Appendix F

DRAINAGE AND STORMWATER MANAGEMENT REPORT

VMC
Schedule 'C' Class Environmental Assessment (EA) Studies for the Extensions of Interchange Way and Millway Avenue

Drainage and Stormwater Management Report

May 2025

DOWNTOWN
vaughan
METROPOLITAN CENTRE

May 28, 2025

City of Vaughan
2141 Major Mackenzie Drive
Vaughan, ON, L6A 1T1

Attention: James Norris, P.Eng, Project Manager

Dear Mr. Norris

Subject: Vaughan Metropolitan Centre Extensions of Interchange Way and Millway Avenue Drainage and Stormwater Management Report

WSP is pleased to submit one electronic copy of the FINAL Drainage and Stormwater Management report for the Vaughan Metropolitan Centre Schedule 'C' Class Environmental Assessment (EA) for the Extensions of Interchange Way and Millway Avenue. This report documents the hydrologic analysis of the study area, and it outlines the preliminary stormwater management plan.

We trust the submission of this documents meets your requirements. Should you have any comments we look forward to your response.

Yours sincerely,

Bryan Orendorff, M.A.Sc., P.Eng.
Manager, Water Resources

WSP ref.: 20M-01179-00

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[1] Approval of this document is an administrative function indicating readiness for release and does not impart legal liability on to the Approver for any technical content contained herein. Technical accuracy and fit-for-purpose of this content is obtained through the review process. The Approver shall ensure the applicable review process has occurred prior to signing the document.

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1 Introduction

1.1 Project Description and Purpose

WSP Canada Inc. (WSP) was retained by the City of Vaughan (the City) to assist in the Municipal Class Environmental Assessment (MCEA) process for the extensions of Interchange Way and Millway Avenue. WSP is also assisting the City in updating the Transportation Master Plan (TMP) to confirm transportation needs, supportive policies, and a phasing strategy to 2041 with a focus on street connectivity, accessibility, and support for multi-modal mobility (i.e., walking, cycling, transit, ride share).

Proposed works include widening of Interchange Way from two to four lanes, extension of Interchange Way east of Jane Street to Creditstone Road, and the construction of an extension of Millway Avenue south of Highway 7 that will connect with Interchange Way.

Millway Avenue will be classified as a Special Collector Road, serving as a mobility hub with adjacent retail, commercial, transit, high-density residential and public spaces. Interchange Way will be classified as a Major Collector Road, with multi-modal transportation prioritized through the accommodation of transit and pedestrian / cycling infrastructure.

These road improvements require design strategies to achieve quantity and quality control targets, for all road surfaces, in adherence to the Toronto and Region Conservation Authority (TRCA) Stormwater Management Design Criteria (2012).

The improvements also include the re-alignment of Black Creek and new Interchange Way overpass which will be completed under a separate project (Black Creek Renewal Project).

This report outlines the hydrologic analysis as well as the preliminary stormwater management (SWM) plan for the MCEA of the roadway extensions.

The study area is shown in Exhibit 1. All exhibits are included at the end of the report.

1.2 Background Information

WSP reviewed the following background documents which were used in the assessments and analysis for this study:

- Vaughan Metropolitan Centre Municipal Servicing Class Environmental Assessment Master Plan (MSMP) prepared by The Municipal Infrastructure Group LTD (TMIG) for the City of Vaughan, November 2012.
- Vaughan Metropolitan Centre Black Creek Renewal (BCR) Class EA Report prepared by TMIG for the City of Vaughan, August 2018.
- Urban Water Plan Vaughan Metropolitan Centre Functional Servicing Strategy Report (FSSR) Volume 4 – Stormwater Management Report prepared by Civica, September 2024.
- Digital based mapping.
- Aerial Images.

The following is a summary of the VMC MSMP, BCR EA and VMC FSSR SWM. Report studies:

- The MSMP (2012) identified that the existing Interchange stormwater management (SWM) Pond would be retrofitted to achieve current SWM criteria (quantity, quality and erosion control) for Interchange Way. It also proposed a SWM pond for the Vaughan Metropolitan Centre southeast quadrant (SEQ) which included Interchange Way east of Jane Street.
- The Black Creek Renewal EA (2018) outlined concerns with implementing the proposed pond within the SEQ. The SWM alternative outlined in the BCR EA is no longer applicable and the City is working on a new SWM strategy for the SEQ. The resulting

SWM strategy for the SEQ will provide quantity and quality control for Interchange Way east of Jane Street.

— In the Vaughan Metropolitan Centre FSSR (2024) it noted that the rights-of-way within the Vaughan Metropolitan Centre, including Interchange Way west and east of Jane Street would remain uncontrolled and end of pipe facilities would provide quantity control for its tributary areas.

Based up on the above, mitigation measures to provide quantity control for the proposed Interchange Way improvements, as part of the road improvements are not required due to the retrofit of the existing Interchange Way Pond and likely end-of-pipe solution(s) as part of the on-going SEQ SWM strategy assessment.

For the area west of Jane Street, the Interchange Pond retrofit will provide the required quality control. For the area east of Jane Street (within the SEQ), the City is currently asking for quality control on an interim basis for road rights-of-way via Low Impact Development (LID). The City is currently establishing the SWM Tree Trench standard which may be an interim or permanent solution. It should be noted that the City will not accept filter-type units, such as Jellyfish, within the City's rights-of-way.

1.3 Scope of Work

The scope of work entails the following:

— Collect and review relevant background information.
— Conduct a field investigation to assess the potential impact of the proposed road improvements and inspect the conditions of all drainage elements.
— Outline the drainage and stormwater management criteria to conform with the TRCA and the City of Vaughan requirements.
— Delineate drainage mosaics, complete hydrologic analysis for existing and proposed conditions.

1.4 Site Investigation

A field investigation of the study area and existing drainage features was conducted by WSP on September 20, 2022. Prior to the field investigation, WSP contacted the City to coordinate a date to meet up on site with the City representatives to discuss any drainage concerns in the area. The purpose of this field investigation was to review the existing drainage conditions, confirm the drainage patterns, inspect existing culverts and identify any drainage concerns and provide recommendations for the drainage features.

Maplecrete Road and Creditstone Road were also investigated at the areas where the proposed Interchange Way extension will intersect these streets. Photographs were taken of the existing Interchange Pond (Pond 1) east of Highway 400, south of Interchange Way and north of Highway 407 from the fence line.

The following drainage conditions were observed:

- Based on visual inspection the sidewalks and grassed areas within the rights-of-way (ROW) of Interchange Way is draining towards the road.
- Maplecrete Road is quite flat.
- The low point of Creditstone Road was observed to be where it intersects with Peelar Road.

The existing Black Creek Tributary crossing located west of Jane Street was inspected. The following was observed:

- Upstream end
    - Gabion collapsing, garbage present
    - Steep slope unable to inspect
    - From what could be observed from above little flow going through
- Downstream end
    - Gabion wall, lots of trees

- Steep slope unable to inspect
- From what could be observed from above standing water is present

A photographic inventory of the site investigation is provided in Appendix A.

2 Design Criteria and Standards

The following criteria were considered in the assessment of the drainage and SWM strategy. These criteria were based on the following guidelines:

- TRCA's Stormwater Management Criteria, August 2012
- MOE (now MECP) Stormwater Management Planning and Design Manual, March 2003
- Stormwater Management System, City of Vaughan Engineering Design Criteria & Standard Drawings, December 2020

2.1 Design Criteria – Stormwater Management (SWM)

Based on the criteria and standards provided by the Regulatory agencies, general stormwater management objectives and practices have been recognized to minimize the impact of the preferred alternative. The identified objectives are as follows:

- Where feasible maintain existing drainage patterns
- Minimize peak flow increases and potential roadway overtopping
- Provide quantity and quality control of runoff for all new pavement areas, as needed
- Provide erosion control and water balance, as needed
- Minimize risk to public safety
- Minimize future maintenance requirements

As previously stated, the drainage and stormwater management design will follow the TRCA and the City of Vaughan requirements. The relevant stormwater management criteria from the TRCA's Stormwater Management Criteria are summarized in Table 2-1 while Table

2-3 summarizes the relevant Stormwater Management Criteria for the City of Vaughan. Table 2-3 summarizes the relevant criteria considered in the previous studies within the study area such as the MSMP (2012), Black Creek Renewal EA (2018) and the FSSR (2024).

Table 2-1: Relevant TRCA Stormwater Management Criteria

Criteria	Section	Description
Stormwater Quantity (Flood) Control Criteria	3.2	- Existing watershed boundaries and drainage patterns should be maintained, and pre-development drainage areas must be used to determine the allowable release rate when using the unit flow rate equation. - Unit flow relationships have been established and should be used for all other sites located in the Humber River Watershed. - Based on Table E.1 in Appendix A of the TRCA SWM Criteria and the location of the site, Equation G for Sub-basin 46 should be used to determine the storage requirements for the study area. - Development outside of the approved urban boundary when the hydrology study was finalized may require Regional storm protection, proponents should consult with TRCA staff to confirm.
Quality Control Criteria	5.2	- All watercourses and water bodies within the TRCA's jurisdiction are classified as requiring an Enhanced level of water quality protection, equivalent to 80% Total Suspended Solids (TSS) removal.
Erosion Control Criteria	4.2	- The minimum erosion control requirement is retention of the first 5 mm of every rainfall event. - For sites with a SWM pond, extended detention of the 25 mm event for a period of 48 hours may also be required, depending on the results of the erosion assessment.

Table 2-2: Relevant City of Vaughan Stormwater Management Criteria

Criteria	Section	Description
Stormwater Management System – General Design Considerations	1.3.1	- SWM plan should be developed in accordance with the City's Design Criteria and Standard Drawings, the TRCA's SWM Criteria (April 2012 or most recent) and the MCEP's SWM Planning and Design Manual (2003 or most recent) - Designed to provide conveyance drainage for a variety of storm frequencies through the minor and major system to provide flood protection for all storms up to the greater of the 100-year storms where mandated by the TRCA.
Infiltration	1.3.1.12	- Where soils are suitable for infiltration, lot level controls, infiltration trenches and perforated pipe systems are suitable and shall be encouraged.
Stormwater Management Facilities	1.3.5	- End of pipe quality control facilities typically considered for developments greater than 5 ha where source controls are impractical - For developments less than 5 ha, quality control measures such as but not limited to Low Impact Development (LID) measures and Oil / Grit Separators (OGS) must be considered - These guidelines are considered supplementary to the latest versions of the MCEP SWM Practices Planning and Design Manual and the TRCA SWM Criteria

Table 2-3: Considered SWM Criteria From Previous Studies

SWM	2012 MSMP	2018 Black Creek Renewal EA (applicable for SEQ Only)	2024 FSSR
Public ROW			
Water Quantity	To be provided via end of pipe facility	For SEQ: See below for retention volume	For Southwest Quadrant (SWQ): None
Water Quality	To be provided via end of pipe facility	For SEQ: See below for retention volume	For SWQ: To be provided via end of pipe facility For SEQ: Interim conditions: Basic-

SWM	2012 MSMP	2018 Black Creek Renewal EA (applicable for SEQ Only)	2024 FSSR
			Enhanced (60 - 80% TSS Removal) Ultimate conditions: To be provided via end of pipe facility
Retention Volume (i.e. Water Balance)	None	For SEQ: 15 mm	For SWQ: None For SEQ: None
End of Pipe Facility			
Water Quantity	Humber River Unit Flow Rates	n/a due to the proposed pond being removed for this report. The 15 mm on-site retention on the ROW is proposed instead of the SEQ SWM facility	Humber River Unit Flow Rates
Water Quality	Enhanced (80% TSS removal)		Enhanced (80% TSS removal)
Retention Volume	None		Based on subwatershed area and unit release rate

3 Predevelopment Conditions

3.1 Existing Drainage Condition

Under existing conditions, runoff from all roadways included in this study get captured by catch basins and conveyed through storm sewers. Interchange Way consists of one lane in either direction while Millway Avenue consists of two lanes in either direction.

The land areas east of Jane Street and south of Highway 7 drains in a south westerly direction towards the main branch of Black Creek. The majority of land south of Highway 7 and west of Jane Street drains to the southwest, towards an existing pond called the Interchange Pond. There is a development south of Highway 7 and west of Jane Street that has its own SWM pond and any runoff from the development gets conveyed to the Toromont SWM pond instead of the Interchange Pond.

The existing condition drainage mosaic, shown on Exhibits 2 to 5 illustrates existing drainage features within the study area and the catchment delineations of the rights-of-way (ROW). The drainage catchments were delineated based on contours.

3.1.1 Land Use and Soil Surface

The existing land use of the study area is mainly comprised of impervious area coming from commercial, manufacturing and industrial properties.

Based on the Soil Map of York County acquired from the Soil Survey Reports for Ontario on the Government of Canada website, the predominant soils within the study area were

classified as clay or clay loam which represents a "CD" soil classification based on hydrologic soil groups (HGS). Due to this soil classification, there is more runoff potential within the catchment areas.

3.2 Rainfall Information

The design storms for the 2-, 5-, 10-, 25-, 50- and the 100-year storm events was created with the rainfall intensities outlined in Appendix 14 of the Final Report Humber River Hydrology Update (June 2015) prepared for the TRCA. This will be further discussed in Section 3.3.

3.3 Hydrologic Modelling

Hydrologic modelling is used to simulate the hydrologic response of the drainage area during the design storms.

The methodology used to develop the hydrologic model can be summarized as follows:

- Hydrologic parameters were estimated for each drainage area based on the catchment area, land use distribution (confirmed with topographic mapping, survey, and aerial photograph(s)), soil distribution and slope of the overland and channel portions of the catchment.
- The hydrologic response of the drainage areas with a directly connected impervious land use greater than 20 percent was obtained using STANDHYD instantaneous hydrograph.
- The hydrologic response of the drainage areas with a directly connected impervious land use less than 20 percent was obtained using NASH instantaneous hydrograph (NASHYD).

A Visual OTTHYMO hydrologic model was developed for the 2-year to 100-year design storms in the study area to determine peak flow runoff rates that would occur during flood events. As mentioned above, the design storms were generated using the rainfall intensities outlined in Appendix 14 of the Final Report Humber River Hydrology Update (June 2015) prepared for the TRCA to create the required rainfall data for the 6- and 12-hour Atmospheric Environment Service (AES) distributions. The rainfall data was inputted into the Visual OTTHYMO model to calculate the peak flows for each distribution. The larger conservative flows will be used for the analysis.

Visual OTTHYMO version 6.2 (VO6) is a single event hydrologic model used to simulate hydrographs by modelling rainfall, infiltration, runoff and routing through a watershed. This model uses the Soil Conservation Curve Number (CN) Method of estimating runoff characteristics in combination with instantaneous unit hydrograph routines to produce storm hydrographs.

3.4 Flow Rates

A summary of the hydrologic parameters used in the existing modelling, including the Curve Number (CN), Initial Abstraction (I_a), and the total impervious percent, is summarized in Table 3-1. Table 3-2 presents the peak flow comparison between the 6 and 12-hour AES distributions under existing conditions. The larger 6-hour AES distribution flows will be used in the analysis. The Visual OTTHYMO output results for existing conditions are included in Appendix B.

Table 3-1: Existing Hydrologic Input Parameters

Catchment ID	Hydrograph Type	Area (ha)	CN	I_a (mm)	Total Impervious (%)
100	Standard	1.10	82	2.2	92
105	Standard	3.24	82	2.9	70

Catchment ID	Hydrograph Type	Area (ha)	CN	I_a (mm)	Total Impervious (%)
200	Standard	2.08	82	2.5	84
300	Standard	0.52	82	2.5	84

Table 3-2: Peak Flow Comparison – Existing Conditions

Catchment ID	Area (ha)	Peak Flows (m^3/s)					
		2-Year	5-Year	10-Year	25-Year	50-Year	100-Year
6-Hour AES Distribution							
100	1.10	0.094	0.129	0.151	0.178	0.199	0.219
105	3.24	0.222	0.304	0.367	0.442	0.499	0.556
200	2.08	0.165	0.223	0.264	0.314	0.352	0.393
300	0.52	0.041	0.056	0.066	0.079	0.089	0.098
12-Hour AES Distribution							
100	1.10	0.056	0.073	0.084	0.099	0.111	0.122
105	3.24	0.137	0.186	0.219	0.261	0.294	0.325
200	2.08	0.099	0.131	0.153	0.180	0.201	0.221
300	0.52	0.025	0.033	0.038	0.045	0.050	0.055

4 Post Development Conditions

4.1 Proposed Drainage Condition

Similarly to existing conditions, runoff will be captured by catch basins and conveyed through storm sewers to an end of pipe outlet. The proposed improvements will include the following:

- Widening Interchange Way from two to four lanes with a center median barrier
- Millway Avenue extension south of Highway 7 that will connect with Interchange Way
- New 2 m wide raised cycle tracks on both sides along Interchange Way and Millway Avenue
- Drainage and stormwater management improvements

The preferred cross-section of Interchange Way and Millway Avenue includes a concrete walkway, a concrete buffer, an asphalt cycle track and raised planters on both sides of the ROW. As for the roadway, the preferred cross-section includes two lanes in either direction with a concrete median in the middle.

Due to the road improvements, a slight increase in impervious area and flows is to be expected. The existing storm sewer network within the study limits may need to be increased in size due to the Millway Avenue and Interchange Way improvements.

Under proposed conditions, the drainage pattern is assumed to stay the same as existing conditions. The proposed drainage mosaic is illustrated in Exhibits 6 to 9.

4.2 Flow Rates

A summary of the hydrologic parameters used in the proposed modelling including the Curve Number (CN), Initial Abstraction (I_a), and the total impervious percent is summarized in Table 4-1. Table 4-2 presents the calculated 6-hour AES distribution peak flows under proposed conditions. The Visual OTTHYMO output results for proposed conditions are included in Appendix C.

Table 4-1: Proposed Hydrologic Input Parameters

Catchment ID	Hydrograph Type	Area (ha)	CN	I_a (mm)	Total Impervious (%)
100	Standard	1.10	82	2.2	92
105	Standard	3.24	82	2.3	91
200	Standard	2.08	82	2.2	92
300	Standard	0.52	82	2.1	98

Table 4-2: Calculated Peak Flows – Proposed Conditions

Catchment ID	Area (ha)	Peak Flows (m^3/s)					
		2-Year	5-Year	10-Year	25-Year	50-Year	100-Year
100	1.10	0.094	0.129	0.151	0.178	0.199	0.219
105	3.24	0.275	0.376	0.440	0.522	0.583	0.643
200	2.08	0.178	0.243	0.284	0.337	0.376	0.415
300	0.52	0.047	0.063	0.073	0.087	0.096	0.106

5 Stormwater Management

5.1 Overview

Under existing conditions, for the areas west of Jane Street, stormwater management measures currently exist in the form of existing ponds (Interchange Pond and the Toromont Pond). However, the areas east of Jane Street and south of Highway 7 have no existing stormwater management measures in place. Roadway runoff is generally captured by existing catch basins and conveyed through existing storm sewer networks.

As previously mentioned in the MSMP (2012), Black Creek Renewal EA (2018) and the FSSR (2024) reports, quantity and quality control for Interchange Way west of Jane Street will be provided by the proposed retrofit of the Interchange Pond, while the SWM strategy for the SEQ will provide the quantity and quality control of Interchange Way east of Jane Street.

The Visual OTTHYMO results summarized in the previous sections were used to determine the storage requirement for the road improvements west and east of Jane Street that should be considered in the Interchange Pond retrofit and the SWM strategy of the SEQ. This will be further discussed in the following sections.

5.2 Impact of the Preferred Design

A slight adjustment of the Interchange Way alignment is proposed east of Jane Street for the preferred alternative. This new slightly shifted alignment of Interchange Way will not produce any significant changes compared with the initial proposed alignment.

Based on the proposed design, three out of the four ROW catchments have an increase in impervious area (Catchments 105, 200 and 300) while the last catchment (100) has the same

impervious area as existing conditions. Table 5-1 includes the impervious area comparison between existing and proposed conditions for each catchment. Increase in impervious areas and flows, as a result of the proposed design, is proposed to be addressed through the retrofit of the Interchange Pond for the ROW catchment areas within the study limits west of Jane Street and the SWM Strategy of the SEQ for the ROW east of Jane Street.

Table 5-1: Impervious Area Comparison

Catchment ID	Impervious Area (ha)		Area Increase (%)
	Existing Conditions	Proposed Conditions	
100	1.01	1.01	0.0
105	2.27	2.95	30.0
200	1.75	1.91	9.1
300	0.44	0.51	15.9

5.3 Water Quantity Control

As the project area is located in the Humber River Watershed, as mentioned in the design requirements, unit flow relationships have been used as per Humber River Stormwater Management Control Release Rates Map and Table E.1 in Appendix A of the TRCA SWM Criteria. The required release rate needed for the west and east of Jane Street ROW catchments was calculated and used as input in the Visual OTTHYMO model. The Visual OTTHYMO model was then used to calculate the required storage to control the ROW west and east of Jane Street that should be considered in the Interchange Pond retrofit and the SWM strategy of the SEQ.

Table 5-2 summarizes the target TRCA release flows from Equation G Sub-basin 46 of the Humber River unit flow relationships for the study areas west and east of Jane Street.

Table 5-2 TRCA Target Release Flows

Location	TRCA Target Release Outflows (m^3/s)					
	2-Year	5-Year	10-Year	25-Year	50-Year	100-Year
West of Jane Street	0.029	0.043	0.052	0.065	0.075	0.085
East of Jane Street	0.018	0.027	0.033	0.041	0.048	0.054

Table 5-3 summarizes a comparison between the existing flows, proposed flows without control and proposed flows with control for the contributing ROW study areas east and west of Jane Street.

Table 5-3 Flow Comparison

Description	Storm Event (m^3/s)					
	2-Year	5-Year	10-Year	25-Year	50-Year	100-Year
West of Jane Street						
Existing	0.316	0.433	0.517	0.620	0.698	0.775
Proposed Without Control	0.369	0.504	0.591	0.700	0.782	0.862
Proposed With Control	0.029	0.043	0.053	0.066	0.075	0.085
East of Jane Street						
Existing	0.207	0.279	0.330	0.393	0.441	0.491
Proposed Without Control	0.226	0.306	0.358	0.423	0.472	0.521
Proposed With Control	0.018	0.027	0.033	0.042	0.048	0.054

Table 5-4 summarizes the volumes required for quantity control that meet the TRCA target release flows for the contributing ROW study areas east and west of Jane Street for the 100-year storm event to be considered for the Interchange Pond retrofit and the SWM strategy for the SEQ. The Visual OTTHYMO results can be found in Appendix D.

Table 5-4: 100-Year Storage Volume to be Considered

Location	Contributing ROW Catchment Area (ha)	Required Volume for 100-Year Event (m^3)
West of Jane Street	4.34	2606
East of Jane Street	2.60	1565

Based on Table 5-4, the 100-year volume calculated for the ROW study area west of Jane Street should be considered for the Interchange Pond retrofit while the 100-year volume calculated for the ROW study area east of Jane Street should be considered for the SWM strategy of the SEQ.

The above-mentioned quantity control volumes should further be confirmed and refined at the detailed design stage. A storm sewer analysis should also be completed at the detailed design stage to confirm that the existing sewer system has the required capacity to convey the flow increase. Further communication with the City of Vaughan will be required during the detailed design stage.

5.4 Water Quality Control

Based on the TRCA's Stormwater Management Criteria, all watercourse and water bodies within the TRCA jurisdiction requires an Enhanced level of water quality protection equivalent to 80% Total Suspended Solids (TSS) removal. Based on the MSMP, FSSR and the Black Creek Renewal Class EA, the quality control will be achieved through the retrofitted Interchange Pond for the ROW catchments west of Jane Street while the quality control for the ROW catchments east of Jane Street will be achieved through the on-going

SWM strategy of the SEQ. It is noted that the City will not accept filter units, such as Jellyfish, within the City rights-of-way.

The use of LID was investigated, however due to the proposed road design which includes construction of bike lanes in front of the planters in the boulevard throughout the project area, runoff from the roadway is unable to make its way to the boulevard. As such, the use of LIDs such as bioretention facilities within the ROW study area, is not feasible. Note, the City is currently recommending LIDs be implemented within rights-of-way within the VMC southeast quadrant to achieve water quality control. This may be an interim solution or part of a treatment train approach as a permanent solution. This will be determined through the City's on-going VMC SWM Enhancement Study.

For the study area west of Jane Street (Millway Avenue and Interchange Way), 15 mm onsite retention is being proposed for development sites. The Interchange Pond retrofit will include erosion control via extended detention. For the study area east of Jane Street, 15 mm onsite retention is being proposed for development sites. The SWM strategy for SEQ may include erosion control via extended detention should a pond be proposed.

6 Sediment and Erosion Control

Sediment and erosion control measures will be implemented during all phases of construction, clean up and restoration to prevent sediment laden runoff from entering any of the watercourses directly from the construction zone.

Uncontrolled erosion and sedimentation occurring during construction can result in loss in topsoil, a disruption of nearby watercourses and degradation of downstream water quality. During construction, erosion and sedimentation control measures should be implemented to prevent the migration of soils from site.

The following recommended erosion and sedimentation control measures should be considered:

Vegetative:

— All areas not subject to active construction 30 days after area grading should be top soiled and seeded immediately after completion of such grading.
— Immediately following seed application, a straw erosion control blanket should be installed on any exposed slopes adjacent to sensitive features.

Structural:

— As construction proceeds, diversion swales should be graded where needed along the right of way boundaries to intercept drainage from external areas and direct it away from exposed surfaces.

- Temporary silt fencing and sedimentation traps should be placed around existing drainage features.
- Temporary silt fencing should be installed around sensitive vegetative features.
- Additional erosion control works may be required during the course of construction. These may consist of silt fences, swales, and/or diversion berms. The location and need for these works will be established in the field.

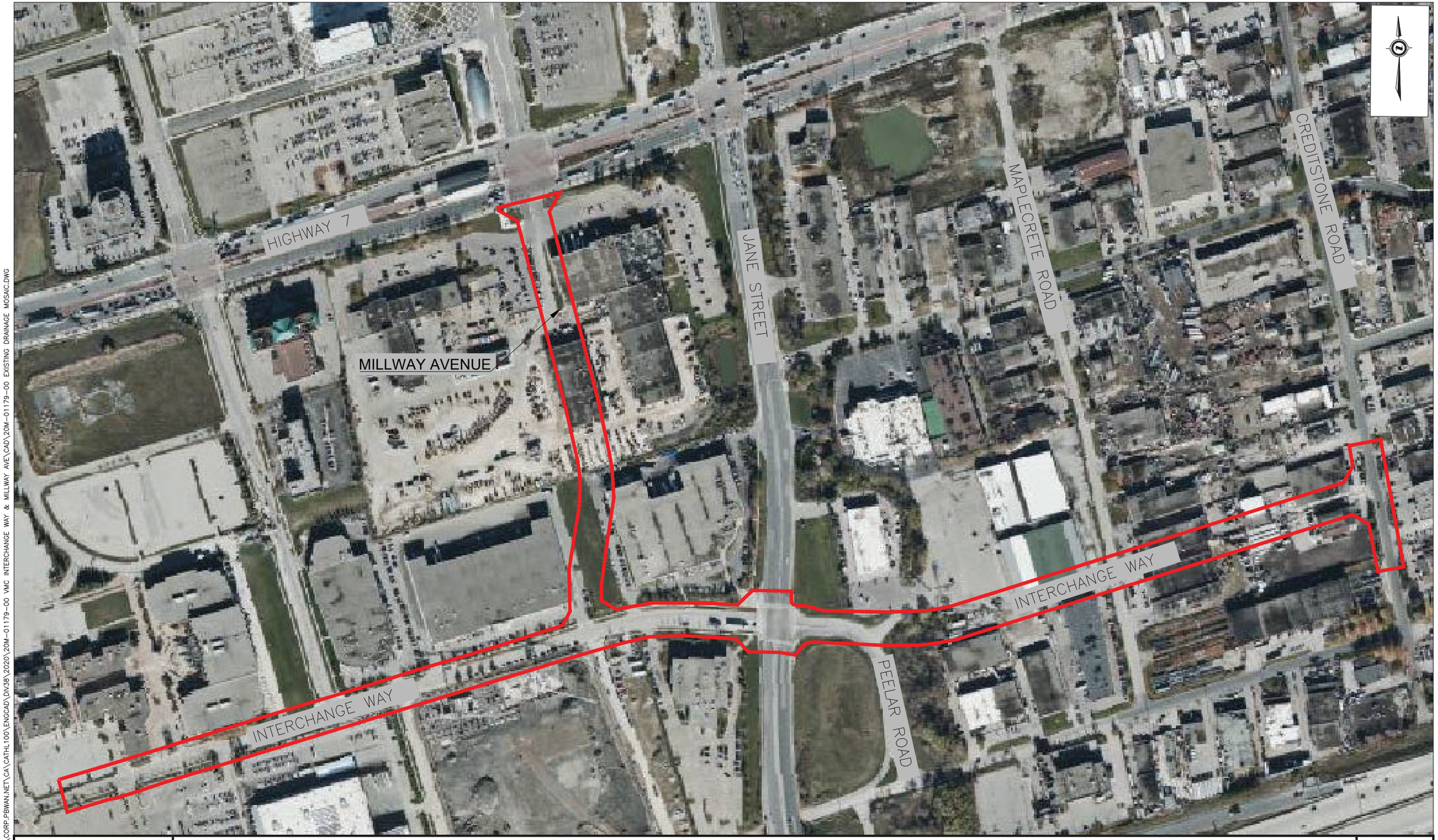
The integration of these measures will minimize the impacts of erosion and sedimentation during construction.

Future detailed designs and plans should identify all regulated features and boundaries within or adjacent to the anticipated work areas to demonstrate that the anticipated impacts to regulated features are mitigated.

7 Conclusions

This report outlines the hydrologic analysis of the contributing ROW catchments within the study limits west and east of Jane Street as well as the 100-year storage to be considered in the Interchange Pond retrofit and the SWM strategy of the SEQ based on the road extensions on Interchange Way and Millway Avenue. The following conclusions can be made:

- The proposed design includes an extension of Millway Avenue from Highway 7 to Interchange Way and the improvement and extension of Interchange Way between Commerce Street and Creditstone Road.
- Hydrological analysis of the roadway corridor was carried out using the Visual OTTHYMO hydrologic model under existing and proposed conditions.
- Unit flow relationships were used to calculate the 100-year required volumes for quantity control of the contributing ROW study areas west and east of Jane Street. The volumes are the following:
    - For the contributing study area west of Jane Street a volume of 2606 m^3 should be considered in the Interchange Pond retrofit.
    - For the contributing study area east of Jane Street a volume of 1565 m^3 should be considered in the SWM strategy of the SEQ.
- SWM Quality Control and onsite retention will be achieved through the Interchange Pond retrofit and the SWM strategy of the SEQ.
- 15 mm onsite retention is being proposed for development sites west and east of Jane Street achieved by the Interchange Pond retrofit via extended detention and the SWM strategy for the SEQ may include extended detention should a pond be proposed.



DRAWING NAME: \\CORP.PBWAN.NET\CA\CATHL100\ENGCAD\DIV38\2020\20M-01179-00 VMC INTERCHANGE WAY & MILLWAY AVE\CAD\20M-01179-00 EXISTING DRAINAGE MOSAIC.DWG

wsp

STUDY AREA

VAUGHAN METROPOLITAN CENTRE SCHEDULE 'C' EA FOR EXTENSIONS OF INTERCHANGE WAY AND MILLWAY AVENUE

EXHIBIT

1

LEGEND

103a — CATCHMENT ID
4.4ha — CATCHMENT AREA

CATCHMENT BOUNDARY

EXISTING CULVERT

100
1.10ha

105
3.24ha

200
2.08ha

300
0.52ha

COMMERCE STREET

DRAWING NAME: \\CORP.PBWAN.NET\CA\CATHL100\ENGCAD\DIV38\2020\20M-01179-00 VMC INTERCHANGE WAY & MILLWAY AVE\CAD\20M-01179-00 EXISTING DRAINAGE MOSAIC.DWG

wsp

EXISTING DRAINAGE MOSAIC - LARGE SCALE

VAUGHAN METROPOLITAN CENTRE SCHEDULE 'C' EA FOR EXTENSIONS OF INTERCHANGE WAY AND MILLWAY AVENUE

EXHIBIT

2

LEGEND

103a — CATCHMENT ID

4.4ha — CATCHMENT AREA

CATCHMENT BOUNDARY

EXISTING CULVERT

Metric Scale

25m 0 50m

Horizontal

105

3.24ha

COMMERCE STREET

INTERCHANGE WAY

EXCHANGE AVENUE
STREET A

DRAWING NAME: \\CORP.PBWAN.NET\CA\CATHL100\ENGCAD\DIV38\2020\20M-01179-00 VMC INTERCHANGE WAY & MILLWAY AVE\CAD\20M-01179-00 EXISTING DRAINAGE MOSAIC.DWG

wsp

EXISTING DRAINAGE MOSAIC

VAUGHAN METROPOLITAN CENTRE SCHEDULE 'C' EA FOR EXTENSIONS OF INTERCHANGE WAY AND MILLWAY AVENUE

EXHIBIT

3

LEGEND

103a — CATCHMENT ID

4.4ha — CATCHMENT AREA

CATCHMENT BOUNDARY

EXISTING CULVERT

Metric Scale

25m 0 50m

Horizontal

100

1.10ha

COMMERCE STREET

DRAWING NAME: \\CORP.PBWAN.NET\CA\CATHL100\ENGCAD\DIV38\2020\20M-01179-00 VMC INTERCHANGE WAY & MILLWAY AVE\CAD\20M-01179-00 EXISTING DRAINAGE MOSAIC.DWG

wsp

EXISTING DRAINAGE MOSAIC

VAUGHAN METROPOLITAN CENTRE SCHEDULE 'C' EA FOR EXTENSIONS OF INTERCHANGE WAY AND MILLWAY AVENUE

EXHIBIT

4

LEGEND

103a — CATCHMENT ID

4.4ha — CATCHMENT AREA

CATCHMENT BOUNDARY

EXISTING CULVERT

Metric Scale

25m 0 50m

Horizontal

BLACK CREEK CULVERT

200
2.08ha

300
0.52ha

DRAWING NAME: \\CORP.PBWAN.NET\CA\CATHL100\ENGCAD\DIV38\2020\20M-01179-00 VMC INTERCHANGE WAY & MILLWAY AVE\CAD\20M-01179-00 EXISTING DRAINAGE MOSAIC.DWG

wsp

EXISTING DRAINAGE MOSAIC

VAUGHAN METROPOLITAN CENTRE SCHEDULE 'C' EA FOR EXTENSIONS OF INTERCHANGE WAY AND MILLWAY AVENUE

EXHIBIT

5

LEGEND

103a — CATCHMENT ID

4.4ha — CATCHMENT AREA

CATCHMENT BOUNDARY

REALIGNED BLACK CREEK CULVERT

100
1.10ha

105
3.24ha

200
2.08ha

300
0.52ha

N

DRAWING NAME: \\CORP.PBWAN.NET\CA\CATHL100\ENGCAD\DIV38\2020\20M-01179-00 VMC INTERCHANGE WAY & MILLWAY AVE\CAD\20M-01179-00 PROPOSED DRAINAGE MOSAIC.DWG

wsp

PROPOSED DRAINAGE MOSAIC - LARGE SCALE

VAUGHAN METROPOLITAN CENTRE SCHEDULE 'C' EA FOR EXTENSIONS OF INTERCHANGE WAY AND MILLWAY AVENUE

EXHIBIT

6

LEGEND

103a — CATCHMENT ID

4.4ha — CATCHMENT AREA

CATCHMENT BOUNDARY

REALIGNED BLACK CREEK CULVERT

Metric Scale

25m 0 50m

Horizontal

105

3.24ha

COMMERCE STREET

MILLWAY AVENUE

EXCHANGE AVENUE

STREET A

33m ROW

DRAWING NAME: \\CORP.PBWAN.NET\CA\CATHL100\ENGCAD\DIV38\2020\20M-01179-00 VMC INTERCHANGE WAY & MILLWAY AVE\CAD\20M-01179-00 PROPOSED DRAINAGE MOSAIC.DWG

wsp

PROPOSED DRAINAGE MOSAIC

VAUGHAN METROPOLITAN CENTRE SCHEDULE 'C' EA FOR EXTENSIONS OF INTERCHANGE WAY AND MILLWAY AVENUE

EXHIBIT

7

LEGEND

103a — CATCHMENT ID

4.4ha — CATCHMENT AREA

CATCHMENT BOUNDARY

REALIGNED BLACK CREEK CULVERT

Metric Scale

25m 0 50m

Horizontal

100

1.10ha

COMMERCE STREET

DRAWING NAME: \\CORP.PBWAN.NET\CA\CATHL100\ENGCAD\DIV38\2020\20M-01179-00 VMC INTERCHANGE WAY & MILLWAY AVE\CAD\20M-01179-00 PROPOSED DRAINAGE MOSAIC.DWG

wsp

PROPOSED DRAINAGE MOSAIC

VAUGHAN METROPOLITAN CENTRE SCHEDULE 'C' EA FOR EXTENSIONS OF INTERCHANGE WAY AND MILLWAY AVENUE

EXHIBIT

8

LEGEND

103a — CATCHMENT ID

4.4ha — CATCHMENT AREA

CATCHMENT BOUNDARY

REALIGNED BLACK CREEK CULVERT

Metric Scale

25m 0 50m

Horizontal

300

0.52ha

200

2.08ha

33m ROW

PROPOSED DRAINAGE MOSAIC

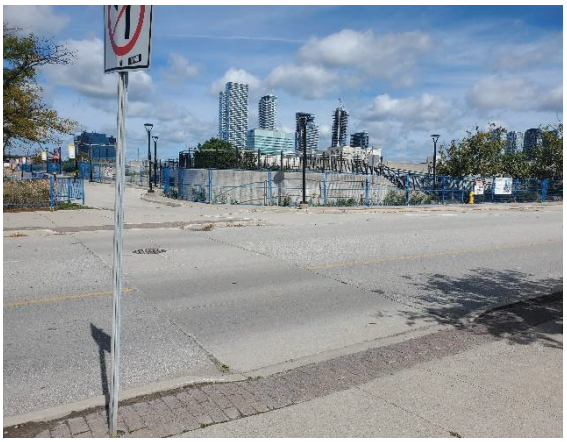
VAUGHAN METROPOLITAN CENTRE SCHEDULE 'C' EA FOR EXTENSIONS OF INTERCHANGE WAY AND MILLWAY AVENUE

EXHIBIT

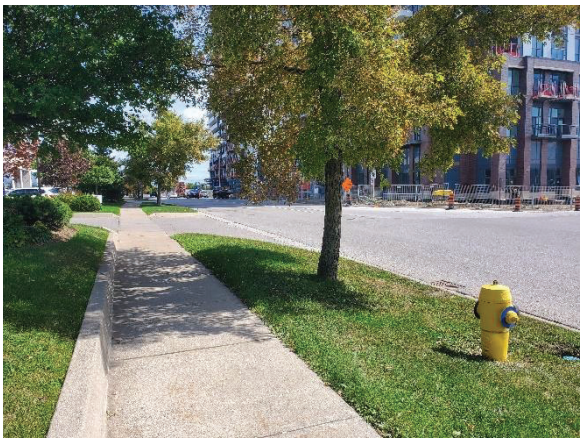
9

DRAWING NAME: \\CORP.PBWAN.NET\CA\CATHL100\ENGCAD\DIV36\2020\20M-01179-00 VMC INTERCHANGE WAY & MILLWAY AVE\CAD\20M-01179-00 PROPOSED DRAINAGE MOSAIC.DWG

Appendix A : Photographic Inventory



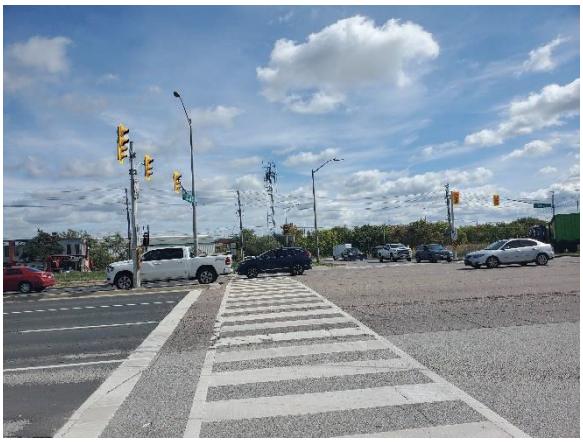
Interchange Way – Looking North



Interchange Way – Looking East

Interchange Way – Looking West

Interchange Way – Around Millway Ave. proposed extension



Jane St. & Interchange Way – Looking East

Jane St. & Interchange Way – Open grass area

Jane St. & Interchange Way – Looking South

Jane St. & Interchange Way – 2018 Black Creek Realignment Location Looking North

Culvert C1 North – Looking North

Culvert C1 North – Looking South

Culvert C1 South – Culvert end

Culvert C1 South – Gabion wall

SWM Pond 1 – Looking South

SWM Pond 1 – External area next to fence line

Maplecrete Road –Looking East

Maplecrete Road – Looking South

Maplecrete Road – Looking North

Maplecrete Road – Looking West

Creditstone Road – Looking West

Creditstone Road – Looking South

Creditstone Road – Looking North

Creditstone Road – Looking East

Appendix B: Existing Conditions Hydrology

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       V    V   I    SSSSS  U   U    A    L              (v 6.2.2015)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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


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DATE: 02-25-2025                          TIME: 10:47:41

USER:



COMMENTS: _____________________________________________________________


--------------------------------------------------------------------------------
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  ********************************************
  ** SIMULATION : AES 12H_002-Humber          **
  ********************************************


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|                  |              ata\Local\Temp\
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| Ptotal= 42.00 mm | Comments: AES 12H_002-Humber

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	3.25	7.14	6.50	2.94	9.75	0.42
0.25	0.42	3.50	7.14	6.75	2.94	10.00	0.42
0.50	0.42	3.75	7.14	7.00	2.94	10.25	0.42
0.75	0.42	4.00	7.14	7.25	1.68	10.50	0.42
1.00	0.42	4.25	19.32	7.50	1.68	10.75	0.42
1.25	0.42	4.50	19.32	7.75	1.68	11.00	0.42
1.50	0.42	4.75	19.32	8.00	1.68	11.25	0.42
1.75	0.42	5.00	19.32	8.25	0.84	11.50	0.42
2.00	0.42	5.25	5.46	8.50	0.84	11.75	0.42
2.25	2.52	5.50	5.46	8.75	0.84	12.00	0.42
2.50	2.52	5.75	5.46	9.00	0.84		
2.75	2.52	6.00	5.46	9.25	0.42		
3.00	2.52	6.25	2.94	9.50	0.42		

| CALIB |
| STANDHYD (0100) | Area (ha)= 1.10
|ID= 1 DT= 5.0 min | Total Imp(%)= 92.00 Dir. Conn.(%)= 92.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.01	0.09
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	85.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.52	6.250	5.46	9.33	0.42
0.167	0.00	3.250	2.52	6.333	2.94	9.42	0.42
0.250	0.00	3.333	7.14	6.417	2.94	9.50	0.42
0.333	0.42	3.417	7.14	6.500	2.94	9.58	0.42
0.417	0.42	3.500	7.14	6.583	2.94	9.67	0.42
0.500	0.42	3.583	7.14	6.667	2.94	9.75	0.42
0.583	0.42	3.667	7.14	6.750	2.94	9.83	0.42
0.667	0.42	3.750	7.14	6.833	2.94	9.92	0.42
0.750	0.42	3.833	7.14	6.917	2.94	10.00	0.42
0.833	0.42	3.917	7.14	7.000	2.94	10.08	0.42
0.917	0.42	4.000	7.14	7.083	2.94	10.17	0.42

1.000	0.42	4.083	7.14	7.167	2.94	10.25	0.42
1.083	0.42	4.167	7.14	7.250	2.94	10.33	0.42
1.167	0.42	4.250	7.14	7.333	1.68	10.42	0.42
1.250	0.42	4.333	19.32	7.417	1.68	10.50	0.42
1.333	0.42	4.417	19.32	7.500	1.68	10.58	0.42
1.417	0.42	4.500	19.32	7.583	1.68	10.67	0.42
1.500	0.42	4.583	19.32	7.667	1.68	10.75	0.42
1.583	0.42	4.667	19.32	7.750	1.68	10.83	0.42
1.667	0.42	4.750	19.32	7.833	1.68	10.92	0.42
1.750	0.42	4.833	19.32	7.917	1.68	11.00	0.42
1.833	0.42	4.917	19.32	8.000	1.68	11.08	0.42
1.917	0.42	5.000	19.32	8.083	1.68	11.17	0.42
2.000	0.42	5.083	19.32	8.167	1.68	11.25	0.42
2.083	0.42	5.167	19.32	8.250	1.68	11.33	0.42
2.167	0.42	5.250	19.32	8.333	0.84	11.42	0.42
2.250	0.42	5.333	5.46	8.417	0.84	11.50	0.42
2.333	2.52	5.417	5.46	8.500	0.84	11.58	0.42
2.417	2.52	5.500	5.46	8.583	0.84	11.67	0.42
2.500	2.52	5.583	5.46	8.667	0.84	11.75	0.42
2.583	2.52	5.667	5.46	8.750	0.84	11.83	0.42
2.667	2.52	5.750	5.46	8.833	0.84	11.92	0.42
2.750	2.52	5.833	5.46	8.917	0.84	12.00	0.42
2.833	2.52	5.917	5.46	9.000	0.84	12.08	0.42
2.917	2.52	6.000	5.46	9.083	0.84	12.17	0.42
3.000	2.52	6.083	5.46	9.167	0.84	12.25	0.42
3.083	2.52	6.167	5.46	9.250	0.84		

Max.Eff.Inten.(mm/hr)=	19.32	9.04	
over (min)	5.00	30.00	
Storage Coeff. (min)=	4.47 (ii)	27.06 (ii)	
Unit Hyd. Tpeak (min)=	5.00	30.00	
Unit Hyd. peak (cms)=	0.23	0.04	
			TOTALS
PEAK FLOW (cms)=	0.05	0.00	0.056 (iii)
TIME TO PEAK (hrs)=	5.25	5.50	5.25
RUNOFF VOLUME (mm)=	41.00	14.76	38.89
TOTAL RAINFALL (mm)=	42.00	42.00	42.00
RUNOFF COEFFICIENT =	0.98	0.35	0.93

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB

| STANDHYD (0105)| Area (ha)= 3.24
|ID= 1 DT= 5.0 min | Total Imp(%)= 70.00 Dir. Conn.(%)= 70.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.27	0.97
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	147.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.52	6.250	5.46	9.33	0.42
0.167	0.00	3.250	2.52	6.333	2.94	9.42	0.42
0.250	0.00	3.333	7.14	6.417	2.94	9.50	0.42
0.333	0.42	3.417	7.14	6.500	2.94	9.58	0.42
0.417	0.42	3.500	7.14	6.583	2.94	9.67	0.42
0.500	0.42	3.583	7.14	6.667	2.94	9.75	0.42
0.583	0.42	3.667	7.14	6.750	2.94	9.83	0.42
0.667	0.42	3.750	7.14	6.833	2.94	9.92	0.42
0.750	0.42	3.833	7.14	6.917	2.94	10.00	0.42
0.833	0.42	3.917	7.14	7.000	2.94	10.08	0.42
0.917	0.42	4.000	7.14	7.083	2.94	10.17	0.42
1.000	0.42	4.083	7.14	7.167	2.94	10.25	0.42
1.083	0.42	4.167	7.14	7.250	2.94	10.33	0.42
1.167	0.42	4.250	7.14	7.333	1.68	10.42	0.42
1.250	0.42	4.333	19.32	7.417	1.68	10.50	0.42
1.333	0.42	4.417	19.32	7.500	1.68	10.58	0.42
1.417	0.42	4.500	19.32	7.583	1.68	10.67	0.42
1.500	0.42	4.583	19.32	7.667	1.68	10.75	0.42
1.583	0.42	4.667	19.32	7.750	1.68	10.83	0.42
1.667	0.42	4.750	19.32	7.833	1.68	10.92	0.42
1.750	0.42	4.833	19.32	7.917	1.68	11.00	0.42
1.833	0.42	4.917	19.32	8.000	1.68	11.08	0.42
1.917	0.42	5.000	19.32	8.083	1.68	11.17	0.42
2.000	0.42	5.083	19.32	8.167	1.68	11.25	0.42
2.083	0.42	5.167	19.32	8.250	1.68	11.33	0.42
2.167	0.42	5.250	19.32	8.333	0.84	11.42	0.42
2.250	0.42	5.333	5.46	8.417	0.84	11.50	0.42
2.333	2.52	5.417	5.46	8.500	0.84	11.58	0.42
2.417	2.52	5.500	5.46	8.583	0.84	11.67	0.42
2.500	2.52	5.583	5.46	8.667	0.84	11.75	0.42
2.583	2.52	5.667	5.46	8.750	0.84	11.83	0.42
2.667	2.52	5.750	5.46	8.833	0.84	11.92	0.42
2.750	2.52	5.833	5.46	8.917	0.84	12.00	0.42
2.833	2.52	5.917	5.46	9.000	0.84	12.08	0.42

```
                2.917    2.52 | 6.000    5.46 | 9.083    0.84 | 12.17    0.42
                3.000    2.52 | 6.083    5.46 | 9.167    0.84 | 12.25    0.42
                3.083    2.52 | 6.167    5.46 | 9.250    0.84 |

     Max.Eff.Inten.(mm/hr)=      19.32         9.04
               over (min)        5.00        30.00
     Storage Coeff.  (min)=      6.21 (ii)   28.80 (ii)
     Unit Hyd. Tpeak (min)=      5.00        30.00
     Unit Hyd. peak  (cms)=      0.19         0.04
                                                        *TOTALS*
     PEAK FLOW       (cms)=      0.12         0.02          0.137 (iii)
     TIME TO PEAK    (hrs)=      5.25         5.50           5.25
     RUNOFF VOLUME    (mm)=     41.00        14.76          33.12
     TOTAL RAINFALL   (mm)=     42.00        42.00          42.00
     RUNOFF COEFFICIENT   =      0.98         0.35           0.79


       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  82.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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

--------------------
| ADD HYD  (  0006)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0100):     1.10   0.056     5.25    38.89
      + ID2= 2 (  0105):     3.24   0.137     5.25    33.12
        ================================================
        ID = 3 (  0006):     4.34   0.193     5.25    34.58

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0200)|   Area    (ha)=   2.08
|ID= 1 DT= 5.0 min |   Total Imp(%)=  84.00   Dir. Conn.(%)=  84.00
--------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.75         0.33
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=     118.00        40.00
     Mannings n           =      0.013        0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.52	6.250	5.46	9.33	0.42
0.167	0.00	3.250	2.52	6.333	2.94	9.42	0.42
0.250	0.00	3.333	7.14	6.417	2.94	9.50	0.42
0.333	0.42	3.417	7.14	6.500	2.94	9.58	0.42
0.417	0.42	3.500	7.14	6.583	2.94	9.67	0.42
0.500	0.42	3.583	7.14	6.667	2.94	9.75	0.42
0.583	0.42	3.667	7.14	6.750	2.94	9.83	0.42
0.667	0.42	3.750	7.14	6.833	2.94	9.92	0.42
0.750	0.42	3.833	7.14	6.917	2.94	10.00	0.42
0.833	0.42	3.917	7.14	7.000	2.94	10.08	0.42
0.917	0.42	4.000	7.14	7.083	2.94	10.17	0.42
1.000	0.42	4.083	7.14	7.167	2.94	10.25	0.42
1.083	0.42	4.167	7.14	7.250	2.94	10.33	0.42
1.167	0.42	4.250	7.14	7.333	1.68	10.42	0.42
1.250	0.42	4.333	19.32	7.417	1.68	10.50	0.42
1.333	0.42	4.417	19.32	7.500	1.68	10.58	0.42
1.417	0.42	4.500	19.32	7.583	1.68	10.67	0.42
1.500	0.42	4.583	19.32	7.667	1.68	10.75	0.42
1.583	0.42	4.667	19.32	7.750	1.68	10.83	0.42
1.667	0.42	4.750	19.32	7.833	1.68	10.92	0.42
1.750	0.42	4.833	19.32	7.917	1.68	11.00	0.42
1.833	0.42	4.917	19.32	8.000	1.68	11.08	0.42
1.917	0.42	5.000	19.32	8.083	1.68	11.17	0.42
2.000	0.42	5.083	19.32	8.167	1.68	11.25	0.42
2.083	0.42	5.167	19.32	8.250	1.68	11.33	0.42
2.167	0.42	5.250	19.32	8.333	0.84	11.42	0.42
2.250	0.42	5.333	5.46	8.417	0.84	11.50	0.42
2.333	2.52	5.417	5.46	8.500	0.84	11.58	0.42
2.417	2.52	5.500	5.46	8.583	0.84	11.67	0.42
2.500	2.52	5.583	5.46	8.667	0.84	11.75	0.42
2.583	2.52	5.667	5.46	8.750	0.84	11.83	0.42
2.667	2.52	5.750	5.46	8.833	0.84	11.92	0.42
2.750	2.52	5.833	5.46	8.917	0.84	12.00	0.42
2.833	2.52	5.917	5.46	9.000	0.84	12.08	0.42
2.917	2.52	6.000	5.46	9.083	0.84	12.17	0.42
3.000	2.52	6.083	5.46	9.167	0.84	12.25	0.42
3.083	2.52	6.167	5.46	9.250	0.84		

Max.Eff.Inten.(mm/hr)=	19.32	9.04		
over (min)	5.00	30.00		
Storage Coeff. (min)=	5.45 (ii)	28.03 (ii)		
Unit Hyd. Tpeak (min)=	5.00	30.00		
Unit Hyd. peak (cms)=	0.20	0.04		
			TOTALS	
PEAK FLOW (cms)=	0.09	0.01	0.099 (iii)	
TIME TO PEAK (hrs)=	5.25	5.50	5.25	

RUNOFF VOLUME (mm)=	41.00	14.76	36.79
TOTAL RAINFALL (mm)=	42.00	42.00	42.00
RUNOFF COEFFICIENT =	0.98	0.35	0.88

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB STANDHYD (0300) | ID= 1 DT= 5.0 min	Area (ha)= 0.52 Total Imp(%)= 84.00 Dir. Conn.(%)= 84.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.44	0.08
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	59.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.52	6.250	5.46	9.33	0.42
0.167	0.00	3.250	2.52	6.333	2.94	9.42	0.42
0.250	0.00	3.333	7.14	6.417	2.94	9.50	0.42
0.333	0.42	3.417	7.14	6.500	2.94	9.58	0.42
0.417	0.42	3.500	7.14	6.583	2.94	9.67	0.42
0.500	0.42	3.583	7.14	6.667	2.94	9.75	0.42
0.583	0.42	3.667	7.14	6.750	2.94	9.83	0.42
0.667	0.42	3.750	7.14	6.833	2.94	9.92	0.42
0.750	0.42	3.833	7.14	6.917	2.94	10.00	0.42
0.833	0.42	3.917	7.14	7.000	2.94	10.08	0.42
0.917	0.42	4.000	7.14	7.083	2.94	10.17	0.42
1.000	0.42	4.083	7.14	7.167	2.94	10.25	0.42
1.083	0.42	4.167	7.14	7.250	2.94	10.33	0.42
1.167	0.42	4.250	7.14	7.333	1.68	10.42	0.42
1.250	0.42	4.333	19.32	7.417	1.68	10.50	0.42
1.333	0.42	4.417	19.32	7.500	1.68	10.58	0.42
1.417	0.42	4.500	19.32	7.583	1.68	10.67	0.42
1.500	0.42	4.583	19.32	7.667	1.68	10.75	0.42
1.583	0.42	4.667	19.32	7.750	1.68	10.83	0.42
1.667	0.42	4.750	19.32	7.833	1.68	10.92	0.42

1.750	0.42	4.833	19.32	7.917	1.68	11.00	0.42
1.833	0.42	4.917	19.32	8.000	1.68	11.08	0.42
1.917	0.42	5.000	19.32	8.083	1.68	11.17	0.42
2.000	0.42	5.083	19.32	8.167	1.68	11.25	0.42
2.083	0.42	5.167	19.32	8.250	1.68	11.33	0.42
2.167	0.42	5.250	19.32	8.333	0.84	11.42	0.42
2.250	0.42	5.333	5.46	8.417	0.84	11.50	0.42
2.333	2.52	5.417	5.46	8.500	0.84	11.58	0.42
2.417	2.52	5.500	5.46	8.583	0.84	11.67	0.42
2.500	2.52	5.583	5.46	8.667	0.84	11.75	0.42
2.583	2.52	5.667	5.46	8.750	0.84	11.83	0.42
2.667	2.52	5.750	5.46	8.833	0.84	11.92	0.42
2.750	2.52	5.833	5.46	8.917	0.84	12.00	0.42
2.833	2.52	5.917	5.46	9.000	0.84	12.08	0.42
2.917	2.52	6.000	5.46	9.083	0.84	12.17	0.42
3.000	2.52	6.083	5.46	9.167	0.84	12.25	0.42
3.083	2.52	6.167	5.46	9.250	0.84		

Max.Eff.Inten.(mm/hr)=	19.32	9.04	
over (min)	5.00	30.00	
Storage Coeff. (min)=	3.59 (ii)	26.18 (ii)	
Unit Hyd. Tpeak (min)=	5.00	30.00	
Unit Hyd. peak (cms)=	0.26	0.04	
			TOTALS
PEAK FLOW (cms)=	0.02	0.00	0.025 (iii)
TIME TO PEAK (hrs)=	5.08	5.50	5.25
RUNOFF VOLUME (mm)=	41.00	14.76	36.78
TOTAL RAINFALL (mm)=	42.00	42.00	42.00
RUNOFF COEFFICIENT =	0.98	0.35	0.88

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0007) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0200):	2.08	0.099	5.25	36.79
+ ID2= 2 (0300):	0.52	0.025	5.25	36.78
ID = 3 (0007):	2.60	0.124	5.25	36.79

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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       V    V   I    SSSSS  U   U    A    L              (v 6.2.2015)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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


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

  Output  filename:
C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\0
05f31a7-e1dd-4bc8-8d3d-9dd9cb324004\s
  Summary filename:
C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\0
05f31a7-e1dd-4bc8-8d3d-9dd9cb324004\s


DATE: 02-25-2025                          TIME: 10:47:41

USER:



COMMENTS: _____________________________________________________________


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  ********************************************
  ** SIMULATION : AES 12H_005-Humber          **
  ********************************************


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|    READ STORM    |    Filename: C:\Users\caeh076182\AppD
```

	ata\Local\Temp\
	875adc2c-1c8d-486e-8a08-c640e73024e8\7895aae8
Ptotal= 54.38 mm	Comments: AES 12H_005-Humber

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	3.25	9.25	6.50	3.81	9.75	0.54
0.25	0.54	3.50	9.25	6.75	3.81	10.00	0.54
0.50	0.54	3.75	9.25	7.00	3.81	10.25	0.54
0.75	0.54	4.00	9.25	7.25	2.18	10.50	0.54
1.00	0.54	4.25	25.02	7.50	2.18	10.75	0.54
1.25	0.54	4.50	25.02	7.75	2.18	11.00	0.54
1.50	0.54	4.75	25.02	8.00	2.18	11.25	0.54
1.75	0.54	5.00	25.02	8.25	1.09	11.50	0.54
2.00	0.54	5.25	7.07	8.50	1.09	11.75	0.54
2.25	3.26	5.50	7.07	8.75	1.09	12.00	0.54
2.50	3.26	5.75	7.07	9.00	1.09		
2.75	3.26	6.00	7.07	9.25	0.54		
3.00	3.26	6.25	3.81	9.50	0.54		

CALIB	
STANDHYD (0100)	Area (ha)= 1.10
ID= 1 DT= 5.0 min	Total Imp(%)= 92.00 Dir. Conn.(%)= 92.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.01	0.09
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	85.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.26	6.250	7.07	9.33	0.54
0.167	0.00	3.250	3.26	6.333	3.81	9.42	0.54
0.250	0.00	3.333	9.25	6.417	3.81	9.50	0.54
0.333	0.54	3.417	9.25	6.500	3.81	9.58	0.54
0.417	0.54	3.500	9.25	6.583	3.81	9.67	0.54
0.500	0.54	3.583	9.25	6.667	3.81	9.75	0.54
0.583	0.54	3.667	9.25	6.750	3.81	9.83	0.54
0.667	0.54	3.750	9.25	6.833	3.81	9.92	0.54
0.750	0.54	3.833	9.25	6.917	3.81	10.00	0.54
0.833	0.54	3.917	9.25	7.000	3.81	10.08	0.54

0.917	0.54	4.000	9.25	7.083	3.81	10.17	0.54
1.000	0.54	4.083	9.25	7.167	3.81	10.25	0.54
1.083	0.54	4.167	9.25	7.250	3.81	10.33	0.54
1.167	0.54	4.250	9.25	7.333	2.18	10.42	0.54
1.250	0.54	4.333	25.02	7.417	2.18	10.50	0.54
1.333	0.54	4.417	25.02	7.500	2.18	10.58	0.54
1.417	0.54	4.500	25.02	7.583	2.18	10.67	0.54
1.500	0.54	4.583	25.02	7.667	2.18	10.75	0.54
1.583	0.54	4.667	25.02	7.750	2.18	10.83	0.54
1.667	0.54	4.750	25.02	7.833	2.18	10.92	0.54
1.750	0.54	4.833	25.02	7.917	2.18	11.00	0.54
1.833	0.54	4.917	25.02	8.000	2.18	11.08	0.54
1.917	0.54	5.000	25.02	8.083	2.18	11.17	0.54
2.000	0.54	5.083	25.02	8.167	2.18	11.25	0.54
2.083	0.54	5.167	25.02	8.250	2.18	11.33	0.54
2.167	0.54	5.250	25.02	8.333	1.09	11.42	0.54
2.250	0.54	5.333	7.07	8.417	1.09	11.50	0.54
2.333	3.26	5.417	7.07	8.500	1.09	11.58	0.54
2.417	3.26	5.500	7.07	8.583	1.09	11.67	0.54
2.500	3.26	5.583	7.07	8.667	1.09	11.75	0.54
2.583	3.26	5.667	7.07	8.750	1.09	11.83	0.54
2.667	3.26	5.750	7.07	8.833	1.09	11.92	0.54
2.750	3.26	5.833	7.07	8.917	1.09	12.00	0.54
2.833	3.26	5.917	7.07	9.000	1.09	12.08	0.54
2.917	3.26	6.000	7.07	9.083	1.09	12.17	0.54
3.000	3.26	6.083	7.07	9.167	1.09	12.25	0.54
3.083	3.26	6.167	7.07	9.250	1.09		

Max.Eff.Inten.(mm/hr)=	25.02	14.28	
over (min)	5.00	25.00	
Storage Coeff. (min)=	4.03 (ii)	22.85 (ii)	
Unit Hyd. Tpeak (min)=	5.00	25.00	
Unit Hyd. peak (cms)=	0.24	0.05	
			TOTALS
PEAK FLOW (cms)=	0.07	0.00	0.073 (iii)
TIME TO PEAK (hrs)=	5.17	5.42	5.25
RUNOFF VOLUME (mm)=	53.38	23.19	50.96
TOTAL RAINFALL (mm)=	54.38	54.38	54.38
RUNOFF COEFFICIENT =	0.98	0.43	0.94

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	
STANDHYD (0105)	Area (ha)= 3.24
ID= 1 DT= 5.0 min	Total Imp(%)= 70.00 Dir. Conn.(%)= 70.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.27	0.97
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	147.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.26	6.250	7.07	9.33	0.54
0.167	0.00	3.250	3.26	6.333	3.81	9.42	0.54
0.250	0.00	3.333	9.25	6.417	3.81	9.50	0.54
0.333	0.54	3.417	9.25	6.500	3.81	9.58	0.54
0.417	0.54	3.500	9.25	6.583	3.81	9.67	0.54
0.500	0.54	3.583	9.25	6.667	3.81	9.75	0.54
0.583	0.54	3.667	9.25	6.750	3.81	9.83	0.54
0.667	0.54	3.750	9.25	6.833	3.81	9.92	0.54
0.750	0.54	3.833	9.25	6.917	3.81	10.00	0.54
0.833	0.54	3.917	9.25	7.000	3.81	10.08	0.54
0.917	0.54	4.000	9.25	7.083	3.81	10.17	0.54
1.000	0.54	4.083	9.25	7.167	3.81	10.25	0.54
1.083	0.54	4.167	9.25	7.250	3.81	10.33	0.54
1.167	0.54	4.250	9.25	7.333	2.18	10.42	0.54
1.250	0.54	4.333	25.02	7.417	2.18	10.50	0.54
1.333	0.54	4.417	25.02	7.500	2.18	10.58	0.54
1.417	0.54	4.500	25.02	7.583	2.18	10.67	0.54
1.500	0.54	4.583	25.02	7.667	2.18	10.75	0.54
1.583	0.54	4.667	25.02	7.750	2.18	10.83	0.54
1.667	0.54	4.750	25.02	7.833	2.18	10.92	0.54
1.750	0.54	4.833	25.02	7.917	2.18	11.00	0.54
1.833	0.54	4.917	25.02	8.000	2.18	11.08	0.54
1.917	0.54	5.000	25.02	8.083	2.18	11.17	0.54
2.000	0.54	5.083	25.02	8.167	2.18	11.25	0.54
2.083	0.54	5.167	25.02	8.250	2.18	11.33	0.54
2.167	0.54	5.250	25.02	8.333	1.09	11.42	0.54
2.250	0.54	5.333	7.07	8.417	1.09	11.50	0.54
2.333	3.26	5.417	7.07	8.500	1.09	11.58	0.54
2.417	3.26	5.500	7.07	8.583	1.09	11.67	0.54
2.500	3.26	5.583	7.07	8.667	1.09	11.75	0.54
2.583	3.26	5.667	7.07	8.750	1.09	11.83	0.54
2.667	3.26	5.750	7.07	8.833	1.09	11.92	0.54
2.750	3.26	5.833	7.07	8.917	1.09	12.00	0.54

```
              2.833    3.26 | 5.917    7.07 | 9.000    1.09 | 12.08    0.54
              2.917    3.26 | 6.000    7.07 | 9.083    1.09 | 12.17    0.54
              3.000    3.26 | 6.083    7.07 | 9.167    1.09 | 12.25    0.54
              3.083    3.26 | 6.167    7.07 | 9.250    1.09 |
```

Max.Eff.Inten.(mm/hr)=	25.02	14.28	
over (min)	5.00	25.00	
Storage Coeff. (min)=	5.60 (ii)	24.42 (ii)	
Unit Hyd. Tpeak (min)=	5.00	25.00	
Unit Hyd. peak (cms)=	0.20	0.05	
			TOTALS
PEAK FLOW (cms)=	0.16	0.03	0.186 (iii)
TIME TO PEAK (hrs)=	5.25	5.42	5.25
RUNOFF VOLUME (mm)=	53.38	23.19	44.32
TOTAL RAINFALL (mm)=	54.38	54.38	54.38
RUNOFF COEFFICIENT =	0.98	0.43	0.81

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD  (  0006)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0100):     1.10   0.073     5.25    50.96
      + ID2= 2 (  0105):     3.24   0.186     5.25    44.32
        ================================================
        ID = 3 (  0006):     4.34   0.259     5.25    46.00
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB            |
| STANDHYD (  0200)|   Area    (ha)=   2.08
|ID= 1 DT= 5.0 min |   Total Imp(%)=  84.00   Dir. Conn.(%)=  84.00
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		IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=		1.75	0.33
Dep. Storage (mm)=		1.00	5.00
Average Slope (%)=		1.00	2.00
Length (m)=		118.00	40.00
Mannings n =		0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.26	6.250	7.07	9.33	0.54
0.167	0.00	3.250	3.26	6.333	3.81	9.42	0.54
0.250	0.00	3.333	9.25	6.417	3.81	9.50	0.54
0.333	0.54	3.417	9.25	6.500	3.81	9.58	0.54
0.417	0.54	3.500	9.25	6.583	3.81	9.67	0.54
0.500	0.54	3.583	9.25	6.667	3.81	9.75	0.54
0.583	0.54	3.667	9.25	6.750	3.81	9.83	0.54
0.667	0.54	3.750	9.25	6.833	3.81	9.92	0.54
0.750	0.54	3.833	9.25	6.917	3.81	10.00	0.54
0.833	0.54	3.917	9.25	7.000	3.81	10.08	0.54
0.917	0.54	4.000	9.25	7.083	3.81	10.17	0.54
1.000	0.54	4.083	9.25	7.167	3.81	10.25	0.54
1.083	0.54	4.167	9.25	7.250	3.81	10.33	0.54
1.167	0.54	4.250	9.25	7.333	2.18	10.42	0.54
1.250	0.54	4.333	25.02	7.417	2.18	10.50	0.54
1.333	0.54	4.417	25.02	7.500	2.18	10.58	0.54
1.417	0.54	4.500	25.02	7.583	2.18	10.67	0.54
1.500	0.54	4.583	25.02	7.667	2.18	10.75	0.54
1.583	0.54	4.667	25.02	7.750	2.18	10.83	0.54
1.667	0.54	4.750	25.02	7.833	2.18	10.92	0.54
1.750	0.54	4.833	25.02	7.917	2.18	11.00	0.54
1.833	0.54	4.917	25.02	8.000	2.18	11.08	0.54
1.917	0.54	5.000	25.02	8.083	2.18	11.17	0.54
2.000	0.54	5.083	25.02	8.167	2.18	11.25	0.54
2.083	0.54	5.167	25.02	8.250	2.18	11.33	0.54
2.167	0.54	5.250	25.02	8.333	1.09	11.42	0.54
2.250	0.54	5.333	7.07	8.417	1.09	11.50	0.54
2.333	3.26	5.417	7.07	8.500	1.09	11.58	0.54
2.417	3.26	5.500	7.07	8.583	1.09	11.67	0.54
2.500	3.26	5.583	7.07	8.667	1.09	11.75	0.54
2.583	3.26	5.667	7.07	8.750	1.09	11.83	0.54
2.667	3.26	5.750	7.07	8.833	1.09	11.92	0.54
2.750	3.26	5.833	7.07	8.917	1.09	12.00	0.54
2.833	3.26	5.917	7.07	9.000	1.09	12.08	0.54
2.917	3.26	6.000	7.07	9.083	1.09	12.17	0.54
3.000	3.26	6.083	7.07	9.167	1.09	12.25	0.54
3.083	3.26	6.167	7.07	9.250	1.09		

Max.Eff.Inten.(mm/hr)=	25.02	14.28	
over (min)	5.00	25.00	
Storage Coeff. (min)=	4.91 (ii)	23.72 (ii)	
Unit Hyd. Tpeak (min)=	5.00	25.00	
Unit Hyd. peak (cms)=	0.22	0.05	
			TOTALS
PEAK FLOW (cms)=	0.12	0.01	0.131 (iii)

TIME TO PEAK (hrs)=	5.25	5.42	5.25
RUNOFF VOLUME (mm)=	53.38	23.19	48.54
TOTAL RAINFALL (mm)=	54.38	54.38	54.38
RUNOFF COEFFICIENT =	0.98	0.43	0.89

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
STANDHYD (0300) | Area (ha)= 0.52
ID= 1 DT= 5.0 min | Total Imp(%)= 84.00 Dir. Conn.(%)= 84.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=		0.44	0.08
Dep. Storage (mm)=		1.00	5.00
Average Slope (%)=		1.00	2.00
Length (m)=		59.00	40.00
Mannings n =		0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.26	6.250	7.07	9.33	0.54
0.167	0.00	3.250	3.26	6.333	3.81	9.42	0.54
0.250	0.00	3.333	9.25	6.417	3.81	9.50	0.54
0.333	0.54	3.417	9.25	6.500	3.81	9.58	0.54
0.417	0.54	3.500	9.25	6.583	3.81	9.67	0.54
0.500	0.54	3.583	9.25	6.667	3.81	9.75	0.54
0.583	0.54	3.667	9.25	6.750	3.81	9.83	0.54
0.667	0.54	3.750	9.25	6.833	3.81	9.92	0.54
0.750	0.54	3.833	9.25	6.917	3.81	10.00	0.54
0.833	0.54	3.917	9.25	7.000	3.81	10.08	0.54
0.917	0.54	4.000	9.25	7.083	3.81	10.17	0.54
1.000	0.54	4.083	9.25	7.167	3.81	10.25	0.54
1.083	0.54	4.167	9.25	7.250	3.81	10.33	0.54
1.167	0.54	4.250	9.25	7.333	2.18	10.42	0.54
1.250	0.54	4.333	25.02	7.417	2.18	10.50	0.54
1.333	0.54	4.417	25.02	7.500	2.18	10.58	0.54
1.417	0.54	4.500	25.02	7.583	2.18	10.67	0.54
1.500	0.54	4.583	25.02	7.667	2.18	10.75	0.54

1.583	0.54	4.667	25.02	7.750	2.18	10.83	0.54
1.667	0.54	4.750	25.02	7.833	2.18	10.92	0.54
1.750	0.54	4.833	25.02	7.917	2.18	11.00	0.54
1.833	0.54	4.917	25.02	8.000	2.18	11.08	0.54
1.917	0.54	5.000	25.02	8.083	2.18	11.17	0.54
2.000	0.54	5.083	25.02	8.167	2.18	11.25	0.54
2.083	0.54	5.167	25.02	8.250	2.18	11.33	0.54
2.167	0.54	5.250	25.02	8.333	1.09	11.42	0.54
2.250	0.54	5.333	7.07	8.417	1.09	11.50	0.54
2.333	3.26	5.417	7.07	8.500	1.09	11.58	0.54
2.417	3.26	5.500	7.07	8.583	1.09	11.67	0.54
2.500	3.26	5.583	7.07	8.667	1.09	11.75	0.54
2.583	3.26	5.667	7.07	8.750	1.09	11.83	0.54
2.667	3.26	5.750	7.07	8.833	1.09	11.92	0.54
2.750	3.26	5.833	7.07	8.917	1.09	12.00	0.54
2.833	3.26	5.917	7.07	9.000	1.09	12.08	0.54
2.917	3.26	6.000	7.07	9.083	1.09	12.17	0.54
3.000	3.26	6.083	7.07	9.167	1.09	12.25	0.54
3.083	3.26	6.167	7.07	9.250	1.09		

Max.Eff.Inten.(mm/hr)=	25.02	14.28	
over (min)	5.00	25.00	
Storage Coeff. (min)=	3.24 (ii)	22.05 (ii)	
Unit Hyd. Tpeak (min)=	5.00	25.00	
Unit Hyd. peak (cms)=	0.27	0.05	
			TOTALS
PEAK FLOW (cms)=	0.03	0.00	0.033 (iii)
TIME TO PEAK (hrs)=	5.08	5.42	5.25
RUNOFF VOLUME (mm)=	53.38	23.19	48.53
TOTAL RAINFALL (mm)=	54.38	54.38	54.38
RUNOFF COEFFICIENT =	0.98	0.43	0.89

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0007)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0200):		2.08	0.131	5.25	48.54
+ ID2= 2 (0300):		0.52	0.033	5.25	48.53
ID = 3 (0007):		2.60	0.164	5.25	48.54

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     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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==============================================================================
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       V    V   I    SSSSS  U   U    A    L              (v 6.2.2015)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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


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

  Output  filename:
C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\f
618768a-4fb4-4eb3-aaf4-389ff94fa60e\s
  Summary filename:
C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\f
618768a-4fb4-4eb3-aaf4-389ff94fa60e\s


DATE: 02-25-2025                          TIME: 10:47:41

USER:



COMMENTS: _____________________________________________________________


------------------------------------------------------------------------------
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  ********************************************
  ** SIMULATION : AES 12H_010-Humber          **
  ********************************************
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|    READ STORM    |    Filename: C:\Users\caeh076182\AppD
|                  |              ata\Local\Temp\
|                  |              875adc2c-1c8d-486e-8a08-c640e73024e8\4434fdbb
| Ptotal= 62.71 mm |    Comments: AES 12H_010-Humber
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TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	3.25	10.66	6.50	4.39	9.75	0.63
0.25	0.63	3.50	10.66	6.75	4.39	10.00	0.63
0.50	0.63	3.75	10.66	7.00	4.39	10.25	0.63
0.75	0.63	4.00	10.66	7.25	2.51	10.50	0.63
1.00	0.63	4.25	28.84	7.50	2.51	10.75	0.63
1.25	0.63	4.50	28.84	7.75	2.51	11.00	0.63
1.50	0.63	4.75	28.84	8.00	2.51	11.25	0.63
1.75	0.63	5.00	28.84	8.25	1.25	11.50	0.63
2.00	0.63	5.25	8.15	8.50	1.25	11.75	0.63
2.25	3.76	5.50	8.15	8.75	1.25	12.00	0.63
2.50	3.76	5.75	8.15	9.00	1.25		
2.75	3.76	6.00	8.15	9.25	0.63		
3.00	3.76	6.25	4.39	9.50	0.63		

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| CALIB            |
| STANDHYD (  0100)|   Area    (ha)=   1.10
|ID= 1 DT= 5.0 min |   Total Imp(%)=  92.00   Dir. Conn.(%)=  92.00
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.01	0.09
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	85.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.76	6.250	8.15	9.33	0.63
0.167	0.00	3.250	3.76	6.333	4.39	9.42	0.63
0.250	0.00	3.333	10.66	6.417	4.39	9.50	0.63
0.333	0.63	3.417	10.66	6.500	4.39	9.58	0.63
0.417	0.63	3.500	10.66	6.583	4.39	9.67	0.63
0.500	0.63	3.583	10.66	6.667	4.39	9.75	0.63
0.583	0.63	3.667	10.66	6.750	4.39	9.83	0.63
0.667	0.63	3.750	10.66	6.833	4.39	9.92	0.63

0.750	0.63	3.833	10.66	6.917	4.39	10.00	0.63
0.833	0.63	3.917	10.66	7.000	4.39	10.08	0.63
0.917	0.63	4.000	10.66	7.083	4.39	10.17	0.63
1.000	0.63	4.083	10.66	7.167	4.39	10.25	0.63
1.083	0.63	4.167	10.66	7.250	4.39	10.33	0.63
1.167	0.63	4.250	10.66	7.333	2.51	10.42	0.63
1.250	0.63	4.333	28.84	7.417	2.51	10.50	0.63
1.333	0.63	4.417	28.84	7.500	2.51	10.58	0.63
1.417	0.63	4.500	28.84	7.583	2.51	10.67	0.63
1.500	0.63	4.583	28.84	7.667	2.51	10.75	0.63
1.583	0.63	4.667	28.84	7.750	2.51	10.83	0.63
1.667	0.63	4.750	28.84	7.833	2.51	10.92	0.63
1.750	0.63	4.833	28.84	7.917	2.51	11.00	0.63
1.833	0.63	4.917	28.84	8.000	2.51	11.08	0.63
1.917	0.63	5.000	28.84	8.083	2.51	11.17	0.63
2.000	0.63	5.083	28.84	8.167	2.51	11.25	0.63
2.083	0.63	5.167	28.84	8.250	2.51	11.33	0.63
2.167	0.63	5.250	28.84	8.333	1.25	11.42	0.63
2.250	0.63	5.333	8.15	8.417	1.25	11.50	0.63
2.333	3.76	5.417	8.15	8.500	1.25	11.58	0.63
2.417	3.76	5.500	8.15	8.583	1.25	11.67	0.63
2.500	3.76	5.583	8.15	8.667	1.25	11.75	0.63
2.583	3.76	5.667	8.15	8.750	1.25	11.83	0.63
2.667	3.76	5.750	8.15	8.833	1.25	11.92	0.63
2.750	3.76	5.833	8.15	8.917	1.25	12.00	0.63
2.833	3.76	5.917	8.15	9.000	1.25	12.08	0.63
2.917	3.76	6.000	8.15	9.083	1.25	12.17	0.63
3.000	3.76	6.083	8.15	9.167	1.25	12.25	0.63
3.083	3.76	6.167	8.15	9.250	1.25		

Max.Eff.Inten.(mm/hr)=	28.84	17.85	
over (min)	5.00	25.00	
Storage Coeff. (min)=	3.81 (ii)	21.01 (ii)	
Unit Hyd. Tpeak (min)=	5.00	25.00	
Unit Hyd. peak (cms)=	0.25	0.05	
			TOTALS
PEAK FLOW (cms)=	0.08	0.00	0.084 (iii)
TIME TO PEAK (hrs)=	5.08	5.33	5.25
RUNOFF VOLUME (mm)=	61.71	29.35	59.11
TOTAL RAINFALL (mm)=	62.71	62.71	62.71
RUNOFF COEFFICIENT =	0.98	0.47	0.94

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB            |
| STANDHYD (  0105)|   Area    (ha)=   3.24
|ID= 1 DT= 5.0 min |   Total Imp(%)=  70.00   Dir. Conn.(%)=  70.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       2.27         0.97
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=     147.00        40.00
     Mannings n           =      0.013        0.350

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.76	6.250	8.15	9.33	0.63
0.167	0.00	3.250	3.76	6.333	4.39	9.42	0.63
0.250	0.00	3.333	10.66	6.417	4.39	9.50	0.63
0.333	0.63	3.417	10.66	6.500	4.39	9.58	0.63
0.417	0.63	3.500	10.66	6.583	4.39	9.67	0.63
0.500	0.63	3.583	10.66	6.667	4.39	9.75	0.63
0.583	0.63	3.667	10.66	6.750	4.39	9.83	0.63
0.667	0.63	3.750	10.66	6.833	4.39	9.92	0.63
0.750	0.63	3.833	10.66	6.917	4.39	10.00	0.63
0.833	0.63	3.917	10.66	7.000	4.39	10.08	0.63
0.917	0.63	4.000	10.66	7.083	4.39	10.17	0.63
1.000	0.63	4.083	10.66	7.167	4.39	10.25	0.63
1.083	0.63	4.167	10.66	7.250	4.39	10.33	0.63
1.167	0.63	4.250	10.66	7.333	2.51	10.42	0.63
1.250	0.63	4.333	28.84	7.417	2.51	10.50	0.63
1.333	0.63	4.417	28.84	7.500	2.51	10.58	0.63
1.417	0.63	4.500	28.84	7.583	2.51	10.67	0.63
1.500	0.63	4.583	28.84	7.667	2.51	10.75	0.63
1.583	0.63	4.667	28.84	7.750	2.51	10.83	0.63
1.667	0.63	4.750	28.84	7.833	2.51	10.92	0.63
1.750	0.63	4.833	28.84	7.917	2.51	11.00	0.63
1.833	0.63	4.917	28.84	8.000	2.51	11.08	0.63
1.917	0.63	5.000	28.84	8.083	2.51	11.17	0.63
2.000	0.63	5.083	28.84	8.167	2.51	11.25	0.63
2.083	0.63	5.167	28.84	8.250	2.51	11.33	0.63
2.167	0.63	5.250	28.84	8.333	1.25	11.42	0.63
2.250	0.63	5.333	8.15	8.417	1.25	11.50	0.63
2.333	3.76	5.417	8.15	8.500	1.25	11.58	0.63
2.417	3.76	5.500	8.15	8.583	1.25	11.67	0.63
2.500	3.76	5.583	8.15	8.667	1.25	11.75	0.63
2.583	3.76	5.667	8.15	8.750	1.25	11.83	0.63

2.667	3.76	5.750	8.15	8.833	1.25	11.92	0.63
2.750	3.76	5.833	8.15	8.917	1.25	12.00	0.63
2.833	3.76	5.917	8.15	9.000	1.25	12.08	0.63
2.917	3.76	6.000	8.15	9.083	1.25	12.17	0.63
3.000	3.76	6.083	8.15	9.167	1.25	12.25	0.63
3.083	3.76	6.167	8.15	9.250	1.25		

Max.Eff.Inten.(mm/hr)=	28.84	17.85	
over (min)	5.00	25.00	
Storage Coeff. (min)=	5.29 (ii)	22.50 (ii)	
Unit Hyd. Tpeak (min)=	5.00	25.00	
Unit Hyd. peak (cms)=	0.21	0.05	
			TOTALS
PEAK FLOW (cms)=	0.18	0.04	0.219 (iii)
TIME TO PEAK (hrs)=	5.25	5.33	5.25
RUNOFF VOLUME (mm)=	61.71	29.35	52.00
TOTAL RAINFALL (mm)=	62.71	62.71	62.71
RUNOFF COEFFICIENT =	0.98	0.47	0.83

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0006)					
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0100):	1.10	0.084	5.25	59.11
+ ID2= 2 (0105):	3.24	0.219	5.25	52.00
ID = 3 (0006):	4.34	0.303	5.25	53.80

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB		
STANDHYD (0200)	Area (ha)=	2.08
ID= 1 DT= 5.0 min	Total Imp(%)=	84.00 Dir. Conn.(%)= 84.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.75	0.33
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	118.00	40.00
Mannings n =	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.76	6.250	8.15	9.33	0.63
0.167	0.00	3.250	3.76	6.333	4.39	9.42	0.63
0.250	0.00	3.333	10.66	6.417	4.39	9.50	0.63
0.333	0.63	3.417	10.66	6.500	4.39	9.58	0.63
0.417	0.63	3.500	10.66	6.583	4.39	9.67	0.63
0.500	0.63	3.583	10.66	6.667	4.39	9.75	0.63
0.583	0.63	3.667	10.66	6.750	4.39	9.83	0.63
0.667	0.63	3.750	10.66	6.833	4.39	9.92	0.63
0.750	0.63	3.833	10.66	6.917	4.39	10.00	0.63
0.833	0.63	3.917	10.66	7.000	4.39	10.08	0.63
0.917	0.63	4.000	10.66	7.083	4.39	10.17	0.63
1.000	0.63	4.083	10.66	7.167	4.39	10.25	0.63
1.083	0.63	4.167	10.66	7.250	4.39	10.33	0.63
1.167	0.63	4.250	10.66	7.333	2.51	10.42	0.63
1.250	0.63	4.333	28.84	7.417	2.51	10.50	0.63
1.333	0.63	4.417	28.84	7.500	2.51	10.58	0.63
1.417	0.63	4.500	28.84	7.583	2.51	10.67	0.63
1.500	0.63	4.583	28.84	7.667	2.51	10.75	0.63
1.583	0.63	4.667	28.84	7.750	2.51	10.83	0.63
1.667	0.63	4.750	28.84	7.833	2.51	10.92	0.63
1.750	0.63	4.833	28.84	7.917	2.51	11.00	0.63
1.833	0.63	4.917	28.84	8.000	2.51	11.08	0.63
1.917	0.63	5.000	28.84	8.083	2.51	11.17	0.63
2.000	0.63	5.083	28.84	8.167	2.51	11.25	0.63
2.083	0.63	5.167	28.84	8.250	2.51	11.33	0.63
2.167	0.63	5.250	28.84	8.333	1.25	11.42	0.63
2.250	0.63	5.333	8.15	8.417	1.25	11.50	0.63
2.333	3.76	5.417	8.15	8.500	1.25	11.58	0.63
2.417	3.76	5.500	8.15	8.583	1.25	11.67	0.63
2.500	3.76	5.583	8.15	8.667	1.25	11.75	0.63
2.583	3.76	5.667	8.15	8.750	1.25	11.83	0.63
2.667	3.76	5.750	8.15	8.833	1.25	11.92	0.63
2.750	3.76	5.833	8.15	8.917	1.25	12.00	0.63
2.833	3.76	5.917	8.15	9.000	1.25	12.08	0.63
2.917	3.76	6.000	8.15	9.083	1.25	12.17	0.63
3.000	3.76	6.083	8.15	9.167	1.25	12.25	0.63
3.083	3.76	6.167	8.15	9.250	1.25		

Max.Eff.Inten.(mm/hr)=	28.84	17.85
over (min)	5.00	25.00
Storage Coeff. (min)=	4.64 (ii)	21.84 (ii)
Unit Hyd. Tpeak (min)=	5.00	25.00
Unit Hyd. peak (cms)=	0.22	0.05

			TOTALS
PEAK FLOW (cms)=	0.14	0.01	0.153 (iii)
TIME TO PEAK (hrs)=	5.25	5.33	5.25
RUNOFF VOLUME (mm)=	61.71	29.35	56.53
TOTAL RAINFALL (mm)=	62.71	62.71	62.71
RUNOFF COEFFICIENT =	0.98	0.47	0.90

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB STANDHYD (0300) ID= 1 DT= 5.0 min	Area (ha)= 0.52 Total Imp(%)= 84.00 Dir. Conn.(%)= 84.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.44	0.08
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	59.00	40.00
Mannings n =	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.76	6.250	8.15	9.33	0.63
0.167	0.00	3.250	3.76	6.333	4.39	9.42	0.63
0.250	0.00	3.333	10.66	6.417	4.39	9.50	0.63
0.333	0.63	3.417	10.66	6.500	4.39	9.58	0.63
0.417	0.63	3.500	10.66	6.583	4.39	9.67	0.63
0.500	0.63	3.583	10.66	6.667	4.39	9.75	0.63
0.583	0.63	3.667	10.66	6.750	4.39	9.83	0.63
0.667	0.63	3.750	10.66	6.833	4.39	9.92	0.63
0.750	0.63	3.833	10.66	6.917	4.39	10.00	0.63
0.833	0.63	3.917	10.66	7.000	4.39	10.08	0.63
0.917	0.63	4.000	10.66	7.083	4.39	10.17	0.63
1.000	0.63	4.083	10.66	7.167	4.39	10.25	0.63
1.083	0.63	4.167	10.66	7.250	4.39	10.33	0.63
1.167	0.63	4.250	10.66	7.333	2.51	10.42	0.63
1.250	0.63	4.333	28.84	7.417	2.51	10.50	0.63
1.333	0.63	4.417	28.84	7.500	2.51	10.58	0.63

1.417	0.63	4.500	28.84	7.583	2.51	10.67	0.63
1.500	0.63	4.583	28.84	7.667	2.51	10.75	0.63
1.583	0.63	4.667	28.84	7.750	2.51	10.83	0.63
1.667	0.63	4.750	28.84	7.833	2.51	10.92	0.63
1.750	0.63	4.833	28.84	7.917	2.51	11.00	0.63
1.833	0.63	4.917	28.84	8.000	2.51	11.08	0.63
1.917	0.63	5.000	28.84	8.083	2.51	11.17	0.63
2.000	0.63	5.083	28.84	8.167	2.51	11.25	0.63
2.083	0.63	5.167	28.84	8.250	2.51	11.33	0.63
2.167	0.63	5.250	28.84	8.333	1.25	11.42	0.63
2.250	0.63	5.333	8.15	8.417	1.25	11.50	0.63
2.333	3.76	5.417	8.15	8.500	1.25	11.58	0.63
2.417	3.76	5.500	8.15	8.583	1.25	11.67	0.63
2.500	3.76	5.583	8.15	8.667	1.25	11.75	0.63
2.583	3.76	5.667	8.15	8.750	1.25	11.83	0.63
2.667	3.76	5.750	8.15	8.833	1.25	11.92	0.63
2.750	3.76	5.833	8.15	8.917	1.25	12.00	0.63
2.833	3.76	5.917	8.15	9.000	1.25	12.08	0.63
2.917	3.76	6.000	8.15	9.083	1.25	12.17	0.63
3.000	3.76	6.083	8.15	9.167	1.25	12.25	0.63
3.083	3.76	6.167	8.15	9.250	1.25		

			TOTALS
Max.Eff.Inten.(mm/hr)=	28.84	17.85	
over (min)	5.00	25.00	
Storage Coeff. (min)=	3.06 (ii)	20.27 (ii)	
Unit Hyd. Tpeak (min)=	5.00	25.00	
Unit Hyd. peak (cms)=	0.27	0.05	
PEAK FLOW (cms)=	0.03	0.00	0.038 (iii)
TIME TO PEAK (hrs)=	5.08	5.33	5.25
RUNOFF VOLUME (mm)=	61.71	29.35	56.51
TOTAL RAINFALL (mm)=	62.71	62.71	62.71
RUNOFF COEFFICIENT =	0.98	0.47	0.90

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0007)					
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 1 (0200):	2.08	0.153	5.25	56.53	
+ ID2= 2 (0300):	0.52	0.038	5.25	56.51	

```
        ==================================================
        ID = 3 (  0007):     2.60   0.191     5.25    56.52

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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==============================================================================
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       V    V   I    SSSSS  U   U    A    L              (v 6.2.2015)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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


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

  Output  filename:
C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\b
51e71c5-1f6d-4b1c-99b3-cbe80d0da3f7\s
  Summary filename:
C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\b
51e71c5-1f6d-4b1c-99b3-cbe80d0da3f7\s


DATE: 02-25-2025                          TIME: 10:47:41

USER:



COMMENTS: _____________________________________________________________


------------------------------------------------------------------------------
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  ********************************************
  ** SIMULATION : AES 12H_050-Humber          **
  ********************************************
```

READ STORM	Filename: C:\Users\caeh076182\AppData\Local\Temp\875adc2c-1c8d-486e-8a08-c640e73024e8\754c11b6
Ptotal= 80.82 mm	Comments: AES 12H_050-Humber

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	3.25	13.74	6.50	5.66	9.75	0.81
0.25	0.81	3.50	13.74	6.75	5.66	10.00	0.81
0.50	0.81	3.75	13.74	7.00	5.66	10.25	0.81
0.75	0.81	4.00	13.74	7.25	3.23	10.50	0.81
1.00	0.81	4.25	37.17	7.50	3.23	10.75	0.81
1.25	0.81	4.50	37.17	7.75	3.23	11.00	0.81
1.50	0.81	4.75	37.17	8.00	3.23	11.25	0.81
1.75	0.81	5.00	37.17	8.25	1.62	11.50	0.81
2.00	0.81	5.25	10.50	8.50	1.62	11.75	0.81
2.25	4.85	5.50	10.50	8.75	1.62	12.00	0.81
2.50	4.85	5.75	10.50	9.00	1.62		
2.75	4.85	6.00	10.50	9.25	0.81		
3.00	4.85	6.25	5.66	9.50	0.81		

CALIB	
STANDHYD (0100)	Area (ha)= 1.10
ID= 1 DT= 5.0 min	Total Imp(%)= 92.00 Dir. Conn.(%)= 92.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.01	0.09
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	85.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	4.85	6.250	10.50	9.33	0.81
0.167	0.00	3.250	4.85	6.333	5.66	9.42	0.81
0.250	0.00	3.333	13.74	6.417	5.66	9.50	0.81
0.333	0.81	3.417	13.74	6.500	5.66	9.58	0.81
0.417	0.81	3.500	13.74	6.583	5.66	9.67	0.81
0.500	0.81	3.583	13.74	6.667	5.66	9.75	0.81

0.583	0.81	3.667	13.74	6.750	5.66	9.83	0.81
0.667	0.81	3.750	13.74	6.833	5.66	9.92	0.81
0.750	0.81	3.833	13.74	6.917	5.66	10.00	0.81
0.833	0.81	3.917	13.74	7.000	5.66	10.08	0.81
0.917	0.81	4.000	13.74	7.083	5.66	10.17	0.81
1.000	0.81	4.083	13.74	7.167	5.66	10.25	0.81
1.083	0.81	4.167	13.74	7.250	5.66	10.33	0.81
1.167	0.81	4.250	13.74	7.333	3.23	10.42	0.81
1.250	0.81	4.333	37.17	7.417	3.23	10.50	0.81
1.333	0.81	4.417	37.17	7.500	3.23	10.58	0.81
1.417	0.81	4.500	37.17	7.583	3.23	10.67	0.81
1.500	0.81	4.583	37.17	7.667	3.23	10.75	0.81
1.583	0.81	4.667	37.17	7.750	3.23	10.83	0.81
1.667	0.81	4.750	37.17	7.833	3.23	10.92	0.81
1.750	0.81	4.833	37.17	7.917	3.23	11.00	0.81
1.833	0.81	4.917	37.17	8.000	3.23	11.08	0.81
1.917	0.81	5.000	37.17	8.083	3.23	11.17	0.81
2.000	0.81	5.083	37.17	8.167	3.23	11.25	0.81
2.083	0.81	5.167	37.17	8.250	3.23	11.33	0.81
2.167	0.81	5.250	37.17	8.333	1.62	11.42	0.81
2.250	0.81	5.333	10.50	8.417	1.62	11.50	0.81
2.333	4.85	5.417	10.50	8.500	1.62	11.58	0.81
2.417	4.85	5.500	10.50	8.583	1.62	11.67	0.81
2.500	4.85	5.583	10.50	8.667	1.62	11.75	0.81
2.583	4.85	5.667	10.50	8.750	1.62	11.83	0.81
2.667	4.85	5.750	10.50	8.833	1.62	11.92	0.81
2.750	4.85	5.833	10.50	8.917	1.62	12.00	0.81
2.833	4.85	5.917	10.50	9.000	1.62	12.08	0.81
2.917	4.85	6.000	10.50	9.083	1.62	12.17	0.81
3.000	4.85	6.083	10.50	9.167	1.62	12.25	0.81
3.083	4.85	6.167	10.50	9.250	1.62		

Max.Eff.Inten.(mm/hr)=	37.17	26.69	
over (min)	5.00	10.00	
Storage Coeff. (min)=	3.44 (ii)	8.27 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.26	0.13	
			TOTALS
PEAK FLOW (cms)=	0.10	0.01	0.111 (iii)
TIME TO PEAK (hrs)=	5.08	5.25	5.25
RUNOFF VOLUME (mm)=	79.82	43.69	76.93
TOTAL RAINFALL (mm)=	80.82	80.82	80.82
RUNOFF COEFFICIENT =	0.99	0.54	0.95

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.

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

CALIB STANDHYD (0105) ID= 1 DT= 5.0 min	Area (ha)= 3.24 Total Imp(%)= 70.00 Dir. Conn.(%)= 70.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.27	0.97
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	147.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	4.85	6.250	10.50	9.33	0.81
0.167	0.00	3.250	4.85	6.333	5.66	9.42	0.81
0.250	0.00	3.333	13.74	6.417	5.66	9.50	0.81
0.333	0.81	3.417	13.74	6.500	5.66	9.58	0.81
0.417	0.81	3.500	13.74	6.583	5.66	9.67	0.81
0.500	0.81	3.583	13.74	6.667	5.66	9.75	0.81
0.583	0.81	3.667	13.74	6.750	5.66	9.83	0.81
0.667	0.81	3.750	13.74	6.833	5.66	9.92	0.81
0.750	0.81	3.833	13.74	6.917	5.66	10.00	0.81
0.833	0.81	3.917	13.74	7.000	5.66	10.08	0.81
0.917	0.81	4.000	13.74	7.083	5.66	10.17	0.81
1.000	0.81	4.083	13.74	7.167	5.66	10.25	0.81
1.083	0.81	4.167	13.74	7.250	5.66	10.33	0.81
1.167	0.81	4.250	13.74	7.333	3.23	10.42	0.81
1.250	0.81	4.333	37.17	7.417	3.23	10.50	0.81
1.333	0.81	4.417	37.17	7.500	3.23	10.58	0.81
1.417	0.81	4.500	37.17	7.583	3.23	10.67	0.81
1.500	0.81	4.583	37.17	7.667	3.23	10.75	0.81
1.583	0.81	4.667	37.17	7.750	3.23	10.83	0.81
1.667	0.81	4.750	37.17	7.833	3.23	10.92	0.81
1.750	0.81	4.833	37.17	7.917	3.23	11.00	0.81
1.833	0.81	4.917	37.17	8.000	3.23	11.08	0.81
1.917	0.81	5.000	37.17	8.083	3.23	11.17	0.81
2.000	0.81	5.083	37.17	8.167	3.23	11.25	0.81
2.083	0.81	5.167	37.17	8.250	3.23	11.33	0.81
2.167	0.81	5.250	37.17	8.333	1.62	11.42	0.81
2.250	0.81	5.333	10.50	8.417	1.62	11.50	0.81
2.333	4.85	5.417	10.50	8.500	1.62	11.58	0.81
2.417	4.85	5.500	10.50	8.583	1.62	11.67	0.81

```
                2.500    4.85 | 5.583   10.50 | 8.667    1.62 | 11.75    0.81
                2.583    4.85 | 5.667   10.50 | 8.750    1.62 | 11.83    0.81
                2.667    4.85 | 5.750   10.50 | 8.833    1.62 | 11.92    0.81
                2.750    4.85 | 5.833   10.50 | 8.917    1.62 | 12.00    0.81
                2.833    4.85 | 5.917   10.50 | 9.000    1.62 | 12.08    0.81
                2.917    4.85 | 6.000   10.50 | 9.083    1.62 | 12.17    0.81
                3.000    4.85 | 6.083   10.50 | 9.167    1.62 | 12.25    0.81
                3.083    4.85 | 6.167   10.50 | 9.250    1.62 |

     Max.Eff.Inten.(mm/hr)=      37.17        26.36
               over (min)         5.00        20.00
     Storage Coeff.  (min)=       4.78 (ii)   19.50 (ii)
     Unit Hyd. Tpeak (min)=       5.00        20.00
     Unit Hyd. peak  (cms)=       0.22         0.06
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.23         0.06          0.294 (iii)
     TIME TO PEAK    (hrs)=       5.25         5.33           5.25
     RUNOFF VOLUME    (mm)=      79.82        43.69          68.98
     TOTAL RAINFALL   (mm)=      80.82        80.82          80.82
     RUNOFF COEFFICIENT   =       0.99         0.54           0.85

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  82.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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

--------------------
| ADD HYD  (  0006)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0100):     1.10   0.111     5.25    76.93
      + ID2= 2 (  0105):     3.24   0.294     5.25    68.98
        ================================================
        ID = 3 (  0006):     4.34   0.405     5.25    70.99

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0200)|   Area    (ha)=   2.08
|ID= 1 DT= 5.0 min |   Total Imp(%)=  84.00   Dir. Conn.(%)=  84.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.75         0.33
     Dep. Storage     (mm)=       1.00         5.00
```

Average Slope	(%)=	1.00	2.00
Length	(m)=	118.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	4.85	6.250	10.50	9.33	0.81
0.167	0.00	3.250	4.85	6.333	5.66	9.42	0.81
0.250	0.00	3.333	13.74	6.417	5.66	9.50	0.81
0.333	0.81	3.417	13.74	6.500	5.66	9.58	0.81
0.417	0.81	3.500	13.74	6.583	5.66	9.67	0.81
0.500	0.81	3.583	13.74	6.667	5.66	9.75	0.81
0.583	0.81	3.667	13.74	6.750	5.66	9.83	0.81
0.667	0.81	3.750	13.74	6.833	5.66	9.92	0.81
0.750	0.81	3.833	13.74	6.917	5.66	10.00	0.81
0.833	0.81	3.917	13.74	7.000	5.66	10.08	0.81
0.917	0.81	4.000	13.74	7.083	5.66	10.17	0.81
1.000	0.81	4.083	13.74	7.167	5.66	10.25	0.81
1.083	0.81	4.167	13.74	7.250	5.66	10.33	0.81
1.167	0.81	4.250	13.74	7.333	3.23	10.42	0.81
1.250	0.81	4.333	37.17	7.417	3.23	10.50	0.81
1.333	0.81	4.417	37.17	7.500	3.23	10.58	0.81
1.417	0.81	4.500	37.17	7.583	3.23	10.67	0.81
1.500	0.81	4.583	37.17	7.667	3.23	10.75	0.81
1.583	0.81	4.667	37.17	7.750	3.23	10.83	0.81
1.667	0.81	4.750	37.17	7.833	3.23	10.92	0.81
1.750	0.81	4.833	37.17	7.917	3.23	11.00	0.81
1.833	0.81	4.917	37.17	8.000	3.23	11.08	0.81
1.917	0.81	5.000	37.17	8.083	3.23	11.17	0.81
2.000	0.81	5.083	37.17	8.167	3.23	11.25	0.81
2.083	0.81	5.167	37.17	8.250	3.23	11.33	0.81
2.167	0.81	5.250	37.17	8.333	1.62	11.42	0.81
2.250	0.81	5.333	10.50	8.417	1.62	11.50	0.81
2.333	4.85	5.417	10.50	8.500	1.62	11.58	0.81
2.417	4.85	5.500	10.50	8.583	1.62	11.67	0.81
2.500	4.85	5.583	10.50	8.667	1.62	11.75	0.81
2.583	4.85	5.667	10.50	8.750	1.62	11.83	0.81
2.667	4.85	5.750	10.50	8.833	1.62	11.92	0.81
2.750	4.85	5.833	10.50	8.917	1.62	12.00	0.81
2.833	4.85	5.917	10.50	9.000	1.62	12.08	0.81
2.917	4.85	6.000	10.50	9.083	1.62	12.17	0.81
3.000	4.85	6.083	10.50	9.167	1.62	12.25	0.81
3.083	4.85	6.167	10.50	9.250	1.62		

Max.Eff.Inten.(mm/hr)=		37.17	26.36
	over (min)	5.00	20.00

Storage Coeff. (min)=	4.19 (ii)	18.91 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.24	0.06	
			TOTALS
PEAK FLOW (cms)=	0.18	0.02	0.201 (iii)
TIME TO PEAK (hrs)=	5.17	5.33	5.25
RUNOFF VOLUME (mm)=	79.82	43.69	74.03
TOTAL RAINFALL (mm)=	80.82	80.82	80.82
RUNOFF COEFFICIENT =	0.99	0.54	0.92

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB		
STANDHYD (0300)	Area (ha)=	0.52
ID= 1 DT= 5.0 min	Total Imp(%)=	84.00 Dir. Conn.(%)= 84.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.44	0.08
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	59.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	4.85	6.250	10.50	9.33	0.81
0.167	0.00	3.250	4.85	6.333	5.66	9.42	0.81
0.250	0.00	3.333	13.74	6.417	5.66	9.50	0.81
0.333	0.81	3.417	13.74	6.500	5.66	9.58	0.81
0.417	0.81	3.500	13.74	6.583	5.66	9.67	0.81
0.500	0.81	3.583	13.74	6.667	5.66	9.75	0.81
0.583	0.81	3.667	13.74	6.750	5.66	9.83	0.81
0.667	0.81	3.750	13.74	6.833	5.66	9.92	0.81
0.750	0.81	3.833	13.74	6.917	5.66	10.00	0.81
0.833	0.81	3.917	13.74	7.000	5.66	10.08	0.81
0.917	0.81	4.000	13.74	7.083	5.66	10.17	0.81
1.000	0.81	4.083	13.74	7.167	5.66	10.25	0.81
1.083	0.81	4.167	13.74	7.250	5.66	10.33	0.81

1.167	0.81	4.250	13.74	7.333	3.23	10.42	0.81
1.250	0.81	4.333	37.17	7.417	3.23	10.50	0.81
1.333	0.81	4.417	37.17	7.500	3.23	10.58	0.81
1.417	0.81	4.500	37.17	7.583	3.23	10.67	0.81
1.500	0.81	4.583	37.17	7.667	3.23	10.75	0.81
1.583	0.81	4.667	37.17	7.750	3.23	10.83	0.81
1.667	0.81	4.750	37.17	7.833	3.23	10.92	0.81
1.750	0.81	4.833	37.17	7.917	3.23	11.00	0.81
1.833	0.81	4.917	37.17	8.000	3.23	11.08	0.81
1.917	0.81	5.000	37.17	8.083	3.23	11.17	0.81
2.000	0.81	5.083	37.17	8.167	3.23	11.25	0.81
2.083	0.81	5.167	37.17	8.250	3.23	11.33	0.81
2.167	0.81	5.250	37.17	8.333	1.62	11.42	0.81
2.250	0.81	5.333	10.50	8.417	1.62	11.50	0.81
2.333	4.85	5.417	10.50	8.500	1.62	11.58	0.81
2.417	4.85	5.500	10.50	8.583	1.62	11.67	0.81
2.500	4.85	5.583	10.50	8.667	1.62	11.75	0.81
2.583	4.85	5.667	10.50	8.750	1.62	11.83	0.81
2.667	4.85	5.750	10.50	8.833	1.62	11.92	0.81
2.750	4.85	5.833	10.50	8.917	1.62	12.00	0.81
2.833	4.85	5.917	10.50	9.000	1.62	12.08	0.81
2.917	4.85	6.000	10.50	9.083	1.62	12.17	0.81
3.000	4.85	6.083	10.50	9.167	1.62	12.25	0.81
3.083	4.85	6.167	10.50	9.250	1.62		

Max.Eff.Inten.(mm/hr)=	37.17	26.36	
over (min)	5.00	20.00	
Storage Coeff. (min)=	2.77 (ii)	17.49 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.28	0.06	
			TOTALS
PEAK FLOW (cms)=	0.05	0.01	0.050 (iii)
TIME TO PEAK (hrs)=	5.08	5.33	5.25
RUNOFF VOLUME (mm)=	79.82	43.69	74.02
TOTAL RAINFALL (mm)=	80.82	80.82	80.82
RUNOFF COEFFICIENT =	0.99	0.54	0.92

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0007)					
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.	

```
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0200):     2.08   0.201     5.25    74.03
      + ID2= 2 (  0300):     0.52   0.050     5.25    74.02
        ================================================
        ID = 3 (  0007):     2.60   0.251     5.25    74.03

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
------------------------------------------------------------------------------
==============================================================================
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       V    V   I    SSSSS  U   U    A    L              (v 6.2.2015)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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


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

  Output  filename:
C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\5
2db7d4d-e67c-489b-a74f-5d53854a3228\s
  Summary filename:
C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\5
2db7d4d-e67c-489b-a74f-5d53854a3228\s


DATE: 02-25-2025                          TIME: 10:47:42

USER:



COMMENTS: _____________________________________________________________


------------------------------------------------------------------------------
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```

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  ************************************************
  ** SIMULATION : AES 12H_100-Humber            **
  ************************************************


--------------------
|    READ STORM    |    Filename: C:\Users\caeh076182\AppD
|                  |              ata\Local\Temp\
|                  |              875adc2c-1c8d-486e-8a08-c640e73024e8\e2f4365a
| Ptotal= 88.54 mm |    Comments: AES 12H_100-Humber
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.00    0.00 |  3.25   15.05 |  6.50    6.20 |  9.75    0.89
                0.25    0.89 |  3.50   15.05 |  6.75    6.20 | 10.00    0.89
                0.50    0.89 |  3.75   15.05 |  7.00    6.20 | 10.25    0.89
                0.75    0.89 |  4.00   15.05 |  7.25    3.54 | 10.50    0.89
                1.00    0.89 |  4.25   40.71 |  7.50    3.54 | 10.75    0.89
                1.25    0.89 |  4.50   40.71 |  7.75    3.54 | 11.00    0.89
                1.50    0.89 |  4.75   40.71 |  8.00    3.54 | 11.25    0.89
                1.75    0.89 |  5.00   40.71 |  8.25    1.77 | 11.50    0.89
                2.00    0.89 |  5.25   11.51 |  8.50    1.77 | 11.75    0.89
                2.25    5.31 |  5.50   11.51 |  8.75    1.77 | 12.00    0.89
                2.50    5.31 |  5.75   11.51 |  9.00    1.77 |
                2.75    5.31 |  6.00   11.51 |  9.25    0.89 |
                3.00    5.31 |  6.25    6.20 |  9.50    0.89 |

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


--------------------
| CALIB            |
| STANDHYD (  0100)|   Area    (ha)=   1.10
|ID= 1 DT= 5.0 min |   Total Imp(%)=  92.00   Dir. Conn.(%)=  92.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
    Surface Area     (ha)=       1.01         0.09
    Dep. Storage     (mm)=       1.00         5.00
    Average Slope     (%)=       1.00         2.00
    Length            (m)=      85.00        40.00
    Mannings n           =      0.013        0.350

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


                          ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    0.00 | 3.167    5.31 | 6.250   11.51 |  9.33    0.89
               0.167    0.00 | 3.250    5.31 | 6.333    6.20 |  9.42    0.89
               0.250    0.00 | 3.333   15.05 | 6.417    6.20 |  9.50    0.89
```

0.333	0.89	3.417	15.05	6.500	6.20	9.58	0.89
0.417	0.89	3.500	15.05	6.583	6.20	9.67	0.89
0.500	0.89	3.583	15.05	6.667	6.20	9.75	0.89
0.583	0.89	3.667	15.05	6.750	6.20	9.83	0.89
0.667	0.89	3.750	15.05	6.833	6.20	9.92	0.89
0.750	0.89	3.833	15.05	6.917	6.20	10.00	0.89
0.833	0.89	3.917	15.05	7.000	6.20	10.08	0.89
0.917	0.89	4.000	15.05	7.083	6.20	10.17	0.89
1.000	0.89	4.083	15.05	7.167	6.20	10.25	0.89
1.083	0.89	4.167	15.05	7.250	6.20	10.33	0.89
1.167	0.89	4.250	15.05	7.333	3.54	10.42	0.89
1.250	0.89	4.333	40.71	7.417	3.54	10.50	0.89
1.333	0.89	4.417	40.71	7.500	3.54	10.58	0.89
1.417	0.89	4.500	40.71	7.583	3.54	10.67	0.89
1.500	0.89	4.583	40.71	7.667	3.54	10.75	0.89
1.583	0.89	4.667	40.71	7.750	3.54	10.83	0.89
1.667	0.89	4.750	40.71	7.833	3.54	10.92	0.89
1.750	0.89	4.833	40.71	7.917	3.54	11.00	0.89
1.833	0.89	4.917	40.71	8.000	3.54	11.08	0.89
1.917	0.89	5.000	40.71	8.083	3.54	11.17	0.89
2.000	0.89	5.083	40.71	8.167	3.54	11.25	0.89
2.083	0.89	5.167	40.71	8.250	3.54	11.33	0.89
2.167	0.89	5.250	40.71	8.333	1.77	11.42	0.89
2.250	0.89	5.333	11.51	8.417	1.77	11.50	0.89
2.333	5.31	5.417	11.51	8.500	1.77	11.58	0.89
2.417	5.31	5.500	11.51	8.583	1.77	11.67	0.89
2.500	5.31	5.583	11.51	8.667	1.77	11.75	0.89
2.583	5.31	5.667	11.51	8.750	1.77	11.83	0.89
2.667	5.31	5.750	11.51	8.833	1.77	11.92	0.89
2.750	5.31	5.833	11.51	8.917	1.77	12.00	0.89
2.833	5.31	5.917	11.51	9.000	1.77	12.08	0.89
2.917	5.31	6.000	11.51	9.083	1.77	12.17	0.89
3.000	5.31	6.083	11.51	9.167	1.77	12.25	0.89
3.083	5.31	6.167	11.51	9.250	1.77		

Max.Eff.Inten.(mm/hr)=	40.71	30.28		
over (min)	5.00	10.00		
Storage Coeff. (min)=	3.32 (ii)	7.98 (ii)		
Unit Hyd. Tpeak (min)=	5.00	10.00		
Unit Hyd. peak (cms)=	0.26	0.13		
			TOTALS	
PEAK FLOW (cms)=	0.11	0.01	0.122 (iii)	
TIME TO PEAK (hrs)=	5.08	5.25	5.25	
RUNOFF VOLUME (mm)=	87.54	50.10	84.54	
TOTAL RAINFALL (mm)=	88.54	88.54	88.54	
RUNOFF COEFFICIENT =	0.99	0.57	0.95	

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	
STANDHYD (0105)	Area (ha)= 3.24
ID= 1 DT= 5.0 min	Total Imp(%)= 70.00 Dir. Conn.(%)= 70.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.27	0.97
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	147.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	5.31	6.250	11.51	9.33	0.89
0.167	0.00	3.250	5.31	6.333	6.20	9.42	0.89
0.250	0.00	3.333	15.05	6.417	6.20	9.50	0.89
0.333	0.89	3.417	15.05	6.500	6.20	9.58	0.89
0.417	0.89	3.500	15.05	6.583	6.20	9.67	0.89
0.500	0.89	3.583	15.05	6.667	6.20	9.75	0.89
0.583	0.89	3.667	15.05	6.750	6.20	9.83	0.89
0.667	0.89	3.750	15.05	6.833	6.20	9.92	0.89
0.750	0.89	3.833	15.05	6.917	6.20	10.00	0.89
0.833	0.89	3.917	15.05	7.000	6.20	10.08	0.89
0.917	0.89	4.000	15.05	7.083	6.20	10.17	0.89
1.000	0.89	4.083	15.05	7.167	6.20	10.25	0.89
1.083	0.89	4.167	15.05	7.250	6.20	10.33	0.89
1.167	0.89	4.250	15.05	7.333	3.54	10.42	0.89
1.250	0.89	4.333	40.71	7.417	3.54	10.50	0.89
1.333	0.89	4.417	40.71	7.500	3.54	10.58	0.89
1.417	0.89	4.500	40.71	7.583	3.54	10.67	0.89
1.500	0.89	4.583	40.71	7.667	3.54	10.75	0.89
1.583	0.89	4.667	40.71	7.750	3.54	10.83	0.89
1.667	0.89	4.750	40.71	7.833	3.54	10.92	0.89
1.750	0.89	4.833	40.71	7.917	3.54	11.00	0.89
1.833	0.89	4.917	40.71	8.000	3.54	11.08	0.89
1.917	0.89	5.000	40.71	8.083	3.54	11.17	0.89
2.000	0.89	5.083	40.71	8.167	3.54	11.25	0.89
2.083	0.89	5.167	40.71	8.250	3.54	11.33	0.89
2.167	0.89	5.250	40.71	8.333	1.77	11.42	0.89

2.250	0.89	5.333	11.51	8.417	1.77	11.50	0.89
2.333	5.31	5.417	11.51	8.500	1.77	11.58	0.89
2.417	5.31	5.500	11.51	8.583	1.77	11.67	0.89
2.500	5.31	5.583	11.51	8.667	1.77	11.75	0.89
2.583	5.31	5.667	11.51	8.750	1.77	11.83	0.89
2.667	5.31	5.750	11.51	8.833	1.77	11.92	0.89
2.750	5.31	5.833	11.51	8.917	1.77	12.00	0.89
2.833	5.31	5.917	11.51	9.000	1.77	12.08	0.89
2.917	5.31	6.000	11.51	9.083	1.77	12.17	0.89
3.000	5.31	6.083	11.51	9.167	1.77	12.25	0.89
3.083	5.31	6.167	11.51	9.250	1.77		

Max.Eff.Inten.(mm/hr)=	40.71	29.94		
over (min)	5.00	20.00		
Storage Coeff. (min)=	4.61 (ii)	18.60 (ii)		
Unit Hyd. Tpeak (min)=	5.00	20.00		
Unit Hyd. peak (cms)=	0.22	0.06		
			TOTALS	
PEAK FLOW (cms)=	0.26	0.07	0.325 (iii)	
TIME TO PEAK (hrs)=	5.25	5.33	5.25	
RUNOFF VOLUME (mm)=	87.54	50.10	76.31	
TOTAL RAINFALL (mm)=	88.54	88.54	88.54	
RUNOFF COEFFICIENT =	0.99	0.57	0.86	

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0006)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0100):	1.10	0.122	5.25	84.54
	+ ID2= 2 (0105):	3.24	0.325	5.25	76.31
	==========				
	ID = 3 (0006):	4.34	0.447	5.25	78.39

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB STANDHYD (0200)					
ID= 1 DT= 5.0 min	Area (ha)=	2.08			
	Total Imp(%)=	84.00	Dir. Conn.(%)=	84.00	

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.75	0.33
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	118.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	5.31	6.250	11.51	9.33	0.89
0.167	0.00	3.250	5.31	6.333	6.20	9.42	0.89
0.250	0.00	3.333	15.05	6.417	6.20	9.50	0.89
0.333	0.89	3.417	15.05	6.500	6.20	9.58	0.89
0.417	0.89	3.500	15.05	6.583	6.20	9.67	0.89
0.500	0.89	3.583	15.05	6.667	6.20	9.75	0.89
0.583	0.89	3.667	15.05	6.750	6.20	9.83	0.89
0.667	0.89	3.750	15.05	6.833	6.20	9.92	0.89
0.750	0.89	3.833	15.05	6.917	6.20	10.00	0.89
0.833	0.89	3.917	15.05	7.000	6.20	10.08	0.89
0.917	0.89	4.000	15.05	7.083	6.20	10.17	0.89
1.000	0.89	4.083	15.05	7.167	6.20	10.25	0.89
1.083	0.89	4.167	15.05	7.250	6.20	10.33	0.89
1.167	0.89	4.250	15.05	7.333	3.54	10.42	0.89
1.250	0.89	4.333	40.71	7.417	3.54	10.50	0.89
1.333	0.89	4.417	40.71	7.500	3.54	10.58	0.89
1.417	0.89	4.500	40.71	7.583	3.54	10.67	0.89
1.500	0.89	4.583	40.71	7.667	3.54	10.75	0.89
1.583	0.89	4.667	40.71	7.750	3.54	10.83	0.89
1.667	0.89	4.750	40.71	7.833	3.54	10.92	0.89
1.750	0.89	4.833	40.71	7.917	3.54	11.00	0.89
1.833	0.89	4.917	40.71	8.000	3.54	11.08	0.89
1.917	0.89	5.000	40.71	8.083	3.54	11.17	0.89
2.000	0.89	5.083	40.71	8.167	3.54	11.25	0.89
2.083	0.89	5.167	40.71	8.250	3.54	11.33	0.89
2.167	0.89	5.250	40.71	8.333	1.77	11.42	0.89
2.250	0.89	5.333	11.51	8.417	1.77	11.50	0.89
2.333	5.31	5.417	11.51	8.500	1.77	11.58	0.89
2.417	5.31	5.500	11.51	8.583	1.77	11.67	0.89
2.500	5.31	5.583	11.51	8.667	1.77	11.75	0.89
2.583	5.31	5.667	11.51	8.750	1.77	11.83	0.89
2.667	5.31	5.750	11.51	8.833	1.77	11.92	0.89
2.750	5.31	5.833	11.51	8.917	1.77	12.00	0.89
2.833	5.31	5.917	11.51	9.000	1.77	12.08	0.89
2.917	5.31	6.000	11.51	9.083	1.77	12.17	0.89
3.000	5.31	6.083	11.51	9.167	1.77	12.25	0.89
3.083	5.31	6.167	11.51	9.250	1.77		

Max.Eff.Inten.(mm/hr)=	40.71	29.94	
over (min)	5.00	20.00	
Storage Coeff. (min)=	4.04 (ii)	18.03 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.24	0.06	
			TOTALS
PEAK FLOW (cms)=	0.20	0.02	0.221 (iii)
TIME TO PEAK (hrs)=	5.17	5.33	5.25
RUNOFF VOLUME (mm)=	87.54	50.10	81.54
TOTAL RAINFALL (mm)=	88.54	88.54	88.54
RUNOFF COEFFICIENT =	0.99	0.57	0.92

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
STANDHYD (0300)
ID= 1 DT= 5.0 min

Area (ha)= 0.52
Total Imp(%)= 84.00 Dir. Conn.(%)= 84.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.44	0.08
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	59.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	5.31	6.250	11.51	9.33	0.89
0.167	0.00	3.250	5.31	6.333	6.20	9.42	0.89
0.250	0.00	3.333	15.05	6.417	6.20	9.50	0.89
0.333	0.89	3.417	15.05	6.500	6.20	9.58	0.89
0.417	0.89	3.500	15.05	6.583	6.20	9.67	0.89
0.500	0.89	3.583	15.05	6.667	6.20	9.75	0.89
0.583	0.89	3.667	15.05	6.750	6.20	9.83	0.89
0.667	0.89	3.750	15.05	6.833	6.20	9.92	0.89
0.750	0.89	3.833	15.05	6.917	6.20	10.00	0.89
0.833	0.89	3.917	15.05	7.000	6.20	10.08	0.89

0.917	0.89	4.000	15.05	7.083	6.20	10.17	0.89
1.000	0.89	4.083	15.05	7.167	6.20	10.25	0.89
1.083	0.89	4.167	15.05	7.250	6.20	10.33	0.89
1.167	0.89	4.250	15.05	7.333	3.54	10.42	0.89
1.250	0.89	4.333	40.71	7.417	3.54	10.50	0.89
1.333	0.89	4.417	40.71	7.500	3.54	10.58	0.89
1.417	0.89	4.500	40.71	7.583	3.54	10.67	0.89
1.500	0.89	4.583	40.71	7.667	3.54	10.75	0.89
1.583	0.89	4.667	40.71	7.750	3.54	10.83	0.89
1.667	0.89	4.750	40.71	7.833	3.54	10.92	0.89
1.750	0.89	4.833	40.71	7.917	3.54	11.00	0.89
1.833	0.89	4.917	40.71	8.000	3.54	11.08	0.89
1.917	0.89	5.000	40.71	8.083	3.54	11.17	0.89
2.000	0.89	5.083	40.71	8.167	3.54	11.25	0.89
2.083	0.89	5.167	40.71	8.250	3.54	11.33	0.89
2.167	0.89	5.250	40.71	8.333	1.77	11.42	0.89
2.250	0.89	5.333	11.51	8.417	1.77	11.50	0.89
2.333	5.31	5.417	11.51	8.500	1.77	11.58	0.89
2.417	5.31	5.500	11.51	8.583	1.77	11.67	0.89
2.500	5.31	5.583	11.51	8.667	1.77	11.75	0.89
2.583	5.31	5.667	11.51	8.750	1.77	11.83	0.89
2.667	5.31	5.750	11.51	8.833	1.77	11.92	0.89
2.750	5.31	5.833	11.51	8.917	1.77	12.00	0.89
2.833	5.31	5.917	11.51	9.000	1.77	12.08	0.89
2.917	5.31	6.000	11.51	9.083	1.77	12.17	0.89
3.000	5.31	6.083	11.51	9.167	1.77	12.25	0.89
3.083	5.31	6.167	11.51	9.250	1.77		

Max.Eff.Inten.(mm/hr)=	40.71	29.94	
over (min)	5.00	20.00	
Storage Coeff. (min)=	2.67 (ii)	16.66 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.29	0.06	
			TOTALS
PEAK FLOW (cms)=	0.05	0.01	0.055 (iii)
TIME TO PEAK (hrs)=	5.08	5.25	5.25
RUNOFF VOLUME (mm)=	87.54	50.10	81.53
TOTAL RAINFALL (mm)=	88.54	88.54	88.54
RUNOFF COEFFICIENT =	0.99	0.57	0.92

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD  (  0007)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0200):     2.08   0.221     5.25    81.54
      + ID2= 2 (  0300):     0.52   0.055     5.25    81.53
        ====================================================
        ID = 3 (  0007):     2.60   0.277     5.25    81.54

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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 FINISH
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       V    V   I    SSSSS  U   U    A    L              (v 6.2.2015)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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


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

  Output  filename:
C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\c
5160dc1-0b16-40d9-927f-0b03d7d36c88\s
  Summary filename:
C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\c
5160dc1-0b16-40d9-927f-0b03d7d36c88\s


DATE: 02-25-2025                          TIME: 10:47:40

USER:
```

COMMENTS: _____


```
  ********************************************
  ** SIMULATION : AES 6H_002-Humber          **
  ********************************************
```

READ STORM	Filename: C:\Users\caeh076182\AppData\Local\Temp\875adc2c-1c8d-486e-8a08-c640e73024e8\c9df40cc
Ptotal= 36.00 mm	Comments: AES 6H_002-Humber

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	1.75	12.24	3.50	5.04	5.25	0.72
0.25	0.72	2.00	12.24	3.75	2.88	5.50	0.72
0.50	0.72	2.25	33.12	4.00	2.88	5.75	0.72
0.75	0.72	2.50	33.12	4.25	1.44	6.00	0.72
1.00	0.72	2.75	9.36	4.50	1.44		
1.25	4.32	3.00	9.36	4.75	0.72		
1.50	4.32	3.25	5.04	5.00	0.72		

CALIB STANDHYD (0100)	Area (ha)= 1.10
ID= 1 DT= 5.0 min	Total Imp(%)= 92.00 Dir. Conn.(%)= 92.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.01	0.09
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	85.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	4.32	3.250	9.36	4.83	0.72

0.167	0.00	1.750	4.32	3.333	5.04	4.92	0.72
0.250	0.00	1.833	12.24	3.417	5.04	5.00	0.72
0.333	0.72	1.917	12.24	3.500	5.04	5.08	0.72
0.417	0.72	2.000	12.24	3.583	5.04	5.17	0.72
0.500	0.72	2.083	12.24	3.667	5.04	5.25	0.72
0.583	0.72	2.167	12.24	3.750	5.04	5.33	0.72
0.667	0.72	2.250	12.24	3.833	2.88	5.42	0.72
0.750	0.72	2.333	33.12	3.917	2.88	5.50	0.72
0.833	0.72	2.417	33.12	4.000	2.88	5.58	0.72
0.917	0.72	2.500	33.12	4.083	2.88	5.67	0.72
1.000	0.72	2.583	33.12	4.167	2.88	5.75	0.72
1.083	0.72	2.667	33.12	4.250	2.88	5.83	0.72
1.167	0.72	2.750	33.12	4.333	1.44	5.92	0.72
1.250	0.72	2.833	9.36	4.417	1.44	6.00	0.72
1.333	4.32	2.917	9.36	4.500	1.44	6.08	0.72
1.417	4.32	3.000	9.36	4.583	1.44	6.17	0.72
1.500	4.32	3.083	9.36	4.667	1.44	6.25	0.72
1.583	4.32	3.167	9.36	4.750	1.44		

			TOTALS
Max.Eff.Inten.(mm/hr)=	33.12	12.45	
over (min)	5.00	25.00	
Storage Coeff. (min)=	3.61 (ii)	23.48 (ii)	
Unit Hyd. Tpeak (min)=	5.00	25.00	
Unit Hyd. peak (cms)=	0.25	0.05	
PEAK FLOW (cms)=	0.09	0.00	0.094 (iii)
TIME TO PEAK (hrs)=	2.75	3.00	2.75
RUNOFF VOLUME (mm)=	35.00	11.08	33.08
TOTAL RAINFALL (mm)=	36.00	36.00	36.00
RUNOFF COEFFICIENT =	0.97	0.31	0.92

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB STANDHYD (0105) ID= 1 DT= 5.0 min	Area (ha)= 3.24 Total Imp(%)= 70.00 Dir. Conn.(%)= 70.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.27	0.97
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	147.00	40.00

Mannings n = 0.013 0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	4.32	3.250	9.36	4.83	0.72
0.167	0.00	1.750	4.32	3.333	5.04	4.92	0.72
0.250	0.00	1.833	12.24	3.417	5.04	5.00	0.72
0.333	0.72	1.917	12.24	3.500	5.04	5.08	0.72
0.417	0.72	2.000	12.24	3.583	5.04	5.17	0.72
0.500	0.72	2.083	12.24	3.667	5.04	5.25	0.72
0.583	0.72	2.167	12.24	3.750	5.04	5.33	0.72
0.667	0.72	2.250	12.24	3.833	2.88	5.42	0.72
0.750	0.72	2.333	33.12	3.917	2.88	5.50	0.72
0.833	0.72	2.417	33.12	4.000	2.88	5.58	0.72
0.917	0.72	2.500	33.12	4.083	2.88	5.67	0.72
1.000	0.72	2.583	33.12	4.167	2.88	5.75	0.72
1.083	0.72	2.667	33.12	4.250	2.88	5.83	0.72
1.167	0.72	2.750	33.12	4.333	1.44	5.92	0.72
1.250	0.72	2.833	9.36	4.417	1.44	6.00	0.72
1.333	4.32	2.917	9.36	4.500	1.44	6.08	0.72
1.417	4.32	3.000	9.36	4.583	1.44	6.17	0.72
1.500	4.32	3.083	9.36	4.667	1.44	6.25	0.72
1.583	4.32	3.167	9.36	4.750	1.44		

Max.Eff.Inten.(mm/hr)=	33.12	12.45	
over (min)	5.00	25.00	
Storage Coeff. (min)=	5.01 (ii)	24.88 (ii)	
Unit Hyd. Tpeak (min)=	5.00	25.00	
Unit Hyd. peak (cms)=	0.21	0.05	
			TOTALS
PEAK FLOW (cms)=	0.21	0.02	0.222 (iii)
TIME TO PEAK (hrs)=	2.75	3.00	2.75
RUNOFF VOLUME (mm)=	35.00	11.08	27.82
TOTAL RAINFALL (mm)=	36.00	36.00	36.00
RUNOFF COEFFICIENT =	0.97	0.31	0.77

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0006)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0100):	1.10	0.094	2.75	33.08
+ ID2= 2 (0105):	3.24	0.222	2.75	27.82
ID = 3 (0006):	4.34	0.316	2.75	29.15

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0200)
ID= 1 DT= 5.0 min

Area (ha)= 2.08
Total Imp(%)= 84.00 Dir. Conn.(%)= 84.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.75	0.33
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	118.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	4.32	3.250	9.36	4.83	0.72
0.167	0.00	1.750	4.32	3.333	5.04	4.92	0.72
0.250	0.00	1.833	12.24	3.417	5.04	5.00	0.72
0.333	0.72	1.917	12.24	3.500	5.04	5.08	0.72
0.417	0.72	2.000	12.24	3.583	5.04	5.17	0.72
0.500	0.72	2.083	12.24	3.667	5.04	5.25	0.72
0.583	0.72	2.167	12.24	3.750	5.04	5.33	0.72
0.667	0.72	2.250	12.24	3.833	2.88	5.42	0.72
0.750	0.72	2.333	33.12	3.917	2.88	5.50	0.72
0.833	0.72	2.417	33.12	4.000	2.88	5.58	0.72
0.917	0.72	2.500	33.12	4.083	2.88	5.67	0.72
1.000	0.72	2.583	33.12	4.167	2.88	5.75	0.72
1.083	0.72	2.667	33.12	4.250	2.88	5.83	0.72
1.167	0.72	2.750	33.12	4.333	1.44	5.92	0.72
1.250	0.72	2.833	9.36	4.417	1.44	6.00	0.72
1.333	4.32	2.917	9.36	4.500	1.44	6.08	0.72
1.417	4.32	3.000	9.36	4.583	1.44	6.17	0.72
1.500	4.32	3.083	9.36	4.667	1.44	6.25	0.72
1.583	4.32	3.167	9.36	4.750	1.44		

Max.Eff.Inten.(mm/hr)=	33.12	12.45	
over (min)	5.00	25.00	

Storage Coeff. (min)=	4.39 (ii)	24.26 (ii)	
Unit Hyd. Tpeak (min)=	5.00	25.00	
Unit Hyd. peak (cms)=	0.23	0.05	
			TOTALS
PEAK FLOW (cms)=	0.16	0.01	0.165 (iii)
TIME TO PEAK (hrs)=	2.75	3.00	2.75
RUNOFF VOLUME (mm)=	35.00	11.08	31.17
TOTAL RAINFALL (mm)=	36.00	36.00	36.00
RUNOFF COEFFICIENT =	0.97	0.31	0.87

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB		
STANDHYD (0300)	Area (ha)=	0.52
ID= 1 DT= 5.0 min	Total Imp(%)=	84.00 Dir. Conn.(%)= 84.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.44	0.08
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	59.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	4.32	3.250	9.36	4.83	0.72
0.167	0.00	1.750	4.32	3.333	5.04	4.92	0.72
0.250	0.00	1.833	12.24	3.417	5.04	5.00	0.72
0.333	0.72	1.917	12.24	3.500	5.04	5.08	0.72
0.417	0.72	2.000	12.24	3.583	5.04	5.17	0.72
0.500	0.72	2.083	12.24	3.667	5.04	5.25	0.72
0.583	0.72	2.167	12.24	3.750	5.04	5.33	0.72
0.667	0.72	2.250	12.24	3.833	2.88	5.42	0.72
0.750	0.72	2.333	33.12	3.917	2.88	5.50	0.72
0.833	0.72	2.417	33.12	4.000	2.88	5.58	0.72
0.917	0.72	2.500	33.12	4.083	2.88	5.67	0.72
1.000	0.72	2.583	33.12	4.167	2.88	5.75	0.72
1.083	0.72	2.667	33.12	4.250	2.88	5.83	0.72

```
               1.167    0.72 | 2.750   33.12 | 4.333    1.44 |  5.92    0.72
               1.250    0.72 | 2.833    9.36 | 4.417    1.44 |  6.00    0.72
               1.333    4.32 | 2.917    9.36 | 4.500    1.44 |  6.08    0.72
               1.417    4.32 | 3.000    9.36 | 4.583    1.44 |  6.17    0.72
               1.500    4.32 | 3.083    9.36 | 4.667    1.44 |  6.25    0.72
               1.583    4.32 | 3.167    9.36 | 4.750    1.44 |

     Max.Eff.Inten.(mm/hr)=      33.12        12.45
               over (min)         5.00        25.00
     Storage Coeff.  (min)=       2.90 (ii)   22.77 (ii)
     Unit Hyd. Tpeak (min)=       5.00        25.00
     Unit Hyd. peak  (cms)=       0.28         0.05
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.04         0.00          0.041 (iii)
     TIME TO PEAK    (hrs)=       2.75         3.00           2.75
     RUNOFF VOLUME    (mm)=      35.00        11.08          31.15
     TOTAL RAINFALL   (mm)=      36.00        36.00          36.00
     RUNOFF COEFFICIENT   =       0.97         0.31           0.87

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  82.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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

--------------------
| ADD HYD  (  0007)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0200):     2.08   0.165     2.75    31.17
      + ID2= 2 (  0300):     0.52   0.041     2.75    31.15
        ================================================
        ID = 3 (  0007):     2.60   0.207     2.75    31.16

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

       V    V   I    SSSSS  U   U    A    L              (v 6.2.2015)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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

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


***** D E T A I L E D O U T P U T *****

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

Output filename:
C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\78d70d68-ae30-458e-b42b-377270058f04\s
Summary filename:
C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\78d70d68-ae30-458e-b42b-377270058f04\s

DATE: 02-25-2025 TIME: 10:47:40

USER:

COMMENTS: _____

****
** SIMULATION : AES 6H_005-Humber **
****

READ STORM	Filename: C:\Users\caeh076182\AppData\Local\Temp\875adc2c-1c8d-486e-8a08-c640e73024e8\ca1f19fd
Ptotal= 47.81 mm	Comments: AES 6H_005-Humber

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	1.75	16.25	3.50	6.69	5.25	0.96
0.25	0.96	2.00	16.25	3.75	3.82	5.50	0.96
0.50	0.96	2.25	43.98	4.00	3.82	5.75	0.96
0.75	0.96	2.50	43.98	4.25	1.91	6.00	0.96
1.00	0.96	2.75	12.43	4.50	1.91		

1.25	5.74	3.00	12.43	4.75	0.96
1.50	5.74	3.25	6.69	5.00	0.96

CALIB STANDHYD (0100) ID= 1 DT= 5.0 min	Area (ha)= 1.10 Total Imp(%)= 92.00 Dir. Conn.(%)= 92.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.01	0.09
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	85.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	5.74	3.250	12.43	4.83	0.96
0.167	0.00	1.750	5.74	3.333	6.69	4.92	0.96
0.250	0.00	1.833	16.25	3.417	6.69	5.00	0.96
0.333	0.96	1.917	16.25	3.500	6.69	5.08	0.96
0.417	0.96	2.000	16.25	3.583	6.69	5.17	0.96
0.500	0.96	2.083	16.25	3.667	6.69	5.25	0.96
0.583	0.96	2.167	16.25	3.750	6.69	5.33	0.96
0.667	0.96	2.250	16.25	3.833	3.82	5.42	0.96
0.750	0.96	2.333	43.98	3.917	3.82	5.50	0.96
0.833	0.96	2.417	43.98	4.000	3.82	5.58	0.96
0.917	0.96	2.500	43.98	4.083	3.82	5.67	0.96
1.000	0.96	2.583	43.98	4.167	3.82	5.75	0.96
1.083	0.96	2.667	43.98	4.250	3.82	5.83	0.96
1.167	0.96	2.750	43.98	4.333	1.91	5.92	0.96
1.250	0.96	2.833	12.43	4.417	1.91	6.00	0.96
1.333	5.74	2.917	12.43	4.500	1.91	6.08	0.96
1.417	5.74	3.000	12.43	4.583	1.91	6.17	0.96
1.500	5.74	3.083	12.43	4.667	1.91	6.25	0.96
1.583	5.74	3.167	12.43	4.750	1.91		

Max.Eff.Inten.(mm/hr)=		43.98	23.12	
over (min)		5.00	10.00	
Storage Coeff. (min)=		3.22 (ii)	7.73 (ii)	
Unit Hyd. Tpeak (min)=		5.00	10.00	
Unit Hyd. peak (cms)=		0.27	0.13	
				TOTALS
PEAK FLOW	(cms)=	0.12	0.00	0.129 (iii)

TIME TO PEAK (hrs)=	2.75	2.75	2.75
RUNOFF VOLUME (mm)=	46.81	18.59	44.55
TOTAL RAINFALL (mm)=	47.81	47.81	47.81
RUNOFF COEFFICIENT =	0.98	0.39	0.93

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
STANDHYD (0105) | Area (ha)= 3.24
ID= 1 DT= 5.0 min | Total Imp(%)= 70.00 Dir. Conn.(%)= 70.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.27	0.97
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	147.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	5.74	3.250	12.43	4.83	0.96
0.167	0.00	1.750	5.74	3.333	6.69	4.92	0.96
0.250	0.00	1.833	16.25	3.417	6.69	5.00	0.96
0.333	0.96	1.917	16.25	3.500	6.69	5.08	0.96
0.417	0.96	2.000	16.25	3.583	6.69	5.17	0.96
0.500	0.96	2.083	16.25	3.667	6.69	5.25	0.96
0.583	0.96	2.167	16.25	3.750	6.69	5.33	0.96
0.667	0.96	2.250	16.25	3.833	3.82	5.42	0.96
0.750	0.96	2.333	43.98	3.917	3.82	5.50	0.96
0.833	0.96	2.417	43.98	4.000	3.82	5.58	0.96
0.917	0.96	2.500	43.98	4.083	3.82	5.67	0.96
1.000	0.96	2.583	43.98	4.167	3.82	5.75	0.96
1.083	0.96	2.667	43.98	4.250	3.82	5.83	0.96
1.167	0.96	2.750	43.98	4.333	1.91	5.92	0.96
1.250	0.96	2.833	12.43	4.417	1.91	6.00	0.96
1.333	5.74	2.917	12.43	4.500	1.91	6.08	0.96
1.417	5.74	3.000	12.43	4.583	1.91	6.17	0.96
1.500	5.74	3.083	12.43	4.667	1.91	6.25	0.96

```
                1.583    5.74 | 3.167   12.43 | 4.750    1.91 |

     Max.Eff.Inten.(mm/hr)=      43.98        20.93
               over (min)         5.00        25.00
     Storage Coeff.  (min)=       4.47 (ii)   20.61 (ii)
     Unit Hyd. Tpeak (min)=       5.00        25.00
     Unit Hyd. peak  (cms)=       0.23         0.05
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.28         0.04          0.304 (iii)
     TIME TO PEAK    (hrs)=       2.75         3.00           2.75
     RUNOFF VOLUME    (mm)=      46.81        18.59          38.34
     TOTAL RAINFALL   (mm)=      47.81        47.81          47.81
     RUNOFF COEFFICIENT   =       0.98         0.39           0.80

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  82.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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

--------------------
| ADD HYD  (  0006)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0100):     1.10   0.129     2.75    44.55
      + ID2= 2 (  0105):     3.24   0.304     2.75    38.34
        ================================================
        ID = 3 (  0006):     4.34   0.433     2.75    39.91

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0200)|   Area    (ha)=   2.08
|ID= 1 DT= 5.0 min |   Total Imp(%)=  84.00   Dir. Conn.(%)=  84.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.75         0.33
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=     118.00        40.00
     Mannings n           =      0.013        0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	5.74	3.250	12.43	4.83	0.96
0.167	0.00	1.750	5.74	3.333	6.69	4.92	0.96
0.250	0.00	1.833	16.25	3.417	6.69	5.00	0.96
0.333	0.96	1.917	16.25	3.500	6.69	5.08	0.96
0.417	0.96	2.000	16.25	3.583	6.69	5.17	0.96
0.500	0.96	2.083	16.25	3.667	6.69	5.25	0.96
0.583	0.96	2.167	16.25	3.750	6.69	5.33	0.96
0.667	0.96	2.250	16.25	3.833	3.82	5.42	0.96
0.750	0.96	2.333	43.98	3.917	3.82	5.50	0.96
0.833	0.96	2.417	43.98	4.000	3.82	5.58	0.96
0.917	0.96	2.500	43.98	4.083	3.82	5.67	0.96
1.000	0.96	2.583	43.98	4.167	3.82	5.75	0.96
1.083	0.96	2.667	43.98	4.250	3.82	5.83	0.96
1.167	0.96	2.750	43.98	4.333	1.91	5.92	0.96
1.250	0.96	2.833	12.43	4.417	1.91	6.00	0.96
1.333	5.74	2.917	12.43	4.500	1.91	6.08	0.96
1.417	5.74	3.000	12.43	4.583	1.91	6.17	0.96
1.500	5.74	3.083	12.43	4.667	1.91	6.25	0.96
1.583	5.74	3.167	12.43	4.750	1.91		

Max.Eff.Inten.(mm/hr)=	43.98	20.93		
over (min)	5.00	25.00		
Storage Coeff. (min)=	3.92 (ii)	20.06 (ii)		
Unit Hyd. Tpeak (min)=	5.00	25.00		
Unit Hyd. peak (cms)=	0.24	0.05		
			TOTALS	
PEAK FLOW (cms)=	0.21	0.01	0.223 (iii)	
TIME TO PEAK (hrs)=	2.75	3.00	2.75	
RUNOFF VOLUME (mm)=	46.81	18.59	42.29	
TOTAL RAINFALL (mm)=	47.81	47.81	47.81	
RUNOFF COEFFICIENT =	0.98	0.39	0.88	

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB STANDHYD (0300) ID= 1 DT= 5.0 min	Area (ha)= 0.52 Total Imp(%)= 84.00 Dir. Conn.(%)= 84.00

	IMPERVIOUS	PERVIOUS (i)

Surface Area	(ha)=	0.44	0.08
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	59.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	5.74	3.250	12.43	4.83	0.96
0.167	0.00	1.750	5.74	3.333	6.69	4.92	0.96
0.250	0.00	1.833	16.25	3.417	6.69	5.00	0.96
0.333	0.96	1.917	16.25	3.500	6.69	5.08	0.96
0.417	0.96	2.000	16.25	3.583	6.69	5.17	0.96
0.500	0.96	2.083	16.25	3.667	6.69	5.25	0.96
0.583	0.96	2.167	16.25	3.750	6.69	5.33	0.96
0.667	0.96	2.250	16.25	3.833	3.82	5.42	0.96
0.750	0.96	2.333	43.98	3.917	3.82	5.50	0.96
0.833	0.96	2.417	43.98	4.000	3.82	5.58	0.96
0.917	0.96	2.500	43.98	4.083	3.82	5.67	0.96
1.000	0.96	2.583	43.98	4.167	3.82	5.75	0.96
1.083	0.96	2.667	43.98	4.250	3.82	5.83	0.96
1.167	0.96	2.750	43.98	4.333	1.91	5.92	0.96
1.250	0.96	2.833	12.43	4.417	1.91	6.00	0.96
1.333	5.74	2.917	12.43	4.500	1.91	6.08	0.96
1.417	5.74	3.000	12.43	4.583	1.91	6.17	0.96
1.500	5.74	3.083	12.43	4.667	1.91	6.25	0.96
1.583	5.74	3.167	12.43	4.750	1.91		

Max.Eff.Inten.(mm/hr)=	43.98	20.93		
over (min)	5.00	20.00		
Storage Coeff. (min)=	2.59 (ii)	18.73 (ii)		
Unit Hyd. Tpeak (min)=	5.00	20.00		
Unit Hyd. peak (cms)=	0.29	0.06		
			TOTALS	
PEAK FLOW (cms)=	0.05	0.00	0.056 (iii)	
TIME TO PEAK (hrs)=	2.75	2.92	2.75	
RUNOFF VOLUME (mm)=	46.81	18.59	42.27	
TOTAL RAINFALL (mm)=	47.81	47.81	47.81	
RUNOFF COEFFICIENT =	0.98	0.39	0.88	

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)

(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.

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

```
--------------------
| ADD HYD  (  0007)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0200):     2.08   0.223     2.75    42.29
      + ID2= 2 (  0300):     0.52   0.056     2.75    42.27
        ================================================
        ID = 3 (  0007):     2.60   0.279     2.75    42.29

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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```
       V    V   I    SSSSS  U   U    A    L              (v 6.2.2015)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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

***** D E T A I L E D   O U T P U T *****

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

Output filename:
C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\912a43a6-3a88-45d8-bb0b-3be9c6c2d3e5\s

Summary filename:
C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\912a43a6-3a88-45d8-bb0b-3be9c6c2d3e5\s

DATE: 02-25-2025 TIME: 10:47:40

USER:

COMMENTS: _____

  ****
  ** SIMULATION : AES 6H_010-Humber **
  ****

| READ STORM |
| |
| Ptotal= 55.69 mm |

Filename: C:\Users\caeh076182\AppData\Local\Temp\875adc2c-1c8d-486e-8a08-c640e73024e8\25dccaf4

Comments: AES 6H_010-Humber

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	1.75	18.94	3.50	7.80	5.25	1.11
0.25	1.11	2.00	18.94	3.75	4.46	5.50	1.11
0.50	1.11	2.25	51.24	4.00	4.46	5.75	1.11
0.75	1.11	2.50	51.24	4.25	2.23	6.00	1.11
1.00	1.11	2.75	14.48	4.50	2.23		
1.25	6.68	3.00	14.48	4.75	1.11		
1.50	6.68	3.25	7.80	5.00	1.11		

| CALIB |
| STANDHYD (0100)|
|ID= 1 DT= 5.0 min |

Area (ha)= 1.10

Total Imp(%)= 92.00 Dir. Conn.(%)= 92.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.01	0.09
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	85.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	6.68	3.250	14.48	4.83	1.11
0.167	0.00	1.750	6.68	3.333	7.80	4.92	1.11

0.250	0.00	1.833	18.94	3.417	7.80	5.00	1.11
0.333	1.11	1.917	18.94	3.500	7.80	5.08	1.11
0.417	1.11	2.000	18.94	3.583	7.80	5.17	1.11
0.500	1.11	2.083	18.94	3.667	7.80	5.25	1.11
0.583	1.11	2.167	18.94	3.750	7.80	5.33	1.11
0.667	1.11	2.250	18.94	3.833	4.46	5.42	1.11
0.750	1.11	2.333	51.24	3.917	4.46	5.50	1.11
0.833	1.11	2.417	51.24	4.000	4.46	5.58	1.11
0.917	1.11	2.500	51.24	4.083	4.46	5.67	1.11
1.000	1.11	2.583	51.24	4.167	4.46	5.75	1.11
1.083	1.11	2.667	51.24	4.250	4.46	5.83	1.11
1.167	1.11	2.750	51.24	4.333	2.23	5.92	1.11
1.250	1.11	2.833	14.48	4.417	2.23	6.00	1.11
1.333	6.68	2.917	14.48	4.500	2.23	6.08	1.11
1.417	6.68	3.000	14.48	4.583	2.23	6.17	1.11
1.500	6.68	3.083	14.48	4.667	2.23	6.25	1.11
1.583	6.68	3.167	14.48	4.750	2.23		

Max.Eff.Inten.(mm/hr)=	51.24	29.66		
over (min)	5.00	10.00		
Storage Coeff. (min)=	3.03 (ii)	7.28 (ii)		
Unit Hyd. Tpeak (min)=	5.00	10.00		
Unit Hyd. peak (cms)=	0.27	0.14		
			TOTALS	
PEAK FLOW (cms)=	0.14	0.01	0.151 (iii)	
TIME TO PEAK (hrs)=	2.75	2.75	2.75	
RUNOFF VOLUME (mm)=	54.69	24.14	52.24	
TOTAL RAINFALL (mm)=	55.69	55.69	55.69	
RUNOFF COEFFICIENT =	0.98	0.43	0.94	

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	
STANDHYD (0105)	Area (ha)= 3.24
ID= 1 DT= 5.0 min	Total Imp(%)= 70.00 Dir. Conn.(%)= 70.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.27	0.97
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	147.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	6.68	3.250	14.48	4.83	1.11
0.167	0.00	1.750	6.68	3.333	7.80	4.92	1.11
0.250	0.00	1.833	18.94	3.417	7.80	5.00	1.11
0.333	1.11	1.917	18.94	3.500	7.80	5.08	1.11
0.417	1.11	2.000	18.94	3.583	7.80	5.17	1.11
0.500	1.11	2.083	18.94	3.667	7.80	5.25	1.11
0.583	1.11	2.167	18.94	3.750	7.80	5.33	1.11
0.667	1.11	2.250	18.94	3.833	4.46	5.42	1.11
0.750	1.11	2.333	51.24	3.917	4.46	5.50	1.11
0.833	1.11	2.417	51.24	4.000	4.46	5.58	1.11
0.917	1.11	2.500	51.24	4.083	4.46	5.67	1.11
1.000	1.11	2.583	51.24	4.167	4.46	5.75	1.11
1.083	1.11	2.667	51.24	4.250	4.46	5.83	1.11
1.167	1.11	2.750	51.24	4.333	2.23	5.92	1.11
1.250	1.11	2.833	14.48	4.417	2.23	6.00	1.11
1.333	6.68	2.917	14.48	4.500	2.23	6.08	1.11
1.417	6.68	3.000	14.48	4.583	2.23	6.17	1.11
1.500	6.68	3.083	14.48	4.667	2.23	6.25	1.11
1.583	6.68	3.167	14.48	4.750	2.23		

Max.Eff.Inten.(mm/hr)=	51.24	28.47	
over (min)	5.00	20.00	
Storage Coeff. (min)=	4.21 (ii)	18.48 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.24	0.06	
			TOTALS
PEAK FLOW (cms)=	0.32	0.05	0.367 (iii)
TIME TO PEAK (hrs)=	2.75	2.92	2.75
RUNOFF VOLUME (mm)=	54.69	24.14	45.52
TOTAL RAINFALL (mm)=	55.69	55.69	55.69
RUNOFF COEFFICIENT =	0.98	0.43	0.82

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| ADD HYD (0006)|
| 1 + 2 = 3 |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0100):	1.10	0.151	2.75	52.24
+ ID2= 2 (0105):	3.24	0.367	2.75	45.52
ID = 3 (0006):	4.34	0.517	2.75	47.23

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0200)
ID= 1 DT= 5.0 min

Area (ha)= 2.08
Total Imp(%)= 84.00 Dir. Conn.(%)= 84.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.75	0.33
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	118.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	6.68	3.250	14.48	4.83	1.11
0.167	0.00	1.750	6.68	3.333	7.80	4.92	1.11
0.250	0.00	1.833	18.94	3.417	7.80	5.00	1.11
0.333	1.11	1.917	18.94	3.500	7.80	5.08	1.11
0.417	1.11	2.000	18.94	3.583	7.80	5.17	1.11
0.500	1.11	2.083	18.94	3.667	7.80	5.25	1.11
0.583	1.11	2.167	18.94	3.750	7.80	5.33	1.11
0.667	1.11	2.250	18.94	3.833	4.46	5.42	1.11
0.750	1.11	2.333	51.24	3.917	4.46	5.50	1.11
0.833	1.11	2.417	51.24	4.000	4.46	5.58	1.11
0.917	1.11	2.500	51.24	4.083	4.46	5.67	1.11
1.000	1.11	2.583	51.24	4.167	4.46	5.75	1.11
1.083	1.11	2.667	51.24	4.250	4.46	5.83	1.11
1.167	1.11	2.750	51.24	4.333	2.23	5.92	1.11
1.250	1.11	2.833	14.48	4.417	2.23	6.00	1.11
1.333	6.68	2.917	14.48	4.500	2.23	6.08	1.11
1.417	6.68	3.000	14.48	4.583	2.23	6.17	1.11
1.500	6.68	3.083	14.48	4.667	2.23	6.25	1.11
1.583	6.68	3.167	14.48	4.750	2.23		

Max.Eff.Inten.(mm/hr)=	51.24	28.47	
over (min)	5.00	20.00	

Storage Coeff. (min)=	3.69 (ii)	17.96 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.25	0.06	
			TOTALS
PEAK FLOW (cms)=	0.25	0.02	0.264 (iii)
TIME TO PEAK (hrs)=	2.75	2.92	2.75
RUNOFF VOLUME (mm)=	54.69	24.14	49.80
TOTAL RAINFALL (mm)=	55.69	55.69	55.69
RUNOFF COEFFICIENT =	0.98	0.43	0.89

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	
STANDHYD (0300)	Area (ha)= 0.52
ID= 1 DT= 5.0 min	Total Imp(%)= 84.00 Dir. Conn.(%)= 84.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.44	0.08
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	59.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	6.68	3.250	14.48	4.83	1.11
0.167	0.00	1.750	6.68	3.333	7.80	4.92	1.11
0.250	0.00	1.833	18.94	3.417	7.80	5.00	1.11
0.333	1.11	1.917	18.94	3.500	7.80	5.08	1.11
0.417	1.11	2.000	18.94	3.583	7.80	5.17	1.11
0.500	1.11	2.083	18.94	3.667	7.80	5.25	1.11
0.583	1.11	2.167	18.94	3.750	7.80	5.33	1.11
0.667	1.11	2.250	18.94	3.833	4.46	5.42	1.11
0.750	1.11	2.333	51.24	3.917	4.46	5.50	1.11
0.833	1.11	2.417	51.24	4.000	4.46	5.58	1.11
0.917	1.11	2.500	51.24	4.083	4.46	5.67	1.11
1.000	1.11	2.583	51.24	4.167	4.46	5.75	1.11
1.083	1.11	2.667	51.24	4.250	4.46	5.83	1.11

```
                1.167    1.11 | 2.750   51.24 | 4.333    2.23 |  5.92    1.11
                1.250    1.11 | 2.833   14.48 | 4.417    2.23 |  6.00    1.11
                1.333    6.68 | 2.917   14.48 | 4.500    2.23 |  6.08    1.11
                1.417    6.68 | 3.000   14.48 | 4.583    2.23 |  6.17    1.11
                1.500    6.68 | 3.083   14.48 | 4.667    2.23 |  6.25    1.11
                1.583    6.68 | 3.167   14.48 | 4.750    2.23 |

     Max.Eff.Inten.(mm/hr)=      51.24        28.47
               over (min)         5.00        20.00
     Storage Coeff.  (min)=       2.43 (ii)   16.71 (ii)
     Unit Hyd. Tpeak (min)=       5.00        20.00
     Unit Hyd. peak  (cms)=       0.30         0.06
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.06         0.00          0.066 (iii)
     TIME TO PEAK    (hrs)=       2.75         2.92           2.75
     RUNOFF VOLUME    (mm)=      54.69        24.14          49.79
     TOTAL RAINFALL   (mm)=      55.69        55.69          55.69
     RUNOFF COEFFICIENT   =       0.98         0.43           0.89

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  82.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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

--------------------
| ADD HYD  (  0007)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0200):     2.08   0.264     2.75    49.80
      + ID2= 2 (  0300):     0.52   0.066     2.75    49.79
        ================================================
        ID = 3 (  0007):     2.60   0.330     2.75    49.79

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

       V    V   I    SSSSS  U   U    A    L              (v 6.2.2015)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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

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


***** D E T A I L E D O U T P U T *****

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

Output filename:
C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\0b2dc01d-f2ba-4ad7-9517-617f7d61a63b\s
Summary filename:
C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\0b2dc01d-f2ba-4ad7-9517-617f7d61a63b\s

DATE: 02-25-2025 TIME: 10:47:40

USER:

COMMENTS: _____

****
** SIMULATION : AES 6H_025-Humber **
****

READ STORM	Filename: C:\Users\caeh076182\AppData\Local\Temp\875adc2c-1c8d-486e-8a08-c640e73024e8\6ec422e5
Ptotal= 65.59 mm	Comments: AES 6H_025-Humber

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	1.75	22.30	3.50	9.18	5.25	1.31
0.25	1.31	2.00	22.30	3.75	5.25	5.50	1.31
0.50	1.31	2.25	60.35	4.00	5.25	5.75	1.31
0.75	1.31	2.50	60.35	4.25	2.62	6.00	1.31
1.00	1.31	2.75	17.06	4.50	2.62		

1.25	7.87	3.00	17.06	4.75	1.31
1.50	7.87	3.25	9.18	5.00	1.31

CALIB	
STANDHYD (0100)	Area (ha)= 1.10
ID= 1 DT= 5.0 min	Total Imp(%)= 92.00 Dir. Conn.(%)= 92.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.01	0.09
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	85.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	7.87	3.250	17.06	4.83	1.31
0.167	0.00	1.750	7.87	3.333	9.18	4.92	1.31
0.250	0.00	1.833	22.30	3.417	9.18	5.00	1.31
0.333	1.31	1.917	22.30	3.500	9.18	5.08	1.31
0.417	1.31	2.000	22.30	3.583	9.18	5.17	1.31
0.500	1.31	2.083	22.30	3.667	9.18	5.25	1.31
0.583	1.31	2.167	22.30	3.750	9.18	5.33	1.31
0.667	1.31	2.250	22.30	3.833	5.25	5.42	1.31
0.750	1.31	2.333	60.35	3.917	5.25	5.50	1.31
0.833	1.31	2.417	60.35	4.000	5.25	5.58	1.31
0.917	1.31	2.500	60.35	4.083	5.25	5.67	1.31
1.000	1.31	2.583	60.35	4.167	5.25	5.75	1.31
1.083	1.31	2.667	60.35	4.250	5.25	5.83	1.31
1.167	1.31	2.750	60.35	4.333	2.62	5.92	1.31
1.250	1.31	2.833	17.06	4.417	2.62	6.00	1.31
1.333	7.87	2.917	17.06	4.500	2.62	6.08	1.31
1.417	7.87	3.000	17.06	4.583	2.62	6.17	1.31
1.500	7.87	3.083	17.06	4.667	2.62	6.25	1.31
1.583	7.87	3.167	17.06	4.750	2.62		

Max.Eff.Inten.(mm/hr)=	60.35	38.26		
over (min)	5.00	10.00		
Storage Coeff. (min)=	2.84 (ii)	6.82 (ii)		
Unit Hyd. Tpeak (min)=	5.00	10.00		
Unit Hyd. peak (cms)=	0.28	0.14		
			TOTALS	
PEAK FLOW (cms)=	0.17	0.01	0.178 (iii)	

```
     TIME TO PEAK    (hrs)=       2.75         2.75          2.75
     RUNOFF VOLUME    (mm)=      64.59        31.55         61.94
     TOTAL RAINFALL   (mm)=      65.59        65.59         65.59
     RUNOFF COEFFICIENT   =       0.98         0.48          0.94

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  82.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0105)|   Area    (ha)=   3.24
|ID= 1 DT= 5.0 min |   Total Imp(%)=  70.00   Dir. Conn.(%)=  70.00
--------------------
                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       2.27         0.97
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=     147.00        40.00
     Mannings n           =      0.013        0.350

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


                        ---- TRANSFORMED HYETOGRAPH ----
      TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
       hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
     0.083    0.00 | 1.667    7.87 | 3.250   17.06 |  4.83    1.31
     0.167    0.00 | 1.750    7.87 | 3.333    9.18 |  4.92    1.31
     0.250    0.00 | 1.833   22.30 | 3.417    9.18 |  5.00    1.31
     0.333    1.31 | 1.917   22.30 | 3.500    9.18 |  5.08    1.31
     0.417    1.31 | 2.000   22.30 | 3.583    9.18 |  5.17    1.31
     0.500    1.31 | 2.083   22.30 | 3.667    9.18 |  5.25    1.31
     0.583    1.31 | 2.167   22.30 | 3.750    9.18 |  5.33    1.31
     0.667    1.31 | 2.250   22.30 | 3.833    5.25 |  5.42    1.31
     0.750    1.31 | 2.333   60.35 | 3.917    5.25 |  5.50    1.31
     0.833    1.31 | 2.417   60.35 | 4.000    5.25 |  5.58    1.31
     0.917    1.31 | 2.500   60.35 | 4.083    5.25 |  5.67    1.31
     1.000    1.31 | 2.583   60.35 | 4.167    5.25 |  5.75    1.31
     1.083    1.31 | 2.667   60.35 | 4.250    5.25 |  5.83    1.31
     1.167    1.31 | 2.750   60.35 | 4.333    2.62 |  5.92    1.31
     1.250    1.31 | 2.833   17.06 | 4.417    2.62 |  6.00    1.31
     1.333    7.87 | 2.917   17.06 | 4.500    2.62 |  6.08    1.31
     1.417    7.87 | 3.000   17.06 | 4.583    2.62 |  6.17    1.31
     1.500    7.87 | 3.083   17.06 | 4.667    2.62 |  6.25    1.31
```

```
                1.583    7.87 | 3.167   17.06 | 4.750    2.62 |

     Max.Eff.Inten.(mm/hr)=      60.35        36.91
               over (min)         5.00        20.00
     Storage Coeff.  (min)=       3.94 (ii)   16.81 (ii)
     Unit Hyd. Tpeak (min)=       5.00        20.00
     Unit Hyd. peak  (cms)=       0.24         0.06
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.38         0.07          0.442 (iii)
     TIME TO PEAK    (hrs)=       2.75         2.92           2.75
     RUNOFF VOLUME    (mm)=      64.59        31.55          54.68
     TOTAL RAINFALL   (mm)=      65.59        65.59          65.59
     RUNOFF COEFFICIENT   =       0.98         0.48           0.83

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  82.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD  (  0006)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0100):     1.10   0.178     2.75    61.94
      + ID2= 2 (  0105):     3.24   0.442     2.75    54.68
        ================================================
        ID = 3 (  0006):     4.34   0.620     2.75    56.52

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0200)|   Area    (ha)=   2.08
|ID= 1 DT= 5.0 min |   Total Imp(%)=  84.00   Dir. Conn.(%)=  84.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.75         0.33
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=     118.00        40.00
     Mannings n           =      0.013        0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	7.87	3.250	17.06	4.83	1.31
0.167	0.00	1.750	7.87	3.333	9.18	4.92	1.31
0.250	0.00	1.833	22.30	3.417	9.18	5.00	1.31
0.333	1.31	1.917	22.30	3.500	9.18	5.08	1.31
0.417	1.31	2.000	22.30	3.583	9.18	5.17	1.31
0.500	1.31	2.083	22.30	3.667	9.18	5.25	1.31
0.583	1.31	2.167	22.30	3.750	9.18	5.33	1.31
0.667	1.31	2.250	22.30	3.833	5.25	5.42	1.31
0.750	1.31	2.333	60.35	3.917	5.25	5.50	1.31
0.833	1.31	2.417	60.35	4.000	5.25	5.58	1.31
0.917	1.31	2.500	60.35	4.083	5.25	5.67	1.31
1.000	1.31	2.583	60.35	4.167	5.25	5.75	1.31
1.083	1.31	2.667	60.35	4.250	5.25	5.83	1.31
1.167	1.31	2.750	60.35	4.333	2.62	5.92	1.31
1.250	1.31	2.833	17.06	4.417	2.62	6.00	1.31
1.333	7.87	2.917	17.06	4.500	2.62	6.08	1.31
1.417	7.87	3.000	17.06	4.583	2.62	6.17	1.31
1.500	7.87	3.083	17.06	4.667	2.62	6.25	1.31
1.583	7.87	3.167	17.06	4.750	2.62		

Max.Eff.Inten.(mm/hr)=	60.35	36.91		
over (min)	5.00	20.00		
Storage Coeff. (min)=	3.45 (ii)	16.32 (ii)		
Unit Hyd. Tpeak (min)=	5.00	20.00		
Unit Hyd. peak (cms)=	0.26	0.06		
			TOTALS	
PEAK FLOW (cms)=	0.29	0.02	0.314 (iii)	
TIME TO PEAK (hrs)=	2.75	2.92	2.75	
RUNOFF VOLUME (mm)=	64.59	31.55	59.30	
TOTAL RAINFALL (mm)=	65.59	65.59	65.59	
RUNOFF COEFFICIENT =	0.98	0.48	0.90	

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB STANDHYD (0300) ID= 1 DT= 5.0 min	Area (ha)= 0.52 Total Imp(%)= 84.00 Dir. Conn.(%)= 84.00

	IMPERVIOUS	PERVIOUS (i)

Surface Area	(ha)=	0.44	0.08
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	59.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	7.87	3.250	17.06	4.83	1.31
0.167	0.00	1.750	7.87	3.333	9.18	4.92	1.31
0.250	0.00	1.833	22.30	3.417	9.18	5.00	1.31
0.333	1.31	1.917	22.30	3.500	9.18	5.08	1.31
0.417	1.31	2.000	22.30	3.583	9.18	5.17	1.31
0.500	1.31	2.083	22.30	3.667	9.18	5.25	1.31
0.583	1.31	2.167	22.30	3.750	9.18	5.33	1.31
0.667	1.31	2.250	22.30	3.833	5.25	5.42	1.31
0.750	1.31	2.333	60.35	3.917	5.25	5.50	1.31
0.833	1.31	2.417	60.35	4.000	5.25	5.58	1.31
0.917	1.31	2.500	60.35	4.083	5.25	5.67	1.31
1.000	1.31	2.583	60.35	4.167	5.25	5.75	1.31
1.083	1.31	2.667	60.35	4.250	5.25	5.83	1.31
1.167	1.31	2.750	60.35	4.333	2.62	5.92	1.31
1.250	1.31	2.833	17.06	4.417	2.62	6.00	1.31
1.333	7.87	2.917	17.06	4.500	2.62	6.08	1.31
1.417	7.87	3.000	17.06	4.583	2.62	6.17	1.31
1.500	7.87	3.083	17.06	4.667	2.62	6.25	1.31
1.583	7.87	3.167	17.06	4.750	2.62		

Max.Eff.Inten.(mm/hr)=	60.35	36.91		
over (min)	5.00	20.00		
Storage Coeff. (min)=	2.28 (ii)	15.15 (ii)		
Unit Hyd. Tpeak (min)=	5.00	20.00		
Unit Hyd. peak (cms)=	0.30	0.07		
			TOTALS	
PEAK FLOW (cms)=	0.07	0.01	0.079 (iii)	
TIME TO PEAK (hrs)=	2.75	2.92	2.75	
RUNOFF VOLUME (mm)=	64.59	31.55	59.29	
TOTAL RAINFALL (mm)=	65.59	65.59	65.59	
RUNOFF COEFFICIENT =	0.98	0.48	0.90	

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)

(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.

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

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--------------------
| ADD HYD  (  0007)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0200):     2.08   0.314     2.75    59.30
      + ID2= 2 (  0300):     0.52   0.079     2.75    59.29
        ================================================
        ID = 3 (  0007):     2.60   0.393     2.75    59.30

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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       V    V   I    SSSSS  U   U    A    L              (v 6.2.2015)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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

***** D E T A I L E D   O U T P U T *****

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

Output filename:
C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\6f2d1128-92be-4a10-b8a3-c7bcc2345a37\s

Summary filename:
C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\6f2d1128-92be-4a10-b8a3-c7bcc2345a37\s

DATE: 02-25-2025 TIME: 10:47:41

USER:

COMMENTS: _____


```
  ********************************************
  ** SIMULATION : AES 6H_050-Humber           **
  ********************************************
```

READ STORM	Filename: C:\Users\caeh076182\AppData\Local\Temp\875adc2c-1c8d-486e-8a08-c640e73024e8\c2571f5b
Ptotal= 73.00 mm	Comments: AES 6H_050-Humber

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	1.75	24.82	3.50	10.22	5.25	1.46
0.25	1.46	2.00	24.82	3.75	5.84	5.50	1.46
0.50	1.46	2.25	67.16	4.00	5.84	5.75	1.46
0.75	1.46	2.50	67.16	4.25	2.92	6.00	1.46
1.00	1.46	2.75	18.98	4.50	2.92		
1.25	8.76	3.00	18.98	4.75	1.46		
1.50	8.76	3.25	10.22	5.00	1.46		

CALIB STANDHYD (0100) ID= 1 DT= 5.0 min	Area (ha)= 1.10 Total Imp(%)= 92.00 Dir. Conn.(%)= 92.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.01	0.09
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	85.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	8.76	3.250	18.98	4.83	1.46
0.167	0.00	1.750	8.76	3.333	10.22	4.92	1.46

0.250	0.00	1.833	24.82	3.417	10.22	5.00	1.46
0.333	1.46	1.917	24.82	3.500	10.22	5.08	1.46
0.417	1.46	2.000	24.82	3.583	10.22	5.17	1.46
0.500	1.46	2.083	24.82	3.667	10.22	5.25	1.46
0.583	1.46	2.167	24.82	3.750	10.22	5.33	1.46
0.667	1.46	2.250	24.82	3.833	5.84	5.42	1.46
0.750	1.46	2.333	67.16	3.917	5.84	5.50	1.46
0.833	1.46	2.417	67.16	4.000	5.84	5.58	1.46
0.917	1.46	2.500	67.16	4.083	5.84	5.67	1.46
1.000	1.46	2.583	67.16	4.167	5.84	5.75	1.46
1.083	1.46	2.667	67.16	4.250	5.84	5.83	1.46
1.167	1.46	2.750	67.16	4.333	2.92	5.92	1.46
1.250	1.46	2.833	18.98	4.417	2.92	6.00	1.46
1.333	8.76	2.917	18.98	4.500	2.92	6.08	1.46
1.417	8.76	3.000	18.98	4.583	2.92	6.17	1.46
1.500	8.76	3.083	18.98	4.667	2.92	6.25	1.46
1.583	8.76	3.167	18.98	4.750	2.92		

			TOTALS
Max.Eff.Inten.(mm/hr)=	67.16	44.89	
over (min)	5.00	10.00	
Storage Coeff. (min)=	2.72 (ii)	6.53 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.29	0.14	
PEAK FLOW (cms)=	0.19	0.01	0.199 (iii)
TIME TO PEAK (hrs)=	2.75	2.75	2.75
RUNOFF VOLUME (mm)=	72.00	37.36	69.23
TOTAL RAINFALL (mm)=	73.00	73.00	73.00
RUNOFF COEFFICIENT =	0.99	0.51	0.95

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	
STANDHYD (0105)	Area (ha)= 3.24
ID= 1 DT= 5.0 min	Total Imp(%)= 70.00 Dir. Conn.(%)= 70.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.27	0.97
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	147.00	40.00
Mannings n =	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	8.76	3.250	18.98	4.83	1.46
0.167	0.00	1.750	8.76	3.333	10.22	4.92	1.46
0.250	0.00	1.833	24.82	3.417	10.22	5.00	1.46
0.333	1.46	1.917	24.82	3.500	10.22	5.08	1.46
0.417	1.46	2.000	24.82	3.583	10.22	5.17	1.46
0.500	1.46	2.083	24.82	3.667	10.22	5.25	1.46
0.583	1.46	2.167	24.82	3.750	10.22	5.33	1.46
0.667	1.46	2.250	24.82	3.833	5.84	5.42	1.46
0.750	1.46	2.333	67.16	3.917	5.84	5.50	1.46
0.833	1.46	2.417	67.16	4.000	5.84	5.58	1.46
0.917	1.46	2.500	67.16	4.083	5.84	5.67	1.46
1.000	1.46	2.583	67.16	4.167	5.84	5.75	1.46
1.083	1.46	2.667	67.16	4.250	5.84	5.83	1.46
1.167	1.46	2.750	67.16	4.333	2.92	5.92	1.46
1.250	1.46	2.833	18.98	4.417	2.92	6.00	1.46
1.333	8.76	2.917	18.98	4.500	2.92	6.08	1.46
1.417	8.76	3.000	18.98	4.583	2.92	6.17	1.46
1.500	8.76	3.083	18.98	4.667	2.92	6.25	1.46
1.583	8.76	3.167	18.98	4.750	2.92		

Max.Eff.Inten.(mm/hr)=	67.16	43.44	
over (min)	5.00	20.00	
Storage Coeff. (min)=	3.77 (ii)	15.83 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.25	0.07	
			TOTALS
PEAK FLOW (cms)=	0.42	0.08	0.499 (iii)
TIME TO PEAK (hrs)=	2.75	2.92	2.75
RUNOFF VOLUME (mm)=	72.00	37.36	61.61
TOTAL RAINFALL (mm)=	73.00	73.00	73.00
RUNOFF COEFFICIENT =	0.99	0.51	0.84

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| ADD HYD (0006)|
| 1 + 2 = 3 |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0100):	1.10	0.199	2.75	69.23
+ ID2= 2 (0105):	3.24	0.499	2.75	61.61
ID = 3 (0006):	4.34	0.698	2.75	63.54

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0200)
ID= 1 DT= 5.0 min

Area (ha)= 2.08
Total Imp(%)= 84.00 Dir. Conn.(%)= 84.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.75	0.33
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	118.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	8.76	3.250	18.98	4.83	1.46
0.167	0.00	1.750	8.76	3.333	10.22	4.92	1.46
0.250	0.00	1.833	24.82	3.417	10.22	5.00	1.46
0.333	1.46	1.917	24.82	3.500	10.22	5.08	1.46
0.417	1.46	2.000	24.82	3.583	10.22	5.17	1.46
0.500	1.46	2.083	24.82	3.667	10.22	5.25	1.46
0.583	1.46	2.167	24.82	3.750	10.22	5.33	1.46
0.667	1.46	2.250	24.82	3.833	5.84	5.42	1.46
0.750	1.46	2.333	67.16	3.917	5.84	5.50	1.46
0.833	1.46	2.417	67.16	4.000	5.84	5.58	1.46
0.917	1.46	2.500	67.16	4.083	5.84	5.67	1.46
1.000	1.46	2.583	67.16	4.167	5.84	5.75	1.46
1.083	1.46	2.667	67.16	4.250	5.84	5.83	1.46
1.167	1.46	2.750	67.16	4.333	2.92	5.92	1.46
1.250	1.46	2.833	18.98	4.417	2.92	6.00	1.46
1.333	8.76	2.917	18.98	4.500	2.92	6.08	1.46
1.417	8.76	3.000	18.98	4.583	2.92	6.17	1.46
1.500	8.76	3.083	18.98	4.667	2.92	6.25	1.46
1.583	8.76	3.167	18.98	4.750	2.92		

Max.Eff.Inten.(mm/hr)=	67.16	43.44	
over (min)	5.00	20.00	

Storage Coeff. (min)=	3.31 (ii)	15.36 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.26	0.07	
			TOTALS
PEAK FLOW (cms)=	0.33	0.03	0.352 (iii)
TIME TO PEAK (hrs)=	2.75	2.92	2.75
RUNOFF VOLUME (mm)=	72.00	37.36	66.45
TOTAL RAINFALL (mm)=	73.00	73.00	73.00
RUNOFF COEFFICIENT =	0.99	0.51	0.91

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB		
STANDHYD (0300)	Area (ha)=	0.52
ID= 1 DT= 5.0 min	Total Imp(%)=	84.00 Dir. Conn.(%)= 84.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.44	0.08
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	59.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	8.76	3.250	18.98	4.83	1.46
0.167	0.00	1.750	8.76	3.333	10.22	4.92	1.46
0.250	0.00	1.833	24.82	3.417	10.22	5.00	1.46
0.333	1.46	1.917	24.82	3.500	10.22	5.08	1.46
0.417	1.46	2.000	24.82	3.583	10.22	5.17	1.46
0.500	1.46	2.083	24.82	3.667	10.22	5.25	1.46
0.583	1.46	2.167	24.82	3.750	10.22	5.33	1.46
0.667	1.46	2.250	24.82	3.833	5.84	5.42	1.46
0.750	1.46	2.333	67.16	3.917	5.84	5.50	1.46
0.833	1.46	2.417	67.16	4.000	5.84	5.58	1.46
0.917	1.46	2.500	67.16	4.083	5.84	5.67	1.46
1.000	1.46	2.583	67.16	4.167	5.84	5.75	1.46
1.083	1.46	2.667	67.16	4.250	5.84	5.83	1.46

```
                1.167    1.46 | 2.750   67.16 | 4.333    2.92 |  5.92    1.46
                1.250    1.46 | 2.833   18.98 | 4.417    2.92 |  6.00    1.46
                1.333    8.76 | 2.917   18.98 | 4.500    2.92 |  6.08    1.46
                1.417    8.76 | 3.000   18.98 | 4.583    2.92 |  6.17    1.46
                1.500    8.76 | 3.083   18.98 | 4.667    2.92 |  6.25    1.46
                1.583    8.76 | 3.167   18.98 | 4.750    2.92 |

     Max.Eff.Inten.(mm/hr)=      67.16        43.44
               over (min)         5.00        15.00
     Storage Coeff.  (min)=       2.18 (ii)   14.24 (ii)
     Unit Hyd. Tpeak (min)=       5.00        15.00
     Unit Hyd. peak  (cms)=       0.31         0.08
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.08         0.01          0.089 (iii)
     TIME TO PEAK    (hrs)=       2.75         2.83           2.75
     RUNOFF VOLUME    (mm)=      72.00        37.36          66.44
     TOTAL RAINFALL   (mm)=      73.00        73.00          73.00
     RUNOFF COEFFICIENT   =       0.99         0.51           0.91

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  82.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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

--------------------
| ADD HYD  (  0007)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0200):     2.08   0.352     2.75    66.45
      + ID2= 2 (  0300):     0.52   0.089     2.75    66.44
        ================================================
        ID = 3 (  0007):     2.60   0.441     2.75    66.45

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

       V    V   I    SSSSS  U   U    A    L              (v 6.2.2015)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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

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


***** D E T A I L E D O U T P U T *****

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

Output filename:
C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\1b39eea3-6c4f-4f88-8dc8-a0dc8825d5e5\s
Summary filename:
C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\1b39eea3-6c4f-4f88-8dc8-a0dc8825d5e5\s

DATE: 02-25-2025 TIME: 10:47:41

USER:

COMMENTS: _____

****
** SIMULATION : AES 6H_100-Humber **
****

READ STORM	Filename: C:\Users\caeh076182\AppData\Local\Temp\875adc2c-1c8d-486e-8a08-c640e73024e8\46578424
Ptotal= 80.31 mm	Comments: AES 6H_100-Humber

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	1.75	27.30	3.50	11.24	5.25	1.61
0.25	1.61	2.00	27.30	3.75	6.42	5.50	1.61
0.50	1.61	2.25	73.88	4.00	6.42	5.75	1.61
0.75	1.61	2.50	73.88	4.25	3.21	6.00	1.61
1.00	1.61	2.75	20.88	4.50	3.21		

1.25	9.64	3.00	20.88	4.75	1.61
1.50	9.64	3.25	11.24	5.00	1.61

CALIB	
STANDHYD (0100)	Area (ha)= 1.10
ID= 1 DT= 5.0 min	Total Imp(%)= 92.00 Dir. Conn.(%)= 92.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.01	0.09
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	85.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	9.64	3.250	20.88	4.83	1.61
0.167	0.00	1.750	9.64	3.333	11.24	4.92	1.61
0.250	0.00	1.833	27.30	3.417	11.24	5.00	1.61
0.333	1.61	1.917	27.30	3.500	11.24	5.08	1.61
0.417	1.61	2.000	27.30	3.583	11.24	5.17	1.61
0.500	1.61	2.083	27.30	3.667	11.24	5.25	1.61
0.583	1.61	2.167	27.30	3.750	11.24	5.33	1.61
0.667	1.61	2.250	27.30	3.833	6.42	5.42	1.61
0.750	1.61	2.333	73.88	3.917	6.42	5.50	1.61
0.833	1.61	2.417	73.88	4.000	6.42	5.58	1.61
0.917	1.61	2.500	73.88	4.083	6.42	5.67	1.61
1.000	1.61	2.583	73.88	4.167	6.42	5.75	1.61
1.083	1.61	2.667	73.88	4.250	6.42	5.83	1.61
1.167	1.61	2.750	73.88	4.333	3.21	5.92	1.61
1.250	1.61	2.833	20.88	4.417	3.21	6.00	1.61
1.333	9.64	2.917	20.88	4.500	3.21	6.08	1.61
1.417	9.64	3.000	20.88	4.583	3.21	6.17	1.61
1.500	9.64	3.083	20.88	4.667	3.21	6.25	1.61
1.583	9.64	3.167	20.88	4.750	3.21		

Max.Eff.Inten.(mm/hr)=		73.88	51.56	
	over (min)	5.00	10.00	
Storage Coeff.	(min)=	2.62 (ii)	6.29 (ii)	
Unit Hyd. Tpeak	(min)=	5.00	10.00	
Unit Hyd. peak	(cms)=	0.29	0.15	
				TOTALS
PEAK FLOW	(cms)=	0.21	0.01	0.219 (iii)

```
     TIME TO PEAK    (hrs)=       2.75         2.75          2.75
     RUNOFF VOLUME    (mm)=      79.31        43.27         76.42
     TOTAL RAINFALL   (mm)=      80.31        80.31         80.31
     RUNOFF COEFFICIENT   =       0.99         0.54          0.95

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  82.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| STANDHYD (  0105)|   Area    (ha)=   3.24
|ID= 1 DT= 5.0 min |   Total Imp(%)=  70.00   Dir. Conn.(%)=  70.00
--------------------
                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       2.27         0.97
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=     147.00        40.00
     Mannings n           =      0.013        0.350

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


                        ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    0.00 | 1.667    9.64 | 3.250   20.88 |  4.83    1.61
               0.167    0.00 | 1.750    9.64 | 3.333   11.24 |  4.92    1.61
               0.250    0.00 | 1.833   27.30 | 3.417   11.24 |  5.00    1.61
               0.333    1.61 | 1.917   27.30 | 3.500   11.24 |  5.08    1.61
               0.417    1.61 | 2.000   27.30 | 3.583   11.24 |  5.17    1.61
               0.500    1.61 | 2.083   27.30 | 3.667   11.24 |  5.25    1.61
               0.583    1.61 | 2.167   27.30 | 3.750   11.24 |  5.33    1.61
               0.667    1.61 | 2.250   27.30 | 3.833    6.42 |  5.42    1.61
               0.750    1.61 | 2.333   73.88 | 3.917    6.42 |  5.50    1.61
               0.833    1.61 | 2.417   73.88 | 4.000    6.42 |  5.58    1.61
               0.917    1.61 | 2.500   73.88 | 4.083    6.42 |  5.67    1.61
               1.000    1.61 | 2.583   73.88 | 4.167    6.42 |  5.75    1.61
               1.083    1.61 | 2.667   73.88 | 4.250    6.42 |  5.83    1.61
               1.167    1.61 | 2.750   73.88 | 4.333    3.21 |  5.92    1.61
               1.250    1.61 | 2.833   20.88 | 4.417    3.21 |  6.00    1.61
               1.333    9.64 | 2.917   20.88 | 4.500    3.21 |  6.08    1.61
               1.417    9.64 | 3.000   20.88 | 4.583    3.21 |  6.17    1.61
               1.500    9.64 | 3.083   20.88 | 4.667    3.21 |  6.25    1.61
```

```
                1.583    9.64 | 3.167   20.88 | 4.750    3.21 |

     Max.Eff.Inten.(mm/hr)=      73.88        50.02
               over (min)         5.00        20.00
     Storage Coeff.  (min)=       3.63 (ii)   15.03 (ii)
     Unit Hyd. Tpeak (min)=       5.00        20.00
     Unit Hyd. peak  (cms)=       0.25         0.07
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.47         0.10          0.556 (iii)
     TIME TO PEAK    (hrs)=       2.75         2.92           2.75
     RUNOFF VOLUME    (mm)=      79.31        43.27          68.50
     TOTAL RAINFALL   (mm)=      80.31        80.31          80.31
     RUNOFF COEFFICIENT   =       0.99         0.54           0.85

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  82.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD  (  0006)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0100):     1.10   0.219     2.75    76.42
      + ID2= 2 (  0105):     3.24   0.556     2.75    68.50
        ================================================
        ID = 3 (  0006):     4.34   0.775     2.75    70.51

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0200)|   Area    (ha)=   2.08
|ID= 1 DT= 5.0 min |   Total Imp(%)=  84.00   Dir. Conn.(%)=  84.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.75         0.33
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=     118.00        40.00
     Mannings n           =      0.013        0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	9.64	3.250	20.88	4.83	1.61
0.167	0.00	1.750	9.64	3.333	11.24	4.92	1.61
0.250	0.00	1.833	27.30	3.417	11.24	5.00	1.61
0.333	1.61	1.917	27.30	3.500	11.24	5.08	1.61
0.417	1.61	2.000	27.30	3.583	11.24	5.17	1.61
0.500	1.61	2.083	27.30	3.667	11.24	5.25	1.61
0.583	1.61	2.167	27.30	3.750	11.24	5.33	1.61
0.667	1.61	2.250	27.30	3.833	6.42	5.42	1.61
0.750	1.61	2.333	73.88	3.917	6.42	5.50	1.61
0.833	1.61	2.417	73.88	4.000	6.42	5.58	1.61
0.917	1.61	2.500	73.88	4.083	6.42	5.67	1.61
1.000	1.61	2.583	73.88	4.167	6.42	5.75	1.61
1.083	1.61	2.667	73.88	4.250	6.42	5.83	1.61
1.167	1.61	2.750	73.88	4.333	3.21	5.92	1.61
1.250	1.61	2.833	20.88	4.417	3.21	6.00	1.61
1.333	9.64	2.917	20.88	4.500	3.21	6.08	1.61
1.417	9.64	3.000	20.88	4.583	3.21	6.17	1.61
1.500	9.64	3.083	20.88	4.667	3.21	6.25	1.61
1.583	9.64	3.167	20.88	4.750	3.21		

			TOTALS
Max.Eff.Inten.(mm/hr)=	73.88	50.02	
over (min)	5.00	15.00	
Storage Coeff. (min)=	3.18 (ii)	14.58 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.27	0.08	
PEAK FLOW (cms)=	0.36	0.04	0.393 (iii)
TIME TO PEAK (hrs)=	2.75	2.83	2.75
RUNOFF VOLUME (mm)=	79.31	43.27	73.54
TOTAL RAINFALL (mm)=	80.31	80.31	80.31
RUNOFF COEFFICIENT =	0.99	0.54	0.92

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB STANDHYD (0300) ID= 1 DT= 5.0 min	Area (ha)= 0.52 Total Imp(%)= 84.00 Dir. Conn.(%)= 84.00

	IMPERVIOUS	PERVIOUS (i)

Surface Area	(ha)=	0.44	0.08
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	59.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	9.64	3.250	20.88	4.83	1.61
0.167	0.00	1.750	9.64	3.333	11.24	4.92	1.61
0.250	0.00	1.833	27.30	3.417	11.24	5.00	1.61
0.333	1.61	1.917	27.30	3.500	11.24	5.08	1.61
0.417	1.61	2.000	27.30	3.583	11.24	5.17	1.61
0.500	1.61	2.083	27.30	3.667	11.24	5.25	1.61
0.583	1.61	2.167	27.30	3.750	11.24	5.33	1.61
0.667	1.61	2.250	27.30	3.833	6.42	5.42	1.61
0.750	1.61	2.333	73.88	3.917	6.42	5.50	1.61
0.833	1.61	2.417	73.88	4.000	6.42	5.58	1.61
0.917	1.61	2.500	73.88	4.083	6.42	5.67	1.61
1.000	1.61	2.583	73.88	4.167	6.42	5.75	1.61
1.083	1.61	2.667	73.88	4.250	6.42	5.83	1.61
1.167	1.61	2.750	73.88	4.333	3.21	5.92	1.61
1.250	1.61	2.833	20.88	4.417	3.21	6.00	1.61
1.333	9.64	2.917	20.88	4.500	3.21	6.08	1.61
1.417	9.64	3.000	20.88	4.583	3.21	6.17	1.61
1.500	9.64	3.083	20.88	4.667	3.21	6.25	1.61
1.583	9.64	3.167	20.88	4.750	3.21		

Max.Eff.Inten.(mm/hr)=		73.88	50.02	
over (min)		5.00	15.00	
Storage Coeff. (min)=		2.10 (ii)	13.50 (ii)	
Unit Hyd. Tpeak (min)=		5.00	15.00	
Unit Hyd. peak (cms)=		0.31	0.08	
				TOTALS
PEAK FLOW	(cms)=	0.09	0.01	0.098 (iii)
TIME TO PEAK	(hrs)=	2.75	2.83	2.75
RUNOFF VOLUME	(mm)=	79.31	43.27	73.53
TOTAL RAINFALL	(mm)=	80.31	80.31	80.31
RUNOFF COEFFICIENT	=	0.99	0.54	0.92

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)

(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.

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

ADD HYD (0007)					
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0200):	2.08	0.393	2.75	73.54
+ ID2= 2 (0300):	0.52	0.098	2.75	73.53
ID = 3 (0007):	2.60	0.491	2.75	73.54

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

Appendix C: Proposed Conditions Hydrology

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       V    V   I    SSSSS  U   U    A    L             (v 6.2.2015)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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


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DATE: 02-25-2025                          TIME: 10:57:44

USER:



COMMENTS: _____________________________________________________________


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  ********************************************
  ** SIMULATION : AES 6H_002-Humber          **
  ********************************************


--------------------
|    READ STORM    |    Filename: C:\Users\caeh076182\AppD
|                  |              ata\Local\Temp\
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| | 50c23a8d-ae9e-4916-9db3-f0f6d0590af0\c9df40cc
| Ptotal= 36.00 mm | Comments: AES 6H_002-Humber

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	1.75	12.24	3.50	5.04	5.25	0.72
0.25	0.72	2.00	12.24	3.75	2.88	5.50	0.72
0.50	0.72	2.25	33.12	4.00	2.88	5.75	0.72
0.75	0.72	2.50	33.12	4.25	1.44	6.00	0.72
1.00	0.72	2.75	9.36	4.50	1.44		
1.25	4.32	3.00	9.36	4.75	0.72		
1.50	4.32	3.25	5.04	5.00	0.72		

| CALIB |
| STANDHYD (0100) | Area (ha)= 1.10
|ID= 1 DT= 5.0 min | Total Imp(%)= 92.00 Dir. Conn.(%)= 92.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.01	0.09
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	85.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	4.32	3.250	9.36	4.83	0.72
0.167	0.00	1.750	4.32	3.333	5.04	4.92	0.72
0.250	0.00	1.833	12.24	3.417	5.04	5.00	0.72
0.333	0.72	1.917	12.24	3.500	5.04	5.08	0.72
0.417	0.72	2.000	12.24	3.583	5.04	5.17	0.72
0.500	0.72	2.083	12.24	3.667	5.04	5.25	0.72
0.583	0.72	2.167	12.24	3.750	5.04	5.33	0.72
0.667	0.72	2.250	12.24	3.833	2.88	5.42	0.72
0.750	0.72	2.333	33.12	3.917	2.88	5.50	0.72
0.833	0.72	2.417	33.12	4.000	2.88	5.58	0.72
0.917	0.72	2.500	33.12	4.083	2.88	5.67	0.72
1.000	0.72	2.583	33.12	4.167	2.88	5.75	0.72
1.083	0.72	2.667	33.12	4.250	2.88	5.83	0.72
1.167	0.72	2.750	33.12	4.333	1.44	5.92	0.72
1.250	0.72	2.833	9.36	4.417	1.44	6.00	0.72
1.333	4.32	2.917	9.36	4.500	1.44	6.08	0.72
1.417	4.32	3.000	9.36	4.583	1.44	6.17	0.72

1.500	4.32	3.083	9.36	4.667	1.44	6.25	0.72
1.583	4.32	3.167	9.36	4.750	1.44		

Max.Eff.Inten.(mm/hr)=	33.12	12.45	
over (min)	5.00	25.00	
Storage Coeff. (min)=	3.61 (ii)	23.48 (ii)	
Unit Hyd. Tpeak (min)=	5.00	25.00	
Unit Hyd. peak (cms)=	0.25	0.05	
			TOTALS
PEAK FLOW (cms)=	0.09	0.00	0.094 (iii)
TIME TO PEAK (hrs)=	2.75	3.00	2.75
RUNOFF VOLUME (mm)=	35.00	11.08	33.08
TOTAL RAINFALL (mm)=	36.00	36.00	36.00
RUNOFF COEFFICIENT =	0.97	0.31	0.92

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	
STANDHYD (0105)	Area (ha)= 3.24
ID= 1 DT= 5.0 min	Total Imp(%)= 91.00 Dir. Conn.(%)= 91.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.95	0.29
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	147.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	4.32	3.250	9.36	4.83	0.72
0.167	0.00	1.750	4.32	3.333	5.04	4.92	0.72
0.250	0.00	1.833	12.24	3.417	5.04	5.00	0.72
0.333	0.72	1.917	12.24	3.500	5.04	5.08	0.72
0.417	0.72	2.000	12.24	3.583	5.04	5.17	0.72
0.500	0.72	2.083	12.24	3.667	5.04	5.25	0.72
0.583	0.72	2.167	12.24	3.750	5.04	5.33	0.72
0.667	0.72	2.250	12.24	3.833	2.88	5.42	0.72

0.750	0.72	2.333	33.12	3.917	2.88	5.50	0.72
0.833	0.72	2.417	33.12	4.000	2.88	5.58	0.72
0.917	0.72	2.500	33.12	4.083	2.88	5.67	0.72
1.000	0.72	2.583	33.12	4.167	2.88	5.75	0.72
1.083	0.72	2.667	33.12	4.250	2.88	5.83	0.72
1.167	0.72	2.750	33.12	4.333	1.44	5.92	0.72
1.250	0.72	2.833	9.36	4.417	1.44	6.00	0.72
1.333	4.32	2.917	9.36	4.500	1.44	6.08	0.72
1.417	4.32	3.000	9.36	4.583	1.44	6.17	0.72
1.500	4.32	3.083	9.36	4.667	1.44	6.25	0.72
1.583	4.32	3.167	9.36	4.750	1.44		

Max.Eff.Inten.(mm/hr)=	33.12	12.45	
over (min)	5.00	25.00	
Storage Coeff. (min)=	5.01 (ii)	24.88 (ii)	
Unit Hyd. Tpeak (min)=	5.00	25.00	
Unit Hyd. peak (cms)=	0.21	0.05	
			TOTALS
PEAK FLOW (cms)=	0.27	0.01	0.275 (iii)
TIME TO PEAK (hrs)=	2.75	3.00	2.75
RUNOFF VOLUME (mm)=	35.00	11.08	32.84
TOTAL RAINFALL (mm)=	36.00	36.00	36.00
RUNOFF COEFFICIENT =	0.97	0.31	0.91

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0001)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0100):		1.10	0.094	2.75	33.08
+ ID2= 2 (0105):		3.24	0.275	2.75	32.84
ID = 3 (0001):		4.34	0.369	2.75	32.90

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
STANDHYD (0200)	Area (ha)= 2.08				
ID= 1 DT= 5.0 min	Total Imp(%)= 92.00		Dir. Conn.(%)= 92.00		
		IMPERVIOUS	PERVIOUS (i)		

Surface Area	(ha)=	1.91	0.17
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	118.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	4.32	3.250	9.36	4.83	0.72
0.167	0.00	1.750	4.32	3.333	5.04	4.92	0.72
0.250	0.00	1.833	12.24	3.417	5.04	5.00	0.72
0.333	0.72	1.917	12.24	3.500	5.04	5.08	0.72
0.417	0.72	2.000	12.24	3.583	5.04	5.17	0.72
0.500	0.72	2.083	12.24	3.667	5.04	5.25	0.72
0.583	0.72	2.167	12.24	3.750	5.04	5.33	0.72
0.667	0.72	2.250	12.24	3.833	2.88	5.42	0.72
0.750	0.72	2.333	33.12	3.917	2.88	5.50	0.72
0.833	0.72	2.417	33.12	4.000	2.88	5.58	0.72
0.917	0.72	2.500	33.12	4.083	2.88	5.67	0.72
1.000	0.72	2.583	33.12	4.167	2.88	5.75	0.72
1.083	0.72	2.667	33.12	4.250	2.88	5.83	0.72
1.167	0.72	2.750	33.12	4.333	1.44	5.92	0.72
1.250	0.72	2.833	9.36	4.417	1.44	6.00	0.72
1.333	4.32	2.917	9.36	4.500	1.44	6.08	0.72
1.417	4.32	3.000	9.36	4.583	1.44	6.17	0.72
1.500	4.32	3.083	9.36	4.667	1.44	6.25	0.72
1.583	4.32	3.167	9.36	4.750	1.44		

Max.Eff.Inten.(mm/hr)=	33.12	12.45		
over (min)	5.00	25.00		
Storage Coeff. (min)=	4.39 (ii)	24.26 (ii)		
Unit Hyd. Tpeak (min)=	5.00	25.00		
Unit Hyd. peak (cms)=	0.23	0.05		
			TOTALS	
PEAK FLOW (cms)=	0.18	0.00	0.178 (iii)	
TIME TO PEAK (hrs)=	2.75	3.00	2.75	
RUNOFF VOLUME (mm)=	35.00	11.08	33.08	
TOTAL RAINFALL (mm)=	36.00	36.00	36.00	
RUNOFF COEFFICIENT =	0.97	0.31	0.92	

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)

(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.

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

CALIB STANDHYD (0300) ID= 1 DT= 5.0 min	Area (ha)= 0.52 Total Imp(%)= 98.00 Dir. Conn.(%)= 98.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.51	0.01
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	59.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	4.32	3.250	9.36	4.83	0.72
0.167	0.00	1.750	4.32	3.333	5.04	4.92	0.72
0.250	0.00	1.833	12.24	3.417	5.04	5.00	0.72
0.333	0.72	1.917	12.24	3.500	5.04	5.08	0.72
0.417	0.72	2.000	12.24	3.583	5.04	5.17	0.72
0.500	0.72	2.083	12.24	3.667	5.04	5.25	0.72
0.583	0.72	2.167	12.24	3.750	5.04	5.33	0.72
0.667	0.72	2.250	12.24	3.833	2.88	5.42	0.72
0.750	0.72	2.333	33.12	3.917	2.88	5.50	0.72
0.833	0.72	2.417	33.12	4.000	2.88	5.58	0.72
0.917	0.72	2.500	33.12	4.083	2.88	5.67	0.72
1.000	0.72	2.583	33.12	4.167	2.88	5.75	0.72
1.083	0.72	2.667	33.12	4.250	2.88	5.83	0.72
1.167	0.72	2.750	33.12	4.333	1.44	5.92	0.72
1.250	0.72	2.833	9.36	4.417	1.44	6.00	0.72
1.333	4.32	2.917	9.36	4.500	1.44	6.08	0.72
1.417	4.32	3.000	9.36	4.583	1.44	6.17	0.72
1.500	4.32	3.083	9.36	4.667	1.44	6.25	0.72
1.583	4.32	3.167	9.36	4.750	1.44		

Max.Eff.Inten.(mm/hr)=		33.12	14.06	
over (min)		5.00	10.00	
Storage Coeff. (min)=		2.90 (ii)	5.73 (ii)	
Unit Hyd. Tpeak (min)=		5.00	10.00	
Unit Hyd. peak (cms)=		0.28	0.15	
				TOTALS
PEAK FLOW	(cms)=	0.05	0.00	0.047 (iii)
TIME TO PEAK	(hrs)=	2.75	2.75	2.75
RUNOFF VOLUME	(mm)=	35.00	11.08	34.52

```
     TOTAL RAINFALL   (mm)=      36.00        36.00          36.00
     RUNOFF COEFFICIENT   =       0.97         0.31           0.96

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  82.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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

--------------------
| ADD HYD  (  0002)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0200):     2.08   0.178     2.75    33.08
      + ID2= 2 (  0300):     0.52   0.047     2.75    34.52
        ====================================================
        ID = 3 (  0002):     2.60   0.226     2.75    33.37

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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================================================================================
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       V    V   I    SSSSS  U   U    A    L              (v 6.2.2015)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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


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DATE: 02-25-2025 TIME: 10:57:45

USER:

COMMENTS: _____

****
** SIMULATION : AES 6H_005-Humber **
****

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Ptotal= 47.81 mm	Comments: AES 6H_005-Humber

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	1.75	16.25	3.50	6.69	5.25	0.96
0.25	0.96	2.00	16.25	3.75	3.82	5.50	0.96
0.50	0.96	2.25	43.98	4.00	3.82	5.75	0.96
0.75	0.96	2.50	43.98	4.25	1.91	6.00	0.96
1.00	0.96	2.75	12.43	4.50	1.91		
1.25	5.74	3.00	12.43	4.75	0.96		
1.50	5.74	3.25	6.69	5.00	0.96		

CALIB STANDHYD (0100)	Area (ha)= 1.10
ID= 1 DT= 5.0 min	Total Imp(%)= 92.00 Dir. Conn.(%)= 92.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.01	0.09
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	85.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	5.74	3.250	12.43	4.83	0.96
0.167	0.00	1.750	5.74	3.333	6.69	4.92	0.96
0.250	0.00	1.833	16.25	3.417	6.69	5.00	0.96
0.333	0.96	1.917	16.25	3.500	6.69	5.08	0.96
0.417	0.96	2.000	16.25	3.583	6.69	5.17	0.96
0.500	0.96	2.083	16.25	3.667	6.69	5.25	0.96
0.583	0.96	2.167	16.25	3.750	6.69	5.33	0.96
0.667	0.96	2.250	16.25	3.833	3.82	5.42	0.96
0.750	0.96	2.333	43.98	3.917	3.82	5.50	0.96
0.833	0.96	2.417	43.98	4.000	3.82	5.58	0.96
0.917	0.96	2.500	43.98	4.083	3.82	5.67	0.96
1.000	0.96	2.583	43.98	4.167	3.82	5.75	0.96
1.083	0.96	2.667	43.98	4.250	3.82	5.83	0.96
1.167	0.96	2.750	43.98	4.333	1.91	5.92	0.96
1.250	0.96	2.833	12.43	4.417	1.91	6.00	0.96
1.333	5.74	2.917	12.43	4.500	1.91	6.08	0.96
1.417	5.74	3.000	12.43	4.583	1.91	6.17	0.96
1.500	5.74	3.083	12.43	4.667	1.91	6.25	0.96
1.583	5.74	3.167	12.43	4.750	1.91		

Max.Eff.Inten.(mm/hr)=	43.98	23.12		
over (min)	5.00	10.00		
Storage Coeff. (min)=	3.22 (ii)	7.73 (ii)		
Unit Hyd. Tpeak (min)=	5.00	10.00		
Unit Hyd. peak (cms)=	0.27	0.13		
			TOTALS	
PEAK FLOW (cms)=	0.12	0.00	0.129 (iii)	
TIME TO PEAK (hrs)=	2.75	2.75	2.75	
RUNOFF VOLUME (mm)=	46.81	18.59	44.55	
TOTAL RAINFALL (mm)=	47.81	47.81	47.81	
RUNOFF COEFFICIENT =	0.98	0.39	0.93	

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB

| STANDHYD (0105)| Area (ha)= 3.24
|ID= 1 DT= 5.0 min | Total Imp(%)= 91.00 Dir. Conn.(%)= 91.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.95	0.29
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	147.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	5.74	3.250	12.43	4.83	0.96
0.167	0.00	1.750	5.74	3.333	6.69	4.92	0.96
0.250	0.00	1.833	16.25	3.417	6.69	5.00	0.96
0.333	0.96	1.917	16.25	3.500	6.69	5.08	0.96
0.417	0.96	2.000	16.25	3.583	6.69	5.17	0.96
0.500	0.96	2.083	16.25	3.667	6.69	5.25	0.96
0.583	0.96	2.167	16.25	3.750	6.69	5.33	0.96
0.667	0.96	2.250	16.25	3.833	3.82	5.42	0.96
0.750	0.96	2.333	43.98	3.917	3.82	5.50	0.96
0.833	0.96	2.417	43.98	4.000	3.82	5.58	0.96
0.917	0.96	2.500	43.98	4.083	3.82	5.67	0.96
1.000	0.96	2.583	43.98	4.167	3.82	5.75	0.96
1.083	0.96	2.667	43.98	4.250	3.82	5.83	0.96
1.167	0.96	2.750	43.98	4.333	1.91	5.92	0.96
1.250	0.96	2.833	12.43	4.417	1.91	6.00	0.96
1.333	5.74	2.917	12.43	4.500	1.91	6.08	0.96
1.417	5.74	3.000	12.43	4.583	1.91	6.17	0.96
1.500	5.74	3.083	12.43	4.667	1.91	6.25	0.96
1.583	5.74	3.167	12.43	4.750	1.91		

Max.Eff.Inten.(mm/hr)=		43.98	23.12	
over (min)		5.00	10.00	
Storage Coeff. (min)=		4.47 (ii)	9.23 (ii)	
Unit Hyd. Tpeak (min)=		5.00	10.00	
Unit Hyd. peak (cms)=		0.23	0.12	
				TOTALS
PEAK FLOW	(cms)=	0.36	0.02	0.376 (iii)
TIME TO PEAK	(hrs)=	2.75	2.75	2.75
RUNOFF VOLUME	(mm)=	46.81	18.59	44.27
TOTAL RAINFALL	(mm)=	47.81	47.81	47.81
RUNOFF COEFFICIENT	=	0.98	0.39	0.93

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

```
       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  82.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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

--------------------
| ADD HYD  (  0001)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0100):     1.10   0.129     2.75    44.55
      + ID2= 2 (  0105):     3.24   0.376     2.75    44.27
        ================================================
        ID = 3 (  0001):     4.34   0.504     2.75    44.34

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0200)|   Area    (ha)=   2.08
|ID= 1 DT= 5.0 min |   Total Imp(%)=  92.00   Dir. Conn.(%)=  92.00
--------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.91         0.17
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=     118.00        40.00
     Mannings n           =      0.013        0.350

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


                          ---- TRANSFORMED HYETOGRAPH ----
               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
              0.083    0.00 | 1.667    5.74 | 3.250   12.43 |  4.83    0.96
              0.167    0.00 | 1.750    5.74 | 3.333    6.69 |  4.92    0.96
              0.250    0.00 | 1.833   16.25 | 3.417    6.69 |  5.00    0.96
              0.333    0.96 | 1.917   16.25 | 3.500    6.69 |  5.08    0.96
              0.417    0.96 | 2.000   16.25 | 3.583    6.69 |  5.17    0.96
              0.500    0.96 | 2.083   16.25 | 3.667    6.69 |  5.25    0.96
              0.583    0.96 | 2.167   16.25 | 3.750    6.69 |  5.33    0.96
              0.667    0.96 | 2.250   16.25 | 3.833    3.82 |  5.42    0.96
              0.750    0.96 | 2.333   43.98 | 3.917    3.82 |  5.50    0.96
              0.833    0.96 | 2.417   43.98 | 4.000    3.82 |  5.58    0.96
              0.917    0.96 | 2.500   43.98 | 4.083    3.82 |  5.67    0.96
              1.000    0.96 | 2.583   43.98 | 4.167    3.82 |  5.75    0.96
              1.083    0.96 | 2.667   43.98 | 4.250    3.82 |  5.83    0.96
```

1.167	0.96	2.750	43.98	4.333	1.91	5.92	0.96
1.250	0.96	2.833	12.43	4.417	1.91	6.00	0.96
1.333	5.74	2.917	12.43	4.500	1.91	6.08	0.96
1.417	5.74	3.000	12.43	4.583	1.91	6.17	0.96
1.500	5.74	3.083	12.43	4.667	1.91	6.25	0.96
1.583	5.74	3.167	12.43	4.750	1.91		

Max.Eff.Inten.(mm/hr)=	43.98	23.12	
over (min)	5.00	10.00	
Storage Coeff. (min)=	3.92 (ii)	8.44 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.24	0.12	
			TOTALS
PEAK FLOW (cms)=	0.23	0.01	0.243 (iii)
TIME TO PEAK (hrs)=	2.75	2.75	2.75
RUNOFF VOLUME (mm)=	46.81	18.59	44.55
TOTAL RAINFALL (mm)=	47.81	47.81	47.81
RUNOFF COEFFICIENT =	0.98	0.39	0.93

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB STANDHYD (0300) ID= 1 DT= 5.0 min	Area (ha)= 0.52 Total Imp(%)= 98.00 Dir. Conn.(%)= 98.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.51	0.01
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	59.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	5.74	3.250	12.43	4.83	0.96
0.167	0.00	1.750	5.74	3.333	6.69	4.92	0.96
0.250	0.00	1.833	16.25	3.417	6.69	5.00	0.96
0.333	0.96	1.917	16.25	3.500	6.69	5.08	0.96

0.417	0.96	2.000	16.25	3.583	6.69	5.17	0.96
0.500	0.96	2.083	16.25	3.667	6.69	5.25	0.96
0.583	0.96	2.167	16.25	3.750	6.69	5.33	0.96
0.667	0.96	2.250	16.25	3.833	3.82	5.42	0.96
0.750	0.96	2.333	43.98	3.917	3.82	5.50	0.96
0.833	0.96	2.417	43.98	4.000	3.82	5.58	0.96
0.917	0.96	2.500	43.98	4.083	3.82	5.67	0.96
1.000	0.96	2.583	43.98	4.167	3.82	5.75	0.96
1.083	0.96	2.667	43.98	4.250	3.82	5.83	0.96
1.167	0.96	2.750	43.98	4.333	1.91	5.92	0.96
1.250	0.96	2.833	12.43	4.417	1.91	6.00	0.96
1.333	5.74	2.917	12.43	4.500	1.91	6.08	0.96
1.417	5.74	3.000	12.43	4.583	1.91	6.17	0.96
1.500	5.74	3.083	12.43	4.667	1.91	6.25	0.96
1.583	5.74	3.167	12.43	4.750	1.91		

Max.Eff.Inten.(mm/hr)=	43.98	23.12		
over (min)	5.00	10.00		
Storage Coeff. (min)=	2.59 (ii)	5.11 (ii)		
Unit Hyd. Tpeak (min)=	5.00	10.00		
Unit Hyd. peak (cms)=	0.29	0.16		
			TOTALS	
PEAK FLOW (cms)=	0.06	0.00	0.063 (iii)	
TIME TO PEAK (hrs)=	2.75	2.75	2.75	
RUNOFF VOLUME (mm)=	46.81	18.59	46.24	
TOTAL RAINFALL (mm)=	47.81	47.81	47.81	
RUNOFF COEFFICIENT =	0.98	0.39	0.97	

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0002) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0200):	2.08	0.243	2.75	44.55
+ ID2= 2 (0300):	0.52	0.063	2.75	46.24
ID = 3 (0002):	2.60	0.306	2.75	44.89

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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       V    V   I    SSSSS  U   U    A    L              (v 6.2.2015)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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


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

  Output  filename:
C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\e
c982f82-9db9-4b38-adf3-7646f3249cb8\s
  Summary filename:
C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\e
c982f82-9db9-4b38-adf3-7646f3249cb8\s


DATE: 02-25-2025                          TIME: 10:57:45

USER:



COMMENTS: _____________________________________________________________


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  ********************************************
  ** SIMULATION : AES 6H_010-Humber          **
  ********************************************


--------------------
|    READ STORM    |    Filename: C:\Users\caeh076182\AppD
|                  |              ata\Local\Temp\
|                  |              50c23a8d-ae9e-4916-9db3-f0f6d0590af0\25dccaf4
```

| Ptotal= 55.69 mm | Comments: AES 6H_010-Humber

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	1.75	18.94	3.50	7.80	5.25	1.11
0.25	1.11	2.00	18.94	3.75	4.46	5.50	1.11
0.50	1.11	2.25	51.24	4.00	4.46	5.75	1.11
0.75	1.11	2.50	51.24	4.25	2.23	6.00	1.11
1.00	1.11	2.75	14.48	4.50	2.23		
1.25	6.68	3.00	14.48	4.75	1.11		
1.50	6.68	3.25	7.80	5.00	1.11		

| CALIB |
| STANDHYD (0100) | Area (ha)= 1.10
|ID= 1 DT= 5.0 min | Total Imp(%)= 92.00 Dir. Conn.(%)= 92.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.01	0.09
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	85.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	6.68	3.250	14.48	4.83	1.11
0.167	0.00	1.750	6.68	3.333	7.80	4.92	1.11
0.250	0.00	1.833	18.94	3.417	7.80	5.00	1.11
0.333	1.11	1.917	18.94	3.500	7.80	5.08	1.11
0.417	1.11	2.000	18.94	3.583	7.80	5.17	1.11
0.500	1.11	2.083	18.94	3.667	7.80	5.25	1.11
0.583	1.11	2.167	18.94	3.750	7.80	5.33	1.11
0.667	1.11	2.250	18.94	3.833	4.46	5.42	1.11
0.750	1.11	2.333	51.24	3.917	4.46	5.50	1.11
0.833	1.11	2.417	51.24	4.000	4.46	5.58	1.11
0.917	1.11	2.500	51.24	4.083	4.46	5.67	1.11
1.000	1.11	2.583	51.24	4.167	4.46	5.75	1.11
1.083	1.11	2.667	51.24	4.250	4.46	5.83	1.11
1.167	1.11	2.750	51.24	4.333	2.23	5.92	1.11
1.250	1.11	2.833	14.48	4.417	2.23	6.00	1.11
1.333	6.68	2.917	14.48	4.500	2.23	6.08	1.11
1.417	6.68	3.000	14.48	4.583	2.23	6.17	1.11
1.500	6.68	3.083	14.48	4.667	2.23	6.25	1.11

```
                1.583    6.68 | 3.167   14.48 | 4.750    2.23 |

     Max.Eff.Inten.(mm/hr)=      51.24        29.66
               over (min)         5.00        10.00
     Storage Coeff.  (min)=       3.03 (ii)    7.28 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.27         0.14
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.14         0.01          0.151 (iii)
     TIME TO PEAK    (hrs)=       2.75         2.75           2.75
     RUNOFF VOLUME    (mm)=      54.69        24.14          52.24
     TOTAL RAINFALL   (mm)=      55.69        55.69          55.69
     RUNOFF COEFFICIENT   =       0.98         0.43           0.94

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  82.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0105)|   Area    (ha)=   3.24
|ID= 1 DT= 5.0 min |   Total Imp(%)=  91.00   Dir. Conn.(%)=  91.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       2.95          0.29
     Dep. Storage     (mm)=       1.00          5.00
     Average Slope     (%)=       1.00          2.00
     Length            (m)=     147.00         40.00
     Mannings n           =      0.013         0.350

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


                            ---- TRANSFORMED HYETOGRAPH ----
               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
              0.083    0.00 | 1.667    6.68 | 3.250   14.48 |  4.83    1.11
              0.167    0.00 | 1.750    6.68 | 3.333    7.80 |  4.92    1.11
              0.250    0.00 | 1.833   18.94 | 3.417    7.80 |  5.00    1.11
              0.333    1.11 | 1.917   18.94 | 3.500    7.80 |  5.08    1.11
              0.417    1.11 | 2.000   18.94 | 3.583    7.80 |  5.17    1.11
              0.500    1.11 | 2.083   18.94 | 3.667    7.80 |  5.25    1.11
              0.583    1.11 | 2.167   18.94 | 3.750    7.80 |  5.33    1.11
              0.667    1.11 | 2.250   18.94 | 3.833    4.46 |  5.42    1.11
              0.750    1.11 | 2.333   51.24 | 3.917    4.46 |  5.50    1.11
```

```
                0.833    1.11 | 2.417   51.24 | 4.000    4.46 |  5.58    1.11
                0.917    1.11 | 2.500   51.24 | 4.083    4.46 |  5.67    1.11
                1.000    1.11 | 2.583   51.24 | 4.167    4.46 |  5.75    1.11
                1.083    1.11 | 2.667   51.24 | 4.250    4.46 |  5.83    1.11
                1.167    1.11 | 2.750   51.24 | 4.333    2.23 |  5.92    1.11
                1.250    1.11 | 2.833   14.48 | 4.417    2.23 |  6.00    1.11
                1.333    6.68 | 2.917   14.48 | 4.500    2.23 |  6.08    1.11
                1.417    6.68 | 3.000   14.48 | 4.583    2.23 |  6.17    1.11
                1.500    6.68 | 3.083   14.48 | 4.667    2.23 |  6.25    1.11
                1.583    6.68 | 3.167   14.48 | 4.750    2.23 |

     Max.Eff.Inten.(mm/hr)=      51.24        29.66
                over (min)        5.00        10.00
     Storage Coeff.  (min)=       4.21 (ii)    8.68 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.24         0.12
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.42         0.02          0.440 (iii)
     TIME TO PEAK    (hrs)=       2.75         2.75           2.75
     RUNOFF VOLUME    (mm)=      54.69        24.14          51.94
     TOTAL RAINFALL   (mm)=      55.69        55.69          55.69
     RUNOFF COEFFICIENT   =       0.98         0.43           0.93

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  82.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD  (  0001)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0100):     1.10   0.151     2.75    52.24
      + ID2= 2 (  0105):     3.24   0.440     2.75    51.94
        ================================================
        ID = 3 (  0001):     4.34   0.591     2.75    52.02

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0200)|   Area    (ha)=   2.08
|ID= 1 DT= 5.0 min |   Total Imp(%)=  92.00   Dir. Conn.(%)=  92.00
--------------------
                            IMPERVIOUS    PERVIOUS (i)
```

Surface Area	(ha)=	1.91	0.17
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	118.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	6.68	3.250	14.48	4.83	1.11
0.167	0.00	1.750	6.68	3.333	7.80	4.92	1.11
0.250	0.00	1.833	18.94	3.417	7.80	5.00	1.11
0.333	1.11	1.917	18.94	3.500	7.80	5.08	1.11
0.417	1.11	2.000	18.94	3.583	7.80	5.17	1.11
0.500	1.11	2.083	18.94	3.667	7.80	5.25	1.11
0.583	1.11	2.167	18.94	3.750	7.80	5.33	1.11
0.667	1.11	2.250	18.94	3.833	4.46	5.42	1.11
0.750	1.11	2.333	51.24	3.917	4.46	5.50	1.11
0.833	1.11	2.417	51.24	4.000	4.46	5.58	1.11
0.917	1.11	2.500	51.24	4.083	4.46	5.67	1.11
1.000	1.11	2.583	51.24	4.167	4.46	5.75	1.11
1.083	1.11	2.667	51.24	4.250	4.46	5.83	1.11
1.167	1.11	2.750	51.24	4.333	2.23	5.92	1.11
1.250	1.11	2.833	14.48	4.417	2.23	6.00	1.11
1.333	6.68	2.917	14.48	4.500	2.23	6.08	1.11
1.417	6.68	3.000	14.48	4.583	2.23	6.17	1.11
1.500	6.68	3.083	14.48	4.667	2.23	6.25	1.11
1.583	6.68	3.167	14.48	4.750	2.23		

Max.Eff.Inten.(mm/hr)=		51.24	29.66	
	over (min)	5.00	10.00	
Storage Coeff.	(min)=	3.69 (ii)	7.93 (ii)	
Unit Hyd. Tpeak	(min)=	5.00	10.00	
Unit Hyd. peak	(cms)=	0.25	0.13	
				TOTALS
PEAK FLOW	(cms)=	0.27	0.01	0.284 (iii)
TIME TO PEAK	(hrs)=	2.75	2.75	2.75
RUNOFF VOLUME	(mm)=	54.69	24.14	52.24
TOTAL RAINFALL	(mm)=	55.69	55.69	55.69
RUNOFF COEFFICIENT	=	0.98	0.43	0.94

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)

(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.

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

CALIB STANDHYD (0300) ID= 1 DT= 5.0 min	Area (ha)= 0.52 Total Imp(%)= 98.00 Dir. Conn.(%)= 98.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.51	0.01
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	59.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	6.68	3.250	14.48	4.83	1.11
0.167	0.00	1.750	6.68	3.333	7.80	4.92	1.11
0.250	0.00	1.833	18.94	3.417	7.80	5.00	1.11
0.333	1.11	1.917	18.94	3.500	7.80	5.08	1.11
0.417	1.11	2.000	18.94	3.583	7.80	5.17	1.11
0.500	1.11	2.083	18.94	3.667	7.80	5.25	1.11
0.583	1.11	2.167	18.94	3.750	7.80	5.33	1.11
0.667	1.11	2.250	18.94	3.833	4.46	5.42	1.11
0.750	1.11	2.333	51.24	3.917	4.46	5.50	1.11
0.833	1.11	2.417	51.24	4.000	4.46	5.58	1.11
0.917	1.11	2.500	51.24	4.083	4.46	5.67	1.11
1.000	1.11	2.583	51.24	4.167	4.46	5.75	1.11
1.083	1.11	2.667	51.24	4.250	4.46	5.83	1.11
1.167	1.11	2.750	51.24	4.333	2.23	5.92	1.11
1.250	1.11	2.833	14.48	4.417	2.23	6.00	1.11
1.333	6.68	2.917	14.48	4.500	2.23	6.08	1.11
1.417	6.68	3.000	14.48	4.583	2.23	6.17	1.11
1.500	6.68	3.083	14.48	4.667	2.23	6.25	1.11
1.583	6.68	3.167	14.48	4.750	2.23		

Max.Eff.Inten.(mm/hr)=		51.24	29.66	
over (min)		5.00	5.00	
Storage Coeff. (min)=		2.43 (ii)	4.81 (ii)	
Unit Hyd. Tpeak (min)=		5.00	5.00	
Unit Hyd. peak (cms)=		0.30	0.22	
				TOTALS
PEAK FLOW	(cms)=	0.07	0.00	0.073 (iii)
TIME TO PEAK	(hrs)=	2.75	2.75	2.75
RUNOFF VOLUME	(mm)=	54.69	24.14	54.08

```
     TOTAL RAINFALL   (mm)=      55.69        55.69          55.69
     RUNOFF COEFFICIENT   =       0.98         0.43           0.97

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  82.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD  (  0002)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0200):     2.08   0.284     2.75    52.24
      + ID2= 2 (  0300):     0.52   0.073     2.75    54.08
        ================================================
        ID = 3 (  0002):     2.60   0.358     2.75    52.61

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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 FINISH
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       V    V   I    SSSSS  U   U    A    L              (v 6.2.2015)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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

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

  Output  filename:
C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\a
86b2198-c4fa-4690-a9da-e173588a5cef\s
  Summary filename:
C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\a
86b2198-c4fa-4690-a9da-e173588a5cef\s


DATE: 02-25-2025                          TIME: 10:57:45

USER:



COMMENTS: _____________________________________________________________


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  ***********************************************
  ** SIMULATION : AES 6H_025-Humber             **
  ***********************************************


--------------------
|    READ STORM    |    Filename: C:\Users\caeh076182\AppD
|                  |              ata\Local\Temp\
|                  |              50c23a8d-ae9e-4916-9db3-f0f6d0590af0\6ec422e5
| Ptotal= 65.59 mm |    Comments: AES 6H_025-Humber
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.00    0.00 |  1.75   22.30 |  3.50    9.18 |  5.25    1.31
                0.25    1.31 |  2.00   22.30 |  3.75    5.25 |  5.50    1.31
                0.50    1.31 |  2.25   60.35 |  4.00    5.25 |  5.75    1.31
                0.75    1.31 |  2.50   60.35 |  4.25    2.62 |  6.00    1.31
                1.00    1.31 |  2.75   17.06 |  4.50    2.62 |
                1.25    7.87 |  3.00   17.06 |  4.75    1.31 |
                1.50    7.87 |  3.25    9.18 |  5.00    1.31 |

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| CALIB            |
| STANDHYD (  0100)|   Area    (ha)=   1.10
|ID= 1 DT= 5.0 min |   Total Imp(%)=  92.00   Dir. Conn.(%)=  92.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
```

Surface Area	(ha)=	1.01	0.09
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	85.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	7.87	3.250	17.06	4.83	1.31
0.167	0.00	1.750	7.87	3.333	9.18	4.92	1.31
0.250	0.00	1.833	22.30	3.417	9.18	5.00	1.31
0.333	1.31	1.917	22.30	3.500	9.18	5.08	1.31
0.417	1.31	2.000	22.30	3.583	9.18	5.17	1.31
0.500	1.31	2.083	22.30	3.667	9.18	5.25	1.31
0.583	1.31	2.167	22.30	3.750	9.18	5.33	1.31
0.667	1.31	2.250	22.30	3.833	5.25	5.42	1.31
0.750	1.31	2.333	60.35	3.917	5.25	5.50	1.31
0.833	1.31	2.417	60.35	4.000	5.25	5.58	1.31
0.917	1.31	2.500	60.35	4.083	5.25	5.67	1.31
1.000	1.31	2.583	60.35	4.167	5.25	5.75	1.31
1.083	1.31	2.667	60.35	4.250	5.25	5.83	1.31
1.167	1.31	2.750	60.35	4.333	2.62	5.92	1.31
1.250	1.31	2.833	17.06	4.417	2.62	6.00	1.31
1.333	7.87	2.917	17.06	4.500	2.62	6.08	1.31
1.417	7.87	3.000	17.06	4.583	2.62	6.17	1.31
1.500	7.87	3.083	17.06	4.667	2.62	6.25	1.31
1.583	7.87	3.167	17.06	4.750	2.62		

Max.Eff.Inten.(mm/hr)=	60.35	38.26		
over (min)	5.00	10.00		
Storage Coeff. (min)=	2.84 (ii)	6.82 (ii)		
Unit Hyd. Tpeak (min)=	5.00	10.00		
Unit Hyd. peak (cms)=	0.28	0.14		
			TOTALS	
PEAK FLOW (cms)=	0.17	0.01	0.178 (iii)	
TIME TO PEAK (hrs)=	2.75	2.75	2.75	
RUNOFF VOLUME (mm)=	64.59	31.55	61.94	
TOTAL RAINFALL (mm)=	65.59	65.59	65.59	
RUNOFF COEFFICIENT =	0.98	0.48	0.94	

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)

(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.

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

CALIB STANDHYD (0105) ID= 1 DT= 5.0 min	Area (ha)= 3.24 Total Imp(%)= 91.00 Dir. Conn.(%)= 91.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.95	0.29
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	147.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	7.87	3.250	17.06	4.83	1.31
0.167	0.00	1.750	7.87	3.333	9.18	4.92	1.31
0.250	0.00	1.833	22.30	3.417	9.18	5.00	1.31
0.333	1.31	1.917	22.30	3.500	9.18	5.08	1.31
0.417	1.31	2.000	22.30	3.583	9.18	5.17	1.31
0.500	1.31	2.083	22.30	3.667	9.18	5.25	1.31
0.583	1.31	2.167	22.30	3.750	9.18	5.33	1.31
0.667	1.31	2.250	22.30	3.833	5.25	5.42	1.31
0.750	1.31	2.333	60.35	3.917	5.25	5.50	1.31
0.833	1.31	2.417	60.35	4.000	5.25	5.58	1.31
0.917	1.31	2.500	60.35	4.083	5.25	5.67	1.31
1.000	1.31	2.583	60.35	4.167	5.25	5.75	1.31
1.083	1.31	2.667	60.35	4.250	5.25	5.83	1.31
1.167	1.31	2.750	60.35	4.333	2.62	5.92	1.31
1.250	1.31	2.833	17.06	4.417	2.62	6.00	1.31
1.333	7.87	2.917	17.06	4.500	2.62	6.08	1.31
1.417	7.87	3.000	17.06	4.583	2.62	6.17	1.31
1.500	7.87	3.083	17.06	4.667	2.62	6.25	1.31
1.583	7.87	3.167	17.06	4.750	2.62		

Max.Eff.Inten.(mm/hr)=		60.35	38.26	
over (min)		5.00	10.00	
Storage Coeff. (min)=		3.94 (ii)	8.13 (ii)	
Unit Hyd. Tpeak (min)=		5.00	10.00	
Unit Hyd. peak (cms)=		0.24	0.13	
				TOTALS
PEAK FLOW	(cms)=	0.49	0.03	0.522 (iii)
TIME TO PEAK	(hrs)=	2.75	2.75	2.75
RUNOFF VOLUME	(mm)=	64.59	31.55	61.62

```
     TOTAL RAINFALL   (mm)=      65.59        65.59          65.59
     RUNOFF COEFFICIENT   =       0.98         0.48           0.94

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  82.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD  (  0001)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0100):     1.10   0.178     2.75    61.94
      + ID2= 2 (  0105):     3.24   0.522     2.75    61.62
        ================================================
        ID = 3 (  0001):     4.34   0.700     2.75    61.70

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0200)|   Area    (ha)=   2.08
|ID= 1 DT= 5.0 min |   Total Imp(%)=  92.00   Dir. Conn.(%)=  92.00
--------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.91         0.17
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=     118.00        40.00
     Mannings n           =      0.013        0.350

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


                          ---- TRANSFORMED HYETOGRAPH ----
               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
              0.083    0.00 | 1.667    7.87 | 3.250   17.06 |  4.83    1.31
              0.167    0.00 | 1.750    7.87 | 3.333    9.18 |  4.92    1.31
              0.250    0.00 | 1.833   22.30 | 3.417    9.18 |  5.00    1.31
              0.333    1.31 | 1.917   22.30 | 3.500    9.18 |  5.08    1.31
              0.417    1.31 | 2.000   22.30 | 3.583    9.18 |  5.17    1.31
              0.500    1.31 | 2.083   22.30 | 3.667    9.18 |  5.25    1.31
              0.583    1.31 | 2.167   22.30 | 3.750    9.18 |  5.33    1.31
              0.667    1.31 | 2.250   22.30 | 3.833    5.25 |  5.42    1.31
```

0.750	1.31	2.333	60.35	3.917	5.25	5.50	1.31
0.833	1.31	2.417	60.35	4.000	5.25	5.58	1.31
0.917	1.31	2.500	60.35	4.083	5.25	5.67	1.31
1.000	1.31	2.583	60.35	4.167	5.25	5.75	1.31
1.083	1.31	2.667	60.35	4.250	5.25	5.83	1.31
1.167	1.31	2.750	60.35	4.333	2.62	5.92	1.31
1.250	1.31	2.833	17.06	4.417	2.62	6.00	1.31
1.333	7.87	2.917	17.06	4.500	2.62	6.08	1.31
1.417	7.87	3.000	17.06	4.583	2.62	6.17	1.31
1.500	7.87	3.083	17.06	4.667	2.62	6.25	1.31
1.583	7.87	3.167	17.06	4.750	2.62		

Max.Eff.Inten.(mm/hr)=	60.35	38.26		
over (min)	5.00	10.00		
Storage Coeff. (min)=	3.45 (ii)	7.43 (ii)		
Unit Hyd. Tpeak (min)=	5.00	10.00		
Unit Hyd. peak (cms)=	0.26	0.13		
			TOTALS	
PEAK FLOW (cms)=	0.32	0.02	0.337 (iii)	
TIME TO PEAK (hrs)=	2.75	2.75	2.75	
RUNOFF VOLUME (mm)=	64.59	31.55	61.95	
TOTAL RAINFALL (mm)=	65.59	65.59	65.59	
RUNOFF COEFFICIENT =	0.98	0.48	0.94	

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB STANDHYD (0300) ID= 1 DT= 5.0 min	Area (ha)= 0.52 Total Imp(%)= 98.00 Dir. Conn.(%)= 98.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.51	0.01
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	59.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN

hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	7.87	3.250	17.06	4.83	1.31
0.167	0.00	1.750	7.87	3.333	9.18	4.92	1.31
0.250	0.00	1.833	22.30	3.417	9.18	5.00	1.31
0.333	1.31	1.917	22.30	3.500	9.18	5.08	1.31
0.417	1.31	2.000	22.30	3.583	9.18	5.17	1.31
0.500	1.31	2.083	22.30	3.667	9.18	5.25	1.31
0.583	1.31	2.167	22.30	3.750	9.18	5.33	1.31
0.667	1.31	2.250	22.30	3.833	5.25	5.42	1.31
0.750	1.31	2.333	60.35	3.917	5.25	5.50	1.31
0.833	1.31	2.417	60.35	4.000	5.25	5.58	1.31
0.917	1.31	2.500	60.35	4.083	5.25	5.67	1.31
1.000	1.31	2.583	60.35	4.167	5.25	5.75	1.31
1.083	1.31	2.667	60.35	4.250	5.25	5.83	1.31
1.167	1.31	2.750	60.35	4.333	2.62	5.92	1.31
1.250	1.31	2.833	17.06	4.417	2.62	6.00	1.31
1.333	7.87	2.917	17.06	4.500	2.62	6.08	1.31
1.417	7.87	3.000	17.06	4.583	2.62	6.17	1.31
1.500	7.87	3.083	17.06	4.667	2.62	6.25	1.31
1.583	7.87	3.167	17.06	4.750	2.62		

			TOTALS
Max.Eff.Inten.(mm/hr)=	60.35	38.26	
over (min)	5.00	5.00	
Storage Coeff. (min)=	2.28 (ii)	4.51 (ii)	
Unit Hyd. Tpeak (min)=	5.00	5.00	
Unit Hyd. peak (cms)=	0.30	0.23	
PEAK FLOW (cms)=	0.09	0.00	0.087 (iii)
TIME TO PEAK (hrs)=	2.75	2.75	2.75
RUNOFF VOLUME (mm)=	64.59	31.55	63.93
TOTAL RAINFALL (mm)=	65.59	65.59	65.59
RUNOFF COEFFICIENT =	0.98	0.48	0.97

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0002)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0200):	2.08	0.337	2.75	61.95
+ ID2= 2 (0300):	0.52	0.087	2.75	63.93

```
        ID = 3 (  0002):     2.60   0.423     2.75    62.34

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

       V    V   I    SSSSS  U   U    A    L              (v 6.2.2015)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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


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

  Output  filename:
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7212107-03ff-4c82-adb2-55ddd52f22c7\s
  Summary filename:
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7212107-03ff-4c82-adb2-55ddd52f22c7\s


DATE: 02-25-2025                          TIME: 10:57:45

USER:



COMMENTS: _____________________________________________________________


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  ********************************************
  ** SIMULATION : AES 6H_050-Humber          **
  ********************************************
```

READ STORM	Filename: C:\Users\caeh076182\AppData\Local\Temp\50c23a8d-ae9e-4916-9db3-f0f6d0590af0\c2571f5b
Ptotal= 73.00 mm	Comments: AES 6H_050-Humber

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	1.75	24.82	3.50	10.22	5.25	1.46
0.25	1.46	2.00	24.82	3.75	5.84	5.50	1.46
0.50	1.46	2.25	67.16	4.00	5.84	5.75	1.46
0.75	1.46	2.50	67.16	4.25	2.92	6.00	1.46
1.00	1.46	2.75	18.98	4.50	2.92		
1.25	8.76	3.00	18.98	4.75	1.46		
1.50	8.76	3.25	10.22	5.00	1.46		

CALIB STANDHYD (0100) ID= 1 DT= 5.0 min	Area (ha)= 1.10 Total Imp(%)= 92.00 Dir. Conn.(%)= 92.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.01	0.09
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	85.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	8.76	3.250	18.98	4.83	1.46
0.167	0.00	1.750	8.76	3.333	10.22	4.92	1.46
0.250	0.00	1.833	24.82	3.417	10.22	5.00	1.46
0.333	1.46	1.917	24.82	3.500	10.22	5.08	1.46
0.417	1.46	2.000	24.82	3.583	10.22	5.17	1.46
0.500	1.46	2.083	24.82	3.667	10.22	5.25	1.46
0.583	1.46	2.167	24.82	3.750	10.22	5.33	1.46
0.667	1.46	2.250	24.82	3.833	5.84	5.42	1.46
0.750	1.46	2.333	67.16	3.917	5.84	5.50	1.46
0.833	1.46	2.417	67.16	4.000	5.84	5.58	1.46
0.917	1.46	2.500	67.16	4.083	5.84	5.67	1.46
1.000	1.46	2.583	67.16	4.167	5.84	5.75	1.46
1.083	1.46	2.667	67.16	4.250	5.84	5.83	1.46

1.167	1.46	2.750	67.16	4.333	2.92	5.92	1.46
1.250	1.46	2.833	18.98	4.417	2.92	6.00	1.46
1.333	8.76	2.917	18.98	4.500	2.92	6.08	1.46
1.417	8.76	3.000	18.98	4.583	2.92	6.17	1.46
1.500	8.76	3.083	18.98	4.667	2.92	6.25	1.46
1.583	8.76	3.167	18.98	4.750	2.92		

Max.Eff.Inten.(mm/hr)=	67.16	44.89	
over (min)	5.00	10.00	
Storage Coeff. (min)=	2.72 (ii)	6.53 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.29	0.14	
			TOTALS
PEAK FLOW (cms)=	0.19	0.01	0.199 (iii)
TIME TO PEAK (hrs)=	2.75	2.75	2.75
RUNOFF VOLUME (mm)=	72.00	37.36	69.23
TOTAL RAINFALL (mm)=	73.00	73.00	73.00
RUNOFF COEFFICIENT =	0.99	0.51	0.95

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB STANDHYD (0105) ID= 1 DT= 5.0 min	Area (ha)= 3.24 Total Imp(%)= 91.00 Dir. Conn.(%)= 91.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.95	0.29
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	147.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	8.76	3.250	18.98	4.83	1.46
0.167	0.00	1.750	8.76	3.333	10.22	4.92	1.46
0.250	0.00	1.833	24.82	3.417	10.22	5.00	1.46
0.333	1.46	1.917	24.82	3.500	10.22	5.08	1.46

```
                0.417    1.46 | 2.000   24.82 | 3.583   10.22 |  5.17    1.46
                0.500    1.46 | 2.083   24.82 | 3.667   10.22 |  5.25    1.46
                0.583    1.46 | 2.167   24.82 | 3.750   10.22 |  5.33    1.46
                0.667    1.46 | 2.250   24.82 | 3.833    5.84 |  5.42    1.46
                0.750    1.46 | 2.333   67.16 | 3.917    5.84 |  5.50    1.46
                0.833    1.46 | 2.417   67.16 | 4.000    5.84 |  5.58    1.46
                0.917    1.46 | 2.500   67.16 | 4.083    5.84 |  5.67    1.46
                1.000    1.46 | 2.583   67.16 | 4.167    5.84 |  5.75    1.46
                1.083    1.46 | 2.667   67.16 | 4.250    5.84 |  5.83    1.46
                1.167    1.46 | 2.750   67.16 | 4.333    2.92 |  5.92    1.46
                1.250    1.46 | 2.833   18.98 | 4.417    2.92 |  6.00    1.46
                1.333    8.76 | 2.917   18.98 | 4.500    2.92 |  6.08    1.46
                1.417    8.76 | 3.000   18.98 | 4.583    2.92 |  6.17    1.46
                1.500    8.76 | 3.083   18.98 | 4.667    2.92 |  6.25    1.46
                1.583    8.76 | 3.167   18.98 | 4.750    2.92 |

     Max.Eff.Inten.(mm/hr)=      67.16        44.89
               over (min)         5.00        10.00
     Storage Coeff.  (min)=       3.77 (ii)    7.79 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.25         0.13
                                                        *TOTALS*
     PEAK FLOW       (cms)=       0.55         0.03          0.583 (iii)
     TIME TO PEAK    (hrs)=       2.75         2.75           2.75
     RUNOFF VOLUME    (mm)=      72.00        37.36          68.88
     TOTAL RAINFALL   (mm)=      73.00        73.00          73.00
     RUNOFF COEFFICIENT   =       0.99         0.51           0.94

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  82.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD  (  0001)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0100):     1.10   0.199     2.75    69.23
      + ID2= 2 (  0105):     3.24   0.583     2.75    68.88
        ================================================
        ID = 3 (  0001):     4.34   0.782     2.75    68.97

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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CALIB	
STANDHYD (0200)	Area (ha)= 2.08
ID= 1 DT= 5.0 min	Total Imp(%)= 92.00 Dir. Conn.(%)= 92.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.91	0.17
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	118.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	8.76	3.250	18.98	4.83	1.46
0.167	0.00	1.750	8.76	3.333	10.22	4.92	1.46
0.250	0.00	1.833	24.82	3.417	10.22	5.00	1.46
0.333	1.46	1.917	24.82	3.500	10.22	5.08	1.46
0.417	1.46	2.000	24.82	3.583	10.22	5.17	1.46
0.500	1.46	2.083	24.82	3.667	10.22	5.25	1.46
0.583	1.46	2.167	24.82	3.750	10.22	5.33	1.46
0.667	1.46	2.250	24.82	3.833	5.84	5.42	1.46
0.750	1.46	2.333	67.16	3.917	5.84	5.50	1.46
0.833	1.46	2.417	67.16	4.000	5.84	5.58	1.46
0.917	1.46	2.500	67.16	4.083	5.84	5.67	1.46
1.000	1.46	2.583	67.16	4.167	5.84	5.75	1.46
1.083	1.46	2.667	67.16	4.250	5.84	5.83	1.46
1.167	1.46	2.750	67.16	4.333	2.92	5.92	1.46
1.250	1.46	2.833	18.98	4.417	2.92	6.00	1.46
1.333	8.76	2.917	18.98	4.500	2.92	6.08	1.46
1.417	8.76	3.000	18.98	4.583	2.92	6.17	1.46
1.500	8.76	3.083	18.98	4.667	2.92	6.25	1.46
1.583	8.76	3.167	18.98	4.750	2.92		

Max.Eff.Inten.(mm/hr)=		67.16	44.89	
over (min)		5.00	10.00	
Storage Coeff. (min)=		3.31 (ii)	7.12 (ii)	
Unit Hyd. Tpeak (min)=		5.00	10.00	
Unit Hyd. peak (cms)=		0.26	0.14	
				TOTALS
PEAK FLOW	(cms)=	0.36	0.02	0.376 (iii)
TIME TO PEAK	(hrs)=	2.75	2.75	2.75
RUNOFF VOLUME	(mm)=	72.00	37.36	69.23
TOTAL RAINFALL	(mm)=	73.00	73.00	73.00
RUNOFF COEFFICIENT	=	0.99	0.51	0.95

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	
STANDHYD (0300)	Area (ha)= 0.52
ID= 1 DT= 5.0 min	Total Imp(%)= 98.00 Dir. Conn.(%)= 98.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.51	0.01
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	59.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	8.76	3.250	18.98	4.83	1.46
0.167	0.00	1.750	8.76	3.333	10.22	4.92	1.46
0.250	0.00	1.833	24.82	3.417	10.22	5.00	1.46
0.333	1.46	1.917	24.82	3.500	10.22	5.08	1.46
0.417	1.46	2.000	24.82	3.583	10.22	5.17	1.46
0.500	1.46	2.083	24.82	3.667	10.22	5.25	1.46
0.583	1.46	2.167	24.82	3.750	10.22	5.33	1.46
0.667	1.46	2.250	24.82	3.833	5.84	5.42	1.46
0.750	1.46	2.333	67.16	3.917	5.84	5.50	1.46
0.833	1.46	2.417	67.16	4.000	5.84	5.58	1.46
0.917	1.46	2.500	67.16	4.083	5.84	5.67	1.46
1.000	1.46	2.583	67.16	4.167	5.84	5.75	1.46
1.083	1.46	2.667	67.16	4.250	5.84	5.83	1.46
1.167	1.46	2.750	67.16	4.333	2.92	5.92	1.46
1.250	1.46	2.833	18.98	4.417	2.92	6.00	1.46
1.333	8.76	2.917	18.98	4.500	2.92	6.08	1.46
1.417	8.76	3.000	18.98	4.583	2.92	6.17	1.46
1.500	8.76	3.083	18.98	4.667	2.92	6.25	1.46
1.583	8.76	3.167	18.98	4.750	2.92		

Max.Eff.Inten.(mm/hr)=		67.16	44.89
	over (min)	5.00	5.00
Storage Coeff. (min)=		2.18 (ii)	4.32 (ii)
Unit Hyd. Tpeak (min)=		5.00	5.00

```
     Unit Hyd. peak  (cms)=       0.31         0.23
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.10         0.00          0.096 (iii)
     TIME TO PEAK    (hrs)=       2.75         2.75           2.75
     RUNOFF VOLUME    (mm)=      72.00        37.36          71.31
     TOTAL RAINFALL   (mm)=      73.00        73.00          73.00
     RUNOFF COEFFICIENT   =       0.99         0.51           0.98

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  82.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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

--------------------
| ADD HYD  (  0002)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0200):     2.08   0.376     2.75    69.23
      + ID2= 2 (  0300):     0.52   0.096     2.75    71.31
        ====================================================
        ID = 3 (  0002):     2.60   0.472     2.75    69.64

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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================================================================================
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       V    V   I    SSSSS  U   U    A    L              (v 6.2.2015)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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

```
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  Output  filename:
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9d25f3e-226a-4aec-905d-8f378af5802c\s
  Summary filename:
C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\8
9d25f3e-226a-4aec-905d-8f378af5802c\s


DATE: 02-25-2025                          TIME: 10:57:45

USER:



COMMENTS: _____________________________________________________________


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  ***********************************************
  ** SIMULATION : AES 6H_100-Humber             **
  ***********************************************


--------------------
|    READ STORM    |    Filename: C:\Users\caeh076182\AppD
|                  |              ata\Local\Temp\
|                  |              50c23a8d-ae9e-4916-9db3-f0f6d0590af0\46578424
| Ptotal= 80.31 mm |    Comments: AES 6H_100-Humber
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.00    0.00 |  1.75   27.30 |  3.50   11.24 |  5.25    1.61
                0.25    1.61 |  2.00   27.30 |  3.75    6.42 |  5.50    1.61
                0.50    1.61 |  2.25   73.88 |  4.00    6.42 |  5.75    1.61
                0.75    1.61 |  2.50   73.88 |  4.25    3.21 |  6.00    1.61
                1.00    1.61 |  2.75   20.88 |  4.50    3.21 |
                1.25    9.64 |  3.00   20.88 |  4.75    1.61 |
                1.50    9.64 |  3.25   11.24 |  5.00    1.61 |

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

--------------------
| CALIB            |
| STANDHYD (  0100)|   Area    (ha)=   1.10
|ID= 1 DT= 5.0 min |   Total Imp(%)=  92.00   Dir. Conn.(%)=  92.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
```

Surface Area	(ha)=	1.01	0.09
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	85.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	9.64	3.250	20.88	4.83	1.61
0.167	0.00	1.750	9.64	3.333	11.24	4.92	1.61
0.250	0.00	1.833	27.30	3.417	11.24	5.00	1.61
0.333	1.61	1.917	27.30	3.500	11.24	5.08	1.61
0.417	1.61	2.000	27.30	3.583	11.24	5.17	1.61
0.500	1.61	2.083	27.30	3.667	11.24	5.25	1.61
0.583	1.61	2.167	27.30	3.750	11.24	5.33	1.61
0.667	1.61	2.250	27.30	3.833	6.42	5.42	1.61
0.750	1.61	2.333	73.88	3.917	6.42	5.50	1.61
0.833	1.61	2.417	73.88	4.000	6.42	5.58	1.61
0.917	1.61	2.500	73.88	4.083	6.42	5.67	1.61
1.000	1.61	2.583	73.88	4.167	6.42	5.75	1.61
1.083	1.61	2.667	73.88	4.250	6.42	5.83	1.61
1.167	1.61	2.750	73.88	4.333	3.21	5.92	1.61
1.250	1.61	2.833	20.88	4.417	3.21	6.00	1.61
1.333	9.64	2.917	20.88	4.500	3.21	6.08	1.61
1.417	9.64	3.000	20.88	4.583	3.21	6.17	1.61
1.500	9.64	3.083	20.88	4.667	3.21	6.25	1.61
1.583	9.64	3.167	20.88	4.750	3.21		

Max.Eff.Inten.(mm/hr)=	73.88	51.56		
over (min)	5.00	10.00		
Storage Coeff. (min)=	2.62 (ii)	6.29 (ii)		
Unit Hyd. Tpeak (min)=	5.00	10.00		
Unit Hyd. peak (cms)=	0.29	0.15		
			TOTALS	
PEAK FLOW (cms)=	0.21	0.01	0.219 (iii)	
TIME TO PEAK (hrs)=	2.75	2.75	2.75	
RUNOFF VOLUME (mm)=	79.31	43.27	76.42	
TOTAL RAINFALL (mm)=	80.31	80.31	80.31	
RUNOFF COEFFICIENT =	0.99	0.54	0.95	

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)

(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.

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

CALIB STANDHYD (0105) ID= 1 DT= 5.0 min	Area (ha)= 3.24 Total Imp(%)= 91.00 Dir. Conn.(%)= 91.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.95	0.29
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	147.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	9.64	3.250	20.88	4.83	1.61
0.167	0.00	1.750	9.64	3.333	11.24	4.92	1.61
0.250	0.00	1.833	27.30	3.417	11.24	5.00	1.61
0.333	1.61	1.917	27.30	3.500	11.24	5.08	1.61
0.417	1.61	2.000	27.30	3.583	11.24	5.17	1.61
0.500	1.61	2.083	27.30	3.667	11.24	5.25	1.61
0.583	1.61	2.167	27.30	3.750	11.24	5.33	1.61
0.667	1.61	2.250	27.30	3.833	6.42	5.42	1.61
0.750	1.61	2.333	73.88	3.917	6.42	5.50	1.61
0.833	1.61	2.417	73.88	4.000	6.42	5.58	1.61
0.917	1.61	2.500	73.88	4.083	6.42	5.67	1.61
1.000	1.61	2.583	73.88	4.167	6.42	5.75	1.61
1.083	1.61	2.667	73.88	4.250	6.42	5.83	1.61
1.167	1.61	2.750	73.88	4.333	3.21	5.92	1.61
1.250	1.61	2.833	20.88	4.417	3.21	6.00	1.61
1.333	9.64	2.917	20.88	4.500	3.21	6.08	1.61
1.417	9.64	3.000	20.88	4.583	3.21	6.17	1.61
1.500	9.64	3.083	20.88	4.667	3.21	6.25	1.61
1.583	9.64	3.167	20.88	4.750	3.21		

Max.Eff.Inten.(mm/hr)=		73.88	51.56	
over (min)		5.00	10.00	
Storage Coeff. (min)=		3.63 (ii)	7.50 (ii)	
Unit Hyd. Tpeak (min)=		5.00	10.00	
Unit Hyd. peak (cms)=		0.25	0.13	
				TOTALS
PEAK FLOW	(cms)=	0.60	0.04	0.643 (iii)
TIME TO PEAK	(hrs)=	2.75	2.75	2.75
RUNOFF VOLUME	(mm)=	79.31	43.27	76.07

```
     TOTAL RAINFALL   (mm)=      80.31        80.31          80.31
     RUNOFF COEFFICIENT   =       0.99         0.54           0.95

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  82.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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

--------------------
| ADD HYD  (  0001)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0100):     1.10   0.219     2.75    76.42
      + ID2= 2 (  0105):     3.24   0.643     2.75    76.07
        ================================================
        ID = 3 (  0001):     4.34   0.862     2.75    76.16

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0200)|   Area    (ha)=   2.08
|ID= 1 DT= 5.0 min |   Total Imp(%)=  92.00   Dir. Conn.(%)=  92.00
--------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.91         0.17
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=     118.00        40.00
     Mannings n           =      0.013        0.350

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


                          ---- TRANSFORMED HYETOGRAPH ----
               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
              0.083    0.00 | 1.667    9.64 | 3.250   20.88 |  4.83    1.61
              0.167    0.00 | 1.750    9.64 | 3.333   11.24 |  4.92    1.61
              0.250    0.00 | 1.833   27.30 | 3.417   11.24 |  5.00    1.61
              0.333    1.61 | 1.917   27.30 | 3.500   11.24 |  5.08    1.61
              0.417    1.61 | 2.000   27.30 | 3.583   11.24 |  5.17    1.61
              0.500    1.61 | 2.083   27.30 | 3.667   11.24 |  5.25    1.61
              0.583    1.61 | 2.167   27.30 | 3.750   11.24 |  5.33    1.61
              0.667    1.61 | 2.250   27.30 | 3.833    6.42 |  5.42    1.61
```

```
                0.750    1.61 | 2.333   73.88 | 3.917    6.42 |  5.50    1.61
                0.833    1.61 | 2.417   73.88 | 4.000    6.42 |  5.58    1.61
                0.917    1.61 | 2.500   73.88 | 4.083    6.42 |  5.67    1.61
                1.000    1.61 | 2.583   73.88 | 4.167    6.42 |  5.75    1.61
                1.083    1.61 | 2.667   73.88 | 4.250    6.42 |  5.83    1.61
                1.167    1.61 | 2.750   73.88 | 4.333    3.21 |  5.92    1.61
                1.250    1.61 | 2.833   20.88 | 4.417    3.21 |  6.00    1.61
                1.333    9.64 | 2.917   20.88 | 4.500    3.21 |  6.08    1.61
                1.417    9.64 | 3.000   20.88 | 4.583    3.21 |  6.17    1.61
                1.500    9.64 | 3.083   20.88 | 4.667    3.21 |  6.25    1.61
                1.583    9.64 | 3.167   20.88 | 4.750    3.21 |

     Max.Eff.Inten.(mm/hr)=      73.88        51.56
               over (min)        5.00        10.00
     Storage Coeff.  (min)=      3.18 (ii)    6.85 (ii)
     Unit Hyd. Tpeak (min)=      5.00        10.00
     Unit Hyd. peak  (cms)=      0.27         0.14
                                                        *TOTALS*
     PEAK FLOW       (cms)=      0.39         0.02          0.415 (iii)
     TIME TO PEAK    (hrs)=      2.75         2.75           2.75
     RUNOFF VOLUME    (mm)=     79.31        43.27          76.43
     TOTAL RAINFALL   (mm)=     80.31        80.31          80.31
     RUNOFF COEFFICIENT   =      0.99         0.54           0.95

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  82.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0300)|   Area    (ha)=   0.52
|ID= 1 DT= 5.0 min |   Total Imp(%)=  98.00   Dir. Conn.(%)=  98.00
--------------------
                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.51         0.01
     Dep. Storage     (mm)=      1.00         5.00
     Average Slope     (%)=      1.00         2.00
     Length            (m)=     59.00        40.00
     Mannings n             =    0.013        0.350

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


                             ---- TRANSFORMED HYETOGRAPH ----
               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
```

hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	9.64	3.250	20.88	4.83	1.61
0.167	0.00	1.750	9.64	3.333	11.24	4.92	1.61
0.250	0.00	1.833	27.30	3.417	11.24	5.00	1.61
0.333	1.61	1.917	27.30	3.500	11.24	5.08	1.61
0.417	1.61	2.000	27.30	3.583	11.24	5.17	1.61
0.500	1.61	2.083	27.30	3.667	11.24	5.25	1.61
0.583	1.61	2.167	27.30	3.750	11.24	5.33	1.61
0.667	1.61	2.250	27.30	3.833	6.42	5.42	1.61
0.750	1.61	2.333	73.88	3.917	6.42	5.50	1.61
0.833	1.61	2.417	73.88	4.000	6.42	5.58	1.61
0.917	1.61	2.500	73.88	4.083	6.42	5.67	1.61
1.000	1.61	2.583	73.88	4.167	6.42	5.75	1.61
1.083	1.61	2.667	73.88	4.250	6.42	5.83	1.61
1.167	1.61	2.750	73.88	4.333	3.21	5.92	1.61
1.250	1.61	2.833	20.88	4.417	3.21	6.00	1.61
1.333	9.64	2.917	20.88	4.500	3.21	6.08	1.61
1.417	9.64	3.000	20.88	4.583	3.21	6.17	1.61
1.500	9.64	3.083	20.88	4.667	3.21	6.25	1.61
1.583	9.64	3.167	20.88	4.750	3.21		

Max.Eff.Inten.(mm/hr)=	73.88	51.56		
over (min)	5.00	5.00		
Storage Coeff. (min)=	2.10 (ii)	4.16 (ii)		
Unit Hyd. Tpeak (min)=	5.00	5.00		
Unit Hyd. peak (cms)=	0.31	0.24		
			TOTALS	
PEAK FLOW (cms)=	0.10	0.00	0.106 (iii)	
TIME TO PEAK (hrs)=	2.75	2.75	2.75	
RUNOFF VOLUME (mm)=	79.31	43.27	78.59	
TOTAL RAINFALL (mm)=	80.31	80.31	80.31	
RUNOFF COEFFICIENT =	0.99	0.54	0.98	

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0002)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0200):	2.08	0.415	2.75	76.43
+ ID2= 2 (0300):	0.52	0.106	2.75	78.59

ID = 3 (0002): 2.60 0.521 2.75 76.86

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

Appendix D: SWM- Model Outputs

```
================================================================================
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       V    V   I    SSSSS  U   U    A    L             (v 6.2.2015)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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


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

  Output  filename:
C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\5
2f9b225-757d-4268-8080-f296481aac0e\s
  Summary filename:
C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\5
2f9b225-757d-4268-8080-f296481aac0e\s


DATE: 05-06-2025                          TIME: 09:58:06

USER:



COMMENTS: _____________________________________________________________


--------------------------------------------------------------------------------
------------------------
  **********************************************
  ** SIMULATION : AES 6H_002-Humber            **
  **********************************************


--------------------
|    READ STORM    |    Filename: C:\Users\caeh076182\AppD
|                  |              ata\Local\Temp\
```

| | ac3521ab-8657-4c27-9afb-46e264ee758f\c9df40cc
| Ptotal= 36.00 mm | Comments: AES 6H_002-Humber

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	1.75	12.24	3.50	5.04	5.25	0.72
0.25	0.72	2.00	12.24	3.75	2.88	5.50	0.72
0.50	0.72	2.25	33.12	4.00	2.88	5.75	0.72
0.75	0.72	2.50	33.12	4.25	1.44	6.00	0.72
1.00	0.72	2.75	9.36	4.50	1.44		
1.25	4.32	3.00	9.36	4.75	0.72		
1.50	4.32	3.25	5.04	5.00	0.72		

| CALIB |
| STANDHYD (0007) | Area (ha)= 1.10
|ID= 1 DT= 5.0 min | Total Imp(%)= 92.00 Dir. Conn.(%)= 92.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.01	0.09
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	85.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	4.32	3.250	9.36	4.83	0.72
0.167	0.00	1.750	4.32	3.333	5.04	4.92	0.72
0.250	0.00	1.833	12.24	3.417	5.04	5.00	0.72
0.333	0.72	1.917	12.24	3.500	5.04	5.08	0.72
0.417	0.72	2.000	12.24	3.583	5.04	5.17	0.72
0.500	0.72	2.083	12.24	3.667	5.04	5.25	0.72
0.583	0.72	2.167	12.24	3.750	5.04	5.33	0.72
0.667	0.72	2.250	12.24	3.833	2.88	5.42	0.72
0.750	0.72	2.333	33.12	3.917	2.88	5.50	0.72
0.833	0.72	2.417	33.12	4.000	2.88	5.58	0.72
0.917	0.72	2.500	33.12	4.083	2.88	5.67	0.72
1.000	0.72	2.583	33.12	4.167	2.88	5.75	0.72
1.083	0.72	2.667	33.12	4.250	2.88	5.83	0.72
1.167	0.72	2.750	33.12	4.333	1.44	5.92	0.72
1.250	0.72	2.833	9.36	4.417	1.44	6.00	0.72
1.333	4.32	2.917	9.36	4.500	1.44	6.08	0.72
1.417	4.32	3.000	9.36	4.583	1.44	6.17	0.72

1.500	4.32	3.083	9.36	4.667	1.44	6.25	0.72
1.583	4.32	3.167	9.36	4.750	1.44		

Max.Eff.Inten.(mm/hr)=	33.12	12.45	
over (min)	5.00	25.00	
Storage Coeff. (min)=	3.61 (ii)	23.48 (ii)	
Unit Hyd. Tpeak (min)=	5.00	25.00	
Unit Hyd. peak (cms)=	0.25	0.05	
			TOTALS
PEAK FLOW (cms)=	0.09	0.00	0.094 (iii)
TIME TO PEAK (hrs)=	2.75	3.00	2.75
RUNOFF VOLUME (mm)=	35.00	11.08	33.08
TOTAL RAINFALL (mm)=	36.00	36.00	36.00
RUNOFF COEFFICIENT =	0.97	0.31	0.92

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	
STANDHYD (0008)	Area (ha)= 3.24
ID= 1 DT= 5.0 min	Total Imp(%)= 91.00 Dir. Conn.(%)= 91.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.95	0.29
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	147.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	4.32	3.250	9.36	4.83	0.72
0.167	0.00	1.750	4.32	3.333	5.04	4.92	0.72
0.250	0.00	1.833	12.24	3.417	5.04	5.00	0.72
0.333	0.72	1.917	12.24	3.500	5.04	5.08	0.72
0.417	0.72	2.000	12.24	3.583	5.04	5.17	0.72
0.500	0.72	2.083	12.24	3.667	5.04	5.25	0.72
0.583	0.72	2.167	12.24	3.750	5.04	5.33	0.72
0.667	0.72	2.250	12.24	3.833	2.88	5.42	0.72

0.750	0.72	2.333	33.12	3.917	2.88	5.50	0.72
0.833	0.72	2.417	33.12	4.000	2.88	5.58	0.72
0.917	0.72	2.500	33.12	4.083	2.88	5.67	0.72
1.000	0.72	2.583	33.12	4.167	2.88	5.75	0.72
1.083	0.72	2.667	33.12	4.250	2.88	5.83	0.72
1.167	0.72	2.750	33.12	4.333	1.44	5.92	0.72
1.250	0.72	2.833	9.36	4.417	1.44	6.00	0.72
1.333	4.32	2.917	9.36	4.500	1.44	6.08	0.72
1.417	4.32	3.000	9.36	4.583	1.44	6.17	0.72
1.500	4.32	3.083	9.36	4.667	1.44	6.25	0.72
1.583	4.32	3.167	9.36	4.750	1.44		

Max.Eff.Inten.(mm/hr)=	33.12	12.45	
over (min)	5.00	25.00	
Storage Coeff. (min)=	5.01 (ii)	24.88 (ii)	
Unit Hyd. Tpeak (min)=	5.00	25.00	
Unit Hyd. peak (cms)=	0.21	0.05	
			TOTALS
PEAK FLOW (cms)=	0.27	0.01	0.275 (iii)
TIME TO PEAK (hrs)=	2.75	3.00	2.75
RUNOFF VOLUME (mm)=	35.00	11.08	32.84
TOTAL RAINFALL (mm)=	36.00	36.00	36.00
RUNOFF COEFFICIENT =	0.97	0.31	0.91

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0006)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0007):		1.10	0.094	2.75	33.08
+ ID2= 2 (0008):		3.24	0.275	2.75	32.84
ID = 3 (0006):		4.34	0.369	2.75	32.90

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0011)	OVERFLOW IS OFF			
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.0430	0.1560

```
                        0.0290     0.1170   |   0.0850      0.2610

                                  AREA     QPEAK     TPEAK       R.V.
                                  (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0006)      4.340      0.369      2.75      32.90
   OUTFLOW: ID= 1 (  0011)      4.340      0.029      4.33      32.67

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  7.80
                  TIME SHIFT OF PEAK FLOW         (min)= 95.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.1163

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0009)|   Area    (ha)=   0.52
|ID= 1 DT= 5.0 min |   Total Imp(%)=  98.00   Dir. Conn.(%)=  98.00
--------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.51         0.01
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=      59.00        40.00
     Mannings n           =      0.013        0.350

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


                          ---- TRANSFORMED HYETOGRAPH ----
      TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
       hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
     0.083    0.00 | 1.667    4.32 | 3.250    9.36 |  4.83    0.72
     0.167    0.00 | 1.750    4.32 | 3.333    5.04 |  4.92    0.72
     0.250    0.00 | 1.833   12.24 | 3.417    5.04 |  5.00    0.72
     0.333    0.72 | 1.917   12.24 | 3.500    5.04 |  5.08    0.72
     0.417    0.72 | 2.000   12.24 | 3.583    5.04 |  5.17    0.72
     0.500    0.72 | 2.083   12.24 | 3.667    5.04 |  5.25    0.72
     0.583    0.72 | 2.167   12.24 | 3.750    5.04 |  5.33    0.72
     0.667    0.72 | 2.250   12.24 | 3.833    2.88 |  5.42    0.72
     0.750    0.72 | 2.333   33.12 | 3.917    2.88 |  5.50    0.72
     0.833    0.72 | 2.417   33.12 | 4.000    2.88 |  5.58    0.72
     0.917    0.72 | 2.500   33.12 | 4.083    2.88 |  5.67    0.72
     1.000    0.72 | 2.583   33.12 | 4.167    2.88 |  5.75    0.72
     1.083    0.72 | 2.667   33.12 | 4.250    2.88 |  5.83    0.72
     1.167    0.72 | 2.750   33.12 | 4.333    1.44 |  5.92    0.72
     1.250    0.72 | 2.833    9.36 | 4.417    1.44 |  6.00    0.72
     1.333    4.32 | 2.917    9.36 | 4.500    1.44 |  6.08    0.72
     1.417    4.32 | 3.000    9.36 | 4.583    1.44 |  6.17    0.72
     1.500    4.32 | 3.083    9.36 | 4.667    1.44 |  6.25    0.72
     1.583    4.32 | 3.167    9.36 | 4.750    1.44 |
```

Max.Eff.Inten.(mm/hr)=	33.12	14.06	
over (min)	5.00	10.00	
Storage Coeff. (min)=	2.90 (ii)	5.73 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.28	0.15	
			TOTALS
PEAK FLOW (cms)=	0.05	0.00	0.047 (iii)
TIME TO PEAK (hrs)=	2.75	2.75	2.75
RUNOFF VOLUME (mm)=	35.00	11.08	34.52
TOTAL RAINFALL (mm)=	36.00	36.00	36.00
RUNOFF COEFFICIENT =	0.97	0.31	0.96

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
STANDHYD (0010)
ID= 1 DT= 5.0 min

Area (ha)= 2.08
Total Imp(%)= 92.00 Dir. Conn.(%)= 92.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.91	0.17
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	118.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	4.32	3.250	9.36	4.83	0.72
0.167	0.00	1.750	4.32	3.333	5.04	4.92	0.72
0.250	0.00	1.833	12.24	3.417	5.04	5.00	0.72
0.333	0.72	1.917	12.24	3.500	5.04	5.08	0.72
0.417	0.72	2.000	12.24	3.583	5.04	5.17	0.72
0.500	0.72	2.083	12.24	3.667	5.04	5.25	0.72
0.583	0.72	2.167	12.24	3.750	5.04	5.33	0.72
0.667	0.72	2.250	12.24	3.833	2.88	5.42	0.72
0.750	0.72	2.333	33.12	3.917	2.88	5.50	0.72
0.833	0.72	2.417	33.12	4.000	2.88	5.58	0.72
0.917	0.72	2.500	33.12	4.083	2.88	5.67	0.72

```
                1.000    0.72 | 2.583   33.12 | 4.167    2.88 |  5.75    0.72
                1.083    0.72 | 2.667   33.12 | 4.250    2.88 |  5.83    0.72
                1.167    0.72 | 2.750   33.12 | 4.333    1.44 |  5.92    0.72
                1.250    0.72 | 2.833    9.36 | 4.417    1.44 |  6.00    0.72
                1.333    4.32 | 2.917    9.36 | 4.500    1.44 |  6.08    0.72
                1.417    4.32 | 3.000    9.36 | 4.583    1.44 |  6.17    0.72
                1.500    4.32 | 3.083    9.36 | 4.667    1.44 |  6.25    0.72
                1.583    4.32 | 3.167    9.36 | 4.750    1.44 |

     Max.Eff.Inten.(mm/hr)=      33.12        12.45
                over (min)        5.00        25.00
     Storage Coeff.  (min)=       4.39 (ii)   24.26 (ii)
     Unit Hyd. Tpeak (min)=       5.00        25.00
     Unit Hyd. peak  (cms)=       0.23         0.05
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.18         0.00          0.178 (iii)
     TIME TO PEAK    (hrs)=       2.75         3.00           2.75
     RUNOFF VOLUME    (mm)=      35.00        11.08          33.08
     TOTAL RAINFALL   (mm)=      36.00        36.00          36.00
     RUNOFF COEFFICIENT   =       0.97         0.31           0.92

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  82.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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

--------------------
| ADD HYD  (  0005)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0010):     2.08   0.178     2.75    33.08
      + ID2= 2 (  0009):     0.52   0.047     2.75    34.52
        ================================================
        ID = 3 (  0005):     2.60   0.226     2.75    33.37

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0012)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0000   |   0.0270      0.0940
                          0.0180     0.0710   |   0.0540      0.1570
```

```
                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0005)      2.600      0.226      2.75      33.37
   OUTFLOW: ID= 1 (  0012)      2.600      0.018      4.25      32.98

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  7.92
                  TIME SHIFT OF PEAK FLOW         (min)= 90.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0705

--------------------------------------------------------------------------------
================================================================================
========================

       V    V   I    SSSSS  U   U    A    L              (v 6.2.2015)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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


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

  Output  filename:
C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\2
60f99a5-3ed3-4a17-aa38-b13e10e415c5\s
  Summary filename:
C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\2
60f99a5-3ed3-4a17-aa38-b13e10e415c5\s


DATE: 05-06-2025                          TIME: 09:58:06

USER:



COMMENTS: _____________________________________________________________
```

```
--------------------------------------------------------------------------------
------------------------
  ********************************************
  ** SIMULATION : AES 6H_005-Humber          **
  ********************************************


--------------------
|    READ STORM    |    Filename: C:\Users\caeh076182\AppD
|                  |              ata\Local\Temp\
|                  |              ac3521ab-8657-4c27-9afb-46e264ee758f\ca1f19fd
| Ptotal= 47.81 mm |    Comments: AES 6H_005-Humber
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.00    0.00 |  1.75   16.25 |  3.50    6.69 |  5.25    0.96
                0.25    0.96 |  2.00   16.25 |  3.75    3.82 |  5.50    0.96
                0.50    0.96 |  2.25   43.98 |  4.00    3.82 |  5.75    0.96
                0.75    0.96 |  2.50   43.98 |  4.25    1.91 |  6.00    0.96
                1.00    0.96 |  2.75   12.43 |  4.50    1.91 |
                1.25    5.74 |  3.00   12.43 |  4.75    0.96 |
                1.50    5.74 |  3.25    6.69 |  5.00    0.96 |

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

--------------------
| CALIB            |
| STANDHYD (  0007)|   Area    (ha)=   1.10
|ID= 1 DT= 5.0 min |   Total Imp(%)=  92.00   Dir. Conn.(%)=  92.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.01         0.09
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=      85.00        40.00
     Mannings n           =      0.013        0.350

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


                          ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    0.00 | 1.667    5.74 | 3.250   12.43 |  4.83    0.96
               0.167    0.00 | 1.750    5.74 | 3.333    6.69 |  4.92    0.96
               0.250    0.00 | 1.833   16.25 | 3.417    6.69 |  5.00    0.96
               0.333    0.96 | 1.917   16.25 | 3.500    6.69 |  5.08    0.96
               0.417    0.96 | 2.000   16.25 | 3.583    6.69 |  5.17    0.96
               0.500    0.96 | 2.083   16.25 | 3.667    6.69 |  5.25    0.96
               0.583    0.96 | 2.167   16.25 | 3.750    6.69 |  5.33    0.96
```

0.667	0.96	2.250	16.25	3.833	3.82	5.42	0.96
0.750	0.96	2.333	43.98	3.917	3.82	5.50	0.96
0.833	0.96	2.417	43.98	4.000	3.82	5.58	0.96
0.917	0.96	2.500	43.98	4.083	3.82	5.67	0.96
1.000	0.96	2.583	43.98	4.167	3.82	5.75	0.96
1.083	0.96	2.667	43.98	4.250	3.82	5.83	0.96
1.167	0.96	2.750	43.98	4.333	1.91	5.92	0.96
1.250	0.96	2.833	12.43	4.417	1.91	6.00	0.96
1.333	5.74	2.917	12.43	4.500	1.91	6.08	0.96
1.417	5.74	3.000	12.43	4.583	1.91	6.17	0.96
1.500	5.74	3.083	12.43	4.667	1.91	6.25	0.96
1.583	5.74	3.167	12.43	4.750	1.91		

Max.Eff.Inten.(mm/hr)=	43.98	23.12	
over (min)	5.00	10.00	
Storage Coeff. (min)=	3.22 (ii)	7.73 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.27	0.13	
			TOTALS
PEAK FLOW (cms)=	0.12	0.00	0.129 (iii)
TIME TO PEAK (hrs)=	2.75	2.75	2.75
RUNOFF VOLUME (mm)=	46.81	18.59	44.55
TOTAL RAINFALL (mm)=	47.81	47.81	47.81
RUNOFF COEFFICIENT =	0.98	0.39	0.93

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
STANDHYD (0008)
ID= 1 DT= 5.0 min

Area (ha)= 3.24
Total Imp(%)= 91.00 Dir. Conn.(%)= 91.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.95	0.29
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	147.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	5.74	3.250	12.43	4.83	0.96
0.167	0.00	1.750	5.74	3.333	6.69	4.92	0.96
0.250	0.00	1.833	16.25	3.417	6.69	5.00	0.96
0.333	0.96	1.917	16.25	3.500	6.69	5.08	0.96
0.417	0.96	2.000	16.25	3.583	6.69	5.17	0.96
0.500	0.96	2.083	16.25	3.667	6.69	5.25	0.96
0.583	0.96	2.167	16.25	3.750	6.69	5.33	0.96
0.667	0.96	2.250	16.25	3.833	3.82	5.42	0.96
0.750	0.96	2.333	43.98	3.917	3.82	5.50	0.96
0.833	0.96	2.417	43.98	4.000	3.82	5.58	0.96
0.917	0.96	2.500	43.98	4.083	3.82	5.67	0.96
1.000	0.96	2.583	43.98	4.167	3.82	5.75	0.96
1.083	0.96	2.667	43.98	4.250	3.82	5.83	0.96
1.167	0.96	2.750	43.98	4.333	1.91	5.92	0.96
1.250	0.96	2.833	12.43	4.417	1.91	6.00	0.96
1.333	5.74	2.917	12.43	4.500	1.91	6.08	0.96
1.417	5.74	3.000	12.43	4.583	1.91	6.17	0.96
1.500	5.74	3.083	12.43	4.667	1.91	6.25	0.96
1.583	5.74	3.167	12.43	4.750	1.91		

			TOTALS
Max.Eff.Inten.(mm/hr)=	43.98	23.12	
over (min)	5.00	10.00	
Storage Coeff. (min)=	4.47 (ii)	9.23 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.23	0.12	
PEAK FLOW (cms)=	0.36	0.02	0.376 (iii)
TIME TO PEAK (hrs)=	2.75	2.75	2.75
RUNOFF VOLUME (mm)=	46.81	18.59	44.27
TOTAL RAINFALL (mm)=	47.81	47.81	47.81
RUNOFF COEFFICIENT =	0.98	0.39	0.93

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0006)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0007):	1.10	0.129	2.75	44.55
+ ID2= 2 (0008):	3.24	0.376	2.75	44.27

```
        ==================================================
        ID = 3 (  0006):     4.34   0.504     2.75    44.34

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0011)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0000   |   0.0430      0.1560
                          0.0290     0.1170   |   0.0850      0.2610

                                 AREA     QPEAK     TPEAK       R.V.
                                 (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0006)      4.340      0.504      2.75      44.34
   OUTFLOW: ID= 1 (  0011)      4.340      0.043      4.25      44.11

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  8.47
                  TIME SHIFT OF PEAK FLOW         (min)= 90.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.1553

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0009)|   Area    (ha)=   0.52
|ID= 1 DT= 5.0 min |   Total Imp(%)=  98.00   Dir. Conn.(%)=  98.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.51         0.01
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=      59.00        40.00
     Mannings n           =      0.013        0.350

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


                          ---- TRANSFORMED HYETOGRAPH ----
               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
              0.083    0.00 | 1.667    5.74 | 3.250   12.43 |  4.83    0.96
              0.167    0.00 | 1.750    5.74 | 3.333    6.69 |  4.92    0.96
              0.250    0.00 | 1.833   16.25 | 3.417    6.69 |  5.00    0.96
              0.333    0.96 | 1.917   16.25 | 3.500    6.69 |  5.08    0.96
              0.417    0.96 | 2.000   16.25 | 3.583    6.69 |  5.17    0.96
              0.500    0.96 | 2.083   16.25 | 3.667    6.69 |  5.25    0.96
              0.583    0.96 | 2.167   16.25 | 3.750    6.69 |  5.33    0.96
              0.667    0.96 | 2.250   16.25 | 3.833    3.82 |  5.42    0.96
              0.750    0.96 | 2.333   43.98 | 3.917    3.82 |  5.50    0.96
```

0.833	0.96	2.417	43.98	4.000	3.82	5.58	0.96
0.917	0.96	2.500	43.98	4.083	3.82	5.67	0.96
1.000	0.96	2.583	43.98	4.167	3.82	5.75	0.96
1.083	0.96	2.667	43.98	4.250	3.82	5.83	0.96
1.167	0.96	2.750	43.98	4.333	1.91	5.92	0.96
1.250	0.96	2.833	12.43	4.417	1.91	6.00	0.96
1.333	5.74	2.917	12.43	4.500	1.91	6.08	0.96
1.417	5.74	3.000	12.43	4.583	1.91	6.17	0.96
1.500	5.74	3.083	12.43	4.667	1.91	6.25	0.96
1.583	5.74	3.167	12.43	4.750	1.91		

Max.Eff.Inten.(mm/hr)=	43.98	23.12		
over (min)	5.00	10.00		
Storage Coeff. (min)=	2.59 (ii)	5.11 (ii)		
Unit Hyd. Tpeak (min)=	5.00	10.00		
Unit Hyd. peak (cms)=	0.29	0.16		
			TOTALS	
PEAK FLOW (cms)=	0.06	0.00	0.063 (iii)	
TIME TO PEAK (hrs)=	2.75	2.75	2.75	
RUNOFF VOLUME (mm)=	46.81	18.59	46.24	
TOTAL RAINFALL (mm)=	47.81	47.81	47.81	
RUNOFF COEFFICIENT =	0.98	0.39	0.97	

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
STANDHYD (0010)
ID= 1 DT= 5.0 min

Area (ha)= 2.08
Total Imp(%)= 92.00 Dir. Conn.(%)= 92.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=		1.91	0.17
Dep. Storage (mm)=		1.00	5.00
Average Slope (%)=		1.00	2.00
Length (m)=		118.00	40.00
Mannings n =		0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr

0.083	0.00	1.667	5.74	3.250	12.43	4.83	0.96
0.167	0.00	1.750	5.74	3.333	6.69	4.92	0.96
0.250	0.00	1.833	16.25	3.417	6.69	5.00	0.96
0.333	0.96	1.917	16.25	3.500	6.69	5.08	0.96
0.417	0.96	2.000	16.25	3.583	6.69	5.17	0.96
0.500	0.96	2.083	16.25	3.667	6.69	5.25	0.96
0.583	0.96	2.167	16.25	3.750	6.69	5.33	0.96
0.667	0.96	2.250	16.25	3.833	3.82	5.42	0.96
0.750	0.96	2.333	43.98	3.917	3.82	5.50	0.96
0.833	0.96	2.417	43.98	4.000	3.82	5.58	0.96
0.917	0.96	2.500	43.98	4.083	3.82	5.67	0.96
1.000	0.96	2.583	43.98	4.167	3.82	5.75	0.96
1.083	0.96	2.667	43.98	4.250	3.82	5.83	0.96
1.167	0.96	2.750	43.98	4.333	1.91	5.92	0.96
1.250	0.96	2.833	12.43	4.417	1.91	6.00	0.96
1.333	5.74	2.917	12.43	4.500	1.91	6.08	0.96
1.417	5.74	3.000	12.43	4.583	1.91	6.17	0.96
1.500	5.74	3.083	12.43	4.667	1.91	6.25	0.96
1.583	5.74	3.167	12.43	4.750	1.91		

			TOTALS
Max.Eff.Inten.(mm/hr)=	43.98	23.12	
over (min)	5.00	10.00	
Storage Coeff. (min)=	3.92 (ii)	8.44 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.24	0.12	
PEAK FLOW (cms)=	0.23	0.01	0.243 (iii)
TIME TO PEAK (hrs)=	2.75	2.75	2.75
RUNOFF VOLUME (mm)=	46.81	18.59	44.55
TOTAL RAINFALL (mm)=	47.81	47.81	47.81
RUNOFF COEFFICIENT =	0.98	0.39	0.93

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0005)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0010):	2.08	0.243	2.75	44.55
+ ID2= 2 (0009):	0.52	0.063	2.75	46.24
ID = 3 (0005):	2.60	0.306	2.75	44.89

```
     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0012)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0000   |   0.0270      0.0940
                          0.0180     0.0710   |   0.0540      0.1570

                                 AREA     QPEAK     TPEAK       R.V.
                                 (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0005)      2.600      0.306      2.75      44.89
   OUTFLOW: ID= 1 (  0012)      2.600      0.027      4.25      44.50

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  8.78
                  TIME SHIFT OF PEAK FLOW         (min)= 90.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0936

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================================================================================
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       V    V   I    SSSSS  U   U    A    L              (v 6.2.2015)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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


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

  Output  filename:
C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\8
729c51d-d60c-4e26-aef8-a87924146f85\s
  Summary filename:
C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\8
729c51d-d60c-4e26-aef8-a87924146f85\s
```

DATE: 05-06-2025 TIME: 09:58:06

USER:

COMMENTS: _____

****
** SIMULATION : AES 6H_010-Humber **
****

READ STORM	Filename: C:\Users\caeh076182\AppData\Local\Temp\ac3521ab-8657-4c27-9afb-46e264ee758f\25dccaf4
Ptotal= 55.69 mm	Comments: AES 6H_010-Humber

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	1.75	18.94	3.50	7.80	5.25	1.11
0.25	1.11	2.00	18.94	3.75	4.46	5.50	1.11
0.50	1.11	2.25	51.24	4.00	4.46	5.75	1.11
0.75	1.11	2.50	51.24	4.25	2.23	6.00	1.11
1.00	1.11	2.75	14.48	4.50	2.23		
1.25	6.68	3.00	14.48	4.75	1.11		
1.50	6.68	3.25	7.80	5.00	1.11		

CALIB STANDHYD (0007)	Area (ha)= 1.10
ID= 1 DT= 5.0 min	Total Imp(%)= 92.00 Dir. Conn.(%)= 92.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.01	0.09
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	85.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	6.68	3.250	14.48	4.83	1.11
0.167	0.00	1.750	6.68	3.333	7.80	4.92	1.11
0.250	0.00	1.833	18.94	3.417	7.80	5.00	1.11
0.333	1.11	1.917	18.94	3.500	7.80	5.08	1.11
0.417	1.11	2.000	18.94	3.583	7.80	5.17	1.11
0.500	1.11	2.083	18.94	3.667	7.80	5.25	1.11
0.583	1.11	2.167	18.94	3.750	7.80	5.33	1.11
0.667	1.11	2.250	18.94	3.833	4.46	5.42	1.11
0.750	1.11	2.333	51.24	3.917	4.46	5.50	1.11
0.833	1.11	2.417	51.24	4.000	4.46	5.58	1.11
0.917	1.11	2.500	51.24	4.083	4.46	5.67	1.11
1.000	1.11	2.583	51.24	4.167	4.46	5.75	1.11
1.083	1.11	2.667	51.24	4.250	4.46	5.83	1.11
1.167	1.11	2.750	51.24	4.333	2.23	5.92	1.11
1.250	1.11	2.833	14.48	4.417	2.23	6.00	1.11
1.333	6.68	2.917	14.48	4.500	2.23	6.08	1.11
1.417	6.68	3.000	14.48	4.583	2.23	6.17	1.11
1.500	6.68	3.083	14.48	4.667	2.23	6.25	1.11
1.583	6.68	3.167	14.48	4.750	2.23		

Max.Eff.Inten.(mm/hr)=	51.24	29.66		
over (min)	5.00	10.00		
Storage Coeff. (min)=	3.03 (ii)	7.28 (ii)		
Unit Hyd. Tpeak (min)=	5.00	10.00		
Unit Hyd. peak (cms)=	0.27	0.14		
			TOTALS	
PEAK FLOW (cms)=	0.14	0.01	0.151 (iii)	
TIME TO PEAK (hrs)=	2.75	2.75	2.75	
RUNOFF VOLUME (mm)=	54.69	24.14	52.24	
TOTAL RAINFALL (mm)=	55.69	55.69	55.69	
RUNOFF COEFFICIENT =	0.98	0.43	0.94	

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB STANDHYD (0008) ID= 1 DT= 5.0 min	Area (ha)= 3.24 Total Imp(%)= 91.00 Dir. Conn.(%)= 91.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.95	0.29
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	147.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	6.68	3.250	14.48	4.83	1.11
0.167	0.00	1.750	6.68	3.333	7.80	4.92	1.11
0.250	0.00	1.833	18.94	3.417	7.80	5.00	1.11
0.333	1.11	1.917	18.94	3.500	7.80	5.08	1.11
0.417	1.11	2.000	18.94	3.583	7.80	5.17	1.11
0.500	1.11	2.083	18.94	3.667	7.80	5.25	1.11
0.583	1.11	2.167	18.94	3.750	7.80	5.33	1.11
0.667	1.11	2.250	18.94	3.833	4.46	5.42	1.11
0.750	1.11	2.333	51.24	3.917	4.46	5.50	1.11
0.833	1.11	2.417	51.24	4.000	4.46	5.58	1.11
0.917	1.11	2.500	51.24	4.083	4.46	5.67	1.11
1.000	1.11	2.583	51.24	4.167	4.46	5.75	1.11
1.083	1.11	2.667	51.24	4.250	4.46	5.83	1.11
1.167	1.11	2.750	51.24	4.333	2.23	5.92	1.11
1.250	1.11	2.833	14.48	4.417	2.23	6.00	1.11
1.333	6.68	2.917	14.48	4.500	2.23	6.08	1.11
1.417	6.68	3.000	14.48	4.583	2.23	6.17	1.11
1.500	6.68	3.083	14.48	4.667	2.23	6.25	1.11
1.583	6.68	3.167	14.48	4.750	2.23		

Max.Eff.Inten.(mm/hr)=		51.24	29.66	
over (min)		5.00	10.00	
Storage Coeff. (min)=		4.21 (ii)	8.68 (ii)	
Unit Hyd. Tpeak (min)=		5.00	10.00	
Unit Hyd. peak (cms)=		0.24	0.12	
				TOTALS
PEAK FLOW	(cms)=	0.42	0.02	0.440 (iii)
TIME TO PEAK	(hrs)=	2.75	2.75	2.75
RUNOFF VOLUME	(mm)=	54.69	24.14	51.94
TOTAL RAINFALL	(mm)=	55.69	55.69	55.69
RUNOFF COEFFICIENT	=	0.98	0.43	0.93

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)

(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL

```
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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

--------------------
| ADD HYD  (  0006)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0007):     1.10   0.151     2.75    52.24
      + ID2= 2 (  0008):     3.24   0.440     2.75    51.94
        ================================================
        ID = 3 (  0006):     4.34   0.591     2.75    52.02

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0011)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0000   |   0.0430      0.1560
                          0.0290     0.1170   |   0.0850      0.2610

                                  AREA     QPEAK     TPEAK       R.V.
                                  (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0006)      4.340      0.591      2.75       52.02
   OUTFLOW: ID= 1 (  0011)      4.340      0.053      4.08       51.78

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)=  8.95
                   TIME SHIFT OF PEAK FLOW         (min)= 80.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.1807

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0009)|   Area    (ha)=   0.52
|ID= 1 DT= 5.0 min |   Total Imp(%)=  98.00   Dir. Conn.(%)=  98.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.51         0.01
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=      59.00        40.00
     Mannings n             =     0.013        0.350

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


                              ---- TRANSFORMED HYETOGRAPH ----
```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	6.68	3.250	14.48	4.83	1.11
0.167	0.00	1.750	6.68	3.333	7.80	4.92	1.11
0.250	0.00	1.833	18.94	3.417	7.80	5.00	1.11
0.333	1.11	1.917	18.94	3.500	7.80	5.08	1.11
0.417	1.11	2.000	18.94	3.583	7.80	5.17	1.11
0.500	1.11	2.083	18.94	3.667	7.80	5.25	1.11
0.583	1.11	2.167	18.94	3.750	7.80	5.33	1.11
0.667	1.11	2.250	18.94	3.833	4.46	5.42	1.11
0.750	1.11	2.333	51.24	3.917	4.46	5.50	1.11
0.833	1.11	2.417	51.24	4.000	4.46	5.58	1.11
0.917	1.11	2.500	51.24	4.083	4.46	5.67	1.11
1.000	1.11	2.583	51.24	4.167	4.46	5.75	1.11
1.083	1.11	2.667	51.24	4.250	4.46	5.83	1.11
1.167	1.11	2.750	51.24	4.333	2.23	5.92	1.11
1.250	1.11	2.833	14.48	4.417	2.23	6.00	1.11
1.333	6.68	2.917	14.48	4.500	2.23	6.08	1.11
1.417	6.68	3.000	14.48	4.583	2.23	6.17	1.11
1.500	6.68	3.083	14.48	4.667	2.23	6.25	1.11
1.583	6.68	3.167	14.48	4.750	2.23		

			TOTALS
Max.Eff.Inten.(mm/hr)=	51.24	29.66	
over (min)	5.00	5.00	
Storage Coeff. (min)=	2.43 (ii)	4.81 (ii)	
Unit Hyd. Tpeak (min)=	5.00	5.00	
Unit Hyd. peak (cms)=	0.30	0.22	
PEAK FLOW (cms)=	0.07	0.00	0.073 (iii)
TIME TO PEAK (hrs)=	2.75	2.75	2.75
RUNOFF VOLUME (mm)=	54.69	24.14	54.08
TOTAL RAINFALL (mm)=	55.69	55.69	55.69
RUNOFF COEFFICIENT =	0.98	0.43	0.97

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB STANDHYD (0010) ID= 1 DT= 5.0 min	Area (ha)= 2.08 Total Imp(%)= 92.00 Dir. Conn.(%)= 92.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.91	0.17

Dep. Storage (mm)=	1.00	5.00	
Average Slope (%)=	1.00	2.00	
Length (m)=	118.00	40.00	
Mannings n =	0.013	0.350	

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	6.68	3.250	14.48	4.83	1.11
0.167	0.00	1.750	6.68	3.333	7.80	4.92	1.11
0.250	0.00	1.833	18.94	3.417	7.80	5.00	1.11
0.333	1.11	1.917	18.94	3.500	7.80	5.08	1.11
0.417	1.11	2.000	18.94	3.583	7.80	5.17	1.11
0.500	1.11	2.083	18.94	3.667	7.80	5.25	1.11
0.583	1.11	2.167	18.94	3.750	7.80	5.33	1.11
0.667	1.11	2.250	18.94	3.833	4.46	5.42	1.11
0.750	1.11	2.333	51.24	3.917	4.46	5.50	1.11
0.833	1.11	2.417	51.24	4.000	4.46	5.58	1.11
0.917	1.11	2.500	51.24	4.083	4.46	5.67	1.11
1.000	1.11	2.583	51.24	4.167	4.46	5.75	1.11
1.083	1.11	2.667	51.24	4.250	4.46	5.83	1.11
1.167	1.11	2.750	51.24	4.333	2.23	5.92	1.11
1.250	1.11	2.833	14.48	4.417	2.23	6.00	1.11
1.333	6.68	2.917	14.48	4.500	2.23	6.08	1.11
1.417	6.68	3.000	14.48	4.583	2.23	6.17	1.11
1.500	6.68	3.083	14.48	4.667	2.23	6.25	1.11
1.583	6.68	3.167	14.48	4.750	2.23		

Max.Eff.Inten.(mm/hr)=	51.24	29.66		
over (min)	5.00	10.00		
Storage Coeff. (min)=	3.69 (ii)	7.93 (ii)		
Unit Hyd. Tpeak (min)=	5.00	10.00		
Unit Hyd. peak (cms)=	0.25	0.13		
			TOTALS	
PEAK FLOW (cms)=	0.27	0.01	0.284 (iii)	
TIME TO PEAK (hrs)=	2.75	2.75	2.75	
RUNOFF VOLUME (mm)=	54.69	24.14	52.24	
TOTAL RAINFALL (mm)=	55.69	55.69	55.69	
RUNOFF COEFFICIENT =	0.98	0.43	0.94	

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)

(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.

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

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--------------------
| ADD HYD  (  0005)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0010):     2.08   0.284     2.75    52.24
      + ID2= 2 (  0009):     0.52   0.073     2.75    54.08
        ================================================
        ID = 3 (  0005):     2.60   0.358     2.75    52.61

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0012)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0000   |   0.0270      0.0940
                          0.0180     0.0710   |   0.0540      0.1570

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0005)      2.600      0.358      2.75      52.61
   OUTFLOW: ID= 1 (  0012)      2.600      0.033      3.92      52.23

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  9.33
                  TIME SHIFT OF PEAK FLOW         (min)= 70.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.1089

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       V    V   I    SSSSS  U   U    A    L              (v 6.2.2015)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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

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

Output filename:
C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\d0eacca2-4cc9-4bad-9ace-4f2324061023\s
Summary filename:
C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\d0eacca2-4cc9-4bad-9ace-4f2324061023\s

DATE: 05-06-2025 TIME: 09:58:06

USER:

COMMENTS: _____

****
** SIMULATION : AES 6H_025-Humber **
****

READ STORM	Filename: C:\Users\caeh076182\AppData\Local\Temp\ac3521ab-8657-4c27-9afb-46e264ee758f\6ec422e5
Ptotal= 65.59 mm	Comments: AES 6H_025-Humber

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	1.75	22.30	3.50	9.18	5.25	1.31
0.25	1.31	2.00	22.30	3.75	5.25	5.50	1.31
0.50	1.31	2.25	60.35	4.00	5.25	5.75	1.31
0.75	1.31	2.50	60.35	4.25	2.62	6.00	1.31
1.00	1.31	2.75	17.06	4.50	2.62		
1.25	7.87	3.00	17.06	4.75	1.31		
1.50	7.87	3.25	9.18	5.00	1.31		

CALIB STANDHYD (0007)	Area (ha)= 1.10

|ID= 1 DT= 5.0 min | Total Imp(%)= 92.00 Dir. Conn.(%)= 92.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.01	0.09
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	85.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	7.87	3.250	17.06	4.83	1.31
0.167	0.00	1.750	7.87	3.333	9.18	4.92	1.31
0.250	0.00	1.833	22.30	3.417	9.18	5.00	1.31
0.333	1.31	1.917	22.30	3.500	9.18	5.08	1.31
0.417	1.31	2.000	22.30	3.583	9.18	5.17	1.31
0.500	1.31	2.083	22.30	3.667	9.18	5.25	1.31
0.583	1.31	2.167	22.30	3.750	9.18	5.33	1.31
0.667	1.31	2.250	22.30	3.833	5.25	5.42	1.31
0.750	1.31	2.333	60.35	3.917	5.25	5.50	1.31
0.833	1.31	2.417	60.35	4.000	5.25	5.58	1.31
0.917	1.31	2.500	60.35	4.083	5.25	5.67	1.31
1.000	1.31	2.583	60.35	4.167	5.25	5.75	1.31
1.083	1.31	2.667	60.35	4.250	5.25	5.83	1.31
1.167	1.31	2.750	60.35	4.333	2.62	5.92	1.31
1.250	1.31	2.833	17.06	4.417	2.62	6.00	1.31
1.333	7.87	2.917	17.06	4.500	2.62	6.08	1.31
1.417	7.87	3.000	17.06	4.583	2.62	6.17	1.31
1.500	7.87	3.083	17.06	4.667	2.62	6.25	1.31
1.583	7.87	3.167	17.06	4.750	2.62		

Max.Eff.Inten.(mm/hr)	=	60.35	38.26	
over (min)		5.00	10.00	
Storage Coeff. (min)	=	2.84 (ii)	6.82 (ii)	
Unit Hyd. Tpeak (min)	=	5.00	10.00	
Unit Hyd. peak (cms)	=	0.28	0.14	
				TOTALS
PEAK FLOW (cms)	=	0.17	0.01	0.178 (iii)
TIME TO PEAK (hrs)	=	2.75	2.75	2.75
RUNOFF VOLUME (mm)	=	64.59	31.55	61.94
TOTAL RAINFALL (mm)	=	65.59	65.59	65.59
RUNOFF COEFFICIENT	=	0.98	0.48	0.94

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

```
            CN*  =  82.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| STANDHYD (  0008)|   Area    (ha)=   3.24
|ID= 1 DT= 5.0 min |   Total Imp(%)=  91.00   Dir. Conn.(%)=  91.00
--------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       2.95         0.29
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=     147.00        40.00
     Mannings n           =      0.013        0.350

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


                              ---- TRANSFORMED HYETOGRAPH ----
               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
              0.083    0.00 | 1.667    7.87 | 3.250   17.06 |  4.83    1.31
              0.167    0.00 | 1.750    7.87 | 3.333    9.18 |  4.92    1.31
              0.250    0.00 | 1.833   22.30 | 3.417    9.18 |  5.00    1.31
              0.333    1.31 | 1.917   22.30 | 3.500    9.18 |  5.08    1.31
              0.417    1.31 | 2.000   22.30 | 3.583    9.18 |  5.17    1.31
              0.500    1.31 | 2.083   22.30 | 3.667    9.18 |  5.25    1.31
              0.583    1.31 | 2.167   22.30 | 3.750    9.18 |  5.33    1.31
              0.667    1.31 | 2.250   22.30 | 3.833    5.25 |  5.42    1.31
              0.750    1.31 | 2.333   60.35 | 3.917    5.25 |  5.50    1.31
              0.833    1.31 | 2.417   60.35 | 4.000    5.25 |  5.58    1.31
              0.917    1.31 | 2.500   60.35 | 4.083    5.25 |  5.67    1.31
              1.000    1.31 | 2.583   60.35 | 4.167    5.25 |  5.75    1.31
              1.083    1.31 | 2.667   60.35 | 4.250    5.25 |  5.83    1.31
              1.167    1.31 | 2.750   60.35 | 4.333    2.62 |  5.92    1.31
              1.250    1.31 | 2.833   17.06 | 4.417    2.62 |  6.00    1.31
              1.333    7.87 | 2.917   17.06 | 4.500    2.62 |  6.08    1.31
              1.417    7.87 | 3.000   17.06 | 4.583    2.62 |  6.17    1.31
              1.500    7.87 | 3.083   17.06 | 4.667    2.62 |  6.25    1.31
              1.583    7.87 | 3.167   17.06 | 4.750    2.62 |

     Max.Eff.Inten.(mm/hr)=      60.35        38.26
               over (min)         5.00        10.00
     Storage Coeff.  (min)=       3.94 (ii)    8.13 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.24         0.13
                                                        *TOTALS*
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     PEAK FLOW       (cms)=       0.49         0.03          0.522 (iii)
     TIME TO PEAK    (hrs)=       2.75         2.75           2.75
     RUNOFF VOLUME    (mm)=      64.59        31.55          61.62
     TOTAL RAINFALL   (mm)=      65.59        65.59          65.59
     RUNOFF COEFFICIENT   =       0.98         0.48           0.94

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  82.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD  (  0006)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0007):     1.10   0.178     2.75    61.94
      + ID2= 2 (  0008):     3.24   0.522     2.75    61.62
        ================================================
        ID = 3 (  0006):     4.34   0.700     2.75    61.70

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0011)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0000   |   0.0430      0.1560
                          0.0290     0.1170   |   0.0850      0.2610

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0006)      4.340      0.700      2.75      61.70
   OUTFLOW: ID= 1 (  0011)      4.340      0.066      3.92      61.46

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  9.39
                  TIME SHIFT OF PEAK FLOW         (min)= 70.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.2127

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--------------------
| CALIB            |
| STANDHYD (  0009)|   Area    (ha)=   0.52
|ID= 1 DT= 5.0 min |   Total Imp(%)=  98.00   Dir. Conn.(%)=  98.00
--------------------
```

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.51	0.01
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	59.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	7.87	3.250	17.06	4.83	1.31
0.167	0.00	1.750	7.87	3.333	9.18	4.92	1.31
0.250	0.00	1.833	22.30	3.417	9.18	5.00	1.31
0.333	1.31	1.917	22.30	3.500	9.18	5.08	1.31
0.417	1.31	2.000	22.30	3.583	9.18	5.17	1.31
0.500	1.31	2.083	22.30	3.667	9.18	5.25	1.31
0.583	1.31	2.167	22.30	3.750	9.18	5.33	1.31
0.667	1.31	2.250	22.30	3.833	5.25	5.42	1.31
0.750	1.31	2.333	60.35	3.917	5.25	5.50	1.31
0.833	1.31	2.417	60.35	4.000	5.25	5.58	1.31
0.917	1.31	2.500	60.35	4.083	5.25	5.67	1.31
1.000	1.31	2.583	60.35	4.167	5.25	5.75	1.31
1.083	1.31	2.667	60.35	4.250	5.25	5.83	1.31
1.167	1.31	2.750	60.35	4.333	2.62	5.92	1.31
1.250	1.31	2.833	17.06	4.417	2.62	6.00	1.31
1.333	7.87	2.917	17.06	4.500	2.62	6.08	1.31
1.417	7.87	3.000	17.06	4.583	2.62	6.17	1.31
1.500	7.87	3.083	17.06	4.667	2.62	6.25	1.31
1.583	7.87	3.167	17.06	4.750	2.62		

Max.Eff.Inten.(mm/hr)=		60.35	38.26	
over (min)		5.00	5.00	
Storage Coeff. (min)=		2.28 (ii)	4.51 (ii)	
Unit Hyd. Tpeak (min)=		5.00	5.00	
Unit Hyd. peak (cms)=		0.30	0.23	
				TOTALS
PEAK FLOW	(cms)=	0.09	0.00	0.087 (iii)
TIME TO PEAK	(hrs)=	2.75	2.75	2.75
RUNOFF VOLUME	(mm)=	64.59	31.55	63.93
TOTAL RAINFALL	(mm)=	65.59	65.59	65.59
RUNOFF COEFFICIENT	=	0.98	0.48	0.97

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)

(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL

THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB		
STANDHYD (0010)	Area (ha)=	2.08
ID= 1 DT= 5.0 min	Total Imp(%)=	92.00 Dir. Conn.(%)= 92.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.91	0.17
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	118.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	7.87	3.250	17.06	4.83	1.31
0.167	0.00	1.750	7.87	3.333	9.18	4.92	1.31
0.250	0.00	1.833	22.30	3.417	9.18	5.00	1.31
0.333	1.31	1.917	22.30	3.500	9.18	5.08	1.31
0.417	1.31	2.000	22.30	3.583	9.18	5.17	1.31
0.500	1.31	2.083	22.30	3.667	9.18	5.25	1.31
0.583	1.31	2.167	22.30	3.750	9.18	5.33	1.31
0.667	1.31	2.250	22.30	3.833	5.25	5.42	1.31
0.750	1.31	2.333	60.35	3.917	5.25	5.50	1.31
0.833	1.31	2.417	60.35	4.000	5.25	5.58	1.31
0.917	1.31	2.500	60.35	4.083	5.25	5.67	1.31
1.000	1.31	2.583	60.35	4.167	5.25	5.75	1.31
1.083	1.31	2.667	60.35	4.250	5.25	5.83	1.31
1.167	1.31	2.750	60.35	4.333	2.62	5.92	1.31
1.250	1.31	2.833	17.06	4.417	2.62	6.00	1.31
1.333	7.87	2.917	17.06	4.500	2.62	6.08	1.31
1.417	7.87	3.000	17.06	4.583	2.62	6.17	1.31
1.500	7.87	3.083	17.06	4.667	2.62	6.25	1.31
1.583	7.87	3.167	17.06	4.750	2.62		

Max.Eff.Inten.(mm/hr)=		60.35	38.26	
over (min)		5.00	10.00	
Storage Coeff. (min)=		3.45 (ii)	7.43 (ii)	
Unit Hyd. Tpeak (min)=		5.00	10.00	
Unit Hyd. peak (cms)=		0.26	0.13	
				TOTALS
PEAK FLOW	(cms)=	0.32	0.02	0.337 (iii)
TIME TO PEAK	(hrs)=	2.75	2.75	2.75

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     RUNOFF VOLUME    (mm)=      64.59        31.55          61.95
     TOTAL RAINFALL   (mm)=      65.59        65.59          65.59
     RUNOFF COEFFICIENT   =       0.98         0.48           0.94

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  82.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD  (  0005)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0010):     2.08   0.337     2.75    61.95
      + ID2= 2 (  0009):     0.52   0.087     2.75    63.93
        ================================================
        ID = 3 (  0005):     2.60   0.423     2.75    62.34

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0012)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0000   |   0.0270      0.0940
                          0.0180     0.0710   |   0.0540      0.1570

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0005)      2.600      0.423      2.75      62.34
   OUTFLOW: ID= 1 (  0012)      2.600      0.042      3.83      61.96

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  9.82
                  TIME SHIFT OF PEAK FLOW         (min)= 65.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.1280

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================================================================================
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       V    V   I    SSSSS  U   U    A    L             (v 6.2.2015)
       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
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         VV     I    SSSSS  UUUUU  A   A  LLLLL

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


***** D E T A I L E D O U T P U T *****

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

Output filename:
C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\fab3ced5-6708-4739-8835-218e07f74cdd\s
Summary filename:
C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\fab3ced5-6708-4739-8835-218e07f74cdd\s

DATE: 05-06-2025 TIME: 09:58:07

USER:

COMMENTS: _____

****
** SIMULATION : AES 6H_050-Humber **
****

READ STORM	Filename: C:\Users\caeh076182\AppData\Local\Temp\ac3521ab-8657-4c27-9afb-46e264ee758f\c2571f5b
Ptotal= 73.00 mm	Comments: AES 6H_050-Humber

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	1.75	24.82	3.50	10.22	5.25	1.46
0.25	1.46	2.00	24.82	3.75	5.84	5.50	1.46

0.50	1.46	2.25	67.16	4.00	5.84	5.75	1.46
0.75	1.46	2.50	67.16	4.25	2.92	6.00	1.46
1.00	1.46	2.75	18.98	4.50	2.92		
1.25	8.76	3.00	18.98	4.75	1.46		
1.50	8.76	3.25	10.22	5.00	1.46		

CALIB
STANDHYD (0007)| Area (ha)= 1.10
ID= 1 DT= 5.0 min | Total Imp(%)= 92.00 Dir. Conn.(%)= 92.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.01	0.09
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	85.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	8.76	3.250	18.98	4.83	1.46
0.167	0.00	1.750	8.76	3.333	10.22	4.92	1.46
0.250	0.00	1.833	24.82	3.417	10.22	5.00	1.46
0.333	1.46	1.917	24.82	3.500	10.22	5.08	1.46
0.417	1.46	2.000	24.82	3.583	10.22	5.17	1.46
0.500	1.46	2.083	24.82	3.667	10.22	5.25	1.46
0.583	1.46	2.167	24.82	3.750	10.22	5.33	1.46
0.667	1.46	2.250	24.82	3.833	5.84	5.42	1.46
0.750	1.46	2.333	67.16	3.917	5.84	5.50	1.46
0.833	1.46	2.417	67.16	4.000	5.84	5.58	1.46
0.917	1.46	2.500	67.16	4.083	5.84	5.67	1.46
1.000	1.46	2.583	67.16	4.167	5.84	5.75	1.46
1.083	1.46	2.667	67.16	4.250	5.84	5.83	1.46
1.167	1.46	2.750	67.16	4.333	2.92	5.92	1.46
1.250	1.46	2.833	18.98	4.417	2.92	6.00	1.46
1.333	8.76	2.917	18.98	4.500	2.92	6.08	1.46
1.417	8.76	3.000	18.98	4.583	2.92	6.17	1.46
1.500	8.76	3.083	18.98	4.667	2.92	6.25	1.46
1.583	8.76	3.167	18.98	4.750	2.92		

Max.Eff.Inten.(mm/hr)=		67.16	44.89
	over (min)	5.00	10.00
Storage Coeff. (min)=		2.72 (ii)	6.53 (ii)
Unit Hyd. Tpeak (min)=		5.00	10.00

Unit Hyd. peak (cms)=	0.29	0.14	
			TOTALS
PEAK FLOW (cms)=	0.19	0.01	0.199 (iii)
TIME TO PEAK (hrs)=	2.75	2.75	2.75
RUNOFF VOLUME (mm)=	72.00	37.36	69.23
TOTAL RAINFALL (mm)=	73.00	73.00	73.00
RUNOFF COEFFICIENT =	0.99	0.51	0.95

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
STANDHYD (0008)
ID= 1 DT= 5.0 min

Area (ha)= 3.24
Total Imp(%)= 91.00 Dir. Conn.(%)= 91.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.95	0.29
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	147.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	8.76	3.250	18.98	4.83	1.46
0.167	0.00	1.750	8.76	3.333	10.22	4.92	1.46
0.250	0.00	1.833	24.82	3.417	10.22	5.00	1.46
0.333	1.46	1.917	24.82	3.500	10.22	5.08	1.46
0.417	1.46	2.000	24.82	3.583	10.22	5.17	1.46
0.500	1.46	2.083	24.82	3.667	10.22	5.25	1.46
0.583	1.46	2.167	24.82	3.750	10.22	5.33	1.46
0.667	1.46	2.250	24.82	3.833	5.84	5.42	1.46
0.750	1.46	2.333	67.16	3.917	5.84	5.50	1.46
0.833	1.46	2.417	67.16	4.000	5.84	5.58	1.46
0.917	1.46	2.500	67.16	4.083	5.84	5.67	1.46
1.000	1.46	2.583	67.16	4.167	5.84	5.75	1.46
1.083	1.46	2.667	67.16	4.250	5.84	5.83	1.46
1.167	1.46	2.750	67.16	4.333	2.92	5.92	1.46
1.250	1.46	2.833	18.98	4.417	2.92	6.00	1.46

```
                1.333    8.76 | 2.917   18.98 | 4.500    2.92 |  6.08    1.46
                1.417    8.76 | 3.000   18.98 | 4.583    2.92 |  6.17    1.46
                1.500    8.76 | 3.083   18.98 | 4.667    2.92 |  6.25    1.46
                1.583    8.76 | 3.167   18.98 | 4.750    2.92 |

     Max.Eff.Inten.(mm/hr)=      67.16        44.89
               over (min)         5.00        10.00
     Storage Coeff.  (min)=       3.77 (ii)    7.79 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.25         0.13
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.55         0.03          0.583 (iii)
     TIME TO PEAK    (hrs)=       2.75         2.75           2.75
     RUNOFF VOLUME    (mm)=      72.00        37.36          68.88
     TOTAL RAINFALL   (mm)=      73.00        73.00          73.00
     RUNOFF COEFFICIENT   =       0.99         0.51           0.94

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  82.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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

--------------------
| ADD HYD  (  0006)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0007):     1.10   0.199     2.75    69.23
      + ID2= 2 (  0008):     3.24   0.583     2.75    68.88
        ================================================
        ID = 3 (  0006):     4.34   0.782     2.75    68.97

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0011)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------       (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000     0.0000   |   0.0430      0.1560
                           0.0290     0.1170   |   0.0850      0.2610

                                  AREA     QPEAK     TPEAK       R.V.
                                  (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0006)      4.340      0.782      2.75      68.97
   OUTFLOW: ID= 1 (  0011)      4.340      0.075      3.92      68.73
```

PEAK FLOW REDUCTION [Qout/Qin](%)= 9.63
TIME SHIFT OF PEAK FLOW (min)= 70.00
MAXIMUM STORAGE USED (ha.m.)= 0.2368

CALIB STANDHYD (0009) ID= 1 DT= 5.0 min	Area (ha)= 0.52 Total Imp(%)= 98.00 Dir. Conn.(%)= 98.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.51	0.01
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	59.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	8.76	3.250	18.98	4.83	1.46
0.167	0.00	1.750	8.76	3.333	10.22	4.92	1.46
0.250	0.00	1.833	24.82	3.417	10.22	5.00	1.46
0.333	1.46	1.917	24.82	3.500	10.22	5.08	1.46
0.417	1.46	2.000	24.82	3.583	10.22	5.17	1.46
0.500	1.46	2.083	24.82	3.667	10.22	5.25	1.46
0.583	1.46	2.167	24.82	3.750	10.22	5.33	1.46
0.667	1.46	2.250	24.82	3.833	5.84	5.42	1.46
0.750	1.46	2.333	67.16	3.917	5.84	5.50	1.46
0.833	1.46	2.417	67.16	4.000	5.84	5.58	1.46
0.917	1.46	2.500	67.16	4.083	5.84	5.67	1.46
1.000	1.46	2.583	67.16	4.167	5.84	5.75	1.46
1.083	1.46	2.667	67.16	4.250	5.84	5.83	1.46
1.167	1.46	2.750	67.16	4.333	2.92	5.92	1.46
1.250	1.46	2.833	18.98	4.417	2.92	6.00	1.46
1.333	8.76	2.917	18.98	4.500	2.92	6.08	1.46
1.417	8.76	3.000	18.98	4.583	2.92	6.17	1.46
1.500	8.76	3.083	18.98	4.667	2.92	6.25	1.46
1.583	8.76	3.167	18.98	4.750	2.92		

Max.Eff.Inten.(mm/hr)=		67.16	44.89
over (min)		5.00	5.00
Storage Coeff. (min)=		2.18 (ii)	4.32 (ii)
Unit Hyd. Tpeak (min)=		5.00	5.00
Unit Hyd. peak (cms)=		0.31	0.23
			TOTALS

PEAK FLOW (cms)=	0.10	0.00	0.096 (iii)
TIME TO PEAK (hrs)=	2.75	2.75	2.75
RUNOFF VOLUME (mm)=	72.00	37.36	71.31
TOTAL RAINFALL (mm)=	73.00	73.00	73.00
RUNOFF COEFFICIENT =	0.99	0.51	0.98

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	
STANDHYD (0010)	Area (ha)= 2.08
ID= 1 DT= 5.0 min	Total Imp(%)= 92.00 Dir. Conn.(%)= 92.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.91	0.17
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	118.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	8.76	3.250	18.98	4.83	1.46
0.167	0.00	1.750	8.76	3.333	10.22	4.92	1.46
0.250	0.00	1.833	24.82	3.417	10.22	5.00	1.46
0.333	1.46	1.917	24.82	3.500	10.22	5.08	1.46
0.417	1.46	2.000	24.82	3.583	10.22	5.17	1.46
0.500	1.46	2.083	24.82	3.667	10.22	5.25	1.46
0.583	1.46	2.167	24.82	3.750	10.22	5.33	1.46
0.667	1.46	2.250	24.82	3.833	5.84	5.42	1.46
0.750	1.46	2.333	67.16	3.917	5.84	5.50	1.46
0.833	1.46	2.417	67.16	4.000	5.84	5.58	1.46
0.917	1.46	2.500	67.16	4.083	5.84	5.67	1.46
1.000	1.46	2.583	67.16	4.167	5.84	5.75	1.46
1.083	1.46	2.667	67.16	4.250	5.84	5.83	1.46
1.167	1.46	2.750	67.16	4.333	2.92	5.92	1.46
1.250	1.46	2.833	18.98	4.417	2.92	6.00	1.46
1.333	8.76	2.917	18.98	4.500	2.92	6.08	1.46
1.417	8.76	3.000	18.98	4.583	2.92	6.17	1.46

```
                1.500    8.76 | 3.083   18.98 | 4.667    2.92 |  6.25    1.46
                1.583    8.76 | 3.167   18.98 | 4.750    2.92 |

     Max.Eff.Inten.(mm/hr)=      67.16        44.89
               over (min)         5.00        10.00
     Storage Coeff.  (min)=       3.31 (ii)    7.12 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.26         0.14
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.36         0.02          0.376 (iii)
     TIME TO PEAK    (hrs)=       2.75         2.75           2.75
     RUNOFF VOLUME    (mm)=      72.00        37.36          69.23
     TOTAL RAINFALL   (mm)=      73.00        73.00          73.00
     RUNOFF COEFFICIENT   =       0.99         0.51           0.95

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  82.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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

--------------------
| ADD HYD  (  0005)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0010):     2.08   0.376     2.75    69.23
      + ID2= 2 (  0009):     0.52   0.096     2.75    71.31
        ================================================
        ID = 3 (  0005):     2.60   0.472     2.75    69.64

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0012)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------       (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000     0.0000   |   0.0270      0.0940
                           0.0180     0.0710   |   0.0540      0.1570

                                 AREA     QPEAK     TPEAK       R.V.
                                 (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0005)      2.600      0.472      2.75      69.64
   OUTFLOW: ID= 1 (  0012)      2.600      0.048      3.83      69.26

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 10.10
```

```
                  TIME SHIFT OF PEAK FLOW         (min)= 65.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.1423

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 FINISH
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       V    V   I    SSSSS  U   U    A    L              (v 6.2.2015)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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


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

  Output  filename:
C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\4
40aea5a-b7a6-478d-a213-2375092b36bd\s
  Summary filename:
C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\4
40aea5a-b7a6-478d-a213-2375092b36bd\s


DATE: 05-06-2025                          TIME: 09:58:06

USER:



COMMENTS: _____________________________________________________________

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  ********************************************
  ** SIMULATION : AES 6H_100-Humber           **
  ********************************************


--------------------
|    READ STORM    |    Filename: C:\Users\caeh076182\AppD
|                  |              ata\Local\Temp\
|                  |              ac3521ab-8657-4c27-9afb-46e264ee758f\46578424
| Ptotal= 80.31 mm |    Comments: AES 6H_100-Humber
--------------------
```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	1.75	27.30	3.50	11.24	5.25	1.61
0.25	1.61	2.00	27.30	3.75	6.42	5.50	1.61
0.50	1.61	2.25	73.88	4.00	6.42	5.75	1.61
0.75	1.61	2.50	73.88	4.25	3.21	6.00	1.61
1.00	1.61	2.75	20.88	4.50	3.21		
1.25	9.64	3.00	20.88	4.75	1.61		
1.50	9.64	3.25	11.24	5.00	1.61		

```
--------------------
| CALIB            |
| STANDHYD (  0007)|   Area    (ha)=   1.10
|ID= 1 DT= 5.0 min |   Total Imp(%)=  92.00   Dir. Conn.(%)=  92.00
--------------------
```

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.01	0.09
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	85.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	9.64	3.250	20.88	4.83	1.61
0.167	0.00	1.750	9.64	3.333	11.24	4.92	1.61
0.250	0.00	1.833	27.30	3.417	11.24	5.00	1.61
0.333	1.61	1.917	27.30	3.500	11.24	5.08	1.61
0.417	1.61	2.000	27.30	3.583	11.24	5.17	1.61
0.500	1.61	2.083	27.30	3.667	11.24	5.25	1.61
0.583	1.61	2.167	27.30	3.750	11.24	5.33	1.61
0.667	1.61	2.250	27.30	3.833	6.42	5.42	1.61

0.750	1.61	2.333	73.88	3.917	6.42	5.50	1.61
0.833	1.61	2.417	73.88	4.000	6.42	5.58	1.61
0.917	1.61	2.500	73.88	4.083	6.42	5.67	1.61
1.000	1.61	2.583	73.88	4.167	6.42	5.75	1.61
1.083	1.61	2.667	73.88	4.250	6.42	5.83	1.61
1.167	1.61	2.750	73.88	4.333	3.21	5.92	1.61
1.250	1.61	2.833	20.88	4.417	3.21	6.00	1.61
1.333	9.64	2.917	20.88	4.500	3.21	6.08	1.61
1.417	9.64	3.000	20.88	4.583	3.21	6.17	1.61
1.500	9.64	3.083	20.88	4.667	3.21	6.25	1.61
1.583	9.64	3.167	20.88	4.750	3.21		

Max.Eff.Inten.(mm/hr)=	73.88	51.56	
over (min)	5.00	10.00	
Storage Coeff. (min)=	2.62 (ii)	6.29 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.29	0.15	
			TOTALS
PEAK FLOW (cms)=	0.21	0.01	0.219 (iii)
TIME TO PEAK (hrs)=	2.75	2.75	2.75
RUNOFF VOLUME (mm)=	79.31	43.27	76.42
TOTAL RAINFALL (mm)=	80.31	80.31	80.31
RUNOFF COEFFICIENT =	0.99	0.54	0.95

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB STANDHYD (0008) ID= 1 DT= 5.0 min	Area (ha)= 3.24 Total Imp(%)= 91.00 Dir. Conn.(%)= 91.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.95	0.29
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	147.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN

hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	9.64	3.250	20.88	4.83	1.61
0.167	0.00	1.750	9.64	3.333	11.24	4.92	1.61
0.250	0.00	1.833	27.30	3.417	11.24	5.00	1.61
0.333	1.61	1.917	27.30	3.500	11.24	5.08	1.61
0.417	1.61	2.000	27.30	3.583	11.24	5.17	1.61
0.500	1.61	2.083	27.30	3.667	11.24	5.25	1.61
0.583	1.61	2.167	27.30	3.750	11.24	5.33	1.61
0.667	1.61	2.250	27.30	3.833	6.42	5.42	1.61
0.750	1.61	2.333	73.88	3.917	6.42	5.50	1.61
0.833	1.61	2.417	73.88	4.000	6.42	5.58	1.61
0.917	1.61	2.500	73.88	4.083	6.42	5.67	1.61
1.000	1.61	2.583	73.88	4.167	6.42	5.75	1.61
1.083	1.61	2.667	73.88	4.250	6.42	5.83	1.61
1.167	1.61	2.750	73.88	4.333	3.21	5.92	1.61
1.250	1.61	2.833	20.88	4.417	3.21	6.00	1.61
1.333	9.64	2.917	20.88	4.500	3.21	6.08	1.61
1.417	9.64	3.000	20.88	4.583	3.21	6.17	1.61
1.500	9.64	3.083	20.88	4.667	3.21	6.25	1.61
1.583	9.64	3.167	20.88	4.750	3.21		

Max.Eff.Inten.(mm/hr)=	73.88	51.56	
over (min)	5.00	10.00	
Storage Coeff. (min)=	3.63 (ii)	7.50 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.25	0.13	
			TOTALS
PEAK FLOW (cms)=	0.60	0.04	0.643 (iii)
TIME TO PEAK (hrs)=	2.75	2.75	2.75
RUNOFF VOLUME (mm)=	79.31	43.27	76.07
TOTAL RAINFALL (mm)=	80.31	80.31	80.31
RUNOFF COEFFICIENT =	0.99	0.54	0.95

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0006)					
1 + 2 = 3		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0007):		1.10	0.219	2.75	76.42
+ ID2= 2 (0008):		3.24	0.643	2.75	76.07

```
        ID = 3 (  0006):     4.34   0.862     2.75    76.16

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| RESERVOIR(  0011)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE    |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)    |   (cms)     (ha.m.)
                          0.0000     0.0000    |   0.0430      0.1560
                          0.0290     0.1170    |   0.0850      0.2610

                                  AREA     QPEAK     TPEAK       R.V.
                                  (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0006)      4.340      0.862      2.75      76.16
   OUTFLOW: ID= 1 (  0011)      4.340      0.085      3.92      75.92

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  9.83
                  TIME SHIFT OF PEAK FLOW         (min)= 70.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.2606

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--------------------
| CALIB            |
| STANDHYD (  0009)|   Area    (ha)=   0.52
|ID= 1 DT= 5.0 min |   Total Imp(%)=  98.00   Dir. Conn.(%)=  98.00
--------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.51         0.01
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=      59.00        40.00
     Mannings n             =     0.013        0.350

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


                          ---- TRANSFORMED HYETOGRAPH ----
  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
 0.083    0.00 | 1.667    9.64 | 3.250   20.88 |  4.83    1.61
 0.167    0.00 | 1.750    9.64 | 3.333   11.24 |  4.92    1.61
 0.250    0.00 | 1.833   27.30 | 3.417   11.24 |  5.00    1.61
 0.333    1.61 | 1.917   27.30 | 3.500   11.24 |  5.08    1.61
 0.417    1.61 | 2.000   27.30 | 3.583   11.24 |  5.17    1.61
 0.500    1.61 | 2.083   27.30 | 3.667   11.24 |  5.25    1.61
 0.583    1.61 | 2.167   27.30 | 3.750   11.24 |  5.33    1.61
 0.667    1.61 | 2.250   27.30 | 3.833    6.42 |  5.42    1.61
 0.750    1.61 | 2.333   73.88 | 3.917    6.42 |  5.50    1.61
 0.833    1.61 | 2.417   73.88 | 4.000    6.42 |  5.58    1.61
```

0.917	1.61	2.500	73.88	4.083	6.42	5.67	1.61
1.000	1.61	2.583	73.88	4.167	6.42	5.75	1.61
1.083	1.61	2.667	73.88	4.250	6.42	5.83	1.61
1.167	1.61	2.750	73.88	4.333	3.21	5.92	1.61
1.250	1.61	2.833	20.88	4.417	3.21	6.00	1.61
1.333	9.64	2.917	20.88	4.500	3.21	6.08	1.61
1.417	9.64	3.000	20.88	4.583	3.21	6.17	1.61
1.500	9.64	3.083	20.88	4.667	3.21	6.25	1.61
1.583	9.64	3.167	20.88	4.750	3.21		

Max.Eff.Inten.(mm/hr)=	73.88	51.56	
over (min)	5.00	5.00	
Storage Coeff. (min)=	2.10 (ii)	4.16 (ii)	
Unit Hyd. Tpeak (min)=	5.00	5.00	
Unit Hyd. peak (cms)=	0.31	0.24	
			TOTALS
PEAK FLOW (cms)=	0.10	0.00	0.106 (iii)
TIME TO PEAK (hrs)=	2.75	2.75	2.75
RUNOFF VOLUME (mm)=	79.31	43.27	78.59
TOTAL RAINFALL (mm)=	80.31	80.31	80.31
RUNOFF COEFFICIENT =	0.99	0.54	0.98

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CN* = 82.0 Ia = Dep. Storage (Above)
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THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB STANDHYD (0010) ID= 1 DT= 5.0 min	Area (ha)= 2.08 Total Imp(%)= 92.00 Dir. Conn.(%)= 92.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.91	0.17
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	118.00	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	9.64	3.250	20.88	4.83	1.61

0.167	0.00	1.750	9.64	3.333	11.24	4.92	1.61
0.250	0.00	1.833	27.30	3.417	11.24	5.00	1.61
0.333	1.61	1.917	27.30	3.500	11.24	5.08	1.61
0.417	1.61	2.000	27.30	3.583	11.24	5.17	1.61
0.500	1.61	2.083	27.30	3.667	11.24	5.25	1.61
0.583	1.61	2.167	27.30	3.750	11.24	5.33	1.61
0.667	1.61	2.250	27.30	3.833	6.42	5.42	1.61
0.750	1.61	2.333	73.88	3.917	6.42	5.50	1.61
0.833	1.61	2.417	73.88	4.000	6.42	5.58	1.61
0.917	1.61	2.500	73.88	4.083	6.42	5.67	1.61
1.000	1.61	2.583	73.88	4.167	6.42	5.75	1.61
1.083	1.61	2.667	73.88	4.250	6.42	5.83	1.61
1.167	1.61	2.750	73.88	4.333	3.21	5.92	1.61
1.250	1.61	2.833	20.88	4.417	3.21	6.00	1.61
1.333	9.64	2.917	20.88	4.500	3.21	6.08	1.61
1.417	9.64	3.000	20.88	4.583	3.21	6.17	1.61
1.500	9.64	3.083	20.88	4.667	3.21	6.25	1.61
1.583	9.64	3.167	20.88	4.750	3.21		

			TOTALS
Max.Eff.Inten.(mm/hr)=	73.88	51.56	
over (min)	5.00	10.00	
Storage Coeff. (min)=	3.18 (ii)	6.85 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.27	0.14	
PEAK FLOW (cms)=	0.39	0.02	0.415 (iii)
TIME TO PEAK (hrs)=	2.75	2.75	2.75
RUNOFF VOLUME (mm)=	79.31	43.27	76.43
TOTAL RAINFALL (mm)=	80.31	80.31	80.31
RUNOFF COEFFICIENT =	0.99	0.54	0.95

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0005)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0010):		2.08	0.415	2.75	76.43
+ ID2= 2 (0009):		0.52	0.106	2.75	78.59
ID = 3 (0005):		2.60	0.521	2.75	76.86

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0012)	OVERFLOW IS OFF			
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.0270	0.0940
	0.0180	0.0710	0.0540	0.1570

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0005)	2.600	0.521	2.75	76.86
OUTFLOW: ID= 1 (0012)	2.600	0.054	3.83	76.48

PEAK FLOW REDUCTION [Qout/Qin](%)= 10.33
TIME SHIFT OF PEAK FLOW (min)= 65.00
MAXIMUM STORAGE USED (ha.m.)= 0.1565
