Functional Servicing and Stormwater Management Report

Proposed Commercial/Industrial Development Claremont North Business Park 5435, 5455 and 5475 Old Brock Road Pickering, Ontario



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## Sign-off Sheet

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## **Table of Contents**

EXEC	UTIVE SUMA	NARYI
<b>1.0</b> 1.1 1.2	SITE LOCA	TION
<ul> <li><b>2.0</b></li> <li>2.1</li> <li>2.2</li> <li>2.3</li> <li>2.4</li> <li>2.5</li> </ul>	STORM DI SANITARY WATER GRADING	IAL SERVICING       2.3         RAINAGE       2.3
<ul><li><b>3.0</b></li><li>3.1</li><li>3.2</li><li>3.3</li></ul>	BACKGRO EXISTING 3.2.1 3.2.2	TER MANAGMENT.3.7DUND AND DESIGN CRITERIA3.7CONDITIONS3.8Drainage3.8Soils Conditions3.10D STORMWATER MANAGEMENT PLAN3.10Stormwater Quality3.11Stormwater Quality3.11TRCA Design Criteria3.14Water Balance & Erosion Control3.14
4.0	CLOSURE.	4.16
LIST C	F APPENDI	CES
APPE	NDIX A	BACKGROUND INFORMATION A
APPE	NDIX B	CONCEPTUAL ENGINEERING PLANSB
APPE		SANITARYC
APPE	NDIX D	WATER D
APPEI	NDIX E	STORMWATER MANAGEMENT



## **Executive Summary**

This report describes the overall site grading, servicing and SWM strategy to functionally service the proposed development in support of a Zoning By-Law Amendment application with the City of Pickering. It also demonstrates conformity to the relevant sections of the ORMCP.

**Storm** - Existing drainage patterns will be maintained and attenuated in accordance to ORMCP Conservation Polices. Current Old Brock Road major/minor flow conveyance to the wetland southeast of the site will be preserved. Onsite major/minor flows will be captured and controlled by a proposed dry pond to treat and control surface water runoff to rates and volumes prescribed by the Agencies for the Duffins Creek Watershed. The proposed stormwater management and drainage strategy will be resilient towards the future effects of Climate Change.

**Sanitary –** No municipal system exists adjacent to site to serve as an outlet. Site sanitary will drain via a private sewer network to a septic system at the southwest corner of the site sized for a peak load of 17,000 L/day. Carwash output will not contribute to the septic load as it will be stored and regularly hauled offsite.

**Water –** No municipal water system is currently available adjacent to site to service the development. A proposed private well located at the northern most point of the site will service the site for domestic and fire through a private water network. Domestic and fire loads are estimated to be 0.31 L/s (26,980 L/day) and 3000 (USGPM), respectively.

**Grading –** Site slope analysis demonstrates the site is exempt from the Landform Conservation Policy set out by the Oak Ridges Moraine Conservation Plan. Grades are set to maintain much of the existing general topography of the site in keeping with ORMCP Conservation Polices.

The existing 17m vertical drop from north to south along the site necessitates the use of steep driveways at entrances and parking lot interfaces to ensure reasonable gradients within parking areas. Exposed foundations and retaining walls are additionally implemented to maintain workable slopes within site and avoid foundation steps.



Introduction January 17, 2019

# **1.0 INTRODUCTION**

This report commissioned by S. Larkin Developments Inc. (Larkin) has been prepared to demonstrate the functional capacity of the subject site to support the proposed development from a grading, private servicing and stormwater management (SWM) perspective for a zoning by-law amendment application for 5435, 5455 and 5475 Old Brock Road in the City of Pickering (the "site". The purpose of the proposed development is to permit additional industrial type builidngs, a retail gas outlet with an accessory restaurant use, associated car wash and to formalize existing employment uses on the site.

## 1.1 SITE LOCATION AND DESCRIPTION

The site, depicted in the aerial figure below, is located south of Uxbridge Pickering Townline between Brock Road and Old Brock Road in the Village of Claremont. The 4.37 hectare lot is mostly undeveloped and contains a residential dwelling, heavy equipment maintenance shop (five bays), barn and various supporting trailers/sheds. The surface makeup is mostly grass, shrubs and soil. Three (3) existing driveways provide access along the western periphery to Old Brock Road.

The subject development resides within the Oak Ridges Moraine, and a wetland is located within the southeast portion of the site. Approaches implemented to conform to the Oak Ridges Moraine Conservation Plan (ORMCP) polices are discussed in relevant sections. This FSR addresses sections 19,25,30,36,43, 45, 46 and 47 of the ORMCP and is in conjunction with various recommendations provided within two (2) other Stantec documents entitled Preliminary Geotechnical/Hydrogeological Report, dated January 17, 2019, and Natural Heritage Evaluation Report and Oak Ridges Moraine Conformity Evaluation, also dated January 17, 2019.



Introduction January 17, 2019



#### Figure 1.1 - Site Location

## 1.2 SITE PROPOSAL

The purpose of the proposed development is to build new infrastructure that will provide services to the community, including three (3) new industrial type buildings, a retail gas outlet with a restaurant and car wash, and associated parking areas for the overall site are proposed. The existing barn structure will be maintained and be incorporated into the proposed development. A third driveway access will be provided along Old Brock Road, and a new access driveway will connect the site to Brock Road. The existing wetland will be maintained. The Development Concept Plan and Pre-Consultation Meeting Minutes, dated January 15, 2016, are provided in **Appendix A**.



Functional Servicing January 17, 2019

## 2.0 FUNCTIONAL SERVICING

The site shall be constructed and serviced in accordance to City of Pickering and Region of Durham design standards and ORMCP polices.

## 2.1 STORM DRAINAGE

Under existing conditions, the site sheet drains south towards the wetland situated at the southeast corner of the site. Additionally, Old Brock Road major flows which enter the site through the southwestern boundary drain easterly across the site and into an existing wetland feature.

Existing drainage patterns will be maintained and attenuated in accordance to ORMCP policies. An overland flow channel south of the proposed dry pond is provided to ensure portions of Old Brock Road major/minor storm conveyance to the wetland is maintained as observed under pre-development conditions.

Onsite minor system flows will be captured via catch basins and directed towards the proposed dry pond located west of the existing wetland. Major flows are directed to the pond via overland relief, which has been accommodated by the proposed grading plan. The storm system throughout the proposed site has been designed to convey 100-year peak flows to prevent localized major storm runoff from spilling onto Brock Road (uncontrolled) and to ensure all onsite major system drainage will be directed toward the proposed stormwater management dry pond.

Stormwater management is discussed in further detail in Section 3.0

The Conceptual Grading Plan (C-101) and Servicing Plan (C-102) are provided in Appendix B.

## 2.2 SANITARY

Currently no municipal sanitary system exists along roads adjacent to the site and the existing buildings are serviced by onsite septic beds. The proposed development will be supported by a larger septic bed situated at the southwest corner of the site, and all existing onsite septic beds will be decommissioned as part of the future development.

The proposed septic system has been preliminarily sized by FlowSpec Engineering (septic subconsultant) for the peak site sanitary load of 17,000 L/day as per OBC Table 8.2.1.3.B. It is our understanding the carwash output will not contribute to the septic load, as it is anticipated to contain higher concentrations of inorganic Total Suspended Solids (TSS), which has the potential to adversely affect the proposed septic bed. As such, car wash wastewater will be stored, recycled and ultimately hauled offsite, as required.



Functional Servicing January 17, 2019

A private sanitary network will deliver site sanitary flows to the septic bed. Individual services to buildings will be sized at detailed design in coordination with building mechanical engineers.

A supporting engineering design memorandum outlining the conceptual onsite sewage disposal system is provided in **Appendix C**. The Conceptual Servicing Plan (C-102) is provided in **Appendix B**.

## 2.3 WATER

Currently no municipal watermain system exists along roads adjacent to the site and the existing buildings are serviced by onsite supply wells. The proposed development will be supported by a larger well situated in the northernmost portion of the site, and all existing wells will be decommissioned.

Water storage tanks adjacent to the well shall be sized to have capacity for domestic as well as firefighting purposes at the detailed design stage. Buildings and standpipes distributed throughout the site will be serviced for domestic and fire by a private water network. Individual services to buildings will be sized at detailed design in coordination with building mechanical engineers.

The peak site domestic load is estimated to be 0.31 L/s (26,980 L/day) in accordance to the Region of Durham Design Specifications for watermains. Fire Underwriters Survey (FUS) calculation yields a required firefighting flow estimate of 3000 (USGPM) for the development. Although the proposed buildings may be equipped with sprinkler systems, as the existing barn is not equipped with a sprinkler system, no sprinkler protection credit was used to calculate fire flow demand for the site, particularly since the barn is adjacent to the gas station. A more indepth assessment of necessary firefighting flow estimates can be conducted at the detailed design stage.

Water calculation sheets are provided in **Appendix D**. The Conceptual Servicing Plan (C-102) is provided in **Appendix B**.

## 2.4 GRADING

The site is located within an area of Landform Conservation in the ORMCP. Specifically, MNR technical paper #4 "Landform Conservation on The Oak Ridges Moraine" defines classification. As demonstrated in the Site Slope Analysis in **Appendix A**, 17% of the existing site slopes are steeper than 10%. This falls under the minimum requirement of 20%. This renders the site exempt from the Landform Conservation Policy (section 30) set out by the ORMCP.

The existing site falls southerly at a vertical relief of close to 17 meters over a distance of 450 meters. It is our understanding the last earthworks activity was in the late 1970's when fill from north end of the site was placed at the south end where the current embankment at the southwest corner of the site resides (refer to *Preliminary Geotechnical/Hydrogeological Report*).



Functional Servicing January 17, 2019

Site grading is done in a fashion to avoid major earth moving and alterations to existing general topography, and majority of site elevations are close to existing in keeping with ORMCP Conservation Polices. Preliminary earthworks analysis suggests that there will be approximately 25,760 m<sup>3</sup> of cut and 15,900 m<sup>3</sup> of fill operation is involved, yielding a net export volume of 9,860 m<sup>3</sup>, to achieve the proposed grading presented herein. This analysis assumes existing fill onsite is suitable for reuse. A more accurate earthworks analysis will be carried out at detailed design, which will account for whether existing fill is suitable for reuse or not and if any surplus materials may be utilized locally, as per ORMCP section 36. As outlined in the *Preliminary Geotechnical/Hydrogeological Report*, onsite soils toward the south/central portion of the property are loosely compacted and anticipated to contain some organic materials.

The steep site topography has created challenges in matching boundary grades; as such, 8% to 10% driveways have been utilized to ensure gradients within site parking areas remain within reasonable limits. The occasional exposed foundation and retaining walls have also been conceptually applied to maintain workable slopes within site and to avoid foundation steps.

The Conceptual Grading Plan (C-101) is provided in Appendix B.

## 2.5 EROSION CONTROL

Prior to the initiation of any construction within the site, a comprehensive Erosion and Sediment Control (ESC) Plan acceptable to the City of Pickering, Region of Durham, and ORMCP policies will be implemented. Appropriate drawings will be prepared at the detailed design stage and submitted to the Agencies for review and approval.

The ESC plans will include all necessary siltation control facilities and will be designed in accordance with the current Agency guidelines.

Below is a list of recommended erosion and sediment control measures that should be further investigated at the detailed design stage for suitability during construction of the Subject Site:

- Temporary sediment control fences, and tree protection fences (if required) installed prior to grading;
- Temporary swales throughout site along with rock check dams;
- Seed temporary topsoil stockpiles to prevent wind erosion (if required);
- All proposed open space areas will be restored/stabilized as per the landscape restoration planting plan(s), to be prepared at the detailed design stage, upon completion of grading; and
- All temporary erosion and sediment control measures should be routinely inspected and repaired during construction. Temporary controls will not be removed until the areas they serve are restored and stable.



Functional Servicing January 17, 2019

An Erosion and Sediment Control Plan should be prepared at the detailed design stage, in accordance with the Erosion & Sediment Control Guidelines for Urban Construction (TRCA, 2006).



Stormwater Managment January 17, 2019

## **3.0 STORMWATER MANAGMENT**

## 3.1 BACKGROUND AND DESIGN CRITERIA

This FSR has been prepared in accordance with or using information from the following reports and documents:

- "Natural Heritage Evaluation Report and Oak Ridges Moraine Conformity Evaluation", prepared by Stantec Consulting Ltd., dated January 17, 2019;
- "Preliminary Geotechnical/Hydrogeological Report", prepared by Stantec Consulting Ltd., dated January 17, 2019;
- "Oak Ridges Moraine Conservation Plan", prepared by the Government of Ontario, dated 2017;
- "The Living City Policies", prepared by the Toronto and Region Conservation Authority, dated November 28, 2014.
- "Addendum: Duffins Creek Hydrology Update Stormwater Management Criteria for Non-Seaton Development Lands", prepared by Aquafor Beech for the TRCA, dated May 23, 2013;
- "2012 Duffins Creek Hydrology Update Final Report", prepared by Aquafor Beech for the City of Pickering, dated February 11, 2013;
- "Stormwater Management Criteria", prepared by the Toronto and Region Conservation Authority, dated August 2012;
- "Stormwater Management Planning and Design Manual" (SWMPDM), prepared by the Ministry of the Environment, dated March, 2003;
- "Low Impact Development Stormwater Management Planning and Design Guide" (LID Manual), prepared by the Credit Valley Conservation and Toronto and Region Conservation, dated 2010; and
- "Stormwater Management Design Guidelines", prepared by the City of Pickering, undated.

In addition to the above noted documents, considerations from Transport Canada with the future potential of a Pickering Airport have also been considered in this conceptual SWM design.

Based on the above noted documents, the required SWM controls for the Site currently include the following:



Stormwater Managment January 17, 2019

- Generally maintain existing flow patterns;
- Prevent increases in stream channel erosion by providing erosion control to consist of the 25 mm 4 hour Chicago storm released over a period of 24 hour to 48 hour period. In addition, at a minimum, retain 5 mm onsite;
- Prevent increases in flood risk by providing water quantity by controlling postdevelopment flows to pre-development levels for the greater storage requirement of 1)
   2-year through 100-year storm events using both 1 hour and 12 hour AES storms with the City of Pickering's rainfall Intensity-Duration-Frequency (IDF) data (City of Pickering); or the unit release rates presented within Table 8.1 of the "Addendum: Duffins Creek Hydrology Update" (TRCA)
- Protect water quality by providing enhanced water quality (80% total suspended solids removal) through a treatment train approach that may include:
  - Lot level controls such as devices and designs that direct roof discharge to ponding areas;
  - o Conveyance controls such as grassed swales; and,
  - o End-of-pipe controls.
- Maintain a 'water balance' by ensuring post-development runoff volumes will mirror predevelopment conditions;
- Due to the site's proximity to a potential future Pickering Airport, the site may not utilize a wet SWM pond due to safety concerns associated with water dwelling birds; and,
- Maintain groundwater quantity and flow by providing onsite retention to match existing stormwater infiltration volumes without the use of rapid infiltration basins or columns.

## 3.2 EXISTING CONDITIONS

## 3.2.1 Drainage

Under existing conditions the site sheet drains south towards the wetland situated at the southeast corner of the site (refer to **Figure 3.1**). Within the site area, there are three existing buildings with a total approximate footprint area of 0.16 ha, the remainder of the site is undeveloped. Under existing conditions, the weighted runoff coefficient is approximately 0.27.

External to the site are three main external drainage areas:



Stormwater Managment January 17, 2019

- Northwest External Drainage Area 1.55 ha consisting of open land to the north of Uxbridge Pickering Townline, the Old Brock Road/Brock Road/Uxbridge Pickering Townline intersection, and the western side of Brock Road that drains to a roadside ditch;
- 2. West External Drainage Area 0.63 ha consisting of the eastern side of Old Brock Road draining to a roadside ditch and through the site; and,
- 3. South External Drainage Area 0.76 ha consisting of the lands to the south of the site that sheet drain toward the existing onsite wetland.

Under existing conditions, the total drainage area to the onsite wetland is approximately 7.52 ha with a weighted runoff coefficient of 0.34. The existing release rate at the onsite wetland outlet (1,050 mm diameter CSP culvert underneath Brock Road) was modeled in Visual OTTHYMO (VO2). Pre-development peak-flow rates should not increase under the post-developed conditions. A summary of flows at the site outlet underneath Brock Road is presented in **Table 3.1**.

Storm	Release Rate (m <sup>3</sup> /s)
25mm 4hour	0.350
2 Year 1 Hour AES Storm	0.581
2 Year 12 Hour AES Storm	0.367
100 Year 1 Hour AES Storm	1.783
100 Year 12 Hour AES Storm	0.805

Table 3.1 – Site Outlet Release Rates

The maximum headwater elevation at the existing 1,050 mm diameter CSP culvert underneath Old Brock Road will be approximately 272.25 m during the 1-hour 100-year AES Storm. The resulting 100-year headwater ponding area that would result (neglecting any reservoir storage routing) is illustrated on Conceptual Grading Plan (C-101). For calculations, refer to the summary provided in **Appendix E**.

Under proposed conditions, the two roadside ditches along Old Brock Road and Brock Road will not be re-graded as these are within public right-of-way areas; existing drainage patterns will be maintained in accordance to ORMCP polices. The development area has been graded to ensure that Brock Road and Old Brock Road major/minor storm conveyance to the onsite wetland is maintained. No changes are proposed to the external drainage areas, patterns or conveyance systems.

Using VO2, the release rates for the external drainage areas leading to a roadside ditch were calculated for both the 1-hour and 12-hour 100-year AES storm events. For both drainage areas, the 1-hour 100-year AES storm had a higher peak runoff rate. This simulated runoff rate compared to the capacity of the roadside ditches, are presented in **Table 3.2**. VO2 modeling and a summary of results are included in **Appendix E**.



Stormwater Managment January 17, 2019

Roadside Ditch	Capacity (m <sup>3</sup> /s)	Required (m <sup>3</sup> /s)
West – Upstream	1.26	0.154
West – Downstream	0.52	0.154
East – Upstream	4.97	0.506
East – Downstream	26.38	0.306

#### Table 3.2 - Existing Capacity of Roadside Ditches

As noted, the roadside ditches can convey the external drainage around the site. As such, no modifications to the roadside ditches will be necessary to address any existing drainage deficiencies. For an illustration of the existing drainage pattern, refer to **Figure 3.1**.

#### 3.2.2 Soils Conditions

Based on the Preliminary Geotechnical/Hydrogeological Report, the existing soils consist of top soil with a base of silty clay fill. The geomean hydraulic conductivity of the soils is 4.3 x 10-7 m/s. Per Table 2 "Approximate Relationship of Soil Types to Permeability and Percolation Time" within the 1997 Ontario Building Code, the soils have an approximate infiltration rate of less than 12 mm/hr.

## 3.3 PROPOSED STORMWATER MANAGEMENT PLAN

Under proposed conditions, the site has a development area of 3.20 ha consisting of a 2.89 ha commercial development, 0.27 ha SWM pond and 0.04 ha of uncontrolled drainage. The remainder of the site, 1.85 ha in area, consisting of steeper slopes and the onsite wetland, will remain undeveloped at this time. A breakdown of the development area is presented in **Table 3.3**. For details regarding the drainage areas, refer to **Figure 3.2**.

Zone	Area (ha)	Runoff Coefficient
Commercial	2.89	0.80
SWM Pond	0.27	0.60
Uncontrolled	0.04	0.90
Total Development	<u>3.20</u>	<u>0.78</u>

#### Table 3.3 – Proposed Development Area

Due to grading constraints, a small 0.04 ha area of the site consisting of a site entrance and drive isle cannot be controlled by the SWM pond; however, the onsite stormwater management pond will provide the required 'over control' to ensure that post-development controls satisfy pre-development rates at the site outlet underneath Brock Road.

The SWM strategy outlined herein is resilient against the potential future effects of Climate Change, for the following reasons:

• The Site is not immediately adjacent to a regulated watercourse and is positioned at the very upstream limit of the drainage catchment divide. As such, there will be no



Stormwater Managment January 17, 2019

increased risk of surface flooding from potential future increasing flows along the riverine system since the nearest regulated watercourse is located much further downstream from the property;

- Onsite minor system drainage has been sized using present day municipal design standards. If there is a preference to adopt a higher-level drainage design standard to account for the potential future effects of Climate Change, then this can be further discussed at the detailed design stage. However, it should be noted that the proposed minor system will not collect basement foundation drains (only subdrains along slab-on-grade construction and storm sewer). As such, the onsite minor system drainage is at very low risk to the potential future effects of Climate Change;
- The Site is comprised of moderately sloping terrain (north to south), which provides excess overland (major system) drainage conveyance capacity across the property and toward the site outlet.

#### 3.3.1 Stormwater Quality

Quality control for the Site will be provided via a treatment train approach consisting of an Oil/Grit Separator (OGS), dry SWM pond, and vegetated swale, which will cumulatively exceed the MOECC water quality treatment requirements for Level 1 (80% TSS Removal Efficiency). The use of an OGS, dry pond and vegetated swale in combination meets the City of Pickering's requirements that dry ponds shall not be used as a stand-alone treatment system. In addition, an Oil-Water Separator will be installed to pre-treat runoff from surface areas in the immediate vicinity of the proposed gas station location.

The SWM pond volume required to provide Basic (60% long term suspended solids removal) was calculated using the MOECC's SWMPDM's Table 3.2. Table 3.2 calculated the required water quality treatment volume of 605 m<sup>3</sup>; the SWM pond exceeds the required volume providing 645 m<sup>3</sup> of extended detention storage. For details, refer to calculations in **Appendix E**. At the detailed design stage, the use of vegetated filter strip, grass swales with stormwater retention zones, infiltration trenches, rooftop discharge to ponding areas, and sand filters as part of an extended treatment train approach will be further explored.

#### 3.3.2 Stormwater Quantity

Stormwater quantity control for the Site will be provided by a dry SWM pond located at the southern edge of the site adjacent to the wetland. The SWM pond will treat/control flows to predevelopment conditions at the site outlet underneath Brock Road. The SWM pond has been designed in general accordance with Table 4.8 in the MOECC's SWMPDM. The pond was designed as follows:

- An 825 mm diameter inlet pipe with an invert of 274.10 m;
- A pond forebay bottom of 274.10 m and main cell bottom of 274.60 m



Stormwater Managment January 17, 2019

- A top of 275.60 m;
- 3:1 side slopes;
- A maintenance access location to the north of the forebay at a road stub;
- A sediment drying area at the east side of the pond block;
- Erosion control and active storage volume are controlled by a Hickenbottom outlet leading to two orifices plate within an outlet control manhole;
- The control manhole outlets to a pre-cast headwall complete with a level spreader designed to promote sheet flow toward the onsite wetland; and
- Emergency overflow provided by a broad crested weir with freeboard between the maximum flow depth and the top of the SWM pond berm.

Using VO2, the release rates for each storm event and each catchment were calculated. The 25 mm 4 Hour Chicago storm was used to calculate the required erosion and sediment control volume and release rate. Per VO2, the site requires 613 m<sup>3</sup> of storage with a maximum release rate of 0.014 m<sup>3</sup>/s (an average release rate of 0.070 m<sup>3</sup>/s); resulting in a drawdown time of ~24.3 hours (greater than the minimum 24 hour drawdown time required). This meets the requirement of preventing increases in stream channel erosion. The extended detention water level has an elevation of 274.96 m. A summary of the existing and proposed, 2-year and 100-year storm event runoff rates for the full site area of 4.58 ha (includes the undeveloped lands) is presented in, and **Table 3.4**.

Storm	Existing Release Rate (m <sup>3</sup> /s)	Proposed Release Rate (m <sup>3</sup> /s)	Difference Runoff (m <sup>3</sup> /s)	
25mm 4hour	0.195	0.068	-0.127	
2 Year 1 Hour AES Storm	0.321	0.109	-0.212	
2 Year 12 Hour AES Storm	0.222	0.104	-0.118	
5 Year 1 Hour AES Storm	0.901	0.224	-0.677	
5 Year 12 Hour AES Storm	0.458	0.202	-0.256	
10 Year 1 Hour AES Storm	0.645	0.320	-0.325	
10 Year 12 Hour AES Storm	0.341	0.259	-0.082	
25 Year 1 Hour AES Storm	0.809	0.436	-0.373	
25 Year 12 Hour AES Storm	0.400	0.323	-0.077	
50 Year 1 Hour AES Storm	0.930	0.522	-0.408	
50 Year 12 Hour AES Storm	0.444	0.369	-0.075	
100 Year 1 Hour AES Storm	1.048	0.609	-0.439	
100 Year 12 Hour AES Storm	0.487	0.414	-0.073	

#### Table 3.4 – Site Release Rates



Stormwater Managment January 17, 2019

As noted in the above table, the proposed site release rate has remained the same as, or decreased from, the existing site conditions. This meets the requirement of preventing increases in downstream flood risk within the watershed.

To achieve the above noted release rates, the dry SWM pond was sized to match existing storm release rates; this was done for all storm events. Based on the VO2 modeling presented in **Table 3.5**, the pond volume shall be greater than 1,282 m<sup>3</sup> (determined in the 100-year, 1 hour AES storm). Within the site, a total pond volume of 1,799 m<sup>3</sup> between an elevation of 247.60 m and 275.65 m, has been provided; this exceeds the required active storage volume.

Storm	Release Rate (m <sup>3</sup> /s)	Pond Volume (m <sup>3</sup> )	Water Level (m)
25mm 4hour	0.014	613	274.96
2 Year 1 Hour AES Storm	0.015	659	274.99
2 Year 12 Hour AES Storm	0.059	760	275.05
100 Year 1 Hour AES Storm	0.338	1,282	275.34
100 Year 12 Hour AES Storm	0.275	1,171	275.28

#### Table 3.5 – Dry Pond Release Rates and Volume

The 100-year water elevation is 275.34 m which allows for 0.31 m of freeboard to the top of pond (275.65 m). For VO2 input/output calculations, refer to the detailed calculations in **Appendix E.** 

Conceptual details of the pond access road, sediment drying area, fencing, signage, lining requirements and details of the outlet structure will be provided at detailed design.

Under proposed conditions, the total drainage area to the onsite wetland is 7.52 ha with a weighted runoff coefficient of 0.55; this is the same overall contributing drainage area as observed under the existing (present day) conditions. The proposed release rate from the wetland was modeled in VO2 and was compared to the existing release rates. The results are presented in **Table 3.6**.



Stormwater Managment January 17, 2019

Storm	Existing Release Rate (m <sup>3</sup> /s)	Proposed Release Rate (m <sup>3</sup> /s)	Difference Runoff (m <sup>3</sup> /s)
25mm 4hour	0.350	0.235	-0.115
2 Year 1 Hour AES Storm	0.581	0.369	-0.212
2 Year 12 Hour AES Storm	0.367	0.238	-0.129
100 Year 1 Hour AES Storm	1.783	1.314	-0.469
100 Year 12 Hour AES Storm	0.805	0.731	-0.074

#### Table 3.6 – Proposed Release Rates at Wetland

For all storm events, the release rate from the wetland has not increased. As such, the development meets the requirement of preventing increasing in flood risks within the watershed.

#### 3.3.3 TRCA Design Criteria

The site is located in Catchment Number 51 of the TRCA's "Addendum: Duffins Creek Hydrology Update – Stormwater Management Criteria for Non-Seaton Development Lands". Table 8.1 prescribes unit flow release rates based on site and impervious site areas, which are identified as 'TRCA Revised' in the table below. The original TRCA unit-release rate criteria are also provided for reference (TRCA SWM Criteria, 2012). Once scaled to the site, the release rates were found to be much lower than the computed existing release rates for the site (refer to **Table 3.7** below).

#### Table 3.7 – TRCA Release Rates

Return	Release Rate (m³/s/ha)			TRCA Release as % of Existin	
Period	Stantec Existing	TRCA Original	<b>TRCA Revised</b>	TRCA Original	TRCA Revised
2 Year	0.048	0.009	0.008	19%	16%
100 Year	0.106	0.032	0.029	30%	27%

As noted in the above table, the TRCA's Revised release rates range from 16% to 27% of the existing conditions release rates. It should be noted that the existing site is comprised of ~97% pervious cover. As such, the TRCA criteria were not used in support of the conceptual site design as they were deemed to be too conservative and given the conceptual site design already accommodates a post-development to pre-development peak flow reduction for all the storm events simulated. In the event that the TRCA insists that background unit-rates be abided by, then the onsite dry pond will need to incorporate an additional 1,500 m<sup>3</sup> (an increase of 121% from the proposed design concept) of active detention storage at the detailed design stage, which would require the development concept to be modified in/around the dry pond at that time.

## 3.3.4 Water Balance & Erosion Control

In order to address the TRCA's water balance criteria (TRCA SWM Criteria, 2010) and the ORMCP Subsection 24(8)iii, an annual water balance was calculated using the Thornthwaite and Mather (1955) method for both the pre-development and (unmitigated) post-development conditions. The calculations applied Environment Canada's climate normal from Pearson Airport from 1981



Stormwater Managment January 17, 2019

to 2010. As the site's impervious area will increase as a result of the proposed development, the unmitigated site runoff volume will increase; with a corresponding decrease in infiltration and evapotranspiration.

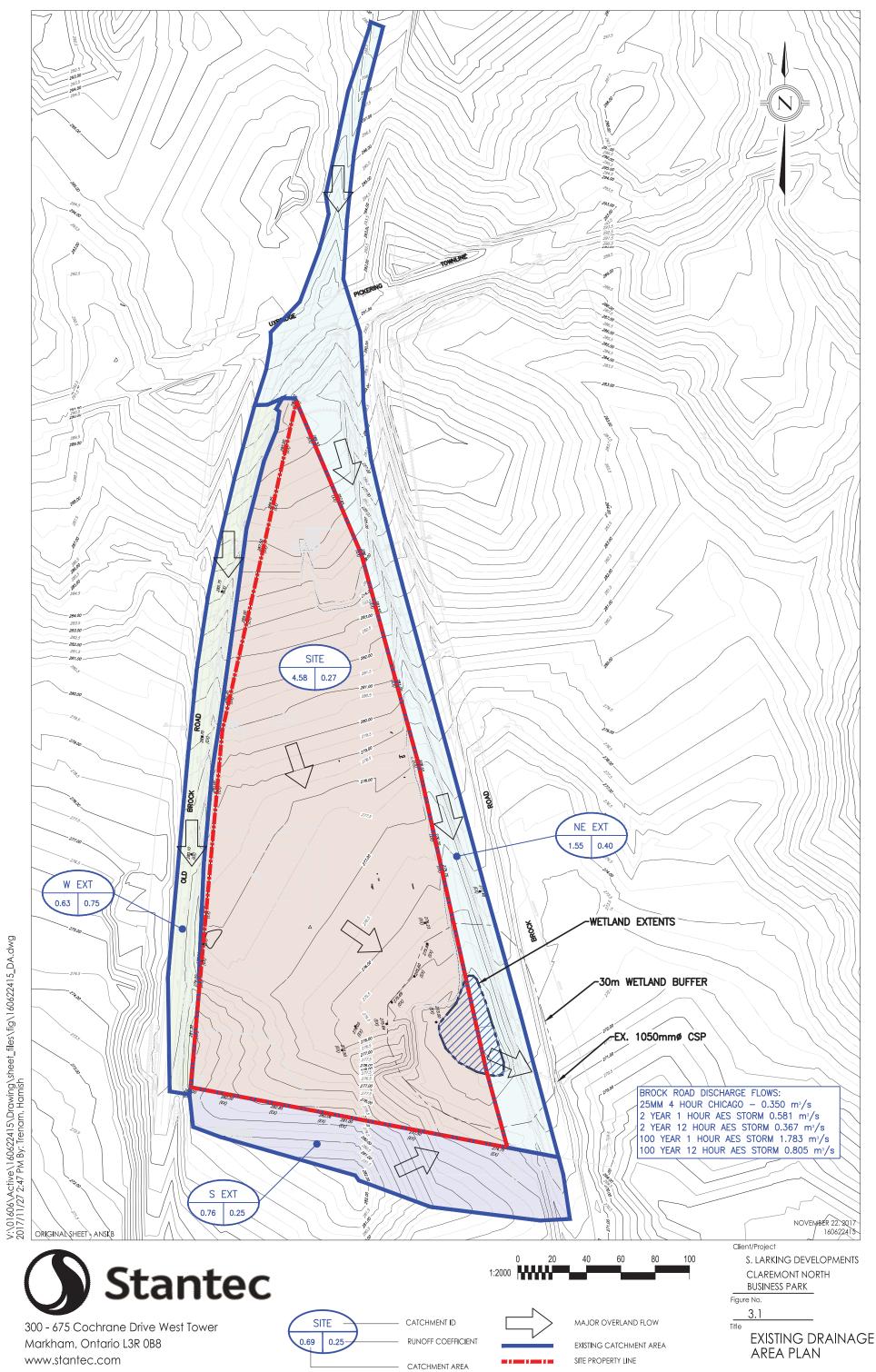
The annual reduction in site infiltration as a result of an unmitigated development is approximately 2,132 m<sup>3</sup>/year across the 4.37 ha site. The total pre-development infiltration volume is approximately equivalent to 10.7% of the total annual precipitation. The moderately sloped existing conditions topography and low permeability soils appear to be cause of the lower existing conditions infiltration fraction. Refer to **Appendix E** for water balance calculations.

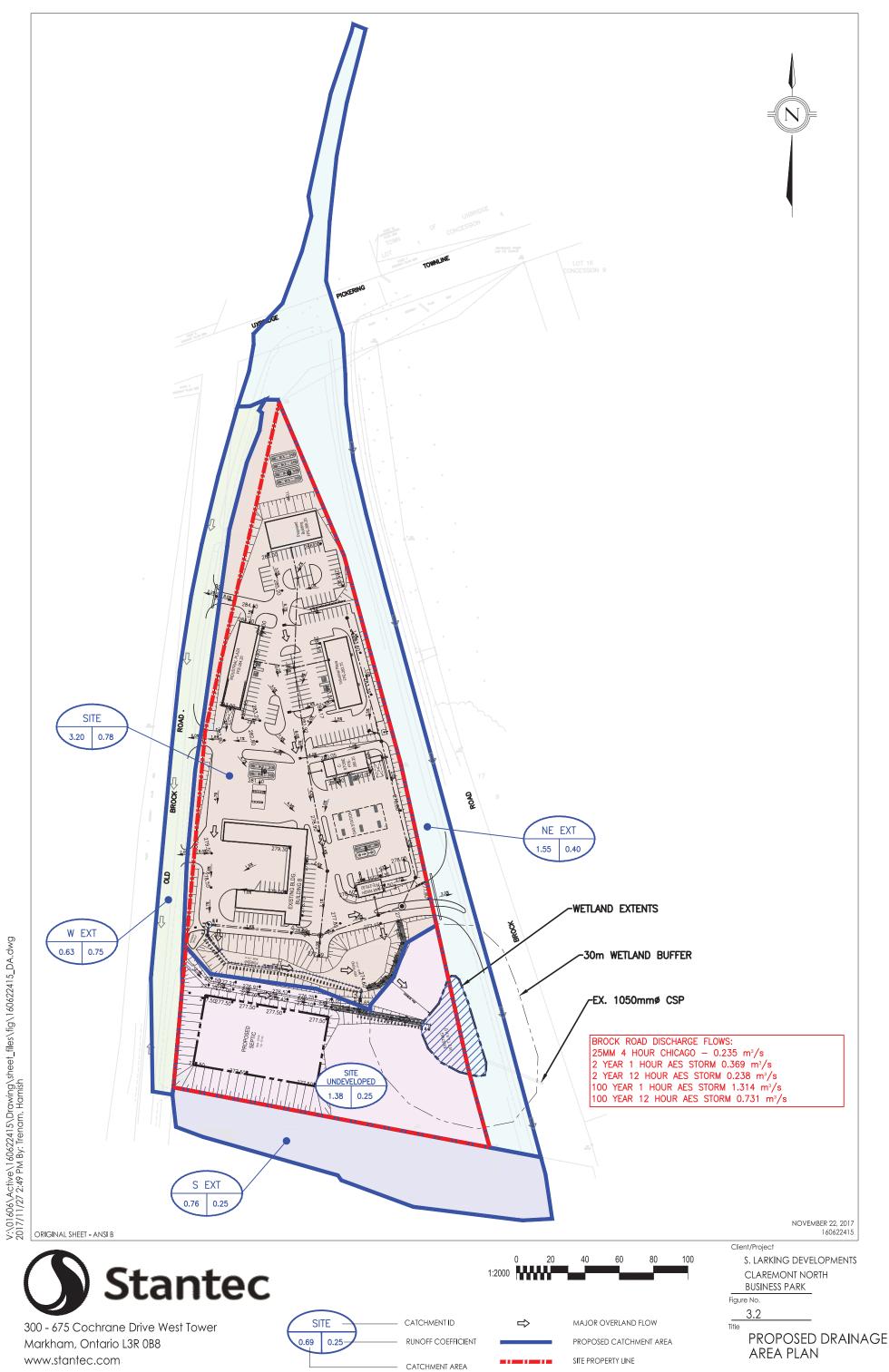
As outlined in the City of Toronto's Wet Weather Flow Management Guidelines (Figure 1a), 10.7% of the total annual precipitation would equate to capturing and infiltrating events up to and including a ~ 1mm to 2 mm discrete rainfall event across the 4.37 ha site. However, despite this minimum requirement to satisfy water balance, the TRCA's current minimum erosion control criteria includes the onsite retention of 5 mm, which will exceed the post-development to predevelopment water balance target noted above.

Various infiltration practices will be explored at the detailed design stage to satisfy the governing erosion control requirement and ORMCP water conservation. Practices may include but will not necessarily be limited to the use of vegetated filter strips, surface infiltration measures, subsurface infiltration measures, onsite water reuse measures, grass swales with stormwater retention zones. Rapid infiltration basins and columns will not be considered.

Further information related to the characterization of existing underlying groundwater conditions can be found in the separately prepared document entitled, *Preliminary Geotechnical/Hydrogeological Report* (Stantec, January 2019). Further information related to the characterization of existing and proposed surface water systems can be referenced in Subsection 3.2 and Subsection 3.3 herein, respectively.







Closure January 17, 2019

## 4.0 CLOSURE

This report describes the overall site grading, servicing and SWM strategy to functionally service the proposed development in support of a Zoning By-Law Amendment application with the City of Pickering. It also demonstrates planning, design and construction practices that ensure that no buildings or other site alterations impede hydrological functions etc. as per Section 20 (Supporting Connectivity) of the ORMCP. This report also demonstrates that the site can be developed in conformance with Section 24 (Watershed Plans) of the ORMCP as relevant background, agency-imposed Watershed Planning criteria for Duffins Creek have been fully considered as part of the conceptual SWM design outlined herein.

An analysis of the existing site topography demonstrates the site is exempt from the Landform Conservation Policy set out by the ORMCP. Grades under the post-development condition will be set to maintain much of the existing general topography of the site in keeping with ORMCP policies.

No municipal sanitary system exists adjacent to site to serve as an outlet. Site sanitary will drain via a private sewer network to a septic system that is contemplated near the southwest corner of the site. Carwash output will not contribute to the septic load as it will be stored and regularly hauled offsite. Since the site will not discharge treated sanitary effluent to surface water, no assimilative capacity of the downstream watercourse is necessary.

No municipal water system is currently available adjacent to site to service the development. A proposed private well located at the northern most point of the site will service the site for domestic and fire through a private water network. A separate, *Preliminary Geotechnical/Hydrogeological Report* (Stantec, January 2019), has been prepared which outlines the underlying groundwater conditions on the subject property and provides a recommendation for a future onsite water supply well. Water conservation measures can be explored further at the detailed design stage to potentially reduce groundwater consumption, as desired.

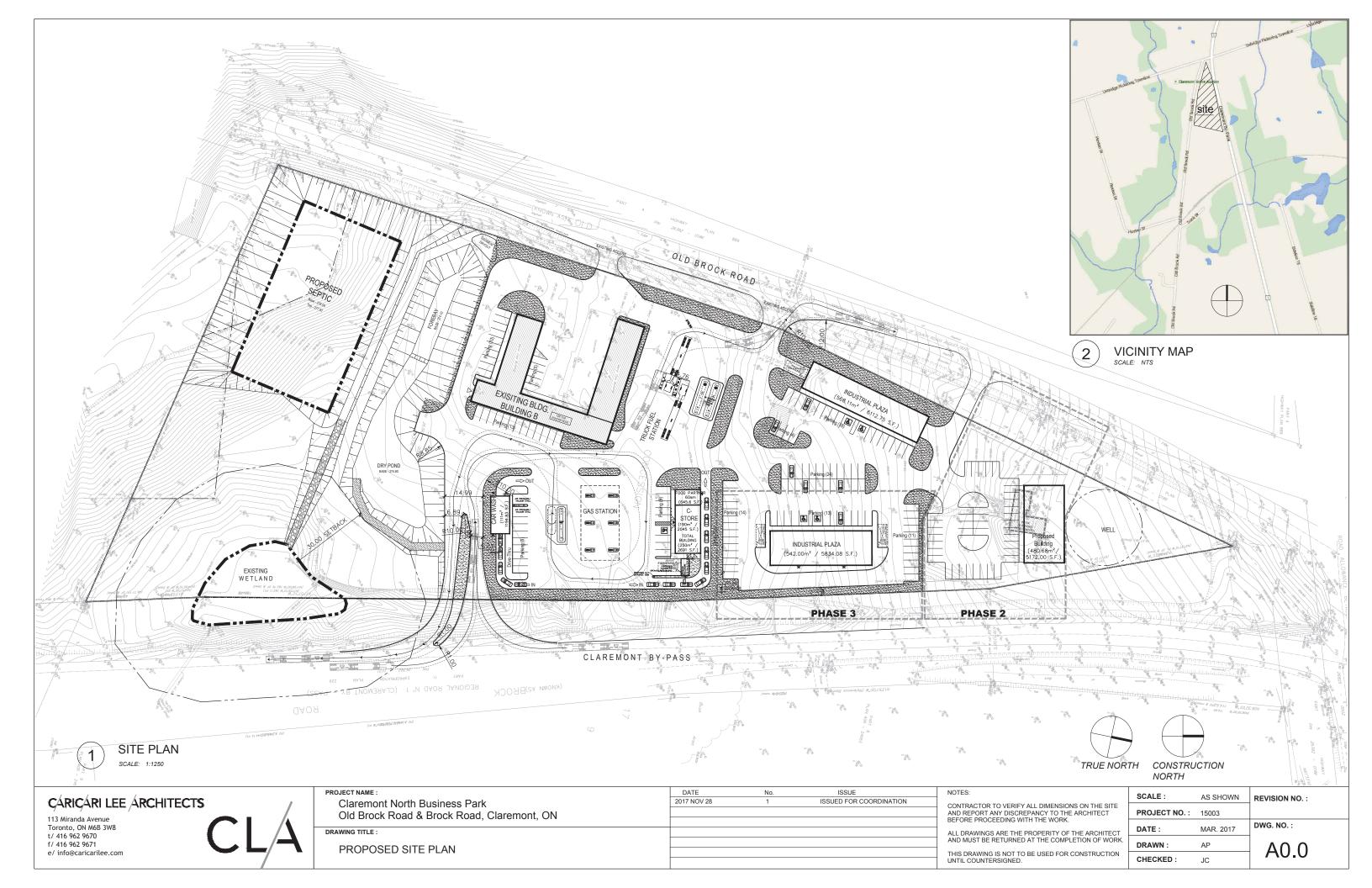
As outlined herein, existing drainage patterns will be maintained and attenuated in accordance to ORMCP polices. Current Old Brock Road major/minor flow conveyance to the wetland southeast of the site will be preserved. Onsite major/minor flows will be captured and controlled in a proposed dry pond. An onsite oil-grit separator in combination with a dry pond and vegetated swale outlet will exceed the minimum requirements for onsite water quality treatment. A proposed dry pond will capture and detain surface water runoff to predevelopment levels. A variety of infiltration measures will be explored at the detailed design stage to ensure the onsite retention of a 5 mm storm will be achieved to satisfy and exceed imposed erosion control and water balance criteria, respectively.

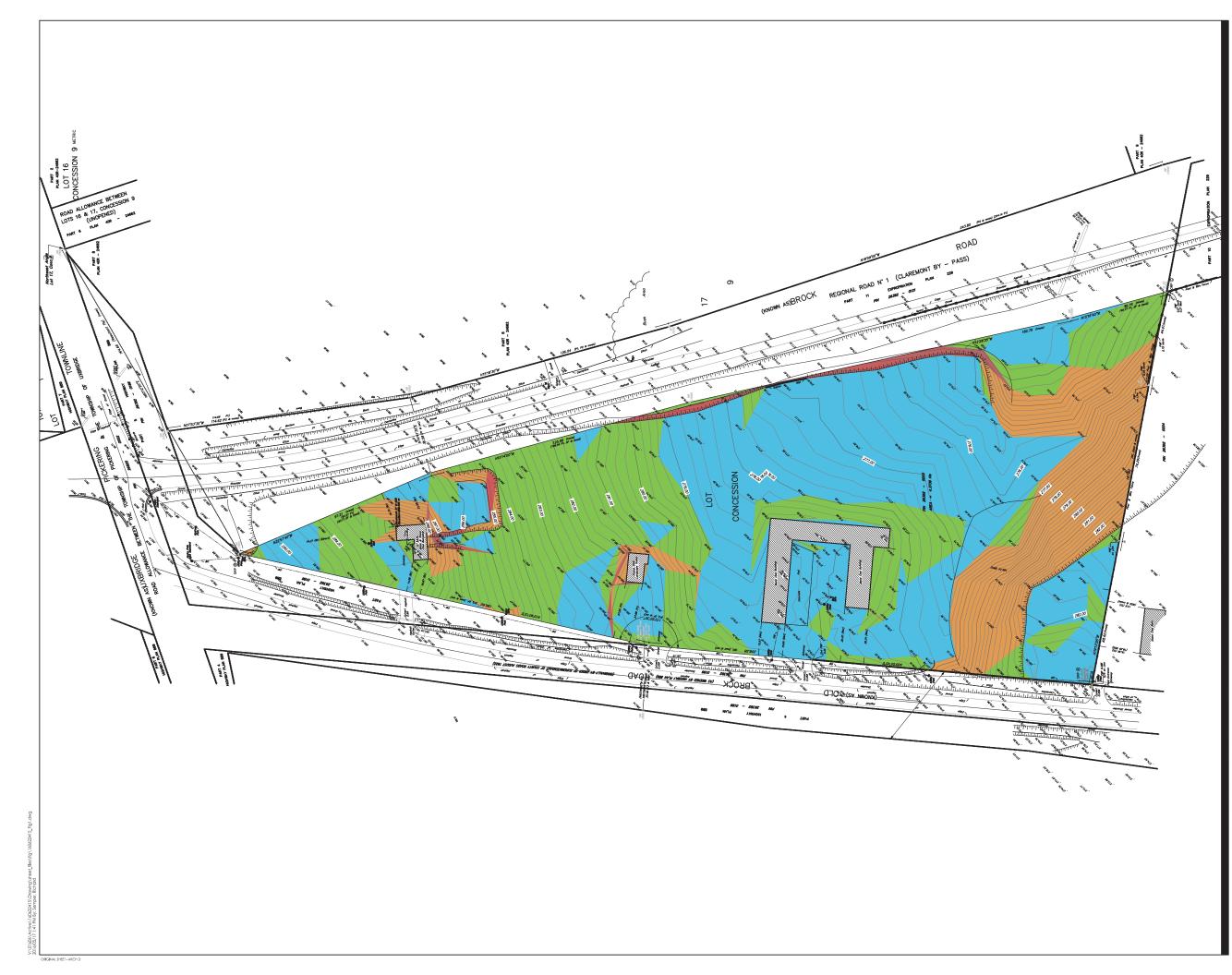


Appendix A Background Information January 17, 2019

# Appendix A BACKGROUND INFORMATION









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Consultants

#### Legend

Slopes Table						
Minimum Slope	Maximum Slope	Area	Color	% AREA		
0.00%	5.00%	25352.60		53.58		
5.00%	10.00%	13726.75		29.01		
10.00%	25.00%	7515.27		15.88		
25.00%		722.55		1.53		

#### Notes

ELEVATION DATUM Elevations are geodetic and are referred to the City of Pickering elevation datum Benchmark : 9-006 Elevation : 288.406 m

Bencimmark : 9-000 m Brass Cap set in east face on brick bungaiow on west side of Regional Road N 1 ±93 m south of Pickering-Uxbridge Townine Road. Plate 0.50 m south of northeast corner and 0.40 m above grade.

Point at which elevations taken shown thus

NOTE ELEVATIONS AND STE CONDITION ARE BASED ON INITIAL SIGNING DATE OF SURVEY BEING, NOVEMBER 26, 2009 BY R.G. MCGBBON LTD., O.L.S. NO ATTEMPT HAS BEEN MADE TO VERIFY SAME IN MARCH, 2016.

#### NOTE

NUIL RG, MXHBON LTD, SURVEY DATED NOVEMBER 9, 2009 (FLE: L-09-05) PARTALLY UPDATED MARCH 30, 2016 BY LLOYD AND PURCELL LTD. TO RELECT CONVERSION OF PLAN INTO LTM NADS CSRS (2010.0 EPOCH) AND CURRENT POSITON OF POST AND WRE FENCE ALONG A PORTION OF THE SOUTH TAND WEST LIMIT.

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Permit-Seal

Client/Project S. Larkin Developments Inc. Claremont North Business Park

Pickering, ON

Title Site Slope Analysis Landform Conservation Policy Assessment Project No. Scale 1:750 160622415 Drawing No. Sheet Revision

## **Minutes/Meeting Summary**



Pre-consultation Meeting

January 15, 2016 11:00 am - 12:00 pm Engineering & Public Works Meeting Room

- Subject: 5435, 5455 & 5475 Old Brock Road Part 1 of Part of Lot 17, Concession 9, City of Pickering
- Applicant: Rosemarie L. Humphries Humphries Planning Group Inc.
- Attendees: Karl Kiproff Region of Durham, Health Department Rosemarie Humphries – Humphries Planning Group Shaun Larkin – S. Larkin Developments Inc. Steven Strong – Toronto and Region Conservation Authority (TRCA)

Nilesh Surti – Manager, Development Review & Urban Design Déan Jacobs, Principal Planner - Policy Paal Helgesen – Development Engineer Irina Marouchko – Water Resources Engineer Kyle Bentley – Chief Building Official Adam Fowler – Fire Inspector Rob Watson – Fire Inspector

ltem	Details & Discussion & Conclusion (summary of discussion)	Action Items /Status
Proposal	To permit a retail gas outlet with an accessory restaurant use and an associated automatic car wash, and to formalize the existing employment uses on the site.	
Type of Applications	Zoning By-law Amendment (Major) <b>Note</b> : A separate pre-consultation meeting will be held for any subsequent application for Site Plan Approval.	
Discussion	<ul> <li>Humphries Planning &amp; S. Larkin</li> <li>The site currently contains buildings being used for machinery sales/repair, landscape storage/sales and indoor/outdoor storage, as well as a single detached dwelling and a trailer.</li> <li>The current proposal is to apply for a zoning by-law amendment to permit a retail gas outlet with an accessory restaurant use and an associated automatic car wash, and to formalize the existing employment uses on the site. The proposal also includes a truck fill.</li> <li>Over time, the intention is to introduce commercial uses on the site also.</li> </ul>	

Item	Details & Discussion & Conclusion (summary of discussion)	Action Items /Status
	It was clarified that although the property in question has three municipal addresses, it is legally one property.	
	The property was leveled in 1974/1975 and does not reflect any landform conservation characteristics.	
	Steven Strong, Toronto and Region Conservation Authority (TRCA)	
	The subject site is located within the TRCA Regulated Area of the Duffins Creek Watershed. The site is regulated with respect to its location within a wetland/wetland area of interference. As such, any proposed works on the subject site will be subject to the criteria of O.Reg. 166/06 and requires TRCA permit and planning approval.	
	As part of a Zoning By-law Amendment application, TRCA will require the following:	
	• Planning Rationale Report, demonstrating how the proposed land uses meets the intent of the Oak Ridges Moraine Conservation Plan, the Regional Official Pan, and the Pickering Official Plan	
	<ul> <li>Regarding the identified Category 2 Landform Conservation area identified in the Pickering Official Plan, a short discussion regarding the location and nature of the historical disturbance of the landform and grading on the site needs to be contained in the Planning Rationale Report (If the site has been substantially graded in the past, the extent should be discussed to assist in the determination of conformity to the ORMCP Landform Conservation policies).</li> </ul>	
	Topographic Plan of Survey	
	Proposed Site Plan	
	Natural Heritage Evaluation	
	Hydrogeological Study/ Water Balance Study	
	Standard Planning Review Fee: \$7,350.00 – please confirm the fee at the time of submission.	
	Paal Helgesen – City of Pickering, Engineering & Public Works (Development Review)	
	The following reports will be required:	
	Functional Servicing and Stormwater Report (FSSR)	
	• A brief regarding construction management, and erosion and sediment controls to be contained within the FSSR	

ltem	Details & Discussion & Conclusion (summary of discussion)	Action Items /Status
	A Geotechnical Report	
	• Traffic Impact Study (in accordance with the Region's Traffic Impact Study Guidelines). The City's Traffic Engineer shall review the proposed Terms of Reference for the Traffic Impact Study.	
	Reports are to be signed and stamped by a professional engineer.	
	Irina Marouchko – City of Pickering, Engineering & Public Works (Water Resources)	
	A Stormwater Management study and Functional Grading Plan is required. The stormwater management criteria for the site are as follows:	
	Quality control – level 1	
	<ul> <li>Quantity control – as outlined in the Duffins Creek Hydrologic Update, 2012 (accessible on-line)</li> </ul>	
	Erosion Control - minimum of 5 millimeters (rainfall) on-site infiltration or retained	
	The Stormwater Management Study and Grading Plan are to be signed and stamped by a professional engineer.	
	Suggested that the owner investigates the use of stormwater for the proposed car wash use.	
	Rob Watson & Adam Fowler, Pickering Fire Services	
	Detailed comments to be provided at Site Plan stage	
	No on-site holding tank is required for firefighting purposes	
	<ul> <li>The proposed restaurant use will require a fire route – details contingent upon ultimate site and building configuration</li> </ul>	
	Karl Kiproff, Region of Durham – Health Department	
	Sewage Services	
	One-site sewage disposal system required	
	<ul> <li>If the sewage flow exceeds 10 000 liters a day, approval of the system is required from the Ministry of Environment and Climate Change</li> </ul>	
	<ul> <li>Indicate location of existing sewage system, proposed area of new system, and reserve area in accordance with Regional Health requirements on Site Plan</li> </ul>	

ltem	Details & Discussion & Conclusion (summary of discussion)	Action Items /Status
	<ul> <li>Noted that it is uncommon to have a car wash facility on private services – waste water must be disposed through on-site sewage system</li> </ul>	
	Water Services	
	Private water supply system required	
	<ul> <li>Please indicate location of existing wells and proposed new wells on Site Plan (note: any abandoned wells need to be properly decommissioned)</li> </ul>	
	• The private water supply is classed as a "Small Drinking Water System" under the Health Protection and Promotion Act, which will require regular inspections and reporting on the condition of the system and water quality	
	Food Safety	
	<ul> <li>Inspections regarding food and personal hygiene will be carried out by the Health Inspector of the Region on a regular basis. Detailed provisions regarding permits from the Region's Health Department will form part of the Building Permit stage.</li> </ul>	
	Heather Finlay - Region of Durham, Planning & Economic Development Department (advised by email on January 14, 2016)	
	Regional Official Plan Conformity: This property is designated "Hamlet" in Schedule 'B' – Map 'B3' of the Regional Official Plan. Hamlets are intended to provide opportunities for minor residential infill and small-scale industrial, commercial and institutional uses, subject to meeting the criteria of the Oak Ridges Moraine Conservation Plan, the Regional Official Plan and the City of Pickering Official Plan. As such, it appears that this proposal is generally in conformity with the Regional Official Plan.	
	Studies	
	<ul> <li>Archaeological Assessment – This property is within the Region's comprehensive archaeological potential model. Therefore, a Stage 1 Archaeological Assessment is to be completed by a Qualified Person (QP) at application submission. This study, and any further studies required by the QP must be completed and submitted to the Ministry of Culture, Tourism and Sport (MTCS) for their clearance letter(s). A copy of this documentation is to be sent to the Region for our records and clearance of the condition.</li> </ul>	

Item	Details & Discussion & Conclusion (summary of discussion)	Action Items /Status
	<ul> <li>Site Screening Questionnaire (SSQ) – This form is part of a formal zoning application, and is to be completed by a QP to ensure that there is no potential for site contamination on or adjacent to the property. If there is any potential for contamination, a Record of Site Condition compliant Phase One Environmental Site Assessment (ESA), and any further studies (including a Record of Site Condition) may be required. Please note that all site contamination reports have a stale date of 18 months as per Ontario. Reg. 153/04.</li> </ul>	
	<ul> <li>Hydrogeological Study – the Region will require a Hydrogeological Study, and may require the Peer Review of this study coordinated through our office, and the cost of this is solely borne by the applicant, in consultation with the TRCA.</li> </ul>	
	Fees	
	<ul> <li>Zoning By-law Amendment Review Fee - \$1,000.00</li> </ul>	
	Copies	
	<ul> <li>five copies of the application and any information included in the zoning amendment submission</li> </ul>	
	<ul> <li>two copies- Archaeological Assessment</li> </ul>	
	<ul> <li>two copies - Site Screening questionnaire/Phase 1 ESA</li> </ul>	
	Peter Castellan - Region of Durham, Public Works Department (advised by email on January 13, 2016)	
	This section of Brock Road is classified as a ROD Type A arterial road with a minimum right-of-way of 36.0 m. It appears there is sufficient right-of-way in this area to meet this criteria.	
	The ultimate site plan configuration indicates two accesses to Old Brock Road and one access to Brock Road. Access to Brock Road will be dependent on the submission of a Traffic Impact Study. Please refer to the Region's Traffic Impact Study (TIS) Guidelines which can be found at <u>durham.ca</u> . The TIS shall also include a sight line analysis at the proposed Brock Road access.	
	Subject to review of the TIS, if access is deemed permissible by the Region, we would require the construction of auxiliary lanes to facilitate the ingress and egress of traffic on Brock Road.	

ltem	Details & Discussion & Conclusion (summary of discussion)	Action Items /Status
	A stormwater management report would also be required for this site.	
	Kyle Bentley - City of Pickering, Building Services	
	<ul> <li>Detailed comments are to be provided at Site Plan and Building Permit stages</li> </ul>	
	<ul> <li>Details regarding the existing wells may be required at the Building Permit stage</li> </ul>	
	Nilesh Surti & Déan Jacobs, City Development	
	Preliminary comments on Concept Site Plan	
	Clarification is required as to whether the existing uses will continue to operate, in which case they need to be shown and included in the rezoning application and shown on the concept site plan (including vehicular access, parking, etc.), or that they will seize to exist and are to be demolished.	
	Pickering Official Plan (POP) schedules and policy sections	
	<ul> <li>Schedule 1 (Land Use Structure) designates the site "Oak Ridges Moraine Rural Hamlet", and Schedule IV-10 Settlement 10: Claremont – North Section designates the site "Hamlet Employment". Permissible uses within the "Hamlet Employment" designation include, among other things, "automotive uses" – see Table 17 in the POP.</li> </ul>	
	<ul> <li>Section 15.38 of the POP states that within the urban area or within a rural hamlet, City Council may approve a site specific zoning by-law with appropriate provisions and restrictions, to permit a retail gasoline outlet in any land use designation except Open Space - Natural Areas, subject to certain criteria.</li> </ul>	
	<ul> <li>Schedule III (Resource Management) designates the majority of site "Minimum Area of Influence" with "Minimum Vegetation Protection Zone" in part along the eastern boundary, because of the proximity to "Significant Woodlands (east, north and south of site) and "Wetlands" (west of site). (See requirements in section 15.41)</li> </ul>	
	<ul> <li>Schedule VI (ORM Landform Conservation Areas): the lands fall within a Category 2 Landform Conservation Area (see requirements in section 15.40).</li> </ul>	
	The Restricted Area Zoning By-law 3037	
	<ul> <li>Zones the site "Oak Ridges Moraine Agricultural (ORM-A)" Zone. This zone category does not permit a retail gasoline outlet. A rezoning application is therefore required.</li> </ul>	

Item	Details & Discussion & Conclusion (summary of discussion)	Action Items /Status
	Studies	
	<ul> <li>Planning Rationale (Justification report)         <ul> <li>Need to address conformity with the ORMCP and the policies in the Pickering and Regional Official Plans</li> </ul> </li> </ul>	
	<ul> <li>Need to contain Sustainable Development Brief (See City's Sustainable Development Guidelines (2007)</li> </ul>	
	<ul> <li>Need to contain key findings &amp; recommendations from background studies to inform the rationale</li> </ul>	
	<ul> <li>In terms of section 15.40 (Landform Conservation), the Planning Rationale Report needs to contain a short brief regarding the location and nature of the historical disturbance of the landform and grading on the site – also see Steven Strong's comments on this matter</li> </ul>	
	Natural Heritage Evaluation – see section 15.41 in the POP	
	Hydrological Evaluation	
	<ul> <li>Site Suitability Study (See section 15.7 in the POP) – this can form part of the Functional Servicing and Stormwater Report</li> </ul>	
	Archaeological Assessment	
	<ul> <li>Traffic Impact Study (analysis to include Old Brock Road) Note: Region to circulate T.O.R. to City</li> </ul>	
	Site Screening and Phase 1 ESA	
	Application Fee	
	<ul> <li>Major Zoning By-law Amendment: \$ 12,500.00 (subject to increase after April 2016)</li> </ul>	
	Other	
	<ul> <li>One Digital (to scale) colour drawing of Concept Site Plan in high resolution (minimum dpi of 100)</li> </ul>	
	Survey of property	
	<ul> <li>20 copies of application form and CD containing all reports and studies</li> </ul>	
	To be noted is that community engagement is anticipated to be a key component of the planning process. Staff will consult with Regional and Local Ward Councillors regarding the need for a community open house.	

Item	Details & Discussion & Conclusion (summary of discussion)	Action Items /Status
Staff Recommendations	For more information on the City's Sustainable Development Guidelines Report, visit the website link below: <u>http://www.pickering.ca/en/living/resources/mainreportfinal</u> <u>may07developmentguidelines.pdf</u>	
	<ul> <li>the Sustainable Development Guidelines for Plans of Subdivision and Zoning Amendment applications are provided below: <u>http://www.pickering.ca/en/living/resources/appendixb- guideline2.pdf</u></li> </ul>	
Technical Reports Required	Please see attached Technical Report Checklist	
Fees Requirement	For the proposed development, the following fees are required (fees are subject to change pending application submission date)	
	City of Pickering (2015 fee By-law)	
	<ul> <li>Zoning By-law Amendment Application (major) \$12,500.00</li> </ul>	
	Region of Durham	
	<ul> <li>Zoning By-law Amendment Application Review Fee \$1,000.00</li> </ul>	
	TRCA	
	<ul> <li>Zoning By-law Amendment (standard)</li> <li>\$7,350.00</li> </ul>	
	Region of Durham Health Department	
	Zoning By-law Amendment Commenting Fee <b>\$245.00</b>	

Meeting Adjourned: 12 noon J:Documents:Development:D-1000 Development & Planning - General:D-1000-001 Pre-Consultation:2016/5435 Old Brock Road (S Larkin):Pre-Consultation Minutes - Meeting Summary.docx

Attachment

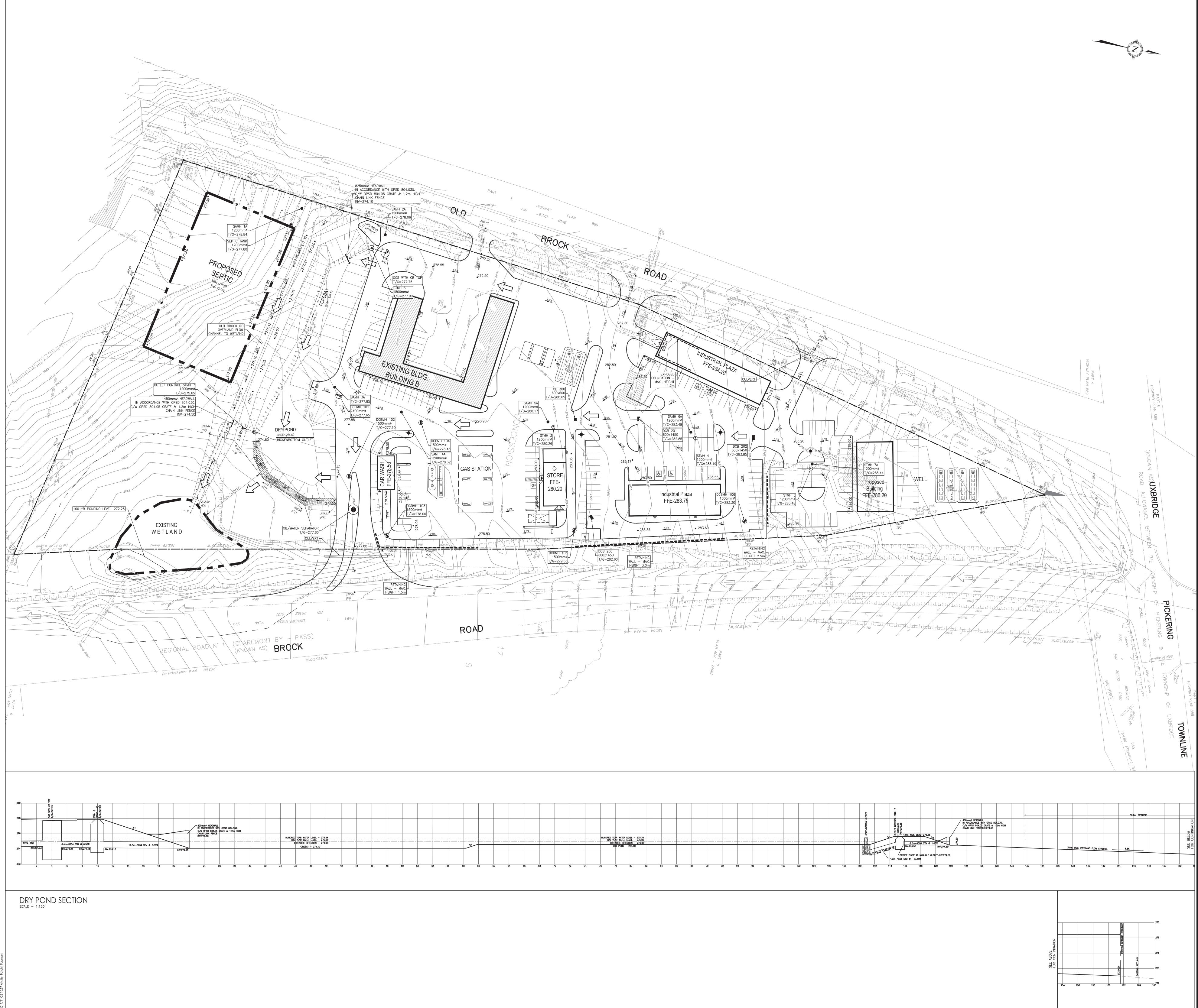
Copy: Peter Castellan – Region of Durham, Works Department Heather Finley, Project Planner – Region of Durham Karl Kiproff – Region of Durham Health Department Steven Strong - TRCA Rosemarie Humphries – Humphries Planning Group Shaun Larkin – S. Larkin Developments Inc.

> Nilesh Surti – Manager, Development Review & Urban Design Kyle Bentley – Chief Building Official Paal Helgesen – Development Engineer Irina Marouchko – Water Resources Engineer Déan Jacobs, Principal Planner - Policy Adam Fowler – Fire Inspector Rob Watson – Fire Inspector

Appendix B Conceptual Engineering Plans January 17, 2019

# Appendix B CONCEPTUAL ENGINEERING PLANS





ORIGINAL SHEET - ARCH E



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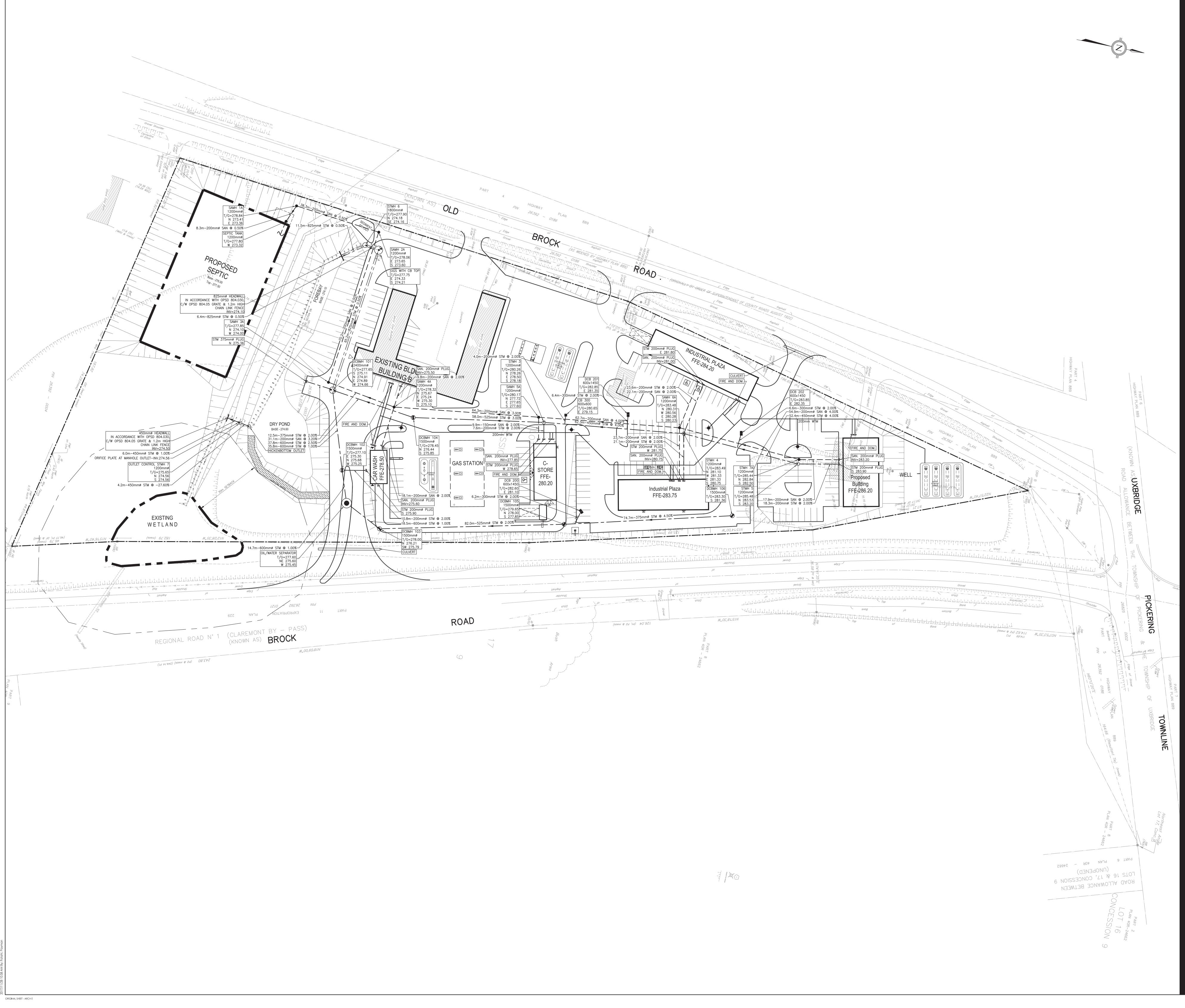
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Client/Project S. LARKIN DEVELOPMENTS INC. CLAREMONT NORTH BUSINESS PARK Old Brock Road and Brock Road Claremont, Ontario 

\_\_\_\_\_ Title CONCEPTUAL GRADING PLAN

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# 300 - 675 Cochrane Drive West Tower Markham, Ontario L3R 0B8 Tel. 905.944.7777

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- Legend SANITARY MANHOLE STORM MANHOLE CATCH BASIN ------ WATERMAIN ------ STORM SEWER — — — SANITARY SEWER
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Client/Project

S. LARKIN DEVELOPMENTS INC.

CLAREMONT NORTH BUSINESS PARK Old Brock Road and Brock Road Claremont, Ontario

Title CONCEPTUAL SERVICING PLAN

Project No. 160622415	Scale 1:500	0 5	15	25m
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Appendix C Sanitary January 17, 2019

# Appendix C SANITARY





November 23, 2017

Mr. Tim Gallagher Stantec 300W-675 Cochrane Drive Markham, ON L3R 0B8 File No.: 00026-1 Document No.: 00026-1.02

Dear Mr. Gallagher:

Subject: Proposed Claremont North Business Park Old Brock Road and Brock Road, Claremont City of Pickering

This report presents a wastewater servicing assessment for the proposed Claremont North Business Park commercial development on Old Brock Road and Brock Road in Claremont, and is intended to supplement a wider functional servicing assessment for the development by Stantec.

The development is to be comprised of the following: i) a restaurant, ii) a gas station, convenience store, and carwash, and iii) several industrial buildings. Wastewater servicing of the development is to be provided by a new private onsite Class 4 (i.e., leaching bed) wastewater treatment system ("WTS").

The property has an area of about 4.4 ha, and is bounded by Brock Road to the east and Old Brock Road to the west, as shown on the appended development concept prepared by Caricari Lee Architects. The ground-surface topography descends moderately to the south-southeast from the northerly corner of the property, with evidence of previous intermittent filling, to a swale and wetland depression which together traverse the southerly portion of the property. South of these features, the grade ascends sharply to a mildly-sloped area at the southwesterly corner of the property.

Currently contained on the property are a single-family residence, as well as additional buildings used for machinery repair, landscaping storage, and general storage. As part of the proposed development, the residence is to be demolished and the largest of the additional buildings is to be retained.

The purpose of this report is to provide preliminary design criteria and specifications for the WTS, as well as to outline additional information required to prepare a final design. To this end, the following information is contained herein:

- brief characterization of subsurface conditions as they pertain to wastewater servicing, based on exploration by FlowSpec Engineering ("FlowSpec") and hydrogeological assessment by Stantec;
- preliminary assessment of percolation time;
- preliminary calculation of daily wastewater flow;
- estimation of wastewater chemistry;
- discussion of effluent criteria;
- description of preliminary design specifications for the WTS; and
- recommendations for additional information required to prepare a final design and support the Site Plan Approval process.

# Subsurface Characterization

FlowSpec performed a subsurface exploration of the property in June 2016, which consisted of the excavation of test pits on the northerly upland portion of the property and within the above-referenced swale near the wetland depression.

The soil stratigraphy at the northerly upland test pits was generally comprised of fill and/or topsoil, overlying silt and sand till, and underlain by clayey sandy silt till. The soil encountered within the swale was comprised of fill and organic topsoil, overlying saturated silt.

Stantec performed a hydrogeological investigation and assessment of the property in 2016 and 2017 and provided its preliminary report (Project No. 160622415; report dated September 15, 2017) to FlowSpec for use in preparing this report. The investigation involved the advancement and installation of several monitoring wells around the perimeter of the property, which were screened both in the shallow unconfined groundwater regime ("shallow groundwater") and deeper water-supply aquifer. Groundwater levels in the monitoring wells were recorded via data-logger and manual measurement.

The Stantec investigation revealed that shallow groundwater flows in a south-southeasterly direction toward the above-referenced wetland depression, and follows a similar pattern to that of the ground-surface topography. The FlowSpec exploration and Stantec investigation together revealed that the <u>high</u> groundwater table is generally less than 1 m below the ground-surface.

The WTS leaching bed is currently proposed to be located at the southwesterly corner of the property. It is therefore recommended that the direction of shallow groundwater flow be specifically delineated in this location, in order to determine if the effluent plume is expected to: i) migrate offsite to the south-southeast, <u>or</u> ii) migrate to the east and northeast following ground-surface topography toward the wetland depression. It is also recommended that additional test pits be excavated to specifically characterize subsurface conditions in this location at the final design stage.

# **Percolation Time**

Notwithstanding the recommendation made in the previous section for additional subsurface characterization, for the purpose of a preliminary percolation time assessment, the till soils encountered in the upland test pits are presumed to extend across other upland areas of the property and into the proposed leaching bed location.

On this basis, samples of the till soils collected during the FlowSpec exploration underwent laboratoryderived particle-size analysis by Stantec. A preliminary percolation time was then assessed by classifying the soils (based on the Unified Soil Classification System), correlating the classification with a percolation time (based on Ontario Building Code ("OBC") Supplementary Standard SB-6, "Percolation Time and Soil Descriptions"), and compensating appropriately for characteristics observed during the subsurface exploration (i.e., density, consistency, and structure).



The assessment is summarized in the following table:

Soil Description	Unified Soil Classification	Percolation Time (min/cm)
Silt and Sand Till, some clay and gravel (upper till)	ML	50
Clayey Sandy Silt Till, some gravel (lower till)	ML-CL	>50

A preliminary percolation time at or above 50 min/cm was assessed and is to be refined upon completion of the additional subsurface characterization at the final design stage, as recommended in the previous section.

# Wastewater Flow

A preliminary <u>theoretical</u> peak daily wastewater flow for the proposed development was calculated using maximum projected building occupancy data and the following information supplied to FlowSpec by Stantec:

- 1. The restaurant is to include the following features: i) 24-hour operation, ii) short-order menu, and iii) a drive-through.
- 2. A reclamation system is proposed for the carwash to reduce the volume of wastewater. This type of wastewater is not suitable for discharge to a leaching bed, due to its inherent soap and sediment content, such that the carwash is to be serviced by a holding tank. *Since wastewater from the carwash is not to be directed to the WTS, its wastewater flow was not included in the calculation.*
- 3. The industrial buildings are to be "dry" in operation (i.e., no process wastewater) and are to contain no showers.

The calculation is presented in the following table and is based on flow-rates prescribed in OBC Table 8.2.1.3.B. and experience:

Occupancy Classification	Occupancy Data	Peak Daily Wastewater Flow (L/day)
Restaurant (24-hour): 16 seats	16 seats x 250 L/day/seat	4,000
Gas Station / Convenience Store: 12 fuel-outlets and 2 water-closets	12 fuel outlets x 560 L/day/fuel-outlet + 2 water-closets x 950 L/day/water-closet	8,620
Dry Industrial (with no showers): 32 employees	32 employees x 75 L/day/employee	2,400
	Total	15,020

A preliminary theoretical peak daily wastewater flow of 17,000 L/day was assessed, in order to provide a factor of safety for potential alteration as the design progresses.

Given the theoretical peak daily wastewater flow exceeds 10,000 L/day, approval of the design and construction of the WTS falls under the jurisdiction of Section 53 of the Ontario Water Resources Act, as administered by the Ontario Ministry of the Environment and Climate Change ("MOECC").



# Wastewater Chemistry

The proposed development is expected to generate wastewater with concentrations of grease, biochemical oxygen demand (i.e., organics), solids, and nitrogen which are higher than typical domestic (i.e., household) wastewater. The increased concentrations are attributed to food preparation in the restaurant (higher organics and solids), high urine content from washrooms in commercial buildings (higher nitrogen), and an absence of showers and laundry which would typically dilute concentrations of these constituents in domestic wastewater.

Constituent concentrations estimated for each type of wastewater, as well as a preliminary combined chemistry are presented in the following table:

Constituent	С	oncentration (mg/L)	
Constituent	Restaurant	Washrooms	Combined
Five-Day Biochemical Oxygen Demand ("BOD₅")	2,200	200	1,200
Total Nitrogen	120	120	120

# **Effluent Concentration Limits and Objectives**

Approval of the design and construction of the WTS falls under the mandate of the MOECC (as described above), which requires consideration for potential nutrient (i.e., nitrogen and phosphorous) impact of the WTS on groundwater (that is or may be used as water-supply) and surface water (generally within approximately 300 m).

The specific direction of shallow groundwater flow in the proposed leaching bed location (i.e., southwest corner of the property) will determine if the effluent plume is expected to: i) migrate offsite to the south-southeast as shallow groundwater, ii) or migrate and outflow to the onsite wetland depression.

Under the former scenario, the MOECC typically stipulates a strict nitrogen concentration limit in groundwater where an effluent plume reaches a property line (i.e., nitrate+nitrite-nitrogen ("nitrate") concentration of 2.5 mg/L). The limit may only be achieved via dilution of the effluent plume in groundwater from precipitation and/or wastewater treatment prior to discharge. Given the leaching bed is to be situated adjacent to the potential downgradient property boundary, reduction of organics, solids, and nitrogen via wastewater treatment would be required to comply with the MOECC property line nitrate concentration limit.

Under the latter scenario, the MOECC and Toronto Region Conservation Authority ("TRCA") may stipulate a strict nitrogen concentration limit at the point where shallow groundwater outflows to the wetland depression, given the depression is hydraulically connected to a designated wetland across Brock Road. Similar to the former scenario described above, reduction of organics, solids, and nitrogen via wastewater treatment may be required to comply with MOECC and TRCA discharge guidelines.



Moreover, under the latter scenario, phosphorous and pathogen reduction is typically required in scenarios where effluent discharges to surface water. Given effluent is to discharge to the subsurface prior to outflow in this case, phosphorous is expected to be removed via adsorption to soil particles and pathogens are expected to be removed via effluent migration through unsaturated soil prior to reaching shallow groundwater. Therefore, additional treatment for phosphorous and pathogen removal is not anticipated.

Specific effluent criteria is to be derived upon delineation of shallow groundwater flow direction in the proposed leaching bed location. For the purpose of this report, however, a preliminary effluent nitrate concentration limit of 3.0 mg/L was assessed. In order to achieve this limit, a proprietary wastewater treatment unit is required, which is also capable of reducing five-day carbonaceous  $BOD_5$  ("CBOD<sub>5</sub>") and total suspended solids ("TSS") to an effluent concentration objective of 10 mg/L.

Reduction of CBOD<sub>5</sub> and TSS to an effluent concentration of 10 mg/L allows for discharge to a Type A dispersal leaching bed, which provides a permissible reduction in bed area of about 30% when compared to the bed area required when effluent is discharged from a conventional septic tank.

# **Design Specifications**

On the basis of the preliminary design criteria described above, the WTS is to be comprised of the following key components: i) proprietary treatment unit, and ii) Type A dispersal leaching bed.

Although specific effluent concentration limits and objectives have yet to be finalized, for preliminary design purposes, the proprietary treatment unit is to be designed to achieve an effluent nitrate concentration limit of 3.0 mg/L and an effluent CBOD<sub>5</sub> and TSS concentration objective of 10 mg/L.

A Type A dispersal leaching bed is comprised of a layer of continuous stone containing a series of gravity distribution pipes, overlying a layer of imported sand fill which extends into a tapered mantle beyond the stone layer. In this case the stone layer would be contained in the mildly sloped southwest corner of the property, and the mantle(s) would extend down the slopes to the north and east.

The minimum leaching bed area required by OBC Sentence 8.7.7.1.(5). is calculated below:

 $A = Q \times T \div 400$ 

where: A = minimum leaching bed area required (m<sup>2</sup>) Q = peak daily wastewater flow (L/day) T = percolation time (min/cm)

A = 17,000 L/day x 50 min/cm ÷ 400 = 2,125 m<sup>2</sup>

The minimum leaching bed area required by OBC Sentence 8.7.7.1.(5). is based on a maximum percolation time of 50 min/cm, even in scenarios where the percolation time exceeds 50 min/cm. It is the opinion of FlowSpec that a technical limitation exists with this formula, such that it is inappropriate for use in situations where the percolation time is greater than 50 min/cm (as <u>may be</u> the case here, to be confirmed upon excavation of additional test pits in the proposed bed location).



Therefore, the leaching bed area used for these preliminary design specifications was calculated using a maximum hydraulic loading rate of 6 L/day/m<sup>2</sup> (considered reasonable for the underlying till soils), as follows:

 $A = Q \div L_R$ 

where: A = minimum leaching bed area required (m<sup>2</sup>) Q = peak daily wastewater flow (L/day)  $L_R = maximum$  hydraulic loading rate (L/day/m<sup>2</sup>)

 $A = 17,000 L/day \div 6 L/day/m^{2} = 2,834 m^{2}$ 

A leaching bed area of 3,000 m<sup>2</sup> has been accommodated in the development concept, and is to be refined upon excavation of additional test pits in the proposed bed location at the final design stage. A preliminary bed envelope is illustrated on the appended development concept.

Should you have any questions regarding the above, please do not hesitate to contact the undersigned.

Yours truly, FlowSpec Engineering Ltd.

David Morlock, P.Eng. Consulting Engineer





FUNCTIONAL SERVICING AND STORMWATER MANAGEMENT REPORT

Appendix D Water January 17, 2019





Project Name -	Project Name - Claremont North Business Park	ness Park				4	
Project Number - 160622415	160622415					<b>Stantec</b>	tec
Date -	Date - Nov-17				y		
		DOMESTIC WA	DOMESTIC WATER CALCULATION SHEET				
Criteria Used:	<b>Criteria Used:</b> Durham Region Standards	dards					
Function	Population	Units	Flow	Units	Min Hr Factor	Peak Hr Factor	Max Day Factor
Single Family Residential	3.5	Per House	4500	L/min	ı	'	1
Townhouse	3.5	Per House	4500	L/min	-	-	,
1 Bdrm Apt	1.6	Per Unit	4500	L/min			
2 Bdrm Apt	2.7	Per Unit	4500	L/min	ı		
3 Bdrm Apt	2.7	Per Unit	4500	L/min	1		
Commercial	-	1000m <sup>2</sup> of GFA	5,000	L/Day	-	-	
Office	-	1000m <sup>2</sup> of GFA	5,000	Г/Дау	-	-	ı
		Reside	Residential Component				
Location	Unit Type	Number of Units	Population	Average Day (L/d)	Min Hour (L/hr)	Min Hour (L/hr) Peak Hour (L/hr)	Max Day (L/d)
			Total Residential	0	0	0	0
		Non-Resi	Non-Residential Component				
Location	Function	GFA Area (Ha)	Population	Average Day (L/d) Min Hour (L/hr) Peak Hour (L/hr) Max Day (L/d)	Min Hour (L/hr)	Peak Hour (L/hr)	Max Day (L/d)

		Non-Resi	Non-Residential Component				
Location	Function	GFA Area (Ha)	Population	Average Day (L/d)	Min Hour (L/hr)	Average Day (L/d)   Min Hour (L/hr)   Peak Hour (L/hr)   Max Day (L/d)	Max Day (L/d)
Claremont North Business Park	Commercial	0.32	-	16000	I		16000
			Total Commercial	16000	0	0	16000
	Number obtained from	ı carwash supplier =>	Total Carwash	10980	0	0	10980
			Total Site	26980	0	0	26980

0.31	
Total Peak Flow (L/s)	

Project Number -	Claremont North 160622415 Nov-17	n Business Park	Stantec
		ALCULATION SHEET	
1. Fire flow estimate		3. Sprinkler Protection Factor	
C=	0.6	Factor (%)=	0%
		F (L/min)=	5796
Largest Floor Area (m <sup>2</sup> )=	1234	4. Exposure Factor	
Above Floor Area (m <sup>2</sup> )=	0	Distance to Clos	est Structure
Below Floor Area (m <sup>2</sup> )=	0	Side 1 (m)=	15
A (m <sup>2</sup> )=	1234	Side 2 (m)=	20
		Side 3 (m)=	20
F (L/min)=	4637	Side 4 (m)=	20
2. Occupancy Factor		Factor (%)=	60%
Factor (%)=	25%	F (L/min)=	10000
F (L/min)=	5796	F (USGPM)=	3000

## FUNCTIONAL SERVICING AND STORMWATER MANAGEMENT REPORT

Appendix E Stormwater Management January 17, 2019

# Appendix E STORMWATER MANAGEMENT



# **Drainage Areas**

Existing Development Area

Zone	Area (ha)	Runoff Coefficient
Building	0.16	0.90
Open Space	4.42	0.25
<u>Total</u>	4.58	0.27

#### Existing Drainage Areas

Zone	Area (ha)	Runoff Coefficient
Northeast External	1.55	0.40
West External	0.63	0.75
South External	0.76	0.25
Site	4.58	0.27
<u>Total</u>	<u>7.52</u>	0.34

### Proposed Site Area

Zone	Area (ha)	Runoff Coefficient
Commercial	2.89	0.80
SWM Pond	0.27	0.60
Uncontrolled	0.04	0.90
Undeveloped	1.38	0.25
<u>Total Site</u>	<u>4.58</u>	<u>0.62</u>

#### Proposed Development Area

Zone	Area (ha)	Runoff Coefficient		
Commercial	2.89	0.80		
SWM Pond	0.27	0.60		
Uncontrolled	0.04	0.90		
<u>Total Development</u>	<u>3.20</u>	<u>0.78</u>		

Proposed Drainage Areas

Zone	Area (ha)	Runoff Coefficient		
Northeast External	1.55	0.40		
West External	0.63	0.75		
South External	0.76	0.25		
Site	4.58	0.62		
<u>Total</u>	<u>7.52</u>	<u>0.55</u>		

Project: Claremont Business Park - ESSO Project Number: 160622415 Project Location: Claremont, ON

# Stormwater Release Rates

## Existing

Existing Site Area Release Rates

Area (ha) = 4.58

Storm	Release Rate (m <sup>3</sup> /s)	Total Rainfall (mm)	Runoff Volume (mm)
25mm 4hour	0.195	25.0	15.4
2 Year 1 Hour AES Storm	0.321	23.8	14.6
2 Year 12 Hour AES Storm	0.222	41.1	31.1
5 Year 1 Hour AES Storm	0.901	32.6	24.8
5 Year 12 Hour AES Storm	0.458	53.2	44.7
10 Year 1 Hour AES Storm	0.645	38.5	28.6
10 Year 12 Hour AES Storm	0.341	61.3	50.5
25 Year 1 Hour AES Storm	0.809	45.9	35.7
25 Year 12 Hour AES Storm	0.400	71.4	60.3
50 Year 1 Hour AES Storm	0.930	41.0	51.4
50 Year 12 Hour AES Storm	0.444	67.7	79.0
100 Year 1 Hour AES Storm	1.048	56.8	46.2
100 Year 12 Hour AES Storm	0.487	86.5	75.0

# Existing Drainage Area Release Rates

Area (ha) = 7.52

Storm	Release Rate (m <sup>3</sup> /s)
25mm 4hour	0.350
2 Year 1 Hour AES Storm	0.581
2 Year 12 Hour AES Storm	0.367
100 Year 1 Hour AES Storm	1.783
100 Year 12 Hour AES Storm	0.805

Existing External Drainage Areas

Storm	Drainage Area	Release Rate (m <sup>3</sup> /s)	
100 Year 1 Hour AES Storm	Northeast - 1.55 ha	<u>0.154</u>	
100 Year 12 Hour AES Storm	Nonneusi - 1.55 hu	0.077	
100 Year 1 Hour AES Storm	West - 0.63 ha	<u>0.506</u>	
100 Year 12 Hour AES Storm	West - 0.65 Hu	0.169	

Existing Roadside Ditch Capacity

Roadside Ditch	Capacity (m <sup>3</sup> /s)	Required (m <sup>3</sup> /s)
West - Upstream	1.26	0.154
West - Downstream	0.52	0.134
East - Upstream	4.97	0.506
East - Downstream	26.38	0.506

#### Proposed

## Proposed Development Area Release Rates

Area (ha) = 3.20

Storm	Release Rate (m <sup>3</sup> /s)	Total Rainfall (mm)	Runoff Volume (mm) <sup>1</sup>	
25mm 4hour	0.014	25.0	22.81	
2 Year 1 Hour AES Storm	0.015	23.8	21.60	
2 Year 12 Hour AES Storm	0.060	41.1	38.80	
100 Year 1 Hour AES Storm	0.342	56.8	54.51	
100 Year 12 Hour AES Storm	0.279	86.5	84.12	

#### Proposed SWM Pond Release Rates

Storm	Release Rate (m <sup>3</sup> /s)	Pond Volume (m <sup>3</sup> )	Water Level (m)
25mm 4hour	0.014	613	274.96
2 Year 1 Hour AES Storm	0.015	659	274.99
2 Year 12 Hour AES Storm	0.059	760	275.05
100 Year 1 Hour AES Storm	0.338	1,282	275.34
100 Year 12 Hour AES Storm	0.275	1,171	275.28

24.3

hours  $\leftarrow$  Expected drawdown time. Assumed average release rate is half of the maximum.

Storm	Release Rate (m <sup>3</sup> /s)	Total Rainfall (mm)	Runoff Volume (mm) 1
25mm 4hour	0.068	25.0	20.5
2 Year 1 Hour AES Storm	0.109	23.8	19.4
2 Year 12 Hour AES Storm	0.104	41.1	36.4
5 Year 1 Hour AES Storm	0.224	32.6	28.0
5 Year 12 Hour AES Storm	0.202	53.2	48.3
10 Year 1 Hour AES Storm	0.320	38.5	33.8
10 Year 12 Hour AES Storm	0.259	61.3	56.3
25 Year 1 Hour AES Storm	0.436	45.9	41.1
25 Year 12 Hour AES Storm	0.323	71.4	66.3
50 Year 1 Hour AES Storm	0.522	41.0	46.6
50 Year 12 Hour AES Storm	0.369	67.7	73.9
100 Year 1 Hour AES Storm	0.609	56.8	51.9
100 Year 12 Hour AES Storm	0.414	86.5	81.3

<sup>1</sup> Unmitigated runoff volume - no runoff reduction techniques applied.

Proposed Drainage Area Release Rates

#### Area (ha) = 7.52

Storm	Release Rate (m <sup>3</sup> /s)
25mm 4hour	0.235
2 Year 1 Hour AES Storm	0.369
2 Year 12 Hour AES Storm	0.238
100 Year 1 Hour AES Storm	1.314
100 Year 12 Hour AES Storm	0.731

#### TRCA

TRCA Unit Flow Relationship per Table 8.1 Addendum: Duffins Creek Hydrology Update Stormwater Management Criteria for Non-Seaton Development Lands Published by Aquafor Beech for the TRCA, dated May 23, 2013

#### TABLE 8.1:

#### Stormwater Management Target Criteria: Future Development Lands (Non-Seaton Lands)

		Model C#	tchment ID					2012 Unit Flow	rStormwaterManage	:ment‡	
Catchment No.	Tributary Name	inder catchinent ib		Existing Pre-development	Future Development Area		Storm Event	Unit Flow Rele	ase Rate Target	Storæge Re	quirem ents
		Rural	Urban	(rural) Area (ha)	Area (ha)	% Impervious	Stann Event	(L/s/ha)	(L/s/imp-ha)	(m 3/ha)	(m 3/imp-ha)
	51 Michell Creek near Claremont 5101 5104 716			716 18.7 39		2-year	2.42	6.21	153	392	
			716 1		5-year	3.94	10.11	213	547		
51		5104			39	10-year	5.03	12.90	253	649	
51		,10	10.7		25-year	6.58	16.88	306	786		
							50-year	7.81	20.02	346	887
							100-year	9.11	23.37	387	993

Development Drainage Area (ha) =

Development Drainage Impervious Percent<sup>1</sup> = 82 2.61

Development Drainage Impervious Area (ha) =

<sup>1</sup>Percent impervious (I) converted from C values based on Simple Method, C = 0.05 + 0.009(I); (Schueler, 1987)

Return Period	Release Ro	ıte (L/s/ha)	Release Rate (m <sup>3</sup> /s/ha)		
Reion renou	Based on Area	Based on Imp. Area	Based on Area	Based on Imp. Area	
2 Year	7.7	16.2	0.008	0.016	
100 Year	29.2	61.0	0.029	0.061	

3.20

TRCA Proposed Release Rates

Storm	Release Rate (m <sup>3</sup> /s)
2 Year 12 Hour AES Storm	0.060
100 Year 12 Hour AES Storm	0.279

Existing Conditions Unit Release Rates vs TRCA Unit Release Rates

Return Period	Release Rat	e (m³/s/ha)	TRCA Relase as a
Reion Fenoa	Existing	TRCA	Percentage of Existing
2 Year	0.048	0.008	16%
100 Year	0.106	0.029	27%

#### **Brock Road Culvert**

Upstream Invert =	271.2	m
Downstream Invert =	270.87	m
Length =	34.75	m
Slope =	0.0095	m/m
Diameter =	1.05	m
Tailwater Elevation =	271.92	m (obvert of culvert)
Headwater Elevation =	272.25	m

Headwater elevation calculated in CulvertMaster. Flow of 1.783 m<sup>3</sup>/s based on 100 Year 1 Hour AES Storm (existing conditions)

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# Stormwater Release Rates Summary

<u>Site Area Release Rates</u>

Area (ha) = 4.58

Storm	Existing Release Rate (m <sup>3</sup> /s)	Proposed Release Rate (m <sup>3</sup> /s)	Difference Runoff (m <sup>3</sup> /s)
25mm 4hour	0.195	0.068	-0.127
2 Year 1 Hour AES Storm	0.321	0.109	-0.212
2 Year 12 Hour AES Storm	0.222	0.104	-0.118
5 Year 1 Hour AES Storm	0.901	0.224	-0.677
5 Year 12 Hour AES Storm	0.458	0.202	-0.256
10 Year 1 Hour AES Storm	0.645	0.320	-0.325
10 Year 12 Hour AES Storm	0.341	0.259	-0.082
25 Year 1 Hour AES Storm	0.809	0.436	-0.373
25 Year 12 Hour AES Storm	0.400	0.323	-0.077
50 Year 1 Hour AES Storm	0.930	0.522	-0.408
50 Year 12 Hour AES Storm	0.444	0.369	-0.075
100 Year 1 Hour AES Storm	1.048	0.609	-0.439
100 Year 12 Hour AES Storm	0.487	0.414	-0.073

Drainage Area Release Rates

Area (ha) = 7.52

Storm	Existing Release Rate (m <sup>3</sup> /s)	Proposed Release Rate (m <sup>3</sup> /s)	Difference Runoff (m <sup>3</sup> /s)
25mm 4hour	0.350	0.235	-0.115
2 Year 1 Hour AES Storm	0.581	0.369	-0.212
2 Year 12 Hour AES Storm	0.367	0.238	-0.129
100 Year 1 Hour AES Storm	1.783	1.314	-0.469
100 Year 12 Hour AES Storm	0.805	0.731	-0.074

# Stormwater Runoff Volume Summary

Development Area Runoff Volumes Area (ha) = 3.20

Storm	Existing Runoff Volume (mm) <sup>1</sup>	Proposed Runoff Volume (mm)	Change in Runoff Volume (mm) <sup>2</sup>
25mm 4hour	15.4	22.8	7.4
2 Year 1 Hour AES Storm	14.6	21.6	7.0
2 Year 12 Hour AES Storm	31.1	38.8	7.8
100 Year 1 Hour AES Storm	46.2	54.5	8.3
100 Year 12 Hour AES Storm	75.0	84.1	9.2

<sup>1</sup> From the existing conditions site area model

<sup>2</sup> Unmitigated runoff volume - no runoff reduction techniques applied.

Project: Claremont Business Park - ESSO Project Number: 160622415 Project Location: Claremont, ON

# SWM Pond Sizing

Elevation (m)	Area (m²)	Incremental Volume (m³)	Total Volume (m <sup>3</sup> )	Total Volume Above NWL (m <sup>3</sup> )	
274.10	240	0	0		
274.20	265	25	25		
274.30	274	27	52		
274.40	315	29	82		
274.50	340	33	114	0	< Forebay volume
274.60	1,336	84	198	84	
274.70	1,404	137	335	221	
274.80	1,481	144	479	365	
274.90	1,558	152	631	517	
275.00	1,635	160	791	677	< Ext. Det. Water Level 274.96 m
275.10	1,712	167	958	844	< 2 Year Water Level 275.05 m
275.20	1,790	175	1,134	1,019	
275.30	1,869	183	1,316	1,202	< 100 Year Water Level 275.34 m
275.40	1,948	191	1,507	1,393	
275.50	2,028	199	1,706	1,592	
275.60	2,110	207	1,913	1,799	< Top of Pond 275.65 m

# **Stormwater Quality**

# **Dry SWM Pond**

Table 3.2 Water Quality Storage Requirements based on receiving Waters MOE, 2003

Protection Level	SWMP	Storage	Volume (m <sup>3</sup> /h	a) for Impervic	ous Level
FIOIECIIOII Level	Туре	35%	55%	70%	85%
Basic 60% long-term S.S. removal	Dry Pond	90	150	200	240

Development Drainage Area (ha) = 3.20

Development Drainage Impervious Percent<sup>1</sup> = 82% 2.61

Development Drainage Impervious Area (ha) =

Required Storage Volume  $(m^3/ha) =$ 232

Required Storage Volume  $(m^3) =$ 605

Provided Storage Volume  $(m^3) =$ 613

As the provided extended detention storage volume exceeds the required storage volume, the pond will provide 60% long-term suspended solids removal.

# WATER BALANCE CALCULATIONS

### TABLE 1 **EXISTING CONDITIONS MONTHLY WATER BALANCE** CLAREMONT NORTH BUSINESS PARK DEVELOPMENT

Model Type: Thornthwaite and Mather (1955) Client: S. Larkin Developments Inc. Location 5435, 5455 and 5475 Old Brock Road, Pickering, ON

Total Site Area (ha) 4.37

Sub-Area Descriptions (topography, soils, cover)Sub-Area ARolling to Hilly - Silty Clay - Moderately Rooted Crops

Land Description Factors (Seeend of table for sub-area descriptions)	Sub-Area A							Total
Topography	0.15						1	
Soils	0.15							
Cover	0.10							
Sum (Infiltration Factor) <sup>†</sup>	0.40							
Soil Moisture Capacity (mm)	200							
Site area (ha)	4.37							4.37
Imperviousness Coefficient	0.05							
Impervious Area (ha)	0.22						ľ	0.22
Percentage of Total Site Area	5.0%							5%
Remaining Pervious Area (ha)	4.15							4.15
Total Pervious Site Area (ha)	4.15							4.15
Percentage of Total Site Area	95.0%						l l	95%

117

31

132

-53

116

-40

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Climate Data <sup>‡</sup>													
Average Daily Temperature (°C)	-5.8	-5.6	-0.4	6.7	13	18.6	21.2	20.2	15.7	8.9	3.1	-2.9	7.7
Precipitation (mm)	62.1	50.5	53.2	74.1	79.6	82.8	79	76.2	81.8	68	80	65.7	853
Potential Evapotranspiration Analysis for Site	Jan	Feb	Mar	Apr	May	Jun	luL	Aug	Sep	Oct	Νον	Dec	Year
Heat Index	0.0	0.0	0.0	1.6	4.2	7.3	8.9	8.3	5.7	2.4	0.5	0.0	39
Unadjusted Potential Evapotranspiration (mm)	0.0	0.0	0.0	29.3	61.0	90.8	104.9	99.5	75.2	40.1	12.5	0.0	513
Potential Evapotranspiration Adjusting Factor for Latitude*	0.77	0.87	0.99	1.12	1.23	1.29	1.26	1.16	1.04	0.92	0.81	0.75	
Adjusted Potential Evapotranspiration	0	0	0	33	75	117	130	116	78	37	10	0	509

75

5

Evapotranspiration Analysis	]												
Sub-Area A	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Accumulated Potential Water Loss (APWL)	0	0	0	0	0	-34	-87	-127	-123	-92	-22	0	
Storage (S)	200	200	200	200	200	169	109	58	61	93	163	200	
Change in Storage	0	0	0	0	0	-31	-60	-51	3	31	70	37	
Actual Evapotranspiration (mm)	0	0	0	33	75	114	139	127	78	37	10	0	613
Recharge/Runoff Analysis													
Water Surplus (mm)	62	51	53	41	5	0	0	0	0	0	0	28	240
Potential Infiltration (I)	25	20	21	17	2	0	0	0	0	0	0	11	96
Potential Direct Surface Water Runoff (R)	37	30	32	25	3	0	0	0	0	0	0	17	144
Potential Infiltration (mm)	0	0	0	94	2	0	0	0	0	0	0	0	96
Pervious Evapotranspiration (m <sup>3</sup> )	0	0	0	1361	3115	4735	5755	5295	3257	1530	417	0	25,466
Pervious Runoff (m <sup>3</sup> )	1548	1259	1326	1031	115	0	0	0	0	0	0	703	5,981
Pervious Infiltration (m <sup>3</sup> )	0	0	0	3911	77	0	0	0	0	0	0	0	3,987
Potential Impervious Evaporation (mm)	6	5	5	7	8	8	8	8	8	7	8	7	85
Potential Impervious Runoff (mm)	56	45	48	67	72	75	71	69	74	61	72	59	768
Impervious Runoff (m <sup>3</sup> )	122	100	105	146	157	163	156	150	161	134	158	129	1,681

Notes on last page.

(PET) (mm)

Precipitation - PET (mm)

0

62

0

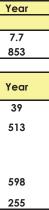
51

0

53

33

41



10

70

0

66

37

31

78

3

Pre-Development Infiltration	3,987	(m <sup>3</sup> /yr)	91	mm/yr	0.1	L/s
Pre-Development Runoff	7,663	(m³/yr)	175	mm/yr	0.2	L/s
Pre-Development Evapotranspiration	25,653	(m³/yr)	587	mm/yr	0.8	L/s
Total	37,303	(m³/yr)	853	mm/yr	1.2	L/s
Original Precipitation	37,303	(m³/yr)	853	mm/yr	1.2	L/s
Error	0.000	(m³/yr)	0.000	mm/yr	0.000	L/s

#### Notes:

† Infiltration factors after Ontario Ministry of the Environment, 2003. Stormwater Management Planning and Design Manual. March 2003.; and Ontario Ministry of Environment and Energy (MOEE). 1995. MOEE Hydrogeological Technical Information Requirements for Land Development Applications. April 1995.

\* PET adjustment factors after Thornthwaite, C.W., and J.R. Mather, 1957. Instructions and Tables for Computing Potential Evapotranspiration and the water balance. Drexel Institute of Technology, Laboratory of Climatology, Publications in Climatology, Volume X, No. 3. Centerton, New Jersey.

<sup>‡</sup> Climate Data after Environment Canada, 2017. Canadian Climate Normals 1981-2010, Toronto Buttonville A, Climate ID 615HMAK. [Online] http://climate.weather.gc.ca/climate\_normals/index\_e.html Accessed September 26 2017

#### Assumptions:

[1] The monthly average precipitation collected at the Toronto Buttonville A climate station is considered reflective of the precipitation trends that have historically occurred at the Site. This station is 23.5 km SE of the Site at an elevation of 198.1 mAMSL

[2] Surplus water is not available for runoff and recharge during months where water losses from actual evapotranspiration exceed precipitation inputs.

[3] Runoff, infiltration and evapotranspiration do not occur in months where the average daily temperature is below 0°C, which is the case for the months of December through March at the Site.

[4] Precipitation during freezing months (i.e., December to March) is assumed to accumulate as snow and result in additional precipitation in the first month thereafter where the average temperature is greater than 0°C (i.e., April).

[5] Soil moisture capacity is at a maximum in April.

160622415 Page 2 of 2

## TABLE 2 POST-DEVELOPMENT MONTHLY WATER BALANCE CLAREMONT NORTH BUSINESS PARK DEVELOPMENT

Model Type: Thornthwaite and Mather (1955) Client: S. Larkin Developments Inc. Location 5435, 5455 and 5475 Old Brock Road, Pickering, ON

Total Site Area (ha) 4.37

Sub-Area Descriptions (topography, soils, cover)

Sub-Area B Rolling to Hilly - Silty Clay - Urban Lawn

Land Description Factors (Seeend of table for sub-area descriptions)	Sub-Area B						
Topography	0.15						
Soils	0.15						
Cover	0.05						
Sum (Infiltration Factor) <sup>†</sup>	0.35						
Soil Moisture Capacity (mm)	150						
Site area (ha)	4.37						
Imperviousness Coefficient	0.54						
Impervious Area (ha)	2.34						
Percentage of Total Site Area	53.5%						
Remaining Pervious Area (ha)	2.03						
Total Pervious Site Area (ha)	2.03						
Percentage of Total Site Area	46.5%						

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Climate Data ‡													
Average Daily Temperature (°C)	-5.8	-5.6	-0.4	6.7	13	18.6	21.2	20.2	15.7	8.9	3.1	-2.9	7.7
Precipitation (mm)	62.1	50.5	53.2	74.1	79.6	82.8	79	76.2	81.8	68	80	65.7	853
Potential Evapotranspiration Analysis for Site	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year

Potential Evapotranspiration Analysis for Site	Jan	reb	Mar	Apr	мау	JUN	101	Aug	зер	Oct	NOV	Dec	fear
Heat Index	0.0	0.0	0.0	1.6	4.2	7.3	8.9	8.3	5.7	2.4	0.5	0.0	39
Unadjusted Potential Evapotranspiration (mm)	0.0	0.0	0.0	29.3	61.0	90.8	104.9	99.5	75.2	40.1	12.5	0.0	513
Potential Evapotranspiration Adjusting Factor for Latitude*	0.77	0.87	0.99	1.12	1.23	1.29	1.26	1.16	1.04	0.92	0.81	0.75	
Adjusted Potential Evapotranspiration (PET) (mm)	0	0	0	33	75	117	132	116	78	37	10	0	598
Precipitation - PET (mm)	62	51	53	41	5	-34	-53	-40	3	31	70	66	255

Evapotranspiration Analysis													
Sub-Area B	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Νον	Dec	Year
Accumulated Potential Water Loss (APWL)	0	0	0	0	0	-34	-87	-127	-123	-92	-22	0	
Storage (S)	150	150	150	150	150	120	67	29	32	63	133	150	
Change in Storage	0	0	0	0	0	-30	-53	-38	3	31	70	17	
Actual Evapotranspiration (mm)	0	0	0	33	75	113	132	114	78	37	10	0	592
Recharge/Runoff Analysis													
Water Surplus (mm)	62	51	53	41	5	0	0	0	0	0	0	49	261
Potential Infiltration (I)	22	18	19	14	2	0	0	0	0	0	0	17	91
Potential Direct Surface Water Runoff (R)	40	33	35	27	3	0	0	0	0	0	0	32	169
Potential Infiltration (mm)	0	0	0	90	2	0	0	0	0	0	0	0	91
Pervious Evapotranspiration (m <sup>3</sup> )	0	0	0	666	1525	2300	2677	2326	1594	749	204	0	12,040
Pervious Runoff (m <sup>3</sup> )	821	667	703	546	61	0	0	0	0	0	0	648	3,446
Pervious Infiltration (m <sup>3</sup> )	0	0	0	1823	33	0	0	0	0	0	0	0	1,855
Potential Impervious Evaporation (mm)	6	5	5	7	8	8	8	8	8	7	8	7	85
Potential Impervious Runoff (mm)	56	45	48	67	72	75	71	69	74	61	72	59	768
Impervious Runoff (m <sup>3</sup> )	1308	1064	1120	1561	1676	1744	1664	1605	1723	1432	1685	1384	17,965

Notes on last page.

Total
4.37
2.34 54% 2.03
2.03 46%





Existing Infiltration	3,987	(m <sup>3</sup> /yr)	91	mm/yr	0.1	L/s
Post-Development Infiltration	1,855	(m <sup>3</sup> /yr)	42	mm/yr	0.1	L/s
Infiltration Deficit	2,132	(m <sup>3</sup> /yr)	49	mm/yr	0.1	L/s
Post-Development Runoff	21,411	(m³/yr)	490	mm/yr	0.7	L/s
Post-Development Evapotranspiration	14,037	(m <sup>3</sup> /yr)	321	mm/yr	0.4	L/s
Total	37,303	(m <sup>3</sup> /yr)	853	mm/yr	1.2	L/s
Original Precipitation	37,303	(m³/yr)	853	mm/yr	1.2	L/s
Error	0.000	(m³/yr)	0.000	mm/yr	0.000	L/s

#### Notes:

† Infiltration factors after Ontario Ministry of the Environment, 2003. Stormwater Management Planning and Design Manual. March 2003.; and Ontario Ministry of Environment and Energy (MOEE). 1995. MOEE Hydrogeological Technical Information Requirements for Land Development Applications. April 1995.

\* PET adjustment factors after Thornthwaite, C.W., and J.R. Mather, 1957. Instructions and Tables for Computing Potential Evapotranspiration and the water balance. Drexel Institute of Technology, Laboratory of Climatology, Publications in Climatology, Volume X, No. 3. Centerton, New Jersey.

<sup>‡</sup> Climate Data after Environment Canada, 2017. Canadian Climate Normals 1981-2010, Toronto Buttonville A, Climate ID 615HMAK. [Online] http://climate.weather.gc.ca/climate\_normals/index\_e.html Accessed September 26 2017

#### Assumptions:

[1] The monthly average precipitation collected at the Toronto Buttonville A climate station is considered reflective of the precipitation trends that have historically occurred at the Site. This station is 23.5 km SE of the Site at an elevation of 198.1 mAMSL

[2] Surplus water is not available for runoff and recharge during months where water losses from actual evapotranspiration exceed precipitation inputs.

[3] Runoff, infiltration and evapotranspiration do not occur in months where the average daily temperature is below 0°C, which is the case for the months of December through March at the Site.

[4] Precipitation during freezing months (i.e., December to March) is assumed to accumulate as snow and result in additional precipitation in the first month thereafter where the average temperature is greater than 0°C (i.e., April).

[5] Soil moisture capacity is at a maximum in April.

160622415 Page 2 of 2 Within the hydrologic cycle, the flow of water into and out of system can be described through a simplified water balance equation as follows:

$$P = ET + S + R + I$$
 Equation 1

Where:

P = precipitation

- ET = evapotranspiration
- S = change in groundwater storage
- R = runoff
- I = infiltration (groundwater recharge)

Equation 1 may be further simplified by ignoring the change in groundwater storage (S), which trends over time to zero. The various components of the hydrologic cycle may be estimated through calculations, or based on measurements made in the field. Precipitation (P) is typically a measured value. Evapotranspiration (ET) is calculated based on measured air temperatures. Infiltration (I) and Runoff (R) are calculated based on P and ET, where the difference between P and ET is the water surplus (WS) available for Infiltration (I) and Recharge (R) as follows:

$$WS = P - ET$$
 Equation 2

Where WS is used to calculate I after applying an infiltration factor (IF),

$$I = WS \times IF$$
 Equation 3

And R is estimated by subtracting I from WS,

$$R = WS - I$$

For this assessment, ET was calculated using the soil moisture balance model by Thornthwaite and Mather (1955). In the Thornthwaite and Mather model monthly potential evapotranspiration (PET) is calculated based on the measured average monthly daily temperature ( $T_{\alpha}$ ) and a heat index (H<sub>i</sub>) value assuming 12 hours of daylight in a day and 30 days in a month, as follows:

$$PET = 16 \times \left(\frac{10T_a}{H_i}\right)^{\alpha}$$
 Equation 5

Where  $T_{\alpha}$  is taken as 0 degrees Celsius for months with negative temperatures, and  $H_{i,}$  the heat index is estimated as,

$$H_i = \sum_{i=1}^{12} \left(\frac{10T_a}{5}\right)^{1.514}$$
 Equation 6

For  $\alpha$ 

$$\alpha = 0.49 + (0.0179 \times H_i) - (0.0000771 \times H_i^2) + (0.000000675 \times H_i^3)$$
 Equation 7

PET values are then multiplied by an adjustment factor, after Thornthwaite and Mather (1957), which represents the average number of daylight hours per month at the latitude of the subject property to give the Adjusted Potential Evapotranspiration (PET<sub>adj</sub>).



Equation 4

Actual Evapotranspiration (AET) is derived as,

$$AET = PET_{adi} - \Delta S$$
 Equation 8

Where  $\Delta S$  is the change in storage for the month, calculated as,

$$\Delta S = S_{mc} \times e^{\left(\frac{APWL}{S_{mc}}\right)}$$
 Equation 9

Where:

S<sub>mc</sub> = soil moisture capacity

APWL = accumulated potential water loss, calculated for  $\Delta P < 0$  as  $APWL = -\sum_{i=0}^{12} PET_i$ , and for  $\Delta P > 0$  by rearranging equation 8; with  $\Delta P$  = net precipitation = P - PET<sub>adj</sub>

WS is derived by subtracting AET from the monthly precipitation,

$$WS = P - AET$$

Equation 10

And the infiltration and runoff calculated per Equation 3 and 4 above. The infiltration factor shown in Equation 3 is estimated based on the topography, soil type and land cover after MOE (2003) and the Ministry of the Environment and Energy (MOEE) (1995). Climate data is obtained from the nearest station with reliable daily precipitation and temperature records.

## References:

- Ministry of the Environment. 2003. Stormwater Management Planning and Design Manual. March, 2003.
- Ministry of Environment and Energy. 1995. MOEE Hydrogeological Technical Information Requirements for Land Development Applications. April 1995.
- Thornthwaite, C.W. and Mather, J.W. 1955. The water balance. Philadelphia, PA: Drexel Institute of Technology, Climatological Laboratory Publication No.8.
- Thornthwaite, C.W., and Mather J.W., 1957. Instructions and Tables for Computing Potential Evapotranspiration and the water balance. Drexel Institute of Technology, Laboratory of Climatology, Publications in Climatology, Volume X, No. 3. Centerton, New Jersey.



Metadata including Station Name, Province, Latitude, Longitude, Elevation, Climate	D, WMO ID, TC IE	)					
STATION_NAME	PROVINCE	LATITUDE	LONGITUDE	ELEVATION	CLIMATE_ID	WMO_ID	TC_ID
TORONTO BUTTONVILLE A	ON	43°51'44.000" N	79°22'12.000'' W	198.1 m	615HMAK		71639 YKZ

Legend A = WMO "3 and 5 rule" (i.e. no more than 3 consecutive and no more than 5 total missing for either temperature or precipitation) B = At least 25 years C = At least 20 years D = At least 15 years

1981 to 2010 Canadian Climate Normals station data

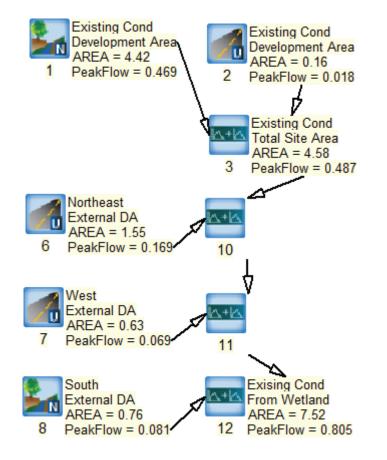
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	
Temperature												
Daily Average (°C)		-5.8	-5.6	-0.4	6.7	13	18.6	21.2	20.2	15.7	8.9	
Standard Deviation		3.1	2.3	2	1.7	1.8	1.3	1.4	1.4	1.4	1.5	
Daily Maximum (°C)		-1.5	-0.9	4.5	12.1	19.1	24.6	27.1	26	21.5	14.1	
		-10.1	-10.2	-5.3			12.6	15.2	14.3	9.9	3.6	
Daily Minimum (°C)					1.2	6.8						-
Extreme Maximum (°C)		14.9	14.9	26	31.7	34.6	36.6	37.2	37.8	34.4	31	2
Date (yyyy/dd)	2005/13	2000/27	1998/30	1990/26	2006/29	1995/19	1988/07	2001/08	2002/09	2007/08	1999/09	
Extreme Minimum (°C)		-35.2	-25.7	-25.6	-10.6	-2.1	1.9	6.9	4.2	-2	-7.4	
Date (yyyy/dd)	1994/16	1987/15	2003/03	2003/06	1996/02	1986/03	1988/03	1986/29	1989/27	1988/31	1987/21	
Precipitation												
Rainfall (mm)		26	22.9	33.6	66.7	79.5	82.8	78.8	76.2	81.8	66.7	6
Snowfall (cm)		38.9	29.9	19.3	7.5	0.1	0	0	0	0	0.6	1
Precipitation (mm)		62.1	50.5	53.2	74.1	79.6	82.8	79	76.2	81.8	68	
Average Snow Depth (cm)		9	9	4	0	0	0	0	0	0	0	
Median Snow Depth (cm)		8	9	3	0	0	Ő	Ő	ő	0	0	
		12	6	1	0	0	0	0	0	0	0	
Snow Depth at Month-end (cm)			-	38	45.1		-	42.8	71.2	80.3	43	
Extreme Daily Rainfall (mm)		40.4	36.3			64.6	41.6					4
Date (yyyy/dd)	1995/15	1990/22	1991/27	2009/03	2000/12	2000/13	2009/23	1986/15	1986/10	1995/05	1993/27	
Extreme Daily Snowfall (cm)		37.4	23.8	22	19.2	1.8	0	0	0	0	6.4	1
Date (yyyy/dd)	1999/03	2001/08	1999/06	2009/06	2005/02	1986/01	1986/01	1986/01	1986/01	1997/27	1987/25	
Extreme Daily Precipitation (mm)		40.4	36.3	38	45.1	64.6	41.6	42.8	71.2	80.3	43	4
Date (yyyy/dd)	1995/15	1990/22	1991/27	2009/03	2000/12	2000/13	2009/23	1986/15	1986/10	1995/05	1993/27	
Extreme Snow Depth (cm)		57	45	44	16	0	0	0	0	0	1	
Date (yyyy/dd)	1999/16	2001/09	2008/09	1994/07	1986/23	1986/01	1986/01	1986/01	1986/01	2008/29	1986/23	
Days with Maximum Temperature												
<= 0 °C		17.8	15.3	7.3	0.58	0	0	0	0	0	0	
<_0°C		13.2	13	23.7	29.4	31	30	31	31	30	31	
> 10 °C		0.78	0.54	6.3	18.7	29.9	30	31	31	29.9	24	
> 20 °C		0	0	0.7	3	12.3	24.6	30.3	29.5	18.7	4.1	С
> 30 °C		0	0	0	0.13	0.79	4	7	4.3	0.84	0.04	
> 35 °C		0	0	0	0	0	0.2	0.6	0.32	0	0	
Days with Minimum Temperature												
> 0 °C		2.4	1	5.1	17.5	29.5	30	31	31	29.6	24	1
<= 2 °C		30.3	28.2	28.5	18.2	4.5	0.04	0	0	1	11.9	2
<= 0 °C		28.6	27.2	25 <b>.9</b>	12.5	1.5	0	0	0	0.4	7	1
<-2 °C		26	25.3	21.2	6.6	0.04	0	0	0	0	2.4	1
<-10 °C		14.8	14.2	6.4	0.08	0	0	Ő	0	0	0	
<-20 °C		3.4	1.8	0.26	0	0	0	0	0	0	0	
< - 30 °C		0.09	0	0.20	0	0	0	0	0	0	0	
Days with Rainfall		0.07	0	0	U	0	0	0	0	0	0	
,		5.0	2.0	. 7	10.0	10	11.0	11.0	0.0	10.0	10	
>= 0.2 mm		5.8	3.8	6.7	10.8	12	11.8	11.2	9.9	10.8	13	I
>= 5 mm		1.8	1.5	2.3	4.8	4.9	5.3	5	4.4	4.7	4.4	
>= 10 mm		0.71	0.79	1.1	1.9	2.7	3.1	2.8	2.6	2.8	2	
>= 25 mm		0.08	0.17	0.09	0.29	0.63	0.48	0.68	0.52	0.64	0.24	C
Days With Snowfall												
>= 0.2 cm		13.4	10.8	7	2.9	0.13	0	0	0	0	0.48	
>= 5 cm		2.5	2	0.96	0.42	0	0	0	0	0	0.04	С
>= 10 cm		0.79	0.5	0.43	0.17	0	0	0	0	0	0	C
>= 25 cm		0.04	0	0	0	0	0	0	0	0	0	
Days with Precipitation			-	-	-	-	-	-	-	-	-	
>= 0.2 mm		16.7	12.9	12	12.3	12	11.8	11.2	9.9	10.8	13.2	1
>= 5 mm		4.3	3.3	3.4	5.3	4.9	5.3	5	4.4	4.7	4.5	'
>= 10 mm		1.5	1.2	1.6	2.2	2.7	3.1	2.8	2.6	2.8	2.1	
>= 25 mm		0.13	0.17	0.09	0.33	0.63	0.48	0.68	0.52	0.64	0.24	
Days with Snow Depth												
>= 1 cm		21.3	22.7	11	1	0	0	0	0	0	0.04	
>= 5 cm		16.2	17.7	6.8	0.43	0	0	0	0	0	0	
>= 10 cm		11	11.3	3.9	0.17	0	0	0	0	0	0	С
>= 20 cm		4.6	3.9	1.1	0	0	0	0	0	0	0	C
					-		-	-	-			

Dec	Year	Code
3.1 1.6 7.2 -1.1 22.1 2001/06 -15 2004/20	-2.9 2.7 0.9 -6.8 18 -26	7.7 C 1.1 C 12.9 C 2.5 C
68.3	34.2	717.4 C
12.1 80	34.2 65.7	142.6 C 852.9 C
1 0	4 3	2 C 2 C
0 43.7	5 30.6	2 C
2006/01 18.5	33.5	
2000/12 43.7	42.6	
1990/03 70	43	
1992/12		
2 28	12.8 18.2	55.9 C 309.4 C
8.2 0.16	1.2 0	211.4 C 123.3 C
0 0	0 0	17 C 1.1 C
12.2	3.3	216.7 C
22.9 17.8	30 27.7	175.5 C 148.5 C
11.8 1.1	23 8.5	116.3 C 45 C
0 0	0.64 0	6.1 C 0.09 C
11.3	6.6	113.7 C
3.8 2.4	2.5 1.1	45.4 C 24 C
0.32	0.12	4.3 C
4.7 0.68	10.8 1.8	50.2 C 8.3 C
0.24	0.64	2.8 C 0.16 C
14.5	15.3	152.7 C
4.6	4	53.5 C
2.7 0.4	1.9 0.28	27.2 C 4.6 C
2.8 1.1	15.8 8.4	74.6 C
0.58	4.7	50.6 C 31.6 C
0.04	1.8	11.4 C

Wind														
Wind Speed (km/h)		14	13.9	13.8	13.9	12.3	11.4	10.7	10	10.6	11.6	12.9	13.4	12.4 C
Most Frequent Direction	SW	14 W	13.9 NW	NW	13.9 NW	NW	NW	10.7 N	N	10.8 W	11.0 W	12.7 W	13.4 NW	12.4 C C
	3 4 4	65	65	67	56	57	50	65	56	52	56	80	54	80
Maximum Hourly Speed (km/h)	1000/00													00
Date (yyyy/dd)	1989/08	1987/08	1991/28	1995/04	2010/08	1988/05	1999/24	1992/10	1989/23	1996/30	1991/30	1991/15	1991/30	
Direction of Maximum Hourly Speed	W	N	W	NW	NW	NW	NW	NW	NW	W	SW	W	SW	
Maximum Gust Speed (km/h)		111	100	111	89	87	111	135	102	83	104	111	93	135
Date (yyyy/dd)	1992/14	1997/27	2002/09	2001/12	1990/17	1986/16	1995/15	1987/16	2000/20	1999/13	1991/30	1991/14	1995/15	
Direction of Maximum Gust	Ν	W	SW	S	W	NW	NW	W	NW	NW	SW	W	NW	
Days with Winds >= 52 km/h		0.8	0.9	0.9	0.6	0.4	0.4	0.2	0.3	0.2	0.4	0.9	0.6	6.7 C
Days with Winds >= 63 km/h		0.2	0.2	0.3	0.1	0	0.2	0.1	0.1	0	0.2	0.4	0.1	1.9 C
Degree Days														
Above 24 °C		0	0	0	0	0.3	4.1	11.9	6.4	0.8	0	0	0	23.5 C
Above 18 °C		0	0	0	1.3	13.2	56.2	104.4	82.5	21.8	1.1	0	0	280.5 C
Above 15 °C		0	0	0.3	4.4	33.6	119.3	191.7	161.9	60.5	5.8	0	0	577.5 C
Above 10 °C		0.1	0	2.7	22.8	112	259	346.2	315.6	175.3	38.6	3.5	0.2	1275.9 C
Above 5°C		2	0.6	17.6	86.9	248.3	408.8	501.2	470.6	320.9	130.8	30	3.4	2220.9 C
		17												
Above 0 °C			11.2	68.3	209.2	402.7	558.8	656.2	625.6	470.9	275.5	111.9	27.9	3435.2 C
Below 0 °C		196.6	168.4	76.6	4.6	0	0	0	0	0	0.2	19.4	118.6	584.2 C
Below 5 °C		336.5	299	180.9	32.2	0.5	0	0	0	0	10.4	87.5	249	1196.2 C
Below 10 °C		489.6	439.7	321	118.2	19.3	0.2	0	0	4.4	73.2	211	400.8	2077.5 C
Below 15 °C		644.5	581	473.6	249.8	95.8	10.6	0.4	1.3	39.6	195.5	357.6	555.6	3205.3 C
Below 18 °C		737.5	665.7	566.3	336.7	168.5	37.4	6.2	15	90.9	283.7	447.5	648.6	4004 C
Humidex														
Extreme Humidex		16	14.4	29.2	35.7	41	44.6	50.9	47.4	43.6	37.8	24.9	20.6	
Date (yyyy/dd)	2005/13	2000/27	1998/30	1990/25	2006/29	1994/15	1995/14	2006/01	1991/16	2007/08	1990/03	1998/07	2010	
Days with Humidex >= 30	2003/10	0	0	0	0.4	3.5	10.1	17.1	14.5	5.4	0.6	0	0	51.6 C
		0	0	0	0.1	0.7			5.8	1.2	0.1	0	0	19.8 C
Days with Humidex >= 35			0	0			4.3	7.6						
Days with Humidex >= 40		0	0	0	0	0.1	0.7	2.2	1.3	0.1	0	0	0	4.4 C
Wind Chill														
Extreme Wind Chill		-42.6	-37.4	-35.6	-18.6	-4.4	0	0	0	-4.2	-8.8	-23.9	-36.6	
Date (yyyy/dd)	1994/16	1995/05	2003/03	1995/05	2004/04	1986/01	1986/01	1986/01	1989/27	1988/31	1987/21	1989/22		
Days with Wind Chill < -20		9.3	7.9	2.4	0	0	0	0	0	0	0	0.1	4	23.7 C
Days with Wind Chill < -30		1.8	0.5	0.2	0	0	0	0	0	0	0	0	0.3	2.8 C
Days with Wind Chill < -40		0.1	0	0	0	0	0	0	0	0	0	0	0	0.1 C
Humidity														
Average Vapour Pressure (kPa)		0-Jan	0.3	0.5	0.7	1	1.5	1.7	1.7	1.4	0.9	0.6	0.4	0.9 C
Average Relative Humidity - 0600LST (%)		79.6	77.6	77.2	76.1	77.9	79.3	82.5	87.4	89.6	87.6	85.1	82.1	81.8 C
Average Relative Humidity - 1500LST (%)		6960%	6400%	5780%	5290%	5230%	5390%	5340%	55.9	59.2	62.4	68.9	71.1	60.1 C
		070078	040078	570076	527078	525078	337076	004076	55.7	J7.Z	02.4	00.7	71.1	00.1 C
Pressure		00000	000007	00000	00100	001077	00107	00100	00.0	00.0	00.0	00.0	00.0	00.0.0
Average Station Pressure (kPa)		9920%	9930%	9930%	9910%	9910%	9910%	9910%	99.3	99.3	99.3	99.3	99.3	99.2 C
Average Sea Level Pressure (kPa)		10-Apr	10-Apr	10-Apr	10-Apr	10-Apr	10-Apr	10-Apr	101.6	101.7	101.7	101.7	101.7	101.6 C
Visibility (hours with)														
< 1 km		16.2	12	11.1	6.2	7.2	5.8	2.4	1.8	5.4	7.4	12.4	13.6	101.5 D
1 to 9 km		150.6	116.7	96.7	80.6	61.7	71.3	72.3	77.4	79.4	80.4	103.8	126.9	1117.7 D
> 9 km		577.2	550.2	636.2	633.2	675.1	642.9	669.4	664.9	635.3	656.2	603.7	603.5	7547.6 D
Cloud Amount (hours with)														
0 to 2 tenths		132.4	152.6	216	186.2	209.8	192.6	199.7	240.7	236.5	176.9	117.1	120.2	2180.6 D
3 to 7 tenths		101.6	109.8	128.2	129.5	162.3	197.6	231.5	213.8	167	150.8	124.4	101.3	1817.7 D
8 to 10 tenths		510	416.5	399.8	404.3	371.9	329.8	312.9	289.6	316.5	416.3	478.5	522.5	4768.5 D
01010101011113		510	410.5	377.0	404.0	5/1./	527.0	512.7	207.0	510.5	410.5	470.0	522.5	4700.5 D
1981 to 2010 Canadian Climate Normals station data (Frost-Free)														
	Frost-Free	: Code												
Average Date of Last Spring Freet	11031-FIGE													
Average Date of Last Spring Frost		42860 C												
Average Date of First Fall Frost		43018 C												
Average Length of Frost-Free Period	157 Days	С												
Probability of last temperature in spring of 0 °C or lower on or after indicated dates		0.1	0.25	0.33	0.5	0.66	0.75	0.9						
Date		42873	42866	42864	42860	42857	42854	42850						
		0.1	0.25	0.33	0.5	0.66	0.75	0.9						
Probability of tirst temperature in tall of U °C or lower on or atter indicated dates					43018	43023	43029	43035						
Probability of first temperature in fall of 0 °C or lower on or after indicated dates Date		43003	43009	43011	43010	43023	4JUZ7							
Date		43003 0 1	43009 0.25	43011 0.33										
Date Probability of frost-free period equal to or less than indicated period (Days)		0.1	0.25	0.33	0.5	0.66	0.75	0.9						
Date														

# **VO2 MODEL INPUT/OUTPUT**

# **Existing Conditions - VO2 Output**



Simulation 1 – 25 mm 4 Hour AES Simulation 2 – 2 Year – 1 Hour AES Simulation 4 – 2 Year – 12 Hour AES Simulation 5 – 100 Year – 1 Hour AES Simulation 7 – 100 Year – 12 Hour AES

-------V V SSSSS U Ι U Α L V V SS L Ι U IJ ΑA V V SS U U AAAAA L Ι U UAAL V V Ι SS A LLLLI VV UUUUU A SSSSS Т 000 TTTTT н ү ү м М 000 ጥጥጥጥጥ Н 0 0 Т т Н Н ΥΥ MM MM 0 0 0 0 Т Т н н Y М м о о 000 Η Н Y 000 т т М М Developed and Distributed by Clarifica Inc.

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\*\*\*\*\* DETAILED OUTPUT \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 2.3.3\voin.dat
Output filename: V:\01606\Active\160622415\Analysis\SWM\Hydrology\V02\2017-1120 V02\V02.out

Summary filename: V:\01606\Active\160622415\Analysis\SWM\Hydrology\VO2\2017-11-20\_VO2\Vo2.sum

DATE: 11/23/2017

TIME: 11:02:47 AM

USER:

COMMENTS:

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READ	STORM	Filena			,	22415\Ana VO2\Storm		HR STM
Ptotal=	25.02 mm	Commen	-		51.	Hour Chic		
	TIM	E RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
	hr	s mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
	.1	7 2.17	1.17	6.20	2.17	5.62	3.17	2.95
	.3	3 2.38	1.33	12.18	2.33	4.80	3.33	2.76
	.5	0 2.66	1.50	41.67	2.50	4.21	3.50	2.62
	.6	7 3.03	1.67	15.28	2.67	3.78	3.67	2.47
	. 8	3 3.58	1.83	9.22	2.83	3.45	3.83	2.35
	1.0	0 4.47	2.00	6.88	3.00	3.18	4.00	2.23

CALIB						
STANDHYD (0006)						
ID= 1 DT= 5.0 min	Total	Imp(%)=	40.00	Dir.	Conn.(%)=	40.00

	IMPERVIOUS	PERVIOUS	(i)
(ha) =	.62	.93	
(mm) =	1.00	1.50	
(%) =	1.00	2.00	
(m) =	101.70	40.00	
=	.013	.250	
	(mm) = (%) =	(ha) = .62 (mm) = 1.00 (%) = 1.00 (m) = 101.70	$\begin{array}{llllllllllllllllllllllllllllllllllll$

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

		TR	ANSFORMEI	D HYETOG	RAPH	-	
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
.083	2.17	1.083	6.20	2.083	5.62	3.08	2.95
.167	2.17	1.167	6.20	2.167	5.62	3.17	2.95
.250	2.38	1.250	12.18	2.250	4.80	3.25	2.76
.333	2.38	1.333	12.18	2.333	4.80	3.33	2.76
.417	2.66	1.417	41.67	2.417	4.21	3.42	2.62
.500	2.66	1.500	41.67	2.500	4.21	3.50	2.62
.583	3.03	1.583	15.28	2.583	3.78	3.58	2.47
.667	3.03	1.667	15.28	2.667	3.78	3.67	2.47
.750	3.58	1.750	9.22	2.750	3.45	3.75	2.35
.833	3.58	1.833	9.22	2.833	3.45	3.83	2.35
.917	4.47	1.917	6.88	2.917	3.18	3.92	2.23
1.000	4.47	2.000	6.88	3.000	3.18	4.00	2.23

Max.Eff.Inten.(mm/hr) =	41.67	27.87	
over (min)	5.00	20.00	
Storage Coeff. (min) =	3.66	(ii) 15.43	(ii)
Unit Hyd. Tpeak (min) =	5.00	20.00	
Unit Hyd. peak (cms) =	.25	.07	
			*TOTALS*
PEAK FLOW (cms) =	.07	.05	.091 (iii)
TIME TO PEAK (hrs) =	1.50	1.75	1.50
RUNOFF VOLUME (mm) =	24.02	19.28	21.17
TOTAL RAINFALL (mm) =	25.02	25.02	25.02
RUNOFF COEFFICIENT =	.96	.77	.85

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 98.0 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 (0002) ID= 1 DT= 5.0 min		(ha) = Imp(%) =		Dir.	Conn.(%)=	90.00
		IMPERVIO	US	PERVIOU	S (i)	
Surface Area	(ha) =	.14		.02		
Dep. Storage	(mm) =	1.00		1.50		
Average Slope	(%) =	1.00		2.00		
Length	(m) =	32.70		40.00		
Mannings n	=	.013		.250		
Max.Eff.Inten.(	mm/hr)=	41.67		104.52		
over	(min)	5.00		10.00		
Storage Coeff.	(min) =	1.85	(ii)	6.01	(ii)	
Unit Hyd. Tpeak	(min) =	5.00		10.00		
Unit Hyd. peak	(cms) =	.32		.15		

				*TOTALS*	
PEAK FLOW	(cms) =	.02	.00	.018 (iii)	
TIME TO PEAK	(hrs) =	1.50	1.58	1.50	
RUNOFF VOLUME	(mm) =	24.02	19.28	23.54	
TOTAL RAINFALL	(mm) =	25.02	25.02	25.02	
RUNOFF COEFFICI	ENT =	.96	.77	.94	

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

- CN\* = 98.0 Ia = Dep. Storage (Above) (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
- THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
NASHYD (0001)		4.42	Curve Number (CN) = 98.0
ID= 1 DT=10.0 min	Ia (mm) =	5.00	# of Linear Res.(N) = 3.00
	U.H. Tp(hrs) =	.20	

NOTE: RAINFALL WAS TRANSFORMED TO 10.0 MIN. TIME STEP.

		TRA	ANSFORMED	HYETOGI	RAPH	-	
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
.167	2.17	1.167	6.20	2.167	5.62	3.17	2.95
.333	2.38	1.333	12.18	2.333	4.80	3.33	2.76
.500	2.66	1.500	41.67	2.500	4.21	3.50	2.62
.667	3.03	1.667	15.28	2.667	3.78	3.67	2.47
.833	3.58	1.833	9.22	2.833	3.45	3.83	2.35
1.000	4.47	2.000	6.88	3.000	3.18	4.00	.00

Unit Hyd Qpeak (cms) = .844

PEAK FLOW TIME TO PEAK RUNOFF VOLUME TOTAL RAINFALL	. ,	.188 1.667 15.146 24.652	(i)
RUNOFF COEFFICI	ENT =	.614	

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

CALIB   STANDHYD (0007)    ID= 1 DT= 5.0 min	Area Total	()		Dir. Conn.(%)=	75.00
		IMPERVIOUS		PERVIOUS (i)	
Surface Area	(ha) =	.47		.16	
Dep. Storage	(mm) =	1.00		1.50	
Average Slope	(%) =	1.00		2.00	
Length	(m) =	64.80		40.00	
Mannings n	=	.013		.250	
NOTE: RAIN	FALL WAS	TRANSFORMED	TO	5.0 MIN. TIME S	STEP.

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		TRA	ANSFORMED	HYETOG	RAPH		
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
.083	2.17	1.083	6.20	2.083	5.62	3.08	2.95

= .96 .77 .91 EFF. IS SMALLER THAN TIME STEP! ELECTED FOR PERVIOUS LOSSES:   ADD Ia = Dep. Storage (Above)   1
2.38   1.333   12.18   2.333   4.80   3.33   2.76   2.66   1.417   41.67   2.417   4.21   3.42   2.62   2.66   1.500   41.67   2.500   4.21   3.50   2.62   3.03   1.583   15.28   2.583   3.78   3.58   2.47   3.03   1.667   15.28   2.667   3.78   3.67   2.47   3.58   1.750   9.22   2.750   3.45   3.75   2.35   3.58   1.833   9.22   2.833   3.45   3.83   2.35   4.47   1.917   6.88   2.917   3.18   3.92   2.23   4.47   2.000   6.88   2.917   3.18   3.92   2.23   4.47   2.000   6.88   3.000   3.18   4.00   2.23   )=   41.67   27.87   )=   41.67   27.87   )=   5.00   15.00   )=   .28   .08   *TOTALS*   )=   .50   1.67   1.50   )=   .28   .08   *TOTALS*   )=   .50   1.67   1.50   )=   .28   =   .96   .77   .91   EFF. IS SMALLER THAN TIME STEP!   EFF. IS SMALLER THAN TIME STEP!   ELECTED FOR PERVIOUS LOSSES:   ADD I a = Dep. Storage (Above)   1   SHOULD BE SMALLER OR EQUAL
3.03       1.583       15.28       2.883       3.78       3.58       2.47         3.03       1.667       15.28       2.667       3.78       3.67       2.47         3.58       1.750       9.22       2.750       3.45       3.75       2.35         3.58       1.833       9.22       2.833       3.45       3.83       2.35       3.44         4.47       1.917       6.88       2.917       3.18       3.92       2.23          )=       41.67       27.87         ADD         )=       5.00       15.00               ADD         )=       5.00       15.00               1         )=       5.00       15.00                ADD         )=       2.79       (ii)       14.56               1               1         )=       5.00       15.00                ADD               1         )=       2.8       .08       *TOTALS*   )=       1.50       1.67       1.50
3.03       1.583       15.28       2.883       3.78       3.58       2.47         3.03       1.667       15.28       2.667       3.78       3.67       2.47         3.58       1.750       9.22       2.750       3.45       3.75       2.35         3.58       1.833       9.22       2.833       3.45       3.83       2.35       3.44         4.47       1.917       6.88       2.917       3.18       3.92       2.23          )=       41.67       27.87         ADD         )=       5.00       15.00               ADD         )=       5.00       15.00               1         )=       5.00       15.00                ADD         )=       2.79       (ii)       14.56               1               1         )=       5.00       15.00                ADD               1         )=       2.8       .08       *TOTALS*   )=       1.50       1.67       1.50
3.03       1.583       15.28       2.883       3.78       3.58       2.47         3.03       1.667       15.28       2.667       3.78       3.67       2.47         3.58       1.750       9.22       2.750       3.45       3.75       2.35         3.58       1.833       9.22       2.833       3.45       3.83       2.35       3.44         4.47       1.917       6.88       2.917       3.18       3.92       2.23          )=       41.67       27.87         ADD         )=       5.00       15.00               ADD         )=       5.00       15.00               1         )=       5.00       15.00                ADD         )=       2.79       (ii)       14.56               1               1         )=       5.00       15.00                ADD               1         )=       2.8       .08       *TOTALS*   )=       1.50       1.67       1.50
4.47   1.917 6.88   2.917 3.18   3.92 2.23 4.47   2.000 6.88   3.000 3.18   4.00 2.23 ) = 41.67 27.87 ) 5.00 15.00   ADD )= 2.79 (ii) 14.56 (ii)   1 )= 5.00 15.00 )= .28 .08 *TOTALS* )= .05 .01 .059 (iii) )= 1.50 1.67 1.50 )= 25.02 25.02 25.02 = .96 .77 .91 ELECTED FOR PERVIOUS LOSSES:   ADD IA DD  ELECTED FOR PERVIOUS LOSSES:   ADD IA DD SHOULD BE SMALLER OR EQUAL GE COEFFICIENT.
4.47   1.917 6.88   2.917 3.18   3.92 2.23 4.47   2.000 6.88   3.000 3.18   4.00 2.23 ) = 41.67 27.87 ) 5.00 15.00   ADD )= 2.79 (ii) 14.56 (ii)   1 = 5.00 15.00 )= .28 .08 *TOTALS* )= .05 .01 .059 (iii) )= 1.50 1.67 1.50 )= 24.02 19.28 22.82 )= 25.02 25.02 25.02 EFF. IS SMALLER THAN TIME STEP! EEFF. IS SMALLER THAN TIME STEP! EEECTED FOR PERVIOUS LOSSES:   ADD IA = Dep. Storage (Above)   1 SHOULD BE SMALLER OR EQUAL GE COEFFICIENT.
4.47   1.917 6.88   2.917 3.18   3.92 2.23 4.47   2.000 6.88   3.000 3.18   4.00 2.23 )
4.47   1.917 6.88   2.917 3.18   3.92 2.23 4.47   2.000 6.88   3.000 3.18   4.00 2.23 )
)= 41.67 27.87 ) 5.00 15.00   ADD )= 2.79 (ii) 14.56 (ii)   1 )= 5.00 15.00 )= .28 .08 *TOTALS* )= .05 .01 .059 (iii) )= 1.50 1.67 1.50 )= 24.02 19.28 22.82 )= 25.02 25.02 25.02 EFF. IS SMALLER THAN TIME STEP! EFF. IS SMALLER THAN TIME STEP! ELECTED FOR PERVIOUS LOSSES:   ADD Ia = Dep. Storage (Above)   1 SHOULD BE SMALLER OR EQUAL GE COEFFICIENT.
) 5.00 15.00   ADD )= 2.79 (ii) 14.56 (ii)   1 )= 5.00 15.00 )= .28 .08 *TOTALS* )= .05 .01 .059 (iii) )= 1.50 1.67 1.50 )= 24.02 19.28 22.82 )= 25.02 25.02 25.02 = .96 .77 .91 EFF. IS SMALLER THAN TIME STEP! ELECTED FOR PERVIOUS LOSSES:   ADD IA = Dep. Storage (Above)   1 SHOULD BE SMALLER OR EQUAL GE COEFFICIENT.
)= 5.00 15.00 )= .28 .08 *TOTALS* )= .05 .01 .059 (iii) )= 1.50 1.67 1.50 )= 24.02 19.28 22.82 )= 25.02 25.02 = .96 .77 .91 EFF. IS SMALLER THAN TIME STEP! ELECTED FOR PERVIOUS LOSSES:   ADD Ia = Dep. Storage (Above)   1 SHOULD BE SMALLER OR EQUAL GE COEFFICIENT.
)= 5.00 15.00 )= .28 .08 *TOTALS* )= .05 .01 .059 (iii) )= 1.50 1.67 1.50 )= 24.02 19.28 22.82 )= 25.02 25.02 25.02 = .96 .77 .91 EFF. IS SMALLER THAN TIME STEP! ELECTED FOR PERVIOUS LOSSES:   ADD IA = Dep. Storage (Above)   1 SHOULD BE SMALLER OR EQUAL GE COEFFICIENT.
)= 5.00 15.00 )= .28 .08 *TOTALS* )= .05 .01 .059 (iii) )= 1.50 1.67 1.50 )= 24.02 19.28 22.82 )= 25.02 25.02 = .96 .77 .91 EFF. IS SMALLER THAN TIME STEP! ELECTED FOR PERVIOUS LOSSES:   ADD Ia = Dep. Storage (Above)   1 SHOULD BE SMALLER OR EQUAL GE COEFFICIENT.
*TOTALS* )= .05 .01 .059 (iii) )= 1.50 1.67 1.50 )= 24.02 19.28 22.82 )= 25.02 25.02 25.02 = .96 .77 .91 EFF. IS SMALLER THAN TIME STEP! ELECTED FOR PERVIOUS LOSSES:   ADD Ia = Dep. Storage (Above)   1 SHOULD BE SMALLER OR EQUAL GE COEFFICIENT.
)= .05 .01 .059 (iii) )= 1.50 1.67 1.50 )= 24.02 19.28 22.82 )= 25.02 25.02 25.02 = .96 .77 .91 EFF. IS SMALLER THAN TIME STEP! ELECTED FOR PERVIOUS LOSSES:   ADD IA = Dep. Storage (Above)   1 SHOULD BE SMALLER OR EQUAL GE COEFFICIENT.
)= 1.50 1.67 1.50 )= 24.02 19.28 22.82 )= 25.02 25.02 25.02 = .96 .77 .91  EFF. IS SMALLER THAN TIME STEP! ELECTED FOR PERVIOUS LOSSES:   ADD Ia = Dep. Storage (Above)   1 SHOULD BE SMALLER OR EQUAL GE COEFFICIENT.
)= 25.02 25.02 25.02 = .96 .77 .91 EFF. IS SMALLER THAN TIME STEP! ELECTED FOR PERVIOUS LOSSES:   ADD Ia = Dep. Storage (Above)   1 SHOULD BE SMALLER OR EQUAL GE COEFFICIENT.
)= 25.02 25.02 25.02 1 = .96 .77 .91 EFF. IS SMALLER THAN TIME STEP! ELECTED FOR PERVIOUS LOSSES:   ADD Ia = Dep. Storage (Above)   1 SHOULD BE SMALLER OR EQUAL GE COEFFICIENT.
= .96 .77 .91 EEFF. IS SMALLER THAN TIME STEP! ELECTED FOR PERVIOUS LOSSES:   ADD Ia = Dep. Storage (Above)   1 SHOULD BE SMALLER OR EQUAL GE COEFFICIENT.
EFF. IS SMALLER THAN TIME STEP! ELECTED FOR PERVIOUS LOSSES:   ADD Ia = Dep. Storage (Above)   1 SHOULD BE SMALLER OR EQUAL GE COEFFICIENT.
ELECTED FOR PERVIOUS LOSSES:   ADD Ia = Dep. Storage (Above)   1 SHOULD BE SMALLER OR EQUAL GE COEFFICIENT.
ELECTED FOR PERVIOUS LOSSES:   ADD Ia = Dep. Storage (Above)   1 SHOULD BE SMALLER OR EQUAL GE COEFFICIENT.
Ia = Dep. Storage (Above)     1       SHOULD BE SMALLER OR EQUAL        GE COEFFICIENT.
SHOULD BE SMALLER OR EQUAL GE COEFFICIENT.
GE COEFFICIENT.
1
ea (ha)= .76 Curve Number (CN)= 98.0 (mm)= 5.00 # of Linear Res.(N)= 3.00
(mm) = 5.00 # of Linear Res.(N) = 3.00 H. Tp(hrs) = .20
n. ip(iii5) = .20
WAS TRANSFORMED TO 10.0 MIN. TIME STEP. ADD
1
TRANSFORMED HYETOGRAPH
RAIN   TIME RAIN   TIME RAIN   TIME RAIN
m/hr   hrs mm/hr   hrs mm/hr   hrs mm/hr
2.17     1.167     6.20     2.167     5.62     3.17     2.95
2.38   1.333 12.18   2.333 4.80   3.33 2.76
2.66     1.500     41.67     2.500     4.21     3.50     2.62     1
3.03   1.667 15.28   2.667 3.78   3.67 2.47
2.66       1.500       41.67       2.500       4.21       3.50       2.62       1         3.03       1.667       15.28       2.667       3.78       3.67       2.47         3.58       1.833       9.22       2.833       3.45       3.83       2.35          4.47       2.000       6.88       3.000       3.18       4.00       .00       ***
4.47 2.000 6.88 3.000 3.18 4.00 .00 ***
**
)= .145 ***
)= .032 (i)
)= 1.667
)= 15.145
)= 24.652
= .614 Pto
OT INCLUDE BASEFLOW IF ANY.

======================================	AREA - (ha)	.018 .188 ======== .195 DE BASEFLC	1.50 1.67 ======= 1.67 WS IF ANY	23.54 15.15 ===== 15.44	
ADD HYD (0010) 1 + 2 = 3 ID1= 1 (00 + ID2= 2 (00 ID = 3 (00)	-   AREA - (ha)	QPEAK (cms) .091 .195 .266	TPEAK (hrs) 1.50 1.67 1.67	R.V. (mm) 21.17 15.44 ====== 16.89	
+ ID2= 2 (0) ====================================	   AREA - (ha) 010): 6.13	.324	1.50 ===== 1.50	22.82 ====== 17.44	
ADD HYD (0012) 1 + 2 = 3 ID1= 1 (00 + ID2= 2 (00 ID = 3 (00)	   AREA - (ha) 011): 6.76	QPEAK (cms) .324 .032 .350	(hrs) 1.50 1.67 ======== 1.50	(mm) 17.44 15.15 ===== 17.21	 
**************************************	BER: 2 ** **********				 
. (	Comments: 2 	ysis\SWM\H yr/1hr	ydrology   TIME   hrs   .75   .83		RAIN mm/hr 2.86

# .33 22.85 | .67 34.27 | 1.00 2.86 |

.3					THAN THE STORAGE COEFFICIENT. (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
					(III) THAT HOW DOLD NOT INCLOSE DADITION IT TAT.
CALIB					
STANDHYD (0006)	Area	(ha) = 1.55			CALIB
ID= 1 DT= 5.0 min		Imp(%) = 40.00	Dir. Conn.(%	e) = 40.00	NASHYD (0001) Area (ha)= 4.42 Curve Number (CN)= 98.0
		Luip(8) = 40.00	DII. COIII. (	8/- 40.00	ID=1  DT=10.0  min   Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
		IMPERVIOUS	PERVIOUS (i)		1D-1D =10.0  min   1a (mm) = 5.00 # 01  binear kes (m) = 5.00 U.H. Tp (hrs) = .20
Surface Area	(ha) =	.62	.93		0.n. ip(iiis)20
	(mm) =	1.00	1.50		NOTE DATABALL WAS TRANSFORMED TO 10.0 MIN THE STAT
Dep. Storage	. ,				NOTE: RAINFALL WAS TRANSFORMED TO 10.0 MIN. TIME STEP.
Average Slope	(%) =	1.00	2.00		
Length	(m) =	101.70	40.00		
Mannings n	=	.013	.250		TRANSFORMED HYETOGRAPH
					TIME RAIN TIME RAIN TIME RAIN TIME RAI
Max.Eff.Inten.(		79.97	53.38		hrs mm/hr   hrs mm/hr   hrs mm/hr   hrs mm/h
	r (min)	5.00	15.00		.167 1.43   .500 61.41   .833 18.56   1.17 1.4
Storage Coeff.	(min) =	2.82 (ii)	11.89 (ii)		.333 15.71   .667 38.55   1.000 5.71
Unit Hyd. Tpeak	: (min)=	5.00	15.00		
Unit Hyd. peak	(cms) =	.28	.09		Unit Hyd Qpeak (cms)= .844
				*TOTALS*	
PEAK FLOW	(cms) =	.13	.08	.154 (iii)	PEAK FLOW (cms) = .306 (i)
TIME TO PEAK	(hrs) =	.50	.75	.50	TIME TO PEAK (hrs) = $.667$
RUNOFF VOLUME	(mm) =	22.80	18.10	19.97	RUNOFF VOLUME $(mr) = 14.355$
TOTAL RAINFALL	(mm) =	23.80	23.80	23.80	TOTAL RAINFALL $(mm) = 23.802$
RUNOFF COEFFICI		.96	.76	.84	RUNOFF COEFFICIENT = .603
RUNOFF COEFFICI	- EN I -	.90	.70	.04	KONOFF COEFFICIENT003
(i) CN PROCED CN* =		TED FOR PERVIOU a = Dep. Storag			
CN* = (ii) TIME STEP	98.0 Ia (DT) SHOU STORAGE CO	a = Dep. Storag JLD BE SMALLER DEFFICIENT.	e (Above) OR EQUAL		CALIB     STANDHYD (0007)   Area (ha)= .63  ID= 1 DT= 5.0 min   Total Imp(%)= 75.00 Dir. Conn.(%)= 75.00
CN* = (ii) TIME STEP THAN THE	98.0 Ia (DT) SHOU STORAGE CO	a = Dep. Storag JLD BE SMALLER DEFFICIENT.	e (Above) OR EQUAL		CALIB     STANDHYD (0007)   Area (ha)= .63  ID= 1 DT= 5.0 min   Total Imp(%)= 75.00 Dir. Conn.(%)= 75.00
CN* = (ii) TIME STEP THAN THE	98.0 Ia (DT) SHOU STORAGE CO	a = Dep. Storag JLD BE SMALLER DEFFICIENT.	e (Above) OR EQUAL		CALIB     STANDHYD (0007)   Area (ha)= .63  ID=1 DT=5.0 min   Total Imp(%)= 75.00 Dir. Conn.(%)= 75.00 
CN* = (ii) TIME STEP THAN THE (iii) PEAK FLOW	98.0 Ia (DT) SHOU STORAGE CO	a = Dep. Storag JLD BE SMALLER DEFFICIENT.	e (Above) OR EQUAL		CALIB     STANDHYD (0007)   Area (ha)= .63  ID=1 DT=5.0 min   Total Imp(%)= 75.00 Dir. Conn.(%)= 75.00 
CN* = (ii) TIME STEP THAN THE (iii) PEAK FLOW CALIB	98.0 Ia (DT) SHOU STORAGE CO DOES NOT	a = Dep. Storag JLD BE SMALLER DEFFICIENT. INCLUDE BASEFL	e (Above) OR EQUAL		CALIB     STANDHYD (0007)   Area (ha) = .63  ID= 1 DT= 5.0 min   Total Imp(%) = 75.00 Dir. Conn.(%) = 75.00 
CN* = (ii) TIME STEP THAN THE (iii) PEAK FLOW 	98.0 Ia (DT) SHOU STORAGE CO DOES NOT Area	a = Dep. Storag JLD BE SMALLER DEFFICIENT. INCLUDE BASEFL (ha) = .16	e (Above) OR EQUAL OW IF ANY.	≥\90_00	CALIB     STANDHYD (0007)   Area (ha) = .63  ID= 1 DT= 5.0 min   Total Imp(%) = 75.00 Dir. Conn.(%) = 75.00 
CN* = (ii) TIME STEP THAN THE (iii) PEAK FLOW 	98.0 Ia (DT) SHOU STORAGE CO DOES NOT Area Total I	a = Dep. Storag JLD BE SMALLER DEFFICIENT. INCLUDE BASEFL	e (Above) OR EQUAL	%)= 90.00	CALIB                 STANDHYD (0007)       Area (ha) = .63         ID= 1 DT= 5.0 min       Total Imp(%) = 75.00 Dir. Conn.(%) = 75.00         IMPERVIOUS PERVIOUS (i)         Surface Area (ha) = .47 .16         Dep. Storage (mm) = 1.00 1.50         Average Slope (%) = 1.00 2.00         Length       (m) = 64.80 40.00
CN* = (ii) TIME STEP THAN THE (iii) PEAK FLOW 	98.0 Ia (DT) SHOU STORAGE CO DOES NOT Area Total I	a = Dep. Storag JLD BE SMALLER DEFFICIENT. INCLUDE BASEFL (ha) = .16 Imp(%) = 90.00	e (Above) OR EQUAL OW IF ANY. Dir. Conn.(§	%)= 90.00	CALIB       Area       (ha) = .63         STANDHYD       (0007)       Area       (ha) = .63         ID= 1 DT= 5.0 min       Total Imp(%) = 75.00       Dir. Conn.(%) = 75.00         IMPERVIOUS PERVIOUS (i)         Surface Area       (ha) = .47       .16         Dep. Storage       (mm) = 1.00       1.50         Average Slope       (%) = 1.00       2.00
CN* = (ii) TIME STEP THAN THE (iii) PEAK FLOW ALIB   TANDHYD (0002)   = 1 DT= 5.0 min	98.0 Ia (DT) SHOU STORAGE CC DOES NOT Area Total :	<pre>a = Dep. Storag JLD BE SMALLER DEFFICIENT. INCLUDE BASEFL (ha) = .16 Imp(%) = 90.00 IMPERVIOUS</pre>	e (Above) OR EQUAL OW IF ANY. Dir. Conn.(9 PERVIOUS (i)	%)= 90.00	CALIB       Area       (ha) = .63         STANDHYD       (0007)       Area       (ha) = .63         ID= 1 DT= 5.0 min       Total Imp(%) = 75.00       Dir. Conn.(%) = 75.00         IMPERVIOUS PERVIOUS (i)         Surface Area       (ha) = .47       .16         Dep. Storage       (mm) = 1.00       1.50         Average Slope       (%) = 1.00       2.00         Length       (m) = 64.80       40.00         Mannings n       = .013       .250
CN* = (ii) TIME STEP THAN THE (iii) PEAK FLOW ALIB   TANDHYD (0002)   = 1 DT= 5.0 min   Surface Area	98.0 Ia (DT) SHOU STORAGE CC DOES NOT Area Total I (ha) =	a = Dep. Storag JLD BE SMALLER DEFFICIENT. INCLUDE BASEFL (ha) = .16 Imp(%) = 90.00 IMPERVIOUS .14	e (Above) OR EQUAL OW IF ANY. Dir. Conn.(% PERVIOUS (i) .02	%)= 90.00	CALIB                 STANDHYD (0007)       Area (ha) = .63         ID= 1 DT= 5.0 min       Total Imp(%) = 75.00 Dir. Conn.(%) = 75.00         IMPERVIOUS PERVIOUS (i)         Surface Area (ha) = .47 .16         Dep. Storage (mm) = 1.00 1.50         Average Slope (%) = 1.00 2.00         Length       (m) = 64.80 40.00
CN* = (ii) TIME STEP THAN THE (iii) PEAK FLOW ALIB   TANDHYD (0002)   = 1 DT= 5.0 min   Surface Area Dep. Storage	98.0 Ia (DT) SHOU STORAGE CC DOES NOT Area Total I (ha) = (mm) =	<pre>a = Dep. Storag JLD BE SMALLER DEFFICIENT. INCLUDE BASEFL (ha) = .16 Imp(%) = 90.00 IMPERVIOUS .14 1.00</pre>	e (Above) OR EQUAL OW IF ANY. Dir. Conn.(% PERVIOUS (i) .02 1.50	%)= 90.00	CALIB       Area       (ha) = .63         STANDHYD       (0007)       Area       (ha) = .63         ID= 1 DT= 5.0 min       Total Imp(%) = 75.00       Dir. Conn.(%) = 75.00         IMPERVIOUS PERVIOUS (i)         Surface Area       (ha) = .47       .16         Dep. Storage       (mm) = 1.00       1.50         Average Slope       (%) = 1.00       2.00         Length       (m) = 64.80       40.00         Mannings n       = .013       .250
CN* = (ii) TIME STEP THAN THE (iii) PEAK FLOW ALIE   TANDHYD (0002)   = 1 DT= 5.0 min   Surface Area Dep. Storage Average Slope	98.0 Ia (DT) SHOU STORAGE CC DOES NOT Area Total : (ha) = (mm) = (%) =	<pre>a = Dep. Storag JLD BE SMALLER DEFFICIENT. INCLUDE BASEFL </pre>	e (Above) OR EQUAL OW IF ANY. Dir. Conn.(% PERVIOUS (i) .02 1.50 2.00	%)= 90.00	CALIB                 STANDHYD (0007)       Area (ha) = .63         ID= 1 DT= 5.0 min       Total Imp(%) = 75.00       Dir. Conn.(%) = 75.00         IMPERVIOUS PERVIOUS (i)         Surface Area (ha) = .47         .16       Dep. Storage (mm) = 1.00       1.50         Average Slope (%) = 1.00       2.00         Length (m) = 64.80       40.00         Mannings n       = .013       .250         NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.
CN* = (ii) TIME STEP THAN THE (iii) PEAK FLOW ALIE   TANDHYD (0002)   = 1 DT= 5.0 min   Surface Area Dep. Storage Average Slope Length	98.0 Ia p (DT) SHOU STORAGE CC DOES NOT Area Total : (ha) = (mm) = (%) = (m) =	<pre>a = Dep. Storag JLD BE SMALLER DEFFICIENT. INCLUDE BASEFL</pre>	e (Above) OR EQUAL OW IF ANY. Dir. Conn.(% PERVIOUS (i) .02 1.50 2.00 40.00	%)= 90.00	CALIB                 STANDHYD (0007)       Area (ha) = .63         ID= 1 DT= 5.0 min       Total Imp(%) = 75.00 Dir. Conn.(%) = 75.00         IMPERVIOUS PERVIOUS (i)         Surface Area (ha) = .47 .16         Dep. Storage (mm) = 1.00 1.50         Average Slope (%) = 1.00 2.00         Length (m) = 64.80 40.00         Mannings n = .013 .250         NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.
CN* = (ii) TIME STEP THAN THE (iii) PEAK FLOW ALIE   TANDHYD (0002)   = 1 DT= 5.0 min   Surface Area Dep. Storage Average Slope	98.0 Ia (DT) SHOU STORAGE CC DOES NOT Area Total : (ha) = (mm) = (%) =	<pre>a = Dep. Storag JLD BE SMALLER DEFFICIENT. INCLUDE BASEFL </pre>	e (Above) OR EQUAL OW IF ANY. Dir. Conn.(% PERVIOUS (i) .02 1.50 2.00	%)= 90.00	CALIB                 STANDHYD (0007)       Area (ha) = .63         ID= 1 DT= 5.0 min       Total Imp(%) = 75.00 Dir. Conn.(%) = 75.00         IMPERVIOUS PERVIOUS (i)         Surface Area (ha) = .47 .16         Dep. Storage (mm) = 1.00 1.50         Average Slope (%) = 1.00 2.00         Length (m) = 64.80 40.00         Mannings n = .013 .250         NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.
CN* = (ii) TIME STEP THAN THE (iii) PEAK FLOW ALIB   TANDHYD (0002)   = 1 DT= 5.0 min   Surface Area Dep. Storage Average Slope Length Mannings n	98.0 Ia (DT) SHOU STORAGE CC DOES NOT Area Total : (ha) = (mm) = (%) = (m) = (%) = (m) =	<pre>a = Dep. Storag JLD BE SMALLER DEFFICIENT. INCLUDE BASEFL </pre>	e (Above) OR EQUAL OW IF ANY. Dir. Conn.(1 PERVIOUS (i) .02 1.50 2.00 40.00 .250	%)= 90.00	CALIB                 STANDHYD (0007)       Area (ha) = .63         ID= 1 DT= 5.0 min       Total Imp(%) = 75.00 Dir. Conn.(%) = 75.00         IMPERVIOUS PERVIOUS (i)         Surface Area (ha) = .47 .16         Dep. Storage (mm) = 1.00 1.50         Average Slope (%) = 1.00 2.00         Length (m) = 64.80 40.00         Mannings n = .013 .250         NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.         TIME RAIN   TIME RA
CN* = (ii) TIME STEP THAN THE (iii) PEAK FLOW TANDHYD (0002) = 1 DT= 5.0 min = Surface Area Dep. Storage Average Slope Length Mannings n Max.Eff.Inten.(	<pre>98.0 Ia &gt; (DT) SHOU STORAGE CC / DOES NOT Area Total : (ha) = (mm) = (%) = (m) = = (mm/hr) =</pre>	<pre>a = Dep. Storag JLD BE SMALLER DEFFICIENT. INCLUDE BASEFL </pre>	e (Above) OR EQUAL OW IF ANY. Dir. Conn.(% PERVIOUS (i) .02 1.50 2.00 40.00 .250 160.15	%)= 90.00	CALIB                 STANDHYD (0007)       Area (ha) = .63         ID= 1 DT= 5.0 min       Total Imp(%) = 75.00 Dir. Conn.(%) = 75.00         IMPERVIOUS PERVIOUS (i)         Surface Area (ha) = .47 .16         Dep. Storage (mm) = 1.00 1.50         Average Slope (%) = 1.00 2.00         Length (m) = 64.80 40.00         Mannings n = .013 .250         NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.         TIME RAIN TIME RAIN TIME RAIN TIME RAIN         AND TIME RAIN TIME RAIN TIME RAIN         LIPE RAIN TIME RAIN TIME RAIN TIME RAIN
CN* = (ii) TIME STEP THAN THE (iii) PEAK FLOW ALIB   TANDHYD (0002)   = 1 DT= 5.0 min   Surface Area Dep. Storage Average Slope Length Mannings n Max.Eff.Inten.( over	<pre>98.0 Ia (DT) SHOU STORAGE CC DOES NOT Area Total : (ha) = (mm) = (%) = (m) = = :mm/hr) = : (min)</pre>	<pre>a = Dep. Storag JLD BE SMALLER DEFFICIENT. INCLUDE BASEFL </pre>	e (Above) OR EQUAL OW IF ANY. Dir. Conn.(% PERVIOUS (i) .02 1.50 2.00 40.00 .250 160.15 5.00	%)= 90.00	CALIB                 STANDHYD (0007)       Area (ha) = .63         ID= 1 DT= 5.0 min       Total Imp(%) = 75.00 Dir. Conn.(%) = 75.00         IMPERVIOUS PERVIOUS (i)         Surface Area (ha) = .47 .16         Dep. Storage (mm) = 1.00 1.50         Average Slope (%) = 1.00 2.00         Length (m) = 64.80 40.00         Mannings n = .013 .250         NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.         TIME RAIN TIME RAIN TIME RAIN         AIME RAIN TIME RAIN       AIME RAIN<
CN* = (ii) TIME STEP THAN THE (iii) PEAK FLOW ALIE   1 DT= 5.0 min   Surface Area Dep. Storage Average Slope Length Mannings n Max.Eff.Inten.( over Storage Coeff.	<pre>98.0 Ia p (DT) SHOU STORAGE CC DOES NOT Area Total : (ha) = (mm) = (%) = (m) = = : :mm/hr) = : (min) (min) =</pre>	<pre>a = Dep. Storag JLD BE SMALLER DEFFICIENT. INCLUDE BASEFL</pre>	e (Above) OR EQUAL OW IF ANY. Dir. Conn.(% PERVIOUS (i) .02 1.50 2.00 40.00 .250 160.15 5.00 4.63 (ii)	%)= 90.00	CALIB                 STANDHYD (0007)       Area (ha) = .63         ID= 1 DT= 5.0 min       Total Imp(%) = 75.00 Dir. Conn.(%) = 75.00         IMPERVIOUS PERVIOUS (i)         Surface Area (ha) = .47 .16         Dep. Storage (mm) = 1.00 1.50         Average Slope (%) = 1.00 2.00         Length (m) = 64.80 40.00         Mannings n = .013 .250         NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.         TIME RAIN TIME RAIN TIME RAIN TIME RAIN         hrs mm/hr       hrs mm/hr       hrs mm/hr         hrs mm/hr       hrs mm/hr       hrs mm/hr       hrs mm/hr         .083 .00       .417 42.84       .750 22.85       1.08 2.8         .167 2.86       .500 79.97       .833 14.28       .250
CN* = (ii) TIME STEP THAN THE (iii) PEAK FLOW ALIB   PANDHYD (0002)   = 1 DT= 5.0 min   Surface Area Dep. Storage Average Slope Length Mannings n Max.Eff.Inten.( over Storage Coeff. Unit Hyd. Tpeak	<pre>98.0 If (DT) SHOT STORAGE CC DOES NOT Area Total : (ha) = (mm) = (%) = (m) = = :(min) (min) = :(min) = :(m</pre>	<pre>a = Dep. Storag JLD BE SMALLER DEFFICIENT. INCLUDE BASEFL (ha) = .16 Imp(%) = 90.00 IMPERVIOUS .14 1.00 1.00 32.70 .013 79.97 5.00 1.43 (ii) 5.00</pre>	e (Above) OR EQUAL OW IF ANY. Dir. Conn.(1 PERVIOUS (i) .02 1.50 2.00 40.00 .250 160.15 5.00 4.63 (ii) 5.00	%)= 90.00	CALIB                 STANDHYD (0007)       Area (ha) = .63         ID= 1 DT= 5.0 min       Total Imp(%) = 75.00 Dir. Conn.(%) = 75.00         IMPERVIOUS PERVIOUS (i)         Surface Area (ha) = .47 .16         Dep. Storage (mm) = 1.00 1.50         Average Slope (%) = 1.00 2.00         Length (m) = 64.80 40.00         Mannings n = .013 .250         NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.         TIME RAIN TIME RAIN TIME RAIN         AIME RAIN TIME RAIN       AIME RAIN<
CN* = (ii) TIME STEP THAN THE (iii) PEAK FLOW ALIE   IANDHYD (0002)   = 1 DT= 5.0 min   Surface Area Dep. Storage Average Slope Length Mannings n Max.Eff.Inten.( over Storage Coeff.	<pre>98.0 If (DT) SHOT STORAGE CC DOES NOT Area Total : (ha) = (mm) = (%) = (m) = = :(min) (min) = :(min) = :(m</pre>	<pre>a = Dep. Storag JLD BE SMALLER DEFFICIENT. INCLUDE BASEFL</pre>	e (Above) OR EQUAL OW IF ANY. Dir. Conn.(% PERVIOUS (i) .02 1.50 2.00 40.00 .250 160.15 5.00 4.63 (ii)	%)= 90.00	$ \begin{vmatrix} CALIB &   \\ STANDHYD (0007) & Area (ha) = .63 \\ ID= 1 DT= 5.0 min & Total Imp(%) = 75.00 Dir. Conn.(%) = 75.00 \\ \hline \\$
CN* = (ii) TIME STEP THAN THE (iii) PEAK FLOW 	<pre>98.0 If (DT) SHOT STORAGE CC DOES NOT Area Total : (ha) = (mm) = (%) = (m) = = :(min) (min) = :(min) = :(m</pre>	<pre>a = Dep. Storag JLD BE SMALLER DEFFICIENT. INCLUDE BASEFL (ha) = .16 Imp(%) = 90.00 IMPERVIOUS .14 1.00 1.00 32.70 .013 79.97 5.00 1.43 (ii) 5.00</pre>	e (Above) OR EQUAL OW IF ANY. Dir. Conn.(1 PERVIOUS (i) .02 1.50 2.00 40.00 .250 160.15 5.00 4.63 (ii) 5.00	%)= 90.00 *TOTALS*	CALIB                 STANDHYD (0007)       Area (ha) = .63         ID= 1 DT= 5.0 min       Total Imp(%) = 75.00 Dir. Conn.(%) = 75.00         IMPERVIOUS PERVIOUS (i)         Surface Area (ha) = .47 .16         Dep. Storage (mm) = 1.00 1.50         Average Slope (%) = 1.00 2.00         Length (m) = 64.80 40.00         Mannings n = .013 .250         NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.         TIME RAIN TIME RAIN TIME RAIN TIME RAIN         hrs mm/hr       hrs mm/hr       hrs mm/hr         hrs mm/hr       hrs mm/hr       hrs mm/hr       hrs mm/hr         .083 .00       .417 42.84       .750 22.85       1.08 2.8         .167 2.86       .500 79.97       .833 14.28       .250
CN* = (ii) TIME STEP THAN THE (iii) PEAK FLOW 	<pre>98.0 If (DT) SHOT STORAGE CC DOES NOT Area Total : (ha) = (mm) = (%) = (m) = = :(min) (min) = :(min) = :(m</pre>	<pre>a = Dep. Storag JLD BE SMALLER DEFFICIENT. INCLUDE BASEFL (ha) = .16 Imp(%) = 90.00 IMPERVIOUS .14 1.00 1.00 32.70 .013 79.97 5.00 1.43 (ii) 5.00</pre>	e (Above) OR EQUAL OW IF ANY. Dir. Conn.(1 PERVIOUS (i) .02 1.50 2.00 40.00 .250 160.15 5.00 4.63 (ii) 5.00		CALIB                 STANDHYD (0007)       Area (ha) = .63         ID= 1 DT= 5.0 min       Total Imp(%) = 75.00       Dir. Conn.(%) = 75.00         IMPERVIOUS PERVIOUS (i)         Surface Area (ha) = .47 .16         Dep. Storage (mm) = 1.00       1.50         Average Slope (%) = 1.00       2.00         Length (m) = 64.80       40.00         Mannings n = .013       .250         NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.         TIME RAIN TIME RAIN TIME RAIN TIME RAIN         hrs mm/hr       hrs mm/hr       hrs mm/hr         .083       .00       .417       42.84       .750       22.85       1.08       2.8         .167       2.86       .500       79.97       .833       14.28       2.8         .250       8.57       .583       42.84       .917       8.57       .333       22.85       .667       34.27       1.000       2.86
CN* = (ii) TIME STEP THAN THE (iii) PEAK FLOW ALIE   TANDHYD (0002)   = 1 DT= 5.0 min   Surface Area Dep. Storage Average Slope Length Mannings n Max.Eff.Inten.( over Storage Coeff. Unit Hyd. Tpeak Unit Hyd. peak	<pre>98.0 Ia 0 (DT) SHOU STORAGE CC 1 DOES NOT Area Total : (ha) = (mm) = (%) = (m) = : : : : : : : : : : : : :</pre>	<pre>a = Dep. Storag JLD BE SMALLER DEFFICIENT. INCLUDE BASEFL </pre>	e (Above) OR EQUAL OW IF ANY. Dir. Conn.(% PERVIOUS (i) .02 1.50 2.00 40.00 .250 160.15 5.00 4.63 (ii) 5.00 .22 .00	*TOTALS* .034 (iii)	CALIB       Area       (ha) = .63         ID= 1 DT= 5.0 min       Total Imp(%) = 75.00       Dir. Conn.(%) = 75.00         IMPERVIOUS PERVIOUS (i)         Surface Area       (ha) = .47       .16         Dep. Storage       (mm) = 1.00       1.50         Average Slope       (%) = 1.00       2.00         Length       (m) = 64.80       40.00         Mannings n       = .013       .250         NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.         TIME RAIN TIME RAIN TIME RAIN TIME RAIN         hrs <mm hr<="" td="">       hrs<mm hr<="" td="">       hrs<mm hr<="" td="">         hcs       .00       .417       42.84         .083       .00       .417       42.84       .917         .250       8.57       .583       42.84       .917       8.57         .333       22.85       .667       34.27       1.000       2.86         Max.Eff.Inten.(mm/hr) =       79.97       53.38       over (min)       5.00       10.00</mm></mm></mm>
CN* = (ii) TIME STEP THAN THE (iii) PEAK FLOW (iii) PEAK FLOW ALIB   TANDHYD (0002)   = 1 DT= 5.0 min   Surface Area Dep. Storage Average Slope Length Mannings n Max.Eff.Inten.( over Storage Coeff. Unit Hyd. Tpeak Unit Hyd. peak PEAK FLOW TIME TO PEAK	<pre>98.0 Ia &gt; (DT) SHOU STORAGE CC / DDES NOT Area Total : (ha) = (mm) = (%) = (m) = (%) = (m) = (min) = (cms) = (cms) = (hrs) =</pre>	<pre>a = Dep. Storag JLD BE SMALLER DEFFICIENT. INCLUDE BASEFL (ha) = .16 Imp(%) = 90.00 IMPERVIOUS .14 1.00 1.00 32.70 .013 79.97 5.00 1.43 (ii) 5.00 .33 .03 .50</pre>	e (Above) OR EQUAL OW IF ANY. Dir. Conn.(1 PERVIOUS (i) .02 1.50 2.00 40.00 .250 160.15 5.00 4.63 (ii) 5.00 .22 .00 .22 .00 .50	*TOTALS* .034 (iii) .50	CALIB       Area       (ha) = .63         ID= 1 DT= 5.0 min       Total Imp(%) = 75.00       Dir. Conn.(%) = 75.00         IMPERVIOUS PERVIOUS (i)         Surface Area       (ha) = .47       .16         Dep. Storage       (mm) = 1.00       1.50         Average Slope       (%) = 1.00       2.00         Length       (m) = 64.80       40.00         Mannings n       = .013       .250         NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.         TIME RAIN TIME RAIN TIME RAIN TIME RAIN         hrs mm/hr       hrs mm/hr       hrs mm/hr         hrs mm/hr       hrs mm/hr       hrs mm/hr       hrs mm/hr         .083       .00       .417       42.84       .917       8.57         .250       8.57       .583       42.84       .917       8.57         .333       22.85       .667       34.27       1.000       2.86         Max.Eff.Inten.(mm/hr) =       79.97       53.38       over (min)       5.00       10.00         Storage Coeff.       (min) =       2.15 (ii)       7.13 (ii)
CN* = (ii) TIME STEP THAN THE (iii) PEAK FLOW 	<pre>98.0 Ia &gt; (DT) SHOU STORAGE CC / DOES NOT Area Total : (ha) = (mm) = (%) = (m) = (mn) = (mn) = (cms) = (cms) = (mn) = (cms) = (mn) =</pre>	<pre>a = Dep. Storag JLD BE SMALLER DEFFICIENT. INCLUDE BASEFL </pre>	e (Above) OR EQUAL OW IF ANY. Dir. Conn.(% PERVIOUS (i) .02 1.50 2.00 40.00 .250 160.15 5.00 4.63 (ii) 5.00 .22 .00 .50 18.10	*TOTALS* .034 (iii) .50 22.31	$ \begin{vmatrix} CALIB \\   STANDHYD (0007) \\   Area (ha) = .63 \\   ID = 1 DT = 5.0 min   Total Imp(%) = 75.00 Dir. Conn.(%) = 75.00 \\ \hline Total Imp(%) = 75.00 Dir. Conn.(%) = 75.00 \\ \hline Total Imp(%) = 75.00 Dir. Conn.(%) = 75.00 \\ \hline Total Imp(%) = 75.00 Dir. Conn.(%) = 75.00 \\ \hline Total Imp(%) = 75.00 Dir. Conn.(%) = 75.00 \\ \hline ImpERVIOUS PERVIOUS (i) \\ Surface Area (ha) = .47 .16 \\ Dep. Storage (mm) = 1.00 1.50 \\ Average Slope (%) = 1.00 2.00 \\ Length (m) = 64.80 40.00 \\ Mannings n = .013 .250 \\ \hline NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP. \\ \hline TIME RAIN   TIME RAIN   TIME RAIN   TIME RAIN   Mrs mm/hr   hrs mm/hr   hr$
CN* = (ii) TIME STEP THAN THE (iii) PEAK FLOW (iii) PEAK FLOW TANDHYD (0002) = 1 DT= 5.0 min Surface Area Dep. Storage Average Slope Length Mannings n Max.Eff.Inten.( over Storage Coeff. Unit Hyd. Tpeak Unit Hyd. Tpeak Unit Hyd. peak PEAK FLOW TIME TO PEAK RUNOFF VOLUME TOTAL RAINFALL	<pre>98.0 Ia &gt; (DT) SHOU STORAGE CC / DOES NOT Area Total : (ha) = (mm) = (%) = (mm) = (min) = : (min) = (cms) = (cms) = (hrs) = (mm) = (mm) =</pre>	<pre>a = Dep. Storag JLD BE SMALLER DEFFICIENT. INCLUDE BASEFL </pre>	e (Above) OR EQUAL OW IF ANY. Dir. Conn.(% PERVIOUS (i) .02 1.50 2.00 40.00 .250 160.15 5.00 4.63 (ii) 5.00 .22 .00 .50 18.10 23.80	*TOTALS* .034 (iii) .50 22.31 23.80	CALIE       Area       (ha) =       .63         ID= 1 DT= 5.0 min       Total Imp(%) =       75.00       Dir. Conn.(%) =       75.00         IMPERVIOUS PERVIOUS (i)         Surface Area       (ha) =       .47       .16         Dep. Storage       (mm) =       1.00       1.50         Average Slope       (%) =       1.00       2.00         Length       (m) =       64.80       40.00         Mannings n       =       .013       .250         NOTE: RAINFALL WAS TRANSFORMED TO       5.0 MIN. TIME STEP.         TIME RAIN TIME RAIN TIME RAIN TIME RAIN         hrs <mm hr<="" td="">       hrs<mm hr<="" td="">       hrs<mm hr<="" td="">         .083       .00       .417       42.84         .250       8.57       .583       42.84       .917         .333       22.85       .667       34.27       1.000       2.86         Max.Eff.Inten.(mm/hr) =       79.97       53.38       over (min)       5.00       10.00         Storage Coeff.       (min) =       2.15 (ii)       7.13 (ii)       101i Hyd. Tpeak (min) =       5.00       10.00         Unit Hyd. peak (cms) =       .31       .14       14       14       14</mm></mm></mm>
CN* = (ii) TIME STEP THAN THE (iii) PEAK FLOW TALIE ( CALIE (0002)) TANDHYD (0002) = 1 DT= 5.0 min ( Surface Area Dep. Storage Average Slope Length Mannings n Max.Eff.Inten.( over Storage Coeff. Unit Hyd. Tpeak Unit Hyd. Tpeak PEAK FLOW TIME TO PEAK RUNOFF VOLUME	<pre>98.0 Ia &gt; (DT) SHOU STORAGE CC / DOES NOT Area Total : (ha) = (mm) = (%) = (mm) = (min) = : (min) = (cms) = (cms) = (hrs) = (mm) = (mm) =</pre>	<pre>a = Dep. Storag JLD BE SMALLER DEFFICIENT. INCLUDE BASEFL </pre>	e (Above) OR EQUAL OW IF ANY. Dir. Conn.(% PERVIOUS (i) .02 1.50 2.00 40.00 .250 160.15 5.00 4.63 (ii) 5.00 .22 .00 .50 18.10	*TOTALS* .034 (iii) .50 22.31	CALIB       Area (ha) = .63         ID= 1 DT= 5.0 min       Total Imp(%) = 75.00 Dir. Conn.(%) = 75.00         IMPERVIOUS PERVIOUS (i)         Surface Area (ha) = .47 .16         Dep. Storage (mm) = 1.00 1.50         Average Slope (%) = 1.00 2.00         Length (m) = 64.80 40.00         Mannings n = .013 .250         NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.         TIME RAIN TIME RAIN TIME RAIN hrs mm/hr hrs
CN* = (ii) TIME STEP THAN THE (iii) PEAK FLOW (iii) PEAK FLOW (iii) PEAK FLOW (iii) PEAK FLOW (iii) PEAK Area Dep. Storage Average Slope Length Mannings n Max.Eff.Inten.( over Storage Coeff. Unit Hyd. Tpeak Unit Hyd. Tpeak PEAK FLOW TIME TO PEAK RUNOFF VOLUME TOTAL RAINFALL RUNOFF COEFFICI	<pre>98.0 Ia &gt; (DT) SHOU STORAGE CC / DDES NOT Area Total : (ha) = (mm) = (%) = (m) = (m) = (min) = (cms) = (cms) = (hrs) = (mm) = (mm) = ENT =</pre>	<pre>a = Dep. Storag JLD BE SMALLER DEFFICIENT. INCLUDE BASEFL (ha) = .16 Imp(%) = 90.00 IMPERVIOUS .14 1.00 1.00 32.70 .013 79.97 5.00 1.43 (ii) 5.00 .33 .03 .50 22.80 23.80 .96</pre>	e (Above) OR EQUAL OW IF ANY. Dir. Conn.(% PERVIOUS (i) .02 1.50 2.00 40.00 .250 160.15 5.00 4.63 (ii) 5.00 .22 .00 .50 18.10 23.80 .76	*TOTALS* .034 (iii) .50 22.31 23.80	CALIB       Area (ha) = .63         STANDHYD (0007)       Area (ha) = .63         ID= 1 DT = 5.0 min       Total Imp(%) = 75.00 Dir. Conn.(%) = 75.00         IMPERVIOUS PERVIOUS (i)         Surface Area (ha) = .47 .16         Dep. Storage (mm) = 1.00 1.50         Average Slope (%) = 1.00 2.00         Length (m) = 64.80 40.00         Mannings n = .013 .250         NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.         TIME RAIN TIME RAIN TIME RAIN hrs mm/hr hrs mm/hr         .083 .00 .417 42.84       .750 22.85 1.08 2.8         .167 2.86 .500 79.97 .833 14.28       .250 8.57 1.583 42.84 .917 8.57 1         .333 22.85 1.667 34.27 1.000 2.86 1       Max.Eff.Inten.(mm/hr) = 79.97 53.38         Max.Eff.Inten.(mm/hr) = 2.15 (ii) 7.13 (ii)       Unit Hyd. Tpeak (min) = 5.00 10.00         Storage Coeff. (min) = 2.15 (ii) 7.13 (ii)       Unit Hyd. Tpeak (min) = 5.00 10.00         Unit Hyd. peak (cms) = .31 .14       *TOTALS*         PEAK FLOW (cms) = .10 .02 .111 (iii)       .111 (iii)
CN* = (ii) TIME STEP THAN THE (iii) PEAK FLOW ALIB   TANDHYD (0002)   = 1 DT= 5.0 min   Surface Area Dep. Storage Average Slope Length Mannings n Max.Eff.Inten.( Over Storage Coeff. Unit Hyd. Tpeak Unit Hyd. peak PEAK FLOW TIME TO PEAK RUNOFF VOLUME TOTAL RAINFALL RUNOFF COEFFICI	<pre>98.0 Ia &gt; (DT) SHOU STORAGE CC / DDES NOT Area Total : (ha) = (mm) = (%) = (m) = (m) = (min) = (cms) = (cms) = (hrs) = (mm) = (mm) = ENT =</pre>	<pre>a = Dep. Storag JLD BE SMALLER DEFFICIENT. INCLUDE BASEFL (ha) = .16 Imp(%) = 90.00 IMPERVIOUS .14 1.00 1.00 32.70 .013 79.97 5.00 1.43 (ii) 5.00 .33 .03 .50 22.80 23.80 .96</pre>	e (Above) OR EQUAL OW IF ANY. Dir. Conn.(% PERVIOUS (i) .02 1.50 2.00 40.00 .250 160.15 5.00 4.63 (ii) 5.00 .22 .00 .50 18.10 23.80 .76	*TOTALS* .034 (iii) .50 22.31 23.80	$ \begin{vmatrix} CALIB \\ STANDHYD (0007) \\ ID= 1 DT= 5.0 min \end{vmatrix} Area (ha) = .63Total Imp(%) = 75.00 Dir. Conn.(%) = 75.00 \\ \hline Total Imp(%) = 75.00 Dir. Conn.(%) = 75.00 \\ \hline Total Imp(%) = 75.00 Dir. Conn.(%) = 75.00 \\ \hline Total Imp(%) = 75.00 Dir. Conn.(%) = 75.00 \\ \hline Total Imp(%) = 75.00 Dir. Conn.(%) = 75.00 \\ \hline Total Imp(%) = 75.00 Dir. Conn.(%) = 75.00 \\ \hline Total Imp(%) = 75.00 Dir. Conn.(%) = 75.00 \\ \hline Total Imp(%) = 75.00 Dir. Conn.(%) = 75.00 \\ \hline Total Imp(%) = 75.00 Dir. Conn.(%) = 75.00 \\ \hline Total Imp(%) = 75.00 Dir. Conn.(%) = 75.00 \\ \hline Total Imp(%) = 75.00 Dir. Conn.(%) = 75.00 \\ \hline Average Slope (%) = 1.00 2.00 \\ \hline Length (m) = 64.80 40.00 \\ \hline Mannings n = .013 .250 \\ \hline NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP. \\ \hline Total Imp(hr mm/hr) hrs mm/hr hrs $
CN* = (ii) TIME STEP THAN THE (iii) PEAK FLOW CALIB   STANDHYD (0002)   D= 1 DT= 5.0 min   Surface Area Dep. Storage Average Slope Length Mannings n Max.Eff.Inten.( over Storage Coeff. Unit Hyd. Tpeak Unit Hyd. Tpeak Unit Hyd. peak PEAK FLOW TIME TO PEAK RUNOFF VOLUME TOTAL RAINFALL RUNOFF COEFFICI **** WARNING: STORA	<pre>98.0 Ia &gt; (DT) SHOU STORAGE CC / DOES NOT Area Total : (ha) = (mm) = (%) = (mm) = (%) = (min) = : (min) = : (min) = (cms) = (hrs) = (mm) = (mm) = .ENT = AGE COEFF.</pre>	<pre>a = Dep. Storag JLD BE SMALLER DEFFICIENT. INCLUDE BASEFL </pre>	e (Above) OR EQUAL OW IF ANY. Dir. Conn.(% PERVIOUS (i) .02 1.50 2.00 40.00 .250 160.15 5.00 4.63 (ii) 5.00 .22 .00 .50 18.10 23.80 .76 N TIME STEP!	*TOTALS* .034 (iii) .50 22.31 23.80	$ \begin{vmatrix} CALIB \\ STANDHYD (0007) \\   ID= 1 DT= 5.0 min \end{vmatrix} Area (ha) = .63Total Imp(%) = 75.00 Dir. Conn.(%) = 75.00 \\ \hline \\$
CN* = (ii) TIME STEP THAN THE (iii) PEAK FLOW CALIB [ STANDHYD (0002) ] D= 1 DT= 5.0 min ] Surface Area Dep. Storage Average Slope Length Mannings n Max.Eff.Inten.( over Storage Coeff. Unit Hyd. Tpeak Unit Hyd. peak PEAK FLOW TIME TO PEAK RUNOFF VOLUME TOTAL RAINFALL RUNOFF COEFFICI **** WARNING: STORA (i) CN PROCED	<pre>98.0 Ia 0 (DT) SHOU STORAGE CC 1 DOES NOT Area Total : (ha) = (mm) = (%) = (mm) = (%) = (min) = (cms) = (cms) = (cms) = (mm) = (mm) = (cms) = (mm) = (mm) = (cms) = (mm) = (mm) = (cms) = (mm) = (mm) = (mm) = (cms) = (mm) = (mm) = (mm) = (cms) = (mm) = (mm) = (cms) = (mm) = (mm) = (cms) = (mm) = (mm) = (cms) = (mm) = (cms) = (mm) = (cms) = (mm) = (cms) = (mm) = (cms) = (c</pre>	<pre>a = Dep. Storag JLD BE SMALLER DEFFICIENT. INCLUDE BASEFL (ha) = .16 Imp(%) = 90.00 IMPERVIOUS .14 1.00 1.00 32.70 .013 79.97 5.00 1.43 (ii) 5.00 .33 .03 .50 22.80 23.80 .96</pre>	e (Above) OR EQUAL OW IF ANY. Dir. Conn.(% PERVIOUS (i) .02 1.50 2.00 40.00 .250 160.15 5.00 4.63 (ii) 5.00 .22 .00 .50 18.10 23.80 .76 N TIME STEP! S LOSSES:	*TOTALS* .034 (iii) .50 22.31 23.80	CALIE       STANDHYD (0007)       Area (ha) = .63         ID= 1 DT= 5.0 min       Total Imp(%) = 75.00 Dir. Conn.(%) = 75.00         IMPERVIOUS PERVIOUS (i)         Surface Area (ha) = .47 .16         Dep. Storage (mm) = 1.00 1.50         Average Slope (%) = 1.00 2.00         Length (m) = 64.80 40.00         Mannings n = .013 .250         NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.         TIME RAIN TIME RAIN TIME RAIN hrs mm/hr         hrs mm/hr       hrs mm/hr         hrs mm/hr       hrs mm/hr         .083 .00       .417 42.84         .250 8.57       .583 42.84         .250 8.57       .583 42.84         .250 8.57       .583 42.84         .250 8.57       .583 42.84         .250 8.57       .583 42.84         .250 8.57       .583 42.84         .250 8.57       .583 33 44.28         .250 8.57       .583 38         over (min)       5.00         .333 22.85       .667 34.27         .1000 2.86       Max.Eff.Inten.(mm/hr) = 79.97 53.38         over (min)       5.00       10.00         Storage Coeff. (min) = 2.15 (ii)       .11         .111 Hyd. peak (cms) = .31       .14

(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL

<pre>***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:</pre>	1 + 2 = 3   AREA QPEAK TPEAK R.V. 
THAN THE STORAGE COEFFICIENT. (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.	NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
CALIB                 NASHYD       (0008)       Area       (ha) =       .76       Curve Number       (CN) =       98.0         ID= 1       DT=10.0       min       Ia       (mm) =       5.00       # of Linear Res.(N) =       3.00         U.H.       Tp(hrs) =       .20	ADD HYD (0012)     1 + 2 = 3   AREA QPEAK TPEAK R.V. (ha) (cms) (hrs) (mm) ID1= 1 (0011): 6.76 .528 .67 16.51
NOTE: RAINFALL WAS TRANSFORMED TO 10.0 MIN. TIME STEP.	+ ID2= 2 (0008): .76 .053 .67 14.35
TRANSFORMED HYETOGRAPH TIME RAIN   TIME RAIN   TIME RAIN   TIME RAIN hrs mm/hr   hrs mm/hr   hrs mm/hr   hrs mm/hr	ID = 3 (0012): 7.52 .581 .67 16.29 NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
.167 1.43   .500 61.41   .833 18.56   1.17 1.43 .333 15.71   .667 38.55   1.000 5.71   Unit Hyd Qpeak (cms)= .145	**************************************
PEAK FLOW (cms) = .053 (i) TIME TO PEAK (hrs) = .667 RUNOFF VOLUME (mm) = 14.354 TOTAL RAINFALL (mm) = 23.802 RUNOFF COEFFICIENT = .603	READ STORM       Filename: V:\01606\Active\160622415\Ana         Isis\SWM\Hydrology\V02\Storms\2Y12.STM         Ptotal= 41.10 mm       Comments: 2yr/12hr
(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.	TIME         RAIN         Main         Ins         mm/hr         hrs         mm/hr         hrs
ADD HYD (0003)       AREA QPEAK TPEAK R.V.         I + 2 = 3       AREA QPEAK TPEAK R.V.         ID1= 1 (0002):       .16 .034 .50 22.31         + ID2= 2 (0001):       4.42 .306 .67 14.36	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$
ID = 3 (0003): 4.58 .321 .67 14.63 NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$
ADD HYD (0010)     1 + 2 = 3   AREA QPEAK TPEAK R.V. (ha) (cms) (hrs) (mm) ID1= 1 (0006): 1.55 .154 .50 19.97	CALIB   STANDHYD (0006)   Area (ha)= 1.55  ID= 1 DT= 5.0 min   Total Imp(%)= 40.00 Dir. Conn.(%)= 40.00
+ ID2= 2 (0003): 4.58 .321 .67 14.63 	IMPERVIOUS         PERVIOUS (i)           Surface Area         (ha) =         .62         .93           Dep. Storage         (mm) =         1.00         1.50           Average Slope         (%) =         1.00         2.00           Length         (m) =         101.70         40.00           Mannings n         =         .013         .250
ADD HYD (0011)	NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

		TRA	ANSFORME	D HYETOGR	APH	-	
TIME	RAIN			TIME			RAIN
hrs	mm/hr	i .	/1	i 1	/1		/1
.083	.00	3.167	2.47	hrs 6.250 6.333 6.417 6.500 6.583 6.667 6.750 6.833 6.917 7.000 7.083 7.167	5.34	9.33	.41
.167	.00	3.250	2.47	6.333	2.88	9.42	.41
.250	.00	3.333	6.99	6.417	2.88	9.50	.41
.333	.41	3.417	6.99	6.500	2.88	9.58	.41
.417	.41	3.500	6.99	6.583	2.88	9.67	.41
.500	.41	3.583	6.99	6.667	2.88	9.75	.41
.583	.41	3.667	6.99	6.750	2.88	9.83	.41
.667	.41	3.750	6.99	6.833	2.88	9.92	.41
.750	.41	3.833	6.99	6.917	2.88	10.00	.41
.833	.41	3.917	6.99	7.000	2.88	10.08	.41
.917	.41	4.000	6.99	7.083	2.88	10.17	.41
1.000	.41	4.083	6.99	7.167	2.88	10.25	.41
1.083	.41	4.167	6.99	7.250 7.333 7.417 7.500 7.583 7.667	2.88	10.33	.41
1.167	.41	4.250	6.99	7.333	1.64	10.42	.41
1.250	.41	4.333	18.91	7.417	1.64	10.50	.41
1.333	.41	4.41/	18.91	7.500	1.64	10.58	.41
1.417	.41	4.500	10.91	7.583	1.64	10.67	.41
1.500							
1.583 1.667	.41	4.007	10.91	7.750	1.04	10.03	.41
1.750	.41	4.750	10.91	7.033	1 64	11 00	.41
1.833	.41	4.033	10.91	1 0 000	1 64	11.00	.41
1.917	.41		18 91	7.750 7.833 7.917 8.000 8.083 8.167 8.250	1 64	111.00	.41
2.000	41	5 083	18 91	8 167	1 64	11 25	.41
2.083	41	5 167	18 91	8 250	1 64	11 33	.41
2.167							
2.250	. 41	5.333	5.34	8.333 8.417 8.500 8.583 8.667 8.750 8.833	.82	11.50	.41
2.333	2.47	5.417	5.34	8.500	. 82	11.58	.41
2.417	2.47	5.500	5.34	8.583	.82	11.67	.41
2.500	2.47	5.583	5.34	8.667	.82	11.75	.41
2.583	2.47	5.667	5.34	8.750	.82	11.83	.41
2.667	2.47	5.750	5.34	8.833	.82	11.92	.41
2.750							
2.833	2.47	5.917	5.34	9.000	.82	12.08	.41
2.917	2.47	6.000	5.34	9.083	.82	12.17	.41
3.000	2.47	6.083	5.34	9.167	.82	12.25	.41
3.083	2.47	6.167	5.34	9.000 9.083 9.167 9.250	.82		
Max.Eff.Inten.(mr over	n/hr)=	18.91		18.36			
over	(min)	5.00		20.00			
Storage Coeff.	(min) =	5.02	(ii)	18.93 (ii	)		
Storage Coeff. Unit Hyd. Tpeak Unit Hyd. peak	(min) =	5.00		20.00			
Unit Hyd. peak	(cms) =	.21		.06			
					*10.	TALS*	
PEAK FLOW TIME TO PEAK	(cms) =	.03		.04 5.25		.077 (ii: 5.25	L)
TIME TO PEAK	(hrs)=	5.25		5.25	5	5.25	
RUNOFF VOLUME	(mm) =	40.10		35.02	37	7.04	
TOTAL RAINFALL	(mm) =	41.10		41.10	41	L.10	
RUNOFF COEFFICIEN	= TI	.98		.85		.90	
<ul> <li>(i) CN PROCEDUN CN* = 98</li> <li>(ii) TIME STEP THAN THE ST</li> <li>(iii) PEAK FLOW I</li> </ul>	3.0 Ia (DT) SHOU FORAGE CO	= Dep. & LD BE SMA EFFICIEN:	Storage ALLER OR F.	(Above) EQUAL			
(i) CN PROCEDUN CN* = 98 (ii) TIME STEP THAN THE ST	NT = RE SELECTI 3.0 Ia (DT) SHOU TORAGE CO DOES NOT :	ED FOR PH = Dep. S LD BE SMA EFFICIEN INCLUDE H	ERVIOUS Storage ALLER OR F. BASEFLOW	LOSSES: (Above) EQUAL IF ANY.			

ID= 1 DT= 5.0 min	Total	Imp(%)=	90.00	Dir. (	Conn.(%)	) = 90.00	
		IMPERVI	OUS	PERVIOUS	5 (i)		
Surface Area	(ha)=	.1	4	.02			
Dep. Storage	(mm) =	1.0	0	1.50			
Average Slope	(%) =	1.0	0	2.00			
Length	(m) =	32.7	0	40.00			
Mannings n	=	.01	3	.250			
Max.Eff.Inten.(m	m/hr)=	18.9	1	18.36			
	, .	5.0	0	20 00			
Storage Coeff.	,				(ii)		
Unit Hyd. Tpeak					(==)		
Unit Hyd. peak				.06			
onic nya. peak	(CIIIB) =	.2	<i>_</i>	.00		*TOTALS*	
DEAK ELON	(	0	1	0.0			
PEAK FLOW	1 1	.0		.00		.008 (iii)	
TIME TO PEAK	(hrs)=	4.7	5	5.25		5.25	
RUNOFF VOLUME	(mm) =	40.1	0	35.02		39.57	
TOTAL RAINFALL	(mm) =	41.1	0	41.10		41.10	
RUNOFF COEFFICIE	ENT =	.9	8	.85		.96	

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 98.0 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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CALTR		

CILLED					
NASHYD (0001)	Area	(ha) =	4.42	Curve Number (CN) = 98	.0
ID= 1 DT=10.0 min	Ia	(mm) =	5.00	<pre># of Linear Res.(N) = 3.</pre>	00
	U.H. Tp	(hrs) =	.20		

NOTE: RAINFALL WAS TRANSFORMED TO 10.0 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
.167	.00	3.333	4.73	6.500	2.88	9.67	.41
.333	.21	3.500	6.99	6.667	2.88	9.83	.41
.500	.41	3.667	6.99	6.833	2.88	10.00	.41
.667	.41	3.833	6.99	7.000	2.88	10.17	.41
.833	.41	4.000	6.99	7.167	2.88	10.33	.41
1.000	.41	4.167	6.99	7.333	2.26	10.50	.41
1.167	.41	4.333	12.95	7.500	1.64	10.67	.41
1.333	.41	4.500	18.91	7.667	1.64	10.83	.41
1.500	.41	4.667	18.91	7.833	1.64	11.00	.41
1.667	.41	4.833	18.91	8.000	1.64	11.17	.41
1.833	.41	5.000	18.91	8.167	1.64	11.33	.41
2.000	.41	5.167	18.91	8.333	1.23	11.50	.41
2.167	.41	5.333	12.13	8.500	.82	11.67	.41
2.333	1.44	5.500	5.34	8.667	.82	11.83	.41
2.500	2.47	5.667	5.34	8.833	.82	12.00	.41
2.667	2.47	5.833	5.34	9.000	.82	12.17	.41
2.833	2.47	6.000	5.34	9.167	.82	12.33	.20
3.000	2.47	6.167	5.34	9.333	.62		
3.167	2.47	6.333	4.11	9.500	.41		

Unit Hyd Qpeak	(cms) =	.844
PEAK FLOW	(cms) =	.214 (i)

TIME TO PEAK	(hrs) =	5.167
RUNOFF VOLUME	(mm) =	30.747
TOTAL RAINFALL	(mm) =	41.100
RUNOFF COEFFICIE	ENT =	.748

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

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CALIB

STANDHYD (0007) Area (ha) = .63 ID= 1 DT= 5.0 min | Total Imp(%) = 75.00 Dir. Conn.(%) = 75.00 -----

		IMPERVIOUS	PERVIOUS	(i)
Surface Area	(ha) =	.47	.16	
Dep. Storage	(mm) =	1.00	1.50	
Average Slope	( % ) =	1.00	2.00	
Length	(m) =	64.80	40.00	
Mannings n	=	.013	.250	

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

---- TRANSFORMED HYETOGRAPH ----

		TRA	ANSFORMED	D HYETOGI	RAPH	-	
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
.083	.00	3.167		6.250	5.34	9.33	.41
.167	.00	3.250	2.47	6.333	2.88	9.42	.41
.250	.00	3.333		6.417	2.88		.41
.333	.41	3.417	6.99	6.500	2.88	9.58	.41
.417	.41		6.99	6.583	2.88	9.67	.41
.500		3.583		6.667	2.88		.41
.583	.41	3.667		6.750	2.88		.41
.667		3.750		6.833	2.88		.41
.750	.41			6.917			
.833	.41		6.99	7.000	2.88		.41
.917	.41	4.000	6.99	7.083	2.88		.41
1.000		4.083		7.167			.41
1.083		4.167		7.250	2.88		
1.167			6.99				
1.250		4.333	18.91	7.417		10.50	
1.333		4.417	18.91	7.500	1.64	10.58	.41
1.417		4.500	18.91	7.583	1.64	10.67	.41
1.500		4.583	18.91	7.667	1.64		.41
1.583		4.667	18.91	7.750	1.64		
1.667		4.750	18.91		1.64		
1.750	.41			7.917	1.64	11.00	.41
1.833		4.917		8.000	1.64		.41
1.917		5.000	18.91	8.083	1.64	11.17	.41
2.000		5.083		8.167			.41
2.083		5.167		8.250			
2.167	.41			8.333		11.42	
2.250	.41		5.34	8.417	.82	11.50	.41
2.333	2.47		5.34		.82	11.58	.41
2.417	2.47	5.500	5.34	8.583	.82	11.67	.41
2.500		5.583		8.667	.82	11.75	.41
2.583		5.667		8.750	.82	11.83	
2.667	2.47	5.750		8.833	.82	11.92	.41
2.750	2.47	5.833		8.917	.82	12.00	.41
2.833	2.47	5.917		9.000	.82	12.08	.41
2.917		6.000		9.083	.82	12.17	.41
		6.083		9.167		12.25	.41
3.083	2.47	6.167	5.34	9.250	.82		
Taban (mm	(la	10 01		10.20			

over Storage Coeff. Unit Hyd. Tpeak		5.00 3.83 (ii) 5.00	20.00 17.74 (ii) 20.00	
Unit Hyd. peak	(cms) =	.25	.06	
				*TOTALS*
PEAK FLOW	(cms) =	.02	.01	.032 (iii)
TIME TO PEAK	(hrs) =	5.08	5.25	5.25
RUNOFF VOLUME	(mm) =	40.10	35.02	38.81
TOTAL RAINFALL	(mm) =	41.10	41.10	41.10
RUNOFF COEFFICIE	ENT =	.98	.85	.94

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 98.0 Ia = Dep. Storage (Above) (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL

THAN THE STORAGE COEFFICIENT.

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

CALIB			
NASHYD (0008)		.76	Curve Number (CN) = 98.0
ID= 1 DT=10.0 min	Ia (mm) =	5.00	# of Linear Res.(N) = 3.00
	U.H. Tp(hrs) =	.20	

NOTE: RAINFALL WAS TRANSFORMED TO 10.0 MIN. TIME STEP.

		TRA	ANSFORMED	HYETOGI	RAPH		
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
.167	.00	3.333	4.73	6.500	2.88	9.67	.41
.333	.21	3.500	6.99	6.667	2.88	9.83	.41
.500	.41	3.667	6.99	6.833	2.88	10.00	.41
.667	.41	3.833	6.99	7.000	2.88	10.17	.41
.833	.41	4.000	6.99	7.167	2.88	10.33	.41
1.000	.41	4.167	6.99	7.333	2.26	10.50	.41
1.167	.41	4.333	12.95	7.500	1.64	10.67	.41
1.333	.41	4.500	18.91	7.667	1.64	10.83	.41
1.500	.41	4.667	18.91	7.833	1.64	11.00	.41
1.667	.41	4.833	18.91	8.000	1.64	11.17	.41
1.833	.41	5.000	18.91	8.167	1.64	11.33	.41
2.000	.41	5.167	18.91	8.333	1.23	11.50	.41
2.167	.41	5.333	12.13	8.500	.82	11.67	.41
2.333	1.44	5.500	5.34	8.667	.82	11.83	.41
2.500	2.47	5.667	5.34	8.833	.82	12.00	.41
2.667	2.47	5.833	5.34	9.000	.82	12.17	.41
2.833	2.47	6.000	5.34	9.167	.82	12.33	.20
3.000	2.47	6.167	5.34	9.333	.62		
3.167	2.47	6.333	4.11	9.500	.41		

Unit Hyd Qpeak (cms)= .145

PEAK FLOW	(cms) =	.037	(i)
TIME TO PEAK	(hrs) =	5.167	
RUNOFF VOLUME	(mm) =	30.747	
TOTAL RAINFALL	(mm) =	41.100	
RUNOFF COEFFICI	ENT =	.748	

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

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Max.Eff.Inten.(mm/hr) = 18.91 18.36

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1 + 2 = 3   ID1= 1 (0002): + ID2= 2 (0001):		QPEAK (cms) .008 .214	TPEAK (hrs) 5.25 5.17	R.V. (mm) 39.57 30.75			3 54.5	3   .67 81.	79   1.00 6.	82
================						CALIB	_			
ID = 3 (0003):	4.58	.222	5.17	31.05		STANDHYD (0006)  ID= 1 DT= 5.0 min	Area Total	(ha) = 1.55 Imp(%) = 40.00	Dir. Conn.(%)	= 40.00
NOTE: PEAK FLOWS DO	O NOT INCLU	JDE BASEFI	LOWS IF A	NY.				IMPERVIOUS	PERVIOUS (i)	
						Surface Area	(ha)=	.62	.93	
						Dep. Storage	(mm) =	1.00	1.50	
						Average Slope	( 응 ) =	1.00	2.00	
ADD HYD (0010)						Length	(m) =	101.70	40.00	
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.		Mannings n	=	.013	.250	
ID1= 1 (0006):	(ha) 1.55	(cms) .077	(hrs) 5.25	(mm) 37.04		Max.Eff.Inten.(	mm/hr)_	190.85	141.78	
+ ID2 = 2 (0003):		.222	5.25	31.04			(min) =	5.00	10.00	
+ 1D2= 2 (0003):						Storage Coeff.			8.13 (ii)	
ID = 3 (0010):		.298	5.17	32.57		Unit Hyd. Tpeak		5.00	10.00	
- ().						Unit Hyd. peak		.31	.13	
NOTE: PEAK FLOWS DO	O NOT INCLU	JDE BASEFI	LOWS IF A	NY.		A 4				*TOTALS*
						PEAK FLOW	(cms) =	.32	.28	.506 (iii)
						TIME TO PEAK	(hrs) =	.50	.58	.50
						RUNOFF VOLUME	(mm) =	55.80	50.56	52.66
						TOTAL RAINFALL	(mm) =	56.80	56.80	56.80
ADD HYD (0011)	*****	00000	mp	D		RUNOFF COEFFICI	ENT =	.98	.89	.93
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.		***** WARNING: STORA	CE COEPE	TO OMALLED DI		
ID1= 1 (0010):	(ha) 6.13	(cms) .298	(hrs) 5.17	(mm) 32.57		STORA	GE CUEFF	. та амитрик	AN IIME SIEF!	
+ ID2 = 2 (0007):		.298	5.17	32.57 38.81		(i) CN PROCET	URE SELF	CTED FOR PERVIO	US LOSSES.	
+ 1D2= 2 (0007):						(I) CN PROCEL CN* =		Ia = Dep. Stora		
ID = 3 (0011): NOTE: PEAK FLOWS DO		.330 JDE BASEFI	5.17 Lows if Al	33.15 NY.		THAN THE	STORAGE (	OULD BE SMALLER COEFFICIENT. I INCLUDE BASEF		
NOTE: PEAK FLOWS DO	O NOT INCLU	JDE BASEFI	LOWS IF A	NY.		THAN THE (iii) PEAK FLOW 	STORAGE ( DOES NOT	COEFFICIENT. I INCLUDE BASEF (ha)= .16	LOW IF ANY.	
NOTE: PEAK FLOWS DO	O NOT INCLU	JDE BASEFI	LOWS IF AN	NY.  R.V.		THAN THE (iii) PEAK FLOW 	STORAGE ( DOES NOT	COEFFICIENT. I INCLUDE BASEF (ha)= .16	LOW IF ANY.	
NOTE: PEAK FLOWS DO ADD HYD (00012)   1 + 2 = 3	O NOT INCLU AREA (ha)	JDE BASEFI QPEAK (cms)	LOWS IF A TPEAK (hrs)	NY.  R.V. (mm)		THAN THE (iii) PEAK FLOW 	STORAGE ( DOES NOT	COEFFICIENT. T INCLUDE BASEF (ha) = .16 Imp(%) = 90.00	LOW IF ANY. Dir. Conn.(%)	
NOTE: PEAK FLOWS DO ADD HYD (0012)   1 + 2 = 3   ID1= 1 (0011):	O NOT INCLU AREA (ha) 6.76	JDE BASEFI QPEAK (cms) .330	LOWS IF A TPEAK (hrs) 5.17	NY. R.V. (mm) 33.15		THAN THE (iii) PEAK FLOW CALIB   STANDHYD (0002)   ID= 1 DT= 5.0 min	STORAGE ( DOES NO Area Total	COEFFICIENT. T INCLUDE BASEF (ha) = .16 Imp(%) = 90.00 IMPERVIOUS	LOW IF ANY. Dir. Conn.(%) PERVIOUS (i)	
NOTE: PEAK FLOWS DO ADD HYD (0012)   1 + 2 = 3	0 NOT INCLU AREA (ha) 6.76 .76	JDE BASEFI QPEAK (cms) .330 .037	LOWS IF A TPEAK (hrs) 5.17 5.17	NY. R.V. (mm) 33.15 30.75		THAN THE (iii) PEAK FLOW CALIB   STANDHYD (0002)   ID= 1 DT= 5.0 min   Surface Area	STORAGE ( DOES NOT Area Total (ha)=	COEFFICIENT. T INCLUDE BASEF (ha) = .16 Imp(%) = 90.00 IMPERVIOUS .14	LOW IF ANY. Dir. Conn.(%)	
NOTE: PEAK FLOWS DO ADD HYD (0012)   1 + 2 = 3   ID1= 1 (0011): + ID2= 2 (0008):	O NOT INCLU AREA (ha) 6.76 .76	JDE BASEFI QPEAK (cms) .330 .037	LOWS IF A TPEAK (hrs) 5.17 5.17	NY. R.V. (mm) 33.15 30.75		THAN THE (iii) PEAK FLOW CALIB   STANDHYD (0002)   ID= 1 DT= 5.0 min	STORAGE ( DOES NO Area Total	COEFFICIENT. T INCLUDE BASEF (ha) = .16 Imp(%) = 90.00 IMPERVIOUS	LOW IF ANY. Dir. Conn.(%) PERVIOUS (i) .02	
NOTE: PEAK FLOWS DO ADD HYD (0012)   1 + 2 = 3   ID1= 1 (0011): + ID2= 2 (0008):	O NOT INCLU AREA (ha) 6.76 .76	UDE BASEFI QPEAK (cms) .330 .037	DOWS IF AN TPEAK (hrs) 5.17 5.17	R.V. (mm) 33.15 30.75		THAN THE (iii) PEAK FLOW CALIB   STANDHYD (0002)   ID= 1 DT= 5.0 min   Surface Area Dep. Storage	STORAGE ( DOES NO Area Total (ha) = (mm) =	COEFFICIENT. I INCLUDE BASEF (ha) = .16 Imp (%) = 90.00 IMPERVIOUS .14 1.00	LOW IF ANY. Dir. Conn.(%) PERVIOUS (i) .02 1.50	
NOTE: PEAK FLOWS DO ADD HYD (0012)   1 + 2 = 3   ID1= 1 (0011): + ID2= 2 (0008):	AREA (ha) 6.76 .76 7.52	DE BASEFI QPEAK (cms) .330 .037 .367	LOWS IF AN TPEAK (hrs) 5.17 5.17 5.17	NY. R.V. (mm) 33.15 30.75 32.91		THAN THE (iii) PEAK FLOW CALIB   STANDHYD (0002)   ID= 1 DT= 5.0 min   Surface Area Dep. Storage Average Slope	STORAGE ( DOES NO Area Total (ha) = (mm) = (%) =	COEFFICIENT. T INCLUDE BASEF (ha) = .16 Imp(%) = 90.00 IMPERVIOUS .14 1.00 1.00	LOW IF ANY. Dir. Conn.(%) PERVIOUS (i) .02 1.50 2.00	
NOTE: PEAK FLOWS DO ADD HYD (0012)   1 + 2 = 3   ID1= 1 (0011): + ID2= 2 (0008): =========== ID = 3 (0012): NOTE: PEAK FLOWS DO	AREA (ha) 6.76 .76 .752 0 NOT INCLU	DE BASEFI QPEAK (cms) .330 .037 .367	LOWS IF AN TPEAK (hrs) 5.17 5.17 5.17	NY. R.V. (mm) 33.15 30.75 32.91		THAN THE (iii) PEAK FLOW CALIB   STANDHYD (0002) ID= 1 DT= 5.0 min   Surface Area Dep. Storage Average Slope Length Mannings n Max.Eff.Inten.(	STORAGE ( DOES NOT Area Total (ha) = (mm) = (%) = (m) = = mm/hr) =	<pre>COEFFICIENT. T INCLUDE BASEF (ha) = .16 Imp(%) = 90.00 IMPERVIOUS .14 1.00 1.00 32.70 .013 190.85</pre>	LOW IF ANY. Dir. Conn.(%) PERVIOUS (i) .02 1.50 2.00 40.00 .250 425.34	
NOTE: PEAK FLOWS DO ADD HYD (0012)   1 + 2 = 3   ID1= 1 (0011): + ID2= 2 (0008): ID = 3 (0012): NOTE: PEAK FLOWS DO	AREA (ha) 6.76 .76 7.52 0 NOT INCLU	DE BASEFI QPEAK (cms) .330 .037 .367	LOWS IF AN TPEAK (hrs) 5.17 5.17 5.17	NY. R.V. (mm) 33.15 30.75 32.91		THAN THE (iii) PEAK FLOW CALIB   STANDHYD (0002) ID= 1 DT= 5.0 min   Surface Area Dep. Storage Average Slope Length Mannings n Max.Eff.Inten.( over	<pre>STORAGE (     DOES NO?     Area     Total     (ha) =     (mm) =     (%) =     (m) =     =     mm/hr) =     (min)</pre>	<pre>COEFFICIENT. T INCLUDE BASEF (ha) = .16 Imp(%) = 90.00 IMPERVIOUS .14 1.00 1.00 32.70 .013 190.85 5.00</pre>	LOW IF ANY. Dir. Conn.(%) PERVIOUS (i) .02 1.50 2.00 40.00 .250 425.34 5.00	
NOTE: PEAK FLOWS DO ADD HYD (0012) 1 + 2 = 3 ID1= 1 (0011): + ID2= 2 (0008): ID = 3 (0012): NOTE: PEAK FLOWS DO ** SIMULATION NUMBER:	AREA (ha) 6.76 7.52 0 NOT INCLU	DE BASEFI QPEAK (cms) .330 .037 .367	LOWS IF AN TPEAK (hrs) 5.17 5.17 5.17	NY. R.V. (mm) 33.15 30.75 32.91		THAN THE (iii) PEAK FLOW	<pre>STORAGE (     DOES NO?     Area     Total     (ha) =     (mm) =     (%) =     (m) =     =     mm/hr) =     (min)     (min) =</pre>	<pre>COEFFICIENT. T INCLUDE BASEF</pre>	LOW IF ANY. Dir. Conn.(%) PERVIOUS (i) .02 1.50 2.00 40.00 .250 425.34 5.00 3.27 (ii)	
NOTE: PEAK FLOWS DO ADD HYD (0012)   1 + 2 = 3   ID1= 1 (0011): + ID2= 2 (0008): ID = 3 (0012): NOTE: PEAK FLOWS DO ** SIMULATION NUMBER:	AREA (ha) 6.76 7.52 0 NOT INCLU	DE BASEFI QPEAK (cms) .330 .037 .367	LOWS IF AN TPEAK (hrs) 5.17 5.17 5.17	NY. R.V. (mm) 33.15 30.75 32.91		THAN THE (iii) PEAK FLOW	<pre>STORAGE (    DOES NO    Area    Total    (ha) =    (mm) =    (%) =    (m) =    (min)    (min) =    (min) = </pre>	<pre>COEFFICIENT. T INCLUDE BASEF</pre>	LOW IF ANY. Dir. Conn.(%) PERVIOUS (i) .02 1.50 2.00 40.00 .250 425.34 5.00 3.27 (ii) 5.00	
NOTE: PEAK FLOWS DO ADD HYD (0012)   1 + 2 = 3   ID1= 1 (0011): + ID2= 2 (0008): ID = 3 (0012): NOTE: PEAK FLOWS DO ** SIMULATION NUMBER:	AREA (ha) 6.76 7.52 0 NOT INCLU	DE BASEFI QPEAK (cms) .330 .037 .367	LOWS IF AN TPEAK (hrs) 5.17 5.17 5.17	NY. R.V. (mm) 33.15 30.75 32.91		THAN THE (iii) PEAK FLOW	<pre>STORAGE (    DOES NO    Area    Total    (ha) =    (mm) =    (%) =    (m) =    (min)    (min) =    (min) = </pre>	<pre>COEFFICIENT. T INCLUDE BASEF</pre>	LOW IF ANY. Dir. Conn.(%) PERVIOUS (i) .02 1.50 2.00 40.00 .250 425.34 5.00 3.27 (ii) 5.00 .27	
NOTE: PEAK FLOWS DO ADD HYD (0012)   1 + 2 = 3   ID1= 1 (0011): + ID2= 2 (0008): ============ ID = 3 (0012): NOTE: PEAK FLOWS DO *** SIMULATION NUMBER:	AREA (ha) 6.76 7.52 0 NOT INCLU	DE BASEFI QPEAK (cms) .330 .037 .367	LOWS IF AN TPEAK (hrs) 5.17 5.17 5.17	NY. R.V. (mm) 33.15 30.75 32.91		THAN THE (iii) PEAK FLOW CALIB   STANDHYD (0002) ID= 1 DT= 5.0 min   Surface Area Dep. Storage Average Slope Length Mannings n Max.Eff.Inten.( over Storage Coeff. Unit Hyd. Tpeak Unit Hyd. peak	STORAGE ( DOES NO Area Total (ha) = (mm) = (%) = (m) = = mm/hr) = (min) (min) = (min) = (cms) =	COEFFICIENT. T INCLUDE BASEF (ha) = .16 Imp(%) = 90.00 IMPERVIOUS .14 1.00 32.70 .013 190.85 5.00 1.01 (ii) 5.00 .34	LOW IF ANY. Dir. Conn.(%) PERVIOUS (i) .02 1.50 2.00 40.00 .250 425.34 5.00 3.27 (ii) 5.00 .27	= 90.00 *TOTALS*
NOTE: PEAK FLOWS DO ADD HYD (0012) 1 + 2 = 3 ID1= 1 (0011): + ID2= 2 (0008): ID = 3 (0012): NOTE: PEAK FLOWS DO ** SIMULATION NUMBER:	AREA (ha) 6.76 7.52 0 NOT INCLU	UDE BASEFI QPEAK (cms) .330 .037 .367 JDE BASEFI	LOWS IF AN TPEAK (hrs) 5.17 5.17 5.17 	NY. R.V. (mm) 33.15 30.75 32.91 NY.		THAN THE (iii) PEAK FLOW	STORAGE ( DOES NO Area Total (ha) = (mm) = (%) = (m) = = mm/hr) = (min) (min) = (min) = (cms) =	COEFFICIENT. T INCLUDE BASEF (ha) = .16 Imp(%) = 90.00 IMPERVIOUS .14 1.00 32.70 .013 190.85 5.00 1.01 (ii) 5.00 .34	LOW IF ANY. Dir. Conn.(%) PERVIOUS (i) .02 1.50 2.00 40.00 .250 425.34 5.00 3.27 (ii) 5.00 .27	= 90.00
NOTE: PEAK FLOWS DO ADD HYD (0012) 1 + 2 = 3 ID1= 1 (0011): + ID2= 2 (0008): ID = 3 (0012): NOTE: PEAK FLOWS DO ** SIMULATION NUMBER:	O NOT INCLU AREA (ha) 6.76 .76 7.52 O NOT INCLU 	<pre>JDE BASEFI QPEAK (cms) .330 .037367 JDE BASEFI JDE BASEFI</pre>	TPEAK (hrs) 5.17 5.17 5.17 .0WS IF AI	NY. R.V. (mm) 33.15 30.75 ====== 32.91 NY.		THAN THE (iii) PEAK FLOW	<pre>STORAGE (     DOES NO?     Area     Total     (ha) =     (mm) =     (%) =     (min)     (min) =     (min)     (min) =     (cms) =     (cms) = </pre>	<pre>COEFFICIENT. T INCLUDE BASEF (ha) = .16 Imp(%) = 90.00 IMPERVIOUS .14 1.00 1.00 32.70 .013 190.85 5.00 1.01 (ii) 5.00 .34 .08</pre>	Low IF ANY. Dir. Conn.(%) PERVIOUS (i) .02 1.50 2.00 40.00 .250 425.34 5.00 3.27 (ii) 5.00 .27 .01	= 90.00 *TOTALS* .083 (iii)
NOTE: PEAK FLOWS DO ADD HYD (0012) 1 + 2 = 3 ID1= 1 (0011): + ID2= 2 (0008): ID = 3 (0012): NOTE: PEAK FLOWS DO ************************************	O NOT INCLU AREA (ha) 6.76 .76 7.52 O NOT INCLU 	<pre>UDE BASEFI  QPEAK (cms) .330 .037 .367 JDE BASEFI</pre>	TPEAK (hrs) 5.17 5.17 5.17 .0WS IF AI	NY. R.V. (mm) 33.15 30.75 ====== 32.91 NY.		THAN THE (iii) PEAK FLOW CALIB STANDHYD (0002) ID= 1 DT= 5.0 min Surface Area Dep. Storage Average Slope Length Mannings n Max.Eff.Inten.( over Storage Coeff. Unit Hyd. Tpeak Unit Hyd. peak PEAK FLOW TIME TO PEAK	<pre>STORAGE (     DOES NO     Area     Total     (ha) =     (mm) =     (%) =     (min)     (min) =     (min)     (min) =     (cms) =     (cms) =     (hrs) = </pre>	<pre>COEFFICIENT. T INCLUDE BASEF (ha) = .16 Imp(%) = 90.00 IMPERVIOUS .14 1.00 1.00 32.70 .013 190.85 5.00 1.01 (ii) 5.00 .34 .08 .50</pre>	Low IF ANY. Dir. Conn.(%) PERVIOUS (i) .02 1.50 2.00 40.00 .250 425.34 5.00 3.27 (ii) 5.00 .27 .01 .50	= 90.00 *TOTALS* .083 (iii) .50
NOTE: PEAK FLOWS DO ADD HYD (0012) 1 + 2 = 3 ID1= 1 (0011): + ID2= 2 (0008): ID = 3 (0012): NOTE: PEAK FLOWS DO *** SIMULATION NUMBER: *** SIMULATION NUMBER:	O NOT INCLU AREA (ha) 6.76 7.52 O NOT INCLU ****** 5 ** ****** Filename: Y	<pre>UDE BASEFI  QPEAK (cms) .330 .037 .367 JDE BASEFI</pre>	TPEAK (hrs) 5.17 5.17 5.17 .0WS IF AI	NY. R.V. (mm) 33.15 30.75 ====== 32.91 NY.		THAN THE (iii) PEAK FLOW CALIB   STANDHYD (0002)   ID= 1 DT= 5.0 min   Surface Area Dep. Storage Average Slope Length Mannings n Max.Eff.Inten.( over Storage Coeff. Unit Hyd. Tpeak Unit Hyd. peak PEAK FLOW TIME TO PEAK RUNOFF VOLUME	<pre>STORAGE (     DOES NO?     Area     Total     (ha) =     (mm) =     (%) =     (m) =     (min) =     (min) =     (min) =     (cms) =     (cms) =     (hrs) =     (mm) =</pre>	<pre>COEFFICIENT. T INCLUDE BASEF (ha) = .16 Imp(%) = 90.00 IMPERVIOUS     .14     1.00     1.00     32.70     .013 190.85     5.00     1.01 (ii)     5.00     .34     .08     .50 55.80</pre>	LOW IF ANY. Dir. Conn.(%) PERVIOUS (i) .02 1.50 2.00 40.00 .250 425.34 5.00 3.27 (ii) 5.00 .27 .01 .50 50.56	= 90.00 *TOTALS* .083 (iii) .50 55.26
NOTE: PEAK FLOWS DO ADD HYD (0012) 1 + 2 = 3 ID1= 1 (0011): + ID2= 2 (0008): ====================================	O NOT INCLU AREA (ha) 6.76 7.52 O NOT INCLU ****** 5 ** ****** Filename: V 1 Comments: 1 RAIN   T1	UDE BASEFI QPEAK (cms) .330 .037 	TPEAK (hrs) 5.17 5.17 5.17 Sows IF Al Active\16 (Hydrolog)	NY. R.V. (mm) 33.15 30.75 ====== 32.91 NY. 0622415\Ar y\V02\Stor E RAIN	a ms\100Y1.STM   TIME RAIN	THAN THE (iii) PEAK FLOW CALIB   STANDHYD (0002)   ID= 1 DT= 5.0 min   Surface Area Dep. Storage Average Slope Length Mannings n Max.Eff.Inten.( over Storage Coeff. Unit Hyd. Tpeak Unit Hyd. Tpeak Unit Hyd. peak PEAK FLOW TIME TO PEAK RUNOFF VOLUME TOTAL RAINFALL RUNOFF COEFFICI	<pre>STORAGE (     DOES NO'     Area     Total     (ha) =     (mm) =     (%) =     (mm) =     (min)     (min) =     (min)     (min) =     (cms) =     (cms) =     (hrs) =     (mm) =     (mm) =     (mm) =     (mm) =     (mm) = </pre>	COEFFICIENT. T INCLUDE BASEF (ha) = .16 Imp(%) = 90.00 IMPERVIOUS .14 1.00 1.00 1.00 32.70 .013 190.85 5.00 1.01 (ii) 5.00 .34 .08 .50 55.80 56.80 .98	Low IF ANY. Dir. Conn.(%) PERVIOUS (i) .02 1.50 2.00 40.00 .250 425.34 5.00 3.27 (ii) 5.00 .27 .01 .50 50.56 56.80 .89	= 90.00 *TOTALS* .083 (iii) .50 55.26 56.80
NOTE: PEAK FLOWS DO ADD HYD (0012) 1 + 2 = 3 ID1= 1 (0011): + ID2= 2 (0008): ID = 3 (0012): NOTE: PEAK FLOWS DO *** SIMULATION NUMBER: *** SIMULATION NUMBER:	O NOT INCLU AREA (ha) 6.76 .76 7.52 O NOT INCLU 	UDE BASEFI QPEAK (cms) .330 .037 .367 JDE BASEFI 	TPEAK (hrs) 5.17 5.17 5.17 COWS IF AI COWS IF AI Active\160 (Hydrology Active\160 (Hydrology	NY. R.V. (mm) 33.15 30.75 32.91 NY. 06222415\Ar y\V02\Stor E RAIN s mm/hr	.a ms\100Y1.STM   TIME RAIN   hrs mm/hr	THAN THE (iii) PEAK FLOW CALIB   STANDHYD (0002) ID= 1 DT= 5.0 min   Surface Area Dep. Storage Average Slope Length Mannings n Max.Eff.Inten.( over Storage Coeff. Unit Hyd. Tpeak Unit Hyd. peak PEAK FLOW TIME TO PEAK RUNOFF VOLUME TOTAL RAINFALL	<pre>STORAGE (     DOES NO'     Area     Total     (ha) =     (mm) =     (%) =     (mm) =     (min)     (min) =     (min)     (min) =     (cms) =     (cms) =     (hrs) =     (mm) =     (mm) =     (mm) =     (mm) =     (mm) = </pre>	COEFFICIENT. T INCLUDE BASEF (ha) = .16 Imp(%) = 90.00 IMPERVIOUS .14 1.00 1.00 1.00 32.70 .013 190.85 5.00 1.01 (ii) 5.00 .34 .08 .50 55.80 56.80 .98	Low IF ANY. Dir. Conn.(%) PERVIOUS (i) .02 1.50 2.00 40.00 .250 425.34 5.00 3.27 (ii) 5.00 .27 .01 .50 50.56 56.80 .89	= 90.00 *TOTALS* .083 (iii) .50 55.26 56.80
NOTE: PEAK FLOWS DO ADD HYD (0012) 1 + 2 = 3 ID1= 1 (0011): + ID2= 2 (0008): ====================================	O NOT INCLU AREA (ha) 6.76 .76 7.52 O NOT INCLU 	UDE BASEFI QPEAK (cms) .330 .037 	LOWS IF AN TPEAK (hrs) 5.17 5.17 5.17 COWS IF AN Active\160 (Hydrolog) (N   TIM! nr   hr; 24   .75	NY. R.V. (mm) 33.15 30.75 32.91 NY. 0622415\Ar y\V02\Stor E RAIN s mm/hr 5 54.53	a ms\100Y1.STM   TIME RAIN	THAN THE (iii) PEAK FLOW CALIB     STANDHYD (0002)   ID= 1 DT= 5.0 min   Surface Area Dep. Storage Average Slope Length Mannings n Max.Eff.Inten.( over Storage Coeff. Unit Hyd. Tpeak Unit Hyd. peak DEAK FLOW TIME TO PEAK RUNOFF VOLUME TOTAL RAINFALL RUNOFF COEFFICI	<pre>STORAGE (     DOES NO?     Area     Total     (ha) =     (mm) =     (%) =     (m) =     (min) =     (min) =     (min) =     (cms) =     (cms) =     (hrs) =     (hrs) =     (mm) =     (mm) =     ENT = GE COEFF</pre>	COEFFICIENT. T INCLUDE BASEF (ha) = .16 Imp(%) = 90.00 IMPERVIOUS .14 1.00 1.00 1.00 32.70 .013 190.85 5.00 1.01 (ii) 5.00 .34 .08 .50 55.80 56.80 .98	LOW IF ANY. Dir. Conn.(%) PERVIOUS (i) .02 1.50 2.00 40.00 .250 425.34 5.00 3.27 (ii) 5.00 .27 .01 .50 50.56 56.80 .89 AN TIME STEP!	= 90.00 *TOTALS* .083 (iii) .50 55.26 56.80

<pre>(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT. (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY. CALIB</pre>	<pre>***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:         CN* = 98.0 Ia = Dep. Storage (Above) (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL         THAN THE STORAGE COEFFICIENT.</pre>
NASHYD       (0001)       Area       (ha) =       4.42       Curve Number       (CN) =       98.0         ID=       1       DT=10.0       min       Ia       (mm) =       5.00       # of Linear Res.(N) =       3.00	(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
NOTE: RAINFALL WAS TRANSFORMED TO 10.0 MIN. TIME STEP.	CALIB                 NASHYD       (0008)       Area       (ha) =       .76       Curve Number       (CN) = 98.0         ID= 1       DT=10.0       min       Ia       (mm) =       5.00       # of Linear Res.(N) =       3.00          U.H.       Tp(hrs) =       .20
TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN         TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN         hrs       mm/hr       hrs       mm/hr       hrs       mm/hr       hrs       mm/hr         .167       3.41       .500       146.55       .833       44.30       1.17       3.41         .333       37.49       .667       92.02       1.000       13.63       1.17	NOTE: RAINFALL WAS TRANSFORMED TO 10.0 MIN. TIME STEP.
	TRANSFORMED HYETOGRAPH
Unit Hyd Qpeak (cms) = .844 PEAK FLOW (cms) = 1.012 (i) TIME TO PEAK (hrs) = .667	TIME         RAIN         TIME         RAIN         TIME         RAIN         TIME         RAIN           hrs         mm/hr         hrs         mm/hr         hrs         mm/hr         hrs         mm/hr           .167         3.41         .500         146.55         .833         44.30         1.17         3.41           .333         37.49         .667         92.02         1.000         13.63
RUNOFF VOLUME(mm) =45.866TOTAL RAINFALL(mm) =56.802RUNOFF COEFFICIENT=.807	Unit Hyd Qpeak (cms)= .145
(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.	PEAK FLOW $(cms) = .174$ (i) TIME TO PEAK $(hrs) = .667$ RUNOFF VOLUME $(mm) = 45.865$ TOTAL RAINFALL $(mm) = 56.802$ RUNOFF COEFFICIENT = .807
CALIB	
STANDHYD     (0007)     Area     (ha) = .63       ID= 1 DT= 5.0 min     Total Imp(%) = 75.00     Dir. Conn.(%) = 75.00	(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
STANDHYD     (0007)     Area     (ha) =     .63       ID= 1 DT= 5.0 min     Total Imp(%) =     75.00     Dir. Conn.(%) =     75.00	
STANDHYD (0007)     Area (ha) = .63       ID= 1 DT= 5.0 min     Total Imp(%) = 75.00 Dir. Conn.(%) = 75.00	
STANDHYD (0007)       Area (ha) = .63         ID= 1 DT= 5.0 min       Total Imp(%) = 75.00 Dir. Conn.(%) = 75.00         IMPERVIOUS PERVIOUS (i)	
STANDHYD (0007)       Area (ha) = .63         ID= 1 DT= 5.0 min       Total Imp(%) = 75.00 Dir. Conn.(%) = 75.00         IMPERVIOUS PERVIOUS (i)         Surface Area (ha) = .47 .16         Dep. Storage (mm) = 1.00 1.50         Average Slope (%) = 1.00 2.00	ADD HYD (0003)     1 + 2 = 3   AREA QPEAK TPEAK R.V.
STANDHYD (0007)       Area (ha) = .63         ID= 1 DT= 5.0 min       Total Imp(%) = 75.00 Dir. Conn.(%) = 75.00         Surface Area (ha) = .47 .16         Dep. Storage (mm) = 1.00 1.50         Average Slope (%) = 1.00 2.00         Length (m) = 64.80 40.00	ADD HYD (0003)     1 + 2 = 3   AREA QPEAK TPEAK R.V. (ha) (cms) (hrs) (mm)
STANDHYD (0007)       Area (ha) = .63         ID= 1 DT= 5.0 min       Total Imp(%) = 75.00 Dir. Conn.(%) = 75.00         IMPERVIOUS       PERVIOUS (i)         Surface Area (ha) = .47 .16         Dep. Storage (mm) = 1.00 1.50         Average Slope (%) = 1.00 2.00         Length (m) = 64.80 40.00         Mannings n       = .013 .250	ADD HYD (0003)     1 + 2 = 3   AREA QPEAK TPEAK R.V.
STANDHYD (0007)       Area (ha) = .63         ID= 1 DT= 5.0 min       Total Imp(%) = 75.00 Dir. Conn.(%) = 75.00         Surface Area (ha) = .47 .16         Dep. Storage (mm) = 1.00 1.50         Average Slope (%) = 1.00 2.00         Length (m) = 64.80 40.00	ADD HYD (0003)     1 + 2 = 3   AREA QPEAK TPEAK R.V. (ha) (cms) (hrs) (mm) ID1= 1 (0002): .16 .083 .50 55.26
STANDHYD (0007)       Area (ha) = .63         ID= 1 DT= 5.0 min       Total Imp(%) = 75.00 Dir. Conn.(%) = 75.00         IMPERVIOUS       PERVIOUS (i)         Surface Area (ha) = .47 .16         Dep. Storage (mm) = 1.00 1.50         Average Slope (%) = 1.00 2.00         Length (m) = 64.80 40.00         Mannings n       = .013 .250	ADD HYD (0003)     1 + 2 = 3   AREA QPEAK TPEAK R.V. (ha) (cms) (hrs) (mm) ID1= 1 (0002): .16 .083 .50 55.26 + ID2= 2 (0001): 4.42 1.012 .67 45.87 
STANDHYD (0007)       Area (ha) = .63         ID= 1 DT= 5.0 min       Total Imp(%) = 75.00 Dir. Conn.(%) = 75.00         IMPERVIOUS PERVIOUS (i)         Surface Area (ha) = .47 .16         Dep. Storage (mm) = 1.00 1.50         Average Slope (%) = 1.00 2.00         Length (m) = 64.80 40.00         Mannings n = .013 .250         NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.         TRANSFORMED HYETOGRAPH         TIME RAIN       TIME RAIN       TIME RAIN         hrs mm/hr       hrs mm/hr       hrs mm/hr         .083       .00       .417 102.24       .750 54.53	ADD HYD (0003) 1 + 2 = 3 AREA QPEAK TPEAK R.V. (ha) (cms) (hrs) (mm) ID1= 1 (0002): .16 .083 .50 55.26 + ID2= 2 (0001): 4.42 1.012 .67 45.87 ID = 3 (0003): 4.58 1.048 .67 46.19 NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
STANDHYD (0007)       Area (ha) = .63         ID= 1 DT= 5.0 min       Total Imp(%) = 75.00 Dir. Conn.(%) = 75.00         IMPERVIOUS PERVIOUS (i)         Surface Area (ha) = .47 .16         Dep. Storage (mm) = 1.00 1.50         Average Slope (%) = 1.00 2.00         Length (m) = 64.80 40.00         Mannings n = .013 .250         NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.         TIME RAIN TIME RAIN TIME RAIN TIME RAIN Nrs mm/hr hrs mm/hr         .083 .00 (.417 102.24 (.750 54.53 (1.08 6.82 .167 6.82 (.500 190.85 (.833 34.08 ))	ADD HYD (0003)   1 + 2 = 3   AREA QPEAK TPEAK R.V. ID1= 1 (0002): .16 .083 .50 55.26 + ID2= 2 (0001): 4.42 1.012 .67 45.87 ID = 3 (0003): 4.58 1.048 .67 46.19 NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
STANDHYD (0007)       Area (ha) = .63         ID= 1 DT= 5.0 min       Total Imp(%) = 75.00 Dir. Conn.(%) = 75.00         IMPERVIOUS PERVIOUS (i)         Surface Area (ha) = .47 .16         Dep. Storage (mm) = 1.00 1.50         Average Slope (%) = 1.00 2.00         Length (m) = 64.80 40.00         Mannings n = .013 .250         NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.         TRANSFORMED HYETOGRAPH         TIME RAIN hrs mm/hr         Aver mm/hr         hrs mm/hr         hrs mm/hr         hrs mm/hr         .00         .107         .083         .250         20.45         .250         .250	ADD HYD (0003)     1 + 2 = 3   AREA QPEAK TPEAK R.V. 
STANDHYD (0007)       Area (ha) = .63         ID= 1 DT= 5.0 min       Total Imp(%) = 75.00 Dir. Conn.(%) = 75.00         IMPERVIOUS PERVIOUS (i)         Surface Area (ha) = .47 .16         Dep. Storage (mm) = 1.00 1.50         Average Slope (%) = 1.00 2.00         Length (m) = 64.80 40.00         Mannings n = .013 .250         NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.         TIME RAIN TIME RAIN TIME RAIN TIME RAIN Nrs mm/hr hrs mm/hr         .083 .00 4.17 102.24       .750 54.53 1.08 6.82         .167 6.82       .500 190.85       .833 34.08	ADD HYD (0003)     1 + 2 = 3   AREA QPEAK TPEAK R.V. 
STANDHYD (0007)       Area (ha) = .63         ID= 1 DT= 5.0 min       Total Imp(%) = 75.00       Dir. Conn.(%) = 75.00         IMPERVIOUS       PERVIOUS (i)         Surface Area (ha) = .47       .16         Dep. Storage (mm) = 1.00       1.50         Average Slope (%) = 1.00       2.00         Length (m) = 64.80       40.00         Mannings n = .013       .250         NOTE: RAINFALL WAS TRANSFORMED TO       5.0 MIN. TIME STEP.         TIME RAIN   TIME RAIN   TIME RAIN   TIME RAIN   Ars mm/hr   hrs mm/hr         .083       .00       .417       102.24       .750       54.53       1.08       6.82         .167       6.82       .500       190.85       .833       34.08       .250       20.45       .583       102.24       .917       20.45       .333       54.53       .667       81.79       1.000       6.82       .333       54.53       .667       81.79       1.000       6.82       .333       .667       81.79       1.000       6.82       .333       .667       81.79       1.000       6.82       .333       .54.53       .667       81.79       1.000       6.82       .333       .667       81.79       1.000       6.82       .333       .667	ADD HYD (0003)     1 + 2 = 3   AREA QPEAK TPEAK R.V. 
STANDHYD (0007)       Area (ha) = .63         ID= 1 DT= 5.0 min       Total Imp(%) = 75.00 Dir. Conn.(%) = 75.00         IMPERVIOUS PERVIOUS (i)         Surface Area (ha) = .47 .16         Dep. Storage (mm) = 1.00 1.50         Average Slope (%) = 1.00 2.00         Length (m) = 64.80 40.00         Mannings n = .013 .250         NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.         TRANSFORMED HYETOGRAPH         TIME RAIN hrs mm/hr         Aver mm/hr         hrs mm/hr         hrs mm/hr         hrs mm/hr         .00         .107         .083         .250         20.45         .250         .250	ADD HYD (0003)   1 + 2 = 3   AREA QPEAK TPEAK R.V. ID1= 1 (0002):16 .083 .50 55.26 + ID2= 2 (0001): 4.42 1.012 .67 45.87 ID = 3 (0003): 4.58 1.048 .67 46.19 NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY. ADD HYD (0010)   1 + 2 = 3   AREA QPEAK TPEAK R.V. ID1= 1 (0006): 1.55 .506 .50 52.66
STANDHYD (0007)       Area (ha) = .63         ID= 1 DT= 5.0 min       Total Imp(%) = 75.00       Dir. Conn.(%) = 75.00         IMPERVIOUS       PERVIOUS (i)         Surface Area (ha) = .47       .16         Dep. Storage (mm) = 1.00       1.50         Average Slope (%) = 1.00       2.00         Length (m) = 64.80       40.00         Mannings n = .013       .250         NOTE: RAINFALL WAS TRANSFORMED TO       5.0 MIN. TIME STEP.         TIME RAIN TIME RAIN TIME RAIN TIME RAIN N''         hrs mm/hr       hrs mm/hr       hrs mm/hr         hrs mm/hr       hrs mm/hr       hrs mm/hr       hrs mm/hr         .083       .00       .417       102.24       .750       54.53       1.08       6.82         .250       20.45       .583       102.24       .917       20.45       .833       34.08         .250       20.45       .583       102.24       .917       20.45       .833       54.53       .841.78	ADD HYD (0003)   1 + 2 = 3   AREA QPEAK TPEAK R.V. ID1= 1 (0002):16 .083 .50 55.26 + ID2= 2 (0001): 4.42 1.012 .67 45.87 ID = 3 (0003): 4.58 1.048 .67 46.19 NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY. ADD HYD (0010)   1 + 2 = 3   AREA QPEAK TPEAK R.V. ID1= 1 (0006): 1.55 .506 .50 52.66
STANDHYD (0007)       Area (ha) = .63         ID= 1 DT= 5.0 min       Total Imp(%) = 75.00       Dir. Conn.(%) = 75.00         IMPERVIOUS       PERVIOUS (i)         Surface Area (ha) = .47       .16         Dep. Storage (mm) = 1.00       1.50         Average Slope (%) = 1.00       2.00         Length (m) = 64.80       40.00         Mannings n = .013       .250         NOTE: RAINFALL WAS TRANSFORMED TO       5.0 MIN. TIME STEP.         TRANSFORMED HYETOGRAPH         TIME RAIN   TIME RAIN   TIME RAIN   TIME RAIN   hrs mm/hr         .083       .00   .417 102.24   .750 54.53   1.08 6.82         .167       6.82   .500 190.85   .833 34.08         .250       20.45   .583 102.24   .917 20.45   .333 54.53   .667 81.79   1.000 6.82           Max.Eff.Inten.(mm/hr) = 190.85 141.78       over (min) 5.00 10.00         Storage Coeff. (min) = 1.52 (ii) 5.03 (ii)       5.03 (ii)         Unit Hyd. Tpeak (min) = 5.00 10.00       10.00	ADD HYD (0003)     1 + 2 = 3   AREA QPEAK TPEAK R.V. (ha) (cms) (hrs) (mm) IDl= 1 (0002): .16 .083 .50 55.26 + ID2= 2 (0001): 4.42 1.012 .67 45.87 
STANDHYD (0007)       Area (ha) = .63         ID= 1 DT= 5.0 min       Total Imp(%) = 75.00       Dir. Conn.(%) = 75.00         IMPERVIOUS       PERVIOUS (i)         Surface Area (ha) = .47       .16         Dep. Storage (mm) = 1.00       1.50         Average Slope (%) = 1.00       2.00         Length (m) = 64.80       40.00         Mannings n = .013       .250         NOTE: RAINFALL WAS TRANSFORMED TO       5.0 MIN. TIME STEP.         TIME RAIN TIME RAIN TIME RAIN TIME RAIN hrs mm/hr hs 6.82         Max.Eff.Inten.(mm/hr) = 190.85         Max.Eff.Inten.(mm/hr) = 190.85         Max.Eff.Inten.(mm/hr) = 152 (ii)         Max.Eff. (min) = 1.52 (ii)         Total 1.52 (ii)         Max.Eff.Inten.(mm/hr) = 190.85         141.78         over (min)         NOT         Adver (min) = 1.52 (ii)         Max.Eff.Inten.(mm/hr) = 190.85         141.78         over (min)         NOT         Not 10.00         Unit Hyd. Tpeak (min) = 5.00	$\begin{vmatrix} ADD HYD & (0003) \\ 1 + 2 = 3 \\ (ha) & (cms) & (hrs) & (mm) \\ ID1 = 1 & (0002) :16 & .083 & .50 & 55.26 \\ + & ID2 = 2 & (0001) : & 4.42 & 1.012 & .67 & 45.87 \\ ID2 = 2 & (0003) : & 4.58 & 1.048 & .67 & 46.19 \\ \hline \\ NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY. \\ \end{vmatrix}$
STANDHYD (0007)       Area (ha)= .63         ID= 1 DT= 5.0 min       Total Imp(%)= 75.00 Dir. Conn.(%)= 75.00         IMPERVIOUS PERVIOUS (i)         Surface Area (ha)= .47 .16         Dep. Storage (mm)= 1.00 1.50         Average Slope (%)= 1.00 2.00         Length (m)= 64.80 40.00         Mannings n = .013 .250         NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.         TIME RAIN   TIME RAIN   TIME RAIN   TIME RAIN   hrs mm/hr         hrs mm/hr       hrs mm/hr       hrs mm/hr         hrs mm/hr       hrs mm/hr       hrs mm/hr         .083 .00       .417 102.24   .750 54.53   1.08 6.82       .833 34.08         .250 20.45       .583 102.24   .917 20.45   .333 54.53   .667 81.79   1.000 6.82           Max.Eff.Inten.(mm/hr)= 190.85 141.78       over (min) 5.00 10.00         Storage Coeff. (min)= 1.52 (ii) 5.03 (ii)       Unit Hyd. Tpeak (min)= 5.00 10.00         Unit Hyd. peak (cms)= .33 .16       *TOTALS*	$\begin{vmatrix} ADD HYD & (0003) \\ 1 + 2 = 3 \\ (ha) & (cms) & (hrs) & (mm) \\ ID1 = 1 & (0002) : & .16 & .083 & .50 & 55.26 \\ + & ID2 = 2 & (0001) : & 4.42 & 1.012 & .67 & 45.87 \\ \hline \\ ID2 = 3 & (0003) : & 4.58 & 1.048 & .67 & 46.19 \\ \hline \\ NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY. \\ \hline \\ \hline \\ \hline \\ ADD HYD & (0010) \\ 1 + 2 = 3 \\ \hline \\ ID1 = 1 & (0006) : & 1.55 & .506 & .50 & 52.66 \\ + & ID2 = 2 & (0003) : & 4.58 & 1.048 & .67 & 46.19 \\ \hline \\ $
STANDHYD (0007)       Area (ha)= .63         ID= 1 DT= 5.0 min       Total Imp(%)= 75.00 Dir. Conn.(%)= 75.00         IMPERVIOUS       PERVIOUS (i)         Surface Area (ha)=       .47 .16         Dep. Storage (mm)=       1.00 1.50         Average Slope (%)=       1.00 2.00         Length (m)=       64.80 40.00         Mannings n       = .013 .250         NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.         TRANSFORMED HYETOGRAPH         TIME RAIN       TIME RAIN         Mrs mm/hr       hrs mm/hr         hrs mm/hr       hrs mm/hr         .083 .00       .417 102.24         .250 20.45       .583 102.24         .333 54.53       1.667 81.79         .333 54.53       .667 81.79         .333 54.53       .667 81.79         Max.Eff.Inten.(mm/hr)=       190.85 141.78         over (min)       5.00 10.00         Storage Coeff. (min)=       .52 (ii) 5.03 (ii)         Unit Hyd. Tpeak (min)=       .33 .16         *TOTALS*       *TOTALS*	$\begin{vmatrix} ADD HYD & (0003) \\ 1 + 2 = 3 \\ (ha) & (cms) & (hrs) & (mm) \\ ID1 = 1 & (0002) :16 & .083 & .50 & 55.26 \\ + & ID2 = 2 & (0001) : & 4.42 & 1.012 & .67 & 45.87 \\ \hline \\ ID = 3 & (0003) : & 4.58 & 1.048 & .67 & 46.19 \\ \hline \\ NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY. \\ \hline \\ \hline \\ I + 2 = 3 \\ (ha) & (cms) & (hrs) & (mm) \\ ID1 = 1 & (0006) : & 1.55 & .506 & .50 & 52.66 \\ + & ID2 = 2 & (0003) : & 4.58 & 1.048 & .67 & 46.19 \\ \hline \\ ID1 = 1 & (0006) : & 1.55 & .506 & .50 & 52.66 \\ + & ID2 = 2 & (0003) : & 4.58 & 1.048 & .67 & 46.19 \\ \hline \\ ID = 3 & (0010) : & 6.13 & 1.454 & .67 & 47.83 \\ \hline \end{aligned}$
STANDHYD (0007)       Area (ha)= .63         ID= 1 DT= 5.0 min       Total Imp(%) = 75.00 Dir. Conn.(%) = 75.00         IMPERVIOUS       PERVIOUS (i)         Surface Area (ha)= .47 .16         Dep. Storage (mm)= 1.00 1.50         Average Slope (%) = 1.00 2.00         Length (m)= 64.80 40.00         Mannings n = .013 .250         NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.         TIME RAIN   TIME RAIN   TIME RAIN   TIME RAIN   hrs mm/hr   hrs mm/hr   hrs mm/hr   .083 .00   .417 102.24   .750 54.53   1.08 6.82         .167 6.82   .500 190.85   .833 34.08   .250 20.45   .583 102.24   .917 20.45   .333 54.53   .667 81.79   1.000 6.82           Max.Eff.Inten.(mm/hr) = 190.85 141.78 over (min) 5.00 10.00         Storage Coeff. (min)= 1.52 (ii) 5.03 (ii)         Unit Hyd. Tpeak (min)= 5.00 10.00         Storage Coeff. (min)= 1.52 (ii) 5.03 (ii)         Unit Hyd. peak (ccs)= .33 .16         *TOTALS*         PEAK FLOW (ccms)= .25 .06 .286 (iii)         TIME TO PEAK (hrs)= .50 .58 .50	ADD HYD (0003)     1 + 2 = 3   AREA QPEAK TPEAK R.V. 
STANDHYD (0007)       Area (ha)= .63         ID= 1 DT= 5.0 min       Total Imp(%)= 75.00 Dir. Conn.(%)= 75.00         IMPERVIOUS PERVIOUS (i)         Surface Area (ha)= .47 .16         Dep. Storage (mm)= 1.00 1.50         Average Slope (%)= 1.00 2.00         Length (m)= 64.80 40.00         Mannings n = .013 .250         NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.         TRANSFORMED HYETOGRAPH         TIME RAIN       TIME RAIN   TIME RAIN   TIME RAIN   hrs mm/hr         hrs mm/hr       hrs mm/hr       hrs mm/hr         .083 .00       .417 102.24       .750 54.53   1.08 6.82         .167 6.82       .500 190.85       .833 34.08           .250 20.45       .583 102.24   .917 20.45         .333 54.53   .667 81.79   1.000 6.82           Max.Eff.Inten.(mm/hr)=       190.85 141.78       .82           Max.Eff.Inten.(mm/hr)=       190.85 141.78       .83 3.16         ver (min)       5.00 10.00       .82           Max.Eff.Inten.(mm/hr)=       .33 .16       *TOTALS*         PEAK FLOW (cms)=       .25 .06 .286 (iii)       .286 (iii)	ADD HYD (0003)     1 + 2 = 3   AREA QPEAK TPEAK R.V. 

		ua) (cm		hrs)	(mm)							ED HYETOGI			
ID1= 1 (001					17.83			TIME	RAIN	TIME	RAIN		RAIN	TIME	
+ ID2= 2 (000		63 .28			54.49			hrs	mm/hr	hrs	mm/hr		mm/hr	hrs	ľ
======================================								.083	.00	3.167	5.19		11.24	9.33	
ID = 3 (001	.1): 6.	76 1.60		.67 4	18.45			.167	.00	3.250	5.19		6.06	9.42	
								.250	.00	3.333	14.71		6.06	9.50	
NOTE: PEAK FLOW	IS DO NOT I	NCLUDE BA	ASEFLOWS	IF ANY.				.333	.86	3.417	14.71		6.06	9.58	
								.417	.86	3.500	14.71	1	6.06	9.67	
								.500	.86	3.583	14.71		6.06	9.75	
								.583	.86	3.667	14.71	1	6.06	9.83	
								.667	.86	3.750	14.71	1	6.06	9.92	
ADD HYD (0012)								.750	.86	3.833	14.71		6.06	10.00	
1 + 2 = 3		EA QPE		PEAK	R.V.			.833	.86	3.917	14.71		6.06	10.08	
		ua) (cm		hrs)	(mm)			.917	.86	4.000	14.71	1	6.06	10.17	
ID1= 1 (001		76 1.60			18.45			1.000	.86	4.083	14.71	1	6.06	10.25	
+ ID2= 2 (000	. (8):	76 .17	/4 ,	.67 4	15.87			1.083	.86	4.167	14.71		6.06	10.33	
								1.167	.86	4.250	14.71		3.46	10.42	
ID = 3 (001	.2): 7.	52 1.78	33	.67 4	18.19			1.250	.86	4.333	39.79	1	3.46	10.50	
								1.333	.86	4.417	39.79	1	3.46	10.58	
NOTE: PEAK FLOW	IS DO NOT I	NCLUDE BA	ASEFLOWS	IF ANY				1.417	.86	4.500	39.79		3.46	10.67	
								1.500	.86	4.583	39.79	1	3.46	10.75	
								1.583	.86	4.667	39.79	1	3.46	10.83	
* * * * * * * * * * * * * * * * * * * *	*******							1.667	.86	4.750	39.79	7.833	3.46	10.92	
** SIMULATION NUMBE								1.750	.86	4.833	39.79	7.917	3.46	11.00	
*****	*******							1.833	.86	4.917	39.79	8.000	3.46	11.08	
								1.917	.86	5.000	39.79	8.083	3.46	11.17	
								2.000	.86	5.083	39.79	8.167	3.46	11.25	
								2.083	.86	5.167	39.79	8.250	3.46	11.33	
READ STORM	Filenam	ne: V:\016	506\Activ	ze\16062	22415\Ana	a		2.167	.86	5.250	39.79	8.333	1.73	11.42	
İ		lysis\	\SWM\Hydı	cology\\	/02\Stori	ms\100Y1	2.STM	2.250	.86	5.333	11.24	8.417	1.73	11.50	
Ptotal= 86.48 mm	Comment	s: 100yr/	/12hr					2.333	5.19	5.417	11.24	8.500	1.73	11.58	
								2.417	5.19	5.500	11.24	8.583	1.73	11.67	
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN	2.500	5.19	5.583	11.24	8.667	1.73	11.75	
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	2.583	5.19	5.667	11.24		1.73	11.83	
.25	.00	3.50	14.71	6.75	6.06	10.00	.86	2.667	5.19	5.750	11.24	8.833	1.73	11.92	
.50	.86	3.75	14.71	7.00	6.06	10.25	.86	2.750	5.19	5.833	11.24	8.917	1.73	12.00	
.75	.86	4.00	14.71	7.25	6.06	10.50	.86	2.833	5.19	5.917	11.24	9.000	1.73	12.08	
1.00	.86	4.25	14.71	7.50	3.46	10.75	.86	2.917	5.19	6.000	11.24	9.083	1.73	12.17	
1.25	.86	4.50	39.79	7.75	3.46	11.00	.86	3.000	5.19	6.083	11.24	9.167	1.73	12.25	
1.50		4.75	39.79	8.00	3.46	11.25	.86	3.083	5.19	6.167	11.24	9.250	1.73	İ.	
1.75			39.79	8.25	3.46	11.50	.86								
2.00			39.79	8.50	1.73	11.75	.86	Max.Eff.Inten.(mm	u/hr)=	39.79		39.49			
2.25			11.24	8.75	1.73	12.00	.86	over		5.00		15.00			
2.50		5.75	11.24	9.00	1.73	12.25	.86		(min) =	3.73	(ii)	13.97 (i:	i)		
2.75			11.24	9.25	1.73	i		Unit Hyd. Tpeak		5.00		15.00			
3.00			11.24	9.50	.86	i			(cms) =	.25		.08			
3.25		6.50	6.06	9.75	.86	1							*TO	TALS*	
								PEAK FLOW	(cms) =	.07		.10		.169 (ii	i)
									(hrs) =	5.08		5.25		5.25	
								RUNOFF VOLUME	(mm) =	85.48		80.09		2.24	
								TOTAL RAINFALL	(mm) =	86.48		86.48		6.48	
CALIB								RUNOFF COEFFICIEN		.99		.93		.95	
STANDHYD (0006)	Area	(ha) = 1	1.55												
D= 1 DT= 5.0 min		$v_{p}(%) = 40$		ir. Conı	n.(%)=	40.00		***** WARNING: STORAGE	COEFF.	IS SMALLF	ER THAN	TIME STE	P!		
	т	MPERVIOUS	S PER'	VIOUS (i	i)			(i) CN PROCEDUR	LE SELECT	ED FOR PF	ERVIOUS	LOSSES:			
Surface Area	(ha) =	.62		.93				CN* = 98		= Dep. 5					
Dep. Storage	(mm) =	1.00		1.50				(ii) TIME STEP (							
Average Slope	(%) =	1.00		2.00				THAN THE ST				- <u>z</u> - · · · ·			
TTOTAJO DIOPO	(m) =	101.70		0.00				(iii) PEAK FLOW D				W TF ANY			
Lenath	\/ -							(III) IDIA IDOW I	020 101		21.0011.001				
Length Mannings n	=	.013		.250											

STANDHYD (0002)    ID= 1 DT= 5.0 min	Total Ir			Conn.(%)=	90.00
		IMPERVIOUS	DEDVIOII	S (i)	
Surface Area			.02	5 (1)	
Dep. Storage	(11d) = (mm) =	1 00	1 50		
Average Slope	(8) -	1 00	2 00		
Average Slope Length	(8) = (m) =	32 70	40.00		
Mannings n	(111) =	012	40.00		
Mainifings	-	.015	.250		
Max.Eff.Inten.(	mm/hr)=	39 79	118 53		
	(min)	5.00			
Storage Coeff.	(min) =				
Unit Hvd Tpeak	(min) =	5 00	10 00	(==)	
Unit Hyd. Tpeak Unit Hyd. peak	(cms) =	32	15		
onito nyat poan	(Olido)	102	.10		)TALS*
PEAK FLOW	(cms) =	.02	.00		
PEAK FLOW TIME TO PEAK	(hrs) =	4.67	5.25		.018 (iii) 5.25
RUNOFF VOLUME	(mm) =	85.48	80.09	ş	34.93
TOTAL RAINFALL	(mm) =	86.48	86.48	5	36.48
TOTAL RAINFALL RUNOFF COEFFICI	ENT =	.99	.93		.98
**** WARNING: STORA					
(i) CN PROCED					
		= Dep. Stor			
(ii) TIME STEP			R OR EQUAI	L	
	STORAGE CON				
(iii) PEAK FLOW	DOES NOT 1	INCLUDE BASE	FLOW IF AN	NY.	
CALIB	3	(1)	o	27	(771) 00 0
NASHYD (0001)					
ID= 1 DT=10.0 min				Linear Res.	(N) = 3.00
	0.н. тр	(nrs) = .2	0		
NOTE: RAIN	FALL WAS TH	RANSFORMED I	O 10.0 M	IN. TIME ST	TEP.
		TRANSE			
CT T 3.4	יידגם ס				
11M. hr		hrs mn			TIME RAIN
					9.67 86

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
.167	.00	3.333	9.95	6.500	6.06	9.67	.86
.333	.43	3.500	14.71	6.667	6.06	9.83	.86
.500	.86	3.667	14.71	6.833	6.06	10.00	.86
.667	.86	3.833	14.71	7.000	6.06	10.17	.86
.833	.86	4.000	14.71	7.167	6.06	10.33	.86
1.000	.86	4.167	14.71	7.333	4.76	10.50	.86
1.167	.86	4.333	27.25	7.500	3.46	10.67	.86
1.333	.86	4.500	39.79	7.667	3.46	10.83	.86
1.500	.86	4.667	39.79	7.833	3.46	11.00	.86
1.667	.86	4.833	39.79	8.000	3.46	11.17	.86
1.833	.86	5.000	39.79	8.167	3.46	11.33	.86
2.000	.86	5.167	39.79	8.333	2.60	11.50	.86
2.167	.86	5.333	25.52	8.500	1.73	11.67	.86
2.333	3.02	5.500	11.24	8.667	1.73	11.83	.86
2.500	5.19	5.667	11.24	8.833	1.73	12.00	.86
2.667	5.19	5.833	11.24	9.000	1.73	12.17	.86
2.833	5.19	6.000	11.24	9.167	1.73	12.33	.43
3.000	5.19	6.167	11.24	9.333	1.30		
3.167	5.19	6.333	8.65	9.500	.86		

Unit Hyd Qpeak (cms) = .844

 PEAK FLOW
 (cms) =
 .469 (i)

 TIME TO PEAK
 (hrs) =
 5.167

 RUNOFF VOLUME
 (mm) =
 74.616

 TOTAL RAINFALL
 (mm) =
 86.480

 RUNOFF COEFFICIENT
 .863

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

\_\_\_\_\_ -----CALIB STANDHYD (0007) Area (ha) = .63 |ID= 1 DT= 5.0 min | Total Imp(%) = 75.00 Dir. Conn.(%) = 75.00 -----IMPERVIOUS PERVIOUS (i) (ha) = .47 .16 Surface Area (mm) = 1.00 1.50 Dep. Storage  $\begin{array}{c} (\%) = & 1.00 & 2.00 \\ (\%) = & 64.80 & 40.00 \\ = & .013 & .250 \end{array}$ Average Slope Length Mannings n

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

		TRA	ANSFORMEI	) HYETOGI	2DH	_	
TIME	RAIN	TIME	RAIN	TIME	RAIN		RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
.083	.00	3.167	5.19	6.250	11.24	9.33	.86
.167	.00	3.250	5.19	6.333	6.06	9.42	.86
.250	.00	3.333	14.71	6.417	6.06	9.50	.86
.333	.86	3.417	14.71	6.500	6.06	9.58	.86
.417	.86	3.500	14.71	6.583	6.06	9.67	.86
.500	.86	3.583	14.71	6.667	6.06	9.75	.86
.583	.86	3.667	14.71	6.750	6.06	9.83	.86
.667	.86	3.750	14.71	6.833	6.06	9.92	.86
.750	.86	3.833	14.71	6.917	6.06	10.00	.86
.833	.86	3.917	14.71	7.000	6.06	10.08	.86
.917	.86	4.000	14.71	7.083	6.06	10.17	.86
1.000	.86	4.083	14.71	7.167	6.06	10.25	.86
1.083	.86	4.167		7.250	6.06	10.33	.86
1.167	.86	4.250	14.71	7.333	3.46	10.42	.86
1.250	.86	4.333	39.79	7.417	3.46	10.50	.86
1.333	.86	4.417	39.79	7.500	3.46	10.58	.86
1.417	.86	4.500	39.79	7.583	3.46	10.67	.86
1.500	.86	4.583	39.79	7.667	3.46	10.75	.86
1.583	.86	4.667	39.79	7.750	3.46	10.83	.86
1.667	.86	4.750	39.79	7.833	3.46	10.92	.86
1.750	.86	4.833	39.79	7.917	3.46	11.00	.86
1.833	.86	4.917	39.79	8.000	3.46	11.08	.86
1.917	.86	5.000	39.79	8.083	3.46	11.17	.86
2.000	.86	5.083	39.79	8.167	3.46	11.25	.86
2.083	.86	5.167	39.79	8.250	3.46	11.33	.86
2.167	.86	5.250	39.79	8.333	1.73	11.42	.86
2.250	.86	5.333	11.24	8.417	1.73	11.50	.86
2.333	5.19	5.417	11.24	8.500	1.73	11.58	.86
2.417	5.19	5.500	11.24	8.583	1.73	11.67	.86
2.500	5.19	5.583	11.24	8.667	1.73	11.75	.86
2.583	5.19	5.667	11.24	8.750	1.73	11.83	.86
2.667	5.19	5.750	11.24	8.833	1.73	11.92	.86
2.750	5.19	5.833	11.24	8.917	1.73	12.00	.86
2.833	5.19	5.917	11.24	9.000	1.73	12.08	.86
2.917	5.19	6.000	11.24	9.083	1.73	12.17	.86
3.000	5.19	6.083	11.24	9.167	1.73	12.25	.86
3.083	5.19	6.167	11.24	9.250	1.73		

Max.Eff.Inten.(mm	n/hr)=	39.79	39.49	
over	(min)	5.00	15.00	
Storage Coeff.	(min) =	2.85 (ii)	13.08 (ii)	
Unit Hyd. Tpeak	(min) =	5.00	15.00	
Unit Hyd. peak	(cms) =	.28	.08	
				*TOTALS*
PEAK FLOW	(cms) =	.05	.02	.069 (iii)
TIME TO PEAK	(hrs)=	4.92	5.25	5.25
RUNOFF VOLUME	(mm) =	85.48	80.09	84.12
TOTAL RAINFALL	(mm) =	86.48	86.48	86.48
RUNOFF COEFFICIEN	- TT	.99	.93	.97

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 98.0 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.

	5.00	Curve Number (CN) = 98.0 # of Linear Res.(N) = 3.00

NOTE: RAINFALL WAS TRANSFORMED TO 10.0 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 .167 .00 3.333 9.95 | 6.500 6.06 9.67 .86 .86 .333 .43 3.500 14.71 6.667 6.06 9.83 6.06 | 10.00 .500 .86 3.667 14.71 6.833 .86 .667 .86 3.833 14.71 7.000 6.06 | 10.17 .86 .833 .86 4.000 14.71 İ 7.167 6.06 İ 10.33 .86 1.000 .86 4.167 7.333 4.76 14.71 10.50 .86 1.167 4.333 27.25 7.500 3.46 10.67 .86 .86 1.333 .86 4.500 39.79 7.667 3.46 10.83 .86 1.500 .86 4.667 39.79 7.833 3.46 11.00 .86 1.667 39.79 .86 4.833 8.000 3.46 11.17 .86 39.79 1.833 .86 5.000 8.167 3.46 | 11.33 .86 2.000 .86 5.167 39.79 8.333 2.60 | 11.50 .86 2.167 .86 5.333 25.52 8.500 1.73 | 11.67 .86 2.333 3.02 5.500 11.24 8.667 1.73 | 11.83 .86 2.500 11.24 8.833 5.19 5.667 1.73 | 12.00 .86 2.667 5.19 5.833 11.24 9.000 1.73 | 12.17 .86 2.833 5.19 6.000 11.24 | 9.167 1.73 | 12.33 .43 3.000 5.19 | 6.167 11.24 9.333 1.30 3.167 5.19 | 6.333 8.65 9.500 .86

Unit Hyd Qpeak (cms) = .145

PEAK FLOW	(cms) =	.081	(i)
TIME TO PEAK	(hrs)=	5.167	
RUNOFF VOLUME	(mm) =	74.615	
TOTAL RAINFALL	(mm) =	86.480	
RUNOFF COEFFICI	ENT =	.863	

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

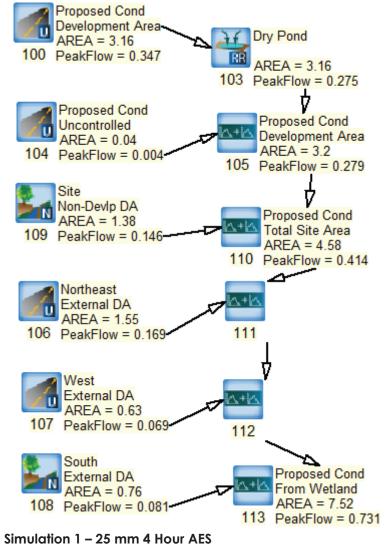
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ADD HYD (0003)   1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 (0002): + ID2= 2 (0001):		.469			
ID = 3 (0003):					
NOTE: PEAK FLOWS DO 1	NOT INCLU	DE BASEFL	OWS IF AN	ΤΥ.	
ADD HYD (0010)   1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.	
ID1= 1 (0006):	1.55	(cms) .169	5.25	82.24	
+ ID2= 2 (0003):		.487			
ID = 3 (0010):					
NOTE: PEAK FLOWS DO 1	NOT INCLU	DE BASEFL	OWS IF AN	ΤΥ.	
ADD HYD (0011)   1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.	
ADD HYD (0011)   1 + 2 = 3   ID1= 1 (0010): + ID2= 2 (0007):	AREA (ha) 6.13 .63	QPEAK (cms) .655 .069	TPEAK (hrs) 5.17 5.25	R.V. (mm) 76.81 84.12	
ADD HYD (0011)   1 + 2 = 3   ID1= 1 (0010):	AREA (ha) 6.13 .63	QPEAK (cms) .655 .069	TPEAK (hrs) 5.17 5.25	R.V. (mm) 76.81 84.12	
ADD HYD (0011)   1 + 2 = 3   ID1= 1 (0010): + ID2= 2 (0007):	AREA (ha) 6.13 .63 6.76	QPEAK (cms) .655 .069 ======= .724	TPEAK (hrs) 5.17 5.25 ======== 5.17	R.V. (mm) 76.81 84.12 77.49	
ADD HYD (0011)   1 + 2 = 3   ID1= 1 (0010): + ID2= 2 (0007): ID = 3 (0011): NOTE: PEAK FLOWS DO 1	AREA (ha) 6.13 .63 6.76 NOT INCLU	QPEAK (cms) .655 .069 ======= .724 DE BASEFL	TPEAK (hrs) 5.17 5.25 ======= 5.17 OWS IF AM	R.V. (mm) 76.81 84.12  77.49 JY.	
ADD HYD (0011)   1 + 2 = 3   ID1= 1 (0010): + ID2= 2 (0007): ID = 3 (0011): NOTE: PEAK FLOWS DO 1	AREA (ha) 6.13 .63 6.76 NOT INCLU	QPEAK (cms) .655 .069 .724 DE BASEFL	TPEAK (hrs) 5.17 5.25 5.17 OWS IF AM	R.V. (mm) 76.81 84.12  77.49 MY.	
ADD HYD (0011)   1 + 2 = 3   ID1= 1 (0010): + ID2= 2 (0007): ID = 3 (0011): NOTE: PEAK FLOWS DO 1 ADD HYD (0012)	AREA (ha) 6.13 .63 6.76 NOT INCLU AREA (ha) 6.76	QPEAK (cms) .655 .069 .724 DE BASEFL	TPEAK (hrs) 5.17 5.25 5.17 OWS IF AM	R.V. (mm) 76.81 84.12  77.49 MY.	
ADD HYD (0011)   1 + 2 = 3   ID1= 1 (0010): + ID2= 2 (0007): ID = 3 (0011): NOTE: PEAK FLOWS DO D ADD HYD (0012)   1 + 2 = 3   ID1= 1 (0011): + ID2= 2 (0008):	AREA (ha) 6.13 .63 6.76 NOT INCLU AREA (ha) 6.76 .76	QPEAK (cms) .655 .069 .724 DE BASEFL  QPEAK (cms) .724 .081	TPEAK (hrs) 5.17 5.25 5.17 OWS IF AN TPEAK (hrs) 5.17 5.17	R.V. (mm) 76.81 84.12 77.49 WY. R.V. (mm) 77.49 74.62	
ADD HYD (0011)   1 + 2 = 3 ID1= 1 (0010): + ID2= 2 (0007): ID = 3 (0011): NOTE: PEAK FLOWS DO D ADD HYD (0012)   1 + 2 = 3 ID1= 1 (0011):	AREA (ha) 6.13 .63 6.76 NOT INCLU AREA (ha) 6.76 .76	QPEAK (cms) .655 .069 = DE BASEFL 	TPEAK (hrs) 5.17 5.25 5.17 OWS IF AN TPEAK (hrs) 5.17 5.17	R.V. (mm) 76.81 84.12 ====== 77.49 NY. R.V. (mm) 77.49 74.62 =======	
ADD HYD (0011)   1 + 2 = 3   ID1= 1 (0010): + ID2= 2 (0007): ID = 3 (0011): NOTE: PEAK FLOWS DO 1 ADD HYD (0012)   1 + 2 = 3   ID1= 1 (0011): + ID2= 2 (0008): 	AREA (ha) 6.13 .63 6.76 NOT INCLU AREA (ha) 6.76 .76 7.52	QPEAK (cms) .655 .069 .724 DE BASEFL 	TPEAK (hrs) 5.17 5.25 5.17 OWS IF AN TPEAK (hrs) 5.17 5.17 5.17	R.V. (mm) 76.81 84.12 77.49 WY. R.V. (mm) 77.49 74.62 77.20	

FINISH

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## Proposed Conditions - VO2 Output



Simulation 2 – 2 Year – 1 Hour AES Simulation 4 – 2 Year – 12 Hour AES Simulation 5 – 100 Year – 1 Hour AES Simulation 7 – 100 Year – 12 Hour AES

V V SSSSS IJ IJ Ι Α L V V SS L Ι IJ IJ ΑΑ 77 V SS U TT AAAAA L Т V V SS U U A A L Ι עעעעע LLLLL WV SSSSS А Т Δ 000 Y 000 TTTTTTTTTTTн Н Y М М 0 0 Т Т Η Н ΥΥ MM MM 0 0 0 0 Т Т Η Η Y М М 0 0 000 000 т т н н М М Developed and Distributed by Clarifica Inc. Copyright 1996, 2007 Clarifica Inc. All rights reserved. DETAILED OUTPUT \*\*\*\*\* Input filename: C:\Program Files (x86)\Visual OTTHYMO 2.3.3\voin.dat Output filename: V:\01606\Active\160622415\Analysis\SWM\Hydrology\V02\2017-11-20 V02\Vo2.out Summary filename: V:\01606\Active\160622415\Analysis\SWM\Hydrology\V02\2017-11-20\_VO2\Vo2.sum

DATE: 11/23/2017

TIME: 11:01:37 AM

USER:

COMMENTS:

\*\*\*\*\*\*

READ STORM	Filenar			ive\16062 ydrology\\			HR.STM
Ptotal= 25.02 mm	Comment	-		mm Four H			
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
.17	2.17	1.17	6.20	2.17	5.62	3.17	2.95
.33	2.38	1.33	12.18	2.33	4.80	3.33	2.76
.50	2.66	1.50	41.67	2.50	4.21	3.50	2.62
.67	3.03	1.67	15.28	2.67	3.78	3.67	2.47
.83	3.58	1.83	9.22	2.83	3.45	3.83	2.35
1.00	4.47	2.00	6.88	3.00	3.18	4.00	2.23
CALIB   NASHYD (0108)    ID= 1 DT=10.0 min	Area Ia	,	.76 5.00	Curve Nur # of Line		CN) = 98.0 (N) = 3.00	

U.H. Tp(hrs) = .20							
Unit Hyd Qpeak (cms)= .145		CALIB STANDHYD (0106)	Area	(ha) = 1.55			
		ID= 1 DT= 5.0 min		Imp(%) = 40.00		(%)= 40.00	
PEAK FLOW (cms) = .032 (i) TIME TO PEAK (hrs) = 1.667				IMPERVIOUS	PERVIOUS (i)		
RUNOFF VOLUME $(mm) = 15.492$		Surface Area	(ha) =	.62	.93		
TOTAL RAINFALL (mm) = 25.023		Dep. Storage	(mm) =	1.00	1.50		
RUNOFF COEFFICIENT = .619		Average Slope	(%) =	1.00	2.00		
		Length	(m) =	101.70	40.00		
(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.		Mannings n	=	.013	.250		
		Max.Eff.Inten.(r	mm/hr)=	41.67	27.87		
		over	(min)	5.00	20.00		
CALIB		Storage Coeff.	(min) =	3.66 (ii)	15.43 (ii)		
STANDHYD (0107) Area (ha)= .63		Unit Hyd. Tpeak	(min) =	5.00	20.00		
D= 1 DT= 5.0 min   Total Imp(%)= 75.00 Dir. Conn.(	%)= 75.00	Unit Hyd. peak	(cms) =	.25	.07		
· ····································		1 L				*TOTALS*	
IMPERVIOUS PERVIOUS (i)		PEAK FLOW	(cms) =	.07	.05	.091 (iii)	,
Surface Area (ha) = .47 .16		TIME TO PEAK	(hrs) =	1.50	1.75	1.50	
Dep. Storage $(mm) = 1.00$ 1.50		RUNOFF VOLUME	(mm) =	24.02	19.28	21.17	
Average Slope (%)= 1.00 2.00		TOTAL RAINFALL	(mm) =	25.02	25.02	25.02	
Length $(m) = 64.80$ 40.00		RUNOFF COEFFICI		.96	.77	.85	
Length $(m) =$ 64.80         40.00           Mannings n         =         .013         .250		KUNUFF CUEFFICI	1 I I I I I I I I I I I I I I I I I I I	. 20	• / /	.00	
-		***** WARNING: STORAG	GE COEFF.	IS SMALLER TH	AN TIME STEP!		
NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIN	ME STEP.	<i>(</i> <b>)</b> <i>, , , , , , , , , , , , , , , , , , ,</i>					
				TED FOR PERVIO			
		CN* = 9		a = Dep. Stora			
TRANSFORMED HYETOGRAP		(ii) TIME STEP			OR EQUAL		
TIME RAIN TIME RAIN TIME I	RAIN TIME RAIN	THAN THE S	STORAGE C	COEFFICIENT.			
hrs mm/hr   hrs mm/hr   hrs mm	m/hr   hrs mm/hr	(iii) PEAK FLOW	DOES NOT	INCLUDE BASEF	LOW IF ANY.		
.083 2.17 1.083 6.20 2.083	5.62 3.08 2.95						
.167 2.17 1.167 6.20 2.167 !	5.62 3.17 2.95						
	4.80 3.25 2.76						
.333 2.38 1.333 12.18 2.333	4.80 3.33 2.76	CALIB					
			Area	(ha) = 1.38	Curve Numbe	er (CN)= 98.0	
.417 2.66 1.417 41.67 2.417	4.21 3.42 2.62	NASHYD (0109)	Area Ta	(ha) = 1.38 (mm) = 5.00		er $(CN) = 98.0$	
.417 2.66 1.417 41.67 2.417 4 .500 2.66 1.500 41.67 2.500 4	4.21   3.42 2.62 4.21   3.50 2.62	NASHYD (0109)  ID= 1 DT=10.0 min	Ia	(mm) = 5.00	# of Linear	er (CN)= 98.0 r Res.(N)= 3.00	
.417 2.66 1.417 41.67 2.417 4 .500 2.66 1.500 41.67 2.500 4 .583 3.03 1.583 15.28 2.583	4.21     3.42     2.62       4.21     3.50     2.62       3.78     3.58     2.47	NASHYD (0109)	Ia		# of Linear		
.417       2.66       1.417       41.67       2.417       4         .500       2.66       1.500       41.67       2.500       4         .583       3.03       1.583       15.28       2.583       3         .667       3.03       1.667       15.28       2.667       3	4.21     3.42     2.62       4.21     3.50     2.62       3.78     3.58     2.47       3.78     3.67     2.47	NASHYD (0109)  ID= 1 DT=10.0 min	Ia U.H. I	(mm) = 5.00 p(hrs) = .20	# of Linear	r Res.(N)= 3.00	
.417         2.66         1.417         41.67         2.417           .500         2.66         1.500         41.67         2.500         4           .583         3.03         1.583         15.28         2.583         3           .667         3.03         1.667         15.28         2.667         3           .750         3.58         1.750         9.22         2.750         3	4.21     3.42     2.62       4.21     3.50     2.62       3.78     3.58     2.47       3.78     3.67     2.47       3.45     3.75     2.35	NASHYD (0109)  ID= 1 DT=10.0 min	Ia U.H. I	(mm) = 5.00	# of Linear	r Res.(N)= 3.00	
.417       2.66       1.417       41.67       2.417         .500       2.66       1.500       41.67       2.500         .583       3.03       1.583       15.28       2.583         .667       3.03       1.667       15.28       2.667         .750       3.58       1.750       9.22       2.750         .833       3.58       1.833       9.22       2.833	4.21     3.42     2.62       4.21     3.50     2.62       3.78     3.58     2.47       3.78     3.67     2.47       3.45     3.75     2.35       3.45     3.83     2.35	NASHYD (0109)  ID= 1 DT=10.0 min	Ia U.H. I	(mm) = 5.00 p(hrs) = .20	# of Linear	r Res.(N)= 3.00	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	4.21       3.42       2.62         4.21       3.50       2.62         3.78       3.58       2.47         3.78       3.67       2.47         3.45       3.75       2.35         3.45       3.83       2.35         3.18       3.92       2.23	NASHYD (0109)  ID= 1 DT=10.0 min	Ia U.H. I	(mm) = 5.00 'p(hrs) = .20 TRANSFORMED TO	# of Linear	r Res.(N)= 3.00	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	4.21     3.42     2.62       4.21     3.50     2.62       3.78     3.58     2.47       3.78     3.67     2.47       3.45     3.75     2.35       3.45     3.83     2.35	NASHYD (0109)    ID= 1 DT=10.0 min    NOTE: RAINI	Ia U.H. T FALL WAS	(mm) = 5.00 'p(hrs) = .20 TRANSFORMED TO TRANSFO	# of Linear 10.0 MIN. TI RMED HYETOGRAM	r Res.(N) = 3.00 IME STEP. PH	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	4.21       3.42       2.62         4.21       3.50       2.62         3.78       3.58       2.47         3.78       3.67       2.47         3.45       3.75       2.35         3.45       3.83       2.35         3.18       3.92       2.23	NASHYD (0109)    ID= 1 DT=10.0 min    NOTE: RAINI TIMI	IA U.H. T FALL WAS E RAIN	(mm) = 5.00 'p(hrs) = .20 TRANSFORMED TO TRANSFO. I   TIME RA	# of Linear 10.0 MIN. TI RMED HYETOGRAH IN   TIME	r Res.(N)= 3.00 IME STEP. PH RAIN   TIME	
.417 2.66 1.417 41.67 2.417 .500 2.66 1.500 41.67 2.500 .583 3.03 1.583 15.28 2.583 .667 3.03 1.667 15.28 2.667 .750 3.58 1.750 9.22 2.750 .833 3.58 1.833 9.22 2.833 .917 4.47 1.917 6.88 2.917 1.000 4.47 2.000 6.88 3.000 3 Max.Eff.Inten.(mm/hr)= 41.67 27.87	4.21       3.42       2.62         4.21       3.50       2.62         3.78       3.58       2.47         3.78       3.67       2.47         3.45       3.75       2.35         3.45       3.83       2.35         3.18       3.92       2.23	NASHYD (0109)    ID= 1 DT=10.0 min    NOTE: RAINI TIMI hrs	Ia U.H. T FALL WAS E RAIN s mm/hr	(mm) = 5.00 'p(hrs) = .20 TRANSFORMED TO TRANSFO I   TIME RA -   hrs mm/2	# of Linear 10.0 MIN. TJ RMED HYETOGRAH IN   TIME hr   hrs m	r Res.(N)= 3.00 IME STEP. PH RAIN   TIME nm/hr   hrs	mm/
.417 2.66   1.417 41.67   2.417 .500 2.66   1.500 41.67   2.500 .583 3.03   1.583 15.28   2.583 3 .667 3.03   1.667 15.28   2.667 3 .750 3.58   1.750 9.22   2.750 3 .833 3.58   1.833 9.22   2.833 3 .917 4.47   1.917 6.88   2.917 3 1.000 4.47   2.000 6.88   3.000 3 Max.Eff.Inten.(mm/hr)= 41.67 27.87 over (min) 5.00 15.00	4.21       3.42       2.62         4.21       3.50       2.62         3.78       3.58       2.47         3.78       3.67       2.47         3.45       3.75       2.35         3.45       3.83       2.35         3.18       3.92       2.23	NASHYD (0109)    ID= 1 DT=10.0 min   	Ia U.H. I FALL WAS E RAIN s mm/hr 7 2.17	(mm) = 5.00 'p(hrs) = .20 TRANSFORMED TO TRANSFO I   TIME RA :   hrs mm/? /   1.167 6.	<pre># of Linear 10.0 MIN. TJ RMED HYETOGRAF IN   TIME hr   hrs n 20   2.167</pre>	r Res.(N) = 3.00 IME STEP. PH RAIN   TIME nm/hr   hrs 5.62   3.17	mm/ 2.
.417 2.66 1.417 41.67 2.417 .500 2.66 1.500 41.67 2.500 .583 3.03 1.583 15.28 2.583 .667 3.03 1.667 15.28 2.667 .750 3.58 1.750 9.22 2.750 .833 3.58 1.833 9.22 2.833 .917 4.47 1.917 6.88 2.917 1.000 4.47 2.000 6.88 3.000 3 Max.Eff.Inten.(mm/hr)= 41.67 27.87	4.21       3.42       2.62         4.21       3.50       2.62         3.78       3.58       2.47         3.78       3.67       2.47         3.45       3.75       2.35         3.45       3.83       2.35         3.18       3.92       2.23	NASHYD (0109)    ID= 1 DT=10.0 min    NOTE: RAINI TIMI hrs	Ia U.H. I FALL WAS E RAIN s mm/hr 7 2.17	(mm) = 5.00 'p(hrs) = .20 TRANSFORMED TO TRANSFO I   TIME RA C   hrs mm/ '   1.167 6.	<pre># of Linear 10.0 MIN. TJ RMED HYETOGRAF IN   TIME hr   hrs n 20   2.167</pre>	r Res.(N)= 3.00 IME STEP. PH RAIN   TIME nm/hr   hrs	mm/ 2.
.417 2.66   1.417 41.67   2.417 .500 2.66   1.500 41.67   2.500 .583 3.03   1.583 15.28   2.583 3 .667 3.03   1.667 15.28   2.667 3 .750 3.58   1.750 9.22   2.750 3 .833 3.58   1.833 9.22   2.833 3 .917 4.47   1.917 6.88   2.917 3 1.000 4.47   2.000 6.88   3.000 3 Max.Eff.Inten.(mm/hr)= 41.67 27.87 over (min) 5.00 15.00	4.21       3.42       2.62         4.21       3.50       2.62         3.78       3.58       2.47         3.78       3.67       2.47         3.45       3.75       2.35         3.45       3.83       2.35         3.18       3.92       2.23	NASHYD (0109)    ID= 1 DT=10.0 min   	Ia U.H. T FALL WAS E RAIN s mm/hr 7 2.17 3 2.38	(mm) = 5.00 'p(hrs) = .20 TRANSFORMED TO TRANSFO I   TIME RA :   hrs mm/?   1.167 6. :   1.333 12.	<pre># of Linear 10.0 MIN. TJ RMED HYETOGRAH IN   TIME hr   hrs m 20   2.167 18   2.333</pre>	r Res.(N) = 3.00 IME STEP. PH RAIN   TIME nm/hr   hrs 5.62   3.17	mm/ 2. 2.
.417 2.66   1.417 41.67   2.417 .500 2.66   1.500 41.67   2.500 .583 3.03   1.583 15.28   2.583 3 .667 3.03   1.667 15.28   2.667 3 .750 3.58   1.750 9.22   2.750 3 .833 3.58   1.833 9.22   2.833 3 .917 4.47   1.917 6.88   2.917 3 1.000 4.47   2.000 6.88   3.000 3 Max.Eff.Inten.(mm/hr) = 41.67 27.87 over (min) 5.00 15.00 Storage Coeff. (min) = 2.79 (ii) 14.56 (ii)	4.21       3.42       2.62         4.21       3.50       2.62         3.78       3.58       2.47         3.78       3.67       2.47         3.45       3.75       2.35         3.45       3.83       2.35         3.18       3.92       2.23	NASHYD (0109)    ID= 1 DT=10.0 min   	Ia U.H. T FALL WAS E RAIN 5 mm/hr 7 2.17 3 2.38 0 2.66	(mm) = 5.00 'p(hrs) = .20 TRANSFORMED TO TRANSFO. I TIME RA - hrs mm/? 1.167 6. 3 1.33 12. 5 1.500 41.	<pre># of Linear 10.0 MIN. T1 RMED HYETOGRAH IN   TIME hr   hrs m 20   2.167 18   2.333 67   2.500</pre>	r Res.(N) = 3.00 IME STEP. PH RAIN   TIME um/hr   hrs 5.62   3.17 4.80   3.33	mm/ 2. 2. 2.
.417 2.66   1.417 41.67   2.417 .500 2.66   1.500 41.67   2.500 4 .583 3.03   1.583 15.28   2.583 3 .667 3.03   1.667 15.28   2.667 3 .750 3.58   1.750 9.22   2.750 3 .833 3.58   1.833 9.22   2.833 3 .917 4.47   1.917 6.88   2.917 3 1.000 4.47   2.000 6.88   3.000 3 Max.Eff.Inten.(mm/hr) = 41.67 27.87 over (min) 5.00 15.00 Storage Coeff.(min) = 2.79 (ii) 14.56 (ii) Unit Hyd. Tpeak (min) = 5.00 15.00	4.21       3.42       2.62         4.21       3.50       2.62         3.78       3.58       2.47         3.78       3.67       2.47         3.45       3.75       2.35         3.45       3.83       2.35         3.18       3.92       2.23	NASHYD (0109)    ID= 1 DT=10.0 min   	Ia U.H. T FALL WAS E RAIN s mm/hr 7 2.17 3 2.38 0 2.66 7 3.03	(mm) = 5.00 'p(hrs) = .20 TRANSFORMED TO TRANSFO I   TIME RA : hrs mm// ! 1.167 6. 3   1.333 12. 5   1.500 41. : 1.667 15.	<pre># of Linear 10.0 MIN. T1 RMED HYETOGRAH IN   TIME hr   hrs m 20   2.167 18   2.333 67   2.500 28   2.667</pre>	r Res.(N) = 3.00 IME STEP. PH RAIN   TIME mm/hr   hrs 5.62   3.17 4.80   3.33 4.21   3.50	mm/ 2. 2. 2. 2.
.417 2.66   1.417 41.67   2.417 .500 2.66   1.500 41.67   2.500 4 .583 3.03   1.583 15.28   2.583 3 .667 3.03   1.667 15.28   2.667 3 .750 3.58   1.750 9.22   2.750 3 .833 3.58   1.833 9.22   2.833 3 .917 4.47   1.917 6.88   2.917 3 1.000 4.47   2.000 6.88   3.000 3 Max.Eff.Inten.(mm/hr) = 41.67 27.87 over (min) 5.00 15.00 Storage Coeff.(min) = 2.79 (ii) 14.56 (ii) Unit Hyd. Tpeak (min) = 5.00 15.00	4.21       3.42       2.62         4.21       3.50       2.62         3.78       3.58       2.47         3.78       3.67       2.47         3.45       3.75       2.35         3.45       3.83       2.35         3.18       3.92       2.23         3.18       4.00       2.23	NASHYD (0109)    ID= 1 DT=10.0 min   	Ia U.H. T FALL WAS E RAIN s mm/hr 7 2.17 3 2.38 0 2.66 7 3.03 3 3.58	(mm) = 5.00 'p(hrs) = .20 TRANSFORMED TO TRANSFO. I   TIME RA : hrs mm/. '   1.167 6. 3   1.333 12. :   1.500 41. :   1.667 15. 3   1.833 9.	<pre># of Linear 10.0 MIN. T] RMED HYETOGRAM IN   TIME hr   hrs m 20   2.167 18   2.333 67   2.500 28   2.667 22   2.833</pre>	r Res.(N) = 3.00 IME STEP. PH RAIN   TIME mm/hr   hrs 5.62   3.17 4.80   3.33 4.21   3.50 3.78   3.67	mm/ 2. 2. 2. 2. 2.
.417 2.66   1.417 41.67   2.417 .500 2.66   1.500 41.67   2.500 .583 3.03   1.583 15.28   2.583 3 .667 3.03   1.667 15.28   2.667 3 .750 3.58   1.750 9.22   2.750 3 .833 3.58   1.833 9.22   2.833 3 .917 4.47   1.917 6.88   2.917 3 1.000 4.47   2.000 6.88   3.000 3 Max.Eff.Inten.(mm/hr) = 41.67 27.87 over (min) 5.00 15.00 Storage Coeff. (min) = 2.79 (ii) 14.56 (ii) Unit Hyd. Tpeak (min) = 5.00 15.00 Unit Hyd. peak (cms) = .28 .08 PEAK FLOW (cms) = .05 .01	4.21   3.42 2.62 4.21   3.50 2.62 3.78   3.58 2.47 3.78   3.67 2.47 3.45   3.75 2.35 3.45   3.83 2.35 3.18   3.92 2.23 3.18   4.00 2.23 *TOTALS* .059 (iii)	NASHYD (0109)    ID= 1 DT=10.0 min   	Ia U.H. T FALL WAS E RAIN s mm/hr 7 2.17 3 2.38 0 2.66 7 3.03 3 3.58	(mm) = 5.00 'p(hrs) = .20 TRANSFORMED TO TRANSFO. I   TIME RA : hrs mm/. '   1.167 6. 3   1.333 12. :   1.500 41. 4   1.667 15. 3   1.833 9.	<pre># of Linear 10.0 MIN. T] RMED HYETOGRAM IN   TIME hr   hrs m 20   2.167 18   2.333 67   2.500 28   2.667 22   2.833</pre>	r Res.(N) = 3.00 IME STEP. RAIN   TIME mm/hr   hrs 5.62   3.17 4.80   3.33 4.21   3.50 3.78   3.67 3.45   3.83	mm/ 2. 2. 2. 2. 2.
.417 2.66 1.417 41.67 2.417 .500 2.66 1.500 41.67 2.500 .583 3.03 1.583 15.28 2.583 3 .667 3.03 1.667 15.28 2.667 3 .750 3.58 1.750 9.22 2.750 3 .833 3.58 1.833 9.22 2.833 3 .917 4.47 1.917 6.88 2.917 3 1.000 4.47 2.000 6.88 3.000 3 Max.Eff.Inten.(mm/hr) = 41.67 27.87 over (min) 5.00 15.00 Storage Coeff. (min) = 2.79 (ii) 14.56 (ii) Unit Hyd. Tpeak (min) = 5.00 15.00 Unit Hyd. Tpeak (min) = 2.28 .08 PEAK FLOW (cms) = .28 .01 TIME TO PEAK (hrs) = 1.50 1.67	4.21   3.42 2.62 4.21   3.50 2.62 3.78   3.58 2.47 3.78   3.67 2.47 3.45   3.75 2.35 3.45   3.83 2.35 3.18   3.92 2.23 3.18   4.00 2.23 *TOTALS* .059 (iii) 1.50	NASHYD (0109)    ID= 1 DT=10.0 min   	Ia U.H. T FALL WAS E RAIN s mm/hr 7 2.17 3 2.38 0 2.66 7 3.03 3 3.58 0 4.47	(mm) = 5.00 'p(hrs) = .20 TRANSFORMED TO TRANSFO I TIME RA : hrs mm/? 1.167 6. 1.333 12. 1.500 41. 1.667 15. 1.833 9. 2.000 6.	<pre># of Linear 10.0 MIN. T] RMED HYETOGRAM IN   TIME hr   hrs m 20   2.167 18   2.333 67   2.500 28   2.667 22   2.833</pre>	r Res.(N) = 3.00 IME STEP. RAIN   TIME mm/hr   hrs 5.62   3.17 4.80   3.33 4.21   3.50 3.78   3.67 3.45   3.83	mm/ 2. 2. 2. 2. 2.
.417 2.66 1.417 41.67 2.417 .500 2.66 1.500 41.67 2.500 .583 3.03 1.583 15.28 2.583 3 .667 3.03 1.667 15.28 2.667 .750 3.58 1.750 9.22 2.750 3 .833 3.58 1.833 9.22 2.833 3 .917 4.47 1.917 6.88 2.917 3 1.000 4.47 2.000 6.88 3.000 3 Max.Eff.Inten.(mm/hr)= 41.67 27.87 over (min) 5.00 15.00 Storage Coeff. (min)= 2.79 (ii) 14.56 (ii) Unit Hyd. Tpeak (min)= 5.00 Unit Hyd. peak (cms)= .28 .08 PEAK FLOW (cms)= .05 .01 TIME TO PEAK (hrs)= 1.50 1.67 RUNOFF VOLUME (mm)= 24.02 19.28	4.21   3.42 2.62 4.21   3.50 2.62 3.78   3.58 2.47 3.78   3.67 2.47 3.45   3.75 2.35 3.45   3.83 2.35 3.18   3.92 2.23 3.18   4.00 2.23 *TOTALS* .059 (iii) 1.50 22.82	NASHYD (0109)    ID= 1 DT=10.0 min   	Ia U.H. T FALL WAS E RAIN s mm/hr 7 2.17 3 2.38 0 2.66 7 3.03 3 3.58 0 4.47	(mm) = 5.00 'p(hrs) = .20 TRANSFORMED TO TRANSFO. I   TIME RA : hrs mm/. '   1.167 6. 3   1.333 12. :   1.500 41. 4   1.667 15. 3   1.833 9.	<pre># of Linear 10.0 MIN. T] RMED HYETOGRAM IN   TIME hr   hrs m 20   2.167 18   2.333 67   2.500 28   2.667 22   2.833</pre>	r Res.(N) = 3.00 IME STEP. RAIN   TIME mm/hr   hrs 5.62   3.17 4.80   3.33 4.21   3.50 3.78   3.67 3.45   3.83	mm/ 2. 2. 2. 2. 2.
.417 2.66 1.417 41.67 2.417 .500 2.66 1.500 41.67 2.500 .583 3.03 1.583 15.28 2.583 3 .667 3.03 1.667 15.28 2.667 3 .750 3.58 1.750 9.22 2.750 3 .833 3.58 1.833 9.22 2.833 3 .917 4.47 1.917 6.88 2.917 3 1.000 4.47 2.000 6.88 3.000 3 Max.Eff.Inten.(mm/hr)= 41.67 27.87 over (min) 5.00 15.00 Storage Coeff. (min)= 2.79 (ii) 14.56 (ii) Unit Hyd. Tpeak (min)= 5.00 15.00 Unit Hyd. Tpeak (min)= 5.00 15.00 Unit Hyd. peak (cms)= .28 .08 PEAK FLOW (cms)= .05 .01 TIME TO PEAK (hrs)= 1.50 1.67 RUNOFF VOLUME (mm)= 24.02 19.28 TOTAL RAINFALL (mm)= 25.02 25.02	4.21   3.42 2.62 4.21   3.50 2.62 3.78   3.58 2.47 3.78   3.67 2.47 3.45   3.75 2.35 3.45   3.83 2.35 3.18   3.92 2.23 3.18   4.00 2.23 *TOTALS* .059 (iii) 1.50 22.82 25.02	NASHYD (0109)    ID= 1 DT=10.0 min   	Ia U.H. T FALL WAS E RAIN 5 mm/hr 7 2.17 3 2.38 0 2.66 7 3.03 3 3.58 0 4.47 (cms) =	(mm) = 5.00 'p(hrs) = .20 TRANSFORMED TO TRANSFO I TIME RA ' 1.167 6. 1.333 12. 1.500 41. 1.667 15. 1.833 9. 2.000 6. .264	<pre># of Linear 10.0 MIN. T] RMED HYETOGRAM IN   TIME hr   hrs m 20   2.167 18   2.333 67   2.500 28   2.667 22   2.833</pre>	r Res.(N) = 3.00 IME STEP. RAIN   TIME mm/hr   hrs 5.62   3.17 4.80   3.33 4.21   3.50 3.78   3.67 3.45   3.83	mm/ 2. 2. 2. 2. 2.
.417 2.66 1.417 41.67 2.417 .500 2.66 1.500 41.67 2.500 .583 3.03 1.583 15.28 2.583 3 .667 3.03 1.667 15.28 2.667 .750 3.58 1.750 9.22 2.750 3 .833 3.58 1.833 9.22 2.833 3 .917 4.47 1.917 6.88 2.917 3 1.000 4.47 2.000 6.88 3.000 3 Max.Eff.Inten.(mm/hr)= 41.67 27.87 over (min) 5.00 15.00 Storage Coeff. (min)= 2.79 (ii) 14.56 (ii) Unit Hyd. Tpeak (min)= 5.00 Unit Hyd. peak (cms)= .28 .08 PEAK FLOW (cms)= .05 .01 TIME TO PEAK (hrs)= 1.50 1.67 RUNOFF VOLUME (mm)= 24.02 19.28	4.21   3.42 2.62 4.21   3.50 2.62 3.78   3.58 2.47 3.78   3.67 2.47 3.45   3.75 2.35 3.45   3.83 2.35 3.18   3.92 2.23 3.18   4.00 2.23 *TOTALS* .059 (iii) 1.50 22.82	NASHYD (0109)    ID= 1 DT=10.0 min   	Ia U.H. T FALL WAS E RAIN s mm/hr 7 2.17 3 2.38 0 2.66 7 3.03 3 3.58 0 4.47	(mm) = 5.00 'p(hrs) = .20 TRANSFORMED TO TRANSFO I   TIME RA : hrs mm/? 1 1.167 6. 1 1.333 12. : 1.500 41. : 1.667 15. : 1.667 15. : 1.833 9. : 2.000 6. .264 .059 (i)	<pre># of Linear 10.0 MIN. T] RMED HYETOGRAM IN   TIME hr   hrs m 20   2.167 18   2.333 67   2.500 28   2.667 22   2.833</pre>	r Res.(N) = 3.00 IME STEP. RAIN   TIME mm/hr   hrs 5.62   3.17 4.80   3.33 4.21   3.50 3.78   3.67 3.45   3.83	mm/ 2. 2. 2. 2. 2.
.417 2.66 1.417 41.67 2.417 .500 2.66 1.500 41.67 2.500 .583 3.03 1.583 15.28 2.583 3 .667 3.03 1.667 15.28 2.667 3 .750 3.58 1.750 9.22 2.750 3 .833 3.58 1.833 9.22 2.833 3 .917 4.47 1.917 6.88 2.917 3 1.000 4.47 2.000 6.88 3.000 3 Max.Eff.Inten.(mm/hr)= 41.67 27.87 over (min) 5.00 15.00 Storage Coeff. (min)= 2.79 (ii) 14.56 (ii) Unit Hyd. Tpeak (min)= 5.00 15.00 Unit Hyd. Tpeak (min)= 5.00 15.00 Unit Hyd. peak (cms)= .28 .08 PEAK FLOW (cms)= .05 .01 TIME TO PEAK (hrs)= 1.50 1.67 RUNOFF VOLUME (mm)= 24.02 19.28 TOTAL RAINFALL (mm)= 25.02 25.02	4.21   3.42 2.62 4.21   3.50 2.62 3.78   3.58 2.47 3.78   3.67 2.47 3.45   3.75 2.35 3.45   3.83 2.35 3.18   3.92 2.23 3.18   4.00 2.23 *TOTALS* .059 (iii) 1.50 22.82 25.02	NASHYD (0109) ID= 1 DT=10.0 min NOTE: RAINI hr: .166 .333 .500 .667 .833 1.000 Unit Hyd Qpeak PEAK FLOW TIME TO PEAK RUNOFF VOLUME	Ia U.H. T FALL WAS E RAIN s mm/hr 7 2.17 3 2.38 0 2.66 7 3.03 3 3.58 0 4.47 (cms) = (cms) = (cms) = (mm) =	(mm) = 5.00 'p(hrs) = .20 TRANSFORMED TO TRANSFO I TIME RA - hrs mm/? 1.167 6. 1.333 12. 1.500 41. 1.667 15. 2.000 6. .264 .059 (i) 1.667 15.146	<pre># of Linear 10.0 MIN. T] RMED HYETOGRAM IN   TIME hr   hrs m 20   2.167 18   2.333 67   2.500 28   2.667 22   2.833</pre>	r Res.(N) = 3.00 IME STEP. RAIN   TIME mm/hr   hrs 5.62   3.17 4.80   3.33 4.21   3.50 3.78   3.67 3.45   3.83	mm/ 2. 2. 2. 2. 2.
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	4.21   3.42 2.62 4.21   3.50 2.62 3.78   3.58 2.47 3.78   3.67 2.47 3.45   3.75 2.35 3.45   3.83 2.35 3.18   3.92 2.23 3.18   4.00 2.23 *TOTALS* .059 (iii) 1.50 22.82 25.02	NASHYD (0109) ID= 1 DT=10.0 min NOTE: RAINI hr: .166 .333 .500 .667 .833 1.000 Unit Hyd Qpeak PEAK FLOW TIME TO PEAK RUNOFF VOLUME	Ia U.H. T FALL WAS E RAIN 5 mm/hr 7 2.17 3 2.38 0 2.66 7 3.03 3 3.58 0 4.47 (cms) = (cms) = (hrs) = (mm) =	(mm) = 5.00 'p(hrs) = .20 TRANSFORMED TO TRANSFO I TIME RA ' 1.167 6. 1.333 12. 5 1.500 41. 5 1.667 15. 4 1.833 9. ' 2.000 6. .264 .059 (i) 1.667 15.146 24.652	<pre># of Linear 10.0 MIN. T] RMED HYETOGRAM IN   TIME hr   hrs m 20   2.167 18   2.333 67   2.500 28   2.667 22   2.833</pre>	r Res.(N) = 3.00 IME STEP. RAIN   TIME mm/hr   hrs 5.62   3.17 4.80   3.33 4.21   3.50 3.78   3.67 3.45   3.83	mm/ 2. 2. 2. 2. 2.
.417 2.66 1.417 41.67 2.417 .500 2.66 1.500 41.67 2.500 .583 3.03 1.583 15.28 2.583 3 .667 3.03 1.667 15.28 2.667 3 .750 3.58 1.750 9.22 2.750 3 .833 3.58 1.833 9.22 2.833 3 .917 4.47 1.917 6.88 2.917 3 1.000 4.47 2.000 6.88 3.000 3 Max.Eff.Inten.(mm/hr)= 41.67 27.87 over (min) 5.00 15.00 Storage Coeff. (min)= 2.79 (ii) 14.56 (ii) Unit Hyd. Tpeak (min)= 5.00 15.00 Unit Hyd. Tpeak (min)= 5.00 15.00 PEAK FLOW (cms)= .28 .08 PEAK FLOW (cms)= .05 .01 TIME TO PEAK (hrs)= 1.50 1.67 RUNOFF VOLUME (mm)= 24.02 19.28 TOTAL RAINFALL (mm)= 25.02 25.02 RUNOFF COEFFICIENT = .96 .77 *** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:	4.21   3.42 2.62 4.21   3.50 2.62 3.78   3.58 2.47 3.78   3.67 2.47 3.45   3.75 2.35 3.45   3.83 2.35 3.18   3.92 2.23 3.18   4.00 2.23 *TOTALS* .059 (iii) 1.50 22.82 25.02	NASHYD (0109) ID= 1 DT=10.0 min NOTE: RAINI hr: .16' .33' .500 .66' .83' 1.000 Unit Hyd Qpeak PEAK FLOW TIME TO PEAK RUNOFF VOLUME TOTAL RAINFALL	Ia U.H. T FALL WAS E RAIN 5 mm/hr 7 2.17 3 2.38 0 2.66 7 3.03 3 3.58 0 4.47 (cms) = (cms) = (hrs) = (mm) =	(mm) = 5.00 'p(hrs) = .20 TRANSFORMED TO TRANSFO I TIME RA ' 1.167 6. 1.333 12. 5 1.500 41. 5 1.667 15. 4 1.833 9. ' 2.000 6. .264 .059 (i) 1.667 15.146 24.652	<pre># of Linear 10.0 MIN. T] RMED HYETOGRAM IN   TIME hr   hrs m 20   2.167 18   2.333 67   2.500 28   2.667 22   2.833</pre>	r Res.(N) = 3.00 IME STEP. RAIN   TIME mm/hr   hrs 5.62   3.17 4.80   3.33 4.21   3.50 3.78   3.67 3.45   3.83	mm/ 2. 2. 2. 2. 2.
.417 2.66   1.417 41.67   2.417 .500 2.66   1.500 41.67   2.500 .583 3.03   1.583 15.28   2.583 : .667 3.03   1.667 15.28   2.667 : .750 3.58   1.750 9.22   2.750 : .833 3.58   1.833 9.22   2.833 : .917 4.47   1.917 6.88   2.917 : 1.000 4.47   2.000 6.88   3.000 : Max.Eff.Inten.(mm/hr) = 41.67 27.87 over (min) 5.00 15.00 Storage Coeff. (min) = 2.79 (ii) 14.56 (ii) Unit Hyd. Tpeak (min) = 5.00 15.00 Unit Hyd. peak (cms) = .28 .08 PEAK FLOW (cms) = .05 .01 TIME TO PEAK (hrs) = 1.50 1.67 RUNOFF VOLUME (mm) = 24.02 19.28 TOTAL RAINFALL (mm) = 25.02 25.02 RUNOFF COEFFICIENT = .96 .77 *** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN* = 98.0 Ia = Dep. Storage (Above)	4.21   3.42 2.62 4.21   3.50 2.62 3.78   3.58 2.47 3.78   3.67 2.47 3.45   3.75 2.35 3.45   3.83 2.35 3.18   3.92 2.23 3.18   4.00 2.23 *TOTALS* .059 (iii) 1.50 22.82 25.02	NASHYD (0109) ID= 1 DT=10.0 min NOTE: RAINI TIMI hr: .16' .33: .50( .66' .83: 1.00( Unit Hyd Qpeak PEAK FLOW TIME TO PEAK RUNOFF VOLUME TOTAL RAINFALL RUNOFF COEFFICIN	Ia U.H. T FALL WAS E RAIN s mm/hr 7 2.17 3 2.38 0 2.66 7 3.03 3 3.58 0 4.47 (cms) = (hrs) = (hrs) = (mm) = ENT =	(mm) = 5.00 'p(hrs) = .20 TRANSFORMED TO TRANSFO I   TIME RA : hrs mm/' 1   1.167 6. 1   1.333 12. : 1.500 41. : 1.667 15. : 1.667 15. : 264 .059 (i) 1.667 15.146 24.652 .614	<pre># of Linear 10.0 MIN. TJ RMED HYETOGRAF IN   TIME hr   hrs m 20   2.167 18   2.333 67   2.500 28   2.667 22   2.833 88   3.000</pre>	r Res.(N) = 3.00 IME STEP. RAIN   TIME mm/hr   hrs 5.62   3.17 4.80   3.33 4.21   3.50 3.78   3.67 3.45   3.83	mm/ 2. 2. 2. 2. 2.
.417 2.66   1.417 41.67   2.417 .500 2.66   1.500 41.67   2.500 .583 3.03   1.583 15.28   2.583 .667 3.03   1.667 15.28   2.667 .750 3.58   1.750 9.22   2.750 .833 3.58   1.833 9.22   2.833 .917 4.47   1.917 6.88   2.917 1.000 4.47   2.000 6.88   3.000 Max.Eff.Inten.(mm/hr)= 41.67 27.87 over (min) 5.00 15.00 Storage Coeff. (min)= 2.79 (ii) 14.56 (ii) Unit Hyd. Tpeak (min)= 5.00 15.00 Unit Hyd. peak (cms)= .28 .08 PEAK FLOW (cms)= .05 .01 TIME TO PEAK (hrs)= 1.50 1.67 RUNOFF VOLUME (mm)= 24.02 19.28 TOTAL RAINFALL (mm)= 25.02 25.02 RUNOFF COEFFICIENT = .96 .77 *** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN* = 98.0 Ia = Dep. Storage (Above) (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL	4.21   3.42 2.62 4.21   3.50 2.62 3.78   3.58 2.47 3.78   3.67 2.47 3.45   3.75 2.35 3.45   3.83 2.35 3.18   3.92 2.23 3.18   4.00 2.23 *TOTALS* .059 (iii) 1.50 22.82 25.02	NASHYD (0109) ID= 1 DT=10.0 min NOTE: RAINI hr: .16' .33' .500 .66' .83' 1.000 Unit Hyd Qpeak PEAK FLOW TIME TO PEAK RUNOFF VOLUME TOTAL RAINFALL	Ia U.H. T FALL WAS E RAIN s mm/hr 7 2.17 3 2.38 0 2.66 7 3.03 3 3.58 0 4.47 (cms) = (hrs) = (hrs) = (mm) = ENT =	(mm) = 5.00 'p(hrs) = .20 TRANSFORMED TO TRANSFO I   TIME RA : hrs mm/' 1   1.167 6. 1   1.333 12. : 1.500 41. : 1.667 15. : 1.667 15. : 264 .059 (i) 1.667 15.146 24.652 .614	<pre># of Linear 10.0 MIN. TJ RMED HYETOGRAF IN   TIME hr   hrs m 20   2.167 18   2.333 67   2.500 28   2.667 22   2.833 88   3.000</pre>	r Res.(N) = 3.00 IME STEP. RAIN   TIME mm/hr   hrs 5.62   3.17 4.80   3.33 4.21   3.50 3.78   3.67 3.45   3.83	mm/ 2. 2. 2. 2. 2.
.417 2.66   1.417 41.67   2.417 .500 2.66   1.500 41.67   2.500 .583 3.03   1.583 15.28   2.583 .667 3.03   1.667 15.28   2.667 .750 3.58   1.750 9.22   2.750 .833 3.58   1.833 9.22   2.833 .917 4.47   1.917 6.88   2.917 1.000 4.47   2.000 6.88   3.000 Max.Eff.Inten.(mm/hr)= 41.67 27.87 over (min) 5.00 15.00 Storage Coeff. (min)= 2.79 (ii) 14.56 (ii) Unit Hyd. Tpeak (min)= 5.00 15.00 Unit Hyd. peak (cms)= .28 .08 PEAK FLOW (cms)= .05 .01 TIME TO PEAK (hrs)= 1.50 1.67 RUNOFF VOLUME (mm)= 25.02 25.02 RUNOFF COEFFICIENT = .96 .77 *** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN* = 98.0 Ia = Dep. Storage (Above) (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.	4.21   3.42 2.62 4.21   3.50 2.62 3.78   3.58 2.47 3.78   3.67 2.47 3.45   3.75 2.35 3.45   3.83 2.35 3.18   3.92 2.23 3.18   4.00 2.23 *TOTALS* .059 (iii) 1.50 22.82 25.02	NASHYD (0109) ID= 1 DT=10.0 min NOTE: RAINI TIMI hr: .16' .33: .50( .66' .83: 1.00( Unit Hyd Qpeak PEAK FLOW TIME TO PEAK RUNOFF VOLUME TOTAL RAINFALL RUNOFF COEFFICIN	Ia U.H. T FALL WAS E RAIN s mm/hr 7 2.17 3 2.38 0 2.66 7 3.03 3 3.58 0 4.47 (cms) = (hrs) = (hrs) = (mm) = ENT =	(mm) = 5.00 'p(hrs) = .20 TRANSFORMED TO TRANSFO I   TIME RA : hrs mm/' 1   1.167 6. 1   1.333 12. : 1.500 41. : 1.667 15. : 1.667 15. : 264 .059 (i) 1.667 15.146 24.652 .614	<pre># of Linear 10.0 MIN. TJ RMED HYETOGRAF IN   TIME hr   hrs m 20   2.167 18   2.333 67   2.500 28   2.667 22   2.833 88   3.000</pre>	r Res.(N) = 3.00 IME STEP. RAIN   TIME mm/hr   hrs 5.62   3.17 4.80   3.33 4.21   3.50 3.78   3.67 3.45   3.83	RA mm/ 2. 2. 2. 2.
.417 2.66   1.417 41.67   2.417 .500 2.66   1.500 41.67   2.500 .583 3.03   1.583 15.28   2.583 .667 3.03   1.667 15.28   2.667 .750 3.58   1.750 9.22   2.750 .833 3.58   1.833 9.22   2.833 .917 4.47   1.917 6.88   2.917 1.000 4.47   2.000 6.88   3.000 Max.Eff.Inten.(mm/hr)= 41.67 27.87 over (min) 5.00 15.00 Storage Coeff. (min)= 2.79 (ii) 14.56 (ii) Unit Hyd. Tpeak (min)= 5.00 15.00 Unit Hyd. peak (cms)= .28 .08 PEAK FLOW (cms)= .05 .01 TIME TO PEAK (hrs)= 1.50 1.67 RUNOFF VOLUME (mm)= 24.02 19.28 TOTAL RAINFALL (mm)= 25.02 25.02 RUNOFF COEFFICIENT = .96 .77 *** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN* = 98.0 Ia = Dep. Storage (Above) (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL	4.21   3.42 2.62 4.21   3.50 2.62 3.78   3.58 2.47 3.78   3.67 2.47 3.45   3.75 2.35 3.45   3.83 2.35 3.18   3.92 2.23 3.18   4.00 2.23 *TOTALS* .059 (iii) 1.50 22.82 25.02	NASHYD (0109) ID= 1 DT=10.0 min NOTE: RAINI TIMI hr: .16' .33: .50( .66' .83: 1.00( Unit Hyd Qpeak PEAK FLOW TIME TO PEAK RUNOFF VOLUME TOTAL RAINFALL RUNOFF COEFFICIN	Ia U.H. T FALL WAS E RAIN s mm/hr 7 2.17 3 2.38 0 2.66 7 3.03 3 3.58 0 4.47 (cms) = (hrs) = (hrs) = (mm) = ENT =	(mm) = 5.00 'p(hrs) = .20 TRANSFORMED TO TRANSFO I   TIME RA : hrs mm/' 1   1.167 6. 1   1.333 12. : 1.500 41. : 1.667 15. : 1.667 15. : 264 .059 (i) 1.667 15.146 24.652 .614	<pre># of Linear 10.0 MIN. TJ RMED HYETOGRAF IN   TIME hr   hrs m 20   2.167 18   2.333 67   2.500 28   2.667 22   2.833 88   3.000</pre>	r Res.(N) = 3.00 IME STEP. RAIN   TIME mm/hr   hrs 5.62   3.17 4.80   3.33 4.21   3.50 3.78   3.67 3.45   3.83	mm/ 2. 2. 2. 2. 2.

= 1 DT= 5.0 min   Total 3	[mp(%)= 90.00	Dir. Conn	.(3)= 90	.00		Unit Hyd. peak (cms	) =	.23	.06		
											'ALS*
		PERVIOUS (i	)			PEAK FLOW (cms		.28	.03		289 (iii)
Surface Area (ha)=	.04	.00				TIME TO PEAK (hrs	) =	1.50	1.75	-	.50
Dep. Storage (mm) =	1.00	1.50				RUNOFF VOLUME (mm	) = 2	4.02	19.28	23	.17
Average Slope (%)=	1.00	2.00				TOTAL RAINFALL (mm	) = 2	5.02	25.02	25	.02
Length (m) =	16.30	40.00				RUNOFF COEFFICIENT	=	.96	.77		.93
Mannings n =	.013	.250									
						***** WARNING: STORAGE CO	EFF. IS S	MALLER TH	AN TIME ST	TEP!	
NOTE: RAINFALL WAS '	RANSFORMED 10	5.0 MIIN.	IIME SIEF	· ·		(i) CN PROCEDURE S	ELECTED F	OR PERVIO	US LOSSES	:	
						CN* = 98.0					
	TRANSFOR	MED HYETOGR.	APH			(ii) TIME STEP (DT)			OR EQUAL		
TIME RAIN	TIME RAI	N TIME	RAIN	TIME	RAIN	THAN THE STORA	GE COEFFI	CIENT.			
hrs mm/hr	hrs mm/h	r   hrs	mm/hr	hrs	mm/hr	(iii) PEAK FLOW DOES	NOT INCL	UDE BASEF	LOW IF AN	Y.	
.083 2.17	1.083 6.2	0 2.083	5.62	3.08	2.95						
.167 2.17	1.167 6.2	0 2.167	5.62	3.17	2.95						
.250 2.38	1.250 12.1		4.80	3.25	2.76						
.333 2.38	1.333 12.1		4.80	3.33	2.76	RESERVOIR (0103)					
.417 2.66	1.417 41.6		4.21	3.42	2.62	IN= 2> OUT= 1					
.500 2.66	1		4.21	3.50	2.62		OUTFLOW	STORAGE		FLOW STO	RAGE
.583 3.03	1.583 15.2		3.78	3.58	2.47		(cms)	(ha.m.)			m.)
.667 3.03	1		3.78	3.67	2.47		.0000	.0000		3500	.1300
.750 3.58			3.45	3.75	2.35		.0150	.0677	.(	0000	.0000
.833 3.58	1.833 9.2		3.45	3.83	2.35		-		000012		
.917 4.47			3.18	3.92	2.23				QPEAK	TPEAK	R.V.
1.000 4.47	2.000 6.8	8   3.000	3.18	4.00	2.23				(cms)	(hrs)	(mm)
						INFLOW : ID= 2 (0100		160	.289	1.50	23.17
<pre>Max.Eff.Inten.(mm/hr) =</pre>	41.67	104.52				OUTFLOW: ID= 1 (0103	) 3.	160	.014	4.08	22.80
over (min)	5.00	10.00									
Storage Coeff. (min)=	1.22 (ii)	5.38 (ii	)			PEAK	FLOW R	EDUCTION	[Qout/Qin]	](%)= 4.69	)
Unit Hyd. Tpeak (min)=	5.00	10.00				TIME S	HIFT OF P	EAK FLOW	(т	min)=155.00	)
Unit Hyd. peak (cms)=	.33	.16					M STORAG			.m.) = .00	
4 4			*TOTA	ALS*							
PEAK FLOW (cms) =	.00	.00	. 0	004 (iii	)						
TIME TO PEAK (hrs) =	1.50	1.58	1.								
RUNOFF VOLUME (mm) =	24.02	19.28	23.								
TOTAL RAINFALL (mm) =	25.02	25.02	25.			ADD HYD (0105)					
RUNOFF COEFFICIENT =	.96	.77	23.			1 + 2 = 3	AREA	OPEAK	TPEAK	R.V.	
KONOFF COEFFICIENT =	. 50	• / /	•	. 94							
+ WARNING GROEDER							(ha)	(cms)	(hrs)	(mm)	
* WARNING: STORAGE COEFF.	IS SMALLER THAT	N TIME STEP	1			ID1= 1 (0104):	.04	.004	1.50	23.52	
						+ ID2= 2 (0103):	3.16	.014	4.08	22.80	
(i) CN PROCEDURE SELEC											
CN* = 98.0 I (ii) TIME STEP (DT) SHO						ID = 3 (0105):	3.20	.014	4.00	22.81	
THAN THE STORAGE C		OK EQUAL				NOTE: PEAK FLOWS DO	NOT INCL	UDE BASEF	LOWS IF AN	NY.	
(iii) PEAK FLOW DOES NOT		OW IF ANY.									
LIB						(0110)					
	(he) 2.15					ADD HYD (0110)	3	000000	mp	D 17	
	(ha) = 3.16		(0)			1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.	
1	[mp(%)= 82.00	Dir. Conn	.(%)= 82	2.00			(ha)	(cms)	(hrs)	(mm)	
						ID1= 1 (0109):	1.38	.059	1.67	15.15	
	IMPERVIOUS	PERVIOUS (i	)			+ ID2= 2 (0105):	3.20	.014	4.00	22.81	
Surface Area (ha) =	2.59	.57									
Dep. Storage (mm)=	1.00	1.50				ID = 3 (0110):	4.58	.068	1.67	20.50	
Average Slope (%)=	1.00	2.00									
Length (m) =	145.10	40.00				NOTE: PEAK FLOWS DO	NOT INCL	UDE BASEF	LOWS IF AN	NY.	
Mannings n =	.013	.250									
naminigo n											
Max.Eff.Inten.(mm/hr)=	41.67	27.87									

1 + 2 = 3 AREA QPEAK TPEAK R.V.	TIME RAIN   TIME RAIN   TIME RAIN   TIME RAIN
(ha) (cms) (hrs) (mm)	hrs mm/hr   hrs mm/hr   hrs mm/hr   hrs mm/hr
ID1= 1 (0106): 1.55 .091 1.50 21.17	.167 1.43 .500 61.41 .833 18.56 1.17 1.43
+ ID2= 2 (0110): 4.58 .068 1.67 20.50	.333 15.71   .667 38.55   1.000 5.71
ID = 3 (0111): 6.13 .149 1.50 20.67	Unit Hyd Qpeak (cms) = .145
NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.	PEAK FLOW (cms) = .053 (i) TIME TO PEAK (hrs) = .667
	RUNOFF VOLUME (mm) = 14.354
	TOTAL RAINFALL (mm) = 23.802
	RUNOFF COEFFICIENT = .603
ADD HYD (0112)	
1 + 2 = 3 AREA QPEAK TPEAK R.V.	(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
(ha) (cms) (hrs) (mm)	
ID1= 1 (0107): .63 .059 1.50 22.82	
+ ID2= 2 (0111): 6.13 .149 1.50 20.67	CALIB
ID = 3 (0112): 6.76 .208 1.50 20.87	STANDHYD (0107) $ $ Area (ha) = .63
	ID= 1 DT= 5.0 min   Total $Imp($) = 75.00 Dir. Conn.($) = 75.00$
NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.	
	IMPERVIOUS PERVIOUS (i)
	Surface Area (ha) = .47 .16
	Dep. Storage (mm) = 1.00 1.50
	Average Slope (%)= 1.00 2.00
ADD HYD (0113)	Length $(m) = 64.80$ 40.00
1 + 2 = 3 AREA QPEAK TPEAK R.V.	Mannings n = .013 .250
(ha) (cms) (hrs) (mm) ID1= 1 (0108): .76 .032 1.67 15.49	NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.
ID1= 1 (0108): .76 .032 1.67 15.49 + ID2= 2 (0112): 6.76 .208 1.50 20.87	NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEF.
ID = 3 (0113): 7.52 .235 1.50 20.33	TRANSFORMED HYETOGRAPH
ID = 3 (0113): 7.52 .235 1.50 20.33	TRANSFORMED HYETOGRAPH TIME RAIN   TIME RAIN   TIME RAIN   TIME RAIN
ID = 3 (0113): 7.52 .235 1.50 20.33 NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.	
	TIME         RAIN         TIME         RAIN         TIME         RAIN         TIME         RAIN           hrs         mm/hr         hrs         mm/hr         hrs         mm/hr         hrs         mm/hr           .083         .00         .417         42.84         .750         22.85         1.08         2.86
NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.	TIME         RAIN         TIME         RAIN         TIME         RAIN         TIME         RAIN           hrs         mm/hr         hrs         mm/hr         hrs         mm/hr         hrs         mm/hr           .083         .00         .417         42.84         .750         22.85         1.08         2.86           .167         2.86         .500         79.97         .833         14.28         14.28
NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.	TIME         RAIN         TIME         RAIN         TIME         RAIN         TIME         RAIN           hrs         mm/hr         hrs         mm/hr         hrs         mm/hr         hrs         mm/hr           .083         .00         .417         42.84         .750         22.85         1.08         2.86           .167         2.86         .500         79.97         .833         14.28         .250         8.57         .583         42.84         .917         8.57
NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.	TIME         RAIN         TIME         RAIN         TIME         RAIN         TIME         RAIN           hrs         mm/hr         hrs         mm/hr         hrs         mm/hr         hrs         mm/hr           .083         .00         .417         42.84         .750         22.85         1.08         2.86           .167         2.86         .500         79.97         .833         14.28
NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.	TIMERAINTIMERAINTIMERAINTIMERAINhrsmm/hrhrsmm/hrhrsmm/hrhrsmm/hr.083.00.41742.84.75022.851.082.86.1672.86.50079.97.83314.28.2508.57.58342.84.9178.57.33322.85.66734.271.0002.86
NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.	TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       Ins       mm/hr       hrs       mm/hr <thr>       .250       8.57       .53</thr>
NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.	TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       Ins       mm/hr       hrs       hrs       hrs <t< td=""></t<>
NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.	TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       Ins       mm/hr       hrs       mm/hr       1.08       2.86       1.07       2.86       5.00       79.97       8.833       14.28       1.08       2.86       1.08       2.86       1.033       22.85       1.667       34.27       1.000       2.86       1.033       2.86       1.033       2.86       1.033       2.86       1.033       2.86       1.033       2.86       1.033       2.86       1.033       2.86       1.033       2.86       1.033       2.86       1.000       2.86       1.033       2.86       1.033       2.86       1.033       2.86       1.033       2.85       1.033       2.85       1.033       2.85
NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.	TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       RAIN       TIME       RAIN       Max       Max       Display       Max       1000       1.08       2.86       2.86         .167       2.86       .500       79.97       .833       14.28       1.08       2.86         .250       8.57       .583       42.84       .917       8.57       1.000       2.86       1.000       2.86       1.000       2.86       1.000       2.86       1.000       2.86       1.000       2.86       1.000
NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.	TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       Ins       mm/hr       hrs       mm/hr       hrs       mm/hr       hrs       mm/hr       hrs       mm/hr       hrs       mm/hr       hrs       mm/hr       line       2.86       2.86       1.08       2.86       2.86       1.08       2.86       2.86       1.08       2.86       2.86       1.08       2.86       1.08       2.86       1.08       2.86       1.08       2.86       1.08       2.86       1.08       2.86       1.08       2.86       1.08       2.86       1.08       2.86       1.08       2.86       1.000       2.86       1.000       2.86       1.000       2.86       1.000       1.000       1.000       1.000       1.000       1.000       1.000       1.000       1.000       1.000       1.000       1.000
NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.	TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       Ins       mm/hr       hrs       mm/hr <thr>       .333       22.85       .6</thr>
NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.	TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       Ins       mm/hr       hrs       mm/hr <thr>       .333       22.85       .6</thr>
NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.	TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       Ins       mm/hr       hrs       mm/hr <thr>       .250       .500       10.</thr>
NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.	TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       Ins       mm/hr       hrs       mm/hr <thr>       .333       22.85       .6</thr>
NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.	TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       Ins       mm/hr       hrs       mm/hr <thr>       .333       22.85       .6</thr>
NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.	TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       Ins       mm/hr       hrs       nm/hr       hrs       nm/hr       hrs       nm/hr       hrs       nm/hr <thr>       .333       22.85       .6</thr>
NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.	TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       Ins       mm/hr       hrs       mm/hr <thr>.333       22.85       .667</thr>
NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.	TIME       RAIN       Ins       mm/hr       hrs       hrs       mm/hr       hrs       hrs       hrs       hrs
NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.	TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       Ins       mm/hr       hrs       mm/hr <thr>       333       22.85       <t< td=""></t<></thr>
NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.	TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       Ins       mm/hr       hrs       mm/hr <thr>       .230       .230       .21</thr>
NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.	TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       Ins       mm/hr       hrs       mm/hr <thr>       .33       22.80       34.</thr>
NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.	TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN         hrs       mm/hr       hrs       mm/hr       hrs       mm/hr       hrs       mm/hr         .083       .00       .417       42.84       .750       22.85       1.08       2.86         .167       2.86       .500       79.97       .833       14.28       .250       8.57       .333       22.85       .667       34.27       1.000       2.86         Max.Eff.Inten.(mm/hr)=       79.97       53.38       .000       10.00       2.86       .000       10.00         Storage Coeff. (min)=       2.15 (ii)       7.13 (ii)       .010       0.10.00       .010.00         Unit Hyd. Tpeak (min)=       5.00       10.00       .02       .111 (iii)         TIME TO PEAK (hrs)=       .50       .58       .50         RUNOFF VOLUME (mm)=       22.80       18.10       21.62         TOTAL RAINFALL (mm)=       23.80       23.80       23.80         RUNOFF COEFFICIENT       =       .96       .76       .91         ****** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN* = 98.0

IMPERVIOUS PERVIOUS (i)	
Surface Area (ha) = .62 .93	NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.
Dep. Storage (mm) = 1.00 1.50	
Average Slope (%)= 1.00 2.00	
Length (m) = 101.70 40.00	TRANSFORMED HYETOGRAPH
Mannings n = .013 .250	TIME RAIN   TIME RAIN   TIME RAIN   TIME RAIN
	hrs mm/hr   hrs mm/hr   hrs mm/hr   hrs mm/hr
Max.Eff.Inten.(mm/hr) = 79.97 53.38 over (min) 5.00 15.00	.083 .00   .417 42.84   .750 22.85   1.08 2.86 .167 2.86   .500 79.97   .833 14.28
over (min) 5.00 15.00 Storage Coeff. (min)= 2.82 (ii) 11.89 (ii)	.167 2.86 500 79.97 833 14.28 .250 8.57 583 42.84 917 8.57
Unit Hyd. Tpeak $(min) = 5.00$ 15.00	.333 22.85   .667 34.27   1.000 2.86
Unit Hyd. peak $(cms) = .28$ .09	
*TOTALS*	Max.Eff.Inten.(mm/hr) = 79.97 160.15
PEAK FLOW (cms) = .13 .08 .154 (iii)	over (min) 5.00 5.00
TIME TO PEAK (hrs)= .50 .75 .50	Storage Coeff. (min)= .94 (ii) 4.15 (ii)
RUNOFF VOLUME (mm)= 22.80 18.10 19.97	Unit Hyd. Tpeak (min)= 5.00 5.00
TOTAL RAINFALL (mm) = 23.80 23.80 23.80	Unit Hyd. peak (cms)= .34 .24
RUNOFF COEFFICIENT = .96 .76 .84	*TOTALS*
ATTAC WARNING COOPER COPER TO CANALLER WINN WINN COPER	PEAK FLOW (cms) = .01 .00 .009 (iii)
***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!	TIME TO PEAK (hrs)= .50 .50 .50 RUNOFF VOLUME (mm)= 22.80 18.10 22.32
(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:	TOTAL RAINFALL $(mm) = 23.80$ 23.80 23.80
CN* = 98.0 Ia = Dep. Storage (Above)	RUNOFF COEFFICIENT =
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL	
THAN THE STORAGE COEFFICIENT.	***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.	
	(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
	CN* = 98.0 Ia = Dep. Storage (Above)
CALIB	(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
NASHYD (0109) Area (ha)= 1.38 Curve Number (CN)= 98.0	(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
ID= 1 DT=10.0 min   Ia (mm)= 5.00 # of Linear Res.(N)= 3.00	
ID= 1 DT=10.0 min   Ia (mm)= 5.00 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= .20	
U.H. Tp(hrs) = .20	
	CALIB
U.H. Tp(hrs) = .20	CALIB     STANDHYD (0100)   Area (ha)= 3.16
U.H. Tp(hrs) = .20 NOTE: RAINFALL WAS TRANSFORMED TO 10.0 MIN. TIME STEP.	CALIB
U.H. Tp(hrs) = .20	CALIB     STANDHYD (0100)   Area (ha)= 3.16  ID= 1 DT= 5.0 min   Total Imp(%)= 82.00 Dir. Conn.(%)= 82.00
U.H. Tp(hrs) = .20 NOTE: RAINFALL WAS TRANSFORMED TO 10.0 MIN. TIME STEP. TRANSFORMED HYETOGRAPH	CALIB     STANDHYD (0100)   Area (ha)= 3.16  ID= 1 DT= 5.0 min   Total Imp(%)= 82.00 Dir. Conn.(%)= 82.00
U.H. Tp(hrs) = .20 NOTE: RAINFALL WAS TRANSFORMED TO 10.0 MIN. TIME STEP. TRANSFORMED HYETOGRAPH TIME RAIN   TIME RAIN   TIME RAIN   TIME RAIN	CALIB     STANDHYD (0100)   Area (ha)= 3.16  ID= 1 DT= 5.0 min   Total Imp(%)= 82.00 Dir. Conn.(%)= 82.00 
U.H. Tp(hrs) = .20 NOTE: RAINFALL WAS TRANSFORMED TO 10.0 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	CALIB                   STANDHYD (0100)       Area (ha) = 3.16           ID= 1 DT= 5.0 min         Total Imp(%) = 82.00 Dir. Conn.(%) = 82.00         IMPERVIOUS       PERVIOUS (i)         Surface Area (ha) = 2.59 .57       .57         Dep. Storage (mm) = 1.00 1.50       Average Slope (%) = 1.00 2.00
U.H. Tp(hrs) = .20 NOTE: RAINFALL WAS TRANSFORMED TO 10.0 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 .167 1.43   .500 61.41   .833 18.56   1.17 1.43 .333 15.71   .667 38.55   1.000 5.71	CALIB       Area       (ha) = 3.16         STANDHYD       (0100)       Area       (ha) = 3.16         ID= 1 DT= 5.0 min       Total Imp(%) = 82.00       Dir. Conn.(%) = 82.00         IMPERVIOUS         Surface Area       (ha) = 2.59       .57         Dep. Storage       (mm) = 1.00       1.50         Average Slope       (%) = 1.00       2.00         Length       (m) = 145.10       40.00
U.H. Tp(hrs) = .20 NOTE: RAINFALL WAS TRANSFORMED TO 10.0 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 .167 1.43   .500 61.41   .833 18.56   1.17 1.43	CALIB                   STANDHYD (0100)       Area (ha) = 3.16           ID= 1 DT= 5.0 min         Total Imp(%) = 82.00 Dir. Conn.(%) = 82.00         IMPERVIOUS       PERVIOUS (i)         Surface Area (ha) = 2.59 .57       .57         Dep. Storage (mm) = 1.00 1.50       Average Slope (%) = 1.00 2.00
U.H. Tp(hrs) = .20 NOTE: RAINFALL WAS TRANSFORMED TO 10.0 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 .167 1.43   .500 61.41   .833 18.56   1.17 1.43 .333 15.71   .667 38.55   1.000 5.71   Unit Hyd Qpeak (cms) = .264	CALIB       Area       (ha) = 3.16         STANDHYD       (0100)       Area       (ha) = 3.16         ID= 1 DT= 5.0 min       Total Imp(%) = 82.00 Dir. Conn.(%) = 82.00         IMPERVIOUS         PERVIOUS       PERVIOUS (i)         Surface Area       (ha) = 2.59 .57         Dep. Storage       (mm) = 1.00       1.50         Average Slope       (%) = 1.00       2.00         Length       (m) = 145.10       40.00         Mannings n       = .013       .250
U.H. Tp(hrs) = .20 NOTE: RAINFALL WAS TRANSFORMED TO 10.0 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 .167 1.43   .500 61.41   .833 18.56   1.17 1.43 .333 15.71   .667 38.55   1.000 5.71   Unit Hyd Qpeak (cms) = .264 PEAK FLOW (cms) = .095 (i)	CALIB       Area       (ha) = 3.16         STANDHYD       (0100)       Area       (ha) = 3.16         ID= 1 DT= 5.0 min       Total Imp(%) = 82.00 Dir. Conn.(%) = 82.00         IMPERVIOUS       pervice         IMPERVIOUS       pervice         Surface Area       (ha) = 2.59 .57       .57         Dep. Storage       (mm) = 1.00 1.50       Average Slope       (%) = 1.00 2.00         Length       (m) = 145.10 40.00       Mannings n       = .013 .250         Max.Eff.Inten.(mm/hr) = 79.97 53.38       53.38
U.H. Tp(hrs) = .20 NOTE: RAINFALL WAS TRANSFORMED TO 10.0 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 .167 1.43   .500 61.41   .833 18.56   1.17 1.43 .333 15.71   .667 38.55   1.000 5.71   Unit Hyd Qpeak (cms) = .264 PEAK FLOW (cms) = .095 (i) TIME TO PEAK (hrs) = .667	CALIB       Area (ha) = 3.16         STANDHYD (0100)       Area (ha) = 3.16         ID= 1 DT = 5.0 min       Total Imp(%) = 82.00 Dir. Conn.(%) = 82.00         IMPERVIOUS PERVIOUS (i)         Surface Area (ha) = 2.59 .57         Dep. Storage (mm) = 1.00 1.50         Average Slope (%) = 1.00 2.00         Length (m) = 145.10 40.00         Mannings n = .013 .250         Max.Eff.Inten.(mm/hr) = 79.97 53.38         over (min) 5.00 10.00
U.H. Tp(hrs) = .20 NOTE: RAINFALL WAS TRANSFORMED TO 10.0 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 .167 1.43   .500 61.41   .833 18.56   1.17 1.43 .333 15.71   .667 38.55   1.000 5.71   Unit Hyd Qpeak (cms) = .264 PEAK FLOW (cms) = .095 (i) TIME TO PEAK (hrs) = .667 RUNOFF VOLUME (mm) = 14.355	CALIB       Area       (ha) = 3.16         STANDHYD       Total Imp(%) = 82.00       Dir. Conn.(%) = 82.00         ID= 1 DT= 5.0 min       Total Imp(%) = 82.00       Dir. Conn.(%) = 82.00         IMPERVIOUS         Surface Area       (ha) =       2.59       .57         Dep. Storage       (mm) =       1.00       1.50         Average Slope       (%) =       1.00       2.00         Length       (m) =       145.10       40.00         Mannings n       =       .013       .250         Max.Eff.Inten.(mm/hr) =       79.97       53.38         over (min)       5.00       10.00         Storage Coeff. (min) =       3.49 (ii)       7.70 (ii)
U.H. Tp(hrs) = .20 NOTE: RAINFALL WAS TRANSFORMED TO 10.0 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 .167 1.43   .500 61.41   .833 18.56   1.17 1.43 .333 15.71   .667 38.55   1.000 5.71   Unit Hyd Qpeak (cms) = .264 PEAK FLOW (cms) = .095 (i) TIME TO PEAK (hrs) = .667	CALIB       Area (ha) = 3.16         STANDHYD (0100)       Area (ha) = 3.16         ID= 1 DT = 5.0 min       Total Imp(%) = 82.00       Dir. Conn.(%) = 82.00         IMPERVIOUS PERVIOUS (i)         Surface Area (ha) = 2.59 .57         Dep. Storage (mm) = 1.00       1.50         Average Slope (%) = 1.00       2.00         Length (m) = 145.10       40.00         Mannings n = .013       .250         Max.Eff.Inten.(mm/hr) = 79.97       53.38         over (min)       5.00       10.00
U.H. Tp(hrs) = .20 NOTE: RAINFALL WAS TRANSFORMED TO 10.0 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 .167 1.43   .500 61.41   .833 18.56   1.17 1.43 .333 15.71   .667 38.55   1.000 5.71   Unit Hyd Qpeak (cms) = .264 PEAK FLOW (cms) = .095 (i) TIME TO PEAK (hrs) = .667 RUNOFF VOLUME (mm) = 14.355 TOTAL RAINFALL (mm) = 23.802	CALIB       Area (ha) = 3.16         STANDHYD (0100)       Area (ha) = 3.16         ID= 1 DT = 5.0 min       Total Imp(%) = 82.00 Dir. Conn.(%) = 82.00         IMPERVIOUS PERVIOUS (i)         Surface Area (ha) = 2.59 .57         Dep. Storage (mm) = 1.00 1.50         Average Slope (%) = 1.00 2.00         Length (m) = 145.10 40.00         Mannings n = .013 .250         Max.Eff.Inten.(mm/hr) = 79.97 53.38         over (min) 5.00 10.00         Storage Coeff. (min) = 3.49 (ii) 7.70 (ii)         Unit Hyd. Tpeak (min) = 5.00 10.00         Unit Hyd. peak (cms) = .26 .13
U.H. Tp(hrs) = .20 NOTE: RAINFALL WAS TRANSFORMED TO 10.0 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 .167 1.43   .500 61.41   .833 18.56   1.17 1.43 .333 15.71   .667 38.55   1.000 5.71   Unit Hyd Qpeak (cms) = .264 PEAK FLOW (cms) = .095 (i) TIME TO PEAK (hrs) = .667 RUNOFF VOLUME (mm) = 14.355 TOTAL RAINFALL (mm) = 23.802	CALIB       Area (ha) = 3.16         STANDHYD (0100)       Total Imp(%) = 82.00 Dir. Conn.(%) = 82.00         ID= 1 DT = 5.0 min       Total Imp(%) = 82.00 Dir. Conn.(%) = 82.00         IMPERVIOUS PERVIOUS (i)         Surface Area (ha) = 2.59 .57         Dep. Storage (mm) = 1.00 1.50         Average Slope (%) = 1.00 2.00         Length (m) = 145.10 40.00         Mannings n = .013 .250         Max.Eff.Inten.(mm/hr) = 79.97 53.38         over (min) 5.00 10.00         Storage Coeff. (min) = 3.49 (ii) 7.70 (ii)         Unit Hyd. Tpeak (min) = 5.00 10.00         Unit Hyd. peak (ccms) = .26 .13         *TOTALS*         PEAK FLOW (ccms) = .50 .06 .538 (iii)
U.H. Tp(hrs) = .20 NOTE: RAINFALL WAS TRANSFORMED TO 10.0 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 .167 1.43   .500 61.41   .833 18.56   1.17 1.43 .333 15.71   .667 38.55   1.000 5.71   Unit Hyd Qpeak (cms) = .264 PEAK FLOW (cms) = .095 (i) TIME TO PEAK (hrs) = .667 RUNOFF VOLUME (mm) = 14.355 TOTAL RAINFALL (mm) = 23.802 RUNOFF COEFFICIENT = .603	CALIB       Area (ha) = 3.16         STANDHYD (0100)       Total Imp(%) = 82.00 Dir. Conn.(%) = 82.00         ID= 1 DT= 5.0 min       Total Imp(%) = 82.00 Dir. Conn.(%) = 82.00         IMPERVIOUS PERVIOUS (i)         Surface Area (ha) = 2.59 .57         Dep. Storage (mm) = 1.00 1.50         Average Slope (%) = 1.00 2.00         Length (m) = 145.10 40.00         Mannings n = .013 .250         Max.Eff.Inten.(mm/hr) = 79.97 53.38         over (min) 5.00 10.00         Storage Coeff. (min) = 3.49 (ii) 7.70 (ii)         Unit Hyd. Tpeak (min) = 5.00 10.00         Unit Hyd. peak (ccms) = .26 .13         *TOTALS*         PEAK FLOW (ccms) = .50 .58 .50
U.H. Tp(hrs) = .20 NOTE: RAINFALL WAS TRANSFORMED TO 10.0 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 .167 1.43   .500 61.41   .833 18.56   1.17 1.43 .333 15.71   .667 38.55   1.000 5.71   Unit Hyd Qpeak (cms) = .264 PEAK FLOW (cms) = .095 (i) TIME TO PEAK (hrs) = .667 RUNOFF VOLUME (mm) = 14.355 TOTAL RAINFALL (mm) = 23.802 RUNOFF COEFFICIENT = .603	CALIB       Area (ha) = 3.16         STANDHYD (0100)       Total Imp(%) = 82.00       Dir. Conn.(%) = 82.00         ID= 1 DT= 5.0 min       Total Imp(%) = 82.00       Dir. Conn.(%) = 82.00         IMPERVIOUS PERVIOUS (i)         Surface Area (ha) = 2.59 .57         Dep. Storage (mm) = 1.00       1.50         Average Slope (%) = 1.00       2.00         Length (m) = 145.10       40.00         Mannings n       .013       .250         Max.Eff.Inten.(mm/hr) = 79.97       53.38         over (min)       5.00       10.00         Storage Coeff. (min) = 3.49 (ii)       7.70 (ii)         Unit Hyd. Tpeak (min) = 5.00       10.00         Unit Hyd. peak (ccms) = .26       .13         *TOTALS*       PEAK FLOW (ccms) = .50       .58         PEAK FLOW (ccms) = .50       .58       .50         RUNOFF VOLUME (mm) = 22.80       18.10       21.95
<pre>U.H. Tp(hrs) = .20 NOTE: RAINFALL WAS TRANSFORMED TO 10.0 MIN. TIME STEP.</pre>	CALIB       Area (ha) = 3.16         STANDHYD (0100)       Total Imp(%) = 82.00       Dir. Conn.(%) = 82.00         ID= 1 DT= 5.0 min       Total Imp(%) = 82.00       Dir. Conn.(%) = 82.00         IMPERVIOUS PERVIOUS (i)         Surface Area (ha) = 2.59 .57         Dep. Storage (mm) = 1.00       1.50         Average Slope (%) = 1.00       2.00         Length (m) = 145.10       40.00         Mannings n = .013       .250         Max.Eff.Inten.(mm/hr) = 79.97       53.38         over (min)       5.00       10.00         Storage Coeff. (min) = 3.49 (ii)       7.70 (ii)         Unit Hyd. Tpeak (min) = 5.00       10.00         Unit Hyd. Tpeak (cms) = .26       .13         *TOTALS*         PEAK FLOW (cms) = .50       .58         TIME TO PEAK (hrs) = .50       .58       .50         RUNOFF VOLUME (mm) = 22.80       18.10       21.95         TOTAL RAINFALL (mm) = 23.80       23.80       23.80
U.H. Tp(hrs) = .20 NOTE: RAINFALL WAS TRANSFORMED TO 10.0 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 .167 1.43   .500 61.41   .833 18.56   1.17 1.43 .333 15.71   .667 38.55   1.000 5.71   Unit Hyd Qpeak (cms) = .264 PEAK FLOW (cms) = .095 (i) TIME TO PEAK (hrs) = .667 RUNOFF VOLUME (mm) = 14.355 TOTAL RAINFALL (mm) = 23.802 RUNOFF COEFFICIENT = .603 (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.	CALIB       Area (ha) = 3.16         STANDHYD (0100)       Total Imp(%) = 82.00       Dir. Conn.(%) = 82.00         ID= 1 DT= 5.0 min       Total Imp(%) = 82.00       Dir. Conn.(%) = 82.00         IMPERVIOUS PERVIOUS (i)         Surface Area (ha) = 2.59 .57         Dep. Storage (mm) = 1.00       1.50         Average Slope (%) = 1.00       2.00         Length (m) = 145.10       40.00         Mannings n       .013       .250         Max.Eff.Inten.(mm/hr) = 79.97       53.38         over (min)       5.00       10.00         Storage Coeff. (min) = 3.49 (ii)       7.70 (ii)         Unit Hyd. Tpeak (min) = 5.00       10.00         Unit Hyd. peak (ccms) = .26       .13         *TOTALS*       PEAK FLOW (ccms) = .50       .58         PEAK FLOW (ccms) = .50       .58       .50         RUNOFF VOLUME (mm) = 22.80       18.10       21.95
U.H. Tp(hrs) = .20 NOTE: RAINFALL WAS TRANSFORMED TO 10.0 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 .167 1.43   .500 61.41   .833 18.56   1.17 1.43 .333 15.71   .667 38.55   1.000 5.71   Unit Hyd Qpeak (cms) = .264 PEAK FLOW (cms) = .095 (i) TIME TO PEAK (hrs) = .667 RUNOFF VOLUME (mm) = 14.355 TOTAL RAINFALL (mm) = 23.802 RUNOFF COEFFICIENT = .603 (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.	CALIB       Area (ha) = 3.16         STANDHYD (0100)       Total Imp(%) = 82.00       Dir. Conn.(%) = 82.00         ID= 1 DT= 5.0 min       Total Imp(%) = 82.00       Dir. Conn.(%) = 82.00         IMPERVIOUS PERVIOUS (i)         Surface Area (ha) = 2.59       .57         Dep. Storage (mm) = 1.00       1.50         Average Slope (%) = 1.00       2.00         Length (m) = 145.10       40.00         Mannings n = .013       .250         Max.Eff.Inten.(mm/hr) = 79.97       53.38         over (min)       5.00       10.00         Storage Coeff. (min) = 3.49 (ii)       7.70 (ii)         Unit Hyd. Tpeak (min) = 5.00       10.00         Unit Hyd. peak (cms) = .26       .13         PEAK FLOW (cms) = .50       .658       .50         RUNOFF VOLUME (mm) = 22.80       18.10       21.95         TOTAL RAINFALL (mm) = 23.80       23.80       23.80         RUNOFF COEFFICIENT = .96       .76       .92
U.H. Tp(hrs) = .20 NOTE: RAINFALL WAS TRANSFORMED TO 10.0 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 .167 1.43   .500 61.41   .833 18.56   1.17 1.43 .333 15.71   .667 38.55   1.000 5.71   Unit Hyd Qpeak (cms) = .264 PEAK FLOW (cms) = .095 (i) TIME TO PEAK (hrs) = .667 RUNOFF VOLUME (mm) = 14.355 TOTAL RAINFALL (mm) = 23.802 RUNOFF COEFFICIENT = .603 (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.	CALIB       Area (ha) = 3.16         STANDHYD (0100)       Total Imp(%) = 82.00       Dir. Conn.(%) = 82.00         ID= 1 DT= 5.0 min       Total Imp(%) = 82.00       Dir. Conn.(%) = 82.00         IMPERVIOUS PERVIOUS (i)         Surface Area (ha) = 2.59 .57         Dep. Storage (mm) = 1.00       1.50         Average Slope (%) = 1.00       2.00         Length (m) = 145.10       40.00         Mannings n = .013       .250         Max.Eff.Inten.(mm/hr) = 79.97       53.38         over (min)       5.00       10.00         Storage Coeff. (min) = 3.49 (ii)       7.70 (ii)         Unit Hyd. Tpeak (min) = 5.00       10.00         Unit Hyd. Tpeak (cms) = .26       .13         *TOTALS*         PEAK FLOW (cms) = .50       .58         TIME TO PEAK (hrs) = .50       .58       .50         RUNOFF VOLUME (mm) = 22.80       18.10       21.95         TOTAL RAINFALL (mm) = 23.80       23.80       23.80
<pre>U.H. Tp(hrs)= .20 NOTE: RAINFALL WAS TRANSFORMED TO 10.0 MIN. TIME STEP TRANSFORMED HYETOGRAPH TIME RAIN   TIME RAIN   TIME RAIN   TIME RAIN   TIME RAIN   hrs mm/hr hrs mm/hr   hrs mm/hr   hrs mm/hr   hrs mm/hr .167 1.43   .500 61.41   .833 18.56   1.17 1.43 .333 15.71   .667 38.55   1.000 5.71   Unit Hyd Qpeak (cms)= .264 PEAK FLOW (cms)= .095 (i) TIME TO PEAK (hrs)= .667 RUNOFF VOLUME (mm)= 14.355 TOTAL RAINFALL (mm)= 23.802 RUNOFF COEFFICIENT = .603 (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY</pre>	CALIB       Area (ha) = 3.16         STANDHYD (0100)       Total Imp(%) = 82.00       Dir. Conn.(%) = 82.00         ID= 1 DT= 5.0 min       Total Imp(%) = 82.00       Dir. Conn.(%) = 82.00         IMPERVIOUS PERVIOUS (i)         Surface Area (ha) = 2.59       .57         Dep. Storage (mm) = 1.00       1.50         Average Slope (%) = 1.00       2.00         Length (m) = 145.10       40.00         Mannings n = .013       .250         Max.Eff.Inten.(mm/hr) = 79.97       53.38         over (min)       5.00       10.00         Storage Coeff. (min) = 3.49 (ii)       7.70 (ii)         Unit Hyd. Tpeak (min) = 5.00       10.00         Unit Hyd. peak (cms) = .26       .13         PEAK FLOW (cms) = .50       .658       .50         RUNOFF VOLUME (mm) = 22.80       18.10       21.95         TOTAL RAINFALL (mm) = 23.80       23.80       23.80         RUNOFF COEFFICIENT = .96       .76       .92
U.H. Tp(hrs)= .20 NOTE: RAINFALL WAS TRANSFORMED TO 10.0 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 .167 1.43 .500 61.41   .833 18.56   1.17 1.43 .333 15.71   .667 38.55   1.000 5.71   Unit Hyd Qpeak (cms)= .264 PEAK FLOW (cms)= .095 (i) TIME TO PEAK (hrs)= .667 RUNOFF VOLUME (mm) = 14.355 TOTAL RAINFALL (mm)= 23.802 RUNOFF COEFFICIENT = .603 (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.	CALIB       Area (ha) = 3.16         STANDHYD (0100)       Area (ha) = 82.00       Dir. Conn.(%) = 82.00         ID= 1 DT= 5.0 min       Total Imp(%) = 82.00       Dir. Conn.(%) = 82.00         IMPERVIOUS PERVIOUS (i)         Surface Area (ha) = 2.59 .57         Dep. Storage (mm) = 1.00       1.50         Average Slope (%) = 1.00       2.00         Length (m) = 145.10       40.00         Mannings n = .013       .250         Max.Eff.Inten.(mm/hr) = 79.97       53.38         over (min)       5.00       10.00         Storage Coeff. (min) = 3.49 (ii)       7.70 (ii)         Unit Hyd. Tpeak (min) = 5.00       10.00         Unit Hyd. peak (cms) = .26       .13         *TOTALS*       PEAK FLOW (cms) = .50       .56         RUNOFF VOLUME (mm) = 23.80       23.80       23.80         RUNOFF VOLUME (mm) = 23.80       23.80       23.80         RUNOFF COEFFICIENT = .96       .76       .92
U.H. Tp(hrs)=       .20         NOTE: RAINFALL WAS TRANSFORMED TO 10.0 MIN. TIME STEP.         TRANSFORMED HYETOGRAPH         TIME       RAIN         TIME       RAIN         hrs       mm/hr         hrs       mm/hr         hrs       mm/hr         hrs       mm/hr         .167       1.43         .333       15.71         .667       38.55         1.000       5.71         Unit Hyd Qpeak (cms)=       .264         PEAK FLOW       (cms)=       .667         RUNOFF VOLUME (mm)=       14.355         TOTAL RAINFALL (mm)=       23.802         RUNOFF COEFFICIENT =       .603         (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.         IMPERVIOUS PERVIOUS (i)         STANDHYD (0104)       Area (ha)=       .04         ID= 1 DT= 5.0 min       Total Imp(%)=       90.00         IMPERVIOUS PERVIOUS (i)         Surface Area (ha)=       .04       .00         Dep. Storage (mm)=       1.00       1.50	CALIB STANDHYD (0100) Area (ha) = 3.16 ID= 1 DT= 5.0 min Total Imp(%) = 82.00 Dir. Conn. (%) = 82.00 IMPERVIOUS PERVIOUS (i) Surface Area (ha) = 2.59 5.7 Dep. Storage (mm) = 1.00 1.50 Average Slope (%) = 1.00 2.00 Length (m) = 145.10 40.00 Mannings n = .013 .250 Max.Eff.Inten.(mm/hr) = 79.97 53.38 over (min) 5.00 10.00 Storage Coeff. (min) = 3.49 (ii) 7.70 (ii) Unit Hyd. Tpeak (min) = 5.00 10.00 Unit Hyd. peak (cms) = .26 .13 PEAK FLOW (cms) = .50 .66 .538 (iii) TIME TO PEAK (hrs) = .50 .58 .50 RUNOFF VOLUME (mm) = 22.80 18.10 21.95 TOTAL RAINFALL (mm) = 23.80 23.80 23.80 RUNOFF COEFFICIENT = .96 .76 .92 ****** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN* = 98.0 Ia = Dep. Storage (Above) (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
<pre>U.H. Tp(hrs)= .20 NOTE: RAINFALL WAS TRANSFORMED TO 10.0 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 .167 1.43   .500 61.41   .833 18.56   1.17 1.43 .333 15.71   .667 38.55   1.000 5.71   Unit Hyd Qpeak (cms)= .264 PEAK FLOW (cms)= .095 (i) TIME TO PEAK (hrs)= .667 RUNOFF VOLUME (mm)= 14.355 TOTAL RAINFALL (mm)= 14.355 TOTAL RAINFALL (mm)= 2.802 RUNOFF COEFFICIENT = .603 (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.</pre>	CALIB STANDHYD (0100) ID= 1 DT= 5.0 min Total Imp(%) = 82.00 Dir. Conn.(%) = 82.00 IMPERVIOUS PERVIOUS (i) Surface Area (ha) = 2.59 .57 Dep. Storage (mm) = 1.00 1.50 Average Slope (%) = 1.00 2.00 Length (m) = 145.10 40.00 Mannings n = .013 .250 Max.Eff.Inten.(mm/hr) = 79.97 53.38 over (min) 5.00 10.00 Storage Coeff. (min) = 3.49 (ii) 7.70 (ii) Unit Hyd. Tpeak (min) = 5.00 10.00 Unit Hyd. peak (cms) = .26 .13 PEAK FLOW (cms) = .50 .58 .50 RUNOFF VOLUME (mm) = 22.80 18.10 21.95 TOTAL AINFALL (mm) = 23.80 23.80 23.80 RUNOFF COEFFICIENT = .96 .76 .92 ****** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CM* = 98.0 Ia = Dep. Storage (Above) (ii) TIME STORAGE COEFFICIENT.
<pre>U.H. Tp(hrs)= .20 NOTE: RAINFALL WAS TRANSFORMED TO 10.0 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 .167 1.43   .500 61.41   .833 18.56   1.17 1.43 .333 15.71   .667 38.55   1.000 5.71   Unit Hyd Qpeak (cms)= .264 PEAK FLOW (cms)= .095 (i) TIME TO PEAK (hrs)= .667 RUNOFF VOLUME (mm)= 14.355 TOTAL RAINFALL (mm)= 23.802 RUNOFF COEFFICIENT = .603 (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.</pre>	CALIB STANDHYD (0100) ID= 1 DT= 5.0 min Total Imp(%) = 82.00 Dir. Conn.(%) = 82.00 IMPERVIOUS PERVIOUS (i) Surface Area (ha) = 2.59 5.7 Dep. Storage (mm) = 1.00 1.50 Average Slope (%) = 1.00 2.00 Length (m) = 145.10 40.00 Mannings n = .013 .250 Max.Eff.Inten.(mm/hr) = 79.97 53.38 over (min) 5.00 10.00 Storage Coeff. (min) = 3.49 (ii) 7.70 (ii) Unit Hyd. Tpeak (min) = 5.00 10.00 Unit Hyd. peak (cms) = .26 .13 PEAK FLOW (cms) = .50 .06 .538 (iii) TIME TO PEAK (hrs) = .50 .58 .50 RUNOFF VOLUME (mm) = 22.80 18.10 21.95 TOTAL RAINFALL (mm) = 23.80 23.80 23.80 RUNOFF COEFFICIENT = .96 .76 .92 ****** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN* = 98.0 Ia = Dep. Storage (Above) (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
<pre>U.H. Tp(hrs)= .20 NOTE: RAINFALL WAS TRANSFORMED TO 10.0 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 .167 1.43 .500 61.41 .833 18.56 1.17 1.43 .333 15.71 .667 38.55 1.000 5.71 Unit Hyd Qpeak (cms)= .264 PEAK FLOW (cms)= .095 (i) TIME TO PEAK (hrs)= .667 RUNOFF VOLUME (mm)= 14.355 TOTAL RAINFALL (mm)= 23.802 RUNOFF COEFFICIENT = .603 (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.</pre>	CALIB STANDHYD (0100) ID= 1 DT= 5.0 min Total Imp(%) = 82.00 Dir. Conn.(%) = 82.00 IMPERVIOUS PERVIOUS (i) Surface Area (ha) = 2.59 .57 Dep. Storage (mm) = 1.00 1.50 Average Slope (%) = 1.00 2.00 Length (m) = 145.10 40.00 Mannings n = .013 .250 Max.Eff.Inten.(mm/hr) = 79.97 53.38 over (min) 5.00 10.00 Storage Coeff. (min) = 3.49 (ii) 7.70 (ii) Unit Hyd. Tpeak (min) = 5.00 10.00 Unit Hyd. peak (cms) = .26 .13 PEAK FLOW (cms) = .50 .58 .50 RUNOFF VOLUME (mm) = 22.80 18.10 21.95 TOTAL AINFALL (mm) = 23.80 23.80 23.80 RUNOFF COEFFICIENT = .96 .76 .92 ****** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CM* = 98.0 Ia = Dep. Storage (Above) (ii) TIME STORAGE COEFFICIENT.

RESERVOIR (0103)   IN= 2> OUT= 1   DT= 5.0 min   OUTFLOW STORAGE   OUTFLOW STORAGE (cms) (ha.m.)   (cms) (ha.m.) .0000 .0000   .3500 .1300 .0150 .0677   .0000 .0000 AREA QPEAK TPEAK R.V. (ha) (cms) (hrs) (mm) INFLOW : ID= 2 (0100) 3.160 .538 .50 21.95 OUTFLOW: ID= 1 (0103) 3.160 .015 1.17 21.59	ID = 3 (0112): 6.76 .327 .50 19.81 NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY. ADD HYD (0113)   ADD HYD (0113)   1 + 2 = 3   AREA QPEAK TPEAK R.V. (ha) (cms) (hrs) (mm)
.0150 .0677 .0000 .0000 AREA QPEAK TPEAK R.V. (ha) (cms) (hrs) (mm) INFLOW : ID= 2 (0100) 3.160 .538 .50 21.95	ADD HYD (0113)     1 + 2 = 3   AREA QPEAK TPEAK R.V.
PEAK FLOW REDUCTION [Qout/Qin](%)= 2.71 TIME SHIFT OF PEAK FLOW (min)= 40.00	ID1= 1 (0108): .76 .053 .67 14.35 + ID2= 2 (0112): 6.76 .327 .50 19.81 
MAXIMUM STORAGE USED (ha.m.) = .0659	NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
ADD HYD (0105)   1 + 2 = 3   AREA QPEAK TPEAK R.V. (ha) (cms) (hrs) (mm) TDI= 1 (0104); 04 008 50 22 32	** SIMULATION NUMBER: 4 ** *********************************
ID1= 1 (0104): .04 .009 .50 22.32 + ID2= 2 (0103): 3.16 .015 1.17 21.59 	READ STORM       Filename: V:\01606\Active\160622415\Ana         Image: Ptotal= 41.10 mm       Image: Ptotal= 41.10 mm
NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.	TIMERAINTIMERAINTIMERAINTIMERAINTIMERAINhrsmm/hrhrsmm/hrhrsmm/hrhrsmm/hrhrsmm/hr.25.003.506.996.752.8810.00.4.50.413.756.997.002.8810.25.4.75.414.006.997.252.8810.50.41.00.414.256.997.501.6410.75.41.25.414.5018.917.751.6411.00.41.50.414.7518.918.001.6411.25.41.50.415.2518.918.50.8211.75.42.00.415.2518.918.50.8211.75.42.552.475.755.349.00.8212.25.43.002.476.255.349.50.41.43.252.476.502.889.75.41.4
ADD HYD (0111)   1 + 2 = 3   AREA QPEAK TPEAK R.V. 	CALIB     NASHYD (0108)   Area (ha)= .76 Curve Number (CN)= 98.0  ID= 1 DT=10.0 min   Ia (mm)= 5.00 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= .20
ID = 3 (0111): 6.13 .253 .67 19.62	NOTE: RAINFALL WAS TRANSFORMED TO 10.0 MIN. TIME STEP.
NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY. ADD HYD (0112)   1 + 2 = 3   AREA QPEAK TPEAK R.V. (ha) (cms) (hrs) (mm) ID1= 1 (0107): .63 .111 .50 21.62	TRANSFORMED         HYETOGRAPH         TIME         RAIN         Ins         mm/hr         hrs         mm/hr         hrs <thr>             .500             .41</thr>

1.16		1 4 2 2 2	10 05		1 64	10.00	4.1
	/ .41	4.333	12.95	7.500	1.64	10.67	.41
1.33	3.41	4.500	18.91	/.66/	1.64	10.83	.41
1.50	0.41	4.667	18.91	7.833	1.64	11.00	.41
1.66	/ .41	4.833	18.91	8.000	1.64	11.17	.41
1.83	3.41	5.000	18.91	8.167	1.64	11.33	.41
2.00	7 .41 3 .41 0 .41 7 .41 3 1.44 0 2.47 7 2.47 3 2.47	5.167	18.91	8.333	1.23	11.50	.41
2.16	/ .41	5.333	12.13	8.500	.82	11.67	.41
2.33	3 1.44	5.500	5.34	8.667	.82	11.83	.41
2.50	0 2.47	5.667	5.34	8.833	.82	12.00	.41
2.66	/ 2.4/	5.833	5.34	9.000	.82	12.17	.41
2.83	3 2.47	6.000	5.34	9.167	.82	12.33	.20
3.00	2.47 2.47 2.47 2.47	6.167	5.34	9.333	.62		
3.16	/ 2.4/	0.333	4.11	9.500	.41		
Unit Hyd Qpeak	(cms) =	.145					
PEAK FLOW	(cms) =	.037 (i)					
PEAK FLOW TIME TO PEAK RUNOFF VOLUME TOTAL RAINFALL	(hrs)=	5.167					
RUNOFF VOLUME	(mm) = 3	0.747					
TOTAL RAINFALL	(mm) = 42	1.100					
RUNOFF COEFFICI	ENT =	.748					
(i) PEAK FLOW D	DES NOT IN	CLUDE BAS	SEFLOW IN	F ANY.			
CALIB							
STANDHYD (0107)	Area	(ha) =	63				
STANDHYD (0107)    ID= 1 DT= 5.0 min	Total I	mp(%) = 7	75.00 I	Dir. Conr	1.(%)= '	75.00	
		IMPERVIOU	JS PEH	RVIOUS (i	L)		
Surface Area	(ha) =	.47		.16			
Dep. Storage	(mm) =	1.00		1.50			
Average Slope	(%) =	1.00					
Surface Area Dep. Storage Average Slope Length Mannings n	(m) =	64.80	4	10.00			
Length Mannings n	=	.013	4	.250			
NOTE: RAIN	FALL WAS T	RANSFORME	ED TO S		TIME ST	EP.	
NOTE: RAIN	FALL WAS TI	RANSFORME	ED TO S		TIME ST	EP.	
NOTE: RAIN	FALL WAS TI			5.0 MIN.			
		TR4	ANSFORMEI	5.0 MIN. D HYETOGF	RAPH	_	
TIM	e rain	TRA   TIME	ANSFORMEI RAIN	5.0 MIN. D HYETOGR   TIME	RAPH RAIN	-   TIME	RAIN
TIM	E RAIN	TRA	ANSFORMEI RAIN	5.0 MIN. D HYETOGF TIME	RAPH RAIN	-   TIME	mama / la sa
TIM	E RAIN	TRA	ANSFORMEI RAIN	5.0 MIN. D HYETOGF TIME	RAPH RAIN	-   TIME	mama / la sa
TIM	E RAIN	TRA	ANSFORMEI RAIN	5.0 MIN. D HYETOGF TIME	RAPH RAIN	-   TIME	mama / la sa
TIM	E RAIN	TRA	ANSFORMEI RAIN	5.0 MIN. D HYETOGF TIME	RAPH RAIN	-   TIME	mama / la sa
TIM	E RAIN	TRA	ANSFORMEI RAIN	5.0 MIN. D HYETOGF TIME	RAPH RAIN	-   TIME	mama / la sa
TIM	E RAIN	TRA	ANSFORMEI RAIN	5.0 MIN. D HYETOGF TIME	RAPH RAIN	-   TIME	mama / la sa
TIM	E RAIN s mm/hr 3 .00 7 .00 0 .00 3 .41 7 .41	TRA   TIME   hrs   3.167   3.250   3.333   3.417   3.500   3.583	ANSFORMEI RAIN mm/hr 2.47 2.47 6.99 6.99 6.99	<pre>5.0 MIN. D HYETOGH TIME hrs 6.250 6.333 6.417 6.500 6.583 6.667</pre>	RAPH RAIN mm/hr 5.34 2.88 2.88 2.88 2.88 2.88 2.88	- TIME 9.33 9.42 9.50 9.58 9.67 9.75	mm/hr .41 .41 .41 .41 .41 .41
TIM hr .08 .16 .25 .33 .41 .50 .58	E RAIN s mm/hr 3 .00 7 .00 0 .00 3 .41 7 .41	TRA   TIME   hrs   3.167   3.250   3.333   3.417   3.500   3.583	ANSFORMEI RAIN mm/hr 2.47 2.47 6.99 6.99 6.99	<pre>5.0 MIN. D HYETOGH TIME hrs 6.250 6.333 6.417 6.500 6.583 6.667</pre>	RAPH RAIN mm/hr 5.34 2.88 2.88 2.88 2.88 2.88 2.88	- TIME 9.33 9.42 9.50 9.58 9.67 9.75	mm/hr .41 .41 .41 .41 .41 .41
TIM hr. .08 .16 .25 .33 .41 .50 .58 .66	E RAIN s mm/hr 3 .00 7 .00 0 .00 3 .41 7 .41	TRA   TIME   hrs   3.167   3.250   3.333   3.417   3.500   3.583	ANSFORMEI RAIN mm/hr 2.47 2.47 6.99 6.99 6.99	<pre>5.0 MIN. D HYETOGH TIME hrs 6.250 6.333 6.417 6.500 6.583 6.667</pre>	RAPH RAIN mm/hr 5.34 2.88 2.88 2.88 2.88 2.88 2.88	- TIME 9.33 9.42 9.50 9.58 9.67 9.75	mm/hr .41 .41 .41 .41 .41 .41
TIM hr: .08 .16 .25 .33 .41 .50 .58 .66 .75	E RAIN s mm/hr 3 .00 7 .00 0 .00 3 .41 7 .41	TRA   TIME   hrs   3.167   3.250   3.333   3.417   3.500   3.583	ANSFORMEI RAIN mm/hr 2.47 2.47 6.99 6.99 6.99	<pre>5.0 MIN. D HYETOGH TIME hrs 6.250 6.333 6.417 6.500 6.583 6.667</pre>	RAPH RAIN mm/hr 5.34 2.88 2.88 2.88 2.88 2.88 2.88	- TIME 9.33 9.42 9.50 9.58 9.67 9.75	mm/hr .41 .41 .41 .41 .41 .41
TIM hr .08 .16 .25 .33 .41 .50 .58 .66 .75 .83	E RAIN s mm/hr 3 .00 7 .00 0 .00 3 .41 7 .41	TRA   TIME   hrs   3.167   3.250   3.333   3.417   3.500   3.583	ANSFORMEI RAIN mm/hr 2.47 2.47 6.99 6.99 6.99	<pre>5.0 MIN. D HYETOGH TIME hrs 6.250 6.333 6.417 6.500 6.583 6.667</pre>	RAPH RAIN mm/hr 5.34 2.88 2.88 2.88 2.88 2.88 2.88	- TIME 9.33 9.42 9.50 9.58 9.67 9.75	mm/hr .41 .41 .41 .41 .41 .41
TIM hr .08 .16 .25 .33 .41 .50 .58 .66 .75 .83 .91	E RAIN s mm/hr 3 .00 7 .00 0 .00 3 .41 7 .41	TRA   TIME   hrs   3.167   3.250   3.333   3.417   3.500   3.583	ANSFORMEI RAIN mm/hr 2.47 2.47 6.99 6.99 6.99	<pre>5.0 MIN. D HYETOGH TIME hrs 6.250 6.333 6.417 6.500 6.583 6.667</pre>	RAPH RAIN mm/hr 5.34 2.88 2.88 2.88 2.88 2.88 2.88	- TIME 9.33 9.42 9.50 9.58 9.67 9.75	mm/hr .41 .41 .41 .41 .41 .41
TIM hr .08 .16 .25 .33 .41 .50 .58 .66 .75 .83 .91 1.00	E RAIN s mm/hr 3 .00 7 .00 0 .00 3 .41 7 .41	TRA   TIME   hrs   3.167   3.250   3.333   3.417   3.500   3.583	ANSFORMEI RAIN mm/hr 2.47 2.47 6.99 6.99 6.99	<pre>5.0 MIN. D HYETOGH TIME hrs 6.250 6.333 6.417 6.500 6.583 6.667</pre>	RAPH RAIN mm/hr 5.34 2.88 2.88 2.88 2.88 2.88 2.88	- TIME 9.33 9.42 9.50 9.58 9.67 9.75	mm/hr .41 .41 .41 .41 .41 .41
TIM hr: .08 .16 .25 .33 .41 .50 .58 .66 .75 .83 .91 1.00 1.08	E RAIN s mm/hr 3 .00 7 .00 0 .00 3 .41 7 .41 0 .41 3 .41 0 .41 3 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 7 .41 0 .41 7 .41	TRA TIME hrs 3.167 3.250 3.333 3.417 3.500 3.583 3.667 3.750 3.833 3.917 4.000 4.083 4.167	ANSFORMEI RAIN mm/hr 2.47 2.47 6.99 6.99 6.99 6.99 6.99 6.99 6.99 6.9	<pre>5.0 MIN. D HYETOGH TIME hrs 6.250 6.333 6.417 6.500 6.583 6.667 6.750 6.833 6.917 7.000 7.083 7.167 7.250 7.233</pre>	RAPH RAIN mm/hr 5.34 2.88 2.88 2.88 2.88 2.88 2.88 2.88 2.8	TIME hrs 9.33 9.42 9.50 9.58 9.67 9.75 9.83 9.92 10.00 10.08 10.17 10.25 10.33	mm/hr .41 .41 .41 .41 .41 .41 .41 .41 .41 .41
TIM hr: .08 .16 .25 .33 .41 .50 .58 .66 .75 .83 .91 1.00 1.08 1.16	E RAIN s mm/hr 3 .00 7 .00 0 .00 3 .41 7 .41 0 .41 3 .41 0 .41 3 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 7 .41 0 .41 7 .41	TRA TIME hrs 3.167 3.250 3.333 3.417 3.500 3.583 3.667 3.750 3.833 3.917 4.000 4.083 4.167	ANSFORMEI RAIN mm/hr 2.47 2.47 6.99 6.99 6.99 6.99 6.99 6.99 6.99 6.9	<pre>5.0 MIN. D HYETOGH TIME hrs 6.250 6.333 6.417 6.500 6.583 6.667 6.750 6.833 6.917 7.000 7.083 7.167 7.250 7.233</pre>	RAPH RAIN mm/hr 5.34 2.88 2.88 2.88 2.88 2.88 2.88 2.88 2.8	TIME hrs 9.33 9.42 9.50 9.58 9.67 9.75 9.83 9.92 10.00 10.08 10.17 10.25 10.33	mm/hr .41 .41 .41 .41 .41 .41 .41 .41 .41 .41
TIM hr .08 .16 .25 .33 .41 .50 .58 .66 .75 .83 .91 1.00 1.08 1.16	E RAIN s mm/hr 3 .00 7 .00 0 .00 3 .41 7 .41 0 .41 3 .41 0 .41 3 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 7 .41 0 .41 7 .41	TRA TIME hrs 3.167 3.250 3.333 3.417 3.500 3.583 3.667 3.750 3.833 3.917 4.000 4.083 4.167	ANSFORMEI RAIN mm/hr 2.47 2.47 6.99 6.99 6.99 6.99 6.99 6.99 6.99 6.9	<pre>5.0 MIN. D HYETOGH TIME hrs 6.250 6.333 6.417 6.500 6.583 6.667 6.750 6.833 6.917 7.000 7.083 7.167 7.250 7.233</pre>	RAPH RAIN mm/hr 5.34 2.88 2.88 2.88 2.88 2.88 2.88 2.88 2.8	TIME hrs 9.33 9.42 9.50 9.58 9.67 9.75 9.83 9.92 10.00 10.08 10.17 10.25 10.33	mm/hr .41 .41 .41 .41 .41 .41 .41 .41 .41 .41
TIM hr .08 .16 .25 .33 .41 .50 .58 .66 .75 .83 .91 1.00 1.08 1.16 1.25	E RAIN s mm/hr 3 .00 7 .00 0 .00 3 .41 7 .41 0 .41 3 .41 0 .41 3 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 7 .41 0 .41 7 .41	TRA TIME hrs 3.167 3.250 3.333 3.417 3.500 3.583 3.667 3.750 3.833 3.917 4.000 4.083 4.167	ANSFORMEI RAIN mm/hr 2.47 2.47 6.99 6.99 6.99 6.99 6.99 6.99 6.99 6.9	<pre>5.0 MIN. D HYETOGH TIME hrs 6.250 6.333 6.417 6.500 6.583 6.667 6.750 6.833 6.917 7.000 7.083 7.167 7.250 7.233</pre>	RAPH RAIN mm/hr 5.34 2.88 2.88 2.88 2.88 2.88 2.88 2.88 2.8	TIME hrs 9.33 9.42 9.50 9.58 9.67 9.75 9.83 9.92 10.00 10.08 10.17 10.25 10.33	mm/hr .41 .41 .41 .41 .41 .41 .41 .41 .41 .41
TIM hr: .08 .16 .25 .33 .41 .50 .58 .66 .75 .83 .91 1.00 1.08 1.16 1.25 1.33 .141	E RAIN s mm/hr 3 .00 7 .00 0 .00 3 .41 7 .41 0 .41 3 .41 0 .41 3 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 7 .41 0 .41 7 .41	TRA TIME hrs 3.167 3.250 3.333 3.417 3.500 3.583 3.667 3.750 3.833 3.917 4.000 4.083 4.167	ANSFORMEI RAIN mm/hr 2.47 2.47 6.99 6.99 6.99 6.99 6.99 6.99 6.99 6.9	<pre>5.0 MIN. D HYETOGH TIME hrs 6.250 6.333 6.417 6.500 6.583 6.667 6.750 6.833 6.917 7.000 7.083 7.167 7.250 7.233</pre>	RAPH RAIN mm/hr 5.34 2.88 2.88 2.88 2.88 2.88 2.88 2.88 2.8	TIME hrs 9.33 9.42 9.50 9.58 9.67 9.75 9.83 9.92 10.00 10.08 10.17 10.25 10.33	mm/hr .41 .41 .41 .41 .41 .41 .41 .41 .41 .41
TIM hr: .08 .16 .25 .33 .41 .50 .58 .66 .75 .83 .91 1.00 1.08 1.16 1.25 1.33 1.41 1.50	E RAIN s mm/hr 3 .00 7 .00 0 .00 3 .41 7 .41 0 .41 3 .41 0 .41 3 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 7 .41 0 .41 7 .41	TRA TIME hrs 3.167 3.250 3.333 3.417 3.500 3.583 3.667 3.750 3.833 3.917 4.000 4.083 4.167	ANSFORMEI RAIN mm/hr 2.47 2.47 6.99 6.99 6.99 6.99 6.99 6.99 6.99 6.9	<pre>5.0 MIN. D HYETOGH TIME hrs 6.250 6.333 6.417 6.500 6.583 6.667 6.750 6.833 6.917 7.000 7.083 7.167 7.250 7.233</pre>	RAPH RAIN mm/hr 5.34 2.88 2.88 2.88 2.88 2.88 2.88 2.88 2.8	TIME hrs 9.33 9.42 9.50 9.58 9.67 9.75 9.83 9.92 10.00 10.08 10.17 10.25 10.33	mm/hr .41 .41 .41 .41 .41 .41 .41 .41 .41 .41
TIM hr .08 .16 .25 .33 .41 .50 .58 .66 .75 .83 .91 1.00 1.08 1.16 1.25 1.33 1.41 1.58	E RAIN s mm/hr 3 .00 7 .00 0 .00 3 .41 7 .41 0 .41 3 .41 0 .41 3 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 0 .41 7 .41 7 .41 0 .41 7 .41	TRA TIME hrs 3.167 3.250 3.333 3.417 3.500 3.583 3.667 3.750 3.833 3.917 4.000 4.083 4.167	ANSFORMEI RAIN mm/hr 2.47 2.47 6.99 6.99 6.99 6.99 6.99 6.99 6.99 6.9	<pre>5.0 MIN. D HYETOGH TIME hrs 6.250 6.333 6.417 6.500 6.583 6.667 6.750 6.833 6.917 7.000 7.083 7.167 7.250 7.233</pre>	RAPH RAIN mm/hr 5.34 2.88 2.88 2.88 2.88 2.88 2.88 2.88 2.8	TIME hrs 9.33 9.42 9.50 9.58 9.67 9.75 9.83 9.92 10.00 10.08 10.17 10.25 10.33	mm/hr .41 .41 .41 .41 .41 .41 .41 .41 .41 .41
TIM hr: .08 .16 .25 .33 .41 .50 .58 .66 .75 .83 .91 1.00 1.08 1.16 1.25 1.33 1.41 1.50	E RAIN mm/hr 3 .00 7 .00 0 .00 3 .41 7 .41 0 .41 3 .41 7 .41	TRA TIME hrs 3.167 3.250 3.333 3.417 3.500 3.583 3.667 3.750 3.833 3.917 4.000 4.083 4.167	ANSFORMEI RAIN mm/hr 2.47 2.47 6.99 6.99 6.99 6.99 6.99 6.99 6.99 6.9	5.0 MIN. D HYETOGH TIME hrs 6.250 6.333 6.417 6.500 6.583 6.667 6.750 6.833 6.917 7.000 7.083 7.167 7.250 7.333 7.417 7.500 7.583 7.667 7.750 7.833	RAPH RAIN mm/hr 5.34 2.88 2.88 2.88 2.88 2.88 2.88 2.88 2.8	TIME hrs 9.33 9.42 9.50 9.58 9.67 9.75 9.83 9.92 10.00 10.08 10.17 10.25 10.33 10.42 10.50 10.58 10.67 10.75 10.83 10.92	<pre>mm/hr     .41</pre>

.41 | 4.917 18.91 | 8.000 1.64 | 11.08

.41

1.833

2.000       .41       5.083       18.91       8.167       1.64       11.25       .41         2.083       .41       5.167       18.91       8.250       1.64       11.33       .41         2.167       .41       5.250       18.91       8.333       .82       11.42       .41         2.250       .41       5.333       5.34       8.417       .82       11.50       .41         2.333       2.47       5.417       5.34       8.500       .82       11.58       .41         2.417       2.47       5.500       5.34       8.583       .82       11.67       .41         2.500       2.47       5.583       5.34       8.667       .82       11.75       .41
2.083       .41       5.167       18.91       8.250       1.64       11.33       .41         2.167       .41       5.250       18.91       8.333       .82       11.42       .41         2.250       .41       5.333       5.34       8.417       .82       11.50       .41         2.33       2.47       5.417       5.34       8.500       .82       11.58       .41         2.417       2.47       5.500       5.34       8.583       .82       11.67       .41
2.250.415.3335.348.417.8211.50.412.3332.475.4175.348.500.8211.58.412.4172.475.5005.348.583.8211.67.41
2.333         2.47         5.417         5.34         8.500         .82         11.58         .41           2.417         2.47         5.500         5.34         8.583         .82         11.67         .41
2.417 2.47 5.500 5.34 8.583 .82 11.67 .41
2 500 2 47 5 583 5 34 8 667 82 1 1 75 41
2.500 2.7/ 5.505 5.57 0.00/ .02 II./5 .41
2.583 2.47 5.667 5.34 8.750 .82 11.83 .41
2.667 2.47 5.750 5.34 8.833 .82 11.92 .41
2.750 2.47 5.833 5.34 8.917 .82 12.00 .41
2.833 2.47 5.917 5.34 9.000 .82 12.08 .41
2.917 2.47   6.000 5.34   9.083 .82   12.17 .41
3.000 2.47   6.083 5.34   9.167 .82   12.25 .41
3.083 2.47   6.167 5.34   9.250 .82
Max.Eff.Inten.(mm/hr)= 18.91 18.36
over (min) 5.00 20.00
Storage Coeff. (min)= 3.83 (ii) 17.74 (ii)
Unit Hyd. Tpeak (min) = 5.00 20.00
Unit Hyd. peak (cms)= .25 .06
*TOTALS*
PEAK FLOW (cms)= .02 .01 .032 (iii)
TIME TO PEAK (hrs) = 5.08 5.25 5.25
RUNOFF VOLUME (mm) = 40.10 35.02 38.81
TOTAL RAINFALL (mm) = 41.10 41.10 41.10
RUNOFF COEFFICIENT = .98 .85 .94

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 98.0 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 (0106) Area (ha)= 1.55 ID= 1 DT= 5.0 min | Total Imp(%) = 40.00 Dir. Conn.(%) = 40.00 -----IMPERVIOUS PERVIOUS (i) .62 Surface Area (ha) = .93 Dep. Storage (mm) = 1.00 1.50 Average Slope (%) = 1.00 2.00 (m) = 101.70 40.00 = .013 .250 Length Mannings n 18.91 18.36 5.00 20.00 Max.Eff.Inten.(mm/hr) = over (min) Storage Coeff. (min) = 5.02 (ii) 18.93 (ii) Unit Hyd. Tpeak (min) = 5.00 20.00 Unit Hyd. peak (cms)= .21 .06 \*TOTALS\* .03 .04 5.25 5.25 40.10 35.02 41.10 41.10 PEAK FLOW (cms) = .077 (iii) TIME TO PEAK (hrs) = 5.25 RUNOFF VOLUME (mm) = 37.04 TOTAL RAINFALL (mm) = 41.10 RUNOFF COEFFICIENT = .98 .90 .85 (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

CN\* = 98.0 Ia = Dep. Storage (Above) (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL

THAN THE STORAGE COEFFICIENT.	.083 .00   3.167 2.47   6.250 5.34   9.33 .41
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.	
	.333 .41 3.417 6.99 6.500 2.88 9.58 .41
	417 .41 3.500 6.99 6.583 2.88 9.67 .41
CALIB	.500 .41 3.583 6.99 6.667 2.88 9.75 .41
NASHYD (0109) Area (ha)= 1.38 Curve Number (CN)= 98.0	.583 .41 3.667 6.99 6.750 2.88 9.83 .41
ID=1 DT=10.0 min   Ia (mm)= 5.00 # of Linear Res.(N)= 3.00	
	.750 .41 3.833 6.99 6.917 2.88 10.00 .41
	.833 .41 3.917 6.99 7.000 2.88 10.08 .41
NOTE: RAINFALL WAS TRANSFORMED TO 10.0 MIN. TIME STEP.	.917 .41 4.000 6.99 7.083 2.88 10.17 .41
	1.000 .41 4.083 6.99 7.167 2.88 10.25 .41
	1.083 .41 4.167 6.99 7.250 2.88 10.33 .41
TRANSFORMED HYETOGRAPH	1.167 .41 4.250 6.99 7.333 1.64 10.42 .41
TIME RAIN   TIME RAIN   TIME RAIN   TIME RAIN	1.250 .41 4.333 18.91 7.417 1.64 10.50 .41
hrs mm/hr   hrs mm/hr   hrs mm/hr   hrs mm/hr	1.333 .41 4.417 18.91 7.500 1.64 10.58 .41
.167 .00 3.333 4.73 6.500 2.88 9.67 .41	1.417 .41 4.500 18.91 7.583 1.64 10.67 .41
.333 .21 3.500 6.99 6.667 2.88 9.83 .41	1.500 .41   4.583 18.91   7.667 1.64   10.75 .41
.500 .41 3.667 6.99 6.833 2.88 10.00 .41	1.583 .41 4.667 18.91 7.750 1.64 10.83 .41
.667 .41 3.833 6.99 7.000 2.88 10.17 .41	1.667 .41 4.750 18.91 7.833 1.64 10.92 .41
.833 .41 4.000 6.99 7.167 2.88 10.33 .41	1.750 .41 4.833 18.91 7.917 1.64 11.00 .41
1.000 .41 4.167 6.99 7.333 2.26 10.50 .41	1.833 .41   4.917 18.91   8.000 1.64   11.08 .41
1.167 .41 4.333 12.95 7.500 1.64 10.67 .41	1.917 .41 5.000 18.91 8.083 1.64 11.17 .41
1.333 .41 4.500 18.91 7.667 1.64 10.83 .41	2.000 .41 5.083 18.91 8.167 1.64 11.25 .41
1.500 .41 4.667 18.91 7.833 1.64 11.00 .41	2.083 .41 5.167 18.91 8.250 1.64 11.33 .41
1.667 .41 4.833 18.91 8.000 1.64 11.17 .41	2.167 .41 5.250 18.91 8.333 .82 11.42 .41
1.833 .41 5.000 18.91 8.167 1.64 11.33 .41	2.250 .41 5.333 5.34 8.417 .82 11.50 .41
2.000 .41 5.167 18.91 8.333 1.23 11.50 .41	2.333 2.47 5.417 5.34 8.500 .82 11.58 .41
2.167 .41   5.333 12.13   8.500 .82   11.67 .41	2.417 2.47   5.500 5.34   8.583 .82   11.67 .41
2.333 1.44   5.500 5.34   8.667 .82   11.83 .41	2.500 2.47   5.583 5.34   8.667 .82   11.75 .41
2.500 2.47   5.667 5.34   8.833 .82   12.00 .41	2.583 2.47   5.667 5.34   8.750 .82   11.83 .41
2.667 2.47   5.833 5.34   9.000 .82   12.17 .41	2.667 2.47   5.750 5.34   8.833 .82   11.92 .41
2.833 2.47 6.000 5.34 9.167 .82 12.33 .20	2.750 2.47   5.833 5.34   8.917 .82   12.00 .41
3.000 2.47   6.167 5.34   9.333 .62	2.833 2.47   5.917 5.34   9.000 .82   12.08 .41
3.167 2.47   6.333 4.11   9.500 .41	2.917 2.47   6.000 5.34   9.083 .82   12.17 .41
	3.000 2.47   6.083 5.34   9.167 .82   12.25 .41
Unit Hyd Qpeak (cms)= .264	3.083 2.47   6.167 5.34   9.250 .82
PEAK FLOW (cms) = .067 (i)	Max.Eff.Inten.(mm/hr) = 18.91 18.36
TIME TO PEAK (hrs) = 5.167	over (min) 5.00 20.00
RUNOFF VOLUME (mm) = 30.747	Storage Coeff. (min) = 1.67 (ii) 15.58 (ii)
TOTAL RAINFALL (mm) = 41.100	Unit Hyd. Tpeak (min)= 5.00 20.00
RUNOFF COEFFICIENT = .748	Unit Hyd. peak (cms)= .32 .07
	*TOTALS*
(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.	PEAK FLOW (cms) = .00 .00 .002 (iii)
	TIME TO PEAK (hrs) = 4.58 5.25 5.25
	RUNOFF VOLUME (mm) = 40.10 35.02 37.56
	TOTAL RAINFALL (mm) = 41.10 41.10 41.10
CALIB	RUNOFF COEFFICIENT = .98 .85 .91
STANDHYD (0104)   Area (ha)= .04  ID= 1 DT= 5.0 min   Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00	***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
IMPERVIOUS PERVIOUS (i)	(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
Surface Area (ha) = .04 .00	CN* = 98.0 Ia = Dep. Storage (Above)
Dep. Storage (mm) = 1.00 1.50	(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
Average Slope (%)= 1.00 2.00	THAN THE STORAGE COEFFICIENT.
Length (m) = 16.30 40.00	(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
Mannings n = .013 .250	
NORD DATABALL MAG TRANSPORTED TO 5 0 NTM TIME OTTO	
NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.	
	CALIB   STANDHYD (0100)   Area (ha)= 3.16
TRANSFORMED HYETOGRAPH	ID= 1 DT= 5.0 min   Total Imp(%) = 82.00 Dir. Conn.(%) = 82.00
TIME RAIN   TIME RAIN   TIME RAIN   TIME RAIN	1D = 1 D = 3.0  min   10  at  10  mp(s) = 32.00  Diff. Cont.(s) = 32.00  min(s) = 32.00
hrs mm/hr   hrs mm/hr   hrs mm/hr   hrs mm/hr	IMPERVIOUS PERVIOUS (i)

Surface Area (ha)= 2.59 .57 Dep. Storage (mm)= 1.00 1.50	ID = 3 (0110): 4.58 .104 5.33 36.37
Average Slope (%)= 1.00 2.00	NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
Length $(m) = 145.10  40.00$	
Mannings n = $.013$ $.250$	
Max.Eff.Inten.(mm/hr) = 18.91 18.36	
over (min) 5.00 25.00	ADD HYD (0111)
Storage Coeff. (min) = 6.22 (ii) 20.12 (ii)	1 + 2 = 3 AREA QPEAK TPEAK R.V.
Unit Hyd. Tpeak (min)= 5.00 25.00	(ha) (cms) (hrs) (mm)
Unit Hyd. peak (cms)= .19 .05	ID1= 1 (0106): 1.55 .077 5.25 37.04
*TOTALS*	+ ID2= 2 (0110): 4.58 .104 5.33 36.37
PEAK FLOW (cms) = .14 .03 .163 (iii)	
TIME TO PEAK (hrs) = 5.25 5.25 5.25	ID = 3 (0111): 6.13 .172 5.25 36.54
RUNOFF VOLUME (mm) = 40.10 35.02 39.18 TOTAL RAINFALL (mm) = 41.10 41.10 41.10	NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
TOTAL RAINFALL     (nun) =     41.10     41.10       RUNOFF COEFFICIENT =     .98     .85     .95	NOIE: FEAR FLOWS DO NOI INCLUDE DASEFLOWS IF ANI.
(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:	
CN* = 98.0 Ia = Dep. Storage (Above)	ADD HYD (0112)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL	1 + 2 = 3   AREA QPEAK TPEAK R.V.
THAN THE STORAGE COEFFICIENT. (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.	(ha) (cms) (hrs) (mm) ID1= 1 (0107): .63 .032 5.25 38.81
(11) TAR ION DOLD NOT INCLUDE DIDITION IF ANT.	+ ID2= 2 (0111): 6.13 .172 5.25 36.54
	ID = 3 (0112): 6.76 .204 5.25 36.75
SRVOIR (0103)   2> OUT= 1	NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
5.0 min   OUTFLOW STORAGE   OUTFLOW STORAGE (cms) (ha.m.) (cms) (ha.m.) .0000 .0000 .3500 .1300	
.0150 .0677   .0000 .0000	
	ADD HYD (0113)
AREA QPEAK TPEAK R.V.	ADD HYD (0113)     1 + 2 = 3   AREA QPEAK TPEAK R.V.
AREA QPEAK TPEAK R.V. (ha) (cms) (hrs) (mm)	ADD HYD       (0113)         1 + 2 = 3       AREA       QPEAK       TPEAK       R.V.          (ha)       (cms)       (hm)
AREA         QPEAK         TPEAK         R.V.           (ha)         (cms)         (hrs)         (mm)           INFLOW : ID= 2 (0100)         3.160         .163         5.25         39.18	ADD HYD (0113)     1 + 2 = 3   AREA QPEAK TPEAK R.V. (ha) (cms) (hrs) (mm) ID1= 1 (0108): .76 .037 5.17 30.75
AREA         QPEAK         TPEAK         R.V.           (ha)         (cms)         (hrs)         (mm)           INFLOW:         ID= 2 (0100)         3.160         .163         5.25         39.18           OUTFLOW:         ID= 1 (0103)         3.160         .059         5.67         38.82	ADD HYD (0113)     1 + 2 = 3   AREA QPEAK TPEAK R.V. (ha) (cmms) (hrs) (mmn) ID1= 1 (0108): .76 .037 5.17 30.75 + ID2= 2 (0112): 6.76 .204 5.25 36.75
AREA         QPEAK         TPEAK         R.V.           (ha)         (cms)         (hrs)         (mm)           INFLOW : ID= 2 (0100)         3.160         .163         5.25         39.18	ADD HYD (0113)
AREA         QPEAK         TPEAK         R.V.           (ha)         (cms)         (hrs)         (mm)           INFLOW:         ID= 2         (0100)         3.160         .163         5.25         39.18           OUTFLOW:         ID= 1         (0103)         3.160         .059         5.67         38.82           PEAK         FLOW         REDUCTION         [Qout/Qin] (%) = 36.55         TIME         SHIFT OF         PEAK         FLOW         (min) = 25.00	ADD HYD (0113)     1 + 2 = 3   AREA QPEAK TPEAK R.V. (ha) (cms) (hrs) (mm) ID1= 1 (0108): .76 .037 5.17 30.75 + ID2= 2 (0112): 6.76 .204 5.25 36.75 
AREA QPEAK TPEAK R.V. (ha) (cms) (hrs) (mm) INFLOW: ID= 2 (0100) 3.160 .163 5.25 39.18 OUTFLOW: ID= 1 (0103) 3.160 .059 5.67 38.82 PEAK FLOW REDUCTION [Qout/Qin] (%)= 36.55 TIME SHIFT OF PEAK FLOW (min)= 25.00	ADD HYD (0113)     1 + 2 = 3   AREA QPEAK TPEAK R.V. (ha) (cms) (hrs) (mm) ID1= 1 (0108): .76 .037 5.17 30.75 + ID2= 2 (0112): 6.76 .204 5.25 36.75 
AREA         QPEAK         TPEAK         R.V.           (ha)         (cms)         (hrs)         (mm)           INFLOW:         ID= 2         (0100)         3.160         .163         5.25         39.18           OUTFLOW:         ID= 1         (0103)         3.160         .059         5.67         38.82           PEAK         FLOW         REDUCTION         [Qout/Qin] (%) = 36.55         TIME         SHIFT OF PEAK         FLOW         (min) = 25.00           MAXIMUM         STORAGE         USED         (ha.m.) =         .0760	<pre>ADD HYD (0113)   1 + 2 = 3   AREA QPEAK TPEAK R.V</pre>
AREA QPEAK TPEAK R.V. (ha) (cms) (hrs) (mm) INFLOW : ID= 2 (0100) 3.160 .163 5.25 39.18 OUTFLOW: ID= 1 (0103) 3.160 .059 5.67 38.82 PEAK FLOW REDUCTION [Qout/Qin] (%) = 36.55 TIME SHIFT OF PEAK FLOW (min) = 25.00 MAXIMUM STORAGE USED (ha.m.) = .0760	ADD HYD (0113)     1 + 2 = 3   AREA QPEAK TPEAK R.V. 
AREA QPEAK TPEAK R.V. (ha) (cms) (hrs) (mm) INFLOW: ID= 2 (0100) 3.160 .163 5.25 39.18 OUTFLOW: ID= 1 (0103) 3.160 .059 5.67 38.82 PEAK FLOW REDUCTION [Qout/Qin] (%) = 36.55 TIME SHIFT OF PEAK FLOW (min) = 25.00 MAXIMUM STORAGE USED (ha.m.) = .0760 HYD (0105)   + 2 = 3   AREA QPEAK TPEAK R.V.	<pre>ADD HYD (0113)   1 + 2 = 3   AREA QPEAK TPEAK R.V</pre>
AREA       QPEAK       TPEAK       R.V.         (ha)       (cms)       (hrs)       (mm)         INFLOW : ID= 2       0100)       3.160       .163       5.25       39.18         OUTFLOW: ID= 1       0103)       3.160       .059       5.67       38.82         PEAK       FLOW       REDUCTION       [Qout/Qin] (%) = 36.55       TIME SHIFT OF PEAK FLOW       (min) = 25.00         MAXIMUM       STORAGE       USED       (ha.m.) = .0760	<pre>ADD HYD (0113)   1 + 2 = 3   AREA QPEAK TPEAK R.V</pre>
AREA QPEAK TPEAK R.V. (ha) (cms) (hrs) (mm) INFLOW: ID= 2 (0100) 3.160 .163 5.25 39.18 OUTFLOW: ID= 1 (0103) 3.160 .059 5.67 38.82 PEAK FLOW REDUCTION [Qout/Qin] (%) = 36.55 TIME SHIFT OF PEAK FLOW (min) = 25.00 MAXIMUM STORAGE USED (ha.m.) = .0760 	<pre>ADD HYD (0113)   1 + 2 = 3   AREA QPEAK TPEAK R.V</pre>
AREA QPEAK TPEAK R.V. (ha) (cms) (hrs) (mm) INFLOW : ID= 2 (0100) 3.160 .163 5.25 39.18 DUTFLOW: ID= 1 (0103) 3.160 .059 5.67 38.82 PEAK FLOW REDUCTION [Qout/Qin] (%) = 36.55 TIME SHIFT OF PEAK FLOW (min) = 25.00 MAXIMUM STORAGE USED (ha.m.) = .0760 	ADD HYD (0113)     1 + 2 = 3   AREA QPEAK TPEAK R.V. 
AREA QPEAK TPEAK R.V. (ha) (cms) (hrs) (mm) INFLOW : ID= 2 (0100) 3.160 .163 5.25 39.18 OUTFLOW: ID= 1 (0103) 3.160 .059 5.67 38.82 PEAK FLOW REDUCTION [Qout/Qin] (%) = 36.55 TIME SHIFT OF PEAK FLOW (min) = 25.00 MAXIMUM STORAGE USED (ha.m.) = .0760 	ADD HYD (0113)       AREA QPEAK TPEAK R.V.         ID1 = 1 (0108):       .76       .037       5.17       30.75         ID2 = 2 (0112):       6.76       .204       5.25       36.75         ID = 3 (0113):       7.52       .238       5.25       36.15         NOTE:       PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.         ************************************
AREA QPEAK TPEAK R.V. (ha) (cms) (hrs) (mm) INFLOW : ID= 2 (0100) 3.160 .163 5.25 39.18 OUTFLOW: ID= 1 (0103) 3.160 .059 5.67 38.82 PEAK FLOW REDUCTION [Qout/Qin] (%) = 36.55 TIME SHIFT OF PEAK FLOW (min) = 25.00 MAXIMUM STORAGE USED (ha.m.) = .0760 	ADD HYD (0113)     1 + 2 = 3   AREA QPEAK TPEAK R.V. 
AREA QPEAK TPEAK R.V. (ha) (cms) (hrs) (mm) INFLOW : ID= 2 (0100) 3.160 .163 5.25 39.18 OUTFLOW: ID= 1 (0103) 3.160 .059 5.67 38.82 PEAK FLOW REDUCTION [Qout/Qin] (%) = 36.55 TIME SHIFT OF PEAK FLOW (min) = 25.00 MAXIMUM STORAGE USED (ha.m.) = .0760 	ADD HYD (0113)       AREA QPEAK TPEAK R.V.         ID1 = 1 (0108):       .76       .037       5.17       30.75         ID2 = 2 (0112):       6.76       .204       5.25       36.75         ID = 3 (0113):       7.52       .238       5.25       36.15         NOTE:       PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.         ************************************
AREA QPEAK TPEAK R.V. (ha) (cms) (hrs) (mm) INFLOW : ID= 2 (0100) 3.160 .163 5.25 39.18 OUTFLOW: ID= 1 (0103) 3.160 .059 5.67 38.82 PEAK FLOW REDUCTION [Qout/Qin] (%) = 36.55 TIME SHIFT OF PEAK FLOW (min) = 25.00 MAXIMUM STORAGE USED (ha.m.) = .0760 	ADD HYD (0113)       AREA QPEAK TPEAK R.V.         ID1 = 1 (0108):       .76       .037       5.17       30.75         ID2 = 2 (0112):       6.76       .204       5.25       36.75         ID = 3 (0113):       7.52       .238       5.25       36.15         NOTE:       PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.         ************************************
AREA QPEAK TPEAK R.V. (ha) (cms) (hrs) (mm) INFLOW : ID= 2 (0100) 3.160 .163 5.25 39.18 OUTFLOW: ID= 1 (0103) 3.160 .059 5.67 38.82 PEAK FLOW REDUCTION [Qout/Qin] (%) = 36.55 TIME SHIFT OF PEAK FLOW (min) = 25.00 MAXIMUM STORAGE USED (ha.m.) = .0760 	ADD HYD (0113)       AREA QPEAK TPEAK R.V.         ID1 = 1 (0108):       .76       .037       5.17       30.75         ID2 = 2 (0112):       6.76       .204       5.25       36.75         ID = 3 (0113):       7.52       .238       5.25       36.15         NOTE:       PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.         ***********************************
AREA QPEAK TPEAK R.V. (ha) (cms) (hrs) (mm) INFLOW: ID= 2 (0100) 3.160 .163 5.25 39.18 OUTFLOW: ID= 1 (0103) 3.160 .059 5.67 38.82 PEAK FLOW REDUCTION [Qout/Qin] (%) = 36.55 TIME SHIFT OF PEAK FLOW (min) = 25.00 MAXIMUM STORAGE USED (ha.m.) = .0760 	ADD HYD (0113)       AREA QPEAK TPEAK R.V.         ID1 = 1 (0108):       .76 .037 5.17 30.75         ID2 = 2 (0112):       6.76 .204 5.25 36.75         ID = 3 (0113):       7.52 .238 5.25 36.15         NOTE:       PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.         ************************************
AREA       QPEAK       TPEAK       R.V.         (ha)       (cms)       (hrs)       (mm)         INFLOW:       ID= 2 (0100)       3.160       .163       5.25       39.18         OUTFLOW:       ID= 1 (0103)       3.160       .059       5.67       38.82         PEAK       FLOW       REDUCTION       [Qout/Qin] (%) = 36.55       38.82         TIME       SHIFT OF PEAK       FLOW       (min) = 25.00         MAXIMUM       STORAGE       USED       (ha.m.) = .0760	ADD HYD (0113)       AREA QPEAK TPEAK R.V.         ID1 = 1 (0108):       .76       .037       5.17       30.75         + ID2 = 2 (0112):       6.76       .204       5.25       36.75         ID = 3 (0113):       7.52       .238       5.25       36.15         NOTE:       PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.         ***********************************
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	ADD HYD (0113)       AREA QPEAK TPEAK R.V.         ID1 = 1 (0108):       .76 .037 5.17 30.75         ID2 = 2 (0112):       6.76 .204 5.25 36.75         ID = 3 (0113):       7.52 .238 5.25 36.15         NOTE:       PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.         ************************************
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	ADD HYD (0113)       AREA QPEAK TPEAK R.V.         ID1 = 1 (0108):       .76 .037 5.17 30.75         ID2 = 2 (0112):       6.76 .204 5.25 36.75         ID = 3 (0113):       7.52 .238 5.25 36.15         NOTE:       PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.         ************************************
AREA       QPEAK       TPEAK       R.V.         (ha)       (cms)       (hrs)       (mm)         INFLOW:       ID=2       (0100)       3.160       .163       5.25       39.18         OUTFLOW:       ID=1       (0103)       3.160       .059       5.67       38.82         PEAK       FLOW       REDUCTION       [Qout/Qin](%)=       36.55         TIME       SHIFT OF PEAK       FLOW       (min)=       25.00         MAXIMUM       STORAGE       USED       (ha.m.)=       .0760	ADD HYD (0113)       AREA QPEAK TPEAK R.V.         ID1 = 1 (0108):       .76 .037 5.17 30.75         ID2 = 2 (0112):       6.76 .204 5.25 36.75         ID = 3 (0113):       7.52 .238 5.25 36.15         NOTE:       PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.         ************************************

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NOTE: RAINFALL WAS TRANSFORMED TO 10.0 MIN. TIME STEP.	CALIB     STANDHYD (0106)   Area (ha)= 1.55  ID= 1 DT= 5.0 min   Total Imp(%)= 40.00 Dir. Conn.(%)= 40.00	
TRANSFORMED HYETOGRAPH TIME RAIN   TIME RAIN   TIME RAIN   TIME RAIN	IMPERVIOUS PERVIOUS (i)	
hrs mm/hr   hrs mm/hr   hrs mm/hr   hrs mm/hr	Surface Area (ha) = .62 .93	
.167 3.41 .500 146.55 .833 44.30 1.17 3.41	Dep. Storage (mm) = 1.00 1.50	
.333 37.49 .667 92.02 1.000 13.63	Average Slope (%)= 1.00 2.00	
	Length (m) = 101.70 40.00	
Unit Hyd Qpeak (cms) = .145	Mannings n = .013 .250	
PEAK FLOW $(cms) = .174$ (i)	Max.Eff.Inten.(mm/hr) = 190.85 141.78	
TIME TO PEAK (hrs) = .667	over (min) 5.00 10.00	
RUNOFF VOLUME (mm) = 45.865	Storage Coeff. (min)= 1.99 (ii) 8.13 (ii)	
TOTAL RAINFALL (mm) = 56.802	Unit Hyd. Tpeak (min) = 5.00 10.00	
RUNOFF COEFFICIENT = .807	Unit Hyd. peak (cms)= .31 .13	
(-) DEAK ELON DOEC NOT INCLIDE DACEDION TE ANY	*TOTALS*	
(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.	PEAK FLOW (cms)= .32 .28 .506 (i TIME TO PEAK (hrs)= .50 .58 .50	1 I )
	RUNOFF VOLUME (mm) = 55.80 50.56 52.66	
	TOTAL RAINFALL $(mm) = 56.80$ 56.80 56.80 56.80	
LIB	RUNOFF COEFFICIENT = .98 .89 .93	
ANDHYD (0107) Area (ha)= .63		
1 DT= 5.0 min   Total Imp(%) = 75.00 Dir. Conn.(%) = 75.00	***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!	
IMPERVIOUS PERVIOUS (i)	(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:	
Surface Area (ha) = .47 .16	CN* = 98.0 Ia = Dep. Storage (Above)	
Dep. Storage (mm) = 1.00 1.50	(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL	
Average Slope (%) = 1.00 2.00	THAN THE STORAGE COEFFICIENT.	
Length $(m) = 64.80 + 40.00$	(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.	
Mannings n = .013 .250		
NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.		
	CALIB	
	NASHYD (0109)   Area (ha) = 1.38 Curve Number (CN) = 98	
TRANSFORMED HYETOGRAPH	ID= 1 DT=10.0 min   Ia (mm)= 5.00 # of Linear Res.(N)= 3.	00
TIME RAIN   TIME RAIN   TIME RAIN   TIME RAIN hrs mm/hr   hrs mm/hr   hrs mm/hr   hrs mm/hr	U.H. Tp(hrs) = .20	
.083 .00 .417 102.24 .750 54.53 1.08 6.82	NOTE: RAINFALL WAS TRANSFORMED TO 10.0 MIN. TIME STEP.	
.167 6.82 .500 190.85 .833 34.08		
.167 6.82   .500 190.85   .833 34.08   .250 20.45   .583 102.24   .917 20.45		
	TRANSFORMED HYETOGRAPH	
.250 20.45   .583 102.24   .917 20.45   .333 54.53   .667 81.79   1.000 6.82	TIME RAIN   TIME RAIN   TIME RAIN   TIME	
.250 20.45   .583 102.24   .917 20.45   .333 54.53   .667 81.79   1.000 6.82   Max.Eff.Inten.(mm/hr)= 190.85 141.78	TIME RAIN   TIME RAIN   TIME RAIN   TIME hrs mm/hr   hrs mm/hr   hrs mm/hr   hrs	mn
.250 20.45   .583 102.24   .917 20.45   .333 54.53   .667 81.79   1.000 6.82   Max.Eff.Inten.(mm/hr)= 190.85 141.78 over(min) 5.00 10.00	TIME         RAIN         TIME         RAIN         TIME         RAIN         TIME           hrs         mm/hr         hrs         mm/hr         hrs         mm/hr         hrs           .167         3.41         .500         146.55         .833         44.30         1.17	
.250 20.45   .583 102.24   .917 20.45   .333 54.53   .667 81.79   1.000 6.82   Max.Eff.Inten.(mm/hr) = 190.85 141.78 over (min) 5.00 10.00 Storage Coeff. (min) = 1.52 (ii) 5.03 (ii)	TIME RAIN   TIME RAIN   TIME RAIN   TIME hrs mm/hr   hrs mm/hr   hrs mm/hr   hrs	mn
.250 20.45   .583 102.24   .917 20.45   .333 54.53   .667 81.79   1.000 6.82   Max.Eff.Inten.(mm/hr) = 190.85 141.78 over (min) 5.00 10.00 Storage Coeff. (min) = 1.52 (ii) 5.03 (ii) Unit Hyd. Tpeak (min) = 5.00 10.00	TIME         RAIN         TIME         RAIN         TIME         RAIN         TIME           hrs         mm/hr         hrs         mm/hr         hrs         mm/hr         hrs         mm/hr         hrs           .167         3.41         .500         146.55         .833         44.30         1.17           .333         37.49         .667         92.02         1.000         13.63	mn
.250 20.45   .583 102.24   .917 20.45   .333 54.53   .667 81.79   1.000 6.82   Max.Eff.Inten.(mm/hr)= 190.85 141.78 over (min) 5.00 10.00 Storage Coeff. (min)= 1.52 (ii) 5.03 (ii)	TIME         RAIN         TIME         RAIN         TIME         RAIN         TIME           hrs         mm/hr         hrs         mm/hr         hrs         mm/hr         hrs           .167         3.41         .500         146.55         .833         44.30         1.17	mn
.250       20.45       .583       102.24       .917       20.45       .333         .333       54.53       .667       81.79       1.000       6.82       .82         Max.Eff.Inten.(mm/hr) =       190.85       141.78       .917       .917       .917       .917         Storage Coeff. (min)       5.00       10.00       .917       .917       .917       .917         Unit Hyd. Tpeak (min) =       5.00       10.00       .917       .917       .917       .917         Unit Hyd. peak (cms) =       .33       .16       .16       .917 <td< td=""><td>TIME         RAIN         TIME         RAIN         TIME         RAIN         TIME           hrs         mm/hr         hrs         mm/hr         hrs         mm/hr         hrs         mm/hr         hrs           .167         3.41         .500         146.55         .833         44.30         1.17           .333         37.49         .667         92.02         1.000         13.63</td><td>mn</td></td<>	TIME         RAIN         TIME         RAIN         TIME         RAIN         TIME           hrs         mm/hr         hrs         mm/hr         hrs         mm/hr         hrs         mm/hr         hrs           .167         3.41         .500         146.55         .833         44.30         1.17           .333         37.49         .667         92.02         1.000         13.63	mn
.250 20.45   .583 102.24   .917 20.45   .333 54.53   .667 81.79   1.000 6.82   Max.Eff.Inten.(mm/hr) = 190.85 141.78 over (min) 5.00 10.00 Storage Coeff. (min) = 1.52 (ii) 5.03 (ii) Unit Hyd. Tpeak (min) = 5.00 10.00 Unit Hyd. peak (cms) = .33 .16 *TOTALS* PEAK FLOW (cms) = .25 .06 .286 (iii) TIME TO PEAK (hrs) = .50 .58 .50	TIME       RAIN       TIME       TIME       RAIN       TIME	mn
.250 20.45   .583 102.24   .917 20.45   .333 54.53   .667 81.79   1.000 6.82   Max.Eff.Inten.(mm/hr) = 190.85 141.78 over (min) 5.00 10.00 Storage Coeff. (min) = 1.52 (ii) 5.03 (ii) Unit Hyd. Tpeak (min) = 5.00 10.00 Unit Hyd. peak (cms) = .33 .16 *TOTALS* PEAK FLOW (cms) = .25 .06 .286 (iii) TIME TO PEAK (hrs) = .50 .58 .50 RUNOFF VOLUME (mm) = 55.80 50.56 54.49	TIME       RAIN       TIME       TIME       Main // hrs       mm/hr       hrs       m/hr       hrs       m/hr       hrs       m/hr       hrs       m/hr       hrs       m/hr       hrs       m/hr       Unit       Hyd       Qpeak <td>mn</td>	mn
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       Rain       TIME       Rain       TIME       Rain       TIME       Rain       TIME       Rain       TIME       Rain	mn
.250       20.45       .583       102.24       .917       20.45       .333       54.53       .667       81.79       1.000       6.82         Max.Eff.Inten.(mm/hr) =       190.85       141.78       .000       6.82	TIME       RAIN       TIME       TIME       Main // hrs       mm/hr       hrs       m/hr       hrs       m/hr       hrs       m/hr       hrs       m/hr       hrs       m/hr       hrs       m/hr       Unit       Hyd       Qpeak <td>mn</td>	mn
.250 20.45   .583 102.24   .917 20.45   .333 54.53   .667 81.79   1.000 6.82   Max.Eff.Inten.(mm/hr) = 190.85 141.78 over (min) 5.00 10.00 Storage Coeff. (min) = 1.52 (ii) 5.03 (ii) Unit Hyd. Tpeak (min) = 5.00 10.00 Unit Hyd. peak (cms) = .33 .16 *TOTALS* PEAK FLOW (cms) = .25 .06 .286 (iii) TIME TO PEAK (hrs) = .50 .58 .50 RUNOFF VOLUME (mm) = 55.80 50.56 54.49 TOTAL RAINFALL (mm) = 56.80 56.80 56.80	TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       Rain       TIME       Rain       TIME       Rain       TIME       Rain       TIME       Rain       TIME       Rain	mn
.250 20.45   .583 102.24   .917 20.45   .333 54.53   .667 81.79   1.000 6.82   Max.Eff.Inten.(mm/hr) = 190.85 141.78 over (min) 5.00 10.00 Storage Coeff. (min) = 1.52 (ii) 5.03 (ii) Unit Hyd. Tpeak (min) = 5.00 10.00 Unit Hyd. peak (cms) = .33 .16 *TOTALS* PEAK FLOW (cms) = .25 .06 .286 (iii) TIME TO PEAK (hrs) = .50 .58 .50 RUNOFF VOLUME (mm) = 55.80 50.56 54.49 TOTAL RAINFALL (mm) = 56.80 56.80 56.80 RUNOFF COEFFICIENT = .98 .89 .96	TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       hrs       mm/hr       Intro tot tot tot tot tot tot tot	mn
.250 20.45   .583 102.24   .917 20.45   .333 54.53   .667 81.79   1.000 6.82   Max.Eff.Inten.(mm/hr)= 190.85 141.78 over (min) 5.00 10.00 Storage Coeff. (min)= 1.52 (ii) 5.03 (ii) Unit Hyd. Tpeak (min)= 5.00 10.00 Unit Hyd. peak (cms)= .33 .16 PEAK FLOW (cms)= .25 .06 .286 (iii) TIME TO PEAK (hrs)= .50 .58 .50 RUNOFF VOLUME (mm)= 55.80 50.56 54.49 TOTAL RAINFALL (mm)= 56.80 56.80 56.80 RUNOFF COEFFICIENT = .98 .89 .96	TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       hrs       mm/hr       Intro tot tot tot tot tot tot tot	mn
.250 20.45   .583 102.24   .917 20.45   .333 54.53   .667 81.79   1.000 6.82   Max.Eff.Inten.(mm/hr) = 190.85 141.78 over (min) 5.00 10.00 Storage Coeff. (min) = 1.52 (ii) 5.03 (ii) Unit Hyd. Tpeak (min) = 5.00 10.00 Unit Hyd. peak (cms) = .33 .16 *TOTALS* PEAK FLOW (cms) = .25 .06 .286 (iii) TIME TO PEAK (hrs) = .50 .58 .50 RUNOFF VOLUME (mm) = 55.80 50.56 54.49 TOTAL RAINFALL (mm) = 56.80 56.80 56.80 RUNOFF COEFFICIENT = .98 .89 .96 * WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:	TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       RAIN       TIME       hrs       mm/hr       Intro tot tot tot tot tot tot tot	mr

	IMPERVIOUS PERV	/IOUS (i)			(i) CN PROCED	URE SELECTED F	OR PERVIC	US LOSSES	:	
Surface Area (ha)=		.00				98.0 Ia = D				
Dep. Storage (mm) =		L.50				(DT) SHOULD B				
Average Slope (%)=		2.00				STORAGE COEFFI		-		
Length (m) =	16.30 40	0.00			(iii) PEAK FLOW	DOES NOT INCL	JDE BASEF	LOW IF AN	Υ.	
Mannings n =	.013 .	.250								
NOTE: RAINFALL WAS	TRANSFORMED TO 5.	.0 MIN. TIME STE	EP.							
					SERVOIR (0103)   = 2> OUT= 1					
	TRANSFORMED	HYETOGRAPH	-		= 5.0 min	OUTFLOW	STORAGE	I OUT	FLOW STO	DRAGE
TIME RAI	1 1	TIME RAIN				(ond)	(ha.m.)			a.m.)
hrs mm/h	· · · · · · · · · · · · · · · · · · ·	hrs mm/hr		ı/hr		.0000	.0000			.1300
.083 .0	· · · · ·	.750 54.53	1.08 6	5.82		.0150	.0677	'   .	0000	.0000
.167 6.8		.833 34.08								
.250 20.4								QPEAK	TPEAK	R.V.
.333 54.5	3   .667 81.79	1.000 6.82					1a)	(cms)	(hrs)	(mm)
More Eff. Totom (mm /hor)	100 95 407	- 24			INFLOW : ID= 2			1.424	.50	54.80
Max.Eff.Inten.(mm/hr) = over (min)		5.34 5.00			OUTFLOW: ID= 1	(UIU3) 3.	L60	.338	.83	54.50
Storage Coeff. (min)=	.66 (ii) 2				-	PEAK FLOW R		[001+/0+~	1(8) - 22 77	2
Unit Hyd. Tpeak (min)=		5.00				IME SHIFT OF P			$\min(3) = 23.73$ min) = 20.00	
Unit Hyd. peak (cms)=		.28				AXIMUM STORAG			m.)= .12	
onic nya. peak (ems)-	.51		TALS*		11	IAMINON DIORAG	- 05ED	(116		202
PEAK FLOW (cms) =	.02		.021 (iii)							
TIME TO PEAK (hrs) =			.50							
RUNOFF VOLUME (mm) =		0.56 55	5.26							
TOTAL RAINFALL (mm) =	56.80 56	5.80 56	5.80	AD	D HYD (0105)					
RUNOFF COEFFICIENT =	.98	.89	97		1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.	
					1 + 2 = 3	AKEA	QLINU	IFEAR	R.V.	
					1 + 2 = 5			(hrs)	(mm)	
			• 5 /		ID1= 1 (01	(ha) .04): .04	(cms) .021	(hrs) .50	(mm) 55.26	
WARNING: STORAGE COEFF	. IS SMALLER THAN TI	IME STEP!			ID1= 1 (01 + ID2= 2 (01	(ha) .04): .04 .03): 3.16	(cms) .021 .338	(hrs) .50 .83	(mm) 55.26 54.50	
WARNING: STORAGE COEFF (i) CN PROCEDURE SELE	. IS SMALLER THAN TI	IME STEP! DSSES:			ID1= 1 (01 + ID2= 2 (01 ========	(ha) .04): .04 .03): 3.16	(cms) .021 .338	(hrs) .50 .83	(mm) 55.26 54.50	
WARNING: STORAGE COEFF (i) CN PROCEDURE SELE CN* = 98.0	. IS SMALLER THAN T CTED FOR PERVIOUS LO Ia = Dep. Storage	IME STEP! DSSES: (Above)			ID1= 1 (01 + ID2= 2 (01	(ha) .04): .04 .03): 3.16	(cms) .021 .338	(hrs) .50 .83	(mm) 55.26 54.50	
WARNING: STORAGE COEFF (i) CN PROCEDURE SELE CN* = 98.0 (ii) TIME STEP (DT) SH	. IS SMALLER THAN T CTED FOR PERVIOUS LO Ia = Dep. Storage OULD BE SMALLER OR H	IME STEP! DSSES: (Above)			ID1= 1 (01 + ID2= 2 (01 ======== ID = 3 (01	(ha) .04): .04 .03): 3.16 .05): 3.20	(cms) .021 .338 .342	(hrs) .50 .83 .83	(mm) 55.26 54.50 ====== 54.51	
WARNING: STORAGE COEFF (i) CN PROCEDURE SELE CN* = 98.0 (ii) TIME STEP (DT) SH THAN THE STORAGE	. IS SMALLER THAN T CTED FOR PERVIOUS LO Ia = Dep. Storage OULD BE SMALLER OR H COEFFICIENT.	IME STEP! OSSES: (Above) SQUAL			ID1= 1 (01 + ID2= 2 (01 ========	(ha) .04): .04 .03): 3.16 .05): 3.20	(cms) .021 .338 .342	(hrs) .50 .83 .83	(mm) 55.26 54.50 ====== 54.51	
WARNING: STORAGE COEFF (i) CN PROCEDURE SELE CN* = 98.0 (ii) TIME STEP (DT) SH	. IS SMALLER THAN T CTED FOR PERVIOUS LO Ia = Dep. Storage OULD BE SMALLER OR H COEFFICIENT.	IME STEP! OSSES: (Above) SQUAL			ID1= 1 (01 + ID2= 2 (01 ======== ID = 3 (01	(ha) .04): .04 .03): 3.16 .05): 3.20	(cms) .021 .338 .342	(hrs) .50 .83 .83	(mm) 55.26 54.50 ====== 54.51	
<pre>WARNING: STORAGE COEFF (i) CN PROCEDURE SELE CN* = 98.0 (ii) TIME STEP (DT) SH THAN THE STORAGE (iii) PEAK FLOW DOES NO</pre>	. IS SMALLER THAN TO CTED FOR PERVIOUS LO Ia = Dep. Storage OULD BE SMALLER OR H COEFFICIENT. T INCLUDE BASEFLOW D	IME STEP! OSSES: (Above) EQUAL IF ANY.		·	ID1= 1 (01 + ID2= 2 (01 ======== ID = 3 (01	(ha) .04): .04 .03): 3.16 	(cms) .021 .338 .342	(hrs) .50 .83 .83	(mm) 55.26 54.50 ====== 54.51	
* WARNING: STORAGE COEFF (i) CN PROCEDURE SELE CN* = 98.0 (ii) TIME STEP (DT) SH THAN THE STORAGE (iii) PEAK FLOW DOES NO 	. IS SMALLER THAN TH CTED FOR PERVIOUS LO Ia = Dep. Storage OULD BE SMALLER OR H COEFFICIENT. T INCLUDE BASEFLOW 1	IME STEP! OSSES: (Above) EQUAL IF ANY.		  - AD	ID1= 1 (01 + ID2= 2 (01 ====== ID = 3 (01 NOTE: PEAK FLC 	(ha) .04): .04 .03): 3.16 	(cms) .021 .338 .342 JDE BASEF	(hrs) .50 .83 .83 PLOWS IF A	(mm) 55.26 54.50 ====== 54.51 NY.	
WARNING: STORAGE COEFF (i) CN PROCEDURE SELE CN* = 98.0 (ii) TIME STEP (DT) SH THAN THE STORAGE (iii) PEAK FLOW DOES NO JIB   ANDHYD (0100)   Area	<ul> <li>IS SMALLER THAN TO</li> <li>CTED FOR PERVIOUS LO</li> <li>Ia = Dep. Storage</li> <li>OULD BE SMALLER OR H</li> <li>COEFFICIENT.</li> <li>T INCLUDE BASEFLOW D</li> <li>(ha) = 3.16</li> </ul>	IME STEP! OSSES: (Above) SQUAL IF ANY.		    AD 	ID1= 1 (01 + ID2= 2 (01 ID = 3 (01 NOTE: PEAK FLC	(ha) .04): .04 .03): 3.16 .05): 3.20 WS DO NOT INCL 	(cms) .021 .338 .342 JDE BASEF	(hrs) .50 .83 .83 PLOWS IF A TPEAK	(mm) 55.26 54.50 ====== 54.51 NY. 	
WARNING: STORAGE COEFF (i) CN PROCEDURE SELE CN* = 98.0 (ii) TIME STEP (DT) SH THAN THE STORAGE (iii) PEAK FLOW DOES NO JIE   NDHYD (0100)   Area 1 DT= 5.0 min   Total	<ul> <li>IS SMALLER THAN TO</li> <li>CTED FOR PERVIOUS LO</li> <li>Ia = Dep. Storage</li> <li>OULD BE SMALLER OR H</li> <li>COEFFICIENT.</li> <li>T INCLUDE BASEFLOW D</li> <li>(ha) = 3.16</li> </ul>	IME STEP! OSSES: (Above) SQUAL IF ANY.		    AD 	ID1= 1 (01 + ID2= 2 (01 ID = 3 (01 NOTE: PEAK FLC D HYD (0110)   1 + 2 = 3	(ha) .04): .04 .03): 3.16 	(cms) .021 .338 .342 JDE BASEF QPEAK (cms)	(hrs) .50 .83 ***********************************	(mm) 55.26 54.50 ====== 54.51 NY. 	
WARNING: STORAGE COEFF (i) CN PROCEDURE SELE CN* = 98.0 (ii) TIME STEP (DT) SH THAN THE STORAGE (iii) PEAK FLOW DOES NO JIE   NDHYD (0100)   Area 1 DT= 5.0 min   Total	<ul> <li>IS SMALLER THAN TO CTED FOR PERVIOUS LO Ia = Dep. Storage OULD BE SMALLER OR H COEFFICIENT.</li> <li>T INCLUDE BASEFLOW D (ha) = 3.16 Imp(%) = 82.00 Di</li> </ul>	IME STEP! OSSES: (Above) GQUAL IF ANY. 		    AD 	ID1= 1 (01 + ID2= 2 (01 ======== ID = 3 (01 NOTE: PEAK FLC D HYD (0110)   1 + 2 = 3   ID1= 1 (01	(ha) .04): .04 .03): 3.16 	(cms) .021 .338 .342 JDE BASEF QPEAK (cms) .316	(hrs) .50 .83 .83 PLOWS IF A TPEAK (hrs) .67	(mm) 55.26 54.50 54.51 .NY. 	
<pre>WARNING: STORAGE COEFF (i) CN PROCEDURE SELE CN* = 98.0 (ii) TIME STEP (DT) SH THAN THE STORAGE (iii) PEAK FLOW DOES NO</pre>	<ul> <li>IS SMALLER THAN THE SMALLER THAN THE SMALLER FOR PERVIOUS LOT IN THE SMALLER OR HE COEFFICIENT.</li> <li>TINCLUDE BASEFLOW THE SMALLER OR H</li></ul>	IME STEP! (Above) EQUAL IF ANY. ir. Conn.(%) = 8 VIOUS (i)		    AD 	ID1= 1 (01 + ID2= 2 (01 ======= ID = 3 (01 NOTE: PEAK FLC D HYD (0110)   1 + 2 = 3   ID1= 1 (01 + ID2= 2 (01	(ha) .04): .04 .03): 3.16 	(cms) .021 .338 .342 JDE BASEF QPEAK (cms) .316 .342	(hrs) .50 .83 PLOWS IF A TPEAK (hrs) .67 .83	(mm) 55.26 54.50 54.51 NY.  R.V. (mm) 45.87 54.51	
WARNING: STORAGE COEFF (i) CN PROCEDURE SELE CN* = 98.0 (ii) TIME STEP (DT) SH THAN THE STORAGE (iii) PEAK FLOW DOES NO JIB   NDHYD (0100)   Area 1 DT= 5.0 min   Total Surface Area (ha) =	<ul> <li>IS SMALLER THAN THE SMALLER THAN THE SMALLER OF PERVIOUS LO IN A DE SMALLER OF HE COEFFICIENT.</li> <li>T INCLUDE BASEFLOW I</li> <li>(ha) = 3.16</li> <li>Imp(%) = 82.00 Di IMPERVIOUS PERVIOUS PERVIOUS PERVI 2.59</li> </ul>	IME STEP! (Above) EQUAL IF ANY. ir. Conn.(%) = 8 /IOUS (i) .57		    AD 	ID1= 1 (01 + ID2= 2 (01 ====== ID = 3 (01 NOTE: PEAK FLC D HYD (0110)   1 + 2 = 3   ID1= 1 (01 + ID2= 2 (01 =======	(ha) (04): .04 (03): 3.16 (05): 3.20 WS DO NOT INCL (05): AREA (ha) (09): 1.38 (05): 3.20	(cms) .021 .338 .342 JDE BASEF QPEAK (cms) .316 .342	(hrs) .50 .83 PLOWS IF A TPEAK (hrs) .67 .83	(mm) 55.26 54.50 54.51 NY. 	
WARNING: STORAGE COEFF (i) CN PROCEDURE SELE CN* = 98.0 (ii) TIME STEP (DT) SH THAN THE STORAGE (iii) PEAK FLOW DOES NO JIB   NDHYD (0100)   Area 1 DT= 5.0 min   Total Surface Area (ha) = Dep. Storage (mm) =	<pre>C. IS SMALLER THAN TI CTED FOR PERVIOUS LO Ia = Dep. Storage OULD BE SMALLER OR H COEFFICIENT. T INCLUDE BASEFLOW I (ha) = 3.16 Imp(%) = 82.00 Di IMPERVIOUS PERV 2.59 1.00 1</pre>	IME STEP! DSSES: (Above) EQUAL IF ANY. 		    AD 	ID1= 1 (01 + ID2= 2 (01 ======= ID = 3 (01 NOTE: PEAK FLC D HYD (0110)   1 + 2 = 3   ID1= 1 (01 + ID2= 2 (01	(ha) (04): .04 (03): 3.16 (05): 3.20 WS DO NOT INCL (05): AREA (ha) (09): 1.38 (05): 3.20	(cms) .021 .338 .342 JDE BASEF QPEAK (cms) .316 .342	(hrs) .50 .83 PLOWS IF A TPEAK (hrs) .67 .83	(mm) 55.26 54.50 54.51 NY.  R.V. (mm) 45.87 54.51	
<pre>wARNING: STORAGE COEFF (i) CN PROCEDURE SELE CN* = 98.0 (ii) TIME STEP (DT) SH THAN THE STORAGE (iii) PEAK FLOW DOES NO</pre>	<pre>CIES SMALLER THAN TI CTED FOR PERVIOUS LO Ia = Dep. Storage OULD BE SMALLER OR H COEFFICIENT. T INCLUDE BASEFLOW I (ha) = 3.16 Imp(%) = 82.00 Di IMPERVIOUS PERV 2.59 1.00 1 1.00 2</pre>	<pre>IME STEP! DSSES: (Above) EQUAL IF ANY. ir. Conn.(%) = 6 /IOUS (i) .57 1.50 2.00</pre>		    AD 	ID1= 1 (01 + ID2= 2 (01 ID = 3 (01 NOTE: PEAK FLC D HYD (0110)   1 + 2 = 3   ID1= 1 (01 + ID2= 2 (01 ======== ID = 3 (01	(ha) .04): .04 .03): 3.16 	(cms) .021 .338 .342 JDE BASEF QPEAK (cms) .316 .342 .609	(hrs) .50 .83 .83 PLOWS IF A TPEAK (hrs) .67 .83 .75	(mm) 55.26 54.50 ====== 54.51 NY. 	
<pre>WARNING: STORAGE COEFF (i) CN PROCEDURE SELE CN* = 98.0 (ii) TIME STEP (DT) SH THAN THE STORAGE (iii) PEAK FLOW DOES NO</pre>	<pre>. IS SMALLER THAN TI CTED FOR PERVIOUS LO Ia = Dep. Storage OULD BE SMALLER OR H COEFFICIENT. T INCLUDE BASEFLOW I (ha) = 3.16 Imp(%) = 82.00 Di IMPERVIOUS PERV 2.59 1.00 1 1.00 2 145.10 4(</pre>	<pre>IME STEP! OSSES: (Above) GQUAL IF ANY. </pre>		    AD 	ID1= 1 (01 + ID2= 2 (01 ====== ID = 3 (01 NOTE: PEAK FLC D HYD (0110)   1 + 2 = 3   ID1= 1 (01 + ID2= 2 (01 =======	(ha) .04): .04 .03): 3.16 	(cms) .021 .338 .342 JDE BASEF QPEAK (cms) .316 .342 .609	(hrs) .50 .83 .83 PLOWS IF A TPEAK (hrs) .67 .83 .75	(mm) 55.26 54.50 ====== 54.51 NY. 	
<pre>WARNING: STORAGE COEFF (i) CN PROCEDURE SELE CN* = 98.0 (ii) TIME STEP (DT) SH THAN THE STORAGE (iii) PEAK FLOW DOES NO</pre>	<pre>. IS SMALLER THAN TI CTED FOR PERVIOUS LO Ia = Dep. Storage OULD BE SMALLER OR H COEFFICIENT. T INCLUDE BASEFLOW I (ha) = 3.16 Imp(%) = 82.00 Di IMPERVIOUS PERV 2.59 1.00 1 1.00 2 145.10 4(</pre>	<pre>IME STEP! DSSES: (Above) EQUAL IF ANY. ir. Conn.(%) = 6 /IOUS (i) .57 1.50 2.00</pre>		    AD 	ID1= 1 (01 + ID2= 2 (01 ID = 3 (01 NOTE: PEAK FLC D HYD (0110)   1 + 2 = 3   ID1= 1 (01 + ID2= 2 (01 ======== ID = 3 (01	(ha) .04): .04 .03): 3.16 	(cms) .021 .338 .342 JDE BASEF QPEAK (cms) .316 .342 .609	(hrs) .50 .83 .83 PLOWS IF A TPEAK (hrs) .67 .83 .75	(mm) 55.26 54.50 ====== 54.51 NY. 	
<pre>WARNING: STORAGE COEFF (i) CN PROCEDURE SELE CN* = 98.0 (ii) TIME STEP (DT) SH THAN THE STORAGE (iii) PEAK FLOW DOES NO</pre>	<pre>CIED FOR PERVIOUS L0 Ia = Dep. Storage OULD BE SMALLER OR H COEFFICIENT. T INCLUDE BASEFLOW I (ha) = 3.16 Imp(%) = 82.00 Di IMPERVIOUS PERV 2.59 1.00 1 1.00 2 145.10 4( .013 .14]</pre>	<pre>IME STEP! DSSES: (Above) BQUAL IF ANY. ir. Conn.(%) = 8 VIOUS (i) .57 1.50 2.00 2.00 2.250 1.78</pre>		   AD 	ID1= 1 (01 + ID2= 2 (01 ID = 3 (01 NOTE: PEAK FLC D HYD (0110)   1 + 2 = 3   ID1= 1 (01 + ID2= 2 (01 ====== ID = 3 (01 NOTE: PEAK FLC	(ha) .04): .04 .03): 3.16 	(cms) .021 .338 .342 JDE BASEF QPEAK (cms) .316 .342 .609	(hrs) .50 .83 .83 PLOWS IF A TPEAK (hrs) .67 .83 .75	(mm) 55.26 54.50 ====== 54.51 NY. 	
<pre>wWARNING: STORAGE COEFF (i) CN PROCEDURE SELE CN* = 98.0 (ii) TIME STEP (DT) SH THAN THE STORAGE (iii) PEAK FLOW DOES NO</pre>	. IS SMALLER THAN TO CTED FOR PERVIOUS LO Ia = Dep. Storage OULD BE SMALLER OR H COEFFICIENT. T INCLUDE BASEFLOW D (ha) = 3.16 Imp(%) = 82.00 D IMPERVIOUS PERV 2.59 1.00 1 1.00 2 145.10 40 .013 .013	<pre>IME STEP! DSSES: (Above) EQUAL IF ANY. </pre>		    AD   	ID1= 1 (01 + ID2= 2 (01 ID = 3 (01 NOTE: PEAK FLC D HYD (0110)   1 + 2 = 3   ID1= 1 (01 + ID2= 2 (01 ======= ID = 3 (01 NOTE: PEAK FLC	(ha) .04): .04 .03): 3.16 .05): 3.20 WS DO NOT INCL       	(cms) .021 .338 .342 JDE BASEF QPEAK (cms) .316 .342 .609	(hrs) .50 .83 .83 PLOWS IF A TPEAK (hrs) .67 .83 .75	(mm) 55.26 54.50 ====== 54.51 NY. 	
<pre>WARNING: STORAGE COEFF (i) CN PROCEDURE SELE CN* = 98.0 (ii) TIME STEP (DT) SH THAN THE STORAGE (iii) PEAK FLOW DOES NO</pre>	<pre>. IS SMALLER THAN TY CTED FOR PERVIOUS LO Ia = Dep. Storage OULD BE SMALLER OR H COEFFICIENT. T INCLUDE BASEFLOW N (ha) = 3.16 Imp(%) = 82.00 Di IMPERVIOUS PERV 2.59 1.00 1 1.00 2 145.10 4( .013 190.85 141 5.00 1( 2.47 (ii) 5</pre>	<pre>IME STEP! OSSES: (Above) EQUAL IF ANY. </pre>		   AD      AD	ID1= 1 (01 + ID2= 2 (01 ID = 3 (01 NOTE: PEAK FLC D HYD (0110)   1 + 2 = 3   ID1= 1 (01 + ID2= 2 (01 ======= ID = 3 (01 NOTE: PEAK FLC D HYD (0111)	(ha) .04): .04 .03): 3.16 .05): 3.20 .05): 3.20 .08 .09): 1.38 .05): 3.20 .09): 1.38 .05): 3.20 .09): 1.38 .05): 3.20 .01): 4.58 .05): 3.20 .05): 3.20 .05): 3.20 .05): 3.20	(cms) .021 .338 .342 JDE BASEF QPEAK (cms) .316 .342 .609 JDE BASEF	(hrs) .50 .83 PLOWS IF A TPEAK (hrs) .67 .83 .75 PLOWS IF A	(mm) 55.26 54.50 	
<pre>WARNING: STORAGE COEFF (i) CN PROCEDURE SELE CN* = 98.0 (ii) TIME STEP (DT) SH THAN THE STORAGE (iii) PEAK FLOW DOES NO</pre>	<pre>C. IS SMALLER THAN TI CTED FOR PERVIOUS LG Ia = Dep. Storage OULD BE SMALLER OR H COEFFICIENT. T INCLUDE BASEFLOW I (ha) = 3.16 Imp(%) = 82.00 Di IMPERVIOUS PERV 2.59 1.00 1 1.00 2 145.10 40 .013 190.85 141 5.00 10 2.47 (ii) 5 5.00 10</pre>	<pre>IME STEP! DSSES: (Above) EQUAL IF ANY. </pre>		   AD      AD	ID1= 1 (01 + ID2= 2 (01 ID = 3 (01 NOTE: PEAK FLC D HYD (0110)   1 + 2 = 3   ID1= 1 (01 + ID2= 2 (01 HYD = 3 (01 NOTE: PEAK FLC NOTE: PEAK FLC	(ha) .04): .04 .03): 3.16 	(cms) .021 .338 .342 JDE BASEF QPEAK (cms) .316 .342 .609 JDE BASEF	(hrs) .50 .83 *LOWS IF A TPEAK (hrs) .67 .83 .75 *LOWS IF A .75	(mm) 55.26 54.50 ======= 54.51 NY. R.V. (mm) 45.87 54.51 ====== 52.13 NY. R.V.	
<pre>WARNING: STORAGE COEFF (i) CN PROCEDURE SELE CN* = 98.0 (ii) TIME STEP (DT) SH THAN THE STORAGE (iii) PEAK FLOW DOES NO</pre>	<pre>C. IS SMALLER THAN TI CTED FOR PERVIOUS LG Ia = Dep. Storage OULD BE SMALLER OR H COEFFICIENT. T INCLUDE BASEFLOW I (ha) = 3.16 Imp(%) = 82.00 Di IMPERVIOUS PERV 2.59 1.00 1 1.00 2 145.10 40 .013 190.85 141 5.00 10 2.47 (ii) 5 5.00 10</pre>	<pre>IME STEP! DSSES: (Above) EQUAL IF ANY. </pre>	32.00	   AD      AD	ID1= 1 (01 + ID2= 2 (01 ID = 3 (01 NOTE: PEAK FLC D HYD (0110)   1 + 2 = 3   ID1= 1 (01 + ID2= 2 (01 HD2= 2 (01 D = 3 (01 NOTE: PEAK FLC D HYD (0111)   1 + 2 = 3	(ha) .04): .04 .03): 3.16 	(cms) .021 .338 .342 JDE BASEF QPEAK (cms) .316 .342 .609 JDE BASEF QPEAK (cms)	(hrs) .50 .83 *LOWS IF A TPEAK (hrs) .67 .83 .75 *LOWS IF A TPEAK (hrs)	(mm) 55.26 54.50 ====== 54.51 NY. R.V. (mm) 45.87 54.51 ====== 52.13 NY. R.V. (mm)	
<pre>WARNING: STORAGE COEFF (i) CN PROCEDURE SELE CN* = 98.0 (ii) TIME STEP (DT) SH THAN THE STORAGE (iii) PEAK FLOW DOES NO</pre>	<pre>CIES SMALLER THAN TI CTED FOR PERVIOUS LO Ia = Dep. Storage OULD BE SMALLER OR H COEFFICIENT. T INCLUDE BASEFLOW I (ha) = 3.16 Imp(%) = 82.00 Di IMPERVIOUS PERV 2.59 1.00 1 1.00 2 145.10 40 .013 190.85 141 5.00 10 2.47 (ii) 5 5.00 10 .30</pre>	<pre>IME STEP! DSSES: (Above) EQUAL IF ANY. ir. Conn.(%) = 6 //OUS (i) .57 1.50 2.00 0.00 2.250 1.78 0.00 5.44 (ii) 0.00 .16</pre>	32.00 FALS*	   AD      AD	ID1= 1 (01 + ID2= 2 (01 ID = 3 (01 NOTE: PEAK FLC D HYD (0110)   1 + 2 = 3   ID1= 1 (01 + ID2= 2 (01 ======== ID = 3 (01 NOTE: PEAK FLC D HYD (0111)   1 + 2 = 3   ID1= 1 (01	(ha) .04): .04 .03): 3.16 	(cms) .021 .338 .342 JDE BASEF QPEAK (cms) .316 .342 .609 JDE BASEF 	(hrs) .50 .83 .83 PLOWS IF A .75 .67 .83 .67 .83 .75 PLOWS IF A .75 PLOWS IF A .75 .50	(mm) 55.26 54.50 ======= 54.51 NY. R.V. (mm) 45.87 54.51 ====== 52.13 NY. R.V. (mm) 52.66	
<pre>* WARNING: STORAGE COEFF (i) CN PROCEDURE SELE CN* = 98.0 (ii) TIME STEP (DT) SH THAN THE STORAGE (iii) PEAK FLOW DOES NO </pre>	. IS SMALLER THAN TY CTED FOR PERVIOUS LO Ia = Dep. Storage OULD BE SMALLER OR H COEFFICIENT. T INCLUDE BASEFLOW I (ha) = 3.16 Imp(%) = 82.00 Di IMPERVIOUS PERV 2.59 1.00 1 1.00 2 145.10 40 .013 . 190.85 141 5.00 10 2.47 (ii) 5 5.00 10 .30 1.28	<pre>IME STEP! DSSES: (Above) EQUAL IF ANY. ir. Conn.(%) = &amp; /IOUS (i) .57 1.50 2.00 0.00 .250 1.78 0.00 5.44 (ii) 0.00 .16 *TOT .20 1.</pre>	32.00 TALS* .424 (iii)	   AD      AD	ID1= 1 (01 + ID2= 2 (01 ID = 3 (01 NOTE: PEAK FLC D HYD (0110)   1 + 2 = 3   ID1= 1 (01 + ID2= 2 (01 ID = 3 (01 NOTE: PEAK FLC D HYD (0111)   1 + 2 = 3   ID1= 1 (01 + ID2= 2 (01	(ha) .04): .04 .03): 3.16 .05): 3.20 WS DO NOT INCL .05): 3.20 .09): 1.38 .09): 1.38 .09): 1.38 .05): 3.20 .09): 4.58 WS DO NOT INCL .00): 4.58 .00): 1.55 .10): 4.58	(cms) .021 .338 .342 JDE BASEF QPEAK (cms) .316 .342 .609 JDE BASEF QPEAK (cms) .506 .609	(hrs) .50 .83 ***********************************	(mm) 55.26 54.50 ====== 54.51 NY. R.V. (mm) 45.87 54.51 ====== 52.13 NY. R.V. (mm) 52.66 52.13	
<pre>* WARNING: STORAGE COEFF (i) CN PROCEDURE SELE CN* = 98.0 (ii) TIME STEP (DT) SH THAN THE STORAGE (iii) PEAK FLOW DOES NO</pre>	<pre>C. IS SMALLER THAN TI CTED FOR PERVIOUS LG Ia = Dep. Storage OULD BE SMALLER OR H COEFFICIENT. T INCLUDE BASEFLOW I (ha) = 3.16 Imp(%) = 82.00 Di IMPERVIOUS PERV 2.59 1.00 Di 1.00 2 145.10 40 .013 190.85 141 5.00 10 2.47 (ii) 5 5.00 10 .30 1.28 .50</pre>	<pre>IME STEP! DSSES: (Above) EQUAL IF ANY. </pre>	7ALS* .424 (iii) .50	   AD      AD	ID1= 1 (01 + ID2= 2 (01 ID = 3 (01 NOTE: PEAK FLC ID = 1 (01 + ID2= 2 (01 + ID2= 2 (01 ID = 3 (01 NOTE: PEAK FLC ID = 3 (01 NOTE: PEAK FLC ID = 3 (01 ID = 1 (01 + ID2= 2 (01 ====================================	(ha) .04): .04 .03): 3.16 .05): 3.20 .05): 3.20 .09): 1.38 .05): 3.20 .09): 1.38 .05): 3.20 .00): 4.58 .00): 4.58 .00): 4.58 .00): 1.55 .10): 4.58	(cms) .021 .338 .342 JDE BASEF 	(hrs) .50 .83 *LOWS IF A TPEAK (hrs) .67 .83 .75 *LOWS IF A TPEAK (hrs) .50 .75	(mm) 55.26 54.50 ======= 54.51 NY. R.V. (mm) 45.87 54.51 ====== 52.13 NY. R.V. (mm) 52.66 52.13 =======	
<pre>* WARNING: STORAGE COEFF (i) CN PROCEDURE SELE CN* = 98.0 (ii) TIME STEP (DT) SH THAN THE STORAGE (iii) PEAK FLOW DOES NO </pre>	<pre>CIED FOR PERVIOUS L0 Ia = Dep. Storage OULD BE SMALLER OR H COEFFICIENT. T INCLUDE BASEFLOW I (ha) = 3.16 Imp(%) = 82.00 Di IMPERVIOUS PERV 2.59 1.00 1 1.00 2 145.10 4( .013 190.85 141 5.00 10 2.47 (ii) 5 5.00 10 .30 1.28 .50 55.80 50</pre>	<pre>IME STEP! DSSES: (Above) EQUAL IF ANY. </pre>	32.00 TALS* .424 (iii)	   AD      AD	ID1= 1 (01 + ID2= 2 (01 ID = 3 (01 NOTE: PEAK FLC D HYD (0110)   1 + 2 = 3   ID1= 1 (01 + ID2= 2 (01 ID = 3 (01 NOTE: PEAK FLC D HYD (0111)   1 + 2 = 3   ID1= 1 (01 + ID2= 2 (01	(ha) .04): .04 .03): 3.16 .05): 3.20 .05): 3.20 .09): 1.38 .05): 3.20 .09): 1.38 .05): 3.20 .00): 4.58 .00): 4.58 .00): 4.58 .00): 1.55 .10): 4.58	(cms) .021 .338 .342 JDE BASEF QPEAK (cms) .316 .342 .609 JDE BASEF QPEAK (cms) .506 .609	(hrs) .50 .83 ***********************************	(mm) 55.26 54.50 ====== 54.51 NY. R.V. (mm) 45.87 54.51 ====== 52.13 NY. R.V. (mm) 52.66 52.13	

									TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAI
									hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/ł
									.167	.00	3.333	9.95	6.500	6.06	9.67	. 8
ADD HYD (0112)									.333	.43	3.500	14.71	6.667	6.06	9.83	. 8
1 + 2 = 3	AR	EA Q	PEAK 1	<b>ГРЕАК</b>	R.V.				.500	.86	3.667	14.71	6.833	6.06	10.00	
	(h			(hrs)	(mm)				.667	.86	3.833	14.71	7.000	6.06	10.17	
ID1= 1 (010			286		54.49				.833	.86	4.000	14.71	7.167	6.06	10.33	
+ ID2= 2 (011)			985		52.26				1.000	.86	4.167	14.71	7.333	4.76	10.50	
											1		1		1	
======================================									1.167	.86	4.333	27.25	7.500	3.46	10.67	
ID = 3 (011)	2): 6.	76 1.	140	.67	52.47				1.333	.86	4.500	39.79	7.667	3.46	10.83	
									1.500	.86	4.667	39.79	7.833	3.46	11.00	
NOTE: PEAK FLOW	S DO NOT I	NCLUDE	BASEFLOWS	S IF ANY	-				1.667	.86	4.833	39.79	8.000	3.46	11.17	
									1.833	.86	5.000	39.79	8.167	3.46	11.33	
									2.000	.86	5.167	39.79	8.333	2.60	11.50	
									2.167	.86	5.333	25.52	8.500	1.73	11.67	
									2.333	3.02	5.500	11.24	8.667	1.73	11.83	
											:		1		:	
ADD HYD (0113)									2.500	5.19	5.667	11.24	8.833	1.73	12.00	
1 + 2 = 3				<b>FPEAK</b>	R.V.				2.667	5.19	5.833	11.24	9.000	1.73	12.17	
	(h	a) (	cms)	(hrs)	(mm)				2.833	5.19	6.000	11.24	9.167	1.73	12.33	
ID1= 1 (010)	8): .	76.	174	.67	45.87				3.000	5.19	6.167	11.24	9.333	1.30		
+ ID2= 2 (0112	2): 6.	76 1.	140	.67	52.47				3.167	5.19	6.333	8.65	9.500	.86		
ID = 3 (011)			======================================		===== 51.94			Unit Hyd (	Dneak (	- ( emr	.145					
									-							
NOTE: PEAK FLOW	S DO NOT I	NCLUDE	BASEFLOWS	S IF ANY	-			PEAK FLOW		cms) =	.081 (i	)				
								TIME TO PI	EAK (]	ırs)= !	5.167					
								RUNOFF VO	JUME	(mm) = 74	4.615					
****	* * * * * * * * *							TOTAL RAII		(mm) = 80						
** SIMULATION NUMBER	R: 7 **							RUNOFF CO			.863					
*****																
								(i) PEAK 1	FLOW DOE:	5 NOT ING	CLUDE BA	SEFLOW I	F ANY.			
		) -														
READ STORM	Filenam		1606\Act:													
READ STORM		lysi	s\SWM\Hyd				2.STM	CALIB	ļ							
	Filenam Comment	lysi	s\SWM\Hyd				2.STM		ļ	Area	(ha) =	.63				
READ STORM                     Ptotal=         86.48 mm		lysi	s\SWM\Hyd				2.STM	CALIB	L07)		(ha) = np(%) =		Dir. Con	n.(%)= '	75.00	
READ STORM     Ptotal= 86.48 mm		lysi	s\SWM\Hyd				2.STM RAIN	CALIB STANDHYD (01	 LO7)   min				Dir. Con	n.(%)= '	75.00	
READ STORM	Comment RAIN	lysi s: 100y	s\SWM\Hyd r/12hr	drology\	VO2\Stor	ms\100Y1	RAIN	CALIB   STANDHYD (0  ID= 1 DT= 5.0	 LO7)   min	Total In		75.00	Dir. Con:		75.00	
READ STORM   Ptotal= 86.48 mm   TIME hrs	Comment RAIN   mm/hr	lysi s: 100y TIME hrs	s\SWM\Hyd r/12hr RAIN mm/hr	drology\   TIME   hrs	VO2\Stor RAIN mm/hr	ms\100Y1:   TIME   hrs	RAIN mm/hr	CALIB   STANDHYD (0)  ID= 1 DT= 5.0	 LO7)   min	Total In	mp(%)= IMPERVIO	75.00 I	RVIOUS (		75.00	
READ STORM   Ptotal= 86.48 mm   TIME hrs .25	Comment RAIN   mm/hr   .00	lysi s: 100y TIME hrs 3.50	s\SWM\Hyd r/12hr RAIN mm/hr 14.71	drology\   TIME   hrs   6.75	VO2\Stor RAIN mm/hr 6.06	ms\100Y1;   TIME   hrs   10.00	RAIN mm/hr .86	CALIB   STANDHYD (0:  ID= 1 DT= 5.0 Surface A:	 107)   min   	Total In (ha)=	mp(%)= IMPERVIO .47	75.00 I	RVIOUS (		75.00	
READ STORM   Ptotal= 86.48 mm   TIME hrs .25 .50	Comment RAIN   mm/hr   .00   .86	lysi s: 100y TIME hrs 3.50 3.75	s\SWM\Hyd r/12hr RAIN mm/hr 14.71 14.71	drology\   TIME   hrs   6.75   7.00	VO2\Stor RAIN mm/hr 6.06 6.06	ms\100Y1   TIME   hrs   10.00   10.25	RAIN mm/hr .86 .86	CALIB   STANDHYD (0:  ID= 1 DT= 5.0 	  07)    min   	Total Ir (ha) = (mm) =	mp(%)= IMPERVIO .47 1.00	75.00 I	RVIOUS (. .16 1.50		75.00	
READ STORM   Ptotal= 86.48 mm   TIME hrs .25 .50 .75	Comment RAIN   mm/hr   .00   .86   .86	lysi s: 100y TIME hrs 3.50 3.75 4.00	s\SWM\Hyd r/12hr RAIN mm/hr 14.71 14.71 14.71	drology\   TIME   hrs   6.75   7.00   7.25	RAIN mm/hr 6.06 6.06 6.06	ms\100Y1   TIME   hrs   10.00   10.25   10.50	RAIN mm/hr .86 .86 .86	CALIB   STANDHYD (0)  ID= 1 DT= 5.0 	  07)    min   	Total In (ha) = (mm) = (%) =	np(%)= IMPERVIO .47 1.00 1.00	75.00 I	RVIOUS ( .16 1.50 2.00		75.00	
READ STORM   Ptotal= 86.48 mm   TIME hrs .25 .50 .75 1.00	Comment RAIN   mm/hr   .00   .86   .86   .86	lysi s: 100y TIME hrs 3.50 3.75 4.00 4.25	s\SWM\Hyd r/12hr RAIN mm/hr 14.71 14.71 14.71 14.71	drology\   TIME   hrs   6.75   7.00   7.25   7.50	RAIN mm/hr 6.06 6.06 6.06 3.46	ms\100Y1   TIME   hrs   10.00   10.25   10.50   10.75	RAIN mm/hr .86 .86 .86 .86 .86	CALIB   STANDHYD (0)  ID= 1 DT= 5.0 	 min   cea age Lope	Total Ir (ha) = (mm) =	np(%) = IMPERVIO .47 1.00 1.00 64.80	75.00 I	RVIOUS ( .16 1.50 2.00 40.00		75.00	
READ STORM   Ptotal= 86.48 mm   TIME hrs .25 .50 .75	Comment RAIN   mm/hr   .00   .86   .86	lysi s: 100y TIME hrs 3.50 3.75 4.00	s\SWM\Hyd r/l2hr RAIN mm/hr 14.71 14.71 14.71 14.71 14.71 39.79	drology\   TIME   hrs   6.75   7.00   7.25	RAIN mm/hr 6.06 6.06 6.06	ms\100Y1   TIME   hrs   10.00   10.25   10.50	RAIN mm/hr .86 .86 .86	CALIB   STANDHYD (0)  ID= 1 DT= 5.0 	 min   cea age Lope	Total In (ha) = (mm) = (%) =	np(%)= IMPERVIO .47 1.00 1.00	75.00 I	RVIOUS ( .16 1.50 2.00		75.00	
READ STORM   Ptotal= 86.48 mm   TIME hrs .25 .50 .75 1.00	Comment RAIN   mm/hr   .00   .86   .86   .86	lysi s: 100y TIME hrs 3.50 3.75 4.00 4.25	s\SWM\Hyd r/12hr RAIN mm/hr 14.71 14.71 14.71 14.71	drology\   TIME   hrs   6.75   7.00   7.25   7.50	RAIN mm/hr 6.06 6.06 6.06 3.46	ms\100Y1   TIME   hrs   10.00   10.25   10.50   10.75	RAIN mm/hr .86 .86 .86 .86 .86	CALIB   STANDHYD (0)  ID= 1 DT= 5.0 	 min   cea age Lope	Total In (ha) = (mm) = (%) = (m) =	np(%) = IMPERVIO .47 1.00 1.00 64.80	75.00 I	RVIOUS ( .16 1.50 2.00 40.00		75.00	
READ STORM   Ptotal= 86.48 mm   TIME hrs .25 .50 .75 1.00 1.25	Comment RAIN   mm/hr   .00   .86   .86   .86   .86   .86	lysi s: 100y TIME hrs 3.50 3.75 4.00 4.25 4.50	s\SWM\Hyd r/l2hr RAIN mm/hr 14.71 14.71 14.71 14.71 14.71 39.79	drology\   TIME   hrs   6.75   7.00   7.25   7.50   7.75	RAIN mm/hr 6.06 6.06 6.06 3.46 3.46	ms\100Y1.   TIME   hrs   10.00   10.25   10.50   10.75   11.00	RAIN mm/hr .86 .86 .86 .86 .86 .86	CALIB   STANDHYD (0:  ID= 1 DT= 5.0 	l07)   min   cea age Lope	Total In (ha) = (mm) = (%) = (m) = =	<pre>mp(%) = IMPERVIO     .47     1.00     1.00     64.80     .013</pre>	75.00 I	RVIOUS ( .16 1.50 2.00 40.00 .250	i)		
READ STORM   Ptotal= 86.48 mm   TIME hrs .25 .50 .75 1.00 0.25 1.50 1.25 1.50 1.75	Comment RAIN   mm/hr   .00   .86   .86   .86   .86   .86   .86	lysi s: 100y TIME hrs 3.50 3.75 4.00 4.25 4.50 4.75 5.00	s\SWM\Hyd r/12hr RAIN mm/hr 14.71 14.71 14.71 14.71 14.71 139.79 39.79 39.79	drology   TIME   hrs   6.75   7.00   7.25   7.50   7.75   8.00   8.25	RAIN mm/hr 6.06 6.06 3.46 3.46 3.46 3.46 3.46	ms\100Y1.   TIME   hrs   10.00   10.25   10.50   10.75   11.00   11.25   11.50	RAIN mm/hr .86 .86 .86 .86 .86 .86 .86	CALIB   STANDHYD (0:  ID= 1 DT= 5.0 	l07)   min   cea age Lope	Total In (ha) = (mm) = (%) = (m) = =	<pre>mp(%) = IMPERVIO     .47     1.00     1.00     64.80     .013</pre>	75.00 I	RVIOUS ( .16 1.50 2.00 40.00	i)		
READ STORM   Ptotal= 86.48 mm   TIME hrs .25 .50 .75 1.00 1.25 1.50 1.75 2.00	Comment RAIN   mm/hr   .00   .86   .86   .86   .86   .86   .86	lysi s: 100y TIME hrs 3.50 3.75 4.00 4.25 4.50 4.75 5.00 5.25	s\SWM\Hyd r/12hr RAIN mm/hr 14.71 14.71 14.71 14.71 14.71 39.79 39.79 39.79 39.79	drology\   TIME   hrs   6.75   7.00   7.25   7.50   7.75   8.00   8.25   8.50	RAIN mm/hr 6.06 6.06 3.46 3.46 3.46 3.46 1.73	ms\100Y1.   TIME   hrs   10.00   10.25   10.50   10.75   11.00   11.25   11.50   11.75	RAIN mm/hr .86 .86 .86 .86 .86 .86 .86 .86	CALIB   STANDHYD (0:  ID= 1 DT= 5.0 	l07)   min   cea age Lope	Total In (ha) = (mm) = (%) = (m) = =	<pre>mp(%) = IMPERVIO     .47     1.00     1.00     64.80     .013</pre>	75.00 I	RVIOUS ( .16 1.50 2.00 40.00 .250	i)		
READ STORM   Ptotal= 86.48 mm   TIME hrs .25 .50 .75 1.00 1.25 1.50 1.75 2.00 2.25	Comment RAIN   mm/hr   .00   .86   .86   .86   .86   .86   .86   .86   .86   .86	lysi s: 100y TIME hrs 3.50 3.75 4.00 4.25 4.50 4.50 4.75 5.00 5.25 5.50	s\SWM\Hyo r/l2hr RAIN mm/hr 14.71 14.71 14.71 14.71 39.79 39.79 39.79 39.79 11.24	drology\   TIME   hrs   6.75   7.00   7.25   7.50   7.75   8.00   8.25   8.50   8.75	RAIN mm/hr 6.06 6.06 3.46 3.46 3.46 3.46 1.73 1.73	<pre>ms\100Y1.   TIME   hrs   10.00   10.25   10.50   10.75   11.00   11.25   11.50   11.75   12.00</pre>	RAIN mm/hr .86 .86 .86 .86 .86 .86 .86 .86 .86 .86	CALIB   STANDHYD (0:  ID= 1 DT= 5.0 	l07)   min   cea age Lope	Total In (ha) = (mm) = (%) = (m) = =	mp(%) = IMPERVIO .47 1.00 1.00 64.80 .013 RANSFORM	75.00 I	RVIOUS (1 .16 1.50 2.00 40.00 .250 5.0 MIN.	i) TIME STI	EP.	
READ STORM   Ptotal= 86.48 mm   TIME hrs .25 .50 .75 1.00 1.25 1.50 1.75 2.00 2.25 2.50	Comment RAIN   mm/hr   .00   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86	lysi s: 100y TIME hrs 3.50 3.75 4.00 4.25 4.50 4.75 5.00 5.25 5.50 5.75	s\SWM\Hyc r/12hr RAIN mm/hr 14.71 14.71 14.71 14.71 14.71 39.79 39.79 39.79 39.79 39.79 11.24 11.24	TIME   TIME   hrs   6.75   7.00   7.25   7.50   7.75   8.00   8.25   8.50   8.75   9.00	RAIN mm/hr 6.06 6.06 3.46 3.46 3.46 3.46 1.73 1.73 1.73	ms\100Y1.   TIME   hrs   10.00   10.25   10.50   10.75   11.00   11.25   11.50   11.75	RAIN mm/hr .86 .86 .86 .86 .86 .86 .86 .86	CALIB   STANDHYD (0:  ID= 1 DT= 5.0 	LO7)   min   cea age Lope 1 RAINFA	Total In (ha) = (mm) = (%) = (m) = = LL WAS TH	<pre>mp (%) = IMPERVIO     .47     1.00     1.00     64.80     .013 RANSFORM TR.</pre>	75.00 I US PE ED TO	RVIOUS (1 16 1.50 2.00 40.00 .250 5.0 MIN.	i) TIME STI RAPH	EP.	
READ STORM   Ptotal= 86.48 mm   TIME hrs .25 .50 .75 1.00 1.25 1.50 1.75 2.00 2.25 2.50 2.75	Comment RAIN   mm/hr   .00   .86	lysi 100y TIME hrs 3.50 3.75 4.00 4.25 4.50 4.75 5.00 5.25 5.50 5.75 6.00	s\SWM\Hyo r/l2hr RAIN mm/hr 14.71 14.71 14.71 14.71 39.79 39.79 39.79 39.79 11.24	<pre>drology\    TIME    hrs    6.75    7.00    7.25    7.50    8.00    8.25    8.50    8.50    8.50    9.00    9.25</pre>	RAIN mm/hr 6.06 6.06 3.46 3.46 3.46 3.46 1.73 1.73 1.73 1.73	<pre>ms\100Y1.   TIME   hrs   10.00   10.25   10.50   10.75   11.00   11.25   11.50   11.75   12.00</pre>	RAIN mm/hr .86 .86 .86 .86 .86 .86 .86 .86 .86 .86	CALIB   STANDHYD (0:  ID= 1 DT= 5.0 	l07)   min   cea age Lope	Total In (ha) = (mm) = (%) = (m) = = LL WAS TH RAIN	<pre>mp (%) = IMPERVIO</pre>	75.00 US PE ED TO ANSFORME RAIN	RVIOUS (1 .16 1.50 2.00 40.00 .250 5.0 MIN. D HYETOG:   TIME	i) TIME STI RAPH RAIN	EP.	
READ STORM   Ptotal= 86.48 mm   TIME hrs .25 .50 .75 1.00 1.25 1.50 1.75 2.00 2.25 2.50	Comment RAIN   mm/hr   .00   .86	lysi s: 100y TIME hrs 3.50 3.75 4.00 4.25 4.50 4.75 5.00 5.25 5.50 5.75	s\SWM\Hyc r/12hr RAIN mm/hr 14.71 14.71 14.71 14.71 14.71 39.79 39.79 39.79 39.79 39.79 11.24 11.24	TIME   TIME   hrs   6.75   7.00   7.25   7.50   7.75   8.00   8.25   8.50   8.75   9.00	RAIN mm/hr 6.06 6.06 3.46 3.46 3.46 3.46 1.73 1.73 1.73	<pre>ms\100Y1.   TIME   hrs   10.00   10.25   10.50   10.75   11.00   11.25   11.50   11.75   12.00</pre>	RAIN mm/hr .86 .86 .86 .86 .86 .86 .86 .86 .86 .86	CALIB   STANDHYD (0:  ID= 1 DT= 5.0 	LO7)   min   cea age Lope 1 RAINFA	Total In (ha) = (mm) = (%) = (m) = = LL WAS TH	<pre>mp (%) = IMPERVIO     .47     1.00     1.00     64.80     .013 RANSFORM TR.</pre>	75.00 I US PE ED TO	RVIOUS (1 16 1.50 2.00 40.00 .250 5.0 MIN.	i) TIME STI RAPH	EP.	
READ STORM   Ptotal= 86.48 mm   TIME hrs .25 .50 .75 1.00 1.25 1.50 1.75 2.00 2.25 2.50 2.75	Comment RAIN   mm/hr   .00   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .81   .81	lysi 100y TIME hrs 3.50 3.75 4.00 4.25 4.50 4.75 5.00 5.25 5.50 5.75 6.00	s\SWM\Hyc r/12hr RAIN mm/hr 14.71 14.71 14.71 14.71 39.79 39.79 39.79 39.79 39.79 11.24 11.24	<pre>drology\    TIME    hrs    6.75    7.00    7.25    7.50    8.00    8.25    8.50    8.50    8.50    9.00    9.25</pre>	RAIN mm/hr 6.06 6.06 3.46 3.46 3.46 3.46 1.73 1.73 1.73 1.73	<pre>ms\100Y1.   TIME   hrs   10.00   10.25   10.50   10.75   11.00   11.25   11.50   11.75   12.00</pre>	RAIN mm/hr .86 .86 .86 .86 .86 .86 .86 .86 .86 .86	CALIB   STANDHYD (0:  ID= 1 DT= 5.0 	LO7)   min   cea age Lope n RAINFA: TIME	Total In (ha) = (mm) = (%) = (m) = = LL WAS TH RAIN	<pre>mp (%) = IMPERVIO</pre>	75.00 US PE ED TO ANSFORME RAIN mm/hr	RVIOUS (1 .16 1.50 2.00 40.00 .250 5.0 MIN. D HYETOG:   TIME	i) TIME STI RAPH RAIN	ep. -   time	mm/
READ STORM   Ptotal= 86.48 mm   TIME hrs .25 .50 .75 1.00 1.25 1.50 1.75 2.00 2.25 2.50 2.75 3.00	Comment RAIN   mm/hr   .00   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .81   .81	lysi 100y TIME hrs 3.50 3.75 4.00 4.25 4.50 4.50 4.50 5.50 5.50 5.50 5.75 6.00 6.25	s\SWM\Hyd r/12hr RAIN mm/hr 14.71 14.24 11.24 11.24 11.24 11.24	<pre>drology\    TIME    hrs    6.75    7.00    7.25    7.50    7.50    8.00    8.25    8.50    8.75    9.00    9.25 </pre>	RAIN mm/hr 6.06 6.06 3.46 3.46 3.46 3.46 1.73 1.73 1.73 1.73 1.73 1.73	<pre>ms\100Y1.   TIME   hrs   10.00   10.25   10.50   10.75   11.00   11.25   11.50   11.75   12.00</pre>	RAIN mm/hr .86 .86 .86 .86 .86 .86 .86 .86 .86 .86	CALIB   STANDHYD (0:  ID= 1 DT= 5.0 	LO7)   min   cea age Lope n RAINFA TIME hrs .083	Total Ir (ha) = (mm) = (%) = (m) = = LL WAS TH RAIN mm/hr .00	<pre>mp(%) = IMPERVIO     .47     1.00     1.00     64.80     .013 RANSFORM TR   TIME   Hrs   3.167</pre>	75.00 US PE ED TO ANSFORME RAIN mm/hr 5.19	RVIOUS () .16 1.50 2.00 40.00 .250 5.0 MIN. D HYETOG:   TIME   hrs   6.250	i) TIME STI RAPH RAIN mm/hr 11.24	EP. -   TIME   hrs   9.33	mm/
READ STORM   Ptotal= 86.48 mm   TIME hrs .25 .50 .75 1.00 1.25 1.50 1.75 2.00 2.25 2.50 2.75 3.00	Comment RAIN   mm/hr   .00   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .81   .81	lysi 100y TIME hrs 3.50 3.75 4.00 4.25 4.50 4.50 4.50 5.50 5.50 5.50 5.75 6.00 6.25	s\SWM\Hyd r/12hr RAIN mm/hr 14.71 14.24 11.24 11.24 11.24 11.24	<pre>drology\    TIME    hrs    6.75    7.00    7.25    7.50    7.50    8.00    8.25    8.50    8.75    9.00    9.25 </pre>	RAIN mm/hr 6.06 6.06 3.46 3.46 3.46 3.46 1.73 1.73 1.73 1.73 1.73 1.73	<pre>ms\100Y1.   TIME   hrs   10.00   10.25   10.50   10.75   11.00   11.25   11.50   11.75   12.00</pre>	RAIN mm/hr .86 .86 .86 .86 .86 .86 .86 .86 .86 .86	CALIB   STANDHYD (0:  ID= 1 DT= 5.0 	LO7)   min   cea age Lope n RAINFA TIME hrs .083 .167	Total Ir (ha) = (mm) = (%) = (m) = = LL WAS TH RAIN mm/hr .00 .00	<pre>mp (%) = IMPERVIO</pre>	75.00 US PE ED TO ANSFORME RAIN mm/hr 5.19 5.19	RVIOUS () .16 1.50 2.00 40.00 .250 5.0 MIN. D HYETOG:   TIME   hrs   6.250   6.333	i) TIME STI RAPH RAIN mm/hr 11.24 6.06	EP. -   TIME   hrs   9.33   9.42	mm/
READ STORM   Ptotal= 86.48 mm   TIME hrs .25 .50 .75 1.00 1.25 1.50 1.75 2.00 2.25 2.50 2.75 3.00	Comment RAIN   mm/hr   .00   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .81   .81	lysi 100y TIME hrs 3.50 3.75 4.00 4.25 4.50 4.50 4.50 5.50 5.50 5.50 5.75 6.00 6.25	s\SWM\Hyd r/12hr RAIN mm/hr 14.71 14.24 11.24 11.24 11.24 11.24	<pre>drology\    TIME    hrs    6.75    7.00    7.25    7.50    7.50    8.00    8.25    8.50    8.75    9.00    9.25 </pre>	RAIN mm/hr 6.06 6.06 3.46 3.46 3.46 3.46 1.73 1.73 1.73 1.73 1.73 1.73	<pre>ms\100Y1.   TIME   hrs   10.00   10.25   10.50   10.75   11.00   11.25   11.50   11.75   12.00</pre>	RAIN mm/hr .86 .86 .86 .86 .86 .86 .86 .86 .86 .86	CALIB   STANDHYD (0:  ID= 1 DT= 5.0 	LO7)   min   cea age Lope n RAINFA: TIME hrs .083 .167 .250	Total In (ha) = (mm) = (%) = (m) = = LL WAS TH RAIN mm/hr .00 .00	<pre>mp(%) = IMPERVIO     .47     .00     1.00     64.80     .013 RANSFORM TR   TIME   hrs   3.167   3.250   3.333</pre>	75.00 ED TO ANSFORME RAIN mm/hr 5.19 5.19 14.71	RVIOUS ( .16 1.50 2.00 40.00 .250 5.0 MIN. D HYETOGE   TIME   hrs   6.250   6.333   6.417	i) TIME STI RAPH RAIN mm/hr 11.24 6.06 6.06	EP.   TIME   hrs   9.33   9.42   9.50	mm/
Ptotal= 86.48 mm   TIME hrs .25 .50 .75 1.00 1.25 1.50 1.75 2.00 2.25 2.50 2.75 3.00	Comment RAIN   mm/hr   .00   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .81   .81	lysi 100y TIME hrs 3.50 3.75 4.00 4.25 4.50 4.50 4.50 5.50 5.50 5.50 5.75 6.00 6.25	s\SWM\Hyd r/12hr RAIN mm/hr 14.71 14.24 11.24 11.24 11.24 11.24	<pre>drology\    TIME    hrs    6.75    7.00    7.25    7.50    7.50    8.00    8.25    8.50    8.75    9.00    9.25 </pre>	RAIN mm/hr 6.06 6.06 3.46 3.46 3.46 3.46 1.73 1.73 1.73 1.73 1.73 1.73	<pre>ms\100Y1.   TIME   hrs   10.00   10.25   10.50   10.75   11.00   11.25   11.50   11.75   12.00</pre>	RAIN mm/hr .86 .86 .86 .86 .86 .86 .86 .86 .86 .86	CALIB   STANDHYD (0:  ID= 1 DT= 5.0 	LO7)   min   cea age Lope n RAINFAT TIME hrs .083 .167 .250 .333	Total In (ha) = (mm) = (%) = (m) = = LL WAS TH RAIN mm/hr .00 .00 .86	<pre>mp(%) = IMPERVIO     .47     1.00     1.00     64.80     .013 RANSFORM TR   TIME   hrs   3.167   3.250   3.333   3.417</pre>	75.00 US PE ED TO ANSFORME RAIN mm/hr 5.19 5.19 14.71 14.71	RVIOUS ( .16 1.50 2.00 40.00 .250 5.0 MIN. D HYETOG:   TIME   hrs   6.250   6.333   6.417   6.500	i) TIME STI RAPH RAIN mm/hr 11.24 6.06 6.06 6.06 6.06	-   TIME   hrs   9.33   9.42   9.50   9.58	mm/ - - -
READ STORM   Ptotal= 86.48 mm   TIME hrs .25 .50 .75 1.00 1.25 1.50 1.75 2.00 2.25 2.50 2.75 3.00 3.25	Comment RAIN   mm/hr   .00   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .81   .81	lysi 100y TIME hrs 3.50 3.75 4.00 4.25 4.50 4.50 4.50 5.50 5.50 5.50 5.75 6.00 6.25	s\SWM\Hyd r/12hr RAIN mm/hr 14.71 14.24 11.24 11.24 11.24 11.24	<pre>drology\    TIME    hrs    6.75    7.00    7.25    7.50    7.50    8.00    8.25    8.50    8.75    9.00    9.25 </pre>	RAIN mm/hr 6.06 6.06 3.46 3.46 3.46 3.46 1.73 1.73 1.73 1.73 1.73 1.73	<pre>ms\100Y1.   TIME   hrs   10.00   10.25   10.50   10.75   11.00   11.25   11.50   11.75   12.00</pre>	RAIN mm/hr .86 .86 .86 .86 .86 .86 .86 .86 .86 .86	CALIB   STANDHYD (0:  ID= 1 DT= 5.0 	 min   cea age Lope n RAINFA TIME hrs .083 .167 .250 .333 .417	Total In (ha) = (mm) = (%) = (m) = = LL WAS TH RAIN mm/hr .00 .00 .86 .86	<pre>mp(%) = IMPERVIO     .47     .00     1.00     64.80     .013 RANSFORM TR.   TIME   hrs   3.167   3.250   3.333   3.417   3.500</pre>	75.00 US PE ED TO ANSFORME RAIN mm/hr 5.19 5.19 14.71 14.71 14.71	RVIOUS () .16 1.50 2.00 40.00 .250 5.0 MIN. D HYETOG:   TIME   hrs   6.250   6.333   6.417   6.500   6.583	i) TIME STI RAPH RAIN mm/hr 11.24 6.06 6.06 6.06 6.06	EP.   TIME   hrs   9.33   9.42   9.50   9.58   9.67	mm/ - - -
READ STORM   Ptotal= 86.48 mm   TIME hrs .25 .50 .75 1.00 1.25 1.50 1.75 2.00 2.25 2.50 2.75 3.00	Comment RAIN   mm/hr   .00   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .81   .81	lysi 100y TIME hrs 3.50 3.75 4.00 4.25 4.50 4.50 4.50 5.50 5.50 5.50 5.75 6.00 6.25	s\SWM\Hyd r/12hr RAIN mm/hr 14.71 14.24 11.24 11.24 11.24 11.24	<pre>drology\    TIME    hrs    6.75    7.00    7.25    7.50    7.50    8.00    8.25    8.50    8.75    9.00    9.25 </pre>	RAIN mm/hr 6.06 6.06 3.46 3.46 3.46 3.46 1.73 1.73 1.73 1.73 1.73 1.73	<pre>ms\100Y1.   TIME   hrs   10.00   10.25   10.50   10.75   11.00   11.25   11.50   11.75   12.00</pre>	RAIN mm/hr .86 .86 .86 .86 .86 .86 .86 .86 .86 .86	CALIB   STANDHYD (0:  ID= 1 DT= 5.0 	LO7)   min   cea age Lope n RAINFAT TIME hrs .083 .167 .250 .333	Total In (ha) = (mm) = (%) = (m) = = LL WAS TH RAIN mm/hr .00 .00 .86	<pre>mp(%) = IMPERVIO     .47     .00     1.00     64.80     .013 RANSFORM TR.   TIME   hrs   3.167   3.250   3.333   3.417   3.500</pre>	75.00 US PE ED TO ANSFORME RAIN mm/hr 5.19 5.19 14.71 14.71	RVIOUS () .16 1.50 2.00 40.00 .250 5.0 MIN. D HYETOG:   TIME   hrs   6.250   6.333   6.417   6.500   6.583	i) TIME STI RAPH RAIN mm/hr 11.24 6.06 6.06 6.06 6.06	-   TIME   hrs   9.33   9.42   9.50   9.58	mm/ - - -
READ STORM   Ptotal= 86.48 mm   TIME hrs .25 .50 .75 1.00 1.25 1.50 1.75 2.00 2.25 2.50 2.75 3.00 3.25	Comment RAIN   mm/hr   .00   .86   .86   .86   .86   .86   .86   .86   .86   5.19   5.19   5.19	lysi s: 100y TIME hrs 3.50 3.75 4.00 4.25 4.50 4.75 5.00 5.25 5.50 5.75 6.00 6.25 6.50	s\SWM\Hyd r/12hr RAIN mm/hr 14.71 14.24 11.24 11.24 11.24 11.24	drology   TIME   hrs   6.75   7.00   7.50   7.50   7.50   7.50   8.50   8.50   8.50   8.50   8.75   9.00   9.25   9.50   9.75	RAIN mm/hr 6.06 6.06 3.46 3.46 3.46 3.46 1.73 1.73 1.73 1.73 1.73 1.73 1.86 .86	ms\100Y1.   TIME   hrs   10.00   10.25   10.50   10.75   11.00   11.25   11.50   11.75   12.00   12.25   	RAIN mm/hr .86 .86 .86 .86 .86 .86 .86 .86 .86 .86	CALIB   STANDHYD (0:  ID= 1 DT= 5.0 	 min   cea age Lope n RAINFA TIME hrs .083 .167 .250 .333 .417	Total In (ha) = (mm) = (%) = (m) = = LL WAS TH RAIN mm/hr .00 .00 .86 .86	<pre>mp (%) = IMPERVIO</pre>	75.00 US PE ED TO ANSFORME RAIN mm/hr 5.19 5.19 14.71 14.71 14.71	RVIOUS ( .16 1.50 2.00 40.00 .250 5.0 MIN. D HYETOG:   TIME   TIME   6.250   6.333   6.417   6.500   6.583   6.667	i) TIME STI RAPH RAIN mm/hr 11.24 6.06 6.06 6.06 6.06	EP.   TIME   hrs   9.33   9.42   9.50   9.58   9.67	mm/ - - - -
READ STORM   Ptotal= 86.48 mm   TIME hrs .25 .50 .75 1.00 1.25 1.50 1.25 2.00 2.25 2.50 2.75 3.00 3.25 	Comment RAIN   mm/hr   .00   .86   .86   .86   .86   .86   .86   5.19   5.19   5.19   5.19	lysi s: 100y TIME hrs 3.50 3.75 4.00 4.25 4.50 4.75 5.00 5.25 5.50 5.75 6.00 6.25 6.50	s\SWM\Hyd r/12hr RAIN mm/hr 14.71 14.74 11.24	drology   TIME   hrs   6.75   7.00   7.75   8.00   8.25   8.50   8.75   9.00   8.75   9.50   9.50   9.75	<pre>RAIN mm/hr 6.06 6.06 3.46 3.46 3.46 3.46 3.46 1.73 1.73 1.73 1.73 86 .86</pre>	<pre>ms \100Y1.   TIME   hrs   10.00   10.25   10.50   10.75   11.00   11.25   11.50   11.75   12.00   12.25       CN) = 98.</pre>	RAIN mm/hr .86 .86 .86 .86 .86 .86 .86 .86 .86	CALIB   STANDHYD (0:  ID= 1 DT= 5.0 	LO7)   min   cea age Lope n RAINFA: TIME hrs .083 .167 .250 .333 .417 .500 .583	Total In (ha) = (mm) = (%) = (m) = = LL WAS TH RAIN mm/hr .00 .00 .86 .86 .86 .86	<pre>mp(%) = IMPERVIO     .47     .00     .013 RANSFORM TR   TIME   hrs   3.167   3.250   3.333   3.417   3.500   3.583   3.667</pre>	75.00 ED TO ED TO ANSFORME RAIN mm/hr 5.19 14.71 14.71 14.71 14.71 14.71	RVIOUS ( .16 1.50 2.00 40.00 .250 5.0 MIN. D HYETOG:   TIME   hrs   6.250   6.333   6.417   6.583   6.583   6.667   6.750	i) TIME STI RAPH RAIN mm/hr 11.24 6.06 6.06 6.06 6.06 6.06 6.06 6.06	EP.   TIME   hrs   9.33   9.42   9.50   9.58   9.67   9.75   9.83	mm/ - - - - - -
READ STORM   Ptotal= 86.48 mm   TIME hrs .25 .50 .75 1.00 1.25 1.50 1.75 2.00 2.25 2.50 2.75 3.00 3.25 	Comment RAIN   mm/hr   .00   .86   .19   5.19   5.19   5.19   5.19   5.12   .10	lysi s: 100y TIME hrs 3.50 3.75 4.00 4.25 4.50 4.75 5.00 5.25 5.50 5.75 6.00 6.25 6.50 	s\SWM\Hyd r/12hr RAIN mm/hr 14.71 14.74 11.24 11	drology   TIME   hrs   6.75   7.00   7.75   8.00   8.25   8.50   8.75   9.00   8.75   9.50   9.50   9.75	<pre>RAIN mm/hr 6.06 6.06 3.46 3.46 3.46 3.46 3.46 1.73 1.73 1.73 1.73 86 .86</pre>	<pre>ms \100Y1.   TIME   hrs   10.00   10.25   10.50   10.75   11.00   11.25   11.50   11.75   12.00   12.25       CN) = 98.</pre>	RAIN mm/hr .86 .86 .86 .86 .86 .86 .86 .86 .86 .86	CALIB   STANDHYD (0:  ID= 1 DT= 5.0 	LO7)   min   cea age Lope n RAINFAT TIME hrs .083 .167 .250 .333 .417 .500 .583 .667	Total In (ha) = (mm) = (%) = (m) = = LL WAS TH RAIN mm/hr .00 .00 .00 .86 .86 .86 .86	<pre>mp(%) = IMPERVIO</pre>	75.00 US PE ED TO ANSFORME RAIN mm/hr 5.19 14.71 14.71 14.71 14.71 14.71 14.71	RVIOUS ( .16 1.50 2.00 40.00 .250 5.0 MIN. D HYETOG:   TIME   hrs   6.250   6.333   6.417   6.500   6.583   6.667   6.750   6.833	TIME STI RAPH RAIN mm/hr 11.24 6.06 6.06 6.06 6.06 6.06 6.06 6.06 6.0	EP. TIME Signal Field	mm/ - - - - - - -
READ STORM   Ptotal= 86.48 mm   TIME hrs .25 .50 .75 1.00 1.25 1.50 1.75 2.00 2.25 2.50 2.75 3.00 3.25	Comment RAIN   mm/hr   .00   .86   .86   .86   .86   .86   .86   5.19   5.19   5.19   5.19	lysi s: 100y TIME hrs 3.50 3.75 4.00 4.25 4.50 4.75 5.00 5.25 5.50 5.75 6.00 6.25 6.50 	s\SWM\Hyd r/12hr RAIN mm/hr 14.71 14.74 11.24	drology   TIME   hrs   6.75   7.00   7.75   8.00   8.25   8.50   8.75   9.00   8.75   9.50   9.50   9.75	<pre>RAIN mm/hr 6.06 6.06 3.46 3.46 3.46 3.46 3.46 1.73 1.73 1.73 1.73 86 .86</pre>	<pre>ms \100Y1.   TIME   hrs   10.00   10.25   10.50   10.75   11.00   11.25   11.50   11.75   12.00   12.25       CN) = 98.</pre>	RAIN mm/hr .86 .86 .86 .86 .86 .86 .86 .86 .86 .86	CALIB   STANDHYD (0:  ID= 1 DT= 5.0 	 min   min   cea age lope n RAINFA: MRE hrs .083 .167 .250 .333 .417 .500 .583 .667 .750	Total In (ha) = (mm) = (%) = (m) = = LL WAS TH RAIN mm/hr .00 .00 .86 .86 .86 .86 .86 .86	<pre>mp(%) = IMPERVIO</pre>	75.00 US PE ED TO ANSFORME RAIN mm/hr 5.19 5.19 14.71 14.71 14.71 14.71 14.71 14.71 14.71 14.71	RVIOUS ( .16 1.50 2.00 40.00 .250 5.0 MIN. D HYETOGE   TIME   hrs   6.250   6.333   6.417   6.500   6.583   6.667   6.750   6.833   6.917	TIME ST RAPH RAIN mm/hr 11.24 6.06 6.06 6.06 6.06 6.06 6.06 6.06 6.0	EP. TIME S.33 9.42 9.50 9.58 9.67 9.75 9.83 9.83 9.92 10.00	mm/ - - - - - - - - - - - - -
READ STORM   Ptotal= 86.48 mm   TIME hrs .25 .50 .75 1.00 1.25 1.50 1.75 2.00 2.25 2.50 2.75 3.00 3.25 CALIB NASHYD (0108) ID= 1 DT=10.0 min	Comment RAIN   mm/hr   .00   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .81   5.19   5.19   5.19   5.19   5.19	lysi s: 100y TIME hrs 3.50 3.75 4.00 4.25 4.50 4.75 5.00 5.75 6.00 6.25 6.50 (ha) = (mm) = hrs) =	s\SWM\Hyd r/12hr RAIN mm/hr 14.71 14.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 12	<pre>drology\    TIME    hrs    6.75    7.00    7.25    7.50    7.50    8.00    8.75    8.00    8.75    8.00    8.75    9.00    9.25    9.00    9.75 Curve Nu # of Lin</pre>	<pre>V02\Stor RAIN mm/hr 6.06 6.06 3.46 3.46 3.46 1.73 1.73 1.73 1.73 886</pre>	<pre>ms \100Y1.   TIME   hrs   10.00   10.25   10.50   10.75   11.00   11.25   11.50   11.75   12.00   12.25     CN) = 98. (N) = 3.0</pre>	RAIN mm/hr .86 .86 .86 .86 .86 .86 .86 .86 .86 .86	CALIB   STANDHYD (0:  ID= 1 DT= 5.0 	 107)   min   cea age Lope n RAINFA: TIME hrs .083 .167 .250 .333 .417 .500 .583 .667 .750 .833	Total In (ha) = (mm) = (%) = (m) = = LL WAS TH RAIN mm/hr .00 .00 .00 .00 .86 .86 .86 .86 .86 .86	<pre>mp(%) = IMPERVIO     .47     1.00     1.00     64.80     .013 RANSFORM TR.   TIME   hrs   3.167   3.250   3.333   3.417   3.500   3.583   3.667   3.750   3.750   3.833   3.917</pre>	75.00 US PE ED TO ANSFORME RAIN mm/hr 5.19 5.19 14.71 14.71 14.71 14.71 14.71 14.71 14.71 14.71	RVIOUS ( .16 1.50 2.00 40.00 .250 5.0 MIN. D HYETOG: TIME hrs 6.250 6.333 6.417 6.500 6.583 6.667 6.750 6.833 6.917 7.000	TIME STI RAPH RAIN mm/hr 11.24 6.06 6.06 6.06 6.06 6.06 6.06 6.06 6.0	EP. -   TIME   hrs   9.33   9.42   9.50   9.58   9.67   9.75   9.83   9.92   10.00   10.08	mm/ - - - - - - - - - - - - - - - - - -
READ STORM   Ptotal= 86.48 mm   TIME hrs .25 .50 .75 1.00 1.25 1.50 1.75 2.00 2.25 2.50 2.75 3.00 3.25 	Comment RAIN   mm/hr   .00   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .81   5.19   5.19   5.19   5.19   5.19	lysi s: 100y TIME hrs 3.50 3.75 4.00 4.25 4.50 4.75 5.00 5.75 6.00 6.25 6.50 (ha) = (mm) = hrs) =	s\SWM\Hyd r/12hr RAIN mm/hr 14.71 14.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 12	<pre>drology\    TIME    hrs    6.75    7.00    7.25    7.50    7.50    8.00    8.75    8.00    8.75    8.00    8.75    9.00    9.25    9.00    9.75 Curve Nu # of Lin</pre>	<pre>V02\Stor RAIN mm/hr 6.06 6.06 3.46 3.46 3.46 1.73 1.73 1.73 1.73 886</pre>	<pre>ms \100Y1.   TIME   hrs   10.00   10.25   10.50   10.75   11.00   11.25   11.50   11.75   12.00   12.25     CN) = 98. (N) = 3.0</pre>	RAIN mm/hr .86 .86 .86 .86 .86 .86 .86 .86 .86 .86	CALIB   STANDHYD (0:  ID= 1 DT= 5.0 	LO7)   min   min   cea age Lope n RAINFA RAINFA TIME hrs .083 .167 .250 .333 .167 .250 .333 .417 .500 .583 .667 .750 .833 .917	Total In (ha) = (mm) = (%) = (m) = = LL WAS TH RAIN mm/hr .00 .00 .00 .86 .86 .86 .86 .86 .86 .86 .86	<pre>mp(%) = IMPERVIO</pre>	75.00 PE US PE ED TO ANSFORME RAIN mm/hr 5.19 14.71 14.71 14.71 14.71 14.71 14.71 14.71 14.71 14.71 14.71	RVIOUS ( .16 1.50 2.00 40.00 .250 5.0 MIN. D HYETOG: TIME   TIME   6.250   6.333   6.417   6.500   6.583   6.667   6.750   6.833   6.917   7.000   7.083	i) TIME STI RAPH RAIN mm/hr 11.24 6.06 6.06 6.06 6.06 6.06 6.06 6.06 6.0	EP. TIME hrs 9.33 9.42 9.50 9.58 9.67 9.75 9.83 9.92 10.00 10.08 10.17	mm/ - - - - - - - - - - - - - - - - - -
READ STORM   Ptotal= 86.48 mm   TIME hrs .25 .50 .75 1.00 1.25 1.50 1.75 2.00 2.25 2.50 2.75 3.00 3.25 CALIB NASHYD (0108) ID= 1 DT=10.0 min	Comment RAIN   mm/hr   .00   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .81   5.19   5.19   5.19   5.19   5.19	lysi s: 100y TIME hrs 3.50 3.75 4.00 4.25 4.50 4.75 5.00 5.75 6.00 6.25 6.50 (ha) = (mm) = hrs) =	s\SWM\Hyd r/12hr RAIN mm/hr 14.71 14.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 12	<pre>drology\    TIME    hrs    6.75    7.00    7.25    7.50    7.50    8.00    8.75    8.00    8.75    8.00    8.75    9.00    9.25    9.00    9.75 Curve Nu # of Lin</pre>	<pre>V02\Stor RAIN mm/hr 6.06 6.06 3.46 3.46 3.46 1.73 1.73 1.73 1.73 886</pre>	<pre>ms \100Y1.   TIME   hrs   10.00   10.25   10.50   10.75   11.00   11.25   11.50   11.75   12.00   12.25     CN) = 98. (N) = 3.0</pre>	RAIN mm/hr .86 .86 .86 .86 .86 .86 .86 .86 .86 .86	CALIB   STANDHYD (0:  ID= 1 DT= 5.0 	 107)   min   cea age Lope n RAINFA: TIME hrs .083 .167 .250 .333 .417 .500 .583 .667 .750 .833	Total In (ha) = (mm) = (%) = (m) = = LL WAS TH RAIN mm/hr .00 .00 .00 .00 .86 .86 .86 .86 .86 .86	<pre>mp(%) = IMPERVIO     .47     1.00     1.00     64.80     .013 RANSFORM TR.   TIME   hrs   3.167   3.250   3.333   3.417   3.500   3.583   3.667   3.750   3.750   3.833   3.917</pre>	75.00 US PE ED TO ANSFORME RAIN mm/hr 5.19 5.19 14.71 14.71 14.71 14.71 14.71 14.71 14.71 14.71	RVIOUS ( .16 1.50 2.00 40.00 .250 5.0 MIN. D HYETOG: TIME   TIME   6.250   6.333   6.417   6.500   6.583   6.667   6.750   6.833   6.917   7.000   7.083	TIME STI RAPH RAIN mm/hr 11.24 6.06 6.06 6.06 6.06 6.06 6.06 6.06 6.0	EP. -   TIME   hrs   9.33   9.42   9.50   9.58   9.67   9.75   9.83   9.92   10.00   10.08	mm/ - - - - - - - - - - - - - - - - - -
READ STORM   Ptotal= 86.48 mm   TIME hrs .25 .50 .75 1.00 1.25 1.50 1.75 2.00 2.25 2.50 2.75 3.00 3.25 CALIB NASHYD (0108) ID= 1 DT=10.0 min	Comment RAIN   mm/hr   .00   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .86   .81   5.19   5.19   5.19   5.19   5.19	lysi s: 100y TIME hrs 3.50 3.75 4.00 4.25 4.50 4.75 5.00 5.75 6.00 6.25 6.50 (ha) = (mm) = hrs) =	s\SWM\Hyd r/12hr RAIN mm/hr 14.71 14.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 11.24 12	<pre>drology\    TIME    hrs    6.75    7.00    7.25    7.50    7.50    8.00    8.75    8.00    8.75    8.00    8.75    9.00    9.25    9.00    9.75 Curve Nu # of Lin</pre>	<pre>V02\Stor RAIN mm/hr 6.06 6.06 3.46 3.46 3.46 1.73 1.73 1.73 1.73 886</pre>	<pre>ms \100Y1.   TIME   hrs   10.00   10.25   10.50   10.75   11.00   11.25   11.50   11.75   12.00   12.25     CN) = 98. (N) = 3.0</pre>	RAIN mm/hr .86 .86 .86 .86 .86 .86 .86 .86 .86 .86	CALIB   STANDHYD (0:  ID= 1 DT= 5.0 	LO7)   min   min   cea age Lope n RAINFA RAINFA TIME hrs .083 .167 .250 .333 .167 .250 .333 .417 .500 .583 .667 .750 .833 .917	Total In (ha) = (mm) = (%) = (m) = = LL WAS TH RAIN mm/hr .00 .00 .00 .86 .86 .86 .86 .86 .86 .86 .86	<pre>mp(%) = IMPERVIO</pre>	75.00 PE US PE ED TO ANSFORME RAIN mm/hr 5.19 14.71 14.71 14.71 14.71 14.71 14.71 14.71 14.71 14.71 14.71	RVIOUS ( .16 1.50 2.00 40.00 .250 5.0 MIN. D HYETOG:   TIME   hrs   6.250   6.333   6.417   6.500   6.583   6.667   6.750   6.750   6.750   6.750   6.750   6.750   7.083   7.167	i) TIME STI RAPH RAIN mm/hr 11.24 6.06 6.06 6.06 6.06 6.06 6.06 6.06 6.0	EP. TIME hrs 9.33 9.42 9.50 9.58 9.67 9.75 9.83 9.92 10.00 10.08 10.17 10.25	RA mm/

1.25 1.33 1.41 1.50 1.58 1.66 1.75 1.83 1.91 2.00 2.08 2.16 2.25 2.33 2.41 2.50 2.58 2.66 2.75 2.83 2.66 2.75 2.83 2.91 3.00	0 .86 3 .86 7 .86 0 .86 3 .86 7 .19 0 5.19 3 5.19 7 5.19 0 5.19 3 5.19	4.333 4.417 4.500 4.583 4.667 4.750 4.833 4.917 5.000 5.083 5.167 5.250 5.333 5.417 5.500 5.583 5.417 5.750 5.833 5.917 6.000 6.083 6.167	39.79                 39.79                 39.79                 39.79                 39.79                 39.79                 39.79                 39.79                 39.79                 39.79                 39.79                 39.79                 39.79                 10.24                 11.24                  11.24                  11.24<	7.417 7.500 7.583 7.667 7.750 7.833 7.917 8.000 8.083 8.167 8.250 8.333 8.417 8.500 8.583 8.667 8.750 8.833 8.917 9.000 9.083 9.167 9.250	3.46   3.46   3.46   3.46   3.46   3.46   3.46   3.46   3.46   3.46   1.73	10.50 10.58 10.67 10.75 10.83 10.92 11.00 11.08 11.17 11.25 11.33 11.42 11.50 11.58 11.67 11.75 11.83 11.92 12.00 12.08 12.17 12.25	.86 .86 .86 .86 .86 .86 .86 .86 .86 .86
vover Storage Coeff. Unit Hyd. Tpeak Unit Hyd. peak PEAK FLOW TIME TO PEAK RUNOFF VOLUME TOTAL RAINFALL RUNOFF COEFFICI ***** WARNING: STORA (i) CN PROCED	<pre>(min) (min) (min) (min)= (cms)= (cms)= (cms)= (hrs)= (mm)= (mm)= ENT = GE COEFF. Turk Selection</pre>	5.00 2.85 ( 5.00 .28 .05 4.92 85.48 86.48 .99 IS SMALLER	ii) 1 1 1 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	.02 5.25 00.08 .02 5.25 00.09 36.48 .93 CIME STEP! LOSSES:	*TO] - - 84 86		
(ii) TIME STEP THAN THE (iii) PEAK FLOW CALIB   STANDHYD (0106) ID= 1 DT= 5.0 min	STORAGE COI DOES NOT :  Area Total In	LD BE SMAI EFFICIENT. INCLUDE BA (ha) = 1 np(%) = 40	LER OR SEFLOW 	EQUAL IF ANY.	(%)= 4		
Surface Area Dep. Storage Average Slope Length Mannings n Max.Eff.Inten.(	(ha) = (mm) = (%) = (m) = = mm/hr) =	39.79	3	39.49			
over Storage Coeff. Unit Hyd. Tpeak Unit Hyd. peak PEAK FLOW TIME TO PEAK	(min) =	5.00 3.73 ( 5.00 .25 .07 5.08	ii) 1	L5.00 L3.97 (ii) L5.00 .08 .10 5.25		CALS* 169 (iii) 5.25	

RUNOFF VOLUME	(mm) =	85.48	80.09	82.24
TOTAL RAINFALL	(mm) =	86.48	86.48	86.48
RUNOFF COEFFICIEN	JT =	.99	.93	.95

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 98.0 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			
NASHYD (0109)	Area (ha)=	1.38	Curve Number (CN) = 98.0
ID= 1 DT=10.0 min	Ia (mm) =	5.00	# of Linear Res.(N) = 3.00
	U.H. Tp(hrs) =	.20	

NOTE: RAINFALL WAS TRANSFORMED TO 10.0 MIN. TIME STEP.

		TR	ANSFORMEI	D HYETOGI	RAPH	-	
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
.167	.00	3.333	9.95	6.500	6.06	9.67	.86
.333	.43	3.500	14.71	6.667	6.06	9.83	.86
.500	.86	3.667	14.71	6.833	6.06	10.00	.86
.667	.86	3.833	14.71	7.000	6.06	10.17	.86
.833	.86	4.000	14.71	7.167	6.06	10.33	.86
1.000	.86	4.167	14.71	7.333	4.76	10.50	.86
1.167	.86	4.333	27.25	7.500	3.46	10.67	.86
1.333	.86	4.500	39.79	7.667	3.46	10.83	.86
1.500	.86	4.667	39.79	7.833	3.46	11.00	.86
1.667	.86	4.833	39.79	8.000	3.46	11.17	.86
1.833	.86	5.000	39.79	8.167	3.46	11.33	.86
2.000	.86	5.167	39.79	8.333	2.60	11.50	.86
2.167	.86	5.333	25.52	8.500	1.73	11.67	.86
2.333	3.02	5.500	11.24	8.667	1.73	11.83	.86
2.500	5.19	5.667	11.24	8.833	1.73	12.00	.86
2.667	5.19	5.833	11.24	9.000	1.73	12.17	.86
2.833	5.19	6.000	11.24	9.167	1.73	12.33	.43
3.000	5.19	6.167	11.24	9.333	1.30		
3.167	5.19	6.333	8.65	9.500	.86		

Unit Hyd Qpeak (cms)= .264

PEAK FLOW	(cms) =	.146	(i)
TIME TO PEAK	(hrs) =	5.167	
RUNOFF VOLUME	(mm) =	74.616	
TOTAL RAINFALL	(mm) =	86.480	
RUNOFF COEFFICI	ENT =	.863	

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

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CALIB					
STANDHYD (0104)	Area	(ha) =	.04		
ID= 1 DT= 5.0 min	Total	Imp(%)=	90.00	Dir. Conn.(%)=	90.00
		IMPERVI	OUS	PERVIOUS (i)	
Surface Area	(ha)=	.0	4	.00	
Dep. Storage	(mm) =	1.0	0	1.50	
Average Slope	(%)=	1.0	0	2.00	

Length	(m) =	16.30	40.00
Mannings n	=	.013	.250

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

		TRA	NSFORME	D HYETOGRA	PH	_	
TIME	RAIN	TIME	RAIN	TIME	RAIN		RAIN
hrs		hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
.083	,	3.167	5.19	1	, 11.24	9.33	.86
.167		3.250	5.19		6.06	9.42	.86
.250		3.333	14.71	6.417	6.06	9.50	.86
.333		3.417	14.71	1	6.06	1	.86
.417	.86	3.500	14.71	6.583	6.06	9.67	.86
.500	.86	3.583	14.71	6.667	6.06	9.75	.86
.583	.86	3.667	14.71	6.750	6.06	9.83	.86
.667	.86	3.750	14.71	6.833	6.06	9.92	.86
.750	.86	3.833	14.71	6.917	6.06	10.00	.86
.833	.86	3.917	14.71	7.000	6.06	10.08	.86
.917	.86	4.000	14.71	7.083	6.06	10.17	.86
1.000	.86	4.083	14.71	7.167	6.06	10.25	.86
1.083		4.167	14.71	7.250	6.06	10.33	.86
1.167	.86	4.250	14.71	7.333	3.46	10.42	.86
1.250	.86	4.333	39.79	7.417	3.46	10.50	.86
1.333		4.417	39.79	1	3.46	1	.86
1.417		4.500	39.79	1	3.46	1	.86
1.500		4.583	39.79		3.46		.86
1.583		4.667	39.79		3.46	1	.86
1.667		4.750	39.79	1	3.46	1	.86
1.750		4.833	39.79	1	3.46	1	.86
1.833		4.917	39.79		3.46		.86
1.917		5.000	39.79	1	3.46	1	.86
2.000		5.083	39.79	1	3.46	1	.86
2.083		5.167	39.79	1	3.46	1	.86
2.167		5.250	39.79	1	1.73	11.42	.86
2.250		5.333		8.417	1.73	1	.86
2.333 2.417		5.417	11.24 11.24	1	1.73 1.73	1	.86 .86
2.417		5.583		8.667	1.73	1	.86
2.583		5.667	11.24	1	1.73	1	.86
2.565		5.750		8.833	1.73	1	.86
2.007		5.833	11.24	1	1.73	12.00	.86
2.833		5.917	11.24	1	1.73		.86
2.033		6.000		9.083	1.73	1	.86
3.000		1		1	1.73		.86
3.083		6.167	11.24		1.73	1	
			1			1	
Max.Eff.Inten.(m	(min) =	39.79		18.53			
		5.00		10.00			
Storage Coeff. Unit Hyd. Tpeak	(min) = (min) =	1.24 5.00		5.48 (ii) 10.00			
Unit Hyd. peak	(miii) = (cms) =	.33		.16			
onic nyu. peak	(CIIIS) =			.10	*T0	TALS*	
PEAK FLOW	(cms) =	.00		.00		.004 (iii)	)
TIME TO PEAK	(hrs)=	4.58		5.25		5.25	
RUNOFF VOLUME	(mm) =	85.48		80.09	8	2.42	
TOTAL RAINFALL	(mm) =	86.48		86.48	8	6.48	
RUNOFF COEFFICIE	NT =	.99		.93		.95	
* WARNING. STORAG	E COEFF	TS SMAT.T.F	R THAN	TIME STEDI			

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

(i) CN PROCEDURE SELECTED FOR	R PERVIOUS LOSSES:
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CN\* = 98.0 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 (0100)   D= 1 DT= 5.0 min	Total	(ha)= 3 Imp(%)= 82	3.16 2.00 Dir	•. Conn.(%):	= 82.00
		IMPERVIOUS	S PERVI		
Surface Area	(ha) =	2.59			
Dep. Storage	(mm) = (%) -	1.00	1. 2.		
Length	(m) =	145.10	40.		
Dep. Storage Average Slope Length Mannings n	=	.013	.2	50	
Max.Eff.Inten.(	mm/hr)=	39.79	39.	49	
over	(min)	5.00	15.	00	
Storage Coeff.	(min) = (min) =	4.62	(11) 14.	85 (11)	
over Storage Coeff. Unit Hyd. Tpeak Unit Hyd. peak	(cms) =	.22	10.	08	
					*TOTALS*
PEAK FLOW				06	.347 (iii)
TIME TO PEAK RUNOFF VOLUME TOTAL RAINFALL RUNOFF COEFFICI	(hrs) = (mm) =	5.1/ 85.48	5. 80. 86.	∠⊃ 09	5.25 84.51
TOTAL RAINFALL	(mm) =	86.48	86.	48	86.48
RUNOFF COEFFICI	ENT =	.99		93	.98
THAN THE	STORAGE C	OULD BE SMAI		UAL	
	STORAGE C DOES NOT	DULD BE SMAI COEFFICIENT INCLUDE BF	LLER OR EQ ASEFLOW IF	90AL 'ANY.	
THAN THE (iii) PEAK FLOW RESERVOIR (0103)   IN= 2> OUT= 1   DT= 5.0 min	STORAGE C DOES NOT OUTF (cm .C	DULD BE SMAI COEFFICIENT INCLUDE BA CLOW STOP (b) (ha. 0000 .( 150 .( AREA	LLER OR EQ ASEFLOW IF 	UAL 'ANY. OUTFLOW (cms) .3500 .0000	STORAGE (ha.m.) .1300 .0000
THAN THE (iii) PEAK FLOW RESERVOIR (0103)   IN= 2> OUT= 1   DT= 5.0 min	STORAGE C DOES NOT OUTF (cm .C	DULD BE SMAI COEFFICIENT INCLUDE BA CLOW STOP (b) (ha. 0000 .( 150 .( AREA	LLER OR EQ ASEFLOW IF 	UAL 'ANY. OUTFLOW (cms) .3500 .0000 TPEAJ	STORAGE (ha.m.) .1300 .0000 K R.V. ) (mm)
THAN THE (iii) PEAK FLOW RESERVOIR (0103)   IN= 2> OUT= 1   DT= 5.0 min	STORAGE C DOES NOT OUTF (cm .C	DULD BE SMAI COEFFICIENT INCLUDE BA CLOW STOP (b) (ha. 0000 .( 150 .( AREA	LLER OR EQ ASEFLOW IF 	UAL 'ANY. OUTFLOW (cms) .3500 .0000 TPEAJ (hrs 5.2!	STORAGE (ha.m.) .1300 .0000 K R.V. ) (mm) 5 84.51
THAN THE (iii) PEAK FLOW RESERVOIR (0103)   IN= 2> OUT= 1   DT= 5.0 min   INFLOW : ID= 2 OUTFLOW: ID= 1 P T M	STORÀGE C DOES NOT OUTF (cn .C (0100) (0103) EAK FLC IME SHIFT AXIMUM S	CLOW STOF SILOW STOF SILOW STOF SILOW STOF SILOW STOF SILOW STOF SILOW STOF SILOW STOF SILOW STOF SILOW STOF AREA (ha) 3.160 3.160 3.160 SILOW REDUCTI STORAGE US	LLER OR EQ ASEFLOW IF 	<pre>QUAL ' ANY. OUTFLOW (cms) .3500 .0000 TPEAH (hrss 5.2! 5.3: Qin](%)= 7! (min)= ! (ha.m.)=</pre>	STORAGE (ha.m.) .1300 .0000 K R.V. ) (mm) 5 84.51 3 84.15 9.26
THAN THE (iii) PEAK FLOW RESERVOIR (0103)   IN= 2> OUT= 1   DT= 5.0 min   INFLOW : ID= 2 OUTFLOW: ID= 1 P T M	STORÀGE C DOES NOT OUTF (cn .C (0100) (0103) EAK FLC IME SHIFT AXIMUM S	CLOW STOF SILOW STOF SILOW STOF SILOW STOF SILOW STOF SILOW STOF SILOW STOF SILOW STOF SILOW STOF SILOW STOF AREA (ha) 3.160 3.160 3.160 SILOW REDUCTI STORAGE US	LLER OR EQ ASEFLOW IF 	<pre>QUAL ' ANY. OUTFLOW (cms) .3500 .0000 TPEAH (hrss 5.2! 5.3: Qin](%)= 7! (min)= ! (ha.m.)=</pre>	STORAGE (ha.m.) .1300 .0000 K R.V. ) (mm) 5 84.51 3 84.15 9.26
THAN THE (iii) PEAK FLOW RESERVOIR (0103)   IN= 2> OUT= 1   DT= 5.0 min   INFLOW : ID= 2 OUTFLOW: ID= 1 P T M	STORAGE C DOES NOT OUTF (cm .C (0100) (0103) EAK FLC IME SHIFT AXIMUM S	DULD BE SMAI COEFFICIENT INCLUDE BA INCLUDE	LLER OR EQ ASEFLOW IF 	<pre>QUAL ' ANY. OUTFLOW (cms) .3500 .0000 TPEAI (hrs 5.2! 5.3: 'Qin](%)= 7! (min)= ! (ha.m.)=</pre>	STORAGE (ha.m.) .1300 .0000 K R.V. (mm) 5 84.51 3 84.15 9.26 5.00 .1171
THAN THE (iii) PEAK FLOW RESERVOIR (0103)   IN= 2> OUT= 1   DT= 5.0 min   INFLOW : ID= 2 OUTFLOW: ID= 1 P T M	STORAGE C DOES NOT OUTF (cm .C (0100) (0103) EAK FLC IME SHIFT AXIMUM S	DULD BE SMAI COEFFICIENT INCLUDE BA INCLUDE	LLER OR EQ ASEFLOW IF 	<pre>QUAL ' ANY. OUTFLOW (cms) .3500 .0000 TPEAI (hrs 5.2! 5.3: 'Qin](%)= 7! (min)= ! (ha.m.)=</pre>	STORAGE (ha.m.) .1300 .0000 K R.V. (mm) 5 84.51 3 84.15 9.26 5.00 .1171
THAN THE (iii) PEAK FLOW RESERVOIR (0103)   IN= 2> OUT= 1   DT= 5.0 min   INFLOW : ID= 2 OUTFLOW: ID= 1 P T M	STORAGE C DOES NOT OUTF (cm .C (0100) (0103) EAK FLC IME SHIFT AXIMUM S	DULD BE SMAI COEFFICIENT INCLUDE BA INCLUDE	LLER OR EQ ASEFLOW IF 	<pre>QUAL ' ANY. OUTFLOW (cms) .3500 .0000 TPEAI (hrs 5.2! 5.3: 'Qin](%)= 7! (min)= ! (ha.m.)=</pre>	STORAGE (ha.m.) .1300 .0000 K R.V. (mm) 5 84.51 3 84.15 9.26 5.00 .1171
THAN THE (iii) PEAK FLOW RESERVOIR (0103)   IN= 2> OUT= 1   DT= 5.0 min   INFLOW : ID= 2 OUTFLOW: ID= 1 P T M	STORAGE C DOES NOT OUTF (cm .C (0100) (0103) EAK FLC IME SHIFT AXIMUM S	DULD BE SMAI COEFFICIENT INCLUDE BA INCLUDE	LLER OR EQ ASEFLOW IF 	<pre>QUAL ' ANY. OUTFLOW (cms) .3500 .0000 TPEAI (hrs 5.2! 5.3: 'Qin](%)= 7! (min)= ! (ha.m.)=</pre>	STORAGE (ha.m.) .1300 .0000 K R.V. (mm) 5 84.51 3 84.15 9.26 5.00 .1171
THAN THE (iii) PEAK FLOW RESERVOIR (0103)   IN= 2> OUT= 1   DT= 5.0 min   INFLOW : ID= 2 OUTFLOW: ID= 1 P T M ADD HYD (0105)   1 + 2 = 3 ID1= 1 (01 + ID2= 2 (01)	STORAGE C DOES NOT OUTF (cm .C (0100) (0103) EAK FLC IME SHIFT AXIMUM S 	DULD BE SMAI COEFFICIENT INCLUDE BA INCLUDE	LLER OR EQ ASEFLOW IF 	<pre>QUAL P ANY. OUTFLOW (cms)    .3500    .0000 TPEAN (hrss    5.2!    5.3: Qin](%) = 7! (ha.m.) = CAK R.V SS) (mmi) 5 82.42 3 84.15</pre>	STORAGE (ha.m.) .1300 .0000 K R.V. ) (mm) 5 84.51 3 84.15 9.26 5.00 .1171

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0110)				
1 + 2 = 3   ID1= 1 (0109):	AREA (ha) 1.38 3.20	QPEAK (cms) .146 .279	TPEAK (hrs) 5.17 5.25	R.V. (mm) 74.62 84.12
ID = 3 (0110):	4.58	.414	5.25	81.26

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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ADD HYD (0111)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0106):	1.55	.169	5.25	82.24
+ ID2= 2 (0110):	4.58	.414	5.25	81.26
			========	
ID = 3 (0111):	6.13	.583	5.25	81.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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ADD HYD (0112)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0107):	.63	.069	5.25	84.12
+ ID2= 2 (0111):	6.13	.583	5.25	81.51
			========	
ID = 3 (0112):	6.76	.652	5.25	81.75

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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ADD HYD (0113)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0108):	.76	.081	5.17	74.62
+ ID2= 2 (0112):	6.76	.652	5.25	81.75
ID = 3 (0113):	7.52	.731	5.17	81.03

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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## FINISH

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