness level of 17%. For Level 1 water quality treatment, the required permanent pool and extended detention volumes are approximately 255 m³ and 290 m³ respectively. The active storage volume required is approximately 760 m³ according to the erosion control requirements of the MECP SWM Design Manual. Based on the original pond design, the total permanent pool volume provided is approximately 1,400 m³. The retrofitted pond design provides approximately 910 m³ of extended detention. Sedimentation should be cleaned out such that the minimum permanent pool depth is 1 m in accordance with MECP recommended depths for wet ponds. This will maintain the permanent pool volume well above the required storage.

The pond drawdown time for the 25-mm design storm is approximately 10 hours and the drawdown time at the extended detention water level is approximately 29 hours. The grassed swales and overland drainage will provide pre-treatment leading into the pond. Water quality storage and drawdown calculations are included in Appendix C for reference.

3.3.3 Recreational Pond Hydrology

Recreation Ponds A and B will capture all water that falls within their footprint such that no water is discharged from the ponds. To represent a worst-case scenario, the recreational ponds have been modelled as catchments with characteristics representative of wetlands/ponds. CN calculations for the recreational ponds are included in Appendix B for reference. The overflow weir for Pond A will discharge directly to the Grey Road 2 ditch and the overflow weir for Pond B will discharge to the retrofitted Pond #3. Under this scenario, the post development peak flows will continue to be controlled below pre-development levels for the 1:2-year through 1:100-year storm events. The Visual OTTHYMO output and updated stage-storage-discharge tables are provided in Appendix D. Post development peak flows are summarized in Table 3.

Table 3: Post Development Peak Flow Summary with Recreational Pond Overflow

DESIGN STORM	INTERMITTENT TRIBUTARY Hydrograph 803 (m ³ /s)	DOWNSTREAM OF GREY ROAD 2 Hydrograph 801 (m ³ /s)
1:2 Year	0.30 (0.32)	0.42 (0.73)
1:5 Year	0.51 (0.54)	0.71 (1.24)
1:10 Year	0.67 (0.72)	0.89 (1.62)
1:25 Year	0.91 (0.97)	1.05 (1.96)
1:50 Year	1.12 (1.18)	1.18 (2.22)
1:100 Year	1.36 (1.39)	1.29 (2.50)

Note: (0.32) - equivalent pre-development flow rate.

The water quality calculations confirm that retrofitted Pond #3 continues to provide the required permanent pool, extended detention and erosion control volumes. The updated drainage area is 7.68 ha and the updated imperviousness is 14%. The drawdown times for the 25-mm design storm and the extended detention water level are not impacted by the increased drainage from Pond B. Water quality calculations are also provided in Appendix D.

3.4 CULVERT AND BRIDGE CROSSINGS

Four existing crossings were assessed using both HY-8 culvert hydraulic software and channel conveyance calculations to determine the design conveyance characteristics of each crossing. Peak flow rates taken from the proposed condition hydrologic model were used in the analysis. Detailed calculations for the four crossings are provided in Appendix E and are summarized as follows:

- Crossing 1 - The existing 475 mm dia. CMP culvert crossing at the intermittent watercourse near the west property boundary has a design capacity of 0.323 m³/s and conveys the 1:2-year storm event. The Regional event will overtop the crossing at a depth of 0.28 m and a velocity of 0.81 m/s. The maximum overtopping depth, velocity and depth-velocity product for the CMP culvert crossing during the Regional storm event are less than 0.30 m, 1.7 m/s and 0.4 m²/s respectively, satisfying standard criteria for safe access and egress.
- Crossing 2 - The existing bridge crossing at the intermittent watercourse upstream of the existing ponds has a span of approximately 15.5 metres. The underside of the bridge is approximately 1.0 m from the bottom of the channel. The bridge crossing design capacity is greater than 3.14 m³/s and conveys the Regional storm event without overtopping. The open channel analysis confirms that the bridge will not form a flow obstruction during the Regional storm event.

- Crossing 3 - The existing 450 mm dia. CMP culvert crossing at the intermittent watercourse downstream of the existing ponds, central to the property has a design capacity of 0.323 m³/s and conveys the 1:2-year storm event. The Regional event will overtop the crossing at a depth of 0.24 and a velocity of 0.73 m/s. The maximum overtopping depth, velocity and depth-velocity product for the CMP culvert crossing during the Regional storm event are less than 0.30 m, 1.7 m/s and 0.4 m²/s respectively, satisfying standard criteria for safe access and egress.
- Crossing 4 - The existing 600 mm dia. driveway CMP culvert crossing at the entrance to the property from Clark Street has a design capacity of 0.33 m³/s and a design storm capacity of the 1:10-year storm event. Based on the hydraulic analysis, the existing CMP culvert conveyance exceeds the Town standard 5-year capacity for driveway culverts. The Regional event will overtop the crossing at a depth of 0.07 m and a velocity of 0.37 m/s. The maximum depth, velocity and depth-velocity product of flow overtopping the crossing are less than 0.30 m, 1.7 m/s and 0.4 m²/s respectively, satisfying standard criteria for safe access and egress. Therefore, the existing culvert at Clark Street provides sufficient capacity and does not require upgrading.

4 Recreational Pond Surface Water Management

As previously described, the proposed development consists of a large circular recreational pond referred to as Pond A and a smaller multi-level recreational pond referred to as Pond B. The following sections describe the pond construction and the strategy for filling and maintaining water levels within the ponds.

4.1 POND CONSTRUCTION

The recreational pond construction is proposed to occur in the summer of 2020. This is to facilitate collection of water from the surplus available from the fall and spring freshet runoff in 2021 to initially fill the ponds. Extensive analysis of construction and maintenance concerns related to the pond were completed in the *Geotechnical and Hydrogeological Study for Proposed Cedar Run Wakeboard Cable Park* report prepared by WSP Canada Inc. (2017).

The WSP report indicates high permeability of the cohesionless deposits at the bottom and lower portions of the proposed pond slopes. To limit seepage/piping, a clay or synthetic membrane liner is required at the bottoms and sides of the ponds. In keeping with the WSP recommendations, a clay liner is proposed with a minimum 0.5 m thickness constructed of low permeability material and compacted to at least 98% SPMDD. Furthermore, earth fill for the berms surrounding the ponds will be constructed to consist of inorganic low permeability material (clayey silt/silty clay) to limit seepage/piping and groundwater intrusion into the berm.

The potential for the pond to interface with the groundwater has also been considered in the design. As summarized in the WSP report, Pond A will extend below the groundwater table into the sandy soils below the topsoil. During construction groundwater control if required will be managed by sumps in the sandy soils but may also require excavation of drainage pits to the base of any saturated sand and gravel deposits. Further details of the proposed groundwater control are summarized in the WSP report and will be addressed during construction. Data from the borehole drilling and monitoring well testing indicates that daily pumping volumes will be less than 400,000 L/day which will not require a Permit to Take Water. However, conservative estimates indicate that the dewatering will still exceed 50,000 L/day and thus should be registered on the Environmental Activity and Site Registry (EASR) prior to construction.

4.2 POND INITIAL FILLING

The filling volume required for Pond A is 30,100 m³ and 10,500 m³ for Pond B. Water balance calculations from September to May of a typical year indicate that Pond A can collect approximately 17,400 m³ from snow melt and rain that falls on the pond surface area and the

central island within Pond A. Similarly, Pond B can collect approximately 7,700 m³ from September to May. Therefore, the total deficit that needs to be filled between the two ponds is approximately 15,600 m³.

Water balance calculations for the intermittent tributary drainage area indicates that the total runoff through the on-site tributary from September to May is approximately 120,500 m³. The proposal is to fill the remainder of the ponds by capturing and diverting a small portion of this spring runoff. Calculations in Appendix F indicate that 5% of this runoff would be diverted to the ponds to initially fill the 6,000 m³ deficit. For the similar period the previous permit allowed for up to 50,001 L/day to be taken from Indian Brook. This volume of water will be used for the remaining pond fill period.

4.3 POND LEVEL MAINTENANCE

To limit seepage in or out of the recreational ponds, a clay liner is proposed for each pond and will minimize any potential infiltration/exfiltration. Details of the clay liner requirements are described in greater detail in Section 4.1 and in the WSP Geotechnical Report. The clay liner is considered to mitigate all losses from infiltration. Water balance calculations were completed for the pond based on natural environmental evaporation losses to consider the volume of water required to maintain water levels through the operating season. Climate normal data for precipitation in Thornbury and representative evaporation losses of small open waterbodies in Ontario were used in the water balance. These calculations indicate that the largest deficit will occur in July. Pond A and Pond B will have a total deficit of 1,195 m³ during this time. To maintain water levels in the ponds, water taking will be required at a rate of approximately 38,540 litres/day to make up for the deficit.

The proposed supplemental water supply source will be from Indian Brook. A Permit to Take Water has been authorized to take water at a maximum rate of 100L/s to 50,001 L/day for the maintenance of water levels in the recreational ponds from Indian Brook. It is noted that the Permit limits the taking of water in Indian Brook up to 5% of the instantaneous streamflow, as established by a stream gauge and rating curve. Supporting calculations and a copy of the authorized Permit to Take Water are included in Appendix F.

5 Siltation and Erosion Control

Siltation and erosion control will be implemented for all construction activities within the development site, including vegetation clearing, topsoil stripping, road construction and stockpiling of materials. The basic principles considered to minimize erosion and sedimentation and resultant negative environmental impacts include:

- Minimize disturbance activities where possible;
- Expose the smallest possible land area to erosion for the shortest possible time;
- Institute erosion control measures as-required immediately;
- Implement sediment control measures before the outset of construction activities; and
- Carry out regular inspections of erosion/sediment control measures and repair or maintain as necessary.

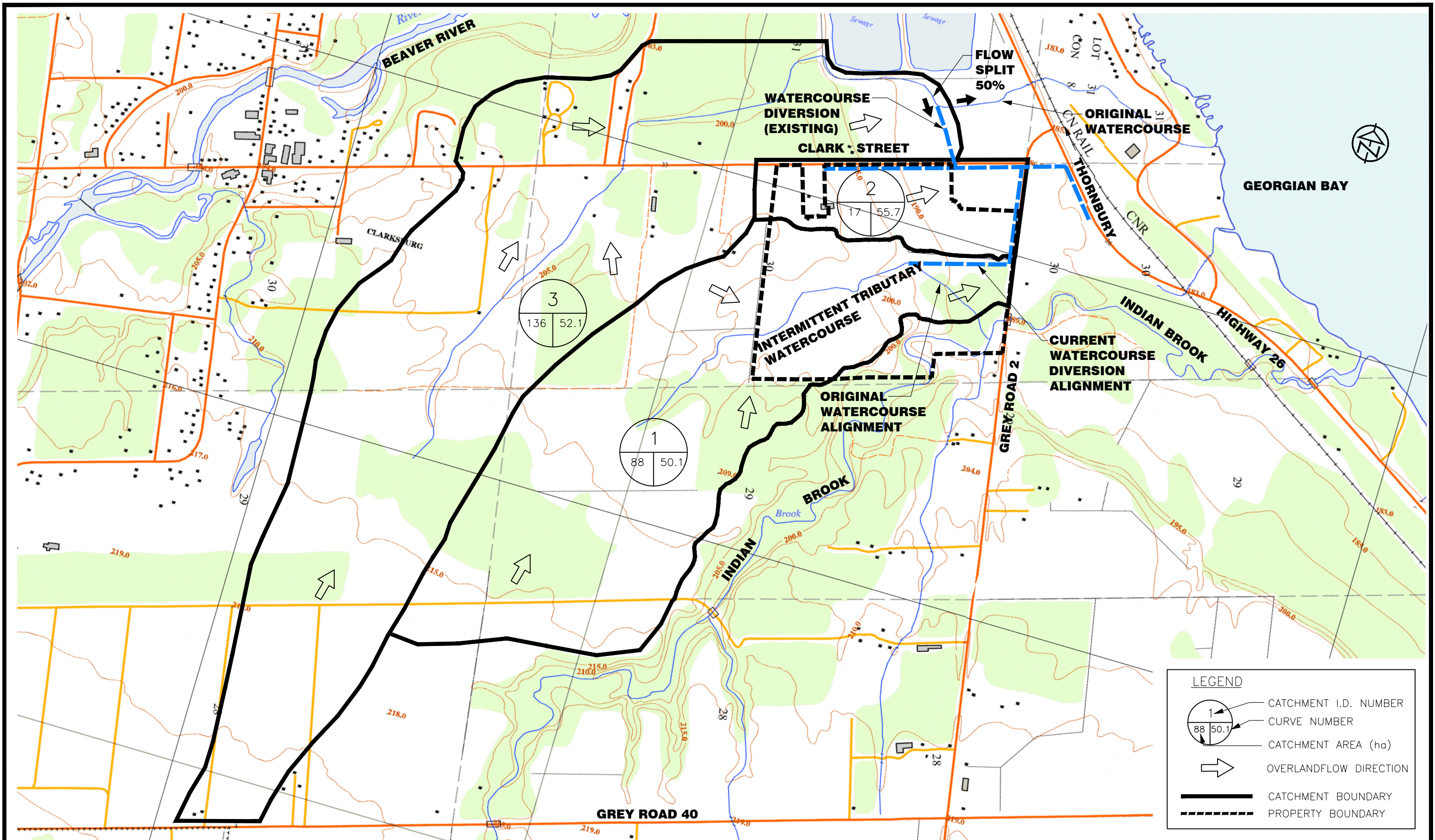
The detailed siltation and erosion control measures proposed to be implemented during and after construction are identified on the Siltation and Erosion Control Plan Drawing SC-1 and include the following:

- Heavy duty silt fences will be erected around the perimeter of the site before any grading operations commence to control sediment movement sites;
- A construction vehicle entrance will be constructed and maintained consisting of a stone mud mat to reduce off-site tracking of materials; and
- Straw bale flow check dams and rock flow check dams will be installed in the on-site and off-site overland flow routes/ditches to prevent the movement of sediment downstream.

6 Summary

This Surface Water Management Strategy Report confirms the proposed development will have no adverse impacts on the intermittent watercourse, Indian Brook or Georgian Bay. Level 1 'Enhanced' water quality control in the form of 80% TSS removal and water quantity control in the form of post to pre-development peak flow attenuation will be provided for the site through the proposed SWM plan.

The recreational pond construction strategy will allow for the ponds to be filled within a single year and the water levels will be maintained from the approved water taking sources without adverse effects.



LEGEND	
	CATCHMENT I.D. NUMBER
	CURVE NUMBER
	CATCHMENT AREA (ha)
	OVERLANDFLOW DIRECTION
	CATCHMENT BOUNDARY
	PROPERTY BOUNDARY

CONTRACT DRAWINGS
 CONTRACTOR MUST VERIFY ALL DIMENSIONS AND BE RESPONSIBLE FOR SAME. ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER BEFORE COMMENCING WORK. DRAWINGS ARE NOT TO BE SCALED.

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**CEDAR RUN WAKEBOARD CABLE PARK
 TOWN OF THE BLUE MOUNTAINS
 EXISTING OVERALL DRAINAGE PLAN**

DWG. No.
ODP1

SCALE: 1:10,000 | DRAWN: DEP | DATE: APR./19 | JOB NO. 115232

Appendix A: Pre-Development Hydrology



Project:	Thornbury Horse Park
File No.:	106009
Date:	Apr-11
Designed By:	JA
Checked By:	DJH
Subject:	CN, IA and TP Calculations

THORNBURY HORSE PARK - CURVE NUMBER, INITIAL ABSTRACTION & TIME TO PEAK CALCULATIONS

CONDITIONS

Catchment Pre 1 Area 88 ha

WEIGHTED CN VALUE																										
Soil Series	Soil Series	Hydrologic Soil Group	Soil Texture	Runoff Coefficient Type	Catchment Soil Characteristics			Forest/Woodland			Pasture/Lawns			Meadows			Cultivated			Impervious			Wetland/Lakes/SWMF			Average CN for Soil Type
					Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	
Brs	BRIGHTON	A	Sand	1	51.92	0.59	15.576	0.3	32	34.786	0.67	49	0	0	38	0	0	62	1.5576	0.03	100	0	0	50	45.43	
Ts	TECUMSETH	AB	Silt	1	29.92	0.34	11.968	0.4	46	17.054	0.57	59	0	0	51	0	0	68	0.8976	0.03	100	0	0	50	55.03	
Gsl	GRANBY	B	Sand Loam	2	6.16	0.07	3.08	0.5	60	2.8952	0.47	69	0	0	65	0	0	74	0.1848	0.03	100	0	0	50	65.43	
	#N/A	#N/A	#N/A	#N/A	0		0	#N/A	0	#N/A	0	#N/A	0	#N/A	0	#N/A	0	#N/A	0	#N/A	0	#N/A	#N/A	0	0	
	#N/A	#N/A	#N/A	#N/A	0		0	#N/A	0	#N/A	0	#N/A	0	#N/A	0	#N/A	0	#N/A	0	#N/A	0	#N/A	#N/A	0	0	
Totals					88	1	30.624	0.348		54.736	0.622		0	0	0	0	0	2.64	0.03	0	0	0	0	50.1		

Time of Concentration Calculations

For Runoff Coefficients greater than 0.4

Bransby-Williams Formula

Maximum Catchment Elevation 217.50 m
 Minimum Catchment Elevation 186.00 m
 Catchment length 1800 m
 Catchment Slope 2%
 Catchment Area 88 ha

Time of Concentration (Minutes) 58.63
 Time of Concentration (Hours) 0.98
 Time to Peak (2/3 x Time of Concentration) 0.65

Time to Peak	1.24 hrs
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For Runoff Coefficients less than 0.4

Airport Method

Maximum Catchment Elevation 217.5 m
 Minimum Catchment Elevation 186 m
 Catchment length 1800 m
 Catchment Slope 2%
 Catchment Area 88 ha

Time of Concentration (Minutes) 111.36
 Time of Concentration (Hours) 1.86
 Time to Peak (2/3 x Time of Concentration) 1.24

Initial Abstraction	6.65 mm
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Woods	10
Meadows	8
Cultivated	7
Lawns	5
Impervious	2

Runoff Coefficient	0.13
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Landuse Type	Soil Series				
	Brs	Ts	Gsl	0	0
Forest/Woodland	0.08	0.08	0.25	#N/A	#N/A
Cultivated	0.22	0.22	0.35	#N/A	#N/A
Pasture/Lawn	0.1	0.1	0.28	#N/A	#N/A
Impervious	0.95	0.95	0.95	#N/A	#N/A
Wetland/Lake/SWMF	0.05	0.05	0.05	#N/A	#N/A
Meadows	0.09	0.09	0.27	#N/A	#N/A
Soil Series Total	0.1195	0.1195	0.2911	#N/A	#N/A



Project:	Thornbury Horse Park
File No.:	106009
Date:	Apr-11
Designed By:	JA
Checked By:	DJH
Subject:	CN, IA and TP Calculations

THORNBURY HORSE PARK - CURVE NUMBER, INITIAL ABSTRACTION & TIME TO PEAK CALCULATIONS

CONDITIONS

Catchment Pre 2 Area 17 ha

WEIGHTED CN VALUE																										
Soil Series	Soil Series	Hydrologic Soil Group	Soil Texture	Runoff Coefficient Type	Catchment Soil Characteristics			Forest/Woodland			Pasture/Lawns			Meadows			Cultivated			Impervious			Wetland/Lakes/SWMF			Average CN for Soil Type
					Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	
Brs	BRIGHTON	A	Sand	1	12.75	0.75	32	0	0	12.368	0.97	49	0	0	38	0	0	62	0.3825	0.03	100	0	0	50	50.53	
Gsl	GRANBY	B	Sand Loam	2	4.25	0.25	60	0	0	3.9525	0.93	69	0	0	65	0	0	74	0.2975	0.07	100	0	0	50	71.17	
	#N/A	#N/A	#N/A	#N/A	0	0	0	0	0	#N/A	0	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	
	#N/A	#N/A	#N/A	#N/A	0	0	0	0	0	#N/A	0	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	
	#N/A	#N/A	#N/A	#N/A	0	0	0	0	0	#N/A	0	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	
Totals					17	1	0	0	0	16.32	0.96	0	0	0	0	0	0	0.68	0.04	0	0	0	0	55.7		

Time of Concentration Calculations

For Runoff Coefficients greater than 0.4

Bransby-Williams Formula

Maximum Catchment Elevation	205.00 m
Minimum Catchment Elevation	187.50 m
Catchment length	750 m
Catchment Slope	2%
Catchment Area	17 ha

Time of Concentration (Minutes)	27.18
Time of Concentration (Hours)	0.45
Time to Peak (2/3 x Time of Concentration)	0.30

Time to Peak	0.70 hrs
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For Runoff Coefficients less than 0.4

Airport Method

Maximum Catchment Elevation	205 m
Minimum Catchment Elevation	187.5 m
Catchment length	750 m
Catchment Slope	2%
Catchment Area	17 ha

Time of Concentration (Minutes)	62.83
Time of Concentration (Hours)	1.05
Time to Peak (2/3 x Time of Concentration)	0.70

Initial Abstraction	4.88 mm
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Woods	10
Meadows	8
Cultivated	7
Lawns	5
Impervious	2

Runoff Coefficient	0.17
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Landuse Type	Soil Series				
	Brs	Gsl	0	0	0
Forest/Woodland	0.08	0.25	#N/A	#N/A	#N/A
Cultivated	0.22	0.35	#N/A	#N/A	#N/A
Pasture/Lawn	0.1	0.28	#N/A	#N/A	#N/A
Impervious	0.95	0.95	#N/A	#N/A	#N/A
Wetland/Lake/SWMF	0.05	0.05	#N/A	#N/A	#N/A
Meadows	0.09	0.27	#N/A	#N/A	#N/A
Soil Series Total	0.1255	0.3001	#N/A	#N/A	#N/A



Project:	Thornbury Horse Park
File No.:	106009
Date:	Apr-11
Designed By:	JA
Checked By:	DJH
Subject:	CN, IA and TP Calculations

THORNBURY HORSE PARK - CURVE NUMBER, INITIAL ABSTRACTION & TIME TO PEAK CALCULATIONS

CONDITIONS

Catchment 101 Area 5.13 ha

WEIGHTED CN VALUE																										
Soil Series	Soil Series	Hydrologic Soil Group	Soil Texture	Runoff Coefficient Type	Catchment Soil Characteristics			Forest/Woodland			Pasture/Lawns			Meadows			Cultivated			Impervious			Wetland/Lakes/SWMF			Average CN for Soil Type
					Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	
Brs	BRIGHTON	A	Sand	1	5.13	1	32	0	0	4.617	0.9	49	0	0	38	0	0	89	0.513	0.1	100	0	0	50	54.1	
	#N/A	#N/A	#N/A	#N/A	0	0	#N/A	0	0	#N/A	0	0	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	
	#N/A	#N/A	#N/A	#N/A	0	0	#N/A	0	0	#N/A	0	0	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	
	#N/A	#N/A	#N/A	#N/A	0	0	#N/A	0	0	#N/A	0	0	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	
	#N/A	#N/A	#N/A	#N/A	0	0	#N/A	0	0	#N/A	0	0	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	
	Totals				5.13	1	0	0	4.617	0.9	0	0	0	0	0	0	0	0.513	0.1	0	0	0	0	54.1		

Time of Concentration Calculations

For Runoff Coefficients greater than 0.4

Bransby-Williams Formula

Maximum Catchment Elevation 200.00 m
 Minimum Catchment Elevation 197.00 m
 Catchment length 280 m
 Catchment Slope 1%
 Catchment Area 5.13 ha

Time of Concentration (Minutes) 13.37
 Time of Concentration (Hours) 0.22
 Time to Peak (2/3 x Time of Concentration) 0.15

Time to Peak	0.54 hrs
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For Runoff Coefficients less than 0.4

Airport Method

Maximum Catchment Elevation 200 m
 Minimum Catchment Elevation 197 m
 Catchment length 280 m
 Catchment Slope 1%
 Catchment Area 5.13 ha

Time of Concentration (Minutes) 48.79
 Time of Concentration (Hours) 0.81
 Time to Peak (2/3 x Time of Concentration) 0.54

Initial Abstraction	4.7 mm
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Woods	10
Meadows	8
Cultivated	7
Lawns	5
Impervious	2

Runoff Coefficient	0.19
---------------------------	-------------

Landuse Type	Soil Series				
	Brs	0	0	0	0
Forest/Woodland	0.08	#N/A	#N/A	#N/A	#N/A
Gravel	0.6	#N/A	#N/A	#N/A	#N/A
Pasture/Lawn	0.1	#N/A	#N/A	#N/A	#N/A
Impervious	0.95	#N/A	#N/A	#N/A	#N/A
Wetland/Lake/SWMF	0.05	#N/A	#N/A	#N/A	#N/A
Meadows	0.09	#N/A	#N/A	#N/A	#N/A
Soil Series Total	0.185	#N/A	#N/A	#N/A	#N/A



Project:	Thornbury Horse Park
File No.:	106009
Date:	Apr-11
Designed By:	JA
Checked By:	DJH
Subject:	CN, IA and TP Calculations

THORNBURY HORSE PARK - CURVE NUMBER, INITIAL ABSTRACTION & TIME TO PEAK CALCULATIONS

CONDITIONS

Catchment 102 Area 2.96 ha

WEIGHTED CN VALUE																										
Soil Series	Soil Series	Hydrologic Soil Group	Soil Texture	Runoff Coefficient Type	Catchment Soil Characteristics			Forest/Woodland			Pasture/Lawns			Meadows			Cultivated			Impervious			Wetland/Lakes/SWMF			Average CN for Soil Type
					Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	
Brs	BRIGHTON	A	Sand	1	2.96	1	0	0	32	2.516	0.85	49	0	0	38	0	0	62	0.444	0.15	100	0	0	50	56.65	
	#N/A	#N/A	#N/A	#N/A	0		0	#N/A	0	#N/A	0	#N/A	0	#N/A	0	#N/A	0	#N/A	0	#N/A	0	#N/A	0	0		
	#N/A	#N/A	#N/A	#N/A	0		0	#N/A	0	#N/A	0	#N/A	0	#N/A	0	#N/A	0	#N/A	0	#N/A	0	#N/A	0	0		
	#N/A	#N/A	#N/A	#N/A	0		0	#N/A	0	#N/A	0	#N/A	0	#N/A	0	#N/A	0	#N/A	0	#N/A	0	#N/A	0	0		
	#N/A	#N/A	#N/A	#N/A	0		0	#N/A	0	#N/A	0	#N/A	0	#N/A	0	#N/A	0	#N/A	0	#N/A	0	#N/A	0	0		
	Totals				2.96	1	0	0	2.516	0.85	49	0	0	38	0	0	62	0.444	0.15	100	0	0	50	56.7		

Time of Concentration Calculations

For Runoff Coefficients greater than 0.4

Bransby-Williams Formula

Maximum Catchment Elevation 204.00 m
 Minimum Catchment Elevation 197.00 m
 Catchment length 200 m
 Catchment Slope 4%
 Catchment Area 2.96 ha

Time of Concentration (Minutes) 7.96
 Time of Concentration (Hours) 0.13
 Time to Peak (2/3 x Time of Concentration) 0.09

Time to Peak	0.30 hrs
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For Runoff Coefficients less than 0.4

Airport Method

Maximum Catchment Elevation 204 m
 Minimum Catchment Elevation 197 m
 Catchment length 200 m
 Catchment Slope 4%
 Catchment Area 2.96 ha

Time of Concentration (Minutes) 26.60
 Time of Concentration (Hours) 0.44
 Time to Peak (2/3 x Time of Concentration) 0.30

Initial Abstraction	4.55 mm
----------------------------	----------------

Woods	10
Meadows	8
Cultivated	7
Lawns	5
Impervious	2

Runoff Coefficient	0.23
---------------------------	-------------

Landuse Type	Soil Series				
	Brs	0	0	0	0
Forest/Woodland	0.08	#N/A	#N/A	#N/A	#N/A
Gravel	0.6	#N/A	#N/A	#N/A	#N/A
Pasture/Lawn	0.1	#N/A	#N/A	#N/A	#N/A
Impervious	0.95	#N/A	#N/A	#N/A	#N/A
Wetland/Lake/SWMF	0.05	#N/A	#N/A	#N/A	#N/A
Meadows	0.09	#N/A	#N/A	#N/A	#N/A
Soil Series Total	0.2275	#N/A	#N/A	#N/A	#N/A



Project:	Thornbury Horse Park
File No.:	106009
Date:	Apr-11
Designed By:	JA
Checked By:	DJH
Subject:	CN, IA and TP Calculations

THORNBURY HORSE PARK - CURVE NUMBER, INITIAL ABSTRACTION & TIME TO PEAK CALCULATIONS

CONDITIONS

Catchment 3 Area 136 ha

WEIGHTED CN VALUE																										
Soil Series	Soil Series	Hydrologic Soil Group	Soil Texture	Runoff Coefficient Type	Catchment Soil Characteristics			Forest/Woodland			Pasture/Lawns			Meadows			Cultivated			Impervious			Wetland/Lakes/SWMF			Average CN for Soil Type
					Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	
Brs	BRIGHTON	A	Sand	1	84.32	0.62	33.728	0.4	32	25.296	0.3	49	0	0	38	22.766	0.27	62	2.5296	0.03	100	0	0	50	47.24	
Ts	TECUMSETH	AB	Silt	1	51.68	0.38	12.92	0.25	46	19.38	0.375	59	0	0	51	17.83	0.345	68	1.5504	0.03	100	0	0	50	60.085	
	#N/A	#N/A	#N/A	#N/A	0	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0		
	#N/A	#N/A	#N/A	#N/A	0	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0		
	#N/A	#N/A	#N/A	#N/A	0	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0		
Totals					136	1	46.648	0.343		44.676	0.3285		0	0	40.596	0.2985		4.08	0.03	0	0	0	0	52.1		

Time of Concentration Calculations

For Runoff Coefficients greater than 0.4

Bransby-Williams Formula

Maximum Catchment Elevation 225.00 m
 Minimum Catchment Elevation 187.50 m
 Catchment length 3400 m
 Catchment Slope 1%
 Catchment Area 136 ha

Time of Concentration (Minutes) 116.28
 Time of Concentration (Hours) 1.94
 Time to Peak (2/3 x Time of Concentration) 1.29

Time to Peak	1.94 hrs
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For Runoff Coefficients less than 0.4

Airport Method

Maximum Catchment Elevation 225 m
 Minimum Catchment Elevation 187.5 m
 Catchment length 3400 m
 Catchment Slope 1%
 Catchment Area 136 ha


Time of Concentration (Minutes) 174.86
 Time of Concentration (Hours) 2.91
 Time to Peak (2/3 x Time of Concentration) 1.94

Initial Abstraction	7.222 mm
----------------------------	-----------------

Woods	10
Meadows	8
Cultivated	7
Lawns	5
Impervious	2

Runoff Coefficient	0.15
---------------------------	-------------

Landuse Type	Soil Series				
	Brs	Ts	0	0	0
Forest/Woodland	0.08	0.08	#N/A	#N/A	#N/A
Cultivated	0.22	0.22	#N/A	#N/A	#N/A
Pasture/Lawn	0.1	0.1	#N/A	#N/A	#N/A
Impervious	0.95	0.95	#N/A	#N/A	#N/A
Wetland/Lake/SWMF	0.05	0.05	#N/A	#N/A	#N/A
Meadows	0.09	0.09	#N/A	#N/A	#N/A
Soil Series Total	0.1499	0.1499	#N/A	#N/A	#N/A


	Project :	Thornbury Horse Park
	File No.	106009
	Date:	May 19, 2009
	Designed By:	DRT
	Checked By:	DJH
	Subject:	Pond No.1 Stage-Volume Table

EXISTING POND No. 1 - STAGE-VOLUME TABLE

Wet Cell

Side Slope 3:1
Bottom Length 50.0 m
Bottom Width 12.0 m
Bottom Elevation 193.00 m
Water Level 196.20 m
Stage 0.1 m

STAGE-VOLUME TABLE									
Elevation	Pond Depth	Pond Area	Average Pond Area	Volume					
				Dead Storage	Accum. Dead Storage	Active Storage	Accum. Active Storage	Accum. Total Storage	Accum. Total Storage
(m)	(m)	(sq.m)	(sq.m)	(cu.m)	(cu.m)	(cu.m)	(cu.m)	(cu.m)	(ha-m)
193.00	0.00	526.00							
193.10	0.10	570.30	548.15	55	55			55	0.0055
193.20	0.20	614.60	592.45	59	114			114	0.0114
193.30	0.30	658.90	636.75	64	178			178	0.0178
193.40	0.40	703.20	681.05	68	246			246	0.0246
193.50	0.50	747.50	725.35	73	318			318	0.0318
193.60	0.60	791.80	769.65	77	395			395	0.0395
193.70	0.70	836.10	813.95	81	477			477	0.0477
193.80	0.80	880.40	858.25	86	563			563	0.0563
193.90	0.90	924.70	902.55	90	653			653	0.0653
194.00	1.00	969.00	946.85	95	747			747	0.0747
194.10	1.10	1013.30	991.15	99	847			847	0.0847
194.20	1.20	1057.60	1035.45	104	950			950	0.0950
194.30	1.30	1101.90	1079.75	108	1058			1058	0.1058
194.40	1.40	1146.20	1124.05	112	1171			1171	0.1171
194.50	1.50	1190.50	1168.35	117	1287			1287	0.1287
194.60	1.60	1234.80	1212.65	121	1409			1409	0.1409
194.70	1.70	1279.10	1256.95	126	1534			1534	0.1534
194.80	1.80	1323.40	1301.25	130	1664			1664	0.1664
194.90	1.90	1367.70	1345.55	135	1799			1799	0.1799
195.00	2.00	1412.00	1389.85	139	1938			1938	0.1938
195.10	2.10	1474.55	1443.28	144	2082			2082	0.2082
195.20	2.20	1537.10	1505.83	151	2233			2233	0.2233
195.30	2.30	1599.65	1568.38	157	2390			2390	0.2390
195.40	2.40	1662.20	1630.93	163	2553			2553	0.2553
195.50	2.50	1724.75	1693.48	169	2722			2722	0.2722
195.60	2.60	1787.30	1756.03	176	2898			2898	0.2898
195.70	2.70	1849.85	1818.58	182	3080			3080	0.3080
195.80	2.80	1912.40	1881.13	188	3268			3268	0.3268
195.90	2.90	1974.95	1943.68	194	3462			3462	0.3462
196.00	3.00	2037.50	2006.23	201	3663			3663	0.3663
196.10	3.10	2100.05	2068.78	207	3870			3870	0.3870
196.20	3.20	2162.60	2131.33	213	4083			4083	0.4083
196.30	3.30	2225.15	2193.88	219	4302			4302	0.4302
196.40	3.40	2287.70	2256.43	226	4528			4528	0.4528
196.50	3.50	2350.25	2318.98	232	4760			4760	0.4760
196.60	3.60	2412.80	2381.53	238	4998			4998	0.4998
196.70	3.70	2475.35	2444.08		4998	244	244	5242	0.5242
196.80	3.80	2537.90	2506.63		4998	251	495	5493	0.5493
196.90	3.90	2600.45	2569.18		4998	257	752	5750	0.5750
197.00	4.00	2663.00	2631.73		4998	263	1015	6013	0.6013

	Project:	Thornbury Horse Park
	File No.:	106009
	Date:	May 19, 2009
	Designed By:	DRT
	Checked By:	DJH
	Subject:	Pond No. 1 Stage-Discharge Table

EXISTING POND No. 1 - STAGE-DISCHARGE TABLE


Primary Low Flow Outlet

Type	Orifice	Pipe
Diameter (mm)	-	-
Area (sq.m)	-	-
Coefficient	-	-
Invert (m)	-	-

Secondary Outlet/Overflow Spillway

Type	DICB	Overflow
Weir Length (m)	0.6	2
Sill Elevation (m)	196.6	196.8
Coefficient	1.7	1.5
Side Slope (H:V)	-	8


STAGE-DISCHARGE TABLE										
Pond Water Level (m)	Primary Low Flow Discharge				Secondary Outlet/Overflow Spillway Discharge				Total Pond Discharge (cms)	Outlet Control
	Orifice		Pipe		DICB		Overflow			
	Head (m)	Discharge (cms)	Head (m)	Discharge (cms)	Head (m)	Discharge (cms)	Head (m)	Discharge (cms)		
196.20	-	-	-	-	0.00	0.0000	0.00	0.0000	0.0000	
196.30	-	-	-	-	0.00	0.0000	0.00	0.0000	0.0000	
196.40	-	-	-	-	0.00	0.0000	0.00	0.0000	0.0000	
196.50	-	-	-	-	0.00	0.0000	0.00	0.0000	0.0000	
196.60	-	-	-	-	0.00	0.0000	0.00	0.0000	0.0000	
196.70	-	-	-	-	0.10	0.0323	0.00	0.0000	0.0323	DICB
196.80	-	-	-	-	0.20	0.0912	0.00	0.0000	0.0912	DICB
196.90	-	-	-	-	0.30	0.1676	0.10	0.1328	0.3004	DICB
197.00	-	-	-	-	0.40	0.2580	0.20	0.4830	0.7410	DICB

	Project:	Thornbury Horse Park
	File No:	106009
	Date:	May 19, 2009
	Designed By:	DRT
	Checked By:	DJH
	Subject:	Pond No. 1 Stage-Storage-Discharge Table

EXISTING POND No. 1 - STAGE-STORAGE-DISCHARGE TABLE

	Wet Cell		Primary Low Flow Outlet		
Side Slope	3:1		Type	Orifice	Pipe
Bottom Length	50 m		Diameter (mm)	-	-
Bottom Width	12 m		Invert(m)	-	-
Bottom Elevation	193.00 m				
Static Water	196.20 m		Secondary Outlet/Overflow Spillway		
Stage	0.10 m		Type	DICB	Overflow
			Length(m)	0.60	2.00
			Sill Elevation(m)	196.6	196.8

STAGE-STORAGE-DISCHARGE TABLE									
Pond Water Level	Primary Low Flow Discharge		DICB	Overflow	Total Pond Discharge	Outlet Control	Pond Storage Volume		
	Orifice Discharge	Pipe Discharge					Discharge	Discharge	Discharge
	(m)	(cms)	(cms)	(cms)	(cms)		(cms)	(cu.m)	(cu.m)
196.20	-	-	0.0000	0.0000	0.0000		4083	0	4083
196.30	-	-	0.0000	0.0000	0.0000		4302	0	4302
196.40	-	-	0.0000	0.0000	0.0000		4528	0	4528
196.50	-	-	0.0000	0.0000	0.0000		4760	0	4760
196.60	-	-	0.0000	0.0000	0.0000		4998	0	4998
196.70	-	-	0.0323	0.0000	0.0323	DICB	4998	244	5242
196.80	-	-	0.0912	0.0000	0.0912	DICB	4998	495	5493
196.90	-	-	0.1676	0.1328	0.3004	DICB	4998	752	5750
197.00	-	-	0.2580	0.4830	0.7410	DICB	4998	1015	6013


	Project :	Thornbury Horse Park
	File No.	106009
	Date:	May 19, 2009
	Designed By:	DRT
	Checked By:	DJH
	Subject:	Pond No. 2&3 Storage-Volume Table

EXISTING POND No. 2&3 - STAGE-VOLUME TABLE

Wet Cell

Side Slope 3:1
Bottom Length 85.0 m
Bottom Width 4.0 m
Bottom Elevation 192.75 m
Water Level 196.15 m
Stage 0.1 m

STAGE-VOLUME TABLE									
Elevation	Pond Depth	Pond Area	Average Pond Area	Volume					
				Dead Storage	Accum. Dead Storage	Active Storage	Accum. Active Storage	Accum. Total Storage	Accum. Total Storage
				(cu.m)	(cu.m)	(cu.m)	(cu.m)	(cu.m)	(ha-m)
192.75	0.00	290.00							
192.85	0.10	372.88	331.44	33	33			33	0.0033
192.95	0.20	455.75	414.31	41	75			75	0.0075
193.05	0.30	538.63	497.19	50	124			124	0.0124
193.15	0.40	621.50	580.06	58	182			182	0.0182
193.25	0.50	704.38	662.94	66	249			249	0.0249
193.35	0.60	787.25	745.81	75	323			323	0.0323
193.45	0.70	870.13	828.69	83	406			406	0.0406
193.55	0.80	953.00	911.56	91	497			497	0.0497
193.65	0.90	1035.88	994.44	99	597			597	0.0597
193.75	1.00	1118.75	1077.31	108	704			704	0.0704
193.85	1.10	1201.63	1160.19	116	820			820	0.0820
193.95	1.20	1284.50	1243.06	124	945			945	0.0945
194.05	1.30	1367.38	1325.94	133	1077			1077	0.1077
194.15	1.40	1450.25	1408.81	141	1218			1218	0.1218
194.25	1.50	1533.13	1491.69	149	1367			1367	0.1367
194.35	1.60	1616.00	1574.56	157	1525			1525	0.1525
194.45	1.70	1698.88	1657.44	166	1691			1691	0.1691
194.55	1.80	1781.75	1740.31	174	1865			1865	0.1865
194.65	1.90	1864.63	1823.19	182	2047			2047	0.2047
194.75	2.00	1947.50	1906.06	191	2237			2237	0.2237
194.85	2.10	2030.38	1988.94	199	2436			2436	0.2436
194.95	2.20	2113.25	2071.81	207	2644			2644	0.2644
195.05	2.30	2196.13	2154.69	215	2859			2859	0.2859
195.15	2.40	2279.00	2237.56	224	3083			3083	0.3083
195.25	2.50	2361.88	2320.44	232	3315			3315	0.3315
195.35	2.60	2444.75	2403.31	240	3555			3555	0.3555
195.45	2.70	2527.63	2486.19	249	3804			3804	0.3804
195.55	2.80	2610.50	2569.06	257	4061			4061	0.4061
195.65	2.90	2693.38	2651.94	265	4326			4326	0.4326
195.75	3.00	2776.25	2734.81	273	4599			4599	0.4599
195.85	3.10	2859.13	2817.69	282	4881			4881	0.4881
195.95	3.20	2942.00	2900.56	290	5171			5171	0.5171
196.05	3.30	3024.88	2983.44	298	5470			5470	0.5470
196.15	3.40	3107.75	3066.31	307	5776			5776	0.5776
196.25	3.50	3190.63	3149.19	315	6091			6091	0.6091
196.35	3.60	3273.50	3232.06	323	6414			6414	0.6414
196.45	3.70	3356.38	3314.94		6414	331	331	6746	0.6746
196.55	3.80	3439.25	3397.81		6414	340	671	7086	0.7086
196.65	3.90	3522.13	3480.69		6414	348	1019	7434	0.7434
196.75	4.00	3605.00	3563.56		6414	356	1376	7790	0.7790

	Project:	Thornbury Horse Park
	File No.:	106009
	Date:	May 19, 2009
	Designed By:	DRT
	Checked By:	DJH
	Subject:	Pond No. 2&3 Stage-Discharge Table

EXISTING POND No. 2&3 - STAGE-DISCHARGE TABLE

Primary Low Flow Outlet

Type	Orifice	Pipe
Diameter (mm)	-	-
Area (sq.m)	-	-
Coefficient	-	-
Invert (m)	-	-

Secondary Outlet/Overflow Spillway

Type	DICB	Overflow
Weir Length (m)	0.6	2
Sill Elevation (m)	196.35	196.55
Coefficient	1.7	1.5
Side Slope (H:V)	-	8

STAGE-DISCHARGE TABLE										
Pond Water Level (m)	Primary Low Flow Discharge				Secondary Outlet/Overflow Spillway Discharge				Total Pond Discharge (cms)	Outlet Control
	Orifice		Pipe		DICB		Overflow			
	Head (m)	Discharge (cms)	Head (m)	Discharge (cms)	Head (m)	Discharge (cms)	Head (m)	Discharge (cms)		
196.15	-	-	-	-	0.00	0.0000	0.00	0.0000	0.0000	
196.25	-	-	-	-	0.00	0.0000	0.00	0.0000	0.0000	
196.35	-	-	-	-	0.00	0.0000	0.00	0.0000	0.0000	
196.45	-	-	-	-	0.10	0.0323	0.00	0.0000	0.0323	DICB
196.55	-	-	-	-	0.20	0.0912	0.00	0.0000	0.0912	DICB
196.65	-	-	-	-	0.30	0.1676	0.10	0.1328	0.3004	DICB
196.75	-	-	-	-	0.40	0.2580	0.20	0.4830	0.7410	DICB



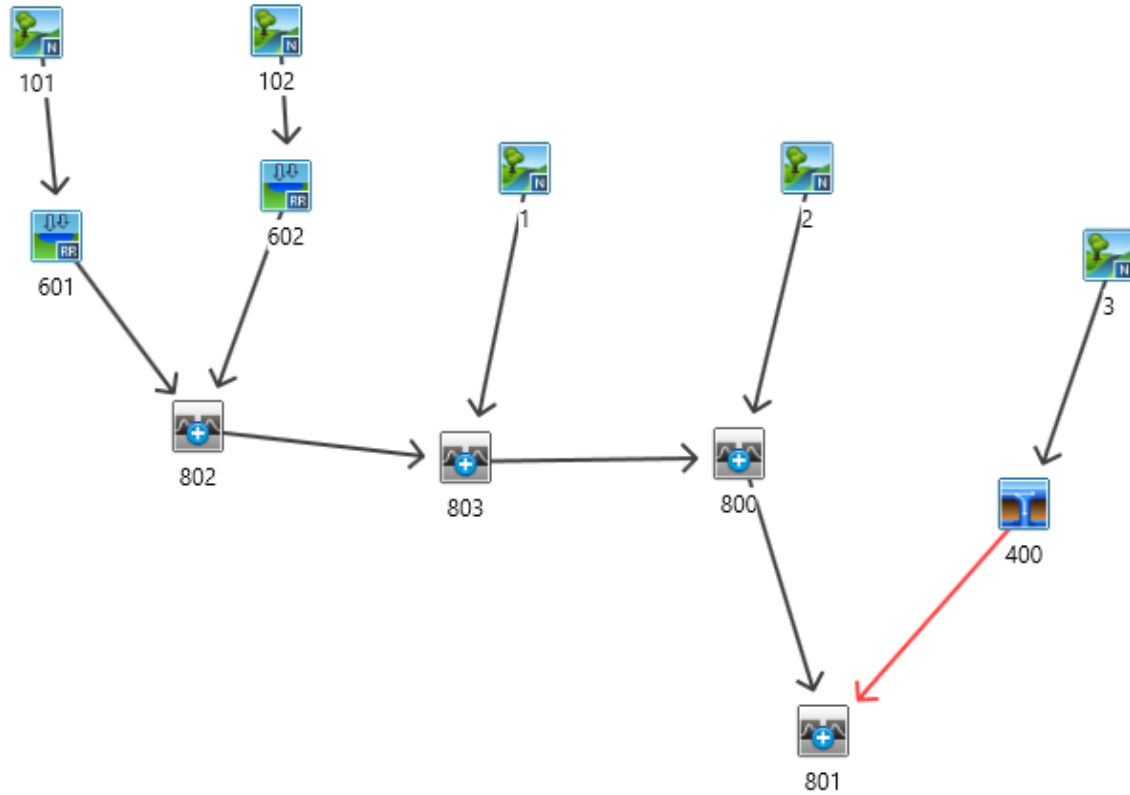
Project:	Thornbury Horse Park
File No:	106009
Date:	May 19, 2009
Designed By:	DRT
Checked By:	DJH
Subject:	Pond No. 2&3 Stage-Storage-Discharge Table

EXISTING POND No. 2&3 - STAGE-STORAGE-DISCHARGE TABLE

	Wet Cell		Primary Low Flow Outlet		
Side Slope	3:1		Type	Orifice	Pipe
Bottom Length	85 m		Diameter (mm)	-	-
Bottom Width	4 m		Invert(m)	-	-
Bottom Elevation	192.75 m				
Static Water	196.15 m		Secondary Outlet/Overflow Spillway		
Stage	0.10 m		Type	DICB	Overflow
			Length(m)	0.60	2.00
			Sill Elevation(m)	196.35	196.55

STAGE-STORAGE-DISCHARGE TABLE									
Pond Water Level	Primary Low Flow Discharge		DICB	Overflow	Total Pond Discharge	Outlet Control	Pond Storage Volume		
	Orifice Discharge	Pipe Discharge					Discharge	Discharge	Discharge
	(m)	(cms)	(cms)	(cms)	(cms)		(cms)	(cu.m)	(cu.m)
196.15	-	-	0.0000	0.0000	0.0000		5776	0	5776
196.25	-	-	0.0000	0.0000	0.0000		6091	0	6091
196.35	-	-	0.0000	0.0000	0.0000		6414	0	6414
196.45	-	-	0.0323	0.0000	0.0323	DICB	6414	331	6746
196.55	-	-	0.0912	0.0000	0.0912	DICB	6414	671	7086
196.65	-	-	0.1676	0.1328	0.3004	DICB	6414	1019	7434
196.75	-	-	0.2580	0.4830	0.7410	DICB	6414	1376	7790

PROJECT	Cedar Run Wakeboard Cable Park	FILE	115232
		DATE	April 2020
SUBJECT	Pre-Development VO Schematic	NAME	ARO
		PAGE	1 OF 1



NASHYD



ROUTE PIPE



DUHYD



STANDHYD



ROUTE CHANNEL



DIVERT HYD



ADDHYD



ROUTE RESERVC

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V V I SSSS U U A L
V V I SS U U A A L
V V I SS U U A A A L
V V I SS U U A A L
WV I SSSS UUUU A A LLLLL

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***** DETAILED OUTPUT *****

Input filename: C:\Program Files (x86)\VH Suite 3.0\VO2\voin.dat
Output filename: C:\Users\dmarshall\AppData\Local\Temp\12b8f7c2-88bf-48ea-99b0-c1e9a31413fa\scenario.out
Summary filename: C:\Users\dmarshall\AppData\Local\Temp\12b8f7c2-88bf-48ea-99b0-c1e9a31413fa\scenario.sum

DATE: 03/10/2017 TIME: 09:49:05

USER:

COMMENTS: _____

** SIMULATION NUMBER: 1 ** 25 mm Storm

READ STORM File: C:\Users\dmarshall\AppData\Local\Temp\12b8f7c2-88bf-48ea-99b0-c1e9a31413fa\0397bbd0
Ptotal= 24.97 mm Comments: OWEN SOUND 25 mm (from a 2 year-4hr stor

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.10	1.29	1.10	2.81	2.10	13.05	3.10	2.04
0.20	1.36	1.20	3.22	2.20	8.44	3.20	1.89
0.30	1.44	1.30	3.77	2.30	6.21	3.30	1.76
0.40	1.53	1.40	4.55	2.40	4.91	3.40	1.65
0.50	1.63	1.50	5.77	2.50	4.06	3.50	1.55
0.60	1.75	1.60	7.86	2.60	3.47	3.60	1.46
0.70	1.89	1.70	12.27	2.70	3.03	3.70	1.39
0.80	2.06	1.80	26.17	2.80	2.70	3.80	1.32
0.90	2.26	1.90	72.58	2.90	2.43	3.90	1.26
1.00	2.50	2.00	26.96	3.00	2.22	4.00	1.20

CALIB NASHYD (0001) Area (ha)= 80.08 Curve Number (CN)= 50.1
ID= 1 DT= 5.0 min Ia (mm)= 6.70 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.24

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	1.29	1.083	2.81	2.083	13.05	3.08	2.04
0.167	1.35	1.167	3.14	2.167	9.36	3.17	1.92
0.250	1.41	1.250	3.55	2.250	7.10	3.25	1.81
0.333	1.48	1.333	4.08	2.333	5.69	3.33	1.72
0.417	1.55	1.417	4.79	2.417	4.74	3.42	1.63
0.500	1.63	1.500	5.77	2.500	4.06	3.50	1.55
0.583	1.75	1.583	7.86	2.583	3.47	3.58	1.46
0.667	1.86	1.667	11.39	2.667	3.12	3.67	1.40
0.750	1.99	1.750	20.61	2.750	2.83	3.75	1.35
0.833	2.14	1.833	44.73	2.833	2.59	3.83	1.30
0.917	2.31	1.917	63.46	2.917	2.39	3.92	1.25

1.000 2.50 | 2.000 26.96 | 3.000 2.22 | 4.00 1.20

Unit Hyd Qpeak (cms)= 2.467
PEAK FLOW (cms)= 0.096 (i)
TIME TO PEAK (hrs)= 3.500
RUNOFF VOLUME (mm)= 1.231
TOTAL RAINFALL (mm)= 24.971
RUNOFF COEFFICIENT = 0.049

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

CALIB NASHYD (0101) Area (ha)= 5.13 Curve Number (CN)= 54.1
ID= 1 DT= 5.0 min Ia (mm)= 4.70 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.54

Unit Hyd Qpeak (cms)= 0.363
PEAK FLOW (cms)= 0.016 (i)
TIME TO PEAK (hrs)= 2.583
RUNOFF VOLUME (mm)= 1.743
TOTAL RAINFALL (mm)= 24.971
RUNOFF COEFFICIENT = 0.070

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

RESERVOIR (0601)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.3000	0.0752
0.0320	0.0244	0.7410	0.1015
0.0910	0.0495	0.0000	0.0000

INFLOW : ID= 2 (0101)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	5.130	0.016	2.58	1.74
OUTFLOW: ID= 1 (0601)	5.130	0.006	3.67	1.71

PEAK FLOW REDUCTION [Qout/Qin](%)= 38.78
TIME SHIFT OF PEAK FLOW (min)= 65.00
MAXIMUM STORAGE USED (ha.m.)= 0.0048

CALIB NASHYD (0102) Area (ha)= 2.96 Curve Number (CN)= 56.7
ID= 1 DT= 5.0 min Ia (mm)= 4.60 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.30

Unit Hyd Qpeak (cms)= 0.377
PEAK FLOW (cms)= 0.016 (i)
TIME TO PEAK (hrs)= 2.250
RUNOFF VOLUME (mm)= 1.935
TOTAL RAINFALL (mm)= 24.971
RUNOFF COEFFICIENT = 0.077

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

RESERVOIR (0602)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.3000	0.1019
0.0320	0.0331	0.7410	0.1376
0.0910	0.0671	0.0000	0.0000

INFLOW : ID= 2 (0102)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	2.960	0.016	2.25	1.94
OUTFLOW: ID= 1 (0602)	2.960	0.003	3.33	1.85

PEAK FLOW REDUCTION [Qout/Qin](%)= 22.19
TIME SHIFT OF PEAK FLOW (min)= 65.00
MAXIMUM STORAGE USED (ha.m.)= 0.0036

ADD HYD (0802)				
1 + 2 = 3				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0601):	5.13	0.006	3.67	1.71
+ ID2= 2 (0602):	2.96	0.003	3.33	1.85
=====				
ID = 3 (0802):	8.09	0.010	3.58	1.76

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0803)				
1 + 2 = 3				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0001):	80.08	0.096	3.50	1.23
+ ID2= 2 (0802):	8.09	0.010	3.58	1.76
=====				
ID = 3 (0803):	88.17	0.106	3.50	1.28

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
NASHYD (0002)			
ID= 1 DT= 5.0 min	Area (ha)	Ia (mm)	U.H. Tp(hrs)
	16.83	4.90	0.70

Unit Hyd Qpeak (cms)= 0.918

PEAK FLOW (cms)= 0.046 (i)
 TIME TO PEAK (hrs)= 2.750
 RUNOFF VOLUME (mm)= 1.814
 TOTAL RAINFALL (mm)= 24.971
 RUNOFF COEFFICIENT = 0.073

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

ADD HYD (0800)				
1 + 2 = 3				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0002):	16.83	0.046	2.75	1.81
+ ID2= 2 (0803):	88.17	0.106	3.50	1.28
=====				
ID = 3 (0800):	105.00	0.141	3.25	1.36

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
NASHYD (0003)			
ID= 1 DT= 5.0 min	Area (ha)	Ia (mm)	U.H. Tp(hrs)
	136.00	7.20	1.94

Unit Hyd Qpeak (cms)= 2.678

PEAK FLOW (cms)= 0.120 (i)
 TIME TO PEAK (hrs)= 4.417
 RUNOFF VOLUME (mm)= 1.257
 TOTAL RAINFALL (mm)= 24.971
 RUNOFF COEFFICIENT = 0.050

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

DUHYD (0400)				
Inlet Cap.=0.713				
#of Inlets= 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
Total (cms)= 0.7	136.00	0.12	4.42	1.26
=====				
TOTAL HYD.(ID= 1):	136.00	0.12	4.42	1.26
MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00
MINOR SYS.(ID= 3):	136.00	0.12	4.42	1.26

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0801)				
1 + 2 = 3				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0400):	136.00	0.120	4.42	1.26
+ ID2= 2 (0800):	105.00	0.141	3.25	1.36
=====				
ID = 3 (0801):	241.00	0.240	3.75	1.30

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 ** SIMULATION NUMBER: 2 ** **2-Year Chicago Storm**

READ STORM		Filename:
Ptotal= 33.75 mm		C:\Users\dmrshall\AppData\Local\Temp\12b8f7c2-88bf-48ea-99b0-c1e9a31413fa\64c43018
		Comments: OWEN SOUND 2 YEAR 4 HOUR DURATION CHICAG

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.10	1.75	1.10	3.80	2.10	17.64	3.10	2.75
0.20	1.84	1.20	4.35	2.20	11.41	3.20	2.55
0.30	1.95	1.30	5.09	2.30	8.39	3.30	2.38
0.40	2.07	1.40	6.16	2.40	6.63	3.40	2.23
0.50	2.21	1.50	7.80	2.50	5.49	3.50	2.09
0.60	2.37	1.60	10.63	2.60	4.69	3.60	1.98
0.70	2.56	1.70	16.59	2.70	4.10	3.70	1.88
0.80	2.78	1.80	35.38	2.80	3.65	3.80	1.78
0.90	3.05	1.90	98.09	2.90	3.29	3.90	1.70
1.00	3.38	2.00	36.45	3.00	2.99	4.00	1.63

CALIB			
NASHYD (0001)			
ID= 1 DT= 5.0 min	Area (ha)	Ia (mm)	U.H. Tp(hrs)
	80.08	6.70	1.24

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	1.75	1.083	3.80	2.083	17.64	3.08	2.75
0.167	1.82	1.167	4.24	2.167	12.66	3.17	2.59
0.250	1.91	1.250	4.79	2.250	9.60	3.25	2.45
0.333	2.00	1.333	5.52	2.333	7.69	3.33	2.32
0.417	2.10	1.417	6.49	2.417	6.40	3.42	2.20
0.500	2.21	1.500	7.80	2.500	5.49	3.50	2.09
0.583	2.37	1.583	10.63	2.583	4.69	3.58	1.98
0.667	2.52	1.667	15.40	2.667	4.22	3.67	1.90
0.750	2.69	1.750	27.86	2.750	3.83	3.75	1.82
0.833	2.89	1.833	60.46	2.833	3.51	3.83	1.75
0.917	3.12	1.917	85.76	2.917	3.23	3.92	1.69
1.000	3.38	2.000	36.45	3.000	2.99	4.00	1.63

Unit Hyd Qpeak (cms)= 2.467

PEAK FLOW (cms)= 0.206 (i)
 TIME TO PEAK (hrs)= 3.500
 RUNOFF VOLUME (mm)= 2.614
 TOTAL RAINFALL (mm)= 33.755
 RUNOFF COEFFICIENT = 0.077

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

CALIB			
NASHYD (0101)			
ID= 1 DT= 5.0 min	Area (ha)	Ia (mm)	U.H. Tp(hrs)
	5.13	4.70	0.54

Unit Hyd Qpeak (cms)= 0.363

PEAK FLOW (cms)= 0.033 (i)
TIME TO PEAK (hrs)= 2.500
RUNOFF VOLUME (mm)= 3.452
TOTAL RAINFALL (mm)= 33.755
RUNOFF COEFFICIENT = 0.102

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

RESERVOIR (0601)
IN= 2--> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.3000	0.0752
0.0320	0.0244	0.7410	0.1015
0.0910	0.0495	0.0000	0.0000

INFLOW : ID= 2 (0101)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
OUTFLOW: ID= 1 (0601)	5.130	0.033	2.50	3.45
	5.130	0.013	3.67	3.41

PEAK FLOW REDUCTION [Qout/Qin](%)= 38.35
TIME SHIFT OF PEAK FLOW (min)= 70.00
MAXIMUM STORAGE USED (ha.m.)= 0.0096

CALIB NASHYD (0102)
ID= 1 DT= 5.0 min

Area (ha)= 2.96 Curve Number (CN)= 56.7
Ia (mm)= 4.60 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.30

Unit Hyd Qpeak (cms)= 0.377

PEAK FLOW (cms)= 0.031 (i)
TIME TO PEAK (hrs)= 2.250
RUNOFF VOLUME (mm)= 3.808
TOTAL RAINFALL (mm)= 33.755
RUNOFF COEFFICIENT = 0.113

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

RESERVOIR (0602)
IN= 2--> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.3000	0.1019
0.0320	0.0331	0.7410	0.1376
0.0910	0.0671	0.0000	0.0000

INFLOW : ID= 2 (0102)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
OUTFLOW: ID= 1 (0602)	2.960	0.031	2.25	3.81
	2.960	0.007	3.25	3.72

PEAK FLOW REDUCTION [Qout/Qin](%)= 21.86
TIME SHIFT OF PEAK FLOW (min)= 60.00
MAXIMUM STORAGE USED (ha.m.)= 0.0071

ADD HYD (0802)
1 + 2 = 3

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0601):	5.13	0.013	3.67	3.41
+ ID2= 2 (0602):	2.96	0.007	3.25	3.72
ID = 3 (0802):	8.09	0.019	3.58	3.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0803)
1 + 2 = 3

AREA	QPEAK	TPEAK	R.V.
------	-------	-------	------

	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0001):	80.08	0.206	3.50	2.61
+ ID2= 2 (0802):	8.09	0.019	3.58	3.53
ID = 3 (0803):	88.17	0.226	3.50	2.70

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0002)
ID= 1 DT= 5.0 min

Area (ha)= 16.83 Curve Number (CN)= 55.7
Ia (mm)= 4.90 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.70

Unit Hyd Qpeak (cms)= 0.918

PEAK FLOW (cms)= 0.093 (i)
TIME TO PEAK (hrs)= 2.750
RUNOFF VOLUME (mm)= 3.606
TOTAL RAINFALL (mm)= 33.755
RUNOFF COEFFICIENT = 0.107

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

ADD HYD (0800)
1 + 2 = 3

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0002):	16.83	0.093	2.75	3.61
+ ID2= 2 (0803):	88.17	0.226	3.50	2.70
ID = 3 (0800):	105.00	0.296	3.25	2.84

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0003)
ID= 1 DT= 5.0 min

Area (ha)= 136.00 Curve Number (CN)= 52.1
Ia (mm)= 7.20 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.94

Unit Hyd Qpeak (cms)= 2.678

PEAK FLOW (cms)= 0.259 (i)
TIME TO PEAK (hrs)= 4.333
RUNOFF VOLUME (mm)= 2.711
TOTAL RAINFALL (mm)= 33.755
RUNOFF COEFFICIENT = 0.080

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

DUHYD (0400)
Inlet Cap.=0.713
#of Inlets= 1
Total (cms)= 0.7

TOTAL HYD. (ID= 1):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
MAJOR SYS. (ID= 2):	0.00	0.00	0.00	0.00
MINOR SYS. (ID= 3):	136.00	0.26	4.33	2.71

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0801)
1 + 2 = 3

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0400):	136.00	0.259	4.33	2.71
+ ID2= 2 (0800):	105.00	0.296	3.25	2.84
ID = 3 (0801):	241.00	0.511	3.67	2.77

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

** SIMULATION NUMBER: 3 ** 5-Year Chicago Storm

READ STORM
 Ptotal= 44.07 mm
 Filename: C:\Users\dmarshall\AppData\Local\Temp\12b8f7c2-88bf-48ea-99b0-c1e9a31413fa\34ba9feb
 Comments: OWEN SOUND 5 YEAR 4 HOUR DURATION CHICAG

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.10	2.16	1.10	4.86	2.10	23.63	3.10	3.47
0.20	2.29	1.20	5.59	2.20	15.14	3.20	3.21
0.30	2.42	1.30	6.58	2.30	11.03	3.30	2.98
0.40	2.58	1.40	8.01	2.40	8.65	3.40	2.78
0.50	2.76	1.50	10.23	2.50	7.11	3.50	2.61
0.60	2.97	1.60	14.08	2.60	6.04	3.60	2.46
0.70	3.22	1.70	22.20	2.70	5.25	3.70	2.33
0.80	3.51	1.80	47.44	2.80	4.65	3.80	2.21
0.90	3.86	1.90	127.12	2.90	4.17	3.90	2.11
1.00	4.30	2.00	48.87	3.00	3.79	4.00	2.01

CALIB NASHYD (0001)
 ID= 1 DT= 5.0 min
 Area (ha)= 80.08
 Ia (mm)= 6.70
 U.H. Tp(hrs)= 1.24
 Curve Number (CN)= 50.1
 # of Linear Res.(N)= 3.00

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	2.16	1.083	4.86	2.083	23.63	3.08	3.47
0.167	2.26	1.167	5.44	2.167	16.84	3.17	3.26
0.250	2.37	1.250	6.18	2.250	12.67	3.25	3.07
0.333	2.48	1.333	7.15	2.333	10.08	3.33	2.90
0.417	2.62	1.417	8.45	2.417	8.34	3.42	2.75
0.500	2.76	1.500	10.23	2.500	7.11	3.50	2.61
0.583	2.97	1.583	14.08	2.583	6.04	3.58	2.46
0.667	3.17	1.667	20.58	2.667	5.41	3.67	2.36
0.750	3.39	1.750	37.34	2.750	4.89	3.75	2.26
0.833	3.65	1.833	79.31	2.833	4.46	3.83	2.17
0.917	3.95	1.917	111.47	2.917	4.09	3.92	2.09
1.000	4.30	2.000	48.87	3.000	3.79	4.00	2.01

Unit Hyd Qpeak (cms)= 2.467
 PEAK FLOW (cms)= 0.385 (i)
 TIME TO PEAK (hrs)= 3.417
 RUNOFF VOLUME (mm)= 4.809
 TOTAL RAINFALL (mm)= 44.068
 RUNOFF COEFFICIENT = 0.109

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

CALIB NASHYD (0101)
 ID= 1 DT= 5.0 min
 Area (ha)= 5.13
 Ia (mm)= 4.70
 U.H. Tp(hrs)= 0.54
 Curve Number (CN)= 54.1
 # of Linear Res.(N)= 3.00

Unit Hyd Qpeak (cms)= 0.363
 PEAK FLOW (cms)= 0.059 (i)
 TIME TO PEAK (hrs)= 2.500
 RUNOFF VOLUME (mm)= 6.080
 TOTAL RAINFALL (mm)= 44.068
 RUNOFF COEFFICIENT = 0.138

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

RESERVOIR (0601)
 IN= 2---> OUT= 1
 DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.3000	0.0752

0.0320	0.0244	0.7410	0.1015
0.0910	0.0495	0.0000	0.0000

INFLOW : ID= 2 (0101)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
OUTFLOW: ID= 1 (0601)	5.130	0.059	2.50	6.08
	5.130	0.022	3.58	6.04

PEAK FLOW REDUCTION [Qout/Qin](%)= 37.78
 TIME SHIFT OF PEAK FLOW (min)= 65.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0170

CALIB NASHYD (0102)
 ID= 1 DT= 5.0 min
 Area (ha)= 2.96
 Ia (mm)= 4.60
 U.H. Tp(hrs)= 0.30
 Curve Number (CN)= 56.7
 # of Linear Res.(N)= 3.00

Unit Hyd Qpeak (cms)= 0.377
 PEAK FLOW (cms)= 0.056 (i)
 TIME TO PEAK (hrs)= 2.250
 RUNOFF VOLUME (mm)= 6.670
 TOTAL RAINFALL (mm)= 44.068
 RUNOFF COEFFICIENT = 0.151

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

RESERVOIR (0602)
 IN= 2---> OUT= 1
 DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.3000	0.1019
0.0320	0.0331	0.7410	0.1376
0.0910	0.0671	0.0000	0.0000

INFLOW : ID= 2 (0102)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
OUTFLOW: ID= 1 (0602)	2.960	0.056	2.25	6.67
	2.960	0.012	3.25	6.58

PEAK FLOW REDUCTION [Qout/Qin](%)= 21.61
 TIME SHIFT OF PEAK FLOW (min)= 60.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0126

ADD HYD (0802)
 1 + 2 = 3

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0601):	5.13	0.022	3.58	6.04
+ ID2= 2 (0602):	2.96	0.012	3.25	6.58
ID = 3 (0802):	8.09	0.034	3.50	6.24

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0803)
 1 + 2 = 3

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0001):	80.08	0.385	3.42	4.81
+ ID2= 2 (0802):	8.09	0.034	3.50	6.24
ID = 3 (0803):	88.17	0.420	3.42	4.94

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0002)
 ID= 1 DT= 5.0 min
 Area (ha)= 16.83
 Ia (mm)= 4.90
 U.H. Tp(hrs)= 0.70
 Curve Number (CN)= 55.7
 # of Linear Res.(N)= 3.00

Unit Hyd Qpeak (cms)= 0.918
 PEAK FLOW (cms)= 0.167 (i)

TIME TO PEAK (hrs)= 2.750
 RUNOFF VOLUME (mm)= 6.361
 TOTAL RAINFALL (mm)= 44.068
 RUNOFF COEFFICIENT = 0.144

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

ADD HYD (0800)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 (0002):	16.83	0.167	2.75	6.36
+ ID2= 2 (0803):	88.17	0.420	3.42	4.94
ID = 3 (0800):	105.00	0.547	3.17	5.17

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0003)	Area (ha)	Curve Number (CN)
NASHYD (0003)	136.00	52.1
ID= 1 DT= 5.0 min	Ia (mm)= 7.20	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.94	

Unit Hyd Qpeak (cms)= 2.678

PEAK FLOW (cms)= 0.482 (i)
 TIME TO PEAK (hrs)= 4.250
 RUNOFF VOLUME (mm)= 5.027
 TOTAL RAINFALL (mm)= 44.068
 RUNOFF COEFFICIENT = 0.114

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

DUHYD (0400)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
Inlet Cap.=0.713				
#of Inlets= 1				
Total (cms)= 0.7				
TOTAL HYD.(ID= 1):	136.00	0.48	4.25	5.03
MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00
MINOR SYS.(ID= 3):	136.00	0.48	4.25	5.03

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0801)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 (0400):	136.00	0.482	4.25	5.03
+ ID2= 2 (0800):	105.00	0.547	3.17	5.17
ID = 3 (0801):	241.00	0.948	3.67	5.09

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 ** SIMULATION NUMBER: 4 ** 10-Year Chicago Storm

READ STORM
 Ptotal= 50.59 mm
 Filename: C:\Users\dmrshall\AppData\Local\Temp\12b8f7c2-88bf-48ea-99b0-c1e9a31413fa\3a95d5c4
 Comments: OWEN SOUND 10 YEAR 4 HOUR DURATION CHICA

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.10	2.37	1.10	5.44	2.10	27.54	3.10	3.85
0.20	2.50	1.20	6.28	2.20	17.50	3.20	3.54
0.30	2.66	1.30	7.44	2.30	12.66	3.30	3.29
0.40	2.84	1.40	9.10	2.40	9.86	3.40	3.06
0.50	3.04	1.50	11.71	2.50	8.06	3.50	2.87
0.60	3.28	1.60	16.26	2.60	6.81	3.60	2.70

0.70	3.56	1.70	25.85	2.70	5.89	3.70	2.55
0.80	3.89	1.80	55.53	2.80	5.20	3.80	2.42
0.90	4.29	1.90	146.69	2.90	4.65	3.90	2.30
1.00	4.80	2.00	57.21	3.00	4.21	4.00	2.20

CALIB NASHYD (0001)	Area (ha)	Curve Number (CN)
NASHYD (0001)	80.08	50.1
ID= 1 DT= 5.0 min	Ia (mm)= 6.70	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.24	

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.37	1.083	5.44	2.083	27.54	3.08	3.85
0.167	2.47	1.167	6.11	2.167	19.51	3.17	3.60
0.250	2.60	1.250	6.98	2.250	14.60	3.25	3.39
0.333	2.73	1.333	8.10	2.333	11.54	3.33	3.20
0.417	2.88	1.417	9.62	2.417	9.50	3.42	3.02
0.500	3.04	1.500	11.71	2.500	8.06	3.50	2.87
0.583	3.28	1.583	16.26	2.583	6.81	3.58	2.70
0.667	3.50	1.667	23.93	2.667	6.07	3.67	2.58
0.750	3.76	1.750	43.66	2.750	5.48	3.75	2.47
0.833	4.05	1.833	91.99	2.833	4.98	3.83	2.37
0.917	4.39	1.917	128.79	2.917	4.56	3.92	2.28
1.000	4.80	2.000	57.21	3.000	4.21	4.00	2.20

Unit Hyd Qpeak (cms)= 2.467

PEAK FLOW (cms)= 0.525 (i)
 TIME TO PEAK (hrs)= 3.417
 RUNOFF VOLUME (mm)= 6.489
 TOTAL RAINFALL (mm)= 50.590
 RUNOFF COEFFICIENT = 0.128

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

CALIB NASHYD (0101)	Area (ha)	Curve Number (CN)
NASHYD (0101)	5.13	54.1
ID= 1 DT= 5.0 min	Ia (mm)= 4.70	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.54	

Unit Hyd Qpeak (cms)= 0.363

PEAK FLOW (cms)= 0.079 (i)
 TIME TO PEAK (hrs)= 2.500
 RUNOFF VOLUME (mm)= 8.056
 TOTAL RAINFALL (mm)= 50.590
 RUNOFF COEFFICIENT = 0.159

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

RESERVOIR (0601)	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
IN= 2--> OUT= 1				
DT= 5.0 min				
	0.0000	0.0000	0.3000	0.0752
	0.0320	0.0244	0.7410	0.1015
	0.0910	0.0495	0.0000	0.0000

INFLOW : ID= 2 (0101)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
OUTFLOW : ID= 1 (0601)	5.130	0.079	2.50	8.06
	5.130	0.030	3.58	8.02

PEAK FLOW REDUCTION [Qout/Qin] (%)= 37.44
 TIME SHIFT OF PEAK FLOW (min)= 65.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0227

CALIB NASHYD (0102)	Area (ha)	Curve Number (CN)
NASHYD (0102)	2.96	56.7
ID= 1 DT= 5.0 min	Ia (mm)= 4.60	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.30	

Unit Hyd Qpeak (cms)= 0.377

PEAK FLOW (cms)= 0.076 (i)
TIME TO PEAK (hrs)= 2.250
RUNOFF VOLUME (mm)= 8.811
TOTAL RAINFALL (mm)= 50.590
RUNOFF COEFFICIENT = 0.174

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

RESERVOIR (0602)				
IN= 2--> OUT= 1				
DT= 5.0 min				
OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)	
0.0000	0.0000	0.3000	0.1019	
0.0320	0.0331	0.7410	0.1376	
0.0910	0.0671	0.0000	0.0000	
INFLOW : ID= 2 (0102)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
OUTFLOW: ID= 1 (0602)	2.960	0.076	2.25	8.81
	2.960	0.016	3.17	8.72
PEAK FLOW REDUCTION [Qout/Qin](%)= 21.45				
TIME SHIFT OF PEAK FLOW (min)= 55.00				
MAXIMUM STORAGE USED (ha.m.)= 0.0168				

ADD HYD (0802)				
1 + 2 = 3				
ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0601):	5.13	0.030	3.58	8.02
+ ID2= 2 (0602):	2.96	0.016	3.17	8.72
ID = 3 (0802):	8.09	0.046	3.50	8.28

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0803)				
1 + 2 = 3				
ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0001):	80.08	0.525	3.42	6.49
+ ID2= 2 (0802):	8.09	0.046	3.50	8.28
ID = 3 (0803):	88.17	0.570	3.42	6.65

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD (0002)				
ID= 1 DT= 5.0 min				
Area (ha)	Ia (mm)	U.H. Tp(hrs)	Curve Number (CN)	# of Linear Res.(N)
16.83	4.90	0.70	55.7	3.00
Unit Hyd Qpeak (cms)= 0.918				
PEAK FLOW (cms)= 0.224 (i)				
TIME TO PEAK (hrs)= 2.750				
RUNOFF VOLUME (mm)= 8.427				
TOTAL RAINFALL (mm)= 50.590				
RUNOFF COEFFICIENT = 0.167				

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

ADD HYD (0800)				
1 + 2 = 3				
ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0002):	16.83	0.224	2.75	8.43
+ ID2= 2 (0803):	88.17	0.570	3.42	6.65
ID = 3 (0800):	105.00	0.742	3.17	6.94

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD (0003)				
ID= 1 DT= 5.0 min				
Area (ha)	Ia (mm)	U.H. Tp(hrs)	Curve Number (CN)	# of Linear Res.(N)
136.00	7.20	1.94	52.1	3.00

Unit Hyd Qpeak (cms)= 2.678

PEAK FLOW (cms)= 0.654 (i)
TIME TO PEAK (hrs)= 4.250
RUNOFF VOLUME (mm)= 6.799
TOTAL RAINFALL (mm)= 50.590
RUNOFF COEFFICIENT = 0.134

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

DUHYD (0400)				
Inlet Cap.=0.713				
#of Inlets= 1				
Total(cms)= 0.7				
TOTAL HYD.(ID= 1):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
136.00	0.65	4.25	6.80	
MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00
MINOR SYS.(ID= 3):	136.00	0.65	4.25	6.80

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0801)				
1 + 2 = 3				
ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0400):	136.00	0.654	4.25	6.80
+ ID2= 2 (0800):	105.00	0.742	3.17	6.94
ID = 3 (0801):	241.00	1.287	3.58	6.86

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

** SIMULATION NUMBER: 5 ** 25-Year Chicago Storm

READ STORM		Filename:
Ptotal= 59.08 mm		C:\Users\dmarsall\AppData\Local\Temp\12b8f7c2-88bf-48ea-99b0-c1e9a31413fa\51e8117f
		Comments: OWEN SOUND 25 YEAR 4 HOUR DURATION CHICA

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.10	2.69	1.10	6.28	2.10	32.51	3.10	4.41
0.20	2.85	1.20	7.27	2.20	20.58	3.20	4.06
0.30	3.03	1.30	8.63	2.30	14.82	3.30	3.76
0.40	3.24	1.40	10.61	2.40	11.50	3.40	3.50
0.50	3.47	1.50	13.69	2.50	9.37	3.50	3.28
0.60	3.75	1.60	19.10	2.60	7.89	3.60	3.08
0.70	4.07	1.70	30.50	2.70	6.82	3.70	2.91
0.80	4.46	1.80	65.56	2.80	6.00	3.80	2.76
0.90	4.94	1.90	170.99	2.90	5.35	3.90	2.62
1.00	5.53	2.00	67.54	3.00	4.84	4.00	2.50

CALIB				
NASHYD (0001)				
ID= 1 DT= 5.0 min				
Area (ha)	Ia (mm)	U.H. Tp(hrs)	Curve Number (CN)	# of Linear Res.(N)
80.08	6.70	1.24	50.1	3.00

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	2.69	1.083	6.28	2.083	32.51	3.08	4.41
0.167	2.82	1.167	7.07	2.167	22.97	3.17	4.13
0.250	2.96	1.250	8.09	2.250	17.12	3.25	3.88
0.333	3.11	1.333	9.42	2.333	13.49	3.33	3.66
0.417	3.29	1.417	11.23	2.417	11.07	3.42	3.46
0.500	3.47	1.500	13.69	2.500	9.37	3.50	3.28
0.583	3.75	1.583	19.10	2.583	7.89	3.58	3.08
0.667	4.01	1.667	28.22	2.667	7.03	3.67	2.94
0.750	4.30	1.750	31.54	2.750	6.33	3.75	2.82
0.833	4.65	1.833	107.73	2.833	5.74	3.83	2.70
0.917	5.06	1.917	150.30	2.917	5.25	3.92	2.60
1.000	5.53	2.000	67.54	3.000	4.84	4.00	2.50

Unit Hyd Qpeak (cms)= 2.467

PEAK FLOW (cms)= 0.731 (i)
 TIME TO PEAK (hrs)= 3.417
 RUNOFF VOLUME (mm)= 8.984
 TOTAL RAINFALL (mm)= 59.076
 RUNOFF COEFFICIENT = 0.152

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

CALIB	Area (ha)=	5.13	Curve Number (CN)=	54.1
NASHYD (0101)	Ia (mm)=	4.70	# of Linear Res. (N)=	3.00
ID= 1 DT= 5.0 min	U.H. Tp(hrs)=	0.54		

Unit Hyd Qpeak (cms)= 0.363

PEAK FLOW (cms)= 0.109 (i)
 TIME TO PEAK (hrs)= 2.500
 RUNOFF VOLUME (mm)= 10.955
 TOTAL RAINFALL (mm)= 59.076
 RUNOFF COEFFICIENT = 0.185

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

RESERVOIR (0601)	Area (ha)=	16.83	Curve Number (CN)=	55.7
IN= 2--> OUT= 1	Ia (mm)=	4.90	# of Linear Res. (N)=	3.00
DT= 5.0 min	U.H. Tp(hrs)=	0.70		

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.3000	0.0752
0.0320	0.0244	0.7410	0.1015
0.0910	0.0495	0.0000	0.0000

INFLOW : ID= 2 (0101)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	5.130	0.109	2.50	10.96
OUTFLOW: ID= 1 (0601)	5.130	0.045	3.50	10.92

PEAK FLOW REDUCTION [Qout/Qin](%)= 41.55
 TIME SHIFT OF PEAK FLOW (min)= 60.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0301

CALIB	Area (ha)=	2.96	Curve Number (CN)=	56.7
NASHYD (0102)	Ia (mm)=	4.60	# of Linear Res. (N)=	3.00
ID= 1 DT= 5.0 min	U.H. Tp(hrs)=	0.30		

Unit Hyd Qpeak (cms)= 0.377

PEAK FLOW (cms)= 0.103 (i)
 TIME TO PEAK (hrs)= 2.250
 RUNOFF VOLUME (mm)= 11.940
 TOTAL RAINFALL (mm)= 59.076
 RUNOFF COEFFICIENT = 0.202

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

RESERVOIR (0602)	Area (ha)=	16.83	Curve Number (CN)=	55.7
IN= 2--> OUT= 1	Ia (mm)=	4.90	# of Linear Res. (N)=	3.00
DT= 5.0 min	U.H. Tp(hrs)=	0.70		

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.3000	0.1019

INFLOW : ID= 2 (0102)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	2.960	0.103	2.25	11.94
OUTFLOW: ID= 1 (0602)	2.960	0.022	3.17	11.85

PEAK FLOW REDUCTION [Qout/Qin](%)= 21.37
 TIME SHIFT OF PEAK FLOW (min)= 55.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0229

ADD HYD (0802)	Area (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
+ ID1= 1 (0601):	5.13	0.045	3.50	10.92
+ ID2= 2 (0602):	2.96	0.022	3.17	11.85
ID = 3 (0802):	8.09	0.067	3.42	11.26

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0803)	Area (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
+ ID1= 1 (0001):	80.08	0.731	3.42	8.98
+ ID2= 2 (0802):	8.09	0.067	3.42	11.26
ID = 3 (0803):	88.17	0.798	3.42	9.19

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)=	16.83	Curve Number (CN)=	55.7
NASHYD (0002)	Ia (mm)=	4.90	# of Linear Res. (N)=	3.00
ID= 1 DT= 5.0 min	U.H. Tp(hrs)=	0.70		

Unit Hyd Qpeak (cms)= 0.918

PEAK FLOW (cms)= 0.308 (i)
 TIME TO PEAK (hrs)= 2.667
 RUNOFF VOLUME (mm)= 11.456
 TOTAL RAINFALL (mm)= 59.076
 RUNOFF COEFFICIENT = 0.194

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

ADD HYD (0800)	Area (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
+ ID1= 1 (0002):	16.83	0.308	2.67	11.46
+ ID2= 2 (0803):	88.17	0.798	3.42	9.19
ID = 3 (0800):	105.00	1.034	3.17	9.56

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)=	136.00	Curve Number (CN)=	52.1
NASHYD (0003)	Ia (mm)=	7.20	# of Linear Res. (N)=	3.00
ID= 1 DT= 5.0 min	U.H. Tp(hrs)=	1.94		

Unit Hyd Qpeak (cms)= 2.678

PEAK FLOW (cms)= 0.909 (i)
 TIME TO PEAK (hrs)= 4.250
 RUNOFF VOLUME (mm)= 9.429
 TOTAL RAINFALL (mm)= 59.076
 RUNOFF COEFFICIENT = 0.160

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

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-----
DUHYD (0400)
Inlet Cap.=0.713
#of Inlets= 1
Total(cms)= 0.7
-----
TOTAL HYD.(ID= 1): 136.00   AREA (ha)= 0.91   QPEAK (cms)= 4.25   TPEAK (hrs)= 9.43   R.V. (mm)= 9.43
-----
MAJOR SYS.(ID= 2): 10.53   0.20   4.25   9.43
MINOR SYS.(ID= 3): 125.47   0.71   3.33   9.43

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
ADD HYD (0801)
1 + 2 = 3
-----
ID1= 1 (0400): 125.47   0.713   3.33   9.43
+ ID2= 2 (0800): 105.00   1.034   3.17   9.56
-----
ID = 3 (0801): 230.47   1.740   3.25   9.49

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NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

** SIMULATION NUMBER: 6 ** 50-Year Chicago Storm

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READ STORM
Filename: C:\Users\dmrshall\AppData\Local\Temp\12b8f7c2-88bf-48ea-99b0-c1e9a31413fa\bb1e6ff5
Ptotal= 65.65 mm
Comments: OWEN SOUND 50 YEAR 4 HOUR DURATION CHICA

```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.10	2.87	1.10	6.88	2.10	36.93	3.10	4.78
0.20	3.04	1.20	8.01	2.20	23.25	3.20	4.39
0.30	3.24	1.30	9.55	2.30	16.64	3.30	4.05
0.40	3.47	1.40	11.81	2.40	12.83	3.40	3.76
0.50	3.73	1.50	15.34	2.50	10.39	3.50	3.52
0.60	4.04	1.60	21.55	2.60	8.71	3.60	3.30
0.70	4.40	1.70	34.62	2.70	7.49	3.70	3.11
0.80	4.84	1.80	74.20	2.80	6.56	3.80	2.94
0.90	5.37	1.90	187.94	2.90	5.84	3.90	2.79
1.00	6.03	2.00	76.42	3.00	5.26	4.00	2.65

```

-----
CALIB NASHYD (0001)
ID= 1 DT= 5.0 min
Area (ha)= 80.08   Curve Number (CN)= 50.1
Ia (mm)= 6.70   # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.24

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

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--- TRANSFORMED HYETOGRAPH ---
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TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.87	1.083	6.88	2.083	36.93	3.08	4.78
0.167	3.01	1.167	7.78	2.167	25.99	3.17	4.47
0.250	3.16	1.250	8.93	2.250	19.28	3.25	4.19
0.333	3.33	1.333	10.45	2.333	15.12	3.33	3.93
0.417	3.52	1.417	12.52	2.417	12.34	3.42	3.71
0.500	3.73	1.500	15.34	2.500	10.39	3.50	3.52
0.583	4.04	1.583	21.55	2.583	8.71	3.58	3.30
0.667	4.33	1.667	32.01	2.667	7.73	3.67	3.15
0.750	4.66	1.750	58.37	2.750	6.93	3.75	3.01
0.833	5.05	1.833	119.70	2.833	6.27	3.83	2.88
0.917	5.50	1.917	165.64	2.917	5.72	3.92	2.76
1.000	6.03	2.000	76.42	3.000	5.26	4.00	2.65

Unit Hyd Qpeak (cms)= 2.467

PEAK FLOW (cms)= 0.912 (i)
TIME TO PEAK (hrs)= 3.333

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RUNOFF VOLUME (mm)= 11.142
TOTAL RAINFALL (mm)= 65.654
RUNOFF COEFFICIENT = 0.170

```

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

```

-----
CALIB NASHYD (0101)
ID= 1 DT= 5.0 min
Area (ha)= 5.13   Curve Number (CN)= 54.1
Ia (mm)= 4.70   # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.54

```

Unit Hyd Qpeak (cms)= 0.363

```

PEAK FLOW (cms)= 0.135 (i)
TIME TO PEAK (hrs)= 2.500
RUNOFF VOLUME (mm)= 13.439
TOTAL RAINFALL (mm)= 65.654
RUNOFF COEFFICIENT = 0.205

```

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

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-----
RESERVOIR (0601)
IN= 2--->OUT= 1
DT= 5.0 min
-----

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OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.3000	0.0752
0.0320	0.0244	0.7410	0.1015
0.0910	0.0495	0.0000	0.0000

```

-----
INFLOW : ID= 2 (0101)   AREA (ha)= 5.130   QPEAK (cms)= 0.135   TPEAK (hrs)= 2.50   R.V. (mm)= 13.44
OUTFLOW : ID= 1 (0601)   5.130   0.059   3.42   13.40

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PEAK FLOW REDUCTION [Qout/Qin](%)= 43.87
TIME SHIFT OF PEAK FLOW (min)= 55.00
MAXIMUM STORAGE USED (ha.m.)= 0.0360

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-----
CALIB NASHYD (0102)
ID= 1 DT= 5.0 min
Area (ha)= 2.96   Curve Number (CN)= 56.7
Ia (mm)= 4.60   # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.30

```

Unit Hyd Qpeak (cms)= 0.377

```

PEAK FLOW (cms)= 0.128 (i)
TIME TO PEAK (hrs)= 2.250
RUNOFF VOLUME (mm)= 14.611
TOTAL RAINFALL (mm)= 65.654
RUNOFF COEFFICIENT = 0.223

```

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

```

-----
RESERVOIR (0602)
IN= 2--->OUT= 1
DT= 5.0 min
-----

```

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.3000	0.1019
0.0320	0.0331	0.7410	0.1376
0.0910	0.0671	0.0000	0.0000

```

-----
INFLOW : ID= 2 (0102)   AREA (ha)= 2.960   QPEAK (cms)= 0.128   TPEAK (hrs)= 2.25   R.V. (mm)= 14.61
OUTFLOW : ID= 1 (0602)   2.960   0.027   3.17   14.52

```

```

PEAK FLOW REDUCTION [Qout/Qin](%)= 21.31
TIME SHIFT OF PEAK FLOW (min)= 55.00
MAXIMUM STORAGE USED (ha.m.)= 0.0282

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-----
ADD HYD (0802)
1 + 2 = 3
-----

```

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
5.13	0.363	2.50	13.44
2.96	0.377	2.25	14.61

ID1= 1 (0601):	5.13	0.059	3.42	13.40
+ ID2= 2 (0602):	2.96	0.027	3.17	14.52

ID = 3 (0802):	8.09	0.086	3.33	13.81

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0803)				
1 + 2 = 3				
ID1= 1 (0001):	80.08	0.912	3.33	11.14
+ ID2= 2 (0802):	8.09	0.086	3.33	13.81

ID = 3 (0803):	88.17	0.998	3.33	11.39

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0002)	Area (ha)= 16.83	Curve Number (CN)= 55.7
ID= 1 DT= 5.0 min	Ia (mm)= 4.90	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.70	

Unit Hyd Qpeak (cms)=	0.918	
PEAK FLOW (cms)=	0.381 (i)	
TIME TO PEAK (hrs)=	2.667	
RUNOFF VOLUME (mm)=	14.047	
TOTAL RAINFALL (mm)=	65.654	
RUNOFF COEFFICIENT =	0.214	

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

ADD HYD (0800)				
1 + 2 = 3				
ID1= 1 (0002):	16.83	0.381	2.67	14.05
+ ID2= 2 (0803):	88.17	0.998	3.33	11.39

ID = 3 (0800):	105.00	1.291	3.17	11.81

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0003)	Area (ha)= 136.00	Curve Number (CN)= 52.1
ID= 1 DT= 5.0 min	Ia (mm)= 7.20	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.94	

Unit Hyd Qpeak (cms)=	2.678	
PEAK FLOW (cms)=	1.132 (i)	
TIME TO PEAK (hrs)=	4.167	
RUNOFF VOLUME (mm)=	11.702	
TOTAL RAINFALL (mm)=	65.654	
RUNOFF COEFFICIENT =	0.178	

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

DUHYD (0400)				
Inlet Cap.=0.713				
#of Inlets= 1				
Total(cms)= 0.7				

TOTAL HYD.(ID= 1):	136.00	1.13	4.17	11.70
MAJOR SYS.(ID= 2):	24.25	0.42	4.17	11.70
MINOR SYS.(ID= 3):	111.75	0.71	3.00	11.70

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0801)				
1 + 2 = 3				
ID1= 1 (0400):	111.75	0.713	3.00	11.70
+ ID2= 2 (0800):	105.00	1.291	3.17	11.81

ID = 3 (0801):	216.75	2.004	3.17	11.76

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 ** SIMULATION NUMBER: 7 ** 100-Year Chicago Storm

READ STORM Filename: C:\Users\dmrshall\AppData\Local\Temp\12b8f7c2-88bf-48ea-99b0-c1e9a31413fa\1ed51b27
 Ptotal= 71.77 mm Comments: OWEN SOUND 100 YEAR 4 HOUR DURATION CHIC

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.10	3.08	1.10	7.44	2.10	40.41	3.10	5.16
0.20	3.27	1.20	8.67	2.20	25.38	3.20	4.73
0.30	3.49	1.30	10.36	2.30	18.12	3.30	4.37
0.40	3.73	1.40	12.83	2.40	13.95	3.40	4.05
0.50	4.02	1.50	16.70	2.50	11.28	3.50	3.79
0.60	4.35	1.60	23.51	2.60	9.44	3.60	3.55
0.70	4.75	1.70	37.88	2.70	8.10	3.70	3.35
0.80	5.22	1.80	81.47	2.80	7.09	3.80	3.16
0.90	5.80	1.90	206.92	2.90	6.31	3.90	3.00
1.00	6.52	2.00	83.92	3.00	5.67	4.00	2.85

CALIB NASHYD (0001)	Area (ha)= 80.08	Curve Number (CN)= 50.1
ID= 1 DT= 5.0 min	Ia (mm)= 6.70	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.24	

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	3.08	1.083	7.44	2.083	40.41	3.08	5.16
0.167	3.23	1.167	8.42	2.167	28.39	3.17	4.82
0.250	3.40	1.250	9.68	2.250	21.02	3.25	4.51
0.333	3.59	1.333	11.35	2.333	16.45	3.33	4.24
0.417	3.79	1.417	13.60	2.417	13.42	3.42	4.00
0.500	4.02	1.500	16.70	2.500	11.28	3.50	3.79
0.583	4.35	1.583	23.51	2.583	9.44	3.58	3.55
0.667	4.67	1.667	35.01	2.667	8.37	3.67	3.39
0.750	5.03	1.750	64.03	2.750	7.49	3.75	3.24
0.833	5.45	1.833	131.65	2.833	6.78	3.83	3.10
0.917	5.94	1.917	182.32	2.917	6.18	3.92	2.97
1.000	6.52	2.000	83.92	3.000	5.67	4.00	2.85

Unit Hyd Qpeak (cms)= 2.467

PEAK FLOW (cms)= 1.094 (i)
 TIME TO PEAK (hrs)= 3.333
 RUNOFF VOLUME (mm)= 13.312
 TOTAL RAINFALL (mm)= 71.769
 RUNOFF COEFFICIENT = 0.185

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

CALIB NASHYD (0101)	Area (ha)= 5.13	Curve Number (CN)= 54.1
ID= 1 DT= 5.0 min	Ia (mm)= 4.70	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.54	

Unit Hyd Qpeak (cms)= 0.363

PEAK FLOW (cms)= 0.161 (i)
 TIME TO PEAK (hrs)= 2.500
 RUNOFF VOLUME (mm)= 15.918

TOTAL RAINFALL (mm)= 71.769
 RUNOFF COEFFICIENT = 0.222

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

RESERVOIR (0601)				
IN= 2--> OUT= 1				
DT= 5.0 min				
OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)	
0.0000	0.0000	0.3000	0.0752	
0.0320	0.0244	0.7410	0.1015	
0.0910	0.0495	0.0000	0.0000	
AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
5.130	0.161	2.50	15.92	
5.130	0.073	3.33	15.88	

PEAK FLOW REDUCTION [Qout/Qin](%)= 45.22
 TIME SHIFT OF PEAK FLOW (min)= 50.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0418

CALIB				
NASHYD (0102)				
ID= 1 DT= 5.0 min				
Area (ha)	Ia (mm)	U.H. Tp(hrs)	Curve Number (CN)	# of Linear Res.(N)
2.96	4.60	0.30	56.7	3.00

Unit Hyd Qpeak (cms)= 0.377

PEAK FLOW (cms)= 0.152 (i)
 TIME TO PEAK (hrs)= 2.250
 RUNOFF VOLUME (mm)= 17.270
 TOTAL RAINFALL (mm)= 71.769
 RUNOFF COEFFICIENT = 0.241

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

RESERVOIR (0602)				
IN= 2--> OUT= 1				
DT= 5.0 min				
OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)	
0.0000	0.0000	0.3000	0.1019	
0.0320	0.0331	0.7410	0.1376	
0.0910	0.0671	0.0000	0.0000	
AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
2.960	0.152	2.25	17.27	
2.960	0.032	3.08	17.18	

PEAK FLOW REDUCTION [Qout/Qin](%)= 21.38
 TIME SHIFT OF PEAK FLOW (min)= 50.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0334

ADD HYD (0802)				
1 + 2 = 3				
ID	Area (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0601):	5.13	0.073	3.33	15.88
+ ID2= 2 (0602):	2.96	0.032	3.08	17.18

ID = 3 (0802):	8.09	0.105	3.33	16.36

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0803)				
1 + 2 = 3				
ID	Area (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0001):	80.08	1.094	3.33	13.31
+ ID2= 2 (0802):	8.09	0.105	3.33	16.36

ID = 3 (0803):	88.17	1.199	3.33	13.59

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD (0002)				
ID= 1 DT= 5.0 min				
Area (ha)	Ia (mm)	U.H. Tp(hrs)	Curve Number (CN)	# of Linear Res.(N)
16.83	4.90	0.70	55.7	3.00

Unit Hyd Qpeak (cms)= 0.918

PEAK FLOW (cms)= 0.454 (i)
 TIME TO PEAK (hrs)= 2.667
 RUNOFF VOLUME (mm)= 16.629
 TOTAL RAINFALL (mm)= 71.769
 RUNOFF COEFFICIENT = 0.232

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

ADD HYD (0800)				
1 + 2 = 3				
ID	Area (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0002):	16.83	0.454	2.67	16.63
+ ID2= 2 (0803):	88.17	1.199	3.33	13.59

ID = 3 (0800):	105.00	1.547	3.17	14.08

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD (0003)				
ID= 1 DT= 5.0 min				
Area (ha)	Ia (mm)	U.H. Tp(hrs)	Curve Number (CN)	# of Linear Res.(N)
136.00	7.20	1.94	52.1	3.00

Unit Hyd Qpeak (cms)= 2.678

PEAK FLOW (cms)= 1.355 (i)
 TIME TO PEAK (hrs)= 4.167
 RUNOFF VOLUME (mm)= 13.986
 TOTAL RAINFALL (mm)= 71.769
 RUNOFF COEFFICIENT = 0.195

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

DUHYD (0400)				
Inlet Cap.=0.713				
#of Inlets= 1				
Total(cms)= 0.7				
Area (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
TOTAL HYD.(ID= 1):	136.00	1.36	4.17	13.99

MAJOR SYS.(ID= 2):	35.85	0.64	4.17	13.99
MINOR SYS.(ID= 3):	100.15	0.71	2.83	13.99

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0801)				
1 + 2 = 3				
ID	Area (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0400):	100.15	0.713	2.83	13.99
+ ID2= 2 (0800):	105.00	1.547	3.17	14.08

ID = 3 (0801):	205.15	2.260	3.17	14.03

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 ** SIMULATION NUMBER: 8 ** Regional Timmins Storm

READ STORM | Filename: c:\Users\dmarshall\AppData

ata\Local\Temp\
12b8f7c2-88bf-48ea-99b0-c1e9a31413fa\5cf2c1d2
Comments: TIMMINS REGIONAL 12 HOUR DURATION STORM

Ptotal=193.00 mm

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.20	15.00	3.20	3.00	6.20	43.00	9.20	13.00
0.40	15.00	3.40	3.00	6.40	43.00	9.40	13.00
0.60	15.00	3.60	3.00	6.60	43.00	9.60	13.00
0.80	15.00	3.80	3.00	6.80	43.00	9.80	13.00
1.00	15.00	4.00	3.00	7.00	43.00	10.00	13.00
1.20	20.00	4.20	5.00	7.20	20.00	10.20	13.00
1.40	20.00	4.40	5.00	7.40	20.00	10.40	13.00
1.60	20.00	4.60	5.00	7.60	20.00	10.60	13.00
1.80	20.00	4.80	5.00	7.80	20.00	10.80	13.00
2.00	20.00	5.00	5.00	8.00	20.00	11.00	13.00
2.20	10.00	5.20	20.00	8.20	23.00	11.20	8.00
2.40	10.00	5.40	20.00	8.40	23.00	11.40	8.00
2.60	10.00	5.60	20.00	8.60	23.00	11.60	8.00
2.80	10.00	5.80	20.00	8.80	23.00	11.80	8.00
3.00	10.00	6.00	20.00	9.00	23.00	12.00	8.00

CALIB (0001) Area (ha)= 80.08 Curve Number (CN)= 50.1
NASHYD (0001) Ia (mm)= 6.70 # of Linear Res. (N)= 3.00
ID= 1 DT= 5.0 min U.H. Tp(hrs)= 1.24

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	15.00	3.083	3.00	6.083	43.00	9.083	13.00
0.167	15.00	3.167	3.00	6.167	43.00	9.167	13.00
0.250	15.00	3.250	3.00	6.250	43.00	9.250	13.00
0.333	15.00	3.333	3.00	6.333	43.00	9.333	13.00
0.417	15.00	3.417	3.00	6.417	43.00	9.417	13.00
0.500	15.00	3.500	3.00	6.500	43.00	9.500	13.00
0.583	15.00	3.583	3.00	6.583	43.00	9.583	13.00
0.667	15.00	3.667	3.00	6.667	43.00	9.667	13.00
0.750	15.00	3.750	3.00	6.750	43.00	9.750	13.00
0.833	15.00	3.833	3.00	6.833	43.00	9.833	13.00
0.917	15.00	3.917	3.00	6.917	43.00	9.917	13.00
1.000	15.00	4.000	3.00	7.000	43.00	10.000	13.00
1.083	20.00	4.083	5.00	7.083	20.00	10.083	13.00
1.167	20.00	4.167	5.00	7.167	20.00	10.167	13.00
1.250	20.00	4.250	5.00	7.250	20.00	10.250	13.00
1.333	20.00	4.333	5.00	7.333	20.00	10.333	13.00
1.417	20.00	4.417	5.00	7.417	20.00	10.417	13.00
1.500	20.00	4.500	5.00	7.500	20.00	10.500	13.00
1.583	20.00	4.583	5.00	7.583	20.00	10.583	13.00
1.667	20.00	4.667	5.00	7.667	20.00	10.667	13.00
1.750	20.00	4.750	5.00	7.750	20.00	10.750	13.00
1.833	20.00	4.833	5.00	7.833	20.00	10.833	13.00
1.917	20.00	4.917	5.00	7.917	20.00	10.917	13.00
2.000	20.00	5.000	5.00	8.000	20.00	11.000	13.00
2.083	10.00	5.083	20.00	8.083	23.00	11.083	8.00
2.167	10.00	5.167	20.00	8.167	23.00	11.167	8.00
2.250	10.00	5.250	20.00	8.250	23.00	11.250	8.00
2.333	10.00	5.333	20.00	8.333	23.00	11.333	8.00
2.417	10.00	5.417	20.00	8.417	23.00	11.417	8.00
2.500	10.00	5.500	20.00	8.500	23.00	11.500	8.00
2.583	10.00	5.583	20.00	8.583	23.00	11.583	8.00
2.667	10.00	5.667	20.00	8.667	23.00	11.667	8.00
2.750	10.00	5.750	20.00	8.750	23.00	11.750	8.00
2.833	10.00	5.833	20.00	8.833	23.00	11.833	8.00
2.917	10.00	5.917	20.00	8.917	23.00	11.917	8.00
3.000	10.00	6.000	20.00	9.000	23.00	12.000	8.00

Unit Hyd Qpeak (cms)= 2.467

PEAK FLOW (cms)= 2.823 (i)
TIME TO PEAK (hrs)= 9.250
RUNOFF VOLUME (mm)= 79.009
TOTAL RAINFALL (mm)= 193.000
RUNOFF COEFFICIENT = 0.409

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

CALIB (0101) Area (ha)= 5.13 Curve Number (CN)= 54.1
NASHYD (0101) Ia (mm)= 4.70 # of Linear Res. (N)= 3.00
ID= 1 DT= 5.0 min U.H. Tp(hrs)= 0.54

Unit Hyd Qpeak (cms)= 0.363

PEAK FLOW (cms)= 0.268 (i)
TIME TO PEAK (hrs)= 7.250
RUNOFF VOLUME (mm)= 87.804
TOTAL RAINFALL (mm)= 193.000
RUNOFF COEFFICIENT = 0.455

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

RESERVOIR (0601)
IN= 2--> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.3000	0.0752
0.0320	0.0244	0.7410	0.1015
0.0910	0.0495	0.0000	0.0000

INFLOW : ID= 2 (0101)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
5.130	5.130	0.268	7.25	87.80
OUTFLOW: ID= 1 (0601)	5.130	0.239	7.58	87.77

PEAK FLOW REDUCTION [Qout/Qin] (%) = 89.22
TIME SHIFT OF PEAK FLOW (min) = 20.00
MAXIMUM STORAGE USED (ha.m.) = 0.0678

CALIB (0102) Area (ha)= 2.96 Curve Number (CN)= 56.7
NASHYD (0102) Ia (mm)= 4.60 # of Linear Res. (N)= 3.00
ID= 1 DT= 5.0 min U.H. Tp(hrs)= 0.30

Unit Hyd Qpeak (cms)= 0.377

PEAK FLOW (cms)= 0.190 (i)
TIME TO PEAK (hrs)= 7.000
RUNOFF VOLUME (mm)= 92.791
TOTAL RAINFALL (mm)= 193.000
RUNOFF COEFFICIENT = 0.481

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

RESERVOIR (0602)
IN= 2--> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.3000	0.1019
0.0320	0.0331	0.7410	0.1376
0.0910	0.0671	0.0000	0.0000

INFLOW : ID= 2 (0102)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
2.960	2.960	0.190	7.00	92.79
OUTFLOW: ID= 1 (0602)	2.960	0.121	9.17	92.70

PEAK FLOW REDUCTION [Qout/Qin] (%) = 63.71
TIME SHIFT OF PEAK FLOW (min)=130.00
MAXIMUM STORAGE USED (ha.m.) = 0.0721

ADD HYD (0802)
1 + 2 = 3

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0601):	5.13	0.239	7.58	87.77
ID2= 2 (0602):	2.96	0.121	9.17	92.70
ID = 3 (0802):	8.09	0.353	7.67	89.57

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

FINISH

ADD HYD	(0803)	AREA	QPEAK	TPEAK	R.V.
1 + 2 =	3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0001):		80.08	2.823	9.25	79.01
+ ID2= 2 (0802):		8.09	0.353	7.67	89.57
<hr/>					
ID = 3 (0803):		88.17	3.143	9.17	79.98

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	(0002)	Area	(ha)=	16.83	Curve Number	(CN)=	55.7
NASHYD	(0002)	Ia	(mm)=	4.90	# of Linear Res.(N)=	3.00	
ID= 1 DT=	5.0 min	U.H. Tp	(hrs)=	0.70			

Unit Hyd Qpeak (cms)= 0.918

PEAK FLOW (cms)= 0.829 (i)
TIME TO PEAK (hrs)= 7.417
RUNOFF VOLUME (mm)= 90.694
TOTAL RAINFALL (mm)= 193.000
RUNOFF COEFFICIENT = 0.470

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

ADD HYD	(0800)	AREA	QPEAK	TPEAK	R.V.
1 + 2 =	3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0002):		16.83	0.829	7.42	90.69
+ ID2= 2 (0803):		88.17	3.143	9.17	79.98
<hr/>					
ID = 3 (0800):		105.00	3.820	9.17	81.70

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	(0003)	Area	(ha)=	136.00	Curve Number	(CN)=	52.1
NASHYD	(0003)	Ia	(mm)=	7.20	# of Linear Res.(N)=	3.00	
ID= 1 DT=	5.0 min	U.H. Tp	(hrs)=	1.94			

Unit Hyd Qpeak (cms)= 2.678

PEAK FLOW (cms)= 4.452 (i)
TIME TO PEAK (hrs)= 10.000
RUNOFF VOLUME (mm)= 82.327
TOTAL RAINFALL (mm)= 193.000
RUNOFF COEFFICIENT = 0.427

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

DUHYD	(0400)	AREA	QPEAK	TPEAK	R.V.
Inlet Cap.=	0.713	(ha)	(cms)	(hrs)	(mm)
#of Inlets=	1				
Total (cms)=	0.7				
TOTAL HYD.(ID= 1):		136.00	4.45	10.00	82.33
<hr/>					
MAJOR SYS.(ID= 2):		92.94	3.74	10.00	82.33
MINOR SYS.(ID= 3):		43.06	0.71	6.00	82.33

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD	(0801)	AREA	QPEAK	TPEAK	R.V.
1 + 2 =	3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0400):		43.06	0.713	6.00	82.33
+ ID2= 2 (0800):		105.00	3.820	9.17	81.70
<hr/>					
ID = 3 (0801):		148.06	4.533	9.17	81.88

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V V I SSSS U U A L
V V I SS U U A A L
V V I SS U U A A A A L
V V I SS U U A A L
WV I SSSS UUUU A A LLLLL

000 TTTT TTTT H H Y Y M M 000 TM
O O T T H H Y Y M M O O
O O T T H H Y Y M M O O
000 T T H H Y Y M M 000

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***** DETAILED OUTPUT *****

Input filename: C:\Program Files (x86)\VH Suite 3.0\VO2\voin.dat
 Output filename: C:\Users\dmarsshall\AppData\Local\Temp\1c420549-9f56-426b-b8c6-47a308c8d649\scenario.out
 Summary filename: C:\Users\dmarsshall\AppData\Local\Temp\1c420549-9f56-426b-b8c6-47a308c8d649\scenario.sum

DATE: 03/10/2017 TIME: 09:49:11

USER:

COMMENTS: _____

 ** SIMULATION NUMBER: 1 ** 2-Year SCS Storm

MASS STORM
 Ptotal= 48.70 mm

Filename: C:\Users\dmarsshall\AppData\Local\Temp\1c420549-9f56-426b-b8c6-47a308c8d649\0c5069ea
 Comments: SCS Type II 24 HR MASS CURVE

Duration of storm = 23.75 hrs
 Mass curve time step = 15.00 min

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.58	6.25	0.97	12.25	7.01	18.25	0.78
0.50	0.39	6.50	0.78	12.50	3.70	18.50	0.97
0.75	0.58	6.75	0.97	12.75	3.51	18.75	0.78
1.00	0.58	7.00	0.97	13.00	2.73	19.00	0.97
1.25	0.58	7.25	1.17	13.25	2.53	19.25	0.78
1.50	0.39	7.50	0.97	13.50	2.14	19.50	0.97
1.75	0.58	7.75	1.17	13.75	1.95	19.75	0.78
2.00	0.58	8.00	1.17	14.00	1.56	20.00	0.58
2.25	0.78	8.25	1.36	14.25	1.36	20.25	0.58
2.50	0.58	8.50	1.36	14.50	1.56	20.50	0.58
2.75	0.58	8.75	1.36	14.75	1.36	20.75	0.58
3.00	0.58	9.00	1.56	15.00	1.56	21.00	0.58
3.25	0.78	9.25	1.56	15.25	1.36	21.25	0.58
3.50	0.58	9.50	1.75	15.50	1.56	21.50	0.58
3.75	0.58	9.75	1.75	15.75	1.36	21.75	0.58
4.00	0.78	10.00	2.14	16.00	0.97	22.00	0.58
4.25	0.78	10.25	2.34	16.25	0.78	22.25	0.58
4.50	0.78	10.50	2.92	16.50	0.97	22.50	0.58
4.75	0.78	10.75	3.12	16.75	0.78	22.75	0.58
5.00	0.78	11.00	4.68	17.00	0.97	23.00	0.58
5.25	0.78	11.25	4.68	17.25	0.78	23.25	0.58
5.50	0.78	11.50	14.42	17.50	0.97	23.50	0.58
5.75	0.78	11.75	59.61	17.75	0.78	23.75	0.58
6.00	0.78	12.00	7.01	18.00	0.97		

CALIB NASHYD (0001) Area (ha)= 80.08 Curve Number (CN)= 50.1
 ID= 1 DT= 5.0 min Ia (mm)= 6.70 # of Linear Res. (N)= 3.00
 U.H. Tp(hrs)= 1.24

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	0.58	6.083	0.97	12.083	7.01	18.08	0.78
0.167	0.58	6.167	0.97	12.167	7.01	18.17	0.78
0.250	0.58	6.250	0.97	12.250	7.01	18.25	0.78
0.333	0.39	6.333	0.78	12.333	3.70	18.33	0.97
0.417	0.39	6.417	0.78	12.417	3.70	18.42	0.97
0.500	0.39	6.500	0.78	12.500	3.70	18.50	0.97
0.583	0.58	6.583	0.97	12.583	3.51	18.58	0.78
0.667	0.58	6.667	0.97	12.667	3.51	18.67	0.78
0.750	0.58	6.750	0.97	12.750	3.51	18.75	0.78
0.833	0.58	6.833	0.97	12.833	2.73	18.83	0.97
0.917	0.58	6.917	0.97	12.917	2.73	18.92	0.97
1.000	0.58	7.000	0.97	13.000	2.73	19.00	0.97
1.083	0.58	7.083	1.17	13.083	2.53	19.08	0.78
1.167	0.58	7.167	1.17	13.167	2.53	19.17	0.78
1.250	0.58	7.250	1.17	13.250	2.53	19.25	0.78
1.333	0.39	7.333	0.97	13.333	2.14	19.33	0.97
1.417	0.39	7.417	0.97	13.417	2.14	19.42	0.97
1.500	0.39	7.500	0.97	13.500	2.14	19.50	0.97
1.583	0.58	7.583	1.17	13.583	1.95	19.58	0.78
1.667	0.58	7.667	1.17	13.667	1.95	19.67	0.78
1.750	0.58	7.750	1.17	13.750	1.95	19.75	0.78
1.833	0.58	7.833	1.17	13.833	1.56	19.83	0.58
1.917	0.58	7.917	1.17	13.917	1.56	19.92	0.58
2.000	0.58	8.000	1.17	14.000	1.56	20.00	0.58
2.083	0.78	8.083	1.36	14.083	1.36	20.08	0.58
2.167	0.78	8.167	1.36	14.167	1.36	20.17	0.58
2.250	0.78	8.250	1.36	14.250	1.36	20.25	0.58
2.333	0.58	8.333	1.36	14.333	1.56	20.33	0.58
2.417	0.58	8.417	1.36	14.417	1.56	20.42	0.58
2.500	0.58	8.500	1.36	14.500	1.56	20.50	0.58
2.583	0.58	8.583	1.36	14.583	1.36	20.58	0.58
2.667	0.58	8.667	1.36	14.667	1.36	20.67	0.58
2.750	0.58	8.750	1.36	14.750	1.36	20.75	0.58
2.833	0.58	8.833	1.56	14.833	1.56	20.83	0.58
2.917	0.58	8.917	1.56	14.917	1.56	20.92	0.58
3.000	0.58	9.000	1.56	15.000	1.56	21.00	0.58
3.083	0.78	9.083	1.56	15.083	1.36	21.08	0.58
3.167	0.78	9.167	1.56	15.167	1.36	21.17	0.58
3.250	0.78	9.250	1.56	15.250	1.36	21.25	0.58
3.333	0.58	9.333	1.75	15.333	1.56	21.33	0.58
3.417	0.58	9.417	1.75	15.417	1.56	21.42	0.58
3.500	0.58	9.500	1.75	15.500	1.56	21.50	0.58
3.583	0.58	9.583	1.75	15.583	1.36	21.58	0.58
3.667	0.58	9.667	1.75	15.667	1.36	21.67	0.58
3.750	0.58	9.750	1.75	15.750	1.36	21.75	0.58
3.833	0.78	9.833	2.14	15.833	0.97	21.83	0.58
3.917	0.78	9.917	2.14	15.917	0.97	21.92	0.58
4.000	0.78	10.000	2.14	16.000	0.97	22.00	0.58
4.083	0.78	10.083	2.34	16.083	0.78	22.08	0.58
4.167	0.78	10.167	2.34	16.167	0.78	22.17	0.58
4.250	0.78	10.250	2.34	16.250	0.78	22.25	0.58
4.333	0.78	10.333	2.92	16.333	0.97	22.33	0.58
4.417	0.78	10.417	2.92	16.417	0.97	22.42	0.58
4.500	0.78	10.500	2.92	16.500	0.97	22.50	0.58
4.583	0.78	10.583	3.12	16.583	0.78	22.58	0.58
4.667	0.78	10.667	3.12	16.667	0.78	22.67	0.58
4.750	0.78	10.750	3.12	16.750	0.78	22.75	0.58
4.833	0.78	10.833	4.68	16.833	0.97	22.83	0.58
4.917	0.78	10.917	4.68	16.917	0.97	22.92	0.58
5.000	0.78	11.000	4.68	17.000	0.97	23.00	0.58
5.083	0.78	11.083	4.68	17.083	0.78	23.08	0.58
5.167	0.78	11.167	4.68	17.167	0.78	23.17	0.58
5.250	0.78	11.250	4.68	17.250	0.78	23.25	0.58
5.333	0.78	11.333	14.41	17.333	0.97	23.33	0.58
5.417	0.78	11.417	14.42	17.417	0.97	23.42	0.58
5.500	0.78	11.500	14.42	17.500	0.97	23.50	0.58
5.583	0.78	11.583	59.60	17.583	0.78	23.58	0.58
5.667	0.78	11.667	59.61	17.667	0.78	23.67	0.58
5.750	0.78	11.750	59.61	17.750	0.78	23.75	0.58
5.833	0.78	11.833	7.02	17.833	0.97		
5.917	0.78	11.917	7.01	17.917	0.97		
6.000	0.78	12.000	7.01	18.000	0.97		

Unit Hyd Qpeak (cms)= 2.467

PEAK FLOW (cms)= 0.296 (i)
 TIME TO PEAK (hrs)= 13.083
 RUNOFF VOLUME (mm)= 5.941
 TOTAL RAINFALL (mm)= 48.554
 RUNOFF COEFFICIENT = 0.122

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

CALIB					
NASHYD	(0101)	Area (ha)=	5.13	Curve Number (CN)=	54.1
ID= 1 DT= 5.0 min		Ia (mm)=	4.70	# of Linear Res.(N)=	3.00
		U.H. Tp(hrs)=	0.54		

Unit Hyd Qpeak (cms)= 0.363

PEAK FLOW (cms)= 0.044 (i)
 TIME TO PEAK (hrs)= 12.250
 RUNOFF VOLUME (mm)= 7.415
 TOTAL RAINFALL (mm)= 48.554
 RUNOFF COEFFICIENT = 0.153

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

RESERVOIR (0601)					
IN= 2----> OUT= 1					
DT= 5.0 min					
	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)	
	0.0000	0.0000	0.3000	0.0752	
	0.0320	0.0244	0.7410	0.1015	
	0.0910	0.0495	0.0000	0.0000	
		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0101)		5.130	0.044	12.25	7.41
OUTFLOW: ID= 1 (0601)		5.130	0.017	13.33	7.38

PEAK FLOW REDUCTION [Qout/Qin](%)= 38.97
 TIME SHIFT OF PEAK FLOW (min)= 65.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0132

CALIB					
NASHYD	(0102)	Area (ha)=	2.96	Curve Number (CN)=	56.7
ID= 1 DT= 5.0 min		Ia (mm)=	4.60	# of Linear Res.(N)=	3.00
		U.H. Tp(hrs)=	0.30		

Unit Hyd Qpeak (cms)= 0.377

PEAK FLOW (cms)= 0.043 (i)
 TIME TO PEAK (hrs)= 11.917
 RUNOFF VOLUME (mm)= 8.117
 TOTAL RAINFALL (mm)= 48.554
 RUNOFF COEFFICIENT = 0.167

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

RESERVOIR (0602)					
IN= 2----> OUT= 1					
DT= 5.0 min					
	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)	
	0.0000	0.0000	0.3000	0.1019	
	0.0320	0.0331	0.7410	0.1376	
	0.0910	0.0671	0.0000	0.0000	
		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0102)		2.960	0.043	11.92	8.12
OUTFLOW: ID= 1 (0602)		2.960	0.009	12.92	8.03

PEAK FLOW REDUCTION [Qout/Qin](%)= 21.86
 TIME SHIFT OF PEAK FLOW (min)= 60.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0098

ADD HYD (0802)					
1 + 2 = 3					
ID1= 1 (0601):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
	5.13	0.017	13.33	7.38	
+ ID2= 2 (0602):	2.96	0.009	12.92	8.03	

ID = 3 (0802): 8.09 0.027 13.17 7.62

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0803)					
1 + 2 = 3					
ID1= 1 (0001):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
	80.08	0.296	13.08	5.94	
+ ID2= 2 (0802):	8.09	0.027	13.17	7.62	
ID = 3 (0803):	88.17	0.323	13.08	6.10	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD	(0002)	Area (ha)=	16.83	Curve Number (CN)=	55.7
ID= 1 DT= 5.0 min		Ia (mm)=	4.90	# of Linear Res.(N)=	3.00
		U.H. Tp(hrs)=	0.70		

Unit Hyd Qpeak (cms)= 0.918

PEAK FLOW (cms)= 0.127 (i)
 TIME TO PEAK (hrs)= 12.417
 RUNOFF VOLUME (mm)= 7.757
 TOTAL RAINFALL (mm)= 48.554
 RUNOFF COEFFICIENT = 0.160

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

ADD HYD (0800)					
1 + 2 = 3					
ID1= 1 (0002):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
	16.83	0.127	12.42	7.76	
+ ID2= 2 (0803):	88.17	0.323	13.08	6.10	
ID = 3 (0800):	105.00	0.420	12.83	6.36	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD	(0003)	Area (ha)=	136.00	Curve Number (CN)=	52.1
ID= 1 DT= 5.0 min		Ia (mm)=	7.20	# of Linear Res.(N)=	3.00
		U.H. Tp(hrs)=	1.94		

Unit Hyd Qpeak (cms)= 2.678

PEAK FLOW (cms)= 0.375 (i)
 TIME TO PEAK (hrs)= 14.000
 RUNOFF VOLUME (mm)= 6.221
 TOTAL RAINFALL (mm)= 48.554
 RUNOFF COEFFICIENT = 0.128

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

DUHYD (0400)					
Inlet Cap.=0.713					
#of Inlets= 1					
Total(cms)= 0.7					
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
TOTAL HYD.(ID= 1):	136.00	0.38	14.00	6.22	
MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00	
MINOR SYS.(ID= 3):	136.00	0.38	14.00	6.22	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0801)					
1 + 2 = 3					
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	

ID1= 1 (0400): 136.00 0.375 14.00 6.22
 + ID2= 2 (0800): 105.00 0.420 12.83 6.36

 ID = 3 (0801): 241.00 0.734 13.33 6.28

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 ** SIMULATION NUMBER: 2 ** 5-Year SCS Storm

MASS STORM
 Ptotal= 62.00 mm
 Filename: C:\Users\dmarsal1\AppData\Local\Temp\1c420549-9f56-426b-b8c6-47a308c8d649\F4a3569d
 Comments: SCS Type II 24 HR MASS CURVE
 Duration of storm = 23.75 hrs
 Mass curve time step = 15.00 min

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.74	6.25	1.24	12.25	8.93	18.25	0.99
0.50	0.50	6.50	0.99	12.50	4.71	18.50	1.24
0.75	0.74	6.75	1.24	12.75	4.46	18.75	0.99
1.00	0.74	7.00	1.24	13.00	3.47	19.00	1.24
1.25	0.74	7.25	1.49	13.25	3.22	19.25	0.99
1.50	0.50	7.50	1.24	13.50	2.73	19.50	1.24
1.75	0.74	7.75	1.49	13.75	2.48	19.75	0.99
2.00	0.74	8.00	1.49	14.00	1.98	20.00	0.74
2.25	0.99	8.25	1.74	14.25	1.74	20.25	0.74
2.50	0.74	8.50	1.74	14.50	1.98	20.50	0.74
2.75	0.74	8.75	1.74	14.75	1.74	20.75	0.74
3.00	0.74	9.00	1.98	15.00	1.98	21.00	0.74
3.25	0.99	9.25	1.98	15.25	1.74	21.25	0.74
3.50	0.74	9.50	2.23	15.50	1.98	21.50	0.74
3.75	0.74	9.75	2.23	15.75	1.74	21.75	0.74
4.00	0.99	10.00	2.73	16.00	1.24	22.00	0.74
4.25	0.99	10.25	2.98	16.25	0.99	22.25	0.74
4.50	0.99	10.50	3.72	16.50	1.24	22.50	0.74
4.75	0.99	10.75	3.97	16.75	0.99	22.75	0.74
5.00	0.99	11.00	5.95	17.00	1.24	23.00	0.74
5.25	0.99	11.25	5.95	17.25	0.99	23.25	0.74
5.50	0.99	11.50	18.35	17.50	1.24	23.50	0.74
5.75	0.99	11.75	75.89	17.75	0.99	23.75	0.74
6.00	0.99	12.00	8.93	18.00	1.24		

CALIB NASHYD (0001)
 ID= 1 DT= 5.0 min
 Area (ha)= 80.08 Curve Number (CN)= 50.1
 Ia (mm)= 6.70 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 1.24

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	0.74	6.083	1.24	12.083	8.93	18.08	0.99
0.167	0.74	6.167	1.24	12.167	8.93	18.17	0.99
0.250	0.74	6.250	1.24	12.250	8.93	18.25	0.99
0.333	0.50	6.333	0.99	12.333	4.71	18.33	1.24
0.417	0.50	6.417	0.99	12.417	4.71	18.42	1.24
0.500	0.50	6.500	0.99	12.500	4.71	18.50	1.24
0.583	0.74	6.583	1.24	12.583	4.46	18.58	0.99
0.667	0.74	6.667	1.24	12.667	4.46	18.67	0.99
0.750	0.74	6.750	1.24	12.750	4.46	18.75	0.99
0.833	0.74	6.833	1.24	12.833	3.47	18.83	1.24
0.917	0.74	6.917	1.24	12.917	3.47	18.92	1.24
1.000	0.74	7.000	1.24	13.000	3.47	19.00	1.24
1.083	0.74	7.083	1.49	13.083	3.22	19.08	0.99
1.167	0.74	7.167	1.49	13.167	3.22	19.17	0.99
1.250	0.74	7.250	1.49	13.250	3.22	19.25	0.99
1.333	0.50	7.333	1.24	13.333	2.73	19.33	1.24
1.417	0.50	7.417	1.24	13.417	2.73	19.42	1.24
1.500	0.50	7.500	1.24	13.500	2.73	19.50	1.24
1.583	0.74	7.583	1.49	13.583	2.48	19.58	0.99
1.667	0.74	7.667	1.49	13.667	2.48	19.67	0.99
1.750	0.74	7.750	1.49	13.750	2.48	19.75	0.99
1.833	0.74	7.833	1.49	13.833	1.98	19.83	0.74
1.917	0.74	7.917	1.49	13.917	1.98	19.92	0.74

2.000	0.74	8.000	1.49	14.000	1.98	20.00	0.74
2.083	0.99	8.083	1.74	14.083	1.74	20.08	0.74
2.167	0.99	8.167	1.74	14.167	1.74	20.17	0.74
2.250	0.99	8.250	1.74	14.250	1.74	20.25	0.74
2.333	0.74	8.333	1.74	14.333	1.98	20.33	0.74
2.417	0.74	8.417	1.74	14.417	1.98	20.42	0.74
2.500	0.74	8.500	1.74	14.500	1.98	20.50	0.74
2.583	0.74	8.583	1.74	14.583	1.74	20.58	0.74
2.667	0.74	8.667	1.74	14.667	1.74	20.67	0.74
2.750	0.74	8.750	1.74	14.750	1.74	20.75	0.74
2.833	0.74	8.833	1.98	14.833	1.98	20.83	0.74
2.917	0.74	8.917	1.98	14.917	1.98	20.92	0.74
3.000	0.74	9.000	1.98	15.000	1.98	21.00	0.74
3.083	0.99	9.083	1.98	15.083	1.74	21.08	0.74
3.167	0.99	9.167	1.98	15.167	1.74	21.17	0.74
3.250	0.99	9.250	1.98	15.250	1.74	21.25	0.74
3.333	0.74	9.333	2.23	15.333	1.98	21.33	0.74
3.417	0.74	9.417	2.23	15.417	1.98	21.42	0.74
3.500	0.74	9.500	2.23	15.500	1.98	21.50	0.74
3.583	0.74	9.583	2.23	15.583	1.74	21.58	0.74
3.667	0.74	9.667	2.23	15.667	1.74	21.67	0.74
3.750	0.74	9.750	2.23	15.750	1.74	21.75	0.74
3.833	0.99	9.833	2.73	15.833	1.24	21.83	0.74
3.917	0.99	9.917	2.73	15.917	1.24	21.92	0.74
4.000	0.99	10.000	2.73	16.000	1.24	22.00	0.74
4.083	0.99	10.083	2.98	16.083	0.99	22.08	0.74
4.167	0.99	10.167	2.98	16.167	0.99	22.17	0.74
4.250	0.99	10.250	2.98	16.250	0.99	22.25	0.74
4.333	0.99	10.333	3.72	16.333	1.24	22.33	0.74
4.417	0.99	10.417	3.72	16.417	1.24	22.42	0.74
4.500	0.99	10.500	3.72	16.500	1.24	22.50	0.74
4.583	0.99	10.583	3.97	16.583	0.99	22.58	0.74
4.667	0.99	10.667	3.97	16.667	0.99	22.67	0.74
4.750	0.99	10.750	3.97	16.750	0.99	22.75	0.74
4.833	0.99	10.833	5.95	16.833	1.24	22.83	0.74
4.917	0.99	10.917	5.95	16.917	1.24	22.92	0.74
5.000	0.99	11.000	5.95	17.000	1.24	23.00	0.74
5.083	0.99	11.083	5.95	17.083	0.99	23.08	0.74
5.167	0.99	11.167	5.95	17.167	0.99	23.17	0.74
5.250	0.99	11.250	5.95	17.250	0.99	23.25	0.74
5.333	0.99	11.333	18.35	17.333	1.24	23.33	0.74
5.417	0.99	11.417	18.35	17.417	1.24	23.42	0.74
5.500	0.99	11.500	18.35	17.500	1.24	23.50	0.74
5.583	0.99	11.583	75.89	17.583	0.99	23.58	0.74
5.667	0.99	11.667	75.89	17.667	0.99	23.67	0.74
5.750	0.99	11.750	75.89	17.750	0.99	23.75	0.74
5.833	0.99	11.833	8.94	17.833	1.24		
5.917	0.99	11.917	8.93	17.917	1.24		
6.000	0.99	12.000	8.93	18.000	1.24		

Unit Hyd Qpeak (cms)= 2.467

PEAK FLOW (cms)= 0.501 (i)
 TIME TO PEAK (hrs)= 13.083
 RUNOFF VOLUME (mm)= 9.859
 TOTAL RAINFALL (mm)= 61.814
 RUNOFF COEFFICIENT = 0.159

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

CALIB NASHYD (0101)
 ID= 1 DT= 5.0 min
 Area (ha)= 5.13 Curve Number (CN)= 54.1
 Ia (mm)= 4.70 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.54

Unit Hyd Qpeak (cms)= 0.363

PEAK FLOW (cms)= 0.073 (i)
 TIME TO PEAK (hrs)= 12.250
 RUNOFF VOLUME (mm)= 11.965
 TOTAL RAINFALL (mm)= 61.814
 RUNOFF COEFFICIENT = 0.194

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

RESERVOIR (0601)
 IN= 2 -> OUT= 1
 DT= 5.0 min
 OUTFLOW (cms) | STORAGE (ha.m.) | OUTFLOW (cms) | STORAGE (ha.m.)
 0.0000 | 0.0000 | 0.3000 | 0.0752

0.0320 0.0244 | 0.7410 0.1015
 0.0910 0.0495 | 0.0000 0.0000

INFLOW : ID= 2 (0101)
 OUTFLOW: ID= 1 (0601)

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
5.130	0.073	12.25	11.97
5.130	0.028	13.25	11.93

PEAK FLOW REDUCTION [Qout/Qin](%)= 39.04
 TIME SHIFT OF PEAK FLOW (min)= 60.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0216

CALIB NASHYD (0102)
 ID= 1 DT= 5.0 min

Area (ha)	Ia (mm)	U.H. Tp(hrs)	Qpeak (cms)	Curve Number (CN)	# of Linear Res.(N)
2.96	4.60	0.30	0.377	56.7	3.00

Unit Hyd Qpeak (cms)= 0.377
 PEAK FLOW (cms)= 0.071 (i)
 TIME TO PEAK (hrs)= 11.917
 RUNOFF VOLUME (mm)= 13.027
 TOTAL RAINFALL (mm)= 61.814
 RUNOFF COEFFICIENT = 0.211

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

RESERVOIR (0602)
 IN= 2--> OUT= 1
 DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.3000	0.1019
0.0320	0.0331	0.7410	0.1376
0.0910	0.0671	0.0000	0.0000

INFLOW : ID= 2 (0102)
 OUTFLOW: ID= 1 (0602)

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
2.960	0.071	11.92	13.03
2.960	0.015	12.83	12.94

PEAK FLOW REDUCTION [Qout/Qin](%)= 21.91
 TIME SHIFT OF PEAK FLOW (min)= 55.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0160

ADD HYD (0802)
 1 + 2 = 3

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0601):	5.13	0.028	13.25	11.93
+ ID2= 2 (0602):	2.96	0.015	12.83	12.94
ID = 3 (0802):	8.09	0.044	13.17	12.30

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0803)
 1 + 2 = 3

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0001):	80.08	0.501	13.08	9.86
+ ID2= 2 (0802):	8.09	0.044	13.17	12.30
ID = 3 (0803):	88.17	0.545	13.08	10.08

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0002)
 ID= 1 DT= 5.0 min

Area (ha)	Ia (mm)	U.H. Tp(hrs)	Qpeak (cms)	Curve Number (CN)	# of Linear Res.(N)
16.83	4.90	0.70	0.918	55.7	3.00

Unit Hyd Qpeak (cms)= 0.918
 PEAK FLOW (cms)= 0.208 (i)

TIME TO PEAK (hrs)= 12.417
 RUNOFF VOLUME (mm)= 12.510
 TOTAL RAINFALL (mm)= 61.814
 RUNOFF COEFFICIENT = 0.202

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

ADD HYD (0800)
 1 + 2 = 3

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0002):	16.83	0.208	12.42	12.51
+ ID2= 2 (0803):	88.17	0.545	13.08	10.08
ID = 3 (0800):	105.00	0.705	12.83	10.47

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0003)
 ID= 1 DT= 5.0 min

Area (ha)	Ia (mm)	U.H. Tp(hrs)	Qpeak (cms)	Curve Number (CN)	# of Linear Res.(N)
136.00	7.20	1.94	2.678	52.1	3.00

Unit Hyd Qpeak (cms)= 2.678

PEAK FLOW (cms)= 0.637 (i)
 TIME TO PEAK (hrs)= 14.000
 RUNOFF VOLUME (mm)= 10.352
 TOTAL RAINFALL (mm)= 61.814
 RUNOFF COEFFICIENT = 0.167

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

DUHYD (0400)
 Inlet Cap.=0.713
 #of Inlets= 1
 Total(cms)= 0.7

TOTAL HYD. (ID= 1):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
136.00	0.64	14.00	10.35	
MAJOR SYS. (ID= 2):	0.00	0.00	0.00	0.00
MINOR SYS. (ID= 3):	136.00	0.64	14.00	10.35

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0801)
 1 + 2 = 3

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0400):	136.00	0.637	14.00	10.35
+ ID2= 2 (0800):	105.00	0.705	12.83	10.47
ID = 3 (0801):	241.00	1.240	13.33	10.40

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 ** SIMULATION NUMBER: 3 **

10-Year SCS Storm

MASS STORM
 Ptotal= 70.90 mm

Filename: C:\Users\dmarshall\AppData\Local\Temp\1c420549-9f56-426b-b8c6-47a308c8d649\27a2b1e4
 Comments: SCS Type II 24 HR MASS CURVE

Duration of storm = 23.75 hrs
 Mass curve time step = 15.00 min

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.85	6.25	1.42	12.25	10.21	18.25	1.13
0.50	0.57	6.50	1.13	12.50	5.39	18.50	1.42
0.75	0.85	6.75	1.42	12.75	5.10	18.75	1.13
1.00	0.85	7.00	1.42	13.00	3.97	19.00	1.42

1.25	0.85	7.25	1.70	13.25	3.69	19.25	1.13
1.50	0.57	7.50	1.42	13.50	3.12	19.50	1.42
1.75	0.85	7.75	1.70	13.75	2.84	19.75	1.13
2.00	0.85	8.00	1.70	14.00	2.27	20.00	0.85
2.25	1.13	8.25	1.99	14.25	1.99	20.25	0.85
2.50	0.85	8.50	1.99	14.50	2.27	20.50	0.85
2.75	0.85	8.75	1.99	14.75	1.99	20.75	0.85
3.00	0.85	9.00	2.27	15.00	2.27	21.00	0.85
3.25	1.13	9.25	2.27	15.25	1.99	21.25	0.85
3.50	0.85	9.50	2.55	15.50	2.27	21.50	0.85
3.75	0.85	9.75	2.55	15.75	1.99	21.75	0.85
4.00	1.13	10.00	3.12	16.00	1.42	22.00	0.85
4.25	1.13	10.25	3.40	16.25	1.13	22.25	0.85
4.50	1.13	10.50	4.25	16.50	1.42	22.50	0.85
4.75	1.13	10.75	4.54	16.75	1.13	22.75	0.85
5.00	1.13	11.00	6.81	17.00	1.42	23.00	0.85
5.25	1.13	11.25	6.81	17.25	1.13	23.25	0.85
5.50	1.13	11.50	20.99	17.50	1.42	23.50	0.85
5.75	1.13	11.75	86.78	17.75	1.13	23.75	0.85
6.00	1.13	12.00	10.21	18.00	1.42		

CALIB NASHYD (0001) Area (ha)= 80.08 Curve Number (CN)= 50.1
 ID= 1 DT= 5.0 min Ia (mm)= 6.70 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 1.24

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	0.85	6.083	1.42	12.083	10.21	18.08	1.13
0.167	0.85	6.167	1.42	12.167	10.21	18.17	1.13
0.250	0.85	6.250	1.42	12.250	10.21	18.25	1.13
0.333	0.57	6.333	1.13	12.333	5.39	18.33	1.42
0.417	0.57	6.417	1.13	12.417	5.39	18.42	1.42
0.500	0.57	6.500	1.13	12.500	5.39	18.50	1.42
0.583	0.85	6.583	1.42	12.583	5.10	18.58	1.13
0.667	0.85	6.667	1.42	12.667	5.10	18.67	1.13
0.750	0.85	6.750	1.42	12.750	5.10	18.75	1.13
0.833	0.85	6.833	1.42	12.833	3.97	18.83	1.42
0.917	0.85	6.917	1.42	12.917	3.97	18.92	1.42
1.000	0.85	7.000	1.42	13.000	3.97	19.00	1.42
1.083	0.85	7.083	1.70	13.083	3.69	19.08	1.13
1.167	0.85	7.167	1.70	13.167	3.69	19.17	1.13
1.250	0.85	7.250	1.70	13.250	3.69	19.25	1.13
1.333	0.57	7.333	1.42	13.333	3.12	19.33	1.42
1.417	0.57	7.417	1.42	13.417	3.12	19.42	1.42
1.500	0.57	7.500	1.42	13.500	3.12	19.50	1.42
1.583	0.85	7.583	1.70	13.583	2.84	19.58	1.13
1.667	0.85	7.667	1.70	13.667	2.84	19.67	1.13
1.750	0.85	7.750	1.70	13.750	2.84	19.75	1.13
1.833	0.85	7.833	1.70	13.833	2.27	19.83	0.85
1.917	0.85	7.917	1.70	13.917	2.27	19.92	0.85
2.000	0.85	8.000	1.70	14.000	2.27	20.00	0.85
2.083	1.13	8.083	1.99	14.083	1.99	20.08	0.85
2.167	1.13	8.167	1.99	14.167	1.99	20.17	0.85
2.250	1.13	8.250	1.99	14.250	1.99	20.25	0.85
2.333	0.85	8.333	1.99	14.333	2.27	20.33	0.85
2.417	0.85	8.417	1.99	14.417	2.27	20.42	0.85
2.500	0.85	8.500	1.99	14.500	2.27	20.50	0.85
2.583	0.85	8.583	1.99	14.583	1.99	20.58	0.85
2.667	0.85	8.667	1.99	14.667	1.99	20.67	0.85
2.750	0.85	8.750	1.99	14.750	1.99	20.75	0.85
2.833	0.85	8.833	2.27	14.833	2.27	20.83	0.85
2.917	0.85	8.917	2.27	14.917	2.27	20.92	0.85
3.000	0.85	9.000	2.27	15.000	2.27	21.00	0.85
3.083	1.13	9.083	2.27	15.083	1.99	21.08	0.85
3.167	1.13	9.167	2.27	15.167	1.99	21.17	0.85
3.250	1.13	9.250	2.27	15.250	1.99	21.25	0.85
3.333	0.85	9.333	2.55	15.333	2.27	21.33	0.85
3.417	0.85	9.417	2.55	15.417	2.27	21.42	0.85
3.500	0.85	9.500	2.55	15.500	2.27	21.50	0.85
3.583	0.85	9.583	2.55	15.583	1.99	21.58	0.85
3.667	0.85	9.667	2.55	15.667	1.99	21.67	0.85
3.750	0.85	9.750	2.55	15.750	1.99	21.75	0.85
3.833	1.13	9.833	3.12	15.833	1.42	21.83	0.85
3.917	1.13	9.917	3.12	15.917	1.42	21.92	0.85
4.000	1.13	10.000	3.12	16.000	1.42	22.00	0.85
4.083	1.13	10.083	3.40	16.083	1.13	22.08	0.85
4.167	1.13	10.167	3.40	16.167	1.13	22.17	0.85

4.250	1.13	10.250	3.40	16.250	1.13	22.25	0.85
4.333	1.13	10.333	4.25	16.333	1.42	22.33	0.85
4.417	1.13	10.417	4.25	16.417	1.42	22.42	0.85
4.500	1.13	10.500	4.25	16.500	1.42	22.50	0.85
4.583	1.13	10.583	4.54	16.583	1.13	22.58	0.85
4.667	1.13	10.667	4.54	16.667	1.13	22.67	0.85
4.750	1.13	10.750	4.54	16.750	1.13	22.75	0.85
4.833	1.13	10.833	6.81	16.833	1.42	22.83	0.85
4.917	1.13	10.917	6.81	16.917	1.42	22.92	0.85
5.000	1.13	11.000	6.81	17.000	1.42	23.00	0.85
5.083	1.13	11.083	6.81	17.083	1.13	23.08	0.85
5.167	1.13	11.167	6.81	17.167	1.13	23.17	0.85
5.250	1.13	11.250	6.81	17.250	1.13	23.25	0.85
5.333	1.13	11.333	20.99	17.333	1.42	23.33	0.85
5.417	1.13	11.417	20.99	17.417	1.42	23.42	0.85
5.500	1.13	11.500	20.99	17.500	1.42	23.50	0.85
5.583	1.13	11.583	86.78	17.583	1.13	23.58	0.85
5.667	1.13	11.667	86.78	17.667	1.13	23.67	0.85
5.750	1.13	11.750	86.78	17.750	1.13	23.75	0.85
5.833	1.13	11.833	10.21	17.833	1.42		
5.917	1.13	11.917	10.21	17.917	1.42		
6.000	1.13	12.000	10.21	18.000	1.42		

Unit Hyd Qpeak (cms)= 2.467

PEAK FLOW (cms)= 0.662 (i)
 TIME TO PEAK (hrs)= 13.083
 RUNOFF VOLUME (mm)= 12.917
 TOTAL RAINFALL (mm)= 70.687
 RUNOFF COEFFICIENT = 0.183

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

CALIB NASHYD (0101) Area (ha)= 5.13 Curve Number (CN)= 54.1
 ID= 1 DT= 5.0 min Ia (mm)= 4.70 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.54

Unit Hyd Qpeak (cms)= 0.363

PEAK FLOW (cms)= 0.095 (i)
 TIME TO PEAK (hrs)= 12.250
 RUNOFF VOLUME (mm)= 15.468
 TOTAL RAINFALL (mm)= 70.687
 RUNOFF COEFFICIENT = 0.219

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

RESERVOIR (0601)
 IN= 2---> OUT= 1
 DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.3000	0.0752
0.0320	0.0244	0.7410	0.1015
0.0910	0.0495	0.0000	0.0000

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
5.130	0.095	12.25	15.47
5.130	0.040	13.17	15.43

PEAK FLOW REDUCTION [Qout/Qin](%)= 42.08
 TIME SHIFT OF PEAK FLOW (min)= 55.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0277

CALIB NASHYD (0102) Area (ha)= 2.96 Curve Number (CN)= 56.7
 ID= 1 DT= 5.0 min Ia (mm)= 4.60 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.30

Unit Hyd Qpeak (cms)= 0.377

PEAK FLOW (cms)= 0.092 (i)
 TIME TO PEAK (hrs)= 11.917
 RUNOFF VOLUME (mm)= 16.788
 TOTAL RAINFALL (mm)= 70.687
 RUNOFF COEFFICIENT = 0.237

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

RESERVOIR (0602)
IN= 2----> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.3000	0.1019
0.0320	0.0331	0.7410	0.1376
0.0910	0.0671	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0102)	2.960	0.092	11.92	16.79
OUTFLOW: ID= 1 (0602)	2.960	0.020	12.83	16.70

PEAK FLOW REDUCTION [Qout/Qin](%)= 21.94
TIME SHIFT OF PEAK FLOW (min)= 55.00
MAXIMUM STORAGE USED (ha.m.)= 0.0208

ADD HYD (0802)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0601):	5.13	0.040	13.17	15.43
+ ID2= 2 (0602):	2.96	0.020	12.83	16.70
ID = 3 (0802):	8.09	0.060	13.17	15.90

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0803)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0001):	80.08	0.662	13.08	12.92
+ ID2= 2 (0802):	8.09	0.060	13.17	15.90
ID = 3 (0803):	88.17	0.722	13.08	13.19

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0002)
ID= 1 DT= 5.0 min

Area (ha)= 16.83 Curve Number (CN)= 55.7
Ia (mm)= 4.90 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.70

Unit Hyd Qpeak (cms)= 0.918

PEAK FLOW (cms)= 0.270 (i)
TIME TO PEAK (hrs)= 12.417
RUNOFF VOLUME (mm)= 16.161
TOTAL RAINFALL (mm)= 70.687
RUNOFF COEFFICIENT = 0.229

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

ADD HYD (0800)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0002):	16.83	0.270	12.42	16.16
+ ID2= 2 (0803):	88.17	0.722	13.08	13.19
ID = 3 (0800):	105.00	0.931	12.83	13.67

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0003)
ID= 1 DT= 5.0 min

Area (ha)= 136.00 Curve Number (CN)= 52.1
Ia (mm)= 7.20 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.94

Unit Hyd Qpeak (cms)= 2.678

PEAK FLOW (cms)= 0.843 (i)
TIME TO PEAK (hrs)= 13.917
RUNOFF VOLUME (mm)= 13.571
TOTAL RAINFALL (mm)= 70.687
RUNOFF COEFFICIENT = 0.192

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

DUHYD (0400)
Inlet Cap.=0.713
#of Inlets= 1
Total(cms)= 0.7

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	136.00	0.84	13.92	13.57
MAJOR SYS.(ID= 2):	4.61	0.13	13.92	13.57
MINOR SYS.(ID= 3):	131.39	0.71	13.08	13.57

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0801)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0400):	131.39	0.713	13.08	13.57
+ ID2= 2 (0800):	105.00	0.931	12.83	13.67
ID = 3 (0801):	236.39	1.623	13.08	13.61

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

** SIMULATION NUMBER: 4 **

25-Year SCS Storm

MASS STORM
Ptotal= 82.00 mm

Filename: C:\Users\dmars\AppData\Local\Temp\1c420549-9f56-426b-b8c6-47a308c8d649\57c8691f
Comments: SCS Type II 24 HR MASS CURVE

Duration of storm = 23.75 hrs
Mass curve time step = 15.00 min

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.98	6.25	1.64	12.25	11.81	18.25	1.31
0.50	0.66	6.50	1.31	12.50	6.23	18.50	1.64
0.75	0.98	6.75	1.64	12.75	5.90	18.75	1.31
1.00	0.98	7.00	1.64	13.00	4.59	19.00	1.64
1.25	0.98	7.25	1.97	13.25	4.26	19.25	1.31
1.50	0.66	7.50	1.64	13.50	3.61	19.50	1.64
1.75	0.98	7.75	1.97	13.75	3.28	19.75	1.31
2.00	0.98	8.00	1.97	14.00	2.62	20.00	0.98
2.25	1.31	8.25	2.30	14.25	2.30	20.25	0.98
2.50	0.98	8.50	2.30	14.50	2.62	20.50	0.98
2.75	0.98	8.75	2.30	14.75	2.30	20.75	0.98
3.00	0.98	9.00	2.62	15.00	2.62	21.00	0.98
3.25	1.31	9.25	2.62	15.25	2.30	21.25	0.98
3.50	0.98	9.50	2.95	15.50	2.62	21.50	0.98
3.75	0.98	9.75	2.95	15.75	2.30	21.75	0.98
4.00	1.31	10.00	3.61	16.00	1.64	22.00	0.98
4.25	1.31	10.25	3.94	16.25	1.31	22.25	0.98
4.50	1.31	10.50	4.92	16.50	1.64	22.50	0.98
4.75	1.31	10.75	5.25	16.75	1.31	22.75	0.98
5.00	1.31	11.00	7.87	17.00	1.64	23.00	0.98
5.25	1.31	11.25	7.87	17.25	1.31	23.25	0.98
5.50	1.31	11.50	24.27	17.50	1.64	23.50	0.98
5.75	1.31	11.75	100.37	17.75	1.31	23.75	0.98
6.00	1.31	12.00	11.81	18.00	1.64		

CALIB NASHYD (0001)
ID= 1 DT= 5.0 min

Area (ha)= 80.08 Curve Number (CN)= 50.1
Ia (mm)= 6.70 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.24

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

--- TRANSFORMED HYETOGRAPH ---					
TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.98	6.083	1.64	12.083	11.81
0.167	0.98	6.167	1.64	12.167	11.81
0.250	0.98	6.250	1.64	12.250	11.81
0.333	0.66	6.333	1.31	12.333	6.23
0.417	0.66	6.417	1.31	12.417	6.23
0.500	0.66	6.500	1.31	12.500	6.23
0.583	0.98	6.583	1.64	12.583	5.90
0.667	0.98	6.667	1.64	12.667	5.90
0.750	0.98	6.750	1.64	12.750	5.90
0.833	0.98	6.833	1.64	12.833	4.59
0.917	0.98	6.917	1.64	12.917	4.59
1.000	0.98	7.000	1.64	13.000	4.59
1.083	0.98	7.083	1.97	13.083	4.26
1.167	0.98	7.167	1.97	13.167	4.26
1.250	0.98	7.250	1.97	13.250	4.26
1.333	0.66	7.333	1.64	13.333	3.61
1.417	0.66	7.417	1.64	13.417	3.61
1.500	0.66	7.500	1.64	13.500	3.61
1.583	0.98	7.583	1.97	13.583	3.28
1.667	0.98	7.667	1.97	13.667	3.28
1.750	0.98	7.750	1.97	13.750	3.28
1.833	0.98	7.833	1.97	13.833	2.62
1.917	0.98	7.917	1.97	13.917	2.62
2.000	0.98	8.000	1.97	14.000	2.62
2.083	1.31	8.083	2.30	14.083	2.30
2.167	1.31	8.167	2.30	14.167	2.30
2.250	1.31	8.250	2.30	14.250	2.30
2.333	0.98	8.333	2.30	14.333	2.62
2.417	0.98	8.417	2.30	14.417	2.62
2.500	0.98	8.500	2.30	14.500	2.62
2.583	0.98	8.583	2.30	14.583	2.30
2.667	0.98	8.667	2.30	14.667	2.30
2.750	0.98	8.750	2.30	14.750	2.30
2.833	0.98	8.833	2.62	14.833	2.62
2.917	0.98	8.917	2.62	14.917	2.62
3.000	0.98	9.000	2.62	15.000	2.62
3.083	1.31	9.083	2.62	15.083	2.30
3.167	1.31	9.167	2.62	15.167	2.30
3.250	1.31	9.250	2.62	15.250	2.30
3.333	0.98	9.333	2.95	15.333	2.62
3.417	0.98	9.417	2.95	15.417	2.62
3.500	0.98	9.500	2.95	15.500	2.62
3.583	0.98	9.583	2.95	15.583	2.30
3.667	0.98	9.667	2.95	15.667	2.30
3.750	0.98	9.750	2.95	15.750	2.30
3.833	1.31	9.833	3.61	15.833	1.64
3.917	1.31	9.917	3.61	15.917	1.64
4.000	1.31	10.000	3.61	16.000	1.64
4.083	1.31	10.083	3.94	16.083	1.31
4.167	1.31	10.167	3.94	16.167	1.31
4.250	1.31	10.250	3.94	16.250	1.31
4.333	1.31	10.333	4.92	16.333	1.64
4.417	1.31	10.417	4.92	16.417	1.64
4.500	1.31	10.500	4.92	16.500	1.64
4.583	1.31	10.583	5.25	16.583	1.31
4.667	1.31	10.667	5.25	16.667	1.31
4.750	1.31	10.750	5.25	16.750	1.31
4.833	1.31	10.833	7.87	16.833	1.64
4.917	1.31	10.917	7.87	16.917	1.64
5.000	1.31	11.000	7.87	17.000	1.64
5.083	1.31	11.083	7.87	17.083	1.31
5.167	1.31	11.167	7.87	17.167	1.31
5.250	1.31	11.250	7.87	17.250	1.31
5.333	1.31	11.333	24.27	17.333	1.64
5.417	1.31	11.417	24.27	17.417	1.64
5.500	1.31	11.500	24.27	17.500	1.64
5.583	1.31	11.583	100.36	17.583	1.31
5.667	1.31	11.667	100.37	17.667	1.31
5.750	1.31	11.750	100.37	17.750	1.31
5.833	1.31	11.833	11.82	17.833	1.64
5.917	1.31	11.917	11.81	17.917	1.64
6.000	1.31	12.000	11.81	18.000	1.64

Unit Hyd Qpeak (cms)= 2.467

PEAK FLOW (cms)= 0.888 (i)
TIME TO PEAK (hrs)= 13.083

RUNOFF VOLUME (mm)= 17.172
TOTAL RAINFALL (mm)= 81.754
RUNOFF COEFFICIENT = 0.210

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

CALIB	NASHYD (0101)	Area (ha)= 5.13	Curve Number (CN)= 54.1
ID= 1	DT= 5.0 min	Ia (mm)= 4.70	# of Linear Res.(N)= 3.00
		U.H. Tp(hrs)= 0.54	

Unit Hyd Qpeak (cms)= 0.363

PEAK FLOW (cms)= 0.125 (i)
TIME TO PEAK (hrs)= 12.167
RUNOFF VOLUME (mm)= 20.294
TOTAL RAINFALL (mm)= 81.754
RUNOFF COEFFICIENT = 0.248

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

RESERVOIR (0601)	IN= 2	OUT= 1	DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
				0.0000	0.0000	0.3000	0.0752
				0.0320	0.0244	0.7410	0.1015
				0.0910	0.0495	0.0000	0.0000

INFLOW : ID= 2 (0101)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
OUTFLOW : ID= 1 (0601)	5.130	0.125	12.17	20.29
	5.130	0.057	13.08	20.26

PEAK FLOW REDUCTION [Qout/Qin](%)= 45.85
TIME SHIFT OF PEAK FLOW (min)= 55.00
MAXIMUM STORAGE USED (ha.m.)= 0.0352

CALIB	NASHYD (0102)	Area (ha)= 2.96	Curve Number (CN)= 56.7
ID= 1	DT= 5.0 min	Ia (mm)= 4.60	# of Linear Res.(N)= 3.00
		U.H. Tp(hrs)= 0.30	

Unit Hyd Qpeak (cms)= 0.377

PEAK FLOW (cms)= 0.121 (i)
TIME TO PEAK (hrs)= 11.917
RUNOFF VOLUME (mm)= 21.947
TOTAL RAINFALL (mm)= 81.754
RUNOFF COEFFICIENT = 0.268

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

RESERVOIR (0602)	IN= 2	OUT= 1	DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
				0.0000	0.0000	0.3000	0.1019
				0.0320	0.0331	0.7410	0.1376
				0.0910	0.0671	0.0000	0.0000

INFLOW : ID= 2 (0102)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
OUTFLOW : ID= 1 (0602)	2.960	0.121	11.92	21.95
	2.960	0.027	12.83	21.86

PEAK FLOW REDUCTION [Qout/Qin](%)= 21.97
TIME SHIFT OF PEAK FLOW (min)= 55.00
MAXIMUM STORAGE USED (ha.m.)= 0.0275

ADD HYD (0802)	1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
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ID1= 1 (0601):	5.13	0.057	13.08	20.26
+ ID2= 2 (0602):	2.96	0.027	12.83	21.86

ID = 3 (0802):	8.09	0.084	13.08	20.84

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0803)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0001):	80.08	0.888	13.08	17.17
+ ID2= 2 (0802):	8.09	0.084	13.08	20.84

ID = 3 (0803):	88.17	0.971	13.08	17.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
NASHYD (0002)			
ID= 1 DT= 5.0 min	Area (ha)=	16.83	Curve Number (CN)= 55.7
	Ia (mm)=	4.90	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.70	

Unit Hyd Qpeak (cms)= 0.918

PEAK FLOW (cms)= 0.357 (i)
 TIME TO PEAK (hrs)= 12.417
 RUNOFF VOLUME (mm)= 21.180
 TOTAL RAINFALL (mm)= 81.754
 RUNOFF COEFFICIENT = 0.259

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

ADD HYD (0800)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0002):	16.83	0.357	12.42	21.18
+ ID2= 2 (0803):	88.17	0.971	13.08	17.51

ID = 3 (0800):	105.00	1.249	12.83	18.10

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
NASHYD (0003)			
ID= 1 DT= 5.0 min	Area (ha)=	136.00	Curve Number (CN)= 52.1
	Ia (mm)=	7.20	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	1.94	

Unit Hyd Qpeak (cms)= 2.678

PEAK FLOW (cms)= 1.131 (i)
 TIME TO PEAK (hrs)= 13.917
 RUNOFF VOLUME (mm)= 18.042
 TOTAL RAINFALL (mm)= 81.754
 RUNOFF COEFFICIENT = 0.221

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

DUHYD (0400)				
Inlet Cap.=0.713				
#of Inlets= 1				
Total(cms)= 0.7				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
TOTAL HYD. (ID= 1):	136.00	1.13	13.92	18.04
MAJOR SYS. (ID= 2):	18.24	0.42	13.92	18.04
MINOR SYS. (ID= 3):	117.76	0.71	12.67	18.04

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0801)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0400):	117.76	0.713	12.67	18.04
+ ID2= 2 (0800):	105.00	1.249	12.83	18.10

ID = 3 (0801):	222.76	1.962	12.83	18.07

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 ** SIMULATION NUMBER: 5 ** 50-Year SCS Storm

MASS STORM	Filename: C:\Users\dmrshall\AppData\Local\Temp\1c420549-9f56-426b-b8c6-47a308c8d649\0bcd6a48
Ptotal= 90.30 mm	Comments: SCS Type II 24 HR MASS CURVE

Duration of storm = 23.75 hrs
 Mass curve time step = 15.00 min

TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.25	1.08	6.25	1.81	12.25	13.00
0.50	0.72	6.50	1.44	12.50	6.86
0.75	1.08	6.75	1.81	12.75	6.50
1.00	1.08	7.00	1.81	13.00	5.06
1.25	1.08	7.25	2.17	13.25	4.70
1.50	0.72	7.50	1.81	13.50	3.97
1.75	1.08	7.75	2.17	13.75	3.61
2.00	1.08	8.00	2.17	14.00	2.89
2.25	1.44	8.25	2.53	14.25	2.53
2.50	1.08	8.50	2.53	14.50	2.89
2.75	1.08	8.75	2.53	14.75	2.53
3.00	1.08	9.00	2.89	15.00	2.89
3.25	1.44	9.25	2.89	15.25	2.53
3.50	1.08	9.50	3.25	15.50	2.89
3.75	1.08	9.75	3.25	15.75	2.53
4.00	1.44	10.00	3.97	16.00	1.81
4.25	1.44	10.25	4.33	16.25	1.44
4.50	1.44	10.50	5.42	16.50	1.81
4.75	1.44	10.75	5.78	16.75	1.44
5.00	1.44	11.00	8.67	17.00	1.81
5.25	1.44	11.25	8.67	17.25	1.44
5.50	1.44	11.50	26.73	17.50	1.81
5.75	1.44	11.75	110.53	17.75	1.44
6.00	1.44	12.00	13.00	18.00	1.81

CALIB			
NASHYD (0001)			
ID= 1 DT= 5.0 min	Area (ha)=	80.08	Curve Number (CN)= 50.1
	Ia (mm)=	6.70	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	1.24	

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

--- TRANSFORMED HYETOGRAPH ---					
TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.08	6.083	1.81	12.083	13.00
0.167	1.08	6.167	1.81	12.167	13.00
0.250	1.08	6.250	1.81	12.250	13.00
0.333	0.72	6.333	1.44	12.333	6.86
0.417	0.72	6.417	1.44	12.417	6.86
0.500	0.72	6.500	1.44	12.500	6.86
0.583	1.08	6.583	1.81	12.583	6.50
0.667	1.08	6.667	1.81	12.667	6.50
0.750	1.08	6.750	1.81	12.750	6.50
0.833	1.08	6.833	1.81	12.833	5.06
0.917	1.08	6.917	1.81	12.917	5.06
1.000	1.08	7.000	1.81	13.000	5.06
1.083	1.08	7.083	2.17	13.083	4.70
1.167	1.08	7.167	2.17	13.167	4.70
1.250	1.08	7.250	2.17	13.250	4.70
1.333	0.72	7.333	1.81	13.333	3.97
1.417	0.72	7.417	1.81	13.417	3.97
1.500	0.72	7.500	1.81	13.500	3.97
1.583	1.08	7.583	2.17	13.583	3.61
1.667	1.08	7.667	2.17	13.667	3.61

1.750	1.08	7.750	2.17	13.750	3.61	19.75	1.44
1.833	1.08	7.833	2.17	13.833	2.89	19.83	1.08
1.917	1.08	7.917	2.17	13.917	2.89	19.92	1.08
2.000	1.08	8.000	2.17	14.000	2.89	20.00	1.08
2.083	1.44	8.083	2.53	14.083	2.53	20.08	1.08
2.167	1.44	8.167	2.53	14.167	2.53	20.17	1.08
2.250	1.44	8.250	2.53	14.250	2.53	20.25	1.08
2.333	1.08	8.333	2.53	14.333	2.89	20.33	1.08
2.417	1.08	8.417	2.53	14.417	2.89	20.42	1.08
2.500	1.08	8.500	2.53	14.500	2.89	20.50	1.08
2.583	1.08	8.583	2.53	14.583	2.53	20.58	1.08
2.667	1.08	8.667	2.53	14.667	2.53	20.67	1.08
2.750	1.08	8.750	2.53	14.750	2.53	20.75	1.08
2.833	1.08	8.833	2.89	14.833	2.89	20.83	1.08
2.917	1.08	8.917	2.89	14.917	2.89	20.92	1.08
3.000	1.08	9.000	2.89	15.000	2.89	21.00	1.08
3.083	1.44	9.083	2.89	15.083	2.53	21.08	1.08
3.167	1.44	9.167	2.89	15.167	2.53	21.17	1.08
3.250	1.44	9.250	2.89	15.250	2.53	21.25	1.08
3.333	1.08	9.333	3.25	15.333	2.89	21.33	1.08
3.417	1.08	9.417	3.25	15.417	2.89	21.42	1.08
3.500	1.08	9.500	3.25	15.500	2.89	21.50	1.08
3.583	1.08	9.583	3.25	15.583	2.53	21.58	1.08
3.667	1.08	9.667	3.25	15.667	2.53	21.67	1.08
3.750	1.08	9.750	3.25	15.750	2.53	21.75	1.08
3.833	1.44	9.833	3.97	15.833	1.81	21.83	1.08
3.917	1.44	9.917	3.97	15.917	1.81	21.92	1.08
4.000	1.44	10.000	3.97	16.000	1.81	22.00	1.08
4.083	1.44	10.083	4.33	16.083	1.44	22.08	1.08
4.167	1.44	10.167	4.33	16.167	1.44	22.17	1.08
4.250	1.44	10.250	4.33	16.250	1.44	22.25	1.08
4.333	1.44	10.333	5.42	16.333	1.81	22.33	1.08
4.417	1.44	10.417	5.42	16.417	1.81	22.42	1.08
4.500	1.44	10.500	5.42	16.500	1.81	22.50	1.08
4.583	1.44	10.583	5.78	16.583	1.44	22.58	1.08
4.667	1.44	10.667	5.78	16.667	1.44	22.67	1.08
4.750	1.44	10.750	5.78	16.750	1.44	22.75	1.08
4.833	1.44	10.833	8.67	16.833	1.81	22.83	1.08
4.917	1.44	10.917	8.67	16.917	1.81	22.92	1.08
5.000	1.44	11.000	8.67	17.000	1.81	23.00	1.08
5.083	1.44	11.083	8.67	17.083	1.44	23.08	1.08
5.167	1.44	11.167	8.67	17.167	1.44	23.17	1.08
5.250	1.44	11.250	8.67	17.250	1.44	23.25	1.08
5.333	1.44	11.333	26.73	17.333	1.81	23.33	1.08
5.417	1.44	11.417	26.73	17.417	1.81	23.42	1.08
5.500	1.44	11.500	26.73	17.500	1.81	23.50	1.08
5.583	1.44	11.583	110.52	17.583	1.44	23.58	1.08
5.667	1.44	11.667	110.53	17.667	1.44	23.67	1.08
5.750	1.44	11.750	110.53	17.750	1.44	23.75	1.08
5.833	1.44	11.833	13.01	17.833	1.81		
5.917	1.44	11.917	13.00	17.917	1.81		
6.000	1.44	12.000	13.00	18.000	1.81		

Unit Hyd Qpeak (cms)= 2.467

PEAK FLOW (cms)= 1.073 (i)
 TIME TO PEAK (hrs)= 13.083
 RUNOFF VOLUME (mm)= 20.647
 TOTAL RAINFALL (mm)= 90.029
 RUNOFF COEFFICIENT = 0.229

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

CALIB NASHYD (0101) | Area (ha)= 5.13 Curve Number (CN)= 54.1
 ID= 1 DT= 5.0 min | Ia (mm)= 4.70 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.54

Unit Hyd Qpeak (cms)= 0.363

PEAK FLOW (cms)= 0.150 (i)
 TIME TO PEAK (hrs)= 12.167
 RUNOFF VOLUME (mm)= 24.202
 TOTAL RAINFALL (mm)= 90.029
 RUNOFF COEFFICIENT = 0.269

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

RESERVOIR (0601) |
 IN= 2---> OUT= 1 |

DT= 5.0 min
 OUTFLOW (cms) | STORAGE (ha.m.) | OUTFLOW (cms) | STORAGE (ha.m.)
 0.0000 | 0.0000 | 0.3000 | 0.0752
 0.0320 | 0.0244 | 0.7410 | 0.1015
 0.0910 | 0.0495 | 0.0000 | 0.0000

AREA (ha) | QPEAK (cms) | TPEAK (hrs) | R.V. (mm)
 INFLOW : ID= 2 (0101) | 5.130 | 0.150 | 12.17 | 24.20
 OUTFLOW: ID= 1 (0601) | 5.130 | 0.071 | 13.08 | 24.17

PEAK FLOW REDUCTION [Qout/Qin](%)= 47.55
 TIME SHIFT OF PEAK FLOW (min)= 55.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0411

CALIB NASHYD (0102) | Area (ha)= 2.96 Curve Number (CN)= 56.7
 ID= 1 DT= 5.0 min | Ia (mm)= 4.60 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.30

Unit Hyd Qpeak (cms)= 0.377

PEAK FLOW (cms)= 0.145 (i)
 TIME TO PEAK (hrs)= 11.917
 RUNOFF VOLUME (mm)= 26.110
 TOTAL RAINFALL (mm)= 90.029
 RUNOFF COEFFICIENT = 0.290

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

RESERVOIR (0602) |
 IN= 2---> OUT= 1 |
DT= 5.0 min
 OUTFLOW (cms) | STORAGE (ha.m.) | OUTFLOW (cms) | STORAGE (ha.m.)
 0.0000 | 0.0000 | 0.3000 | 0.1019
 0.0320 | 0.0331 | 0.7410 | 0.1376
 0.0910 | 0.0671 | 0.0000 | 0.0000

AREA (ha) | QPEAK (cms) | TPEAK (hrs) | R.V. (mm)
 INFLOW : ID= 2 (0102) | 2.960 | 0.145 | 11.92 | 26.11
 OUTFLOW: ID= 1 (0602) | 2.960 | 0.032 | 12.83 | 26.02

PEAK FLOW REDUCTION [Qout/Qin](%)= 21.99
 TIME SHIFT OF PEAK FLOW (min)= 55.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0329

ADD HYD (0802) |
1 + 2 = 3
 ID1= 1 (0601): | AREA (ha) | QPEAK (cms) | TPEAK (hrs) | R.V. (mm)
 5.13 | 0.071 | 13.08 | 24.17
 + ID2= 2 (0602): | 2.96 | 0.032 | 12.83 | 26.02

 ID = 3 (0802): | 8.09 | 0.103 | 13.00 | 24.85

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0803) |
1 + 2 = 3
 ID1= 1 (0001): | AREA (ha) | QPEAK (cms) | TPEAK (hrs) | R.V. (mm)
 80.08 | 1.073 | 13.08 | 20.65
 + ID2= 2 (0802): | 8.09 | 0.103 | 13.00 | 24.85

 ID = 3 (0803): | 88.17 | 1.175 | 13.08 | 21.03

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0002) | Area (ha)= 16.83 Curve Number (CN)= 55.7
 ID= 1 DT= 5.0 min | Ia (mm)= 4.90 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.70

Unit Hyd Qpeak (cms)= 0.918

PEAK FLOW (cms)= 0.427 (i)
TIME TO PEAK (hrs)= 12.417
RUNOFF VOLUME (mm)= 25.238
TOTAL RAINFALL (mm)= 90.029
RUNOFF COEFFICIENT = 0.280

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

Table with 5 columns: ADD HYD (0800), AREA (ha), QPEAK (cms), TPEAK (hrs), R.V. (mm). Rows include ID1=1, ID2=2, and ID=3 (0800).

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

Table with 4 columns: CALIB NASHYD (0003), Area (ha), Curve Number (CN), # of Linear Res. (N). Includes U.H. Tp (hrs).

Unit Hyd Qpeak (cms)= 2.678

PEAK FLOW (cms)= 1.367 (i)
TIME TO PEAK (hrs)= 13.917
RUNOFF VOLUME (mm)= 21.687
TOTAL RAINFALL (mm)= 90.029
RUNOFF COEFFICIENT = 0.241

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

Table with 5 columns: DUHYD (0400), AREA (ha), QPEAK (cms), TPEAK (hrs), R.V. (mm). Rows include Inlet Cap., # of Inlets, Total, and MAJOR/MINOR SYS.

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

Table with 5 columns: ADD HYD (0801), AREA (ha), QPEAK (cms), TPEAK (hrs), R.V. (mm). Rows include ID1=1, ID2=2, and ID=3 (0801).

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

** SIMULATION NUMBER: 6 ** 100-Year SCS Storm

MASS STORM
Filename: C:\Users\dmarshall\AppData\Local\Temp\1c420549-9f56-426b-b8c6-47a308c8d649\ea6490c4
Comments: SCS Type II 24 HR MASS CURVE

Duration of storm = 23.75 hrs
Mass curve time step = 15.00 min

Table with 8 columns: TIME (hrs), RAIN (mm/hr), TIME (hrs), RAIN (mm/hr), TIME (hrs), RAIN (mm/hr), TIME (hrs), RAIN (mm/hr).

Table with 8 columns: TIME (hrs), RAIN (mm/hr), TIME (hrs), RAIN (mm/hr), TIME (hrs), RAIN (mm/hr), TIME (hrs), RAIN (mm/hr).

Table with 4 columns: CALIB NASHYD (0001), Area (ha), Curve Number (CN), # of Linear Res. (N). Includes U.H. Tp (hrs).

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

Table with 8 columns: TIME (hrs), RAIN (mm/hr), TIME (hrs), RAIN (mm/hr), TIME (hrs), RAIN (mm/hr), TIME (hrs), RAIN (mm/hr). Includes header '--- TRANSFORMED HYETOGRAPH ---'.

4.000	1.58	10.000	4.33	16.000	1.97	22.00	1.18
4.083	1.58	10.083	4.73	16.083	1.58	22.08	1.18
4.167	1.58	10.167	4.73	16.167	1.58	22.17	1.18
4.250	1.58	10.250	4.73	16.250	1.58	22.25	1.18
4.333	1.58	10.333	5.91	16.333	1.97	22.33	1.18
4.417	1.58	10.417	5.91	16.417	1.97	22.42	1.18
4.500	1.58	10.500	5.91	16.500	1.97	22.50	1.18
4.583	1.58	10.583	6.30	16.583	1.58	22.58	1.18
4.667	1.58	10.667	6.30	16.667	1.58	22.67	1.18
4.750	1.58	10.750	6.30	16.750	1.58	22.75	1.18
4.833	1.58	10.833	9.46	16.833	1.97	22.83	1.18
4.917	1.58	10.917	9.46	16.917	1.97	22.92	1.18
5.000	1.58	11.000	9.46	17.000	1.97	23.00	1.18
5.083	1.58	11.083	9.46	17.083	1.58	23.08	1.18
5.167	1.58	11.167	9.46	17.167	1.58	23.17	1.18
5.250	1.58	11.250	9.46	17.250	1.58	23.25	1.18
5.333	1.58	11.333	29.15	17.333	1.97	23.33	1.18
5.417	1.58	11.417	29.16	17.417	1.97	23.42	1.18
5.500	1.58	11.500	29.16	17.500	1.97	23.50	1.18
5.583	1.58	11.583	120.56	17.583	1.58	23.58	1.18
5.667	1.58	11.667	120.56	17.667	1.58	23.67	1.18
5.750	1.58	11.750	120.56	17.750	1.58	23.75	1.18
5.833	1.58	11.833	14.20	17.833	1.97		
5.917	1.58	11.917	14.18	17.917	1.97		
6.000	1.58	12.000	14.18	18.000	1.97		

Unit Hyd Qpeak (cms)= 2.467

PEAK FLOW (cms)= 1.268 (i)
 TIME TO PEAK (hrs)= 13.083
 RUNOFF VOLUME (mm)= 24.306
 TOTAL RAINFALL (mm)= 98.205
 RUNOFF COEFFICIENT = 0.248

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

CALIB NASHYD (0101)	Area (ha)= 5.13	Curve Number (CN)= 54.1
ID= 1 DT= 5.0 min	Ia (mm)= 4.70	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.54	

Unit Hyd Qpeak (cms)= 0.363

PEAK FLOW (cms)= 0.176 (i)
 TIME TO PEAK (hrs)= 12.167
 RUNOFF VOLUME (mm)= 28.293
 TOTAL RAINFALL (mm)= 98.205
 RUNOFF COEFFICIENT = 0.288

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

RESERVOIR (0601)	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
IN= 2---> OUT= 1	0.0000	0.0000	0.3000	0.0752
DT= 5.0 min	0.0320	0.0244	0.7410	0.1015
	0.0910	0.0495	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0101)	5.130	0.176	12.17	28.29
OUTFLOW: ID= 1 (0601)	5.130	0.086	13.00	28.26

PEAK FLOW REDUCTION [Qout/Qin](%)= 48.71
 TIME SHIFT OF PEAK FLOW (min)= 50.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0473

CALIB NASHYD (0102)	Area (ha)= 2.96	Curve Number (CN)= 56.7
ID= 1 DT= 5.0 min	Ia (mm)= 4.60	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.30	

Unit Hyd Qpeak (cms)= 0.377

PEAK FLOW (cms)= 0.169 (i)
 TIME TO PEAK (hrs)= 11.917
 RUNOFF VOLUME (mm)= 30.456

TOTAL RAINFALL (mm)= 98.205
 RUNOFF COEFFICIENT = 0.310

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

RESERVOIR (0602)	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
IN= 2---> OUT= 1	0.0000	0.0000	0.3000	0.1019
DT= 5.0 min	0.0320	0.0331	0.7410	0.1376
	0.0910	0.0671	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0102)	2.960	0.169	11.92	30.46
OUTFLOW: ID= 1 (0602)	2.960	0.041	12.75	30.37

PEAK FLOW REDUCTION [Qout/Qin](%)= 23.98
 TIME SHIFT OF PEAK FLOW (min)= 50.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0381

ADD HYD (0802)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 (0601):	5.13	0.086	13.00	28.26
+ ID2= 2 (0602):	2.96	0.041	12.75	30.37
ID = 3 (0802):	8.09	0.126	13.00	29.03

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0803)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 (0001):	80.08	1.268	13.08	24.31
+ ID2= 2 (0802):	8.09	0.126	13.00	29.03
ID = 3 (0803):	88.17	1.394	13.00	24.74

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0002)	Area (ha)= 16.83	Curve Number (CN)= 55.7
ID= 1 DT= 5.0 min	Ia (mm)= 4.90	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.70	

Unit Hyd Qpeak (cms)= 0.918

PEAK FLOW (cms)= 0.501 (i)
 TIME TO PEAK (hrs)= 12.417
 RUNOFF VOLUME (mm)= 29.479
 TOTAL RAINFALL (mm)= 98.205
 RUNOFF COEFFICIENT = 0.300

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

ADD HYD (0800)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 (0002):	16.83	0.501	12.42	29.48
+ ID2= 2 (0803):	88.17	1.394	13.00	24.74
ID = 3 (0800):	105.00	1.786	12.83	25.50

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0003)	Area (ha)= 136.00	Curve Number (CN)= 52.1
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|ID= 1 DT= 5.0 min | Ia (mm)= 7.20 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.94

Unit Hyd Qpeak (cms)= 2.678

PEAK FLOW (cms)= 1.615 (i)
TIME TO PEAK (hrs)= 13.917
RUNOFF VOLUME (mm)= 25.520
TOTAL RAINFALL (mm)= 98.205
RUNOFF COEFFICIENT = 0.260

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

DUHYD (0400) |
Inlet Cap.=0.713 |
#of Inlets= 1 |
Total(cms)= 0.7
AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
TOTAL HYD.(ID= 1): 136.00 1.62 13.92 25.52
=====

MAJOR SYS.(ID= 2):	36.47	0.90	13.92	25.52
MINOR SYS.(ID= 3):	99.53	0.71	12.33	25.52

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0801) |
1 + 2 = 3
AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 1 (0400): 99.53 0.713 12.33 25.52
+ ID2= 2 (0800): 105.00 1.786 12.83 25.50
=====

ID = 3 (0801):	204.53	2.499	12.83	25.51
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NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

FINISH
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Appendix B: Post-Development Hydrology



Project:	Cedar Run Wakeboard Cable Park
File No.:	115232
Date:	Mar-17
Designed By:	DAM
Checked By:	DJH
Subject:	CN, IA and TP Calculations

CEDAR RUN WAKEBOARD CABLE PARK - CURVE NUMBER, INITIAL ABSTRACTION & TIME TO PEAK CALCULATIONS

CONDITIONS

Catchment Post 1 Area 77.7462 ha

WEIGHTED CN VALUE																										
Soil Series	Soil Series	Hydrologic Soil Group	Soil Texture	Runoff Coefficient Type	Catchment Soil Characteristics			Forest/Woodland			Pasture/Lawns			Meadows			Cultivated			Impervious			Wetland/Lakes/SWMF			Average CN for Soil Type
					Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	
Brs	BRIGHTON	A	Sand	1	42.76041	0.55	15.821	0.37	32	25.656	0.6	49	0	0	38	0	0	62	1.2828	0.03	100	0	0	50	44.24	
Ts	TECUMSETH	AB	Silt	1	30.32102	0.39	12.128	0.4	46	17.283	0.57	59	0	0	51	0	0	68	0.9096	0.03	100	0	0	50	55.03	
Gsl	GRANBY	B	Sand Loam	2	4.664772	0.06	3.0787	0.66	60	1.4461	0.31	69	0	0	65	0	0	74	0.1399	0.03	100	0	0	50	63.99	
	#N/A	#N/A	#N/A	#N/A	0		0	#N/A	0		#N/A	0		#N/A	0		#N/A	0		#N/A	0		#N/A	0		
	#N/A	#N/A	#N/A	#N/A	0		0	#N/A	0		#N/A	0		#N/A	0		#N/A	0		#N/A	0		#N/A	0		
Totals					77.7462	1	31.0285	0.3991		44.3853	0.5709		0	0	0	0	0	2.33239	0.03	0	0	0	0	49.6		

Time of Concentration Calculations

For Runoff Coefficients greater than 0.4

Bransby-Williams Formula

Maximum Catchment Elevation 217.50 m
 Minimum Catchment Elevation 186.00 m
 Catchment length 1800 m
 Catchment Slope 2%
 Catchment Area 77.7462 ha

Time of Concentration (Minutes) 59.36
 Time of Concentration (Hours) 0.99
 Time to Peak (2/3 x Time of Concentration) 0.66

Time to Peak	1.24 hrs
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For Runoff Coefficients less than 0.4

Airport Method

Maximum Catchment Elevation 217.5 m
 Minimum Catchment Elevation 186 m
 Catchment length 1800 m
 Catchment Slope 2%
 Catchment Area 77.7462 ha

Time of Concentration (Minutes) 111.73
 Time of Concentration (Hours) 1.86
 Time to Peak (2/3 x Time of Concentration) 1.24

Initial Abstraction	6.9055 mm
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Woods	10
Meadows	8
Cultivated	7
Lawns	5
Impervious	2

Runoff Coefficient	0.13
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Landuse Type	Soil Series				
	Brs	Ts	Gsl	0	0
Forest/Woodland	0.08	0.08	0.25	#N/A	#N/A
Cultivated	0.22	0.22	0.35	#N/A	#N/A
Pasture/Lawn	0.1	0.1	0.28	#N/A	#N/A
Impervious	0.95	0.95	0.95	#N/A	#N/A
Wetland/Lake/SWMF	0.05	0.05	0.05	#N/A	#N/A
Meadows	0.09	0.09	0.27	#N/A	#N/A
Soil Series Total	0.1181	0.1181	0.289	#N/A	#N/A



Project:	Cedar Run Wakeboard Cable Park
File No.:	115232
Date:	Mar-17
Designed By:	DAM
Checked By:	DJH
Subject:	CN, IA and TP Calculations

CEDAR RUN WAKEBOARD CABLE PARK - CURVE NUMBER, INITIAL ABSTRACTION & TIME TO PEAK CALCULATIONS

CONDITIONS

Catchment Post 2 Area 10.9257 ha

WEIGHTED CN VALUE																										
Soil Series	Soil Series	Hydrologic Soil Group	Soil Texture	Runoff Coefficient Type	Catchment Soil Characteristics			Forest/Woodland			Pasture/Lawns			Meadows			Cultivated			Impervious			Wetland/Lakes/SWMF			Average CN for Soil Type
					Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	
Brs	BRIGHTON	A	Sand	1	3.8240	0.35	0	0	0	32	3.3616	0.8791	49	0	0	38	0	0	62	0.4624	0.1209	100	0	0	50	55.16692
Gsl	GRANBY	B	Sand Loam	2	7.1017	0.65	0	0	0	60	5.5585	0.7827	69	0	0	65	0	0	74	1.5432	0.2173	100	0	0	50	75.7363
	#N/A	#N/A	#N/A	#N/A	0	0	0	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0
	#N/A	#N/A	#N/A	#N/A	0	0	0	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0
	#N/A	#N/A	#N/A	#N/A	0	0	0	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0
Totals					10.9257	1	0	0	0	8.9201	0.816433	0	0	0	0	0	0	0	2.0056	0.183567	0	0	0	0	68.5	

Time of Concentration Calculations

For Runoff Coefficients greater than 0.4

Bransby-Williams Formula

Maximum Catchment Elevation 205.00 m
 Minimum Catchment Elevation 185.00 m
 Catchment length 850 m
 Catchment Slope 2%
 Catchment Area 10.9257 ha

Time of Concentration (Minutes) 32.15
 Time of Concentration (Hours) 0.54
 Time to Peak (2/3 x Time of Concentration) 0.36

Time to Peak	0.60 hrs
---------------------	-----------------

For Runoff Coefficients less than 0.4

Airport Method

Maximum Catchment Elevation 205 m
 Minimum Catchment Elevation 185 m
 Catchment length 850 m
 Catchment Slope 2%
 Catchment Area 10.9257 ha


Time of Concentration (Minutes) 53.92
 Time of Concentration (Hours) 0.90
 Time to Peak (2/3 x Time of Concentration) 0.60

Initial Abstraction	4.4493 mm
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Woods	10
Meadows	8
Cultivated	7
Lawns	5
Impervious	2

Runoff Coefficient	0.35
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Landuse Type	Soil Series				
	Brs	Gsl	0	0	0
Forest/Woodland	0.08	0.25	#N/A	#N/A	#N/A
Cultivated	0.22	0.35	#N/A	#N/A	#N/A
Pasture/Lawn	0.1	0.28	#N/A	#N/A	#N/A
Impervious	0.95	0.95	#N/A	#N/A	#N/A
Wetland/Lake/SWMF	0.05	0.05	#N/A	#N/A	#N/A
Meadows	0.09	0.27	#N/A	#N/A	#N/A
Soil Series Total	0.2028	0.4256	#N/A	#N/A	#N/A

	Project:	Cedar Run Wakeboard Cable Park
	File No.:	115232
	Date:	Mar-17
	Designed By:	DAM
	Checked By:	DJH
	Subject:	CN, IA and TP Calculations

CEDAR RUN WAKEBOARD CABLE PARK - CURVE NUMBER, INITIAL ABSTRACTION & TIME TO PEAK CALCULATIONS

CONDITIONS

Catchment 201 Area 5.0467 ha

WEIGHTED CN VALUE																										
Soil Series	Soil Series	Hydrologic Soil Group	Soil Texture	Runoff Coefficient Type	Catchment Soil Characteristics			Forest/Woodland			Pasture/Lawns			Meadows			Gravel		Impervious		Wetland/Lakes/SWMF			Average CN for Soil Type		
					Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	Area		Percent	CN
Brs	BRIGHTON	A	Sand	1	5.0467	1	0	0	32	4.6097	0.9134	49	0	0	0	38	0	0	89	0.2321	0.046	100	0.2049	0.0406	50	51.3866
	#N/A	#N/A	#N/A	#N/A	0	0	0	0	#N/A	0	0	#N/A	0	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	#N/A	0	
	#N/A	#N/A	#N/A	#N/A	0	0	0	0	#N/A	0	0	#N/A	0	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	#N/A	0	
	#N/A	#N/A	#N/A	#N/A	0	0	0	0	#N/A	0	0	#N/A	0	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	#N/A	0	
	#N/A	#N/A	#N/A	#N/A	0	0	0	0	#N/A	0	0	#N/A	0	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	#N/A	0	
				Totals	5.0467	1	0	0		4.60966	0.9134		0	0	0	0	0	0	0.23215	0.046	0.2049	0.0406		51.4		

Time of Concentration Calculations

For Runoff Coefficients greater than 0.4

Bransby-Williams Formula

Maximum Catchment Elevation 200.00 m
 Minimum Catchment Elevation 197.00 m
 Catchment length 280 m
 Catchment Slope 1%
 Catchment Area 5.0467 ha

Time of Concentration (Minutes) 13.39
 Time of Concentration (Hours) 0.22
 Time to Peak (2/3 x Time of Concentration) 0.15

Time to Peak	0.57 hrs
---------------------	-----------------

For Runoff Coefficients less than 0.4

Airport Method

Maximum Catchment Elevation 200 m
 Minimum Catchment Elevation 197 m
 Catchment length 280 m
 Catchment Slope 1%
 Catchment Area 5.0467 ha


Time of Concentration (Minutes) 51.35
 Time of Concentration (Hours) 0.86
 Time to Peak (2/3 x Time of Concentration) 0.57

Initial Abstraction	4.659 mm
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Woods	10
Meadows	8
Gravel	3
Lawns	5
Wetland	12
Impervious	2

Runoff Coefficient	0.14
---------------------------	-------------

Landuse Type	Soil Series				
	Brs	0	0	0	0
Forest/Woodland	0.08	#N/A	#N/A	#N/A	#N/A
Gravel	0.6	#N/A	#N/A	#N/A	#N/A
Pasture/Lawn	0.1	#N/A	#N/A	#N/A	#N/A
Impervious	0.95	#N/A	#N/A	#N/A	#N/A
Wetland/Lake/SWMF	0.05	#N/A	#N/A	#N/A	#N/A
Meadows	0.09	#N/A	#N/A	#N/A	#N/A
Soil Series Total	0.1371	#N/A	#N/A	#N/A	#N/A

	Project:	Cedar Run Wakeboard Cable Park
	File No.:	115232
	Date:	Mar-17
	Designed By:	DAM
	Checked By:	DJH
	Subject:	CN, IA and TP Calculations

CEDAR RUN WAKEBOARD CABLE PARK - CURVE NUMBER, INITIAL ABSTRACTION & TIME TO PEAK CALCULATIONS

CONDITIONS

Catchment 202 Area 6.3465 ha

WEIGHTED CN VALUE																											
Soil Series	Soil Series	Hydrologic Soil Group	Soil Texture	Runoff Coefficient Type	Catchment Soil Characteristics			Forest/Woodland			Pasture/Lawns			Meadows			Cultivated			Impervious			Wetland/Lakes/SWMF			Average CN for Soil Type	
					Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	Area	Percent	CN		
Brs	BRIGHTON	A	Sand	1	6.3465	1	0	0	0	32	5.0168	0.79048	49	0	0	0	38	0	0	62	1.1041	0.174	100	0.2256	0.0355	50	57.90802
	#N/A	#N/A	#N/A	#N/A	0	0	0	0	0	#N/A	0	0.89	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0
	#N/A	#N/A	#N/A	#N/A	0	0	0	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0
	#N/A	#N/A	#N/A	#N/A	0	0	0	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0
	#N/A	#N/A	#N/A	#N/A	0	0	0	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0
Totals					6.3465	1	0	0	0	32	5.0168	0.79048	49	0	0	0	38	0	0	62	1.1041	0.174	100	0.2256	0.0355	50	57.9

Time of Concentration Calculations

For Runoff Coefficients greater than 0.4

Bransby-Williams Formula

Maximum Catchment Elevation 204.00 m
 Minimum Catchment Elevation 196.50 m
 Catchment length 445 m
 Catchment Slope 2%
 Catchment Area 6.3465 ha

Time of Concentration (Minutes) 19.00
 Time of Concentration (Hours) 0.32
 Time to Peak (2/3 x Time of Concentration) 0.21

Time to Peak 0.55 hrs

For Runoff Coefficients less than 0.4

Airport Method

Maximum Catchment Elevation 204 m
 Minimum Catchment Elevation 196.5 m
 Catchment length 445 m
 Catchment Slope 2%
 Catchment Area 6.3465 ha


Time of Concentration (Minutes) 49.43
 Time of Concentration (Hours) 0.82
 Time to Peak (2/3 x Time of Concentration) 0.55

Initial Abstraction 4.72692 mm

Woods	10
Meadows	8
Cultivated	7
Lawns	5
Wetland	12
Impervious	2

Runoff Coefficient 0.25

Landuse Type	Soil Series				
	Brs	0	0	0	0
Forest/Woodland	0.08	#N/A	#N/A	#N/A	#N/A
Cultivated	0.22	#N/A	#N/A	#N/A	#N/A
Pasture/Lawn	0.1	#N/A	#N/A	#N/A	#N/A
Impervious	0.95	#N/A	#N/A	#N/A	#N/A
Wetland/Lake/SWMF	0.05	#N/A	#N/A	#N/A	#N/A
Meadows	0.09	#N/A	#N/A	#N/A	#N/A
Soil Series Total	0.2461	#N/A	#N/A	#N/A	#N/A


	Project :	Cedar Run Wakeboard Cable Park
	File No.	115232
	Date:	Sep-18
	Designed By:	DAM
	Checked By:	DJH
	Subject:	Pond No. 3 Storage-Volume Table

RETROFITTED POND No. 3 - STAGE-VOLUME TABLE

Wet Cell

Side Slope 3:1
Bottom Elevation 192.75 m
Water Level 194.90 m
Stage 0.1 m

STAGE-VOLUME TABLE									
Elevation	Pond Depth	Pond Area	Average Pond Area	Volume					
				Dead Storage	Accum. Dead Storage	Active Storage	Accum. Active Storage	Accum. Total Storage	Accum. Total Storage
(m)	(m)	(sq.m)	(sq.m)	(cu.m)	(cu.m)	(cu.m)	(cu.m)	(cu.m)	(ha-m)
192.75	0.00	165.00							
192.85	0.10	218.72	191.86	19	19			19	0.0019
192.95	0.20	272.44	245.58	25	44			44	0.0044
193.05	0.30	326.16	299.30	30	74			74	0.0074
193.15	0.40	379.88	353.02	35	109			109	0.0109
193.25	0.50	433.60	406.74	41	150			150	0.0150
193.35	0.60	487.33	460.47	46	196			196	0.0196
193.45	0.70	541.05	514.19	51	247			247	0.0247
193.55	0.80	594.77	567.91	57	304			304	0.0304
193.65	0.90	648.49	621.63	62	366			366	0.0366
193.75	1.00	702.21	675.35	68	434			434	0.0434
193.85	1.10	755.93	729.07	73	507			507	0.0507
193.95	1.20	809.65	782.79	78	585			585	0.0585
194.05	1.30	863.37	836.51	84	668			668	0.0668
194.15	1.40	917.09	890.23	89	757			757	0.0757
194.25	1.50	970.81	943.95	94	852			852	0.0852
194.35	1.60	1024.53	997.67	100	952			952	0.0952
194.45	1.70	1078.26	1051.40	105	1057			1057	0.1057
194.55	1.80	1131.98	1105.12	111	1167			1167	0.1167
194.65	1.90	1185.70	1158.84	116	1283			1283	0.1283
194.75	2.00	1239.42	1212.56	121	1404			1404	0.1404
194.85	2.10	1293.14	1266.28	127	1404			1404	0.1404
194.90	2.15	1320.00	1279.71	64	1404			1404	0.1404
194.95	2.20	1353.27	1323.20		1404	66	66	1471	0.1471
195.05	2.30	1419.81	1386.54		1404	139	205	1609	0.1609
195.15	2.40	1486.35	1453.08		1404	145	350	1755	0.1755
195.25	2.50	1552.88	1519.62		1404	152	502	1907	0.1907
195.35	2.60	1619.42	1586.15		1404	159	661	2065	0.2065
195.45	2.70	1685.96	1652.69		1404	165	826	2230	0.2230
195.55	2.80	1752.50	1719.23		1404	172	998	2402	0.2402
195.65	2.90	1819.04	1785.77		1404	179	1176	2581	0.2581
195.75	3.00	1885.58	1852.31		1404	185	1362	2766	0.2766
195.85	3.10	1952.12	1918.85		1404	192	1554	2958	0.2958
195.95	3.20	2018.65	1985.38		1404	199	1752	3157	0.3157
196.05	3.30	2085.19	2051.92		1404	205	1957	3362	0.3362
196.15	3.40	2151.73	2118.46		1404	212	2169	3574	0.3574
196.20	3.45	2185.00	2168.37		1404	108	2278	3682	0.3682

	Project:	Cedar Run Wakeboard Cable Park
	File No.:	115232
	Date:	Sep-18
	Designed By:	DAM
	Checked By:	DJH
	Subject:	Pond No. 3 Stage-Discharge Table

RETROFITTED POND No. 3 - STAGE-DISCHARGE TABLE


Primary Low Flow Outlet

Type	Orifice	Pipe
Diameter (mm)	100	375
Area (sq.m)	0.007854	0.1104466
Coefficient	0.63	0.63
Invert (m)	194.9	194.9

Secondary Outlet/Overflow Spillway

Type	DICB	Overflow
Weir Length (m)	0.6	2
Sill Elevation (m)	195.5	195.65
Coefficient	-	1.46
Side Slope (H:V)	4	3

STAGE-DISCHARGE TABLE										
Pond Water Level (m)	Primary Low Flow Discharge				Secondary Outlet/Overflow Spillway Discharge				Total Pond Discharge (cms)	Outlet Control
	Orifice		Pipe		DICB		Overflow			
	Head (m)	Discharge (cms)	Head (m)	Discharge (cms)	Head (m)	Discharge (cms)	Head (m)	Discharge (cms)		
194.90	0.00	0.00	0.00	0.00	0.00	0.0000	0.00	0.0000	0.0000	Orifice/DICB
194.95	0.05	0.00	0.05	0.00	0.00	0.0000	0.00	0.0000	0.0014	Orifice/DICB
195.05	0.10	0.01	0.15	0.03	0.00	0.0000	0.00	0.0000	0.0069	Orifice/DICB
195.15	0.20	0.01	0.06	0.08	0.00	0.0000	0.00	0.0000	0.0098	Orifice/DICB
195.25	0.30	0.01	0.16	0.12	0.00	0.0000	0.00	0.0000	0.0120	Orifice/DICB
195.35	0.40	0.01	0.26	0.16	0.00	0.0000	0.00	0.0000	0.0139	Orifice/DICB
195.45	0.50	0.02	0.36	0.19	0.00	0.0000	0.00	0.0000	0.0155	Orifice/DICB
195.55	0.60	0.02	0.46	0.21	0.05	0.0224	0.00	0.0000	0.0394	Orifice/DICB
195.65	0.70	0.02	0.56	0.23	0.15	0.1123	0.00	0.0000	0.1306	Orifice/DICB
195.75	0.80	0.02	0.66	0.25	0.25	0.2725	0.10	0.1025	0.3534	Orifice/DICB
195.85	0.90	0.02	0.76	0.27	0.35	0.5032	0.20	0.3355	0.6046	Orifice/DICB
195.95	1.00	0.02	0.86	0.29	0.45	0.8042	0.30	0.6880	0.9742	Orifice/DICB
196.05	1.10	0.02	0.96	0.30	0.55	1.1757	0.40	1.1641	1.4665	Orifice/DICB
196.15	1.20	0.02	1.06	0.32	0.65	1.6175	0.50	1.7705	2.0882	Orifice/DICB
196.20	1.25	0.02	1.11	0.33	0.70	1.8648	0.55	2.1249	2.4500	Orifice/DICB

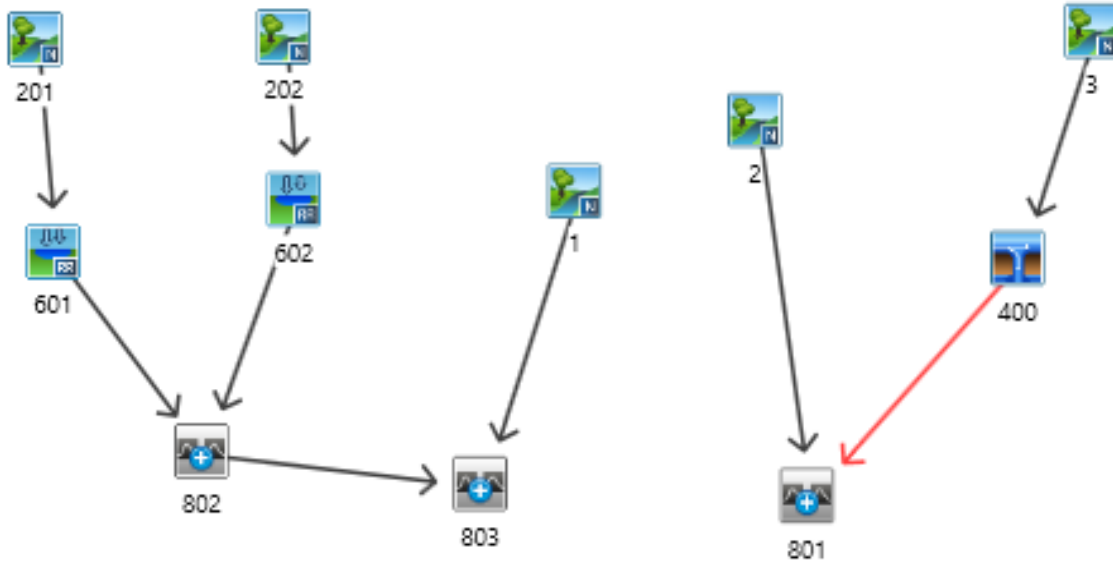
	Project:	Cedar Run Wakeboard Cable Park
	File No:	115232
	Date:	Sep-18
	Designed By:	DAM
	Checked By:	DJH
	Subject:	Pond No. 3 Stage-Storage-Discharge Table

RETROFITTED POND No. 3 - STAGE-STORAGE-DISCHARGE TABLE

	Wet Cell		Primary Low Flow Outlet		
Side Slope	3:1		Type	Orifice	Pipe
Bottom Elevation	192.75 m		Diameter (mm)	100.00	375.00
Static Water	194.90 m		Invert(m)	194.90	194.90
Stage	0.10 m				
			Secondary Outlet/Overflow Spillway		
			Type	DICB	Overflow
			Length(m)	0.60	2.00
			Sill Elevation(m)	195.5	195.65

STAGE-STORAGE-DISCHARGE TABLE									
Pond Water Level	Primary Low Flow Discharge		DICB Discharge	Overflow Discharge	Total Pond Discharge	Outlet Control	Pond Storage Volume		
	Orifice Discharge	Pipe Discharge					Dead Storage	Active Storage	Total Storage
	(m)	(cms)					(cms)	(cu.m)	(cu.m)
194.90	0.0000	0.0000	0.0000	0.0000	0.0000	Orifice/DICB	1404	0	1404
194.95	0.0014	0.0032	0.0000	0.0000	0.0014	Orifice/DICB	1404	66	1471
195.05	0.0069	0.0264	0.0000	0.0000	0.0069	Orifice/DICB	1404	205	1609
195.15	0.0098	0.0771	0.0000	0.0000	0.0098	Orifice/DICB	1404	350	1755
195.25	0.0120	0.1242	0.0000	0.0000	0.0120	Orifice/DICB	1404	502	1907
195.35	0.0139	0.1579	0.0000	0.0000	0.0139	Orifice/DICB	1404	661	2065
195.45	0.0155	0.1856	0.0000	0.0000	0.0155	Orifice/DICB	1404	826	2230
195.55	0.0170	0.2096	0.0224	0.0000	0.0394	Orifice/DICB	1404	998	2402
195.65	0.0183	0.2312	0.1123	0.0000	0.1306	Orifice/DICB	1404	1176	2581
195.75	0.0196	0.2509	0.2725	0.1025	0.3534	Orifice/DICB	1404	1362	2766
195.85	0.0208	0.2691	0.5032	0.3355	0.6046	Orifice/DICB	1404	1554	2958
195.95	0.0219	0.2862	0.8042	0.6880	0.9742	Orifice/DICB	1404	1752	3157
196.05	0.0230	0.3024	1.1757	1.1641	1.4665	Orifice/DICB	1404	1957	3362
196.15	0.0240	0.3177	1.6175	1.7705	2.0882	Orifice/DICB	1404	2169	3574
196.20	0.0245	0.3251	1.8648	2.1249	2.4500	Orifice/DICB	1404	2278	3682

PROJECT	Cedar Run Wakeboard Cable Park	FILE	115232
		DATE	April 2020
SUBJECT	Post Development VO Schematic	NAME	ARO
		PAGE	1 OF 1



NASHYD



ROUTE PIPE



DUHYD



STANDHYD



ROUTE CHANNEL



DIVERT HYD



ADDHYD



ROUTE RESERVOIR

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

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OOO TTTT TTTT 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 5.0\VO2\voin.dat
 Output filename: C:\Users\ALOverholt\AppData\Local\Civica\WH5\c1119499-7c01-4a85-b304-3a19a257e6a9\02b0014d-0e22-48ea-ab9a-2174fd45e55f\s
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DATE: 04-02-2020

TIME: 11:07:58

USER:

COMMENTS: _____

 ** SIMULATION : Run 01 **

25 mm Chicago

```

-----
READ STORM
-----
Ptotal= 24.97 mm
-----

```

Filename: C:\Users\ALOverholt\AppData\Local\Temp\cb481504-fc3d-4402-bd42-40cd28c5d654\10a552b2
 Comments: OWEN SOUND 25 mm (from a 2 year-4hr stor

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.10	1.29	1.10	2.81	2.10	13.05	3.10	2.04
0.20	1.36	1.20	3.22	2.20	8.44	3.20	1.89
0.30	1.44	1.30	3.77	2.30	6.21	3.30	1.76
0.40	1.53	1.40	4.55	2.40	4.91	3.40	1.65
0.50	1.63	1.50	5.77	2.50	4.06	3.50	1.55
0.60	1.75	1.60	7.86	2.60	3.47	3.60	1.46
0.70	1.89	1.70	12.27	2.70	3.03	3.70	1.39
0.80	2.06	1.80	26.17	2.80	2.70	3.80	1.32
0.90	2.26	1.90	72.58	2.90	2.43	3.90	1.26
1.00	2.50	2.00	26.96	3.00	2.22	4.00	1.20

```

-----
CALIB
NASHYD ( 0002)
ID= 1 DT= 5.0 min
-----

```

Area (ha)= 10.93 Curve Number (CN)= 68.5
 Ia (mm)= 4.40 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.60

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	1.29	1.083	2.81	2.083	13.05	3.08	2.04
0.167	1.35	1.167	3.14	2.167	9.36	3.17	1.92
0.250	1.41	1.250	3.55	2.250	7.10	3.25	1.81
0.333	1.48	1.333	4.08	2.333	5.69	3.33	1.72
0.417	1.55	1.417	4.79	2.417	4.74	3.42	1.63
0.500	1.63	1.500	5.77	2.500	4.06	3.50	1.55
0.583	1.75	1.583	7.86	2.583	3.47	3.58	1.46
0.667	1.86	1.667	11.39	2.667	3.12	3.67	1.40
0.750	1.99	1.750	20.61	2.750	2.83	3.75	1.35
0.833	2.14	1.833	44.73	2.833	2.59	3.83	1.30
0.917	2.31	1.917	63.46	2.917	2.39	3.92	1.25
1.000	2.50	2.000	26.96	3.000	2.22	4.00	1.20

Unit Hyd Qpeak (cms)= 0.696

PEAK FLOW (cms)= 0.057 (i)
 TIME TO PEAK (hrs)= 2.667
 RUNOFF VOLUME (mm)= 3.080
 TOTAL RAINFALL (mm)= 24.971
 RUNOFF COEFFICIENT = 0.123

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

```

-----
READ STORM
-----
Ptotal= 24.97 mm
-----

```

Filename: C:\Users\ALOverholt\AppData\Local\Temp\cb481504-fc3d-4402-bd42-40cd28c5d654\10a552b2
 Comments: OWEN SOUND 25 mm (from a 2 year-4hr stor

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.10	1.29	1.10	2.81	2.10	13.05	3.10	2.04
0.20	1.36	1.20	3.22	2.20	8.44	3.20	1.89
0.30	1.44	1.30	3.77	2.30	6.21	3.30	1.76
0.40	1.53	1.40	4.55	2.40	4.91	3.40	1.65
0.50	1.63	1.50	5.77	2.50	4.06	3.50	1.55
0.60	1.75	1.60	7.86	2.60	3.47	3.60	1.46
0.70	1.89	1.70	12.27	2.70	3.03	3.70	1.39
0.80	2.06	1.80	26.17	2.80	2.70	3.80	1.32
0.90	2.26	1.90	72.58	2.90	2.43	3.90	1.26
1.00	2.50	2.00	26.96	3.00	2.22	4.00	1.20

```

-----
CALIB
NASHYD ( 0003)
ID= 1 DT= 5.0 min
-----

```

Area (ha)= 136.00 Curve Number (CN)= 52.1
 Ia (mm)= 7.20 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 1.94

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	1.29	1.083	2.81	2.083	13.05	3.08	2.04
0.167	1.35	1.167	3.14	2.167	9.36	3.17	1.92
0.250	1.41	1.250	3.55	2.250	7.10	3.25	1.81
0.333	1.48	1.333	4.08	2.333	5.69	3.33	1.72
0.417	1.55	1.417	4.79	2.417	4.74	3.42	1.63
0.500	1.63	1.500	5.77	2.500	4.06	3.50	1.55
0.583	1.75	1.583	7.86	2.583	3.47	3.58	1.46
0.667	1.86	1.667	11.39	2.667	3.12	3.67	1.40
0.750	1.99	1.750	20.61	2.750	2.83	3.75	1.35
0.833	2.14	1.833	44.73	2.833	2.59	3.83	1.30
0.917	2.31	1.917	63.46	2.917	2.39	3.92	1.25
1.000	2.50	2.000	26.96	3.000	2.22	4.00	1.20

Unit Hyd Qpeak (cms)= 2.678

PEAK FLOW (cms)= 0.120 (i)
 TIME TO PEAK (hrs)= 4.417
 RUNOFF VOLUME (mm)= 1.257
 TOTAL RAINFALL (mm)= 24.971
 RUNOFF COEFFICIENT = 0.050

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

DUHYD (0400)
 Inlet Cap.= 0.713
 #of Inlets= 1
 Total(cms)= 0.7

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	136.00	0.12	4.42	1.26
MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00
MINOR SYS.(ID= 3):	136.00	0.12	4.42	1.26

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0801)
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0002):	10.93	0.057	2.67	3.08
+ ID2= 2 (0400):	136.00	0.120	4.42	1.26
ID = 3 (0801):	146.93	0.135	4.08	1.39

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

READ STORM
 Ptotal= 24.97 mm

Filename: C:\Users\ALOverholt\AppData\Local\Temp\cb481504-fc3d-4402-bd42-40cd28c5d654\10a552b2
 Comments: OWEN SOUND 25 mm (from a 2 year-4hr stor

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.10	1.29	1.10	2.81	2.10	13.05	3.10	2.04
0.20	1.36	1.20	3.22	2.20	8.44	3.20	1.89
0.30	1.44	1.30	3.77	2.30	6.21	3.30	1.76
0.40	1.53	1.40	4.55	2.40	4.91	3.40	1.65
0.50	1.63	1.50	5.77	2.50	4.06	3.50	1.55
0.60	1.75	1.60	7.86	2.60	3.47	3.60	1.46
0.70	1.89	1.70	12.27	2.70	3.03	3.70	1.39
0.80	2.06	1.80	26.17	2.80	2.70	3.80	1.32
0.90	2.26	1.90	72.58	2.90	2.43	3.90	1.26
1.00	2.50	2.00	26.96	3.00	2.22	4.00	1.20

CALIB
 NASHYD (0001)
 ID= 1 DT= 5.0 min

Area (ha)= 77.75
 Curve Number (CN)= 49.6
 Ta (mm)= 6.91
 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 1.24

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	1.29	1.083	2.81	2.083	13.05	3.08	2.04
0.167	1.35	1.167	3.14	2.167	9.36	3.17	1.92
0.250	1.41	1.250	3.55	2.250	7.10	3.25	1.81
0.333	1.48	1.333	4.08	2.333	5.69	3.33	1.72
0.417	1.55	1.417	4.79	2.417	4.74	3.42	1.63
0.500	1.63	1.500	5.77	2.500	4.06	3.50	1.55
0.583	1.75	1.583	7.86	2.583	3.47	3.58	1.46
0.667	1.86	1.667	11.39	2.667	3.12	3.67	1.40
0.750	1.99	1.750	20.61	2.750	2.83	3.75	1.35
0.833	2.14	1.833	44.73	2.833	2.59	3.83	1.30
0.917	2.31	1.917	63.46	2.917	2.39	3.92	1.25
1.000	2.50	2.000	26.96	3.000	2.22	4.00	1.20

Unit Hyd Qpeak (cms)= 2.395

PEAK FLOW (cms)= 0.089 (i)
 TIME TO PEAK (hrs)= 3.583
 RUNOFF VOLUME (mm)= 1.181
 TOTAL RAINFALL (mm)= 24.971
 RUNOFF COEFFICIENT = 0.047

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

READ STORM
 Ptotal= 24.97 mm

Filename: C:\Users\ALOverholt\AppData\Local\Temp\cb481504-fc3d-4402-bd42-40cd28c5d654\10a552b2
 Comments: OWEN SOUND 25 mm (from a 2 year-4hr stor

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.10	1.29	1.10	2.81	2.10	13.05	3.10	2.04
0.20	1.36	1.20	3.22	2.20	8.44	3.20	1.89
0.30	1.44	1.30	3.77	2.30	6.21	3.30	1.76

0.40	1.53	1.40	4.55	2.40	4.91	3.40	1.65
0.50	1.63	1.50	5.77	2.50	4.06	3.50	1.55
0.60	1.75	1.60	7.86	2.60	3.47	3.60	1.46
0.70	1.89	1.70	12.27	2.70	3.03	3.70	1.39
0.80	2.06	1.80	26.17	2.80	2.70	3.80	1.32
0.90	2.26	1.90	72.58	2.90	2.43	3.90	1.26
1.00	2.50	2.00	26.96	3.00	2.22	4.00	1.20

CALIB
 NASHYD (0201) Area (ha)= 5.05 Curve Number (CN)= 51.4
 ID= 1 DT= 5.0 min Ia (mm)= 4.70 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.57

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	1.29	1.083	2.81	2.083	13.05	3.08	2.04
0.167	1.35	1.167	3.14	2.167	9.36	3.17	1.92
0.250	1.41	1.250	3.55	2.250	7.10	3.25	1.81
0.333	1.48	1.333	4.08	2.333	5.69	3.33	1.72
0.417	1.55	1.417	4.79	2.417	4.74	3.42	1.63
0.500	1.63	1.500	5.77	2.500	4.06	3.50	1.55
0.583	1.75	1.583	7.86	2.583	3.47	3.58	1.46
0.667	1.86	1.667	11.39	2.667	3.12	3.67	1.40
0.750	1.99	1.750	20.61	2.750	2.83	3.75	1.35
0.833	2.14	1.833	44.73	2.833	2.59	3.83	1.30
0.917	2.31	1.917	63.46	2.917	2.39	3.92	1.25
1.000	2.50	2.000	26.96	3.000	2.22	4.00	1.20

Unit Hyd Qpeak (cms)= 0.338

PEAK FLOW (cms)= 0.014 (i)
 TIME TO PEAK (hrs)= 2.583
 RUNOFF VOLUME (mm)= 1.577
 TOTAL RAINFALL (mm)= 24.971
 RUNOFF COEFFICIENT = 0.063

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

RESERVOIR(0601)
 IN= 2---> OUT= 1
 DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.3000	0.0752
0.0320	0.0244	0.7410	0.1015
0.0910	0.0495	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0201)	5.047	0.014	2.58	1.58
OUTFLOW: ID= 1 (0601)	5.047	0.006	3.75	1.54

PEAK FLOW REDUCTION [Qout/Qin](%)= 40.00
 TIME SHIFT OF PEAK FLOW (min)= 70.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0042

READ STORM
 Ptotal= 24.97 mm

Filename: C:\Users\ALOverholt\AppData\Local\Temp\cb481504-fc3d-4402-bd42-40cd28c5d654\10a552b2
 Comments: OWEN SOUND 25 mm (from a 2 year-4hr stor

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.10	1.29	1.10	2.81	2.10	13.05	3.10	2.04
0.20	1.36	1.20	3.22	2.20	8.44	3.20	1.89
0.30	1.44	1.30	3.77	2.30	6.21	3.30	1.76
0.40	1.53	1.40	4.55	2.40	4.91	3.40	1.65
0.50	1.63	1.50	5.77	2.50	4.06	3.50	1.55
0.60	1.75	1.60	7.86	2.60	3.47	3.60	1.46
0.70	1.89	1.70	12.27	2.70	3.03	3.70	1.39
0.80	2.06	1.80	26.17	2.80	2.70	3.80	1.32
0.90	2.26	1.90	72.58	2.90	2.43	3.90	1.26
1.00	2.50	2.00	26.96	3.00	2.22	4.00	1.20

CALIB
 NASHYD (0202)
 ID= 1 DT= 5.0 min

Area (ha)= 6.35 Curve Number (CN)= 57.9
 Ia (mm)= 4.70 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.55

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	1.29	1.083	2.81	2.083	13.05	3.08	2.04
0.167	1.35	1.167	3.14	2.167	9.36	3.17	1.92
0.250	1.41	1.250	3.55	2.250	7.10	3.25	1.81
0.333	1.48	1.333	4.08	2.333	5.69	3.33	1.72
0.417	1.55	1.417	4.79	2.417	4.74	3.42	1.63
0.500	1.63	1.500	5.77	2.500	4.06	3.50	1.55
0.583	1.75	1.583	7.86	2.583	3.47	3.58	1.46
0.667	1.86	1.667	11.39	2.667	3.12	3.67	1.40
0.750	1.99	1.750	20.61	2.750	2.83	3.75	1.35
0.833	2.14	1.833	44.73	2.833	2.59	3.83	1.30
0.917	2.31	1.917	63.46	2.917	2.39	3.92	1.25
1.000	2.50	2.000	26.96	3.000	2.22	4.00	1.20

Unit Hyd Qpeak (cms)= 0.441

PEAK FLOW (cms)= 0.023 (i)
 TIME TO PEAK (hrs)= 2.583
 RUNOFF VOLUME (mm)= 2.005
 TOTAL RAINFALL (mm)= 24.971
 RUNOFF COEFFICIENT = 0.080

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

RESERVOIR(0602)
 IN= 2---> OUT= 1
 DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
---------------	-----------------	---------------	-----------------

0.0000	0.0000	0.0394	0.0998
0.0000	0.0000	0.1306	0.1176
0.0014	0.0066	0.3534	0.1362
0.0069	0.0205	0.6046	0.1554
0.0098	0.0350	0.9742	0.1752
0.0120	0.0502	1.4665	0.1957
0.0139	0.0661	2.0882	0.2169
0.0155	0.0826	2.4500	0.2278

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0202)	6.346	0.023	2.58	2.00
OUTFLOW: ID= 1 (0602)	6.346	0.003	4.67	1.82

PEAK FLOW REDUCTION [Qout/Qin](%)= 12.95
 TIME SHIFT OF PEAK FLOW (min)=125.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0105

| ADD HYD (0802) |
 | 1 + 2 = 3 |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0601):	5.05	0.006	3.75	1.54
+ ID2= 2 (0602):	6.35	0.003	4.67	1.82
=====				
ID = 3 (0802):	11.39	0.008	4.08	1.69

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

| ADD HYD (0803) |
 | 1 + 2 = 3 |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0001):	77.75	0.089	3.58	1.18
+ ID2= 2 (0802):	11.39	0.008	4.08	1.69
=====				
ID = 3 (0803):	89.14	0.097	3.58	1.25

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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

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OOO TTTT TTTT 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 5.0\VO2\voin.dat
 Output filename: C:\Users\ALOverholt\AppData\Local\Civica\VH5
 \c1119499-7c01-4a85-b304-3a19a257e6a9\1d10519d-197a-494f-9008-7928b3e2ef16\s
 Summary filename: C:\Users\ALOverholt\AppData\Local\Civica\VH5
 \c1119499-7c01-4a85-b304-3a19a257e6a9\1d10519d-197a-494f-9008-7928b3e2ef16\s

DATE: 04-02-2020

TIME: 11:07:58

USER:

COMMENTS: _____

 ** SIMULATION : Run 02 **

2 Year Chicago

READ STORM
 Ptotal= 33.75 mm

Filename: C:\Users\ALOverholt\AppData
 ata\Local\Temp\
 cb481504-fc3d-4402-bd42-40cd28c5d654\b1686189
 Comments: OWEN SOUND 2 YEAR 4 HOUR DURATION CHICAG

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.10	1.75	1.10	3.80	2.10	17.64	3.10	2.75
0.20	1.84	1.20	4.35	2.20	11.41	3.20	2.55
0.30	1.95	1.30	5.09	2.30	8.39	3.30	2.38
0.40	2.07	1.40	6.16	2.40	6.63	3.40	2.23
0.50	2.21	1.50	7.80	2.50	5.49	3.50	2.09
0.60	2.37	1.60	10.63	2.60	4.69	3.60	1.98
0.70	2.56	1.70	16.59	2.70	4.10	3.70	1.88
0.80	2.78	1.80	35.38	2.80	3.65	3.80	1.78
0.90	3.05	1.90	98.09	2.90	3.29	3.90	1.70
1.00	3.38	2.00	36.45	3.00	2.99	4.00	1.63

CALIB
 NASHYD (0002)
 ID= 1 DT= 5.0 min

Area (ha)= 10.93 Curve Number (CN)= 68.5
 Ia (mm)= 4.40 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.60

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	1.75	1.083	3.80	2.083	17.64	3.08	2.75
0.167	1.82	1.167	4.24	2.167	12.66	3.17	2.59
0.250	1.91	1.250	4.79	2.250	9.60	3.25	2.45
0.333	2.00	1.333	5.52	2.333	7.69	3.33	2.32
0.417	2.10	1.417	6.49	2.417	6.40	3.42	2.20
0.500	2.21	1.500	7.80	2.500	5.49	3.50	2.09

0.583	2.37	1.583	10.63	2.583	4.69	3.58	1.98
0.667	2.52	1.667	15.40	2.667	4.22	3.67	1.90
0.750	2.69	1.750	27.86	2.750	3.83	3.75	1.82
0.833	2.89	1.833	60.46	2.833	3.51	3.83	1.75
0.917	3.12	1.917	85.76	2.917	3.23	3.92	1.69
1.000	3.38	2.000	36.45	3.000	2.99	4.00	1.63

Unit Hyd Qpeak (cms)= 0.696

PEAK FLOW (cms)= 0.112 (i)
 TIME TO PEAK (hrs)= 2.583
 RUNOFF VOLUME (mm)= 5.896
 TOTAL RAINFALL (mm)= 33.755
 RUNOFF COEFFICIENT = 0.175

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

READ STORM
 Ptotal= 33.75 mm
 Filename: C:\Users\ALOverholt\AppData\Local\Temp\cb481504-fc3d-4402-bd42-40cd28c5d654\b1686189
 Comments: OWEN SOUND 2 YEAR 4 HOUR DURATION CHICAG

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.10	1.75	1.10	3.80	2.10	17.64	3.10	2.75
0.20	1.84	1.20	4.35	2.20	11.41	3.20	2.55
0.30	1.95	1.30	5.09	2.30	8.39	3.30	2.38
0.40	2.07	1.40	6.16	2.40	6.63	3.40	2.23
0.50	2.21	1.50	7.80	2.50	5.49	3.50	2.09
0.60	2.37	1.60	10.63	2.60	4.69	3.60	1.98
0.70	2.56	1.70	16.59	2.70	4.10	3.70	1.88
0.80	2.78	1.80	35.38	2.80	3.65	3.80	1.78
0.90	3.05	1.90	98.09	2.90	3.29	3.90	1.70
1.00	3.38	2.00	36.45	3.00	2.99	4.00	1.63

CALIB NASHYD (0003)
 ID= 1 DT= 5.0 min
 Area (ha)= 136.00
 Ia (mm)= 7.20
 U.H. Tp(hrs)= 1.94
 Curve Number (CN)= 52.1
 # of Linear Res.(N)= 3.00

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	1.75	1.083	3.80	2.083	17.64	3.08	2.75
0.167	1.82	1.167	4.24	2.167	12.66	3.17	2.59
0.250	1.91	1.250	4.79	2.250	9.60	3.25	2.45
0.333	2.00	1.333	5.52	2.333	7.69	3.33	2.32
0.417	2.10	1.417	6.49	2.417	6.40	3.42	2.20
0.500	2.21	1.500	7.80	2.500	5.49	3.50	2.09
0.583	2.37	1.583	10.63	2.583	4.69	3.58	1.98
0.667	2.52	1.667	15.40	2.667	4.22	3.67	1.90
0.750	2.69	1.750	27.86	2.750	3.83	3.75	1.82
0.833	2.89	1.833	60.46	2.833	3.51	3.83	1.75
0.917	3.12	1.917	85.76	2.917	3.23	3.92	1.69
1.000	3.38	2.000	36.45	3.000	2.99	4.00	1.63

Unit Hyd Qpeak (cms)= 2.678

PEAK FLOW (cms)= 0.259 (i)
 TIME TO PEAK (hrs)= 4.333
 RUNOFF VOLUME (mm)= 2.711
 TOTAL RAINFALL (mm)= 33.755
 RUNOFF COEFFICIENT = 0.080

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

DUHYD (0400)
 Inlet Cap.= 0.713
 #of Inlets= 1
 Total(cms)= 0.7

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1): 136.00	0.26	4.33	2.71
MAJOR SYS.(ID= 2): 0.00	0.00	0.00	0.00
MINOR SYS.(ID= 3): 136.00	0.26	4.33	2.71

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0801)
 1 + 2 = 3

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0002):	10.93	0.112	2.58	5.90
+ ID2= 2 (0400):	136.00	0.259	4.33	2.71
ID = 3 (0801):	146.93	0.288	4.08	2.95

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

READ STORM
 Ptotal= 33.75 mm
 Filename: C:\Users\ALOverholt\AppData\Local\Temp\cb481504-fc3d-4402-bd42-40cd28c5d654\b1686189
 Comments: OWEN SOUND 2 YEAR 4 HOUR DURATION CHICAG

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.10	1.75	1.10	3.80	2.10	17.64	3.10	2.75
0.20	1.84	1.20	4.35	2.20	11.41	3.20	2.55
0.30	1.95	1.30	5.09	2.30	8.39	3.30	2.38
0.40	2.07	1.40	6.16	2.40	6.63	3.40	2.23
0.50	2.21	1.50	7.80	2.50	5.49	3.50	2.09
0.60	2.37	1.60	10.63	2.60	4.69	3.60	1.98
0.70	2.56	1.70	16.59	2.70	4.10	3.70	1.88
0.80	2.78	1.80	35.38	2.80	3.65	3.80	1.78
0.90	3.05	1.90	98.09	2.90	3.29	3.90	1.70
1.00	3.38	2.00	36.45	3.00	2.99	4.00	1.63

CALIB NASHYD (0001)
 Area (ha)= 77.75
 Curve Number (CN)= 49.6

|ID= 1 DT= 5.0 min | Ia (mm)= 6.91 # of Linear Res.(N)= 3.00
 ----- U.H. Tp(hrs)= 1.24

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	1.75	1.083	3.80	2.083	17.64	3.08	2.75
0.167	1.82	1.167	4.24	2.167	12.66	3.17	2.59
0.250	1.91	1.250	4.79	2.250	9.60	3.25	2.45
0.333	2.00	1.333	5.52	2.333	7.69	3.33	2.32
0.417	2.10	1.417	6.49	2.417	6.40	3.42	2.20
0.500	2.21	1.500	7.80	2.500	5.49	3.50	2.09
0.583	2.37	1.583	10.63	2.583	4.69	3.58	1.98
0.667	2.52	1.667	15.40	2.667	4.22	3.67	1.90
0.750	2.69	1.750	27.86	2.750	3.83	3.75	1.82
0.833	2.89	1.833	60.46	2.833	3.51	3.83	1.75
0.917	3.12	1.917	85.76	2.917	3.23	3.92	1.69
1.000	3.38	2.000	36.45	3.000	2.99	4.00	1.63

Unit Hyd Qpeak (cms)= 2.395

PEAK FLOW (cms)= 0.194 (i)
 TIME TO PEAK (hrs)= 3.500
 RUNOFF VOLUME (mm)= 2.529
 TOTAL RAINFALL (mm)= 33.755
 RUNOFF COEFFICIENT = 0.075

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

 READ STORM
 Ptotal= 33.75 mm

 Filename: C:\Users\ALOverholt\AppData
 ata\Local\Temp\
 cb481504-fc3d-4402-bd42-40cd28c5d654\b1686189
 Comments: OWEN SOUND 2 YEAR 4 HOUR DURATION CHICAG

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.10	1.75	1.10	3.80	2.10	17.64	3.10	2.75
0.20	1.84	1.20	4.35	2.20	11.41	3.20	2.55
0.30	1.95	1.30	5.09	2.30	8.39	3.30	2.38
0.40	2.07	1.40	6.16	2.40	6.63	3.40	2.23
0.50	2.21	1.50	7.80	2.50	5.49	3.50	2.09
0.60	2.37	1.60	10.63	2.60	4.69	3.60	1.98
0.70	2.56	1.70	16.59	2.70	4.10	3.70	1.88
0.80	2.78	1.80	35.38	2.80	3.65	3.80	1.78
0.90	3.05	1.90	98.09	2.90	3.29	3.90	1.70
1.00	3.38	2.00	36.45	3.00	2.99	4.00	1.63

 CALIB
 NASHYD (0201)
 ID= 1 DT= 5.0 min | Area (ha)= 5.05 Curve Number (CN)= 51.4
 U.H. Tp(hrs)= 0.57 # of Linear Res.(N)= 3.00

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	1.75	1.083	3.80	2.083	17.64	3.08	2.75
0.167	1.82	1.167	4.24	2.167	12.66	3.17	2.59
0.250	1.91	1.250	4.79	2.250	9.60	3.25	2.45
0.333	2.00	1.333	5.52	2.333	7.69	3.33	2.32
0.417	2.10	1.417	6.49	2.417	6.40	3.42	2.20
0.500	2.21	1.500	7.80	2.500	5.49	3.50	2.09
0.583	2.37	1.583	10.63	2.583	4.69	3.58	1.98
0.667	2.52	1.667	15.40	2.667	4.22	3.67	1.90
0.750	2.69	1.750	27.86	2.750	3.83	3.75	1.82
0.833	2.89	1.833	60.46	2.833	3.51	3.83	1.75
0.917	3.12	1.917	85.76	2.917	3.23	3.92	1.69
1.000	3.38	2.000	36.45	3.000	2.99	4.00	1.63

Unit Hyd Qpeak (cms)= 0.338

PEAK FLOW (cms)= 0.028 (i)
 TIME TO PEAK (hrs)= 2.583
 RUNOFF VOLUME (mm)= 3.135
 TOTAL RAINFALL (mm)= 33.755
 RUNOFF COEFFICIENT = 0.093

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

 RESERVOIR(0601)
 IN= 2---> OUT= 1
 DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.3000	0.0752
0.0320	0.0244	0.7410	0.1015
0.0910	0.0495	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0201)	5.047	0.028	2.58	3.14
OUTFLOW: ID= 1 (0601)	5.047	0.011	3.75	3.10

PEAK FLOW REDUCTION [Qout/Qin](%)= 39.46
 TIME SHIFT OF PEAK FLOW (min)= 70.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0085

 READ STORM
 Ptotal= 33.75 mm

 Filename: C:\Users\ALOverholt\AppData
 ata\Local\Temp\
 cb481504-fc3d-4402-bd42-40cd28c5d654\b1686189
 Comments: OWEN SOUND 2 YEAR 4 HOUR DURATION CHICAG

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.10	1.75	1.10	3.80	2.10	17.64	3.10	2.75
0.20	1.84	1.20	4.35	2.20	11.41	3.20	2.55
0.30	1.95	1.30	5.09	2.30	8.39	3.30	2.38
0.40	2.07	1.40	6.16	2.40	6.63	3.40	2.23
0.50	2.21	1.50	7.80	2.50	5.49	3.50	2.09
0.60	2.37	1.60	10.63	2.60	4.69	3.60	1.98
0.70	2.56	1.70	16.59	2.70	4.10	3.70	1.88
0.80	2.78	1.80	35.38	2.80	3.65	3.80	1.78
0.90	3.05	1.90	98.09	2.90	3.29	3.90	1.70

1.00 3.38 | 2.00 36.45 | 3.00 2.99 | 4.00 1.63

```

-----
| CALIB
| NASHYD ( 0202) | Area (ha)= 6.35 Curve Number (CN)= 57.9
| ID= 1 DT= 5.0 min | Ia (mm)= 4.70 # of Linear Res.(N)= 3.00
| U.H. Tp(hrs)= 0.55
-----

```

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	1.75	1.083	3.80	2.083	17.64	3.08	2.75
0.167	1.82	1.167	4.24	2.167	12.66	3.17	2.59
0.250	1.91	1.250	4.79	2.250	9.60	3.25	2.45
0.333	2.00	1.333	5.52	2.333	7.69	3.33	2.32
0.417	2.10	1.417	6.49	2.417	6.40	3.42	2.20
0.500	2.21	1.500	7.80	2.500	5.49	3.50	2.09
0.583	2.37	1.583	10.63	2.583	4.69	3.58	1.98
0.667	2.52	1.667	15.40	2.667	4.22	3.67	1.90
0.750	2.69	1.750	27.86	2.750	3.83	3.75	1.82
0.833	2.89	1.833	60.46	2.833	3.51	3.83	1.75
0.917	3.12	1.917	85.76	2.917	3.23	3.92	1.69
1.000	3.38	2.000	36.45	3.000	2.99	4.00	1.63

Unit Hyd Qpeak (cms)= 0.441

PEAK FLOW (cms)= 0.046 (i)
 TIME TO PEAK (hrs)= 2.583
 RUNOFF VOLUME (mm)= 3.949
 TOTAL RAINFALL (mm)= 33.755
 RUNOFF COEFFICIENT = 0.117

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

```

-----
| RESERVOIR( 0602) |
| IN= 2---> OUT= 1 |
| DT= 5.0 min      |
-----

```

OUTFLOW	STORAGE	OUTFLOW	STORAGE
(cms)	(ha.m.)	(cms)	(ha.m.)
0.0000	0.0000	0.0394	0.0998
0.0000	0.0000	0.1306	0.1176
0.0014	0.0066	0.3534	0.1362
0.0069	0.0205	0.6046	0.1554
0.0098	0.0350	0.9742	0.1752
0.0120	0.0502	1.4665	0.1957
0.0139	0.0661	2.0882	0.2169
0.0155	0.0826	2.4500	0.2278

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 (0202)	6.346	0.046	2.58	3.95
OUTFLOW: ID= 1 (0602)	6.346	0.007	4.50	3.76

PEAK FLOW REDUCTION [Qout/Qin](%)= 14.71
 TIME SHIFT OF PEAK FLOW (min)=115.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0201

```

-----
| ADD HYD ( 0802) |
| 1 + 2 = 3      |
-----

```

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0601):	5.05	0.011	3.75	3.10
+ ID2= 2 (0602):	6.35	0.007	4.50	3.76
=====				
ID = 3 (0802):	11.39	0.017	4.00	3.47

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 0803) |
| 1 + 2 = 3      |
-----

```

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0001):	77.75	0.194	3.50	2.53
+ ID2= 2 (0802):	11.39	0.017	4.00	3.47
=====				
ID = 3 (0803):	89.14	0.211	3.50	2.65

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
V V I SSSSS U U A L
V V I SS U U A A L
V V I SS U U A A A A L
V V I SS U U A A L
VV I SSSSS UUUUU A A LLLLL
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000 TTTTT TTTTT H H Y Y M M 000 TM
O O T T H H Y Y MM MM O O
O O T T H H Y M M O O
000 T T H H Y M M 000
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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 5.0\VO2\voin.dat
 Output filename: C:\Users\ALOverholt\AppData\Local\Civica\vh5
 \c1119499-7c01-4a85-b304-3a19a257e6a9\34eeb181-b4af-4b58-ac3d-683fea87fb1a\s
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DATE: 04-02-2020

TIME: 11:07:58

USER:

COMMENTS: _____

 ** SIMULATION : Run 03 **

5 Year Chicago

 | READ STORM |
Ptotal= 44.07 mm

Filename: C:\Users\ALoverholt\AppData
 ata\Local\Temp\
 cb481504-fc3d-4402-bd42-40cd28c5d654\b6ae1a7c
 Comments: OWEN SOUND 5 YEAR 4 HOUR DURATION CHICAG

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.10	2.16	1.10	4.86	2.10	23.63	3.10	3.47
0.20	2.29	1.20	5.59	2.20	15.14	3.20	3.21
0.30	2.42	1.30	6.58	2.30	11.03	3.30	2.98
0.40	2.58	1.40	8.01	2.40	8.65	3.40	2.78
0.50	2.76	1.50	10.23	2.50	7.11	3.50	2.61
0.60	2.97	1.60	14.08	2.60	6.04	3.60	2.46
0.70	3.22	1.70	22.20	2.70	5.25	3.70	2.33
0.80	3.51	1.80	47.44	2.80	4.65	3.80	2.21
0.90	3.86	1.90	127.12	2.90	4.17	3.90	2.11
1.00	4.30	2.00	48.87	3.00	3.79	4.00	2.01

 | CALIB |
 | NASHYD (0002) |
ID= 1 DT= 5.0 min

Area (ha)= 10.93 Curve Number (CN)= 68.5
 Ia (mm)= 4.40 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.60

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	2.16	1.083	4.86	2.083	23.63	3.08	3.47
0.167	2.26	1.167	5.44	2.167	16.84	3.17	3.26
0.250	2.37	1.250	6.18	2.250	12.67	3.25	3.07
0.333	2.48	1.333	7.15	2.333	10.08	3.33	2.90
0.417	2.62	1.417	8.45	2.417	8.34	3.42	2.75
0.500	2.76	1.500	10.23	2.500	7.11	3.50	2.61
0.583	2.97	1.583	14.08	2.583	6.04	3.58	2.46
0.667	3.17	1.667	20.58	2.667	5.41	3.67	2.36
0.750	3.39	1.750	37.34	2.750	4.89	3.75	2.26
0.833	3.65	1.833	79.31	2.833	4.46	3.83	2.17
0.917	3.95	1.917	111.47	2.917	4.09	3.92	2.09
1.000	4.30	2.000	48.87	3.000	3.79	4.00	2.01

Unit Hyd Qpeak (cms)= 0.696

PEAK FLOW (cms)= 0.195 (i)
 TIME TO PEAK (hrs)= 2.583
 RUNOFF VOLUME (mm)= 10.056
 TOTAL RAINFALL (mm)= 44.068
 RUNOFF COEFFICIENT = 0.228

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

 | READ STORM |
Ptotal= 44.07 mm

Filename: C:\Users\ALoverholt\AppData
 ata\Local\Temp\
 cb481504-fc3d-4402-bd42-40cd28c5d654\b6ae1a7c
 Comments: OWEN SOUND 5 YEAR 4 HOUR DURATION CHICAG

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.10	2.16	1.10	4.86	2.10	23.63	3.10	3.47
0.20	2.29	1.20	5.59	2.20	15.14	3.20	3.21
0.30	2.42	1.30	6.58	2.30	11.03	3.30	2.98
0.40	2.58	1.40	8.01	2.40	8.65	3.40	2.78
0.50	2.76	1.50	10.23	2.50	7.11	3.50	2.61
0.60	2.97	1.60	14.08	2.60	6.04	3.60	2.46
0.70	3.22	1.70	22.20	2.70	5.25	3.70	2.33
0.80	3.51	1.80	47.44	2.80	4.65	3.80	2.21
0.90	3.86	1.90	127.12	2.90	4.17	3.90	2.11
1.00	4.30	2.00	48.87	3.00	3.79	4.00	2.01

 | CALIB |
 | NASHYD (0003) |
ID= 1 DT= 5.0 min

Area (ha)= 136.00 Curve Number (CN)= 52.1
 Ia (mm)= 7.20 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 1.94

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	2.16	1.083	4.86	2.083	23.63	3.08	3.47
0.167	2.26	1.167	5.44	2.167	16.84	3.17	3.26
0.250	2.37	1.250	6.18	2.250	12.67	3.25	3.07
0.333	2.48	1.333	7.15	2.333	10.08	3.33	2.90
0.417	2.62	1.417	8.45	2.417	8.34	3.42	2.75
0.500	2.76	1.500	10.23	2.500	7.11	3.50	2.61
0.583	2.97	1.583	14.08	2.583	6.04	3.58	2.46
0.667	3.17	1.667	20.58	2.667	5.41	3.67	2.36
0.750	3.39	1.750	37.34	2.750	4.89	3.75	2.26
0.833	3.65	1.833	79.31	2.833	4.46	3.83	2.17
0.917	3.95	1.917	111.47	2.917	4.09	3.92	2.09
1.000	4.30	2.000	48.87	3.000	3.79	4.00	2.01

Unit Hyd Qpeak (cms)= 2.678

PEAK FLOW (cms)= 0.482 (i)
 TIME TO PEAK (hrs)= 4.250
 RUNOFF VOLUME (mm)= 5.027
 TOTAL RAINFALL (mm)= 44.068
 RUNOFF COEFFICIENT = 0.114

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

 | DUHYD (0400) |
 | Inlet Cap.= 0.713 |
 | #of Inlets= 1 |
Total(cms)= 0.7

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1): 136.00	0.48	4.25	5.03

```

=====
MAJOR SYS.(ID= 2):  0.00   0.00   0.00   0.00
MINOR SYS.(ID= 3): 136.00  0.48   4.25   5.03

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 0801) |
| 1 + 2 = 3       |
-----
      AREA   QPEAK   TPEAK   R.V.
      (ha)   (cms)   (hrs)   (mm)
+ ID1= 1 ( 0002):  10.93  0.195  2.58   10.06
+ ID2= 2 ( 0400): 136.00  0.482  4.25   5.03
-----
      ID = 3 ( 0801): 146.93  0.532  4.00   5.40

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| READ STORM      |
| Ptotal= 44.07 mm |
-----
      Filename: C:\Users\ALOverholt\AppData
      ata\Local\Temp\
      cb481504-fc3d-4402-bd42-40cd28c5d654\b6ae1a7c
      Comments: OWEN SOUND 5 YEAR 4 HOUR DURATION CHICAG

```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.10	2.16	1.10	4.86	2.10	23.63	3.10	3.47
0.20	2.29	1.20	5.59	2.20	15.14	3.20	3.21
0.30	2.42	1.30	6.58	2.30	11.03	3.30	2.98
0.40	2.58	1.40	8.01	2.40	8.65	3.40	2.78
0.50	2.76	1.50	10.23	2.50	7.11	3.50	2.61
0.60	2.97	1.60	14.08	2.60	6.04	3.60	2.46
0.70	3.22	1.70	22.20	2.70	5.25	3.70	2.33
0.80	3.51	1.80	47.44	2.80	4.65	3.80	2.21
0.90	3.86	1.90	127.12	2.90	4.17	3.90	2.11
1.00	4.30	2.00	48.87	3.00	3.79	4.00	2.01

```

-----
| CALIB          |
| NASHYD ( 0001) |
| ID= 1 DT= 5.0 min |
-----
      Area (ha)= 77.75   Curve Number (CN)= 49.6
      Ia (mm)= 6.91     # of Linear Res.(N)= 3.00
      U.H. Tp(hrs)= 1.24

```

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

```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.16	1.083	4.86	2.083	23.63	3.08	3.47
0.167	2.26	1.167	5.44	2.167	16.84	3.17	3.26
0.250	2.37	1.250	6.18	2.250	12.67	3.25	3.07
0.333	2.48	1.333	7.15	2.333	10.08	3.33	2.90
0.417	2.62	1.417	8.45	2.417	8.34	3.42	2.75
0.500	2.76	1.500	10.23	2.500	7.11	3.50	2.61
0.583	2.97	1.583	14.08	2.583	6.04	3.58	2.46
0.667	3.17	1.667	20.58	2.667	5.41	3.67	2.36
0.750	3.39	1.750	37.34	2.750	4.89	3.75	2.26
0.833	3.65	1.833	79.31	2.833	4.46	3.83	2.17

```

0.917  3.95 | 1.917 111.47 | 2.917  4.09 | 3.92  2.09
1.000  4.30 | 2.000  48.87 | 3.000  3.79 | 4.00  2.01

```

Unit Hyd Qpeak (cms)= 2.395

```

PEAK FLOW (cms)= 0.364 (i)
TIME TO PEAK (hrs)= 3.417
RUNOFF VOLUME (mm)= 4.676
TOTAL RAINFALL (mm)= 44.068
RUNOFF COEFFICIENT = 0.106

```

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

```

-----
| READ STORM      |
| Ptotal= 44.07 mm |
-----
      Filename: C:\Users\ALOverholt\AppData
      ata\Local\Temp\
      cb481504-fc3d-4402-bd42-40cd28c5d654\b6ae1a7c
      Comments: OWEN SOUND 5 YEAR 4 HOUR DURATION CHICAG

```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.10	2.16	1.10	4.86	2.10	23.63	3.10	3.47
0.20	2.29	1.20	5.59	2.20	15.14	3.20	3.21
0.30	2.42	1.30	6.58	2.30	11.03	3.30	2.98
0.40	2.58	1.40	8.01	2.40	8.65	3.40	2.78
0.50	2.76	1.50	10.23	2.50	7.11	3.50	2.61
0.60	2.97	1.60	14.08	2.60	6.04	3.60	2.46
0.70	3.22	1.70	22.20	2.70	5.25	3.70	2.33
0.80	3.51	1.80	47.44	2.80	4.65	3.80	2.21
0.90	3.86	1.90	127.12	2.90	4.17	3.90	2.11
1.00	4.30	2.00	48.87	3.00	3.79	4.00	2.01

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-----
| CALIB          |
| NASHYD ( 0201) |
| ID= 1 DT= 5.0 min |
-----
      Area (ha)= 5.05   Curve Number (CN)= 51.4
      Ia (mm)= 4.70    # of Linear Res.(N)= 3.00
      U.H. Tp(hrs)= 0.57

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

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-----
      ----- TRANSFORMED HYETOGRAPH -----
      TIME   RAIN   TIME   RAIN   TIME   RAIN   TIME   RAIN
      hrs   mm/hr  hrs   mm/hr  hrs   mm/hr  hrs   mm/hr

```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.16	1.083	4.86	2.083	23.63	3.08	3.47
0.167	2.26	1.167	5.44	2.167	16.84	3.17	3.26
0.250	2.37	1.250	6.18	2.250	12.67	3.25	3.07
0.333	2.48	1.333	7.15	2.333	10.08	3.33	2.90
0.417	2.62	1.417	8.45	2.417	8.34	3.42	2.75
0.500	2.76	1.500	10.23	2.500	7.11	3.50	2.61
0.583	2.97	1.583	14.08	2.583	6.04	3.58	2.46
0.667	3.17	1.667	20.58	2.667	5.41	3.67	2.36
0.750	3.39	1.750	37.34	2.750	4.89	3.75	2.26
0.833	3.65	1.833	79.31	2.833	4.46	3.83	2.17
0.917	3.95	1.917	111.47	2.917	4.09	3.92	2.09
1.000	4.30	2.000	48.87	3.000	3.79	4.00	2.01

Unit Hyd Qpeak (cms)= 0.338

PEAK FLOW (cms)= 0.051 (i)

TIME TO PEAK (hrs)= 2.583
 RUNOFF VOLUME (mm)= 5.544
 TOTAL RAINFALL (mm)= 44.068
 RUNOFF COEFFICIENT = 0.126

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

RESERVOIR(0601)
 IN= 2---> OUT= 1
 DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.3000	0.0752
0.0320	0.0244	0.7410	0.1015
0.0910	0.0495	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0201)	5.047	0.051	2.58	5.54
OUTFLOW: ID= 1 (0601)	5.047	0.020	3.67	5.51

PEAK FLOW REDUCTION [Qout/Qin](%)= 38.98
 TIME SHIFT OF PEAK FLOW (min)= 65.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0151

READ STORM
 Ptotal= 44.07 mm

Filename: C:\Users\ALOverholt\AppData\Local\Temp\cb481504-fc3d-4402-bd42-40cd28c5d654\b6ae1a7c
 Comments: OWEN SOUND 5 YEAR 4 HOUR DURATION CHICAG

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.10	2.16	1.10	4.86	2.10	23.63	3.10	3.47
0.20	2.29	1.20	5.59	2.20	15.14	3.20	3.21
0.30	2.42	1.30	6.58	2.30	11.03	3.30	2.98
0.40	2.58	1.40	8.01	2.40	8.65	3.40	2.78
0.50	2.76	1.50	10.23	2.50	7.11	3.50	2.61
0.60	2.97	1.60	14.08	2.60	6.04	3.60	2.46
0.70	3.22	1.70	22.20	2.70	5.25	3.70	2.33
0.80	3.51	1.80	47.44	2.80	4.65	3.80	2.21
0.90	3.86	1.90	127.12	2.90	4.17	3.90	2.11
1.00	4.30	2.00	48.87	3.00	3.79	4.00	2.01

CALIB
 NASHYD (0202)
 ID= 1 DT= 5.0 min

Area (ha)= 6.35 Curve Number (CN)= 57.9
 Ia (mm)= 4.70 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.55

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	2.16	1.083	4.86	2.083	23.63	3.08	3.47
0.167	2.26	1.167	5.44	2.167	16.84	3.17	3.26
0.250	2.37	1.250	6.18	2.250	12.67	3.25	3.07

0.333	2.48	1.333	7.15	2.333	10.08	3.33	2.90
0.417	2.62	1.417	8.45	2.417	8.34	3.42	2.75
0.500	2.76	1.500	10.23	2.500	7.11	3.50	2.61
0.583	2.97	1.583	14.08	2.583	6.04	3.58	2.46
0.667	3.17	1.667	20.58	2.667	5.41	3.67	2.36
0.750	3.39	1.750	37.34	2.750	4.89	3.75	2.26
0.833	3.65	1.833	79.31	2.833	4.46	3.83	2.17
0.917	3.95	1.917	111.47	2.917	4.09	3.92	2.09
1.000	4.30	2.000	48.87	3.000	3.79	4.00	2.01

Unit Hyd Qpeak (cms)= 0.441

PEAK FLOW (cms)= 0.082 (i)
 TIME TO PEAK (hrs)= 2.500
 RUNOFF VOLUME (mm)= 6.917
 TOTAL RAINFALL (mm)= 44.068
 RUNOFF COEFFICIENT = 0.157

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

RESERVOIR(0602)
 IN= 2---> OUT= 1
 DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.0394	0.0998
0.0000	0.0000	0.1306	0.1176
0.0014	0.0066	0.3534	0.1362
0.0069	0.0205	0.6046	0.1554
0.0098	0.0350	0.9742	0.1752
0.0120	0.0502	1.4665	0.1957
0.0139	0.0661	2.0882	0.2169
0.0155	0.0826	2.4500	0.2278

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0202)	6.346	0.082	2.50	6.92
OUTFLOW: ID= 1 (0602)	6.346	0.010	4.58	6.73

PEAK FLOW REDUCTION [Qout/Qin](%)= 12.08
 TIME SHIFT OF PEAK FLOW (min)=125.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0358

ADD HYD (0802)
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0601):	5.05	0.020	3.67	5.51
+ ID2= 2 (0602):	6.35	0.010	4.58	6.73
=====	=====	=====	=====	=====
ID = 3 (0802):	11.39	0.029	3.83	6.19

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0803)
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0001):	77.75	0.364	3.42	4.68

+ ID2= 2 (0802): 11.39 0.029 3.83 6.19
 =====
 ID = 3 (0803): 89.14 0.392 3.42 4.87

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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

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OOO TTTT TTTT 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 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 *****

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DATE: 04-02-2020

TIME: 11:07:58

USER:

COMMENTS: _____

 ** SIMULATION : Run 04 **

10 Year Chicago

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| Ptotal= 50.59 mm | Comments: OWEN SOUND 10 YEAR 4 HOUR DURATION CHICA
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TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.10	2.37	1.10	5.44	2.10	27.54	3.10	3.85
0.20	2.50	1.20	6.28	2.20	17.50	3.20	3.54
0.30	2.66	1.30	7.44	2.30	12.66	3.30	3.29
0.40	2.84	1.40	9.10	2.40	9.86	3.40	3.06
0.50	3.04	1.50	11.71	2.50	8.06	3.50	2.87

0.60	3.28	1.60	16.26	2.60	6.81	3.60	2.70
0.70	3.56	1.70	25.85	2.70	5.89	3.70	2.55
0.80	3.89	1.80	55.53	2.80	5.20	3.80	2.42
0.90	4.29	1.90	146.69	2.90	4.65	3.90	2.30
1.00	4.80	2.00	57.21	3.00	4.21	4.00	2.20

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| CALIB |
| NASHYD ( 0002) | Area (ha)= 10.93 Curve Number (CN)= 68.5
| ID= 1 DT= 5.0 min | Ia (mm)= 4.40 # of Linear Res.(N)= 3.00
|             | U.H. Tp(hrs)= 0.60
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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	2.37	1.083	5.44	2.083	27.54	3.08	3.85
0.167	2.47	1.167	6.11	2.167	19.51	3.17	3.60
0.250	2.60	1.250	6.98	2.250	14.60	3.25	3.39
0.333	2.73	1.333	8.10	2.333	11.54	3.33	3.20
0.417	2.88	1.417	9.62	2.417	9.50	3.42	3.02
0.500	3.04	1.500	11.71	2.500	8.06	3.50	2.87
0.583	3.28	1.583	16.26	2.583	6.81	3.58	2.70
0.667	3.50	1.667	23.93	2.667	6.07	3.67	2.58
0.750	3.76	1.750	43.66	2.750	5.48	3.75	2.47
0.833	4.05	1.833	91.99	2.833	4.98	3.83	2.37
0.917	4.39	1.917	128.79	2.917	4.56	3.92	2.28
1.000	4.80	2.000	57.21	3.000	4.21	4.00	2.20

Unit Hyd Qpeak (cms)= 0.696

PEAK FLOW (cms)= 0.258 (i)
 TIME TO PEAK (hrs)= 2.583
 RUNOFF VOLUME (mm)= 13.089
 TOTAL RAINFALL (mm)= 50.590
 RUNOFF COEFFICIENT = 0.259

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

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| Ptotal= 50.59 mm | Comments: OWEN SOUND 10 YEAR 4 HOUR DURATION CHICA
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TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.10	2.37	1.10	5.44	2.10	27.54	3.10	3.85
0.20	2.50	1.20	6.28	2.20	17.50	3.20	3.54
0.30	2.66	1.30	7.44	2.30	12.66	3.30	3.29
0.40	2.84	1.40	9.10	2.40	9.86	3.40	3.06
0.50	3.04	1.50	11.71	2.50	8.06	3.50	2.87
0.60	3.28	1.60	16.26	2.60	6.81	3.60	2.70
0.70	3.56	1.70	25.85	2.70	5.89	3.70	2.55
0.80	3.89	1.80	55.53	2.80	5.20	3.80	2.42
0.90	4.29	1.90	146.69	2.90	4.65	3.90	2.30
1.00	4.80	2.00	57.21	3.00	4.21	4.00	2.20

CALIB
 NASHYD (0003) Area (ha)= 136.00 Curve Number (CN)= 52.1
 ID= 1 DT= 5.0 min Ia (mm)= 7.20 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 1.94

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	2.37	1.083	5.44	2.083	27.54	3.08	3.85
0.167	2.47	1.167	6.11	2.167	19.51	3.17	3.60
0.250	2.60	1.250	6.98	2.250	14.60	3.25	3.39
0.333	2.73	1.333	8.10	2.333	11.54	3.33	3.20
0.417	2.88	1.417	9.62	2.417	9.50	3.42	3.02
0.500	3.04	1.500	11.71	2.500	8.06	3.50	2.87
0.583	3.28	1.583	16.26	2.583	6.81	3.58	2.70
0.667	3.50	1.667	23.93	2.667	6.07	3.67	2.58
0.750	3.76	1.750	43.66	2.750	5.48	3.75	2.47
0.833	4.05	1.833	91.99	2.833	4.98	3.83	2.37
0.917	4.39	1.917	128.79	2.917	4.56	3.92	2.28
1.000	4.80	2.000	57.21	3.000	4.21	4.00	2.20

Unit Hyd Qpeak (cms)= 2.678

PEAK FLOW (cms)= 0.654 (i)
 TIME TO PEAK (hrs)= 4.250
 RUNOFF VOLUME (mm)= 6.799
 TOTAL RAINFALL (mm)= 50.590
 RUNOFF COEFFICIENT = 0.134

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

DUHYD (0400)
 Inlet Cap.= 0.713
 #of Inlets= 1
 Total(cms)= 0.7

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	136.00	0.65	4.25	6.80
MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00
MINOR SYS.(ID= 3):	136.00	0.65	4.25	6.80

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0801)
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0002):	10.93	0.258	2.58	13.09
+ ID2= 2 (0400):	136.00	0.654	4.25	6.80
===== ID = 3 (0801):	146.93	0.718	4.00	7.27

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

READ STORM

Filename: C:\Users\ALOverholt\AppData
 ata\Local\Temp\
 cb481504-fc3d-4402-bd42-40cd28c5d654\6321c58e
 Comments: OWEN SOUND 10 YEAR 4 HOUR DURATION CHICA

Ptotal= 50.59 mm

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.10	2.37	1.10	5.44	2.10	27.54	3.10	3.85
0.20	2.50	1.20	6.28	2.20	17.50	3.20	3.54
0.30	2.66	1.30	7.44	2.30	12.66	3.30	3.29
0.40	2.84	1.40	9.10	2.40	9.86	3.40	3.06
0.50	3.04	1.50	11.71	2.50	8.06	3.50	2.87
0.60	3.28	1.60	16.26	2.60	6.81	3.60	2.70
0.70	3.56	1.70	25.85	2.70	5.89	3.70	2.55
0.80	3.89	1.80	55.53	2.80	5.20	3.80	2.42
0.90	4.29	1.90	146.69	2.90	4.65	3.90	2.30
1.00	4.80	2.00	57.21	3.00	4.21	4.00	2.20

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	2.37	1.083	5.44	2.083	27.54	3.08	3.85
0.167	2.47	1.167	6.11	2.167	19.51	3.17	3.60
0.250	2.60	1.250	6.98	2.250	14.60	3.25	3.39
0.333	2.73	1.333	8.10	2.333	11.54	3.33	3.20
0.417	2.88	1.417	9.62	2.417	9.50	3.42	3.02
0.500	3.04	1.500	11.71	2.500	8.06	3.50	2.87
0.583	3.28	1.583	16.26	2.583	6.81	3.58	2.70
0.667	3.50	1.667	23.93	2.667	6.07	3.67	2.58
0.750	3.76	1.750	43.66	2.750	5.48	3.75	2.47
0.833	4.05	1.833	91.99	2.833	4.98	3.83	2.37
0.917	4.39	1.917	128.79	2.917	4.56	3.92	2.28
1.000	4.80	2.000	57.21	3.000	4.21	4.00	2.20

Unit Hyd Qpeak (cms)= 2.395

PEAK FLOW (cms)= 0.496 (i)
 TIME TO PEAK (hrs)= 3.417
 RUNOFF VOLUME (mm)= 6.322
 TOTAL RAINFALL (mm)= 50.590
 RUNOFF COEFFICIENT = 0.125

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

READ STORM

Filename: C:\Users\ALOverholt\AppData
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 cb481504-fc3d-4402-bd42-40cd28c5d654\6321c58e

| Ptotal= 50.59 mm | Comments: OWEN SOUND 10 YEAR 4 HOUR DURATION CHICA

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.10	2.37	1.10	5.44	2.10	27.54	3.10	3.85
0.20	2.50	1.20	6.28	2.20	17.50	3.20	3.54
0.30	2.66	1.30	7.44	2.30	12.66	3.30	3.29
0.40	2.84	1.40	9.10	2.40	9.86	3.40	3.06
0.50	3.04	1.50	11.71	2.50	8.06	3.50	2.87
0.60	3.28	1.60	16.26	2.60	6.81	3.60	2.70
0.70	3.56	1.70	25.85	2.70	5.89	3.70	2.55
0.80	3.89	1.80	55.53	2.80	5.20	3.80	2.42
0.90	4.29	1.90	146.69	2.90	4.65	3.90	2.30
1.00	4.80	2.00	57.21	3.00	4.21	4.00	2.20

CALIB
NASHYD (0201) | Area (ha)= 5.05 | Curve Number (CN)= 51.4
ID= 1 DT= 5.0 min | Ia (mm)= 4.70 | # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.57

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	2.37	1.083	5.44	2.083	27.54	3.08	3.85
0.167	2.47	1.167	6.11	2.167	19.51	3.17	3.60
0.250	2.60	1.250	6.98	2.250	14.60	3.25	3.39
0.333	2.73	1.333	8.10	2.333	11.54	3.33	3.20
0.417	2.88	1.417	9.62	2.417	9.50	3.42	3.02
0.500	3.04	1.500	11.71	2.500	8.06	3.50	2.87
0.583	3.28	1.583	16.26	2.583	6.81	3.58	2.70
0.667	3.50	1.667	23.93	2.667	6.07	3.67	2.58
0.750	3.76	1.750	43.66	2.750	5.48	3.75	2.47
0.833	4.05	1.833	91.99	2.833	4.98	3.83	2.37
0.917	4.39	1.917	128.79	2.917	4.56	3.92	2.28
1.000	4.80	2.000	57.21	3.000	4.21	4.00	2.20

Unit Hyd Qpeak (cms)= 0.338

PEAK FLOW (cms)= 0.068 (i)
TIME TO PEAK (hrs)= 2.583
RUNOFF VOLUME (mm)= 7.361
TOTAL RAINFALL (mm)= 50.590
RUNOFF COEFFICIENT = 0.146

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

RESERVOIR(0601)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.3000	0.0752
0.0320	0.0244	0.7410	0.1015
0.0910	0.0495	0.0000	0.0000

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)

INFLOW : ID= 2 (0201) 5.047 0.068 2.58 7.36
OUTFLOW: ID= 1 (0601) 5.047 0.026 3.67 7.32

PEAK FLOW REDUCTION [Qout/Qin](%)= 38.67
TIME SHIFT OF PEAK FLOW (min)= 65.00
MAXIMUM STORAGE USED (ha.m.)= 0.0202

READ STORM
Ptotal= 50.59 mm

Filename: C:\Users\ALOverholt\AppData\Local\Temp\cb481504-fc3d-4402-bd42-40cd28c5d654\6321c58e
Comments: OWEN SOUND 10 YEAR 4 HOUR DURATION CHICA

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.10	2.37	1.10	5.44	2.10	27.54	3.10	3.85
0.20	2.50	1.20	6.28	2.20	17.50	3.20	3.54
0.30	2.66	1.30	7.44	2.30	12.66	3.30	3.29
0.40	2.84	1.40	9.10	2.40	9.86	3.40	3.06
0.50	3.04	1.50	11.71	2.50	8.06	3.50	2.87
0.60	3.28	1.60	16.26	2.60	6.81	3.60	2.70
0.70	3.56	1.70	25.85	2.70	5.89	3.70	2.55
0.80	3.89	1.80	55.53	2.80	5.20	3.80	2.42
0.90	4.29	1.90	146.69	2.90	4.65	3.90	2.30
1.00	4.80	2.00	57.21	3.00	4.21	4.00	2.20

CALIB
NASHYD (0202) | Area (ha)= 6.35 | Curve Number (CN)= 57.9
ID= 1 DT= 5.0 min | Ia (mm)= 4.70 | # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.55

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	2.37	1.083	5.44	2.083	27.54	3.08	3.85
0.167	2.47	1.167	6.11	2.167	19.51	3.17	3.60
0.250	2.60	1.250	6.98	2.250	14.60	3.25	3.39
0.333	2.73	1.333	8.10	2.333	11.54	3.33	3.20
0.417	2.88	1.417	9.62	2.417	9.50	3.42	3.02
0.500	3.04	1.500	11.71	2.500	8.06	3.50	2.87
0.583	3.28	1.583	16.26	2.583	6.81	3.58	2.70
0.667	3.50	1.667	23.93	2.667	6.07	3.67	2.58
0.750	3.76	1.750	43.66	2.750	5.48	3.75	2.47
0.833	4.05	1.833	91.99	2.833	4.98	3.83	2.37
0.917	4.39	1.917	128.79	2.917	4.56	3.92	2.28
1.000	4.80	2.000	57.21	3.000	4.21	4.00	2.20

Unit Hyd Qpeak (cms)= 0.441

PEAK FLOW (cms)= 0.110 (i)
TIME TO PEAK (hrs)= 2.500
RUNOFF VOLUME (mm)= 9.133
TOTAL RAINFALL (mm)= 50.590
RUNOFF COEFFICIENT = 0.181

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

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-----
| RESERVOIR( 0602) |
| IN= 2---> OUT= 1 |
| DT= 5.0 min      |
-----

```

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.0394	0.0998
0.0000	0.0000	0.1306	0.1176
0.0014	0.0066	0.3534	0.1362
0.0069	0.0205	0.6046	0.1554
0.0098	0.0350	0.9742	0.1752
0.0120	0.0502	1.4665	0.1957
0.0139	0.0661	2.0882	0.2169
0.0155	0.0826	2.4500	0.2278

INFLOW : ID= 2 (0202)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
6.346	6.346	0.110	2.50	9.13
OUTFLOW: ID= 1 (0602)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
6.346	6.346	0.012	4.58	8.94

PEAK FLOW REDUCTION [Qout/Qin](%)= 10.61
 TIME SHIFT OF PEAK FLOW (min)=125.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0480

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-----
| ADD HYD ( 0802) |
| 1 + 2 = 3      |
-----

```

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0601):	5.05	0.026	3.67	7.32
+ ID2= 2 (0602):	6.35	0.012	4.58	8.94
===== ID = 3 (0802):	11.39	0.038	3.75	8.23

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| ADD HYD ( 0803) |
| 1 + 2 = 3      |
-----

```

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0001):	77.75	0.496	3.42	6.32
+ ID2= 2 (0802):	11.39	0.038	3.75	8.23
===== ID = 3 (0803):	89.14	0.533	3.42	6.57

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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=====
V V I SSSSS U U A L
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 TTTT TTTT 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

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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 5.0\VO2\voin.dat
 Output filename: C:\Users\ALOverholt\AppData\Local\Civica\VH5
 \c1119499-7c01-4a85-b304-3a19a257e6a9\1d81d467-b299-411c-97b1-244be3c7b886\s
 Summary filename: C:\Users\ALOverholt\AppData\Local\Civica\VH5
 \c1119499-7c01-4a85-b304-3a19a257e6a9\1d81d467-b299-411c-97b1-244be3c7b886\s

DATE: 04-02-2020 TIME: 11:07:58

USER:

COMMENTS: _____

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*****
** SIMULATION : Run 05 **
*****

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25 Year Chicago

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-----
| READ STORM |
| Ptotal= 59.08 mm |
-----

```

Filename: C:\Users\ALOverholt\AppData
 ata\Local\Temp\
 cb481504-fc3d-4402-bd42-40cd28c5d654\c50aec48
 Comments: OWEN SOUND 25 YEAR 4 HOUR DURATION CHICA

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.10	2.69	1.10	6.28	2.10	32.51	3.10	4.41
0.20	2.85	1.20	7.27	2.20	20.58	3.20	4.06
0.30	3.03	1.30	8.63	2.30	14.82	3.30	3.76
0.40	3.24	1.40	10.61	2.40	11.50	3.40	3.50
0.50	3.47	1.50	13.69	2.50	9.37	3.50	3.28
0.60	3.75	1.60	19.10	2.60	7.89	3.60	3.08
0.70	4.07	1.70	30.50	2.70	6.82	3.70	2.91
0.80	4.46	1.80	65.56	2.80	6.00	3.80	2.76
0.90	4.94	1.90	170.99	2.90	5.35	3.90	2.62
1.00	5.53	2.00	67.54	3.00	4.84	4.00	2.50

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| CALIB |
| NASHYD ( 0002) | Area (ha)= 10.93 Curve Number (CN)= 68.5
| ID= 1 DT= 5.0 min | Ia (mm)= 4.40 # of Linear Res.(N)= 3.00
| | U.H. Tp(hrs)= 0.60
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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	2.69	1.083	6.28	2.083	32.51	3.08	4.41
0.167	2.82	1.167	7.07	2.167	22.97	3.17	4.13
0.250	2.96	1.250	8.09	2.250	17.12	3.25	3.88
0.333	3.11	1.333	9.42	2.333	13.49	3.33	3.66
0.417	3.29	1.417	11.23	2.417	11.07	3.42	3.46
0.500	3.47	1.500	13.69	2.500	9.37	3.50	3.28
0.583	3.75	1.583	19.10	2.583	7.89	3.58	3.08
0.667	4.01	1.667	28.22	2.667	7.03	3.67	2.94
0.750	4.30	1.750	51.54	2.750	6.33	3.75	2.82
0.833	4.65	1.833	107.73	2.833	5.74	3.83	2.70
0.917	5.06	1.917	150.30	2.917	5.25	3.92	2.60
1.000	5.53	2.000	67.54	3.000	4.84	4.00	2.50

Unit Hyd Qpeak (cms)= 0.696

PEAK FLOW (cms)= 0.347 (i)
 TIME TO PEAK (hrs)= 2.583
 RUNOFF VOLUME (mm)= 17.433
 TOTAL RAINFALL (mm)= 59.076
 RUNOFF COEFFICIENT = 0.295

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

READ STORM
 Ptotal= 59.08 mm
 Filename: C:\Users\ALOverholt\AppData\Local\Temp\cb481504-fc3d-4402-bd42-40cd28c5d654\c50aec48
 Comments: OWEN SOUND 25 YEAR 4 HOUR DURATION CHICA

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.10	2.69	1.10	6.28	2.10	32.51	3.10	4.41
0.20	2.85	1.20	7.27	2.20	20.58	3.20	4.06
0.30	3.03	1.30	8.63	2.30	14.82	3.30	3.76
0.40	3.24	1.40	10.61	2.40	11.50	3.40	3.50
0.50	3.47	1.50	13.69	2.50	9.37	3.50	3.28
0.60	3.75	1.60	19.10	2.60	7.89	3.60	3.08
0.70	4.07	1.70	30.50	2.70	6.82	3.70	2.91
0.80	4.46	1.80	65.56	2.80	6.00	3.80	2.76
0.90	4.94	1.90	170.99	2.90	5.35	3.90	2.62
1.00	5.53	2.00	67.54	3.00	4.84	4.00	2.50

CALIB NASHYD (0003)
 ID= 1 DT= 5.0 min
 Area (ha)= 136.00
 Ia (mm)= 7.20
 U.H. Tp(hrs)= 1.94
 Curve Number (CN)= 52.1
 # of Linear Res.(N)= 3.00

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	2.69	1.083	6.28	2.083	32.51	3.08	4.41
0.167	2.82	1.167	7.07	2.167	22.97	3.17	4.13
0.250	2.96	1.250	8.09	2.250	17.12	3.25	3.88
0.333	3.11	1.333	9.42	2.333	13.49	3.33	3.66
0.417	3.29	1.417	11.23	2.417	11.07	3.42	3.46

0.500	3.47	1.500	13.69	2.500	9.37	3.50	3.28
0.583	3.75	1.583	19.10	2.583	7.89	3.58	3.08
0.667	4.01	1.667	28.22	2.667	7.03	3.67	2.94
0.750	4.30	1.750	51.54	2.750	6.33	3.75	2.82
0.833	4.65	1.833	107.73	2.833	5.74	3.83	2.70
0.917	5.06	1.917	150.30	2.917	5.25	3.92	2.60
1.000	5.53	2.000	67.54	3.000	4.84	4.00	2.50

Unit Hyd Qpeak (cms)= 2.678

PEAK FLOW (cms)= 0.909 (i)
 TIME TO PEAK (hrs)= 4.250
 RUNOFF VOLUME (mm)= 9.429
 TOTAL RAINFALL (mm)= 59.076
 RUNOFF COEFFICIENT = 0.160

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

DUHYD (0400)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
Inlet Cap.= 0.713				
#of Inlets= 1				
Total(cms)= 0.7				
TOTAL HYD.(ID= 1):	136.00	0.91	4.25	9.43
MAJOR SYS.(ID= 2):	10.53	0.20	4.25	9.43
MINOR SYS.(ID= 3):	125.47	0.71	3.33	9.43

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0801)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 (0002):	10.93	0.347	2.58	17.43
+ ID2= 2 (0400):	125.47	0.713	3.33	9.43
ID = 3 (0801):	136.40	0.926	3.25	10.07

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

READ STORM
 Ptotal= 59.08 mm
 Filename: C:\Users\ALOverholt\AppData\Local\Temp\cb481504-fc3d-4402-bd42-40cd28c5d654\c50aec48
 Comments: OWEN SOUND 25 YEAR 4 HOUR DURATION CHICA

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.10	2.69	1.10	6.28	2.10	32.51	3.10	4.41
0.20	2.85	1.20	7.27	2.20	20.58	3.20	4.06
0.30	3.03	1.30	8.63	2.30	14.82	3.30	3.76
0.40	3.24	1.40	10.61	2.40	11.50	3.40	3.50
0.50	3.47	1.50	13.69	2.50	9.37	3.50	3.28
0.60	3.75	1.60	19.10	2.60	7.89	3.60	3.08
0.70	4.07	1.70	30.50	2.70	6.82	3.70	2.91
0.80	4.46	1.80	65.56	2.80	6.00	3.80	2.76
0.90	4.94	1.90	170.99	2.90	5.35	3.90	2.62

1.00 5.53 | 2.00 67.54 | 3.00 4.84 | 4.00 2.50

CALIB
 NASHYD (0001) Area (ha)= 77.75 Curve Number (CN)= 49.6
 ID= 1 DT= 5.0 min Ia (mm)= 6.91 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 1.24

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	2.69	1.083	6.28	2.083	32.51	3.08	4.41
0.167	2.82	1.167	7.07	2.167	22.97	3.17	4.13
0.250	2.96	1.250	8.09	2.250	17.12	3.25	3.88
0.333	3.11	1.333	9.42	2.333	13.49	3.33	3.66
0.417	3.29	1.417	11.23	2.417	11.07	3.42	3.46
0.500	3.47	1.500	13.69	2.500	9.37	3.50	3.28
0.583	3.75	1.583	19.10	2.583	7.89	3.58	3.08
0.667	4.01	1.667	28.22	2.667	7.03	3.67	2.94
0.750	4.30	1.750	51.54	2.750	6.33	3.75	2.82
0.833	4.65	1.833	107.73	2.833	5.74	3.83	2.70
0.917	5.06	1.917	150.30	2.917	5.25	3.92	2.60
1.000	5.53	2.000	67.54	3.000	4.84	4.00	2.50

Unit Hyd Qpeak (cms)= 2.395

PEAK FLOW (cms)= 0.693 (i)
 TIME TO PEAK (hrs)= 3.417
 RUNOFF VOLUME (mm)= 8.771
 TOTAL RAINFALL (mm)= 59.076
 RUNOFF COEFFICIENT = 0.148

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

READ STORM
 Ptotal= 59.08 mm
 Filename: C:\Users\ALoverholt\AppData\Local\Temp\cb481504-fc3d-4402-bd42-40cd28c5d654\c50aec48
 Comments: OWEN SOUND 25 YEAR 4 HOUR DURATION CHICA

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.10	2.69	1.10	6.28	2.10	32.51	3.10	4.41
0.20	2.85	1.20	7.27	2.20	20.58	3.20	4.06
0.30	3.03	1.30	8.63	2.30	14.82	3.30	3.76
0.40	3.24	1.40	10.61	2.40	11.50	3.40	3.50
0.50	3.47	1.50	13.69	2.50	9.37	3.50	3.28
0.60	3.75	1.60	19.10	2.60	7.89	3.60	3.08
0.70	4.07	1.70	30.50	2.70	6.82	3.70	2.91
0.80	4.46	1.80	65.56	2.80	6.00	3.80	2.76
0.90	4.94	1.90	170.99	2.90	5.35	3.90	2.62
1.00	5.53	2.00	67.54	3.00	4.84	4.00	2.50

CALIB

NASHYD (0201) | Area (ha)= 5.05 Curve Number (CN)= 51.4
 ID= 1 DT= 5.0 min | Ia (mm)= 4.70 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.57

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	2.69	1.083	6.28	2.083	32.51	3.08	4.41
0.167	2.82	1.167	7.07	2.167	22.97	3.17	4.13
0.250	2.96	1.250	8.09	2.250	17.12	3.25	3.88
0.333	3.11	1.333	9.42	2.333	13.49	3.33	3.66
0.417	3.29	1.417	11.23	2.417	11.07	3.42	3.46
0.500	3.47	1.500	13.69	2.500	9.37	3.50	3.28
0.583	3.75	1.583	19.10	2.583	7.89	3.58	3.08
0.667	4.01	1.667	28.22	2.667	7.03	3.67	2.94
0.750	4.30	1.750	51.54	2.750	6.33	3.75	2.82
0.833	4.65	1.833	107.73	2.833	5.74	3.83	2.70
0.917	5.06	1.917	150.30	2.917	5.25	3.92	2.60
1.000	5.53	2.000	67.54	3.000	4.84	4.00	2.50

Unit Hyd Qpeak (cms)= 0.338

PEAK FLOW (cms)= 0.094 (i)
 TIME TO PEAK (hrs)= 2.583
 RUNOFF VOLUME (mm)= 10.038
 TOTAL RAINFALL (mm)= 59.076
 RUNOFF COEFFICIENT = 0.170

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

RESERVOIR(0601)			
IN= 2---> OUT= 1			
DT= 5.0 min			
OUTFLOW	STORAGE	OUTFLOW	STORAGE
(cms)	(ha.m.)	(cms)	(ha.m.)
0.0000	0.0000	0.3000	0.0752
0.0320	0.0244	0.7410	0.1015
0.0910	0.0495	0.0000	0.0000

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 (0201)	5.047	0.094	2.58	10.04
OUTFLOW: ID= 1 (0601)	5.047	0.039	3.58	10.00

PEAK FLOW REDUCTION [Qout/Qin](%)= 41.14
 TIME SHIFT OF PEAK FLOW (min)= 60.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0273

READ STORM
 Ptotal= 59.08 mm
 Filename: C:\Users\ALoverholt\AppData\Local\Temp\cb481504-fc3d-4402-bd42-40cd28c5d654\c50aec48
 Comments: OWEN SOUND 25 YEAR 4 HOUR DURATION CHICA

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.10	2.69	1.10	6.28	2.10	32.51	3.10	4.41
0.20	2.85	1.20	7.27	2.20	20.58	3.20	4.06

0.30	3.03	1.30	8.63	2.30	14.82	3.30	3.76
0.40	3.24	1.40	10.61	2.40	11.50	3.40	3.50
0.50	3.47	1.50	13.69	2.50	9.37	3.50	3.28
0.60	3.75	1.60	19.10	2.60	7.89	3.60	3.08
0.70	4.07	1.70	30.50	2.70	6.82	3.70	2.91
0.80	4.46	1.80	65.56	2.80	6.00	3.80	2.76
0.90	4.94	1.90	170.99	2.90	5.35	3.90	2.62
1.00	5.53	2.00	67.54	3.00	4.84	4.00	2.50

CALIB
 NASHYD (0202) | Area (ha)= 6.35 Curve Number (CN)= 57.9
 ID= 1 DT= 5.0 min | Ia (mm)= 4.70 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.55

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	2.69	1.083	6.28	2.083	32.51	3.08	4.41
0.167	2.82	1.167	7.07	2.167	22.97	3.17	4.13
0.250	2.96	1.250	8.09	2.250	17.12	3.25	3.88
0.333	3.11	1.333	9.42	2.333	13.49	3.33	3.66
0.417	3.29	1.417	11.23	2.417	11.07	3.42	3.46
0.500	3.47	1.500	13.69	2.500	9.37	3.50	3.28
0.583	3.75	1.583	19.10	2.583	7.89	3.58	3.08
0.667	4.01	1.667	28.22	2.667	7.03	3.67	2.94
0.750	4.30	1.750	51.54	2.750	6.33	3.75	2.82
0.833	4.65	1.833	107.73	2.833	5.74	3.83	2.70
0.917	5.06	1.917	150.30	2.917	5.25	3.92	2.60
1.000	5.53	2.000	67.54	3.000	4.84	4.00	2.50

Unit Hyd Qpeak (cms)= 0.441

PEAK FLOW (cms)= 0.151 (i)
 TIME TO PEAK (hrs)= 2.500
 RUNOFF VOLUME (mm)= 12.367
 TOTAL RAINFALL (mm)= 59.076
 RUNOFF COEFFICIENT = 0.209

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

RESERVOIR(0602)
 IN= 2---> OUT= 1
 DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.0394	0.0998
0.0000	0.0000	0.1306	0.1176
0.0014	0.0066	0.3534	0.1362
0.0069	0.0205	0.6046	0.1554
0.0098	0.0350	0.9742	0.1752
0.0120	0.0502	1.4665	0.1957
0.0139	0.0661	2.0882	0.2169
0.0155	0.0826	2.4500	0.2278

INFLOW : ID= 2 (0202)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	6.346	0.151	2.50	12.37

OUTFLOW: ID= 1 (0602) 6.346 0.014 4.67 12.18

PEAK FLOW REDUCTION [Qout/Qin](%)= 9.23
 TIME SHIFT OF PEAK FLOW (min)=130.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0662

ADD HYD (0802)
 1 + 2 = 3

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0601):	5.05	0.039	3.58	10.00
+ ID2= 2 (0602):	6.35	0.014	4.67	12.18
===== ID = 3 (0802):	11.39	0.052	3.58	11.21

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0803)
 1 + 2 = 3

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0001):	77.75	0.693	3.42	8.77
+ ID2= 2 (0802):	11.39	0.052	3.58	11.21
===== ID = 3 (0803):	89.14	0.743	3.42	9.08

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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V V I SSSSS U U A L
V V I SS U U A A L
V V I SS U U A A A L
V V I SS U U A A L
VV I SSSSS UUUU A A LLLLL

OOO TTTT TTTT 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 5.0\VO2\voin.dat
 Output filename: C:\Users\ALOverholt\AppData\Local\Civica\XH5
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DATE: 04-02-2020

TIME: 11:07:58

USER:

COMMENTS: _____

 ** SIMULATION : Run 06 **

50 Year Chicago

 | READ STORM | Filename: C:\Users\ALOverholt\AppData
 | | ata\Local\Temp\
 | | cb481504-fc3d-4402-bd42-40cd28c5d654\078eb815
 | Ptotal= 65.65 mm | Comments: OWEN SOUND 50 YEAR 4 HOUR DURATION CHICA

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.10	2.87	1.10	6.88	2.10	36.93	3.10	4.78
0.20	3.04	1.20	8.01	2.20	23.25	3.20	4.39
0.30	3.24	1.30	9.55	2.30	16.64	3.30	4.05
0.40	3.47	1.40	11.81	2.40	12.83	3.40	3.76
0.50	3.73	1.50	15.34	2.50	10.39	3.50	3.52
0.60	4.04	1.60	21.55	2.60	8.71	3.60	3.30
0.70	4.40	1.70	34.62	2.70	7.49	3.70	3.11
0.80	4.84	1.80	74.20	2.80	6.56	3.80	2.94
0.90	5.37	1.90	187.94	2.90	5.84	3.90	2.79
1.00	6.03	2.00	76.42	3.00	5.26	4.00	2.65

 | CALIB |
 | NASHYD (0002) | Area (ha)= 10.93 Curve Number (CN)= 68.5
 | ID= 1 DT= 5.0 min | Ia (mm)= 4.40 # of Linear Res.(N)= 3.00
 | | U.H. Tp(hrs)= 0.60

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	2.87	1.083	6.88	2.083	36.93	3.08	4.78
0.167	3.01	1.167	7.78	2.167	25.99	3.17	4.47
0.250	3.16	1.250	8.93	2.250	19.28	3.25	4.19
0.333	3.33	1.333	10.45	2.333	15.12	3.33	3.93
0.417	3.52	1.417	12.52	2.417	12.34	3.42	3.71
0.500	3.73	1.500	15.34	2.500	10.39	3.50	3.52
0.583	4.04	1.583	21.55	2.583	8.71	3.58	3.30
0.667	4.33	1.667	32.01	2.667	7.73	3.67	3.15
0.750	4.66	1.750	58.37	2.750	6.93	3.75	3.01
0.833	5.05	1.833	119.70	2.833	6.27	3.83	2.88
0.917	5.50	1.917	165.64	2.917	5.72	3.92	2.76
1.000	6.03	2.000	76.42	3.000	5.26	4.00	2.65

Unit Hyd Qpeak (cms)= 0.696

PEAK FLOW (cms)= 0.423 (i)
 TIME TO PEAK (hrs)= 2.583
 RUNOFF VOLUME (mm)= 21.072

TOTAL RAINFALL (mm)= 65.654
 RUNOFF COEFFICIENT = 0.321

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

 | READ STORM | Filename: C:\Users\ALOverholt\AppData
 | | ata\Local\Temp\
 | | cb481504-fc3d-4402-bd42-40cd28c5d654\078eb815
 | Ptotal= 65.65 mm | Comments: OWEN SOUND 50 YEAR 4 HOUR DURATION CHICA

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.10	2.87	1.10	6.88	2.10	36.93	3.10	4.78
0.20	3.04	1.20	8.01	2.20	23.25	3.20	4.39
0.30	3.24	1.30	9.55	2.30	16.64	3.30	4.05
0.40	3.47	1.40	11.81	2.40	12.83	3.40	3.76
0.50	3.73	1.50	15.34	2.50	10.39	3.50	3.52
0.60	4.04	1.60	21.55	2.60	8.71	3.60	3.30
0.70	4.40	1.70	34.62	2.70	7.49	3.70	3.11
0.80	4.84	1.80	74.20	2.80	6.56	3.80	2.94
0.90	5.37	1.90	187.94	2.90	5.84	3.90	2.79
1.00	6.03	2.00	76.42	3.00	5.26	4.00	2.65

 | CALIB |
 | NASHYD (0003) | Area (ha)= 136.00 Curve Number (CN)= 52.1
 | ID= 1 DT= 5.0 min | Ia (mm)= 7.20 # of Linear Res.(N)= 3.00
 | | U.H. Tp(hrs)= 1.94

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	2.87	1.083	6.88	2.083	36.93	3.08	4.78
0.167	3.01	1.167	7.78	2.167	25.99	3.17	4.47
0.250	3.16	1.250	8.93	2.250	19.28	3.25	4.19
0.333	3.33	1.333	10.45	2.333	15.12	3.33	3.93
0.417	3.52	1.417	12.52	2.417	12.34	3.42	3.71
0.500	3.73	1.500	15.34	2.500	10.39	3.50	3.52
0.583	4.04	1.583	21.55	2.583	8.71	3.58	3.30
0.667	4.33	1.667	32.01	2.667	7.73	3.67	3.15
0.750	4.66	1.750	58.37	2.750	6.93	3.75	3.01
0.833	5.05	1.833	119.70	2.833	6.27	3.83	2.88
0.917	5.50	1.917	165.64	2.917	5.72	3.92	2.76
1.000	6.03	2.000	76.42	3.000	5.26	4.00	2.65

Unit Hyd Qpeak (cms)= 2.678

PEAK FLOW (cms)= 1.132 (i)
 TIME TO PEAK (hrs)= 4.167
 RUNOFF VOLUME (mm)= 11.702
 TOTAL RAINFALL (mm)= 65.654
 RUNOFF COEFFICIENT = 0.178

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

DUHYD (0400)
 Inlet Cap.= 0.713
 #of Inlets= 1
 Total(cms)= 0.7

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	136.00	1.13	4.17	11.70
MAJOR SYS.(ID= 2):	24.25	0.42	4.17	11.70
MINOR SYS.(ID= 3):	111.75	0.71	3.00	11.70

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0801)
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0002):	10.93	0.423	2.58	21.07
+ ID2= 2 (0400):	111.75	0.713	3.00	11.70
ID = 3 (0801):	122.68	1.048	3.00	12.54

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

READ STORM
 Ptotal= 65.65 mm

Filename: C:\Users\ALOverholt\AppData\Local\Temp\cb481504-fc3d-4402-bd42-40cd28c5d654\078eb815
 Comments: OWEN SOUND 50 YEAR 4 HOUR DURATION CHICA

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.10	2.87	1.10	6.88	2.10	36.93	3.10	4.78
0.20	3.04	1.20	8.01	2.20	23.25	3.20	4.39
0.30	3.24	1.30	9.55	2.30	16.64	3.30	4.05
0.40	3.47	1.40	11.81	2.40	12.83	3.40	3.76
0.50	3.73	1.50	15.34	2.50	10.39	3.50	3.52
0.60	4.04	1.60	21.55	2.60	8.71	3.60	3.30
0.70	4.40	1.70	34.62	2.70	7.49	3.70	3.11
0.80	4.84	1.80	74.20	2.80	6.56	3.80	2.94
0.90	5.37	1.90	187.94	2.90	5.84	3.90	2.79
1.00	6.03	2.00	76.42	3.00	5.26	4.00	2.65

CALIB
 NASHYD (0001)
 ID= 1 DT= 5.0 min

Area (ha)= 77.75 Curve Number (CN)= 49.6
 Ia (mm)= 6.91 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 1.24

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	2.87	1.083	6.88	2.083	36.93	3.08	4.78
0.167	3.01	1.167	7.78	2.167	25.99	3.17	4.47
0.250	3.16	1.250	8.93	2.250	19.28	3.25	4.19
0.333	3.33	1.333	10.45	2.333	15.12	3.33	3.93
0.417	3.52	1.417	12.52	2.417	12.34	3.42	3.71
0.500	3.73	1.500	15.34	2.500	10.39	3.50	3.52
0.583	4.04	1.583	21.55	2.583	8.71	3.58	3.30
0.667	4.33	1.667	32.01	2.667	7.73	3.67	3.15
0.750	4.66	1.750	58.37	2.750	6.93	3.75	3.01

0.333	3.33	1.333	10.45	2.333	15.12	3.33	3.93
0.417	3.52	1.417	12.52	2.417	12.34	3.42	3.71
0.500	3.73	1.500	15.34	2.500	10.39	3.50	3.52
0.583	4.04	1.583	21.55	2.583	8.71	3.58	3.30
0.667	4.33	1.667	32.01	2.667	7.73	3.67	3.15
0.750	4.66	1.750	58.37	2.750	6.93	3.75	3.01
0.833	5.05	1.833	119.70	2.833	6.27	3.83	2.88
0.917	5.50	1.917	165.64	2.917	5.72	3.92	2.76
1.000	6.03	2.000	76.42	3.000	5.26	4.00	2.65

Unit Hyd Qpeak (cms)= 2.395

PEAK FLOW (cms)= 0.865 (i)
 TIME TO PEAK (hrs)= 3.333
 RUNOFF VOLUME (mm)= 10.891
 TOTAL RAINFALL (mm)= 65.654
 RUNOFF COEFFICIENT = 0.166

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

READ STORM
 Ptotal= 65.65 mm

Filename: C:\Users\ALOverholt\AppData\Local\Temp\cb481504-fc3d-4402-bd42-40cd28c5d654\078eb815
 Comments: OWEN SOUND 50 YEAR 4 HOUR DURATION CHICA

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.10	2.87	1.10	6.88	2.10	36.93	3.10	4.78
0.20	3.04	1.20	8.01	2.20	23.25	3.20	4.39
0.30	3.24	1.30	9.55	2.30	16.64	3.30	4.05
0.40	3.47	1.40	11.81	2.40	12.83	3.40	3.76
0.50	3.73	1.50	15.34	2.50	10.39	3.50	3.52
0.60	4.04	1.60	21.55	2.60	8.71	3.60	3.30
0.70	4.40	1.70	34.62	2.70	7.49	3.70	3.11
0.80	4.84	1.80	74.20	2.80	6.56	3.80	2.94
0.90	5.37	1.90	187.94	2.90	5.84	3.90	2.79
1.00	6.03	2.00	76.42	3.00	5.26	4.00	2.65

CALIB
 NASHYD (0201)
 ID= 1 DT= 5.0 min

Area (ha)= 5.05 Curve Number (CN)= 51.4
 Ia (mm)= 4.70 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.57

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	2.87	1.083	6.88	2.083	36.93	3.08	4.78
0.167	3.01	1.167	7.78	2.167	25.99	3.17	4.47
0.250	3.16	1.250	8.93	2.250	19.28	3.25	4.19
0.333	3.33	1.333	10.45	2.333	15.12	3.33	3.93
0.417	3.52	1.417	12.52	2.417	12.34	3.42	3.71
0.500	3.73	1.500	15.34	2.500	10.39	3.50	3.52
0.583	4.04	1.583	21.55	2.583	8.71	3.58	3.30
0.667	4.33	1.667	32.01	2.667	7.73	3.67	3.15
0.750	4.66	1.750	58.37	2.750	6.93	3.75	3.01

0.833	5.05	1.833	119.70	2.833	6.27	3.83	2.88
0.917	5.50	1.917	165.64	2.917	5.72	3.92	2.76
1.000	6.03	2.000	76.42	3.000	5.26	4.00	2.65

Unit Hyd Qpeak (cms)= 0.338

PEAK FLOW (cms)= 0.117 (i)
 TIME TO PEAK (hrs)= 2.583
 RUNOFF VOLUME (mm)= 12.338
 TOTAL RAINFALL (mm)= 65.654
 RUNOFF COEFFICIENT = 0.188

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

RESERVOIR(0601)
 IN= 2--> OUT= 1
 DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.3000	0.0752
0.0320	0.0244	0.7410	0.1015
0.0910	0.0495	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0201)	5.047	0.117	2.58	12.34
OUTFLOW: ID= 1 (0601)	5.047	0.051	3.50	12.30

PEAK FLOW REDUCTION [Qout/Qin](%)= 44.05
 TIME SHIFT OF PEAK FLOW (min)= 55.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0327

READ STORM
 Ptotal= 65.65 mm

Filename: C:\Users\ALoverholt\AppData\Local\Temp\cb481504-fc3d-4402-bd42-40cd28c5d654\078eb815
 Comments: OWEN SOUND 50 YEAR 4 HOUR DURATION CHICA

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.10	2.87	1.10	6.88	2.10	36.93	3.10	4.78
0.20	3.04	1.20	8.01	2.20	23.25	3.20	4.39
0.30	3.24	1.30	9.55	2.30	16.64	3.30	4.05
0.40	3.47	1.40	11.81	2.40	12.83	3.40	3.76
0.50	3.73	1.50	15.34	2.50	10.39	3.50	3.52
0.60	4.04	1.60	21.55	2.60	8.71	3.60	3.30
0.70	4.40	1.70	34.62	2.70	7.49	3.70	3.11
0.80	4.84	1.80	74.20	2.80	6.56	3.80	2.94
0.90	5.37	1.90	187.94	2.90	5.84	3.90	2.79
1.00	6.03	2.00	76.42	3.00	5.26	4.00	2.65

CALIB
 NASHYD (0202)
 ID= 1 DT= 5.0 min

Area (ha)= 6.35
 Ia (mm)= 4.70
 U.H. Tp(hrs)= 0.55
 Curve Number (CN)= 57.9
 # of Linear Res.(N)= 3.00

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	2.87	1.083	6.88	2.083	36.93	3.08	4.78
0.167	3.01	1.167	7.78	2.167	25.99	3.17	4.47
0.250	3.16	1.250	8.93	2.250	19.28	3.25	4.19
0.333	3.33	1.333	10.45	2.333	15.12	3.33	3.93
0.417	3.52	1.417	12.52	2.417	12.34	3.42	3.71
0.500	3.73	1.500	15.34	2.500	10.39	3.50	3.52
0.583	4.04	1.583	21.55	2.583	8.71	3.58	3.30
0.667	4.33	1.667	32.01	2.667	7.73	3.67	3.15
0.750	4.66	1.750	58.37	2.750	6.93	3.75	3.01
0.833	5.05	1.833	119.70	2.833	6.27	3.83	2.88
0.917	5.50	1.917	165.64	2.917	5.72	3.92	2.76
1.000	6.03	2.000	76.42	3.000	5.26	4.00	2.65

Unit Hyd Qpeak (cms)= 0.441

PEAK FLOW (cms)= 0.186 (i)
 TIME TO PEAK (hrs)= 2.500
 RUNOFF VOLUME (mm)= 15.125
 TOTAL RAINFALL (mm)= 65.654
 RUNOFF COEFFICIENT = 0.230

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

RESERVOIR(0602)
 IN= 2--> OUT= 1
 DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.0394	0.0998
0.0000	0.0000	0.1306	0.1176
0.0014	0.0066	0.3534	0.1362
0.0069	0.0205	0.6046	0.1554
0.0098	0.0350	0.9742	0.1752
0.0120	0.0502	1.4665	0.1957
0.0139	0.0661	2.0882	0.2169
0.0155	0.0826	2.4500	0.2278

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0202)	6.346	0.186	2.50	15.12
OUTFLOW: ID= 1 (0602)	6.346	0.015	4.67	14.94

PEAK FLOW REDUCTION [Qout/Qin](%)= 8.30
 TIME SHIFT OF PEAK FLOW (min)=130.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0821

ADD HYD (0802)
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0601):	5.05	0.051	3.50	12.30
+ ID2= 2 (0602):	6.35	0.015	4.67	14.94
=====	=====	=====	=====	=====
ID = 3 (0802):	11.39	0.066	3.50	13.77

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0803)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0001):	77.75	0.865	3.33	10.89
+ ID2= 2 (0802):	11.39	0.066	3.50	13.77
ID = 3 (0803):	89.14	0.931	3.42	11.26

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
V V I SSSSS U U A L
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 TTTT TTTT 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 5.0\VO2\vojn.dat
Output filename: C:\Users\ALOverholt\AppData\Local\Civica\vh5
c1119499-7c01-4a85-b304-3a19a257e6a9\537dff3e-0183-4c0a-b227-bf39547ea7f2\s
Summary filename: C:\Users\ALOverholt\AppData\Local\Civica\vh5
c1119499-7c01-4a85-b304-3a19a257e6a9\537dff3e-0183-4c0a-b227-bf39547ea7f2\s

DATE: 04-02-2020

TIME: 11:07:58

USER:

COMMENTS: _____

** SIMULATION : Run 07 **

100 Year
Chicago

READ STORM
Ptotal= 71.77 mm

Filename: C:\Users\ALOverholt\AppData\Local\Temp\cb481504-fc3d-4402-bd42-40cd28c5d654\43e3c67d
Comments: OWEN SOUND 100 YEAR 4 HOUR DURATION CHIC

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.10	3.08	1.10	7.44	2.10	40.41	3.10	5.16
0.20	3.27	1.20	8.67	2.20	25.38	3.20	4.73
0.30	3.49	1.30	10.36	2.30	18.12	3.30	4.37
0.40	3.73	1.40	12.83	2.40	13.95	3.40	4.05
0.50	4.02	1.50	16.70	2.50	11.28	3.50	3.79
0.60	4.35	1.60	23.51	2.60	9.44	3.60	3.55
0.70	4.75	1.70	37.88	2.70	8.10	3.70	3.35
0.80	5.22	1.80	81.47	2.80	7.09	3.80	3.16
0.90	5.80	1.90	206.92	2.90	6.31	3.90	3.00
1.00	6.52	2.00	83.92	3.00	5.67	4.00	2.85

CALIB
NASHYD (0002)
ID= 1 DT= 5.0 min

Area (ha)= 10.93 Curve Number (CN)= 68.5
Ia (mm)= 4.40 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.60

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	3.08	1.083	7.44	2.083	40.41	3.08	5.16
0.167	3.23	1.167	8.42	2.167	28.39	3.17	4.82
0.250	3.40	1.250	9.68	2.250	21.02	3.25	4.51
0.333	3.59	1.333	11.35	2.333	16.45	3.33	4.24
0.417	3.79	1.417	13.60	2.417	13.42	3.42	4.00
0.500	4.02	1.500	16.70	2.500	11.28	3.50	3.79
0.583	4.35	1.583	23.51	2.583	9.44	3.58	3.55
0.667	4.67	1.667	35.01	2.667	8.37	3.67	3.39
0.750	5.03	1.750	64.03	2.750	7.49	3.75	3.24
0.833	5.45	1.833	131.65	2.833	6.78	3.83	3.10
0.917	5.94	1.917	182.32	2.917	6.18	3.92	2.97
1.000	6.52	2.000	83.92	3.000	5.67	4.00	2.85

Unit Hyd Qpeak (cms)= 0.696

PEAK FLOW (cms)= 0.498 (i)
TIME TO PEAK (hrs)= 2.583
RUNOFF VOLUME (mm)= 24.642
TOTAL RAINFALL (mm)= 71.769
RUNOFF COEFFICIENT = 0.343

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

READ STORM
Ptotal= 71.77 mm

Filename: C:\Users\ALOverholt\AppData\Local\Temp\cb481504-fc3d-4402-bd42-40cd28c5d654\43e3c67d
Comments: OWEN SOUND 100 YEAR 4 HOUR DURATION CHIC

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.10	3.08	1.10	7.44	2.10	40.41	3.10	5.16
0.20	3.27	1.20	8.67	2.20	25.38	3.20	4.73
0.30	3.49	1.30	10.36	2.30	18.12	3.30	4.37
0.40	3.73	1.40	12.83	2.40	13.95	3.40	4.05

0.50	4.02	1.50	16.70	2.50	11.28	3.50	3.79
0.60	4.35	1.60	23.51	2.60	9.44	3.60	3.55
0.70	4.75	1.70	37.88	2.70	8.10	3.70	3.35
0.80	5.22	1.80	81.47	2.80	7.09	3.80	3.16
0.90	5.80	1.90	206.92	2.90	6.31	3.90	3.00
1.00	6.52	2.00	83.92	3.00	5.67	4.00	2.85

CALIB
 NASHYD (0003) Area (ha)= 136.00 Curve Number (CN)= 52.1
 ID= 1 DT= 5.0 min Ia (mm)= 7.20 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 1.94

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	3.08	1.083	7.44	2.083	40.41	3.08	5.16
0.167	3.23	1.167	8.42	2.167	28.39	3.17	4.82
0.250	3.40	1.250	9.68	2.250	21.02	3.25	4.51
0.333	3.59	1.333	11.35	2.333	16.45	3.33	4.24
0.417	3.79	1.417	13.60	2.417	13.42	3.42	4.00
0.500	4.02	1.500	16.70	2.500	11.28	3.50	3.79
0.583	4.35	1.583	23.51	2.583	9.44	3.58	3.55
0.667	4.67	1.667	35.01	2.667	8.37	3.67	3.39
0.750	5.03	1.750	64.03	2.750	7.49	3.75	3.24
0.833	5.45	1.833	131.65	2.833	6.78	3.83	3.10
0.917	5.94	1.917	182.32	2.917	6.18	3.92	2.97
1.000	6.52	2.000	83.92	3.000	5.67	4.00	2.85

Unit Hyd Qpeak (cms)= 2.678

PEAK FLOW (cms)= 1.355 (i)
 TIME TO PEAK (hrs)= 4.167
 RUNOFF VOLUME (mm)= 13.986
 TOTAL RAINFALL (mm)= 71.769
 RUNOFF COEFFICIENT = 0.195

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

DUHYD (0400)
 Inlet Cap.= 0.713
 #of Inlets= 1
 Total(cms)= 0.7

AREA	QPEAK	TPEAK	R.V.	
(ha)	(cms)	(hrs)	(mm)	
TOTAL HYD.(ID= 1):	136.00	1.36	4.17	13.99
MAJOR SYS.(ID= 2):	35.85	0.64	4.17	13.99
MINOR SYS.(ID= 3):	100.15	0.71	2.83	13.99

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0801)
 1 + 2 = 3

AREA	QPEAK	TPEAK	R.V.
(ha)	(cms)	(hrs)	(mm)

ID1= 1 (0002):	10.93	0.498	2.58	24.64
+ ID2= 2 (0400):	100.15	0.713	2.83	13.99
=====				
ID = 3 (0801):	111.08	1.162	2.83	15.03

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

READ STORM
 Ptotal= 71.77 mm

Filename: C:\Users\ALOverholt\AppData\Local\Temp\cb481504-fc3d-4402-bd42-40cd28c5d654\43e3c67d
 Comments: OWEN SOUND 100 YEAR 4 HOUR DURATION CHIC

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.10	3.08	1.10	7.44	2.10	40.41	3.10	5.16
0.20	3.27	1.20	8.67	2.20	25.38	3.20	4.73
0.30	3.49	1.30	10.36	2.30	18.12	3.30	4.37
0.40	3.73	1.40	12.83	2.40	13.95	3.40	4.05
0.50	4.02	1.50	16.70	2.50	11.28	3.50	3.79
0.60	4.35	1.60	23.51	2.60	9.44	3.60	3.55
0.70	4.75	1.70	37.88	2.70	8.10	3.70	3.35
0.80	5.22	1.80	81.47	2.80	7.09	3.80	3.16
0.90	5.80	1.90	206.92	2.90	6.31	3.90	3.00
1.00	6.52	2.00	83.92	3.00	5.67	4.00	2.85

CALIB
 NASHYD (0001) Area (ha)= 77.75 Curve Number (CN)= 49.6
 ID= 1 DT= 5.0 min Ia (mm)= 6.91 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 1.24

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	3.08	1.083	7.44	2.083	40.41	3.08	5.16
0.167	3.23	1.167	8.42	2.167	28.39	3.17	4.82
0.250	3.40	1.250	9.68	2.250	21.02	3.25	4.51
0.333	3.59	1.333	11.35	2.333	16.45	3.33	4.24
0.417	3.79	1.417	13.60	2.417	13.42	3.42	4.00
0.500	4.02	1.500	16.70	2.500	11.28	3.50	3.79
0.583	4.35	1.583	23.51	2.583	9.44	3.58	3.55
0.667	4.67	1.667	35.01	2.667	8.37	3.67	3.39
0.750	5.03	1.750	64.03	2.750	7.49	3.75	3.24
0.833	5.45	1.833	131.65	2.833	6.78	3.83	3.10
0.917	5.94	1.917	182.32	2.917	6.18	3.92	2.97
1.000	6.52	2.000	83.92	3.000	5.67	4.00	2.85

Unit Hyd Qpeak (cms)= 2.395

PEAK FLOW (cms)= 1.039 (i)
 TIME TO PEAK (hrs)= 3.333
 RUNOFF VOLUME (mm)= 13.026
 TOTAL RAINFALL (mm)= 71.769
 RUNOFF COEFFICIENT = 0.181

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

 READ STORM
 Ptotal= 71.77 mm

Filename: C:\Users\ALOverholt\AppData
 ata\Local\Temp\
 cb481504-fc3d-4402-bd42-40cd28c5d654\43e3c67d
 Comments: OWEN SOUND 100 YEAR 4 HOUR DURATION CHIC

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.10	3.08	1.10	7.44	2.10	40.41	3.10	5.16
0.20	3.27	1.20	8.67	2.20	25.38	3.20	4.73
0.30	3.49	1.30	10.36	2.30	18.12	3.30	4.37
0.40	3.73	1.40	12.83	2.40	13.95	3.40	4.05
0.50	4.02	1.50	16.70	2.50	11.28	3.50	3.79
0.60	4.35	1.60	23.51	2.60	9.44	3.60	3.55
0.70	4.75	1.70	37.88	2.70	8.10	3.70	3.35
0.80	5.22	1.80	81.47	2.80	7.09	3.80	3.16
0.90	5.80	1.90	206.92	2.90	6.31	3.90	3.00
1.00	6.52	2.00	83.92	3.00	5.67	4.00	2.85

 CALIB
 NASHYD (0201)
 ID= 1 DT= 5.0 min

Area (ha)= 5.05 Curve Number (CN)= 51.4
 Ia (mm)= 4.70 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.57

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	3.08	1.083	7.44	2.083	40.41	3.08	5.16
0.167	3.23	1.167	8.42	2.167	28.39	3.17	4.82
0.250	3.40	1.250	9.68	2.250	21.02	3.25	4.51
0.333	3.59	1.333	11.35	2.333	16.45	3.33	4.24
0.417	3.79	1.417	13.60	2.417	13.42	3.42	4.00
0.500	4.02	1.500	16.70	2.500	11.28	3.50	3.79
0.583	4.35	1.583	23.51	2.583	9.44	3.58	3.55
0.667	4.67	1.667	35.01	2.667	8.37	3.67	3.39
0.750	5.03	1.750	64.03	2.750	7.49	3.75	3.24
0.833	5.45	1.833	131.65	2.833	6.78	3.83	3.10
0.917	5.94	1.917	182.32	2.917	6.18	3.92	2.97
1.000	6.52	2.000	83.92	3.000	5.67	4.00	2.85

Unit Hyd Qpeak (cms)= 0.338

PEAK FLOW (cms)= 0.139 (i)
 TIME TO PEAK (hrs)= 2.583
 RUNOFF VOLUME (mm)= 14.641
 TOTAL RAINFALL (mm)= 71.769
 RUNOFF COEFFICIENT = 0.204

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

 RESERVOIR(0601)
 IN= 2---> OUT= 1
 DT= 5.0 min

OUTFLOW STORAGE | OUTFLOW STORAGE

(cms)	(ha.m.)	(cms)	(ha.m.)
0.0000	0.0000	0.3000	0.0752
0.0320	0.0244	0.7410	0.1015
0.0910	0.0495	0.0000	0.0000

AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)
 INFLOW : ID= 2 (0201) 5.047 0.139 2.58 14.64
 OUTFLOW: ID= 1 (0601) 5.047 0.064 3.42 14.60

PEAK FLOW REDUCTION [Qout/Qin](%)= 45.75
 TIME SHIFT OF PEAK FLOW (min)= 50.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0379

 READ STORM
 Ptotal= 71.77 mm

Filename: C:\Users\ALOverholt\AppData
 ata\Local\Temp\
 cb481504-fc3d-4402-bd42-40cd28c5d654\43e3c67d
 Comments: OWEN SOUND 100 YEAR 4 HOUR DURATION CHIC

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.10	3.08	1.10	7.44	2.10	40.41	3.10	5.16
0.20	3.27	1.20	8.67	2.20	25.38	3.20	4.73
0.30	3.49	1.30	10.36	2.30	18.12	3.30	4.37
0.40	3.73	1.40	12.83	2.40	13.95	3.40	4.05
0.50	4.02	1.50	16.70	2.50	11.28	3.50	3.79
0.60	4.35	1.60	23.51	2.60	9.44	3.60	3.55
0.70	4.75	1.70	37.88	2.70	8.10	3.70	3.35
0.80	5.22	1.80	81.47	2.80	7.09	3.80	3.16
0.90	5.80	1.90	206.92	2.90	6.31	3.90	3.00
1.00	6.52	2.00	83.92	3.00	5.67	4.00	2.85

 CALIB
 NASHYD (0202)
 ID= 1 DT= 5.0 min

Area (ha)= 6.35 Curve Number (CN)= 57.9
 Ia (mm)= 4.70 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.55

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	3.08	1.083	7.44	2.083	40.41	3.08	5.16
0.167	3.23	1.167	8.42	2.167	28.39	3.17	4.82
0.250	3.40	1.250	9.68	2.250	21.02	3.25	4.51
0.333	3.59	1.333	11.35	2.333	16.45	3.33	4.24
0.417	3.79	1.417	13.60	2.417	13.42	3.42	4.00
0.500	4.02	1.500	16.70	2.500	11.28	3.50	3.79
0.583	4.35	1.583	23.51	2.583	9.44	3.58	3.55
0.667	4.67	1.667	35.01	2.667	8.37	3.67	3.39
0.750	5.03	1.750	64.03	2.750	7.49	3.75	3.24
0.833	5.45	1.833	131.65	2.833	6.78	3.83	3.10
0.917	5.94	1.917	182.32	2.917	6.18	3.92	2.97
1.000	6.52	2.000	83.92	3.000	5.67	4.00	2.85

Unit Hyd Qpeak (cms)= 0.441

PEAK FLOW (cms)= 0.221 (i)
 TIME TO PEAK (hrs)= 2.500
 RUNOFF VOLUME (mm)= 17.867
 TOTAL RAINFALL (mm)= 71.769
 RUNOFF COEFFICIENT = 0.249

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

 | RESERVOIR(0602) |
 | IN= 2--> OUT= 1 |
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.0394	0.0998
0.0000	0.0000	0.1306	0.1176
0.0014	0.0066	0.3534	0.1362
0.0069	0.0205	0.6046	0.1554
0.0098	0.0350	0.9742	0.1752
0.0120	0.0502	1.4665	0.1957
0.0139	0.0661	2.0882	0.2169
0.0155	0.0826	2.4500	0.2278

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0202)	6.346	0.221	2.50	17.87
OUTFLOW: ID= 1 (0602)	6.346	0.031	4.33	17.68

PEAK FLOW REDUCTION [Qout/Qin](%)= 13.98
 TIME SHIFT OF PEAK FLOW (min)=110.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0937

 | ADD HYD (0802) |
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0601):	5.05	0.064	3.42	14.60
+ ID2= 2 (0602):	6.35	0.031	4.33	17.68
=====				
ID = 3 (0802):	11.39	0.087	3.83	16.32

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 | ADD HYD (0803) |
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0001):	77.75	1.039	3.33	13.03
+ ID2= 2 (0802):	11.39	0.087	3.83	16.32
=====				
ID = 3 (0803):	89.14	1.118	3.42	13.45

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

V V I SSSSS U U A L
 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

 000 TTTTT TTTTT H H Y Y M M 000 TM
 O O T T H H Y Y MM MM O O
 O O T T H H Y M M O O
 000 T T H H Y M M 000

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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 5.0\VO2\voin.dat
 Output filename: C:\Users\ALOverholt\AppData\Local\Civica\XH5
 \c1119499-7c01-4a85-b304-3a19a257e6a9\de490210-033e-45c3-af8b-5c8e599a49ed\s
 Summary filename: C:\Users\ALOverholt\AppData\Local\Civica\XH5
 \c1119499-7c01-4a85-b304-3a19a257e6a9\de490210-033e-45c3-af8b-5c8e599a49ed\s

DATE: 04-02-2020

TIME: 11:07:58

USER:

COMMENTS: _____

 ** SIMULATION : Run 08 **

Regional Chicago

 | READ STORM |
Ptotal=193.00 mm

Filename: C:\Users\ALOverholt\AppData\Local\Temp\cb481504-fc3d-4402-bd42-40cd28c5d654\715aff24
 Comments: TMMINS REGIONAL 12 HOUR DURATION STORM

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.20	15.00	3.20	3.00	6.20	43.00	9.20	13.00
0.40	15.00	3.40	3.00	6.40	43.00	9.40	13.00
0.60	15.00	3.60	3.00	6.60	43.00	9.60	13.00
0.80	15.00	3.80	3.00	6.80	43.00	9.80	13.00
1.00	15.00	4.00	3.00	7.00	43.00	10.00	13.00
1.20	20.00	4.20	5.00	7.20	20.00	10.20	13.00
1.40	20.00	4.40	5.00	7.40	20.00	10.40	13.00
1.60	20.00	4.60	5.00	7.60	20.00	10.60	13.00
1.80	20.00	4.80	5.00	7.80	20.00	10.80	13.00
2.00	20.00	5.00	5.00	8.00	20.00	11.00	13.00
2.20	10.00	5.20	20.00	8.20	23.00	11.20	8.00
2.40	10.00	5.40	20.00	8.40	23.00	11.40	8.00
2.60	10.00	5.60	20.00	8.60	23.00	11.60	8.00
2.80	10.00	5.80	20.00	8.80	23.00	11.80	8.00
3.00	10.00	6.00	20.00	9.00	23.00	12.00	8.00

 | CALIB
 | NASHYD (0002)
ID= 1 DT= 5.0 min

Area (ha)= 10.93 Curve Number (CN)= 68.5
 Ia (mm)= 4.40 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.60

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	15.00	3.083	3.00	6.083	43.00	9.08	13.00
0.167	15.00	3.167	3.00	6.167	43.00	9.17	13.00
0.250	15.00	3.250	3.00	6.250	43.00	9.25	13.00
0.333	15.00	3.333	3.00	6.333	43.00	9.33	13.00
0.417	15.00	3.417	3.00	6.417	43.00	9.42	13.00
0.500	15.00	3.500	3.00	6.500	43.00	9.50	13.00
0.583	15.00	3.583	3.00	6.583	43.00	9.58	13.00
0.667	15.00	3.667	3.00	6.667	43.00	9.67	13.00
0.750	15.00	3.750	3.00	6.750	43.00	9.75	13.00
0.833	15.00	3.833	3.00	6.833	43.00	9.83	13.00
0.917	15.00	3.917	3.00	6.917	43.00	9.92	13.00
1.000	15.00	4.000	3.00	7.000	43.00	10.00	13.00
1.083	20.00	4.083	5.00	7.083	20.00	10.08	13.00
1.167	20.00	4.167	5.00	7.167	20.00	10.17	13.00
1.250	20.00	4.250	5.00	7.250	20.00	10.25	13.00
1.333	20.00	4.333	5.00	7.333	20.00	10.33	13.00
1.417	20.00	4.417	5.00	7.417	20.00	10.42	13.00
1.500	20.00	4.500	5.00	7.500	20.00	10.50	13.00
1.583	20.00	4.583	5.00	7.583	20.00	10.58	13.00
1.667	20.00	4.667	5.00	7.667	20.00	10.67	13.00
1.750	20.00	4.750	5.00	7.750	20.00	10.75	13.00
1.833	20.00	4.833	5.00	7.833	20.00	10.83	13.00
1.917	20.00	4.917	5.00	7.917	20.00	10.92	13.00
2.000	20.00	5.000	5.00	8.000	20.00	11.00	13.00
2.083	10.00	5.083	20.00	8.083	23.00	11.08	8.00
2.167	10.00	5.167	20.00	8.167	23.00	11.17	8.00
2.250	10.00	5.250	20.00	8.250	23.00	11.25	8.00
2.333	10.00	5.333	20.00	8.333	23.00	11.33	8.00
2.417	10.00	5.417	20.00	8.417	23.00	11.42	8.00
2.500	10.00	5.500	20.00	8.500	23.00	11.50	8.00
2.583	10.00	5.583	20.00	8.583	23.00	11.58	8.00
2.667	10.00	5.667	20.00	8.667	23.00	11.67	8.00
2.750	10.00	5.750	20.00	8.750	23.00	11.75	8.00
2.833	10.00	5.833	20.00	8.833	23.00	11.83	8.00
2.917	10.00	5.917	20.00	8.917	23.00	11.92	8.00
3.000	10.00	6.000	20.00	9.000	23.00	12.00	8.00

Unit Hyd Qpeak (cms)= 0.696

PEAK FLOW (cms)= 0.748 (i)
 TIME TO PEAK (hrs)= 7.250
 RUNOFF VOLUME (mm)= 116.466
 TOTAL RAINFALL (mm)= 193.000
 RUNOFF COEFFICIENT = 0.603

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

 | READ STORM | Filename: C:\Users\ALOverholt\AppData

Ptotal=193.00 mm

ata\Local\Temp\
 cb481504-fc3d-4402-bd42-40cd28c5d654\715aff24
 Comments: TIMMINS REGIONAL 12 HOUR DURATION STORM

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.20	15.00	3.20	3.00	6.20	43.00	9.20	13.00
0.40	15.00	3.40	3.00	6.40	43.00	9.40	13.00
0.60	15.00	3.60	3.00	6.60	43.00	9.60	13.00
0.80	15.00	3.80	3.00	6.80	43.00	9.80	13.00
1.00	15.00	4.00	3.00	7.00	43.00	10.00	13.00
1.20	20.00	4.20	5.00	7.20	20.00	10.20	13.00
1.40	20.00	4.40	5.00	7.40	20.00	10.40	13.00
1.60	20.00	4.60	5.00	7.60	20.00	10.60	13.00
1.80	20.00	4.80	5.00	7.80	20.00	10.80	13.00
2.00	20.00	5.00	5.00	8.00	20.00	11.00	13.00
2.20	10.00	5.20	20.00	8.20	23.00	11.20	8.00
2.40	10.00	5.40	20.00	8.40	23.00	11.40	8.00
2.60	10.00	5.60	20.00	8.60	23.00	11.60	8.00
2.80	10.00	5.80	20.00	8.80	23.00	11.80	8.00
3.00	10.00	6.00	20.00	9.00	23.00	12.00	8.00

 | CALIB
 | NASHYD (0003)
ID= 1 DT= 5.0 min

Area (ha)= 136.00 Curve Number (CN)= 52.1
 Ia (mm)= 7.20 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 1.94

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	15.00	3.083	3.00	6.083	43.00	9.08	13.00
0.167	15.00	3.167	3.00	6.167	43.00	9.17	13.00
0.250	15.00	3.250	3.00	6.250	43.00	9.25	13.00
0.333	15.00	3.333	3.00	6.333	43.00	9.33	13.00
0.417	15.00	3.417	3.00	6.417	43.00	9.42	13.00
0.500	15.00	3.500	3.00	6.500	43.00	9.50	13.00
0.583	15.00	3.583	3.00	6.583	43.00	9.58	13.00
0.667	15.00	3.667	3.00	6.667	43.00	9.67	13.00
0.750	15.00	3.750	3.00	6.750	43.00	9.75	13.00
0.833	15.00	3.833	3.00	6.833	43.00	9.83	13.00
0.917	15.00	3.917	3.00	6.917	43.00	9.92	13.00
1.000	15.00	4.000	3.00	7.000	43.00	10.00	13.00
1.083	20.00	4.083	5.00	7.083	20.00	10.08	13.00
1.167	20.00	4.167	5.00	7.167	20.00	10.17	13.00
1.250	20.00	4.250	5.00	7.250	20.00	10.25	13.00
1.333	20.00	4.333	5.00	7.333	20.00	10.33	13.00
1.417	20.00	4.417	5.00	7.417	20.00	10.42	13.00
1.500	20.00	4.500	5.00	7.500	20.00	10.50	13.00
1.583	20.00	4.583	5.00	7.583	20.00	10.58	13.00
1.667	20.00	4.667	5.00	7.667	20.00	10.67	13.00
1.750	20.00	4.750	5.00	7.750	20.00	10.75	13.00
1.833	20.00	4.833	5.00	7.833	20.00	10.83	13.00
1.917	20.00	4.917	5.00	7.917	20.00	10.92	13.00
2.000	20.00	5.000	5.00	8.000	20.00	11.00	13.00
2.083	10.00	5.083	20.00	8.083	23.00	11.08	8.00
2.167	10.00	5.167	20.00	8.167	23.00	11.17	8.00
2.250	10.00	5.250	20.00	8.250	23.00	11.25	8.00
2.333	10.00	5.333	20.00	8.333	23.00	11.33	8.00

2.417	10.00	5.417	20.00	8.417	23.00	11.42	8.00
2.500	10.00	5.500	20.00	8.500	23.00	11.50	8.00
2.583	10.00	5.583	20.00	8.583	23.00	11.58	8.00
2.667	10.00	5.667	20.00	8.667	23.00	11.67	8.00
2.750	10.00	5.750	20.00	8.750	23.00	11.75	8.00
2.833	10.00	5.833	20.00	8.833	23.00	11.83	8.00
2.917	10.00	5.917	20.00	8.917	23.00	11.92	8.00
3.000	10.00	6.000	20.00	9.000	23.00	12.00	8.00

Unit Hyd Qpeak (cms)= 2.678

PEAK FLOW (cms)= 4.452 (i)
 TIME TO PEAK (hrs)= 10.000
 RUNOFF VOLUME (mm)= 82.327
 TOTAL RAINFALL (mm)= 193.000
 RUNOFF COEFFICIENT = 0.427

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

DUHYD (0400)
 Inlet Cap.= 0.713
 #of Inlets= 1
 Total(cms)= 0.7

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	136.00	4.45	10.00	82.33
MAJOR SYS.(ID= 2):	92.94	3.74	10.00	82.33
MINOR SYS.(ID= 3):	43.06	0.71	6.00	82.33

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0801)
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0002):	10.93	0.748	7.25	116.47
+ ID2= 2 (0400):	43.06	0.713	6.00	82.33
ID = 3 (0801):	53.99	1.461	7.25	89.24

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

READ STORM
 Ptotal=193.00 mm

Filename: C:\Users\ALOverholt\AppData
 ata\Local\Temp\
 cb481504-fc3d-4402-bd42-40cd28c5d654\715aff24
 Comments: TIMMINS REGIONAL 12 HOUR DURATION STORM

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.20	15.00	3.20	3.00	6.20	43.00	9.20	13.00
0.40	15.00	3.40	3.00	6.40	43.00	9.40	13.00
0.60	15.00	3.60	3.00	6.60	43.00	9.60	13.00
0.80	15.00	3.80	3.00	6.80	43.00	9.80	13.00
1.00	15.00	4.00	3.00	7.00	43.00	10.00	13.00
1.20	20.00	4.20	5.00	7.20	20.00	10.20	13.00
1.40	20.00	4.40	5.00	7.40	20.00	10.40	13.00
1.60	20.00	4.60	5.00	7.60	20.00	10.60	13.00

1.80	20.00	4.80	5.00	7.80	20.00	10.80	13.00
2.00	20.00	5.00	5.00	8.00	20.00	11.00	13.00
2.20	10.00	5.20	20.00	8.20	23.00	11.20	8.00
2.40	10.00	5.40	20.00	8.40	23.00	11.40	8.00
2.60	10.00	5.60	20.00	8.60	23.00	11.60	8.00
2.80	10.00	5.80	20.00	8.80	23.00	11.80	8.00
3.00	10.00	6.00	20.00	9.00	23.00	12.00	8.00

CALIB
 NASHYD (0001)
 ID= 1 DT= 5.0 min

Area (ha)= 77.75
 Ia (mm)= 6.91
 U.H. Tp(hrs)= 1.24
 Curve Number (CN)= 49.6
 # of Linear Res.(N)= 3.00

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	15.00	3.083	3.00	6.083	43.00	9.08	13.00
0.167	15.00	3.167	3.00	6.167	43.00	9.17	13.00
0.250	15.00	3.250	3.00	6.250	43.00	9.25	13.00
0.333	15.00	3.333	3.00	6.333	43.00	9.33	13.00
0.417	15.00	3.417	3.00	6.417	43.00	9.42	13.00
0.500	15.00	3.500	3.00	6.500	43.00	9.50	13.00
0.583	15.00	3.583	3.00	6.583	43.00	9.58	13.00
0.667	15.00	3.667	3.00	6.667	43.00	9.67	13.00
0.750	15.00	3.750	3.00	6.750	43.00	9.75	13.00
0.833	15.00	3.833	3.00	6.833	43.00	9.83	13.00
0.917	15.00	3.917	3.00	6.917	43.00	9.92	13.00
1.000	15.00	4.000	3.00	7.000	43.00	10.00	13.00
1.083	20.00	4.083	5.00	7.083	20.00	10.08	13.00
1.167	20.00	4.167	5.00	7.167	20.00	10.17	13.00
1.250	20.00	4.250	5.00	7.250	20.00	10.25	13.00
1.333	20.00	4.333	5.00	7.333	20.00	10.33	13.00
1.417	20.00	4.417	5.00	7.417	20.00	10.42	13.00
1.500	20.00	4.500	5.00	7.500	20.00	10.50	13.00
1.583	20.00	4.583	5.00	7.583	20.00	10.58	13.00
1.667	20.00	4.667	5.00	7.667	20.00	10.67	13.00
1.750	20.00	4.750	5.00	7.750	20.00	10.75	13.00
1.833	20.00	4.833	5.00	7.833	20.00	10.83	13.00
1.917	20.00	4.917	5.00	7.917	20.00	10.92	13.00
2.000	20.00	5.000	5.00	8.000	20.00	11.00	13.00
2.083	10.00	5.083	20.00	8.083	23.00	11.08	8.00
2.167	10.00	5.167	20.00	8.167	23.00	11.17	8.00
2.250	10.00	5.250	20.00	8.250	23.00	11.25	8.00
2.333	10.00	5.333	20.00	8.333	23.00	11.33	8.00
2.417	10.00	5.417	20.00	8.417	23.00	11.42	8.00
2.500	10.00	5.500	20.00	8.500	23.00	11.50	8.00
2.583	10.00	5.583	20.00	8.583	23.00	11.58	8.00
2.667	10.00	5.667	20.00	8.667	23.00	11.67	8.00
2.750	10.00	5.750	20.00	8.750	23.00	11.75	8.00
2.833	10.00	5.833	20.00	8.833	23.00	11.83	8.00
2.917	10.00	5.917	20.00	8.917	23.00	11.92	8.00
3.000	10.00	6.000	20.00	9.000	23.00	12.00	8.00

Unit Hyd Qpeak (cms)= 2.395

PEAK FLOW (cms)= 2.708 (i)
 TIME TO PEAK (hrs)= 9.250
 RUNOFF VOLUME (mm)= 77.961

TOTAL RAINFALL (mm)= 193.000
 RUNOFF COEFFICIENT = 0.404

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

 READ STORM
 Ptotal=193.00 mm
 Filename: C:\Users\ALOverholt\AppData\Local\Temp\cb481504-fc3d-4402-bd42-40cd28c5d654\715aff24
 Comments: TIMMINS REGIONAL 12 HOUR DURATION STORM

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.20	15.00	3.20	3.00	6.20	43.00	9.20	13.00
0.40	15.00	3.40	3.00	6.40	43.00	9.40	13.00
0.60	15.00	3.60	3.00	6.60	43.00	9.60	13.00
0.80	15.00	3.80	3.00	6.80	43.00	9.80	13.00
1.00	15.00	4.00	3.00	7.00	43.00	10.00	13.00
1.20	20.00	4.20	5.00	7.20	20.00	10.20	13.00
1.40	20.00	4.40	5.00	7.40	20.00	10.40	13.00
1.60	20.00	4.60	5.00	7.60	20.00	10.60	13.00
1.80	20.00	4.80	5.00	7.80	20.00	10.80	13.00
2.00	20.00	5.00	5.00	8.00	20.00	11.00	13.00
2.20	10.00	5.20	20.00	8.20	23.00	11.20	8.00
2.40	10.00	5.40	20.00	8.40	23.00	11.40	8.00
2.60	10.00	5.60	20.00	8.60	23.00	11.60	8.00
2.80	10.00	5.80	20.00	8.80	23.00	11.80	8.00
3.00	10.00	6.00	20.00	9.00	23.00	12.00	8.00

 CALIB NASHYD (0201)
 ID= 1 DT= 5.0 min
 Area (ha)= 5.05 Curve Number (CN)= 51.4
 Ia (mm)= 4.70 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.57

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	15.00	3.083	3.00	6.083	43.00	9.08	13.00
0.167	15.00	3.167	3.00	6.167	43.00	9.17	13.00
0.250	15.00	3.250	3.00	6.250	43.00	9.25	13.00
0.333	15.00	3.333	3.00	6.333	43.00	9.33	13.00
0.417	15.00	3.417	3.00	6.417	43.00	9.42	13.00
0.500	15.00	3.500	3.00	6.500	43.00	9.50	13.00
0.583	15.00	3.583	3.00	6.583	43.00	9.58	13.00
0.667	15.00	3.667	3.00	6.667	43.00	9.67	13.00
0.750	15.00	3.750	3.00	6.750	43.00	9.75	13.00
0.833	15.00	3.833	3.00	6.833	43.00	9.83	13.00
0.917	15.00	3.917	3.00	6.917	43.00	9.92	13.00
1.000	15.00	4.000	3.00	7.000	43.00	10.00	13.00
1.083	20.00	4.083	5.00	7.083	20.00	10.08	13.00
1.167	20.00	4.167	5.00	7.167	20.00	10.17	13.00
1.250	20.00	4.250	5.00	7.250	20.00	10.25	13.00
1.333	20.00	4.333	5.00	7.333	20.00	10.33	13.00
1.417	20.00	4.417	5.00	7.417	20.00	10.42	13.00
1.500	20.00	4.500	5.00	7.500	20.00	10.50	13.00
1.583	20.00	4.583	5.00	7.583	20.00	10.58	13.00

1.667	20.00	4.667	5.00	7.667	20.00	10.67	13.00
1.750	20.00	4.750	5.00	7.750	20.00	10.75	13.00
1.833	20.00	4.833	5.00	7.833	20.00	10.83	13.00
1.917	20.00	4.917	5.00	7.917	20.00	10.92	13.00
2.000	20.00	5.000	5.00	8.000	20.00	11.00	13.00
2.083	10.00	5.083	20.00	8.083	23.00	11.08	8.00
2.167	10.00	5.167	20.00	8.167	23.00	11.17	8.00
2.250	10.00	5.250	20.00	8.250	23.00	11.25	8.00
2.333	10.00	5.333	20.00	8.333	23.00	11.33	8.00
2.417	10.00	5.417	20.00	8.417	23.00	11.42	8.00
2.500	10.00	5.500	20.00	8.500	23.00	11.50	8.00
2.583	10.00	5.583	20.00	8.583	23.00	11.58	8.00
2.667	10.00	5.667	20.00	8.667	23.00	11.67	8.00
2.750	10.00	5.750	20.00	8.750	23.00	11.75	8.00
2.833	10.00	5.833	20.00	8.833	23.00	11.83	8.00
2.917	10.00	5.917	20.00	8.917	23.00	11.92	8.00
3.000	10.00	6.000	20.00	9.000	23.00	12.00	8.00

Unit Hyd Qpeak (cms)= 0.338

PEAK FLOW (cms)= 0.243 (i)
 TIME TO PEAK (hrs)= 7.250
 RUNOFF VOLUME (mm)= 82.751
 TOTAL RAINFALL (mm)= 193.000
 RUNOFF COEFFICIENT = 0.429

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

 RESERVOIR(0601)
 IN= 2---> OUT= 1
 DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.3000	0.0752
0.0320	0.0244	0.7410	0.1015
0.0910	0.0495	0.0000	0.0000

INFLOW : ID= 2 (0201)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
OUTFLOW: ID= 1 (0601)	5.047	0.243	7.25	82.75
	5.047	0.216	7.67	82.71

PEAK FLOW REDUCTION [Qout/Qin](%)= 88.79
 TIME SHIFT OF PEAK FLOW (min)= 25.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0649

 READ STORM
 Ptotal=193.00 mm
 Filename: C:\Users\ALOverholt\AppData\Local\Temp\cb481504-fc3d-4402-bd42-40cd28c5d654\715aff24
 Comments: TIMMINS REGIONAL 12 HOUR DURATION STORM

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.20	15.00	3.20	3.00	6.20	43.00	9.20	13.00
0.40	15.00	3.40	3.00	6.40	43.00	9.40	13.00
0.60	15.00	3.60	3.00	6.60	43.00	9.60	13.00
0.80	15.00	3.80	3.00	6.80	43.00	9.80	13.00
1.00	15.00	4.00	3.00	7.00	43.00	10.00	13.00
1.20	20.00	4.20	5.00	7.20	20.00	10.20	13.00
1.40	20.00	4.40	5.00	7.40	20.00	10.40	13.00

1.60	20.00	4.60	5.00	7.60	20.00	10.60	13.00
1.80	20.00	4.80	5.00	7.80	20.00	10.80	13.00
2.00	20.00	5.00	5.00	8.00	20.00	11.00	13.00
2.20	10.00	5.20	20.00	8.20	23.00	11.20	8.00
2.40	10.00	5.40	20.00	8.40	23.00	11.40	8.00
2.60	10.00	5.60	20.00	8.60	23.00	11.60	8.00
2.80	10.00	5.80	20.00	8.80	23.00	11.80	8.00
3.00	10.00	6.00	20.00	9.00	23.00	12.00	8.00

CALIB
 NASHYD (0202) | Area (ha)= 6.35 Curve Number (CN)= 57.9
 ID= 1 DT= 5.0 min | Ia (mm)= 4.70 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.55

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	15.00	3.083	3.00	6.083	43.00	9.08	13.00
0.167	15.00	3.167	3.00	6.167	43.00	9.17	13.00
0.250	15.00	3.250	3.00	6.250	43.00	9.25	13.00
0.333	15.00	3.333	3.00	6.333	43.00	9.33	13.00
0.417	15.00	3.417	3.00	6.417	43.00	9.42	13.00
0.500	15.00	3.500	3.00	6.500	43.00	9.50	13.00
0.583	15.00	3.583	3.00	6.583	43.00	9.58	13.00
0.667	15.00	3.667	3.00	6.667	43.00	9.67	13.00
0.750	15.00	3.750	3.00	6.750	43.00	9.75	13.00
0.833	15.00	3.833	3.00	6.833	43.00	9.83	13.00
0.917	15.00	3.917	3.00	6.917	43.00	9.92	13.00
1.000	15.00	4.000	3.00	7.000	43.00	10.00	13.00
1.083	20.00	4.083	5.00	7.083	20.00	10.08	13.00
1.167	20.00	4.167	5.00	7.167	20.00	10.17	13.00
1.250	20.00	4.250	5.00	7.250	20.00	10.25	13.00
1.333	20.00	4.333	5.00	7.333	20.00	10.33	13.00
1.417	20.00	4.417	5.00	7.417	20.00	10.42	13.00
1.500	20.00	4.500	5.00	7.500	20.00	10.50	13.00
1.583	20.00	4.583	5.00	7.583	20.00	10.58	13.00
1.667	20.00	4.667	5.00	7.667	20.00	10.67	13.00
1.750	20.00	4.750	5.00	7.750	20.00	10.75	13.00
1.833	20.00	4.833	5.00	7.833	20.00	10.83	13.00
1.917	20.00	4.917	5.00	7.917	20.00	10.92	13.00
2.000	20.00	5.000	5.00	8.000	20.00	11.00	13.00
2.083	10.00	5.083	20.00	8.083	23.00	11.08	8.00
2.167	10.00	5.167	20.00	8.167	23.00	11.17	8.00
2.250	10.00	5.250	20.00	8.250	23.00	11.25	8.00
2.333	10.00	5.333	20.00	8.333	23.00	11.33	8.00
2.417	10.00	5.417	20.00	8.417	23.00	11.42	8.00
2.500	10.00	5.500	20.00	8.500	23.00	11.50	8.00
2.583	10.00	5.583	20.00	8.583	23.00	11.58	8.00
2.667	10.00	5.667	20.00	8.667	23.00	11.67	8.00
2.750	10.00	5.750	20.00	8.750	23.00	11.75	8.00
2.833	10.00	5.833	20.00	8.833	23.00	11.83	8.00
2.917	10.00	5.917	20.00	8.917	23.00	11.92	8.00
3.000	10.00	6.000	20.00	9.000	23.00	12.00	8.00

Unit Hyd Qpeak (cms)= 0.441

PEAK FLOW (cms)= 0.360 (i)
 TIME TO PEAK (hrs)= 7.250

RUNOFF VOLUME (mm)= 95.058
 TOTAL RAINFALL (mm)= 193.000
 RUNOFF COEFFICIENT = 0.493

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

RESERVOIR(0602)
 IN= 2--> OUT= 1
 DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.0394	0.0998
0.0000	0.0000	0.1306	0.1176
0.0014	0.0066	0.3534	0.1362
0.0069	0.0205	0.6046	0.1554
0.0098	0.0350	0.9742	0.1752
0.0120	0.0502	1.4665	0.1957
0.0139	0.0661	2.0882	0.2169
0.0155	0.0826	2.4500	0.2278

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0202)	6.346	0.360	7.25	95.06
OUTFLOW: ID= 1 (0602)	6.346	0.334	7.50	94.87

PEAK FLOW REDUCTION [Qout/Qin](%)= 92.85
 TIME SHIFT OF PEAK FLOW (min)= 15.00
 MAXIMUM STORAGE USED (ha.m.)= 0.1346

ADD HYD (0802)
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0601):	5.05	0.216	7.67	82.71
+ ID2= 2 (0602):	6.35	0.334	7.50	94.87
ID = 3 (0802):	11.39	0.548	7.58	89.49

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0803)
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0001):	77.75	2.708	9.25	77.96
+ ID2= 2 (0802):	11.39	0.548	7.58	89.49
ID = 3 (0803):	89.14	3.158	9.25	79.43

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

FINISH

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

OOO TTTT TTTT 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 Y M M O O
OOO T T H H Y 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 5.0\VO2\voin.dat
 Output filename: C:\Users\ALOverholt\AppData\Local\Civica\VH5\c1119499-7c01-4a85-b304-3a19a257e6a9\c53aa8df-0de9-4095-9292-3716fa182d08\s
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DATE: 04-02-2020 TIME: 11:08:15

USER:

COMMENTS: _____

 ** SIMULATION : Run 01 **

2 Year SCS

MASS STORM
 Ptotal= 48.70 mm

Filename: C:\Users\ALOverholt\AppData\Local\Temp\df4fd7c8-c3db-445e-97d8-d931e3a274b7\5dc71c1e
 Comments: SCS Type II 24 HR MASS CURVE
 Duration of storm = 23.75 hrs
 Mass curve time step = 15.00 min

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.58	6.25	0.97	12.25	7.01	18.25	0.78
0.50	0.39	6.50	0.78	12.50	3.70	18.50	0.97
0.75	0.58	6.75	0.97	12.75	3.51	18.75	0.78
1.00	0.58	7.00	0.97	13.00	2.73	19.00	0.97
1.25	0.58	7.25	1.17	13.25	2.53	19.25	0.78
1.50	0.39	7.50	0.97	13.50	2.14	19.50	0.97
1.75	0.58	7.75	1.17	13.75	1.95	19.75	0.78
2.00	0.58	8.00	1.17	14.00	1.56	20.00	0.58
2.25	0.78	8.25	1.36	14.25	1.36	20.25	0.58
2.50	0.58	8.50	1.36	14.50	1.56	20.50	0.58

2.75	0.58	8.75	1.36	14.75	1.36	20.75	0.58
3.00	0.58	9.00	1.56	15.00	1.56	21.00	0.58
3.25	0.78	9.25	1.56	15.25	1.36	21.25	0.58
3.50	0.58	9.50	1.75	15.50	1.56	21.50	0.58
3.75	0.58	9.75	1.75	15.75	1.36	21.75	0.58
4.00	0.78	10.00	2.14	16.00	0.97	22.00	0.58
4.25	0.78	10.25	2.34	16.25	0.78	22.25	0.58
4.50	0.78	10.50	2.92	16.50	0.97	22.50	0.58
4.75	0.78	10.75	3.12	16.75	0.78	22.75	0.58
5.00	0.78	11.00	4.68	17.00	0.97	23.00	0.58
5.25	0.78	11.25	4.68	17.25	0.78	23.25	0.58
5.50	0.78	11.50	14.42	17.50	0.97	23.50	0.58
5.75	0.78	11.75	59.61	17.75	0.78	23.75	0.58
6.00	0.78	12.00	7.01	18.00	0.97		

CALIB
 NASHYD (0003)
 ID= 1 DT= 5.0 min

Area (ha)= 136.00 Curve Number (CN)= 52.1
 Ia (mm)= 7.20 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 1.94

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	0.58	6.083	0.97	12.083	7.01	18.08	0.78
0.167	0.58	6.167	0.97	12.167	7.01	18.17	0.78
0.250	0.58	6.250	0.97	12.250	7.01	18.25	0.78
0.333	0.39	6.333	0.78	12.333	3.70	18.33	0.97
0.417	0.39	6.417	0.78	12.417	3.70	18.42	0.97
0.500	0.39	6.500	0.78	12.500	3.70	18.50	0.97
0.583	0.58	6.583	0.97	12.583	3.51	18.58	0.78
0.667	0.58	6.667	0.97	12.667	3.51	18.67	0.78
0.750	0.58	6.750	0.97	12.750	3.51	18.75	0.78
0.833	0.58	6.833	0.97	12.833	2.73	18.83	0.97
0.917	0.58	6.917	0.97	12.917	2.73	18.92	0.97
1.000	0.58	7.000	0.97	13.000	2.73	19.00	0.97
1.083	0.58	7.083	1.17	13.083	2.53	19.08	0.78
1.167	0.58	7.167	1.17	13.167	2.53	19.17	0.78
1.250	0.58	7.250	1.17	13.250	2.53	19.25	0.78
1.333	0.39	7.333	0.97	13.333	2.14	19.33	0.97
1.417	0.39	7.417	0.97	13.417	2.14	19.42	0.97
1.500	0.39	7.500	0.97	13.500	2.14	19.50	0.97
1.583	0.58	7.583	1.17	13.583	1.95	19.58	0.78
1.667	0.58	7.667	1.17	13.667	1.95	19.67	0.78
1.750	0.58	7.750	1.17	13.750	1.95	19.75	0.78
1.833	0.58	7.833	1.17	13.833	1.56	19.83	0.58
1.917	0.58	7.917	1.17	13.917	1.56	19.92	0.58
2.000	0.58	8.000	1.17	14.000	1.56	20.00	0.58
2.083	0.78	8.083	1.36	14.083	1.36	20.08	0.58
2.167	0.78	8.167	1.36	14.167	1.36	20.17	0.58
2.250	0.78	8.250	1.36	14.250	1.36	20.25	0.58
2.333	0.58	8.333	1.36	14.333	1.56	20.33	0.58
2.417	0.58	8.417	1.36	14.417	1.56	20.42	0.58
2.500	0.58	8.500	1.36	14.500	1.56	20.50	0.58
2.583	0.58	8.583	1.36	14.583	1.36	20.58	0.58
2.667	0.58	8.667	1.36	14.667	1.36	20.67	0.58
2.750	0.58	8.750	1.36	14.750	1.36	20.75	0.58
2.833	0.58	8.833	1.56	14.833	1.56	20.83	0.58
2.917	0.58	8.917	1.56	14.917	1.56	20.92	0.58
3.000	0.58	9.000	1.56	15.000	1.56	21.00	0.58

3.083	0.78	9.083	1.56	15.083	1.36	21.08	0.58
3.167	0.78	9.167	1.56	15.167	1.36	21.17	0.58
3.250	0.78	9.250	1.56	15.250	1.36	21.25	0.58
3.333	0.58	9.333	1.75	15.333	1.56	21.33	0.58
3.417	0.58	9.417	1.75	15.417	1.56	21.42	0.58
3.500	0.58	9.500	1.75	15.500	1.56	21.50	0.58
3.583	0.58	9.583	1.75	15.583	1.36	21.58	0.58
3.667	0.58	9.667	1.75	15.667	1.36	21.67	0.58
3.750	0.58	9.750	1.75	15.750	1.36	21.75	0.58
3.833	0.78	9.833	2.14	15.833	0.97	21.83	0.58
3.917	0.78	9.917	2.14	15.917	0.97	21.92	0.58
4.000	0.78	10.000	2.14	16.000	0.97	22.00	0.58
4.083	0.78	10.083	2.34	16.083	0.78	22.08	0.58
4.167	0.78	10.167	2.34	16.167	0.78	22.17	0.58
4.250	0.78	10.250	2.34	16.250	0.78	22.25	0.58
4.333	0.78	10.333	2.92	16.333	0.97	22.33	0.58
4.417	0.78	10.417	2.92	16.417	0.97	22.42	0.58
4.500	0.78	10.500	2.92	16.500	0.97	22.50	0.58
4.583	0.78	10.583	3.12	16.583	0.78	22.58	0.58
4.667	0.78	10.667	3.12	16.667	0.78	22.67	0.58
4.750	0.78	10.750	3.12	16.750	0.78	22.75	0.58
4.833	0.78	10.833	4.68	16.833	0.97	22.83	0.58
4.917	0.78	10.917	4.68	16.917	0.97	22.92	0.58
5.000	0.78	11.000	4.68	17.000	0.97	23.00	0.58
5.083	0.78	11.083	4.68	17.083	0.78	23.08	0.58
5.167	0.78	11.167	4.68	17.167	0.78	23.17	0.58
5.250	0.78	11.250	4.68	17.250	0.78	23.25	0.58
5.333	0.78	11.333	14.41	17.333	0.97	23.33	0.58
5.417	0.78	11.417	14.42	17.417	0.97	23.42	0.58
5.500	0.78	11.500	14.42	17.500	0.97	23.50	0.58
5.583	0.78	11.583	59.60	17.583	0.78	23.58	0.58
5.667	0.78	11.667	59.61	17.667	0.78	23.67	0.58
5.750	0.78	11.750	59.61	17.750	0.78	23.75	0.58
5.833	0.78	11.833	7.02	17.833	0.97		
5.917	0.78	11.917	7.01	17.917	0.97		
6.000	0.78	12.000	7.01	18.000	0.97		

Unit Hyd Qpeak (cms)= 2.678

PEAK FLOW (cms)= 0.375 (i)
 TIME TO PEAK (hrs)= 14.000
 RUNOFF VOLUME (mm)= 6.221
 TOTAL RAINFALL (mm)= 48.554
 RUNOFF COEFFICIENT = 0.128

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

DUHYD (0400)
 Inlet Cap.= 0.713
 #of Inlets= 1
 Total(cms)= 0.7

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	136.00	0.38	14.00	6.22
MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00
MINOR SYS.(ID= 3):	136.00	0.38	14.00	6.22

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

MASS STORM | Filename: C:\Users\ALOverholt\AppData

Ptotal= 48.70 mm

ata\Local\Temp\
 df4fd7c8-c3db-445e-97d8-d931e3a274b7\5dc71c1e
 Comments: SCS Type II 24 HR MASS CURVE

Duration of storm = 23.75 hrs
 Mass curve time step = 15.00 min

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.58	6.25	0.97	12.25	7.01	18.25	0.78
0.50	0.39	6.50	0.78	12.50	3.70	18.50	0.97
0.75	0.58	6.75	0.97	12.75	3.51	18.75	0.78
1.00	0.58	7.00	0.97	13.00	2.73	19.00	0.97
1.25	0.58	7.25	1.17	13.25	2.53	19.25	0.78
1.50	0.39	7.50	0.97	13.50	2.14	19.50	0.97
1.75	0.58	7.75	1.17	13.75	1.95	19.75	0.78
2.00	0.58	8.00	1.17	14.00	1.56	20.00	0.58
2.25	0.78	8.25	1.36	14.25	1.36	20.25	0.58
2.50	0.58	8.50	1.36	14.50	1.56	20.50	0.58
2.75	0.58	8.75	1.36	14.75	1.36	20.75	0.58
3.00	0.58	9.00	1.56	15.00	1.56	21.00	0.58
3.25	0.78	9.25	1.56	15.25	1.36	21.25	0.58
3.50	0.58	9.50	1.75	15.50	1.56	21.50	0.58
3.75	0.58	9.75	1.75	15.75	1.36	21.75	0.58
4.00	0.78	10.00	2.14	16.00	0.97	22.00	0.58
4.25	0.78	10.25	2.34	16.25	0.78	22.25	0.58
4.50	0.78	10.50	2.92	16.50	0.97	22.50	0.58
4.75	0.78	10.75	3.12	16.75	0.78	22.75	0.58
5.00	0.78	11.00	4.68	17.00	0.97	23.00	0.58
5.25	0.78	11.25	4.68	17.25	0.78	23.25	0.58
5.50	0.78	11.50	14.42	17.50	0.97	23.50	0.58
5.75	0.78	11.75	59.61	17.75	0.78	23.75	0.58
6.00	0.78	12.00	7.01	18.00	0.97		

CALIB
 NASHYD (0002)
 ID= 1 DT= 5.0 min

Area (ha)= 10.93
 Curve Number (CN)= 68.5
 Ia (mm)= 4.40
 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.60

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	0.58	6.083	0.97	12.083	7.01	18.08	0.78
0.167	0.58	6.167	0.97	12.167	7.01	18.17	0.78
0.250	0.58	6.250	0.97	12.250	7.01	18.25	0.78
0.333	0.39	6.333	0.78	12.333	3.70	18.33	0.97
0.417	0.39	6.417	0.78	12.417	3.70	18.42	0.97
0.500	0.39	6.500	0.78	12.500	3.70	18.50	0.97
0.583	0.58	6.583	0.97	12.583	3.51	18.58	0.78
0.667	0.58	6.667	0.97	12.667	3.51	18.67	0.78
0.750	0.58	6.750	0.97	12.750	3.51	18.75	0.78
0.833	0.58	6.833	0.97	12.833	2.73	18.83	0.97
0.917	0.58	6.917	0.97	12.917	2.73	18.92	0.97
1.000	0.58	7.000	0.97	13.000	2.73	19.00	0.97
1.083	0.58	7.083	1.17	13.083	2.53	19.08	0.78
1.167	0.58	7.167	1.17	13.167	2.53	19.17	0.78
1.250	0.58	7.250	1.17	13.250	2.53	19.25	0.78
1.333	0.39	7.333	0.97	13.333	2.14	19.33	0.97
1.417	0.39	7.417	0.97	13.417	2.14	19.42	0.97

1.500	0.39	7.500	0.97	13.500	2.14	19.50	0.97
1.583	0.58	7.583	1.17	13.583	1.95	19.58	0.78
1.667	0.58	7.667	1.17	13.667	1.95	19.67	0.78
1.750	0.58	7.750	1.17	13.750	1.95	19.75	0.78
1.833	0.58	7.833	1.17	13.833	1.56	19.83	0.58
1.917	0.58	7.917	1.17	13.917	1.56	19.92	0.58
2.000	0.58	8.000	1.17	14.000	1.56	20.00	0.58
2.083	0.78	8.083	1.36	14.083	1.36	20.08	0.58
2.167	0.78	8.167	1.36	14.167	1.36	20.17	0.58
2.250	0.78	8.250	1.36	14.250	1.36	20.25	0.58
2.333	0.58	8.333	1.36	14.333	1.56	20.33	0.58
2.417	0.58	8.417	1.36	14.417	1.56	20.42	0.58
2.500	0.58	8.500	1.36	14.500	1.56	20.50	0.58
2.583	0.58	8.583	1.36	14.583	1.36	20.58	0.58
2.667	0.58	8.667	1.36	14.667	1.36	20.67	0.58
2.750	0.58	8.750	1.36	14.750	1.36	20.75	0.58
2.833	0.58	8.833	1.56	14.833	1.56	20.83	0.58
2.917	0.58	8.917	1.56	14.917	1.56	20.92	0.58
3.000	0.58	9.000	1.56	15.000	1.56	21.00	0.58
3.083	0.78	9.083	1.56	15.083	1.36	21.08	0.58
3.167	0.78	9.167	1.56	15.167	1.36	21.17	0.58
3.250	0.78	9.250	1.56	15.250	1.36	21.25	0.58
3.333	0.58	9.333	1.75	15.333	1.56	21.33	0.58
3.417	0.58	9.417	1.75	15.417	1.56	21.42	0.58
3.500	0.58	9.500	1.75	15.500	1.56	21.50	0.58
3.583	0.58	9.583	1.75	15.583	1.36	21.58	0.58
3.667	0.58	9.667	1.75	15.667	1.36	21.67	0.58
3.750	0.58	9.750	1.75	15.750	1.36	21.75	0.58
3.833	0.78	9.833	2.14	15.833	0.97	21.83	0.58
3.917	0.78	9.917	2.14	15.917	0.97	21.92	0.58
4.000	0.78	10.000	2.14	16.000	0.97	22.00	0.58
4.083	0.78	10.083	2.34	16.083	0.78	22.08	0.58
4.167	0.78	10.167	2.34	16.167	0.78	22.17	0.58
4.250	0.78	10.250	2.34	16.250	0.78	22.25	0.58
4.333	0.78	10.333	2.92	16.333	0.97	22.33	0.58
4.417	0.78	10.417	2.92	16.417	0.97	22.42	0.58
4.500	0.78	10.500	2.92	16.500	0.97	22.50	0.58
4.583	0.78	10.583	3.12	16.583	0.78	22.58	0.58
4.667	0.78	10.667	3.12	16.667	0.78	22.67	0.58
4.750	0.78	10.750	3.12	16.750	0.78	22.75	0.58
4.833	0.78	10.833	4.68	16.833	0.97	22.83	0.58
4.917	0.78	10.917	4.68	16.917	0.97	22.92	0.58
5.000	0.78	11.000	4.68	17.000	0.97	23.00	0.58
5.083	0.78	11.083	4.68	17.083	0.78	23.08	0.58
5.167	0.78	11.167	4.68	17.167	0.78	23.17	0.58
5.250	0.78	11.250	4.68	17.250	0.78	23.25	0.58
5.333	0.78	11.333	14.41	17.333	0.97	23.33	0.58
5.417	0.78	11.417	14.42	17.417	0.97	23.42	0.58
5.500	0.78	11.500	14.42	17.500	0.97	23.50	0.58
5.583	0.78	11.583	59.60	17.583	0.78	23.58	0.58
5.667	0.78	11.667	59.61	17.667	0.78	23.67	0.58
5.750	0.78	11.750	59.61	17.750	0.78	23.75	0.58
5.833	0.78	11.833	7.02	17.833	0.97		
5.917	0.78	11.917	7.01	17.917	0.97		
6.000	0.78	12.000	7.01	18.000	0.97		

Unit Hyd Qpeak (cms)= 0.696

PEAK FLOW (cms)= 0.148 (i)
 TIME TO PEAK (hrs)= 12.250
 RUNOFF VOLUME (mm)= 12.112
 TOTAL RAINFALL (mm)= 48.554
 RUNOFF COEFFICIENT = 0.249

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

ADD HYD (0801)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0002):	10.93	0.148	12.25	12.11
+ ID2= 2 (0400):	136.00	0.375	14.00	6.22
ID = 3 (0801):	146.93	0.415	13.75	6.66

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

MASS STORM	Filename: C:\Users\ALOverholt\AppData\Local\Temp\df4fd7c8-c3db-445e-97d8-d931e3a274b7\5dc71c1e
Ptotal= 48.70 mm	Comments: SCS Type II 24 HR MASS CURVE

Duration of storm = 23.75 hrs
 Mass curve time step = 15.00 min

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.25	0.58	6.25	0.97	12.25	7.01	18.25	0.78
0.50	0.39	6.50	0.78	12.50	3.70	18.50	0.97
0.75	0.58	6.75	0.97	12.75	3.51	18.75	0.78
1.00	0.58	7.00	0.97	13.00	2.73	19.00	0.97
1.25	0.58	7.25	1.17	13.25	2.53	19.25	0.78
1.50	0.39	7.50	0.97	13.50	2.14	19.50	0.97
1.75	0.58	7.75	1.17	13.75	1.95	19.75	0.78
2.00	0.58	8.00	1.17	14.00	1.56	20.00	0.58
2.25	0.78	8.25	1.36	14.25	1.36	20.25	0.58
2.50	0.58	8.50	1.36	14.50	1.56	20.50	0.58
2.75	0.58	8.75	1.36	14.75	1.36	20.75	0.58
3.00	0.58	9.00	1.56	15.00	1.56	21.00	0.58
3.25	0.78	9.25	1.56	15.25	1.36	21.25	0.58
3.50	0.58	9.50	1.75	15.50	1.56	21.50	0.58
3.75	0.58	9.75	1.75	15.75	1.36	21.75	0.58
4.00	0.78	10.00	2.14	16.00	0.97	22.00	0.58
4.25	0.78	10.25	2.34	16.25	0.78	22.25	0.58
4.50	0.78	10.50	2.92	16.50	0.97	22.50	0.58
4.75	0.78	10.75	3.12	16.75	0.78	22.75	0.58
5.00	0.78	11.00	4.68	17.00	0.97	23.00	0.58
5.25	0.78	11.25	4.68	17.25	0.78	23.25	0.58
5.50	0.78	11.50	14.42	17.50	0.97	23.50	0.58
5.75	0.78	11.75	59.61	17.75	0.78	23.75	0.58
6.00	0.78	12.00	7.01	18.00	0.97		

CALIB	Area (ha)= 77.75	Curve Number (CN)= 49.6
NASHYD (0001)	Ia (mm)= 6.91	# of Linear Res.(N)= 3.00
ID= 1 DT= 5.0 min	U.H. Tp(hrs)= 1.24	

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	0.58	6.083	0.97	12.083	7.01	18.08	0.78
0.167	0.58	6.167	0.97	12.167	7.01	18.17	0.78
0.250	0.58	6.250	0.97	12.250	7.01	18.25	0.78
0.333	0.39	6.333	0.78	12.333	3.70	18.33	0.97
0.417	0.39	6.417	0.78	12.417	3.70	18.42	0.97
0.500	0.39	6.500	0.78	12.500	3.70	18.50	0.97
0.583	0.58	6.583	0.97	12.583	3.51	18.58	0.78
0.667	0.58	6.667	0.97	12.667	3.51	18.67	0.78
0.750	0.58	6.750	0.97	12.750	3.51	18.75	0.78
0.833	0.58	6.833	0.97	12.833	2.73	18.83	0.97
0.917	0.58	6.917	0.97	12.917	2.73	18.92	0.97
1.000	0.58	7.000	0.97	13.000	2.73	19.00	0.97
1.083	0.58	7.083	1.17	13.083	2.53	19.08	0.78
1.167	0.58	7.167	1.17	13.167	2.53	19.17	0.78
1.250	0.58	7.250	1.17	13.250	2.53	19.25	0.78
1.333	0.39	7.333	0.97	13.333	2.14	19.33	0.97
1.417	0.39	7.417	0.97	13.417	2.14	19.42	0.97
1.500	0.39	7.500	0.97	13.500	2.14	19.50	0.97
1.583	0.58	7.583	1.17	13.583	1.95	19.58	0.78
1.667	0.58	7.667	1.17	13.667	1.95	19.67	0.78
1.750	0.58	7.750	1.17	13.750	1.95	19.75	0.78
1.833	0.58	7.833	1.17	13.833	1.56	19.83	0.58
1.917	0.58	7.917	1.17	13.917	1.56	19.92	0.58
2.000	0.58	8.000	1.17	14.000	1.56	20.00	0.58
2.083	0.78	8.083	1.36	14.083	1.36	20.08	0.58
2.167	0.78	8.167	1.36	14.167	1.36	20.17	0.58
2.250	0.78	8.250	1.36	14.250	1.36	20.25	0.58
2.333	0.58	8.333	1.36	14.333	1.56	20.33	0.58
2.417	0.58	8.417	1.36	14.417	1.56	20.42	0.58
2.500	0.58	8.500	1.36	14.500	1.56	20.50	0.58
2.583	0.58	8.583	1.36	14.583	1.36	20.58	0.58
2.667	0.58	8.667	1.36	14.667	1.36	20.67	0.58
2.750	0.58	8.750	1.36	14.750	1.36	20.75	0.58
2.833	0.58	8.833	1.56	14.833	1.56	20.83	0.58
2.917	0.58	8.917	1.56	14.917	1.56	20.92	0.58
3.000	0.58	9.000	1.56	15.000	1.56	21.00	0.58
3.083	0.78	9.083	1.56	15.083	1.36	21.08	0.58
3.167	0.78	9.167	1.56	15.167	1.36	21.17	0.58
3.250	0.78	9.250	1.56	15.250	1.36	21.25	0.58
3.333	0.58	9.333	1.75	15.333	1.56	21.33	0.58
3.417	0.58	9.417	1.75	15.417	1.56	21.42	0.58
3.500	0.58	9.500	1.75	15.500	1.56	21.50	0.58
3.583	0.58	9.583	1.75	15.583	1.36	21.58	0.58
3.667	0.58	9.667	1.75	15.667	1.36	21.67	0.58
3.750	0.58	9.750	1.75	15.750	1.36	21.75	0.58
3.833	0.78	9.833	2.14	15.833	0.97	21.83	0.58
3.917	0.78	9.917	2.14	15.917	0.97	21.92	0.58
4.000	0.78	10.000	2.14	16.000	0.97	22.00	0.58
4.083	0.78	10.083	2.34	16.083	0.78	22.08	0.58
4.167	0.78	10.167	2.34	16.167	0.78	22.17	0.58
4.250	0.78	10.250	2.34	16.250	0.78	22.25	0.58
4.333	0.78	10.333	2.92	16.333	0.97	22.33	0.58
4.417	0.78	10.417	2.92	16.417	0.97	22.42	0.58
4.500	0.78	10.500	2.92	16.500	0.97	22.50	0.58
4.583	0.78	10.583	3.12	16.583	0.78	22.58	0.58
4.667	0.78	10.667	3.12	16.667	0.78	22.67	0.58
4.750	0.78	10.750	3.12	16.750	0.78	22.75	0.58
4.833	0.78	10.833	4.68	16.833	0.97	22.83	0.58
4.917	0.78	10.917	4.68	16.917	0.97	22.92	0.58
5.000	0.78	11.000	4.68	17.000	0.97	23.00	0.58
5.083	0.78	11.083	4.68	17.083	0.78	23.08	0.58
5.167	0.78	11.167	4.68	17.167	0.78	23.17	0.58
5.250	0.78	11.250	4.68	17.250	0.78	23.25	0.58

5.333	0.78	11.333	14.41	17.333	0.97	23.33	0.58
5.417	0.78	11.417	14.42	17.417	0.97	23.42	0.58
5.500	0.78	11.500	14.42	17.500	0.97	23.50	0.58
5.583	0.78	11.583	59.60	17.583	0.78	23.58	0.58
5.667	0.78	11.667	59.61	17.667	0.78	23.67	0.58
5.750	0.78	11.750	59.61	17.750	0.78	23.75	0.58
5.833	0.78	11.833	7.02	17.833	0.97		
5.917	0.78	11.917	7.01	17.917	0.97		
6.000	0.78	12.000	7.01	18.000	0.97		

Unit Hyd Qpeak (cms)= 2.395

PEAK FLOW (cms)= 0.279 (i)
 TIME TO PEAK (hrs)= 13.083
 RUNOFF VOLUME (mm)= 5.786
 TOTAL RAINFALL (mm)= 48.554
 RUNOFF COEFFICIENT = 0.119

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

MASS STORM
 Ptotal= 48.70 mm

Filename: C:\Users\ALOverholt\AppData\Local\Temp\df4fd7c8-c3db-445e-97d8-d931e3a274b7\5dc71c1e
 Comments: SCS Type II 24 HR MASS CURVE

Duration of storm = 23.75 hrs
 Mass curve time step = 15.00 min

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.58	6.25	0.97	12.25	7.01	18.25	0.78
0.50	0.39	6.50	0.78	12.50	3.70	18.50	0.97
0.75	0.58	6.75	0.97	12.75	3.51	18.75	0.78
1.00	0.58	7.00	0.97	13.00	2.73	19.00	0.97
1.25	0.58	7.25	1.17	13.25	2.53	19.25	0.78
1.50	0.39	7.50	0.97	13.50	2.14	19.50	0.97
1.75	0.58	7.75	1.17	13.75	1.95	19.75	0.78
2.00	0.58	8.00	1.17	14.00	1.56	20.00	0.58
2.25	0.78	8.25	1.36	14.25	1.36	20.25	0.58
2.50	0.58	8.50	1.36	14.50	1.56	20.50	0.58
2.75	0.58	8.75	1.36	14.75	1.36	20.75	0.58
3.00	0.58	9.00	1.56	15.00	1.56	21.00	0.58
3.25	0.78	9.25	1.56	15.25	1.36	21.25	0.58
3.50	0.58	9.50	1.75	15.50	1.56	21.50	0.58
3.75	0.58	9.75	1.75	15.75	1.36	21.75	0.58
4.00	0.78	10.00	2.14	16.00	0.97	22.00	0.58
4.25	0.78	10.25	2.34	16.25	0.78	22.25	0.58
4.50	0.78	10.50	2.92	16.50	0.97	22.50	0.58
4.75	0.78	10.75	3.12	16.75	0.78	22.75	0.58
5.00	0.78	11.00	4.68	17.00	0.97	23.00	0.58
5.25	0.78	11.25	4.68	17.25	0.78	23.25	0.58
5.50	0.78	11.50	14.42	17.50	0.97	23.50	0.58
5.75	0.78	11.75	59.61	17.75	0.78	23.75	0.58
6.00	0.78	12.00	7.01	18.00	0.97		

CALIB
 NASHYD (0202)
 ID= 1 DT= 5.0 min

Area (ha)= 6.35 Curve Number (CN)= 57.9
 Ia (mm)= 4.70 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.55

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	0.58	6.083	0.97	12.083	7.01	18.08	0.78
0.167	0.58	6.167	0.97	12.167	7.01	18.17	0.78
0.250	0.58	6.250	0.97	12.250	7.01	18.25	0.78
0.333	0.39	6.333	0.78	12.333	3.70	18.33	0.97
0.417	0.39	6.417	0.78	12.417	3.70	18.42	0.97
0.500	0.39	6.500	0.78	12.500	3.70	18.50	0.97
0.583	0.58	6.583	0.97	12.583	3.51	18.58	0.78
0.667	0.58	6.667	0.97	12.667	3.51	18.67	0.78
0.750	0.58	6.750	0.97	12.750	3.51	18.75	0.78
0.833	0.58	6.833	0.97	12.833	2.73	18.83	0.97
0.917	0.58	6.917	0.97	12.917	2.73	18.92	0.97
1.000	0.58	7.000	0.97	13.000	2.73	19.00	0.97
1.083	0.58	7.083	1.17	13.083	2.53	19.08	0.78
1.167	0.58	7.167	1.17	13.167	2.53	19.17	0.78
1.250	0.58	7.250	1.17	13.250	2.53	19.25	0.78
1.333	0.39	7.333	0.97	13.333	2.14	19.33	0.97
1.417	0.39	7.417	0.97	13.417	2.14	19.42	0.97
1.500	0.39	7.500	0.97	13.500	2.14	19.50	0.97
1.583	0.58	7.583	1.17	13.583	1.95	19.58	0.78
1.667	0.58	7.667	1.17	13.667	1.95	19.67	0.78
1.750	0.58	7.750	1.17	13.750	1.95	19.75	0.78
1.833	0.58	7.833	1.17	13.833	1.56	19.83	0.58
1.917	0.58	7.917	1.17	13.917	1.56	19.92	0.58
2.000	0.58	8.000	1.17	14.000	1.56	20.00	0.58
2.083	0.78	8.083	1.36	14.083	1.36	20.08	0.58
2.167	0.78	8.167	1.36	14.167	1.36	20.17	0.58
2.250	0.78	8.250	1.36	14.250	1.36	20.25	0.58
2.333	0.58	8.333	1.36	14.333	1.56	20.33	0.58
2.417	0.58	8.417	1.36	14.417	1.56	20.42	0.58
2.500	0.58	8.500	1.36	14.500	1.56	20.50	0.58
2.583	0.58	8.583	1.36	14.583	1.36	20.58	0.58
2.667	0.58	8.667	1.36	14.667	1.36	20.67	0.58
2.750	0.58	8.750	1.36	14.750	1.36	20.75	0.58
2.833	0.58	8.833	1.56	14.833	1.56	20.83	0.58
2.917	0.58	8.917	1.56	14.917	1.56	20.92	0.58
3.000	0.58	9.000	1.56	15.000	1.56	21.00	0.58
3.083	0.78	9.083	1.56	15.083	1.36	21.08	0.58
3.167	0.78	9.167	1.56	15.167	1.36	21.17	0.58
3.250	0.78	9.250	1.56	15.250	1.36	21.25	0.58
3.333	0.58	9.333	1.75	15.333	1.56	21.33	0.58
3.417	0.58	9.417	1.75	15.417	1.56	21.42	0.58
3.500	0.58	9.500	1.75	15.500	1.56	21.50	0.58
3.583	0.58	9.583	1.75	15.583	1.36	21.58	0.58
3.667	0.58	9.667	1.75	15.667	1.36	21.67	0.58
3.750	0.58	9.750	1.75	15.750	1.36	21.75	0.58
3.833	0.78	9.833	2.14	15.833	0.97	21.83	0.58
3.917	0.78	9.917	2.14	15.917	0.97	21.92	0.58
4.000	0.78	10.000	2.14	16.000	0.97	22.00	0.58
4.083	0.78	10.083	2.34	16.083	0.78	22.08	0.58
4.167	0.78	10.167	2.34	16.167	0.78	22.17	0.58
4.250	0.78	10.250	2.34	16.250	0.78	22.25	0.58
4.333	0.78	10.333	2.92	16.333	0.97	22.33	0.58
4.417	0.78	10.417	2.92	16.417	0.97	22.42	0.58
4.500	0.78	10.500	2.92	16.500	0.97	22.50	0.58
4.583	0.78	10.583	3.12	16.583	0.78	22.58	0.58
4.667	0.78	10.667	3.12	16.667	0.78	22.67	0.58
4.750	0.78	10.750	3.12	16.750	0.78	22.75	0.58
4.833	0.78	10.833	4.68	16.833	0.97	22.83	0.58

4.917	0.78	10.917	4.68	16.917	0.97	22.92	0.58
5.000	0.78	11.000	4.68	17.000	0.97	23.00	0.58
5.083	0.78	11.083	4.68	17.083	0.78	23.08	0.58
5.167	0.78	11.167	4.68	17.167	0.78	23.17	0.58
5.250	0.78	11.250	4.68	17.250	0.78	23.25	0.58
5.333	0.78	11.333	14.41	17.333	0.97	23.33	0.58
5.417	0.78	11.417	14.42	17.417	0.97	23.42	0.58
5.500	0.78	11.500	14.42	17.500	0.97	23.50	0.58
5.583	0.78	11.583	59.60	17.583	0.78	23.58	0.58
5.667	0.78	11.667	59.61	17.667	0.78	23.67	0.58
5.750	0.78	11.750	59.61	17.750	0.78	23.75	0.58
5.833	0.78	11.833	7.02	17.833	0.97		
5.917	0.78	11.917	7.01	17.917	0.97		
6.000	0.78	12.000	7.01	18.000	0.97		

Unit Hyd Qpeak (cms)= 0.441

PEAK FLOW (cms)= 0.062 (i)
 TIME TO PEAK (hrs)= 12.250
 RUNOFF VOLUME (mm)= 8.414
 TOTAL RAINFALL (mm)= 48.554
 RUNOFF COEFFICIENT = 0.173

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

RESERVOIR(0602)
 IN= 2---> OUT= 1
 DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.0394	0.0998
0.0000	0.0000	0.1306	0.1176
0.0014	0.0066	0.3534	0.1362
0.0069	0.0205	0.6046	0.1554
0.0098	0.0350	0.9742	0.1752
0.0120	0.0502	1.4665	0.1957
0.0139	0.0661	2.0882	0.2169
0.0155	0.0826	2.4500	0.2278

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0202)	6.346	0.062	12.25	8.41
OUTFLOW: ID= 1 (0602)	6.346	0.009	14.92	8.23

PEAK FLOW REDUCTION [Qout/Qin](%)= 13.79
 TIME SHIFT OF PEAK FLOW (min)=160.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0288

MASS STORM
 Ptotal= 48.70 mm

Filename: C:\Users\ALOverholt\AppData
 Local\Temp\
 df4fd7c8-c3db-445e-97d8-d931e3a274b7\5dc71c1e
 Comments: SCS Type II 24 HR MASS CURVE

Duration of storm = 23.75 hrs
 Mass curve time step = 15.00 min

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.58	6.25	0.97	12.25	7.01	18.25	0.78
0.50	0.39	6.50	0.78	12.50	3.70	18.50	0.97
0.75	0.58	6.75	0.97	12.75	3.51	18.75	0.78

1.00	0.58	7.00	0.97	13.00	2.73	19.00	0.97
1.25	0.58	7.25	1.17	13.25	2.53	19.25	0.78
1.50	0.39	7.50	0.97	13.50	2.14	19.50	0.97
1.75	0.58	7.75	1.17	13.75	1.95	19.75	0.78
2.00	0.58	8.00	1.17	14.00	1.56	20.00	0.58
2.25	0.78	8.25	1.36	14.25	1.36	20.25	0.58
2.50	0.58	8.50	1.36	14.50	1.56	20.50	0.58
2.75	0.58	8.75	1.36	14.75	1.36	20.75	0.58
3.00	0.58	9.00	1.56	15.00	1.56	21.00	0.58
3.25	0.78	9.25	1.56	15.25	1.36	21.25	0.58
3.50	0.58	9.50	1.75	15.50	1.56	21.50	0.58
3.75	0.58	9.75	1.75	15.75	1.36	21.75	0.58
4.00	0.78	10.00	2.14	16.00	0.97	22.00	0.58
4.25	0.78	10.25	2.34	16.25	0.78	22.25	0.58
4.50	0.78	10.50	2.92	16.50	0.97	22.50	0.58
4.75	0.78	10.75	3.12	16.75	0.78	22.75	0.58
5.00	0.78	11.00	4.68	17.00	0.97	23.00	0.58
5.25	0.78	11.25	4.68	17.25	0.78	23.25	0.58
5.50	0.78	11.50	14.42	17.50	0.97	23.50	0.58
5.75	0.78	11.75	59.61	17.75	0.78	23.75	0.58
6.00	0.78	12.00	7.01	18.00	0.97		

CALIB
 NASHYD (0201) | Area (ha)= 5.05 | Curve Number (CN)= 51.4
 ID= 1 DT= 5.0 min | Ia (mm)= 4.70 | # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.57

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	0.58	6.083	0.97	12.083	7.01	18.08	0.78
0.167	0.58	6.167	0.97	12.167	7.01	18.17	0.78
0.250	0.58	6.250	0.97	12.250	7.01	18.25	0.78
0.333	0.39	6.333	0.78	12.333	3.70	18.33	0.97
0.417	0.39	6.417	0.78	12.417	3.70	18.42	0.97
0.500	0.39	6.500	0.78	12.500	3.70	18.50	0.97
0.583	0.58	6.583	0.97	12.583	3.51	18.58	0.78
0.667	0.58	6.667	0.97	12.667	3.51	18.67	0.78
0.750	0.58	6.750	0.97	12.750	3.51	18.75	0.78
0.833	0.58	6.833	0.97	12.833	2.73	18.83	0.97
0.917	0.58	6.917	0.97	12.917	2.73	18.92	0.97
1.000	0.58	7.000	0.97	13.000	2.73	19.00	0.97
1.083	0.58	7.083	1.17	13.083	2.53	19.08	0.78
1.167	0.58	7.167	1.17	13.167	2.53	19.17	0.78
1.250	0.58	7.250	1.17	13.250	2.53	19.25	0.78
1.333	0.39	7.333	0.97	13.333	2.14	19.33	0.97
1.417	0.39	7.417	0.97	13.417	2.14	19.42	0.97
1.500	0.39	7.500	0.97	13.500	2.14	19.50	0.97
1.583	0.58	7.583	1.17	13.583	1.95	19.58	0.78
1.667	0.58	7.667	1.17	13.667	1.95	19.67	0.78
1.750	0.58	7.750	1.17	13.750	1.95	19.75	0.78
1.833	0.58	7.833	1.17	13.833	1.56	19.83	0.58
1.917	0.58	7.917	1.17	13.917	1.56	19.92	0.58
2.000	0.58	8.000	1.17	14.000	1.56	20.00	0.58
2.083	0.78	8.083	1.36	14.083	1.36	20.08	0.58
2.167	0.78	8.167	1.36	14.167	1.36	20.17	0.58
2.250	0.78	8.250	1.36	14.250	1.36	20.25	0.58
2.333	0.58	8.333	1.36	14.333	1.56	20.33	0.58
2.417	0.58	8.417	1.36	14.417	1.56	20.42	0.58

2.500	0.58	8.500	1.36	14.500	1.56	20.50	0.58
2.583	0.58	8.583	1.36	14.583	1.36	20.58	0.58
2.667	0.58	8.667	1.36	14.667	1.36	20.67	0.58
2.750	0.58	8.750	1.36	14.750	1.36	20.75	0.58
2.833	0.58	8.833	1.56	14.833	1.56	20.83	0.58
2.917	0.58	8.917	1.56	14.917	1.56	20.92	0.58
3.000	0.58	9.000	1.56	15.000	1.56	21.00	0.58
3.083	0.78	9.083	1.56	15.083	1.36	21.08	0.58
3.167	0.78	9.167	1.56	15.167	1.36	21.17	0.58
3.250	0.78	9.250	1.56	15.250	1.36	21.25	0.58
3.333	0.58	9.333	1.75	15.333	1.56	21.33	0.58
3.417	0.58	9.417	1.75	15.417	1.56	21.42	0.58
3.500	0.58	9.500	1.75	15.500	1.56	21.50	0.58
3.583	0.58	9.583	1.75	15.583	1.36	21.58	0.58
3.667	0.58	9.667	1.75	15.667	1.36	21.67	0.58
3.750	0.58	9.750	1.75	15.750	1.36	21.75	0.58
3.833	0.78	9.833	2.14	15.833	0.97	21.83	0.58
3.917	0.78	9.917	2.14	15.917	0.97	21.92	0.58
4.000	0.78	10.000	2.14	16.000	0.97	22.00	0.58
4.083	0.78	10.083	2.34	16.083	0.78	22.08	0.58
4.167	0.78	10.167	2.34	16.167	0.78	22.17	0.58
4.250	0.78	10.250	2.34	16.250	0.78	22.25	0.58
4.333	0.78	10.333	2.92	16.333	0.97	22.33	0.58
4.417	0.78	10.417	2.92	16.417	0.97	22.42	0.58
4.500	0.78	10.500	2.92	16.500	0.97	22.50	0.58
4.583	0.78	10.583	3.12	16.583	0.78	22.58	0.58
4.667	0.78	10.667	3.12	16.667	0.78	22.67	0.58
4.750	0.78	10.750	3.12	16.750	0.78	22.75	0.58
4.833	0.78	10.833	4.68	16.833	0.97	22.83	0.58
4.917	0.78	10.917	4.68	16.917	0.97	22.92	0.58
5.000	0.78	11.000	4.68	17.000	0.97	23.00	0.58
5.083	0.78	11.083	4.68	17.083	0.78	23.08	0.58
5.167	0.78	11.167	4.68	17.167	0.78	23.17	0.58
5.250	0.78	11.250	4.68	17.250	0.78	23.25	0.58
5.333	0.78	11.333	14.41	17.333	0.97	23.33	0.58
5.417	0.78	11.417	14.42	17.417	0.97	23.42	0.58
5.500	0.78	11.500	14.42	17.500	0.97	23.50	0.58
5.583	0.78	11.583	59.60	17.583	0.78	23.58	0.58
5.667	0.78	11.667	59.61	17.667	0.78	23.67	0.58
5.750	0.78	11.750	59.61	17.750	0.78	23.75	0.58
5.833	0.78	11.833	7.02	17.833	0.97		
5.917	0.78	11.917	7.01	17.917	0.97		
6.000	0.78	12.000	7.01	18.000	0.97		

Unit Hyd Qpeak (cms)= 0.338

PEAK FLOW (cms)= 0.038 (i)
 TIME TO PEAK (hrs)= 12.250
 RUNOFF VOLUME (mm)= 6.771
 TOTAL RAINFALL (mm)= 48.554
 RUNOFF COEFFICIENT = 0.139

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

RESERVOIR(0601)
 IN= 2--> OUT= 1
 DT= 5.0 min

OUTFLOW	STORAGE	OUTFLOW	STORAGE
(cms)	(ha.m.)	(cms)	(ha.m.)
0.0000	0.0000	0.3000	0.0752
0.0320	0.0244	0.7410	0.1015
0.0910	0.0495	0.0000	0.0000

INFLOW : ID= 2 (0201) AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)
 5.047 0.038 12.25 6.77
 OUTFLOW: ID= 1 (0601) 5.047 0.015 13.33 6.73

PEAK FLOW REDUCTION [Qout/Qin](%)= 40.13
 TIME SHIFT OF PEAK FLOW (min)= 65.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0117

ADD HYD (0802)
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0601):	5.05	0.015	13.33	6.73
+ ID2= 2 (0602):	6.35	0.009	14.92	8.23
=====				
ID = 3 (0802):	11.39	0.023	13.50	7.57

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0803)
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0001):	77.75	0.279	13.08	5.79
+ ID2= 2 (0802):	11.39	0.023	13.50	7.57
=====				
ID = 3 (0803):	89.14	0.302	13.17	6.01

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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V V I SSSSS U U A L
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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000 TTTT TTTT H H Y Y M M 000 TM
O O T T H H Y Y MM MM O O
O O T T H H Y M M O O
000 T T H H Y M M 000
  
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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 5.0\VO2\vojn.dat
 Output filename: C:\Users\ALoverholt\AppData\Local\Civica\XH5\c1119499-7c01-4a85-b304-3a19a257e6a9\0c727470-31b2-4ece-b954-a58f8e5348bd\S
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DATE: 04-02-2020

TIME: 11:08:15

USER:

COMMENTS:

 ** SIMULATION : Run 02 **

5 Year SCS

MASS STORM
 Ptotal= 62.00 mm

Filename: C:\Users\ALoverholt\AppData\Local\Temp\df4fd7c8-c3db-445e-97d8-d931e3a274b7\b17fb634
 Comments: SCS Type II 24 HR MASS CURVE

Duration of storm = 23.75 hrs
 Mass curve time step = 15.00 min

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.74	6.25	1.24	12.25	8.93	18.25	0.99
0.50	0.50	6.50	0.99	12.50	4.71	18.50	1.24
0.75	0.74	6.75	1.24	12.75	4.46	18.75	0.99
1.00	0.74	7.00	1.24	13.00	3.47	19.00	1.24
1.25	0.74	7.25	1.49	13.25	3.22	19.25	0.99
1.50	0.50	7.50	1.24	13.50	2.73	19.50	1.24
1.75	0.74	7.75	1.49	13.75	2.48	19.75	0.99
2.00	0.74	8.00	1.49	14.00	1.98	20.00	0.74
2.25	0.99	8.25	1.74	14.25	1.74	20.25	0.74
2.50	0.74	8.50	1.74	14.50	1.98	20.50	0.74
2.75	0.74	8.75	1.74	14.75	1.74	20.75	0.74
3.00	0.74	9.00	1.98	15.00	1.98	21.00	0.74
3.25	0.99	9.25	1.98	15.25	1.74	21.25	0.74
3.50	0.74	9.50	2.23	15.50	1.98	21.50	0.74
3.75	0.74	9.75	2.23	15.75	1.74	21.75	0.74
4.00	0.99	10.00	2.73	16.00	1.24	22.00	0.74
4.25	0.99	10.25	2.98	16.25	0.99	22.25	0.74
4.50	0.99	10.50	3.72	16.50	1.24	22.50	0.74
4.75	0.99	10.75	3.97	16.75	0.99	22.75	0.74
5.00	0.99	11.00	5.95	17.00	1.24	23.00	0.74
5.25	0.99	11.25	5.95	17.25	0.99	23.25	0.74
5.50	0.99	11.50	18.35	17.50	1.24	23.50	0.74
5.75	0.99	11.75	75.89	17.75	0.99	23.75	0.74
6.00	0.99	12.00	8.93	18.00	1.24		

CALIB
 NASHYD (0003)
 ID= 1 DT= 5.0 min

Area (ha)= 136.00 Curve Number (CN)= 52.1
 Ia (mm)= 7.20 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 1.94

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
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0.083	0.74	6.083	1.24	12.083	8.93	18.08	0.99
0.167	0.74	6.167	1.24	12.167	8.93	18.17	0.99
0.250	0.74	6.250	1.24	12.250	8.93	18.25	0.99
0.333	0.50	6.333	0.99	12.333	4.71	18.33	1.24
0.417	0.50	6.417	0.99	12.417	4.71	18.42	1.24
0.500	0.50	6.500	0.99	12.500	4.71	18.50	1.24
0.583	0.74	6.583	1.24	12.583	4.46	18.58	0.99
0.667	0.74	6.667	1.24	12.667	4.46	18.67	0.99
0.750	0.74	6.750	1.24	12.750	4.46	18.75	0.99
0.833	0.74	6.833	1.24	12.833	3.47	18.83	1.24
0.917	0.74	6.917	1.24	12.917	3.47	18.92	1.24
1.000	0.74	7.000	1.24	13.000	3.47	19.00	1.24
1.083	0.74	7.083	1.49	13.083	3.22	19.08	0.99
1.167	0.74	7.167	1.49	13.167	3.22	19.17	0.99
1.250	0.74	7.250	1.49	13.250	3.22	19.25	0.99
1.333	0.50	7.333	1.24	13.333	2.73	19.33	1.24
1.417	0.50	7.417	1.24	13.417	2.73	19.42	1.24
1.500	0.50	7.500	1.24	13.500	2.73	19.50	1.24
1.583	0.74	7.583	1.49	13.583	2.48	19.58	0.99
1.667	0.74	7.667	1.49	13.667	2.48	19.67	0.99
1.750	0.74	7.750	1.49	13.750	2.48	19.75	0.99
1.833	0.74	7.833	1.49	13.833	1.98	19.83	0.74
1.917	0.74	7.917	1.49	13.917	1.98	19.92	0.74
2.000	0.74	8.000	1.49	14.000	1.98	20.00	0.74
2.083	0.99	8.083	1.74	14.083	1.74	20.08	0.74
2.167	0.99	8.167	1.74	14.167	1.74	20.17	0.74
2.250	0.99	8.250	1.74	14.250	1.74	20.25	0.74
2.333	0.74	8.333	1.74	14.333	1.98	20.33	0.74
2.417	0.74	8.417	1.74	14.417	1.98	20.42	0.74
2.500	0.74	8.500	1.74	14.500	1.98	20.50	0.74
2.583	0.74	8.583	1.74	14.583	1.74	20.58	0.74
2.667	0.74	8.667	1.74	14.667	1.74	20.67	0.74
2.750	0.74	8.750	1.74	14.750	1.74	20.75	0.74
2.833	0.74	8.833	1.98	14.833	1.98	20.83	0.74
2.917	0.74	8.917	1.98	14.917	1.98	20.92	0.74
3.000	0.74	9.000	1.98	15.000	1.98	21.00	0.74
3.083	0.99	9.083	1.98	15.083	1.74	21.08	0.74
3.167	0.99	9.167	1.98	15.167	1.74	21.17	0.74
3.250	0.99	9.250	1.98	15.250	1.74	21.25	0.74
3.333	0.74	9.333	2.23	15.333	1.98	21.33	0.74
3.417	0.74	9.417	2.23	15.417	1.98	21.42	0.74
3.500	0.74	9.500	2.23	15.500	1.98	21.50	0.74
3.583	0.74	9.583	2.23	15.583	1.74	21.58	0.74
3.667	0.74	9.667	2.23	15.667	1.74	21.67	0.74
3.750	0.74	9.750	2.23	15.750	1.74	21.75	0.74
3.833	0.99	9.833	2.73	15.833	1.24	21.83	0.74
3.917	0.99	9.917	2.73	15.917	1.24	21.92	0.74
4.000	0.99	10.000	2.73	16.000	1.24	22.00	0.74
4.083	0.99	10.083	2.98	16.083	0.99	22.08	0.74
4.167	0.99	10.167	2.98	16.167	0.99	22.17	0.74
4.250	0.99	10.250	2.98	16.250	0.99	22.25	0.74
4.333	0.99	10.333	3.72	16.333	1.24	22.33	0.74
4.417	0.99	10.417	3.72	16.417	1.24	22.42	0.74
4.500	0.99	10.500	3.72	16.500	1.24	22.50	0.74
4.583	0.99	10.583	3.97	16.583	0.99	22.58	0.74
4.667	0.99	10.667	3.97	16.667	0.99	22.67	0.74
4.750	0.99	10.750	3.97	16.750	0.99	22.75	0.74
4.833	0.99	10.833	5.95	16.833	1.24	22.83	0.74
4.917	0.99	10.917	5.95	16.917	1.24	22.92	0.74
5.000	0.99	11.000	5.95	17.000	1.24	23.00	0.74
5.083	0.99	11.083	5.95	17.083	0.99	23.08	0.74
5.167	0.99	11.167	5.95	17.167	0.99	23.17	0.74
5.250	0.99	11.250	5.95	17.250	0.99	23.25	0.74
5.333	0.99	11.333	18.35	17.333	1.24	23.33	0.74

5.417	0.99	11.417	18.35	17.417	1.24	23.42	0.74
5.500	0.99	11.500	18.35	17.500	1.24	23.50	0.74
5.583	0.99	11.583	75.88	17.583	0.99	23.58	0.74
5.667	0.99	11.667	75.89	17.667	0.99	23.67	0.74
5.750	0.99	11.750	75.89	17.750	0.99	23.75	0.74
5.833	0.99	11.833	8.93	17.833	1.24		
5.917	0.99	11.917	8.93	17.917	1.24		
6.000	0.99	12.000	8.93	18.000	1.24		

Unit Hyd Qpeak (cms)= 2.678

PEAK FLOW (cms)= 0.637 (i)
 TIME TO PEAK (hrs)= 14.000
 RUNOFF VOLUME (mm)= 10.352
 TOTAL RAINFALL (mm)= 61.814
 RUNOFF COEFFICIENT = 0.167

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

DUHYD (0400)				
Inlet Cap.= 0.713				
#of inlets= 1				
Total(cms)= 0.71				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
TOTAL HYD.(ID= 1):	136.00	0.64	14.00	10.35
MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00
MINOR SYS.(ID= 3):	136.00	0.64	14.00	10.35

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

MASS STORM
 Ptotal= 62.00 mm
 Filename: C:\Users\ALOverholt\AppData\Local\Temp\df4fd7c8-c3db-445e-97d8-d931e3a274b7\b17fb634
 Comments: SCS Type II 24 HR MASS CURVE

Duration of storm = 23.75 hrs
 Mass curve time step = 15.00 min

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.25	0.74	6.25	1.24	12.25	8.93	18.25	0.99
0.50	0.50	6.50	0.99	12.50	4.71	18.50	1.24
0.75	0.74	6.75	1.24	12.75	4.46	18.75	0.99
1.00	0.74	7.00	1.24	13.00	3.47	19.00	1.24
1.25	0.74	7.25	1.49	13.25	3.22	19.25	0.99
1.50	0.50	7.50	1.24	13.50	2.73	19.50	1.24
1.75	0.74	7.75	1.49	13.75	2.48	19.75	0.99
2.00	0.74	8.00	1.49	14.00	1.98	20.00	0.74
2.25	0.99	8.25	1.74	14.25	1.74	20.25	0.74
2.50	0.74	8.50	1.74	14.50	1.98	20.50	0.74
2.75	0.74	8.75	1.74	14.75	1.74	20.75	0.74
3.00	0.74	9.00	1.98	15.00	1.98	21.00	0.74
3.25	0.99	9.25	1.98	15.25	1.74	21.25	0.74
3.50	0.74	9.50	2.23	15.50	1.98	21.50	0.74
3.75	0.74	9.75	2.23	15.75	1.74	21.75	0.74
4.00	0.99	10.00	2.73	16.00	1.24	22.00	0.74
4.25	0.99	10.25	2.98	16.25	0.99	22.25	0.74
4.50	0.99	10.50	3.72	16.50	1.24	22.50	0.74
4.75	0.99	10.75	3.97	16.75	0.99	22.75	0.74

5.00	0.99	11.00	5.95	17.00	1.24	23.00	0.74
5.25	0.99	11.25	5.95	17.25	0.99	23.25	0.74
5.50	0.99	11.50	18.35	17.50	1.24	23.50	0.74
5.75	0.99	11.75	75.89	17.75	0.99	23.75	0.74
6.00	0.99	12.00	8.93	18.00	1.24		

 CALIB
 NASHYD (0002) | Area (ha)= 10.93 | Curve Number (CN)= 68.5
 ID= 1 DT= 5.0 min | Ia (mm)= 4.40 | # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.60

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	0.74	6.083	1.24	12.083	8.93	18.08	0.99
0.167	0.74	6.167	1.24	12.167	8.93	18.17	0.99
0.250	0.74	6.250	1.24	12.250	8.93	18.25	0.99
0.333	0.50	6.333	0.99	12.333	4.71	18.33	1.24
0.417	0.50	6.417	0.99	12.417	4.71	18.42	1.24
0.500	0.50	6.500	0.99	12.500	4.71	18.50	1.24
0.583	0.74	6.583	1.24	12.583	4.46	18.58	0.99
0.667	0.74	6.667	1.24	12.667	4.46	18.67	0.99
0.750	0.74	6.750	1.24	12.750	4.46	18.75	0.99
0.833	0.74	6.833	1.24	12.833	3.47	18.83	1.24
0.917	0.74	6.917	1.24	12.917	3.47	18.92	1.24
1.000	0.74	7.000	1.24	13.000	3.47	19.00	1.24
1.083	0.74	7.083	1.49	13.083	3.22	19.08	0.99
1.167	0.74	7.167	1.49	13.167	3.22	19.17	0.99
1.250	0.74	7.250	1.49	13.250	3.22	19.25	0.99
1.333	0.50	7.333	1.24	13.333	2.73	19.33	1.24
1.417	0.50	7.417	1.24	13.417	2.73	19.42	1.24
1.500	0.50	7.500	1.24	13.500	2.73	19.50	1.24
1.583	0.74	7.583	1.49	13.583	2.48	19.58	0.99
1.667	0.74	7.667	1.49	13.667	2.48	19.67	0.99
1.750	0.74	7.750	1.49	13.750	2.48	19.75	0.99
1.833	0.74	7.833	1.49	13.833	1.98	19.83	0.74
1.917	0.74	7.917	1.49	13.917	1.98	19.92	0.74
2.000	0.74	8.000	1.49	14.000	1.98	20.00	0.74
2.083	0.99	8.083	1.74	14.083	1.74	20.08	0.74
2.167	0.99	8.167	1.74	14.167	1.74	20.17	0.74
2.250	0.99	8.250	1.74	14.250	1.74	20.25	0.74
2.333	0.74	8.333	1.74	14.333	1.98	20.33	0.74
2.417	0.74	8.417	1.74	14.417	1.98	20.42	0.74
2.500	0.74	8.500	1.74	14.500	1.98	20.50	0.74
2.583	0.74	8.583	1.74	14.583	1.74	20.58	0.74
2.667	0.74	8.667	1.74	14.667	1.74	20.67	0.74
2.750	0.74	8.750	1.74	14.750	1.74	20.75	0.74
2.833	0.74	8.833	1.98	14.833	1.98	20.83	0.74
2.917	0.74	8.917	1.98	14.917	1.98	20.92	0.74
3.000	0.74	9.000	1.98	15.000	1.98	21.00	0.74
3.083	0.99	9.083	1.98	15.083	1.74	21.08	0.74
3.167	0.99	9.167	1.98	15.167	1.74	21.17	0.74
3.250	0.99	9.250	1.98	15.250	1.74	21.25	0.74
3.333	0.74	9.333	2.23	15.333	1.98	21.33	0.74
3.417	0.74	9.417	2.23	15.417	1.98	21.42	0.74
3.500	0.74	9.500	2.23	15.500	1.98	21.50	0.74
3.583	0.74	9.583	2.23	15.583	1.74	21.58	0.74
3.667	0.74	9.667	2.23	15.667	1.74	21.67	0.74
3.750	0.74	9.750	2.23	15.750	1.74	21.75	0.74

3.833	0.99	9.833	2.73	15.833	1.24	21.83	0.74
3.917	0.99	9.917	2.73	15.917	1.24	21.92	0.74
4.000	0.99	10.000	2.73	16.000	1.24	22.00	0.74
4.083	0.99	10.083	2.98	16.083	0.99	22.08	0.74
4.167	0.99	10.167	2.98	16.167	0.99	22.17	0.74
4.250	0.99	10.250	2.98	16.250	0.99	22.25	0.74
4.333	0.99	10.333	3.72	16.333	1.24	22.33	0.74
4.417	0.99	10.417	3.72	16.417	1.24	22.42	0.74
4.500	0.99	10.500	3.72	16.500	1.24	22.50	0.74
4.583	0.99	10.583	3.97	16.583	0.99	22.58	0.74
4.667	0.99	10.667	3.97	16.667	0.99	22.67	0.74
4.750	0.99	10.750	3.97	16.750	0.99	22.75	0.74
4.833	0.99	10.833	5.95	16.833	1.24	22.83	0.74
4.917	0.99	10.917	5.95	16.917	1.24	22.92	0.74
5.000	0.99	11.000	5.95	17.000	1.24	23.00	0.74
5.083	0.99	11.083	5.95	17.083	0.99	23.08	0.74
5.167	0.99	11.167	5.95	17.167	0.99	23.17	0.74
5.250	0.99	11.250	5.95	17.250	0.99	23.25	0.74
5.333	0.99	11.333	18.35	17.333	1.24	23.33	0.74
5.417	0.99	11.417	18.35	17.417	1.24	23.42	0.74
5.500	0.99	11.500	18.35	17.500	1.24	23.50	0.74
5.583	0.99	11.583	75.88	17.583	0.99	23.58	0.74
5.667	0.99	11.667	75.89	17.667	0.99	23.67	0.74
5.750	0.99	11.750	75.89	17.750	0.99	23.75	0.74
5.833	0.99	11.833	8.93	17.833	1.24		
5.917	0.99	11.917	8.93	17.917	1.24		
6.000	0.99	12.000	8.93	18.000	1.24		

Unit Hyd Qpeak (cms)= 0.696

PEAK FLOW (cms)= 0.234 (i)
 TIME TO PEAK (hrs)= 12.250
 RUNOFF VOLUME (mm)= 18.920
 TOTAL RAINFALL (mm)= 61.814
 RUNOFF COEFFICIENT = 0.306

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

 ADD HYD (0801)
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0002):	10.93	0.234	12.25	18.92
+ ID2= 2 (0400):	136.00	0.637	14.00	10.35
=====				
ID = 3 (0801):	146.93	0.700	13.67	10.99

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 MASS STORM | Filename: C:\Users\ALoverholt\AppData
 | | ata\Local\Temp\
 | | df4fd7c8-c3db-445e-97d8-d931e3a274b7\b17fb634
 Ptotal= 62.00 mm | Comments: SCS Type II 24 HR MASS CURVE

Duration of storm = 23.75 hrs
 Mass curve time step = 15.00 min

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.74	6.25	1.24	12.25	8.93	18.25	0.99

0.50	0.50	6.50	0.99	12.50	4.71	18.50	1.24
0.75	0.74	6.75	1.24	12.75	4.46	18.75	0.99
1.00	0.74	7.00	1.24	13.00	3.47	19.00	1.24
1.25	0.74	7.25	1.49	13.25	3.22	19.25	0.99
1.50	0.50	7.50	1.24	13.50	2.73	19.50	1.24
1.75	0.74	7.75	1.49	13.75	2.48	19.75	0.99
2.00	0.74	8.00	1.49	14.00	1.98	20.00	0.74
2.25	0.99	8.25	1.74	14.25	1.74	20.25	0.74
2.50	0.74	8.50	1.74	14.50	1.98	20.50	0.74
2.75	0.74	8.75	1.74	14.75	1.74	20.75	0.74
3.00	0.74	9.00	1.98	15.00	1.98	21.00	0.74
3.25	0.99	9.25	1.98	15.25	1.74	21.25	0.74
3.50	0.74	9.50	2.23	15.50	1.98	21.50	0.74
3.75	0.74	9.75	2.23	15.75	1.74	21.75	0.74
4.00	0.99	10.00	2.73	16.00	1.24	22.00	0.74
4.25	0.99	10.25	2.98	16.25	0.99	22.25	0.74
4.50	0.99	10.50	3.72	16.50	1.24	22.50	0.74
4.75	0.99	10.75	3.97	16.75	0.99	22.75	0.74
5.00	0.99	11.00	5.95	17.00	1.24	23.00	0.74
5.25	0.99	11.25	5.95	17.25	0.99	23.25	0.74
5.50	0.99	11.50	18.35	17.50	1.24	23.50	0.74
5.75	0.99	11.75	75.89	17.75	0.99	23.75	0.74
6.00	0.99	12.00	8.93	18.00	1.24		

2.333	0.74	8.333	1.74	14.333	1.98	20.33	0.74
2.417	0.74	8.417	1.74	14.417	1.98	20.42	0.74
2.500	0.74	8.500	1.74	14.500	1.98	20.50	0.74
2.583	0.74	8.583	1.74	14.583	1.74	20.58	0.74
2.667	0.74	8.667	1.74	14.667	1.74	20.67	0.74
2.750	0.74	8.750	1.74	14.750	1.74	20.75	0.74
2.833	0.74	8.833	1.98	14.833	1.98	20.83	0.74
2.917	0.74	8.917	1.98	14.917	1.98	20.92	0.74
3.000	0.74	9.000	1.98	15.000	1.98	21.00	0.74
3.083	0.99	9.083	1.98	15.083	1.74	21.08	0.74
3.167	0.99	9.167	1.98	15.167	1.74	21.17	0.74
3.250	0.99	9.250	1.98	15.250	1.74	21.25	0.74
3.333	0.74	9.333	2.23	15.333	1.98	21.33	0.74
3.417	0.74	9.417	2.23	15.417	1.98	21.42	0.74
3.500	0.74	9.500	2.23	15.500	1.98	21.50	0.74
3.583	0.74	9.583	2.23	15.583	1.74	21.58	0.74
3.667	0.74	9.667	2.23	15.667	1.74	21.67	0.74
3.750	0.74	9.750	2.23	15.750	1.74	21.75	0.74
3.833	0.99	9.833	2.73	15.833	1.24	21.83	0.74
3.917	0.99	9.917	2.73	15.917	1.24	21.92	0.74
4.000	0.99	10.000	2.73	16.000	1.24	22.00	0.74
4.083	0.99	10.083	2.98	16.083	0.99	22.08	0.74
4.167	0.99	10.167	2.98	16.167	0.99	22.17	0.74
4.250	0.99	10.250	2.98	16.250	0.99	22.25	0.74
4.333	0.99	10.333	3.72	16.333	1.24	22.33	0.74
4.417	0.99	10.417	3.72	16.417	1.24	22.42	0.74
4.500	0.99	10.500	3.72	16.500	1.24	22.50	0.74
4.583	0.99	10.583	3.97	16.583	0.99	22.58	0.74
4.667	0.99	10.667	3.97	16.667	0.99	22.67	0.74
4.750	0.99	10.750	3.97	16.750	0.99	22.75	0.74
4.833	0.99	10.833	5.95	16.833	1.24	22.83	0.74
4.917	0.99	10.917	5.95	16.917	1.24	22.92	0.74
5.000	0.99	11.000	5.95	17.000	1.24	23.00	0.74
5.083	0.99	11.083	5.95	17.083	0.99	23.08	0.74
5.167	0.99	11.167	5.95	17.167	0.99	23.17	0.74
5.250	0.99	11.250	5.95	17.250	0.99	23.25	0.74
5.333	0.99	11.333	18.35	17.333	1.24	23.33	0.74
5.417	0.99	11.417	18.35	17.417	1.24	23.42	0.74
5.500	0.99	11.500	18.35	17.500	1.24	23.50	0.74
5.583	0.99	11.583	75.89	17.583	0.99	23.58	0.74
5.667	0.99	11.667	75.89	17.667	0.99	23.67	0.74
5.750	0.99	11.750	75.89	17.750	0.99	23.75	0.74
5.833	0.99	11.833	8.93	17.833	1.24		
5.917	0.99	11.917	8.93	17.917	1.24		
6.000	0.99	12.000	8.93	18.000	1.24		

CALIB
NASHYD (0001) Area (ha)= 77.75 Curve Number (CN)= 49.6
ID= 1 DT= 5.0 min Ia (mm)= 6.91 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.24

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	0.74	6.083	1.24	12.083	8.93	18.08	0.99
0.167	0.74	6.167	1.24	12.167	8.93	18.17	0.99
0.250	0.74	6.250	1.24	12.250	8.93	18.25	0.99
0.333	0.50	6.333	0.99	12.333	4.71	18.33	1.24
0.417	0.50	6.417	0.99	12.417	4.71	18.42	1.24
0.500	0.50	6.500	0.99	12.500	4.71	18.50	1.24
0.583	0.74	6.583	1.24	12.583	4.46	18.58	0.99
0.667	0.74	6.667	1.24	12.667	4.46	18.67	0.99
0.750	0.74	6.750	1.24	12.750	4.46	18.75	0.99
0.833	0.74	6.833	1.24	12.833	3.47	18.83	1.24
0.917	0.74	6.917	1.24	12.917	3.47	18.92	1.24
1.000	0.74	7.000	1.24	13.000	3.47	19.00	1.24
1.083	0.74	7.083	1.49	13.083	3.22	19.08	0.99
1.167	0.74	7.167	1.49	13.167	3.22	19.17	0.99
1.250	0.74	7.250	1.49	13.250	3.22	19.25	0.99
1.333	0.50	7.333	1.24	13.333	2.73	19.33	1.24
1.417	0.50	7.417	1.24	13.417	2.73	19.42	1.24
1.500	0.50	7.500	1.24	13.500	2.73	19.50	1.24
1.583	0.74	7.583	1.49	13.583	2.48	19.58	0.99
1.667	0.74	7.667	1.49	13.667	2.48	19.67	0.99
1.750	0.74	7.750	1.49	13.750	2.48	19.75	0.99
1.833	0.74	7.833	1.49	13.833	1.98	19.83	0.74
1.917	0.74	7.917	1.49	13.917	1.98	19.92	0.74
2.000	0.74	8.000	1.49	14.000	1.98	20.00	0.74
2.083	0.99	8.083	1.74	14.083	1.74	20.08	0.74
2.167	0.99	8.167	1.74	14.167	1.74	20.17	0.74
2.250	0.99	8.250	1.74	14.250	1.74	20.25	0.74

Unit Hyd Qpeak (cms)= 2.395

PEAK FLOW (cms)= 0.474 (i)
TIME TO PEAK (hrs)= 13.083
RUNOFF VOLUME (mm)= 9.631
TOTAL RAINFALL (mm)= 61.814
RUNOFF COEFFICIENT = 0.156

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

MASS STORM
Ptotal= 62.00 mm

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df4fd7c8-c3db-445e-97d8-d931e3a274b7\b17fb634
Comments: SCS Type II 24 HR MASS CURVE
Duration of storm = 23.75 hrs

Mass curve time step = 15.00 min

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.74	6.25	1.24	12.25	8.93	18.25	0.99
0.50	0.50	6.50	0.99	12.50	4.71	18.50	1.24
0.75	0.74	6.75	1.24	12.75	4.46	18.75	0.99
1.00	0.74	7.00	1.24	13.00	3.47	19.00	1.24
1.25	0.74	7.25	1.49	13.25	3.22	19.25	0.99
1.50	0.50	7.50	1.24	13.50	2.73	19.50	1.24
1.75	0.74	7.75	1.49	13.75	2.48	19.75	0.99
2.00	0.74	8.00	1.49	14.00	1.98	20.00	0.74
2.25	0.99	8.25	1.74	14.25	1.74	20.25	0.74
2.50	0.74	8.50	1.74	14.50	1.98	20.50	0.74
2.75	0.74	8.75	1.74	14.75	1.74	20.75	0.74
3.00	0.74	9.00	1.98	15.00	1.98	21.00	0.74
3.25	0.99	9.25	1.98	15.25	1.74	21.25	0.74
3.50	0.74	9.50	2.23	15.50	1.98	21.50	0.74
3.75	0.74	9.75	2.23	15.75	1.74	21.75	0.74
4.00	0.99	10.00	2.73	16.00	1.24	22.00	0.74
4.25	0.99	10.25	2.98	16.25	0.99	22.25	0.74
4.50	0.99	10.50	3.72	16.50	1.24	22.50	0.74
4.75	0.99	10.75	3.97	16.75	0.99	22.75	0.74
5.00	0.99	11.00	5.95	17.00	1.24	23.00	0.74
5.25	0.99	11.25	5.95	17.25	0.99	23.25	0.74
5.50	0.99	11.50	18.35	17.50	1.24	23.50	0.74
5.75	0.99	11.75	75.89	17.75	0.99	23.75	0.74
6.00	0.99	12.00	8.93	18.00	1.24		

 | CALIB |
 | NASHYD (0202) | Area (ha)= 6.35 Curve Number (CN)= 57.9
 | ID= 1 DT= 5.0 min | Ia (mm)= 4.70 # of Linear Res.(N)= 3.00
 |-----| U.H. Tp(hrs)= 0.55

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	0.74	6.083	1.24	12.083	8.93	18.08	0.99
0.167	0.74	6.167	1.24	12.167	8.93	18.17	0.99
0.250	0.74	6.250	1.24	12.250	8.93	18.25	0.99
0.333	0.50	6.333	0.99	12.333	4.71	18.33	1.24
0.417	0.50	6.417	0.99	12.417	4.71	18.42	1.24
0.500	0.50	6.500	0.99	12.500	4.71	18.50	1.24
0.583	0.74	6.583	1.24	12.583	4.46	18.58	0.99
0.667	0.74	6.667	1.24	12.667	4.46	18.67	0.99
0.750	0.74	6.750	1.24	12.750	4.46	18.75	0.99
0.833	0.74	6.833	1.24	12.833	3.47	18.83	1.24
0.917	0.74	6.917	1.24	12.917	3.47	18.92	1.24
1.000	0.74	7.000	1.24	13.000	3.47	19.00	1.24
1.083	0.74	7.083	1.49	13.083	3.22	19.08	0.99
1.167	0.74	7.167	1.49	13.167	3.22	19.17	0.99
1.250	0.74	7.250	1.49	13.250	3.22	19.25	0.99
1.333	0.50	7.333	1.24	13.333	2.73	19.33	1.24
1.417	0.50	7.417	1.24	13.417	2.73	19.42	1.24
1.500	0.50	7.500	1.24	13.500	2.73	19.50	1.24
1.583	0.74	7.583	1.49	13.583	2.48	19.58	0.99
1.667	0.74	7.667	1.49	13.667	2.48	19.67	0.99
1.750	0.74	7.750	1.49	13.750	2.48	19.75	0.99
1.833	0.74	7.833	1.49	13.833	1.98	19.83	0.74

1.917	0.74	7.917	1.49	13.917	1.98	19.92	0.74
2.000	0.74	8.000	1.49	14.000	1.98	20.00	0.74
2.083	0.99	8.083	1.74	14.083	1.74	20.08	0.74
2.167	0.99	8.167	1.74	14.167	1.74	20.17	0.74
2.250	0.99	8.250	1.74	14.250	1.74	20.25	0.74
2.333	0.74	8.333	1.74	14.333	1.98	20.33	0.74
2.417	0.74	8.417	1.74	14.417	1.98	20.42	0.74
2.500	0.74	8.500	1.74	14.500	1.98	20.50	0.74
2.583	0.74	8.583	1.74	14.583	1.74	20.58	0.74
2.667	0.74	8.667	1.74	14.667	1.74	20.67	0.74
2.750	0.74	8.750	1.74	14.750	1.74	20.75	0.74
2.833	0.74	8.833	1.98	14.833	1.98	20.83	0.74
2.917	0.74	8.917	1.98	14.917	1.98	20.92	0.74
3.000	0.74	9.000	1.98	15.000	1.98	21.00	0.74
3.083	0.99	9.083	1.98	15.083	1.74	21.08	0.74
3.167	0.99	9.167	1.98	15.167	1.74	21.17	0.74
3.250	0.99	9.250	1.98	15.250	1.74	21.25	0.74
3.333	0.74	9.333	2.23	15.333	1.98	21.33	0.74
3.417	0.74	9.417	2.23	15.417	1.98	21.42	0.74
3.500	0.74	9.500	2.23	15.500	1.98	21.50	0.74
3.583	0.74	9.583	2.23	15.583	1.74	21.58	0.74
3.667	0.74	9.667	2.23	15.667	1.74	21.67	0.74
3.750	0.74	9.750	2.23	15.750	1.74	21.75	0.74
3.833	0.99	9.833	2.73	15.833	1.24	21.83	0.74
3.917	0.99	9.917	2.73	15.917	1.24	21.92	0.74
4.000	0.99	10.000	2.73	16.000	1.24	22.00	0.74
4.083	0.99	10.083	2.98	16.083	0.99	22.08	0.74
4.167	0.99	10.167	2.98	16.167	0.99	22.17	0.74
4.250	0.99	10.250	2.98	16.250	0.99	22.25	0.74
4.333	0.99	10.333	3.72	16.333	1.24	22.33	0.74
4.417	0.99	10.417	3.72	16.417	1.24	22.42	0.74
4.500	0.99	10.500	3.72	16.500	1.24	22.50	0.74
4.583	0.99	10.583	3.97	16.583	0.99	22.58	0.74
4.667	0.99	10.667	3.97	16.667	0.99	22.67	0.74
4.750	0.99	10.750	3.97	16.750	0.99	22.75	0.74
4.833	0.99	10.833	5.95	16.833	1.24	22.83	0.74
4.917	0.99	10.917	5.95	16.917	1.24	22.92	0.74
5.000	0.99	11.000	5.95	17.000	1.24	23.00	0.74
5.083	0.99	11.083	5.95	17.083	0.99	23.08	0.74
5.167	0.99	11.167	5.95	17.167	0.99	23.17	0.74
5.250	0.99	11.250	5.95	17.250	0.99	23.25	0.74
5.333	0.99	11.333	18.35	17.333	1.24	23.33	0.74
5.417	0.99	11.417	18.35	17.417	1.24	23.42	0.74
5.500	0.99	11.500	18.35	17.500	1.24	23.50	0.74
5.583	0.99	11.583	75.88	17.583	0.99	23.58	0.74
5.667	0.99	11.667	75.89	17.667	0.99	23.67	0.74
5.750	0.99	11.750	75.89	17.750	0.99	23.75	0.74
5.833	0.99	11.833	8.93	17.833	1.24		
5.917	0.99	11.917	8.93	17.917	1.24		
6.000	0.99	12.000	8.93	18.000	1.24		

Unit Hyd Qpeak (cms)= 0.441

PEAK FLOW (cms)= 0.101 (i)
 TIME TO PEAK (hrs)= 12.250
 RUNOFF VOLUME (mm)= 13.490
 TOTAL RAINFALL (mm)= 61.814
 RUNOFF COEFFICIENT = 0.218

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

 | RESERVOIR(0602) |

IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.0394	0.0998
0.0000	0.0000	0.1306	0.1176
0.0014	0.0066	0.3534	0.1362
0.0069	0.0205	0.6046	0.1554
0.0098	0.0350	0.9742	0.1752
0.0120	0.0502	1.4665	0.1957
0.0139	0.0661	2.0882	0.2169
0.0155	0.0826	2.4500	0.2278

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0202)	6.346	0.101	12.25	13.49
OUTFLOW: ID= 1 (0602)	6.346	0.012	16.00	13.30

PEAK FLOW REDUCTION [Qout/Qin](%)= 11.69
TIME SHIFT OF PEAK FLOW (min)=225.00
MAXIMUM STORAGE USED (ha.m.)= 0.0487

MASS STORM
Ptotal= 62.00 mm

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Comments: SCS Type II 24 HR MASS CURVE

Duration of storm = 23.75 hrs
Mass curve time step = 15.00 min

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.74	6.25	1.24	12.25	8.93	18.25	0.99
0.50	0.50	6.50	0.99	12.50	4.71	18.50	1.24
0.75	0.74	6.75	1.24	12.75	4.46	18.75	0.99
1.00	0.74	7.00	1.24	13.00	3.47	19.00	1.24
1.25	0.74	7.25	1.49	13.25	3.22	19.25	0.99
1.50	0.50	7.50	1.24	13.50	2.73	19.50	1.24
1.75	0.74	7.75	1.49	13.75	2.48	19.75	0.99
2.00	0.74	8.00	1.49	14.00	1.98	20.00	0.74
2.25	0.99	8.25	1.74	14.25	1.74	20.25	0.74
2.50	0.74	8.50	1.74	14.50	1.98	20.50	0.74
2.75	0.74	8.75	1.74	14.75	1.74	20.75	0.74
3.00	0.74	9.00	1.98	15.00	1.98	21.00	0.74
3.25	0.99	9.25	1.98	15.25	1.74	21.25	0.74
3.50	0.74	9.50	2.23	15.50	1.98	21.50	0.74
3.75	0.74	9.75	2.23	15.75	1.74	21.75	0.74
4.00	0.99	10.00	2.73	16.00	1.24	22.00	0.74
4.25	0.99	10.25	2.98	16.25	0.99	22.25	0.74
4.50	0.99	10.50	3.72	16.50	1.24	22.50	0.74
4.75	0.99	10.75	3.97	16.75	0.99	22.75	0.74
5.00	0.99	11.00	5.95	17.00	1.24	23.00	0.74
5.25	0.99	11.25	5.95	17.25	0.99	23.25	0.74
5.50	0.99	11.50	18.35	17.50	1.24	23.50	0.74
5.75	0.99	11.75	75.89	17.75	0.99	23.75	0.74
6.00	0.99	12.00	8.93	18.00	1.24		

CALIB NASHYD (0201)
ID= 1 DT= 5.0 min

Area (ha)= 5.05 Curve Number (CN)= 51.4
Ia (mm)= 4.70 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.57

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	0.74	6.083	1.24	12.083	8.93	18.08	0.99
0.167	0.74	6.167	1.24	12.167	8.93	18.17	0.99
0.250	0.74	6.250	1.24	12.250	8.93	18.25	0.99
0.333	0.50	6.333	0.99	12.333	4.71	18.33	1.24
0.417	0.50	6.417	0.99	12.417	4.71	18.42	1.24
0.500	0.50	6.500	0.99	12.500	4.71	18.50	1.24
0.583	0.74	6.583	1.24	12.583	4.46	18.58	0.99
0.667	0.74	6.667	1.24	12.667	4.46	18.67	0.99
0.750	0.74	6.750	1.24	12.750	4.46	18.75	0.99
0.833	0.74	6.833	1.24	12.833	3.47	18.83	1.24
0.917	0.74	6.917	1.24	12.917	3.47	18.92	1.24
1.000	0.74	7.000	1.24	13.000	3.47	19.00	1.24
1.083	0.74	7.083	1.49	13.083	3.22	19.08	0.99
1.167	0.74	7.167	1.49	13.167	3.22	19.17	0.99
1.250	0.74	7.250	1.49	13.250	3.22	19.25	0.99
1.333	0.50	7.333	1.24	13.333	2.73	19.33	1.24
1.417	0.50	7.417	1.24	13.417	2.73	19.42	1.24
1.500	0.50	7.500	1.24	13.500	2.73	19.50	1.24
1.583	0.74	7.583	1.49	13.583	2.48	19.58	0.99
1.667	0.74	7.667	1.49	13.667	2.48	19.67	0.99
1.750	0.74	7.750	1.49	13.750	2.48	19.75	0.99
1.833	0.74	7.833	1.49	13.833	1.98	19.83	0.74
1.917	0.74	7.917	1.49	13.917	1.98	19.92	0.74
2.000	0.74	8.000	1.49	14.000	1.98	20.00	0.74
2.083	0.99	8.083	1.74	14.083	1.74	20.08	0.74
2.167	0.99	8.167	1.74	14.167	1.74	20.17	0.74
2.250	0.99	8.250	1.74	14.250	1.74	20.25	0.74
2.333	0.74	8.333	1.74	14.333	1.98	20.33	0.74
2.417	0.74	8.417	1.74	14.417	1.98	20.42	0.74
2.500	0.74	8.500	1.74	14.500	1.98	20.50	0.74
2.583	0.74	8.583	1.74	14.583	1.74	20.58	0.74
2.667	0.74	8.667	1.74	14.667	1.74	20.67	0.74
2.750	0.74	8.750	1.74	14.750	1.74	20.75	0.74
2.833	0.74	8.833	1.98	14.833	1.98	20.83	0.74
2.917	0.74	8.917	1.98	14.917	1.98	20.92	0.74
3.000	0.74	9.000	1.98	15.000	1.98	21.00	0.74
3.083	0.99	9.083	1.98	15.083	1.74	21.08	0.74
3.167	0.99	9.167	1.98	15.167	1.74	21.17	0.74
3.250	0.99	9.250	1.98	15.250	1.74	21.25	0.74
3.333	0.74	9.333	2.23	15.333	1.98	21.33	0.74
3.417	0.74	9.417	2.23	15.417	1.98	21.42	0.74
3.500	0.74	9.500	2.23	15.500	1.98	21.50	0.74
3.583	0.74	9.583	2.23	15.583	1.74	21.58	0.74
3.667	0.74	9.667	2.23	15.667	1.74	21.67	0.74
3.750	0.74	9.750	2.23	15.750	1.74	21.75	0.74
3.833	0.99	9.833	2.73	15.833	1.24	21.83	0.74
3.917	0.99	9.917	2.73	15.917	1.24	21.92	0.74
4.000	0.99	10.000	2.73	16.000	1.24	22.00	0.74
4.083	0.99	10.083	2.98	16.083	0.99	22.08	0.74
4.167	0.99	10.167	2.98	16.167	0.99	22.17	0.74
4.250	0.99	10.250	2.98	16.250	0.99	22.25	0.74
4.333	0.99	10.333	3.72	16.333	1.24	22.33	0.74
4.417	0.99	10.417	3.72	16.417	1.24	22.42	0.74
4.500	0.99	10.500	3.72	16.500	1.24	22.50	0.74
4.583	0.99	10.583	3.97	16.583	0.99	22.58	0.74
4.667	0.99	10.667	3.97	16.667	0.99	22.67	0.74
4.750	0.99	10.750	3.97	16.750	0.99	22.75	0.74

4.833	0.99	10.833	5.95	16.833	1.24	22.83	0.74
4.917	0.99	10.917	5.95	16.917	1.24	22.92	0.74
5.000	0.99	11.000	5.95	17.000	1.24	23.00	0.74
5.083	0.99	11.083	5.95	17.083	0.99	23.08	0.74
5.167	0.99	11.167	5.95	17.167	0.99	23.17	0.74
5.250	0.99	11.250	5.95	17.250	0.99	23.25	0.74
5.333	0.99	11.333	18.35	17.333	1.24	23.33	0.74
5.417	0.99	11.417	18.35	17.417	1.24	23.42	0.74
5.500	0.99	11.500	18.35	17.500	1.24	23.50	0.74
5.583	0.99	11.583	75.88	17.583	0.99	23.58	0.74
5.667	0.99	11.667	75.89	17.667	0.99	23.67	0.74
5.750	0.99	11.750	75.89	17.750	0.99	23.75	0.74
5.833	0.99	11.833	8.93	17.833	1.24		
5.917	0.99	11.917	8.93	17.917	1.24		
6.000	0.99	12.000	8.93	18.000	1.24		

Unit Hyd Qpeak (cms)= 0.338

PEAK FLOW (cms)= 0.063 (i)
 TIME TO PEAK (hrs)= 12.250
 RUNOFF VOLUME (mm)= 10.972
 TOTAL RAINFALL (mm)= 61.814
 RUNOFF COEFFICIENT = 0.178

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

RESERVOIR(0601)
 IN= 2---> OUT= 1
 DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.3000	0.0752
0.0320	0.0244	0.7410	0.1015
0.0910	0.0495	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0201)	5.047	0.063	12.25	10.97
OUTFLOW: ID= 1 (0601)	5.047	0.025	13.33	10.94

PEAK FLOW REDUCTION [Qout/Qin](%)= 40.15
 TIME SHIFT OF PEAK FLOW (min)= 65.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0193

ADD HYD (0802)
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0601):	5.05	0.025	13.33	10.94
+ ID2= 2 (0602):	6.35	0.012	16.00	13.30
ID = 3 (0802):	11.39	0.036	13.42	12.25

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0803)
 1 + 2 = 3

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)

ID1= 1 (0001): 77.75 0.474 13.08 9.63
 + ID2= 2 (0802): 11.39 0.036 13.42 12.25
 =====
 ID = 3 (0803): 89.14 0.510 13.08 9.97

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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V V I SSSSS U U A L
V V I SS U U AAA L
V V I SS U U AAAAA L
V V I SS U U A A L
VV I SSSSS UUUU A A LLLLL

OOO TTTT TTTT 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 5.0\VO2\voin.dat
 Output filename: C:\Users\ALoverholt\AppData\Local\Civica\VH5
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DATE: 04-02-2020

TIME: 11:08:15

USER:

COMMENTS: _____

 ** SIMULATION : Run 03 **

10 Year SCS

MASS STORM
 Ptotal= 70.90 mm

Filename: C:\Users\ALoverholt\AppData\Local\Temp\df4fd7c8-c3db-445e-97d8-d931e3a274b7\33e0ecf
 Comments: SCS Type II 24 HR MASS CURVE

Duration of storm = 23.75 hrs
 Mass curve time step = 15.00 min

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.85	6.25	1.42	12.25	10.21	18.25	1.13
0.50	0.57	6.50	1.13	12.50	5.39	18.50	1.42

0.75	0.85	6.75	1.42	12.75	5.10	18.75	1.13
1.00	0.85	7.00	1.42	13.00	3.97	19.00	1.42
1.25	0.85	7.25	1.70	13.25	3.69	19.25	1.13
1.50	0.57	7.50	1.42	13.50	3.12	19.50	1.42
1.75	0.85	7.75	1.70	13.75	2.84	19.75	1.13
2.00	0.85	8.00	1.70	14.00	2.27	20.00	0.85
2.25	1.13	8.25	1.99	14.25	1.99	20.25	0.85
2.50	0.85	8.50	1.99	14.50	2.27	20.50	0.85
2.75	0.85	8.75	1.99	14.75	1.99	20.75	0.85
3.00	0.85	9.00	2.27	15.00	2.27	21.00	0.85
3.25	1.13	9.25	2.27	15.25	1.99	21.25	0.85
3.50	0.85	9.50	2.55	15.50	2.27	21.50	0.85
3.75	0.85	9.75	2.55	15.75	1.99	21.75	0.85
4.00	1.13	10.00	3.12	16.00	1.42	22.00	0.85
4.25	1.13	10.25	3.40	16.25	1.13	22.25	0.85
4.50	1.13	10.50	4.25	16.50	1.42	22.50	0.85
4.75	1.13	10.75	4.54	16.75	1.13	22.75	0.85
5.00	1.13	11.00	6.81	17.00	1.42	23.00	0.85
5.25	1.13	11.25	6.81	17.25	1.13	23.25	0.85
5.50	1.13	11.50	20.99	17.50	1.42	23.50	0.85
5.75	1.13	11.75	86.78	17.75	1.13	23.75	0.85
6.00	1.13	12.00	10.21	18.00	1.42		

 | CALIB (0003) | Area (ha)= 136.00 Curve Number (CN)= 52.1
 | NASHYD (0003) | Ia (mm)= 7.20 # of Linear Res.(N)= 3.00
 | ID= 1 DT= 5.0 min | U.H. Tp(hrs)= 1.94

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	0.85	6.083	1.42	12.083	10.21	18.08	1.13
0.167	0.85	6.167	1.42	12.167	10.21	18.17	1.13
0.250	0.85	6.250	1.42	12.250	10.21	18.25	1.13
0.333	0.57	6.333	1.13	12.333	5.39	18.33	1.42
0.417	0.57	6.417	1.13	12.417	5.39	18.42	1.42
0.500	0.57	6.500	1.13	12.500	5.39	18.50	1.42
0.583	0.85	6.583	1.42	12.583	5.10	18.58	1.13
0.667	0.85	6.667	1.42	12.667	5.10	18.67	1.13
0.750	0.85	6.750	1.42	12.750	5.10	18.75	1.13
0.833	0.85	6.833	1.42	12.833	3.97	18.83	1.42
0.917	0.85	6.917	1.42	12.917	3.97	18.92	1.42
1.000	0.85	7.000	1.42	13.000	3.97	19.00	1.42
1.083	0.85	7.083	1.70	13.083	3.69	19.08	1.13
1.167	0.85	7.167	1.70	13.167	3.69	19.17	1.13
1.250	0.85	7.250	1.70	13.250	3.69	19.25	1.13
1.333	0.57	7.333	1.42	13.333	3.12	19.33	1.42
1.417	0.57	7.417	1.42	13.417	3.12	19.42	1.42
1.500	0.57	7.500	1.42	13.500	3.12	19.50	1.42
1.583	0.85	7.583	1.70	13.583	2.84	19.58	1.13
1.667	0.85	7.667	1.70	13.667	2.84	19.67	1.13
1.750	0.85	7.750	1.70	13.750	2.84	19.75	1.13
1.833	0.85	7.833	1.70	13.833	2.27	19.83	0.85
1.917	0.85	7.917	1.70	13.917	2.27	19.92	0.85
2.000	0.85	8.000	1.70	14.000	2.27	20.00	0.85
2.083	1.13	8.083	1.99	14.083	1.99	20.08	0.85
2.167	1.13	8.167	1.99	14.167	1.99	20.17	0.85
2.250	1.13	8.250	1.99	14.250	1.99	20.25	0.85
2.333	0.85	8.333	1.99	14.333	2.27	20.33	0.85

2.417	0.85	8.417	1.99	14.417	2.27	20.42	0.85
2.500	0.85	8.500	1.99	14.500	2.27	20.50	0.85
2.583	0.85	8.583	1.99	14.583	1.99	20.58	0.85
2.667	0.85	8.667	1.99	14.667	1.99	20.67	0.85
2.750	0.85	8.750	1.99	14.750	1.99	20.75	0.85
2.833	0.85	8.833	2.27	14.833	2.27	20.83	0.85
2.917	0.85	8.917	2.27	14.917	2.27	20.92	0.85
3.000	0.85	9.000	2.27	15.000	2.27	21.00	0.85
3.083	1.13	9.083	2.27	15.083	1.99	21.08	0.85
3.167	1.13	9.167	2.27	15.167	1.99	21.17	0.85
3.250	1.13	9.250	2.27	15.250	1.99	21.25	0.85
3.333	0.85	9.333	2.55	15.333	2.27	21.33	0.85
3.417	0.85	9.417	2.55	15.417	2.27	21.42	0.85
3.500	0.85	9.500	2.55	15.500	2.27	21.50	0.85
3.583	0.85	9.583	2.55	15.583	1.99	21.58	0.85
3.667	0.85	9.667	2.55	15.667	1.99	21.67	0.85
3.750	0.85	9.750	2.55	15.750	1.99	21.75	0.85
3.833	1.13	9.833	3.12	15.833	1.42	21.83	0.85
3.917	1.13	9.917	3.12	15.917	1.42	21.92	0.85
4.000	1.13	10.000	3.12	16.000	1.42	22.00	0.85
4.083	1.13	10.083	3.40	16.083	1.13	22.08	0.85
4.167	1.13	10.167	3.40	16.167	1.13	22.17	0.85
4.250	1.13	10.250	3.40	16.250	1.13	22.25	0.85
4.333	1.13	10.333	4.25	16.333	1.42	22.33	0.85
4.417	1.13	10.417	4.25	16.417	1.42	22.42	0.85
4.500	1.13	10.500	4.25	16.500	1.42	22.50	0.85
4.583	1.13	10.583	4.54	16.583	1.13	22.58	0.85
4.667	1.13	10.667	4.54	16.667	1.13	22.67	0.85
4.750	1.13	10.750	4.54	16.750	1.13	22.75	0.85
4.833	1.13	10.833	6.81	16.833	1.42	22.83	0.85
4.917	1.13	10.917	6.81	16.917	1.42	22.92	0.85
5.000	1.13	11.000	6.81	17.000	1.42	23.00	0.85
5.083	1.13	11.083	6.81	17.083	1.13	23.08	0.85
5.167	1.13	11.167	6.81	17.167	1.13	23.17	0.85
5.250	1.13	11.250	6.81	17.250	1.13	23.25	0.85
5.333	1.13	11.333	20.99	17.333	1.42	23.33	0.85
5.417	1.13	11.417	20.99	17.417	1.42	23.42	0.85
5.500	1.13	11.500	20.99	17.500	1.42	23.50	0.85
5.583	1.13	11.583	86.78	17.583	1.13	23.58	0.85
5.667	1.13	11.667	86.78	17.667	1.13	23.67	0.85
5.750	1.13	11.750	86.78	17.750	1.13	23.75	0.85
5.833	1.13	11.833	10.22	17.833	1.42		
5.917	1.13	11.917	10.21	17.917	1.42		
6.000	1.13	12.000	10.21	18.000	1.42		

Unit Hyd Qpeak (cms)= 2.678

PEAK FLOW (cms)= 0.843 (i)
 TIME TO PEAK (hrs)= 13.917
 RUNOFF VOLUME (mm)= 13.571
 TOTAL RAINFALL (mm)= 70.687
 RUNOFF COEFFICIENT = 0.192

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

 | DUHYD (0400) | AREA QPEAK TPEAK R.V.
 | Inlet Cap.= 0.713 | (ha) (cms) (hrs) (mm)
 | #of Inlets= 1 | 136.00 0.84 13.92 13.57
Total(cms)= 0.7
 TOTAL HYD. (ID= 1): 136.00 0.84 13.92 13.57
 =====

MAJOR SYS.(ID= 2): 4.61 0.13 13.92 13.57
 MINOR SYS.(ID= 3): 131.39 0.71 13.08 13.57

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

MASS STORM
 Ptotal= 70.90 mm

Filename: C:\Users\ALoverholt\AppData
 ata\Local\Temp\
 df4fd7c8-c3db-445e-97d8-d931e3a274b7\33e0ecef
 Comments: SCS Type II 24 HR MASS CURVE

Duration of storm = 23.75 hrs
 Mass curve time step = 15.00 min

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.85	6.25	1.42	12.25	10.21	18.25	1.13
0.50	0.57	6.50	1.13	12.50	5.39	18.50	1.42
0.75	0.85	6.75	1.42	12.75	5.10	18.75	1.13
1.00	0.85	7.00	1.42	13.00	3.97	19.00	1.42
1.25	0.85	7.25	1.70	13.25	3.69	19.25	1.13
1.50	0.57	7.50	1.42	13.50	3.12	19.50	1.42
1.75	0.85	7.75	1.70	13.75	2.84	19.75	1.13
2.00	0.85	8.00	1.70	14.00	2.27	20.00	0.85
2.25	1.13	8.25	1.99	14.25	1.99	20.25	0.85
2.50	0.85	8.50	1.99	14.50	2.27	20.50	0.85
2.75	0.85	8.75	1.99	14.75	1.99	20.75	0.85
3.00	0.85	9.00	2.27	15.00	2.27	21.00	0.85
3.25	1.13	9.25	2.27	15.25	1.99	21.25	0.85
3.50	0.85	9.50	2.55	15.50	2.27	21.50	0.85
3.75	0.85	9.75	2.55	15.75	1.99	21.75	0.85
4.00	1.13	10.00	3.12	16.00	1.42	22.00	0.85
4.25	1.13	10.25	3.40	16.25	1.13	22.25	0.85
4.50	1.13	10.50	4.25	16.50	1.42	22.50	0.85
4.75	1.13	10.75	4.54	16.75	1.13	22.75	0.85
5.00	1.13	11.00	6.81	17.00	1.42	23.00	0.85
5.25	1.13	11.25	6.81	17.25	1.13	23.25	0.85
5.50	1.13	11.50	20.99	17.50	1.42	23.50	0.85
5.75	1.13	11.75	86.78	17.75	1.13	23.75	0.85
6.00	1.13	12.00	10.21	18.00	1.42		

CALIB
 NASHYD (0002)
 ID= 1 DT= 5.0 min

Area (ha)= 10.93 Curve Number (CN)= 68.5
 Ia (mm)= 4.40 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.60

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	0.85	6.083	1.42	12.083	10.21	18.08	1.13
0.167	0.85	6.167	1.42	12.167	10.21	18.17	1.13
0.250	0.85	6.250	1.42	12.250	10.21	18.25	1.13
0.333	0.57	6.333	1.13	12.333	5.39	18.33	1.42
0.417	0.57	6.417	1.13	12.417	5.39	18.42	1.42
0.500	0.57	6.500	1.13	12.500	5.39	18.50	1.42
0.583	0.85	6.583	1.42	12.583	5.10	18.58	1.13
0.667	0.85	6.667	1.42	12.667	5.10	18.67	1.13
0.750	0.85	6.750	1.42	12.750	5.10	18.75	1.13

0.833	0.85	6.833	1.42	12.833	3.97	18.83	1.42
0.917	0.85	6.917	1.42	12.917	3.97	18.92	1.42
1.000	0.85	7.000	1.42	13.000	3.97	19.00	1.42
1.083	0.85	7.083	1.70	13.083	3.69	19.08	1.13
1.167	0.85	7.167	1.70	13.167	3.69	19.17	1.13
1.250	0.85	7.250	1.70	13.250	3.69	19.25	1.13
1.333	0.57	7.333	1.42	13.333	3.12	19.33	1.42
1.417	0.57	7.417	1.42	13.417	3.12	19.42	1.42
1.500	0.57	7.500	1.42	13.500	3.12	19.50	1.42
1.583	0.85	7.583	1.70	13.583	2.84	19.58	1.13
1.667	0.85	7.667	1.70	13.667	2.84	19.67	1.13
1.750	0.85	7.750	1.70	13.750	2.84	19.75	1.13
1.833	0.85	7.833	1.70	13.833	2.27	19.83	0.85
1.917	0.85	7.917	1.70	13.917	2.27	19.92	0.85
2.000	0.85	8.000	1.70	14.000	2.27	20.00	0.85
2.083	1.13	8.083	1.99	14.083	1.99	20.08	0.85
2.167	1.13	8.167	1.99	14.167	1.99	20.17	0.85
2.250	1.13	8.250	1.99	14.250	1.99	20.25	0.85
2.333	0.85	8.333	1.99	14.333	2.27	20.33	0.85
2.417	0.85	8.417	1.99	14.417	2.27	20.42	0.85
2.500	0.85	8.500	1.99	14.500	2.27	20.50	0.85
2.583	0.85	8.583	1.99	14.583	1.99	20.58	0.85
2.667	0.85	8.667	1.99	14.667	1.99	20.67	0.85
2.750	0.85	8.750	1.99	14.750	1.99	20.75	0.85
2.833	0.85	8.833	2.27	14.833	2.27	20.83	0.85
2.917	0.85	8.917	2.27	14.917	2.27	20.92	0.85
3.000	0.85	9.000	2.27	15.000	2.27	21.00	0.85
3.083	1.13	9.083	2.27	15.083	1.99	21.08	0.85
3.167	1.13	9.167	2.27	15.167	1.99	21.17	0.85
3.250	1.13	9.250	2.27	15.250	1.99	21.25	0.85
3.333	0.85	9.333	2.55	15.333	2.27	21.33	0.85
3.417	0.85	9.417	2.55	15.417	2.27	21.42	0.85
3.500	0.85	9.500	2.55	15.500	2.27	21.50	0.85
3.583	0.85	9.583	2.55	15.583	1.99	21.58	0.85
3.667	0.85	9.667	2.55	15.667	1.99	21.67	0.85
3.750	0.85	9.750	2.55	15.750	1.99	21.75	0.85
3.833	1.13	9.833	3.12	15.833	1.42	21.83	0.85
3.917	1.13	9.917	3.12	15.917	1.42	21.92	0.85
4.000	1.13	10.000	3.12	16.000	1.42	22.00	0.85
4.083	1.13	10.083	3.40	16.083	1.13	22.08	0.85
4.167	1.13	10.167	3.40	16.167	1.13	22.17	0.85
4.250	1.13	10.250	3.40	16.250	1.13	22.25	0.85
4.333	1.13	10.333	4.25	16.333	1.42	22.33	0.85
4.417	1.13	10.417	4.25	16.417	1.42	22.42	0.85
4.500	1.13	10.500	4.25	16.500	1.42	22.50	0.85
4.583	1.13	10.583	4.54	16.583	1.13	22.58	0.85
4.667	1.13	10.667	4.54	16.667	1.13	22.67	0.85
4.750	1.13	10.750	4.54	16.750	1.13	22.75	0.85
4.833	1.13	10.833	6.81	16.833	1.42	22.83	0.85
4.917	1.13	10.917	6.81	16.917	1.42	22.92	0.85
5.000	1.13	11.000	6.81	17.000	1.42	23.00	0.85
5.083	1.13	11.083	6.81	17.083	1.13	23.08	0.85
5.167	1.13	11.167	6.81	17.167	1.13	23.17	0.85
5.250	1.13	11.250	6.81	17.250	1.13	23.25	0.85
5.333	1.13	11.333	20.99	17.333	1.42	23.33	0.85
5.417	1.13	11.417	20.99	17.417	1.42	23.42	0.85
5.500	1.13	11.500	20.99	17.500	1.42	23.50	0.85
5.583	1.13	11.583	86.78	17.583	1.13	23.58	0.85
5.667	1.13	11.667	86.78	17.667	1.13	23.67	0.85
5.750	1.13	11.750	86.78	17.750	1.13	23.75	0.85
5.833	1.13	11.833	10.22	17.833	1.42		
5.917	1.13	11.917	10.21	17.917	1.42		
6.000	1.13	12.000	10.21	18.000	1.42		

Unit Hyd Qpeak (cms)= 0.696

PEAK FLOW (cms)= 0.300 (i)
TIME TO PEAK (hrs)= 12.250
RUNOFF VOLUME (mm)= 23.999
TOTAL RAINFALL (mm)= 70.687
RUNOFF COEFFICIENT = 0.340

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

ADD HYD (0801)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0002):	10.93	0.300	12.25	24.00
+ ID2= 2 (0400):	131.39	0.713	13.08	13.57
ID = 3 (0801):	142.32	0.877	13.08	14.37

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

MASS STORM

Filename: C:\Users\ALOverholt\AppData
Local\Temp\df4fd7c8-c3db-445e-97d8-d931e3a274b7\33e0eecf
Comments: SCS Type II 24 HR MASS CURVE

Duration of storm = 23.75 hrs
Mass curve time step = 15.00 min

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.85	6.25	1.42	12.25	10.21	18.25	1.13
0.50	0.57	6.50	1.13	12.50	5.39	18.50	1.42
0.75	0.85	6.75	1.42	12.75	5.10	18.75	1.13
1.00	0.85	7.00	1.42	13.00	3.97	19.00	1.42
1.25	0.85	7.25	1.70	13.25	3.69	19.25	1.13
1.50	0.57	7.50	1.42	13.50	3.12	19.50	1.42
1.75	0.85	7.75	1.70	13.75	2.84	19.75	1.13
2.00	0.85	8.00	1.70	14.00	2.27	20.00	0.85
2.25	1.13	8.25	1.99	14.25	1.99	20.25	0.85
2.50	0.85	8.50	1.99	14.50	2.27	20.50	0.85
2.75	0.85	8.75	1.99	14.75	1.99	20.75	0.85
3.00	0.85	9.00	2.27	15.00	2.27	21.00	0.85
3.25	1.13	9.25	2.27	15.25	1.99	21.25	0.85
3.50	0.85	9.50	2.55	15.50	2.27	21.50	0.85
3.75	0.85	9.75	2.55	15.75	1.99	21.75	0.85
4.00	1.13	10.00	3.12	16.00	1.42	22.00	0.85
4.25	1.13	10.25	3.40	16.25	1.13	22.25	0.85
4.50	1.13	10.50	4.25	16.50	1.42	22.50	0.85
4.75	1.13	10.75	4.54	16.75	1.13	22.75	0.85
5.00	1.13	11.00	6.81	17.00	1.42	23.00	0.85
5.25	1.13	11.25	6.81	17.25	1.13	23.25	0.85
5.50	1.13	11.50	20.99	17.50	1.42	23.50	0.85
5.75	1.13	11.75	86.78	17.75	1.13	23.75	0.85
6.00	1.13	12.00	10.21	18.00	1.42		

CALIB (0001) | Area (ha)= 77.75 Curve Number (CN)= 49.6

|ID= 1 DT= 5.0 min | Ia (mm)= 6.91 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.24

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	0.85	6.083	1.42	12.083	10.21	18.08	1.13
0.167	0.85	6.167	1.42	12.167	10.21	18.17	1.13
0.250	0.85	6.250	1.42	12.250	10.21	18.25	1.13
0.333	0.57	6.333	1.13	12.333	5.39	18.33	1.42
0.417	0.57	6.417	1.13	12.417	5.39	18.42	1.42
0.500	0.57	6.500	1.13	12.500	5.39	18.50	1.42
0.583	0.85	6.583	1.42	12.583	5.10	18.58	1.13
0.667	0.85	6.667	1.42	12.667	5.10	18.67	1.13
0.750	0.85	6.750	1.42	12.750	5.10	18.75	1.13
0.833	0.85	6.833	1.42	12.833	3.97	18.83	1.42
0.917	0.85	6.917	1.42	12.917	3.97	18.92	1.42
1.000	0.85	7.000	1.42	13.000	3.97	19.00	1.42
1.083	0.85	7.083	1.70	13.083	3.69	19.08	1.13
1.167	0.85	7.167	1.70	13.167	3.69	19.17	1.13
1.250	0.85	7.250	1.70	13.250	3.69	19.25	1.13
1.333	0.57	7.333	1.42	13.333	3.12	19.33	1.42
1.417	0.57	7.417	1.42	13.417	3.12	19.42	1.42
1.500	0.57	7.500	1.42	13.500	3.12	19.50	1.42
1.583	0.85	7.583	1.70	13.583	2.84	19.58	1.13
1.667	0.85	7.667	1.70	13.667	2.84	19.67	1.13
1.750	0.85	7.750	1.70	13.750	2.84	19.75	1.13
1.833	0.85	7.833	1.70	13.833	2.27	19.83	0.85
1.917	0.85	7.917	1.70	13.917	2.27	19.92	0.85
2.000	0.85	8.000	1.70	14.000	2.27	20.00	0.85
2.083	1.13	8.083	1.99	14.083	1.99	20.08	0.85
2.167	1.13	8.167	1.99	14.167	1.99	20.17	0.85
2.250	1.13	8.250	1.99	14.250	1.99	20.25	0.85
2.333	0.85	8.333	1.99	14.333	2.27	20.33	0.85
2.417	0.85	8.417	1.99	14.417	2.27	20.42	0.85
2.500	0.85	8.500	1.99	14.500	2.27	20.50	0.85
2.583	0.85	8.583	1.99	14.583	1.99	20.58	0.85
2.667	0.85	8.667	1.99	14.667	1.99	20.67	0.85
2.750	0.85	8.750	1.99	14.750	1.99	20.75	0.85
2.833	0.85	8.833	2.27	14.833	2.27	20.83	0.85
2.917	0.85	8.917	2.27	14.917	2.27	20.92	0.85
3.000	0.85	9.000	2.27	15.000	2.27	21.00	0.85
3.083	1.13	9.083	2.27	15.083	1.99	21.08	0.85
3.167	1.13	9.167	2.27	15.167	1.99	21.17	0.85
3.250	1.13	9.250	2.27	15.250	1.99	21.25	0.85
3.333	0.85	9.333	2.55	15.333	2.27	21.33	0.85
3.417	0.85	9.417	2.55	15.417	2.27	21.42	0.85
3.500	0.85	9.500	2.55	15.500	2.27	21.50	0.85
3.583	0.85	9.583	2.55	15.583	1.99	21.58	0.85
3.667	0.85	9.667	2.55	15.667	1.99	21.67	0.85
3.750	0.85	9.750	2.55	15.750	1.99	21.75	0.85
3.833	1.13	9.833	3.12	15.833	1.42	21.83	0.85
3.917	1.13	9.917	3.12	15.917	1.42	21.92	0.85
4.000	1.13	10.000	3.12	16.000	1.42	22.00	0.85
4.083	1.13	10.083	3.40	16.083	1.13	22.08	0.85
4.167	1.13	10.167	3.40	16.167	1.13	22.17	0.85
4.250	1.13	10.250	3.40	16.250	1.13	22.25	0.85
4.333	1.13	10.333	4.25	16.333	1.42	22.33	0.85
4.417	1.13	10.417	4.25	16.417	1.42	22.42	0.85
4.500	1.13	10.500	4.25	16.500	1.42	22.50	0.85
4.583	1.13	10.583	4.54	16.583	1.13	22.58	0.85

4.667	1.13	10.667	4.54	16.667	1.13	22.67	0.85
4.750	1.13	10.750	4.54	16.750	1.13	22.75	0.85
4.833	1.13	10.833	6.81	16.833	1.42	22.83	0.85
4.917	1.13	10.917	6.81	16.917	1.42	22.92	0.85
5.000	1.13	11.000	6.81	17.000	1.42	23.00	0.85
5.083	1.13	11.083	6.81	17.083	1.13	23.08	0.85
5.167	1.13	11.167	6.81	17.167	1.13	23.17	0.85
5.250	1.13	11.250	6.81	17.250	1.13	23.25	0.85
5.333	1.13	11.333	20.99	17.333	1.42	23.33	0.85
5.417	1.13	11.417	20.99	17.417	1.42	23.42	0.85
5.500	1.13	11.500	20.99	17.500	1.42	23.50	0.85
5.583	1.13	11.583	86.78	17.583	1.13	23.58	0.85
5.667	1.13	11.667	86.78	17.667	1.13	23.67	0.85
5.750	1.13	11.750	86.78	17.750	1.13	23.75	0.85
5.833	1.13	11.833	10.22	17.833	1.42		
5.917	1.13	11.917	10.21	17.917	1.42		
6.000	1.13	12.000	10.21	18.000	1.42		

Unit Hyd Qpeak (cms)= 2.395

PEAK FLOW (cms)= 0.628 (i)
 TIME TO PEAK (hrs)= 13.083
 RUNOFF VOLUME (mm)= 12.637
 TOTAL RAINFALL (mm)= 70.687
 RUNOFF COEFFICIENT = 0.179

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

MASS STORM
 Ptotal= 70.90 mm

Filename: C:\Users\ALoverholt\AppData
 ata\Local\Temp\
 df4fd7c8-c3db-445e-97d8-d931e3a274b7\33e0eecf
 Comments: SCS Type II 24 HR MASS CURVE

Duration of storm = 23.75 hrs
 Mass curve time step = 15.00 min

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.85	6.25	1.42	12.25	10.21	18.25	1.13
0.50	0.57	6.50	1.13	12.50	5.39	18.50	1.42
0.75	0.85	6.75	1.42	12.75	5.10	18.75	1.13
1.00	0.85	7.00	1.42	13.00	3.97	19.00	1.42
1.25	0.85	7.25	1.70	13.25	3.69	19.25	1.13
1.50	0.57	7.50	1.42	13.50	3.12	19.50	1.42
1.75	0.85	7.75	1.70	13.75	2.84	19.75	1.13
2.00	0.85	8.00	1.70	14.00	2.27	20.00	0.85
2.25	1.13	8.25	1.99	14.25	1.99	20.25	0.85
2.50	0.85	8.50	1.99	14.50	2.27	20.50	0.85
2.75	0.85	8.75	1.99	14.75	1.99	20.75	0.85
3.00	0.85	9.00	2.27	15.00	2.27	21.00	0.85
3.25	1.13	9.25	2.27	15.25	1.99	21.25	0.85
3.50	0.85	9.50	2.55	15.50	2.27	21.50	0.85
3.75	0.85	9.75	2.55	15.75	1.99	21.75	0.85
4.00	1.13	10.00	3.12	16.00	1.42	22.00	0.85
4.25	1.13	10.25	3.40	16.25	1.13	22.25	0.85
4.50	1.13	10.50	4.25	16.50	1.42	22.50	0.85
4.75	1.13	10.75	4.54	16.75	1.13	22.75	0.85
5.00	1.13	11.00	6.81	17.00	1.42	23.00	0.85
5.25	1.13	11.25	6.81	17.25	1.13	23.25	0.85
5.50	1.13	11.50	20.99	17.50	1.42	23.50	0.85
5.75	1.13	11.75	86.78	17.75	1.13	23.75	0.85
6.00	1.13	12.00	10.21	18.00	1.42		

CALIB
 NASHYD (0202) Area (ha)= 6.35 Curve Number (CN)= 57.9
 ID= 1 DT= 5.0 min Ia (mm)= 4.70 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.55

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	0.85	6.083	1.42	12.083	10.21	18.08	1.13
0.167	0.85	6.167	1.42	12.167	10.21	18.17	1.13
0.250	0.85	6.250	1.42	12.250	10.21	18.25	1.13
0.333	0.57	6.333	1.13	12.333	5.39	18.33	1.42
0.417	0.57	6.417	1.13	12.417	5.39	18.42	1.42
0.500	0.57	6.500	1.13	12.500	5.39	18.50	1.42
0.583	0.85	6.583	1.42	12.583	5.10	18.58	1.13
0.667	0.85	6.667	1.42	12.667	5.10	18.67	1.13
0.750	0.85	6.750	1.42	12.750	5.10	18.75	1.13
0.833	0.85	6.833	1.42	12.833	3.97	18.83	1.42
0.917	0.85	6.917	1.42	12.917	3.97	18.92	1.42
1.000	0.85	7.000	1.42	13.000	3.97	19.00	1.42
1.083	0.85	7.083	1.70	13.083	3.69	19.08	1.13
1.167	0.85	7.167	1.70	13.167	3.69	19.17	1.13
1.250	0.85	7.250	1.70	13.250	3.69	19.25	1.13
1.333	0.57	7.333	1.42	13.333	3.12	19.33	1.42
1.417	0.57	7.417	1.42	13.417	3.12	19.42	1.42
1.500	0.57	7.500	1.42	13.500	3.12	19.50	1.42
1.583	0.85	7.583	1.70	13.583	2.84	19.58	1.13
1.667	0.85	7.667	1.70	13.667	2.84	19.67	1.13
1.750	0.85	7.750	1.70	13.750	2.84	19.75	1.13
1.833	0.85	7.833	1.70	13.833	2.27	19.83	0.85
1.917	0.85	7.917	1.70	13.917	2.27	19.92	0.85
2.000	0.85	8.000	1.70	14.000	2.27	20.00	0.85
2.083	1.13	8.083	1.99	14.083	1.99	20.08	0.85
2.167	1.13	8.167	1.99	14.167	1.99	20.17	0.85
2.250	1.13	8.250	1.99	14.250	1.99	20.25	0.85
2.333	0.85	8.333	1.99	14.333	2.27	20.33	0.85
2.417	0.85	8.417	1.99	14.417	2.27	20.42	0.85
2.500	0.85	8.500	1.99	14.500	2.27	20.50	0.85
2.583	0.85	8.583	1.99	14.583	1.99	20.58	0.85
2.667	0.85	8.667	1.99	14.667	1.99	20.67	0.85
2.750	0.85	8.750	1.99	14.750	1.99	20.75	0.85
2.833	0.85	8.833	2.27	14.833	2.27	20.83	0.85
2.917	0.85	8.917	2.27	14.917	2.27	20.92	0.85
3.000	0.85	9.000	2.27	15.000	2.27	21.00	0.85
3.083	1.13	9.083	2.27	15.083	1.99	21.08	0.85
3.167	1.13	9.167	2.27	15.167	1.99	21.17	0.85
3.250	1.13	9.250	2.27	15.250	1.99	21.25	0.85
3.333	0.85	9.333	2.55	15.333	2.27	21.33	0.85
3.417	0.85	9.417	2.55	15.417	2.27	21.42	0.85
3.500	0.85	9.500	2.55	15.500	2.27	21.50	0.85
3.583	0.85	9.583	2.55	15.583	1.99	21.58	0.85
3.667	0.85	9.667	2.55	15.667	1.99	21.67	0.85
3.750	0.85	9.750	2.55	15.750	1.99	21.75	0.85
3.833	1.13	9.833	3.12	15.833	1.42	21.83	0.85
3.917	1.13	9.917	3.12	15.917	1.42	21.92	0.85
4.000	1.13	10.000	3.12	16.000	1.42	22.00	0.85
4.083	1.13	10.083	3.40	16.083	1.13	22.08	0.85
4.167	1.13	10.167	3.40	16.167	1.13	22.17	0.85

4.250	1.13	10.250	3.40	16.250	1.13	22.25	0.85
4.333	1.13	10.333	4.25	16.333	1.42	22.33	0.85
4.417	1.13	10.417	4.25	16.417	1.42	22.42	0.85
4.500	1.13	10.500	4.25	16.500	1.42	22.50	0.85
4.583	1.13	10.583	4.54	16.583	1.13	22.58	0.85
4.667	1.13	10.667	4.54	16.667	1.13	22.67	0.85
4.750	1.13	10.750	4.54	16.750	1.13	22.75	0.85
4.833	1.13	10.833	6.81	16.833	1.42	22.83	0.85
4.917	1.13	10.917	6.81	16.917	1.42	22.92	0.85
5.000	1.13	11.000	6.81	17.000	1.42	23.00	0.85
5.083	1.13	11.083	6.81	17.083	1.13	23.08	0.85
5.167	1.13	11.167	6.81	17.167	1.13	23.17	0.85
5.250	1.13	11.250	6.81	17.250	1.13	23.25	0.85
5.333	1.13	11.333	20.99	17.333	1.42	23.33	0.85
5.417	1.13	11.417	20.99	17.417	1.42	23.42	0.85
5.500	1.13	11.500	20.99	17.500	1.42	23.50	0.85
5.583	1.13	11.583	86.78	17.583	1.13	23.58	0.85
5.667	1.13	11.667	86.78	17.667	1.13	23.67	0.85
5.750	1.13	11.750	86.78	17.750	1.13	23.75	0.85
5.833	1.13	11.833	10.22	17.833	1.42		
5.917	1.13	11.917	10.21	17.917	1.42		
6.000	1.13	12.000	10.21	18.000	1.42		

Unit Hyd Qpeak (cms)= 0.441

PEAK FLOW (cms)= 0.131 (i)
 TIME TO PEAK (hrs)= 12.250
 RUNOFF VOLUME (mm)= 17.370
 TOTAL RAINFALL (mm)= 70.687
 RUNOFF COEFFICIENT = 0.246

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

RESERVOIR(0602)
 IN= 2---> OUT= 1
 DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.0394	0.0998
0.0000	0.0000	0.1306	0.1176
0.0014	0.0066	0.3534	0.1362
0.0069	0.0205	0.6046	0.1554
0.0098	0.0350	0.9742	0.1752
0.0120	0.0502	1.4665	0.1957
0.0139	0.0661	2.0882	0.2169
0.0155	0.0826	2.4500	0.2278

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0202)	6.346	0.131	12.25	17.37
OUTFLOW: ID= 1 (0602)	6.346	0.014	16.25	17.18

PEAK FLOW REDUCTION [Qout/Qin]= 10.53
 TIME SHIFT OF PEAK FLOW (min)=240.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0650

MASS STORM
 Ptotal= 70.90 mm

Filename: C:\Users\ALOverholt\AppData\Local\Temp\df4fd7c8-c3db-445e-97d8-d931e3a274b7\33e0eecf
 Comments: SCS Type II 24 HR MASS CURVE

Duration of storm = 23.75 hrs
 Mass curve time step = 15.00 min

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.85	6.25	1.42	12.25	10.21	18.25	1.13
0.50	0.57	6.50	1.13	12.50	5.39	18.50	1.42
0.75	0.85	6.75	1.42	12.75	5.10	18.75	1.13
1.00	0.85	7.00	1.42	13.00	3.97	19.00	1.42
1.25	0.85	7.25	1.70	13.25	3.69	19.25	1.13
1.50	0.57	7.50	1.42	13.50	3.12	19.50	1.42
1.75	0.85	7.75	1.70	13.75	2.84	19.75	1.13
2.00	0.85	8.00	1.70	14.00	2.27	20.00	0.85
2.25	1.13	8.25	1.99	14.25	1.99	20.25	0.85
2.50	0.85	8.50	1.99	14.50	2.27	20.50	0.85
2.75	0.85	8.75	1.99	14.75	1.99	20.75	0.85
3.00	0.85	9.00	2.27	15.00	2.27	21.00	0.85
3.25	1.13	9.25	2.27	15.25	1.99	21.25	0.85
3.50	0.85	9.50	2.55	15.50	2.27	21.50	0.85
3.75	0.85	9.75	2.55	15.75	1.99	21.75	0.85
4.00	1.13	10.00	3.12	16.00	1.42	22.00	0.85
4.25	1.13	10.25	3.40	16.25	1.13	22.25	0.85
4.50	1.13	10.50	4.25	16.50	1.42	22.50	0.85
4.75	1.13	10.75	4.54	16.75	1.13	22.75	0.85
5.00	1.13	11.00	6.81	17.00	1.42	23.00	0.85
5.25	1.13	11.25	6.81	17.25	1.13	23.25	0.85
5.50	1.13	11.50	20.99	17.50	1.42	23.50	0.85
5.75	1.13	11.75	86.78	17.75	1.13	23.75	0.85
6.00	1.13	12.00	10.21	18.00	1.42		

CALIB
 NASHYD (0201)
 ID= 1 DT= 5.0 min

Area (ha)= 5.05
 Curve Number (CN)= 51.4
 Ia (mm)= 4.70
 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.57

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.85	6.083	1.42	12.083	10.21	18.08	1.13
0.167	0.85	6.167	1.42	12.167	10.21	18.17	1.13
0.250	0.85	6.250	1.42	12.250	10.21	18.25	1.13
0.333	0.57	6.333	1.13	12.333	5.39	18.33	1.42
0.417	0.57	6.417	1.13	12.417	5.39	18.42	1.42
0.500	0.57	6.500	1.13	12.500	5.39	18.50	1.42
0.583	0.85	6.583	1.42	12.583	5.10	18.58	1.13
0.667	0.85	6.667	1.42	12.667	5.10	18.67	1.13
0.750	0.85	6.750	1.42	12.750	5.10	18.75	1.13
0.833	0.85	6.833	1.42	12.833	3.97	18.83	1.42
0.917	0.85	6.917	1.42	12.917	3.97	18.92	1.42
1.000	0.85	7.000	1.42	13.000	3.97	19.00	1.42
1.083	0.85	7.083	1.70	13.083	3.69	19.08	1.13
1.167	0.85	7.167	1.70	13.167	3.69	19.17	1.13
1.250	0.85	7.250	1.70	13.250	3.69	19.25	1.13
1.333	0.57	7.333	1.42	13.333	3.12	19.33	1.42
1.417	0.57	7.417	1.42	13.417	3.12	19.42	1.42
1.500	0.57	7.500	1.42	13.500	3.12	19.50	1.42
1.583	0.85	7.583	1.70	13.583	2.84	19.58	1.13
1.667	0.85	7.667	1.70	13.667	2.84	19.67	1.13
1.750	0.85	7.750	1.70	13.750	2.84	19.75	1.13

1.833	0.85	7.833	1.70	13.833	2.27	19.83	0.85
1.917	0.85	7.917	1.70	13.917	2.27	19.92	0.85
2.000	0.85	8.000	1.70	14.000	2.27	20.00	0.85
2.083	1.13	8.083	1.99	14.083	1.99	20.08	0.85
2.167	1.13	8.167	1.99	14.167	1.99	20.17	0.85
2.250	1.13	8.250	1.99	14.250	1.99	20.25	0.85
2.333	0.85	8.333	1.99	14.333	2.27	20.33	0.85
2.417	0.85	8.417	1.99	14.417	2.27	20.42	0.85
2.500	0.85	8.500	1.99	14.500	2.27	20.50	0.85
2.583	0.85	8.583	1.99	14.583	1.99	20.58	0.85
2.667	0.85	8.667	1.99	14.667	1.99	20.67	0.85
2.750	0.85	8.750	1.99	14.750	1.99	20.75	0.85
2.833	0.85	8.833	2.27	14.833	2.27	20.83	0.85
2.917	0.85	8.917	2.27	14.917	2.27	20.92	0.85
3.000	0.85	9.000	2.27	15.000	2.27	21.00	0.85
3.083	1.13	9.083	2.27	15.083	1.99	21.08	0.85
3.167	1.13	9.167	2.27	15.167	1.99	21.17	0.85
3.250	1.13	9.250	2.27	15.250	1.99	21.25	0.85
3.333	0.85	9.333	2.55	15.333	2.27	21.33	0.85
3.417	0.85	9.417	2.55	15.417	2.27	21.42	0.85
3.500	0.85	9.500	2.55	15.500	2.27	21.50	0.85
3.583	0.85	9.583	2.55	15.583	1.99	21.58	0.85
3.667	0.85	9.667	2.55	15.667	1.99	21.67	0.85
3.750	0.85	9.750	2.55	15.750	1.99	21.75	0.85
3.833	1.13	9.833	3.12	15.833	1.42	21.83	0.85
3.917	1.13	9.917	3.12	15.917	1.42	21.92	0.85
4.000	1.13	10.000	3.12	16.000	1.42	22.00	0.85
4.083	1.13	10.083	3.40	16.083	1.13	22.08	0.85
4.167	1.13	10.167	3.40	16.167	1.13	22.17	0.85
4.250	1.13	10.250	3.40	16.250	1.13	22.25	0.85
4.333	1.13	10.333	4.25	16.333	1.42	22.33	0.85
4.417	1.13	10.417	4.25	16.417	1.42	22.42	0.85
4.500	1.13	10.500	4.25	16.500	1.42	22.50	0.85
4.583	1.13	10.583	4.54	16.583	1.13	22.58	0.85
4.667	1.13	10.667	4.54	16.667	1.13	22.67	0.85
4.750	1.13	10.750	4.54	16.750	1.13	22.75	0.85
4.833	1.13	10.833	6.81	16.833	1.42	22.83	0.85
4.917	1.13	10.917	6.81	16.917	1.42	22.92	0.85
5.000	1.13	11.000	6.81	17.000	1.42	23.00	0.85
5.083	1.13	11.083	6.81	17.083	1.13	23.08	0.85
5.167	1.13	11.167	6.81	17.167	1.13	23.17	0.85
5.250	1.13	11.250	6.81	17.250	1.13	23.25	0.85
5.333	1.13	11.333	20.99	17.333	1.42	23.33	0.85
5.417	1.13	11.417	20.99	17.417	1.42	23.42	0.85
5.500	1.13	11.500	20.99	17.500	1.42	23.50	0.85
5.583	1.13	11.583	86.78	17.583	1.13	23.58	0.85
5.667	1.13	11.667	86.78	17.667	1.13	23.67	0.85
5.750	1.13	11.750	86.78	17.750	1.13	23.75	0.85
5.833	1.13	11.833	10.22	17.833	1.42		
5.917	1.13	11.917	10.21	17.917	1.42		
6.000	1.13	12.000	10.21	18.000	1.42		

Unit Hyd Qpeak (cms)= 0.338

PEAK FLOW (cms)= 0.082 (i)
 TIME TO PEAK (hrs)= 12.250
 RUNOFF VOLUME (mm)= 14.222
 TOTAL RAINFALL (mm)= 70.687
 RUNOFF COEFFICIENT = 0.201

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

RESERVOIR(0601)
 IN= 2---> OUT= 1
 DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.3000	0.0752
0.0320	0.0244	0.7410	0.1015
0.0910	0.0495	0.0000	0.0000

INFLOW : ID= 2 (0201)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
5.047	5.047	0.082	12.25	14.22
OUTFLOW: ID= 1 (0601)	5.047	0.034	13.33	14.19

PEAK FLOW REDUCTION [Qout/Qin](%)= 40.94
 TIME SHIFT OF PEAK FLOW (min)= 65.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0251

ADD HYD (0802)
 1 + 2 = 3

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0601):	5.05	0.034	13.33	14.19
+ ID2= 2 (0602):	6.35	0.014	16.25	17.18
=====				
ID = 3 (0802):	11.39	0.046	13.33	15.85

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0803)
 1 + 2 = 3

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0001):	77.75	0.628	13.08	12.64
+ ID2= 2 (0802):	11.39	0.046	13.33	15.85
=====				
ID = 3 (0803):	89.14	0.673	13.08	13.05

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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V V I SSSSS U U A L
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 TTTT TTTT 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 *****

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DATE: 04-02-2020 TIME: 11:08:15

USER:

COMMENTS: _____

 ** SIMULATION : Run 04 **

25 Year SCS

MASS STORM
 Ptotal= 82.00 mm

Filename: C:\Users\ALOverholt\AppData
 ata\Local\Temp\
 df4fd7c8-c3db-445e-97d8-d931e3a274b7\25ee0aa8
 Comments: SCS Type II 24 HR MASS CURVE

Duration of storm = 23.75 hrs
 Mass curve time step = 15.00 min

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.98	6.25	1.64	12.25	11.81	18.25	1.31
0.50	0.66	6.50	1.31	12.50	6.23	18.50	1.64
0.75	0.98	6.75	1.64	12.75	5.90	18.75	1.31
1.00	0.98	7.00	1.64	13.00	4.59	19.00	1.64
1.25	0.98	7.25	1.97	13.25	4.26	19.25	1.31
1.50	0.66	7.50	1.64	13.50	3.61	19.50	1.64
1.75	0.98	7.75	1.97	13.75	3.28	19.75	1.31
2.00	0.98	8.00	1.97	14.00	2.62	20.00	0.98
2.25	1.31	8.25	2.30	14.25	2.30	20.25	0.98
2.50	0.98	8.50	2.30	14.50	2.62	20.50	0.98
2.75	0.98	8.75	2.30	14.75	2.30	20.75	0.98
3.00	0.98	9.00	2.62	15.00	2.62	21.00	0.98
3.25	1.31	9.25	2.62	15.25	2.30	21.25	0.98
3.50	0.98	9.50	2.95	15.50	2.62	21.50	0.98
3.75	0.98	9.75	2.95	15.75	2.30	21.75	0.98
4.00	1.31	10.00	3.61	16.00	1.64	22.00	0.98
4.25	1.31	10.25	3.94	16.25	1.31	22.25	0.98
4.50	1.31	10.50	4.92	16.50	1.64	22.50	0.98
4.75	1.31	10.75	5.25	16.75	1.31	22.75	0.98
5.00	1.31	11.00	7.87	17.00	1.64	23.00	0.98
5.25	1.31	11.25	7.87	17.25	1.31	23.25	0.98
5.50	1.31	11.50	24.27	17.50	1.64	23.50	0.98
5.75	1.31	11.75	100.37	17.75	1.31	23.75	0.98
6.00	1.31	12.00	11.81	18.00	1.64		

CALIB
 NASHYD (0003) Area (ha)= 136.00 Curve Number (CN)= 52.1
 ID= 1 DT= 5.0 min Ia (mm)= 7.20 # of Linear Res.(N)= 3.00

U.H. Tp(hrs)= 1.94

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	0.98	6.083	1.64	12.083	11.81	18.08	1.31
0.167	0.98	6.167	1.64	12.167	11.81	18.17	1.31
0.250	0.98	6.250	1.64	12.250	11.81	18.25	1.31
0.333	0.66	6.333	1.31	12.333	6.23	18.33	1.64
0.417	0.66	6.417	1.31	12.417	6.23	18.42	1.64
0.500	0.66	6.500	1.31	12.500	6.23	18.50	1.64
0.583	0.98	6.583	1.64	12.583	5.90	18.58	1.31
0.667	0.98	6.667	1.64	12.667	5.90	18.67	1.31
0.750	0.98	6.750	1.64	12.750	5.90	18.75	1.31
0.833	0.98	6.833	1.64	12.833	4.59	18.83	1.64
0.917	0.98	6.917	1.64	12.917	4.59	18.92	1.64
1.000	0.98	7.000	1.64	13.000	4.59	19.00	1.64
1.083	0.98	7.083	1.97	13.083	4.26	19.08	1.31
1.167	0.98	7.167	1.97	13.167	4.26	19.17	1.31
1.250	0.98	7.250	1.97	13.250	4.26	19.25	1.31
1.333	0.66	7.333	1.64	13.333	3.61	19.33	1.64
1.417	0.66	7.417	1.64	13.417	3.61	19.42	1.64
1.500	0.66	7.500	1.64	13.500	3.61	19.50	1.64
1.583	0.98	7.583	1.97	13.583	3.28	19.58	1.31
1.667	0.98	7.667	1.97	13.667	3.28	19.67	1.31
1.750	0.98	7.750	1.97	13.750	3.28	19.75	1.31
1.833	0.98	7.833	1.97	13.833	2.62	19.83	0.98
1.917	0.98	7.917	1.97	13.917	2.62	19.92	0.98
2.000	0.98	8.000	1.97	14.000	2.62	20.00	0.98
2.083	1.31	8.083	2.30	14.083	2.30	20.08	0.98
2.167	1.31	8.167	2.30	14.167	2.30	20.17	0.98
2.250	1.31	8.250	2.30	14.250	2.30	20.25	0.98
2.333	0.98	8.333	2.30	14.333	2.62	20.33	0.98
2.417	0.98	8.417	2.30	14.417	2.62	20.42	0.98
2.500	0.98	8.500	2.30	14.500	2.62	20.50	0.98
2.583	0.98	8.583	2.30	14.583	2.30	20.58	0.98
2.667	0.98	8.667	2.30	14.667	2.30	20.67	0.98
2.750	0.98	8.750	2.30	14.750	2.30	20.75	0.98
2.833	0.98	8.833	2.62	14.833	2.62	20.83	0.98
2.917	0.98	8.917	2.62	14.917	2.62	20.92	0.98
3.000	0.98	9.000	2.62	15.000	2.62	21.00	0.98
3.083	1.31	9.083	2.62	15.083	2.30	21.08	0.98
3.167	1.31	9.167	2.62	15.167	2.30	21.17	0.98
3.250	1.31	9.250	2.62	15.250	2.30	21.25	0.98
3.333	0.98	9.333	2.95	15.333	2.62	21.33	0.98
3.417	0.98	9.417	2.95	15.417	2.62	21.42	0.98
3.500	0.98	9.500	2.95	15.500	2.62	21.50	0.98
3.583	0.98	9.583	2.95	15.583	2.30	21.58	0.98
3.667	0.98	9.667	2.95	15.667	2.30	21.67	0.98
3.750	0.98	9.750	2.95	15.750	2.30	21.75	0.98
3.833	1.31	9.833	3.61	15.833	1.64	21.83	0.98
3.917	1.31	9.917	3.61	15.917	1.64	21.92	0.98
4.000	1.31	10.000	3.61	16.000	1.64	22.00	0.98
4.083	1.31	10.083	3.94	16.083	1.31	22.08	0.98
4.167	1.31	10.167	3.94	16.167	1.31	22.17	0.98
4.250	1.31	10.250	3.94	16.250	1.31	22.25	0.98
4.333	1.31	10.333	4.92	16.333	1.64	22.33	0.98
4.417	1.31	10.417	4.92	16.417	1.64	22.42	0.98
4.500	1.31	10.500	4.92	16.500	1.64	22.50	0.98
4.583	1.31	10.583	5.25	16.583	1.31	22.58	0.98
4.667	1.31	10.667	5.25	16.667	1.31	22.67	0.98

4.750	1.31	10.750	5.25	16.750	1.31	22.75	0.98
4.833	1.31	10.833	7.87	16.833	1.64	22.83	0.98
4.917	1.31	10.917	7.87	16.917	1.64	22.92	0.98
5.000	1.31	11.000	7.87	17.000	1.64	23.00	0.98
5.083	1.31	11.083	7.87	17.083	1.31	23.08	0.98
5.167	1.31	11.167	7.87	17.167	1.31	23.17	0.98
5.250	1.31	11.250	7.87	17.250	1.31	23.25	0.98
5.333	1.31	11.333	24.27	17.333	1.64	23.33	0.98
5.417	1.31	11.417	24.27	17.417	1.64	23.42	0.98
5.500	1.31	11.500	24.27	17.500	1.64	23.50	0.98
5.583	1.31	11.583	100.36	17.583	1.31	23.58	0.98
5.667	1.31	11.667	100.37	17.667	1.31	23.67	0.98
5.750	1.31	11.750	100.37	17.750	1.31	23.75	0.98
5.833	1.31	11.833	11.82	17.833	1.64		
5.917	1.31	11.917	11.81	17.917	1.64		
6.000	1.31	12.000	11.81	18.000	1.64		

Unit Hyd Qpeak (cms)= 2.678

PEAK FLOW (cms)= 1.131 (i)
 TIME TO PEAK (hrs)= 13.917
 RUNOFF VOLUME (mm)= 18.042
 TOTAL RAINFALL (mm)= 81.754
 RUNOFF COEFFICIENT = 0.221

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

DUHYD (0400)
 Inlet Cap.= 0.713
 #of Inlets= 1
 Total(cms)= 0.7

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	136.00	1.13	13.92	18.04
MAJOR SYS.(ID= 2):	18.24	0.42	13.92	18.04
MINOR SYS.(ID= 3):	117.76	0.71	12.67	18.04

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

MASS STORM
 Ptotal= 82.00 mm

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 df4fd7c8-c3db-445e-97d8-d931e3a274b7\25ee0aa8
 Comments: SCS Type II 24 HR MASS CURVE

Duration of storm = 23.75 hrs
 Mass curve time step = 15.00 min

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.98	6.25	1.64	12.25	11.81	18.25	1.31
0.50	0.66	6.50	1.31	12.50	6.23	18.50	1.64
0.75	0.98	6.75	1.64	12.75	5.90	18.75	1.31
1.00	0.98	7.00	1.64	13.00	4.59	19.00	1.64
1.25	0.98	7.25	1.97	13.25	4.26	19.25	1.31
1.50	0.66	7.50	1.64	13.50	3.61	19.50	1.64
1.75	0.98	7.75	1.97	13.75	3.28	19.75	1.31
2.00	0.98	8.00	1.97	14.00	2.62	20.00	0.98
2.25	1.31	8.25	2.30	14.25	2.30	20.25	0.98
2.50	0.98	8.50	2.30	14.50	2.62	20.50	0.98
2.75	0.98	8.75	2.30	14.75	2.30	20.75	0.98

3.00	0.98	9.00	2.62	15.00	2.62	21.00	0.98
3.25	1.31	9.25	2.62	15.25	2.30	21.25	0.98
3.50	0.98	9.50	2.95	15.50	2.62	21.50	0.98
3.75	0.98	9.75	2.95	15.75	2.30	21.75	0.98
4.00	1.31	10.00	3.61	16.00	1.64	22.00	0.98
4.25	1.31	10.25	3.94	16.25	1.31	22.25	0.98
4.50	1.31	10.50	4.92	16.50	1.64	22.50	0.98
4.75	1.31	10.75	5.25	16.75	1.31	22.75	0.98
5.00	1.31	11.00	7.87	17.00	1.64	23.00	0.98
5.25	1.31	11.25	7.87	17.25	1.31	23.25	0.98
5.50	1.31	11.50	24.27	17.50	1.64	23.50	0.98
5.75	1.31	11.75	100.37	17.75	1.31	23.75	0.98
6.00	1.31	12.00	11.81	18.00	1.64		

CALIB
 NASHYD (0002)
 ID= 1 DT= 5.0 min

Area (ha)= 10.93
 Ia (mm)= 4.40
 U.H. Tp(hrs)= 0.60
 Curve Number (CN)= 68.5
 # of Linear Res.(N)= 3.00

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	0.98	6.083	1.64	12.083	11.81	18.08	1.31
0.167	0.98	6.167	1.64	12.167	11.81	18.17	1.31
0.250	0.98	6.250	1.64	12.250	11.81	18.25	1.31
0.333	0.66	6.333	1.31	12.333	6.23	18.33	1.64
0.417	0.66	6.417	1.31	12.417	6.23	18.42	1.64
0.500	0.66	6.500	1.31	12.500	6.23	18.50	1.64
0.583	0.98	6.583	1.64	12.583	5.90	18.58	1.31
0.667	0.98	6.667	1.64	12.667	5.90	18.67	1.31
0.750	0.98	6.750	1.64	12.750	5.90	18.75	1.31
0.833	0.98	6.833	1.64	12.833	4.59	18.83	1.64
0.917	0.98	6.917	1.64	12.917	4.59	18.92	1.64
1.000	0.98	7.000	1.64	13.000	4.59	19.00	1.64
1.083	0.98	7.083	1.97	13.083	4.26	19.08	1.31
1.167	0.98	7.167	1.97	13.167	4.26	19.17	1.31
1.250	0.98	7.250	1.97	13.250	4.26	19.25	1.31
1.333	0.66	7.333	1.64	13.333	3.61	19.33	1.64
1.417	0.66	7.417	1.64	13.417	3.61	19.42	1.64
1.500	0.66	7.500	1.64	13.500	3.61	19.50	1.64
1.583	0.98	7.583	1.97	13.583	3.28	19.58	1.31
1.667	0.98	7.667	1.97	13.667	3.28	19.67	1.31
1.750	0.98	7.750	1.97	13.750	3.28	19.75	1.31
1.833	0.98	7.833	1.97	13.833	2.62	19.83	0.98
1.917	0.98	7.917	1.97	13.917	2.62	19.92	0.98
2.000	0.98	8.000	1.97	14.000	2.62	20.00	0.98
2.083	1.31	8.083	2.30	14.083	2.30	20.08	0.98
2.167	1.31	8.167	2.30	14.167	2.30	20.17	0.98
2.250	1.31	8.250	2.30	14.250	2.30	20.25	0.98
2.333	0.98	8.333	2.30	14.333	2.62	20.33	0.98
2.417	0.98	8.417	2.30	14.417	2.62	20.42	0.98
2.500	0.98	8.500	2.30	14.500	2.62	20.50	0.98
2.583	0.98	8.583	2.30	14.583	2.30	20.58	0.98
2.667	0.98	8.667	2.30	14.667	2.30	20.67	0.98
2.750	0.98	8.750	2.30	14.750	2.30	20.75	0.98
2.833	0.98	8.833	2.62	14.833	2.62	20.83	0.98
2.917	0.98	8.917	2.62	14.917	2.62	20.92	0.98
3.000	0.98	9.000	2.62	15.000	2.62	21.00	0.98
3.083	1.31	9.083	2.62	15.083	2.30	21.08	0.98

3.167	1.31	9.167	2.62	15.167	2.30	21.17	0.98
3.250	1.31	9.250	2.62	15.250	2.30	21.25	0.98
3.333	0.98	9.333	2.95	15.333	2.62	21.33	0.98
3.417	0.98	9.417	2.95	15.417	2.62	21.42	0.98
3.500	0.98	9.500	2.95	15.500	2.62	21.50	0.98
3.583	0.98	9.583	2.95	15.583	2.30	21.58	0.98
3.667	0.98	9.667	2.95	15.667	2.30	21.67	0.98
3.750	0.98	9.750	2.95	15.750	2.30	21.75	0.98
3.833	1.31	9.833	3.61	15.833	1.64	21.83	0.98
3.917	1.31	9.917	3.61	15.917	1.64	21.92	0.98
4.000	1.31	10.000	3.61	16.000	1.64	22.00	0.98
4.083	1.31	10.083	3.94	16.083	1.31	22.08	0.98
4.167	1.31	10.167	3.94	16.167	1.31	22.17	0.98
4.250	1.31	10.250	3.94	16.250	1.31	22.25	0.98
4.333	1.31	10.333	4.92	16.333	1.64	22.33	0.98
4.417	1.31	10.417	4.92	16.417	1.64	22.42	0.98
4.500	1.31	10.500	4.92	16.500	1.64	22.50	0.98
4.583	1.31	10.583	5.25	16.583	1.31	22.58	0.98
4.667	1.31	10.667	5.25	16.667	1.31	22.67	0.98
4.750	1.31	10.750	5.25	16.750	1.31	22.75	0.98
4.833	1.31	10.833	7.87	16.833	1.64	22.83	0.98
4.917	1.31	10.917	7.87	16.917	1.64	22.92	0.98
5.000	1.31	11.000	7.87	17.000	1.64	23.00	0.98
5.083	1.31	11.083	7.87	17.083	1.31	23.08	0.98
5.167	1.31	11.167	7.87	17.167	1.31	23.17	0.98
5.250	1.31	11.250	7.87	17.250	1.31	23.25	0.98
5.333	1.31	11.333	24.27	17.333	1.64	23.33	0.98
5.417	1.31	11.417	24.27	17.417	1.64	23.42	0.98
5.500	1.31	11.500	24.27	17.500	1.64	23.50	0.98
5.583	1.31	11.583	100.36	17.583	1.31	23.58	0.98
5.667	1.31	11.667	100.37	17.667	1.31	23.67	0.98
5.750	1.31	11.750	100.37	17.750	1.31	23.75	0.98
5.833	1.31	11.833	11.82	17.833	1.64		
5.917	1.31	11.917	11.81	17.917	1.64		
6.000	1.31	12.000	11.81	18.000	1.64		

Unit Hyd Qpeak (cms)= 0.696

PEAK FLOW (cms)= 0.388 (i)
 TIME TO PEAK (hrs)= 12.250
 RUNOFF VOLUME (mm)= 30.818
 TOTAL RAINFALL (mm)= 81.754
 RUNOFF COEFFICIENT = 0.377

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

ADD HYD (0801)
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0002):	10.93	0.388	12.25	30.82
+ ID2= 2 (0400):	117.76	0.713	12.67	18.04
ID = 3 (0801):	128.69	1.031	12.67	19.13

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

MASS STORM

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| Ptotal= 82.00 mm |

Comments: SCS Type II 24 HR MASS CURVE

Duration of storm = 23.75 hrs
 Mass curve time step = 15.00 min

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.98	6.25	1.64	12.25	11.81	18.25	1.31
0.50	0.66	6.50	1.31	12.50	6.23	18.50	1.64
0.75	0.98	6.75	1.64	12.75	5.90	18.75	1.31
1.00	0.98	7.00	1.64	13.00	4.59	19.00	1.64
1.25	0.98	7.25	1.97	13.25	4.26	19.25	1.31
1.50	0.66	7.50	1.64	13.50	3.61	19.50	1.64
1.75	0.98	7.75	1.97	13.75	3.28	19.75	1.31
2.00	0.98	8.00	1.97	14.00	2.62	20.00	0.98
2.25	1.31	8.25	2.30	14.25	2.30	20.25	0.98
2.50	0.98	8.50	2.30	14.50	2.62	20.50	0.98
2.75	0.98	8.75	2.30	14.75	2.30	20.75	0.98
3.00	0.98	9.00	2.62	15.00	2.62	21.00	0.98
3.25	1.31	9.25	2.62	15.25	2.30	21.25	0.98
3.50	0.98	9.50	2.95	15.50	2.62	21.50	0.98
3.75	0.98	9.75	2.95	15.75	2.30	21.75	0.98
4.00	1.31	10.00	3.61	16.00	1.64	22.00	0.98
4.25	1.31	10.25	3.94	16.25	1.31	22.25	0.98
4.50	1.31	10.50	4.92	16.50	1.64	22.50	0.98
4.75	1.31	10.75	5.25	16.75	1.31	22.75	0.98
5.00	1.31	11.00	7.87	17.00	1.64	23.00	0.98
5.25	1.31	11.25	7.87	17.25	1.31	23.25	0.98
5.50	1.31	11.50	24.27	17.50	1.64	23.50	0.98
5.75	1.31	11.75	100.37	17.75	1.31	23.75	0.98
6.00	1.31	12.00	11.81	18.00	1.64		

CALIB
 NASHYD (0001)
 ID= 1 DT= 5.0 min

Area (ha)= 77.75
 Ia (mm)= 6.91
 U.H. Tp(hrs)= 1.24
 Curve Number (CN)= 49.6
 # of Linear Res.(N)= 3.00

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	0.98	6.083	1.64	12.083	11.81	18.08	1.31
0.167	0.98	6.167	1.64	12.167	11.81	18.17	1.31
0.250	0.98	6.250	1.64	12.250	11.81	18.25	1.31
0.333	0.66	6.333	1.31	12.333	6.23	18.33	1.64
0.417	0.66	6.417	1.31	12.417	6.23	18.42	1.64
0.500	0.66	6.500	1.31	12.500	6.23	18.50	1.64
0.583	0.98	6.583	1.64	12.583	5.90	18.58	1.31
0.667	0.98	6.667	1.64	12.667	5.90	18.67	1.31
0.750	0.98	6.750	1.64	12.750	5.90	18.75	1.31
0.833	0.98	6.833	1.64	12.833	4.59	18.83	1.64
0.917	0.98	6.917	1.64	12.917	4.59	18.92	1.64
1.000	0.98	7.000	1.64	13.000	4.59	19.00	1.64
1.083	0.98	7.083	1.97	13.083	4.26	19.08	1.31
1.167	0.98	7.167	1.97	13.167	4.26	19.17	1.31
1.250	0.98	7.250	1.97	13.250	4.26	19.25	1.31
1.333	0.66	7.333	1.64	13.333	3.61	19.33	1.64
1.417	0.66	7.417	1.64	13.417	3.61	19.42	1.64
1.500	0.66	7.500	1.64	13.500	3.61	19.50	1.64
1.583	0.98	7.583	1.97	13.583	3.28	19.58	1.31

1.667	0.98	7.667	1.97	13.667	3.28	19.67	1.31
1.750	0.98	7.750	1.97	13.750	3.28	19.75	1.31
1.833	0.98	7.833	1.97	13.833	2.62	19.83	0.98
1.917	0.98	7.917	1.97	13.917	2.62	19.92	0.98
2.000	0.98	8.000	1.97	14.000	2.62	20.00	0.98
2.083	1.31	8.083	2.30	14.083	2.30	20.08	0.98
2.167	1.31	8.167	2.30	14.167	2.30	20.17	0.98
2.250	1.31	8.250	2.30	14.250	2.30	20.25	0.98
2.333	0.98	8.333	2.30	14.333	2.62	20.33	0.98
2.417	0.98	8.417	2.30	14.417	2.62	20.42	0.98
2.500	0.98	8.500	2.30	14.500	2.62	20.50	0.98
2.583	0.98	8.583	2.30	14.583	2.30	20.58	0.98
2.667	0.98	8.667	2.30	14.667	2.30	20.67	0.98
2.750	0.98	8.750	2.30	14.750	2.30	20.75	0.98
2.833	0.98	8.833	2.62	14.833	2.62	20.83	0.98
2.917	0.98	8.917	2.62	14.917	2.62	20.92	0.98
3.000	0.98	9.000	2.62	15.000	2.62	21.00	0.98
3.083	1.31	9.083	2.62	15.083	2.30	21.08	0.98
3.167	1.31	9.167	2.62	15.167	2.30	21.17	0.98
3.250	1.31	9.250	2.62	15.250	2.30	21.25	0.98
3.333	0.98	9.333	2.95	15.333	2.62	21.33	0.98
3.417	0.98	9.417	2.95	15.417	2.62	21.42	0.98
3.500	0.98	9.500	2.95	15.500	2.62	21.50	0.98
3.583	0.98	9.583	2.95	15.583	2.30	21.58	0.98
3.667	0.98	9.667	2.95	15.667	2.30	21.67	0.98
3.750	0.98	9.750	2.95	15.750	2.30	21.75	0.98
3.833	1.31	9.833	3.61	15.833	1.64	21.83	0.98
3.917	1.31	9.917	3.61	15.917	1.64	21.92	0.98
4.000	1.31	10.000	3.61	16.000	1.64	22.00	0.98
4.083	1.31	10.083	3.94	16.083	1.31	22.08	0.98
4.167	1.31	10.167	3.94	16.167	1.31	22.17	0.98
4.250	1.31	10.250	3.94	16.250	1.31	22.25	0.98
4.333	1.31	10.333	4.92	16.333	1.64	22.33	0.98
4.417	1.31	10.417	4.92	16.417	1.64	22.42	0.98
4.500	1.31	10.500	4.92	16.500	1.64	22.50	0.98
4.583	1.31	10.583	5.25	16.583	1.31	22.58	0.98
4.667	1.31	10.667	5.25	16.667	1.31	22.67	0.98
4.750	1.31	10.750	5.25	16.750	1.31	22.75	0.98
4.833	1.31	10.833	7.87	16.833	1.64	22.83	0.98
4.917	1.31	10.917	7.87	16.917	1.64	22.92	0.98
5.000	1.31	11.000	7.87	17.000	1.64	23.00	0.98
5.083	1.31	11.083	7.87	17.083	1.31	23.08	0.98
5.167	1.31	11.167	7.87	17.167	1.31	23.17	0.98
5.250	1.31	11.250	7.87	17.250	1.31	23.25	0.98
5.333	1.31	11.333	24.27	17.333	1.64	23.33	0.98
5.417	1.31	11.417	24.27	17.417	1.64	23.42	0.98
5.500	1.31	11.500	24.27	17.500	1.64	23.50	0.98
5.583	1.31	11.583	100.36	17.583	1.31	23.58	0.98
5.667	1.31	11.667	100.37	17.667	1.31	23.67	0.98
5.750	1.31	11.750	100.37	17.750	1.31	23.75	0.98
5.833	1.31	11.833	11.82	17.833	1.64		
5.917	1.31	11.917	11.81	17.917	1.64		
6.000	1.31	12.000	11.81	18.000	1.64		

Unit Hyd Qpeak (cms)= 2.395

PEAK FLOW (cms)= 0.843 (i)
 TIME TO PEAK (hrs)= 13.083
 RUNOFF VOLUME (mm)= 16.825
 TOTAL RAINFALL (mm)= 81.754
 RUNOFF COEFFICIENT = 0.206

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

MASS STORM							
Pttotal= 82.00 mm				Filename: C:\Users\ALOverholt\AppData\Local\Temp\df4fd7c8-c3db-445e-97d8-d931e3a274b7\25ee0aa8			
				Comments: SCS Type II 24 HR MASS CURVE			
				Duration of storm = 23.75 hrs			
				Mass curve time step = 15.00 min			
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.25	0.98	6.25	1.64	12.25	11.81	18.25	1.31
0.50	0.66	6.50	1.31	12.50	6.23	18.50	1.64
0.75	0.98	6.75	1.64	12.75	5.90	18.75	1.31
1.00	0.98	7.00	1.64	13.00	4.59	19.00	1.64
1.25	0.98	7.25	1.97	13.25	4.26	19.25	1.31
1.50	0.66	7.50	1.64	13.50	3.61	19.50	1.64
1.75	0.98	7.75	1.97	13.75	3.28	19.75	1.31
2.00	0.98	8.00	1.97	14.00	2.62	20.00	0.98
2.25	1.31	8.25	2.30	14.25	2.30	20.25	0.98
2.50	0.98	8.50	2.30	14.50	2.62	20.50	0.98
2.75	0.98	8.75	2.30	14.75	2.30	20.75	0.98
3.00	0.98	9.00	2.62	15.00	2.62	21.00	0.98
3.25	1.31	9.25	2.62	15.25	2.30	21.25	0.98
3.50	0.98	9.50	2.95	15.50	2.62	21.50	0.98
3.75	0.98	9.75	2.95	15.75	2.30	21.75	0.98
4.00	1.31	10.00	3.61	16.00	1.64	22.00	0.98
4.25	1.31	10.25	3.94	16.25	1.31	22.25	0.98
4.50	1.31	10.50	4.92	16.50	1.64	22.50	0.98
4.75	1.31	10.75	5.25	16.75	1.31	22.75	0.98
5.00	1.31	11.00	7.87	17.00	1.64	23.00	0.98
5.25	1.31	11.25	7.87	17.25	1.31	23.25	0.98
5.50	1.31	11.50	24.27	17.50	1.64	23.50	0.98
5.75	1.31	11.75	100.37	17.75	1.31	23.75	0.98
6.00	1.31	12.00	11.81	18.00	1.64		

CALIB			
NASHYD (0202)			
ID= 1 DT= 5.0 min			
Area (ha)=	6.35	Curve Number (CN)=	57.9
Ia (mm)=	4.70	# of Linear Res.(N)=	3.00
U.H. Tp(hrs)=	0.55		

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	0.98	6.083	1.64	12.083	11.81	18.08	1.31
0.167	0.98	6.167	1.64	12.167	11.81	18.17	1.31
0.250	0.98	6.250	1.64	12.250	11.81	18.25	1.31
0.333	0.66	6.333	1.31	12.333	6.23	18.33	1.64
0.417	0.66	6.417	1.31	12.417	6.23	18.42	1.64
0.500	0.66	6.500	1.31	12.500	6.23	18.50	1.64
0.583	0.98	6.583	1.64	12.583	5.90	18.58	1.31
0.667	0.98	6.667	1.64	12.667	5.90	18.67	1.31
0.750	0.98	6.750	1.64	12.750	5.90	18.75	1.31
0.833	0.98	6.833	1.64	12.833	4.59	18.83	1.64
0.917	0.98	6.917	1.64	12.917	4.59	18.92	1.64
1.000	0.98	7.000	1.64	13.000	4.59	19.00	1.64
1.083	0.98	7.083	1.97	13.083	4.26	19.08	1.31
1.167	0.98	7.167	1.97	13.167	4.26	19.17	1.31

1.250	0.98	7.250	1.97	13.250	4.26	19.25	1.31
1.333	0.66	7.333	1.64	13.333	3.61	19.33	1.64
1.417	0.66	7.417	1.64	13.417	3.61	19.42	1.64
1.500	0.66	7.500	1.64	13.500	3.61	19.50	1.64
1.583	0.98	7.583	1.97	13.583	3.28	19.58	1.31
1.667	0.98	7.667	1.97	13.667	3.28	19.67	1.31
1.750	0.98	7.750	1.97	13.750	3.28	19.75	1.31
1.833	0.98	7.833	1.97	13.833	2.62	19.83	0.98
1.917	0.98	7.917	1.97	13.917	2.62	19.92	0.98
2.000	0.98	8.000	1.97	14.000	2.62	20.00	0.98
2.083	1.31	8.083	2.30	14.083	2.30	20.08	0.98
2.167	1.31	8.167	2.30	14.167	2.30	20.17	0.98
2.250	1.31	8.250	2.30	14.250	2.30	20.25	0.98
2.333	0.98	8.333	2.30	14.333	2.62	20.33	0.98
2.417	0.98	8.417	2.30	14.417	2.62	20.42	0.98
2.500	0.98	8.500	2.30	14.500	2.62	20.50	0.98
2.583	0.98	8.583	2.30	14.583	2.30	20.58	0.98
2.667	0.98	8.667	2.30	14.667	2.30	20.67	0.98
2.750	0.98	8.750	2.30	14.750	2.30	20.75	0.98
2.833	0.98	8.833	2.62	14.833	2.62	20.83	0.98
2.917	0.98	8.917	2.62	14.917	2.62	20.92	0.98
3.000	0.98	9.000	2.62	15.000	2.62	21.00	0.98
3.083	1.31	9.083	2.62	15.083	2.30	21.08	0.98
3.167	1.31	9.167	2.62	15.167	2.30	21.17	0.98
3.250	1.31	9.250	2.62	15.250	2.30	21.25	0.98
3.333	0.98	9.333	2.95	15.333	2.62	21.33	0.98
3.417	0.98	9.417	2.95	15.417	2.62	21.42	0.98
3.500	0.98	9.500	2.95	15.500	2.62	21.50	0.98
3.583	0.98	9.583	2.95	15.583	2.30	21.58	0.98
3.667	0.98	9.667	2.95	15.667	2.30	21.67	0.98
3.750	0.98	9.750	2.95	15.750	2.30	21.75	0.98
3.833	1.31	9.833	3.61	15.833	1.64	21.83	0.98
3.917	1.31	9.917	3.61	15.917	1.64	21.92	0.98
4.000	1.31	10.000	3.61	16.000	1.64	22.00	0.98
4.083	1.31	10.083	3.94	16.083	1.31	22.08	0.98
4.167	1.31	10.167	3.94	16.167	1.31	22.17	0.98
4.250	1.31	10.250	3.94	16.250	1.31	22.25	0.98
4.333	1.31	10.333	4.92	16.333	1.64	22.33	0.98
4.417	1.31	10.417	4.92	16.417	1.64	22.42	0.98
4.500	1.31	10.500	4.92	16.500	1.64	22.50	0.98
4.583	1.31	10.583	5.25	16.583	1.31	22.58	0.98
4.667	1.31	10.667	5.25	16.667	1.31	22.67	0.98
4.750	1.31	10.750	5.25	16.750	1.31	22.75	0.98
4.833	1.31	10.833	7.87	16.833	1.64	22.83	0.98
4.917	1.31	10.917	7.87	16.917	1.64	22.92	0.98
5.000	1.31	11.000	7.87	17.000	1.64	23.00	0.98
5.083	1.31	11.083	7.87	17.083	1.31	23.08	0.98
5.167	1.31	11.167	7.87	17.167	1.31	23.17	0.98
5.250	1.31	11.250	7.87	17.250	1.31	23.25	0.98
5.333	1.31	11.333	24.27	17.333	1.64	23.33	0.98
5.417	1.31	11.417	24.27	17.417	1.64	23.42	0.98
5.500	1.31	11.500	24.27	17.500	1.64	23.50	0.98
5.583	1.31	11.583	100.36	17.583	1.31	23.58	0.98
5.667	1.31	11.667	100.37	17.667	1.31	23.67	0.98
5.750	1.31	11.750	100.37	17.750	1.31	23.75	0.98
5.833	1.31	11.833	11.82	17.833	1.64		
5.917	1.31	11.917	11.81	17.917	1.64		
6.000	1.31	12.000	11.81	18.000	1.64		

Unit Hyd Qpeak (cms)= 0.441

PEAK FLOW (cms)= 0.172 (i)
 TIME TO PEAK (hrs)= 12.250
 RUNOFF VOLUME (mm)= 22.683

TOTAL RAINFALL (mm)= 81.754
 RUNOFF COEFFICIENT = 0.277

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

RESERVOIR(0602)
 IN= 2---> OUT= 1
 DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.0394	0.0998
0.0000	0.0000	0.1306	0.1176
0.0014	0.0066	0.3534	0.1362
0.0069	0.0205	0.6046	0.1554
0.0098	0.0350	0.9742	0.1752
0.0120	0.0502	1.4665	0.1957
0.0139	0.0661	2.0882	0.2169
0.0155	0.0826	2.4500	0.2278

INFLOW : ID= 2 (0202)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
6.346	6.346	0.172	12.25	22.68
OUTFLOW: ID= 1 (0602)	6.346	0.020	15.83	22.50

PEAK FLOW REDUCTION [Qout/Qin](%)= 11.49
 TIME SHIFT OF PEAK FLOW (min)=215.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0857

MASS STORM
 Ptotal= 82.00 mm

Filename: C:\Users\ALoverholt\AppData
 ata\Local\Temp\
 df4fd7c8-c3db-445e-97d8-d931e3a274b7\25ee0aa8
 Comments: SCS Type II 24 HR MASS CURVE

Duration of storm = 23.75 hrs
 Mass curve time step = 15.00 min

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.98	6.25	1.64	12.25	11.81	18.25	1.31
0.50	0.66	6.50	1.31	12.50	6.23	18.50	1.64
0.75	0.98	6.75	1.64	12.75	5.90	18.75	1.31
1.00	0.98	7.00	1.64	13.00	4.59	19.00	1.64
1.25	0.98	7.25	1.97	13.25	4.26	19.25	1.31
1.50	0.66	7.50	1.64	13.50	3.61	19.50	1.64
1.75	0.98	7.75	1.97	13.75	3.28	19.75	1.31
2.00	0.98	8.00	1.97	14.00	2.62	20.00	0.98
2.25	1.31	8.25	2.30	14.25	2.30	20.25	0.98
2.50	0.98	8.50	2.30	14.50	2.62	20.50	0.98
2.75	0.98	8.75	2.30	14.75	2.30	20.75	0.98
3.00	0.98	9.00	2.62	15.00	2.62	21.00	0.98
3.25	1.31	9.25	2.62	15.25	2.30	21.25	0.98
3.50	0.98	9.50	2.95	15.50	2.62	21.50	0.98
3.75	0.98	9.75	2.95	15.75	2.30	21.75	0.98
4.00	1.31	10.00	3.61	16.00	1.64	22.00	0.98
4.25	1.31	10.25	3.94	16.25	1.31	22.25	0.98
4.50	1.31	10.50	4.92	16.50	1.64	22.50	0.98
4.75	1.31	10.75	5.25	16.75	1.31	22.75	0.98
5.00	1.31	11.00	7.87	17.00	1.64	23.00	0.98
5.25	1.31	11.25	7.87	17.25	1.31	23.25	0.98
5.50	1.31	11.50	24.27	17.50	1.64	23.50	0.98
5.75	1.31	11.75	100.37	17.75	1.31	23.75	0.98

6.00 1.31 | 12.00 11.81 | 18.00 1.64 |

 | CALIB |
 | NASHYD (0201) | Area (ha)= 5.05 Curve Number (CN)= 51.4
 | ID= 1 DT= 5.0 min | Ia (mm)= 4.70 # of Linear Res.(N)= 3.00
 | U.H. Tp(hrs)= 0.57 |

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	0.98	6.083	1.64	12.083	11.81	18.08	1.31
0.167	0.98	6.167	1.64	12.167	11.81	18.17	1.31
0.250	0.98	6.250	1.64	12.250	11.81	18.25	1.31
0.333	0.66	6.333	1.31	12.333	6.23	18.33	1.64
0.417	0.66	6.417	1.31	12.417	6.23	18.42	1.64
0.500	0.66	6.500	1.31	12.500	6.23	18.50	1.64
0.583	0.98	6.583	1.64	12.583	5.90	18.58	1.31
0.667	0.98	6.667	1.64	12.667	5.90	18.67	1.31
0.750	0.98	6.750	1.64	12.750	5.90	18.75	1.31
0.833	0.98	6.833	1.64	12.833	4.59	18.83	1.64
0.917	0.98	6.917	1.64	12.917	4.59	18.92	1.64
1.000	0.98	7.000	1.64	13.000	4.59	19.00	1.64
1.083	0.98	7.083	1.97	13.083	4.26	19.08	1.31
1.167	0.98	7.167	1.97	13.167	4.26	19.17	1.31
1.250	0.98	7.250	1.97	13.250	4.26	19.25	1.31
1.333	0.66	7.333	1.64	13.333	3.61	19.33	1.64
1.417	0.66	7.417	1.64	13.417	3.61	19.42	1.64
1.500	0.66	7.500	1.64	13.500	3.61	19.50	1.64
1.583	0.98	7.583	1.97	13.583	3.28	19.58	1.31
1.667	0.98	7.667	1.97	13.667	3.28	19.67	1.31
1.750	0.98	7.750	1.97	13.750	3.28	19.75	1.31
1.833	0.98	7.833	1.97	13.833	2.62	19.83	0.98
1.917	0.98	7.917	1.97	13.917	2.62	19.92	0.98
2.000	0.98	8.000	1.97	14.000	2.62	20.00	0.98
2.083	1.31	8.083	2.30	14.083	2.30	20.08	0.98
2.167	1.31	8.167	2.30	14.167	2.30	20.17	0.98
2.250	1.31	8.250	2.30	14.250	2.30	20.25	0.98
2.333	0.98	8.333	2.30	14.333	2.62	20.33	0.98
2.417	0.98	8.417	2.30	14.417	2.62	20.42	0.98
2.500	0.98	8.500	2.30	14.500	2.62	20.50	0.98
2.583	0.98	8.583	2.30	14.583	2.30	20.58	0.98
2.667	0.98	8.667	2.30	14.667	2.30	20.67	0.98
2.750	0.98	8.750	2.30	14.750	2.30	20.75	0.98
2.833	0.98	8.833	2.62	14.833	2.62	20.83	0.98
2.917	0.98	8.917	2.62	14.917	2.62	20.92	0.98
3.000	0.98	9.000	2.62	15.000	2.62	21.00	0.98
3.083	1.31	9.083	2.62	15.083	2.30	21.08	0.98
3.167	1.31	9.167	2.62	15.167	2.30	21.17	0.98
3.250	1.31	9.250	2.62	15.250	2.30	21.25	0.98
3.333	0.98	9.333	2.95	15.333	2.62	21.33	0.98
3.417	0.98	9.417	2.95	15.417	2.62	21.42	0.98
3.500	0.98	9.500	2.95	15.500	2.62	21.50	0.98
3.583	0.98	9.583	2.95	15.583	2.30	21.58	0.98
3.667	0.98	9.667	2.95	15.667	2.30	21.67	0.98
3.750	0.98	9.750	2.95	15.750	2.30	21.75	0.98
3.833	1.31	9.833	3.61	15.833	1.64	21.83	0.98
3.917	1.31	9.917	3.61	15.917	1.64	21.92	0.98
4.000	1.31	10.000	3.61	16.000	1.64	22.00	0.98
4.083	1.31	10.083	3.94	16.083	1.31	22.08	0.98

4.167	1.31	10.167	3.94	16.167	1.31	22.17	0.98
4.250	1.31	10.250	3.94	16.250	1.31	22.25	0.98
4.333	1.31	10.333	4.92	16.333	1.64	22.33	0.98
4.417	1.31	10.417	4.92	16.417	1.64	22.42	0.98
4.500	1.31	10.500	4.92	16.500	1.64	22.50	0.98
4.583	1.31	10.583	5.25	16.583	1.31	22.58	0.98
4.667	1.31	10.667	5.25	16.667	1.31	22.67	0.98
4.750	1.31	10.750	5.25	16.750	1.31	22.75	0.98
4.833	1.31	10.833	7.87	16.833	1.64	22.83	0.98
4.917	1.31	10.917	7.87	16.917	1.64	22.92	0.98
5.000	1.31	11.000	7.87	17.000	1.64	23.00	0.98
5.083	1.31	11.083	7.87	17.083	1.31	23.08	0.98
5.167	1.31	11.167	7.87	17.167	1.31	23.17	0.98
5.250	1.31	11.250	7.87	17.250	1.31	23.25	0.98
5.333	1.31	11.333	24.27	17.333	1.64	23.33	0.98
5.417	1.31	11.417	24.27	17.417	1.64	23.42	0.98
5.500	1.31	11.500	24.27	17.500	1.64	23.50	0.98
5.583	1.31	11.583	100.36	17.583	1.31	23.58	0.98
5.667	1.31	11.667	100.37	17.667	1.31	23.67	0.98
5.750	1.31	11.750	100.37	17.750	1.31	23.75	0.98
5.833	1.31	11.833	11.82	17.833	1.64		
5.917	1.31	11.917	11.81	17.917	1.64		
6.000	1.31	12.000	11.81	18.000	1.64		

Unit Hyd Qpeak (cms)= 0.338

PEAK FLOW (cms)= 0.109 (i)
 TIME TO PEAK (hrs)= 12.250
 RUNOFF VOLUME (mm)= 18.716
 TOTAL RAINFALL (mm)= 81.754
 RUNOFF COEFFICIENT = 0.229

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

 | RESERVOIR(0601) |
 | IN= 2---> OUT= 1 |
 | DT= 5.0 min |

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.3000	0.0752
0.0320	0.0244	0.7410	0.1015
0.0910	0.0495	0.0000	0.0000

INFLOW : ID= 2 (0201)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	5.047	0.109	12.25	18.72
OUTFLOW: ID= 1 (0601)	5.047	0.050	13.17	18.68

PEAK FLOW REDUCTION [Qout/Qin](%)= 45.72
 TIME SHIFT OF PEAK FLOW (min)= 55.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0320

 | ADD HYD (0802) |
 | 1 + 2 = 3 |

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0601):	5.05	0.050	13.17	18.68
+ ID2= 2 (0602):	6.35	0.020	15.83	22.50
=====				
ID = 3 (0802):	11.39	0.064	13.25	20.80

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 0803) |
| 1 + 2 = 3 |
-----
      AREA      QPEAK      TPEAK      R.V.
      (ha)      (cms)      (hrs)      (mm)
ID1= 1 ( 0001):  77.75  0.843  13.08  16.82
+ ID2= 2 ( 0802):  11.39  0.064  13.25  20.80
-----
ID = 3 ( 0803):  89.14  0.907  13.08  17.33
-----

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

=====
V   V   I   SSSSS  U   U   A   L
V   V   I   SS    U   U   AA  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  TTTT  TTTT  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 5.0\VO2\voin.dat
Output filename: C:\Users\ALOverholt\AppData\Local\Civica\WH5
\c1119499-7c01-4a85-b304-3a19a257e6a9\el135a99c-1ccf-4b9d-93b1-8ce1eb8f3a80\s
Summary filename: C:\Users\ALOverholt\AppData\Local\Civica\WH5
\c1119499-7c01-4a85-b304-3a19a257e6a9\el135a99c-1ccf-4b9d-93b1-8ce1eb8f3a80\s

```

DATE: 04-02-2020 TIME: 11:08:15

USER:

COMMENTS: _____

 ** SIMULATION : Run 05 **

50 Year SCS

```

-----
| MASS STORM |      Filename: C:\Users\ALOverholt\AppData\Local\Temp\
|           |      df4fd7c8-c3db-445e-97d8-d931e3a274b7\838666bc
| Ptotal= 90.30 mm |      Comments: SCS Type II 24 HR MASS CURVE

```

 Duration of storm = 23.75 hrs
 Mass curve time step = 15.00 min

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	1.08	6.25	1.81	12.25	13.00	18.25	1.44
0.50	0.72	6.50	1.44	12.50	6.86	18.50	1.81
0.75	1.08	6.75	1.81	12.75	6.50	18.75	1.44
1.00	1.08	7.00	1.81	13.00	5.06	19.00	1.81
1.25	1.08	7.25	2.17	13.25	4.70	19.25	1.44
1.50	0.72	7.50	1.81	13.50	3.97	19.50	1.81
1.75	1.08	7.75	2.17	13.75	3.61	19.75	1.44
2.00	1.08	8.00	2.17	14.00	2.89	20.00	1.08
2.25	1.44	8.25	2.53	14.25	2.53	20.25	1.08
2.50	1.08	8.50	2.53	14.50	2.89	20.50	1.08
2.75	1.08	8.75	2.53	14.75	2.53	20.75	1.08
3.00	1.08	9.00	2.89	15.00	2.89	21.00	1.08
3.25	1.44	9.25	2.89	15.25	2.53	21.25	1.08
3.50	1.08	9.50	3.25	15.50	2.89	21.50	1.08
3.75	1.08	9.75	3.25	15.75	2.53	21.75	1.08
4.00	1.44	10.00	3.97	16.00	1.81	22.00	1.08
4.25	1.44	10.25	4.33	16.25	1.44	22.25	1.08
4.50	1.44	10.50	5.42	16.50	1.81	22.50	1.08
4.75	1.44	10.75	5.78	16.75	1.44	22.75	1.08
5.00	1.44	11.00	8.67	17.00	1.81	23.00	1.08
5.25	1.44	11.25	8.67	17.25	1.44	23.25	1.08
5.50	1.44	11.50	26.73	17.50	1.81	23.50	1.08
5.75	1.44	11.75	110.53	17.75	1.44	23.75	1.08
6.00	1.44	12.00	13.00	18.00	1.81		

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-----
| CALIB |      Area (ha)= 136.00 |      Curve Number (CN)= 52.1
| NASHYD ( 0003) |      Ia (mm)= 7.20 |      # of Linear Res.(N)= 3.00
| ID= 1 DT= 5.0 min |      U.H. Tp(hrs)= 1.94

```

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	1.08	6.083	1.81	12.083	13.00	18.08	1.44
0.167	1.08	6.167	1.81	12.167	13.00	18.17	1.44
0.250	1.08	6.250	1.81	12.250	13.00	18.25	1.44
0.333	0.72	6.333	1.44	12.333	6.86	18.33	1.81
0.417	0.72	6.417	1.44	12.417	6.86	18.42	1.81
0.500	0.72	6.500	1.44	12.500	6.86	18.50	1.81
0.583	1.08	6.583	1.81	12.583	6.50	18.58	1.44
0.667	1.08	6.667	1.81	12.667	6.50	18.67	1.44
0.750	1.08	6.750	1.81	12.750	6.50	18.75	1.44
0.833	1.08	6.833	1.81	12.833	5.06	18.83	1.81
0.917	1.08	6.917	1.81	12.917	5.06	18.92	1.81
1.000	1.08	7.000	1.81	13.000	5.06	19.00	1.81
1.083	1.08	7.083	2.17	13.083	4.70	19.08	1.44
1.167	1.08	7.167	2.17	13.167	4.70	19.17	1.44
1.250	1.08	7.250	2.17	13.250	4.70	19.25	1.44
1.333	0.72	7.333	1.81	13.333	3.97	19.33	1.81
1.417	0.72	7.417	1.81	13.417	3.97	19.42	1.81
1.500	0.72	7.500	1.81	13.500	3.97	19.50	1.81
1.583	1.08	7.583	2.17	13.583	3.61	19.58	1.44
1.667	1.08	7.667	2.17	13.667	3.61	19.67	1.44

1.750	1.08	7.750	2.17	13.750	3.61	19.75	1.44
1.833	1.08	7.833	2.17	13.833	2.89	19.83	1.08
1.917	1.08	7.917	2.17	13.917	2.89	19.92	1.08
2.000	1.08	8.000	2.17	14.000	2.89	20.00	1.08
2.083	1.44	8.083	2.53	14.083	2.53	20.08	1.08
2.167	1.44	8.167	2.53	14.167	2.53	20.17	1.08
2.250	1.44	8.250	2.53	14.250	2.53	20.25	1.08
2.333	1.08	8.333	2.53	14.333	2.89	20.33	1.08
2.417	1.08	8.417	2.53	14.417	2.89	20.42	1.08
2.500	1.08	8.500	2.53	14.500	2.89	20.50	1.08
2.583	1.08	8.583	2.53	14.583	2.53	20.58	1.08
2.667	1.08	8.667	2.53	14.667	2.53	20.67	1.08
2.750	1.08	8.750	2.53	14.750	2.53	20.75	1.08
2.833	1.08	8.833	2.89	14.833	2.89	20.83	1.08
2.917	1.08	8.917	2.89	14.917	2.89	20.92	1.08
3.000	1.08	9.000	2.89	15.000	2.89	21.00	1.08
3.083	1.44	9.083	2.89	15.083	2.53	21.08	1.08
3.167	1.44	9.167	2.89	15.167	2.53	21.17	1.08
3.250	1.44	9.250	2.89	15.250	2.53	21.25	1.08
3.333	1.08	9.333	3.25	15.333	2.89	21.33	1.08
3.417	1.08	9.417	3.25	15.417	2.89	21.42	1.08
3.500	1.08	9.500	3.25	15.500	2.89	21.50	1.08
3.583	1.08	9.583	3.25	15.583	2.53	21.58	1.08
3.667	1.08	9.667	3.25	15.667	2.53	21.67	1.08
3.750	1.08	9.750	3.25	15.750	2.53	21.75	1.08
3.833	1.44	9.833	3.97	15.833	1.81	21.83	1.08
3.917	1.44	9.917	3.97	15.917	1.81	21.92	1.08
4.000	1.44	10.000	3.97	16.000	1.81	22.00	1.08
4.083	1.44	10.083	4.33	16.083	1.44	22.08	1.08
4.167	1.44	10.167	4.33	16.167	1.44	22.17	1.08
4.250	1.44	10.250	4.33	16.250	1.44	22.25	1.08
4.333	1.44	10.333	5.42	16.333	1.81	22.33	1.08
4.417	1.44	10.417	5.42	16.417	1.81	22.42	1.08
4.500	1.44	10.500	5.42	16.500	1.81	22.50	1.08
4.583	1.44	10.583	5.78	16.583	1.44	22.58	1.08
4.667	1.44	10.667	5.78	16.667	1.44	22.67	1.08
4.750	1.44	10.750	5.78	16.750	1.44	22.75	1.08
4.833	1.44	10.833	8.67	16.833	1.81	22.83	1.08
4.917	1.44	10.917	8.67	16.917	1.81	22.92	1.08
5.000	1.44	11.000	8.67	17.000	1.81	23.00	1.08
5.083	1.44	11.083	8.67	17.083	1.44	23.08	1.08
5.167	1.44	11.167	8.67	17.167	1.44	23.17	1.08
5.250	1.44	11.250	8.67	17.250	1.44	23.25	1.08
5.333	1.44	11.333	26.73	17.333	1.81	23.33	1.08
5.417	1.44	11.417	26.73	17.417	1.81	23.42	1.08
5.500	1.44	11.500	26.73	17.500	1.81	23.50	1.08
5.583	1.44	11.583	110.52	17.583	1.44	23.58	1.08
5.667	1.44	11.667	110.53	17.667	1.44	23.67	1.08
5.750	1.44	11.750	110.53	17.750	1.44	23.75	1.08
5.833	1.44	11.833	13.01	17.833	1.81		
5.917	1.44	11.917	13.00	17.917	1.81		
6.000	1.44	12.000	13.00	18.000	1.81		

Unit Hyd Qpeak (cms)= 2.678

PEAK FLOW (cms)= 1.367 (i)
 TIME TO PEAK (hrs)= 13.917
 RUNOFF VOLUME (mm)= 21.687
 TOTAL RAINFALL (mm)= 90.029
 RUNOFF COEFFICIENT = 0.241

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

DUHYD (0400)
 Inlet Cap.= 0.713
 #of Inlets= 1
 Total(cms)= 0.7

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	136.00	1.37	13.92	21.69
MAJOR SYS.(ID= 2):	27.96	0.65	13.92	21.69
MINOR SYS.(ID= 3):	108.04	0.71	12.50	21.69

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

MASS STORM
 Ptotal= 90.30 mm

Filename: C:\Users\ALoverholt\AppData\Local\Temp\df4fd7c8-c3db-445e-97d8-d931e3a274b7\838666bc
 Comments: SCS Type II 24 HR MASS CURVE

Duration of storm = 23.75 hrs
 Mass curve time step = 15.00 min

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	1.08	6.25	1.81	12.25	13.00	18.25	1.44
0.50	0.72	6.50	1.44	12.50	6.86	18.50	1.81
0.75	1.08	6.75	1.81	12.75	6.50	18.75	1.44
1.00	1.08	7.00	1.81	13.00	5.06	19.00	1.81
1.25	1.08	7.25	2.17	13.25	4.70	19.25	1.44
1.50	0.72	7.50	1.81	13.50	3.97	19.50	1.81
1.75	1.08	7.75	2.17	13.75	3.61	19.75	1.44
2.00	1.08	8.00	2.17	14.00	2.89	20.00	1.08
2.25	1.44	8.25	2.53	14.25	2.53	20.25	1.08
2.50	1.08	8.50	2.53	14.50	2.89	20.50	1.08
2.75	1.08	8.75	2.53	14.75	2.53	20.75	1.08
3.00	1.08	9.00	2.89	15.00	2.89	21.00	1.08
3.25	1.44	9.25	2.89	15.25	2.53	21.25	1.08
3.50	1.08	9.50	3.25	15.50	2.89	21.50	1.08
3.75	1.08	9.75	3.25	15.75	2.53	21.75	1.08
4.00	1.44	10.00	3.97	16.00	1.81	22.00	1.08
4.25	1.44	10.25	4.33	16.25	1.44	22.25	1.08
4.50	1.44	10.50	5.42	16.50	1.81	22.50	1.08
4.75	1.44	10.75	5.78	16.75	1.44	22.75	1.08
5.00	1.44	11.00	8.67	17.00	1.81	23.00	1.08
5.25	1.44	11.25	8.67	17.25	1.44	23.25	1.08
5.50	1.44	11.50	26.73	17.50	1.81	23.50	1.08
5.75	1.44	11.75	110.53	17.75	1.44	23.75	1.08
6.00	1.44	12.00	13.00	18.00	1.81		

CALIB
 NASHYD (0002)
 ID= 1 DT= 5.0 min

Area (ha)= 10.93
 Curve Number (CN)= 68.5
 Ia (mm)= 4.40
 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.60

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	1.08	6.083	1.81	12.083	13.00	18.08	1.44

0.167	1.08	6.167	1.81	12.167	13.00	18.17	1.44
0.250	1.08	6.250	1.81	12.250	13.00	18.25	1.44
0.333	0.72	6.333	1.44	12.333	6.86	18.33	1.81
0.417	0.72	6.417	1.44	12.417	6.86	18.42	1.81
0.500	0.72	6.500	1.44	12.500	6.86	18.50	1.81
0.583	1.08	6.583	1.81	12.583	6.50	18.58	1.44
0.667	1.08	6.667	1.81	12.667	6.50	18.67	1.44
0.750	1.08	6.750	1.81	12.750	6.50	18.75	1.44
0.833	1.08	6.833	1.81	12.833	5.06	18.83	1.81
0.917	1.08	6.917	1.81	12.917	5.06	18.92	1.81
1.000	1.08	7.000	1.81	13.000	5.06	19.00	1.81
1.083	1.08	7.083	2.17	13.083	4.70	19.08	1.44
1.167	1.08	7.167	2.17	13.167	4.70	19.17	1.44
1.250	1.08	7.250	2.17	13.250	4.70	19.25	1.44
1.333	0.72	7.333	1.81	13.333	3.97	19.33	1.81
1.417	0.72	7.417	1.81	13.417	3.97	19.42	1.81
1.500	0.72	7.500	1.81	13.500	3.97	19.50	1.81
1.583	1.08	7.583	2.17	13.583	3.61	19.58	1.44
1.667	1.08	7.667	2.17	13.667	3.61	19.67	1.44
1.750	1.08	7.750	2.17	13.750	3.61	19.75	1.44
1.833	1.08	7.833	2.17	13.833	2.89	19.83	1.08
1.917	1.08	7.917	2.17	13.917	2.89	19.92	1.08
2.000	1.08	8.000	2.17	14.000	2.89	20.00	1.08
2.083	1.44	8.083	2.53	14.083	2.53	20.08	1.08
2.167	1.44	8.167	2.53	14.167	2.53	20.17	1.08
2.250	1.44	8.250	2.53	14.250	2.53	20.25	1.08
2.333	1.08	8.333	2.53	14.333	2.89	20.33	1.08
2.417	1.08	8.417	2.53	14.417	2.89	20.42	1.08
2.500	1.08	8.500	2.53	14.500	2.89	20.50	1.08
2.583	1.08	8.583	2.53	14.583	2.53	20.58	1.08
2.667	1.08	8.667	2.53	14.667	2.53	20.67	1.08
2.750	1.08	8.750	2.53	14.750	2.53	20.75	1.08
2.833	1.08	8.833	2.89	14.833	2.89	20.83	1.08
2.917	1.08	8.917	2.89	14.917	2.89	20.92	1.08
3.000	1.08	9.000	2.89	15.000	2.89	21.00	1.08
3.083	1.44	9.083	2.89	15.083	2.53	21.08	1.08
3.167	1.44	9.167	2.89	15.167	2.53	21.17	1.08
3.250	1.44	9.250	2.89	15.250	2.53	21.25	1.08
3.333	1.08	9.333	3.25	15.333	2.89	21.33	1.08
3.417	1.08	9.417	3.25	15.417	2.89	21.42	1.08
3.500	1.08	9.500	3.25	15.500	2.89	21.50	1.08
3.583	1.08	9.583	3.25	15.583	2.53	21.58	1.08
3.667	1.08	9.667	3.25	15.667	2.53	21.67	1.08
3.750	1.08	9.750	3.25	15.750	2.53	21.75	1.08
3.833	1.44	9.833	3.97	15.833	1.81	21.83	1.08
3.917	1.44	9.917	3.97	15.917	1.81	21.92	1.08
4.000	1.44	10.000	3.97	16.000	1.81	22.00	1.08
4.083	1.44	10.083	4.33	16.083	1.44	22.08	1.08
4.167	1.44	10.167	4.33	16.167	1.44	22.17	1.08
4.250	1.44	10.250	4.33	16.250	1.44	22.25	1.08
4.333	1.44	10.333	5.42	16.333	1.81	22.33	1.08
4.417	1.44	10.417	5.42	16.417	1.81	22.42	1.08
4.500	1.44	10.500	5.42	16.500	1.81	22.50	1.08
4.583	1.44	10.583	5.78	16.583	1.44	22.58	1.08
4.667	1.44	10.667	5.78	16.667	1.44	22.67	1.08
4.750	1.44	10.750	5.78	16.750	1.44	22.75	1.08
4.833	1.44	10.833	8.67	16.833	1.81	22.83	1.08
4.917	1.44	10.917	8.67	16.917	1.81	22.92	1.08
5.000	1.44	11.000	8.67	17.000	1.81	23.00	1.08
5.083	1.44	11.083	8.67	17.083	1.44	23.08	1.08
5.167	1.44	11.167	8.67	17.167	1.44	23.17	1.08
5.250	1.44	11.250	8.67	17.250	1.44	23.25	1.08
5.333	1.44	11.333	26.73	17.333	1.81	23.33	1.08
5.417	1.44	11.417	26.73	17.417	1.81	23.42	1.08

5.500	1.44	11.500	26.73	17.500	1.81	23.50	1.08
5.583	1.44	11.583	110.52	17.583	1.44	23.58	1.08
5.667	1.44	11.667	110.53	17.667	1.44	23.67	1.08
5.750	1.44	11.750	110.53	17.750	1.44	23.75	1.08
5.833	1.44	11.833	13.01	17.833	1.81		
5.917	1.44	11.917	13.00	17.917	1.81		
6.000	1.44	12.000	13.00	18.000	1.81		

Unit Hyd Qpeak (cms)= 0.696

PEAK FLOW (cms)= 0.458 (i)
 TIME TO PEAK (hrs)= 12.250
 RUNOFF VOLUME (mm)= 36.220
 TOTAL RAINFALL (mm)= 90.029
 RUNOFF COEFFICIENT = 0.402

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

ADD HYD (0801)
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0002):	10.93	0.458	12.25	36.22
+ ID2= 2 (0400):	108.04	0.713	12.50	21.69
=====				
ID = 3 (0801):	118.97	1.140	12.42	23.02

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

MASS STORM
 Ptotal= 90.30 mm

Filename: C:\Users\ALOverholt\AppData\Local\Temp\df4fd7c8-c3db-445e-97d8-d931e3a274b7\838666bc
 Comments: SCS Type II 24 HR MASS CURVE

Duration of storm = 23.75 hrs
 Mass curve time step = 15.00 min

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	1.08	6.25	1.81	12.25	13.00	18.25	1.44
0.50	0.72	6.50	1.44	12.50	6.86	18.50	1.81
0.75	1.08	6.75	1.81	12.75	6.50	18.75	1.44
1.00	1.08	7.00	1.81	13.00	5.06	19.00	1.81
1.25	1.08	7.25	2.17	13.25	4.70	19.25	1.44
1.50	0.72	7.50	1.81	13.50	3.97	19.50	1.81
1.75	1.08	7.75	2.17	13.75	3.61	19.75	1.44
2.00	1.08	8.00	2.17	14.00	2.89	20.00	1.08
2.25	1.44	8.25	2.53	14.25	2.53	20.25	1.08
2.50	1.08	8.50	2.53	14.50	2.89	20.50	1.08
2.75	1.08	8.75	2.53	14.75	2.53	20.75	1.08
3.00	1.08	9.00	2.89	15.00	2.89	21.00	1.08
3.25	1.44	9.25	2.89	15.25	2.53	21.25	1.08
3.50	1.08	9.50	3.25	15.50	2.89	21.50	1.08
3.75	1.08	9.75	3.25	15.75	2.53	21.75	1.08
4.00	1.44	10.00	3.97	16.00	1.81	22.00	1.08
4.25	1.44	10.25	4.33	16.25	1.44	22.25	1.08
4.50	1.44	10.50	5.42	16.50	1.81	22.50	1.08
4.75	1.44	10.75	5.78	16.75	1.44	22.75	1.08
5.00	1.44	11.00	8.67	17.00	1.81	23.00	1.08
5.25	1.44	11.25	8.67	17.25	1.44	23.25	1.08

5.50	1.44	11.50	26.73	17.50	1.81	23.50	1.08
5.75	1.44	11.75	110.53	17.75	1.44	23.75	1.08
6.00	1.44	12.00	13.00	18.00	1.81		

 CALIB (0001) Area (ha)= 77.75 Curve Number (CN)= 49.6
 NASHYD (0001) Ta (mm)= 6.91 # of Linear Res.(N)= 3.00
 ID= 1 DT= 5.0 min U.H. Tp(hrs)= 1.24

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	1.08	6.083	1.81	12.083	13.00	18.08	1.44
0.167	1.08	6.167	1.81	12.167	13.00	18.17	1.44
0.250	1.08	6.250	1.81	12.250	13.00	18.25	1.44
0.333	0.72	6.333	1.44	12.333	6.86	18.33	1.81
0.417	0.72	6.417	1.44	12.417	6.86	18.42	1.81
0.500	0.72	6.500	1.44	12.500	6.86	18.50	1.81
0.583	1.08	6.583	1.81	12.583	6.50	18.58	1.44
0.667	1.08	6.667	1.81	12.667	6.50	18.67	1.44
0.750	1.08	6.750	1.81	12.750	6.50	18.75	1.44
0.833	1.08	6.833	1.81	12.833	5.06	18.83	1.81
0.917	1.08	6.917	1.81	12.917	5.06	18.92	1.81
1.000	1.08	7.000	1.81	13.000	5.06	19.00	1.81
1.083	1.08	7.083	2.17	13.083	4.70	19.08	1.44
1.167	1.08	7.167	2.17	13.167	4.70	19.17	1.44
1.250	1.08	7.250	2.17	13.250	4.70	19.25	1.44
1.333	0.72	7.333	1.81	13.333	3.97	19.33	1.81
1.417	0.72	7.417	1.81	13.417	3.97	19.42	1.81
1.500	0.72	7.500	1.81	13.500	3.97	19.50	1.81
1.583	1.08	7.583	2.17	13.583	3.61	19.58	1.44
1.667	1.08	7.667	2.17	13.667	3.61	19.67	1.44
1.750	1.08	7.750	2.17	13.750	3.61	19.75	1.44
1.833	1.08	7.833	2.17	13.833	2.89	19.83	1.08
1.917	1.08	7.917	2.17	13.917	2.89	19.92	1.08
2.000	1.08	8.000	2.17	14.000	2.89	20.00	1.08
2.083	1.44	8.083	2.53	14.083	2.53	20.08	1.08
2.167	1.44	8.167	2.53	14.167	2.53	20.17	1.08
2.250	1.44	8.250	2.53	14.250	2.53	20.25	1.08
2.333	1.08	8.333	2.53	14.333	2.89	20.33	1.08
2.417	1.08	8.417	2.53	14.417	2.89	20.42	1.08
2.500	1.08	8.500	2.53	14.500	2.89	20.50	1.08
2.583	1.08	8.583	2.53	14.583	2.53	20.58	1.08
2.667	1.08	8.667	2.53	14.667	2.53	20.67	1.08
2.750	1.08	8.750	2.53	14.750	2.53	20.75	1.08
2.833	1.08	8.833	2.89	14.833	2.89	20.83	1.08
2.917	1.08	8.917	2.89	14.917	2.89	20.92	1.08
3.000	1.08	9.000	2.89	15.000	2.89	21.00	1.08
3.083	1.44	9.083	2.89	15.083	2.53	21.08	1.08
3.167	1.44	9.167	2.89	15.167	2.53	21.17	1.08
3.250	1.44	9.250	2.89	15.250	2.53	21.25	1.08
3.333	1.08	9.333	3.25	15.333	2.89	21.33	1.08
3.417	1.08	9.417	3.25	15.417	2.89	21.42	1.08
3.500	1.08	9.500	3.25	15.500	2.89	21.50	1.08
3.583	1.08	9.583	3.25	15.583	2.53	21.58	1.08
3.667	1.08	9.667	3.25	15.667	2.53	21.67	1.08
3.750	1.08	9.750	3.25	15.750	2.53	21.75	1.08
3.833	1.44	9.833	3.97	15.833	1.81	21.83	1.08
3.917	1.44	9.917	3.97	15.917	1.81	21.92	1.08

4.000	1.44	10.000	3.97	16.000	1.81	22.00	1.08
4.083	1.44	10.083	4.33	16.083	1.44	22.08	1.08
4.167	1.44	10.167	4.33	16.167	1.44	22.17	1.08
4.250	1.44	10.250	4.33	16.250	1.44	22.25	1.08
4.333	1.44	10.333	5.42	16.333	1.81	22.33	1.08
4.417	1.44	10.417	5.42	16.417	1.81	22.42	1.08
4.500	1.44	10.500	5.42	16.500	1.81	22.50	1.08
4.583	1.44	10.583	5.78	16.583	1.44	22.58	1.08
4.667	1.44	10.667	5.78	16.667	1.44	22.67	1.08
4.750	1.44	10.750	5.78	16.750	1.44	22.75	1.08
4.833	1.44	10.833	8.67	16.833	1.81	22.83	1.08
4.917	1.44	10.917	8.67	16.917	1.81	22.92	1.08
5.000	1.44	11.000	8.67	17.000	1.81	23.00	1.08
5.083	1.44	11.083	8.67	17.083	1.44	23.08	1.08
5.167	1.44	11.167	8.67	17.167	1.44	23.17	1.08
5.250	1.44	11.250	8.67	17.250	1.44	23.25	1.08
5.333	1.44	11.333	26.73	17.333	1.81	23.33	1.08
5.417	1.44	11.417	26.73	17.417	1.81	23.42	1.08
5.500	1.44	11.500	26.73	17.500	1.81	23.50	1.08
5.583	1.44	11.583	110.52	17.583	1.44	23.58	1.08
5.667	1.44	11.667	110.53	17.667	1.44	23.67	1.08
5.750	1.44	11.750	110.53	17.750	1.44	23.75	1.08
5.833	1.44	11.833	13.01	17.833	1.81		
5.917	1.44	11.917	13.00	17.917	1.81		
6.000	1.44	12.000	13.00	18.000	1.81		

Unit Hyd Qpeak (cms)= 2.395

PEAK FLOW (cms)= 1.020 (i)
 TIME TO PEAK (hrs)= 13.083
 RUNOFF VOLUME (mm)= 20.248
 TOTAL RAINFALL (mm)= 90.029
 RUNOFF COEFFICIENT = 0.225

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

 MASS STORM
 Ptotal= 90.30 mm
 Filename: C:\Users\ALOverholt\AppData\Local\Temp\df4fd7c8-c3db-445e-97d8-d931e3a274b7\838666bc
 Comments: SCS Type II 24 HR MASS CURVE

Duration of storm = 23.75 hrs
 Mass curve time step = 15.00 min

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	1.08	6.25	1.81	12.25	13.00	18.25	1.44
0.50	0.72	6.50	1.44	12.50	6.86	18.50	1.81
0.75	1.08	6.75	1.81	12.75	6.50	18.75	1.44
1.00	1.08	7.00	1.81	13.00	5.06	19.00	1.81
1.25	1.08	7.25	2.17	13.25	4.70	19.25	1.44
1.50	0.72	7.50	1.81	13.50	3.97	19.50	1.81
1.75	1.08	7.75	2.17	13.75	3.61	19.75	1.44
2.00	1.08	8.00	2.17	14.00	2.89	20.00	1.08
2.25	1.44	8.25	2.53	14.25	2.53	20.25	1.08
2.50	1.08	8.50	2.53	14.50	2.89	20.50	1.08
2.75	1.08	8.75	2.53	14.75	2.53	20.75	1.08
3.00	1.08	9.00	2.89	15.00	2.89	21.00	1.08
3.25	1.44	9.25	2.89	15.25	2.53	21.25	1.08
3.50	1.08	9.50	3.25	15.50	2.89	21.50	1.08
3.75	1.08	9.75	3.25	15.75	2.53	21.75	1.08
4.00	1.44	10.00	3.97	16.00	1.81	22.00	1.08

4.25	1.44	10.25	4.33	16.25	1.44	22.25	1.08
4.50	1.44	10.50	5.42	16.50	1.81	22.50	1.08
4.75	1.44	10.75	5.78	16.75	1.44	22.75	1.08
5.00	1.44	11.00	8.67	17.00	1.81	23.00	1.08
5.25	1.44	11.25	8.67	17.25	1.44	23.25	1.08
5.50	1.44	11.50	26.73	17.50	1.81	23.50	1.08
5.75	1.44	11.75	110.53	17.75	1.44	23.75	1.08
6.00	1.44	12.00	13.00	18.00	1.81		

 CALIB (0202) Area (ha)= 6.35 Curve Number (CN)= 57.9
 NASHYD (0202) Ia (mm)= 4.70 # of Linear Res.(N)= 3.00
 ID= 1 DT= 5.0 min U.H. Tp(hrs)= 0.55

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	1.08	6.083	1.81	12.083	13.00	18.08	1.44
0.167	1.08	6.167	1.81	12.167	13.00	18.17	1.44
0.250	1.08	6.250	1.81	12.250	13.00	18.25	1.44
0.333	0.72	6.333	1.44	12.333	6.86	18.33	1.81
0.417	0.72	6.417	1.44	12.417	6.86	18.42	1.81
0.500	0.72	6.500	1.44	12.500	6.86	18.50	1.81
0.583	1.08	6.583	1.81	12.583	6.50	18.58	1.44
0.667	1.08	6.667	1.81	12.667	6.50	18.67	1.44
0.750	1.08	6.750	1.81	12.750	6.50	18.75	1.44
0.833	1.08	6.833	1.81	12.833	5.06	18.83	1.81
0.917	1.08	6.917	1.81	12.917	5.06	18.92	1.81
1.000	1.08	7.000	1.81	13.000	5.06	19.00	1.81
1.083	1.08	7.083	2.17	13.083	4.70	19.08	1.44
1.167	1.08	7.167	2.17	13.167	4.70	19.17	1.44
1.250	1.08	7.250	2.17	13.250	4.70	19.25	1.44
1.333	0.72	7.333	1.81	13.333	3.97	19.33	1.81
1.417	0.72	7.417	1.81	13.417	3.97	19.42	1.81
1.500	0.72	7.500	1.81	13.500	3.97	19.50	1.81
1.583	1.08	7.583	2.17	13.583	3.61	19.58	1.44
1.667	1.08	7.667	2.17	13.667	3.61	19.67	1.44
1.750	1.08	7.750	2.17	13.750	3.61	19.75	1.44
1.833	1.08	7.833	2.17	13.833	2.89	19.83	1.08
1.917	1.08	7.917	2.17	13.917	2.89	19.92	1.08
2.000	1.08	8.000	2.17	14.000	2.89	20.00	1.08
2.083	1.44	8.083	2.53	14.083	2.53	20.08	1.08
2.167	1.44	8.167	2.53	14.167	2.53	20.17	1.08
2.250	1.44	8.250	2.53	14.250	2.53	20.25	1.08
2.333	1.08	8.333	2.53	14.333	2.89	20.33	1.08
2.417	1.08	8.417	2.53	14.417	2.89	20.42	1.08
2.500	1.08	8.500	2.53	14.500	2.89	20.50	1.08
2.583	1.08	8.583	2.53	14.583	2.53	20.58	1.08
2.667	1.08	8.667	2.53	14.667	2.53	20.67	1.08
2.750	1.08	8.750	2.53	14.750	2.53	20.75	1.08
2.833	1.08	8.833	2.89	14.833	2.89	20.83	1.08
2.917	1.08	8.917	2.89	14.917	2.89	20.92	1.08
3.000	1.08	9.000	2.89	15.000	2.89	21.00	1.08
3.083	1.44	9.083	2.89	15.083	2.53	21.08	1.08
3.167	1.44	9.167	2.89	15.167	2.53	21.17	1.08
3.250	1.44	9.250	2.89	15.250	2.53	21.25	1.08
3.333	1.08	9.333	3.25	15.333	2.89	21.33	1.08
3.417	1.08	9.417	3.25	15.417	2.89	21.42	1.08
3.500	1.08	9.500	3.25	15.500	2.89	21.50	1.08

3.583	1.08	9.583	3.25	15.583	2.53	21.58	1.08
3.667	1.08	9.667	3.25	15.667	2.53	21.67	1.08
3.750	1.08	9.750	3.25	15.750	2.53	21.75	1.08
3.833	1.44	9.833	3.97	15.833	1.81	21.83	1.08
3.917	1.44	9.917	3.97	15.917	1.81	21.92	1.08
4.000	1.44	10.000	3.97	16.000	1.81	22.00	1.08
4.083	1.44	10.083	4.33	16.083	1.44	22.08	1.08
4.167	1.44	10.167	4.33	16.167	1.44	22.17	1.08
4.250	1.44	10.250	4.33	16.250	1.44	22.25	1.08
4.333	1.44	10.333	5.42	16.333	1.81	22.33	1.08
4.417	1.44	10.417	5.42	16.417	1.81	22.42	1.08
4.500	1.44	10.500	5.42	16.500	1.81	22.50	1.08
4.583	1.44	10.583	5.78	16.583	1.44	22.58	1.08
4.667	1.44	10.667	5.78	16.667	1.44	22.67	1.08
4.750	1.44	10.750	5.78	16.750	1.44	22.75	1.08
4.833	1.44	10.833	8.67	16.833	1.81	22.83	1.08
4.917	1.44	10.917	8.67	16.917	1.81	22.92	1.08
5.000	1.44	11.000	8.67	17.000	1.81	23.00	1.08
5.083	1.44	11.083	8.67	17.083	1.44	23.08	1.08
5.167	1.44	11.167	8.67	17.167	1.44	23.17	1.08
5.250	1.44	11.250	8.67	17.250	1.44	23.25	1.08
5.333	1.44	11.333	26.73	17.333	1.81	23.33	1.08
5.417	1.44	11.417	26.73	17.417	1.81	23.42	1.08
5.500	1.44	11.500	26.73	17.500	1.81	23.50	1.08
5.583	1.44	11.583	110.52	17.583	1.44	23.58	1.08
5.667	1.44	11.667	110.53	17.667	1.44	23.67	1.08
5.750	1.44	11.750	110.53	17.750	1.44	23.75	1.08
5.833	1.44	11.833	13.01	17.833	1.81		
5.917	1.44	11.917	13.00	17.917	1.81		
6.000	1.44	12.000	13.00	18.000	1.81		

Unit Hyd Qpeak (cms)= 0.441

PEAK FLOW (cms)= 0.205 (i)
 TIME TO PEAK (hrs)= 12.250
 RUNOFF VOLUME (mm)= 26.964
 TOTAL RAINFALL (mm)= 90.029
 RUNOFF COEFFICIENT = 0.300

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

 RESERVOIR(0602)
 IN= 2---> OUT= 1
 DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.0394	0.0998
0.0000	0.0000	0.1306	0.1176
0.0014	0.0066	0.3534	0.1362
0.0069	0.0205	0.6046	0.1554
0.0098	0.0350	0.9742	0.1752
0.0120	0.0502	1.4665	0.1957
0.0139	0.0661	2.0882	0.2169
0.0155	0.0826	2.4500	0.2278

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0202)	6.346	0.205	12.25	26.96
OUTFLOW: ID= 1 (0602)	6.346	0.034	14.25	26.78

PEAK FLOW REDUCTION [Qout/Qin] (%)= 16.68
 TIME SHIFT OF PEAK FLOW (min)=120.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0961

MASS STORM
Ptotal= 90.30 mm

Filename: C:\Users\ALOverholt\AppData\Local\Temp\df4fd7c8-c3db-445e-97d8-d931e3a274b7\838666bc
Comments: SCS Type II 24 HR MASS CURVE

Duration of storm = 23.75 hrs
Mass curve time step = 15.00 min

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	1.08	6.25	1.81	12.25	13.00	18.25	1.44
0.50	0.72	6.50	1.44	12.50	6.86	18.50	1.81
0.75	1.08	6.75	1.81	12.75	6.50	18.75	1.44
1.00	1.08	7.00	1.81	13.00	5.06	19.00	1.81
1.25	1.08	7.25	2.17	13.25	4.70	19.25	1.44
1.50	0.72	7.50	1.81	13.50	3.97	19.50	1.81
1.75	1.08	7.75	2.17	13.75	3.61	19.75	1.44
2.00	1.08	8.00	2.17	14.00	2.89	20.00	1.08
2.25	1.44	8.25	2.53	14.25	2.53	20.25	1.08
2.50	1.08	8.50	2.53	14.50	2.89	20.50	1.08
2.75	1.08	8.75	2.53	14.75	2.53	20.75	1.08
3.00	1.08	9.00	2.89	15.00	2.89	21.00	1.08
3.25	1.44	9.25	2.89	15.25	2.53	21.25	1.08
3.50	1.08	9.50	3.25	15.50	2.89	21.50	1.08
3.75	1.08	9.75	3.25	15.75	2.53	21.75	1.08
4.00	1.44	10.00	3.97	16.00	1.81	22.00	1.08
4.25	1.44	10.25	4.33	16.25	1.44	22.25	1.08
4.50	1.44	10.50	5.42	16.50	1.81	22.50	1.08
4.75	1.44	10.75	5.78	16.75	1.44	22.75	1.08
5.00	1.44	11.00	8.67	17.00	1.81	23.00	1.08
5.25	1.44	11.25	8.67	17.25	1.44	23.25	1.08
5.50	1.44	11.50	26.73	17.50	1.81	23.50	1.08
5.75	1.44	11.75	110.53	17.75	1.44	23.75	1.08
6.00	1.44	12.00	13.00	18.00	1.81		

CALIB
NASHYD (0201)
ID= 1 DT= 5.0 min

Area (ha)= 5.05 Curve Number (CN)= 51.4
Ia (mm)= 4.70 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.57

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	1.08	6.083	1.81	12.083	13.00	18.08	1.44
0.167	1.08	6.167	1.81	12.167	13.00	18.17	1.44
0.250	1.08	6.250	1.81	12.250	13.00	18.25	1.44
0.333	0.72	6.333	1.44	12.333	6.86	18.33	1.81
0.417	0.72	6.417	1.44	12.417	6.86	18.42	1.81
0.500	0.72	6.500	1.44	12.500	6.86	18.50	1.81
0.583	1.08	6.583	1.81	12.583	6.50	18.58	1.44
0.667	1.08	6.667	1.81	12.667	6.50	18.67	1.44
0.750	1.08	6.750	1.81	12.750	6.50	18.75	1.44
0.833	1.08	6.833	1.81	12.833	5.06	18.83	1.81
0.917	1.08	6.917	1.81	12.917	5.06	18.92	1.81
1.000	1.08	7.000	1.81	13.000	5.06	19.00	1.81
1.083	1.08	7.083	2.17	13.083	4.70	19.08	1.44

1.167	1.08	7.167	2.17	13.167	4.70	19.17	1.44
1.250	1.08	7.250	2.17	13.250	4.70	19.25	1.44
1.333	0.72	7.333	1.81	13.333	3.97	19.33	1.81
1.417	0.72	7.417	1.81	13.417	3.97	19.42	1.81
1.500	0.72	7.500	1.81	13.500	3.97	19.50	1.81
1.583	1.08	7.583	2.17	13.583	3.61	19.58	1.44
1.667	1.08	7.667	2.17	13.667	3.61	19.67	1.44
1.750	1.08	7.750	2.17	13.750	3.61	19.75	1.44
1.833	1.08	7.833	2.17	13.833	2.89	19.83	1.08
1.917	1.08	7.917	2.17	13.917	2.89	19.92	1.08
2.000	1.08	8.000	2.17	14.000	2.89	20.00	1.08
2.083	1.44	8.083	2.53	14.083	2.53	20.08	1.08
2.167	1.44	8.167	2.53	14.167	2.53	20.17	1.08
2.250	1.44	8.250	2.53	14.250	2.53	20.25	1.08
2.333	1.08	8.333	2.53	14.333	2.89	20.33	1.08
2.417	1.08	8.417	2.53	14.417	2.89	20.42	1.08
2.500	1.08	8.500	2.53	14.500	2.89	20.50	1.08
2.583	1.08	8.583	2.53	14.583	2.53	20.58	1.08
2.667	1.08	8.667	2.53	14.667	2.53	20.67	1.08
2.750	1.08	8.750	2.53	14.750	2.53	20.75	1.08
2.833	1.08	8.833	2.89	14.833	2.89	20.83	1.08
2.917	1.08	8.917	2.89	14.917	2.89	20.92	1.08
3.000	1.08	9.000	2.89	15.000	2.89	21.00	1.08
3.083	1.44	9.083	2.89	15.083	2.53	21.08	1.08
3.167	1.44	9.167	2.89	15.167	2.53	21.17	1.08
3.250	1.44	9.250	2.89	15.250	2.53	21.25	1.08
3.333	1.08	9.333	3.25	15.333	2.89	21.33	1.08
3.417	1.08	9.417	3.25	15.417	2.89	21.42	1.08
3.500	1.08	9.500	3.25	15.500	2.89	21.50	1.08
3.583	1.08	9.583	3.25	15.583	2.53	21.58	1.08
3.667	1.08	9.667	3.25	15.667	2.53	21.67	1.08
3.750	1.08	9.750	3.25	15.750	2.53	21.75	1.08
3.833	1.44	9.833	3.97	15.833	1.81	21.83	1.08
3.917	1.44	9.917	3.97	15.917	1.81	21.92	1.08
4.000	1.44	10.000	3.97	16.000	1.81	22.00	1.08
4.083	1.44	10.083	4.33	16.083	1.44	22.08	1.08
4.167	1.44	10.167	4.33	16.167	1.44	22.17	1.08
4.250	1.44	10.250	4.33	16.250	1.44	22.25	1.08
4.333	1.44	10.333	5.42	16.333	1.81	22.33	1.08
4.417	1.44	10.417	5.42	16.417	1.81	22.42	1.08
4.500	1.44	10.500	5.42	16.500	1.81	22.50	1.08
4.583	1.44	10.583	5.78	16.583	1.44	22.58	1.08
4.667	1.44	10.667	5.78	16.667	1.44	22.67	1.08
4.750	1.44	10.750	5.78	16.750	1.44	22.75	1.08
4.833	1.44	10.833	8.67	16.833	1.81	22.83	1.08
4.917	1.44	10.917	8.67	16.917	1.81	22.92	1.08
5.000	1.44	11.000	8.67	17.000	1.81	23.00	1.08
5.083	1.44	11.083	8.67	17.083	1.44	23.08	1.08
5.167	1.44	11.167	8.67	17.167	1.44	23.17	1.08
5.250	1.44	11.250	8.67	17.250	1.44	23.25	1.08
5.333	1.44	11.333	26.73	17.333	1.81	23.33	1.08
5.417	1.44	11.417	26.73	17.417	1.81	23.42	1.08
5.500	1.44	11.500	26.73	17.500	1.81	23.50	1.08
5.583	1.44	11.583	110.52	17.583	1.44	23.58	1.08
5.667	1.44	11.667	110.53	17.667	1.44	23.67	1.08
5.750	1.44	11.750	110.53	17.750	1.44	23.75	1.08
5.833	1.44	11.833	13.01	17.833	1.81		
5.917	1.44	11.917	13.00	17.917	1.81		
6.000	1.44	12.000	13.00	18.000	1.81		

Unit Hyd Qpeak (cms)= 0.338

PEAK FLOW (cms)= 0.131 (i)
TIME TO PEAK (hrs)= 12.250

RUNOFF VOLUME (mm)= 22.368
 TOTAL RAINFALL (mm)= 90.029
 RUNOFF COEFFICIENT = 0.248

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

RESERVOIR(0601)
 IN= 2--> OUT= 1
 DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.3000	0.0752
0.0320	0.0244	0.7410	0.1015
0.0910	0.0495	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0201)	5.047	0.131	12.25	22.37
OUTFLOW: ID= 1 (0601)	5.047	0.062	13.17	22.33

PEAK FLOW REDUCTION [Qout/Qin](%)= 47.77
 TIME SHIFT OF PEAK FLOW (min)= 55.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0374

ADD HYD (0802)
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0601):	5.05	0.062	13.17	22.33
+ ID2= 2 (0602):	6.35	0.034	14.25	26.78
=====				
ID = 3 (0802):	11.39	0.089	13.58	24.81

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0803)
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0001):	77.75	1.020	13.08	20.25
+ ID2= 2 (0802):	11.39	0.089	13.58	24.81
=====				
ID = 3 (0803):	89.14	1.101	13.08	20.83

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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V V I SSSSS U U A L
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 UUUU A A LLLLL

OOO TTTT TTTT 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
  
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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 5.0\VO2\vojn.dat
 Output filename: C:\Users\ALOverholt\AppData\Local\Civica\XH5
 \c1119499-7c01-4a85-b304-3a19a257e6a9\06971823-aae3-42ab-ad80-55a5e9445625\s
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DATE: 04-02-2020

TIME: 11:08:16

USER:

COMMENTS:

 ** SIMULATION : Run 06 **

100 Year SCS

MASS STORM
 Ptotal= 98.50 mm

Filename: C:\Users\ALOverholt\AppData\Local\Temp\df4fd7c8-c3db-445e-97d8-d931e3a274b7\eb3c3733
 Comments: SCS Type II 24 HR MASS CURVE

Duration of storm = 23.75 hrs
 Mass curve time step = 15.00 min

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	1.18	6.25	1.97	12.25	14.18	18.25	1.58
0.50	0.79	6.50	1.58	12.50	7.49	18.50	1.97
0.75	1.18	6.75	1.97	12.75	7.09	18.75	1.58
1.00	1.18	7.00	1.97	13.00	5.52	19.00	1.97
1.25	1.18	7.25	2.36	13.25	5.12	19.25	1.58
1.50	0.79	7.50	1.97	13.50	4.33	19.50	1.97
1.75	1.18	7.75	2.36	13.75	3.94	19.75	1.58
2.00	1.18	8.00	2.36	14.00	3.15	20.00	1.18
2.25	1.58	8.25	2.76	14.25	2.76	20.25	1.18
2.50	1.18	8.50	2.76	14.50	3.15	20.50	1.18
2.75	1.18	8.75	2.76	14.75	2.76	20.75	1.18
3.00	1.18	9.00	3.15	15.00	3.15	21.00	1.18
3.25	1.58	9.25	3.15	15.25	2.76	21.25	1.18
3.50	1.18	9.50	3.55	15.50	3.15	21.50	1.18
3.75	1.18	9.75	3.55	15.75	2.76	21.75	1.18
4.00	1.58	10.00	4.33	16.00	1.97	22.00	1.18
4.25	1.58	10.25	4.73	16.25	1.58	22.25	1.18
4.50	1.58	10.50	5.91	16.50	1.97	22.50	1.18
4.75	1.58	10.75	6.30	16.75	1.58	22.75	1.18
5.00	1.58	11.00	9.46	17.00	1.97	23.00	1.18
5.25	1.58	11.25	9.46	17.25	1.58	23.25	1.18
5.50	1.58	11.50	29.16	17.50	1.97	23.50	1.18

5.75 1.58 | 11.75 120.56 | 17.75 1.58 | 23.75 1.18
 6.00 1.58 | 12.00 14.18 | 18.00 1.97 |

CALIB
 NASHYD (0003) Area (ha)= 136.00 Curve Number (CN)= 52.1
 ID= 1 DT= 5.0 min Ia (mm)= 7.20 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 1.94

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	1.18	6.083	1.97	12.083	14.18	18.08	1.58
0.167	1.18	6.167	1.97	12.167	14.18	18.17	1.58
0.250	1.18	6.250	1.97	12.250	14.18	18.25	1.58
0.333	0.79	6.333	1.58	12.333	7.49	18.33	1.97
0.417	0.79	6.417	1.58	12.417	7.49	18.42	1.97
0.500	0.79	6.500	1.58	12.500	7.49	18.50	1.97
0.583	1.18	6.583	1.97	12.583	7.09	18.58	1.58
0.667	1.18	6.667	1.97	12.667	7.09	18.67	1.58
0.750	1.18	6.750	1.97	12.750	7.09	18.75	1.58
0.833	1.18	6.833	1.97	12.833	5.52	18.83	1.97
0.917	1.18	6.917	1.97	12.917	5.52	18.92	1.97
1.000	1.18	7.000	1.97	13.000	5.52	19.00	1.97
1.083	1.18	7.083	2.36	13.083	5.12	19.08	1.58
1.167	1.18	7.167	2.36	13.167	5.12	19.17	1.58
1.250	1.18	7.250	2.36	13.250	5.12	19.25	1.58
1.333	0.79	7.333	1.97	13.333	4.33	19.33	1.97
1.417	0.79	7.417	1.97	13.417	4.33	19.42	1.97
1.500	0.79	7.500	1.97	13.500	4.33	19.50	1.97
1.583	1.18	7.583	2.36	13.583	3.94	19.58	1.58
1.667	1.18	7.667	2.36	13.667	3.94	19.67	1.58
1.750	1.18	7.750	2.36	13.750	3.94	19.75	1.58
1.833	1.18	7.833	2.36	13.833	3.15	19.83	1.18
1.917	1.18	7.917	2.36	13.917	3.15	19.92	1.18
2.000	1.18	8.000	2.36	14.000	3.15	20.00	1.18
2.083	1.58	8.083	2.76	14.083	2.76	20.08	1.18
2.167	1.58	8.167	2.76	14.167	2.76	20.17	1.18
2.250	1.58	8.250	2.76	14.250	2.76	20.25	1.18
2.333	1.18	8.333	2.76	14.333	3.15	20.33	1.18
2.417	1.18	8.417	2.76	14.417	3.15	20.42	1.18
2.500	1.18	8.500	2.76	14.500	3.15	20.50	1.18
2.583	1.18	8.583	2.76	14.583	2.76	20.58	1.18
2.667	1.18	8.667	2.76	14.667	2.76	20.67	1.18
2.750	1.18	8.750	2.76	14.750	2.76	20.75	1.18
2.833	1.18	8.833	3.15	14.833	3.15	20.83	1.18
2.917	1.18	8.917	3.15	14.917	3.15	20.92	1.18
3.000	1.18	9.000	3.15	15.000	3.15	21.00	1.18
3.083	1.58	9.083	3.15	15.083	2.76	21.08	1.18
3.167	1.58	9.167	3.15	15.167	2.76	21.17	1.18
3.250	1.58	9.250	3.15	15.250	2.76	21.25	1.18
3.333	1.18	9.333	3.55	15.333	3.15	21.33	1.18
3.417	1.18	9.417	3.55	15.417	3.15	21.42	1.18
3.500	1.18	9.500	3.55	15.500	3.15	21.50	1.18
3.583	1.18	9.583	3.55	15.583	2.76	21.58	1.18
3.667	1.18	9.667	3.55	15.667	2.76	21.67	1.18
3.750	1.18	9.750	3.55	15.750	2.76	21.75	1.18
3.833	1.58	9.833	4.33	15.833	1.97	21.83	1.18
3.917	1.58	9.917	4.33	15.917	1.97	21.92	1.18
4.000	1.58	10.000	4.33	16.000	1.97	22.00	1.18

4.083	1.58	10.083	4.73	16.083	1.58	22.08	1.18
4.167	1.58	10.167	4.73	16.167	1.58	22.17	1.18
4.250	1.58	10.250	4.73	16.250	1.58	22.25	1.18
4.333	1.58	10.333	5.91	16.333	1.97	22.33	1.18
4.417	1.58	10.417	5.91	16.417	1.97	22.42	1.18
4.500	1.58	10.500	5.91	16.500	1.97	22.50	1.18
4.583	1.58	10.583	6.30	16.583	1.58	22.58	1.18
4.667	1.58	10.667	6.30	16.667	1.58	22.67	1.18
4.750	1.58	10.750	6.30	16.750	1.58	22.75	1.18
4.833	1.58	10.833	9.46	16.833	1.97	22.83	1.18
4.917	1.58	10.917	9.46	16.917	1.97	22.92	1.18
5.000	1.58	11.000	9.46	17.000	1.97	23.00	1.18
5.083	1.58	11.083	9.46	17.083	1.58	23.08	1.18
5.167	1.58	11.167	9.46	17.167	1.58	23.17	1.18
5.250	1.58	11.250	9.46	17.250	1.58	23.25	1.18
5.333	1.58	11.333	29.15	17.333	1.97	23.33	1.18
5.417	1.58	11.417	29.16	17.417	1.97	23.42	1.18
5.500	1.58	11.500	29.16	17.500	1.97	23.50	1.18
5.583	1.58	11.583	120.56	17.583	1.58	23.58	1.18
5.667	1.58	11.667	120.56	17.667	1.58	23.67	1.18
5.750	1.58	11.750	120.56	17.750	1.58	23.75	1.18
5.833	1.58	11.833	14.19	17.833	1.97		
5.917	1.58	11.917	14.18	17.917	1.97		
6.000	1.58	12.000	14.18	18.000	1.97		

Unit Hyd Qpeak (cms)= 2.678

PEAK FLOW (cms)= 1.615 (i)
 TIME TO PEAK (hrs)= 13.917
 RUNOFF VOLUME (mm)= 25.520
 TOTAL RAINFALL (mm)= 98.205
 RUNOFF COEFFICIENT = 0.260

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

DUHYD (0400)
 Inlet Cap.= 0.713
 #of Inlets= 1
 Total(cms)= 0.7

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	136.00	1.62	13.92	25.52
MAJOR SYS.(ID= 2):	36.47	0.90	13.92	25.52
MINOR SYS.(ID= 3):	99.53	0.71	12.33	25.52

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

MASS STORM
 Ptotal= 98.50 mm

Filename: C:\Users\ALOverholt\AppData
 Local\Temp\
 df4fd7c8-c3db-445e-97d8-d931e3a274b7\eb3c3733
 Comments: SCS Type II 24 HR MASS CURVE

Duration of storm = 23.75 hrs
 Mass curve time step = 15.00 min

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	1.18	6.25	1.97	12.25	14.18	18.25	1.58
0.50	0.79	6.50	1.58	12.50	7.49	18.50	1.97
0.75	1.18	6.75	1.97	12.75	7.09	18.75	1.58

1.00	1.18	7.00	1.97	13.00	5.52	19.00	1.97
1.25	1.18	7.25	2.36	13.25	5.12	19.25	1.58
1.50	0.79	7.50	1.97	13.50	4.33	19.50	1.97
1.75	1.18	7.75	2.36	13.75	3.94	19.75	1.58
2.00	1.18	8.00	2.36	14.00	3.15	20.00	1.18
2.25	1.58	8.25	2.76	14.25	2.76	20.25	1.18
2.50	1.18	8.50	2.76	14.50	3.15	20.50	1.18
2.75	1.18	8.75	2.76	14.75	2.76	20.75	1.18
3.00	1.18	9.00	3.15	15.00	3.15	21.00	1.18
3.25	1.58	9.25	3.15	15.25	2.76	21.25	1.18
3.50	1.18	9.50	3.55	15.50	3.15	21.50	1.18
3.75	1.18	9.75	3.55	15.75	2.76	21.75	1.18
4.00	1.58	10.00	4.33	16.00	1.97	22.00	1.18
4.25	1.58	10.25	4.73	16.25	1.58	22.25	1.18
4.50	1.58	10.50	5.91	16.50	1.97	22.50	1.18
4.75	1.58	10.75	6.30	16.75	1.58	22.75	1.18
5.00	1.58	11.00	9.46	17.00	1.97	23.00	1.18
5.25	1.58	11.25	9.46	17.25	1.58	23.25	1.18
5.50	1.58	11.50	29.16	17.50	1.97	23.50	1.18
5.75	1.58	11.75	120.56	17.75	1.58	23.75	1.18
6.00	1.58	12.00	14.18	18.00	1.97		

CALIB
 NASHYD (0002) Area (ha)= 10.93 Curve Number (CN)= 68.5
 ID= 1 DT= 5.0 min Ia (mm)= 4.40 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.60

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	1.18	6.083	1.97	12.083	14.18	18.08	1.58
0.167	1.18	6.167	1.97	12.167	14.18	18.17	1.58
0.250	1.18	6.250	1.97	12.250	14.18	18.25	1.58
0.333	0.79	6.333	1.58	12.333	7.49	18.33	1.97
0.417	0.79	6.417	1.58	12.417	7.49	18.42	1.97
0.500	0.79	6.500	1.58	12.500	7.49	18.50	1.97
0.583	1.18	6.583	1.97	12.583	7.09	18.58	1.58
0.667	1.18	6.667	1.97	12.667	7.09	18.67	1.58
0.750	1.18	6.750	1.97	12.750	7.09	18.75	1.58
0.833	1.18	6.833	1.97	12.833	5.52	18.83	1.97
0.917	1.18	6.917	1.97	12.917	5.52	18.92	1.97
1.000	1.18	7.000	1.97	13.000	5.52	19.00	1.97
1.083	1.18	7.083	2.36	13.083	5.12	19.08	1.58
1.167	1.18	7.167	2.36	13.167	5.12	19.17	1.58
1.250	1.18	7.250	2.36	13.250	5.12	19.25	1.58
1.333	0.79	7.333	1.97	13.333	4.33	19.33	1.97
1.417	0.79	7.417	1.97	13.417	4.33	19.42	1.97
1.500	0.79	7.500	1.97	13.500	4.33	19.50	1.97
1.583	1.18	7.583	2.36	13.583	3.94	19.58	1.58
1.667	1.18	7.667	2.36	13.667	3.94	19.67	1.58
1.750	1.18	7.750	2.36	13.750	3.94	19.75	1.58
1.833	1.18	7.833	2.36	13.833	3.15	19.83	1.18
1.917	1.18	7.917	2.36	13.917	3.15	19.92	1.18
2.000	1.18	8.000	2.36	14.000	3.15	20.00	1.18
2.083	1.58	8.083	2.76	14.083	2.76	20.08	1.18
2.167	1.58	8.167	2.76	14.167	2.76	20.17	1.18
2.250	1.58	8.250	2.76	14.250	2.76	20.25	1.18
2.333	1.18	8.333	2.76	14.333	3.15	20.33	1.18
2.417	1.18	8.417	2.76	14.417	3.15	20.42	1.18

2.500	1.18	8.500	2.76	14.500	3.15	20.50	1.18
2.583	1.18	8.583	2.76	14.583	2.76	20.58	1.18
2.667	1.18	8.667	2.76	14.667	2.76	20.67	1.18
2.750	1.18	8.750	2.76	14.750	2.76	20.75	1.18
2.833	1.18	8.833	3.15	14.833	3.15	20.83	1.18
2.917	1.18	8.917	3.15	14.917	3.15	20.92	1.18
3.000	1.18	9.000	3.15	15.000	3.15	21.00	1.18
3.083	1.58	9.083	3.15	15.083	2.76	21.08	1.18
3.167	1.58	9.167	3.15	15.167	2.76	21.17	1.18
3.250	1.58	9.250	3.15	15.250	2.76	21.25	1.18
3.333	1.18	9.333	3.55	15.333	3.15	21.33	1.18
3.417	1.18	9.417	3.55	15.417	3.15	21.42	1.18
3.500	1.18	9.500	3.55	15.500	3.15	21.50	1.18
3.583	1.18	9.583	3.55	15.583	2.76	21.58	1.18
3.667	1.18	9.667	3.55	15.667	2.76	21.67	1.18
3.750	1.18	9.750	3.55	15.750	2.76	21.75	1.18
3.833	1.58	9.833	4.33	15.833	1.97	21.83	1.18
3.917	1.58	9.917	4.33	15.917	1.97	21.92	1.18
4.000	1.58	10.000	4.33	16.000	1.97	22.00	1.18
4.083	1.58	10.083	4.73	16.083	1.58	22.08	1.18
4.167	1.58	10.167	4.73	16.167	1.58	22.17	1.18
4.250	1.58	10.250	4.73	16.250	1.58	22.25	1.18
4.333	1.58	10.333	5.91	16.333	1.97	22.33	1.18
4.417	1.58	10.417	5.91	16.417	1.97	22.42	1.18
4.500	1.58	10.500	5.91	16.500	1.97	22.50	1.18
4.583	1.58	10.583	6.30	16.583	1.58	22.58	1.18
4.667	1.58	10.667	6.30	16.667	1.58	22.67	1.18
4.750	1.58	10.750	6.30	16.750	1.58	22.75	1.18
4.833	1.58	10.833	9.46	16.833	1.97	22.83	1.18
4.917	1.58	10.917	9.46	16.917	1.97	22.92	1.18
5.000	1.58	11.000	9.46	17.000	1.97	23.00	1.18
5.083	1.58	11.083	9.46	17.083	1.58	23.08	1.18
5.167	1.58	11.167	9.46	17.167	1.58	23.17	1.18
5.250	1.58	11.250	9.46	17.250	1.58	23.25	1.18
5.333	1.58	11.333	29.15	17.333	1.97	23.33	1.18
5.417	1.58	11.417	29.16	17.417	1.97	23.42	1.18
5.500	1.58	11.500	29.16	17.500	1.97	23.50	1.18
5.583	1.58	11.583	120.56	17.583	1.58	23.58	1.18
5.667	1.58	11.667	120.56	17.667	1.58	23.67	1.18
5.750	1.58	11.750	120.56	17.750	1.58	23.75	1.18
5.833	1.58	11.833	14.19	17.833	1.97		
5.917	1.58	11.917	14.18	17.917	1.97		
6.000	1.58	12.000	14.18	18.000	1.97		

Unit Hyd Qpeak (cms)= 0.696

PEAK FLOW (cms)= 0.531 (i)
 TIME TO PEAK (hrs)= 12.250
 RUNOFF VOLUME (mm)= 41.779
 TOTAL RAINFALL (mm)= 98.205
 RUNOFF COEFFICIENT = 0.425

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

ADD HYD (0801)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0002):	10.93	0.531	12.25	41.78
+ ID2= 2 (0400):	99.53	0.713	12.33	25.52
=====				
ID = 3 (0801):	110.46	1.240	12.33	27.13

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

MASS STORM
Ptotal= 98.50 mm

Filename: C:\Users\ALOverholt\AppData\Local\Temp\df4fd7c8-c3db-445e-97d8-d931e3a274b7\eb3c3733
Comments: SCS Type II 24 HR MASS CURVE
Duration of storm = 23.75 hrs
Mass curve time step = 15.00 min

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	1.18	6.25	1.97	12.25	14.18	18.25	1.58
0.50	0.79	6.50	1.58	12.50	7.49	18.50	1.97
0.75	1.18	6.75	1.97	12.75	7.09	18.75	1.58
1.00	1.18	7.00	1.97	13.00	5.52	19.00	1.97
1.25	1.18	7.25	2.36	13.25	5.12	19.25	1.58
1.50	0.79	7.50	1.97	13.50	4.33	19.50	1.97
1.75	1.18	7.75	2.36	13.75	3.94	19.75	1.58
2.00	1.18	8.00	2.36	14.00	3.15	20.00	1.18
2.25	1.58	8.25	2.76	14.25	2.76	20.25	1.18
2.50	1.18	8.50	2.76	14.50	3.15	20.50	1.18
2.75	1.18	8.75	2.76	14.75	2.76	20.75	1.18
3.00	1.18	9.00	3.15	15.00	3.15	21.00	1.18
3.25	1.58	9.25	3.15	15.25	2.76	21.25	1.18
3.50	1.18	9.50	3.55	15.50	3.15	21.50	1.18
3.75	1.18	9.75	3.55	15.75	2.76	21.75	1.18
4.00	1.58	10.00	4.33	16.00	1.97	22.00	1.18
4.25	1.58	10.25	4.73	16.25	1.58	22.25	1.18
4.50	1.58	10.50	5.91	16.50	1.97	22.50	1.18
4.75	1.58	10.75	6.30	16.75	1.58	22.75	1.18
5.00	1.58	11.00	9.46	17.00	1.97	23.00	1.18
5.25	1.58	11.25	9.46	17.25	1.58	23.25	1.18
5.50	1.58	11.50	29.16	17.50	1.97	23.50	1.18
5.75	1.58	11.75	17.75	17.75	1.58	23.75	1.18
6.00	1.58	12.00	14.18	18.00	1.97		

CALIB
NASHYD (0001)
ID= 1 DT= 5.0 min

Area (ha)= 77.75 Curve Number (CN)= 49.6
Ia (mm)= 6.91 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.24

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	1.18	6.083	1.97	12.083	14.18	18.08	1.58
0.167	1.18	6.167	1.97	12.167	14.18	18.17	1.58
0.250	1.18	6.250	1.97	12.250	14.18	18.25	1.58
0.333	0.79	6.333	1.58	12.333	7.49	18.33	1.97
0.417	0.79	6.417	1.58	12.417	7.49	18.42	1.97
0.500	0.79	6.500	1.58	12.500	7.49	18.50	1.97
0.583	1.18	6.583	1.97	12.583	7.09	18.58	1.58
0.667	1.18	6.667	1.97	12.667	7.09	18.67	1.58
0.750	1.18	6.750	1.97	12.750	7.09	18.75	1.58
0.833	1.18	6.833	1.97	12.833	5.52	18.83	1.97
0.917	1.18	6.917	1.97	12.917	5.52	18.92	1.97

1.000	1.18	7.000	1.97	13.000	5.52	19.00	1.97
1.083	1.18	7.083	2.36	13.083	5.12	19.08	1.58
1.167	1.18	7.167	2.36	13.167	5.12	19.17	1.58
1.250	1.18	7.250	2.36	13.250	5.12	19.25	1.58
1.333	0.79	7.333	1.97	13.333	4.33	19.33	1.97
1.417	0.79	7.417	1.97	13.417	4.33	19.42	1.97
1.500	0.79	7.500	1.97	13.500	4.33	19.50	1.97
1.583	1.18	7.583	2.36	13.583	3.94	19.58	1.58
1.667	1.18	7.667	2.36	13.667	3.94	19.67	1.58
1.750	1.18	7.750	2.36	13.750	3.94	19.75	1.58
1.833	1.18	7.833	2.36	13.833	3.15	19.83	1.18
1.917	1.18	7.917	2.36	13.917	3.15	19.92	1.18
2.000	1.18	8.000	2.36	14.000	3.15	20.00	1.18
2.083	1.58	8.083	2.76	14.083	2.76	20.08	1.18
2.167	1.58	8.167	2.76	14.167	2.76	20.17	1.18
2.250	1.58	8.250	2.76	14.250	2.76	20.25	1.18
2.333	1.18	8.333	2.76	14.333	3.15	20.33	1.18
2.417	1.18	8.417	2.76	14.417	3.15	20.42	1.18
2.500	1.18	8.500	2.76	14.500	3.15	20.50	1.18
2.583	1.18	8.583	2.76	14.583	2.76	20.58	1.18
2.667	1.18	8.667	2.76	14.667	2.76	20.67	1.18
2.750	1.18	8.750	2.76	14.750	2.76	20.75	1.18
2.833	1.18	8.833	3.15	14.833	3.15	20.83	1.18
2.917	1.18	8.917	3.15	14.917	3.15	20.92	1.18
3.000	1.18	9.000	3.15	15.000	3.15	21.00	1.18
3.083	1.58	9.083	3.15	15.083	2.76	21.08	1.18
3.167	1.58	9.167	3.15	15.167	2.76	21.17	1.18
3.250	1.58	9.250	3.15	15.250	2.76	21.25	1.18
3.333	1.18	9.333	3.55	15.333	3.15	21.33	1.18
3.417	1.18	9.417	3.55	15.417	3.15	21.42	1.18
3.500	1.18	9.500	3.55	15.500	3.15	21.50	1.18
3.583	1.18	9.583	3.55	15.583	2.76	21.58	1.18
3.667	1.18	9.667	3.55	15.667	2.76	21.67	1.18
3.750	1.18	9.750	3.55	15.750	2.76	21.75	1.18
3.833	1.58	9.833	4.33	15.833	1.97	21.83	1.18
3.917	1.58	9.917	4.33	15.917	1.97	21.92	1.18
4.000	1.58	10.000	4.33	16.000	1.97	22.00	1.18
4.083	1.58	10.083	4.73	16.083	1.58	22.08	1.18
4.167	1.58	10.167	4.73	16.167	1.58	22.17	1.18
4.250	1.58	10.250	4.73	16.250	1.58	22.25	1.18
4.333	1.58	10.333	5.91	16.333	1.97	22.33	1.18
4.417	1.58	10.417	5.91	16.417	1.97	22.42	1.18
4.500	1.58	10.500	5.91	16.500	1.97	22.50	1.18
4.583	1.58	10.583	6.30	16.583	1.58	22.58	1.18
4.667	1.58	10.667	6.30	16.667	1.58	22.67	1.18
4.750	1.58	10.750	6.30	16.750	1.58	22.75	1.18
4.833	1.58	10.833	9.46	16.833	1.97	22.83	1.18
4.917	1.58	10.917	9.46	16.917	1.97	22.92	1.18
5.000	1.58	11.000	9.46	17.000	1.97	23.00	1.18
5.083	1.58	11.083	9.46	17.083	1.58	23.08	1.18
5.167	1.58	11.167	9.46	17.167	1.58	23.17	1.18
5.250	1.58	11.250	9.46	17.250	1.58	23.25	1.18
5.333	1.58	11.333	29.15	17.333	1.97	23.33	1.18
5.417	1.58	11.417	29.16	17.417	1.97	23.42	1.18
5.500	1.58	11.500	29.16	17.500	1.97	23.50	1.18
5.583	1.58	11.583	120.56	17.583	1.58	23.58	1.18
5.667	1.58	11.667	120.56	17.667	1.58	23.67	1.18
5.750	1.58	11.750	120.56	17.750	1.58	23.75	1.18
5.833	1.58	11.833	14.19	17.833	1.97		
5.917	1.58	11.917	14.18	17.917	1.97		
6.000	1.58	12.000	14.18	18.000	1.97		

Unit Hyd Qpeak (cms)= 2.395

PEAK FLOW (cms)= 1.207 (i)
 TIME TO PEAK (hrs)= 13.083
 RUNOFF VOLUME (mm)= 23.855
 TOTAL RAINFALL (mm)= 98.205
 RUNOFF COEFFICIENT = 0.243

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

MASS STORM
 Ptotal= 98.50 mm

Filename: C:\Users\ALOverholt\AppData\Local\Temp\df4fd7c8-c3db-445e-97d8-d931e3a274b7\eb3c3733
 Comments: SCS Type II 24 HR MASS CURVE

Duration of storm = 23.75 hrs
 Mass curve time step = 15.00 min

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	1.18	6.25	1.97	12.25	14.18	18.25	1.58
0.50	0.79	6.50	1.58	12.50	7.49	18.50	1.97
0.75	1.18	6.75	1.97	12.75	7.09	18.75	1.58
1.00	1.18	7.00	1.97	13.00	5.52	19.00	1.97
1.25	1.18	7.25	2.36	13.25	5.12	19.25	1.58
1.50	0.79	7.50	1.97	13.50	4.33	19.50	1.97
1.75	1.18	7.75	2.36	13.75	3.94	19.75	1.58
2.00	1.18	8.00	2.36	14.00	3.15	20.00	1.18
2.25	1.58	8.25	2.76	14.25	2.76	20.25	1.18
2.50	1.18	8.50	2.76	14.50	3.15	20.50	1.18
2.75	1.18	8.75	2.76	14.75	2.76	20.75	1.18
3.00	1.18	9.00	3.15	15.00	3.15	21.00	1.18
3.25	1.58	9.25	3.15	15.25	2.76	21.25	1.18
3.50	1.18	9.50	3.55	15.50	3.15	21.50	1.18
3.75	1.18	9.75	3.55	15.75	2.76	21.75	1.18
4.00	1.58	10.00	4.33	16.00	1.97	22.00	1.18
4.25	1.58	10.25	4.73	16.25	1.58	22.25	1.18
4.50	1.58	10.50	5.91	16.50	1.97	22.50	1.18
4.75	1.58	10.75	6.30	16.75	1.58	22.75	1.18
5.00	1.58	11.00	9.46	17.00	1.97	23.00	1.18
5.25	1.58	11.25	9.46	17.25	1.58	23.25	1.18
5.50	1.58	11.50	29.16	17.50	1.97	23.50	1.18
5.75	1.58	11.75	120.56	17.75	1.58	23.75	1.18
6.00	1.58	12.00	14.18	18.00	1.97		

CALIB
 NASHYD (0202)
 ID= 1 DT= 5.0 min

Area (ha)= 6.35 Curve Number (CN)= 57.9
 Ia (mm)= 4.70 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.55

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	1.18	6.083	1.97	12.083	14.18	18.08	1.58
0.167	1.18	6.167	1.97	12.167	14.18	18.17	1.58
0.250	1.18	6.250	1.97	12.250	14.18	18.25	1.58
0.333	0.79	6.333	1.58	12.333	7.49	18.33	1.97
0.417	0.79	6.417	1.58	12.417	7.49	18.42	1.97
0.500	0.79	6.500	1.58	12.500	7.49	18.50	1.97

0.583	1.18	6.583	1.97	12.583	7.09	18.58	1.58
0.667	1.18	6.667	1.97	12.667	7.09	18.67	1.58
0.750	1.18	6.750	1.97	12.750	7.09	18.75	1.58
0.833	1.18	6.833	1.97	12.833	5.52	18.83	1.97
0.917	1.18	6.917	1.97	12.917	5.52	18.92	1.97
1.000	1.18	7.000	1.97	13.000	5.52	19.00	1.97
1.083	1.18	7.083	2.36	13.083	5.12	19.08	1.58
1.167	1.18	7.167	2.36	13.167	5.12	19.17	1.58
1.250	1.18	7.250	2.36	13.250	5.12	19.25	1.58
1.333	0.79	7.333	1.97	13.333	4.33	19.33	1.97
1.417	0.79	7.417	1.97	13.417	4.33	19.42	1.97
1.500	0.79	7.500	1.97	13.500	4.33	19.50	1.97
1.583	1.18	7.583	2.36	13.583	3.94	19.58	1.58
1.667	1.18	7.667	2.36	13.667	3.94	19.67	1.58
1.750	1.18	7.750	2.36	13.750	3.94	19.75	1.58
1.833	1.18	7.833	2.36	13.833	3.15	19.83	1.18
1.917	1.18	7.917	2.36	13.917	3.15	19.92	1.18
2.000	1.18	8.000	2.36	14.000	3.15	20.00	1.18
2.083	1.58	8.083	2.76	14.083	2.76	20.08	1.18
2.167	1.58	8.167	2.76	14.167	2.76	20.17	1.18
2.250	1.58	8.250	2.76	14.250	2.76	20.25	1.18
2.333	1.18	8.333	2.76	14.333	3.15	20.33	1.18
2.417	1.18	8.417	2.76	14.417	3.15	20.42	1.18
2.500	1.18	8.500	2.76	14.500	3.15	20.50	1.18
2.583	1.18	8.583	2.76	14.583	2.76	20.58	1.18
2.667	1.18	8.667	2.76	14.667	2.76	20.67	1.18
2.750	1.18	8.750	2.76	14.750	2.76	20.75	1.18
2.833	1.18	8.833	3.15	14.833	3.15	20.83	1.18
2.917	1.18	8.917	3.15	14.917	3.15	20.92	1.18
3.000	1.18	9.000	3.15	15.000	3.15	21.00	1.18
3.083	1.58	9.083	3.15	15.083	2.76	21.08	1.18
3.167	1.58	9.167	3.15	15.167	2.76	21.17	1.18
3.250	1.58	9.250	3.15	15.250	2.76	21.25	1.18
3.333	1.18	9.333	3.55	15.333	3.15	21.33	1.18
3.417	1.18	9.417	3.55	15.417	3.15	21.42	1.18
3.500	1.18	9.500	3.55	15.500	3.15	21.50	1.18
3.583	1.18	9.583	3.55	15.583	2.76	21.58	1.18
3.667	1.18	9.667	3.55	15.667	2.76	21.67	1.18
3.750	1.18	9.750	3.55	15.750	2.76	21.75	1.18
3.833	1.58	9.833	4.33	15.833	1.97	21.83	1.18
3.917	1.58	9.917	4.33	15.917	1.97	21.92	1.18
4.000	1.58	10.000	4.33	16.000	1.97	22.00	1.18
4.083	1.58	10.083	4.73	16.083	1.58	22.08	1.18
4.167	1.58	10.167	4.73	16.167	1.58	22.17	1.18
4.250	1.58	10.250	4.73	16.250	1.58	22.25	1.18
4.333	1.58	10.333	5.91	16.333	1.97	22.33	1.18
4.417	1.58	10.417	5.91	16.417	1.97	22.42	1.18
4.500	1.58	10.500	5.91	16.500	1.97	22.50	1.18
4.583	1.58	10.583	6.30	16.583	1.58	22.58	1.18
4.667	1.58	10.667	6.30	16.667	1.58	22.67	1.18
4.750	1.58	10.750	6.30	16.750	1.58	22.75	1.18
4.833	1.58	10.833	9.46	16.833	1.97	22.83	1.18
4.917	1.58	10.917	9.46	16.917	1.97	22.92	1.18
5.000	1.58	11.000	9.46	17.000	1.97	23.00	1.18
5.083	1.58	11.083	9.46	17.083	1.58	23.08	1.18
5.167	1.58	11.167	9.46	17.167	1.58	23.17	1.18
5.250	1.58	11.250	9.46	17.250	1.58	23.25	1.18
5.333	1.58	11.333	29.15	17.333	1.97	23.33	1.18
5.417	1.58	11.417	29.16	17.417	1.97	23.42	1.18
5.500	1.58	11.500	29.16	17.500	1.97	23.50	1.18
5.583	1.58	11.583	120.56	17.583	1.58	23.58	1.18
5.667	1.58	11.667	120.56	17.667	1.58	23.67	1.18
5.750	1.58	11.750	120.56	17.750	1.58	23.75	1.18
5.833	1.58	11.833	14.19	17.833	1.97		

5.917 1.58 |11.917 14.18 |17.917 1.97 |
 6.000 1.58 |12.000 14.18 |18.000 1.97 |

Unit Hyd Qpeak (cms)= 0.441

PEAK FLOW (cms)= 0.240 (i)
 TIME TO PEAK (hrs)= 12.250
 RUNOFF VOLUME (mm)= 31.427
 TOTAL RAINFALL (mm)= 98.205
 RUNOFF COEFFICIENT = 0.320

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

RESERVOIR(0602)
 IN= 2---> OUT= 1
 DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.0394	0.0998
0.0000	0.0000	0.1306	0.1176
0.0014	0.0066	0.3534	0.1362
0.0069	0.0205	0.6046	0.1554
0.0098	0.0350	0.9742	0.1752
0.0120	0.0502	1.4665	0.1957
0.0139	0.0661	2.0882	0.2169
0.0155	0.0826	2.4500	0.2278

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0202)	6.346	0.240	12.25	31.43
OUTFLOW: ID= 1 (0602)	6.346	0.063	13.67	31.24

PEAK FLOW REDUCTION [Qout/Qin](%)= 26.14
 TIME SHIFT OF PEAK FLOW (min)= 85.00
 MAXIMUM STORAGE USED (ha.m.)= 0.1044

MASS STORM
 Ptotal= 98.50 mm

Filename: C:\Users\ALOverholt\AppData\Local\Temp\df4fd7c8-c3db-445e-97d8-d931e3a274b7\eb3c3733
 Comments: SCS Type II 24 HR MASS CURVE

Duration of storm = 23.75 hrs
 Mass curve time step = 15.00 min

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	1.18	6.25	1.97	12.25	14.18	18.25	1.58
0.50	0.79	6.50	1.58	12.50	7.49	18.50	1.97
0.75	1.18	6.75	1.97	12.75	7.09	18.75	1.58
1.00	1.18	7.00	1.97	13.00	5.52	19.00	1.97
1.25	1.18	7.25	2.36	13.25	5.12	19.25	1.58
1.50	0.79	7.50	1.97	13.50	4.33	19.50	1.97
1.75	1.18	7.75	2.36	13.75	3.94	19.75	1.58
2.00	1.18	8.00	2.36	14.00	3.15	20.00	1.18
2.25	1.58	8.25	2.76	14.25	2.76	20.25	1.18
2.50	1.18	8.50	2.76	14.50	3.15	20.50	1.18
2.75	1.18	8.75	2.76	14.75	2.76	20.75	1.18
3.00	1.18	9.00	3.15	15.00	3.15	21.00	1.18
3.25	1.58	9.25	3.15	15.25	2.76	21.25	1.18
3.50	1.18	9.50	3.55	15.50	3.15	21.50	1.18
3.75	1.18	9.75	3.55	15.75	2.76	21.75	1.18

4.00	1.58	10.00	4.33	16.00	1.97	22.00	1.18
4.25	1.58	10.25	4.73	16.25	1.58	22.25	1.18
4.50	1.58	10.50	5.91	16.50	1.97	22.50	1.18
4.75	1.58	10.75	6.30	16.75	1.58	22.75	1.18
5.00	1.58	11.00	9.46	17.00	1.97	23.00	1.18
5.25	1.58	11.25	9.46	17.25	1.58	23.25	1.18
5.50	1.58	11.50	29.16	17.50	1.97	23.50	1.18
5.75	1.58	11.75	120.56	17.75	1.58	23.75	1.18
6.00	1.58	12.00	14.18	18.00	1.97		

CALIB
 NASHYD (0201)
 ID= 1 DT= 5.0 min

Area (ha)= 5.05
 Ia (mm)= 4.70
 U.H. Tp(hrs)= 0.57
 Curve Number (CN)= 51.4
 # of Linear Res.(N)= 3.00

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	1.18	6.083	1.97	12.083	14.18	18.08	1.58
0.167	1.18	6.167	1.97	12.167	14.18	18.17	1.58
0.250	1.18	6.250	1.97	12.250	14.18	18.25	1.58
0.333	0.79	6.333	1.58	12.333	7.49	18.33	1.97
0.417	0.79	6.417	1.58	12.417	7.49	18.42	1.97
0.500	0.79	6.500	1.58	12.500	7.49	18.50	1.97
0.583	1.18	6.583	1.97	12.583	7.09	18.58	1.58
0.667	1.18	6.667	1.97	12.667	7.09	18.67	1.58
0.750	1.18	6.750	1.97	12.750	7.09	18.75	1.58
0.833	1.18	6.833	1.97	12.833	5.52	18.83	1.97
0.917	1.18	6.917	1.97	12.917	5.52	18.92	1.97
1.000	1.18	7.000	1.97	13.000	5.52	19.00	1.97
1.083	1.18	7.083	2.36	13.083	5.12	19.08	1.58
1.167	1.18	7.167	2.36	13.167	5.12	19.17	1.58
1.250	1.18	7.250	2.36	13.250	5.12	19.25	1.58
1.333	0.79	7.333	1.97	13.333	4.33	19.33	1.97
1.417	0.79	7.417	1.97	13.417	4.33	19.42	1.97
1.500	0.79	7.500	1.97	13.500	4.33	19.50	1.97
1.583	1.18	7.583	2.36	13.583	3.94	19.58	1.58
1.667	1.18	7.667	2.36	13.667	3.94	19.67	1.58
1.750	1.18	7.750	2.36	13.750	3.94	19.75	1.58
1.833	1.18	7.833	2.36	13.833	3.15	19.83	1.18
1.917	1.18	7.917	2.36	13.917	3.15	19.92	1.18
2.000	1.18	8.000	2.36	14.000	3.15	20.00	1.18
2.083	1.58	8.083	2.76	14.083	2.76	20.08	1.18
2.167	1.58	8.167	2.76	14.167	2.76	20.17	1.18
2.250	1.58	8.250	2.76	14.250	2.76	20.25	1.18
2.333	1.18	8.333	2.76	14.333	3.15	20.33	1.18
2.417	1.18	8.417	2.76	14.417	3.15	20.42	1.18
2.500	1.18	8.500	2.76	14.500	3.15	20.50	1.18
2.583	1.18	8.583	2.76	14.583	2.76	20.58	1.18
2.667	1.18	8.667	2.76	14.667	2.76	20.67	1.18
2.750	1.18	8.750	2.76	14.750	2.76	20.75	1.18
2.833	1.18	8.833	3.15	14.833	3.15	20.83	1.18
2.917	1.18	8.917	3.15	14.917	3.15	20.92	1.18
3.000	1.18	9.000	3.15	15.000	3.15	21.00	1.18
3.083	1.58	9.083	3.15	15.083	2.76	21.08	1.18
3.167	1.58	9.167	3.15	15.167	2.76	21.17	1.18
3.250	1.58	9.250	3.15	15.250	2.76	21.25	1.18
3.333	1.18	9.333	3.55	15.333	3.15	21.33	1.18
3.417	1.18	9.417	3.55	15.417	3.15	21.42	1.18

3.500	1.18	9.500	3.55	15.500	3.15	21.50	1.18
3.583	1.18	9.583	3.55	15.583	2.76	21.58	1.18
3.667	1.18	9.667	3.55	15.667	2.76	21.67	1.18
3.750	1.18	9.750	3.55	15.750	2.76	21.75	1.18
3.833	1.58	9.833	4.33	15.833	1.97	21.83	1.18
3.917	1.58	9.917	4.33	15.917	1.97	21.92	1.18
4.000	1.58	10.000	4.33	16.000	1.97	22.00	1.18
4.083	1.58	10.083	4.73	16.083	1.58	22.08	1.18
4.167	1.58	10.167	4.73	16.167	1.58	22.17	1.18
4.250	1.58	10.250	4.73	16.250	1.58	22.25	1.18
4.333	1.58	10.333	5.91	16.333	1.97	22.33	1.18
4.417	1.58	10.417	5.91	16.417	1.97	22.42	1.18
4.500	1.58	10.500	5.91	16.500	1.97	22.50	1.18
4.583	1.58	10.583	6.30	16.583	1.58	22.58	1.18
4.667	1.58	10.667	6.30	16.667	1.58	22.67	1.18
4.750	1.58	10.750	6.30	16.750	1.58	22.75	1.18
4.833	1.58	10.833	9.46	16.833	1.97	22.83	1.18
4.917	1.58	10.917	9.46	16.917	1.97	22.92	1.18
5.000	1.58	11.000	9.46	17.000	1.97	23.00	1.18
5.083	1.58	11.083	9.46	17.083	1.58	23.08	1.18
5.167	1.58	11.167	9.46	17.167	1.58	23.17	1.18
5.250	1.58	11.250	9.46	17.250	1.58	23.25	1.18
5.333	1.58	11.333	29.15	17.333	1.97	23.33	1.18
5.417	1.58	11.417	29.16	17.417	1.97	23.42	1.18
5.500	1.58	11.500	29.16	17.500	1.97	23.50	1.18
5.583	1.58	11.583	120.56	17.583	1.58	23.58	1.18
5.667	1.58	11.667	120.56	17.667	1.58	23.67	1.18
5.750	1.58	11.750	120.56	17.750	1.58	23.75	1.18
5.833	1.58	11.833	14.19	17.833	1.97		
5.917	1.58	11.917	14.18	17.917	1.97		
6.000	1.58	12.000	14.18	18.000	1.97		

Unit Hyd Qpeak (cms)= 0.338

PEAK FLOW (cms)= 0.154 (i)
 TIME TO PEAK (hrs)= 12.250
 RUNOFF VOLUME (mm)= 26.202
 TOTAL RAINFALL (mm)= 98.205
 RUNOFF COEFFICIENT = 0.267

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

RESERVOIR(0601)
 IN= 2---> OUT= 1
 DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.3000	0.0752
0.0320	0.0244	0.7410	0.1015
0.0910	0.0495	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0201)	5.047	0.154	12.25	26.20
OUTFLOW: ID= 1 (0601)	5.047	0.076	13.08	26.17

PEAK FLOW REDUCTION [Qout/Qin](%)= 49.18
 TIME SHIFT OF PEAK FLOW (min)= 50.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0430

ADD HYD (0802)
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0601):	5.05	0.076	13.08	26.17
+ ID2= 2 (0602):	6.35	0.063	13.67	31.24
ID = 3 (0802):	11.39	0.133	13.50	28.99

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0803)
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0001):	77.75	1.207	13.08	23.85
+ ID2= 2 (0802):	11.39	0.133	13.50	28.99
ID = 3 (0803):	89.14	1.320	13.08	24.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

FINISH

Appendix C: Water Quality Calculations



Project: Cedar Run Wakeboard Cable Park

Date: March 2017

File No.: 115232

Designed: DAM

Subject: Storage Volume Calculations

Checked: DJH

STORAGE VOLUME CALCULATIONS (AS PER MOE TABLE 3.2)

POND #3

Catchments:	202	
Total Area (ha):	6.35	
Total Impervious Area:	17%	
Required Pond Active Storage Volume (m ³ /ha	86	*Table 3.2 MOE SWM Manual (extrapolated)
Total Storage Volume Required (m ³):	546.10	
Extended Detention Volume Required (m ³):	254.00	
Permanent Pool Volume Required (m ³):	292.10	
Extended Detention Volume Provided (m ³):	912.00	
Permanent Pool Volume Provided (m ³):	1404.00	

Therefore, the Storage Volume provided is greater than required.



Project: Cedar Run Wakeboard Cable Park	Date: March 2017
File No.: 115232	Designed: DAM
Subject: Erosion Control Calculations	Checked: DJH

SIMPLIFIED APPROACH (AS PER MOE-SWMPPD MANUAL SECTION C.4)

POND #1

No directly connected impervious area. There is no minor orifice providing active storage volume, but this is not required for Pond 1.

POND #3

Catchments:	202	
Total Area (ha):	6.35	
Total Directly Connected Impervious Area:	20%	*20% Total Impervious, 0% Directly Connected
SCS Soil Group	A	
Source Control (m ³):	0	
Required Pond Active Storage Volume (m ³ /ha):	120	*Fig. C1 MOE SWM Manual
Total Storage Volume Required (m ³):	762.00	
Active Storage Volume Provided (m ³):	912	*Active Storage Volume Controlled by Minor Orifice

Therefore, the Storage Volume provided is greater than required.



Project:	Cedar Run Wakeboard Cable Park
File No.:	115232
Date:	Mar-17
Design:	DAM
Check:	DJH
Subject:	SWMF Drawdown Calculation
Condition:	25 mm Storm

DRAWDOWN TIME FOR POND - WATER QUALITY STORM

(Using the falling head orifice equation)

$$t = \frac{0.66 C_2 h^{1.5} + 2 C_3 h^{0.5}}{2.75 A_o}$$

where t = drawdown time in seconds

C ₂ = slope coefficient from the area-depth linear regression	665.38	
C ₃ = intercept from the area-depth linear regression	1320	
A _o = cross-sectional area of orifice (m ²)	0.007854 m ²	100 mm diameter
h = maximum water elevation above the orifice (m)	0.08 m	

t =	35,032.22 seconds
t =	9.73 hours

Water Quality Storage

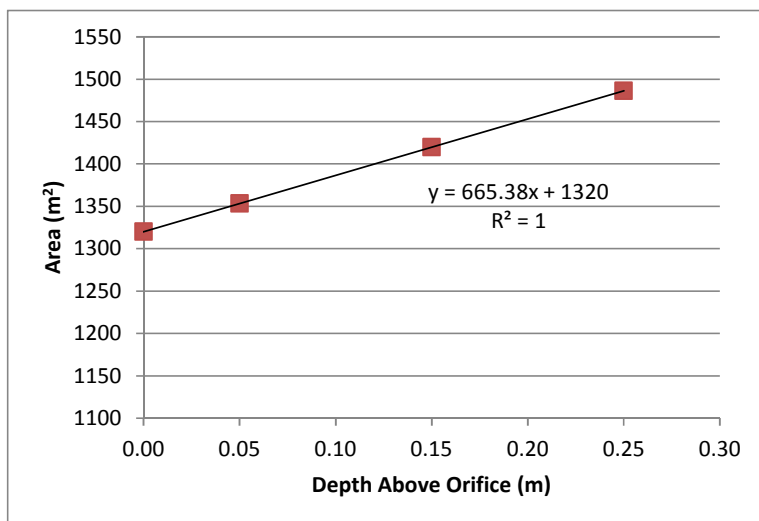
105 m³

Associated Pond Elevation:

194.98 m

Area Depth Relationship

Area (m ²)	Depth Above Orifice Invert (m)
1320	0.00
1353	0.05
1420	0.15
1486	0.25
1553	0.35
1619	0.45





Project:	Cedar Run Wakeboard Cable Park
File No.:	115232
Date:	Mar-17
Design:	DAM
Check:	DJH
Subject:	SWMF Drawdown Calculation
Condition:	Extended Detention Water Level

DRAWDOWN TIME FOR POND - EXTENDED DETENTION

(Using the falling head orifice equation)

$$t = \frac{0.66 C_2 h^{1.5} + 2 C_3 h^{0.5}}{2.75 A_o}$$

where t = drawdown time in seconds

C ₂ = slope coefficient from the area-depth linear regression	665.38	
C ₃ = intercept from the area-depth linear regression	1320	
A _o = cross-sectional area of orifice (m ²)	0.007854 m ²	100 mm diameter
h = maximum water elevation above the orifice (m)	0.60 m	

t =	104,129.42 seconds
t =	28.92 hours

Extended Detention Storage

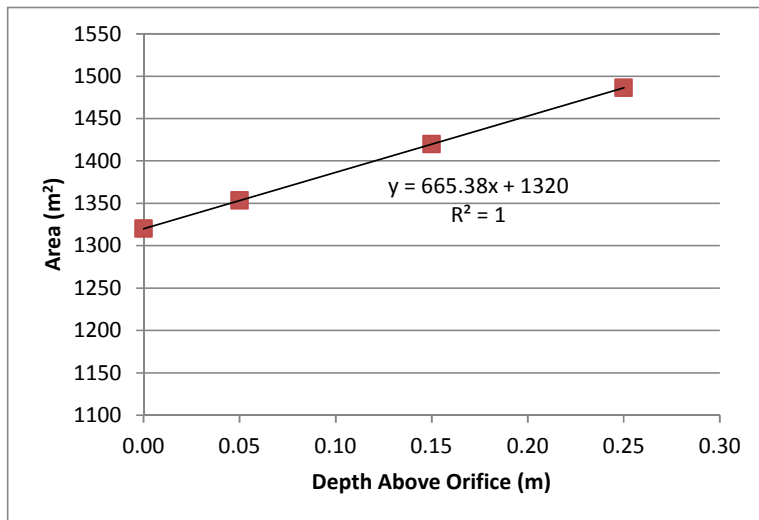
912 m³

Associated Pond Elevation:


195.5 m

Area Depth Relationship

Area (m ²)	Depth Above Orifice Invert (m)
1320	0.00
1353	0.05
1420	0.15
1486	0.25
1553	0.35
1619	0.45



**Appendix D:
Post-Development Hydrology and
Water Quality with Recreational
Pond Overflow**

	Project:	Cedar Run Wakeboard Cable Park
	File No.:	115232
	Date:	Sep-18
	Designed By:	DAM
	Checked By:	DJH
	Subject:	CN, IA and TP Calculations

CEDAR RUN WAKEBOARD CABLE PARK - CURVE NUMBER, INITIAL ABSTRACTION & TIME TO PEAK CALCULATIONS

CONDITIONS

Catchment Pond A Area 3.79 ha

WEIGHTED CN VALUE																									
Soil Series	Soil Series	Hydrologic Soil Group	Soil Texture	Runoff Coefficient	Catchment Soil Characteristics		Forest/Woodland			Pasture/Lawns			Meadows			Cultivated			Impervious			Wetland/Lakes/SWMF			Average CN for Soil Type
					Type	Area	Percent	Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	Area	Percent	
Brs	BRIGHTON	A	Sand	1	1.2646	0.33	0	0	32	0.3035	0.2400	49	0	0	38	0	0	62	0	0	100	0.9611	0.76	50	49.76
Gsl	GRANBY	B	Sand Loam	2	1.2646	0.33	0	0	60	0.3035	0.2400	69	0	0	65	0	0	74	0	0	100	0.9611	0.76	50	54.56
Bl	BONDHEAD	B	Loam or Silt Loam	2	1.264633	0.33	0	0	60	0.3035	0.2400	69	0	0	65	0	0	74	0	0	100	0.9611	0.76	50	54.56
	#N/A	#N/A	#N/A	#N/A	0		0		#N/A	0		#N/A	0		#N/A	0		#N/A	0		#N/A	0	#N/A	0	
	#N/A	#N/A	#N/A	#N/A	0		0		#N/A	0		#N/A	0		#N/A	0		#N/A	0		#N/A	0	#N/A	0	
Totals					3.7939	1	0	0	0	0.91054	0.24	0	0	0	0	0	0	0	0	0	0	2.88336	0.76	50	53.0

Time of Concentration Calculations

For Runoff Coefficients greater than 0.4

Bransby-Williams Formula

Maximum Catchment Elevation m
 Minimum Catchment Elevation m
 Catchment length m
 Catchment Slope
 Catchment Area 3.7939 ha

Time of Concentration (Minutes) 15.00
 Time of Concentration (Hours) 0.25
 Time to Peak (2/3 x Time of Concentration) 0.17

Time to Peak 0.17 hrs

For Runoff Coefficients less than 0.4

Airport Method

Maximum Catchment Elevation 0 m
 Minimum Catchment Elevation 0 m
 Catchment length 0 m
 Catchment Slope
 Catchment Area 3.7939 ha


Time of Concentration (Minutes) 15.00
 Time of Concentration (Hours) 0.25
 Time to Peak (2/3 x Time of Concentration) 0.17

Initial Abstraction 13.36 mm

Woods	10
Meadows	8
Cultivated	7
Lawns	5
Wetlands	16

Runoff Coefficient 0.09

Landuse Type	Soil Series				
	Brs	Gsl	Bl	0	0
Forest/Woodland	1	2	2	#N/A	#N/A
Cultivated	0.08	0.25	0.25	#N/A	#N/A
Pasture/Lawn	0.22	0.35	0.35	#N/A	#N/A
Impervious	0.1	0.28	0.28	#N/A	#N/A
Wetland/Lake/SWMF	0.95	0.95	0.95	#N/A	#N/A
Meadows	0.05	0.05	0.05	#N/A	#N/A
Soil Series Total	0.09	0.27	0.27	#N/A	#N/A
Soil Series Total	0.062	0.1052	0.1052	#N/A	#N/A

	Project:	Cedar Run Wakeboard Cable Park
	File No.:	115232
	Date:	Sep-18
	Designed By:	DAM
	Checked By:	DJH
	Subject:	CN, IA and TP Calculations

CEDAR RUN WAKEBOARD CABLE PARK - CURVE NUMBER, INITIAL ABSTRACTION & TIME TO PEAK CALCULATIONS

CONDITIONS

Catchment Pond B Area 1.33 ha

WEIGHTED CN VALUE																										
Soil Series	Soil Series	Hydrologic Soil Group	Soil Texture	Runoff Coefficient Type	Catchment Soil Characteristics			Forest/Woodland			Pasture/Lawns			Meadows			Cultivated			Impervious			Wetland/Lakes/SWMF			Average CN for Soil Type
					Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	Area	Percent	CN	
Brs	BRIGHTON	A	Sand	1	1.3300	1	0	0	32	0	0.0000	49	0	0	38	0	0	62	0	0	100	1.33	1.00	50	50	
	#N/A	#N/A	#N/A	#N/A	0.0000	0	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	
	#N/A	#N/A	#N/A	#N/A	0	0	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	
	#N/A	#N/A	#N/A	#N/A	0	0	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	
	#N/A	#N/A	#N/A	#N/A	0	0	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	0	#N/A	0	
Totals					1.33	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.33	1	50	50	

Time of Concentration Calculations

For Runoff Coefficients greater than 0.4

Bransby-Williams Formula

Maximum Catchment Elevation m
 Minimum Catchment Elevation m
 Catchment length m
 Catchment Slope m
 Catchment Area 1.33 ha

Time of Concentration (Minutes) 15.00
 Time of Concentration (Hours) 0.25
 Time to Peak (2/3 x Time of Concentration) 0.17

Time to Peak 0.17 hrs

For Runoff Coefficients less than 0.4

Airport Method

Maximum Catchment Elevation 0 m
 Minimum Catchment Elevation 0 m
 Catchment length m
 Catchment Slope
 Catchment Area 1.33 ha

Time of Concentration (Minutes) 15.00
 Time of Concentration (Hours) 0.25
 Time to Peak (2/3 x Time of Concentration) 0.17

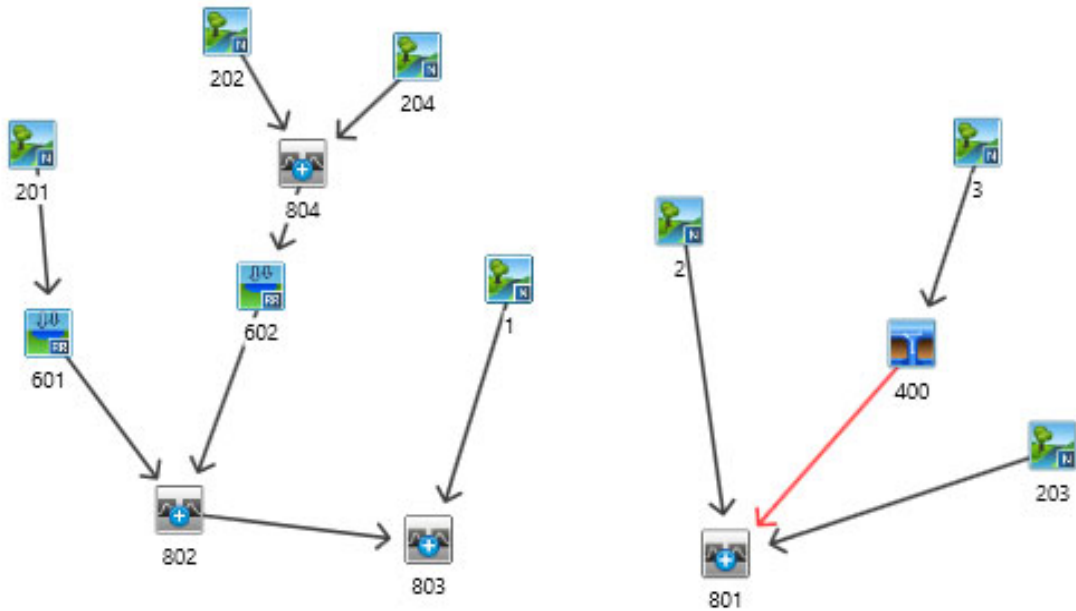
Initial Abstraction 16 mm

Woods	10
Meadows	8
Cultivated	7
Lawns	5
Wetlands	16

Runoff Coefficient 0.05

Landuse Type	Soil Series				
	Brs	0	0	0	0
Forest/Woodland	0.08	#N/A	#N/A	#N/A	#N/A
Cultivated	0.22	#N/A	#N/A	#N/A	#N/A
Pasture/Lawn	0.1	#N/A	#N/A	#N/A	#N/A
Impervious	0.95	#N/A	#N/A	#N/A	#N/A
Wetland/Lake/SWMF	0.05	#N/A	#N/A	#N/A	#N/A
Meadows	0.09	#N/A	#N/A	#N/A	#N/A
Soil Series Total	0.05	#N/A	#N/A	#N/A	#N/A

PROJECT	Cedar Run Wakeboard Cable Park	FILE	115232
		DATE	April 2020
SUBJECT	Post Development - Recreational Pond Overflow	NAME	ARO
		PAGE	1 OF 1



NASHYD



ROUTE PIPE



DUHYD



STANDHYD



ROUTE CHANNEL



DIVERT HYD



ADDHYD



ROUTE RESERVOIR

```

V V I SSSS U U A L
V V I SS U U A A L
V V I SS U U A A A A L
V V I SS U U A A L
W I SSSS UUUU A A LLLLL

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000 TTTT TTTT H H Y Y M M 000 TM
O O T T H H Y Y M M O O
O O T T H H Y Y M M O O
000 T T H H Y Y M M 000

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***** DETAILED OUTPUT *****

Input filename: C:\Program Files (x86)\VH Suite 3.0\VO2\voin.dat
 Output filename: C:\Users\dmarshall\AppData\Local\Temp\07988835-6edc-40f2-b5aa-029467b1253a\scenario.out
 Summary filename: C:\Users\dmarshall\AppData\Local\Temp\07988835-6edc-40f2-b5aa-029467b1253a\scenario.sum

DATE: 09/17/2018 TIME: 11:10:21

USER:

COMMENTS: _____

 ** SIMULATION NUMBER: 1 ** 25 mm Storm

READ STORM File: C:\Users\dmarshall\AppData\Local\Temp\07988835-6edc-40f2-b5aa-029467b1253a\0397bbd0
 Ptotal= 24.97 mm Comments: OWEN SOUND 25 mm (from a 2 year-4hr stor

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.10	1.29	1.10	2.81	2.10	13.05	3.10	2.04
0.20	1.36	1.20	3.22	2.20	8.44	3.20	1.89
0.30	1.44	1.30	3.77	2.30	6.21	3.30	1.76
0.40	1.53	1.40	4.55	2.40	4.91	3.40	1.65
0.50	1.63	1.50	5.77	2.50	4.06	3.50	1.55
0.60	1.75	1.60	7.86	2.60	3.47	3.60	1.46
0.70	1.89	1.70	12.27	2.70	3.03	3.70	1.39
0.80	2.06	1.80	26.17	2.80	2.70	3.80	1.32
0.90	2.26	1.90	72.58	2.90	2.43	3.90	1.26
1.00	2.50	2.00	26.96	3.00	2.22	4.00	1.20

CALIB NASHYD (0002) Area (ha)= 10.93 Curve Number (CN)= 68.5
 ID= 1 DT= 5.0 min Ia (mm)= 4.40 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.60

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	1.29	1.083	2.81	2.083	13.05	3.08	2.04
0.167	1.35	1.167	3.14	2.167	9.36	3.17	1.92
0.250	1.41	1.250	3.55	2.250	7.10	3.25	1.81
0.333	1.48	1.333	4.08	2.333	5.69	3.33	1.72
0.417	1.55	1.417	4.79	2.417	4.74	3.42	1.63
0.500	1.63	1.500	5.77	2.500	4.06	3.50	1.55
0.583	1.75	1.583	7.86	2.583	3.47	3.58	1.46
0.667	1.86	1.667	11.39	2.667	3.12	3.67	1.40
0.750	1.99	1.750	20.61	2.750	2.83	3.75	1.35
0.833	2.14	1.833	44.73	2.833	2.59	3.83	1.30
0.917	2.31	1.917	63.46	2.917	2.39	3.92	1.25

1.000 2.50 | 2.000 26.96 | 3.000 2.22 | 4.00 1.20

Unit Hyd Qpeak (cms)= 0.696
 PEAK FLOW (cms)= 0.057 (i)
 TIME TO PEAK (hrs)= 2.667
 RUNOFF VOLUME (mm)= 3.080
 TOTAL RAINFALL (mm)= 24.971
 RUNOFF COEFFICIENT = 0.123

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

CALIB NASHYD (0003) Area (ha)= 136.00 Curve Number (CN)= 52.1
 ID= 1 DT= 5.0 min Ia (mm)= 7.20 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 1.94

Unit Hyd Qpeak (cms)= 2.678
 PEAK FLOW (cms)= 0.120 (i)
 TIME TO PEAK (hrs)= 4.417
 RUNOFF VOLUME (mm)= 1.257
 TOTAL RAINFALL (mm)= 24.971
 RUNOFF COEFFICIENT = 0.050

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

DUHYD (0400) Inlet Cap.=0.713 #of Inlets= 1 Total(cms)= 0.7
 AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)
 TOTAL HYD.(ID= 1): 136.00 0.12 4.42 1.26
 MAJOR SYS.(ID= 2): 0.00 0.00 0.00 0.00
 MINOR SYS.(ID= 3): 136.00 0.12 4.42 1.26

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0203) Area (ha)= 3.79 Curve Number (CN)= 53.0
 ID= 1 DT= 5.0 min Ia (mm)= 16.00 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.17

Unit Hyd Qpeak (cms)= 0.852
 PEAK FLOW (cms)= 0.003 (i)
 TIME TO PEAK (hrs)= 2.333
 RUNOFF VOLUME (mm)= 0.342
 TOTAL RAINFALL (mm)= 24.971
 RUNOFF COEFFICIENT = 0.014

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

ADD HYD (0801) 1 + 2 = 3
 AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)
 ID1= 1 (0002): 10.93 0.057 2.67 3.08
 + ID2= 2 (0203): 3.79 0.003 2.33 0.34
 ID = 3 (0801): 14.72 0.060 2.58 2.38

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0801) 3 + 2 = 1
 AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)
 ID1= 3 (0801): 14.72 0.060 2.58 2.38
 + ID2= 2 (0400): 136.00 0.120 4.42 1.26
 ID = 1 (0801): 150.72 0.136 4.00 1.37

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

CALIB
NASHYD (0001) Area (ha)= 77.75 Curve Number (CN)= 49.6
ID= 1 DT= 5.0 min Ia (mm)= 6.91 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.24
  
```

```

Unit Hyd Qpeak (cms)= 2.395
PEAK FLOW (cms)= 0.089 (i)
TIME TO PEAK (hrs)= 3.583
RUNOFF VOLUME (mm)= 1.181
TOTAL RAINFALL (mm)= 24.971
RUNOFF COEFFICIENT = 0.047
  
```

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

```

CALIB
NASHYD (0201) Area (ha)= 5.05 Curve Number (CN)= 51.4
ID= 1 DT= 5.0 min Ia (mm)= 4.70 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.57
  
```

```

Unit Hyd Qpeak (cms)= 0.338
PEAK FLOW (cms)= 0.014 (i)
TIME TO PEAK (hrs)= 2.583
RUNOFF VOLUME (mm)= 1.577
TOTAL RAINFALL (mm)= 24.971
RUNOFF COEFFICIENT = 0.063
  
```

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

```

RESERVOIR (0601)
IN= 2--> OUT= 1
DT= 5.0 min
  
```

	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.3000	0.0752
	0.0320	0.0244	0.7410	0.1015
	0.0910	0.0495	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0201)	5.047	0.014	2.58	1.58
OUTFLOW: ID= 1 (0601)	5.047	0.006	3.75	1.54

```

PEAK FLOW REDUCTION [Qout/Qin](%)= 40.00
TIME SHIFT OF PEAK FLOW (min)= 70.00
MAXIMUM STORAGE USED (ha.m.)= 0.0042
  
```

```

CALIB
NASHYD (0202) Area (ha)= 6.35 Curve Number (CN)= 57.9
ID= 1 DT= 5.0 min Ia (mm)= 4.70 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.55
  
```

```

Unit Hyd Qpeak (cms)= 0.441
PEAK FLOW (cms)= 0.023 (i)
TIME TO PEAK (hrs)= 2.583
RUNOFF VOLUME (mm)= 2.005
TOTAL RAINFALL (mm)= 24.971
RUNOFF COEFFICIENT = 0.080
  
```

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

```

CALIB
NASHYD (0204) Area (ha)= 1.33 Curve Number (CN)= 50.0
ID= 1 DT= 5.0 min Ia (mm)= 16.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.17
  
```

```

Unit Hyd Qpeak (cms)= 0.299
PEAK FLOW (cms)= 0.001 (i)
TIME TO PEAK (hrs)= 2.333
RUNOFF VOLUME (mm)= 0.305
  
```

TOTAL RAINFALL (mm)= 24.971
 RUNOFF COEFFICIENT = 0.012

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

```

ADD HYD (0804)
1 + 2 = 3
  
```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0202):	6.35	0.023	2.58	2.00
+ ID2= 2 (0204):	1.33	0.001	2.33	0.30
ID = 3 (0804):	7.68	0.024	2.58	1.71

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

RESERVOIR (0602)
IN= 2--> OUT= 1
DT= 5.0 min
  
```

	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.1306	0.1176
	0.0014	0.0066	0.3534	0.1362
	0.0069	0.0205	0.6046	0.1554
	0.0098	0.0350	0.9742	0.1752
	0.0120	0.0502	1.4665	0.1957
	0.0139	0.0661	2.0882	0.2169
	0.0155	0.0826	2.4500	0.2278
	0.0394	0.0998	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0804)	7.677	0.024	2.58	1.71
OUTFLOW: ID= 1 (0602)	7.677	0.003	4.58	1.55

```

PEAK FLOW REDUCTION [Qout/Qin](%)= 13.09
TIME SHIFT OF PEAK FLOW (min)=120.00
MAXIMUM STORAGE USED (ha.m.)= 0.0109
  
```

```

ADD HYD (0802)
1 + 2 = 3
  
```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0601):	5.05	0.006	3.75	1.54
+ ID2= 2 (0602):	7.68	0.003	4.58	1.55
ID = 3 (0802):	12.72	0.008	4.08	1.55

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

ADD HYD (0803)
1 + 2 = 3
  
```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0001):	77.75	0.089	3.58	1.18
+ ID2= 2 (0802):	12.72	0.008	4.08	1.55
ID = 3 (0803):	90.47	0.098	3.58	1.23

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 ** SIMULATION NUMBER: 2 **

2-Year Chicago Storm

```

READ STORM
Filename: c:\Users\dmrshall\AppData\Local\Temp\07988835-6edc-40f2-b5aa-029467b1253a\64c43018
Ptotal= 33.75 mm
Comments: OWEN SOUND 2 YEAR 4 HOUR DURATION CHICAGO
  
```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.10	1.75	1.10	3.80	2.10	17.64	3.10	2.75
0.20	1.84	1.20	4.35	2.20	11.41	3.20	2.55

0.30	1.95	1.30	5.09	2.30	8.39	3.30	2.38
0.40	2.07	1.40	6.16	2.40	6.63	3.40	2.23
0.50	2.21	1.50	7.80	2.50	5.49	3.50	2.09
0.60	2.37	1.60	10.63	2.60	4.69	3.60	1.98
0.70	2.56	1.70	16.59	2.70	4.10	3.70	1.88
0.80	2.78	1.80	35.38	2.80	3.65	3.80	1.78
0.90	3.05	1.90	98.09	2.90	3.29	3.90	1.70
1.00	3.38	2.00	36.45	3.00	2.99	4.00	1.63

CALIB NASHYD (0002) Area (ha)= 10.93 Curve Number (CN)= 68.5
 ID= 1 DT= 5.0 min Ia (mm)= 4.40 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.60

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	1.75	1.083	3.80	2.083	17.64	3.08	2.75
0.167	1.82	1.167	4.24	2.167	12.66	3.17	2.59
0.250	1.91	1.250	4.79	2.250	9.60	3.25	2.45
0.333	2.00	1.333	5.52	2.333	7.69	3.33	2.32
0.417	2.10	1.417	6.49	2.417	6.40	3.42	2.20
0.500	2.21	1.500	7.80	2.500	5.49	3.50	2.09
0.583	2.37	1.583	10.63	2.583	4.69	3.58	1.98
0.667	2.52	1.667	15.40	2.667	4.22	3.67	1.90
0.750	2.69	1.750	27.86	2.750	3.83	3.75	1.82
0.833	2.89	1.833	60.46	2.833	3.51	3.83	1.75
0.917	3.12	1.917	85.76	2.917	3.23	3.92	1.69
1.000	3.38	2.000	36.45	3.000	2.99	4.00	1.63

Unit Hyd Qpeak (cms)= 0.696

PEAK FLOW (cms)= 0.112 (i)
 TIME TO PEAK (hrs)= 2.583
 RUNOFF VOLUME (mm)= 5.896
 TOTAL RAINFALL (mm)= 33.755
 RUNOFF COEFFICIENT = 0.175

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

CALIB NASHYD (0003) Area (ha)= 136.00 Curve Number (CN)= 52.1
 ID= 1 DT= 5.0 min Ia (mm)= 7.20 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 1.94

Unit Hyd Qpeak (cms)= 2.678

PEAK FLOW (cms)= 0.259 (i)
 TIME TO PEAK (hrs)= 4.333
 RUNOFF VOLUME (mm)= 2.711
 TOTAL RAINFALL (mm)= 33.755
 RUNOFF COEFFICIENT = 0.080

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

DUHYD (0400) Inlet Cap.=0.713 #of Inlets= 1 Total(cms)= 0.7

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
136.00	0.26	4.33	2.71

MAJOR SYS.(ID= 2): 0.00 0.00 0.00 0.00
 MINOR SYS.(ID= 3): 136.00 0.26 4.33 2.71

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0203) Area (ha)= 3.79 Curve Number (CN)= 53.0
 ID= 1 DT= 5.0 min Ia (mm)= 16.00 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.17

Unit Hyd Qpeak (cms)= 0.852

PEAK FLOW (cms)= 0.014 (i)
 TIME TO PEAK (hrs)= 2.167
 RUNOFF VOLUME (mm)= 1.293
 TOTAL RAINFALL (mm)= 33.755
 RUNOFF COEFFICIENT = 0.038

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

ADD HYD (0801) 1 + 2 = 3

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0002):	10.93	0.112	2.58	5.90
+ ID2= 2 (0203):	3.79	0.014	2.17	1.29
ID= 3 (0801):	14.72	0.120	2.58	4.71

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0801) 3 + 2 = 1

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0801):	14.72	0.120	2.58	4.71
+ ID2= 2 (0400):	136.00	0.259	4.33	2.71
ID= 1 (0801):	150.72	0.291	4.00	2.91

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0001) Area (ha)= 77.75 Curve Number (CN)= 49.6
 ID= 1 DT= 5.0 min Ia (mm)= 6.91 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 1.24

Unit Hyd Qpeak (cms)= 2.395

PEAK FLOW (cms)= 0.194 (i)
 TIME TO PEAK (hrs)= 3.500
 RUNOFF VOLUME (mm)= 2.529
 TOTAL RAINFALL (mm)= 33.755
 RUNOFF COEFFICIENT = 0.075

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

CALIB NASHYD (0201) Area (ha)= 5.05 Curve Number (CN)= 51.4
 ID= 1 DT= 5.0 min Ia (mm)= 4.70 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.57

Unit Hyd Qpeak (cms)= 0.338

PEAK FLOW (cms)= 0.028 (i)
 TIME TO PEAK (hrs)= 2.583
 RUNOFF VOLUME (mm)= 3.135
 TOTAL RAINFALL (mm)= 33.755
 RUNOFF COEFFICIENT = 0.093

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

RESERVOIR (0601) IN= 2--> OUT= 1 DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.3000	0.0752
0.0320	0.0244	0.7410	0.1015
0.0910	0.0495	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0201)	5.047	0.028	2.58	3.14
OUTFLOW: ID= 1 (0601)	5.047	0.011	3.75	3.10

PEAK FLOW REDUCTION [Qout/Qin](%)= 39.46
 TIME SHIFT OF PEAK FLOW (min)= 70.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0085

CALIB (0202) | Area (ha)= 6.35 | Curve Number (CN)= 57.9
 NASHYD | Ia (mm)= 4.70 | # of Linear Res. (N)= 3.00
 ID= 1 DT= 5.0 min | U.H. Tp(hrs)= 0.55

Unit Hyd Qpeak (cms)= 0.441

PEAK FLOW (cms)= 0.046 (i)
 TIME TO PEAK (hrs)= 2.583
 RUNOFF VOLUME (mm)= 3.949
 TOTAL RAINFALL (mm)= 33.755
 RUNOFF COEFFICIENT = 0.117

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

CALIB (0204) | Area (ha)= 1.33 | Curve Number (CN)= 50.0
 NASHYD | Ia (mm)= 16.00 | # of Linear Res. (N)= 3.00
 ID= 1 DT= 5.0 min | U.H. Tp(hrs)= 0.17

Unit Hyd Qpeak (cms)= 0.299

PEAK FLOW (cms)= 0.004 (i)
 TIME TO PEAK (hrs)= 2.167
 RUNOFF VOLUME (mm)= 1.156
 TOTAL RAINFALL (mm)= 33.755
 RUNOFF COEFFICIENT = 0.034

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

ADD HYD (0804) | AREA | QPEAK | TPEAK | R.V.
 1 + 2 = 3 | (ha) | (cms) | (hrs) | (mm)
 ID1= 1 (0202): | 6.35 | 0.046 | 2.58 | 3.95
 + ID2= 2 (0204): | 1.33 | 0.004 | 2.17 | 1.16
 ID = 3 (0804): | 7.68 | 0.048 | 2.50 | 3.47

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0602)
 IN= 2---> OUT= 1
 DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.1306	0.1176
0.0014	0.0066	0.3534	0.1362
0.0069	0.0205	0.6046	0.1554
0.0098	0.0350	0.9742	0.1752
0.0120	0.0502	1.4665	0.1957
0.0139	0.0661	2.0882	0.2169
0.0155	0.0826	2.4500	0.2278
0.0394	0.0998	0.0000	0.0000

INFLOW : ID= 2 (0804) | AREA (ha)= 7.677 | QPEAK (cms)= 0.048 | TPEAK (hrs)= 2.50 | R.V. (mm)= 3.47
 OUTFLOW: ID= 1 (0602) | AREA (ha)= 7.677 | QPEAK (cms)= 0.007 | TPEAK (hrs)= 4.50 | R.V. (mm)= 3.31

PEAK FLOW REDUCTION [Qout/Qin](%)= 14.58
 TIME SHIFT OF PEAK FLOW (min)=120.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0213

ADD HYD (0802) | AREA | QPEAK | TPEAK | R.V.
 1 + 2 = 3 | (ha) | (cms) | (hrs) | (mm)
 ID1= 1 (0601): | 5.05 | 0.011 | 3.75 | 3.10
 + ID2= 2 (0602): | 7.68 | 0.007 | 4.50 | 3.31

ID = 3 (0802): | 12.72 | 0.018 | 3.92 | 3.23

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0803) | AREA | QPEAK | TPEAK | R.V.
 1 + 2 = 3 | (ha) | (cms) | (hrs) | (mm)
 ID1= 1 (0001): | 77.75 | 0.194 | 3.50 | 2.53
 + ID2= 2 (0802): | 12.72 | 0.018 | 3.92 | 3.23
 ID = 3 (0803): | 90.47 | 0.211 | 3.50 | 2.63

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 ** SIMULATION NUMBER: 3 ** 5-Year Chicago Storm

READ STORM | Filename: C:\Users\dmarshall\AppData\Local\Temp\07988835-6ede-40f2-b5aa-029467b1253a\34ba9feb
 Ptotal= 44.07 mm | Comments: OWEN SOUND 5 YEAR 4 HOUR DURATION CHICAG

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.10	2.16	1.10	4.86	2.10	23.63	3.10	3.47
0.20	2.29	1.20	5.59	2.20	15.14	3.20	3.21
0.30	2.42	1.30	6.58	2.30	11.03	3.30	2.98
0.40	2.58	1.40	8.01	2.40	8.65	3.40	2.78
0.50	2.76	1.50	10.23	2.50	7.11	3.50	2.61
0.60	2.97	1.60	14.08	2.60	6.04	3.60	2.46
0.70	3.22	1.70	22.20	2.70	5.25	3.70	2.33
0.80	3.51	1.80	47.44	2.80	4.65	3.80	2.21
0.90	3.86	1.90	127.12	2.90	4.17	3.90	2.11
1.00	4.30	2.00	48.87	3.00	3.79	4.00	2.01

CALIB (0002) | Area (ha)= 10.93 | Curve Number (CN)= 68.5
 NASHYD | Ia (mm)= 4.40 | # of Linear Res. (N)= 3.00
 ID= 1 DT= 5.0 min | U.H. Tp(hrs)= 0.60

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	2.16	1.083	4.86	2.083	23.63	3.08	3.47
0.167	2.26	1.167	5.44	2.167	16.84	3.17	3.26
0.250	2.37	1.250	6.18	2.250	12.67	3.25	3.07
0.333	2.48	1.333	7.15	2.333	10.08	3.33	2.90
0.417	2.62	1.417	8.45	2.417	8.34	3.42	2.75
0.500	2.76	1.500	10.23	2.500	7.11	3.50	2.61
0.583	2.97	1.583	14.08	2.583	6.04	3.58	2.46
0.667	3.17	1.667	20.58	2.667	5.41	3.67	2.36
0.750	3.39	1.750	37.34	2.750	4.89	3.75	2.26
0.833	3.65	1.833	79.31	2.833	4.46	3.83	2.17
0.917	3.95	1.917	111.47	2.917	4.09	3.92	2.09
1.000	4.30	2.000	48.87	3.000	3.79	4.00	2.01

Unit Hyd Qpeak (cms)= 0.696

PEAK FLOW (cms)= 0.195 (i)
 TIME TO PEAK (hrs)= 2.583
 RUNOFF VOLUME (mm)= 10.056
 TOTAL RAINFALL (mm)= 44.068
 RUNOFF COEFFICIENT = 0.228

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

CALIB (0003) | Area (ha)= 136.00 | Curve Number (CN)= 52.1
 NASHYD

|ID= 1 DT= 5.0 min | Ia (mm)= 7.20 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 1.94

Unit Hyd Qpeak (cms)= 2.678

PEAK FLOW (cms)= 0.482 (i)
 TIME TO PEAK (hrs)= 4.250
 RUNOFF VOLUME (mm)= 5.027
 TOTAL RAINFALL (mm)= 44.068
 RUNOFF COEFFICIENT = 0.114

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

DUHYD (0400)
 Inlet Cap.=0.713
 #of Inlets= 1
 Total(cms)= 0.7

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	136.00	0.48	4.25	5.03
MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00
MINOR SYS.(ID= 3):	136.00	0.48	4.25	5.03

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0203) | Area (ha)= 3.79 Curve Number (CN)= 53.0
 ID= 1 DT= 5.0 min | Ia (mm)= 16.00 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.17

Unit Hyd Qpeak (cms)= 0.852

PEAK FLOW (cms)= 0.040 (i)
 TIME TO PEAK (hrs)= 2.083
 RUNOFF VOLUME (mm)= 3.099
 TOTAL RAINFALL (mm)= 44.068
 RUNOFF COEFFICIENT = 0.070

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

ADD HYD (0801)
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0002):	10.93	0.195	2.58	10.06
+ ID2= 2 (0203):	3.79	0.040	2.08	3.10
ID = 3 (0801):	14.72	0.212	2.50	8.26

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0801)
 3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0801):	14.72	0.212	2.50	8.26
+ ID2= 2 (0400):	136.00	0.482	4.25	5.03
ID = 1 (0801):	150.72	0.537	4.00	5.34

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0001) | Area (ha)= 77.75 Curve Number (CN)= 49.6
 ID= 1 DT= 5.0 min | Ia (mm)= 6.91 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 1.24

Unit Hyd Qpeak (cms)= 2.395

PEAK FLOW (cms)= 0.364 (i)
 TIME TO PEAK (hrs)= 3.417
 RUNOFF VOLUME (mm)= 4.676
 TOTAL RAINFALL (mm)= 44.068
 RUNOFF COEFFICIENT = 0.106

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

CALIB NASHYD (0201) | Area (ha)= 5.05 Curve Number (CN)= 51.4
 ID= 1 DT= 5.0 min | Ia (mm)= 4.70 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.57

Unit Hyd Qpeak (cms)= 0.338

PEAK FLOW (cms)= 0.051 (i)
 TIME TO PEAK (hrs)= 2.583
 RUNOFF VOLUME (mm)= 5.544
 TOTAL RAINFALL (mm)= 44.068
 RUNOFF COEFFICIENT = 0.126

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

RESERVOIR (0601)
 IN= 2---> OUT= 1
 DT= 5.0 min

	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.3000	0.0752
	0.0320	0.0244	0.7410	0.1015
	0.0910	0.0495	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0201)	5.047	0.051	2.58	5.54
OUTFLOW: ID= 1 (0601)	5.047	0.020	3.67	5.51

PEAK FLOW REDUCTION [Qout/Qin] (%) = 38.98
 TIME SHIFT OF PEAK FLOW (min) = 65.00
 MAXIMUM STORAGE USED (ha.m.) = 0.0151

CALIB NASHYD (0202) | Area (ha)= 6.35 Curve Number (CN)= 57.9
 ID= 1 DT= 5.0 min | Ia (mm)= 4.70 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.55

Unit Hyd Qpeak (cms)= 0.441

PEAK FLOW (cms)= 0.082 (i)
 TIME TO PEAK (hrs)= 2.500
 RUNOFF VOLUME (mm)= 6.917
 TOTAL RAINFALL (mm)= 44.068
 RUNOFF COEFFICIENT = 0.157

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

CALIB NASHYD (0204) | Area (ha)= 1.33 Curve Number (CN)= 50.0
 ID= 1 DT= 5.0 min | Ia (mm)= 16.00 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.17

Unit Hyd Qpeak (cms)= 0.299

PEAK FLOW (cms)= 0.013 (i)
 TIME TO PEAK (hrs)= 2.083
 RUNOFF VOLUME (mm)= 2.783
 TOTAL RAINFALL (mm)= 44.068
 RUNOFF COEFFICIENT = 0.063

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

ADD HYD (0804)
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0202):	6.35	0.082	2.50	6.92
+ ID2= 2 (0204):	1.33	0.013	2.08	2.78
ID = 3 (0804):	7.68	0.088	2.50	6.20

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0602)
IN= 2--> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.1306	0.1176
0.0014	0.0066	0.3534	0.1362
0.0069	0.0205	0.6046	0.1554
0.0098	0.0350	0.9742	0.1752
0.0120	0.0502	1.4665	0.1957
0.0139	0.0661	2.0882	0.2169
0.0155	0.0826	2.4500	0.2278
0.0394	0.0998	0.0000	0.0000

INFLOW : ID= 2 (0804) 7.677 0.088 2.50 6.20
OUTFLOW: ID= 1 (0602) 7.677 0.010 4.58 6.05

PEAK FLOW REDUCTION [Qout/Qin](%)= 11.75
TIME SHIFT OF PEAK FLOW (min)=125.00
MAXIMUM STORAGE USED (ha.m.)= 0.0390

ADD HYD (0802)
1 + 2 = 3

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0601):	5.05	0.020	3.67	5.51
+ ID2= 2 (0602):	7.68	0.010	4.58	6.05
=====				
ID = 3 (0802):	12.72	0.030	3.75	5.83

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0803)
1 + 2 = 3

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0001):	77.75	0.364	3.42	4.68
+ ID2= 2 (0802):	12.72	0.030	3.75	5.83
=====				
ID = 3 (0803):	90.47	0.393	3.42	4.84

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

** SIMULATION NUMBER: 4 ** 10-Year Chicago Storm

READ STORM
Ptotal= 50.59 mm

Filename: C:\Users\dmarshall\AppData\Local\Temp\07988835-6edc-40f2-b5aa-029467b1253a\3a95d5c4
Comments: OWEN SOUND 10 YEAR 4 HOUR DURATION CHICA

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.10	2.37	1.10	5.44	2.10	27.54	3.10	3.85
0.20	2.50	1.20	6.28	2.20	17.50	3.20	3.54
0.30	2.66	1.30	7.44	2.30	12.66	3.30	3.29
0.40	2.84	1.40	9.10	2.40	9.86	3.40	3.06
0.50	3.04	1.50	11.71	2.50	8.06	3.50	2.87
0.60	3.28	1.60	16.26	2.60	6.81	3.60	2.70
0.70	3.56	1.70	25.85	2.70	5.89	3.70	2.55
0.80	3.89	1.80	55.53	2.80	5.20	3.80	2.42
0.90	4.29	1.90	146.69	2.90	4.65	3.90	2.30
1.00	4.80	2.00	57.21	3.00	4.21	4.00	2.20

CALIB NASHYD (0002)
ID= 1 DT= 5.0 min

Area (ha)= 10.93 Curve Number (CN)= 68.5
Ia (mm)= 4.40 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.60

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	2.37	1.083	5.44	2.083	27.54	3.08	3.85
0.167	2.47	1.167	6.11	2.167	19.51	3.17	3.60
0.250	2.60	1.250	6.98	2.250	14.60	3.25	3.39
0.333	2.73	1.333	8.10	2.333	11.54	3.33	3.20
0.417	2.88	1.417	9.62	2.417	9.50	3.42	3.02
0.500	3.04	1.500	11.71	2.500	8.06	3.50	2.87
0.583	3.28	1.583	16.26	2.583	6.81	3.58	2.70
0.667	3.50	1.667	23.93	2.667	6.07	3.67	2.58
0.750	3.76	1.750	43.66	2.750	5.48	3.75	2.47
0.833	4.05	1.833	91.99	2.833	4.98	3.83	2.37
0.917	4.39	1.917	128.79	2.917	4.56	3.92	2.28
1.000	4.80	2.000	57.21	3.000	4.21	4.00	2.20

Unit Hyd Qpeak (cms)= 0.696

PEAK FLOW (cms)= 0.258 (i)
TIME TO PEAK (hrs)= 2.583
RUNOFF VOLUME (mm)= 13.089
TOTAL RAINFALL (mm)= 50.590
RUNOFF COEFFICIENT = 0.259

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

CALIB NASHYD (0003)
ID= 1 DT= 5.0 min

Area (ha)= 136.00 Curve Number (CN)= 52.1
Ia (mm)= 7.20 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.94

Unit Hyd Qpeak (cms)= 2.678

PEAK FLOW (cms)= 0.654 (i)
TIME TO PEAK (hrs)= 4.250
RUNOFF VOLUME (mm)= 6.799
TOTAL RAINFALL (mm)= 50.590
RUNOFF COEFFICIENT = 0.134

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

DUHYD (0400)
Inlet Cap.=0.713
#of Inlets= 1
Total(cms)= 0.7

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	136.00	0.65	4.25	6.80
MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00
MINOR SYS.(ID= 3):	136.00	0.65	4.25	6.80

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0203)
ID= 1 DT= 5.0 min

Area (ha)= 3.79 Curve Number (CN)= 53.0
Ia (mm)= 16.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.17

Unit Hyd Qpeak (cms)= 0.852

PEAK FLOW (cms)= 0.064 (i)
TIME TO PEAK (hrs)= 2.083
RUNOFF VOLUME (mm)= 4.588
TOTAL RAINFALL (mm)= 50.590
RUNOFF COEFFICIENT = 0.091

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

ADD HYD (0801)
1 + 2 = 3

AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)

ID1= 1 (0002): 10.93 0.258 2.58 13.09
 + ID2= 2 (0203): 3.79 0.064 2.08 4.59
 =====
 ID = 3 (0801): 14.72 0.283 2.50 10.90

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 | ADD HYD (0801) |
3 + 2 = 1
 AREA QPEAK TPEAK R.V.
 (ha) (cms) (hrs) (mm)
 ID1= 3 (0801): 14.72 0.283 2.50 10.90
 + ID2= 2 (0400): 136.00 0.654 4.25 6.80
 =====
 ID = 1 (0801): 150.72 0.724 3.92 7.20

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 | CALIB NASHYD (0001) |
ID= 1 DT= 5.0 min
 Area (ha)= 77.75 Curve Number (CN)= 49.6
 Ia (mm)= 6.91 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 1.24

Unit Hyd Qpeak (cms)= 2.395
 PEAK FLOW (cms)= 0.496 (i)
 TIME TO PEAK (hrs)= 3.417
 RUNOFF VOLUME (mm)= 6.322
 TOTAL RAINFALL (mm)= 50.590
 RUNOFF COEFFICIENT = 0.125

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

 | CALIB NASHYD (0201) |
ID= 1 DT= 5.0 min
 Area (ha)= 5.05 Curve Number (CN)= 51.4
 Ia (mm)= 4.70 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.57

Unit Hyd Qpeak (cms)= 0.338
 PEAK FLOW (cms)= 0.068 (i)
 TIME TO PEAK (hrs)= 2.583
 RUNOFF VOLUME (mm)= 7.361
 TOTAL RAINFALL (mm)= 50.590
 RUNOFF COEFFICIENT = 0.146

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

 | RESERVOIR (0601) |
 | IN= 2---> OUT= 1 |
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.3000	0.0752
0.0320	0.0244	0.7410	0.1015
0.0910	0.0495	0.0000	0.0000

INFLOW : ID= 2 (0201)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	5.047	0.068	2.58	7.36
OUTFLOW: ID= 1 (0601)	5.047	0.026	3.67	7.32

PEAK FLOW REDUCTION [Qout/Qin](%)= 38.67
 TIME SHIFT OF PEAK FLOW (min)= 65.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0202

 | CALIB NASHYD (0202) |
ID= 1 DT= 5.0 min
 Area (ha)= 6.35 Curve Number (CN)= 57.9
 Ia (mm)= 4.70 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.55

Unit Hyd Qpeak (cms)= 0.441
 PEAK FLOW (cms)= 0.110 (i)
 TIME TO PEAK (hrs)= 2.500

RUNOFF VOLUME (mm)= 9.133
 TOTAL RAINFALL (mm)= 50.590
 RUNOFF COEFFICIENT = 0.181

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

 | CALIB NASHYD (0204) |
ID= 1 DT= 5.0 min
 Area (ha)= 1.33 Curve Number (CN)= 50.0
 Ia (mm)= 16.00 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.17

Unit Hyd Qpeak (cms)= 0.299
 PEAK FLOW (cms)= 0.020 (i)
 TIME TO PEAK (hrs)= 2.083
 RUNOFF VOLUME (mm)= 4.131
 TOTAL RAINFALL (mm)= 50.590
 RUNOFF COEFFICIENT = 0.082

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

 | ADD HYD (0804) |
1 + 2 = 3
 AREA QPEAK TPEAK R.V.
 (ha) (cms) (hrs) (mm)
 ID1= 1 (0202): 6.35 0.110 2.50 9.13
 + ID2= 2 (0204): 1.33 0.020 2.08 4.13
 =====
 ID = 3 (0804): 7.68 0.119 2.50 8.27

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 | RESERVOIR (0602) |
 | IN= 2---> OUT= 1 |
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.1306	0.1176
0.0014	0.0066	0.3534	0.1362
0.0069	0.0205	0.6046	0.1554
0.0098	0.0350	0.9742	0.1752
0.0120	0.0502	1.4665	0.1957
0.0139	0.0661	2.0882	0.2169
0.0155	0.0826	2.4500	0.2278
0.0394	0.0998	0.0000	0.0000

INFLOW : ID= 2 (0804)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	7.677	0.119	2.50	8.27
OUTFLOW: ID= 1 (0602)	7.677	0.012	4.58	8.11

PEAK FLOW REDUCTION [Qout/Qin](%)= 10.34
 TIME SHIFT OF PEAK FLOW (min)=125.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0528

 | ADD HYD (0802) |
1 + 2 = 3
 AREA QPEAK TPEAK R.V.
 (ha) (cms) (hrs) (mm)
 ID1= 1 (0601): 5.05 0.026 3.67 7.32
 + ID2= 2 (0602): 7.68 0.012 4.58 8.11
 =====
 ID = 3 (0802): 12.72 0.038 3.75 7.80

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 | ADD HYD (0803) |
1 + 2 = 3
 AREA QPEAK TPEAK R.V.
 (ha) (cms) (hrs) (mm)
 ID1= 1 (0001): 77.75 0.496 3.42 6.32
 + ID2= 2 (0802): 12.72 0.038 3.75 7.80
 =====
 ID = 3 (0803): 90.47 0.534 3.42 6.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 ** SIMULATION NUMBER: 5 ** **25-Year Chicago Storm**

READ STORM
 Filename: C:\Users\dmarshall\AppData\Local\Temp\07988835-6edc-40f2-b5aa-029467b1253a\51e8117f
 Ptotal= 59.08 mm
 Comments: OWEN SOUND 25 YEAR 4 HOUR DURATION CHICA

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.10	2.69	1.10	6.28	2.10	32.51	3.10	4.41
0.20	2.85	1.20	7.27	2.20	20.58	3.20	4.06
0.30	3.03	1.30	8.63	2.30	14.82	3.30	3.76
0.40	3.24	1.40	10.61	2.40	11.50	3.40	3.50
0.50	3.47	1.50	13.69	2.50	9.37	3.50	3.28
0.60	3.75	1.60	19.10	2.60	7.89	3.60	3.08
0.70	4.07	1.70	30.50	2.70	6.82	3.70	2.91
0.80	4.46	1.80	65.56	2.80	6.00	3.80	2.76
0.90	4.94	1.90	170.99	2.90	5.35	3.90	2.62
1.00	5.53	2.00	67.54	3.00	4.84	4.00	2.50

CALIB NASHYD (0002) Area (ha)= 10.93 Curve Number (CN)= 68.5
 ID= 1 DT= 5.0 min Ia (mm)= 4.40 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.60

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	2.69	1.083	6.28	2.083	32.51	3.08	4.41
0.167	2.82	1.167	7.07	2.167	22.97	3.17	4.13
0.250	2.96	1.250	8.09	2.250	17.12	3.25	3.88
0.333	3.11	1.333	9.42	2.333	13.49	3.33	3.66
0.417	3.29	1.417	11.23	2.417	11.07	3.42	3.46
0.500	3.47	1.500	13.69	2.500	9.37	3.50	3.28
0.583	3.75	1.583	19.10	2.583	7.89	3.58	3.08
0.667	4.01	1.667	28.22	2.667	7.03	3.67	2.94
0.750	4.30	1.750	51.54	2.750	6.33	3.75	2.82
0.833	4.65	1.833	107.73	2.833	5.74	3.83	2.70
0.917	5.06	1.917	150.30	2.917	5.25	3.92	2.60
1.000	5.53	2.000	67.54	3.000	4.84	4.00	2.50

Unit Hyd Qpeak (cms)= 0.696

PEAK FLOW (cms)= 0.347 (i)
 TIME TO PEAK (hrs)= 2.583
 RUNOFF VOLUME (mm)= 17.433
 TOTAL RAINFALL (mm)= 59.076
 RUNOFF COEFFICIENT = 0.295

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

CALIB NASHYD (0003) Area (ha)= 136.00 Curve Number (CN)= 52.1
 ID= 1 DT= 5.0 min Ia (mm)= 7.20 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 1.94

Unit Hyd Qpeak (cms)= 2.678

PEAK FLOW (cms)= 0.909 (i)
 TIME TO PEAK (hrs)= 4.250
 RUNOFF VOLUME (mm)= 9.429
 TOTAL RAINFALL (mm)= 59.076
 RUNOFF COEFFICIENT = 0.160

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

DUHYD (0400)

Inlet Cap.=0.713
 #of Inlets= 1
 Total (cms)= 0.7

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD. (ID= 1):	136.00	0.91	4.25	9.43
MAJOR SYS. (ID= 2):	10.53	0.20	4.25	9.43
MINOR SYS. (ID= 3):	125.47	0.71	3.33	9.43

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0203) Area (ha)= 3.79 Curve Number (CN)= 53.0
 ID= 1 DT= 5.0 min Ia (mm)= 16.00 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.17

Unit Hyd Qpeak (cms)= 0.852

PEAK FLOW (cms)= 0.101 (i)
 TIME TO PEAK (hrs)= 2.083
 RUNOFF VOLUME (mm)= 6.891
 TOTAL RAINFALL (mm)= 59.076
 RUNOFF COEFFICIENT = 0.117

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

ADD HYD (0801)
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0002):	10.93	0.347	2.58	17.43
+ ID2= 2 (0203):	3.79	0.101	2.08	6.89
ID = 3 (0801):	14.72	0.385	2.50	14.72

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0801)
 3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0801):	14.72	0.385	2.50	14.72
+ ID2= 2 (0400):	125.47	0.713	3.33	9.43
ID = 1 (0801):	140.19	0.939	3.25	9.98

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0001) Area (ha)= 77.75 Curve Number (CN)= 49.6
 ID= 1 DT= 5.0 min Ia (mm)= 6.91 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 1.24

Unit Hyd Qpeak (cms)= 2.395

PEAK FLOW (cms)= 0.693 (i)
 TIME TO PEAK (hrs)= 3.417
 RUNOFF VOLUME (mm)= 8.771
 TOTAL RAINFALL (mm)= 59.076
 RUNOFF COEFFICIENT = 0.148

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

CALIB NASHYD (0201) Area (ha)= 5.05 Curve Number (CN)= 51.4
 ID= 1 DT= 5.0 min Ia (mm)= 4.70 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.57

Unit Hyd Qpeak (cms)= 0.338

PEAK FLOW (cms)= 0.094 (i)
 TIME TO PEAK (hrs)= 2.583
 RUNOFF VOLUME (mm)= 10.038
 TOTAL RAINFALL (mm)= 59.076

RUNOFF COEFFICIENT = 0.170

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

RESERVOIR (0601)				
IN= 2----> OUT= 1				
DT= 5.0 min				
OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)	
0.0000	0.0000	0.3000	0.0752	
0.0320	0.0244	0.7410	0.1015	
0.0910	0.0495	0.0000	0.0000	

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0201)	5.047	0.094	2.58	10.04
OUTFLOW: ID= 1 (0601)	5.047	0.039	3.58	10.00

PEAK FLOW REDUCTION [Qout/Qin](%)= 41.14
 TIME SHIFT OF PEAK FLOW (min)= 60.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0273

CALIB (0202)			
NASHYD (0202)			
ID= 1 DT= 5.0 min			
Area (ha)	Ia (mm)	Curve Number (CN)	# of Linear Res. (N)
6.35	4.70	57.9	3.00
U.H. Tp(hrs)=	0.55		

Unit Hyd Qpeak (cms)= 0.441

PEAK FLOW (cms)= 0.151 (i)
 TIME TO PEAK (hrs)= 2.500
 RUNOFF VOLUME (mm)= 12.367
 TOTAL RAINFALL (mm)= 59.076
 RUNOFF COEFFICIENT = 0.209

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

CALIB (0204)			
NASHYD (0204)			
ID= 1 DT= 5.0 min			
Area (ha)	Ia (mm)	Curve Number (CN)	# of Linear Res. (N)
1.33	16.00	50.0	3.00
U.H. Tp(hrs)=	0.17		

Unit Hyd Qpeak (cms)= 0.299

PEAK FLOW (cms)= 0.032 (i)
 TIME TO PEAK (hrs)= 2.083
 RUNOFF VOLUME (mm)= 6.224
 TOTAL RAINFALL (mm)= 59.076
 RUNOFF COEFFICIENT = 0.105

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

ADD HYD (0804)				
1 + 2 = 3				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0202):	6.35	0.151	2.50	12.37
+ ID2= 2 (0204):	1.33	0.032	2.08	6.22
ID = 3 (0804):	7.68	0.164	2.50	11.30

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0602)				
IN= 2----> OUT= 1				
DT= 5.0 min				
OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)	
0.0000	0.0000	0.1306	0.1176	
0.0014	0.0066	0.3534	0.1362	
0.0069	0.0205	0.6046	0.1554	
0.0098	0.0350	0.9742	0.1752	
0.0120	0.0502	1.4665	0.1957	
0.0139	0.0661	2.0882	0.2169	
0.0155	0.0826	2.4500	0.2278	
0.0394	0.0998	0.0000	0.0000	

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0804)	7.677	0.164	2.50	11.30
OUTFLOW: ID= 1 (0602)	7.677	0.015	4.58	11.15

PEAK FLOW REDUCTION [Qout/Qin](%)= 8.94
 TIME SHIFT OF PEAK FLOW (min)=125.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0737

ADD HYD (0802)				
1 + 2 = 3				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0601):	5.05	0.039	3.58	10.00
+ ID2= 2 (0602):	7.68	0.015	4.58	11.15
ID = 3 (0802):	12.72	0.053	3.58	10.69

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0803)				
1 + 2 = 3				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0001):	77.75	0.693	3.42	8.77
+ ID2= 2 (0802):	12.72	0.053	3.58	10.69
ID = 3 (0803):	90.47	0.744	3.42	9.04

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 ** SIMULATION NUMBER: 6 ** 50-Year Chicago Storm

READ STORM	Filename:
	C:\Users\dmarshall\AppData\Local\Temp\07988835-6edc-40f2-b5aa-029467b1253a\bb1e6ff5
Ptotal= 65.65 mm	Comments: OWEN SOUND 50 YEAR 4 HOUR DURATION CHICA

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.10	2.87	1.10	6.88	2.10	36.93	3.10	4.78
0.20	3.04	1.20	8.01	2.20	23.25	3.20	4.39
0.30	3.24	1.30	9.55	2.30	16.64	3.30	4.05
0.40	3.47	1.40	11.81	2.40	12.83	3.40	3.76
0.50	3.73	1.50	15.34	2.50	10.39	3.50	3.52
0.60	4.04	1.60	21.55	2.60	8.71	3.60	3.30
0.70	4.40	1.70	34.62	2.70	7.49	3.70	3.11
0.80	4.84	1.80	74.20	2.80	6.56	3.80	2.94
0.90	5.37	1.90	187.94	2.90	5.84	3.90	2.79
1.00	6.03	2.00	76.42	3.00	5.26	4.00	2.65

CALIB (0002)			
NASHYD (0002)			
ID= 1 DT= 5.0 min			
Area (ha)	Ia (mm)	Curve Number (CN)	# of Linear Res. (N)
10.93	4.40	68.5	3.00
U.H. Tp(hrs)=	0.60		

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	2.87	1.083	6.88	2.083	36.93	3.08	4.78
0.167	3.01	1.167	7.78	2.167	25.99	3.17	4.47
0.250	3.16	1.250	8.93	2.250	19.28	3.25	4.19
0.333	3.33	1.333	10.45	2.333	15.12	3.33	3.93
0.417	3.52	1.417	12.52	2.417	12.34	3.42	3.71
0.500	3.73	1.500	15.34	2.500	10.39	3.50	3.52
0.583	4.04	1.583	21.55	2.583	8.71	3.58	3.30
0.667	4.33	1.667	32.01	2.667	7.73	3.67	3.15
0.750	4.66	1.750	58.37	2.750	6.93	3.75	3.01

0.833	5.05	1.833	119.70	2.833	6.27	3.83	2.88
0.917	5.50	1.917	165.64	2.917	5.72	3.92	2.76
1.000	6.03	2.000	76.42	3.000	5.26	4.00	2.65

Unit Hyd Qpeak (cms)= 0.696

PEAK FLOW (cms)= 0.423 (i)
 TIME TO PEAK (hrs)= 2.583
 RUNOFF VOLUME (mm)= 21.072
 TOTAL RAINFALL (mm)= 65.654
 RUNOFF COEFFICIENT = 0.321

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

CALIB NASHYD (0003)	Area (ha)= 136.00	Curve Number (CN)= 52.1
ID= 1 DT= 5.0 min	Ia (mm)= 7.20	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.94	

Unit Hyd Qpeak (cms)= 2.678

PEAK FLOW (cms)= 1.132 (i)
 TIME TO PEAK (hrs)= 4.167
 RUNOFF VOLUME (mm)= 11.702
 TOTAL RAINFALL (mm)= 65.654
 RUNOFF COEFFICIENT = 0.178

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

DUHYD (0400)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
Inlet Cap.=0.713				
#of Inlets= 1				
Total (cms)= 0.7				
TOTAL HYD. (ID= 1):	136.00	1.13	4.17	11.70
MAJOR SYS. (ID= 2):	24.25	0.42	4.17	11.70
MINOR SYS. (ID= 3):	111.75	0.71	3.00	11.70

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0203)	Area (ha)= 3.79	Curve Number (CN)= 53.0
ID= 1 DT= 5.0 min	Ia (mm)= 16.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.17	

Unit Hyd Qpeak (cms)= 0.852

PEAK FLOW (cms)= 0.135 (i)
 TIME TO PEAK (hrs)= 2.083
 RUNOFF VOLUME (mm)= 8.937
 TOTAL RAINFALL (mm)= 65.654
 RUNOFF COEFFICIENT = 0.136

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

ADD HYD (0801)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 (0002):	10.93	0.423	2.58	21.07
+ ID2= 2 (0203):	3.79	0.135	2.08	8.94
ID = 3 (0801):	14.72	0.472	2.50	17.95

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0801)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 (0801):	14.72	0.472	2.50	17.95
+ ID2= 2 (0400):	111.75	0.713	3.00	11.70

ID = 1 (0801): 126.47 1.069 3.00 12.43

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0001)	Area (ha)= 77.75	Curve Number (CN)= 49.6
ID= 1 DT= 5.0 min	Ia (mm)= 6.91	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.24	

Unit Hyd Qpeak (cms)= 2.395

PEAK FLOW (cms)= 0.865 (i)
 TIME TO PEAK (hrs)= 3.333
 RUNOFF VOLUME (mm)= 10.891
 TOTAL RAINFALL (mm)= 65.654
 RUNOFF COEFFICIENT = 0.166

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

CALIB NASHYD (0201)	Area (ha)= 5.05	Curve Number (CN)= 51.4
ID= 1 DT= 5.0 min	Ia (mm)= 4.70	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.57	

Unit Hyd Qpeak (cms)= 0.338

PEAK FLOW (cms)= 0.117 (i)
 TIME TO PEAK (hrs)= 2.583
 RUNOFF VOLUME (mm)= 12.338
 TOTAL RAINFALL (mm)= 65.654
 RUNOFF COEFFICIENT = 0.188

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

RESERVOIR (0601)	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
IN= 2--> OUT= 1	0.0000	0.0000	0.3000	0.0752
DT= 5.0 min	0.0320	0.0244	0.7410	0.1015
	0.0910	0.0495	0.0000	0.0000

INFLOW : ID= 2 (0201)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
OUTFLOW: ID= 1 (0601)	5.047	0.117	2.58	12.34
	5.047	0.051	3.50	12.30

PEAK FLOW REDUCTION [Qout/Qin](%)= 44.05
 TIME SHIFT OF PEAK FLOW (min)= 55.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0327

CALIB NASHYD (0202)	Area (ha)= 6.35	Curve Number (CN)= 57.9
ID= 1 DT= 5.0 min	Ia (mm)= 4.70	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.55	

Unit Hyd Qpeak (cms)= 0.441

PEAK FLOW (cms)= 0.186 (i)
 TIME TO PEAK (hrs)= 2.500
 RUNOFF VOLUME (mm)= 15.125
 TOTAL RAINFALL (mm)= 65.654
 RUNOFF COEFFICIENT = 0.230

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

CALIB NASHYD (0204)	Area (ha)= 1.33	Curve Number (CN)= 50.0
ID= 1 DT= 5.0 min	Ia (mm)= 16.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.17	

Unit Hyd Qpeak (cms)= 0.299

PEAK FLOW (cms)= 0.043 (i)

TIME TO PEAK (hrs)= 2.083
 RUNOFF VOLUME (mm)= 8.090
 TOTAL RAINFALL (mm)= 65.654
 RUNOFF COEFFICIENT = 0.123

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

ADD HYD (0804)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 (0202):	6.35	0.186	2.50	15.12
+ ID2= 2 (0204):	1.33	0.043	2.08	8.09
ID = 3 (0804):	7.68	0.203	2.42	13.91

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0602)	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
IN= 2--> OUT= 1 DT= 5.0 min				
	0.0000	0.0000	0.1306	0.1176
	0.0014	0.0066	0.3534	0.1362
	0.0069	0.0205	0.6046	0.1554
	0.0098	0.0350	0.9742	0.1752
	0.0120	0.0502	1.4665	0.1957
	0.0139	0.0661	2.0882	0.2169
	0.0155	0.0826	2.4500	0.2278
	0.0394	0.0998	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0804)	7.677	0.203	2.42	13.91
OUTFLOW: ID= 1 (0602)	7.677	0.025	4.42	13.75

PEAK FLOW REDUCTION [Qout/Qin](%)= 12.48
 TIME SHIFT OF PEAK FLOW (min)=120.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0897

ADD HYD (0802)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 (0601):	5.05	0.051	3.50	12.30
+ ID2= 2 (0602):	7.68	0.025	4.42	13.75
ID = 3 (0802):	12.72	0.070	3.92	13.18

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0803)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 (0001):	77.75	0.865	3.33	10.89
+ ID2= 2 (0802):	12.72	0.070	3.92	13.18
ID = 3 (0803):	90.47	0.932	3.42	11.21

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 ** SIMULATION NUMBER: 7 ** 100-Year Chicago Storm

READ STORM
 Ptotal= 71.77 mm
 Filename: C:\Users\dmarshall\AppData\Local\Temp\07988835-6edc-40f2-b5aa-029467b1253a\led51b27
 Comments: OWEN SOUND 100 YEAR 4 HOUR DURATION CHIC

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr

0.10	3.08	1.10	7.44	2.10	40.41	3.10	5.16
0.20	3.27	1.20	8.67	2.20	25.38	3.20	4.73
0.30	3.49	1.30	10.36	2.30	18.12	3.30	4.37
0.40	3.73	1.40	12.83	2.40	13.95	3.40	4.05
0.50	4.02	1.50	16.70	2.50	11.28	3.50	3.79
0.60	4.35	1.60	23.51	2.60	9.44	3.60	3.55
0.70	4.75	1.70	37.88	2.70	8.10	3.70	3.35
0.80	5.22	1.80	81.47	2.80	7.09	3.80	3.16
0.90	5.80	1.90	206.92	2.90	6.31	3.90	3.00
1.00	6.52	2.00	83.92	3.00	5.67	4.00	2.85

CALIB NASHYD (0002)	Area (ha)	Curve Number (CN)
ID= 1 DT= 5.0 min	10.93	68.5
	Ia (mm)= 4.40	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.60	

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	3.08	1.083	7.44	2.083	40.41	3.08	5.16
0.167	3.23	1.167	8.42	2.167	28.39	3.17	4.82
0.250	3.40	1.250	9.68	2.250	21.02	3.25	4.51
0.333	3.59	1.333	11.35	2.333	16.45	3.33	4.24
0.417	3.79	1.417	13.60	2.417	13.42	3.42	4.00
0.500	4.02	1.500	16.70	2.500	11.28	3.50	3.79
0.583	4.35	1.583	23.51	2.583	9.44	3.58	3.55
0.667	4.67	1.667	35.01	2.667	8.37	3.67	3.39
0.750	5.03	1.750	64.03	2.750	7.49	3.75	3.24
0.833	5.45	1.833	131.65	2.833	6.78	3.83	3.10
0.917	5.94	1.917	182.32	2.917	6.18	3.92	2.97
1.000	6.52	2.000	83.92	3.000	5.67	4.00	2.85

Unit Hyd Qpeak (cms)= 0.696

PEAK FLOW (cms)= 0.498 (i)
 TIME TO PEAK (hrs)= 2.583
 RUNOFF VOLUME (mm)= 24.642
 TOTAL RAINFALL (mm)= 71.769
 RUNOFF COEFFICIENT = 0.343

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

CALIB NASHYD (0003)	Area (ha)	Curve Number (CN)
ID= 1 DT= 5.0 min	136.00	52.1
	Ia (mm)= 7.20	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.94	

Unit Hyd Qpeak (cms)= 2.678

PEAK FLOW (cms)= 1.355 (i)
 TIME TO PEAK (hrs)= 4.167
 RUNOFF VOLUME (mm)= 13.986
 TOTAL RAINFALL (mm)= 71.769
 RUNOFF COEFFICIENT = 0.195

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

DUHYD (0400)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
Inlet Cap.=0.713 #of Inlets= 1 Total(cms)= 0.7				
TOTAL HYD.(ID= 1):	136.00	1.36	4.17	13.99
MAJOR SYS.(ID= 2):	35.85	0.64	4.17	13.99
MINOR SYS.(ID= 3):	100.15	0.71	2.83	13.99

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0203)	Area (ha)	Curve Number (CN)
ID= 1 DT= 5.0 min	3.79	53.0
	Ia (mm)= 16.00	# of Linear Res.(N)= 3.00

U.H. Tp(hrs)= 0.17

Unit Hyd Qpeak (cms)= 0.852

PEAK FLOW (cms)= 0.170 (i)
TIME TO PEAK (hrs)= 2.083
RUNOFF VOLUME (mm)= 11.028
TOTAL RAINFALL (mm)= 71.769
RUNOFF COEFFICIENT = 0.154

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

ADD HYD (0801)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 (0002):	10.93	0.498	2.58	24.64
+ ID2= 2 (0203):	3.79	0.170	2.08	11.03
ID = 3 (0801):	14.72	0.558	2.50	21.14

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0801)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 (0801):	14.72	0.558	2.50	21.14
+ ID2= 2 (0400):	100.15	0.713	2.83	13.99
ID = 1 (0801):	114.87	1.193	2.83	14.90

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0001)	Area (ha)	Ia (mm)	U.H. Tp(hrs)	Curve Number (CN)	# of Linear Res. (N)
ID= 1 DT= 5.0 min	77.75	6.91	1.24	49.6	3.00

Unit Hyd Qpeak (cms)= 2.395

PEAK FLOW (cms)= 1.039 (i)
TIME TO PEAK (hrs)= 3.333
RUNOFF VOLUME (mm)= 13.026
TOTAL RAINFALL (mm)= 71.769
RUNOFF COEFFICIENT = 0.181

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

CALIB NASHYD (0201)	Area (ha)	Ia (mm)	U.H. Tp(hrs)	Curve Number (CN)	# of Linear Res. (N)
ID= 1 DT= 5.0 min	5.05	4.70	0.57	51.4	3.00

Unit Hyd Qpeak (cms)= 0.338

PEAK FLOW (cms)= 0.139 (i)
TIME TO PEAK (hrs)= 2.583
RUNOFF VOLUME (mm)= 14.641
TOTAL RAINFALL (mm)= 71.769
RUNOFF COEFFICIENT = 0.204

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

RESERVOIR (0601)	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)	
IN= 2--> OUT= 1 DT= 5.0 min	0.0000	0.0000	0.3000	0.0752	
	0.0320	0.0244	0.7410	0.1015	
	0.0910	0.0495	0.0000	0.0000	
		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)

INFLOW : ID= 2 (0201) 5.047 0.139 2.58 14.64
OUTFLOW: ID= 1 (0601) 5.047 0.064 3.42 14.60

PEAK FLOW REDUCTION [Qout/Qin](%)= 45.75
TIME SHIFT OF PEAK FLOW (min)= 50.00
MAXIMUM STORAGE USED (ha.m.)= 0.0379

CALIB NASHYD (0202)	Area (ha)	Ia (mm)	U.H. Tp(hrs)	Curve Number (CN)	# of Linear Res. (N)
ID= 1 DT= 5.0 min	6.35	4.70	0.55	57.9	3.00

Unit Hyd Qpeak (cms)= 0.441

PEAK FLOW (cms)= 0.221 (i)
TIME TO PEAK (hrs)= 2.500
RUNOFF VOLUME (mm)= 17.867
TOTAL RAINFALL (mm)= 71.769
RUNOFF COEFFICIENT = 0.249

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

CALIB NASHYD (0204)	Area (ha)	Ia (mm)	U.H. Tp(hrs)	Curve Number (CN)	# of Linear Res. (N)
ID= 1 DT= 5.0 min	1.33	16.00	0.17	50.0	3.00

Unit Hyd Qpeak (cms)= 0.299

PEAK FLOW (cms)= 0.054 (i)
TIME TO PEAK (hrs)= 2.083
RUNOFF VOLUME (mm)= 10.004
TOTAL RAINFALL (mm)= 71.769
RUNOFF COEFFICIENT = 0.139

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

ADD HYD (0804)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 (0202):	6.35	0.221	2.50	17.87
+ ID2= 2 (0204):	1.33	0.054	2.08	10.00
ID = 3 (0804):	7.68	0.242	2.42	16.50

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0602)	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
IN= 2--> OUT= 1 DT= 5.0 min	0.0000	0.0000	0.1306	0.1176
	0.0014	0.0066	0.3534	0.1362
	0.0069	0.0205	0.6046	0.1554
	0.0098	0.0350	0.9742	0.1752
	0.0120	0.0502	1.4665	0.1957
	0.0139	0.0661	2.0882	0.2169
	0.0155	0.0826	2.4500	0.2278
	0.0394	0.0998	0.0000	0.0000

INFLOW : ID= 2 (0804) 7.677 0.242 2.42 16.50
OUTFLOW: ID= 1 (0602) 7.677 0.046 4.08 16.35

PEAK FLOW REDUCTION [Qout/Qin](%)= 19.10
TIME SHIFT OF PEAK FLOW (min)=100.00
MAXIMUM STORAGE USED (ha.m.)= 0.1011

ADD HYD (0802)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				

ID1= 1 (0601): 5.05 0.064 3.42 14.60
 + ID2= 2 (0602): 7.68 0.046 4.08 16.35
 =====
 ID = 3 (0802): 12.72 0.103 3.92 15.66

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 | ADD HYD (0803) |
1 + 2 = 3
 AREA QPEAK TPEAK R.V.
 (ha) (cms) (hrs) (mm)
 ID1= 1 (0001): 77.75 1.039 3.33 13.03
 + ID2= 2 (0802): 12.72 0.103 3.92 15.66
 =====
 ID = 3 (0803): 90.47 1.133 3.42 13.40

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 ** SIMULATION NUMBER: 8 **

 Regional Timmins Storm

 | READ STORM | Filename: C:\Users\dmarshall\AppData\Local\Temp\07988835-6edc-40f2-b5aa-029467b1253a\5cf2c1d2
 | Ptotal=193.00 mm | Comments: TIMMINS REGIONAL 12 HOUR DURATION STORM

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.20	15.00	3.20	3.00	6.20	43.00	9.20	13.00
0.40	15.00	3.40	3.00	6.40	43.00	9.40	13.00
0.60	15.00	3.60	3.00	6.60	43.00	9.60	13.00
0.80	15.00	3.80	3.00	6.80	43.00	9.80	13.00
1.00	15.00	4.00	3.00	7.00	43.00	10.00	13.00
1.20	20.00	4.20	5.00	7.20	20.00	10.20	13.00
1.40	20.00	4.40	5.00	7.40	20.00	10.40	13.00
1.60	20.00	4.60	5.00	7.60	20.00	10.60	13.00
1.80	20.00	4.80	5.00	7.80	20.00	10.80	13.00
2.00	20.00	5.00	5.00	8.00	20.00	11.00	13.00
2.20	10.00	5.20	20.00	8.20	23.00	11.20	8.00
2.40	10.00	5.40	20.00	8.40	23.00	11.40	8.00
2.60	10.00	5.60	20.00	8.60	23.00	11.60	8.00
2.80	10.00	5.80	20.00	8.80	23.00	11.80	8.00
3.00	10.00	6.00	20.00	9.00	23.00	12.00	8.00

 | CALIB NASHYD (0002) | Area (ha)= 10.93 Curve Number (CN)= 68.5
 | ID= 1 DT= 5.0 min | Ia (mm)= 4.40 # of Linear Res.(N)= 3.00
 | U.H. Tp(hrs)= 0.60

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	15.00	3.083	3.00	6.083	43.00	9.08	13.00
0.167	15.00	3.167	3.00	6.167	43.00	9.17	13.00
0.250	15.00	3.250	3.00	6.250	43.00	9.25	13.00
0.333	15.00	3.333	3.00	6.333	43.00	9.33	13.00
0.417	15.00	3.417	3.00	6.417	43.00	9.42	13.00
0.500	15.00	3.500	3.00	6.500	43.00	9.50	13.00
0.583	15.00	3.583	3.00	6.583	43.00	9.58	13.00
0.667	15.00	3.667	3.00	6.667	43.00	9.67	13.00
0.750	15.00	3.750	3.00	6.750	43.00	9.75	13.00
0.833	15.00	3.833	3.00	6.833	43.00	9.83	13.00
0.917	15.00	3.917	3.00	6.917	43.00	9.92	13.00
1.000	15.00	4.000	3.00	7.000	43.00	10.00	13.00
1.083	20.00	4.083	5.00	7.083	20.00	10.08	13.00
1.167	20.00	4.167	5.00	7.167	20.00	10.17	13.00
1.250	20.00	4.250	5.00	7.250	20.00	10.25	13.00
1.333	20.00	4.333	5.00	7.333	20.00	10.33	13.00
1.417	20.00	4.417	5.00	7.417	20.00	10.42	13.00
1.500	20.00	4.500	5.00	7.500	20.00	10.50	13.00
1.583	20.00	4.583	5.00	7.583	20.00	10.58	13.00
1.667	20.00	4.667	5.00	7.667	20.00	10.67	13.00

1.750	20.00	4.750	5.00	7.750	20.00	10.75	13.00
1.833	20.00	4.833	5.00	7.833	20.00	10.83	13.00
1.917	20.00	4.917	5.00	7.917	20.00	10.92	13.00
2.000	20.00	5.000	5.00	8.000	20.00	11.00	13.00
2.083	10.00	5.083	20.00	8.083	23.00	11.08	8.00
2.167	10.00	5.167	20.00	8.167	23.00	11.17	8.00
2.250	10.00	5.250	20.00	8.250	23.00	11.25	8.00
2.333	10.00	5.333	20.00	8.333	23.00	11.33	8.00
2.417	10.00	5.417	20.00	8.417	23.00	11.42	8.00
2.500	10.00	5.500	20.00	8.500	23.00	11.50	8.00
2.583	10.00	5.583	20.00	8.583	23.00	11.58	8.00
2.667	10.00	5.667	20.00	8.667	23.00	11.67	8.00
2.750	10.00	5.750	20.00	8.750	23.00	11.75	8.00
2.833	10.00	5.833	20.00	8.833	23.00	11.83	8.00
2.917	10.00	5.917	20.00	8.917	23.00	11.92	8.00
3.000	10.00	6.000	20.00	9.000	23.00	12.00	8.00

Unit Hyd Qpeak (cms)= 0.696

PEAK FLOW (cms)= 0.748 (i)
 TIME TO PEAK (hrs)= 7.250
 RUNOFF VOLUME (mm)= 116.466
 TOTAL RAINFALL (mm)= 193.000
 RUNOFF COEFFICIENT = 0.603

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

 | CALIB NASHYD (0003) | Area (ha)= 136.00 Curve Number (CN)= 52.1
 | ID= 1 DT= 5.0 min | Ia (mm)= 7.20 # of Linear Res.(N)= 3.00
 | U.H. Tp(hrs)= 1.94

Unit Hyd Qpeak (cms)= 2.678

PEAK FLOW (cms)= 4.452 (i)
 TIME TO PEAK (hrs)= 10.000
 RUNOFF VOLUME (mm)= 82.327
 TOTAL RAINFALL (mm)= 193.000
 RUNOFF COEFFICIENT = 0.427

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

 | DUHYD (0400) |
 | Inlet Cap.=0.713 |
 | #of Inlets= 1 |
Total(cms)= 0.7
 AREA QPEAK TPEAK R.V.
 (ha) (cms) (hrs) (mm)
 TOTAL HYD.(ID= 1): 136.00 4.45 10.00 82.33
 MAJOR SYS.(ID= 2): 92.94 3.74 10.00 82.33
 MINOR SYS.(ID= 3): 43.06 0.71 6.00 82.33

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 | CALIB NASHYD (0203) | Area (ha)= 3.79 Curve Number (CN)= 53.0
 | ID= 1 DT= 5.0 min | Ia (mm)= 16.00 # of Linear Res.(N)= 3.00
 | U.H. Tp(hrs)= 0.17

Unit Hyd Qpeak (cms)= 0.852

PEAK FLOW (cms)= 0.222 (i)
 TIME TO PEAK (hrs)= 7.000
 RUNOFF VOLUME (mm)= 77.607
 TOTAL RAINFALL (mm)= 193.000
 RUNOFF COEFFICIENT = 0.402

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

 | ADD HYD (0801) |
1 + 2 = 3
 AREA QPEAK TPEAK R.V.
 (ha) (cms) (hrs) (mm)
 ID1= 1 (0002): 10.93 0.748 7.25 116.47
 + ID2= 2 (0203): 3.79 0.222 7.00 77.61
 =====

ID = 3 (0801): 14.72 0.927 7.08 106.46

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0801)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 (0801):	14.72	0.927	7.08	106.46
+ ID2= 2 (0400):	43.06	0.713	6.00	82.33

ID = 1 (0801):	57.78	1.640	7.08	88.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0001)	Area (ha)	Curve Number (CN)
ID= 1 DT= 5.0 min	77.75	49.6
	Ia (mm)= 6.91	# of Linear Res. (N)= 3.00
	U.H. Tp(hrs)= 1.24	

Unit Hyd Qpeak (cms)= 2.395
 PEAK FLOW (cms)= 2.708 (i)
 TIME TO PEAK (hrs)= 9.250
 RUNOFF VOLUME (mm)= 77.961
 TOTAL RAINFALL (mm)= 193.000
 RUNOFF COEFFICIENT = 0.404

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

CALIB NASHYD (0201)	Area (ha)	Curve Number (CN)
ID= 1 DT= 5.0 min	5.05	51.4
	Ia (mm)= 4.70	# of Linear Res. (N)= 3.00
	U.H. Tp(hrs)= 0.57	

Unit Hyd Qpeak (cms)= 0.338
 PEAK FLOW (cms)= 0.243 (i)
 TIME TO PEAK (hrs)= 7.250
 RUNOFF VOLUME (mm)= 82.751
 TOTAL RAINFALL (mm)= 193.000
 RUNOFF COEFFICIENT = 0.429

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

RESERVOIR (0601)	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
IN= 2--> OUT= 1 DT= 5.0 min	0.0000	0.0000	0.3000	0.0752
	0.0320	0.0244	0.7410	0.1015
	0.0910	0.0495	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0201)	5.047	0.243	7.25	82.75
OUTFLOW: ID= 1 (0601)	5.047	0.216	7.67	82.71

PEAK FLOW REDUCTION [Qout/Qin](%)= 88.79
 TIME SHIFT OF PEAK FLOW (min)= 25.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0649

CALIB NASHYD (0202)	Area (ha)	Curve Number (CN)
ID= 1 DT= 5.0 min	6.35	57.9
	Ia (mm)= 4.70	# of Linear Res. (N)= 3.00
	U.H. Tp(hrs)= 0.55	

Unit Hyd Qpeak (cms)= 0.441
 PEAK FLOW (cms)= 0.360 (i)
 TIME TO PEAK (hrs)= 7.250
 RUNOFF VOLUME (mm)= 95.058
 TOTAL RAINFALL (mm)= 193.000
 RUNOFF COEFFICIENT = 0.493

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

CALIB NASHYD (0204)	Area (ha)	Curve Number (CN)
ID= 1 DT= 5.0 min	1.33	50.0
	Ia (mm)= 16.00	# of Linear Res. (N)= 3.00
	U.H. Tp(hrs)= 0.17	

Unit Hyd Qpeak (cms)= 0.299
 PEAK FLOW (cms)= 0.072 (i)
 TIME TO PEAK (hrs)= 7.000
 RUNOFF VOLUME (mm)= 72.429
 TOTAL RAINFALL (mm)= 193.000
 RUNOFF COEFFICIENT = 0.375

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

ADD HYD (0804)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 (0202):	6.35	0.360	7.25	95.06
+ ID2= 2 (0204):	1.33	0.072	7.00	72.43

ID = 3 (0804):	7.68	0.417	7.08	91.14

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0602)	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
IN= 2--> OUT= 1 DT= 5.0 min	0.0000	0.0000	0.1306	0.1176
	0.0014	0.0066	0.3534	0.1362
	0.0069	0.0205	0.6046	0.1554
	0.0098	0.0350	0.9742	0.1752
	0.0120	0.0502	1.4665	0.1957
	0.0139	0.0651	2.0882	0.2169
	0.0155	0.0826	2.4500	0.2278
	0.0394	0.0998	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0804)	7.677	0.417	7.08	91.14
OUTFLOW: ID= 1 (0602)	7.677	0.392	7.42	90.98

PEAK FLOW REDUCTION [Qout/Qin](%)= 93.87
 TIME SHIFT OF PEAK FLOW (min)= 20.00
 MAXIMUM STORAGE USED (ha.m.)= 0.1391

ADD HYD (0802)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 (0601):	5.05	0.216	7.67	82.71
+ ID2= 2 (0602):	7.68	0.392	7.42	90.98

ID = 3 (0802):	12.72	0.599	7.50	87.70

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0803)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 (0001):	77.75	2.708	9.25	77.96
+ ID2= 2 (0802):	12.72	0.599	7.50	87.70

ID = 3 (0803):	90.47	3.203	9.17	79.33

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

FINISH

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V V I SSSS U U A L
V V I SS U U A A L
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V V I SS U U A A L
VV I SSSS UUUUU A A LLLLL

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

Input filename: C:\Program Files (x86)\VH Suite 3.0\VO2\voin.dat
Output filename: C:\Users\dmrshall\AppData\Local\Temp\27273bc1-82f4-48f8-aa53-bc87bf5ec9a7\Scenario.out
Summary filename: C:\Users\dmrshall\AppData\Local\Temp\27273bc1-82f4-48f8-aa53-bc87bf5ec9a7\Scenario.sum

DATE: 09/17/2018 TIME: 11:17:08

USER:

COMMENTS: _____

** SIMULATION NUMBER: 1 ** 2-Year SCS Storm

MASS STORM Filename: C:\Users\dmrshall\AppData\Local\Temp\27273bc1-82f4-48f8-aa53-bc87bf5ec9a7\9b21073d
Ptotal= 48.70 mm Comments: SCS Type II 24 HR MASS CURVE

Duration of storm = 23.75 hrs
Mass curve time step = 15.00 min

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.58	6.25	0.97	12.25	7.01	18.25	0.78
0.50	0.39	6.50	0.78	12.50	3.70	18.50	0.97
0.75	0.58	6.75	0.97	12.75	3.51	18.75	0.78
1.00	0.58	7.00	0.97	13.00	2.73	19.00	0.97
1.25	0.58	7.25	1.17	13.25	2.53	19.25	0.78
1.50	0.39	7.50	0.97	13.50	2.14	19.50	0.97
1.75	0.58	7.75	1.17	13.75	1.95	19.75	0.78
2.00	0.58	8.00	1.17	14.00	1.56	20.00	0.58
2.25	0.78	8.25	1.36	14.25	1.36	20.25	0.58
2.50	0.58	8.50	1.36	14.50	1.56	20.50	0.58
2.75	0.58	8.75	1.36	14.75	1.36	20.75	0.58
3.00	0.58	9.00	1.56	15.00	1.56	21.00	0.58
3.25	0.78	9.25	1.56	15.25	1.36	21.25	0.58
3.50	0.58	9.50	1.75	15.50	1.56	21.50	0.58
3.75	0.58	9.75	1.75	15.75	1.36	21.75	0.58
4.00	0.78	10.00	2.14	16.00	0.97	22.00	0.58
4.25	0.78	10.25	2.34	16.25	0.78	22.25	0.58
4.50	0.78	10.50	2.92	16.50	0.97	22.50	0.58
4.75	0.78	10.75	3.12	16.75	0.78	22.75	0.58
5.00	0.78	11.00	4.68	17.00	0.97	23.00	0.58
5.25	0.78	11.25	4.68	17.25	0.78	23.25	0.58
5.50	0.78	11.50	14.42	17.50	0.97	23.50	0.58
5.75	0.78	11.75	59.61	17.75	0.78	23.75	0.58
6.00	0.78	12.00	7.01	18.00	0.97		

CALIB NASHYD (0003) Area (ha)= 136.00 Curve Number (CN)= 52.1
ID= 1 DT= 5.0 min Ia (mm)= 7.20 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.94

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	0.58	6.083	0.97	12.083	7.01	18.08	0.78
0.167	0.58	6.167	0.97	12.167	7.01	18.17	0.78
0.250	0.58	6.250	0.97	12.250	7.01	18.25	0.78
0.333	0.39	6.333	0.78	12.333	3.70	18.33	0.97
0.417	0.39	6.417	0.78	12.417	3.70	18.42	0.97
0.500	0.39	6.500	0.78	12.500	3.70	18.50	0.97
0.583	0.58	6.583	0.97	12.583	3.51	18.58	0.78
0.667	0.58	6.667	0.97	12.667	3.51	18.67	0.78
0.750	0.58	6.750	0.97	12.750	3.51	18.75	0.78
0.833	0.58	6.833	0.97	12.833	2.73	18.83	0.97
0.917	0.58	6.917	0.97	12.917	2.73	18.92	0.97
1.000	0.58	7.000	0.97	13.000	2.73	19.00	0.97
1.083	0.58	7.083	1.17	13.083	2.53	19.08	0.78
1.167	0.58	7.167	1.17	13.167	2.53	19.17	0.78
1.250	0.58	7.250	1.17	13.250	2.53	19.25	0.78
1.333	0.39	7.333	0.97	13.333	2.14	19.33	0.97
1.417	0.39	7.417	0.97	13.417	2.14	19.42	0.97
1.500	0.39	7.500	0.97	13.500	2.14	19.50	0.97
1.583	0.58	7.583	1.17	13.583	1.95	19.58	0.78
1.667	0.58	7.667	1.17	13.667	1.95	19.67	0.78
1.750	0.58	7.750	1.17	13.750	1.95	19.75	0.78
1.833	0.58	7.833	1.17	13.833	1.56	19.83	0.58
1.917	0.58	7.917	1.17	13.917	1.56	19.92	0.58
2.000	0.58	8.000	1.17	14.000	1.56	20.00	0.58
2.083	0.78	8.083	1.36	14.083	1.36	20.08	0.58
2.167	0.78	8.167	1.36	14.167	1.36	20.17	0.58
2.250	0.78	8.250	1.36	14.250	1.36	20.25	0.58
2.333	0.58	8.333	1.36	14.333	1.56	20.33	0.58
2.417	0.58	8.417	1.36	14.417	1.56	20.42	0.58
2.500	0.58	8.500	1.36	14.500	1.56	20.50	0.58
2.583	0.58	8.583	1.36	14.583	1.36	20.58	0.58
2.667	0.58	8.667	1.36	14.667	1.36	20.67	0.58
2.750	0.58	8.750	1.36	14.750	1.36	20.75	0.58
2.833	0.58	8.833	1.56	14.833	1.56	20.83	0.58
2.917	0.58	8.917	1.56	14.917	1.56	20.92	0.58
3.000	0.58	9.000	1.56	15.000	1.56	21.00	0.58
3.083	0.78	9.083	1.56	15.083	1.36	21.08	0.58
3.167	0.78	9.167	1.56	15.167	1.36	21.17	0.58
3.250	0.78	9.250	1.56	15.250	1.36	21.25	0.58
3.333	0.58	9.333	1.75	15.333	1.56	21.33	0.58
3.417	0.58	9.417	1.75	15.417	1.56	21.42	0.58
3.500	0.58	9.500	1.75	15.500	1.56	21.50	0.58
3.583	0.58	9.583	1.75	15.583	1.36	21.58	0.58
3.667	0.58	9.667	1.75	15.667	1.36	21.67	0.58
3.750	0.58	9.750	1.75	15.750	1.36	21.75	0.58
3.833	0.78	9.833	2.14	15.833	0.97	21.83	0.58
3.917	0.78	9.917	2.14	15.917	0.97	21.92	0.58
4.000	0.78	10.000	2.14	16.000	0.97	22.00	0.58
4.083	0.78	10.083	2.34	16.083	0.78	22.08	0.58
4.167	0.78	10.167	2.34	16.167	0.78	22.17	0.58
4.250	0.78	10.250	2.34	16.250	0.78	22.25	0.58
4.333	0.78	10.333	2.92	16.333	0.97	22.33	0.58
4.417	0.78	10.417	2.92	16.417	0.97	22.42	0.58
4.500	0.78	10.500	2.92	16.500	0.97	22.50	0.58
4.583	0.78	10.583	3.12	16.583	0.78	22.58	0.58
4.667	0.78	10.667	3.12	16.667	0.78	22.67	0.58
4.750	0.78	10.750	3.12	16.750	0.78	22.75	0.58
4.833	0.78	10.833	4.68	16.833	0.97	22.83	0.58
4.917	0.78	10.917	4.68	16.917	0.97	22.92	0.58
5.000	0.78	11.000	4.68	17.000	0.97	23.00	0.58
5.083	0.78	11.083	4.68	17.083	0.78	23.08	0.58
5.167	0.78	11.167	4.68	17.167	0.78	23.17	0.58
5.250	0.78	11.250	4.68	17.250	0.78	23.25	0.58
5.333	0.78	11.333	14.41	17.333	0.97	23.33	0.58
5.417	0.78	11.417	14.42	17.417	0.97	23.42	0.58
5.500	0.78	11.500	14.42	17.500	0.97	23.50	0.58
5.583	0.78	11.583	59.60	17.583	0.78	23.58	0.58
5.667	0.78	11.667	59.61	17.667	0.78	23.67	0.58
5.750	0.78	11.750	59.61	17.750	0.78	23.75	0.58
5.833	0.78	11.833	7.02	17.833	0.97		
5.917	0.78	11.917	7.01	17.917	0.97		
6.000	0.78	12.000	7.01	18.000	0.97		

Unit Hyd Qpeak (cms)= 2.678
 PEAK FLOW (cms)= 0.375 (i)
 TIME TO PEAK (hrs)= 14.000
 RUNOFF VOLUME (mm)= 6.221
 TOTAL RAINFALL (mm)= 48.554
 RUNOFF COEFFICIENT = 0.128

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

DUHYD (0400)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
Inlet Cap.=0.713				
#of Inlets= 1				
Total (cms)= 0.7				
TOTAL HYD. (ID= 1):	136.00	0.38	14.00	6.22
MAJOR SYS. (ID= 2):	0.00	0.00	0.00	0.00
MINOR SYS. (ID= 3):	136.00	0.38	14.00	6.22

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0002)	Area (ha)	Ia (mm)	U.H. Tp (hrs)	Curve Number (CN)	# of Linear Res. (N)
ID= 1 DT= 5.0 min	10.93	4.40	0.60	68.5	3.00
Unit Hyd Qpeak (cms)=	0.696				
PEAK FLOW (cms)=	0.148 (i)				
TIME TO PEAK (hrs)=	12.250				
RUNOFF VOLUME (mm)=	12.112				
TOTAL RAINFALL (mm)=	48.554				
RUNOFF COEFFICIENT =	0.249				

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

CALIB NASHYD (0203)	Area (ha)	Ia (mm)	U.H. Tp (hrs)	Curve Number (CN)	# of Linear Res. (N)
ID= 1 DT= 5.0 min	3.79	16.00	0.17	53.0	3.00
Unit Hyd Qpeak (cms)=	0.852				
PEAK FLOW (cms)=	0.034 (i)				
TIME TO PEAK (hrs)=	11.833				
RUNOFF VOLUME (mm)=	4.096				
TOTAL RAINFALL (mm)=	48.554				
RUNOFF COEFFICIENT =	0.084				

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

ADD HYD (0801)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 (0002):	10.93	0.148	12.25	12.11
+ ID2= 2 (0203):	3.79	0.034	11.83	4.10
ID = 3 (0801):	14.72	0.160	12.25	10.05

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0801)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 (0801):	14.72	0.160	12.25	10.05
+ ID2= 2 (0400):	136.00	0.375	14.00	6.22
ID = 1 (0801):	150.72	0.419	13.75	6.60

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0001)	Area (ha)	Ia (mm)	U.H. Tp (hrs)	Curve Number (CN)	# of Linear Res. (N)
ID= 1 DT= 5.0 min	77.75	6.91	1.24	49.6	3.00

Unit Hyd Qpeak (cms)= 2.395

PEAK FLOW (cms)= 0.279 (i)
TIME TO PEAK (hrs)= 13.083
RUNOFF VOLUME (mm)= 5.786
TOTAL RAINFALL (mm)= 48.554
RUNOFF COEFFICIENT = 0.119

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

CALIB NASHYD (0202) Area (ha)= 6.35 Curve Number (CN)= 57.9
ID= 1 DT= 5.0 min Ia (mm)= 4.70 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.55

Unit Hyd Qpeak (cms)= 0.441

PEAK FLOW (cms)= 0.062 (i)
TIME TO PEAK (hrs)= 12.250
RUNOFF VOLUME (mm)= 8.415
TOTAL RAINFALL (mm)= 48.554
RUNOFF COEFFICIENT = 0.173

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

CALIB NASHYD (0204) Area (ha)= 1.33 Curve Number (CN)= 50.0
ID= 1 DT= 5.0 min Ia (mm)= 16.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.17

Unit Hyd Qpeak (cms)= 0.299

PEAK FLOW (cms)= 0.011 (i)
TIME TO PEAK (hrs)= 11.833
RUNOFF VOLUME (mm)= 3.685
TOTAL RAINFALL (mm)= 48.554
RUNOFF COEFFICIENT = 0.076

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

ADD HYD (0804) 1 + 2 = 3 AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)
ID1= 1 (0202): 6.35 0.062 12.25 8.41
+ ID2= 2 (0204): 1.33 0.011 11.83 3.68
ID = 3 (0804): 7.68 0.066 12.17 7.60

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0602) IN= 2---> OUT= 1 DT= 5.0 min
OUTFLOW (cms) STORAGE (ha.m.)
0.0000 0.0000 0.1306 0.1176
0.0014 0.0066 0.3534 0.1362
0.0069 0.0205 0.6046 0.1554
0.0098 0.0350 0.9742 0.1752
0.0120 0.0502 1.4665 0.1957
0.0139 0.0661 2.0882 0.2169
0.0155 0.0826 2.4500 0.2278
0.0394 0.0998 0.0000 0.0000

INFLOW : ID= 2 (0804) 7.677 0.066 12.17 7.60
OUTFLOW: ID= 1 (0602) 7.677 0.009 15.25 7.44

PEAK FLOW REDUCTION [Qout/Qin](%)= 13.73
TIME SHIFT OF PEAK FLOW (min)=185.00
MAXIMUM STORAGE USED (ha.m.)= 0.0313

CALIB

NASHYD (0201) Area (ha)= 5.05 Curve Number (CN)= 51.4
ID= 1 DT= 5.0 min Ia (mm)= 4.70 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.57

Unit Hyd Qpeak (cms)= 0.338

PEAK FLOW (cms)= 0.038 (i)
TIME TO PEAK (hrs)= 12.250
RUNOFF VOLUME (mm)= 6.771
TOTAL RAINFALL (mm)= 48.554
RUNOFF COEFFICIENT = 0.139

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

RESERVOIR (0601) IN= 2---> OUT= 1 DT= 5.0 min
OUTFLOW (cms) STORAGE (ha.m.)
0.0000 0.0000 0.3000 0.0752
0.0320 0.0244 0.7410 0.1015
0.0910 0.0495 0.0000 0.0000

INFLOW : ID= 2 (0201) 5.047 0.038 12.25 6.77
OUTFLOW: ID= 1 (0601) 5.047 0.015 13.33 6.73

PEAK FLOW REDUCTION [Qout/Qin](%)= 40.13
TIME SHIFT OF PEAK FLOW (min)= 65.00
MAXIMUM STORAGE USED (ha.m.)= 0.0117

ADD HYD (0802) 1 + 2 = 3 AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)
ID1= 1 (0601): 5.05 0.015 13.33 6.73
+ ID2= 2 (0602): 7.68 0.009 15.25 7.44
ID = 3 (0802): 12.72 0.024 13.50 7.16

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0803) 1 + 2 = 3 AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)
ID1= 1 (0001): 77.75 0.279 13.08 5.79
+ ID2= 2 (0802): 12.72 0.024 13.50 7.16
ID = 3 (0803): 90.47 0.302 13.17 5.98

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

** SIMULATION NUMBER: 2 ** 5-Year SCS Storm

MASS STORM Filename: C:\Users\dmrshall\AppData\Local\Temp\27273bc1-82f4-48f8-aa53-bc87bf5ec9a7\aca58f75
Ptotal= 62.00 mm Comments: SCS Type II 24 HR MASS CURVE

Duration of storm = 23.75 hrs
Mass curve time step = 15.00 min

Table with 8 columns: TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr. It shows a hydrograph with rain intensity and cumulative volume over time.

2.50	0.74	8.50	1.74	14.50	1.98	20.50	0.74
2.75	0.74	8.75	1.74	14.75	1.74	20.75	0.74
3.00	0.74	9.00	1.98	15.00	1.98	21.00	0.74
3.25	0.99	9.25	1.98	15.25	1.74	21.25	0.74
3.50	0.74	9.50	2.23	15.50	1.98	21.50	0.74
3.75	0.74	9.75	2.23	15.75	1.74	21.75	0.74
4.00	0.99	10.00	2.73	16.00	1.24	22.00	0.74
4.25	0.99	10.25	2.98	16.25	0.99	22.25	0.74
4.50	0.99	10.50	3.72	16.50	1.24	22.50	0.74
4.75	0.99	10.75	3.97	16.75	0.99	22.75	0.74
5.00	0.99	11.00	5.95	17.00	1.24	23.00	0.74
5.25	0.99	11.25	5.95	17.25	0.99	23.25	0.74
5.50	0.99	11.50	18.35	17.50	1.24	23.50	0.74
5.75	0.99	11.75	75.89	17.75	0.99	23.75	0.74
6.00	0.99	12.00	8.93	18.00	1.24		

CALIB (0003) | Area (ha)= 136.00 | Curve Number (CN)= 52.1
NASHYD | Ia (mm)= 7.20 | # of Linear Res.(N)= 3.00
ID= 1 DT= 5.0 min | U.H. Tp(hrs)= 1.94

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	0.74	6.083	1.24	12.083	8.93	18.08	0.99
0.167	0.74	6.167	1.24	12.167	8.93	18.17	0.99
0.250	0.74	6.250	1.24	12.250	8.93	18.25	0.99
0.333	0.50	6.333	0.99	12.333	4.71	18.33	1.24
0.417	0.50	6.417	0.99	12.417	4.71	18.42	1.24
0.500	0.50	6.500	0.99	12.500	4.71	18.50	1.24
0.583	0.74	6.583	1.24	12.583	4.46	18.58	0.99
0.667	0.74	6.667	1.24	12.667	4.46	18.67	0.99
0.750	0.74	6.750	1.24	12.750	4.46	18.75	0.99
0.833	0.74	6.833	1.24	12.833	3.47	18.83	1.24
0.917	0.74	6.917	1.24	12.917	3.47	18.92	1.24
1.000	0.74	7.000	1.24	13.000	3.47	19.00	1.24
1.083	0.74	7.083	1.49	13.083	3.22	19.08	0.99
1.167	0.74	7.167	1.49	13.167	3.22	19.17	0.99
1.250	0.74	7.250	1.49	13.250	3.22	19.25	0.99
1.333	0.50	7.333	1.24	13.333	2.73	19.33	1.24
1.417	0.50	7.417	1.24	13.417	2.73	19.42	1.24
1.500	0.50	7.500	1.24	13.500	2.73	19.50	1.24
1.583	0.74	7.583	1.49	13.583	2.48	19.58	0.99
1.667	0.74	7.667	1.49	13.667	2.48	19.67	0.99
1.750	0.74	7.750	1.49	13.750	2.48	19.75	0.99
1.833	0.74	7.833	1.49	13.833	1.98	19.83	0.74
1.917	0.74	7.917	1.49	13.917	1.98	19.92	0.74
2.000	0.74	8.000	1.49	14.000	1.98	20.00	0.74
2.083	0.99	8.083	1.74	14.083	1.74	20.08	0.74
2.167	0.99	8.167	1.74	14.167	1.74	20.17	0.74
2.250	0.99	8.250	1.74	14.250	1.74	20.25	0.74
2.333	0.74	8.333	1.74	14.333	1.98	20.33	0.74
2.417	0.74	8.417	1.74	14.417	1.98	20.42	0.74
2.500	0.74	8.500	1.74	14.500	1.98	20.50	0.74
2.583	0.74	8.583	1.74	14.583	1.74	20.58	0.74
2.667	0.74	8.667	1.74	14.667	1.74	20.67	0.74
2.750	0.74	8.750	1.74	14.750	1.74	20.75	0.74
2.833	0.74	8.833	1.98	14.833	1.98	20.83	0.74
2.917	0.74	8.917	1.98	14.917	1.98	20.92	0.74
3.000	0.74	9.000	1.98	15.000	1.98	21.00	0.74
3.083	0.99	9.083	1.98	15.083	1.74	21.08	0.74
3.167	0.99	9.167	1.98	15.167	1.74	21.17	0.74
3.250	0.99	9.250	1.98	15.250	1.74	21.25	0.74
3.333	0.74	9.333	2.23	15.333	1.98	21.33	0.74
3.417	0.74	9.417	2.23	15.417	1.98	21.42	0.74
3.500	0.74	9.500	2.23	15.500	1.98	21.50	0.74
3.583	0.74	9.583	2.23	15.583	1.74	21.58	0.74
3.667	0.74	9.667	2.23	15.667	1.74	21.67	0.74
3.750	0.74	9.750	2.23	15.750	1.74	21.75	0.74
3.833	0.99	9.833	2.73	15.833	1.24	21.83	0.74
3.917	0.99	9.917	2.73	15.917	1.24	21.92	0.74
4.000	0.99	10.000	2.73	16.000	1.24	22.00	0.74
4.083	0.99	10.083	2.98	16.083	0.99	22.08	0.74
4.167	0.99	10.167	2.98	16.167	0.99	22.17	0.74
4.250	0.99	10.250	2.98	16.250	0.99	22.25	0.74
4.333	0.99	10.333	3.72	16.333	1.24	22.33	0.74
4.417	0.99	10.417	3.72	16.417	1.24	22.42	0.74
4.500	0.99	10.500	3.72	16.500	1.24	22.50	0.74
4.583	0.99	10.583	3.97	16.583	0.99	22.58	0.74

4.667	0.99	10.667	3.97	16.667	0.99	22.67	0.74
4.750	0.99	10.750	3.97	16.750	0.99	22.75	0.74
4.833	0.99	10.833	5.95	16.833	1.24	22.83	0.74
4.917	0.99	10.917	5.95	16.917	1.24	22.92	0.74
5.000	0.99	11.000	5.95	17.000	1.24	23.00	0.74
5.083	0.99	11.083	5.95	17.083	0.99	23.08	0.74
5.167	0.99	11.167	5.95	17.167	0.99	23.17	0.74
5.250	0.99	11.250	5.95	17.250	0.99	23.25	0.74
5.333	0.99	11.333	18.35	17.333	1.24	23.33	0.74
5.417	0.99	11.417	18.35	17.417	1.24	23.42	0.74
5.500	0.99	11.500	18.35	17.500	1.24	23.50	0.74
5.583	0.99	11.583	75.88	17.583	0.99	23.58	0.74
5.667	0.99	11.667	75.89	17.667	0.99	23.67	0.74
5.750	0.99	11.750	75.89	17.750	0.99	23.75	0.74
5.833	0.99	11.833	8.94	17.833	1.24		
5.917	0.99	11.917	8.93	17.917	1.24		
6.000	0.99	12.000	8.93	18.000	1.24		

Unit Hyd Qpeak (cms)= 2.678

PEAK FLOW (cms)= 0.637 (i)
TIME TO PEAK (hrs)= 14.000
RUNOFF VOLUME (mm)= 10.352
TOTAL RAINFALL (mm)= 61.814
RUNOFF COEFFICIENT = 0.167

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

DUHYD (0400)				
Inlet Cap.=0.713				
#of Inlets= 1				
Total(cms)= 0.7				

TOTAL HYD. (ID= 1):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	136.00	0.64	14.00	10.35

MAJOR SYS. (ID= 2):	0.00	0.00	0.00	0.00
MINOR SYS. (ID= 3):	136.00	0.64	14.00	10.35

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB (0002) | Area (ha)= 10.93 | Curve Number (CN)= 68.5
NASHYD | Ia (mm)= 4.40 | # of Linear Res.(N)= 3.00
ID= 1 DT= 5.0 min | U.H. Tp(hrs)= 0.60

Unit Hyd Qpeak (cms)= 0.696

PEAK FLOW (cms)= 0.234 (i)
TIME TO PEAK (hrs)= 12.250
RUNOFF VOLUME (mm)= 18.921
TOTAL RAINFALL (mm)= 61.814
RUNOFF COEFFICIENT = 0.306

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

CALIB (0203) | Area (ha)= 3.79 | Curve Number (CN)= 53.0
NASHYD | Ia (mm)= 16.00 | # of Linear Res.(N)= 3.00
ID= 1 DT= 5.0 min | U.H. Tp(hrs)= 0.17

Unit Hyd Qpeak (cms)= 0.852

PEAK FLOW (cms)= 0.071 (i)
TIME TO PEAK (hrs)= 11.833
RUNOFF VOLUME (mm)= 7.716
TOTAL RAINFALL (mm)= 61.814
RUNOFF COEFFICIENT = 0.125

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

ADD HYD (0801)				
1 + 2 = 3				

ID1= 1 (0002):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	10.93	0.234	12.25	18.92
+ ID2= 2 (0203):	3.79	0.071	11.83	7.72

=====
 ID = 3 (0801): 14.72 0.258 12.25 16.04

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 ADD HYD (0801)
 3 + 2 = 1
 AREA QPEAK TPEAK R.V.
 (ha) (cms) (hrs) (mm)
 ID1= 3 (0801): 14.72 0.258 12.25 16.04
 + ID2= 2 (0400): 136.00 0.637 14.00 10.35
 =====
 ID = 1 (0801): 150.72 0.706 13.67 10.91

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 CALIB
 NASHYD (0001) Area (ha)= 77.75 Curve Number (CN)= 49.6
 ID= 1 DT= 5.0 min Ia (mm)= 6.91 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 1.24

Unit Hyd Qpeak (cms)= 2.395
 PEAK FLOW (cms)= 0.474 (i)
 TIME TO PEAK (hrs)= 13.083
 RUNOFF VOLUME (mm)= 9.631
 TOTAL RAINFALL (mm)= 61.814
 RUNOFF COEFFICIENT = 0.156

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

 CALIB
 NASHYD (0202) Area (ha)= 6.35 Curve Number (CN)= 57.9
 ID= 1 DT= 5.0 min Ia (mm)= 4.70 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.55

Unit Hyd Qpeak (cms)= 0.441
 PEAK FLOW (cms)= 0.101 (i)
 TIME TO PEAK (hrs)= 12.250
 RUNOFF VOLUME (mm)= 13.490
 TOTAL RAINFALL (mm)= 61.814
 RUNOFF COEFFICIENT = 0.218

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

 CALIB
 NASHYD (0204) Area (ha)= 1.33 Curve Number (CN)= 50.0
 ID= 1 DT= 5.0 min Ia (mm)= 16.00 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.17

Unit Hyd Qpeak (cms)= 0.299
 PEAK FLOW (cms)= 0.022 (i)
 TIME TO PEAK (hrs)= 11.833
 RUNOFF VOLUME (mm)= 6.975
 TOTAL RAINFALL (mm)= 61.814
 RUNOFF COEFFICIENT = 0.113

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

 ADD HYD (0804)
 1 + 2 = 3
 AREA QPEAK TPEAK R.V.
 (ha) (cms) (hrs) (mm)
 ID1= 1 (0202): 6.35 0.101 12.25 13.49
 + ID2= 2 (0204): 1.33 0.022 11.83 6.98
 =====
 ID = 3 (0804): 7.68 0.109 12.17 12.36

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 RESERVOIR (0602)
 IN= 2--> OUT= 1
 DT= 5.0 min
 OUTFLOW STORAGE OUTFLOW STORAGE
 (cms) (ha.m.) (cms) (ha.m.)
 0.0000 0.0000 0.1306 0.1176
 0.0014 0.0066 0.3534 0.1362
 0.0069 0.0205 0.6046 0.1554
 0.0098 0.0350 0.9742 0.1752
 0.0120 0.0502 1.4665 0.1957
 0.0139 0.0661 2.0882 0.2169
 0.0155 0.0826 2.4500 0.2278
 0.0394 0.0998 0.0000 0.0000
 AREA QPEAK TPEAK R.V.
 (ha) (cms) (hrs) (mm)
 INFLOW : ID= 2 (0804) 7.677 0.109 12.17 12.36
 OUTFLOW: ID= 1 (0602) 7.677 0.012 16.17 12.21

PEAK FLOW REDUCTION [Qout/Qin] (%) = 11.49
 TIME SHIFT OF PEAK FLOW (min)=240.00
 MAXIMUM STORAGE USED (ha.m.) = 0.0543

 CALIB
 NASHYD (0201) Area (ha)= 5.05 Curve Number (CN)= 51.4
 ID= 1 DT= 5.0 min Ia (mm)= 4.70 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.57

Unit Hyd Qpeak (cms)= 0.338
 PEAK FLOW (cms)= 0.063 (i)
 TIME TO PEAK (hrs)= 12.250
 RUNOFF VOLUME (mm)= 10.972
 TOTAL RAINFALL (mm)= 61.814
 RUNOFF COEFFICIENT = 0.178

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

 RESERVOIR (0601)
 IN= 2--> OUT= 1
 DT= 5.0 min
 OUTFLOW STORAGE OUTFLOW STORAGE
 (cms) (ha.m.) (cms) (ha.m.)
 0.0000 0.0000 0.3000 0.0752
 0.0320 0.0244 0.7410 0.1015
 0.0910 0.0495 0.0000 0.0000

AREA QPEAK TPEAK R.V.
 (ha) (cms) (hrs) (mm)
 INFLOW : ID= 2 (0201) 5.047 0.063 12.25 10.97
 OUTFLOW: ID= 1 (0601) 5.047 0.025 13.33 10.94

PEAK FLOW REDUCTION [Qout/Qin] (%) = 40.15
 TIME SHIFT OF PEAK FLOW (min)= 65.00
 MAXIMUM STORAGE USED (ha.m.) = 0.0193

 ADD HYD (0802)
 1 + 2 = 3
 AREA QPEAK TPEAK R.V.
 (ha) (cms) (hrs) (mm)
 ID1= 1 (0601): 5.05 0.025 13.33 10.94
 + ID2= 2 (0602): 7.68 0.012 16.17 12.21
 =====
 ID = 3 (0802): 12.72 0.037 13.42 11.70

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 ADD HYD (0803)
 1 + 2 = 3
 AREA QPEAK TPEAK R.V.
 (ha) (cms) (hrs) (mm)
 ID1= 1 (0001): 77.75 0.474 13.08 9.63
 + ID2= 2 (0802): 12.72 0.037 13.42 11.70
 =====
 ID = 3 (0803): 90.47 0.510 13.08 9.92

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 ** SIMULATION NUMBER: 3 **

10-Year SCS Storm

MASS STORM
 Ptotal= 70.90 mm

Filename: C:\Users\dmarshall\AppData\Local\Temp\27273bc1-82f4-48f8-aa53-bc87bf5ec9a7\1b866731
 Comments: SCS Type II 24 HR MASS CURVE

Duration of storm = 23.75 hrs
 Mass curve time step = 15.00 min

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.85	6.25	1.42	12.25	10.21	18.25	1.13
0.50	0.57	6.50	1.13	12.50	5.39	18.50	1.42
0.75	0.85	6.75	1.42	12.75	5.10	18.75	1.13
1.00	0.85	7.00	1.42	13.00	3.97	19.00	1.42
1.25	0.85	7.25	1.70	13.25	3.69	19.25	1.13
1.50	0.57	7.50	1.42	13.50	3.12	19.50	1.42
1.75	0.85	7.75	1.70	13.75	2.84	19.75	1.13
2.00	0.85	8.00	1.70	14.00	2.27	20.00	0.85
2.25	1.13	8.25	1.99	14.25	1.99	20.25	0.85
2.50	0.85	8.50	1.99	14.50	2.27	20.50	0.85
2.75	0.85	8.75	1.99	14.75	1.99	20.75	0.85
3.00	0.85	9.00	2.27	15.00	2.27	21.00	0.85
3.25	1.13	9.25	2.27	15.25	1.99	21.25	0.85
3.50	0.85	9.50	2.55	15.50	2.27	21.50	0.85
3.75	0.85	9.75	2.55	15.75	1.99	21.75	0.85
4.00	1.13	10.00	3.12	16.00	1.42	22.00	0.85
4.25	1.13	10.25	3.40	16.25	1.13	22.25	0.85
4.50	1.13	10.50	4.25	16.50	1.42	22.50	0.85
4.75	1.13	10.75	4.54	16.75	1.13	22.75	0.85
5.00	1.13	11.00	6.81	17.00	1.42	23.00	0.85
5.25	1.13	11.25	6.81	17.25	1.13	23.25	0.85
5.50	1.13	11.50	20.99	17.50	1.42	23.50	0.85
5.75	1.13	11.75	86.78	17.75	1.13	23.75	0.85
6.00	1.13	12.00	10.21	18.00	1.42		

CALIB NASHYD (0003)
 ID= 1 DT= 5.0 min

Area (ha)= 136.00 Curve Number (CN)= 52.1
 Ia (mm)= 7.20 # of Linear Res. (N)= 3.00
 U.H. Tp(hrs)= 1.94

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	0.85	6.083	1.42	12.083	10.21	18.08	1.13
0.167	0.85	6.167	1.42	12.167	10.21	18.17	1.13
0.250	0.85	6.250	1.42	12.250	10.21	18.25	1.13
0.333	0.57	6.333	1.13	12.333	5.39	18.33	1.42
0.417	0.57	6.417	1.13	12.417	5.39	18.42	1.42
0.500	0.57	6.500	1.13	12.500	5.39	18.50	1.42
0.583	0.85	6.583	1.42	12.583	5.10	18.58	1.13
0.667	0.85	6.667	1.42	12.667	5.10	18.67	1.13
0.750	0.85	6.750	1.42	12.750	5.10	18.75	1.13
0.833	0.85	6.833	1.42	12.833	3.97	18.83	1.42
0.917	0.85	6.917	1.42	12.917	3.97	18.92	1.42
1.000	0.85	7.000	1.42	13.000	3.97	19.00	1.42
1.083	0.85	7.083	1.70	13.083	3.69	19.08	1.13
1.167	0.85	7.167	1.70	13.167	3.69	19.17	1.13
1.250	0.85	7.250	1.70	13.250	3.69	19.25	1.13
1.333	0.57	7.333	1.42	13.333	3.12	19.33	1.42
1.417	0.57	7.417	1.42	13.417	3.12	19.42	1.42
1.500	0.57	7.500	1.42	13.500	3.12	19.50	1.42
1.583	0.85	7.583	1.70	13.583	2.84	19.58	1.13
1.667	0.85	7.667	1.70	13.667	2.84	19.67	1.13
1.750	0.85	7.750	1.70	13.750	2.84	19.75	1.13
1.833	0.85	7.833	1.70	13.833	2.27	19.83	0.85
1.917	0.85	7.917	1.70	13.917	2.27	19.92	0.85
2.000	0.85	8.000	1.70	14.000	2.27	20.00	0.85
2.083	1.13	8.083	1.99	14.083	1.99	20.08	0.85
2.167	1.13	8.167	1.99	14.167	1.99	20.17	0.85
2.250	1.13	8.250	1.99	14.250	1.99	20.25	0.85
2.333	0.85	8.333	1.99	14.333	2.27	20.33	0.85
2.417	0.85	8.417	1.99	14.417	2.27	20.42	0.85
2.500	0.85	8.500	1.99	14.500	2.27	20.50	0.85

2.583	0.85	8.583	1.99	14.583	1.99	20.58	0.85
2.667	0.85	8.667	1.99	14.667	1.99	20.67	0.85
2.750	0.85	8.750	1.99	14.750	1.99	20.75	0.85
2.833	0.85	8.833	2.27	14.833	2.27	20.83	0.85
2.917	0.85	8.917	2.27	14.917	2.27	20.92	0.85
3.000	0.85	9.000	2.27	15.000	2.27	21.00	0.85
3.083	1.13	9.083	2.27	15.083	1.99	21.08	0.85
3.167	1.13	9.167	2.27	15.167	1.99	21.17	0.85
3.250	1.13	9.250	2.27	15.250	1.99	21.25	0.85
3.333	0.85	9.333	2.55	15.333	2.27	21.33	0.85
3.417	0.85	9.417	2.55	15.417	2.27	21.42	0.85
3.500	0.85	9.500	2.55	15.500	2.27	21.50	0.85
3.583	0.85	9.583	2.55	15.583	1.99	21.58	0.85
3.667	0.85	9.667	2.55	15.667	1.99	21.67	0.85
3.750	0.85	9.750	2.55	15.750	1.99	21.75	0.85
3.833	1.13	9.833	3.12	15.833	1.42	21.83	0.85
3.917	1.13	9.917	3.12	15.917	1.42	21.92	0.85
4.000	1.13	10.000	3.12	16.000	1.42	22.00	0.85
4.083	1.13	10.083	3.40	16.083	1.13	22.08	0.85
4.167	1.13	10.167	3.40	16.167	1.13	22.17	0.85
4.250	1.13	10.250	3.40	16.250	1.13	22.25	0.85
4.333	1.13	10.333	4.25	16.333	1.42	22.33	0.85
4.417	1.13	10.417	4.25	16.417	1.42	22.42	0.85
4.500	1.13	10.500	4.25	16.500	1.42	22.50	0.85
4.583	1.13	10.583	4.54	16.583	1.13	22.58	0.85
4.667	1.13	10.667	4.54	16.667	1.13	22.67	0.85
4.750	1.13	10.750	4.54	16.750	1.13	22.75	0.85
4.833	1.13	10.833	6.81	16.833	1.42	22.83	0.85
4.917	1.13	10.917	6.81	16.917	1.42	22.92	0.85
5.000	1.13	11.000	6.81	17.000	1.42	23.00	0.85
5.083	1.13	11.083	6.81	17.083	1.13	23.08	0.85
5.167	1.13	11.167	6.81	17.167	1.13	23.17	0.85
5.250	1.13	11.250	6.81	17.250	1.13	23.25	0.85
5.333	1.13	11.333	20.99	17.333	1.42	23.33	0.85
5.417	1.13	11.417	20.99	17.417	1.42	23.42	0.85
5.500	1.13	11.500	20.99	17.500	1.42	23.50	0.85
5.583	1.13	11.583	86.78	17.583	1.13	23.58	0.85
5.667	1.13	11.667	86.78	17.667	1.13	23.67	0.85
5.750	1.13	11.750	86.78	17.750	1.13	23.75	0.85
5.833	1.13	11.833	10.22	17.833	1.42		
5.917	1.13	11.917	10.21	17.917	1.42		
6.000	1.13	12.000	10.21	18.000	1.42		

Unit Hyd Qpeak (cms)= 2.678

PEAK FLOW (cms)= 0.843 (i)
 TIME TO PEAK (hrs)= 13.917
 RUNOFF VOLUME (mm)= 13.571
 TOTAL RAINFALL (mm)= 70.687
 RUNOFF COEFFICIENT = 0.192

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

DUHYD (0400)
 Inlet Cap.=0.713
 #of Inlets= 1
 Total(cms)= 0.7

	AREA (ha)	OPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD. (ID= 1):	136.00	0.84	13.92	13.57
MAJOR SYS. (ID= 2):	4.61	0.13	13.92	13.57
MINOR SYS. (ID= 3):	131.39	0.71	13.08	13.57

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0002)
 ID= 1 DT= 5.0 min

Area (ha)= 10.93 Curve Number (CN)= 68.5
 Ia (mm)= 4.40 # of Linear Res. (N)= 3.00
 U.H. Tp(hrs)= 0.60

Unit Hyd Qpeak (cms)= 0.696

PEAK FLOW (cms)= 0.300 (i)
 TIME TO PEAK (hrs)= 12.250
 RUNOFF VOLUME (mm)= 23.999
 TOTAL RAINFALL (mm)= 70.687
 RUNOFF COEFFICIENT = 0.340

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

```

-----
| CALIB          |
| NASHYD (0203) | Area (ha)= 3.79 Curve Number (CN)= 53.0
| ID= 1 DT= 5.0 min | Ia (mm)= 16.00 # of Linear Res.(N)= 3.00
|-----|
| U.H. Tp(hrs)= 0.17

```

```

Unit Hyd Qpeak (cms)= 0.852

PEAK FLOW (cms)= 0.102 (i)
TIME TO PEAK (hrs)= 11.833
RUNOFF VOLUME (mm)= 10.645
TOTAL RAINFALL (mm)= 70.687
RUNOFF COEFFICIENT = 0.151

```

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

```

-----
| ADD HYD (0801) |
| 1 + 2 = 3 | AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)
|-----|
| ID1= 1 (0002): 10.93 0.300 12.25 24.00
| + ID2= 2 (0203): 3.79 0.102 11.83 10.65
|-----|
| ID = 3 (0801): 14.72 0.332 12.25 20.56

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD (0801) |
| 3 + 2 = 1 | AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)
|-----|
| ID1= 3 (0801): 14.72 0.332 12.25 20.56
| + ID2= 2 (0400): 131.39 0.713 13.08 13.57
|-----|
| ID = 1 (0801): 146.11 0.888 13.08 14.27

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB          |
| NASHYD (0001) | Area (ha)= 77.75 Curve Number (CN)= 49.6
| ID= 1 DT= 5.0 min | Ia (mm)= 6.91 # of Linear Res.(N)= 3.00
|-----|
| U.H. Tp(hrs)= 1.24

```

```

Unit Hyd Qpeak (cms)= 2.395

PEAK FLOW (cms)= 0.628 (i)
TIME TO PEAK (hrs)= 13.083
RUNOFF VOLUME (mm)= 12.637
TOTAL RAINFALL (mm)= 70.687
RUNOFF COEFFICIENT = 0.179

```

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

```

-----
| CALIB          |
| NASHYD (0202) | Area (ha)= 6.35 Curve Number (CN)= 57.9
| ID= 1 DT= 5.0 min | Ia (mm)= 4.70 # of Linear Res.(N)= 3.00
|-----|
| U.H. Tp(hrs)= 0.55

```

```

Unit Hyd Qpeak (cms)= 0.441

PEAK FLOW (cms)= 0.131 (i)
TIME TO PEAK (hrs)= 12.250
RUNOFF VOLUME (mm)= 17.370
TOTAL RAINFALL (mm)= 70.687
RUNOFF COEFFICIENT = 0.246

```

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

```

-----
| CALIB          |
| NASHYD (0204) | Area (ha)= 1.33 Curve Number (CN)= 50.0
| ID= 1 DT= 5.0 min | Ia (mm)= 16.00 # of Linear Res.(N)= 3.00
|-----|
| U.H. Tp(hrs)= 0.17

```

Unit Hyd Qpeak (cms)= 0.299

```

PEAK FLOW (cms)= 0.032 (i)
TIME TO PEAK (hrs)= 11.833
RUNOFF VOLUME (mm)= 9.654
TOTAL RAINFALL (mm)= 70.687
RUNOFF COEFFICIENT = 0.137

```

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

```

-----
| ADD HYD (0804) |
| 1 + 2 = 3 | AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)
|-----|
| ID1= 1 (0202): 6.35 0.131 12.25 17.37
| + ID2= 2 (0204): 1.33 0.032 11.83 9.65
|-----|
| ID = 3 (0804): 7.68 0.142 12.17 16.03

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| RESERVOIR (0602) |
| IN= 2--> OUT= 1 |
| DT= 5.0 min |
|-----|
| OUTFLOW (cms) STORAGE (ha.m.) | OUTFLOW (cms) STORAGE (ha.m.)
|-----|
| 0.0000 0.0000 | 0.1306 0.1176
| 0.0014 0.0066 | 0.3534 0.1362
| 0.0069 0.0205 | 0.6046 0.1554
| 0.0098 0.0350 | 0.9742 0.1752
| 0.0120 0.0502 | 1.4665 0.1957
| 0.0139 0.0661 | 2.0882 0.2169
| 0.0155 0.0826 | 2.4500 0.2278
| 0.0394 0.0998 | 0.0000 0.0000

```

```

INFLOW : ID= 2 (0804) 7.677 0.142 12.17 16.03
OUTFLOW: ID= 1 (0602) 7.677 0.015 16.33 15.88

```

```

PEAK FLOW REDUCTION [Qout/Qin](%)= 10.28
TIME SHIFT OF PEAK FLOW (min)=250.00
MAXIMUM STORAGE USED (ha.m.)= 0.0732

```

```

-----
| CALIB          |
| NASHYD (0201) | Area (ha)= 5.05 Curve Number (CN)= 51.4
| ID= 1 DT= 5.0 min | Ia (mm)= 4.70 # of Linear Res.(N)= 3.00
|-----|
| U.H. Tp(hrs)= 0.57

```

```

Unit Hyd Qpeak (cms)= 0.338

PEAK FLOW (cms)= 0.082 (i)
TIME TO PEAK (hrs)= 12.250
RUNOFF VOLUME (mm)= 14.222
TOTAL RAINFALL (mm)= 70.687
RUNOFF COEFFICIENT = 0.201

```

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

```

-----
| RESERVOIR (0601) |
| IN= 2--> OUT= 1 |
| DT= 5.0 min |
|-----|
| OUTFLOW (cms) STORAGE (ha.m.) | OUTFLOW (cms) STORAGE (ha.m.)
|-----|
| 0.0000 0.0000 | 0.3000 0.0752
| 0.0320 0.0244 | 0.7410 0.1015
| 0.0910 0.0495 | 0.0000 0.0000

```

```

INFLOW : ID= 2 (0201) 5.047 0.082 12.25 14.22
OUTFLOW: ID= 1 (0601) 5.047 0.034 13.33 14.19

```

```

PEAK FLOW REDUCTION [Qout/Qin](%)= 40.94
TIME SHIFT OF PEAK FLOW (min)= 65.00
MAXIMUM STORAGE USED (ha.m.)= 0.0251

```

ADD HYD (0802)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 (0601):	5.05	0.034	13.33	14.19
+ ID2= 2 (0602):	7.68	0.015	16.33	15.88
ID = 3 (0802):	12.72	0.047	13.33	15.21

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0803)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 (0001):	77.75	0.628	13.08	12.64
+ ID2= 2 (0802):	12.72	0.047	13.33	15.21
ID = 3 (0803):	90.47	0.674	13.08	13.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 ** SIMULATION NUMBER: 4 ** 25-Year SCS Storm

MASS STORM
 Ptotal= 82.00 mm
 Filename: C:\Users\dmarshall\AppData\Local\Temp\27273bc1-82f4-48f8-aa53-bc87bf5ec9a7\7552f531
 Comments: SCS Type II 24 HR MASS CURVE

Duration of storm = 23.75 hrs
 Mass curve time step = 15.00 min

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.98	6.25	1.64	12.25	11.81	18.25	1.31
0.50	0.66	6.50	1.31	12.50	6.23	18.50	1.64
0.75	0.98	6.75	1.64	12.75	5.90	18.75	1.31
1.00	0.98	7.00	1.64	13.00	4.59	19.00	1.64
1.25	0.98	7.25	1.97	13.25	4.26	19.25	1.31
1.50	0.66	7.50	1.64	13.50	3.61	19.50	1.64
1.75	0.98	7.75	1.97	13.75	3.28	19.75	1.31
2.00	0.98	8.00	1.97	14.00	2.62	20.00	0.98
2.25	1.31	8.25	2.30	14.25	2.30	20.25	0.98
2.50	0.98	8.50	2.30	14.50	2.62	20.50	0.98
2.75	0.98	8.75	2.30	14.75	2.30	20.75	0.98
3.00	0.98	9.00	2.62	15.00	2.62	21.00	0.98
3.25	1.31	9.25	2.62	15.25	2.30	21.25	0.98
3.50	0.98	9.50	2.95	15.50	2.62	21.50	0.98
3.75	0.98	9.75	2.95	15.75	2.30	21.75	0.98
4.00	1.31	10.00	3.61	16.00	1.64	22.00	0.98
4.25	1.31	10.25	3.94	16.25	1.31	22.25	0.98
4.50	1.31	10.50	4.92	16.50	1.64	22.50	0.98
4.75	1.31	10.75	5.25	16.75	1.31	22.75	0.98
5.00	1.31	11.00	7.87	17.00	1.64	23.00	0.98
5.25	1.31	11.25	7.87	17.25	1.31	23.25	0.98
5.50	1.31	11.50	24.27	17.50	1.64	23.50	0.98
5.75	1.31	11.75	100.37	17.75	1.31	23.75	0.98
6.00	1.31	12.00	11.81	18.00	1.64		

CALIB NASHYD (0003)
 ID= 1 DT= 5.0 min
 Area (ha)= 136.00 Curve Number (CN)= 52.1
 Ia (mm)= 7.20 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 1.94

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	0.98	6.083	1.64	12.083	11.81	18.08	1.31
0.167	0.98	6.167	1.64	12.167	11.81	18.17	1.31
0.250	0.98	6.250	1.64	12.250	11.81	18.25	1.31
0.333	0.66	6.333	1.31	12.333	6.23	18.33	1.64
0.417	0.66	6.417	1.31	12.417	6.23	18.42	1.64

0.500	0.66	6.500	1.31	12.500	6.23	18.50	1.64
0.583	0.98	6.583	1.64	12.583	5.90	18.58	1.31
0.667	0.98	6.667	1.64	12.667	5.90	18.67	1.31
0.750	0.98	6.750	1.64	12.750	5.90	18.75	1.31
0.833	0.98	6.833	1.64	12.833	4.59	18.83	1.64
0.917	0.98	6.917	1.64	12.917	4.59	18.92	1.64
1.000	0.98	7.000	1.64	13.000	4.59	19.00	1.64
1.083	0.98	7.083	1.97	13.083	4.26	19.08	1.31
1.167	0.98	7.167	1.97	13.167	4.26	19.17	1.31
1.250	0.98	7.250	1.97	13.250	4.26	19.25	1.31
1.333	0.66	7.333	1.64	13.333	3.61	19.33	1.64
1.417	0.66	7.417	1.64	13.417	3.61	19.42	1.64
1.500	0.66	7.500	1.64	13.500	3.61	19.50	1.64
1.583	0.98	7.583	1.97	13.583	3.28	19.58	1.31
1.667	0.98	7.667	1.97	13.667	3.28	19.67	1.31
1.750	0.98	7.750	1.97	13.750	3.28	19.75	1.31
1.833	0.98	7.833	1.97	13.833	2.62	19.83	0.98
1.917	0.98	7.917	1.97	13.917	2.62	19.92	0.98
2.000	0.98	8.000	1.97	14.000	2.62	20.00	0.98
2.083	1.31	8.083	2.30	14.083	2.30	20.08	0.98
2.167	1.31	8.167	2.30	14.167	2.30	20.17	0.98
2.250	1.31	8.250	2.30	14.250	2.30	20.25	0.98
2.333	0.98	8.333	2.30	14.333	2.62	20.33	0.98
2.417	0.98	8.417	2.30	14.417	2.62	20.42	0.98
2.500	0.98	8.500	2.30	14.500	2.62	20.50	0.98
2.583	0.98	8.583	2.30	14.583	2.30	20.58	0.98
2.667	0.98	8.667	2.30	14.667	2.30	20.67	0.98
2.750	0.98	8.750	2.30	14.750	2.30	20.75	0.98
2.833	0.98	8.833	2.62	14.833	2.62	20.83	0.98
2.917	0.98	8.917	2.62	14.917	2.62	20.92	0.98
3.000	0.98	9.000	2.62	15.000	2.62	21.00	0.98
3.083	1.31	9.083	2.62	15.083	2.30	21.08	0.98
3.167	1.31	9.167	2.62	15.167	2.30	21.17	0.98
3.250	1.31	9.250	2.62	15.250	2.30	21.25	0.98
3.333	0.98	9.333	2.95	15.333	2.62	21.33	0.98
3.417	0.98	9.417	2.95	15.417	2.62	21.42	0.98
3.500	0.98	9.500	2.95	15.500	2.62	21.50	0.98
3.583	0.98	9.583	2.95	15.583	2.30	21.58	0.98
3.667	0.98	9.667	2.95	15.667	2.30	21.67	0.98
3.750	0.98	9.750	2.95	15.750	2.30	21.75	0.98
3.833	1.31	9.833	3.61	15.833	1.64	21.83	0.98
3.917	1.31	9.917	3.61	15.917	1.64	21.92	0.98
4.000	1.31	10.000	3.61	16.000	1.64	22.00	0.98
4.083	1.31	10.083	3.94	16.083	1.31	22.08	0.98
4.167	1.31	10.167	3.94	16.167	1.31	22.17	0.98
4.250	1.31	10.250	3.94	16.250	1.31	22.25	0.98
4.333	1.31	10.333	4.92	16.333	1.64	22.33	0.98
4.417	1.31	10.417	4.92	16.417	1.64	22.42	0.98
4.500	1.31	10.500	4.92	16.500	1.64	22.50	0.98
4.583	1.31	10.583	5.25	16.583	1.31	22.58	0.98
4.667	1.31	10.667	5.25	16.667	1.31	22.67	0.98
4.750	1.31	10.750	5.25	16.750	1.31	22.75	0.98
4.833	1.31	10.833	7.87	16.833	1.64	22.83	0.98
4.917	1.31	10.917	7.87	16.917	1.64	22.92	0.98
5.000	1.31	11.000	7.87	17.000	1.64	23.00	0.98
5.083	1.31	11.083	7.87	17.083	1.31	23.08	0.98
5.167	1.31	11.167	7.87	17.167	1.31	23.17	0.98
5.250	1.31	11.250	7.87	17.250	1.31	23.25	0.98
5.333	1.31	11.333	24.27	17.333	1.64	23.33	0.98
5.417	1.31	11.417	24.27	17.417	1.64	23.42	0.98
5.500	1.31	11.500	24.27	17.500	1.64	23.50	0.98
5.583	1.31	11.583	100.36	17.583	1.31	23.58	0.98
5.667	1.31	11.667	100.37	17.667	1.31	23.67	0.98
5.750	1.31	11.750	100.37	17.750	1.31	23.75	0.98
5.833	1.31	11.833	11.82	17.833	1.64		
5.917	1.31	11.917	11.81	17.917	1.64		
6.000	1.31	12.000	11.81	18.000	1.64		

Unit Hyd Qpeak (cms)= 2.678

PEAK FLOW (cms)= 1.131 (i)
 TIME TO PEAK (hrs)= 13.917
 RUNOFF VOLUME (mm)= 18.042
 TOTAL RAINFALL (mm)= 81.754
 RUNOFF COEFFICIENT = 0.221

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

DUHYD (0400)
 Inlet Cap.=0.713
 #of Inlets= 1
 Total(cms)= 0.7 AREA QPEAK TPEAK R.V.

	(ha)	(cms)	(hrs)	(mm)
TOTAL HYD. (ID= 1):	136.00	1.13	13.92	18.04
MAJOR SYS. (ID= 2):	18.24	0.42	13.92	18.04
MINOR SYS. (ID= 3):	117.76	0.71	12.67	18.04

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	NASHYD	(0002)	Area	(ha)=	10.93	Curve Number	(CN)=	68.5
ID= 1	DT=	5.0 min	Ia	(mm)=	4.40	# of Linear Res. (N)=	3.00	
			U.H. Tp	(hrs)=	0.60			

Unit Hyd Qpeak (cms)= 0.696

PEAK FLOW	(cms)=	0.388 (i)
TIME TO PEAK	(hrs)=	12.250
RUNOFF VOLUME	(mm)=	30.818
TOTAL RAINFALL	(mm)=	81.754
RUNOFF COEFFICIENT	=	0.377

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

CALIB	NASHYD	(0203)	Area	(ha)=	3.79	Curve Number	(CN)=	53.0
ID= 1	DT=	5.0 min	Ia	(mm)=	16.00	# of Linear Res. (N)=	3.00	
			U.H. Tp	(hrs)=	0.17			

Unit Hyd Qpeak (cms)= 0.852

PEAK FLOW	(cms)=	0.146 (i)
TIME TO PEAK	(hrs)=	11.833
RUNOFF VOLUME	(mm)=	14.805
TOTAL RAINFALL	(mm)=	81.754
RUNOFF COEFFICIENT	=	0.181

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

ADD HYD	(0801)	1 + 2 = 3	AREA	(ha)	QPEAK	(cms)	TPEAK	(hrs)	R.V.	(mm)
ID1= 1	(0002):		10.93	0.388	12.25	30.82				
+ ID2= 2	(0203):		3.79	0.146	11.83	14.80				
ID = 3	(0801):		14.72	0.432	12.17	26.69				

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD	(0801)	3 + 2 = 1	AREA	(ha)	QPEAK	(cms)	TPEAK	(hrs)	R.V.	(mm)
ID1= 3	(0801):		14.72	0.432	12.17	26.69				
+ ID2= 2	(0400):		117.76	0.713	12.67	18.04				
ID = 1	(0801):		132.48	1.053	12.58	19.00				

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	NASHYD	(0001)	Area	(ha)=	77.75	Curve Number	(CN)=	49.6
ID= 1	DT=	5.0 min	Ia	(mm)=	6.91	# of Linear Res. (N)=	3.00	
			U.H. Tp	(hrs)=	1.24			

Unit Hyd Qpeak (cms)= 2.395

PEAK FLOW	(cms)=	0.843 (i)
TIME TO PEAK	(hrs)=	13.083
RUNOFF VOLUME	(mm)=	16.825
TOTAL RAINFALL	(mm)=	81.754
RUNOFF COEFFICIENT	=	0.206

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

CALIB	NASHYD	(0202)	Area	(ha)=	6.35	Curve Number	(CN)=	57.9
ID= 1	DT=	5.0 min	Ia	(mm)=	4.70	# of Linear Res. (N)=	3.00	
			U.H. Tp	(hrs)=	0.55			

Unit Hyd Qpeak (cms)= 0.441

PEAK FLOW	(cms)=	0.172 (i)
TIME TO PEAK	(hrs)=	12.250
RUNOFF VOLUME	(mm)=	22.683
TOTAL RAINFALL	(mm)=	81.754
RUNOFF COEFFICIENT	=	0.277

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

CALIB	NASHYD	(0204)	Area	(ha)=	1.33	Curve Number	(CN)=	50.0
ID= 1	DT=	5.0 min	Ia	(mm)=	16.00	# of Linear Res. (N)=	3.00	
			U.H. Tp	(hrs)=	0.17			

Unit Hyd Qpeak (cms)= 0.299

PEAK FLOW	(cms)=	0.046 (i)
TIME TO PEAK	(hrs)=	11.833
RUNOFF VOLUME	(mm)=	13.473
TOTAL RAINFALL	(mm)=	81.754
RUNOFF COEFFICIENT	=	0.165

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

ADD HYD	(0804)	1 + 2 = 3	AREA	(ha)	QPEAK	(cms)	TPEAK	(hrs)	R.V.	(mm)
ID1= 1	(0202):		6.35	0.172	12.25	22.68				
+ ID2= 2	(0204):		1.33	0.046	11.83	13.47				
ID = 3	(0804):		7.68	0.188	12.17	21.09				

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR	(0602)	IN= 2--> OUT= 1	DT= 5.0 min	OUTFLOW	(cms)	STORAGE	(ha.m.)	OUTFLOW	(cms)	STORAGE	(ha.m.)
				0.0000	0.0000	0.1306	0.1176				
				0.0014	0.0066	0.3534	0.1362				
				0.0069	0.0205	0.6046	0.1554				
				0.0098	0.0350	0.9742	0.1752				
				0.0120	0.0502	1.4665	0.1957				
				0.0139	0.0661	2.0882	0.2169				
				0.0155	0.0826	2.4500	0.2278				
				0.0394	0.0998	0.0000	0.0000				

	AREA	(ha)	QPEAK	(cms)	TPEAK	(hrs)	R.V.	(mm)
INFLOW : ID= 2 (0804)	7.677	0.188	12.17	21.09				
OUTFLOW: ID= 1 (0602)	7.677	0.028	14.50	20.93				

PEAK FLOW REDUCTION [Qout/Qin] (%)= 15.14
 TIME SHIFT OF PEAK FLOW (min)=140.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0919

CALIB	NASHYD	(0201)	Area	(ha)=	5.05	Curve Number	(CN)=	51.4
ID= 1	DT=	5.0 min	Ia	(mm)=	4.70	# of Linear Res. (N)=	3.00	
			U.H. Tp	(hrs)=	0.57			

Unit Hyd Qpeak (cms)= 0.338

PEAK FLOW	(cms)=	0.109 (i)
TIME TO PEAK	(hrs)=	12.250
RUNOFF VOLUME	(mm)=	18.716

TOTAL RAINFALL (mm)= 81.754
 RUNOFF COEFFICIENT = 0.229

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

RESERVOIR (0601)				
IN= 2--> OUT= 1				
DT= 5.0 min				
OUTFLOW	STORAGE	OUTFLOW	STORAGE	
(cms)	(ha.m.)	(cms)	(ha.m.)	
0.0000	0.0000	0.3000	0.0752	
0.0320	0.0244	0.7410	0.1015	
0.0910	0.0495	0.0000	0.0000	

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 (0201)	5.047	0.109	12.25	18.72
OUTFLOW: ID= 1 (0601)	5.047	0.050	13.17	18.68

PEAK FLOW REDUCTION [qout/qin](%)= 45.72
 TIME SHIFT OF PEAK FLOW (min)= 55.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0320

ADD HYD (0802)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0601):	5.05	0.050	13.17	18.68
+ ID2= 2 (0602):	7.68	0.028	14.50	20.93
ID = 3 (0802):	12.72	0.071	13.67	20.04

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0803)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0001):	77.75	0.843	13.08	16.82
+ ID2= 2 (0802):	12.72	0.071	13.67	20.04
ID = 3 (0803):	90.47	0.908	13.08	17.28

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 ** SIMULATION NUMBER: 5 ** 50-Year SCS Storm

MASS STORM
 Ptotal= 90.30 mm
 Filename: C:\Users\dmarshall\AppData\Local\Temp\27273bc1-82f4-48f8-aa53-bc87bf5ec9a7\42a3edb3
 Comments: SCS Type II 24 HR MASS CURVE

Duration of storm = 23.75 hrs
 Mass curve time step = 15.00 min

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.25	1.08	6.25	1.81	12.25	13.00	18.25	1.44
0.50	0.72	6.50	1.44	12.50	6.86	18.50	1.81
0.75	1.08	6.75	1.81	12.75	6.50	18.75	1.44
1.00	1.08	7.00	1.81	13.00	5.06	19.00	1.81
1.25	1.08	7.25	2.17	13.25	4.70	19.25	1.44
1.50	0.72	7.50	1.81	13.50	3.97	19.50	1.81
1.75	1.08	7.75	2.17	13.75	3.61	19.75	1.44
2.00	1.08	8.00	2.17	14.00	2.89	20.00	1.08
2.25	1.44	8.25	2.53	14.25	2.53	20.25	1.08
2.50	1.08	8.50	2.53	14.50	2.89	20.50	1.08
2.75	1.08	8.75	2.53	14.75	2.53	20.75	1.08
3.00	1.08	9.00	2.89	15.00	2.89	21.00	1.08
3.25	1.44	9.25	2.89	15.25	2.53	21.25	1.08
3.50	1.08	9.50	3.25	15.50	2.89	21.50	1.08
3.75	1.08	9.75	3.25	15.75	2.53	21.75	1.08
4.00	1.44	10.00	3.97	16.00	1.81	22.00	1.08
4.25	1.44	10.25	4.33	16.25	1.44	22.25	1.08
4.50	1.44	10.50	5.42	16.50	1.81	22.50	1.08

4.75	1.44	10.75	5.78	16.75	1.44	22.75	1.08
5.00	1.44	11.00	8.67	17.00	1.81	23.00	1.08
5.25	1.44	11.25	8.67	17.25	1.44	23.25	1.08
5.50	1.44	11.50	26.73	17.50	1.81	23.50	1.08
5.75	1.44	11.75	110.53	17.75	1.44	23.75	1.08
6.00	1.44	12.00	13.00	18.00	1.81		

CALIB			
NASHYD (0003)			
ID= 1	DT= 5.0 min	U.H. Tp(hrs)=	
Area (ha)=	136.00	Curve Number (CN)=	52.1
Ia (mm)=	7.20	# of Linear Res. (N)=	3.00

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	1.08	6.083	1.81	12.083	13.00	18.08	1.44
0.167	1.08	6.167	1.81	12.167	13.00	18.17	1.44
0.250	1.08	6.250	1.81	12.250	13.00	18.25	1.44
0.333	0.72	6.333	1.44	12.333	6.86	18.33	1.81
0.417	0.72	6.417	1.44	12.417	6.86	18.42	1.81
0.500	0.72	6.500	1.44	12.500	6.86	18.50	1.81
0.583	1.08	6.583	1.81	12.583	6.50	18.58	1.44
0.667	1.08	6.667	1.81	12.667	6.50	18.67	1.44
0.750	1.08	6.750	1.81	12.750	6.50	18.75	1.44
0.833	1.08	6.833	1.81	12.833	5.06	18.83	1.81
0.917	1.08	6.917	1.81	12.917	5.06	18.92	1.81
1.000	1.08	7.000	1.81	13.000	5.06	19.00	1.81
1.083	1.08	7.083	2.17	13.083	4.70	19.08	1.44
1.167	1.08	7.167	2.17	13.167	4.70	19.17	1.44
1.250	1.08	7.250	2.17	13.250	4.70	19.25	1.44
1.333	0.72	7.333	1.81	13.333	3.97	19.33	1.81
1.417	0.72	7.417	1.81	13.417	3.97	19.42	1.81
1.500	0.72	7.500	1.81	13.500	3.97	19.50	1.81
1.583	1.08	7.583	2.17	13.583	3.61	19.58	1.44
1.667	1.08	7.667	2.17	13.667	3.61	19.67	1.44
1.750	1.08	7.750	2.17	13.750	3.61	19.75	1.44
1.833	1.08	7.833	2.17	13.833	2.89	19.83	1.08
1.917	1.08	7.917	2.17	13.917	2.89	19.92	1.08
2.000	1.08	8.000	2.17	14.000	2.89	20.00	1.08
2.083	1.44	8.083	2.53	14.083	2.53	20.08	1.08
2.167	1.44	8.167	2.53	14.167	2.53	20.17	1.08
2.250	1.44	8.250	2.53	14.250	2.53	20.25	1.08
2.333	1.08	8.333	2.53	14.333	2.89	20.33	1.08
2.417	1.08	8.417	2.53	14.417	2.89	20.42	1.08
2.500	1.08	8.500	2.53	14.500	2.89	20.50	1.08
2.583	1.08	8.583	2.53	14.583	2.53	20.58	1.08
2.667	1.08	8.667	2.53	14.667	2.53	20.67	1.08
2.750	1.08	8.750	2.53	14.750	2.53	20.75	1.08
2.833	1.08	8.833	2.89	14.833	2.89	20.83	1.08
2.917	1.08	8.917	2.89	14.917	2.89	20.92	1.08
3.000	1.08	9.000	2.89	15.000	2.89	21.00	1.08
3.083	1.44	9.083	2.89	15.083	2.53	21.08	1.08
3.167	1.44	9.167	2.89	15.167	2.53	21.17	1.08
3.250	1.44	9.250	2.89	15.250	2.53	21.25	1.08
3.333	1.08	9.333	3.25	15.333	2.89	21.33	1.08
3.417	1.08	9.417	3.25	15.417	2.89	21.42	1.08
3.500	1.08	9.500	3.25	15.500	2.89	21.50	1.08
3.583	1.08	9.583	3.25	15.583	2.53	21.58	1.08
3.667	1.08	9.667	3.25	15.667	2.53	21.67	1.08
3.750	1.08	9.750	3.25	15.750	2.53	21.75	1.08
3.833	1.44	9.833	3.97	15.833	1.81	21.83	1.08
3.917	1.44	9.917	3.97	15.917	1.81	21.92	1.08
4.000	1.44	10.000	3.97	16.000	1.81	22.00	1.08
4.083	1.44	10.083	4.33	16.083	1.44	22.08	1.08
4.167	1.44	10.167	4.33	16.167	1.44	22.17	1.08
4.250	1.44	10.250	4.33	16.250	1.44	22.25	1.08
4.333	1.44	10.333	5.42	16.333	1.81	22.33	1.08
4.417	1.44	10.417	5.42	16.417	1.81	22.42	1.08
4.500	1.44	10.500	5.42	16.500	1.81	22.50	1.08
4.583	1.44	10.583	5.78	16.583	1.44	22.58	1.08
4.667	1.44	10.667	5.78	16.667	1.44	22.67	1.08
4.750	1.44	10.750	5.78	16.750	1.44	22.75	1.08
4.833	1.44	10.833	8.67	16.833	1.81	22.83	1.08
4.917	1.44	10.917	8.67	16.917	1.81	22.92	1.08
5.000	1.44	11.000	8.67	17.000	1.81	23.00	1.08
5.083	1.44	11.083	8.67	17.083	1.44	23.08	1.08
5.167	1.44	11.167	8.67	17.167	1.44	23.17	1.08
5.250	1.44	11.250	8.67	17.250	1.44	23.25	1.08
5.333	1.44	11.333	26.73	17.333	1.81	23.33	1.08

5.417	1.44	11.417	26.73	17.417	1.81	23.42	1.08
5.500	1.44	11.500	26.73	17.500	1.81	23.50	1.08
5.583	1.44	11.583	110.52	17.583	1.44	23.58	1.08
5.667	1.44	11.667	110.53	17.667	1.44	23.67	1.08
5.750	1.44	11.750	110.53	17.750	1.44	23.75	1.08
5.833	1.44	11.833	13.01	17.833	1.81		
5.917	1.44	11.917	13.00	17.917	1.81		
6.000	1.44	12.000	13.00	18.000	1.81		

Unit Hyd Qpeak (cms)= 2.678

PEAK FLOW (cms)= 1.367 (i)
 TIME TO PEAK (hrs)= 13.917
 RUNOFF VOLUME (mm)= 21.687
 TOTAL RAINFALL (mm)= 90.029
 RUNOFF COEFFICIENT = 0.241

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

DUHYD (0400)				
Inlet Cap.=0.713				
#of Inlets= 1				
Total (cms)= 0.7				

TOTAL HYD.(ID= 1):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	136.00	1.37	13.92	21.69

MAJOR SYS.(ID= 2):	27.96	0.65	13.92	21.69
MINOR SYS.(ID= 3):	108.04	0.71	12.50	21.69

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0002)				
ID= 1 DT= 5.0 min				
Area (ha)=	10.93	Curve Number (CN)=	68.5	
Ia (mm)=	4.40	# of Linear Res.(N)=	3.00	
U.H. Tp(hrs)=	0.60			

Unit Hyd Qpeak (cms)= 0.696

PEAK FLOW (cms)= 0.458 (i)
 TIME TO PEAK (hrs)= 12.250
 RUNOFF VOLUME (mm)= 36.220
 TOTAL RAINFALL (mm)= 90.029
 RUNOFF COEFFICIENT = 0.402

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

CALIB NASHYD (0203)				
ID= 1 DT= 5.0 min				
Area (ha)=	3.79	Curve Number (CN)=	53.0	
Ia (mm)=	16.00	# of Linear Res.(N)=	3.00	
U.H. Tp(hrs)=	0.17			

Unit Hyd Qpeak (cms)= 0.852

PEAK FLOW (cms)= 0.182 (i)
 TIME TO PEAK (hrs)= 11.833
 RUNOFF VOLUME (mm)= 18.247
 TOTAL RAINFALL (mm)= 90.029
 RUNOFF COEFFICIENT = 0.203

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

ADD HYD (0801)				
1 + 2 = 3				

ID1= 1 (0002):	10.93	0.458	12.25	36.22
+ ID2= 2 (0203):	3.79	0.182	11.83	18.25

ID = 3 (0801):	14.72	0.513	12.17	31.59

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0801)

3 + 2 = 1				

ID1= 3 (0801):	14.72	0.513	12.17	31.59
+ ID2= 2 (0400):	108.04	0.713	12.50	21.69

ID = 1 (0801):	122.76	1.178	12.42	22.87

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0001)				
ID= 1 DT= 5.0 min				
Area (ha)=	77.75	Curve Number (CN)=	49.6	
Ia (mm)=	6.91	# of Linear Res.(N)=	3.00	
U.H. Tp(hrs)=	1.24			

Unit Hyd Qpeak (cms)= 2.395

PEAK FLOW (cms)= 1.020 (i)
 TIME TO PEAK (hrs)= 13.083
 RUNOFF VOLUME (mm)= 20.248
 TOTAL RAINFALL (mm)= 90.029
 RUNOFF COEFFICIENT = 0.225

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

CALIB NASHYD (0202)				
ID= 1 DT= 5.0 min				
Area (ha)=	6.35	Curve Number (CN)=	57.9	
Ia (mm)=	4.70	# of Linear Res.(N)=	3.00	
U.H. Tp(hrs)=	0.55			

Unit Hyd Qpeak (cms)= 0.441

PEAK FLOW (cms)= 0.205 (i)
 TIME TO PEAK (hrs)= 12.250
 RUNOFF VOLUME (mm)= 26.964
 TOTAL RAINFALL (mm)= 90.029
 RUNOFF COEFFICIENT = 0.300

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

CALIB NASHYD (0204)				
ID= 1 DT= 5.0 min				
Area (ha)=	1.33	Curve Number (CN)=	50.0	
Ia (mm)=	16.00	# of Linear Res.(N)=	3.00	
U.H. Tp(hrs)=	0.17			

Unit Hyd Qpeak (cms)= 0.299

PEAK FLOW (cms)= 0.058 (i)
 TIME TO PEAK (hrs)= 11.833
 RUNOFF VOLUME (mm)= 16.647
 TOTAL RAINFALL (mm)= 90.029
 RUNOFF COEFFICIENT = 0.185

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

ADD HYD (0804)				
1 + 2 = 3				

ID1= 1 (0202):	6.35	0.205	12.25	26.96
+ ID2= 2 (0204):	1.33	0.058	11.83	16.65

ID = 3 (0804):	7.68	0.225	12.17	25.18

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0602)				
IN= 2--> OUT= 1				
DT= 5.0 min				

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)	
0.0000	0.0000	0.1306	0.1176	
0.0014	0.0066	0.3534	0.1362	
0.0069	0.0205	0.6046	0.1554	
0.0098	0.0350	0.9742	0.1752	
0.0120	0.0502	1.4665	0.1957	

0.0139 0.0661 2.0882 0.2169
 0.0155 0.0826 2.4500 0.2278
 0.0394 0.0998 0.0000 0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0804)	7.677	0.225	12.17	25.18
OUTFLOW: ID= 1 (0602)	7.677	0.053	13.75	25.02

PEAK FLOW REDUCTION [Qout/Qin](%)= 23.71
 TIME SHIFT OF PEAK FLOW (min)= 95.00
 MAXIMUM STORAGE USED (ha.m.)= 0.1025

CALIB	Area (ha)	Curve Number (CN)
NASHYD (0201)	5.05	51.4
ID= 1 DT= 5.0 min	Ia (mm)= 4.70	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.57	

Unit Hyd Qpeak (cms)= 0.338
 PEAK FLOW (cms)= 0.131 (i)
 TIME TO PEAK (hrs)= 12.250
 RUNOFF VOLUME (mm)= 22.368
 TOTAL RAINFALL (mm)= 90.029
 RUNOFF COEFFICIENT = 0.248

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

RESERVOIR (0601)	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
IN= 2--> OUT= 1	0.0000	0.0000	0.3000	0.0752
DT= 5.0 min	0.0320	0.0244	0.7410	0.1015
	0.0910	0.0495	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0201)	5.047	0.131	12.25	22.37
OUTFLOW: ID= 1 (0601)	5.047	0.062	13.17	22.33

PEAK FLOW REDUCTION [Qout/Qin](%)= 47.77
 TIME SHIFT OF PEAK FLOW (min)= 55.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0374

ADD HYD (0802)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 (0601):	5.05	0.062	13.17	22.33
+ ID2= 2 (0602):	7.68	0.053	13.75	25.02
ID = 3 (0802):	12.72	0.110	13.58	23.95

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0803)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 (0001):	77.75	1.020	13.08	20.25
+ ID2= 2 (0802):	12.72	0.110	13.58	23.95
ID = 3 (0803):	90.47	1.116	13.08	20.77

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 ** SIMULATION NUMBER: 6 **

100-Year SCS Storm

MASS STORM | Filename: C:\Users\dmarshall\AppData\Local\Temp\27273bc1-82f4-48f8-aa53-bc87bf5ec9a7\47afa09e

| Ptotal= 98.50 mm | Comments: SCS Type II 24 HR MASS CURVE

Duration of storm = 23.75 hrs
 Mass curve time step = 15.00 min

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	1.18	6.25	1.97	12.25	14.18	18.25	1.58
0.50	0.79	6.50	1.58	12.50	7.49	18.50	1.97
0.75	1.18	6.75	1.97	12.75	7.09	18.75	1.58
1.00	1.18	7.00	1.97	13.00	5.52	19.00	1.97
1.25	1.18	7.25	2.36	13.25	5.12	19.25	1.58
1.50	0.79	7.50	1.97	13.50	4.33	19.50	1.97
1.75	1.18	7.75	2.36	13.75	3.94	19.75	1.58
2.00	1.18	8.00	2.36	14.00	3.15	20.00	1.18
2.25	1.58	8.25	2.76	14.25	2.76	20.25	1.18
2.50	1.18	8.50	2.76	14.50	3.15	20.50	1.18
2.75	1.18	8.75	2.76	14.75	2.76	20.75	1.18
3.00	1.18	9.00	3.15	15.00	3.15	21.00	1.18
3.25	1.58	9.25	3.15	15.25	2.76	21.25	1.18
3.50	1.18	9.50	3.55	15.50	3.15	21.50	1.18
3.75	1.18	9.75	3.55	15.75	2.76	21.75	1.18
4.00	1.58	10.00	4.33	16.00	1.97	22.00	1.18
4.25	1.58	10.25	4.73	16.25	1.58	22.25	1.18
4.50	1.58	10.50	5.91	16.50	1.97	22.50	1.18
4.75	1.58	10.75	6.30	16.75	1.58	22.75	1.18
5.00	1.58	11.00	9.46	17.00	1.97	23.00	1.18
5.25	1.58	11.25	9.46	17.25	1.58	23.25	1.18
5.50	1.58	11.50	29.16	17.50	1.97	23.50	1.18
5.75	1.58	11.75	120.56	17.75	1.58	23.75	1.18
6.00	1.58	12.00	14.18	18.00	1.97		

CALIB	Area (ha)	Curve Number (CN)
NASHYD (0003)	136.00	52.1
ID= 1 DT= 5.0 min	Ia (mm)= 7.20	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.94	

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.18	6.083	1.97	12.083	14.18	18.08	1.58
0.167	1.18	6.167	1.97	12.167	14.18	18.17	1.58
0.250	1.18	6.250	1.97	12.250	14.18	18.25	1.58
0.333	0.79	6.333	1.58	12.333	7.49	18.33	1.97
0.417	0.79	6.417	1.58	12.417	7.49	18.42	1.97
0.500	0.79	6.500	1.58	12.500	7.49	18.50	1.97
0.583	1.18	6.583	1.97	12.583	7.09	18.58	1.58
0.667	1.18	6.667	1.97	12.667	7.09	18.67	1.58
0.750	1.18	6.750	1.97	12.750	7.09	18.75	1.58
0.833	1.18	6.833	1.97	12.833	5.52	18.83	1.97
0.917	1.18	6.917	1.97	12.917	5.52	18.92	1.97
1.000	1.18	7.000	1.97	13.000	5.52	19.00	1.97
1.083	1.18	7.083	2.36	13.083	5.12	19.08	1.58
1.167	1.18	7.167	2.36	13.167	5.12	19.17	1.58
1.250	1.18	7.250	2.36	13.250	5.12	19.25	1.58
1.333	0.79	7.333	1.97	13.333	4.33	19.33	1.97
1.417	0.79	7.417	1.97	13.417	4.33	19.42	1.97
1.500	0.79	7.500	1.97	13.500	4.33	19.50	1.97
1.583	1.18	7.583	2.36	13.583	3.94	19.58	1.58
1.667	1.18	7.667	2.36	13.667	3.94	19.67	1.58
1.750	1.18	7.750	2.36	13.750	3.94	19.75	1.58
1.833	1.18	7.833	2.36	13.833	3.15	19.83	1.18
1.917	1.18	7.917	2.36	13.917	3.15	19.92	1.18
2.000	1.18	8.000	2.36	14.000	3.15	20.00	1.18
2.083	1.58	8.083	2.76	14.083	2.76	20.08	1.18
2.167	1.58	8.167	2.76	14.167	2.76	20.17	1.18
2.250	1.58	8.250	2.76	14.250	2.76	20.25	1.18
2.333	1.18	8.333	2.76	14.333	3.15	20.33	1.18
2.417	1.18	8.417	2.76	14.417	3.15	20.42	1.18
2.500	1.18	8.500	2.76	14.500	3.15	20.50	1.18
2.583	1.18	8.583	2.76	14.583	2.76	20.58	1.18
2.667	1.18	8.667	2.76	14.667	2.76	20.67	1.18
2.750	1.18	8.750	2.76	14.750	2.76	20.75	1.18
2.833	1.18	8.833	3.15	14.833	3.15	20.83	1.18
2.917	1.18	8.917	3.15	14.917	3.15	20.92	1.18
3.000	1.18	9.000	3.15	15.000	3.15	21.00	1.18
3.083	1.58	9.083	3.15	15.083	2.76	21.08	1.18
3.167	1.58	9.167	3.15	15.167	2.76	21.17	1.18
3.250	1.58	9.250	3.15	15.250	2.76	21.25	1.18

3.333	1.18	9.333	3.55	15.333	3.15	21.33	1.18
3.417	1.18	9.417	3.55	15.417	3.15	21.42	1.18
3.500	1.18	9.500	3.55	15.500	3.15	21.50	1.18
3.583	1.18	9.583	3.55	15.583	2.76	21.58	1.18
3.667	1.18	9.667	3.55	15.667	2.76	21.67	1.18
3.750	1.18	9.750	3.55	15.750	2.76	21.75	1.18
3.833	1.58	9.833	4.33	15.833	1.97	21.83	1.18
3.917	1.58	9.917	4.33	15.917	1.97	21.92	1.18
4.000	1.58	10.000	4.33	16.000	1.97	22.00	1.18
4.083	1.58	10.083	4.73	16.083	1.58	22.08	1.18
4.167	1.58	10.167	4.73	16.167	1.58	22.17	1.18
4.250	1.58	10.250	4.73	16.250	1.58	22.25	1.18
4.333	1.58	10.333	5.91	16.333	1.97	22.33	1.18
4.417	1.58	10.417	5.91	16.417	1.97	22.42	1.18
4.500	1.58	10.500	5.91	16.500	1.97	22.50	1.18
4.583	1.58	10.583	6.30	16.583	1.58	22.58	1.18
4.667	1.58	10.667	6.30	16.667	1.58	22.67	1.18
4.750	1.58	10.750	6.30	16.750	1.58	22.75	1.18
4.833	1.58	10.833	9.46	16.833	1.97	22.83	1.18
4.917	1.58	10.917	9.46	16.917	1.97	22.92	1.18
5.000	1.58	11.000	9.46	17.000	1.97	23.00	1.18
5.083	1.58	11.083	9.46	17.083	1.58	23.08	1.18
5.167	1.58	11.167	9.46	17.167	1.58	23.17	1.18
5.250	1.58	11.250	9.46	17.250	1.58	23.25	1.18
5.333	1.58	11.333	29.15	17.333	1.97	23.33	1.18
5.417	1.58	11.417	29.16	17.417	1.97	23.42	1.18
5.500	1.58	11.500	29.16	17.500	1.97	23.50	1.18
5.583	1.58	11.583	120.56	17.583	1.58	23.58	1.18
5.667	1.58	11.667	120.56	17.667	1.58	23.67	1.18
5.750	1.58	11.750	120.56	17.750	1.58	23.75	1.18
5.833	1.58	11.833	14.20	17.833	1.97		
5.917	1.58	11.917	14.18	17.917	1.97		
6.000	1.58	12.000	14.18	18.000	1.97		

Unit Hyd Qpeak (cms)= 2.678

PEAK FLOW (cms)= 1.615 (i)
 TIME TO PEAK (hrs)= 13.917
 RUNOFF VOLUME (mm)= 25.520
 TOTAL RAINFALL (mm)= 98.205
 RUNOFF COEFFICIENT = 0.260

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

DUHYD (0400)				
Inlet Cap.=0.713				
#of Inlets= 1				
Total(cms)= 0.7				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
TOTAL HYD.(ID= 1):	136.00	1.62	13.92	25.52
MAJOR SYS.(ID= 2):	36.47	0.90	13.92	25.52
MINOR SYS.(ID= 3):	99.53	0.71	12.33	25.52

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
NASHYD (0002)			
ID= 1 DT= 5.0 min	Area	(ha)= 10.93	Curve Number (CN)= 68.5
	Ia	(mm)= 4.40	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.60	

Unit Hyd Qpeak (cms)= 0.696

PEAK FLOW (cms)= 0.531 (i)
 TIME TO PEAK (hrs)= 12.250
 RUNOFF VOLUME (mm)= 41.779
 TOTAL RAINFALL (mm)= 98.205
 RUNOFF COEFFICIENT = 0.425

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

CALIB			
NASHYD (0203)			
ID= 1 DT= 5.0 min	Area	(ha)= 3.79	Curve Number (CN)= 53.0
	Ia	(mm)= 16.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.17	

Unit Hyd Qpeak (cms)= 0.852

PEAK FLOW (cms)= 0.220 (i)
 TIME TO PEAK (hrs)= 11.833
 RUNOFF VOLUME (mm)= 21.901
 TOTAL RAINFALL (mm)= 98.205
 RUNOFF COEFFICIENT = 0.223

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

ADD HYD (0801)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0002):	10.93	0.531	12.25	41.78
+ ID2= 2 (0203):	3.79	0.220	11.83	21.90
ID = 3 (0801):	14.72	0.597	12.17	36.66

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0801)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0801):	14.72	0.597	12.17	36.66
+ ID2= 2 (0400):	99.53	0.713	12.33	25.52
ID = 1 (0801):	114.25	1.293	12.33	26.96

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
NASHYD (0001)			
ID= 1 DT= 5.0 min	Area	(ha)= 77.75	Curve Number (CN)= 49.6
	Ia	(mm)= 6.91	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	1.24	

Unit Hyd Qpeak (cms)= 2.395

PEAK FLOW (cms)= 1.207 (i)
 TIME TO PEAK (hrs)= 13.083
 RUNOFF VOLUME (mm)= 23.855
 TOTAL RAINFALL (mm)= 98.205
 RUNOFF COEFFICIENT = 0.243

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

CALIB			
NASHYD (0202)			
ID= 1 DT= 5.0 min	Area	(ha)= 6.35	Curve Number (CN)= 57.9
	Ia	(mm)= 4.70	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.55	

Unit Hyd Qpeak (cms)= 0.441

PEAK FLOW (cms)= 0.240 (i)
 TIME TO PEAK (hrs)= 12.250
 RUNOFF VOLUME (mm)= 31.427
 TOTAL RAINFALL (mm)= 98.205
 RUNOFF COEFFICIENT = 0.320

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

CALIB			
NASHYD (0204)			
ID= 1 DT= 5.0 min	Area	(ha)= 1.33	Curve Number (CN)= 50.0
	Ia	(mm)= 16.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.17	

Unit Hyd Qpeak (cms)= 0.299

PEAK FLOW (cms)= 0.070 (i)
 TIME TO PEAK (hrs)= 11.833
 RUNOFF VOLUME (mm)= 20.028
 TOTAL RAINFALL (mm)= 98.205
 RUNOFF COEFFICIENT = 0.204

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

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD	(0804)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)	
ID1= 1 (0202):	6.35	0.240	12.25	31.43	
+ ID2= 2 (0204):	1.33	0.070	11.83	20.03	
=====					
ID = 3 (0804):	7.68	0.264	12.17	29.45	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0602)	OUTFLOW	STORAGE	OUTFLOW	STORAGE
IN= 2---> OUT= 1	(cms)	(ha.m.)	(cms)	(ha.m.)
DT= 5.0 min				
	0.0000	0.0000	0.1306	0.1176
	0.0014	0.0066	0.3534	0.1362
	0.0069	0.0205	0.6046	0.1554
	0.0098	0.0350	0.9742	0.1752
	0.0120	0.0502	1.4665	0.1957
	0.0139	0.0651	2.0882	0.2169
	0.0155	0.0826	2.4500	0.2278
	0.0394	0.0998	0.0000	0.0000

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 (0804)	7.677	0.264	12.17	29.45
OUTFLOW: ID= 1 (0602)	7.677	0.090	13.33	29.30

PEAK FLOW REDUCTION	[Qout/Qin](%)
TIME SHIFT OF PEAK FLOW	(min)= 70.00
MAXIMUM STORAGE USED	(ha.m.)= 0.1098

CALIB	Area	(ha)=	5.05	Curve Number	(CN)=	51.4
NASHYD	Ia	(mm)=	4.70	# of Linear Res.	(N)=	3.00
ID= 1 DT= 5.0 min	U.H.	Tp(hrs)=	0.57			

Unit Hyd Qpeak	(cms)=	0.338
PEAK FLOW	(cms)=	0.154 (i)
TIME TO PEAK	(hrs)=	12.250
RUNOFF VOLUME	(mm)=	26.202
TOTAL RAINFALL	(mm)=	98.205
RUNOFF COEFFICIENT	=	0.267

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

RESERVOIR (0601)	OUTFLOW	STORAGE	OUTFLOW	STORAGE
IN= 2---> OUT= 1	(cms)	(ha.m.)	(cms)	(ha.m.)
DT= 5.0 min				
	0.0000	0.0000	0.3000	0.0752
	0.0320	0.0244	0.7410	0.1015
	0.0910	0.0495	0.0000	0.0000

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 (0201)	5.047	0.154	12.25	26.20
OUTFLOW: ID= 1 (0601)	5.047	0.076	13.08	26.17

PEAK FLOW REDUCTION	[Qout/Qin](%)
TIME SHIFT OF PEAK FLOW	(min)= 50.00
MAXIMUM STORAGE USED	(ha.m.)= 0.0430

ADD HYD	(0802)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)	
ID1= 1 (0601):	5.05	0.076	13.08	26.17	
+ ID2= 2 (0602):	7.68	0.090	13.33	29.30	
=====					
ID = 3 (0802):	12.72	0.164	13.33	28.05	

ADD HYD	(0803)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)	
ID1= 1 (0001):	77.75	1.207	13.08	23.85	
+ ID2= 2 (0802):	12.72	0.164	13.33	28.05	
=====					
ID = 3 (0803):	90.47	1.365	13.08	24.45	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

FINISH



Project: Cedar Run Wakeboard Cable Park

Date: September 2018

File No.: 115232

Designed: DAM

Subject: Storage Volume Calculations

Checked: DJH

STORAGE VOLUME CALCULATIONS (AS PER MOE TABLE 3.2)

POND #3

Catchments:	202, 204	
Total Area (ha):	7.68	
Total Impervious Area:	14%	
Required Pond Active Storage Volume (m ³ /ha	77	*Table 3.2 MOE SWM Manual (extrapolated)
Total Storage Volume Required (m ³):	587.52	
Extended Detention Volume Required (m ³):	307.20	
Permanent Pool Volume Required (m ³):	280.32	
Extended Detention Volume Provided (m ³):	912.00	
Permanent Pool Volume Provided (m ³):	1404.00	

Therefore, the Storage Volume provided is greater than required.



Project: Cedar Run Wakeboard Cable Park

Date: September 2018

File No.: 115232

Designed: DAM

Subject: Erosion Control Calculations

Checked: DJH

SIMPLIFIED APPROACH (AS PER MOE-SWMPPD MANUAL SECTION C.4)

POND #1

No directly connected impervious area. There is no minor orifice providing active storage volume, but this is not required for Pond 1.

POND #3

Catchments:	202, 204	
Total Area (ha):	7.68	
Total Directly Connected Impervious Area:	15%	*15% Total Impervious, 0% Directly Connected
SCS Soil Group	A	
Source Control (m ³):	0	
Required Pond Active Storage Volume (m ³ /ha):	100	*Fig. C.1 MOE SWM Manual
Total Storage Volume Required (m ³):	768.00	
Active Storage Volume Provided (m ³):	912	*Active Storage Volume Controlled by Minor Orifice

Therefore, the Storage Volume provided is greater than required.



Project:	Cedar Run Wakeboard Cable Park
File No.:	115232
Date:	Sep-18
Design:	DAM
Check:	DJH
Subject:	SWMF Drawdown Calculation
Condition:	25 mm Storm

DRAWDOWN TIME FOR POND - WATER QUALITY STORM

(Using the falling head orifice equation)

$$t = \frac{0.66 C_2 h^{1.5} + 2 C_3 h^{0.5}}{2.75 A_o}$$

where t = drawdown time in seconds

C_2 = slope coefficient from the area-depth linear regression	665.38	
C_3 = intercept from the area-depth linear regression	1320	
A_o = cross-sectional area of orifice (m ²)	0.007854 m ²	100 mm diameter
h = maximum water elevation above the orifice (m)	0.08 m	

t =	35,032.22 seconds
t =	9.73 hours

Water Quality Storage

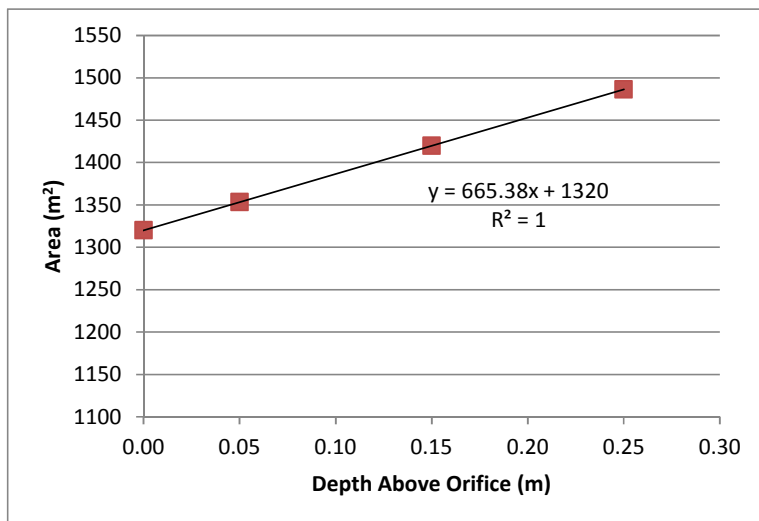
109 m³

Associated Pond Elevation:

194.98 m

Area Depth Relationship

Area (m ²)	Depth Above Orifice Invert (m)
1320	0.00
1353	0.05
1420	0.15
1486	0.25
1553	0.35
1619	0.45





Project:	Cedar Run Wakeboard Cable Park
File No.:	115232
Date:	Sep-18
Design:	DAM
Check:	DJH
Subject:	SWMF Drawdown Calculation
Condition:	Extended Detention Water Level

DRAWDOWN TIME FOR POND - EXTENDED DETENTION

(Using the falling head orifice equation)

$$t = \frac{0.66 C_2 h^{1.5} + 2 C_3 h^{0.5}}{2.75 A_o}$$

where t = drawdown time in seconds

- C₂ = slope coefficient from the area-depth linear regression 665.38
- C₃ = intercept from the area-depth linear regression 1320
- A_o = cross-sectional area of orifice (m²) 0.007854 m² 100 mm diameter
- h = maximum water elevation above the orifice (m) 0.60 m

t =	104,129.42 seconds
t =	28.92 hours

Extended Detention Storage

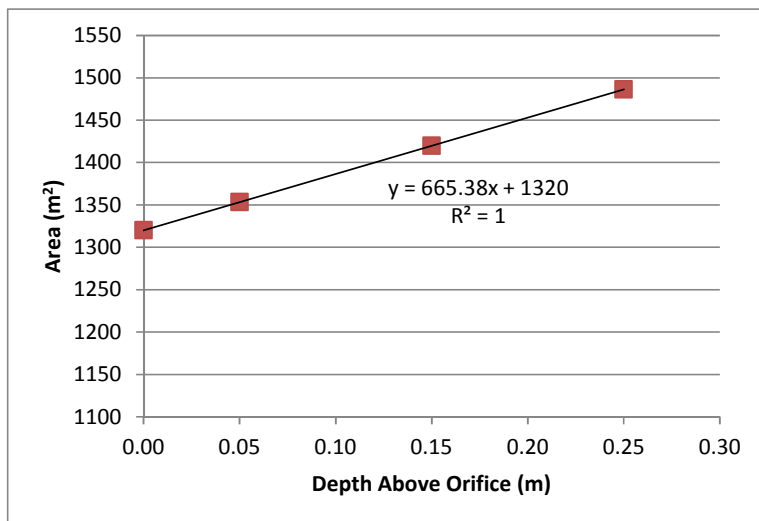
912 m³

Associated Pond Elevation:

195.5 m

Area Depth Relationship

Area (m ²)	Depth Above Orifice Invert (m)
1320	0.00
1353	0.05
1420	0.15
1486	0.25
1553	0.35
1619	0.45



Appendix E: Culvert and Bridge Crossing Calculations

HY-8 Culvert Analysis Report

Crossing ID 1

West Property Boundary

Crossing Discharge Data

Discharge Selection Method: Specify Minimum, Design, and Maximum Flow

Minimum Flow: 11.3007 cfs

Design Flow: 19.4231 cfs

Maximum Flow: 110.888 cfs

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

Headwater Elevation (m)	Total Discharge (cms)	Culvert 1 Discharge (cms)	Roadway Discharge (cms)	Iterations
198.93	0.32	0.32	0.00	1
199.05	0.55	0.35	0.20	9
199.10	0.88	0.36	0.52	6
199.13	1.17	0.37	0.79	5
199.15	1.45	0.38	1.07	4
199.18	1.73	0.38	1.35	4
199.20	2.01	0.39	1.62	4
199.22	2.29	0.39	1.90	3
199.24	2.58	0.40	2.18	3
199.26	2.86	0.40	2.46	3
199.28	3.14	0.41	2.73	3
199.00	0.34	0.34	0.00	Overtopping

Rating Curve Plot for Crossing: Crossing ID 1

Total Rating Curve

Crossing: Crossing ID 1

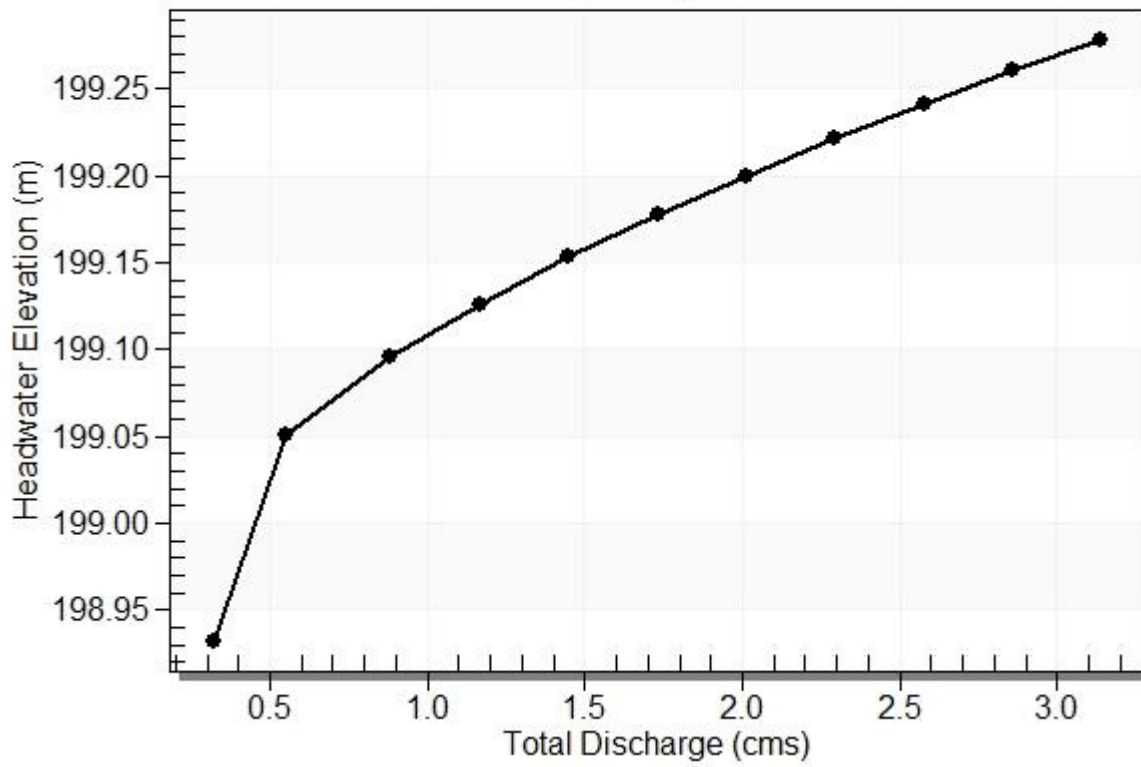


Table 2 - Culvert Summary Table: Culvert 1

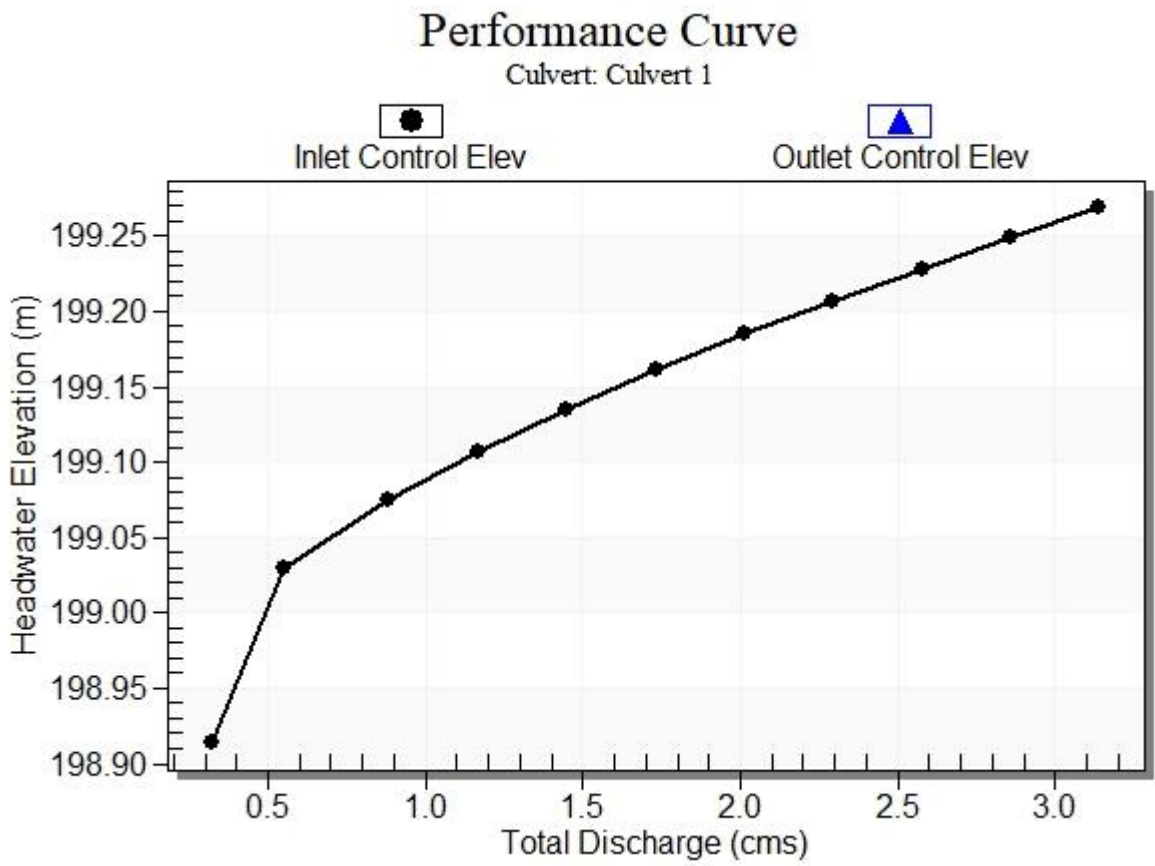
Total Discharge (cms)	Culvert Discharge (cms)	Headwater Elevation (m)	Inlet Control Depth (m)	Outlet Control Depth (m)	Flow Type	Normal Depth (m)	Critical Depth (m)	Outlet Depth (m)	Tailwater Depth (m)	Outlet Velocity (m/s)	Tailwater Velocity (m/s)
0.32	0.32	198.93	0.874	0.893	7-M2c	0.475	0.390	0.390	0.365	2.054	0.802
0.55	0.35	199.05	0.990	1.022	7-M2t	0.475	0.406	0.447	0.447	2.030	0.918
0.88	0.36	199.10	1.035	1.143	4-FFf	0.475	0.411	0.475	0.534	2.044	1.034
1.17	0.37	199.13	1.066	1.230	4-FFf	0.475	0.414	0.475	0.592	2.086	1.108
1.45	0.38	199.15	1.094	1.305	4-FFf	0.475	0.417	0.475	0.642	2.123	1.169
1.73	0.38	199.18	1.121	1.373	4-FFf	0.475	0.420	0.475	0.687	2.158	1.223
2.01	0.39	199.20	1.145	1.435	4-FFf	0.475	0.421	0.475	0.727	2.188	1.270
2.29	0.39	199.22	1.167	1.492	4-FFf	0.475	0.423	0.475	0.763	2.216	1.312
2.58	0.40	199.24	1.188	1.544	4-FFf	0.475	0.425	0.475	0.797	2.241	1.350
2.86	0.40	199.26	1.209	1.594	4-FFf	0.475	0.427	0.475	0.829	2.267	1.386
3.14	0.41	199.28	1.229	1.642	4-FFf	0.475	0.428	0.475	0.859	2.291	1.419

Straight Culvert

Inlet Elevation (invert): 198.04 m, Outlet Elevation (invert): 197.97 m

Culvert Length: 6.70 m, Culvert Slope: 0.0104

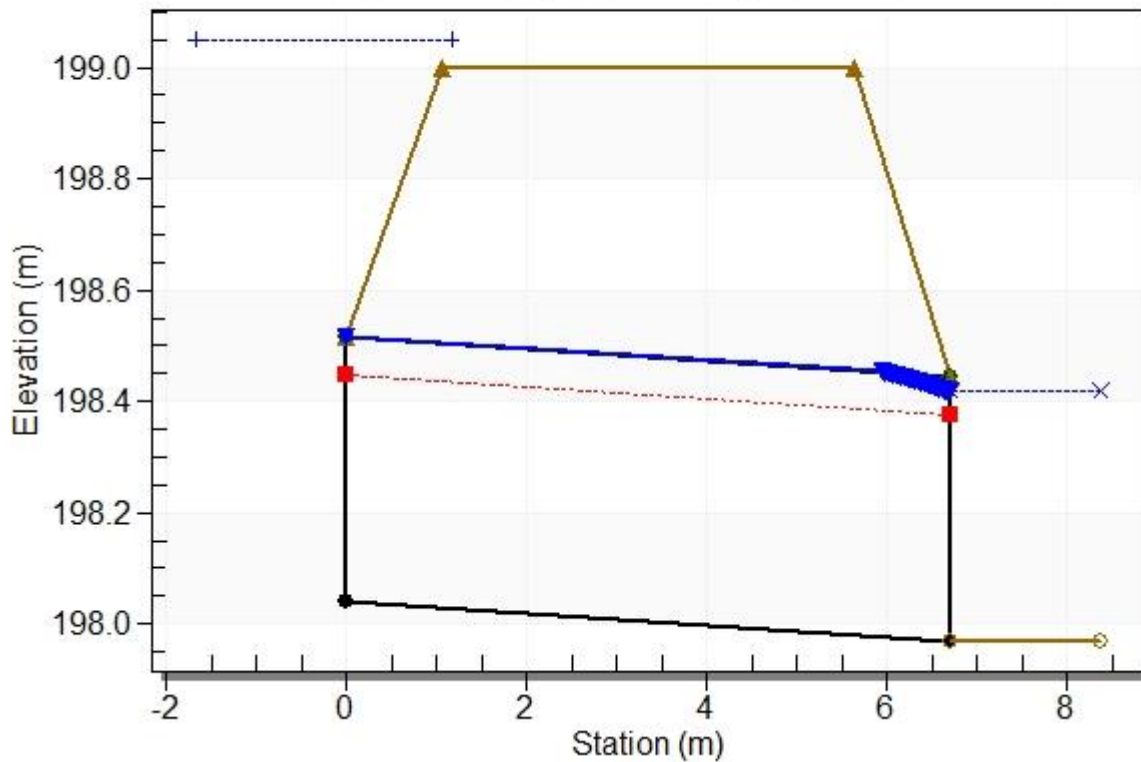
Culvert Performance Curve Plot: Culvert 1



Water Surface Profile Plot for Culvert: Culvert 1

Crossing - Crossing ID 1, Design Discharge - 0.55 cms

Culvert - Culvert 1, Culvert Discharge - 0.35 cms



Site Data - Culvert 1

Site Data Option: Culvert Invert Data

Inlet Station: 0.00 m

Inlet Elevation: 198.04 m

Outlet Station: 6.70 m

Outlet Elevation: 197.97 m

Number of Barrels: 1

Culvert Data Summary - Culvert 1

Barrel Shape: Circular

Barrel Diameter: 475.00 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

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

Flow (cms)	Water Surface Elev (m)	Depth (m)	Velocity (m/s)	Shear (Pa)	Froude Number
0.32	198.33	0.36	0.80	21.45	0.60
0.55	198.42	0.45	0.92	26.28	0.62
0.88	198.50	0.53	1.03	31.40	0.64
1.17	198.56	0.59	1.11	34.84	0.65
1.45	198.61	0.64	1.17	37.79	0.66
1.73	198.66	0.69	1.22	40.39	0.67
2.01	198.70	0.73	1.27	42.75	0.67
2.29	198.73	0.76	1.31	44.90	0.68
2.58	198.77	0.80	1.35	46.90	0.68
2.86	198.80	0.83	1.39	48.76	0.69
3.14	198.83	0.86	1.42	50.51	0.69

Tailwater Channel Data - Crossing ID 1

Tailwater Channel Option: Triangular Channel

Side Slope (H:V): 3.00 (1:1)

Channel Slope: 0.0060

Channel Manning's n: 0.0300

Channel Invert Elevation: 197.97 m

Roadway Data for Crossing: Crossing ID 1

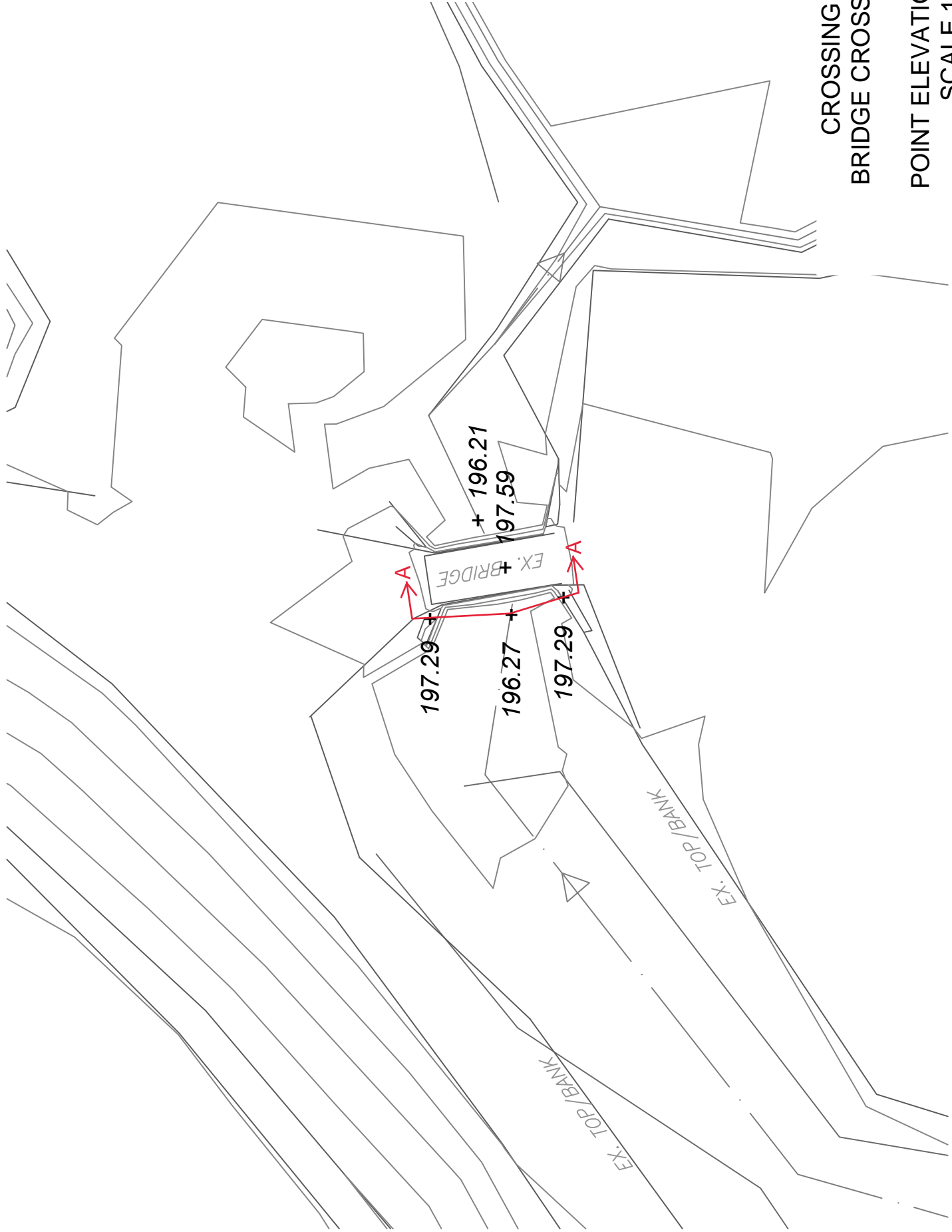
Roadway Profile Shape: Constant Roadway Elevation

Crest Length: 12.00 m

Crest Elevation: 199.00 m

Roadway Surface: Gravel

Roadway Top Width: 4.60 m



CROSSING ID 2
BRIDGE CROSSING
POINT ELEVATIONS
SCALE 1:300

Channel Report

Crossing ID 2 Intermittent Waterway Bridge Crossing, Regional Peak Flow

Triangular

Side Slopes (z:1) = 7.8100, 7.8100
Total Depth (m) = 1.0200

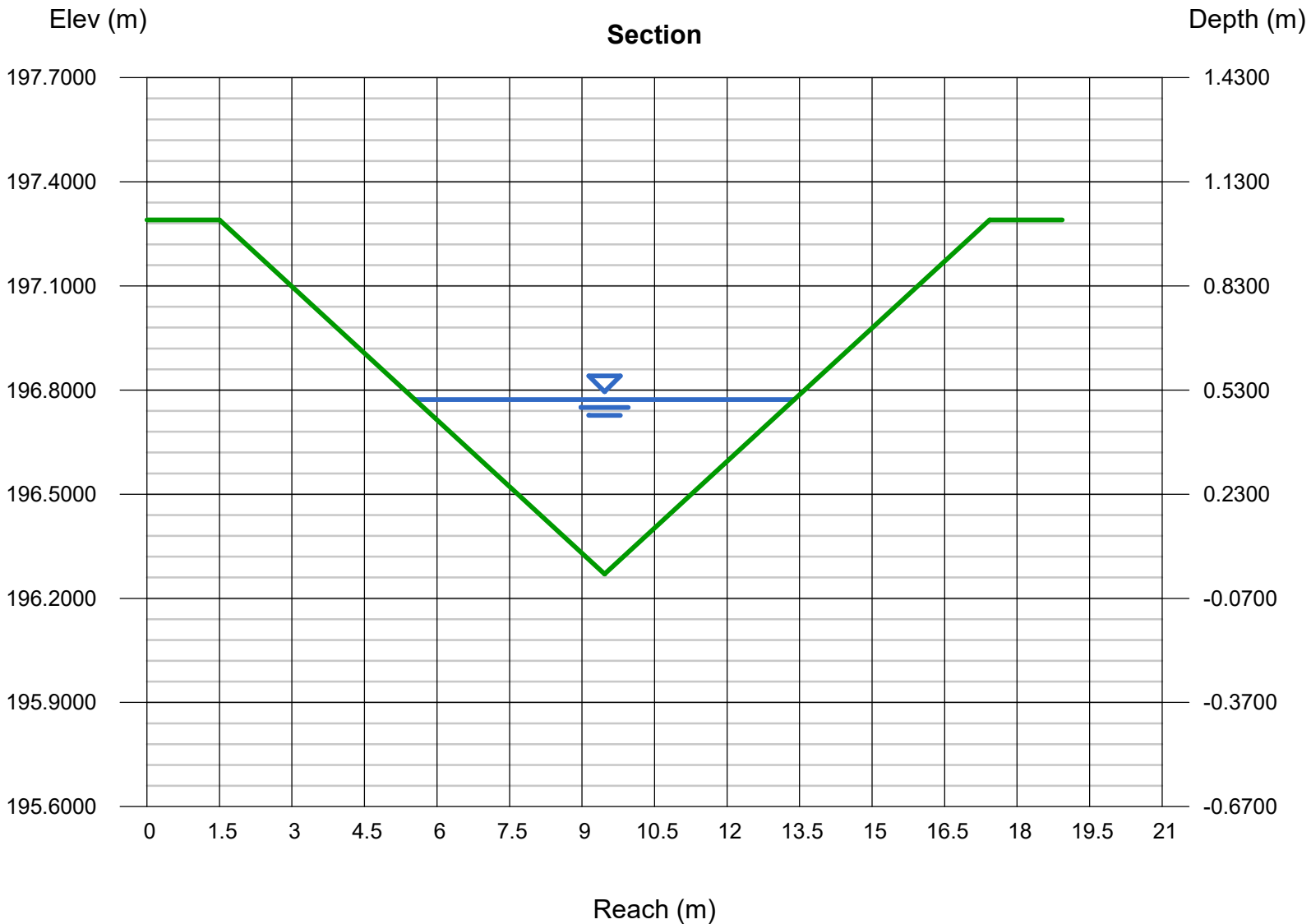
Invert Elev (m) = 196.2700
Slope (%) = 2.0000
N-Value = 0.035

Calculations

Compute by: Known Q
Known Q (cms) = 3.1400

Highlighted

Depth (m) = 0.5029
Q (cms) = 3.1400
Area (sqm) = 1.9754
Velocity (m/s) = 1.5896
Wetted Perim (m) = 7.9197
Crit Depth, Yc (m) = 0.5060
Top Width (m) = 7.8556
EGL (m) = 0.6318



HY-8 Culvert Analysis Report

Crossing ID 3

Downstream of Existing Ponds, Central to Property

Crossing Discharge Data

Discharge Selection Method: Specify Minimum, Design, and Maximum Flow

Minimum Flow: 11.3007 cfs

Design Flow: 19.4231 cfs

Maximum Flow: 110.888 cfs

Table 1 - Summary of Culvert Flows at Crossing: Crossing ID 3

Headwater Elevation (m)	Total Discharge (cms)	Culvert 1 Discharge (cms)	Roadway Discharge (cms)	Iterations
194.01	0.32	0.32	0.00	1
194.34	0.55	0.37	0.18	9
194.38	0.88	0.37	0.51	6
194.41	1.17	0.38	0.79	5
194.43	1.45	0.38	1.07	4
194.45	1.73	0.38	1.35	4
194.47	2.01	0.38	1.62	3
194.49	2.29	0.39	1.90	3
194.50	2.58	0.39	2.19	3
194.52	2.86	0.39	2.47	3
194.54	3.14	0.39	2.75	3
194.30	0.36	0.36	0.00	Overtopping

Rating Curve Plot for Crossing: Crossing ID 3

Total Rating Curve

Crossing: Crossing ID 3

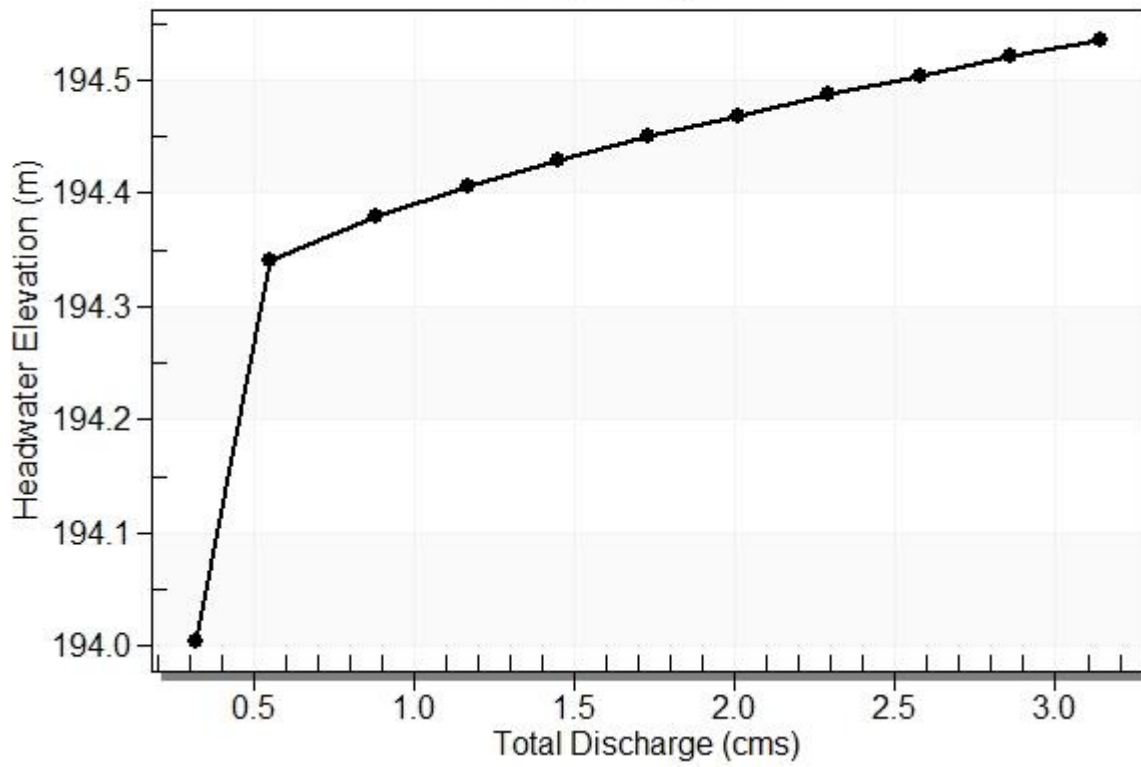


Table 2 - Culvert Summary Table: Culvert 1

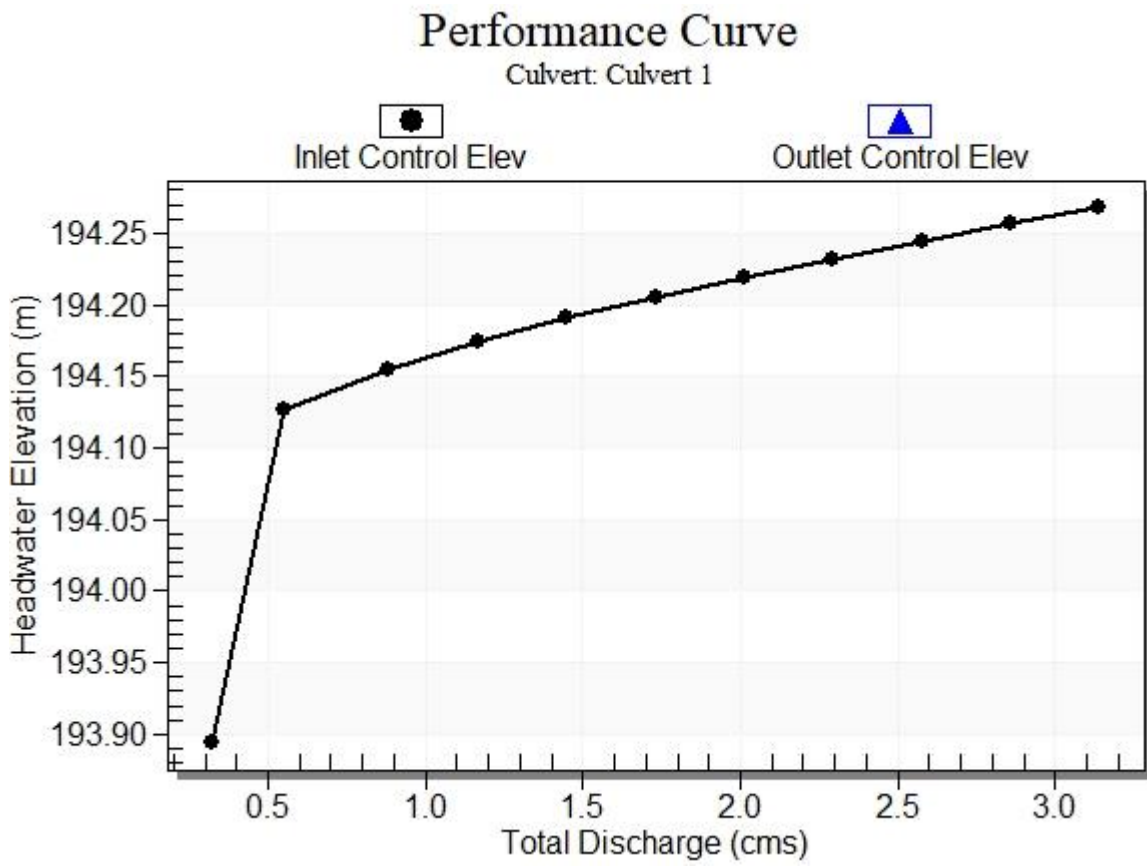
Total Discharge (cms)	Culvert Discharge (cms)	Headwater Elevation (m)	Inlet Control Depth (m)	Outlet Control Depth (m)	Flow Type	Normal Depth (m)	Critical Depth (m)	Outlet Depth (m)	Tailwater Depth (m)	Outlet Velocity (m/s)	Tailwater Velocity (m/s)
0.32	0.32	194.01	0.994	1.105	7-M2c	0.450	0.391	0.391	0.237	2.180	1.901
0.55	0.37	194.34	1.227	1.440	7-M2c	0.450	0.410	0.410	0.290	2.414	2.177
0.88	0.37	194.38	1.255	1.479	7-M2c	0.450	0.412	0.412	0.347	2.441	2.451
1.17	0.38	194.41	1.274	1.506	7-M2c	0.450	0.413	0.413	0.385	2.459	2.627
1.45	0.38	194.43	1.290	1.529	7-M2t	0.450	0.414	0.417	0.417	2.462	2.773
1.73	0.38	194.45	1.305	1.560	7-M2t	0.450	0.414	0.446	0.446	2.401	2.899
2.01	0.38	194.47	1.319	1.605	4-FFf	0.450	0.415	0.450	0.472	2.413	3.011
2.29	0.39	194.49	1.332	1.646	4-FFf	0.450	0.416	0.450	0.496	2.428	3.111
2.58	0.39	194.50	1.345	1.685	4-FFf	0.450	0.416	0.450	0.518	2.441	3.202
2.86	0.39	194.52	1.357	1.722	4-FFf	0.450	0.417	0.450	0.538	2.454	3.287
3.14	0.39	194.54	1.368	1.757	4-FFf	0.450	0.417	0.450	0.558	2.467	3.365

Straight Culvert

Inlet Elevation (invert): 192.90 m, Outlet Elevation (invert): 192.56 m

Culvert Length: 14.80 m, Culvert Slope: 0.0230

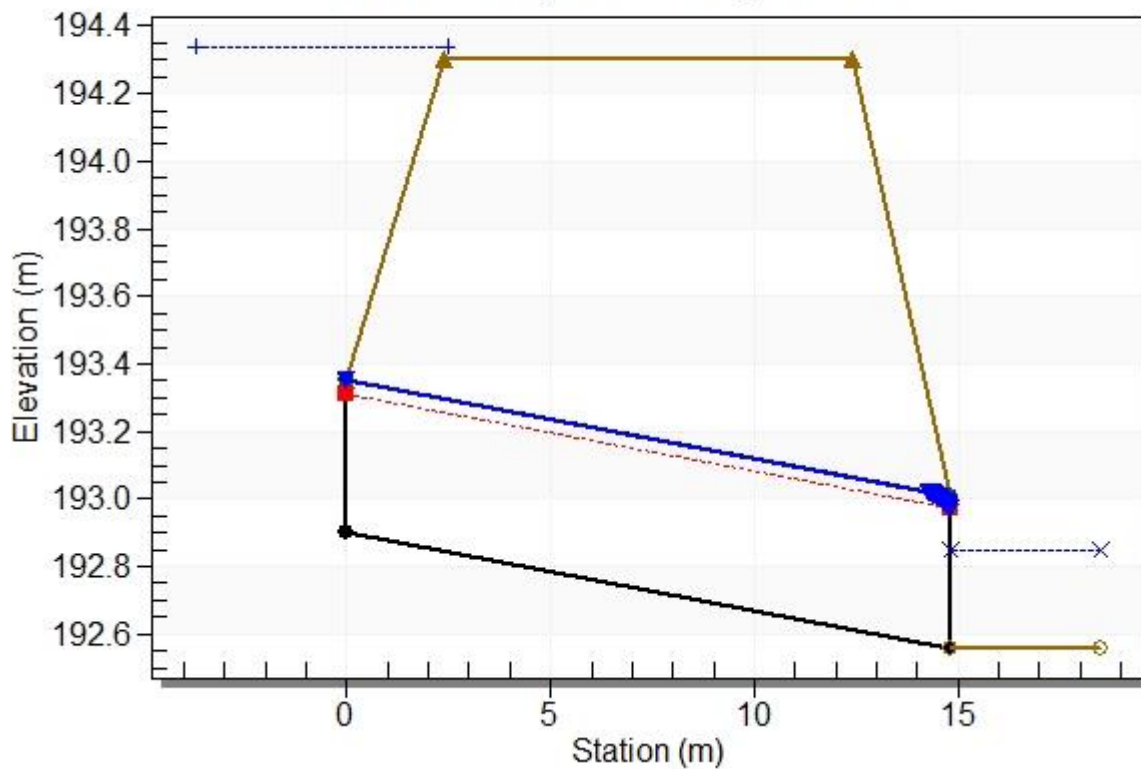
Culvert Performance Curve Plot: Culvert 1



Water Surface Profile Plot for Culvert: Culvert 1

Crossing - Crossing ID 3, Design Discharge - 0.55 cms

Culvert - Culvert 1, Culvert Discharge - 0.37 cms



Site Data - Culvert 1

Site Data Option: Culvert Invert Data

Inlet Station: 0.00 m

Inlet Elevation: 192.90 m

Outlet Station: 14.80 m

Outlet Elevation: 192.56 m

Number of Barrels: 1

Culvert Data Summary - 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

Table 3 - Downstream Channel Rating Curve (Crossing: Crossing ID 3)

Flow (cms)	Water Surface Elev (m)	Depth (m)	Velocity (m/s)	Shear (Pa)	Froude Number
0.32	192.80	0.24	1.90	139.31	1.76
0.55	192.85	0.29	2.18	170.68	1.82
0.88	192.91	0.35	2.45	203.92	1.88
1.17	192.94	0.38	2.63	226.23	1.91
1.45	192.98	0.42	2.77	245.37	1.94
1.73	193.01	0.45	2.90	262.31	1.96
2.01	193.03	0.47	3.01	277.59	1.98
2.29	193.06	0.50	3.11	291.58	1.99
2.58	193.08	0.52	3.20	304.54	2.01
2.86	193.10	0.54	3.29	316.64	2.02
3.14	193.12	0.56	3.36	328.01	2.03

Tailwater Channel Data - Crossing ID 3

Tailwater Channel Option: Triangular Channel

Side Slope (H:V): 3.00 (_:1)

Channel Slope: 0.0600

Channel Manning's n: 0.0300

Channel Invert Elevation: 192.56 m

Roadway Data for Crossing: Crossing ID 3

Roadway Profile Shape: Constant Roadway Elevation

Crest Length: 15.70 m

Crest Elevation: 194.30 m

Roadway Surface: Gravel

Roadway Top Width: 10.00 m

HY-8 Culvert Analysis Report

Crossing ID 4

Proposed Commercial Entrance

Crossing Discharge Data

Discharge Selection Method: Specify Minimum, Design, and Maximum Flow

Minimum Flow: 5.22657 cfs

Design Flow: 18.7521 cfs

Maximum Flow: 26.4154 cfs

Table 1 - Summary of Culvert Flows at Crossing: Crossing ID 4

Headwater Elevation (m)	Total Discharge (cms)	Culvert 1 Discharge (cms)	Roadway Discharge (cms)	Iterations
198.19	0.15	0.15	0.00	1
198.29	0.21	0.21	0.00	1
198.38	0.27	0.27	0.00	1
198.48	0.33	0.33	0.00	1
198.51	0.39	0.37	0.02	9
198.52	0.45	0.38	0.07	5
198.54	0.51	0.39	0.12	4
198.54	0.53	0.39	0.13	3
198.55	0.63	0.41	0.22	4
198.56	0.69	0.42	0.27	3
198.57	0.75	0.42	0.32	3
198.50	0.35	0.35	0.00	Overtopping

Rating Curve Plot for Crossing: Crossing ID 4

Total Rating Curve

Crossing: Crossing ID 4

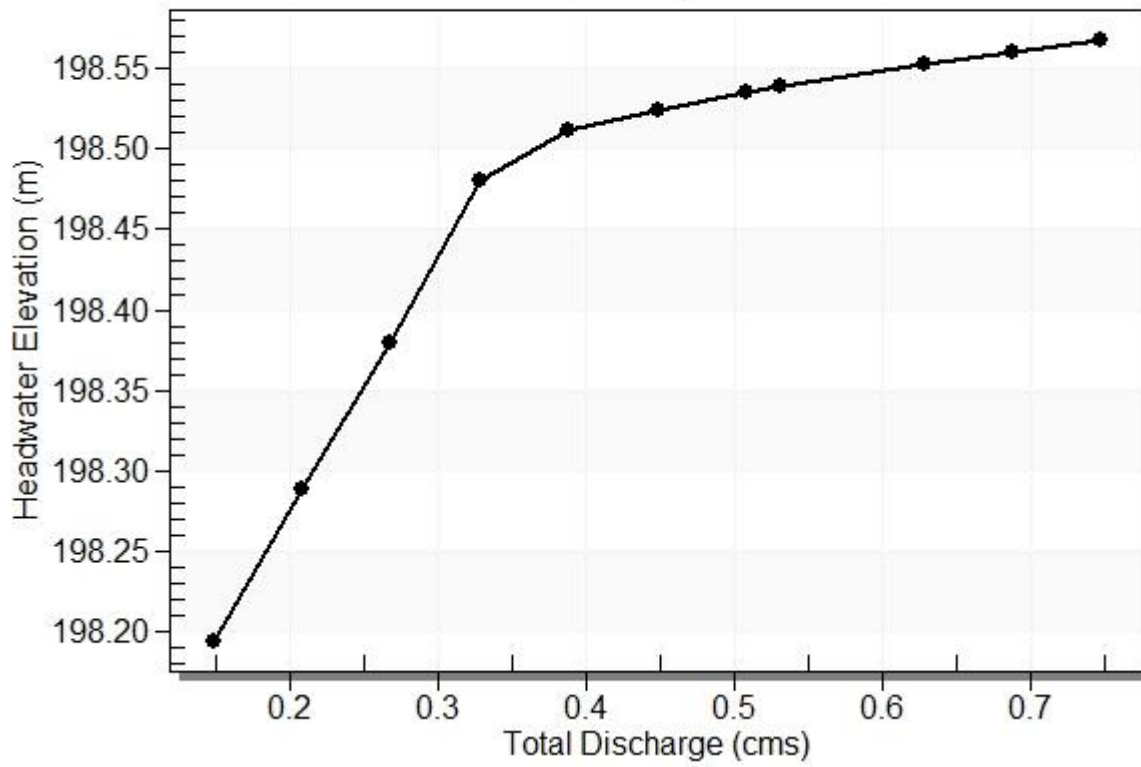


Table 2 - Culvert Summary Table: Culvert 1

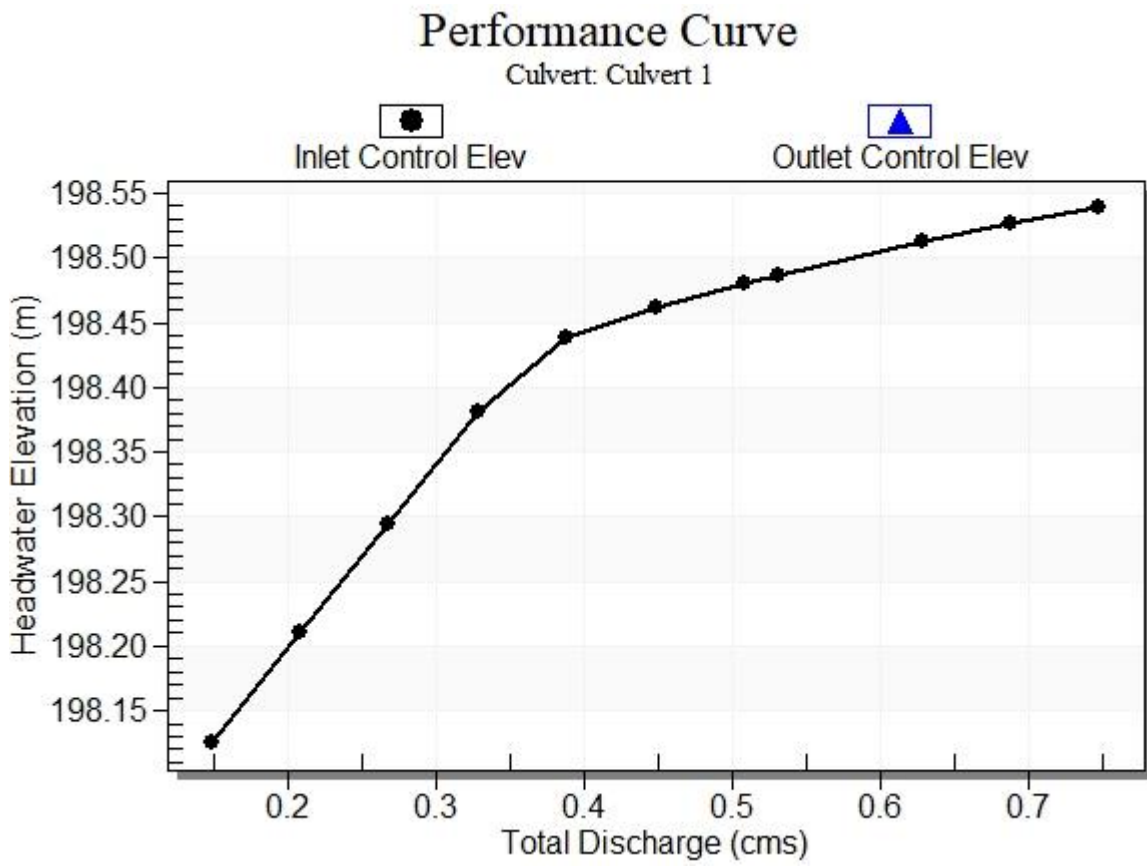
Total Discharge (cms)	Culvert Discharge (cms)	Headwater Elevation (m)	Inlet Control Depth (m)	Outlet Control Depth (m)	Flow Type	Normal Depth (m)	Critical Depth (m)	Outlet Depth (m)	Tailwater Depth (m)	Outlet Velocity (m/s)	Tailwater Velocity (m/s)
0.15	0.15	198.19	0.375	0.444	7-H2c	-0.305	0.246	0.246	0.218	1.356	1.038
0.21	0.21	198.29	0.461	0.538	7-H2c	-0.305	0.295	0.295	0.248	1.504	1.131
0.27	0.27	198.38	0.544	0.630	7-H2c	-0.305	0.335	0.335	0.272	1.649	1.205
0.33	0.33	198.48	0.631	0.730	7-H2c	-0.305	0.373	0.373	0.294	1.778	1.267
0.39	0.37	198.51	0.689	0.762	7-H2c	-0.305	0.395	0.395	0.313	1.852	1.321
0.45	0.38	198.52	0.712	0.774	7-H2c	-0.305	0.402	0.402	0.330	1.882	1.370
0.51	0.39	198.54	0.730	0.785	7-H2c	-0.305	0.408	0.408	0.346	1.906	1.413
0.53	0.39	198.54	0.737	0.789	7-H2c	-0.305	0.410	0.410	0.352	1.914	1.429
0.63	0.41	198.55	0.762	0.803	7-H2c	-0.305	0.418	0.418	0.375	1.946	1.490
0.69	0.42	198.56	0.776	0.811	7-H2c	-0.305	0.422	0.422	0.388	1.963	1.525
0.75	0.42	198.57	0.789	0.818	7-H2c	-0.305	0.426	0.426	0.400	1.979	1.557

Straight Culvert

Inlet Elevation (invert): 197.75 m, Outlet Elevation (invert): 197.75 m

Culvert Length: 14.20 m, Culvert Slope: 0.0000

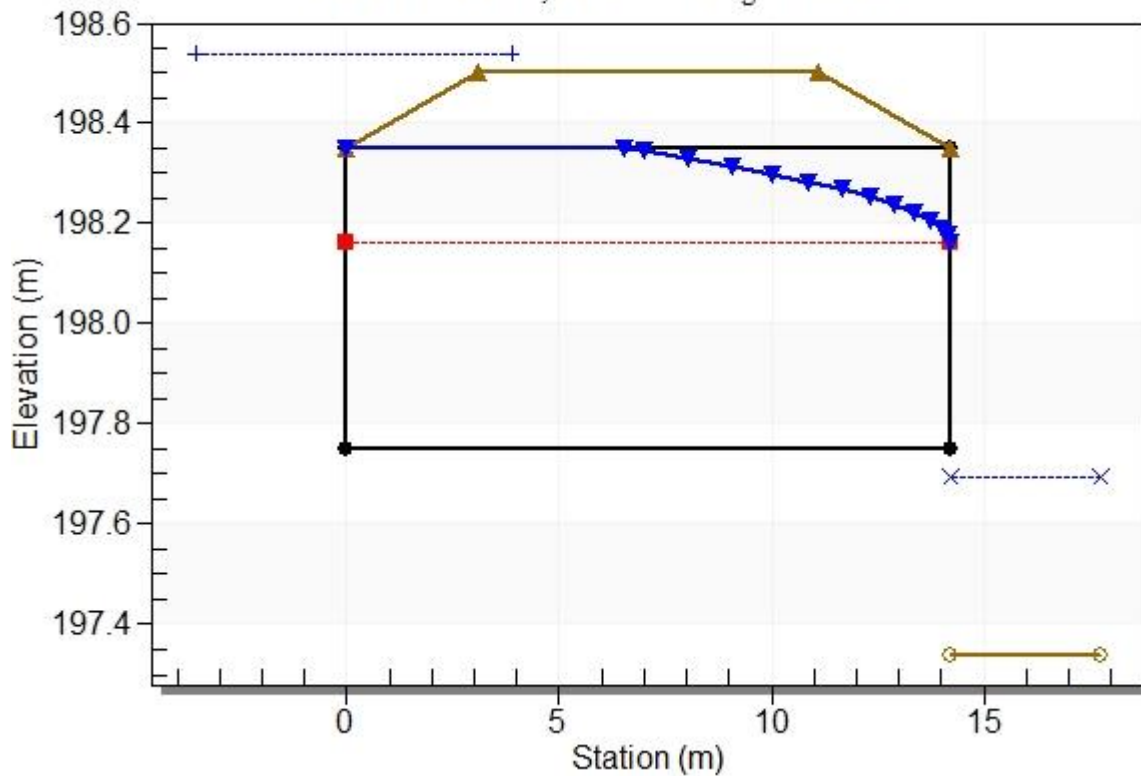
Culvert Performance Curve Plot: Culvert 1



Water Surface Profile Plot for Culvert: Culvert 1

Crossing - Crossing ID 4, Design Discharge - 0.53 cms

Culvert - Culvert 1, Culvert Discharge - 0.39 cms



Site Data - Culvert 1

Site Data Option: Culvert Invert Data

Inlet Station: 0.00 m

Inlet Elevation: 197.75 m

Outlet Station: 14.20 m

Outlet Elevation: 197.75 m

Number of Barrels: 1

Culvert Data Summary - Culvert 1

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

Table 3 - Downstream Channel Rating Curve (Crossing: Crossing ID 4)

Flow (cms)	Water Surface Elev (m)	Depth (m)	Velocity (m/s)	Shear (Pa)	Froude Number
0.15	197.56	0.22	1.04	42.73	1.00
0.21	197.59	0.25	1.13	48.55	1.03
0.27	197.61	0.27	1.20	53.39	1.04
0.33	197.63	0.29	1.27	57.59	1.06
0.39	197.65	0.31	1.32	61.33	1.07
0.45	197.67	0.33	1.37	64.73	1.08
0.51	197.69	0.35	1.41	67.85	1.08
0.53	197.69	0.35	1.43	68.99	1.09
0.63	197.71	0.37	1.49	73.47	1.10
0.69	197.73	0.39	1.52	76.03	1.11
0.75	197.74	0.40	1.56	78.45	1.11

Tailwater Channel Data - Crossing ID 4

Tailwater Channel Option: Triangular Channel

Side Slope (H:V): 3.00 (_:1)

Channel Slope: 0.0200

Channel Manning's n: 0.0300

Channel Invert Elevation: 197.34 m

Roadway Data for Crossing: Crossing ID 4

Roadway Profile Shape: Constant Roadway Elevation

Crest Length: 12.50 m

Crest Elevation: 198.50 m

Roadway Surface: Gravel

Roadway Top Width: 8.00 m

Appendix F: Recreational Pond Water Balance Calculations



C.C. Tatham & Associates Ltd.

Consulting Engineers

Collingwood Bracebridge Orillia Barrie

Project: Cedar Run Wakeboard Cable Park	Date: March 2017
File No.: 115232	Designed: DAM
Subject: Wakeboard Volume Calculations	Checked: DJH

Wakeboard Pond A

Pond Bottom Elevation:	187.70	m
Pond Bottom Area:	17,636.89	m ²
Pond Top of Bank Elevation:	189.50	m
Assumed Water Level (0.30 m Freeboard):	189.20	m
Water Level Top Area:	22,520.81	m ²
Pond Depth:	1.50	m
Pond Storage Volume:	30,118.27	m ³
Total Storage Volume:	30,118.27	m³
Total Water Surface Area:	22,520.81	m²
Total Surface Area Draining to Pond:	28,352.42	m²

Multi-Level Wakeboard Pond

Cell 1

Pond Bottom Elevation:	203.50	m
Pond Bottom Area:	279.74	m ²
Pond Top of Bank Elevation:	205.30	m
Assumed Water Level (0.30 m Freeboard):	205.00	m
Water Level Top Area:	665.84	m ²
Pond Depth:	1.50	m
Pond Storage Volume:	709.19	m ³

Cell 2

Pond Bottom Elevation:	201.40	m
Pond Bottom Area:	654.04	m ²
Pond Top of Bank Elevation:	203.20	m
Assumed Water Level (0.30 m Freeboard):	202.90	m
Water Level Top Area:	1,211.14	m ²
Pond Depth:	1.50	m
Pond Storage Volume:	1,398.88	m ³

Cell 3

Pond Bottom Elevation:	200.80	m
Pond Bottom Area:	180.99	m ²
Pond Top of Bank Elevation:	202.60	m
Assumed Water Level (0.30 m Freeboard):	202.30	m
Water Level Top Area:	1,422.09	m ²
Pond Depth:	1.50	m
Pond Storage Volume:	1,202.31	m ³

Cell 4

Pond Bottom Elevation:	199.00	m
Pond Bottom Area:	604.81	m ²
Pond Top of Bank Elevation:	200.80	m
Assumed Water Level (0.30 m Freeboard):	200.50	m
Water Level Top Area:	1,837.81	m ²
Pond Depth:	1.50	m
Pond Storage Volume:	1,831.97	m ³

Cell 5

Pond Bottom Elevation:	199.00	m
Pond Bottom Area:	1,967.24	m ²
Pond Top of Bank Elevation:	200.80	m
Assumed Water Level (0.30 m Freeboard):	200.50	m
Water Level Top Area:	3,163.34	m ²
Pond Depth:	1.50	m
Pond Storage Volume:	3,847.94	m ³

Cell 6

Pond Bottom Elevation:	200.80	m
Pond Bottom Area:	279.74	m ²
Pond Top of Bank Elevation:	202.60	m
Assumed Water Level (0.30 m Freeboard):	202.30	m
Water Level Top Area:	665.84	m ²
Pond Depth:	1.50	m
Pond Storage Volume:	709.18	m ³

Cell 7

Pond Bottom Elevation:	200.20	m
Pond Bottom Area:	340.81	m ²
Pond Top of Bank Elevation:	202.00	m
Assumed Water Level (0.30 m Freeboard):	201.70	m
Water Level Top Area:	754.81	m ²
Pond Depth:	1.50	m
Pond Storage Volume:	821.72	m ³

Total Storage Volume:	10,521.18	m³
Total Water Surface Area:	9,720.87	m²
Total Surface Area Draining to Cells:	13,300.00	m²



C.C. Tatham & Associates Ltd.
 Consulting Engineers
 Collingwood Bracebridge Orillia Barrie

Project :	Cedar Run Wakeboard Cable Park
File No.	115232
Date:	Mar-17
Designed By:	DAM
Checked By:	DJH
Subject:	Pond A Water Balance

CEDAR RUN WAKEBOARD CABLE PARK - 115232

EXPECTED MONTHLY DEFICITS

CLIMATE NORMALS - 1981 to 2010 CANADIAN CLIMATE NORMALS STATION DATA

Surface Area Pond A 22,520.81 m²
 Drainage Area Pond A 28,352.42 m²

	Date	Days Per Month	Total Rain (mm)	Total Snow (cm)	Total Precip (mm)	Rainfall Volume (cu.m)	Snowfall Volume (cu.m)	Accumulated Snowfall (cu.m)	Snowmelt Volume (cu.m)	Evaporation (mm/day)	Evaporation (mm)	Evaporation (cu.m)	Balance (cu.m)
1	January	31	20.9	79.1	100.0	593	2,243	3,764	376	0.00	0.0	0	969
2	February	28	19.4	49	68.4	550	1,389	4,777	955	0.00	0.0	0	1,505
3	March	31	36.7	27.4	64.0	1,041	777	4,598	1,839	0.00	0.0	0	2,880
4	April	30	57.4	7.9	65.3	1,627	224	2,983	2,386	2.30	69.0	1,554	2,460
5	May	31	82.7	0	82.7	2,345	0	597	597	3.40	105.4	2,374	568
6	June	30	79.1	0	79.1	2,243	0	0	0	4.20	126.0	2,838	-595
7	July	31	72.1	0	72.1	2,044	0	0	0	4.20	130.2	2,932	-888
8	August	31	78.2	0	78.2	2,217	0	0	0	3.30	102.3	2,304	-87
9	September	30	95.9	0	95.9	2,719	0	0	0	1.80	54.0	1,216	1,503
10	October	31	84	3.3	87.3	2,382	94	94	94	0.70	21.7	489	1,986
11	November	30	70.4	29.2	99.6	1,996	828	828	662	0.00	0.0	0	2,658
12	December	31	28.5	70.8	99.4	808	2,007	2,173	652	0.00	0.0	0	1,460
Total			725.3	266.7	992.0	20,564.0	7,561.6		7,561.6			13,706.2	14,419.4

- Notes:
1. Monthly Climate normals taken from the Thornbury SLAMA Weather Station for the 1981 to 2010 period.
 2. Evaporation data taken from average values from the Hamilton RBG Weather Station for the 1981 to 2010 period.



C.C. Tatham & Associates Ltd.
 Consulting Engineers
 Collingwood Bracebridge Orillia Barrie

Project :	Cedar Run Wakeboard Cable Park
File No.	115232
Date:	Mar-17
Designed By:	DAM
Checked By:	DJH
Subject:	Multi-Level Pond Water Balance

CEDAR RUN WAKEBOARD CABLE PARK - 115232

EXPECTED MONTHLY DEFICITS

CLIMATE NORMALS - 1981 to 2010 CANADIAN CLIMATE NORMALS STATION DATA

Surface Area Multi-Level 9,720.87 m²
 Drainage Area Multi-Level 13,300.00 m²

	Date	Days Per Month	Total Rain (mm)	Total Snow (cm)	Total Precip (mm)	Rainfall Volume (cu.m)	Snowfall Volume (cu.m)	Accumulated Snowfall (cu.m)	Snowmelt Volume (cu.m)	Evaporation (mm/day)	Evaporation (mm)	Evaporation (cu.m)	Balance (cu.m)
1	January	31	20.9	79.1	100.0	278	1,052	1,766	177	0.00	0.0	0	455
2	February	28	19.4	49	68.4	258	652	2,241	448	0.00	0.0	0	706
3	March	31	36.7	27.4	64.0	488	364	2,157	863	0.00	0.0	0	1,351
4	April	30	57.4	7.9	65.3	763	105	1,399	1,119	2.30	69.0	671	1,212
5	May	31	82.7	0	82.7	1,100	0	280	280	3.40	105.4	1,025	355
6	June	30	79.1	0	79.1	1,052	0	0	0	4.20	126.0	1,225	-173
7	July	31	72.1	0	72.1	959	0	0	0	4.20	130.2	1,266	-307
8	August	31	78.2	0	78.2	1,040	0	0	0	3.30	102.3	994	46
9	September	30	95.9	0	95.9	1,275	0	0	0	1.80	54.0	525	751
10	October	31	84	3.3	87.3	1,117	44	44	44	0.70	21.7	211	950
11	November	30	70.4	29.2	99.6	936	388	388	311	0.00	0.0	0	1,247
12	December	31	28.5	70.8	99.4	379	942	1,019	306	0.00	0.0	0	685
Total			725.3	266.7	992.0	9,646.5	3,547.1		3,547.1			5,916.1	7,277.5

- Notes:
1. Monthly Climate normals taken from the Thornbury SLAMA Weather Station for the 1981 to 2010 period.
 2. Evaporation data taken from average values from the Hamilton RBG Weather Station for the 1981 to 2010 period.



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Project :	Cedar Run Wakeboard Cable Park
File No.	115232
Date:	Mar-17
Designed By:	DAM
Checked By:	DJH
Subject:	Pond A Island Runoff

CEDAR RUN WAKEBOARD CABLE PARK - 115232

EXPECTED RUNOFF

CLIMATE NORMALS - 1981 to 2010 CANADIAN CLIMATE NORMALS STATION DATA

Island Area Pond A 9,357.72 m²
 Runoff Coefficient 0.28
 Thornthwaite Coefficient: 1.056

	Date	Days Per Month	Total Precip (mm)	Daylight Hours	Average Temperature (°C)	Heat Index	PET (mm)	Daylight Factor	Adjusted PET (mm)	AET (mm)	Surplus (mm)	Deficit (mm)	Runoff (cu.m)
1	January	31	100.0	9.28	-6.3	0.0	0.0	0.77	0.0	0.0	100.0	0.0	262
2	February	28	68.4	10.46	-5.4	0.0	0.0	0.87	0.0	0.0	68.4	0.0	179
3	March	31	64.0	11.89	-1.5	0.0	0.0	0.99	0.0	0.0	64.0	0.0	168
4	April	30	65.3	13.43	5.5	1.2	28.8	1.12	32.2	32.2	33.1	0.0	87
5	May	31	82.7	14.73	11.5	3.5	71.0	1.23	87.1	82.7	0.0	4.4	0
6	June	30	79.1	15.43	16.7	6.2	106.8	1.29	137.3	79.1	0.0	58.2	0
7	July	31	72.1	15.14	19.8	8.0	129.5	1.26	163.4	72.1	0.0	91.3	0
8	August	31	78.2	14.01	19.2	7.7	116.0	1.17	135.4	78.2	0.0	57.2	0
9	September	30	95.9	12.54	15.5	5.5	80.2	1.04	83.7	83.7	12.2	0.0	32
10	October	31	87.3	11.05	9.1	2.5	41.6	0.92	38.4	38.4	48.9	0.0	128
11	November	30	99.6	9.68	3.1	0.5	11.3	0.81	9.1	9.1	90.5	0.0	237
12	December	31	99.4	8.94	-2.7	0.0	0.0	0.75	0.0	0.0	99.4	0.0	260
Total			992.0			35.1	585.2		686.7	475.5	516.5	211.2	1,353.3

- Notes:
1. Monthly Climate normals taken from the Thornbury SLAMA Weather Station for the 1981 to 2010 period.
 2. Thornthwaite method used to determine the potential Evapotranspiration.
 3. PET - potential evapotranspiration; AET - actual evapotranspiration.



C.C. Tatham & Associates Ltd.
 Consulting Engineers
 Collingwood Bracebridge Orillia Barrie

Project :	Cedar Run Wakeboard Cable Park
File No.	115232
Date:	Mar-17
Designed By:	DAM
Checked By:	DJH
Subject:	Catchment 1 Runoff

CEDAR RUN WAKEBOARD CABLE PARK - 115232

EXPECTED RUNOFF

CLIMATE NORMALS - 1981 to 2010 CANADIAN CLIMATE NORMALS STATION DATA

Drainage to Intermittent Tributary 777,500.00 m²
 Runoff Coefficient 0.13
 Thornthwaite Coefficient: 1.056

	Date	Days Per Month	Total Precip (mm)	Daylight Hours	Average Temperature (°C)	Heat Index	PET (mm)	Daylight Factor	Adjusted PET (mm)	AET (mm)	Surplus (mm)	Deficit (mm)	Runoff (cu.m)
1	January	31	100.0	9.28	-6.3	0.0	0.0	0.77	0.0	0.0	100.0	0.0	10,108
2	February	28	68.4	10.46	-5.4	0.0	0.0	0.87	0.0	0.0	68.4	0.0	6,914
3	March	31	64.0	11.89	-1.5	0.0	0.0	0.99	0.0	0.0	64.0	0.0	6,469
4	April	30	65.3	13.43	5.5	1.2	28.8	1.12	32.2	32.2	33.1	0.0	3,345
5	May	31	82.7	14.73	11.5	3.5	71.0	1.23	87.1	82.7	0.0	4.4	0
6	June	30	79.1	15.43	16.7	6.2	106.8	1.29	137.3	79.1	0.0	58.2	0
7	July	31	72.1	15.14	19.8	8.0	129.5	1.26	163.4	72.1	0.0	91.3	0
8	August	31	78.2	14.01	19.2	7.7	116.0	1.17	135.4	78.2	0.0	57.2	0
9	September	30	95.9	12.54	15.5	5.5	80.2	1.04	83.7	83.7	12.2	0.0	1,229
10	October	31	87.3	11.05	9.1	2.5	41.6	0.92	38.4	38.4	48.9	0.0	4,947
11	November	30	99.6	9.68	3.1	0.5	11.3	0.81	9.1	9.1	90.5	0.0	9,145
12	December	31	99.4	8.94	-2.7	0.0	0.0	0.75	0.0	0.0	99.4	0.0	10,047
Total			992.0			35.1	585.2		686.7	475.5	516.5	211.2	52,203.0

- Notes:
1. Monthly Climate normals taken from the Thornbury SLAMA Weather Station for the 1981 to 2010 period.
 2. Thornthwaite method used to determine the potential Evapotranspiration.
 3. PET - potential evapotranspiration; AET - actual evapotranspiration.



C.C. Tatham & Associates Ltd.
Consulting Engineers

Collingwood Bracebridge Orillia Barrie

Project: Cedar Run Wakeboard Cable Park

Date: March 2017

File No.: 115232

Designed: DAM

Subject: Wakeboard Fill and Maintenance Calculations

Checked: DJH

WAKEBOARD POND FILL CALCULATIONS

Wakeboard Pond A

Total Storage Volume: 30,118.27 m³
Water Balance From September to May: 15,989.10 m³
Runoff From Island Area From September to May: 1,353.26 m³
Pond Deficit: 12,775.92 m³

Multi-Level Wakeboard Pond

Total Storage Volume: 10,521.18 m³
Water Balance From September to May: 7,711.39 m³
Pond Deficit: 2,809.79 m³

Total Deficit to Supplement: 15,585.71 m³

Catchment 1 (78 ha):

Total Runoff From September to May: 52,203.01 m³

Percent of Runoff Required: 30%

WAKEBOARD POND LEVEL MAINTENANCE CALCULATIONS

Wakeboard Pond A

Greatest Deficit (888) m³
Month of Greatest Deficit July

Multi-Level Wakeboard Pond

Greatest Deficit (307) m³
Month of Greatest Deficit July

Total Deficit to Supplement: (1,195) m³

Days in Month 31

Required Water Taking Rate: 38,540 litres/day

<50,000 litres per day which requires Permit to Take Water.

**Ministry of the Environment,
Conservation and Parks**

Southwestern Region
Technical Support
Water Resources
733 Exeter Rd
London ON N6E 1L3
Fax: (519) 873-5020
Tel: (519) 873-5020

**Ministère de l'Environnement, de la
Protection de la nature et des
Parcs**

Direction régionale du Sud-Ouest
Bureau du district de Barrie
733 Exeter Rd
London ON N6E 1L3
Télécopieur: (519) 873-5020
Tél: 519 (873-5020)



November 26, 2019

Bayou Cable Park Inc.
385362 20th Sideroad
Amaranth, Ontario, L0N 1M0
Canada

Dear Sir/Madam

RE: Lot: 30, Concession: 9
The Blue Mountains, County of Grey

Reference Number 0667-BEFKAH

Please find attached a Permit to Take Water which authorizes the withdrawal of water in accordance with the application for this Permit to Take Water, dated July 23, 2019 and signed by Dan J. Hurley.

Section 9(3) of Ontario Regulation 387/04 (Water Taking and Transfer) requires all holders of a permit to report daily water taking amounts annually, in a manner and form approved by the Director (<https://www.lrcsde.lrc.gov.on.ca/wtrs/>). For the purpose of s. 9(3), such reports shall be submitted electronically to the Water Taking Reporting System (WTRS) electronic database or via hard copy, as described in the Technical Bulletin entitled "Permit to Take Water Program Monitoring and Reporting of Water Takings", dated November 2006, PIBs 6003e (<http://www.ontla.on.ca/library/repository/mon/16000/269521.pdf>).

If you have questions about reporting requirements, please call the WTRS Help Desk at 416-235-6322 (toll free: 1-877-344-2011) or by email, WTRSHelpdesk@ontario.ca. It is preferred that you submit your data directly and electronically to the WTRS. Where this is impracticable, please contact the WTRS Help Desk to arrange for written submission of your data.

Take notice that in issuing this Permit, terms and conditions pertaining to the taking of water and to the results of the taking have been imposed. The terms and conditions have been designed to allow for the development of water resources, while providing reasonable protection to existing water uses and users.

Yours truly,



Jason Lehouillier
Permit to Take Water Signing Director
Southwestern Region

File Storage Number: SIGRBMC9.220

PERMIT TO TAKE WATER
Surface Water
NUMBER 1066-BJAQXM

Pursuant to Section 34.1 of the Ontario Water Resources Act, R.S.O. 1990 this Permit To Take Water is hereby issued to:

Bayou Cable Park Inc.
385362 20th Sideroad
Amaranth, Ontario, L0N 1M0
Canada

For the water taking from: Indian Brook, Intermittent Watercourse

Located at: Lot 30, Concession 9, Geographic Township of Collingwood
The Blue Mountains, County of Grey

For the purposes of this Permit, and the terms and conditions specified below, the following definitions apply:

DEFINITIONS

- (a) "Director" means any person appointed in writing as a Director pursuant to section 5 of the OWRA for the purposes of section 34.1, OWRA.
- (b) "Provincial Officer" means any person designated in writing by the Minister as a Provincial Officer pursuant to section 5 of the OWRA.
- (c) "Ministry" means Ontario Ministry of the Environment, Conservation and Parks.
- (d) "District Office" means the Owen Sound District Office.
- (e) "Permit" means this Permit to Take Water No. 1066-BJAQXM including its Schedules, if any, issued in accordance with Section 34.1 of the OWRA.
- (f) "Permit Holder" means Bayou Cable Park Inc..
- (g) "OWRA " means the *Ontario Water Resources Act*, R.S.O. 1990, c. O. 40, as amended.

You are hereby notified that this Permit is issued subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

1. Compliance with Permit

- 1.1 Except where modified by this Permit, the water taking shall be in accordance with the application for this Permit To Take Water, dated July 23, 2019 and signed by Dan J. Hurley, and all Schedules included in this Permit.
- 1.2 The Permit Holder shall ensure that any person authorized by the Permit Holder to take water under this Permit is provided with a copy of this Permit and shall take all reasonable measures to ensure that any such person complies with the conditions of this Permit.
- 1.3 Any person authorized by the Permit Holder to take water under this Permit shall comply with the conditions of this Permit.
- 1.4 This Permit is not transferable to another person.
- 1.5 This Permit provides the Permit Holder with permission to take water in accordance with the conditions of this Permit, up to the date of the expiry of this Permit. This Permit does not constitute a legal right, vested or otherwise, to a water allocation, and the issuance of this Permit does not guarantee that, upon its expiry, it will be renewed.
- 1.6 The Permit Holder shall keep this Permit available at all times at or near the site of the taking, and shall produce this Permit immediately for inspection by a Provincial Officer upon his or her request.
- 1.7 The Permit Holder shall report any changes of address to the Director within thirty days of any such change. The Permit Holder shall report any change of ownership of the property for which this Permit is issued within thirty days of any such change. A change in ownership in the property shall cause this Permit to be cancelled.

2. General Conditions and Interpretation

- 2.1 Inspections
The Permit Holder must forthwith, upon presentation of credentials, permit a Provincial Officer to carry out any and all inspections authorized by the OWRA, the *Environmental Protection Act*, R.S.O. 1990, the *Pesticides Act*, R.S.O. 1990, or the *Safe Drinking Water Act*, S. O. 2002.
- 2.2 Other Approvals
The issuance of, and compliance with this Permit, does not:
 - (a) relieve the Permit Holder or any other person from any obligation to comply with any other applicable legal requirements, including the provisions of the *Ontario Water Resources Act*, and

the *Environmental Protection Act* , and any regulations made thereunder; or

(b) limit in any way any authority of the Ministry, a Director, or a Provincial Officer, including the authority to require certain steps be taken or to require the Permit Holder to furnish any further information related to this Permit.

2.3 Information

The receipt of any information by the Ministry, the failure of the Ministry to take any action or require any person to take any action in relation to the information, or the failure of a Provincial Officer to prosecute any person in relation to the information, shall not be construed as:

(a) an approval, waiver or justification by the Ministry of any act or omission of any person that contravenes this Permit or other legal requirement; or

(b) acceptance by the Ministry of the information's completeness or accuracy.

2.4 Rights of Action

The issuance of, and compliance with this Permit shall not be construed as precluding or limiting any legal claims or rights of action that any person, including the Crown in right of Ontario or any agency thereof, has or may have against the Permit Holder, its officers, employees, agents, and contractors.

2.5 Severability

The requirements of this Permit are severable. If any requirements of this Permit, or the application of any requirements of this Permit to any circumstance, is held invalid or unenforceable, the application of such requirements to other circumstances and the remainder of this Permit shall not be affected thereby.

2.6 Conflicts

Where there is a conflict between a provision of any submitted document referred to in this Permit, including its Schedules, and the conditions of this Permit, the conditions in this Permit shall take precedence.

3. **Water Takings Authorized by This Permit**

3.1 **Expiry**

This Permit expires on **November 30, 2024**. No water shall be taken under authority of this Permit after the expiry date.

3.2 Amounts of Taking Permitted

The Permit Holder shall only take water from the source, during the periods and at the rates and amounts of taking specified in Table A. Water takings are authorized only for the purposes specified in Table A.

Table A

	Source Name / Description:	Source: Type:	Taking Specific Purpose:	Taking Major Category:	Max. Taken per Minute (litres):	Max. Num. of Hrs Taken per Day:	Max. Taken per Day (litres):	Max. Num. of Days Taken per Year:	Zone/ Easting/ Northing:
1	Indian Brook	Stream	Other - Recreational	Recreational	100	8	50,001	60	17 544678 4932717
2	Intermittent Watercourse	Stream	Other - Recreational	Recreational	100	8	50,001	120	17 544550 4932892
							Total Taking:	100,002	

- 3.3 Notwithstanding Table A, no water shall be taken from Source 2 (Intermittent Watercourse) after the initial filling of the on-site ponds.
- 3.4 Notwithstanding Table A, this Permit limits the taking of water in Indian Brook for up to 5 percent of the instantaneous streamflow present on the day or days of taking. At no time shall the withdrawal rate exceed 5 percent of available streamflow at that location. Table A permitted taking rates may therefore have to be adjusted downward to remain within this 5 percent maximum.
- 3.5 The Permit Holder shall use the established stream gauge and rating curve to limit the pumping rate to 5% of the flow from Source 1 (Indian Brook) at any time. The established rating curve shall be updated by a qualified person during the first year of operation under this Permit. A minimum of 4 additional points shall be added to the existing rating curve.

4. Monitoring

- 4.1 The Permit Holder shall maintain a record of all water takings. This record shall include the dates and times of water takings, and the total measured amounts of water pumped per day for each day that water is taken under the authorization of this Permit. A separate record shall be maintained for each source. The Permit Holder shall keep all required records up to date and available at or near the site of the taking and shall produce the records immediately for inspection by a Provincial Officer upon his or her request. The total amounts of water pumped shall be measured using a flow meter, or other device as approved by the District Manager, Owen Sound District Office.
- 4.2 Any application submitted to the Ministry for renewal or amendment of this Permit shall be accompanied by all records required by the conditions of this Permit.

5. Impacts of the Water Taking

5.1 Notification

The Permit Holder shall immediately notify the local District Office of any complaint arising from the taking of water authorized under this Permit and shall report any action which has been taken or is proposed with regard to such complaint. The Permit Holder shall immediately notify the local District Office if the taking of water is observed to have any significant impact on the

surrounding waters. After hours, calls shall be directed to the Ministry's Spills Action Centre at 1-800-268-6060.

5.2 For Surface-Water Takings

The taking of water (including the taking of water into storage and the subsequent or simultaneous withdrawal from storage) shall be carried out in such a manner that streamflow is not stopped and is not reduced to a rate that will cause interference with downstream uses of water or with the natural functions of the stream.

6. Director May Amend Permit

The Director may amend this Permit by letter requiring the Permit Holder to suspend or reduce the taking to an amount or threshold specified by the Director in the letter. The suspension or reduction in taking shall be effective immediately and may be revoked at any time upon notification by the Director. This condition does not affect your right to appeal the suspension or reduction in taking to the Environmental Review Tribunal under the *Ontario Water Resources Act*, Section 100 (4).

The reasons for the imposition of these terms and conditions are as follows:

1. Condition 1 is included to ensure that the conditions in this Permit are complied with and can be enforced.
2. Condition 2 is included to clarify the legal interpretation of aspects of this Permit.
3. Conditions 3 through 6 are included to protect the quality of the natural environment so as to safeguard the ecosystem and human health and foster efficient use and conservation of waters. These conditions allow for the beneficial use of waters while ensuring the fair sharing, conservation and sustainable use of the waters of Ontario. The conditions also specify the water takings that are authorized by this Permit and the scope of this Permit.

In accordance with Section 100 of the Ontario Water Resources Act, R.S.O. 1990, you may by written notice served upon me, the Environmental Review Tribunal and the Minister of the Environment, Conservation and Parks, within 15 days after receipt of this Notice, require a hearing by the Tribunal. The Minister of the Environment, Conservation and Parks will place notice of your appeal on the Environmental Registry. Section 101 of the Ontario Water Resources Act, as amended provides that the Notice requiring a hearing shall state:

1. The portions of the Permit or each term or condition in the Permit in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

In addition to these legal requirements, the Notice should also include:

- a. The name of the appellant;
- b. The address of the appellant;
- c. The Permit to Take Water number;
- d. The date of the Permit to Take Water;
- e. The name of the Director;
- f. The municipality within which the works are located;

This notice must be served upon:

*The Secretary
Environmental Review Tribunal
655 Bay Street, 15th Floor
Toronto ON
M5G 1E5
Fax: (416) 326-5370
Email:
ERTTribunalsecretary@ontario.ca*

AND

*The Minister of the Environment,
Conservation and Parks
777 Bay Street, 5th Floor
Toronto, Ontario
M7J 2J3*

AND

*The Director, Section 34.1,
Ministry of the Environment,
Conservation and Parks
733 Exeter Rd
London ON N6E 1L3
Fax: (519) 873-5020*

Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal:

by Telephone at

(416) 212-6349

Toll Free 1(866) 448-2248

by Fax at

(416) 326-5370

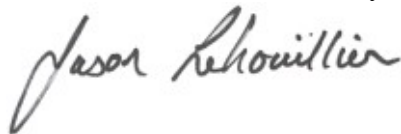
Toll Free 1(844) 213-3474

by e-mail at

www.ert.gov.on.ca

*This instrument is subject to Section 38 of the **Environmental Bill of Rights** that allows residents of Ontario to seek leave to appeal the decision on this instrument. Residents of Ontario may seek to appeal for 15 days from the date this decision is placed on the Environmental Registry. By accessing the Environmental Registry, you can determine when the leave to appeal period ends.*

Dated at London this 26th day of November, 2019.



Jason Lehouillier

Director, Section 34.1
Ontario Water Resources Act , R.S.O. 1990

Schedule A

This Schedule "A" forms part of Permit To Take Water 1066-BJAQXM, dated November 26, 2019.

Email Hurley to Munro dated November 21, 2019.