

**FUNCTIONAL SERVICING &
STORMWATER MANAGEMENT REPORT**

**DUNN CAPITAL CORPORATION
WEST END COMMERCIAL DEVELOPMENT**

TOWN OF COLLINGWOOD

PREPARED BY:

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TABLE OF CONTENTS

1.0	Introduction	1
2.0	Background.....	2
2.1	Previous Engineering Reports & Design Criteria	2
2.2	Pre-Consultation.....	3
3.0	Site Description.....	4
3.1	Existing Conditions	4
3.2	Development Proposal	5
3.3	Geotechnical Conditions.....	6
4.0	Sanitary Sewage System.....	6
4.1	Existing Sanitary Infrastructure	6
4.2	Proposed Sanitary Strategy & Design Flows.....	7
4.3	Waste Water Treatment Plant Capacity.....	7
5.0	Potable Water Supply.....	8
5.1	Existing Watermain Infrastructure.....	8
5.2	Proposed Water Servicing Strategy.....	8
5.3	Water Treatment Plant Capacity	9
6.0	Utilities.....	9
7.0	Existing Drainage Conditions.....	9
7.1	Parcels 1/2	9
7.2	Parcel 3	10
8.0	Stormwater Management & Site Drainage.....	11
8.1	Outlet Options	12
8.1.1	West Outlet: Direct to Black Ash Creek (Gravity).....	12
8.1.2	West Outlet: Direct to Black Ash Creek (Stormwater Pumping).....	12
8.1.3	North Outlet: Black Ash Creek via Existing Cambridge Street Storm Sewer.....	12
8.1.4	North Outlet: Black Ash Creek via an External Trunk Storm Sewer	13
8.1.5	East Outlet: High Street.....	13
8.1.6	Outlet Selection	14
8.2	Overview of SWM Design	14
8.2.1	Lands Tributary to Regional SWM Facility	15

8.2.2	Lands Directly Tributary to High Street	16
8.2.3	Lands Tributary to Home Depot SWM Pond.....	16
8.2.4	Lands Tributary to the existing Cambridge Street.....	16
8.3	Stormwater Quantity Control Requirements	17
8.3.1	Results of Post-Development Hydrologic Modeling.....	18
8.4	Stormwater Quality & Erosion Control	18
8.4.1	Lands Tributary to Regional SWM Facility	18
8.4.2	Lands Tributary Directly Tributary to High Street	19
	Public ROW Controls.....	19
8.4.3	Lands Tributary to Home Depot	20
8.5	Detention Storage Characteristics and Design Features.....	20
8.5.1	Regional SWM Facility.....	20
8.5.2	Lands Directly Tributary to High Street	21
8.6	Alternative Outlet for Regional SWM Facility	22
8.6.1	Black Ash Creek via Pumping.....	22
8.6.2	Black Ash Creek via an External Trunk Sewer	22
8.6.3	Reduction of Flows to High Street.....	23
9.0	Phasing of Stormwater infrastructure.....	23
9.1	Phase 1 Drainage Conditions.....	24
9.2	Water Quantity Control.....	24
9.3	Water Quality Control.....	25
9.3.1	Lands Tributary to Northeast Pond.....	25
9.3.2	Cambridge Street Extension (Catchment R4).....	26
10.0	Conclusions & Recommendations	27

LIST OF FIGURES

- Figure 1: Site Location
- Figure 2: Draft Plan
- Figure 3: Preliminary Sanitary Servicing Plan
- Figure 4: Preliminary Watermain Servicing Plan
- Figure 5: Preliminary Trunk Storm Sewer Routing Plan
- Figure 6: Preliminary Grading and Drainage Plan
- Figure 7: Stormwater Management Facility Plan
- Figure 8: Phase 1 Drainage Plan

APPENDICES

- Appendix A: High Street Storm Sewer Design Sheets
- Appendix B: Parcels 1/2 Fill Control Grading and Sediment & Erosion Control Plan
- Appendix C: Anticipated Sanitary Flow Calculations
- Appendix D: Parcels 1/2 Pre-Development Drainage Plan
- Appendix E: Home Depot Stormwater Management Plan
- Appendix F: Full Build-out Hydrologic Modeling
- Appendix G: Regional SWM Facility Design
- Appendix H: Phase 1 Drainage Design

1.0 INTRODUCTION

C.F. Crozier & Associates Inc. (Crozier) has been retained by Dunn Capital Corporation (DCC) to prepare an engineering study in support of a mixed use development, herein referred to as West End Commercial Development, located in the Town of Collingwood. The 21.1 ha subject lands consists of three parcels that are situated between High Street and the channelized Black Ash Creek, and is bounded by the existing Wal-Mart development to the north, and existing Stewart Road industrial developments to the south. Two outparcels exist that result in the subject lands being an irregular shape; namely, the existing Home Depot development, which bounds the subject lands adjacent to the northeast portion of the property and multiple industrial lots that bound the southeast portion of the property. Refer to Figure 1 for the Site Location Plan.

The legal descriptions of the three parcels are the following:

- Parcel 1 (6.5 ha) and Parcel 2 (0.4 ha): Parts 2 and 3 located in Part of Lot 43 (former Township of Collingwood), County of Simcoe. Municipal address is 530 Third Street.
- Parcel 3 (14.2 ha): Part of the South Half of Lot 44, Concession 10, Town of Collingwood, Parts 2, 3, 4, and 6, 51R-27418, PIN 58260-0010 (LT). Municipal address is 20 High Street.

The subject lands will be subdivided into multiple development blocks. As a result, the Developer is seeking Draft Plan of Subdivision Approval for the subject lands as well as amendments to the Town of Collingwood Official Plan and Zoning By-law. This report has been prepared to support planning applications of the subject lands and to provide sufficient information concerning municipal servicing and stormwater management systems for the development. It is the intention of the proponent to subdivide Parcel 1 into multiple parcels to enable the creation of separate blocks for the existing Goodall Building and parking lot, Cambridge Street Extension ROW, and a future commercial block.

This report will establish the framework on which to build the detailed engineering required for the proposed public roadway system as well as to support future site plan applications for each development block. Furthermore, the report will also serve as a master plan for each stormwater management (SWM) design of the various development blocks.

In addition to this Functional Servicing & Stormwater Management Report, several other reports have been prepared for the subject lands, including:

- Traffic Impact Study (Crozier);
- Geotechnical Report (SPL Consultants);
- Planning Report – Regional Commercial District (D.C. Slade Consultants Inc.); and
- Air Quality & Odour Study for a Mixed Commercial Site (Ortech Consulting Inc.)

Contained within this report is a background discussion (Section 2.0); a description of the existing site conditions and proposed development (Section 3.0); the recommended servicing options for sanitary sewage, water distribution, and utilities (Sections 4.0, 5.0 and 6.0, respectively); the existing drainage conditions and proposed stormwater management strategy (Sections 7.0 and 8.0); discussion on phasing of stormwater infrastructure (Section 9.0), and conclusions & recommendations (Section 10.0).

2.0 BACKGROUND

2.1 Previous Engineering Reports & Design Criteria

A number of engineering reports have been previously completed for the various parcels of the subject lands as well as adjacent developments, which have been reviewed in preparation of this report.

Parcels 1/2

A *Functional Servicing & Stormwater Management Report* (Parcels 1/2 FSR) was completed by Crozier in May 2007 to support planning applications for a proposed commercial development. This Parcel contains the Goodall Facility. The proposal included the re-development of the former industrial property into commercial uses. The SWM plan proposed splitting the drainage into western and eastern portions. It was envisioned that runoff generated from 1.8 ha of the western portion of the site would discharge to Black Ash Creek while 4.4 ha of the eastern portion of the site would ultimately discharge to High Street.

The SWM Criteria used in the Parcels 1/2 FSR includes:

- Minor system (5-year) post-development peak flows at High Street to respect the available storm sewer capacity of 119 L/s per the High Street Storm Sewer Ainley Design Sheets (Ainley Design Sheets);
- Major system (up to 100 year) post-development peak flows at High Street to meet pre-development levels; and,
- All flows directed to the Black Ash Creek to be uncontrolled.

Parcel 3

Parcel 3 represents the majority of the former Holborn Property, save and except the Home Depot site. A *Functional Servicing Report* (Holborn FSR) was completed by Stantec Consulting Limited in October 2006 to support planning applications for a proposed commercial development. The SWM plan proposed directing 8.6 ha of the western portion of the site to Black Ash Creek, without attenuation. The 5.55 ha eastern portion of the site was proposed to outlet to High Street via the existing 675 mm diameter storm sewer, which bisects the Home Depot Site.

The SWM criteria used in the Stantec Holborn Report included:

- All flows up to and including the 5-year storm event are controlled to 215 L/s. As noted in the Stantec Holborn Report, the Ainley Design Sheets allocated 270 L/s for the Home Depot site and Parcel 3; a combined area of 17.5 ha. Per the Ainley Design Sheets, the available capacity in the receiving storm sewer (MH 11 to MH 15) is based on the 5-year flow from 7.5 ha, at a runoff coefficient of 0.40. To determine the allowable release rate, the 270 L/s allocation flow was prorated based on the Parcel 2 area of 14.0 ha, which equates to 215 L/s. Refer to Appendix A for the Ainley Design Sheets.
- Flows between the 5-year and 100-year are controlled to pre-development levels.

Home Depot

In 2005, Pinestone Engineering Ltd. prepared a *Stormwater Management and Construction Mitigation Plan Report* [Home Depot Report] as well as the associated engineering plans to support the proposed Home Depot development, which was subsequently constructed in 2006.

The SWM criteria used in the Home Depot Site Plan included:

- All flows up to and including the 5-year storm event are controlled to 60 L/s. As noted in the Home Depot Report, the Ainley Design Sheets allocated 270 L/s for the Home Depot site and Parcel 2, a combined area of 17.0 ha. The total area noted in the Home Depot Report does not match the 17.5 ha total area per the Stantec Holborne Report. To determine the allowable release rate, the 270 L/s allocation flow was pro-rated based on the Home Depot area of 3.5 ha over a total area of 17.0 ha, which equates to 60 L/s.
- Flows between the 5-year to the 100-year are controlled to pre-development levels.
- The SWM plan for the Home Depot site is to accommodate future development opportunities on the remnant lands (Parcel 2).

Collingwood Firehall

In 2012, C.C. Tatham & Associates (CCTA) prepared a *Stormwater Management Design Brief* [Collingwood Fire Hall Report] as well as the associated engineering plans to support the proposed Collingwood Firehall development. Per review of the Collingwood Fire Hall Report, the 5-year post-development peak flow is controlled to 30 L/s, which corresponds to the allocated High Street storm sewer release rate. Post-development peak flows between the 5-year and 100-year events are below pre-development levels, with a 100-year post-development peak flow rate of 50 L/s.

The site allocated High Street storm sewer release rate is based on the following excerpt from the Collingwood Fire Hall Report: 'per the Ainley Design Sheets, the existing 975 mm diameter storm sewer, adjacent to the site, was designed to accept the 5 year storm event from a catchment area of 3.9 ha (MH 13 to 15). The catchment area is split, with 3.24 ha (83%) on the west side and 0.66 ha (17%) on the east side of High Street. The peak design flow for the catchment area for this section of pipe is 178 L/s; therefore, the total allowable flow from the Fire Hall site is calculated to be 30 L/s (17% of 178 L/s) during the 5-year storm'.

Wal-Mart

In 2004, Stantec Consulting Ltd. prepared a *Stormwater Management Design Brief Report* as well as the associated engineering plans to support the proposed Wal-Mart Development, which was subsequently constructed. The Wal-Mart development is located within the OPA 37 lands (part of Area 1) and required no on-site water quantity controls.

2.2 Pre-Consultation

A number of pre-consultation discussions have taken place between Crozier staff and the Town of Collingwood to support the development concept for the subject site. Previous consultation with the Nottawasaga Valley Conservation Authority (NVCA) was completed as part of the preparation of the FSR for

Parcels 1/2. The following items have been addressed through pre-consultation, and are reflected in the subject Draft Plan:

- An environmental protection (EP) area has been designated along the Black Ash Creek, per NVCA request.
- A 20.0 m buffer from the EP area has been applied.

3.0 SITE DESCRIPTION

3.1 Existing Conditions

Parcels 1/2

In 2007, earthworks operations took place within the western portion of the Parcel 1. A cut operation was undertaken whereby fill was removed and placed off-site. Refer to Appendix B for the Fill Control Grading & Sediment & Erosion Control Plan, which was prepared to obtain a fill permit.

There are no prominent drainage features within the western portion of the property. Elevations across this area vary from 186.3 m to 184 m asl, with slopes generally at 0.5%.

The eastern portion of Parcel 1 consists primarily of the existing Goodall plant/facility. The existing building consists of a large approximately 10, 000 m² warehouse and associated asphalt parking and internal roadways with access from Third Street west of High Street. The building and all appurtenances located to the south of Cambridge Street Extension will remain when the site is developed; however, the parking lot will be improved at a future date.

The soils within Parcels 1/2 are classified as Kemble clay loam and Smithfield Silty Clay Loam (Soil Survey of Simcoe County 1953). These soils are classified as hydrologic soil group D and CD, respectively per the Ministry of Transportation Drainage Manual (1997).

Parcel 3

The former Harding Carpet Factory, a one-storey masonry block industrial building, occupies the eastern portion of the parcel. A portion of this building has been demolished to facilitate the development of the Home Depot site plan. The building will be completely demolished once the existing tenants have been relocated.

The remainder of the site consists primarily of heavily treed areas along the Black Ash Creek frontage and tree cleared areas. There are no prominent drainage features within Parcel 2. Elevations across this area vary from 186.0 m to 181 m asl, with slopes generally at 1.5%.

The soils within Parcel 3 are classified as Kemble clay loam and Smithfield Silty Clay Loam (Soil Survey of Simcoe County 1953). These soils are classified as hydrologic soil group D and CD, respectively per the Ministry of Transportation Drainage Manual (1997).

3.2 Development Proposal

The proposed Draft Plan of Subdivision for the site was produced by Patten & Thomsen Ltd (April, 2015), and is illustrated on Figure 2. As shown, the development will consist of four (4) development blocks, and internal roadways. Furthermore, the Draft Plan provides for widening of High Street to accommodate High Street improvements. Table 1 outlines the land use distribution contemplated by the Draft Plan.

Table 1: Proposed Distribution of Land Uses

Land Use	Area (ha)
Street A (Cambridge Street Extension)	1.21
Development Blocks (Blocks 1 to 4)	19.76
High Street Widening	0.06

It is intended to develop the majority of the blocks as a commercial land uses. However, the servicing and stormwater management strategies presented herein allow for the design flexibility to enable a portion of Blocks 1 and 2 to be developed as residential.

It is our understanding that the proponent intends on undertaking a lot severance within Block 2 to create a separate 3.0 ha block for the existing Goodall plant. For the purposes of this report, Block 2 will herein refer to the portion of the block being severed from the Goodall plant.

Access to the proposed development will be from two existing public roads namely Third Street and Cambridge Street as well as an existing private laneway along the south limit of the Home Depot site.

As part of the proposed development, Cambridge Street will be extended south to connect to the existing west limit of Third Street, thus creating a linkage between High Street and the south terminus of the existing Cambridge Street. This road extension is herein referred to as Cambridge Street Extension. A roundabout is proposed at the intersection of the Cambridge Street Extension and the Private Laneway.

The preliminary design of the roundabout allows for a future road to extend west of the roundabout to access Block 1, if deemed required in future block-level site plan applications. A conceptual (100 m long) road has been shown on the report figures to facilitate the preliminary design of the servicing and stormwater management systems.

All roadways, both public and private, will be constructed as per municipal standards and the recommendations of the geotechnical reports completed for the development.

Upon obtaining draft plan approval, the detailed design of the Cambridge Street Extension, private laneway, High Street/Third Street intersection improvements, and Regional SWM Facility will commence, followed by construction of the said infrastructure. This will include all services within the ROW (watermain, sanitary, storm, and utilities) to provide service stubs to the various development blocks as well as the roadways. It is proposed to phase the construction of the Regional SWM Facility (refer to Section 9.0 for further discussion).

The layout of the internal roadways and services within each development block will be designed at the site plan application stage for each respective development block; consequently, block-level design is beyond the scope of this report.

3.3 Geotechnical Conditions

SPL Consultants Limited have completed a geotechnical investigation to determine the geotechnical conditions along the proposed Cambridge Street Extension, private laneway, roundabout location and High Street and provide recommendations for future construction.

As part of the Geotechnical Investigation, fifteen (15) boreholes were advanced with three boreholes (BH14-01, 14-04 and 14-07) serving as groundwater monitoring wells. Bedrock was encountered in all the boreholes, at depths between 0.7 m and 2.3 below grade. Groundwater was observed within the monitoring wells at depths between 1.0 m and 3.5 m below grade, which is based on September 2014 readings. Refer to Geotechnical Report for further information.

SPL has been retained to complete a 9 month groundwater monitoring program within the aforementioned monitoring wells to determine the groundwater characteristics (i.e. seasonal high groundwater table) within the development lands. This data will be used to support the detailed design efforts of the proposed servicing and roadworks.

Block-level geotechnical/hydrogeological investigations will be completed by the future owners as part of the site plan approval process for each respective block.

4.0 SANITARY SEWAGE SYSTEM

It is the for the entire subject development to be serviced via the Town of Collingwood municipal sewage system.

4.1 Existing Sanitary Infrastructure

High Street & Third Street

As-built municipal servicing drawings obtained from the Town indicate an existing 300 mm diameter sanitary sewer is located along High Street. There is also a 250 mm diameter sanitary sewer along Third Street west of High Street, which services the existing Goodall site. Based on Town drawings, the existing 300 mm diameter sanitary sewer along High Street north of Third Street is at a slope of 0.35 %, which equates to a capacity of approximately 57.2 L/s.

Block 4 Stub

There is an existing 250 mm \varnothing sewer that runs west from the High Street sewer and bisects the Home Depot parking lot to the east limit of Block 4. The invert at the manhole (MH'B') is at 179.0 m. This sewer is contained within an easement, as shown on Figure 2.

Cambridge Street

There is no existing sanitary sewer along Cambridge Street.

4.2 Proposed Sanitary Strategy & Design Flows

As previously noted in Section 3.2, the subject development will consist of commercial blocks with the option to enable a portion of the site (along the BAC frontage) to be developed as residential. Wastewater generated from residential developments is typically higher than wastewater flows associated with commercial developments. As a result, the anticipated sanitary design flows presented herein is based on the conservative scenario whereby the west half of Blocks 1 and 2 are assumed to be residential while the balance is assumed to be commercial. This represents a worst-case scenario with respect to the anticipated sanitary design flows.

It is the intent for the entire subject development to be serviced via gravity sewers discharging to the High Street sanitary sewer system. Preliminary calculations show that the projected peak sewage flow will be 16.5 L/s, which represents 30% of the High Street sewer capacity. Refer to Appendix C for these calculations.

The sanitary servicing strategy will involve extending a sanitary sewer along Cambridge Street Extension from the existing Third Street sewer (MH A) to provide sanitary servicing to Blocks 2 and 3 only. To provide services to Block 1, the existing Block 4 sanitary stub will be extended to Cambridge Street Extension, bisecting Block 4. A servicing easement would be required within Block 4 to contain the sewer. The exact sewer easement location will be determined at the detailed design stage of the proposed Public ROWs and Regional stormwater management facility. Refer to Figure 3 for the sanitary servicing strategy plan.

Block 2 will be serviced via extending a service from Cambridge Street Extension west to the block. The service will be contained within a drainage/servicing easement.

4.3 Waste Water Treatment Plant Capacity

The existing waste water treatment plant (WWTP) is located north of First Street between Beech and Birch Streets. The plant treats sewage and discharges the treated effluent to the Collingwood Harbour. The design capacity of the plant (Average Daily Flow, ADF) is 24,545 m³ per day. As of the end of 2013, the ADF was 17,774 m³ per day. The ADF to the end of September 2014 is 15,793 m³ per day, so the plant is operating at approximately 70% of its hydraulic capacity (per personal communication between Crozier staff and Don Green, October 2014).

Allocation within the Collingwood WWTP for the subject lands has yet to be reserved with the Town of Collingwood. It should however be noted that allocation of available capacity is typically issued on a "first come first served" basis upon registration of the subject development and will be confirmed with the Town of Collingwood as development approvals proceed.

5.0 POTABLE WATER SUPPLY

Potable water for the development will be supplied by the Town of Collingwood municipal water distribution system.

5.1 Existing Watermain Infrastructure

As-built municipal servicing drawings obtained from the Town indicate the following existing municipal watermain infrastructure.

Cambridge Street

There is an existing 250 mm diameter watermain stub at the Cambridge Street terminus. The watermain along Cambridge Street reduces in size from a 250 to 200 mm diameter near the First Street Extension intersection.

Third Street & High Street

There is a 300 mm located along Third Street, west of High Street, which connects to a 300 mm diameter C.I. watermain along High Street.

5.2 Proposed Water Servicing Strategy

Connection to the existing municipal system is straightforward and feasible. The subject development will be serviced by extending watermains through the development along the proposed Cambridge Street Extension per municipal standards, with connections to the municipal system in a minimum of two locations; one at the High Street intersection and a connection at the existing Cambridge Street terminus. Two connections to the municipal network will satisfy the Town and Ministry of Environment requirements for a looped water distribution system. The proposed watermain distribution network is reflected on Figure 4.

To provide services to Block 1, a watermain will also be extended to the west limit of the Cambridge Street Extension roundabout. A water service will be provided for Block 2 via extending a watermain from Cambridge Street Extension along a servicing/drainage easement.

At a minimum, one (1) watermain stub will be provided for each development block, with multiple stubs provided for Block 1.

To meet Town Standards, the minimum watermain sizing within the public ROWs is a 200 mm diameter; this sizing will be subject to the Town completing a distribution analysis and updating their municipal model during the detailed design process.

Fire hydrants will be spaced to provide sufficient fire protection. The location of valves, services, and fire hydrants will be specified at detailed design.

5.3 Water Treatment Plant Capacity

The Town of Collingwood treats and distributes potable water from its water treatment plant (WTP) located on Raglan Street, which draws water from Nottawasaga Bay. The municipality completed an Environmental Assessment study of the WTP, and this study confirmed the re-rating of the daily treatment capacity of the plant to be 31,140 m³/d. A new Certificate of Approval was issued in July 2011. Per the 2014 Compliance Report for the WTP the Yearly Daily Average demand was 17,744 m³ and the Maximum Day demand was 23,468 m³ which indicates more than sufficient capacity is available for future development.

Allocation within the Collingwood WTP for the subject lands has yet to be reserved. As noted previously in Section 4.0, allocation of available capacity in the municipality's treatment plants is issued on a "first come first served" basis upon registration of the subject development and is confirmed as development approvals proceed.

6.0 UTILITIES

The subject development will be serviced with telephone, cable TV, gas and hydro. All such utilities have been contacted, and each utility has confirmed that there are existing facilities available in the area.

7.0 EXISTING DRAINAGE CONDITIONS

7.1 Parcels 1/2

The existing conditions of Parcels 1/2 were described in Section 3. As indicated, Parcel 1 is located along the east berm of Black Ash Creek. Almost the entire parcel drains away from Black Ash Creek towards Parcel 3 (former Holborn property) and High Street. An evaluation of the existing drainage conditions across the site is described below.

The earthworks operations that took place in 2007 generally respected the existing drainage patterns within Parcel 1.

Drainage to Parcel 3

As illustrated on Figure 2 – Pre-Development Drainage Plan in Appendix D, the western portion of the subject lands and additional external area south of the site presently drain by sheet flow towards Parcel 2. This area consists of approximately 2.6 ha (Catchment No. 1) of internal lands and 0.6 ha (Catchment EXT-1) of external lands consisting predominately of vegetated lands (formerly disturbed by earthworks operations), with the exception of developed lands within the external catchment. Topographic relief across both internal and external lands is approximately 2 metres with slopes of approximately 0.5%.

Drainage to High Street

Runoff generated from the 4.2 ha eastern portion of the site and 1.9 ha external catchment is conveyed via interceptor swales, road-side ditches and sheet flow. These areas consist of existing developed areas and undeveloped open spaces.

Runoff generated from the 1.9 ha external area and a portion of the existing Goodall building is intercepted by a drainage swale located along the south side of the building. The drainage swale conveys external flow and a portion of internal flow east to the Third Street ROW drainage ditches.

Runoff generated from the remainder of the eastern portion of the parcel is also conveyed towards the Third Street road-side ditches via overland drainage as sheet flow. During minor storm events, drainage from the road side ditches discharge to the High Street storm sewer system via existing culverts and storm inlets. Major flows in excess of the existing ditch capacities are directed overland on the roadway toward High Street.

A small amount of runoff generated from the northeastern portion of the parcel is conveyed via an interceptor swale along the north limits of the subject lands, ultimately outletting to the High Street ROW.

7.2 Parcel 3

Parcel 3 currently drains east towards High Street. Per review of the Home Depot SWM Report and accompanying drawings, runoff generated from portions of Parcel 3 outlet to the existing Home Depot SWM pond while the remainder by-passes the pond and outlets directly to High Street.

Per review of the Home Depot Stormwater Management Plan (refer to Appendix E), Catchments 201 and 202 are tributary to the Home Depot SWM pond and oil-grit separator. As a result, these catchments are subject to water quality and quantity controls. Runoff generated from Catchments 203 (Harding Carpets site) and 204 (remainder of Parcel 3) by-pass the Home Depot SWM Pond and are conveyed to the High Street Storm Sewer via two existing storm sewers. The two storm sewers are a 675 mm storm sewer, which runs parallel to the south side of the Home Depot building, and a 450 mm storm sewer, which is located along the north side of the Home Depot building. A portion of the runoff generated from Catchment 203 is conveyed to High Street via an existing swale along the south limits of Parcel 3.

As previously noted in Section 2.1, the Home Depot SWM Pond controls the 5-year storm flows generated from Catchments 201 and 202 to the target release rate of 60 L/s, prior to outletting to the High Street storm sewer.

8.0 STORMWATER MANAGEMENT & SITE DRAINAGE

The management of stormwater and site drainage for the proposed development must comply with the policies and standards of the various agencies including the Town of Collingwood, Nottawasaga Valley Conservation Authority, and Ministry of the Environment and Climate Change. The stormwater management criteria that will be met with the subject development are as follows:

- Water Quantity Control
 - High Street
 - “Post to pre” control for storms greater than the 5-year return period storm and up to and including the 100-year event
 - Peak flow control to the allocated High Street storm sewer capacity for the 5-year event.
 - Black Ash Creek
 - Peak flow control for areas draining to Black Ash Creek is not required, subject to the flow capacity of the conveyance system (if applicable).
 - Existing Cambridge Street
 - Peak flow control to the free flow capacity of the Cambridge Street storm for the 5-year event.
 - “Post to pre” control for storms greater than the 5-year return period storm and up to and including the 100-year event
- Water Quality Control
 - Runoff is to be treated prior to discharge meeting “Enhanced Protection” given Black Ash Creek and Georgian Bay as ultimate receivers.
- Erosion Control
 - 24 hour detention of the 25 mm event runoff is required.
- External Drainage Management
 - SWM design to accommodate external flows

The above noted criteria are consistent with the stormwater management strategies developed in the Home Depot Report, Parcel 1/2 FSR and the Holborn (Parcel 3) FSR.

As previously noted in Section 3.2, the subject development will consist of commercial blocks with the option to enable a portion of the site (along the BAC frontage) to be developed as residential. Given that the impervious levels associated with a commercial development are typically around 85% while residential developments have an impervious level of 40 to 50% (subject to unit density), the stormwater management analysis presented herein is based on the conservative option that the entire subject development will be a commercial development. This represents a worst-case scenario.

High Street SWM Criteria

At this preliminary juncture, for post-development flows directed to High Street, the SWM design will provide 100-year post-development peak flow control to the 5-year maximum allowable release rate to the High Street storm sewer system. The maximum allowable release rate to the High Street storm sewer has

been taken as 161 L/s. This is premised on the basis that the allotted 5-year storm flows between MH 9 and 11, which is based on a 3.3 ha area at 0.4 runoff coefficient, has been used by the Goodall Site and is not available for the subject development as well as the facts listed below. Refer to Appendix A for the Ainley Design Sheets.

- Per the Ainley Design Sheets, the peak design flow for the 7.5 ha catchment area between MH 11 to 15 is 270 L/s.

LESS the following allocations

- Home Depot 60 L/s (MH 13 to 15)
- Collingwood Firehall 30 L/s (MH 11 to 13)
- Peak design flow between MH 13 to 15 is 110 L/s and 17% of the 3.6 ha catchment area is located on the east side of High Street.
- 18.7 L/s (17% of 110 L/s) is allocated to the east side of High Street.
- **Total allocated flow to subject development is 161 L/s.**

8.1 Outlet Options

A preliminary review of the outlet options for the site indicate that there are two primary outlet locations for the subject development; Black Ash Creek to the west and High Street drainage system to the east. The option of outletting stormwater to the existing Cambridge Street was also examined.

8.1.1 West Outlet: Direct to Black Ash Creek (Gravity)

As previously noted, Black Ash Creek [BAC] along the west frontage of the subject lands, is a channelized system that has a channel invert that is between 1 m and 3 m below the existing grades along the subject lands frontage. Given this, Black Ash Creek could serve as a deep outlet for a storm sewer network within the subject lands. However, to realize the BAC as an outlet, lands that would be tributary to the BAC would be required to have proposed grades that are a minimum elevation of 0.3 m above the Regional flood elevation to achieve adequate floodproofing. As previously noted, the subject lands fall away from the BAC towards High Street; therefore, fill depths to as high as 5.0 m would be required to outlet the subject development to the BAC. As a result, the use of BAC as a gravity outlet is limited due to site grading and fill implications.

8.1.2 West Outlet: Direct to Black Ash Creek (Stormwater Pumping)

An alternative to outletting directly to Black Ash Creek via gravity is to collect the on-site stormwater in a centralized SWM facility. The SWM facility would be complete with a pumping station that would pump controlled flows to Black Ash Creek via a forcemain.

8.1.3 North Outlet: Black Ash Creek via Existing Cambridge Street Storm Sewer

Per the review of the following drawings, the feasibility of using the existing Cambridge Street as a stormwater outlet has been examined.

- 'Cambridge and First Street Extension – Plan & Profile – Sta. 0+840 to 1+130' Drawing No. C-002-AC (Construction Record), R.J. Burnside, February 24, 2006; and,
- 'Cambridge and First Street Extension – Plan & Profile – Sta. 9+800 to 10+045' Drawing No. C-004-AC (Construction Record), R.J. Burnside, February 24, 2006; and,

There is an existing 300 mm \varnothing storm sewer at the north subject property line with Cambridge Street with a pipe slope of 0.2%, which equates to a free flow capacity of 43 L/s. Given the small magnitude of this flow, outletting an appreciable area of the subject development to this storm sewer would result in a cost prohibitive amount of detention storage required. Therefore, the existing Cambridge Street storm sewer system is deemed inadequate as a primary outlet for the subject development.

There is a high point approximately 40 m north of the Cambridge Street terminus; as a result, any overland flow generated from the subject lands and directed to Cambridge Street cannot flow north. Rather, overland flow would be conveyed along the existing lane at the back of the Home Depot building (private property). Therefore, directing overland flow to Cambridge Street is deemed to be not feasible based on the existing road profile.

Given the lack of overland flow route along Cambridge Street, the SWM criteria for discharge to Cambridge Street has been modified from the SWM criteria outlined in Section 8.0 to the following:

- Post-development 100-year post-development peak flow control to be controlled to the free flow capacity of the existing Cambridge Street storm sewer. The maximum allowable release rate is 43 L/s.

8.1.4 North Outlet: Black Ash Creek via an External Trunk Storm Sewer

To increase the allowable release rate to the North Outlet, a trunk storm sewer could be installed along the existing Cambridge Street and First Street Extension, outletting at the BAC (refer to Figure 5). This proposed storm sewer would serve as a dedicated sewer for the subject lands. To limit the required storm sewer to a practical size, on-site water quantity controls would still be required.

8.1.5 East Outlet: High Street

Given that the site falls towards High Street, the use of the High Street drainage system is the preferred option from a site grading and imported fill implications perspective. However, the maximum allowable release rate of 161 L/s is highly restrictive for the subject development as less than half of the subject lands was accounted for in the design flow calculations. Furthermore, the design flow computations were based on a runoff coefficient of 0.4, which reflects a low development intensity that is not commensurate with the proposed commercial development.

Given that High Street is a four lane arterial road and the subject land falls towards the road, High Street is the preferred overland flow route for the major storm outlet from a fill implication and conveyance perspective.

8.1.6 Outlet Selection

Based on the examination options, the feasible outlet options include the following:

- Black Ash Creek via external trunk storm sewer;
- Black Ash Creek via a forcemain (pump station required); and
- High Street

It is noted that all the feasible outlet options require on-site detention storage to attenuate the flows. Outletting stormwater generated from the subject lands to High Street is considered the preferred outlet option given that the site falls towards High Street and the two outlet options to the Black Ash Creek require additional infrastructure (pump station and forcemain or external trunk storm sewer). Therefore, the stormwater management design is premised on outletting to High Street.

8.2 Overview of SWM Design

Two SWM control options were explored to meet the SWM criteria.

Option 'A' – water quantity, quality and erosion controls provided on a block-level basis.

Option 'B' – SWM criteria met via a centralized, regional SWM pond facility.

Preliminary examination of Option 'A' indicates that extensive onsite detention storage (~10,000 m³ combined across the Blocks) is required along with controls within the public ROWs, regardless of outlet option. As a result, Option 'B' has been selected.

The post-development drainage condition involves directing 15.0 ha of the site, comprised of 14.2 ha of block lands a 0.8 ha of Cambridge Street Extension to a regional SWM facility, and ultimately to the High Street Drainage System. Due to site grading constraints, 5.1 ha of the site, comprised of 1.4 ha of block lands and 0.5 ha of Cambridge Street Extension, 0.3 ha of an overland flow route and 2.9 ha of the Goodall Site is not able to outlet to the regional SWM facility; as such, these lands will be directly tributary to the High Street drainage system. A portion of the Private Lane (0.2 ha) will be directed to the Home Depot SWM Pond. Refer to Figure 6 for the post-development drainage plan.

It is proposed to provide a drainage divide along the Cambridge Street Extension with 230 m of the road (Catchment R4) from the High Street intersection to the north limit of the Goodall Site being conveyed to the High Street drainage system, 140 m of the road being conveyed to the SWM facility and the remainder of the road (0.16 ha) being conveyed to the existing 300 mm ø storm sewer at the south limit of the existing Cambridge Street.

The Cambridge Street Extension will be 'saw-toothed' from a high point located 80 m south of the connection to Cambridge Street. The use of the saw-toothing within the road will accomplish the following:

- Enable the private laneway and the portion of Cambridge Street Extension near the High Street intersection to better match surrounding existing grades within private property;
- Reduce proposed road grades along the Goodall Facility to better blend into existing site grades; and,
- Reduced overall proposed grades within Cambridge Street Extension.

An alternative SWM design whereby the Regional SWM facility outlets to the Black Ash Creek as opposed to High Street is provided in Section 8.6.

8.2.1 Lands Tributary to Regional SWM Facility

Due to the size and commercial nature of each development block, it was determined that the conveyance of uncontrolled flows generated from each block to a regional SWM facility would require consideration of the infrastructure requirements to convey the minor and major storm events to the pond. For an example, the option of locating the Regional SWM facility within Block 4 was examined. To convey uncontrolled minor storm flows (5-year) from the development blocks and Cambridge Street Extension, it was determined that storm sewers ranging in size from 900 mm to 1500 mm diameter would be required within the Municipal ROW.

The SWM facility will consist of a wetland with extended detention capabilities, providing water quantity and quality control as well as erosion control. As consistent with the Stantec Holborn Report, the SWM facility will outlet to the existing 675 mm diameter, at the west limit of the Home Depot site. The facility will consist of four cells, with each cell located at each of the four quadrants of the proposed roundabout. Each of the four cells will consist of a sediment forebay and a main cell. Hydraulic connection between the ponds will be achieved via equalization pipes. Refer to Section 8.5 for further discussion on the SWM facility operating characteristics.

Development Blocks – Blocks 1, 2, portion of Block 3, and 4

Minor and major storm flows generated from Blocks 1, 2, a portion of Block 3, and 4 will be conveyed via an internal storm sewer network and overland flow route, respectively, to the sediment forebay of the closest pond of the SWM facility.

As such, the need for conveyance of the major and minor storm development block drainage within Cambridge Street Extension has been eliminated, thereby reducing the storm sewer and overland flow infrastructure requirements within the Municipal ROW.

At this preliminary juncture, Block 1 will have split drainage with portions of the block outletting to the southwest cell and to the northwest cell of the SWM facility. Similarly, Block 3 will have split drainage with 1.0 ha being directed to the SWM facility and 1.7 ha outletting to High Street.

As illustrated on Figure 6, preliminary grading has been prepared illustrating the minimum finished grades for each block to outlet the minor and major storm flows to the SWM facility.

Per the preliminary storm sewer and road profile design within Cambridge Street Extension, local road drainage (major and minor storm systems) will be directed to the northeast SWM pond. This will enable phasing of the proposed SWM facilities to accommodate the Developer's intention to construct the public roadway prior to the development of the blocks. Refer to Section 9.0 for further discussion.

The minor storm flows generated from Block 2 will outlet to a storm lateral, which will extend from the forebay of the southwest (SW) pond and be contained within a 10 m drainage/servicing easement. Major storm flows will be conveyed to Cambridge Street Extension via the aforementioned easement. Cambridge Street Extension, along the south limits of the roundabout, will be complete with curb cuts to enable the major storm flows to outlet to the SE pond and SW pond. Block 2 will be required to incorporate EXT1 located to the south into the SWM plan, as part of the Site Plan Approval process. Refer to Figure 1 in Appendix D for the External Drainage Areas.

8.2.2 Lands Directly Tributary to High Street

Portions of Block 3 (Catchments B2 and C) and Catchment R4 (portion of Cambridge Street Extension) will outlet directly to the High Street drainage system. The Goodall Site and 1.9 ha of external drainage area will also continue to outlet to High Street via the proposed Cambridge Street Extension drainage system.

The proposed Cambridge Street Extension storm sewer within Catchment R4 will be designed to intercept and convey the 100-year storm peak flow from the ROW. The storm sewer will also be designed to accept at a minimum the minor storm flows from the Goodall Site. Stormwater generated from the Goodall Site will outlet to the Municipal ROW in an uncontrolled manner, as consistent with existing conditions. It is anticipated that major storm flows from the Goodall Site will be conveyed overland within the Row; however, this is subject to detailed design.

A storm lateral will be extended from the High Street storm sewer (Mh#48) to provide a storm outlet for Catchment B2.

Catchment C will outlet to the proposed Cambridge Street Extension storm sewer via a storm sewer stub.

To meet the SWM criteria, block-level SWM controls will be required for a portion of Block 3 (Catchments B2 and C). Furthermore, ROW level SWM controls will be required for Catchment R4. Further discussion is provided in Section 8.3.

8.2.3 Lands Tributary to Home Depot SWM Pond

In conformance with the Home Depot SWM report, Subcatchment R6 will outlet to the existing Home Depot stormwater infrastructure and will be controlled via the existing Home Depot SWM pond along the High Street frontage prior to discharging to the High Street storm sewer system.

8.2.4 Lands Tributary to the existing Cambridge Street

The drainage area to the existing Cambridge Street storm sewer will be minimized with only Catchment R5 (0.16 ha) being tributary to the outlet. No development block areas will be tributary to the existing Cambridge Street storm sewer.

8.3 Stormwater Quantity Control Requirements

Hydrologic modeling was prepared for the post-development site conditions. The purpose of this modeling is to determine the detention storage requirements for the following to ensure that the SWM criteria can be met for the subject development:

- Lands Tributary to Regional SWM Facility (ultimately to High Street);
- Lands Directly Tributary to High Street;
- Lands Tributary to the Home Depot SWM Pond; and,
- Lands Tributary to the existing Cambridge Street storm sewer.

Crozier applied the stormwater management hydrologic computer program SWMHYMO to model the post-development on-site conditions, consistent with industry standard. The STANDHYD command was used to model the urban development conditions based on the level of imperviousness assumptions noted in Table 2. The NASHHYD command was applied to the external drainage areas located to the south of the site.

Table 2: Levels of Imperviousness Assumptions

Land Use	% Impervious
Development Blocks	85
Cambridge Street Extension	70
SWM Facility	50
Goodall Property	70
External Drainage Area	EXT1 – 0%; EXT2 - 36%

Hydrologic models were prepared for design storm events including the 25mm Chicago event for water quality and erosion protection, as well as the 5, 25, and 100 year return periods and Timmins Regional event for quantity control. Both 4-hour Chicago and 24-hour SCS design storms were modeled to determine which storm distribution results in the largest detention storage volume requirements.

The maximum allowable release rate for the Home Depot SWM Pond has been determined by preparing a hydrologic model of Catchment 201. To facilitate this model, the hydrologic parameters were extracted from the Home Depot SWM report. Refer to Appendix E for the Home Depot SWM report model.

Post-development catchment areas are illustrated on Figure 6. Refer to Appendix F for the hydrologic parameter sheets.

8.3.1 Results of Post-Development Hydrologic Modeling

Results from the hydrologic modeling are summarized in Table 3. Refer to Appendix F for the model input/output files.

Table 3: 100-Year SCS Hydrologic Modeling Results Summary

Tributary Area	Max. Allowable Release Rate (L/s)	Uncontrolled Peak Flow (L/s)	Detention Storage Required (Y/N)	Detention Storage (m ³)
Regional SWM Facility	161	4650 ²	Y	13700 ¹
Directly to High Street			Y	955
Home Depot SWM Pond	792	794 ³	N	0
Existing Cambridge Street	43	43	N	0

Note: 1) Detention Storage is based on the stage-storage-discharge relationship of the SWM facility. Refer to Section ___ for further discussion.

2) Excludes peak flows from the Goodall Site and Ext2.

3) flow increase represents a negligible change as compared to the Home Depot SWM Pond model.

As indicated in Table 3, the total storage volume for the Regional SWM Facility and for lands directly tributary to High Street is 13,700 m³ and 955 m³, respectively. Refer to Section 8.5 for further discussion on the SWM Facility operating characteristics and the detention storage methods for lands directly tributary to High Street. Lands outletting to the Home Depot SWM pond and the Existing Cambridge Street do not require detention storage as the uncontrolled peak flow rates are below the maximum allowable release rates.

The SCS storm distribution proved to result in the largest detention storage requirements.

8.4 Stormwater Quality & Erosion Control

8.4.1 Lands Tributary to Regional SWM Facility

As indicated, stormwater quality controls are required to provide the “enhanced protection” (ie. 80% TSS removal) level for the SWM facility catchment area. Furthermore, 24 hour detention of the water quality event will provide erosion control. A SWM facility wetland has been selected as the preferred end-of-pipe treatment facility for the catchment area to meet these objectives.

Based on the MOE Stormwater Management Planning and Design Manual (2003) for “enhanced protection” and an impervious level of 85%, the minimum water quality storage volume required for a stormwater wetland is 140 m³/ha. This volume is comprised of 100 m³/ha permanent pool volume and 40 m³/ha extended detention. Given a proposed contributing drainage area of 15.0 ha, the minimum water quality volumes required are as follows:

- Permanent Pool: 1500 m³
- Extended Detention: 600 m³

Erosion control will be achieved by incorporating extended detention into the operation of the proposed stormwater wetland. Sizing was based on providing 24 hours of extended detention of the runoff produced

following a short duration (4 hour) 25 mm storm event. Applying the above criteria yields an extended detention volume for erosion control of approximately 2,925 m³, based on a runoff depth of 19.5 mm. A 120 mm diameter extended detention orifice has been designed into the configuration of the pond outlet to provide the necessary controls. According to the preliminary design of the SWM facility, the actual volumes provided are:

- Provided permanent pool: 2,500 m³
- Provided extended detention 3,200 m³

See Appendix G for extended detention orifice calculations. A sediment forebay has been provided at each of the four ponds to meet MOE criteria (see Appendix G for calculations related to forebay sizing).

8.4.2 Lands Tributary Directly Tributary to High Street

Block Level Controls (Catchments B2 and C)

Portions of Block 3 (Catchments B2 and C) that outlets to High Street will be required to provide block-level water quality control to a Level 1 'enhanced' protection criteria. Water quality control can include but not limited to the use of the following (or a combination thereof):

- Oil-grit separator;
- End-of-pipe SWM pond; and/or,
- Vegetated swales.

Public ROW Controls

It is proposed that given the negligible drainage area (0.16 ha), water quality control for the portion of Cambridge Street Extension that outlets to the existing Cambridge Street (Catchment R5) is not warranted.

Catchment R4 of Cambridge Street Extension will accept flows from the Goodall Site. Providing treatment for the road runoff will result in 'clean' stormwater from the roadway mixing with untreated water from the Goodall Site. This is not an ideal practice given that the TSS removal efficiency is highly impaired by the mixing of treated and untreated waters. Therefore, there are two options available:

- 1) Do not provide water quality control;
- 2) Provide water quality control on the Goodall Site as well as on Cambridge Street Extension.

Option 2 will involve the mixing of treated water from the Goodall Site and the Cambridge Street Extension. The total removal rate of the treatment train needs to be accounted for to demonstrate an overall TSS removal rate of 80%. A simplified equation for the total TSS removal rate (R) can be applied in this scenario.

$$R = A + B - [(A \times B) / 100]$$

Where:

R = Total TSS Removal Rate

A = TSS Removal Rate of the Upstream Units (Block Level Treatment)

B = TSS Removal Rate of the Second or Downstream Unit (Public ROW)

Oil-grit separator sizing calculations can proceed on the basis of drainage area and impervious level, per industry standard. The selection of the water quality control method is subject to further discussions with Town staff during detailed design.

8.4.3 Lands Tributary to Home Depot

Per the Home Depot SWM Report, water quality control for runoff generated from Catchment 201 is provided by a treatment train approach consisting of a dry SWM pond and an oil-grit separator. Therefore, Sub-Catchment R6 does not require the implementation of water quality control measures.

8.5 Detention Storage Characteristics and Design Features

8.5.1 Regional SWM Facility

At the time of report preparation, it is proposed that the Regional SWM Facility will be owned and operated privately by Dunn Capital Corporation. Ownership may be subject to change as part of the approval process.

A preliminary design of the SWM facility has been completed. Refer to Figure 7 for the SWM Facility Plan. The permanent pool of the SWM facility has been set based on the upstream invert of the existing 675 mm diameter storm sewer, which has an approximate invert of 180.0 m. The invert is based on the Stantec Holborn Report – Figure 8: Stormwater Management Plan (October 2006). Should the 675 mm diameter storm sewer be in an unsuitable condition to use as an outlet for the SWM facility, a storm sewer could be extended from Ex. MH A on High Street (design invert 179.50) to the southeast pond along the alignment of the proposed SWM facility overland flow route. The permanent pool elevation can be maintained with this alternative storm sewer.

It was found that the water quantity control requirements governed the size of the outlet orifice. Therefore, the extended detention elevation has been set to provide 86 hour extended detention of the 25mm event runoff volume from the contributing lands.

The stage-storage- discharge relationship for the SWM facility is included in Appendix G. The operating levels of the proposed SWM facility, per SWMHYMO modeling, are summarized in Table 4.

Table 4: Regional SWM Facility Operating Characteristics

SWM Facility Level	Elevation (m)	Storage Volume (m ³)	
		Required	Provided
Base (deep zones)	179.20	-	-
Permanent Pool ⁽¹⁾	180.40	1500	2500
Extended Detention	180.85	2925	3200
100-Year SCS HWL	181.90	13700	13700
Regional	182.50	19390	19390
Top of Berm	182.60	20460	20460

Note: 1) Permanent pool volume represents dead storage, and all other volumes represent active storage.

The SWM facility has been designed to fully control the 100-year event from 15 ha of the subject lands and external contributing lands to 39 L/s. All discharge from the SWM facility for storm events up to and including the 100-year event will occur by way of the outlet structure. An overland flow route has been provided for the Regional event to safely convey flows to the High Street ROW. This overland flow route will also act as an emergency spill route in the event that the outlet structure was to become blocked.

The preliminary alignment of the equalization pipes have been shown on Figure 7. At the detailed design stage, the equalization pipes will be required to be sized to enable flows up to and including the Regional storm event to be distributed throughout the four ponds of the SWM facility without adverse operational level impacts to each of the four ponds.

At this preliminary juncture, an outlet structure consisting of a 120 mm diameter orifice will provide the required extended detention and water quantity controls. A reverse slope pipe will be used to draw cool water from a micro pool within the main cell. The outlet structure is subject to detailed design.

8.5.2 Lands Directly Tributary to High Street

Per Table 3, 955 m³ of detention storage is required for Catchments B2, C, and R4. Per the hydrologic modeling, it is proposed to distribute the total required detention storage volume as per the following:

- Catchment B2 = 410 m³;
- Catchment C = 370 m³; and
- Catchment R4 = 175 m³.

Public ROWs (Catchment R4)

At this preliminary juncture, an oversized storm sewer complete with orifice control has been selected as the preferred storage solution. All other viable storage options require additional land (i.e. pond). A 1050 mm \varnothing storm sewer will provide the required detention storage of 175 m³. The sizing of the orifice control device will be completed at the detailed design stage, with the requirement to convey at a minimum the uncontrolled minor (5-year) storm from the Goodall Site.

The desirability of Town staff to maintain the oversized pipe storage system is subject to further discussions with Town staff during the detailed design stage.

Development Blocks (Catchments B2 and C)

Catchments B2 and C will require detention storage options within the development blocks and could include the use of the following (or a combination thereof):

- SWM pond;
- Parking lot storage; and/or,
- Subsurface storage (i.e. Cultec, Triton, etc.).

It is noted that at this time, the NVCA does not support the use of rooftop storage system. The selection of the storage method including the use of the rooftop storage system should be vetted with the NVCA during the site plan approval stage of the given block.

Catchment C storm stub connection to the Cambridge Street Extension storm sewer is proposed to be located downstream of the orifice control to avoid backwater influences from the road storm sewer.

8.6 Alternative Outlet for Regional SWM Facility

As noted in Section 8.1, the alternative feasible stormwater outlet option is the Black Ash Creek. This section provides preliminary design details to demonstrate feasibility in outletting the SWM facility to Black Ash Creek via either pumping or through the use of an external trunk sewer. Per Section 8.5, the 100-year release rate from the SWM Facility is 39 L/s. The release rate could be increased given that there are no water quantity control requirements for site flows that are directed to the Black Ash Creek.

8.6.1 Black Ash Creek via Pumping

A stormwater pumping station could be incorporated into the outlet structure for the SWM facility to convey discharge from the pond for events up to and including the 100 year design storm. An overland flow route to High Street would still be required to serve as an outlet for the Regional event and as an emergency spill route.

Based on previous experience in the design of stormwater pumping stations, a wet well complete with two (2) Flygt pumps (Xylem Inc.) each with a capacity of 40 L/s can provide adequate pump capacity to discharge the 100-year attenuated peak flow from the SWM Facility (39 L/s) while providing a back-up pump for redundancy, subject to detailed design specifications. Pump Station controls could be incorporated into the design to enable the pump usage to be cycled, preventing uneven usage of the pumps. The stormwater pumping station could be equipped with a diesel generator set for backup power and SCADA controls for remote monitoring.

A proposed forcemain would convey flows from the SWM facility to Black Ash Creek. A forcemain, in the range of 200 mm to 375mm diameter would be required. The alignment and specifications of the forcemain are subject to detailed design. Head loss calculations including losses associated with friction, bends, tees, pipe fittings and valves in the station plumbing and forcemain infrastructure as well as tailwater elevations would be incorporated into the sizing calculations.

8.6.2 Black Ash Creek via an External Trunk Sewer

A storm sewer would be required to convey the said flow to the Black Ash Creek. Per Figure 5, a 340 m storm sewer would need to be installed along the existing Cambridge Street and First Street Extension, outletting at the BAC. This proposed storm sewer would serve as a dedicated sewer for the Regional SWM Facility, including runoff generated from Catchment R5 of the proposed Cambridge Street Extension ROW. The combined 100-year peak flow from Catchment R5 and the outlet from the Regional SWM Facility has been determined to be 83 L/s.

Based on a review of the aforementioned Burnside drawings, there is an existing sanitary sewer that provides a service to Wal-Mart, crosses First Street Extension approximately 60 m from BAC and has an obvert elevation of approximately 179.05 m. To meet the following design constraints, a 375 mm \varnothing storm sewer at 0.25% is required:

- sufficient pipe cover to enable the use of pipe insulation;
- provide adequate vertical clearance above the sanitary sewer; and,
- have an invert of 180.40 m at the NW pond to maintain a permanent pool elevation of 180.40 m.

The horizontal and vertical alignment as well as the sizing of the storm sewer is subject to detailed design. The free flow capacity of the proposed storm sewer has been taken as 88 L/s at this preliminary stage.

8.6.3 Reduction of Flows to High Street

By diverting the SWM Facility outflow to the Black Ash Creek, the 100-year maximum release rate from the subject development is reduced from 160 L/s to 120 L/s.

9.0 PHASING OF STORMWATER INFRASTRUCTURE

As previously noted in Section 3.2, Dunn Capital Corporation will complete the construction of the Cambridge Street Extension, private laneway, High Street/Third Street intersection improvements, and a portion of the Regional SWM Facility. It is proposed to phase the construction of the Regional SWM Facility. The following is the phasing schedule of the SWM Facility:

- Phase 1: Construction of the northeast (NE) pond, outlet structure, and connection to the existing 675 mm diameter storm sewer to coincide with the construction of the Cambridge Street Extension and Private Laneway;
- Phase 2: Construction of the three outstanding ponds and overland flow route to High Street once a development block within the SWM facility catchment area is proposed.

It is noted that the three outstanding ponds may be constructed by the proponents of the development blocks. Therefore, the detailed design of the said ponds will be under the auspices of the site plan approval process for the development blocks. The water quality and quantity volume requirements outlined in Section 8.0 shall be treated as minimum values and serve as a guideline for the future detailed design of each of the three ponds.

Water quality and quantity control requirements have been determined to demonstrate that the SWM criteria will be met under Phase 1 conditions with the use of the NE Pond only and the oversized storm sewer within Cambridge Street Extension.

As consistent with the full build-out scenario, the SWM Criteria is the following:

Table 5: Phase 1 Water Quantity Control Criteria

Tributary Area	Max. Allowable Release Rate (L/s)
Regional SWM Facility (NE Pond Only)	161 ¹
Directly to High Street	
Home Depot SWM Pond	792 L/s
Existing Cambridge Street	43 L/s

Note: 1) Maximum allowable release rate applies to the portion of the subject lands that will be tributary to the NE Pond as well as Catchment R4 since all other areas that are tributary to High Street will not be subject to construction during Phase 1 works.

- Water Quality Control
 - Runoff is to be treated prior to discharge meeting “Enhanced Protection” given Black Ash Creek and Georgian Bay as ultimate receivers.
- Erosion Control
 - 24 hour detention of the 25 mm event runoff is required.
- External Drainage Management
 - SWM design to accommodate external flows

9.1 Phase 1 Drainage Conditions

Under Phase 1 drainage conditions, 13.5 ha of the site will be tributary to the NE pond, 0.48 ha of Cambridge Street Extension will outlet to High Street via the oversized storm sewer storage system and the remainder of the site will outlet to High Street as per existing conditions.

Existing flows from Blocks 1 and 2 will be conveyed to the NE Pond. An interceptor swale along the west side of Cambridge Street Extension will collect and convey flows to a culvert, which will cross Cambridge Street and outlet to the NE Pond. The cross culvert will ultimately act as an equalization pipe for the Regional SWM facility. Refer to Figure 8 for the Phase 1 Drainage Plan.

Runoff generated from 0.8 ha of Cambridge Street Extension will outlet to the NE Pond via the proposed roadway storm sewer system. The remainder of Block 4 and 0.6 ha of Block 3 have been assumed to also be tributary to the NE pond, subject to the future demolition permits.

As consistent with the full build-out conditions, 0.48 ha of Cambridge Street Extension will outlet to High Street via the oversized storm sewer storage system.

9.2 Water Quantity Control

Hydrologic modeling has been prepared to demonstrate that the NE Pond and the oversized storm sewer within Cambridge Street Extension will meet the SWM criteria for Phase 1, per Table 5. Preliminary hydrologic modeling indicates that the 100-year and Regional water levels in the NE pond will result in

ponding in the low lying area within the northeast corner of Block 1. As a result, natural storage associated with ponding within Block 1 has been accounted for in the stage-storage-discharge relationship of the NE pond for Phase 1 conditions. Refer to Appendix H for the NE pond hydraulics spreadsheet. To contain the ponding within the Block 1 limits, a temporary berm will be constructed along the north limit of Block 1. Refer to Figure 8 for the ponding extents and preliminary berm design.

Results from the hydrologic modeling are summarized in Table 6. Refer to Appendix H for the model input/output files.

Table 6: 100-Year SCS Hydrologic Modeling Results Summary – Phase 1 Conditions

Tributary Area	Max. Allowable Release Rate (L/s)	Uncontrolled Peak Flow (L/s)	Detention Storage Required (Y/N)	Detention Storage (m ³)
NE Pond & Block 1 Ponding	161	1490	Y	6212 ¹
Cambridge Street Extension (Catchment R4)			Y	175
Existing Cambridge Street	43	43	N	0

Note: 1) Detention Storage is based on the stage-storage-discharge relationship of the SWM facility. Refer to Section 9.3 for further discussion.

As indicated in Table 6, the total 100-year storage volume for the NE Pond and for lands directly tributary to High Street is 6212 m³ and 175 m³, respectively. Refer to Section 9.3 for further discussion on the SWM Facility operating characteristics. The 1050 mm diameter storm sewer proposed within Cambridge Street Extension will provide sufficient storage under Phase 1 conditions. The portion of Cambridge Street Extension outletting to the existing Cambridge Street does not require detention storage as the uncontrolled peak flow rates are below the maximum allowable release rates.

9.3 Water Quality Control

9.3.1 Lands Tributary to Northeast Pond

Based on the MOE Stormwater Management Planning and Design Manual (2003) for “enhanced protection” and an impervious level of 14%, the minimum water quality storage volume required for the Northeast Pond (stormwater wetland) is 54 m³/ha. Refer to Appendix H for water quality volume calculations. This volume is comprised of 14 m³/ha permanent pool volume and 40 m³/ha extended detention. Given a proposed contributing drainage area of 13.5 ha, the minimum water quality volumes required are as follows:

- Permanent Pool = 189 m³
- Extended Detention = 540 m³.

Erosion control will be achieved by incorporating extended detention into the operation of the proposed stormwater wetland. Sizing was based on providing 24 hours of extended detention of the runoff produced following a short duration (4 hour) 25 mm storm event, Applying the above criteria yields an extended detention volume for erosion control of approximately 920 m³, based on a runoff depth of 6.8 mm. A 205 mm diameter extended detention orifice has been designed into the configuration of the pond outlet to

provide the necessary controls. According to the preliminary design of the SWM facility, the actual volumes provided are:

- Provided permanent pool = 543 m³
- Provided extended detention = 920 m³

See Appendix H for extended detention orifice calculations.

Overall, the Northeast Pond operating characteristics are summarized in Table 7.

Table 7: North East Pond Facility Operating Characteristics – Phase 1 Conditions

SWM Facility Level	Elevation (m)	Storage Volume (m ³)	
		Required	Provided
Base (deep zones)	179.20	-	-
Permanent Pool ⁽¹⁾	180.40	189	543
Extended Detention	181.00	540	920
100-Year SCS HWL	181.50	6210	6210
Regional	182.00	16730	16730
Top of Berm	182.30	24572	24572

Note: ⁽¹⁾ Permanent pool volume represents dead storage, and all other volumes represent active storage.

Once blocks become developed, the SWM facility outlet structure will require modifications. The 205 mm diameter orifice device will be required to be replaced with the 120 mm diameter orifice device, to suit full build-out conditions.

A berm has been specified along the north limit of Block 1 to contain the Regional ponding area within the subject lands.

9.3.2 Cambridge Street Extension (Catchment R4)

The water quality control method that is selected for the full build-out condition will be used for Phase 1 conditions. Refer to Section 8.4.

10.0 CONCLUSIONS & RECOMMENDATIONS

Based on the foregoing, we conclude that the proposed West End Commercial development can be serviced and meet the stormwater management objectives.

Phasing

1. The proponent intends to construct the Cambridge Street Extension, private laneway, High Street/Third Street intersection improvements, and a portion of the Regional SWM facility under the auspices of the Subdivision Agreement. The layout of the internal roadways and services within each development block will be designed at the site plan application stage for each respective development block.

Access

2. Access to the proposed development will be from two existing public roads namely Third Street and Cambridge Street as well as an existing private laneway along the south limit of the Home Depot site. As part of the proposed development, Cambridge Street will be extended to connect to the existing west limit of Third Street, thus creating a linkage between High Street and the south terminus of the existing Cambridge Street. The intersection of the private laneway and the Cambridge Street Extension will be a roundabout.
3. All roads will be constructed to Town Standards and assumed by the Municipality save and except internal roadways within the development blocks.

Sanitary Servicing & Potable Water Supply

4. The development will be fully serviced via the municipal sewage system via connections to the High Street trunk sewer. Connections to the existing Third Street sanitary sewer (west of High Street) and to the existing Block 4 sanitary stub are proposed. All gravity sanitary sewers within the proposed public ROW will be publicly owned and maintained.
5. The potable water supply will be provided by the Municipal water distribution system. A looped system is proposed via two connections: one connection to the Cambridge Street watermain and the second connection to the Third Street watermain.

Utilities

6. Utilities including hydro, gas, telephone and cable services are available.

Stormwater Management

7. The overall SWM strategy for the subject development will involve directing runoff to the High Street drainage system, with a small area (0.16 ha) tributary to the existing Cambridge Street storm sewer.
8. Based on assumptions incorporated into the High Street storm sewer system, the High Street outlet results in a highly restrictive target release rates for the subject development.
9. A Regional SWM Facility is proposed consisting of four cells surrounding the roundabout. At this time, it is proposed that the SWM Facility will be privately owned by Dunn Capital Corporation.

10. Due to site grading constraints, portions of the site cannot outlet to the Regional SWM Facility; as such, block level water quantity controls are required from a portion of Block 3. Furthermore, a 0.5 ha portion of Cambridge Street Extension will require detention storage. A superpipe has been selected as the preferred storage method for the public ROW.
11. A preliminary stormwater management plan for the proposed Phase 1 works has been completed demonstrating that the construction of only the Northeast Cell of the Regional SWM facility and the superpipe within the Cambridge Street Extension will meet the SWM criteria.
12. To provide design flexibility, alternative outlet options for the Regional SWM Facility have been examined with the conclusion that outletting the SWM facility via either a trunk storm sewer or by pumping are feasible options.

Given the above noted conclusions, we support the development of the subject lands from the perspective of the engineering servicing and stormwater management requirements.

Respectfully Submitted,

C.F. CROZIER & ASSOCIATES INC.



Kevin Morris, P.Eng.
Senior Project Manager

C.F. CROZIER & ASSOCIATES INC.

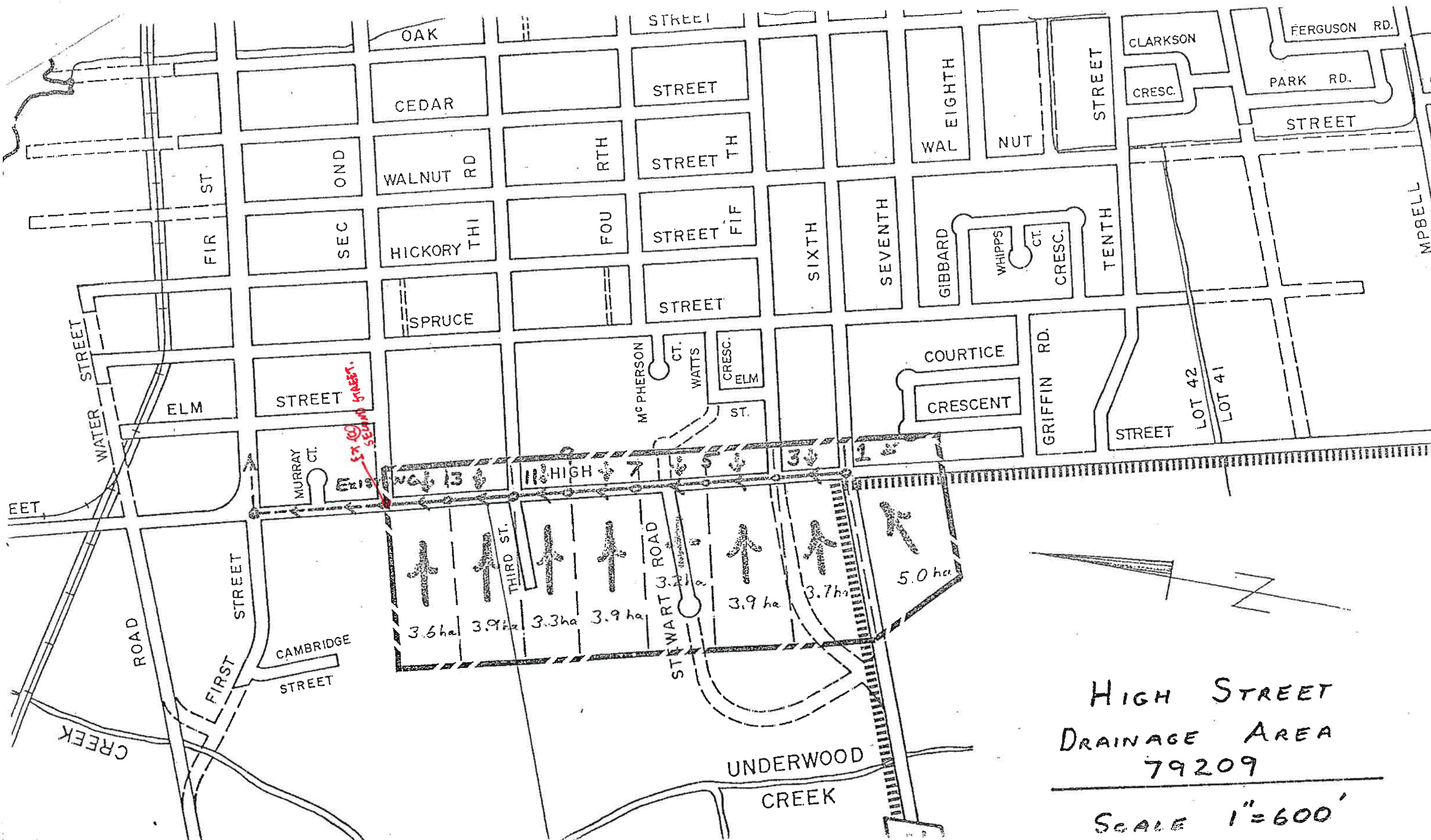


Darrin Tone, P.Eng.
Project Engineer

J:\100\183 - Landex Projects\2697 - 20 High St\Reports\FSR SWM\04072015_3rd Street FSRSWM.docx

APPENDIX A

High Street Storm Sewer Design Sheets



HIGH STREET
 DRAINAGE AREA
 79209

 SCALE 1"=600'

AINLEY AND ASSOCIATES
STORM SEWER DESIGN

Project No. 79209

Project Name High Street Reconstruction

Street High Street From Sixth Street
To First Street

Calculated By IN

Checked By LH

Date January 20, 1981

Rainfall Curve 5 Yr. Yarnell

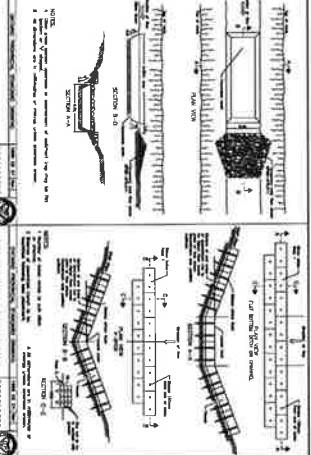
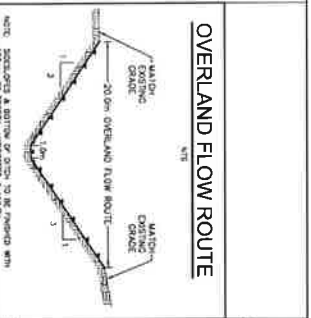
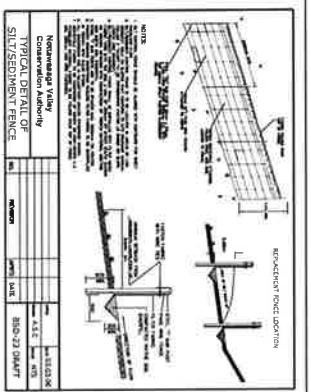
0.3% south of Sixth St

FROM		TO		RUNOFF DATA				OUTLET PIPE DATA						REMARKS	
Structure #	Structure #	Area Hectares	C	A.C.	Accum. A.C.	i mm/hr	Q m ³ /S	Length m	Size mm	Grade %	Cap. m ³ /S	Vel. m/S	Time Min	Total Time	
		5.0	0.4	2.0	2.0									39	TC
1	3	3.7	0.4	1.5	3.5	45.7	0.44	114	525	1.2	0.47	2.2	0.9	39.9	
3	5	3.9	0.4	1.6	5.1	45.7	0.63	120	600	1.2	0.67	2.4	0.8	40.7	
5	7	3.2	0.4	1.3	6.4	44.5	0.78	97	675	1.1	0.88	2.5	0.6	41.3	
7	9	3.9	0.4	1.6	8.0	44.5	0.97	121	750	1.1	1.17	2.6	0.8	42.1	
9	11	3.3	0.4	1.3	9.3	43.2	1.09	101	900	0.4	1.14	1.8	0.9	43.0	
11	13	3.9	0.4	1.6	10.9	42.0	1.25	121	975	0.4	1.42	1.9	1.1	44.1	
13	Existing at Second St.	3.6	0.4	1.4	12.3	40.6	1.36	112	975	0.4	1.42	1.9	1.0	45.1	
	Existing Sewer							88	990	0.35	1.39	1.8			

$Q = 0.00272 \times A \times C \times I$

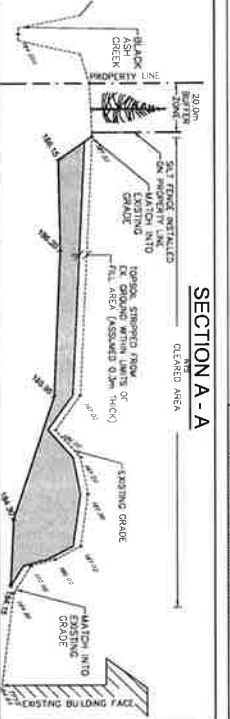
APPENDIX B

Parcels 1/2 Fill Control Grading and Sediment & Erosion Control Plan



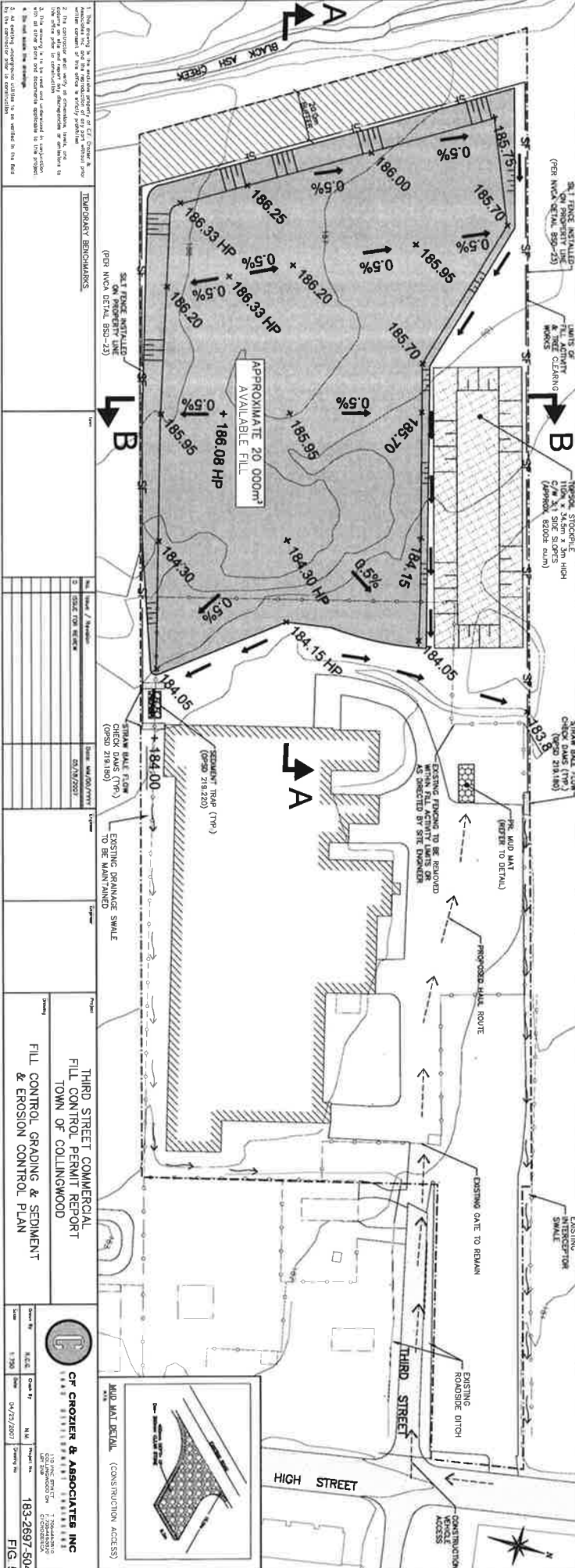
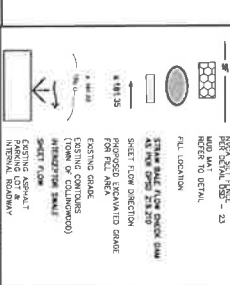
- CONSTRUCTION NOTES**
1. The silvosegment fence shall be installed as shown.
 2. The stream bed flow shall be as shown.
 3. The stream bed flow shall be as shown.
 4. The stream bed flow shall be as shown.
 5. The stream bed flow shall be as shown.
 6. The stream bed flow shall be as shown.
 7. The stream bed flow shall be as shown.
 8. The stream bed flow shall be as shown.
 9. The stream bed flow shall be as shown.
 10. The stream bed flow shall be as shown.

- MAINTENANCE & OPERATIONS & MATERIALS**
- Stream Bed Flow Channel Clean**
1. Remove accumulated sediment up stream of dam height.
 2. Do not remove material below dam height.
 3. Do not remove material below dam height.
 4. Do not remove material below dam height.
 5. Do not remove material below dam height.
 6. Do not remove material below dam height.
 7. Do not remove material below dam height.
 8. Do not remove material below dam height.
 9. Do not remove material below dam height.
 10. Do not remove material below dam height.



- CONSTRUCTION NOTES**
1. The silvosegment fence shall be installed as shown.
 2. The stream bed flow shall be as shown.
 3. The stream bed flow shall be as shown.
 4. The stream bed flow shall be as shown.
 5. The stream bed flow shall be as shown.
 6. The stream bed flow shall be as shown.
 7. The stream bed flow shall be as shown.
 8. The stream bed flow shall be as shown.
 9. The stream bed flow shall be as shown.
 10. The stream bed flow shall be as shown.

- MAINTENANCE & OPERATIONS & MATERIALS**
- Stream Bed Flow Channel Clean**
1. Remove accumulated sediment up stream of dam height.
 2. Do not remove material below dam height.
 3. Do not remove material below dam height.
 4. Do not remove material below dam height.
 5. Do not remove material below dam height.
 6. Do not remove material below dam height.
 7. Do not remove material below dam height.
 8. Do not remove material below dam height.
 9. Do not remove material below dam height.
 10. Do not remove material below dam height.



APPENDIX C

Anticipated Sanitary Flow Calculations



CROZIER & ASSOCIATES
Consulting Engineers

Project No.: 183-2697
Project Name: 3rd Street Commercial
Date: 9-Apr-2015
FILE: Mastersanisspreadsheet

Individual Catchments
SANITARY SEWER DESIGN MODEL

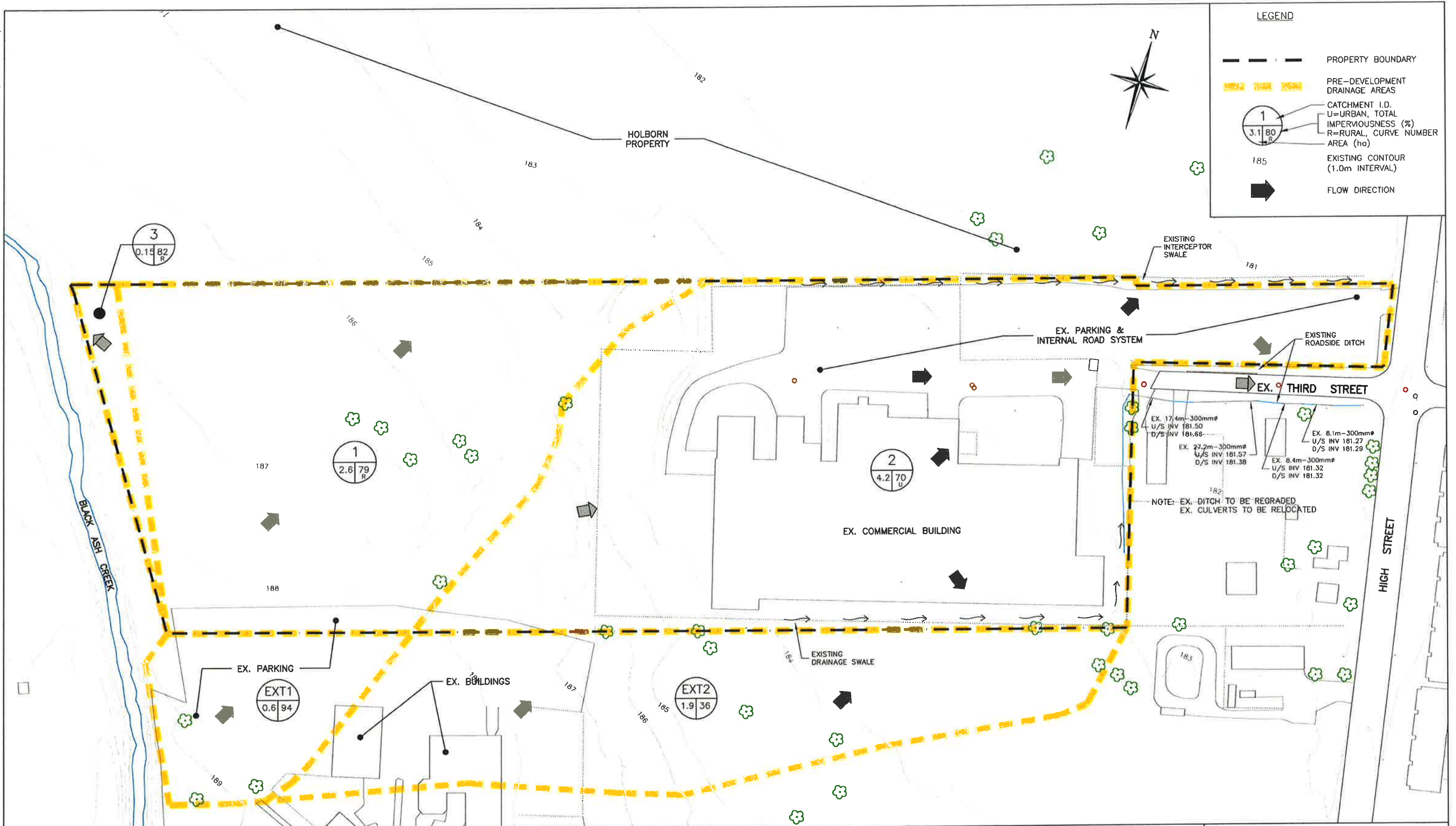
DESIGN: D.Tone, P. Eng. Manning's N = 0.013
CHECK: Population = 29 p.p.u.
UPDATED: 17 Units/ha
50 Persons/ha
Average Residential Flow Rate = 450 L/cap/d
Residential Infiltration Rate = 0.23 L/s/ha
Residential Peaking Factor = $M = 1 + (1/4 + 4/1000)(V/0.5)$ (H)
Commercial Infiltration Rate = 0.11 L/ha/s
Commercial Average Flow Rate = 28000 L/ha/d
Commercial Peaking Factor = 2

Area Designation	FROM	Area (ha)	Units	Gross Pop.	Residential			Commercial				
					Res. Peaking Factor	Peak Flow (L/s)	Infiltration (L/s)	Area (ha)	Average Flow (L/s)	Peak Flow (L/s)	Infiltration (L/s)	Design Flow (L/s)
Commercial	Block 4	1.02	n/a	n/a	n/a	n/a	n/a	1.00	0.3	0.6	0.11	0.76
Commercial	Block 3	2.71	n/a	n/a	n/a	n/a	n/a	2.10	0.7	1.4	0.23	1.59
Commercial/Residential	Block 1	5.04	86	248	4.11	5.3	1.2	5.04	1.6	3.3	0.55	10.29
Commercial/Residential	Block 2	1.53	26	75	4.28	1.7	0.4	1.53	0.5	1.0	0.17	3.19
Total		10.295	112	324	4.06	6.9	2.4	9.665	3.1	6.3	1.06	16.5

Notes:

APPENDIX D

Parcels 1/2 Pre-Development Drainage Plan



1. This drawing is the exclusive property of C.F. Crozier & Associates Inc. and the reproduction of any part without prior written consent of this office is strictly prohibited.
2. The contractor shall verify all dimensions, levels, and returns on site and report any discrepancies or omissions to this office prior to construction.
3. This drawing is to be read and understood in conjunction with all other plans and documents applicable to this project.
4. Do not scale the drawings.
5. All existing underground utilities to be verified in the field by the contractor prior to construction.

TEMPORARY BENCHMARKS	

No.	Issue / Revision	Date: MM/DD/YYYY	Engineer
0	ISSUE FOR REVIEW	04/20/2007	

Project	
THIRD STREET COMMERCIAL TOWN OF COLLINGWOOD	
Drawing: PRE-DEVELOPMENT DRAINAGE PLAN	

CF CROZIER & ASSOCIATES INC.			
LAND DEVELOPMENT ENGINEERS			
110 PINE STREET COLLINGWOOD ON L3P 2Y6		T 705-446-3910 F 705-446-3820 CFCROZIER@CA	
Drawn By: J.R.S.	Check By: N.M.	Project No:	183-2697-704
Scale: 1:1500	Date: 03/22/2007	Drawing No.:	FIG. 4

APPENDIX E

Home Depot Stormwater Management Plan

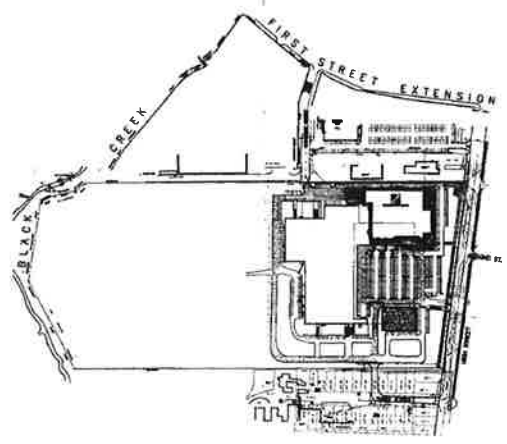
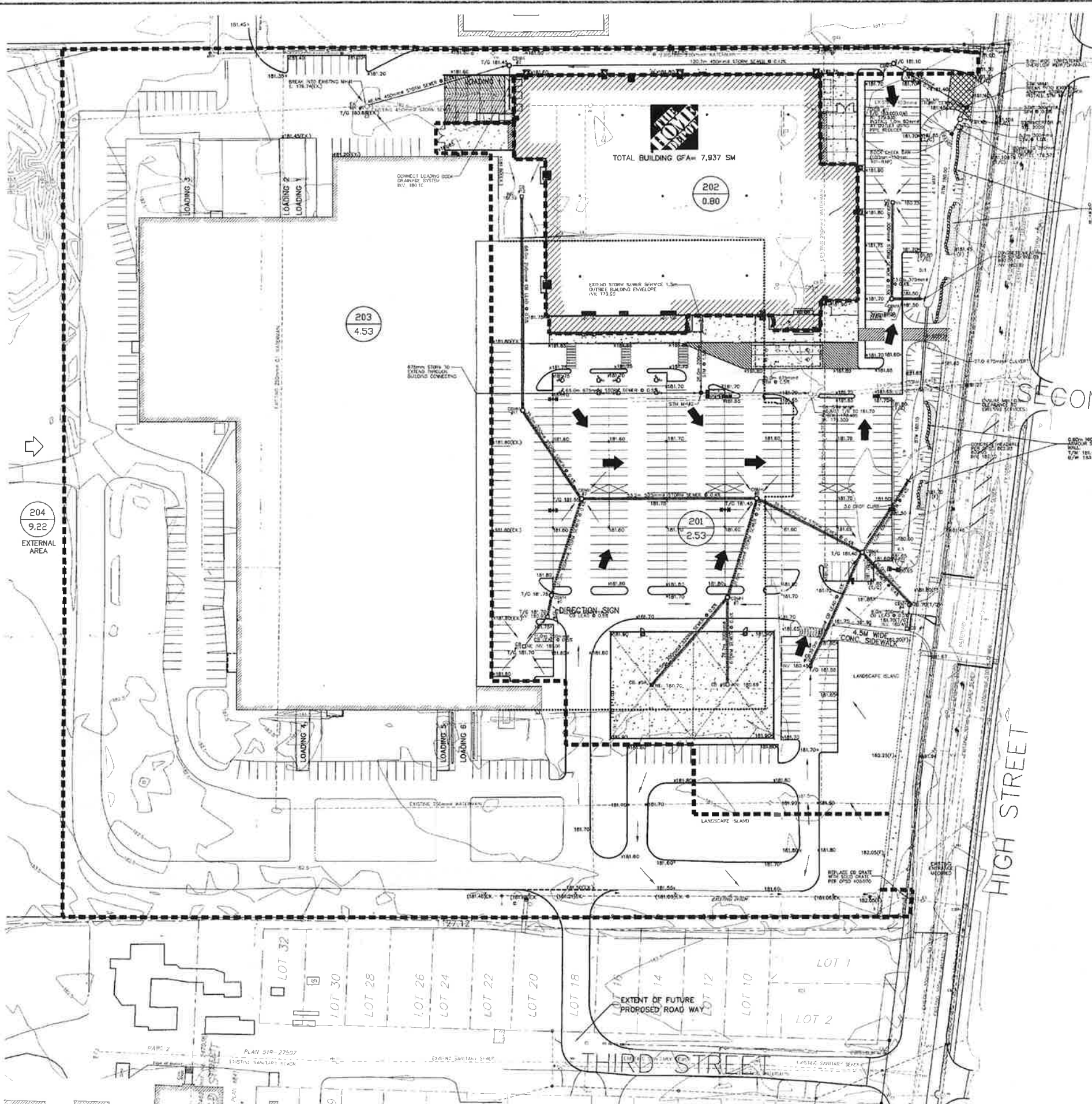
TOPOGRAPHICAL PLAN OF
PART OF THE SOUTH HALF OF LOT 44
CONCESSION 10
(FORMERLY THE TOWNSHIP OF NOTTAWASAGA)
TOWN OF COLLINGWOOD
COUNTY OF SIMCOE

PINESTONE ENGINEERING LTD.
Consulting Engineers
10 Kimberly Avenue
Brimley, ON L2R 2Z8
Tel: 905-461-1750
Fax: 905-461-1751
E: pinestone@psl.ca

This drawing, as an instrument of service, is provided by and is the property of Turner Fleischer Architects Inc. The contractor must verify and accept responsibility for all dimensions and conditions on site and must notify Turner Fleischer Architects Inc. of any variations from the supplied information. This drawing is not to be used for any other purpose without the written consent of Turner Fleischer Architects Inc. The contractor must ensure that all applicable codes and requirements of applicable regulatory authorities are followed. The contractor must ensure that all applicable codes and requirements of applicable regulatory authorities are followed. The contractor must ensure that all applicable codes and requirements of applicable regulatory authorities are followed.

- NOTES:**
1. TOPOGRAPHIC SURVEY PROVIDED BY TURNER FLEISCHER ARCHITECT INC.
 2. THIS PLAN TO BE READ IN CONJUNCTION WITH THE SERVICING PLAN, LANDSCAPE PLAN, AND REMOVALS, STORM WATER MANAGEMENT PLAN.
 3. THIS PLAN NOT TO BE USED FOR LAYOUT.
 4. ALL EXISTING FULL MATERIAL TO BE REMOVED PER RECOMMENDATIONS OF GEOTECHNICAL ENGINEER.
 5. FOUNDATION CONSTRUCTION METHODS TO CONFORM TO THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER.

- LEGEND**
- EXISTING CONTOUR LINE
 - DISTING. DITCH
 - PROPOSED FINISHED ASPHALT GRADES HOME DEPOT DEVELOPMENT
 - TOP OF CURB ELEVATION
 - HEAVY DUTY SILT FENCE (PER NVCA REQUIREMENTS)
 - BARRIER CURB AS PER OPSD 900.110(TYP.)
 - ROOF DRAIN (ZURN 210S)
 - DIRECTION OF OVERLAND FLOW (MAJOR SYSTEM)
 - DIRECTION OF OVERLAND FLOW (MINOR SYSTEM)
 - PROPOSED STORM MANHOLE
 - PROPOSED CATCH-BASIN MANHOLE
 - PROPOSED DOUBLE CATCH-BASIN
 - PROPOSED CATCH-BASIN
 - POST DEVELOPMENT CATCHMENT AREA (HA)



THE HOME DEPOT
COLLINGWOOD, ONTARIO
BLACK ASH CREEK



THE HOME DEPOT
CANADA INC.

ONTARIO



- REVISIONS**
- ISSUED-SPA 20.05.05
 - TOWN COMMENTS 14.08.05
 - NVCA COMMENTS 11.01.06
 - BUILDING PERMIT APPLICATION 06.02.06
 - NVCA COMMENTS / HIGH ST. REV. 18.14.06

COLLINGWOOD, ONTARIO
STORE NUMBER
7234
PINESTONE PROJECT NO
05-10563

C3.0

STORMWATER MANAGEMENT PLAN

C3.0 STORMWATER MANAGEMENT PLAN
SCALE: 1:500

C3.0 KEY PLAN
SCALE: NTS

```

00001> 2      Metric units
00002> *#-----
00003> *# Project Name: [Post - Home Depot Model - Catchment 201] Project: [183-2697]
00004> *# Date       : 11-17-2014
00005> *# Modeller   : JM
00006> *# Company    : C.F. Crozier & Associates Inc.
00007> *# License #   : 3737016
00008> *#-----
00009> *# START       TZERO=[0.0], MOUT=[2], NSTORM=[0], NRUN=[0]
00010> *# [ ] <--storm filename, one per line for NSTORM time
00011> *#-----
00012> *#----- POST-DEVELOPMENT -----
00013> *#-----
00014> *#----- 100 YEAR EVENT - 24H SCS DISTRIBUTION-----
00015> *#-----
00016> *# Rainfall Depths per MTO - West of and Including Collingwood
00017> *# Chicago Rainfall Distribution
00018> *#-----
00019> *# These storms are the SCS Volumes from MTO Design Chart 1.01(c)-----
00020> *# District 5: Owen Sound, West of and including Collingwood.
00021> *#-----
00022> *# MASS STORM  PTOTAL=[108.0] (mm), CSDT=[1] (min),
00023> *# CURVE_FILENAME=["SCS24HI1.mst"]
00024> *#-----
00025> *# CALIB STANDHYD ID=[1], NHYD=["201"], DT=[1] (min), AREA=[2.53] (ha),
00026> *# XIMP=[0.90], TIMP=[0.90], DWF=[0] (cms), LOSS=[2],
00027> *# SCS curve number CN=(74),
00028> *# Pervious surfaces: IAPer=[4] (mm), SLPF=[2] (%),
00029> *# LGF=[40] (m), NKP=[0.25], SCP=[0] (min),
00030> *# Impervious surfaces: IAImp=[2] (mm), SLPF=[1] (%),
00031> *# LGI=[129.9] (m), MHI=[0.013], SCI=[0] (m)
00032> *# RAINFALL=[ , , , ] (mm/hr) , END=-1
00033> *#-----
00034>
00035>
00036> FINISH
00037>
00038>
00039>
00040>
00041>
00042>
00043>
00044>
00045>
00046>
00047>
00048>
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0001>-----
0002>
0003> SSSS W W M M H H Y Y M M O O 999 999 -----
0004> S W W W M M M H H H Y Y M M O O 9 9 9 9
0005> SSSS W W M M M H H H Y Y M M O O ## 9 9 9 Ver 4.05
0006> S W W M M H H H Y M M O O 9999 9999 Sept 2011
0007> SSSS W W M M H H Y M M O O 9 9 9 9 -----
0008>
0009> StormWater Management Hydrologic Model 999 999 -----
0010>
0011>-----
0012> ***** SWMHYMO Ver/4.05 *****
0013> ***** A single event and continuous hydrologic simulation model *****
0014> ***** based on the principles of HYMO and its successors *****
0015> ***** OTHYMO-83 and OTHYMO-89. *****
0016>
0017> ***** Distributed by: J.F. Sabourin and Associates Inc. *****
0018> ***** Ottawa, Ontario: (613) 836-3884 *****
0019> ***** Gatineau, Quebec: (819) 243-6858 *****
0020> ***** E-Mail: swmhyo@jfsa.Com *****
0021>-----
0022>
0023>+++++++ Licensed user: C.F. Crozier & Associates Inc. ++++++
0024>+++++++ Collingwood SERIAL:3737016 ++++++
0025>+++++++
0026>-----
0027>
0028> *****
0029> ***** +++++ PROGRAM ARRAY DIMENSIONS +++++ *****
0030> ***** Maximum value for ID numbers : 10 *****
0031> ***** Max. number of rainfall points: 105408 *****
0032> ***** number of flow points : 105408 *****
0033>-----
0034>
0035> ***** DESCRIPTION SUMMARY TABLE HEADERS (units depend on METOUT in START) *****
0036>-----
0037> ***** ID: Hydrograph Identification numbers, (1-10). *****
0038> ***** NHYD: Hydrograph reference numbers, (6 digits or characters). *****
0039> ***** AREA: Drainage area associated with hydrograph, (ac.) or (ha). *****
0040> ***** QPEAK: Peak flow of simulated hydrograph, (ft3/s) or (m3/s). *****
0041> ***** TpeakDate hh:mm is the date and time of the peak flow. *****
0042> ***** R.V.: Runoff Volume of simulated hydrograph, (in) or (mm). *****
0043> ***** R.C.: Runoff Coefficient of simulated hydrograph, (ratio). *****
0044> ***** *: see WARNING or NOTE message printed at end of run. *****
0045> ***** **: see ERROR message printed at end of run. *****
0046>-----
0047>
0048>-----
0049>-----
0050>-----
0051>-----
0052>-----
0053> ***** SUMMARY OUTPUT *****
0054>-----
0055> * DATE: 2014-11-17 TIME: 16:27:45 RUN COUNTER: 000055
0056>-----
0057> * Input filename: C:\SWMHYMO\183-2647\SCS\SCS100.dat
0058> * Output filename: C:\SWMHYMO\183-2647\SCS\SCS100.out
0059> * Summary filename: C:\SWMHYMO\183-2647\SCS\SCS100.sum
0060> * User comments:
0061> * 1:
0062> * 2:
0063> * 3:
0064>-----
0065>-----
0066>-----
0067>-----
0068> # Project Name: [Post - Home Depot Model - Catchment 201] Project: [183-2697]
0069> # Date : 11-17-2014
0070> # Modeller : TM
0071> # Company : C.F. Crozier & Associates Inc.
0072> # License # : 3737016
0073>-----
0074> RUN:COMMAND#
0075> 001:0001-----
0076> START
0077> [TZERO = .00 hrs on 0]
0078> [METOUT= 2 [1=imperial, 2=metric output]]
0079> [NSTORM= 0 ]
0080> [NRUN = 1 ]
0081>-----
0082>-----
0083>-----
0084> #-----100 YEAR EVENT - 24H SCS DISTRIBUTION-----
0085>-----
0086> # Rainfall Depths per MTO - West of and including Collingwood
0087> # Chicago Rainfall Distribution
0088>-----
0089> #-----These storms are the SCS Volumes from MTO Design Chart 1.01(c)-----
0090> # District 5: Owen Sound, West of and including Collingwood.
0091>-----
0092> 001:0002-----
0093> MASS STORM
0094> Filename = C:\SWMHYMO\183-2647\SCS\SCS24HII.mst
0095> Comment = 24 hour SCS II storm mass curve
0096> [SOT= 1.00;SDUR= 24.00;PTOT= 108.00]
0097>-----
0098> 001:0003-----ID:NHYD-----AREA-----QPEAK-TpeakDate hh:mm-----R.V.-
0099> CALIB STANDHYD 01:201 2.53 .792 No_date 12:12 101.00
0100> [XIMP=.90;TIMP=.90]
0101> [LOSS= 2 ;CN= 74.0]
0102> [PerVIOUS area: Iaper= 4.00;SLEP=2.00;LGP= 40.;MNF=.250;SCP= .0]
0103> [ImperVIOUS area: Iamp= 2.00;SLEI=1.00;LGI= 130.;MNI=.013;SCI= .0]
0104> 001:0004-----
0105> FINISH
0106>-----
0107>-----
0108> WARNINGS / ERRORS / NOTES
0109>-----
0110> Simulation ended on 2014-11-17 at 16:27:45
0111>-----
0112>

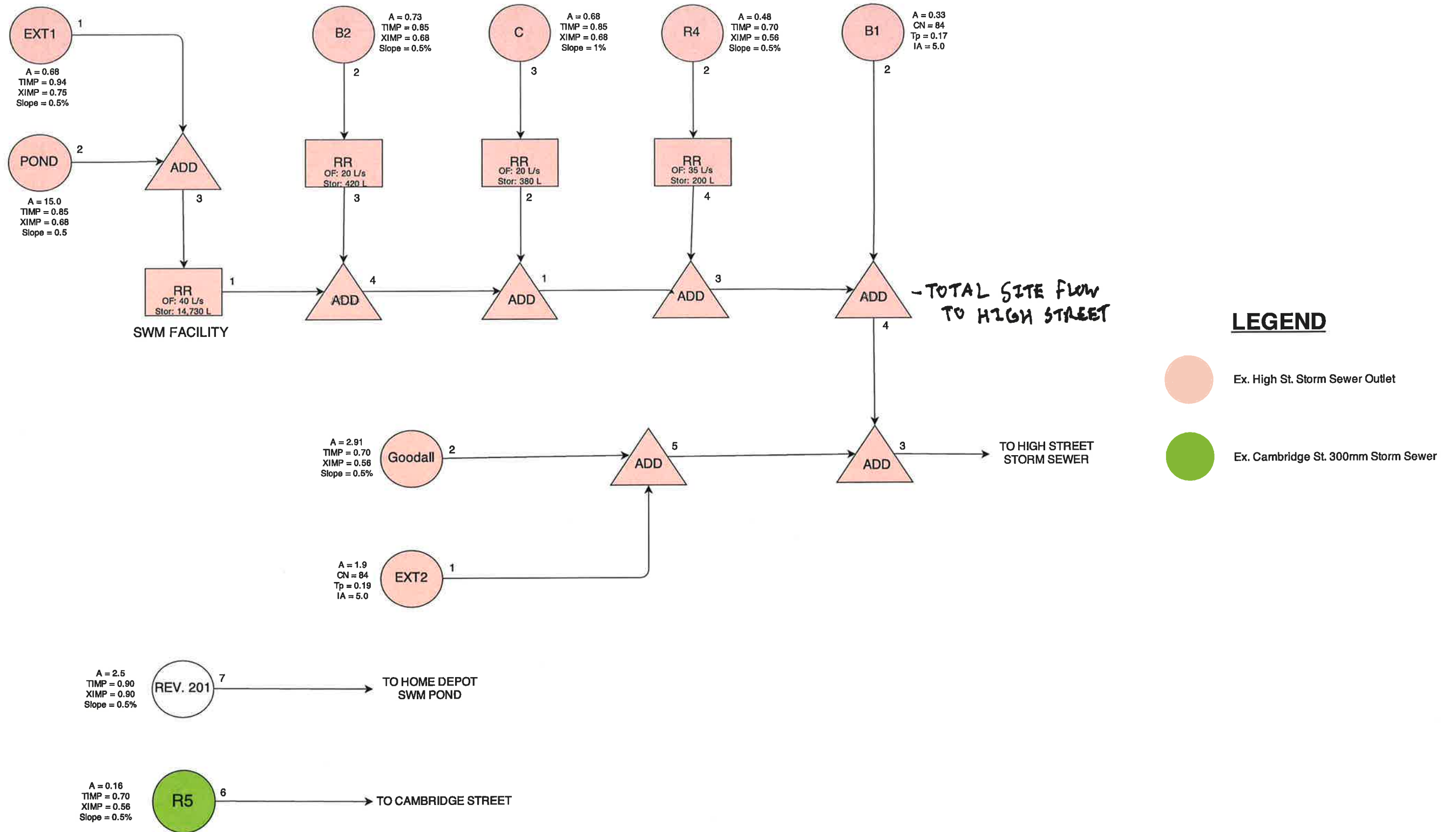
```

APPENDIX F

Full Build-out Hydrologic Modeling

West End Commercial - 4 pond SWM facility

Apr. 9, 2015
183-2697



```

00001 2 Metric units
00002 *# *****
00003 *# Project Name [West End Commercial, Collingwood] Project Number: [183-269]
00004 *# Date [April 9, 2015]
00005 *# Modeller [T. MacDougall]
00006 *# Company [CF Crozier & Associates Inc.]
00007 *# License # [137016]
00008 *# *****
00009 *# Proposed Conditions - 4 Cell Pond
00101 *#
00111 *# Rainfall Data: Storms are the SCS Volumes from MTD Design Chart 1.01(e)
00112 *# District 5: Owen Sound, Basins West of and including Collingwood
00113 *# *****
00141 *# START
00142 *# TZERO=[0.0], METOUT=[2], NSTORM=[0], NRUN=[0]
00143 *# [ ] <- storm filename, one per line for NSTORM time
00144 *# *****
00145 *#
00146 *#
00147 *#
00148 *#
00149 *#
00150 *#
00151 *# ADD HYD IDaum=[5], NHYD=["GDSum"], IDs to add=[1+2]
00152 *# *****
00153 *# TOTAL DISCHARGE TO HIGH STREET
00154 *# *****
00155 *# ADD HYD IDaum=[3], NHYD=["HighSt"], IDs to add=[4+5]
00156 *# *****
00157 *#
00158 *#
00159 *#
00160 *#
00161 *# DESIGN STANDHYD ID=[6], NHYD=["R6"], DT=[1] (min), AREA=[0.16] (ha),
00162 *# XIMP=[0.56], TIMP=[0.70], DWF=[0] (cms), LOSS=[2],
00163 *# SCS curve number CN=[84],
00164 *# Pervious surfaces: IAPER=[5.0] (mm), SLP=[0.5] (%),
00165 *# LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00166 *# Impervious surfaces: IAIMP=[2.0] (mm), SLP=[1.0] (%),
00167 *# LGI=[120] (m), MNI=[0.013], SCI=[0] (min)
00168 *# RAINFALL=[ , , , ] (mm/hr), END=1
00169 *# *****
00170 *#
00171 *#
00172 *#
00173 *# SITE AREA CONTRIBUTING TO SWM FACILITY
00174 *# *****
00175 *#
00176 *#
00177 *#
00178 *#
00179 *#
00180 *# ***** 4 hour Chicago 5-year *****
00181 *#
00182 *#
00183 *# CHICAGO STORM
00184 *# UNITS=[2], TD=[4] (hrs), TPRAT=[0.333], CSDT=[5] (min),
00185 *# ICASES=[2],
00186 *# Enter ordinates of IDF curve below, at least seven points
00187 *# TIME (min) Intensity (mm/hr)
00188 *# [5] [130]
00189 *# [10] [90]
00190 *# [15] [77]
00191 *# [30] [50]
00192 *# [60] [33]
00193 *# [120] [21]
00194 *# [360] [16.6]
00195 *# [720] [4.7]
00196 *# [1440] [2.6]
00197 *# *****
00198 *#
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00268 *#
00269 *#
00270 *#

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00136- DWF=[0] (cms), CR/C=[84], IA=[5.0] (mm),
00137- N=[3], TP=[0.17] hrs,
00138- RAINFALL=[ , , , ] (mm/hr), END=1
00139- *# *****
00140- *# -----GOODALL SITE-----
00141- *# *****
00142- *# CALIB STANDHYD
00143- *# ID=[2], NHYD=["Goodall"], DT=[1] (min), AREA=[2.91] (ha),
00144- *# XIMP=[0.56], TIMP=[0.70], DWF=[0] (cms), LOSS=[2],
00145- *# SCS curve number CN=[84],
00146- *# Pervious surfaces: IAPER=[5.0] (mm), SLP=[0.5] (%),
00147- *# LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00148- *# Impervious surfaces: IAIMP=[2.0] (mm), SLP=[1.0] (%),
00149- *# LGI=[240] (m), MNI=[0.013], SCI=[0] (min)
00150- *# RAINFALL=[ , , , ] (mm/hr), END=1
00151- *# *****
00152- *#
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00270- *#

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00271> Idovf=[9], NHYDovf=["OVF"]
00272> #-----
00273> ADD HYD Idsum=[1], NHYD=["SumC"], IDs to add=[2+4]
00274> #-----
00275> #-----
00276> #-----
00277> DESIGN STANDHYD ID=[2], NHYD=["R4"], DT=[1]min, AREA=[0.48] (ha),
XIMP=[0.56], TIMP=[0.70], DWF=[0] (cms), LOSS=[2], CN=[84],
SLOPE=[0.5] (%), RAINFALL=[ , , , ] (mm/hr), END=-1
00278> #-----
00279> #-----
00280> #-----
00281> ROUTE RESERVOIR IDout=[4], NHYD=["SR4"], IDin=[2],
RDT=[1] (min)
00282> #-----
00283> TABLE of ( OUTFLOW-STORAGE ) values
00284> #-----
00285> (cms) - (ha-m)
00286> 0.0 0.0
00287> 0.035 0.020
00288> -1 -1 (max twenty pts)
00289> #-----
00290> Idovf=[9], NHYDovf=["OVF"]
00291> #-----
00292> CONTROLLED DISCHARGE TO HIGH STREET FROM SITE
00293> #-----
00294> #-----
00295> #-----
00296> ADD HYD Idsum=[3], NHYD=["HighSt"], IDs to add=[1+4]
00297> #-----
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00405> #-----

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00406> [ 0.980 1.473 ]
00407> [ 0.047 1.755 ]
00408> [ 0.222 1.846 ]
00409> [ 1.779 2.046 ]
00410> -1 -1 (max twenty pts)
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00540> #-----

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00541: *#----- OUTLET: HIGH STREET
00542: *#-----
00543: *#----- EXTERNAL AREA #1
00544: *#-----
00545: CALIB STANDHYD ID=[1], NHYD=["EXT1"], DT=[1] (min), AREA=[0.6] (ha),
XIMP=[0.75], TIMP=[0.94], DWF=[0] (cms), LOSS=[2],
SCS curve number CN=[84],
Pervious surfaces: IAPER=[5.0] (mm), SLPP=[0.5] (%),
LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
Impervious surfaces: IAIMP=[2.0] (mm), SLPI=[1.0] (%),
LGI=[120] (m), MNI=[0.013], SCI=[0] (min)
RAINFALL=[ , , , ] (mm/hr), END=-1
00553: *#-----
00554: *#----- SITE AREA CONTRIBUTING TO SWM FACILITY
00555: *#-----
00556: CALIB STANDHYD ID=[2], NHYD=["AREA"], DT=[1] (min), AREA=[15] (ha),
XIMP=[0.68], TIMP=[0.85], DWF=[0] (cms), LOSS=[2],
SCS curve number CN=[84],
Pervious surfaces: IAPER=[5] (mm), SLPP=[0.5] (%),
LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
LGI=[300] (m), MNI=[0.013], SCI=[0] (min)
RAINFALL=[ , , , ] (mm/hr), END=-1
00563: *#-----
00564: *#-----
00565: ADD HYD IDaum=[3], NHYD=["ToPond"], IDs to add=[1+2]
00566: *#-----
00567: *#----- REGIONAL SWM FACILITY
00568: *#-----
00569: ROUTE RESERVOIR IDout=[1], NHYD=["StSWM"], IDin=[3],
RDT=[1] (min),
TABLE of ( OUTFLOW-STORAGE ) values
(cms) - (ha-m)
[ 0.0, 0.0 ]
[ 0.020, 0.040 ]
[ 0.033, 0.035 ]
[ 0.037, 1.252 ]
[ 0.040, 1.473 ]
[ 0.043, 1.755 ]
[ 0.222, 1.846 ]
[ 1.739, 2.046 ]
[ -1, -1 ] (max twenty pts)
IDovf=[9], NHYDovf=["OVFP"]
00584: *#-----
00585: *#----- B2
00586: *#-----
00587: DESIGN STANDHYD ID=[2], NHYD=["B2"], DT=[1] (min), AREA=[0.71] (ha),
XIMP=[0.68], TIMP=[0.85], DWF=[0] (cms), LOSS=[2], CN=[84],
SLOPE=[0.5] (%), RAINFALL=[ , , , ] (mm/hr), END=-1
00590: *#-----
00591: ROUTE RESERVOIR IDout=[3], NHYD=["StorB2"], IDin=[2],
RDT=[1] (min),
TABLE of ( OUTFLOW-STORAGE ) values
(cms) - (ha-m)
[ 0.0, 0.0 ]
[ 0.020, 0.042 ]
[ -1, -1 ] (max twenty pts)
IDovf=[9], NHYDovf=["OVFP"]
00599: *#-----
00600: ADD HYD IDaum=[4], NHYD=["SumB2"], IDs to add=[1+3]
00601: *#-----
00602: *#----- C
00603: *#-----
00604: DESIGN STANDHYD ID=[3], NHYD=["C"], DT=[1] (min), AREA=[0.68] (ha),
XIMP=[0.68], TIMP=[0.85], DWF=[0] (cms), LOSS=[2], CN=[84],
SLOPE=[1.0] (%), RAINFALL=[ , , , ] (mm/hr), END=-1
00607: *#-----
00608: ROUTE RESERVOIR IDout=[2], NHYD=["StC"], IDin=[3],
RDT=[1] (min),
TABLE of ( OUTFLOW-STORAGE ) values
(cms) - (ha-m)
[ 0.0, 0.0 ]
[ 0.020, 0.038 ]
[ -1, -1 ] (max twenty pts)
IDovf=[9], NHYDovf=["OVFP"]
00617: ADD HYD IDaum=[1], NHYD=["SumC"], IDs to add=[2+4]
00618: *#-----
00619: *#-----
00620: *#-----
00621: DESIGN STANDHYD ID=[2], NHYD=["R4"], DT=[1] (min), AREA=[0.48] (ha),
XIMP=[0.56], TIMP=[0.70], DWF=[0] (cms), LOSS=[2], CN=[84],
SLOPE=[0.5] (%), RAINFALL=[ , , , ] (mm/hr), END=-1
00623: *#-----
00624: *#-----
00625: ROUTE RESERVOIR IDout=[4], NHYD=["StR4"], IDin=[2],
RDT=[1] (min),
TABLE of ( OUTFLOW-STORAGE ) values
(cms) - (ha-m)
[ 0.0, 0.0 ]
[ 0.035, 0.020 ]
[ -1, -1 ] (max twenty pts)
IDovf=[9], NHYDovf=["OVFP"]
00633: *#-----
00634: *#----- CONTROLLED DISCHARGE TO HIGH STREET FROM SITE
00635: *#-----
00636: ADD HYD IDaum=[3], NHYD=["HighSt"], IDs to add=[1+4]
00637: *#-----
00638: *#----- B1
00639: *#-----
00640: CALIB NASHYD ID=[2], NHYD=["B1"], DT=[1] (min), AREA=[0.33] (ha),
DWF=[0] (cms), CN/C=[84], IA=[5.0] (mm),
N=[3], TP=[0.17] hrs.,
RAINFALL=[ , , , ] (mm/hr), END=-1
00643: *#-----
00644: *#-----
00645: *#----- TOTAL DISCHARGE TO HIGH STREET FROM SITE
00646: *#-----
00647: ADD HYD IDaum=[4], NHYD=["SumB1"], IDs to add=[2+3]
00648: *#-----
00649: *#-----
00650: *#----- EXTERNAL AREA #2
00651: CALIB NASHYD ID=[1], NHYD=["EXT2"], DT=[1] (min), AREA=[1.91] (ha),
DWF=[0] (cms), CN/C=[84], IA=[5.0] (mm),
N=[3], TP=[0.17] hrs.,
RAINFALL=[ , , , ] (mm/hr), END=-1
00654: *#-----
00655: *#-----
00656: *#----- GOODALL SITE
00657: *#-----
00658: CALIB STANDHYD ID=[2], NHYD=["Goodall"], DT=[1] (min), AREA=[2.91] (ha),
XIMP=[0.56], TIMP=[0.70], DWF=[0] (cms), LOSS=[2],
SCS curve number CN=[84],
Pervious surfaces: IAPER=[5.0] (mm), SLPP=[0.5] (%),
LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
Impervious surfaces: IAIMP=[2.0] (mm), SLPI=[0.5] (%),
LGI=[120] (m), MNI=[0.013], SCI=[0] (min)
RAINFALL=[ , , , ] (mm/hr), END=-1
00666: *#-----
00667: ADD HYD IDaum=[5], NHYD=["GdSum"], IDs to add=[1+2]
00668: *#-----
00669: *#----- TOTAL DISCHARGE TO HIGH STREET
00670: *#-----
00671: ADD HYD IDaum=[3], NHYD=["HighTot"], IDs to add=[4+5]
00672: *#-----
00673: *#----- OUTLET: CAMBRIDGE STREET
00674: *#-----
00675: *#----- B5

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00676: *#-----
00677: DESIGN STANDHYD ID=[6], NHYD=["RS"], DT=[1] (min), AREA=[0.16] (ha),
XIMP=[0.56], TIMP=[0.70], DWF=[0] (cms), LOSS=[2], CN=[84],
SLOPE=[0.5] (%), RAINFALL=[ , , , ] (mm/hr), END=-1
00680: *#-----
00681: *#----- OUTLET: HOME DEPOT
00682: *#----- SWM POND
00683: *#----- REVISED 201
00684: *#-----
00685: CALIB STANDHYD ID=[7], NHYD=["Rev201"], DT=[1] (min), AREA=[2.50] (ha),
XIMP=[0.9], TIMP=[0.9], DWF=[0] (cms), LOSS=[2],
SCS curve number CN=[84],
Pervious surfaces: IAPER=[5.0] (mm), SLPP=[2] (%),
LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
Impervious surfaces: IAIMP=[2] (mm), SLPI=[1] (%),
LGI=[130] (m), MNI=[0.013], SCI=[0] (min)
RAINFALL=[ , , , ] (mm/hr), END=-1
00693: *#-----
00694: *#-----
00695: *#----- REGIONAL EVENT
00696: *#-----
00697: *#-----
00698: HEAD STORM STORM_FILENAME=["cim.stm"]
00699: *#-----
00700: *#----- OUTLET: HIGH STREET
00701: *#-----
00702: *#----- EXTERNAL AREA #1
00703: *#-----
00704: *#-----
00705: CALIB STANDHYD ID=[1], NHYD=["EXT1"], DT=[1] (min), AREA=[0.6] (ha),
XIMP=[0.75], TIMP=[0.94], DWF=[0] (cms), LOSS=[2],
SCS curve number CN=[84],
Pervious surfaces: IAPER=[5.0] (mm), SLPP=[0.5] (%),
LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
Impervious surfaces: IAIMP=[2.0] (mm), SLPI=[1.0] (%),
LGI=[120] (m), MNI=[0.013], SCI=[0] (min)
RAINFALL=[ , , , ] (mm/hr), END=-1
00712: *#-----
00713: *#----- SITE AREA CONTRIBUTING TO SWM FACILITY
00714: *#-----
00715: CALIB STANDHYD ID=[2], NHYD=["AREA"], DT=[1] (min), AREA=[15] (ha),
XIMP=[0.68], TIMP=[0.85], DWF=[0] (cms), LOSS=[2],
SCS curve number CN=[84],
Pervious surfaces: IAPER=[5] (mm), SLPP=[0.5] (%),
LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
LGI=[300] (m), MNI=[0.013], SCI=[0] (min)
RAINFALL=[ , , , ] (mm/hr), END=-1
00722: *#-----
00723: *#-----
00724: ADD HYD IDaum=[3], NHYD=["ToPond"], IDs to add=[1+2]
00725: *#-----
00726: *#----- REGIONAL SWM FACILITY
00727: *#-----
00728: ROUTE RESERVOIR IDout=[1], NHYD=["StSWM"], IDin=[3],
RDT=[1] (min),
TABLE of ( OUTFLOW-STORAGE ) values
(cms) - (ha-m)
[ 0.0, 0.0 ]
[ 0.019, 0.280 ]
[ 0.024, 0.450 ]
[ 0.033, 0.935 ]
[ 0.037, 1.252 ]
[ 0.040, 1.473 ]
[ 0.043, 1.755 ]
[ 0.222, 1.846 ]
[ 1.739, 2.046 ]
[ -1, -1 ] (max twenty pts)
IDovf=[9], NHYDovf=["OVFP"]
00743: *#-----
00744: *#----- B2
00745: *#-----
00746: DESIGN STANDHYD ID=[2], NHYD=["B2"], DT=[1] (min), AREA=[0.71] (ha),
XIMP=[0.68], TIMP=[0.85], DWF=[0] (cms), LOSS=[2], CN=[84],
SLOPE=[0.5] (%), RAINFALL=[ , , , ] (mm/hr), END=-1
00749: *#-----
00750: ROUTE RESERVOIR IDout=[3], NHYD=["StorB2"], IDin=[2],
RDT=[1] (min),
TABLE of ( OUTFLOW-STORAGE ) values
(cms) - (ha-m)
[ 0.0, 0.0 ]
[ 0.020, 0.042 ]
[ -1, -1 ] (max twenty pts)
IDovf=[9], NHYDovf=["OVFP"]
00757: *#-----
00758: *#-----
00759: ADD HYD IDaum=[4], NHYD=["SumB2"], IDs to add=[1+3]
00760: *#-----
00761: *#----- C
00762: *#-----
00763: *#-----
00764: DESIGN STANDHYD ID=[3], NHYD=["C"], DT=[1] (min), AREA=[0.68] (ha),
XIMP=[0.68], TIMP=[0.85], DWF=[0] (cms), LOSS=[2], CN=[84],
SLOPE=[1.0] (%), RAINFALL=[ , , , ] (mm/hr), END=-1
00766: *#-----
00767: ROUTE RESERVOIR IDout=[2], NHYD=["StC"], IDin=[3],
RDT=[1] (min),
TABLE of ( OUTFLOW-STORAGE ) values
(cms) - (ha-m)
[ 0.0, 0.0 ]
[ 0.020, 0.038 ]
[ -1, -1 ] (max twenty pts)
IDovf=[9], NHYDovf=["OVFP"]
00775: *#-----
00776: *#-----
00777: ADD HYD IDaum=[1], NHYD=["SumC"], IDs to add=[2+4]
00778: *#-----
00779: *#-----
00780: DESIGN STANDHYD ID=[2], NHYD=["R4"], DT=[1] (min), AREA=[0.48] (ha),
XIMP=[0.56], TIMP=[0.70], DWF=[0] (cms), LOSS=[2], CN=[84],
SLOPE=[0.5] (%), RAINFALL=[ , , , ] (mm/hr), END=-1
00783: *#-----
00784: ROUTE RESERVOIR IDout=[4], NHYD=["StR4"], IDin=[2],
RDT=[1] (min),
TABLE of ( OUTFLOW-STORAGE ) values
(cms) - (ha-m)
[ 0.0, 0.0 ]
[ 0.035, 0.020 ]
[ -1, -1 ] (max twenty pts)
IDovf=[9], NHYDovf=["OVFP"]
00792: *#-----
00793: *#----- CONTROLLED DISCHARGE TO HIGH STREET FROM SITE
00794: *#-----
00795: ADD HYD IDaum=[3], NHYD=["HighSt"], IDs to add=[1+4]
00796: *#-----
00797: *#----- B1
00798: *#-----
00799: CALIB NASHYD ID=[2], NHYD=["B1"], DT=[1] (min), AREA=[0.33] (ha),
DWF=[0] (cms), CN/C=[84], IA=[5.0] (mm),
N=[3], TP=[0.17] hrs.,
RAINFALL=[ , , , ] (mm/hr), END=-1
08000: *#-----
08001: *#-----
08002: *#-----
08003: *#----- TOTAL DISCHARGE TO HIGH STREET FROM SITE
08004: *#-----
08005: *#-----
08006: ADD HYD IDaum=[4], NHYD=["SumB1"], IDs to add=[2+3]
08007: *#-----
08008: *#----- EXTERNAL AREA #2
08009: *#-----
08010: CALIB NASHYD ID=[1], NHYD=["EXT2"], DT=[1] (min), AREA=[1.91] (ha),

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00811> DWF=[0] (cms), CN/C=[84], IA=[5.0] (mm),
00812> N=[3], TP=[0.17] (hr),
00813> RAINFALL=[ , , , ] (mm/hr), END=-1
00814> *#-----GOODALL SITE-----
00815> *#-----
00816> *#-----
00817> CALIB STANDHYD ID=[2], NHYD=["Goodall"], DT=[1] (min), AREA=[2.91] (ha),
00818> XIMP=[0.56], TIMP=[0.70], DWF=[0] (cms), LOSS=[2],
00819> SCS curve number CN=[84],
00820> Pervious surfaces: IAPER=[5.0] (mm), SLPP=[0.5] (%),
00821> LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00822> Impervious surfaces: IAimp=[2.0] (mm), SLPI=[0.5] (%),
00823> LGI=[240] (m), MNI=[0.013], SCI=[0] (min)
00824> RAINFALL=[ , , , ] (mm/hr), END=-1
00825> *#-----
00826> ADD HYD IDaum=[5], NHYD=["GdSum"], IDs to add=[1+2]
00827> *#-----
00828> *#-----TOTAL DISCHARGE TO HIGH STREET-----
00829> *#-----
00830> ADD HYD IDaum=[3], NHYD=["HighTot"], IDs to add=[4+5]
00831> *#-----
00832> *#-----OUTLET: CAMBRIDGE STREET-----
00833> *#-----
00834> *#-----R5-----
00835> *#-----
00836> DESIGN STANDHYD ID=[6], NHYD=["R5"], DT=[1] (min), AREA=[0.16] (ha),
00837> XIMP=[0.56], TIMP=[0.70], DWF=[0] (cms), LOSS=[2], CN=[84],
00838> SLOPE=[0.5] (%), RAINFALL=[ , , , ] (mm/hr), END=-1
00839> *#-----
00840> *#-----OUTLET: HOME DEPOT-----
00841> *#-----SWM POND-----
00842> *#-----REVISED 201-----
00843> *#-----
00844> CALIB STANDHYD ID=[7], NHYD=["Rev201"], DT=[1] (min), AREA=[2.90] (ha),
00845> XIMP=[0.9], TIMP=[0.9], DWF=[0] (cms), LOSS=[2],
00846> SCS curve number CN=[84],
00847> Pervious surfaces: IAPER=[5.0] (mm), SLPP=[2] (%),
00848> LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00849> Impervious surfaces: IAimp=[2] (mm), SLPI=[1] (%),
00850> LGI=[130] (m), MNI=[0.013], SCI=[0] (min)
00851> RAINFALL=[ , , , ] (mm/hr), END=-1
00852> *#-----
00853> FINISH
00854>
00855>
00856>

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00001>
00002>
00003> SSSSS W W N M M H H Y Y M M 000 999 999 *****
00004> S W W N M M M H H Y Y M M 0 0 9 9 9 9
00005> SSSSS W W N M M H H H Y Y M M 0 0 # 9 9 9 9 Ver 4.05
00006> S W W M M M H H Y Y M M 0 0 9999 9999 Sept 2011
00007> SSSSS W W M M H H Y Y M M 000 # 9 9 9
00008>
00009> Stormwater Management Hydrologic Model 999 999 *****
00010>
00011>
00012> ***** SWHMYO Ver 4.05 *****
00013> ***** A single event and continuous hydrologic simulation model *****
00014> ***** based on the principles of HYMO and its successors *****
00015> ***** OTHYMO-83 and OTHYMO-89. *****
00016> ***** Distributed by: F. Sabourin and Associates Inc. *****
00018> ***** Ottawa, Ontario: (613) 836-3884 *****
00019> ***** Gatineau, Quebec: (819) 243-6858 *****
00020> ***** E-Mail: swhmyo@faa.com *****
00021>
00022>
00023> ***** Licensed user: C.F. Crozier & Associates Inc. *****
00024> ***** Collingwood SERIAL#:3737016 *****
00025>
00026>
00027>
00028> ***** PROGRAM ARRAY DIMENSIONS *****
00029> ***** Maximum value for ID numbers: 10 *****
00030> ***** Max. number of rainfall points: 10540 *****
00031> ***** Max. number of flow points: 10540 *****
00032>
00033> *****
00034> ***** DESCRIPTION SUMMARY TABLE HEADERS (units depend on METOUT in START) *****
00035> *****
00036> ***** ID: Hydrograph Identification numbers, (1-10) *****
00037> ***** WHYD: Hydrograph reference numbers, (6 digits or characters) *****
00038> ***** AREA: Drainage area associated with hydrograph, (ac) or (ha) *****
00039> ***** OPEAK: Peak flow of simulated hydrograph, (ft3/s) or (m3/s) *****
00040> ***** TpeakDate:hh:mm is the date and time of the peak flow. *****
00041> ***** R.V.: Runoff Volume of simulated hydrograph, (in) or (mm) *****
00042> ***** R.C.: Runoff Coefficient of simulated hydrograph, (ratio) *****
00043> ***** *: see WARNING or NOTE message printed at end of run. *****
00044> ***** see ERROR message printed at end of run. *****
00045> *****
00046>
00047>
00048>
00049>
00050>
00051>
00052>
00053> ***** SUMMARY OUTPUT *****
00054> *****
00055> ***** DATE: 2015-04-09 TIME: 09:25:58 RUN COUNTER: 000138 *****
00056> *****
00057> * Input filename: C:\SWHMYO\THIRDH-1\MAR31-1\PostCHI4.DAT
00058> * Output filename: C:\SWHMYO\THIRDH-1\MAR31-1\PostCHI4.out
00059> * Summary filename: C:\SWHMYO\THIRDH-1\MAR31-1\PostCHI4.sum
00060> * User comments:
00061> * 1:
00062> * 2:
00063> * 3:
00064>
00065>
00066>
00067>
00068> * Project Name: [West End Commercial, Collingwood] Project Number: [83-269]
00069> * Date: [April 9, 2015]
00070> * Modeller: [T. MacDougall]
00071> * Company: [C.F. Crozier & Associates Inc.]
00072> * License #: [737016]
00073> *
00074> * Proposed Conditions - 4 Cell Pond
00075> *
00076> * Rainfall Data: Storms are the SCS Volumes from MTO Design Chart 1.01(e)
00077> * District: 5: Oxon Sound, Basins West of and including Collingwood.
00078> *
00079> RUN COMMAND
00080> 001:0001
00081> ***** START *****
00082> [ITER = 00 hrs on 0]
00083> [METOUT = 2 ((=imperial, 2=metric output)]
00084> [NFORM = 0]
00085> [NRUN = 1]
00086> #
00087> #
00088> #
00089> #
00090> #
00091> #
00092> #
00093> #
00094> #
00095> #
00096> #
00097> #
00098> #
00099> #
00100> 001:0003 ID:WHYD AREA OPEAK TpeakDate hh:mm R.V.
00101> CALIB STANDHYD 01:EXT1 60 079 No_date 1:21 21.24
00102> [XIMP=75:TIMP=94]
00103> [LOSS=2:CN=84.0]
00104> [Pervious area: IAPER=5.00:SLPP=50:LGP=40:MNP=250:SCP=0]
00105> [Impervious area: IAIMP=2.00:SLPI=1.00:LGI=100:MNI=013:SCI=0]
00106> #
00107> #
00108> #
00109> 001:0004 ID:WHYD AREA OPEAK TpeakDate hh:mm R.V.
00110> CALIB STANDHYD 02:AREA 15.00 1.250 No_date 1:25 19.25
00111> [XIMP=68:TIMP=85]
00112> [LOSS=2:CN=84.0]
00113> [Pervious area: IAPER=5.00:SLPP=50:LGP=40:MNP=250:SCP=0]
00114> [Impervious area: IAIMP=2.00:SLPI=1.00:LGI=300:MNI=013:SCI=0]
00115> #
00116> 001:0005 ID:WHYD AREA OPEAK TpeakDate hh:mm R.V.
00117> ADD HYD 01:EXT1 60 079 No_date 1:21 21.24
00118> * 02:AREA 15.00 1.250 No_date 1:25 19.25
00119> [DT=1.00] SUM= 03:ToPond 15.60 1.309 No_date 1:25 19.33
00120> #
00121> #
00122> #
00123> 001:0006 ID:WHYD AREA OPEAK TpeakDate hh:mm R.V.
00124> ROUTE RESERVOIR -> 03:ToPond 15.60 1.109 No_date 1:25 19.33
00125> [RDT=1.00] out= 01:STSW 15.60 0.019 No_date 4:17 19.33
00126> * overflow <= 09:OVP 0.00 0.00 No_date 0.00 0.00
00127> [MxStoUsed=2825E+00 TotOfVol=0000E+00 N-Ovf=0 TotDurOvf=0 hrs]
00128> #
00129> #
00130> #
00131> 001:0007 ID:WHYD AREA OPEAK TpeakDate hh:mm R.V.
00132> DESIGN STANDHYD 02:B2 73 089 No_date 1:21 20.47
00133> [XIMP=68:TIMP=85]
00134> [SLP=50:DT=1.00]
00135> [LOSS=2:CN=84.0]

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00136> #
00137> 001:0008 ID:WHYD AREA OPEAK TpeakDate hh:mm R.V.
00138> ROUTE RESERVOIR -> 02:B2 73 089 No_date 1:21 20.47
00139> [RDT=1.00] out= 03:StorB2 73 0.00 No_date 2:42 20.47
00140> * overflow <= 09:OVP 0.00 0.00 No_date 0.00 0.00
00141> [MxStoUsed=1084E+01 TotOfVol=0000E+00 N-Ovf=0 TotDurOvf=0 hrs]
00142> #
00143> 001:0009 ID:WHYD AREA OPEAK TpeakDate hh:mm R.V.
00144> ADD HYD 01:STSW 15.60 0.019 No_date 4:17 19.33
00145> * 03:StorB2 73 0.00 No_date 2:42 20.47
00146> [DT=1.00] SUM= 04:SumB2 16.33 0.024 No_date 4:00 19.38
00147> #
00148> #
00149> #
00150> 001:0010 ID:WHYD AREA OPEAK TpeakDate hh:mm R.V.
00151> DESIGN STANDHYD 03:C 66 090 No_date 1:20 20.47
00152> [XIMP=68:TIMP=85]
00153> [SLP=1.09:DT=1.00]
00154> [LOSS=2:CN=84.0]
00155> 001:0011 ID:WHYD AREA OPEAK TpeakDate hh:mm R.V.
00156> ROUTE RESERVOIR -> 03:C 66 090 No_date 1:20 20.47
00157> [RDT=1.00] out= 02:STC 66 0.00 No_date 2:31 20.47
00158> * overflow <= 09:OVP 0.00 0.00 No_date 0.00 0.00
00159> [MxStoUsed=9955E-02 TotOfVol=0000E+00 N-Ovf=0 TotDurOvf=0 hrs]
00160> #
00161> 001:0012 ID:WHYD AREA OPEAK TpeakDate hh:mm R.V.
00162> ADD HYD 02:STC 66 0.00 No_date 2:31 20.47
00163> * 04:SumB2 16.33 0.024 No_date 4:00 19.38
00164> [DT=1.00] SUM= 01:SumC 17.01 0.029 No_date 3:56 19.42
00165> #
00166> #
00167> #
00168> 001:0013 ID:WHYD AREA OPEAK TpeakDate hh:mm R.V.
00169> DESIGN STANDHYD 02:B4 48 051 No_date 1:20 17.98
00170> [XIMP=56:TIMP=70]
00171> [SLP=50:DT=1.00]
00172> [LOSS=2:CN=84.0]
00173> #
00174> 001:0014 ID:WHYD AREA OPEAK TpeakDate hh:mm R.V.
00175> ROUTE RESERVOIR -> 02:B4 48 051 No_date 1:20 17.98
00176> [RDT=1.00] out= 04:StR4 48 0.08 No_date 2:00 17.98
00177> * overflow <= 09:OVP 0.00 0.00 No_date 0.00 0.00
00178> [MxStoUsed=4324E-02 TotOfVol=0000E+00 N-Ovf=0 TotDurOvf=0 hrs]
00179> #
00180> #
00181> #
00182> 001:0015 ID:WHYD AREA OPEAK TpeakDate hh:mm R.V.
00183> ADD HYD 01:SumC 17.01 0.029 No_date 3:56 19.42
00184> * 04:StR4 48 0.08 No_date 2:00 17.98
00185> [DT=1.00] SUM= 03:HighSt 17.49 0.04 No_date 2:18 19.38
00186> #
00187> #
00188> #
00189> 001:0016 ID:WHYD AREA OPEAK TpeakDate hh:mm R.V.
00190> CALIB NASHYD 02:B1 33 006 No_date 1:35 5.84
00191> [XIMP=84:TIMP=1.00]
00192> [TP=17:DT=1.00]
00193> #
00194> #
00195> #
00196> #
00197> #
00198> #
00199> #
00200> #
00201> #
00202> #
00203> 001:0018 ID:WHYD AREA OPEAK TpeakDate hh:mm R.V.
00204> CALIB NASHYD 01:EXT2 1.90 035 No_date 1:35 5.84
00205> [CN=84.0:M=3.00]
00206> [TP=17:DT=1.00]
00207> #
00208> #
00209> #
00210> 001:0019 ID:WHYD AREA OPEAK TpeakDate hh:mm R.V.
00211> CALIB STANDHYD 02:Goodall 2.91 213 No_date 1:24 16.63
00212> [XIMP=56:TIMP=70]
00213> [LOSS=2:CN=84.0]
00214> [Pervious area: IAPER=5.00:SLPP=50:LGP=40:MNP=250:SCP=0]
00215> [Impervious area: IAIMP=2.00:SLPI=1.00:LGI=240:MNI=013:SCI=0]
00216> #
00217> #
00218> 001:0020 ID:WHYD AREA OPEAK TpeakDate hh:mm R.V.
00219> ADD HYD 01:EXT2 1.90 035 No_date 1:35 5.84
00220> * 02:Goodall 2.91 213 No_date 1:24 16.63
00221> [DT=1.00] SUM= 05:GdSum 4.81 230 No_date 1:25 16.37
00222> #
00223> #
00224> #
00225> #
00226> #
00227> #
00228> #
00229> #
00230> #
00231> #
00232> #
00233> 001:0022 ID:WHYD AREA OPEAK TpeakDate hh:mm R.V.
00234> DESIGN STANDHYD 06:R5 16 018 No_date 1:20 17.98
00235> [XIMP=56:TIMP=70]
00236> [SLP=50:DT=1.00]
00237> [LOSS=2:CN=84.0]
00238> #
00239> #
00240> #
00241> #
00242> #
00243> #
00244> #
00245> #
00246> #
00247> #
00248> #
00249> #
00250> #
00251> #
00252> #
00253> #
00254> 001:0024 CHICAGO STORM
00255> [SDT=5.00:SDUR=4.00:PTOT=46.10]
00256> [A/B/C=1081.402/ 9.194/ 823:R=9994]
00257> #
00258> #
00259> #
00260> #
00261> #
00262> #
00263> #
00264> #
00265> #
00266> #
00267> #
00268> #
00269> #
00270> #

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00811> overflow <= 09:OVF          .16      .060 No_date  7:00 185.74
00812> [MxStoUsed=18028-01, TotOvfVol=.23028-01, N-Ovf= 1, TotDurOvf= 4 hrs
00813> #-----
00814> 001:0100-----ID:NHYD-----AREA---QPEAK-TpeakDate hh:mm---R.V.
00815> ADD HYD          02:STC          .52      .020 No_date  6:37 185.74
00816> * 04:SumB2      16.15      .946 No_date  9:06 184.58
00817> [DT= 1.00] SUM= 01:SumC      16.67      .966 No_date  9:06 184.52
00818> #-----
00819> #-----R4-----
00820> #-----
00821> 001:0101-----ID:NHYD-----AREA---QPEAK-TpeakDate hh:mm---R.V.
00822> DESIGN STANDHYD 02:R4          .48      .055 No_date  7:00 179.72
00823> [XIMP=.56;TIMP=.70]
00824> [SLP=.50;DT= 1.00]
00825> [LOSS= 2 :CN= 84.0]
00826> #-----
00827> 001:0102-----ID:NHYD-----AREA---QPEAK-TpeakDate hh:mm---R.V.
00828> ROUTE RESERVOIR -> 02:R4          .48      .055 No_date  7:00 179.72
00829> [RDT= 1.00] out<- 04:STR4      .48      .033 No_date  7:19 179.72
00830> overflow <= 09:OVF          .00      .000 No_date  0:00  0.00
00831> [MxStoUsed=18628-01, TotOvfVol=.0000E+00, N-Ovf= 0, TotDurOvf= 0 hrs
00832> #-----
00833> #-----CONTROLLED DISCHARGE TO HIGH STREET FROM SITE-----
00834> #-----
00835> 001:0103-----ID:NHYD-----AREA---QPEAK-TpeakDate hh:mm---R.V.
00836> ADD HYD          01:SumC      16.67      .966 No_date  9:06 184.62
00837> * 04:STR4          .48      .033 No_date  7:19 179.72
00838> [DT= 1.00] SUM= 03:HighSt     17.15      .994 No_date  9:06 184.48
00839> #-----
00840> #-----B1-----
00841> #-----
00842> 001:0104-----ID:NHYD-----AREA---QPEAK-TpeakDate hh:mm---R.V.
00843> CALIB NASHYD     02:B1          .33      .035 No_date  7:00 149.52
00844> [CN= 84.0;N= 3.00]
00845> [Tp= 17;DT= 1.00]
00846> #-----
00847> #-----TOTAL DISCHARGE TO HIGH STREET FROM SITE-----
00848> #-----
00849> 001:0105-----ID:NHYD-----AREA---QPEAK-TpeakDate hh:mm---R.V.
00850> ADD HYD          02:B1          .33      .035 No_date  7:00 149.52
00851> * 03:HighSt     17.15      .996 No_date  9:06 184.48
00852> [DT= 1.00] SUM= 04:SumB1     17.48      1.015 No_date  9:05 183.82
00853> #-----
00854> #-----EXTERNAL AREA #2-----
00855> #-----
00856> 001:0106-----ID:NHYD-----AREA---QPEAK-TpeakDate hh:mm---R.V.
00857> CALIB NASHYD     01:EXT2         1.90      .203 No_date  7:00 149.52
00858> [CN= 84.0;N= 3.00]
00859> [Tp= 17;DT= 1.00]
00860> #-----
00861> #-----GOODALL SITE-----
00862> #-----
00863> 001:0107-----ID:NHYD-----AREA---QPEAK-TpeakDate hh:mm---R.V.
00864> CALIB STANDHYD 02:Goodall     2.91      .329 No_date  7:00 178.02
00865> [XIMP=.56;TIMP=.70]
00866> [LOSS= 2 :CN= 84.0]
00867> [Previous area: IAper= 5.00;SLPP= 50;LGP= 40 ;MNP=.250;SCP= 0]
00868> [Impervious area: IAimp= 2.00;SLPI= 50;LGI= 240 ;MNI=.013;SCI= 0]
00869> #-----
00870> 001:0108-----ID:NHYD-----AREA---QPEAK-TpeakDate hh:mm---R.V.
00871> ADD HYD          01:EXT2         1.90      .203 No_date  7:00 149.52
00872> * 02:Goodall     2.91      .329 No_date  7:00 178.02
00873> [DT= 1.00] SUM= 05:GdSum      4.81      .532 No_date  7:00 166.76
00874> #-----
00875> #-----TOTAL DISCHARGE TO HIGH STREET-----
00876> #-----
00877> 001:0109-----ID:NHYD-----AREA---QPEAK-TpeakDate hh:mm---R.V.
00878> ADD HYD          04:SumB1     17.48      1.015 No_date  9:05 183.82
00879> * 05:GdSum       4.01      .532 No_date  7:00 166.76
00880> [DT= 1.00] SUM= 03:HighTot    22.29      1.304 No_date  9:02 180.14
00881> #-----
00882> #-----OUTLET: CAMBRIDGE STREET-----
00883> #-----
00884> #-----R5-----
00885> #-----
00886> 001:0110-----ID:NHYD-----AREA---QPEAK-TpeakDate hh:mm---R.V.
00887> DESIGN STANDHYD 06:R5          .16      .018 No_date  7:00 179.72
00888> [XIMP=.56;TIMP=.70]
00889> [SLP=.50;DT= 1.00]
00890> [LOSS= 2 :CN= 84.0]
00891> #-----
00892> #-----OUTLET: HOME DEPOT-----
00893> #-----SWM POND-----
00894> #-----REVISED 201-----
00895> #-----
00896> 001:0111-----ID:NHYD-----AREA---QPEAK-TpeakDate hh:mm---R.V.
00897> CALIB STANDHYD 07:Rev201     2.50      .295 No_date  7:00 186.55
00898> [XIMP=.90;TIMP=.90]
00899> [LOSS= 2 :CN= 84.0]
00900> [Previous area: IAper= 5.00;SLPP=2.00;LGP= 40 ;MNP=.250;SCP= 0]
00901> [Impervious area: IAimp= 2.00;SLPI=1.00;LGI= 130 ;MNI=.013;SCI= 0]
00902> #-----
00903> 001:0112-----
00904> FINISH
00905> #-----
00906> #-----
00907> #-----WARNINGS / ERRORS / NOTES-----
00908> #-----
00909> Simulation ended on 2015-04-09 at 09:26:02
00910> #-----
00911> #-----

```

```

00001> 2 Metric units
00002> # Project Name: West End Commercial, Collingwood Project Number: 183-269
00003> # Date : April 9, 2015
00004> # Modeller : [T. MacDougall]
00005> # Company : CF Crozier & Associates Inc.
00006> # License # : 3737016
00007> # Proposed Conditions - 4 Cell Pond
00008> #
00009> # Rainfall Data: Storms are the SCS Volumes from MTO Design Chart 1.01(e)
00010> # District 5: Owen Sound, Basins West of and including Collingwood.
00011> #
00012> # START TZRERO [0.0], METOUT [2], NSTORM [0], NRUN [0]
00013> #
00014> # [ ] <- storm filename, one per line for NSTORM time
00015> #
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00270> #

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00271+ (cms) - (ha-m)
00272+ [ 0.0, 0.0 ]
00273+ [ 0.035, 0.020 ]
00274+ [ -1, -1 ] (max twenty pts)
00275+ IDovf=[9], NHYDovf=["OVF"]
00276+ #B-----
00277+ #B-----
00278+ #B-----
00279+ #B-----
00280+ #B-----
00281+ #B-----
00282+ #B-----
00283+ #B-----
00284+ #B-----
00285+ #B-----
00286+ #B-----
00287+ #B-----
00288+ #B-----
00289+ #B-----
00290+ #B-----
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00541> [ 0.040 , 1.473 ]
00542> [ 0.043 , 1.755 ]
00543> [ 0.222 , 1.846 ]
00544> [ 1.739 , 2.046 ]
00545> [ -1 , -1 ] (max twenty pts)
00546> IDovf=[9], NHYDovf=["OVF"]
00547> -----
00548> #B2
00549> #
00550> DESIGN STANDHYD ID=[2], NHYD=["B2"], DT=[1]min, AREA=[0.73] (ha),
XIMP=[0.68], TIMP=[0.85], DWF=[0] (cms), LOSS=[2], CN=[84],
SLOPE=[0.5] (%), RAINFALL=[ , , , ] (mm/hr), END=-1
00551> #
00552> #
00553> # ROUTE RESERVOIR IDout=[3], NHYD=["StorB2"], IDin=[2],
RDT=[1] (min)
00554> #
00555> # TABLE of ( OUTFLOW-STORAGE ) values
00556> # (cms) - (ha-m)
00557> # [ 0.0 , 0.0 ]
00558> # [ 0.020 , 0.042 ]
00559> # [ -1 , -1 ] (max twenty pts)
00560> #
00561> # IDovf=[9], NHYDovf=["OVF"]
00562> #
00563> # ADD HYD IDsum=[4], NHYD=["SumB2"], IDs to add=[1+3]
00564> #
00565> #
00566> #
00567> DESIGN STANDHYD ID=[3], NHYD=["C"], DT=[1]min, AREA=[0.68] (ha),
XIMP=[0.68], TIMP=[0.85], DWF=[0] (cms), LOSS=[2], CN=[84],
SLOPE=[0.5] (%), RAINFALL=[ , , , ] (mm/hr), END=-1
00568> #
00569> #
00570> #
00571> # ROUTE RESERVOIR IDout=[2], NHYD=["StC"], IDin=[3],
RDT=[1] (min)
00572> #
00573> # TABLE of ( OUTFLOW-STORAGE ) values
00574> # (cms) - (ha-m)
00575> # [ 0.0 , 0.0 ]
00576> # [ 0.020 , 0.038 ]
00577> # [ -1 , -1 ] (max twenty pts)
00578> #
00579> # IDovf=[9], NHYDovf=["OVF"]
00580> #
00581> #
00582> # ADD HYD IDsum=[1], NHYD=["SumC"], IDs to add=[2+4]
00583> #
00584> #
00585> DESIGN STANDHYD ID=[2], NHYD=["B4"], DT=[1]min, AREA=[0.48] (ha),
XIMP=[0.56], TIMP=[0.70], DWF=[0] (cms), LOSS=[2], CN=[84],
SLOPE=[0.5] (%), RAINFALL=[ , , , ] (mm/hr), END=-1
00586> #
00587> #
00588> # ROUTE RESERVOIR IDout=[4], NHYD=["StC4"], IDin=[2],
RDT=[1] (min)
00589> #
00590> # TABLE of ( OUTFLOW-STORAGE ) values
00591> # (cms) - (ha-m)
00592> # [ 0.0 , 0.0 ]
00593> # [ 0.035 , 0.020 ]
00594> # [ -1 , -1 ] (max twenty pts)
00595> #
00596> # IDovf=[9], NHYDovf=["OVF"]
00597> #
00598> #
00599> # ADD HYD IDsum=[3], NHYD=["HighB2"], IDs to add=[1+4]
00600> #
00601> #
00602> #
00603> # CALIB NASHYD ID=[2], NHYD=["B1"], DT=[1]min, AREA=[0.33] (ha),
DWF=[0] (cms), CN/C=[84], IA=[5.0] (mm),
N=[3], TP=[0.17]hrs,
RAINFALL=[ , , , ] (mm/hr), END=-1
00604> #
00605> #
00606> #
00607> #
00608> # TOTAL DISCHARGE TO HIGH STREET FROM SITE
00609> #
00610> #
00611> #
00612> # EXTERNAL AREA #2
00613> #
00614> # CALIB NASHYD ID=[3], NHYD=["EXT2"], DT=[1]min, AREA=[1.9] (ha),
DWF=[0] (cms), CN/C=[84], IA=[5] (mm),
N=[3], TP=[0.19]hrs,
RAINFALL=[ , , , ] (mm/hr), END=-1
00615> #
00616> #
00617> #
00618> #
00619> #
00620> #
00621> # CALIB STANDHYD ID=[2], NHYD=["Goodall"], DT=[1] (min), AREA=[2.91] (ha),
XIMP=[0.56], TIMP=[0.70], DWF=[0] (cms), LOSS=[2],
SCS curve number CN=[84],
Pervious surfaces: IAPER=[5.0] (mm), SLP=[0.5] (%),
LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
Impervious surfaces: IAIMP=[2.0] (mm), SLP=[0.5] (%),
LGI=[240] (m), MNI=[0.013], SCI=[0] (min)
RAINFALL=[ , , , ] (mm/hr), END=-1
00622> #
00623> #
00624> #
00625> #
00626> #
00627> #
00628> #
00629> #
00630> # ADD HYD IDsum=[5], NHYD=["GdSum"], IDs to add=[1+2]
00631> #
00632> #
00633> # TOTAL DISCHARGE TO HIGH STREET
00634> #
00635> #
00636> #
00637> #
00638> #
00639> #
00640> #
00641> #
00642> #
00643> #
00644> #
00645> #
00646> #
00647> #
00648> # CALIB STANDHYD ID=[7], NHYD=["Rev201"], DT=[1] (min), AREA=[2.50] (ha),
XIMP=[0.9], TIMP=[0.9], DWF=[0] (cms), LOSS=[2],
SCS curve number CN=[84],
Pervious surfaces: IAPER=[5.0] (mm), SLP=[2] (%),
LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
Impervious surfaces: IAIMP=[2] (mm), SLP=[1] (%),
LGI=[130] (m), MNI=[0.013], SCI=[0] (min)
RAINFALL=[ , , , ] (mm/hr), END=-1
00649> #
00650> #
00651> #
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00674> #
00675> #

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00676> # SITE AREA CONTRIBUTING TO SWM FACILITY
00677> #
00678> # CALIB STANDHYD ID=[2], NHYD=["ARB1"], DT=[1] (min), AREA=[15] (ha),
XIMP=[0.68], TIMP=[0.85], DWF=[0] (cms), LOSS=[2],
SCS curve number CN=[84],
Pervious surfaces: IAPER=[5.0] (mm), SLP=[0.5] (%),
Impervious surfaces: IAIMP=[2] (mm), SLP=[0.5] (%),
LGI=[300] (m), MNI=[0.013], SCI=[0] (min)
RAINFALL=[ , , , ] (mm/hr), END=-1
00679> #
00680> #
00681> #
00682> #
00683> #
00684> #
00685> #
00686> #
00687> # ADD HYD IDsum=[3], NHYD=["ToPond"], IDs to add=[1+2]
00688> #
00689> #
00690> #
00691> # REGIONAL SWM FACILITY
00692> #
00693> # ROUTE RESERVOIR IDout=[1], NHYD=["StSWM"], IDin=[3],
RDT=[1] (min)
00694> #
00695> # TABLE of ( OUTFLOW-STORAGE ) values
00696> # (cms) - (ha-m)
00697> # [ 0.0 , 0.0 ]
00698> # [ 0.019 , 0.280 ]
00699> # [ 0.024 , 0.450 ]
00700> # [ 0.039 , 0.935 ]
00701> # [ 0.037 , 1.252 ]
00702> # [ 0.040 , 1.473 ]
00703> # [ 0.043 , 1.755 ]
00704> # [ 0.222 , 1.846 ]
00705> # [ 1.739 , 2.046 ]
00706> # [ -1 , -1 ] (max twenty pts)
00707> #
00708> # IDovf=[9], NHYDovf=["OVF"]
00709> #
00710> #
00711> #
00712> #
00713> # DESIGN STANDHYD ID=[2], NHYD=["B2"], DT=[1]min, AREA=[0.73] (ha),
XIMP=[0.68], TIMP=[0.85], DWF=[0] (cms), LOSS=[2], CN=[84],
SLOPE=[0.5] (%), RAINFALL=[ , , , ] (mm/hr), END=-1
00714> #
00715> #
00716> #
00717> #
00718> #
00719> #
00720> #
00721> #
00722> # ROUTE RESERVOIR IDout=[3], NHYD=["StB2"], IDin=[2],
RDT=[1] (min)
00723> #
00724> # TABLE of ( OUTFLOW-STORAGE ) values
00725> # (cms) - (ha-m)
00726> # [ 0.0 , 0.0 ]
00727> # [ 0.020 , 0.042 ]
00728> # [ -1 , -1 ] (max twenty pts)
00729> #
00730> # IDovf=[9], NHYDovf=["OVF"]
00731> #
00732> #
00733> #
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00809> #
00810> #

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00811> LGP=[40] (m), MNP=[0,25], SCP=[0] (min),
00812> Impervious surfaces: IAImp=[2] (mm), SLPI=[1] (%),
00813> LGI=[130] (m), MNI=[0,013], SCI=[0] (min)
00814> RAINFALL=[ , , , ] (mm/hr), END=-1
00815> *#-----*
00816> FINISH
00817>
00818>
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00001 00002
00003 SSSSS W W M M H H Y Y M M O O 999 999 *****
00004 S W W M M M H H Y Y M M O O 9 9 9 9
00005 SSSSS W W M M H H H H Y Y M M O O # 9 9 9 9 Ver 4.05
00006 S W W M M M H H Y Y M M O O 9999 9999 Sept 2011
00007 SSSSS W W M M H H Y Y M M O O 9 9 9 9
00008 Stormwater Management Hydrologic Model 999 999 *****
00009
00010 *****
00011 *****
00012 *****
00013 ***** A single event and continuous hydrologic simulation model *****
00014 ***** based on the principles of HYMO and its successors *****
00015 ***** OTHERMO-83 and OTTYMO-89 *****
00016 *****
00017 ***** Distributed by J. Sabourin and Associates Inc. *****
00018 ***** Ottawa, Ontario: (613) 836-3884 *****
00019 ***** Gatineau, Quebec: (819) 243-6858 *****
00020 ***** E-Mail: swmhyo@fesa.com *****
00021 *****
00022 *****
00023 *****
00024 ***** Licensed user: C.F. Crozier & Associates Inc. *****
00025 ***** Collingwood SERIAL#:3737016 *****
00026 *****
00027 *****
00028 *****
00029 ***** PROGRAM ARRAY DIMENSIONS *****
00030 ***** Maximum value for ID numbers 10 *****
00031 ***** Max. number of rainfall points 10540 *****
00032 ***** Max. number of flow points 10540 *****
00033 *****
00034 *****
00035 ***** DESCRIPTION SUMMARY TABLE HEADERS (units depend on METOUT in START) *****
00036 *****
00037 ***** ID: Hydrograph Identification numbers (1-10) *****
00038 ***** NHYD: Hydrograph reference numbers, (6 digits or characters) *****
00039 ***** AREA: Drainage area associated with hydrograph, (ac) or (ha) *****
00040 ***** OPEAK: Peak flow of simulated hydrograph, (ft3/s) or (m3/s) *****
00041 ***** TpeakDate:hh:mm is the date and time of the peak flow. *****
00042 ***** R.V.: Runoff Volume of simulated hydrograph, (in) or (mm) *****
00043 ***** R.C.: Runoff coefficient of simulated hydrograph, (ratio) *****
00044 ***** *: see WARNING or NOTE message printed at end of run. *****
00045 ***** see ERROR message printed at end of run. *****
00046 *****
00047 *****
00048 *****
00049 *****
00050 *****
00051 *****
00052 *****
00053 ***** SUMMARY OUTPUT *****
00054 *****
00055 ***** DATE: 2015-04-09 TIME: 09:25:19 RUN COUNTER: 000137 *****
00056 *****
00057 ***** Input filename: C:\SWHYMO\THIRDH-1\MAR31-1\PostSCS4.DAT *****
00058 ***** Output filename: C:\SWHYMO\THIRDH-1\MAR31-1\PostSCS4.out *****
00059 ***** Summary filename: C:\SWHYMO\THIRDH-1\MAR31-1\PostSCS4.sum *****
00060 ***** User comments: *****
00061 ***** # *****
00062 ***** # *****
00063 ***** # *****
00064 ***** # *****
00065 *****
00066 *****
00067 *****
00068 ***** Project Name: [West End Commercial, Collingwood] Project Number: [183-269] *****
00069 ***** # Date [April 9, 2015] *****
00070 ***** # Modeller [T. MacDougall] *****
00071 ***** # Company [C.F. Crozier & Associates Inc.] *****
00072 ***** # License # [3737016] *****
00073 ***** # *****
00074 ***** # Proposed Conditions - 4 Cell Pond *****
00075 ***** # *****
00076 ***** # Rainfall Data: Storms are the SCS Volumes from MTO Design Chart 1.01(e) *****
00077 ***** # District 5: Owen Sound, Basins West of and including Collingwood. *****
00078 ***** # *****
00079 ***** # RUN:COMMAND# *****
00080 ***** # 001:0001 *****
00081 ***** # *****
00082 ***** # [TZRO = 00 hrs on 0] *****
00083 ***** # [METOUT = 2 (1=serial, 2=metric output)] *****
00084 ***** # [NSTORM = 0] *****
00085 ***** # [NRUN = 1] *****
00086 ***** # *****
00087 ***** # *****
00088 ***** # ***** 25mm event *****
00089 ***** # *****
00090 ***** # *****
00091 ***** # 001:0002 *****
00092 ***** # MASS STORM *****
00093 ***** # Filename = C:\SWHYMO\THIRDH-1\MAR31-1\SCS24HI.mst *****
00094 ***** # Comment = 24 hour SCS II storm mass curve *****
00095 ***** # [SDT = 1.00;SDUR = 24.00;PTOT = 25.00] *****
00096 ***** # *****
00097 ***** # ***** OUTLET: HIGH STREET *****
00098 ***** # *****
00099 ***** # ***** EXTERNAL AREA #1 *****
00100 ***** # *****
00101 ***** # 001:0003 *****
00102 ***** # CALIB STANDHYD 01:EXT1 *****
00103 ***** # [XIMP=.75;TIP=.94] *****
00104 ***** # [LOSS=2;CN=84.0] *****
00105 ***** # [Impervious area: IAPER=5.00;SLPP=.50;LGP=40;MNP=250;SCP=.0] *****
00106 ***** # [Impervious area: IAIMP=2.00;SLPI=1.00;LGI=120;MNI=.013;SCI=.0] *****
00107 ***** # *****
00108 ***** # ***** SITE AREA CONTRIBUTING TO SWM FACILITY *****
00109 ***** # *****
00110 ***** # 001:0004 *****
00111 ***** # CALIB STANDHYD 02:AREA *****
00112 ***** # [XIMP=.68;TIP=.85] *****
00113 ***** # [LOSS=2;CN=84.0] *****
00114 ***** # [Impervious area: IAPER=5.00;SLPP=.50;LGP=40;MNP=250;SCP=.0] *****
00115 ***** # [Impervious area: IAIMP=2.00;SLPI=1.00;LGI=100;MNI=.013;SCI=.0] *****
00116 ***** # *****
00117 ***** # 001:0005 *****
00118 ***** # ADD HYD *****
00119 ***** # [DT=1.00] SUM *****
00120 ***** # *****
00121 ***** # *****
00122 ***** # ***** REGIONAL SWM FACILITY *****
00123 ***** # *****
00124 ***** # 001:0006 *****
00125 ***** # ROUTE RESERVOIR -> 03:ToPond *****
00126 ***** # [RDT=1.00] out *****
00127 ***** # overflow *****
00128 ***** # [MxStoUsed=.2356E+00;TotOvfVol=.0000E+00;N-Ovf=.0;TotDurOvf=.0hrs] *****
00129 ***** # *****
00130 ***** # ***** B2 *****
00131 ***** # *****
00132 ***** # 001:0007 *****
00133 ***** # DESIGN STANDHYD 02:B2 *****
00134 ***** # [XIMP=.68;TIP=.85] *****
00135 ***** # [SLP=.50;DT=1.00] *****

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[LOSS=2;CN=84.0]
00136 *****
00137 *****
00138 ***** 001:0008 *****
00139 ***** # ROUTE RESERVOIR *****
00140 ***** # [RDT=1.00] out *****
00141 ***** # overflow *****
00142 ***** # [MxStoUsed=.2356E+00;TotOvfVol=.0000E+00;N-Ovf=.0;TotDurOvf=.0hrs] *****
00143 ***** # *****
00144 ***** # 001:0009 *****
00145 ***** # ADD HYD *****
00146 ***** # [DT=1.00] SUM *****
00147 ***** # *****
00148 ***** # *****
00149 ***** # *****
00150 ***** # *****
00151 ***** # 001:0010 *****
00152 ***** # DESIGN STANDHYD 01:C *****
00153 ***** # [XIMP=.68;TIP=.85] *****
00154 ***** # [SLP=1.00;DT=1.00] *****
00155 ***** # [LOSS=2;CN=84.0] *****
00156 ***** # 001:0011 *****
00157 ***** # ROUTE RESERVOIR *****
00158 ***** # [RDT=1.00] out *****
00159 ***** # overflow *****
00160 ***** # [MxStoUsed=.7438E-02;TotOvfVol=.0000E+00;N-Ovf=.0;TotDurOvf=.0hrs] *****
00161 ***** # *****
00162 ***** # *****
00163 ***** # 001:0012 *****
00164 ***** # ADD HYD *****
00165 ***** # [DT=1.00] SUM *****
00166 ***** # *****
00167 ***** # *****
00168 ***** # *****
00169 ***** # 001:0013 *****
00170 ***** # DESIGN STANDHYD 02:R4 *****
00171 ***** # [XIMP=.56;TIP=.70] *****
00172 ***** # [SLP=.50;DT=1.00] *****
00173 ***** # [LOSS=2;CN=84.0] *****
00174 ***** # *****
00175 ***** # 001:0014 *****
00176 ***** # ROUTE RESERVOIR *****
00177 ***** # [RDT=1.00] out *****
00178 ***** # overflow *****
00179 ***** # [MxStoUsed=.2946E-02;TotOvfVol=.0000E+00;N-Ovf=.0;TotDurOvf=.0hrs] *****
00180 ***** # *****
00181 ***** # ***** CONTROLLED DISCHARGE TO HIGH STREET FROM SITE *****
00182 ***** # *****
00183 ***** # 001:0015 *****
00184 ***** # ADD HYD *****
00185 ***** # [DT=1.00] SUM *****
00186 ***** # *****
00187 ***** # *****
00188 ***** # *****
00189 ***** # *****
00190 ***** # 001:0016 *****
00191 ***** # CALIB HASHYD 02:B1 *****
00192 ***** # [CN=84.0;N=3.00] *****
00193 ***** # [TP=17;DT=1.00] *****
00194 ***** # *****
00195 ***** # ***** TOTAL DISCHARGE TO HIGH STREET FROM SITE *****
00196 ***** # *****
00197 ***** # 001:0017 *****
00198 ***** # ADD HYD *****
00199 ***** # [DT=1.00] SUM *****
00200 ***** # *****
00201 ***** # ***** EXTERNAL AREA #2 *****
00202 ***** # *****
00203 ***** # 001:0018 *****
00204 ***** # CALIB HASHYD 01:EXT2 *****
00205 ***** # [CN=84.0;N=3.00] *****
00206 ***** # [TP=19;DT=1.00] *****
00207 ***** # *****
00208 ***** # ***** GOODALL SITE *****
00209 ***** # *****
00210 ***** # 001:0019 *****
00211 ***** # CALIB STANDHYD 02:Goodall *****
00212 ***** # [XIMP=.56;TIP=.70] *****
00213 ***** # [LOSS=2;CN=84.0] *****
00214 ***** # [Impervious area: IAPER=5.00;SLPP=.50;LGP=40;MNP=250;SCP=.0] *****
00215 ***** # [Impervious area: IAIMP=2.00;SLPI=1.00;LGI=120;MNI=.013;SCI=.0] *****
00216 ***** # *****
00217 ***** # 001:0020 *****
00218 ***** # ADD HYD *****
00219 ***** # [DT=1.00] SUM *****
00220 ***** # *****
00221 ***** # ***** TOTAL DISCHARGE TO HIGH STREET *****
00222 ***** # *****
00223 ***** # *****
00224 ***** # 001:0021 *****
00225 ***** # ADD HYD *****
00226 ***** # [DT=1.00] SUM *****
00227 ***** # *****
00228 ***** # *****
00229 ***** # *****
00230 ***** # ***** OUTLET: CAMBRIDGE STREET *****
00231 ***** # *****
00232 ***** # ***** B5 *****
00233 ***** # *****
00234 ***** # 001:0022 *****
00235 ***** # DESIGN STANDHYD 06:R5 *****
00236 ***** # [XIMP=.56;TIP=.70] *****
00237 ***** # [SLP=.50;DT=1.00] *****
00238 ***** # [LOSS=2;CN=84.0] *****
00239 ***** # *****
00240 ***** # ***** OUTLET: HOME DEPOT *****
00241 ***** # *****
00242 ***** # ***** SWM POND *****
00243 ***** # *****
00244 ***** # 001:0023 *****
00245 ***** # CALIB STANDHYD 01:REV201 *****
00246 ***** # [XIMP=.75;TIP=.94] *****
00247 ***** # [LOSS=2;CN=84.0] *****
00248 ***** # [Impervious area: IAPER=5.00;SLPP=2.00;LGP=40;MNP=350;SCP=.0] *****
00249 ***** # [Impervious area: IAIMP=2.00;SLPI=1.00;LGI=110;MNI=.013;SCI=.0] *****
00250 ***** # *****
00251 ***** # *****
00252 ***** # ***** 24 hour SCS 5-year *****
00253 ***** # *****
00254 ***** # 001:0024 *****
00255 ***** # MASS STORM *****
00256 ***** # Filename = C:\SWHYMO\THIRDH-1\MAR31-1\SCS24HI.mst *****
00257 ***** # Comment = 24 hour SCS II storm mass curve *****
00258 ***** # [SDT=1.00;SDUR=24.00;PTOT=62.40] *****
00259 ***** # *****
00260 ***** # ***** OUTLET: HIGH STREET *****
00261 ***** # *****
00262 ***** # ***** EXTERNAL AREA #1 *****
00263 ***** # *****
00264 ***** # 001:0025 *****
00265 ***** # CALIB STANDHYD 01:EXT1 *****
00266 ***** # [XIMP=.75;TIP=.94] *****
00267 ***** # [LOSS=2;CN=84.0] *****
00268 ***** # [Impervious area: IAPER=5.00;SLPP=.50;LGP=40;MNP=250;SCP=.0] *****
00269 ***** # [Impervious area: IAIMP=2.00;SLPI=1.00;LGI=120;MNI=.013;SCI=.0] *****
00270 ***** # *****

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00811> ROUTE RESERVOIR -> 03:C .68 .080 No_date 7:00 185.74
00812> [RDT= 1.00] out<- 02:StC .52 .020 No_date 6:37 185.74
00813> overflow <= 09:OVF .16 .060 No_date 7:00 185.74
00814> {MxStoUsed= .3800E-01, TotOvfVol= .2903E-01, N-Ovf= 3, TotDurOvf= 4, hrs
00815> #-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
00816> 001:0100-----|ID:NHYD-----|AREA-----|QPEAK-TpeakDate_hh:mm-----|R.V.
00817> ADD HYD .02:StC .52 .020 No_date 6:37 185.74
00818> + 04:SumB2 16.15 .946 No_date 9:06 184.58
00819> [DT= 1.00] SUM= 01:SumC 16.67 .966 No_date 9:06 184.62
00820> #-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
00821> #-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
00822> #-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
00823> 001:0101-----|ID:NHYD-----|AREA-----|QPEAK-TpeakDate_hh:mm-----|R.V.
00824> DESIGN STANDHYD 02:R4 .48 .055 No_date 7:00 179.72
00825> [XIMP= .56:TMP= .70]
00826> [SLP= .50:DT= 1.00]
00827> [LOSS= 2 :CN= 84.0]
00828> #-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
00829> 001:0102-----|ID:NHYD-----|AREA-----|QPEAK-TpeakDate_hh:mm-----|R.V.
00830> ROUTE RESERVOIR 02:R4 .48 .055 No_date 7:00 179.72
00831> [RDT= 1.00] out<- 04:StR4 .48 .033 No_date 7:19 179.72
00832> overflow <= 09:OVF .00 .000 No_date 0:00 .00
00833> {MxStoUsed= .1862E-01, TotOvfVol= .0000E+00, N-Ovf= 0, TotDurOvf= 0, hrs
00834> #-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
00835> #-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
00836> #-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
00837> 001:0103-----|ID:NHYD-----|AREA-----|QPEAK-TpeakDate_hh:mm-----|R.V.
00838> ADD HYD 01:SumC 16.67 .966 No_date 9:06 184.62
00839> + 04:StR4 .48 .033 No_date 7:19 179.72
00840> [DT= 1.00] SUM= 02:HighSt 17.15 .996 No_date 9:06 184.48
00841> #-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
00842> #-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
00843> #-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
00844> 001:0104-----|ID:NHYD-----|AREA-----|QPEAK-TpeakDate_hh:mm-----|R.V.
00845> CALIB NASHYD 02:B1 .33 .035 No_date 7:00 149.52
00846> [CN= 84.0: N= 1.00]
00847> [Tp= .17:DT= 1.00]
00848> #-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
00849> #-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
00850> #-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
00851> 001:0105-----|ID:NHYD-----|AREA-----|QPEAK-TpeakDate_hh:mm-----|R.V.
00852> ADD HYD 02:B1 .33 .035 No_date 7:00 149.52
00853> + 03:HighSt 17.15 .996 No_date 9:06 184.48
00854> [DT= 1.00] SUM= 04:SumB1 17.48 1.015 No_date 9:05 183.62
00855> #-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
00856> #-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
00857> #-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
00858> 001:0106-----|ID:NHYD-----|AREA-----|QPEAK-TpeakDate_hh:mm-----|R.V.
00859> CALIB NASHYD 01:EXT2 1.90 .202 No_date 7:01 149.52
00860> [CN= 84.0: N= 3.00]
00861> [Tp= .19:DT= 1.00]
00862> #-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
00863> #-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
00864> #-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
00865> 001:0107-----|ID:NHYD-----|AREA-----|QPEAK-TpeakDate_hh:mm-----|R.V.
00866> CALIB STANDHYD 02:Goodall 2.91 .329 No_date 7:00 178.02
00867> [XIMP= .56:TMP= .70]
00868> [LOSS= 2 :CN= 84.0]
00869> [Pervious area: IAPer= 5.00:SLPP= .50:LGP= 40 :MNP= .250:SCP= 0]
00870> [Impervious area: IAImp= 2.00:SLPI= .50:LGI= 130 :MNI= .013:SCI= 0]
00871> #-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
00872> 001:0108-----|ID:NHYD-----|AREA-----|QPEAK-TpeakDate_hh:mm-----|R.V.
00873> ADD HYD 01:EXT2 1.90 .202 No_date 7:01 149.52
00874> + 02:Goodall 2.91 .329 No_date 7:00 178.02
00875> [DT= 1.00] SUM= 05:GdSite 4.81 .531 No_date 7:00 166.76
00876> #-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
00877> #-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
00878> #-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
00879> 001:0109-----|ID:NHYD-----|AREA-----|QPEAK-TpeakDate_hh:mm-----|R.V.
00880> ADD HYD 04:SumB1 17.48 1.015 No_date 9:05 183.62
00881> + 05:GdSite 4.81 .531 No_date 7:00 166.76
00882> [DT= 1.00] SUM= 03:HighTot 22.29 1.304 No_date 9:02 180.14
00883> #-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
00884> #-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
00885> #-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
00886> #-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
00887> #-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
00888> 001:0110-----|ID:NHYD-----|AREA-----|QPEAK-TpeakDate_hh:mm-----|R.V.
00889> DESIGN STANDHYD 06:R5 .16 .018 No_date 7:00 179.72
00890> [XIMP= .56:TMP= .70]
00891> [SLP= .50:DT= 1.00]
00892> [LOSS= 2 :CN= 84.0]
00893> #-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
00894> #-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
00895> #-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
00896> #-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
00897> #-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
00898> 001:0111-----|ID:NHYD-----|AREA-----|QPEAK-TpeakDate_hh:mm-----|R.V.
00899> CALIB STANDHYD 07:Rev201 2.50 .295 No_date 7:00 186.85
00900> [XIMP= .90:TMP= .90]
00901> [LOSS= 2 :CN= 84.0]
00902> [Pervious area: IAPer= 5.00:SLPP= 2.00:LGP= 40 :MNP= .250:SCP= 0]
00903> [Impervious area: IAImp= 2.00:SLPI= 1.00:LGI= 130 :MNI= .013:SCI= 0]
00904> #-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
00905> 001:0112-----|ID:NHYD-----|AREA-----|QPEAK-TpeakDate_hh:mm-----|R.V.
00906> FINISH
00907> #-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
00908> #-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
00909> #-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
00910> #-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
00911> #-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
00912> #-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
00913> #-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

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00001: 2 Metric Units
00002: # Project Name: [West End Commercial, Collingwood] Project Number: [18J-269]
00003: # Date: [April 9, 2015]
00004: # Designer: [T. MacDougall]
00005: # Modeller: [C.F. Crozier & Associates Inc.]
00006: # Company: [C.F. Crozier & Associates Inc.]
00007: # License #: [1737016]
00008: #
00009: # Uncontrolled Site Conditions - no ponds
00010: #
00011: # Rainfall Data: Storms are the SCS Volumes from MTO Design Chart 1.01(e)
00012: # District 5: Owen Sound, Basins West of and including Collingwood.
00013: #
00014: START TZR=0.0 METOUT=[ ] NSTORM=[0] NRUN=[0]
00015: # [ ] <- storm filename, one per line for NSTORM time
00016: #
00017: #
00018: # 25mm Event
00019: #
00020: #
00021: CHICAGO STORM LUNITS=[2], TD=[4] (hrs), TPRAT=[0.333], CSDT=[5] (min),
00022: ICASCS=[1],
00023: A=[566,700], B=[6,662], and C=[0.819]
00024: #
00025: # OUTLET HIGH STREET
00026: #
00027: # EXTERNAL AREA #1
00028: #
00029: CALIB STANDHYD ID=[3], NHYD=["EXT1"], DT=[1] (min), AREA=[0.6] (ha),
00030: XIMP=[0.75], TIMP=[0.94], DWF=[0] (cms), LOSS=[2],
00031: SCS curve number CN=[84],
00032: Pervious surfaces: IAPer=[5.0] (mm), SLP=[0.5] (%),
00033: LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00034: Impervious surfaces: IAImp=[2] (mm), SLP=[1.0] (%),
00035: LGI=[120] (m), MNI=[0.013], SCI=[0] (min)
00036: RAINFALL=[ , , , ] (mm/hr), END=1
00037: #
00038: # SITE AREA CONTRIBUTING TO SWM FACILITY
00039: #
00040: CALIB STANDHYD ID=[2], NHYD=["AREA"], DT=[1] (min), AREA=[15] (ha),
00041: XIMP=[0.68], TIMP=[0.85], DWF=[0] (cms), LOSS=[2],
00042: SCS curve number CN=[84],
00043: Pervious surfaces: IAPer=[5] (mm), SLP=[0.5] (%),
00044: LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00045: Impervious surfaces: IAImp=[2] (mm), SLP=[0.5] (%),
00046: LGI=[300] (m), MNI=[0.013], SCI=[0] (min)
00047: RAINFALL=[ , , , ] (mm/hr), END=1
00048: #
00049: ADD HYD IDsum=[3], NHYD=["ToPond"], IDs to add=[1+2]
00050: #
00051: # B2
00052: #
00053: DESIGN STANDHYD ID=[2], NHYD=["B2"], DT=[1] min, AREA=[0.73] (ha),
00054: XIMP=[0.68], TIMP=[0.85], DWF=[0] (cms), LOSS=[2], CN=[84],
00055: SLOPE=[0.5] (%), RAINFALL=[ , , , ] (mm/hr), END=1
00056: #
00057: ADD HYD IDsum=[4], NHYD=["SumB2"], IDs to add=[2+3]
00058: #
00059: # C
00060: #
00061: DESIGN STANDHYD ID=[3], NHYD=["C"], DT=[1] min, AREA=[0.68] (ha),
00062: XIMP=[0.68], TIMP=[0.85], DWF=[0] (cms), LOSS=[2], CN=[84],
00063: SLOPE=[1.0] (%), RAINFALL=[ , , , ] (mm/hr), END=1
00064: #
00065: ADD HYD IDsum=[1], NHYD=["SumC"], IDs to add=[3+4]
00066: #
00067: # R4
00068: #
00069: DESIGN STANDHYD ID=[2], NHYD=["R4"], DT=[1] min, AREA=[0.48] (ha),
00070: XIMP=[0.56], TIMP=[0.70], DWF=[0] (cms), LOSS=[2], CN=[84],
00071: SLOPE=[0.5] (%), RAINFALL=[ , , , ] (mm/hr), END=1
00072: #
00073: ADD HYD IDsum=[3], NHYD=["HighR4"], IDs to add=[1+2]
00074: #
00075: # B1
00076: #
00077: CALIB NASHYD ID=[2], NHYD=["B1"], DT=[1] min, AREA=[0.33] (ha),
00078: DWF=[0] (cms), CN/C=[84], IA=[5.0] (mm),
00079: N=[3], TP=[0.17] hrs,
00080: RAINFALL=[ , , , ] (mm/hr), END=1
00081: #
00082: # TOTAL DISCHARGE TO HIGH STREET FROM SITE
00083: #
00084: ADD HYD IDsum=[4], NHYD=["SumB1"], IDs to add=[2+3]
00085: #
00086: # EXTERNAL AREA #2
00087: #
00088: CALIB NASHYD ID=[1], NHYD=["EXT2"], DT=[1] min, AREA=[1.9] (ha),
00089: DWF=[0] (cms), CN/C=[89], IA=[3.9] (mm),
00090: N=[3], TP=[0.19] hrs,
00091: RAINFALL=[ , , , ] (mm/hr), END=1
00092: #
00093: # GOODALL SITE
00094: #
00095: CALIB STANDHYD ID=[2], NHYD=["Goodall"], DT=[1] (min), AREA=[2.91] (ha),
00096: XIMP=[0.56], TIMP=[0.70], DWF=[0] (cms), LOSS=[2],
00097: SCS curve number CN=[84],
00098: Pervious surfaces: IAPer=[5.0] (mm), SLP=[0.5] (%),
00099: LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00100: Impervious surfaces: IAImp=[2.0] (mm), SLP=[0.5] (%),
00101: LGI=[240] (m), MNI=[0.013], SCI=[0] (min)
00102: RAINFALL=[ , , , ] (mm/hr), END=1
00103: #
00104: ADD HYD IDsum=[5], NHYD=["GdSum"], IDs to add=[1+2]
00105: #
00106: # TOTAL DISCHARGE TO HIGH STREET
00107: #
00108: ADD HYD IDsum=[3], NHYD=["HighTot"], IDs to add=[4+5]
00109: #
00110: # OUTLET CAMBRIDGE STREET
00111: #
00112: # R5
00113: #
00114: DESIGN STANDHYD ID=[6], NHYD=["R5"], DT=[1] min, AREA=[0.16] (ha),
00115: XIMP=[0.56], TIMP=[0.70], DWF=[0] (cms), LOSS=[2], CN=[84],
00116: SLOPE=[0.5] (%), RAINFALL=[ , , , ] (mm/hr), END=1
00117: #
00118: # OUTLET HOME DEPOT
00119: # SWM POND
00120: # REVISED 201
00121: #
00122: CALIB STANDHYD ID=[7], NHYD=["Rev201"], DT=[1] (min), AREA=[2.50] (ha),
00123: XIMP=[0.9], TIMP=[0.9], DWF=[0] (cms), LOSS=[2],
00124: SCS curve number CN=[84],
00125: Pervious surfaces: IAPer=[5.0] (mm), SLP=[2] (%),
00126: LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00127: Impervious surfaces: IAImp=[2] (mm), SLP=[1] (%),
00128: LGI=[130] (m), MNI=[0.013], SCI=[0] (min)
00129: RAINFALL=[ , , , ] (mm/hr), END=1
00130: #
00131: # 4 hour Chicago 5-year
00132: #
00133: #
00134: #
00135: CHICAGO STORM LUNITS=[2], TD=[4] (hrs), TPRAT=[0.333], CSDT=[5] (min),

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00136: ICASCS=[2]
00137: Enter ordinates of IDF curve below, at least seven points
00138: TIME (min) Intensity (mm/hr)
00139: [5] [130]
00140: [10] [90]
00141: [15] [77]
00142: [30] [50]
00143: [60] [33]
00144: [120] [21]
00145: [360] [8.0]
00146: [720] [4.7]
00147: [1440] [2.6]
00148: #
00149: #
00150: # OUTLET HIGH STREET
00151: #
00152: # EXTERNAL AREA #1
00153: #
00154: CALIB STANDHYD ID=[1], NHYD=["EXT1"], DT=[1] (min), AREA=[0.6] (ha),
00155: XIMP=[0.75], TIMP=[0.94], DWF=[0] (cms), LOSS=[2],
00156: SCS curve number CN=[84],
00157: Pervious surfaces: IAPer=[5.0] (mm), SLP=[0.5] (%),
00158: LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00159: Impervious surfaces: IAImp=[2.0] (mm), SLP=[1.0] (%),
00160: LGI=[120] (m), MNI=[0.013], SCI=[0] (min)
00161: RAINFALL=[ , , , ] (mm/hr), END=1
00162: #
00163: # SITE AREA CONTRIBUTING TO SWM FACILITY
00164: #
00165: CALIB STANDHYD ID=[2], NHYD=["AREA"], DT=[1] (min), AREA=[15] (ha),
00166: XIMP=[0.68], TIMP=[0.85], DWF=[0] (cms), LOSS=[2],
00167: SCS curve number CN=[84],
00168: Pervious surfaces: IAPer=[5] (mm), SLP=[0.5] (%),
00169: LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00170: Impervious surfaces: IAImp=[2] (mm), SLP=[0.5] (%),
00171: LGI=[300] (m), MNI=[0.013], SCI=[0] (min)
00172: RAINFALL=[ , , , ] (mm/hr), END=1
00173: #
00174: ADD HYD IDsum=[3], NHYD=["ToPond"], IDs to add=[1+2]
00175: #
00176: # B2
00177: #
00178: DESIGN STANDHYD ID=[2], NHYD=["B2"], DT=[1] min, AREA=[0.73] (ha),
00179: XIMP=[0.68], TIMP=[0.85], DWF=[0] (cms), LOSS=[2], CN=[84],
00180: SLOPE=[0.5] (%), RAINFALL=[ , , , ] (mm/hr), END=1
00181: #
00182: ADD HYD IDsum=[4], NHYD=["SumB2"], IDs to add=[2+3]
00183: #
00184: # C
00185: #
00186: DESIGN STANDHYD ID=[3], NHYD=["C"], DT=[1] min, AREA=[0.68] (ha),
00187: XIMP=[0.68], TIMP=[0.85], DWF=[0] (cms), LOSS=[2], CN=[84],
00188: SLOPE=[1.0] (%), RAINFALL=[ , , , ] (mm/hr), END=1
00189: #
00190: ADD HYD IDsum=[1], NHYD=["SumC"], IDs to add=[3+4]
00191: #
00192: # R4
00193: #
00194: DESIGN STANDHYD ID=[2], NHYD=["R4"], DT=[1] min, AREA=[0.48] (ha),
00195: XIMP=[0.56], TIMP=[0.70], DWF=[0] (cms), LOSS=[2], CN=[84],
00196: SLOPE=[0.5] (%), RAINFALL=[ , , , ] (mm/hr), END=1
00197: #
00198: ADD HYD IDsum=[3], NHYD=["HighR4"], IDs to add=[1+2]
00199: #
00200: # B1
00201: #
00202: CALIB NASHYD ID=[2], NHYD=["B1"], DT=[1] min, AREA=[0.33] (ha),
00203: DWF=[0] (cms), CN/C=[84], IA=[5.0] (mm),
00204: N=[3], TP=[0.17] hrs,
00205: RAINFALL=[ , , , ] (mm/hr), END=1
00206: #
00207: # TOTAL DISCHARGE TO HIGH STREET FROM SITE
00208: #
00209: ADD HYD IDsum=[4], NHYD=["SumB1"], IDs to add=[2+3]
00210: #
00211: # EXTERNAL AREA #2
00212: #
00213: CALIB NASHYD ID=[1], NHYD=["EXT2"], DT=[1] min, AREA=[1.9] (ha),
00214: DWF=[0] (cms), CN/C=[89], IA=[3.9] (mm),
00215: N=[3], TP=[0.19] hrs,
00216: RAINFALL=[ , , , ] (mm/hr), END=1
00217: #
00218: # GOODALL SITE
00219: #
00220: CALIB STANDHYD ID=[2], NHYD=["Goodall"], DT=[1] (min), AREA=[2.91] (ha),
00221: XIMP=[0.56], TIMP=[0.70], DWF=[0] (cms), LOSS=[2],
00222: SCS curve number CN=[84],
00223: Pervious surfaces: IAPer=[5.0] (mm), SLP=[0.5] (%),
00224: LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00225: Impervious surfaces: IAImp=[2.0] (mm), SLP=[0.5] (%),
00226: LGI=[240] (m), MNI=[0.013], SCI=[0] (min)
00227: RAINFALL=[ , , , ] (mm/hr), END=1
00228: #
00229: ADD HYD IDsum=[5], NHYD=["GdSum"], IDs to add=[1+2]
00230: #
00231: # TOTAL DISCHARGE TO HIGH STREET
00232: #
00233: ADD HYD IDsum=[3], NHYD=["HighTot"], IDs to add=[4+5]
00234: #
00235: # OUTLET CAMBRIDGE STREET
00236: #
00237: #
00238: #
00239: DESIGN STANDHYD ID=[6], NHYD=["R5"], DT=[1] min, AREA=[0.16] (ha),
00240: XIMP=[0.56], TIMP=[0.70], DWF=[0] (cms), LOSS=[2], CN=[84],
00241: SLOPE=[0.5] (%), RAINFALL=[ , , , ] (mm/hr), END=1
00242: #
00243: #
00244: # OUTLET HOME DEPOT
00245: # SWM POND
00246: # REVISED 201
00247: #
00248: CALIB STANDHYD ID=[7], NHYD=["Rev201"], DT=[1] (min), AREA=[2.50] (ha),
00249: XIMP=[0.9], TIMP=[0.9], DWF=[0] (cms), LOSS=[2],
00250: SCS curve number CN=[84],
00251: Pervious surfaces: IAPer=[5.0] (mm), SLP=[2] (%),
00252: LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00253: Impervious surfaces: IAImp=[2] (mm), SLP=[1] (%),
00254: LGI=[130] (m), MNI=[0.013], SCI=[0] (min)
00255: RAINFALL=[ , , , ] (mm/hr), END=1
00256: #
00257: # 4 HOUR CHICAGO 5-YEAR
00258: #
00259: #
00260: CHICAGO STORM LUNITS=[2], TD=[4] (hrs), TPRAT=[0.333], CSDT=[5] (min),
00261: ICASCS=[2]
00262: Enter ordinates of IDF curve below, at least seven points
00263: TIME (min) Intensity (mm/hr)
00264: [5] [180]
00265: [10] [120]
00266: [15] [105]
00267: [30] [67]
00268: [60] [46]
00269: [120] [28]
00270: [360] [13]

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00271> (720) [6.5]
00272> (1440) [3.6]
00273> -1 -1
00274> #-----
00275> #-----
00276> #-----
00277> #-----
00278> #-----
00279> CALIB STANDHYD ID= [1], NHYD= ["EXT1"], DT= [1] (min), AREA= [0.6] (ha),
00280> XIMP= [0.75], TIMP= [0.94], DWF= [0] (cms), LOSS= [2],
00281> SCS curve number CN= [84]
00282> Pervious surfaces: IAPER= [5.0] (mm), SLPP= [0.5] (%),
00283> LGP= [40] (m), MNP= [0.25], SCP= [0] (min),
00284> Impervious surfaces: IAIMP= [2.0] (mm), SLPI= [1.0] (%),
00285> LGI= [120] (m), MNI= [0.013], SCI= [0] (min)
00286> RAINFALL= [ , , , ] (mm/hr) END= -1
00287> #-----
00288> #-----
00289> #-----
00290> CALIB STANDHYD ID= [2], NHYD= ["AREA"], DT= [1] (min), AREA= [15] (ha),
00291> XIMP= [0.68], TIMP= [0.85], DWF= [0] (cms), LOSS= [2],
00292> SCS curve number CN= [84],
00293> Pervious surfaces: IAPER= [5] (mm), SLPP= [0.5] (%),
00294> LGP= [40] (m), MNP= [0.25], SCP= [0] (min),
00295> Impervious surfaces: IAIMP= [2] (mm), SLPI= [0.5] (%),
00296> LGI= [300] (m), MNI= [0.013], SCI= [0] (min)
00297> RAINFALL= [ , , , ] (mm/hr) END= -1
00298> #-----
00299> #-----
00300> #-----
00301> #-----
00302> #-----
00303> DESIGN STANDHYD ID= [2], NHYD= ["B2"], DT= [1] (min), AREA= [0.73] (ha),
00304> XIMP= [0.68], TIMP= [0.85], DWF= [0] (cms), LOSS= [2], CN= [84],
00305> SLOPE= [0.5] (%), RAINFALL= [ , , , ] (mm/hr) END= -1
00306> #-----
00307> #-----
00308> #-----
00309> #-----
00310> #-----
00311> DESIGN STANDHYD ID= [3], NHYD= ["C"], DT= [1] (min), AREA= [0.68] (ha),
00312> XIMP= [0.68], TIMP= [0.85], DWF= [0] (cms), LOSS= [2], CN= [84],
00313> SLOPE= [1.0] (%), RAINFALL= [ , , , ] (mm/hr) END= -1
00314> #-----
00315> #-----
00316> #-----
00317> #-----
00318> #-----
00319> DESIGN STANDHYD ID= [2], NHYD= ["R4"], DT= [1] (min), AREA= [0.48] (ha),
00320> XIMP= [0.56], TIMP= [0.70], DWF= [0] (cms), LOSS= [2], CN= [84],
00321> SLOPE= [0.5] (%), RAINFALL= [ , , , ] (mm/hr) END= -1
00322> #-----
00323> #-----
00324> #-----
00325> #-----
00326> #-----
00327> CALIB NASHYD ID= [2], NHYD= ["B1"], DT= [1] (min), AREA= [0.33] (ha),
00328> DWF= [0] (cms), CN/C= [84], IA= [5.0] (mm),
00329> N= [3], TP= [0.17] hrs,
00330> RAINFALL= [ , , , ] (mm/hr) END= -1
00331> #-----
00332> #-----
00333> #-----
00334> #-----
00335> #-----
00336> #-----
00337> #-----
00338> CALIB NASHYD ID= [1], NHYD= ["EXT2"], DT= [1] (min), AREA= [1.9] (ha),
00339> DWF= [0] (cms), CN/C= [89], IA= [3.9] (mm),
00340> N= [3], TP= [0.19] hrs,
00341> RAINFALL= [ , , , ] (mm/hr) END= -1
00342> #-----
00343> #-----
00344> #-----
00345> #-----
00346> CALIB STANDHYD ID= [2], NHYD= ["Goodall"], DT= [1] (min), AREA= [2.91] (ha),
00347> XIMP= [0.56], TIMP= [0.70], DWF= [0] (cms), LOSS= [2],
00348> SCS curve number CN= [84],
00349> Pervious surfaces: IAPER= [5.0] (mm), SLPP= [0.5] (%),
00350> LGP= [40] (m), MNP= [0.25], SCP= [0] (min),
00351> Impervious surfaces: IAIMP= [2.0] (mm), SLPI= [1.0] (%),
00352> LGI= [120] (m), MNI= [0.013], SCI= [0] (min)
00353> RAINFALL= [ , , , ] (mm/hr) END= -1
00354> #-----
00355> #-----
00356> #-----
00357> #-----
00358> #-----
00359> #-----
00360> #-----
00361> #-----
00362> #-----
00363> #-----
00364> DESIGN STANDHYD ID= [6], NHYD= ["R5"], DT= [1] (min), AREA= [0.16] (ha),
00365> XIMP= [0.56], TIMP= [0.70], DWF= [0] (cms), LOSS= [2], CN= [84],
00366> SLOPE= [0.5] (%), RAINFALL= [ , , , ] (mm/hr) END= -1
00367> #-----
00368> #-----
00369> #-----
00370> #-----
00371> #-----
00372> CALIB STANDHYD ID= [7], NHYD= ["Rev201"], DT= [1] (min), AREA= [2.50] (ha),
00373> XIMP= [0.9], TIMP= [0.9], DWF= [0] (cms), LOSS= [2],
00374> SCS curve number CN= [84],
00375> Pervious surfaces: IAPER= [5.0] (mm), SLPP= [2] (%),
00376> LGP= [40] (m), MNP= [0.25], SCP= [0] (min),
00377> Impervious surfaces: IAIMP= [2] (mm), SLPI= [1] (%),
00378> LGI= [130] (m), MNI= [0.013], SCI= [0] (min)
00379> RAINFALL= [ , , , ] (mm/hr) END= -1
00380> #-----
00381> #-----
00382> #-----
00383> #-----
00384> #-----
00385> #-----
00386> #-----
00387> #-----
00388> #-----
00389> #-----
00390> #-----
00391> #-----
00392> #-----
00393> #-----
00394> #-----
00395> #-----
00396> #-----
00397> #-----
00398> #-----
00399> #-----
00400> #-----
00401> #-----
00402> #-----
00403> #-----
00404> CALIB STANDHYD ID= [1], NHYD= ["EXT1"], DT= [1] (min), AREA= [0.6] (ha),
00405> XIMP= [0.75], TIMP= [0.94], DWF= [0] (cms), LOSS= [2],

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00406> SCS curve number CN= [84],
00407> Pervious surfaces: IAPER= [5.0] (mm), SLPP= [0.5] (%),
00408> LGP= [40] (m), MNP= [0.25], SCP= [0] (min),
00409> Impervious surfaces: IAIMP= [2.0] (mm), SLPI= [1.0] (%),
00410> LGI= [120] (m), MNI= [0.013], SCI= [0] (min)
00411> RAINFALL= [ , , , ] (mm/hr) END= -1
00412> #-----
00413> #-----
00414> #-----
00415> #-----
00416> CALIB STANDHYD ID= [2], NHYD= ["AREA"], DT= [1] (min), AREA= [15] (ha),
00417> XIMP= [0.68], TIMP= [0.85], DWF= [0] (cms), LOSS= [2],
00418> SCS curve number CN= [84],
00419> Pervious surfaces: IAPER= [5] (mm), SLPP= [0.5] (%),
00420> LGP= [40] (m), MNP= [0.25], SCP= [0] (min),
00421> Impervious surfaces: IAIMP= [2] (mm), SLPI= [0.5] (%),
00422> LGI= [300] (m), MNI= [0.013], SCI= [0] (min)
00423> RAINFALL= [ , , , ] (mm/hr) END= -1
00424> #-----
00425> #-----
00426> #-----
00427> #-----
00428> DESIGN STANDHYD ID= [2], NHYD= ["B2"], DT= [1] (min), AREA= [0.73] (ha),
00429> XIMP= [0.68], TIMP= [0.85], DWF= [0] (cms), LOSS= [2], CN= [84],
00430> SLOPE= [0.5] (%), RAINFALL= [ , , , ] (mm/hr) END= -1
00431> #-----
00432> #-----
00433> #-----
00434> #-----
00435> #-----
00436> #-----
00437> #-----
00438> #-----
00439> #-----
00440> #-----
00441> #-----
00442> #-----
00443> #-----
00444> DESIGN STANDHYD ID= [2], NHYD= ["R4"], DT= [1] (min), AREA= [0.48] (ha),
00445> XIMP= [0.56], TIMP= [0.70], DWF= [0] (cms), LOSS= [2], CN= [84],
00446> SLOPE= [0.5] (%), RAINFALL= [ , , , ] (mm/hr) END= -1
00447> #-----
00448> #-----
00449> #-----
00450> #-----
00451> #-----
00452> CALIB NASHYD ID= [2], NHYD= ["B1"], DT= [1] (min), AREA= [0.33] (ha),
00453> DWF= [0] (cms), CN/C= [84], IA= [5.0] (mm),
00454> N= [3], TP= [0.17] hrs,
00455> RAINFALL= [ , , , ] (mm/hr) END= -1
00456> #-----
00457> #-----
00458> #-----
00459> #-----
00460> #-----
00461> #-----
00462> #-----
00463> #-----
00464> CALIB NASHYD ID= [1], NHYD= ["EXT2"], DT= [1] (min), AREA= [1.9] (ha),
00465> DWF= [0] (cms), CN/C= [89], IA= [3.9] (mm),
00466> N= [3], TP= [0.19] hrs,
00467> RAINFALL= [ , , , ] (mm/hr) END= -1
00468> #-----
00469> #-----
00470> #-----
00471> CALIB STANDHYD ID= [2], NHYD= ["Goodall"], DT= [1] (min), AREA= [2.91] (ha),
00472> XIMP= [0.56], TIMP= [0.70], DWF= [0] (cms), LOSS= [2],
00473> SCS curve number CN= [84],
00474> Pervious surfaces: IAPER= [5.0] (mm), SLPP= [0.5] (%),
00475> LGP= [40] (m), MNP= [0.25], SCP= [0] (min),
00476> Impervious surfaces: IAIMP= [2.0] (mm), SLPI= [1.0] (%),
00477> LGI= [120] (m), MNI= [0.013], SCI= [0] (min)
00478> RAINFALL= [ , , , ] (mm/hr) END= -1
00479> #-----
00480> #-----
00481> #-----
00482> #-----
00483> #-----
00484> #-----
00485> #-----
00486> #-----
00487> #-----
00488> #-----
00489> DESIGN STANDHYD ID= [6], NHYD= ["R5"], DT= [1] (min), AREA= [0.16] (ha),
00490> XIMP= [0.56], TIMP= [0.70], DWF= [0] (cms), LOSS= [2], CN= [84],
00491> SLOPE= [0.5] (%), RAINFALL= [ , , , ] (mm/hr) END= -1
00492> #-----
00493> #-----
00494> #-----
00495> #-----
00496> #-----
00497> CALIB STANDHYD ID= [7], NHYD= ["Rev201"], DT= [1] (min), AREA= [2.50] (ha),
00498> XIMP= [0.9], TIMP= [0.9], DWF= [0] (cms), LOSS= [2],
00499> SCS curve number CN= [84],
00500> Pervious surfaces: IAPER= [5.0] (mm), SLPP= [2] (%),
00501> LGP= [40] (m), MNP= [0.25], SCP= [0] (min),
00502> Impervious surfaces: IAIMP= [2] (mm), SLPI= [1] (%),
00503> LGI= [130] (m), MNI= [0.013], SCI= [0] (min)
00504> RAINFALL= [ , , , ] (mm/hr) END= -1
00505> #-----
00506> #-----
00507> #-----
00508> #-----
00509> #-----
00510> #-----
00511> #-----
00512> #-----
00513> #-----
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00524> #-----
00525> #-----
00526> #-----
00527> CALIB STANDHYD ID= [3], NHYD= ["AREA"], DT= [1] (min), AREA= [15] (ha),
00528> XIMP= [0.68], TIMP= [0.85], DWF= [0] (cms), LOSS= [2],
00529> SCS curve number CN= [84],
00530> Pervious surfaces: IAPER= [5] (mm), SLPP= [0.5] (%),
00531> LGP= [40] (m), MNP= [0.25], SCP= [0] (min),
00532> Impervious surfaces: IAIMP= [2] (mm), SLPI= [0.5] (%),
00533> LGI= [300] (m), MNI= [0.013], SCI= [0] (min)
00534> RAINFALL= [ , , , ] (mm/hr) END= -1
00535> #-----
00536> #-----
00537> #-----
00538> #-----
00539> #-----
00540> #-----
00541> #-----
00542> #-----
00543> #-----
00544> #-----
00545> DESIGN STANDHYD ID= [2], NHYD= ["B2"], DT= [1] (min), AREA= [0.73] (ha),

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00541> XIMP=[0.68], TIMP=[0.85], DWF=[0] (cms), LOSS=[2], CN=[84],
00542> SLOPE=[0.5] (%), RAINFALL=[ , , , ] (mm/hr), END=-1
00543> *#-----
00544> ADD HYD IDaum=[4], NHYD=["SumB2"], IDa to add=[2+3]
00545> *#-----
00546> *#----- C -----
00547> *#-----
00548> DESIGN STANDHYD ID=[3], NHYD=["C*"], DT=[1]min, AREA=[0.68] (ha),
00549> XIMP=[0.68], TIMP=[0.85], DWF=[0] (cms), LOSS=[2], CN=[84],
00550> SLOPE=[1.0] (%), RAINFALL=[ , , , ] (mm/hr), END=-1
00551> *#-----
00552> ADD HYD IDaum=[1], NHYD=["SumC"], IDa to add=[3+4]
00553> *#-----
00554> *#-----
00555> *#-----
00556> DESIGN STANDHYD ID=[2], NHYD=["R4"], DT=[1]min, AREA=[0.48] (ha),
00557> XIMP=[0.56], TIMP=[0.70], DWF=[0] (cms), LOSS=[2], CN=[84],
00558> SLOPE=[0.5] (%), RAINFALL=[ , , , ] (mm/hr), END=-1
00559> *#-----
00560> ADD HYD IDaum=[3], NHYD=["HighSt"], IDa to add=[1+2]
00561> *#-----
00562> *#----- B1 -----
00563> *#-----
00564> CALIB NASHYD ID=[2], NHYD=["B1"], DT=[1]min, AREA=[0.33] (ha),
00565> DWF=[0] (cms), CN/C=[84], IA=[5.0] (mm),
00566> N=[3], TP=[0.17] hrs,
00567> RAINFALL=[ , , , ] (mm/hr), END=-1
00568> *#-----
00569> *#----- TOTAL DISCHARGE TO HIGH STREET FROM SITE -----
00570> *#-----
00571> ADD HYD IDaum=[4], NHYD=["SumB1"], IDa to add=[2+3]
00572> *#-----
00573> *#----- EXTERNAL AREA #2 -----
00574> *#-----
00575> CALIB NASHYD ID=[1], NHYD=["EXT2"], DT=[1]min, AREA=[1.9] (ha),
00576> DWF=[0] (cms), CN/C=[89], IA=[3.9] (mm),
00577> N=[3], TP=[0.19] hrs,
00578> RAINFALL=[ , , , ] (mm/hr), END=-1
00579> *#-----
00580> *#----- GOODALL SITE -----
00581> *#-----
00582> CALIB STANDHYD ID=[2], NHYD=["Goodall"], DT=[1]min, AREA=[2.91] (ha),
00583> XIMP=[0.56], TIMP=[0.70], DWF=[0] (cms), LOSS=[2],
00584> SCS curve number CN=[84],
00585> Pervious surfaces: IApex=[5.0] (mm), SLPP=[0.5] (%),
00586> LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00587> Impervious surfaces: IAimp=[2.0] (mm), SLPI=[0.5] (%),
00588> LGI=[240] (m), MNI=[0.013], SCI=[0] (min)
00589> RAINFALL=[ , , , ] (mm/hr), END=-1
00590> *#-----
00591> ADD HYD IDaum=[5], NHYD=["GdSum"], IDa to add=[1+2]
00592> *#-----
00593> *#----- TOTAL DISCHARGE TO HIGH STREET -----
00594> *#-----
00595> ADD HYD IDaum=[3], NHYD=["HighTot"], IDa to add=[4+5]
00596> *#-----
00597> *#----- OUTLET: CAMBRIDGE STREET -----
00598> *#-----
00599> *#----- R5 -----
00600> *#-----
00601> DESIGN STANDHYD ID=[6], NHYD=["R5"], DT=[1]min, AREA=[0.16] (ha),
00602> XIMP=[0.56], TIMP=[0.70], DWF=[0] (cms), LOSS=[2], CN=[84],
00603> SLOPE=[0.5] (%), RAINFALL=[ , , , ] (mm/hr), END=-1
00604> *#-----
00605> *#----- OUTLET: HOME DEPOT -----
00606> *#----- SWM POND -----
00607> *#----- REVISED 201 -----
00608> *#-----
00609> CALIB STANDHYD ID=[7], NHYD=["Rev201"], DT=[1]min, AREA=[2.59] (ha),
00610> XIMP=[0.9], TIMP=[0.9], DWF=[0] (cms), LOSS=[2],
00611> SCS curve number CN=[84],
00612> Pervious surfaces: IApex=[5.0] (mm), SLPP=[2] (%),
00613> LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00614> Impervious surfaces: IAimp=[2] (mm), SLPI=[1] (%),
00615> LGI=[130] (m), MNI=[0.013], SCI=[0] (min)
00616> RAINFALL=[ , , , ] (mm/hr), END=-1
00617> *#-----
00618> FINISH
00619>

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00001: SSSSS W W M M H H Y Y M M 000 999 999 *****
00002: SSSSS W W M M H H Y Y M M 000 999 999 *****
00003: SSSSS W W M M H H Y Y M M 000 999 999 *****
00004: SSSSS W W M M H H Y Y M M 000 999 999 *****
00005: SSSSS W W M M H H Y Y M M 000 999 999 *****
00006: SSSSS W W M M H H Y Y M M 000 999 999 *****
00007: SSSSS W W M M H H Y Y M M 000 999 999 *****
00008: SSSSS W W M M H H Y Y M M 000 999 999 *****
00009: StormWater Management Hydrologic Model 999 999 *****
00010:
00011: ***** SWMHYMO Ver/4.05 *****
00012: ***** A single event and continuous hydrologic simulation model *****
00013: ***** based on the principles of HYMO and its successors *****
00014: ***** OTHYMO-83 and OTHYMO-89 *****
00015: ***** Distributed by: J.F. Sabourin and Associates Inc. *****
00016: ***** Ottawa, Ontario: (613) 836-3884 *****
00017: ***** Gatineau, Quebec: (819) 243-6958 *****
00018: ***** E-Mail: swmhymo@jfsa.com *****
00019: *****
00020: *****
00021: *****
00022: *****
00023: *****
00024: ***** Licensed user: C.F. Crozier & Associates Inc. *****
00025: ***** Collingwood SERIAL#3737016 *****
00026: *****
00027: *****
00028: *****
00029: *****
00030: ***** PROGRAM ARRAY DIMENSIONS *****
00031: ***** Max. number of rain fall points: 105408 *****
00032: ***** Max. number of flow points: 105408 *****
00033: *****
00034: *****
00035: ***** DESCRIPTION SUMMARY TABLE HEADERS (units depend on METOUT in START) *****
00036: *****
00037: ***** ID: Hydrograph identification numbers, (1-10) *****
00038: ***** NHYD: Hydrograph reference numbers, (6 digits or characters) *****
00039: ***** AREA: Drainage area associated with hydrograph, (ac.) or (ha) *****
00040: ***** QPEAK: Peak flow of simulated hydrograph, (ft3/s) or (m3/s) *****
00041: ***** TpeakDate hh:mm:ss the date and time of the peak flow. *****
00042: ***** R.V.: Runoff Volume of simulated hydrograph, (in) or (mm) *****
00043: ***** R.C.: Runoff Coefficient of simulated hydrograph, (ratio) *****
00044: ***** *: see WARNING or NOTE message printed at end of run. *****
00045: ***** #: see ERROR message printed at end of run *****
00046: *****
00047: *****
00048: *****
00049: *****
00050: *****
00051: *****
00052: *****
00053: ***** SUMMARY OUTPUT *****
00054: *****
00055: ***** DATE: 2015-04-09 TIME: 09:29:51 RUN COUNTER: 000143 *****
00056: *****
00057: * Input filename: C:\SWMHYMO\THIRDH-1\UNCCONT-1\UncCHI4.DAT
00058: * Output filename: C:\SWMHYMO\THIRDH-1\UNCCONT-1\UncCHI4.out
00059: * Summary filename: C:\SWMHYMO\THIRDH-1\UNCCONT-1\UncCHI4.sum
00060: * User comments:
00061: * 1
00062: * 2
00063: * 3
00064: *****
00065: *****
00066: *****
00067: # *****
00068: # Project Name: [West End Commercial, Collingwood] Project Number: [183-269]
00069: # Date: April 9, 2015
00070: # Modeller: [T MacDougall]
00071: # Company: C.F. Crozier & Associates Inc.
00072: # License #: 3737016
00073: # *****
00074: # Uncontrolled Site Conditions - no ponds
00075: # *****
00076: # Rainfall Data: Storms are the SCS Volumes from MTO Design Chart 1.01(e)
00077: # District 5: Owen Sound, Basins West of and including Collingwood.
00078: # *****
00079: RUN COMMAND#
00080: 001:0001
00081: # *****
00082: [TZERO = 00 hrs on 0]
00083: [METOUT = 2 (1=imperial, 2=metric output)]
00084: [NSTORM = 0]
00085: [NRUN = 1]
00086: # *****
00087: # *****
00088: # *****
00089: # *****
00090: # *****
00091: # *****
00092: CHICAGO STORM
00093: [SDT= 5.00:SDUR= 4.00:PTOT= 24.99]
00094: [A/B/C= 568.700/ 6.662/ 819]
00095: # *****
00096: # *****
00097: # *****
00098: # *****
00099: # *****
00100: 001:0002 ID:NHYD AREA QPEAK TpeakDate hh:mm R.V.
00101: CALIB STANDHYD 01:EXT1 .60 .079 No_date 1:21 21.24
00102: [XIMP= 75:TIMP= 84]
00103: [LOSS= 2 :CN= 84.0]
00104: [Pervious area: IAPER= 5.00:SLPP= 50:LGP= 40:MNP= 250:SCP= 0]
00105: [Impervious area: IAIMP= 2.00:SLPI= 50:LGI= 120:MNI= 013:SCI= 0]
00106: # *****
00107: # *****
00108: # *****
00109: 001:0004 ID:NHYD AREA QPEAK TpeakDate hh:mm R.V.
00110: CALIB STANDHYD 02:AREA 15.00 1.250 No_date 1:25 19.25
00111: [XIMP= 68:TIMP= 85]
00112: [LOSS= 2 :CN= 84.0]
00113: [Pervious area: IAPER= 5.00:SLPP= 50:LGP= 40:MNP= 250:SCP= 0]
00114: [Impervious area: IAIMP= 2.00:SLPI= 50:LGI= 100:MNI= 013:SCI= 0]
00115: # *****
00116: 001:0005 ID:NHYD AREA QPEAK TpeakDate hh:mm R.V.
00117: ADD HYD 01:EXT1 .60 .079 No_date 1:21 21.24
00118: 02:AREA 15.00 1.250 No_date 1:25 19.25
00119: [DT= 1.00] SUM= 03:ToPond 15.60 1.309 No_date 1:25 19.33
00120: # *****
00121: # *****
00122: 001:0006 ID:NHYD AREA QPEAK TpeakDate hh:mm R.V.
00123: DESIGN STANDHYD 02:B2 .73 .089 No_date 1:21 20.47
00124: [XIMP= 68:TIMP= 85]
00125: [SLP= 50:DT= 1.00]
00126: [LOSS= 2 :CN= 84.0]
00127: # *****
00128: # *****
00129: 001:0007 ID:NHYD AREA QPEAK TpeakDate hh:mm R.V.
00130: ADD HYD 02:B2 .73 .089 No_date 1:21 20.47
00131: 03:ToPond 15.60 1.309 No_date 1:25 19.33
00132: [DT= 1.00] SUM= 04:SumB2 16.33 1.371 No_date 1:25 19.39
00133: # *****
00134: # *****
00135: # *****

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00136: 001:0008 ID:NHYD AREA QPEAK TpeakDate hh:mm R.V.
00137: DESIGN STANDHYD 03:C .68 .090 No_date 1:20 20.47
00138: [XIMP= 68:TIMP= 85]
00139: [SLP= 50:DT= 1.00]
00140: [LOSS= 2 :CN= 84.0]
00141: # *****
00142: 001:0009 ID:NHYD AREA QPEAK TpeakDate hh:mm R.V.
00143: ADD HYD 03:C .68 .090 No_date 1:20 20.47
00144: 04:SumB2 16.33 1.371 No_date 1:25 19.39
00145: [DT= 1.00] SUM= 01:SumC 17.01 1.426 No_date 1:25 19.43
00146: # *****
00147: # *****
00148: # *****
00149: 001:0010 ID:NHYD AREA QPEAK TpeakDate hh:mm R.V.
00150: DESIGN STANDHYD 02:R4 .48 .051 No_date 1:20 17.98
00151: [XIMP= 56:TIMP= 70]
00152: [SLP= 50:DT= 1.00]
00153: [LOSS= 2 :CN= 84.0]
00154: # *****
00155: 001:0011 ID:NHYD AREA QPEAK TpeakDate hh:mm R.V.
00156: ADD HYD 01:SumC 17.01 1.426 No_date 1:25 19.43
00157: 02:R4 .48 .051 No_date 1:20 17.98
00158: [DT= 1.00] SUM= 03:HighSt 17.49 1.457 No_date 1:25 19.39
00159: # *****
00160: # *****
00161: # *****
00162: 001:0012 ID:NHYD AREA QPEAK TpeakDate hh:mm R.V.
00163: CALIB NASHHYD 02:B1 .33 .006 No_date 1:15 5.84
00164: [CN= 84.0: N= 3.00]
00165: [Tp= 17.00: DT= 1.00]
00166: # *****
00167: # *****
00168: # *****
00169: 001:0013 ID:NHYD AREA QPEAK TpeakDate hh:mm R.V.
00170: ADD HYD 01:SumC 17.49 1.457 No_date 1:25 19.39
00171: 03:HighSt 17.49 1.457 No_date 1:25 19.39
00172: [DT= 1.00] SUM= 04:SumB1 17.82 1.461 No_date 1:25 19.33
00173: # *****
00174: # *****
00175: # *****
00176: 001:0014 ID:NHYD AREA QPEAK TpeakDate hh:mm R.V.
00177: CALIB NASHHYD 01:EXT2 1.90 .051 No_date 1:16 8.48
00178: [CN= 89.0: N= 3.00]
00179: [Tp= 19.00: DT= 1.00]
00180: # *****
00181: # *****
00182: # *****
00183: 001:0015 ID:NHYD AREA QPEAK TpeakDate hh:mm R.V.
00184: CALIB STANDHYD 02:Goodall 2.91 .213 No_date 1:24 16.63
00185: [XIMP= 56:TIMP= 70]
00186: [LOSS= 2 :CN= 84.0]
00187: [Pervious area: IAPER= 5.00:SLPP= 50:LGP= 40:MNP= 250:SCP= 0]
00188: [Impervious area: IAIMP= 2.00:SLPI= 50:LGI= 120:MNI= 013:SCI= 0]
00189: # *****
00190: 001:0016 ID:NHYD AREA QPEAK TpeakDate hh:mm R.V.
00191: ADD HYD 01:EXT2 1.90 .051 No_date 1:16 8.48
00192: 02:Goodall 2.91 .213 No_date 1:24 16.63
00193: [DT= 1.00] SUM= 05:GdSum 4.81 .240 No_date 1:25 13.41
00194: # *****
00195: # *****
00196: # *****
00197: 001:0017 ID:NHYD AREA QPEAK TpeakDate hh:mm R.V.
00198: ADD HYD 01:SumB1 17.82 1.461 No_date 1:25 19.33
00199: 05:GdSum 4.81 .240 No_date 1:25 13.41
00200: [DT= 1.00] SUM= 03:HighTot 22.63 1.701 No_date 1:25 17.92
00201: # *****
00202: # *****
00203: # *****
00204: # *****
00205: 001:0018 ID:NHYD AREA QPEAK TpeakDate hh:mm R.V.
00206: DESIGN STANDHYD 04:R5 .16 .019 No_date 1:20 17.98
00207: [XIMP= 56:TIMP= 70]
00208: [SLP= 50:DT= 1.00]
00209: [LOSS= 2 :CN= 84.0]
00210: # *****
00211: # *****
00212: # *****
00213: # *****
00214: # *****
00215: # *****
00216: 001:0019 ID:NHYD AREA QPEAK TpeakDate hh:mm R.V.
00217: CALIB STANDHYD 07:Rev201 2.50 .377 No_date 1:21 21.28
00218: [XIMP= 90:TIMP= 90]
00219: [LOSS= 2 :CN= 84.0]
00220: [Pervious area: IAPER= 5.00:SLPP= 2.00:LGP= 40:MNP= 250:SCP= 0]
00221: [Impervious area: IAIMP= 2.00:SLPI= 1.00:LGI= 130:MNI= 013:SCI= 0]
00222: # *****
00223: # *****
00224: # *****
00225: # *****
00226: # *****
00227: 001:0020 CHICAGO STORM
00228: [SDT= 5.00:SDUR= 4.00:PTOT= 46.10]
00229: [A/B/C= 1081.402/ 9.194/ .823: R= 9994]
00230: # *****
00231: # *****
00232: # *****
00233: # *****
00234: # *****
00235: 001:0021 ID:NHYD AREA QPEAK TpeakDate hh:mm R.V.
00236: CALIB STANDHYD 01:EXT1 .60 .043 No_date 1:21 41.99
00237: [XIMP= 75:TIMP= 94]
00238: [LOSS= 2 :CN= 84.0]
00239: [Pervious area: IAPER= 5.00:SLPP= 50:LGP= 40:MNP= 250:SCP= 0]
00240: [Impervious area: IAIMP= 2.00:SLPI= 50:LGI= 120:MNI= 013:SCI= 0]
00241: # *****
00242: # *****
00243: # *****
00244: # *****
00245: 001:0022 ID:NHYD AREA QPEAK TpeakDate hh:mm R.V.
00246: CALIB STANDHYD 02:AREA 15.00 2.429 No_date 1:25 39.21
00247: [XIMP= 68:TIMP= 85]
00248: [LOSS= 2 :CN= 84.0]
00249: [Pervious area: IAPER= 5.00:SLPP= 50:LGP= 40:MNP= 250:SCP= 0]
00250: [Impervious area: IAIMP= 2.00:SLPI= 50:LGI= 300:MNI= 013:SCI= 0]
00251: # *****
00252: 001:0023 ID:NHYD AREA QPEAK TpeakDate hh:mm R.V.
00253: ADD HYD 01:EXT1 .60 .043 No_date 1:21 41.99
00254: 02:AREA 15.00 2.429 No_date 1:25 39.21
00255: [DT= 1.00] SUM= 03:ToPond 15.60 2.544 No_date 1:24 39.31
00256: # *****
00257: # *****
00258: # *****
00259: 001:0024 ID:NHYD AREA QPEAK TpeakDate hh:mm R.V.
00260: DESIGN STANDHYD 02:B2 .73 .160 No_date 1:20 40.49
00261: [XIMP= 68:TIMP= 85]
00262: [SLP= 50:DT= 1.00]
00263: [LOSS= 2 :CN= 84.0]
00264: # *****
00265: 001:0025 ID:NHYD AREA QPEAK TpeakDate hh:mm R.V.
00266: ADD HYD 02:B2 .73 .160 No_date 1:20 40.49
00267: 03:ToPond 15.60 2.544 No_date 1:24 39.31
00268: [DT= 1.00] SUM= 04:SumB2 16.33 2.661 No_date 1:24 39.37
00269: # *****
00270: # *****

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Table with columns: ID, HYD, AREA, QPEAK, TpeakDate, hh:mm, R, V. Contains data for various hydrology calculations including design standards, storm events, and flow rates.

Table with columns: ID, HYD, AREA, QPEAK, TpeakDate, hh:mm, R, V. Continuation of hydrology calculations from the left page, including design standards, storm events, and flow rates.

```

00541#-----
00542#-----
00543#-----
00544# 001:0062-----ID:NHYD-----AREA---QPEAK-TpeakDate_hh:mm---R,V
DESIGN STANDHYD 03:C AREA 68 280 No_date 1:20 71.03
[XIMP=68;TIMP=85]
[SLP=1.00;DT=1.00]
00547#-----
00548# [LOSS=2;CN=84.0]
00549#-----
00550# 001:0063-----ID:NHYD-----AREA---QPEAK-TpeakDate_hh:mm---R,V
ADD HYD 03:C 68 280 No_date 1:20 71.03
00551#-----
00552# [CN=84.0]
00553# [DT=1.00] SUM= 01:SumC 16.33 4.993 No_date 1:23 70.70
00554#-----
00555#-----R4-----
00556#-----
00557# 001:0064-----ID:NHYD-----AREA---QPEAK-TpeakDate_hh:mm---R,V
DESIGN STANDHYD 02:R4 46 157 No_date 1:20 67.15
[XIMP=56;TIMP=70]
[SLP=50;DT=1.00]
00560#-----
00561# [LOSS=2;CN=84.0]
00562#-----
00563# 001:0065-----ID:NHYD-----AREA---QPEAK-TpeakDate_hh:mm---R,V
ADD HYD 01:SumC 17.01 5.190 No_date 1:23 70.75
00564#-----
00565# [DT=1.00] SUM= 03:HighSt 17.49 5.308 No_date 1:23 70.65
00566#-----
00567#-----
00568#-----B1-----
00569#-----
00570# 001:0066-----ID:NHYD-----AREA---QPEAK-TpeakDate_hh:mm---R,V
CALIB NASHYD 02:B1 33 051 No_date 1:32 44.09
[CN=84.0;N=3.00]
[TP=17;DT=1.00]
00574#-----
00575#-----
00576#-----
00577# 001:0067-----ID:NHYD-----AREA---QPEAK-TpeakDate_hh:mm---R,V
ADD HYD 02:B1 33 051 No_date 1:32 44.09
[DT=1.00] SUM= 04:SumB1 17.49 5.308 No_date 1:23 70.65
00580#-----
00581#-----
00582#-----
00583#-----
00584# 001:0068-----ID:NHYD-----AREA---QPEAK-TpeakDate_hh:mm---R,V
CALIB NASHYD 01:EXT2 1.90 337 No_date 1:33 52.25
[CN=89.0;N=3.00]
[TP=19;DT=1.00]
00588#-----
00589#-----
00590#-----
00591# 001:0069-----ID:NHYD-----AREA---QPEAK-TpeakDate_hh:mm---R,V
CALIB STANDHYD 02:Goodall 2.91 761 No_date 1:22 65.53
[XIMP=56;TIMP=70]
[LOSS=2;CN=84.0]
[Pervious area: IAPER=5.00;SLPP=50;LGP=40;MNP=250;SCP=0]
[Impervious area: IAIMP=2.00;SLPI=50;LGI=240;MNI=013;SCI=0]
00595#-----
00596#-----
00597#-----
00598# 001:0070-----ID:NHYD-----AREA---QPEAK-TpeakDate_hh:mm---R,V
ADD HYD 01:EXT2 1.90 337 No_date 1:33 52.25
[DT=1.00] SUM= 05:GdsSum 4.81 954 No_date 1:23 60.28
00600#-----
00601#-----
00602#-----
00603#-----
00604#-----
00605# 001:0071-----ID:NHYD-----AREA---QPEAK-TpeakDate_hh:mm---R,V
ADD HYD 04:SumB1 17.82 5.339 No_date 1:23 70.18
[DT=1.00] SUM= 03:HighTot 22.63 6.293 No_date 1:23 68.06
00609#-----
00610#-----
00611#-----
00612#-----
00613#-----
00614# 001:0072-----ID:NHYD-----AREA---QPEAK-TpeakDate_hh:mm---R,V
DESIGN STANDHYD 06:R5 16 055 No_date 1:20 67.15
[XIMP=56;TIMP=70]
[SLP=50;DT=1.00]
00618#-----
00619#-----
00620#-----
00621#-----
00622#-----
00623#-----
00624# 001:0073-----ID:NHYD-----AREA---QPEAK-TpeakDate_hh:mm---R,V
CALIB STANDHYD 07:Rev201 2.50 1142 No_date 1:20 73.00
[XIMP=90;TIMP=90]
[LOSS=2;CN=84.0]
[Pervious area: IAPER=5.00;SLPP=2.00;LGP=40;MNP=250;SCP=0]
[Impervious area: IAIMP=2.00;SLPI=1.00;LGI=130;MNI=013;SCI=0]
00629#-----
00630#-----
00631#-----
00632#-----
00633#-----
00634#-----
00635# 001:0074-----
00636# READ STORM
00637# Filename = tim.STM
00638# Comment =
00639# [SDT=60.00;RDDR= 12.00;PTOT= 193.00]
00640#-----
00641#-----
00642#-----
00643#-----
00644#-----
00645# 001:0075-----ID:NHYD-----AREA---QPEAK-TpeakDate_hh:mm---R,V
CALIB STANDHYD 01:EXT1 60 071 No_date 7:00 188.46
[XIMP=75;TIMP=94]
[LOSS=2;CN=84.0]
[Pervious area: IAPER=5.00;SLPP=50;LGP=40;MNP=250;SCP=0]
[Impervious area: IAIMP=2.00;SLPI=1.00;LGI=120;MNI=013;SCI=0]
00650#-----
00651#-----
00652#-----
00653#-----
00654# 001:0076-----ID:NHYD-----AREA---QPEAK-TpeakDate_hh:mm---R,V
CALIB STANDHYD 02:AREA 15.00 1.742 No_date 7:00 184.40
[XIMP=68;TIMP=85]
[LOSS=2;CN=84.0]
[Pervious area: IAPER=5.00;SLPP=50;LGP=40;MNP=250;SCP=0]
[Impervious area: IAIMP=2.00;SLPI=50;LGI=300;MNI=013;SCI=0]
00660#-----
00661# 001:0077-----ID:NHYD-----AREA---QPEAK-TpeakDate_hh:mm---R,V
ADD HYD 01:EXT1 60 071 No_date 7:00 188.46
[DT=1.00] SUM= 03:ToPond 15.60 1.814 No_date 7:00 184.56
00665#-----
00666#-----
00667#-----
00668# 001:0078-----ID:NHYD-----AREA---QPEAK-TpeakDate_hh:mm---R,V
DESIGN STANDHYD 02:B2 73 086 No_date 7:00 185.74
[XIMP=68;TIMP=85]
[SLP=50;DT=1.00]
00671#-----
00672# [LOSS=2;CN=84.0]
00673#-----
00674# 001:0079-----ID:NHYD-----AREA---QPEAK-TpeakDate_hh:mm---R,V
ADD HYD 02:B2 73 086 No_date 7:00 185.74

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00675#-----
00676#-----
00677# [DT=1.00] SUM= 04:SumB2 16.33 1.900 No_date 7:00 184.61
00678#-----
00679#-----
00680#-----
00681# 001:0080-----ID:NHYD-----AREA---QPEAK-TpeakDate_hh:mm---R,V
DESIGN STANDHYD 03:C 68 080 No_date 7:00 185.74
[XIMP=68;TIMP=85]
[SLP=1.00;DT=1.00]
00685#-----
00686# [LOSS=2;CN=84.0]
00687#-----
00688# 001:0081-----ID:NHYD-----AREA---QPEAK-TpeakDate_hh:mm---R,V
ADD HYD 03:C 68 080 No_date 7:00 185.74
[DT=1.00] SUM= 04:SumB2 16.33 1.900 No_date 7:00 184.61
00690#-----
00691#-----
00692#-----
00693#-----
00694# 001:0082-----ID:NHYD-----AREA---QPEAK-TpeakDate_hh:mm---R,V
DESIGN STANDHYD 02:R4 48 055 No_date 7:00 179.72
[XIMP=56;TIMP=70]
[SLP=50;DT=1.00]
00698#-----
00699# [LOSS=2;CN=84.0]
00700# 001:0083-----ID:NHYD-----AREA---QPEAK-TpeakDate_hh:mm---R,V
ADD HYD 01:SumC 17.01 1.990 No_date 7:00 184.56
[DT=1.00] SUM= 02:R4 48 055 No_date 7:00 179.72
00703#-----
00704#-----
00705#-----
00706#-----
00707# 001:0084-----ID:NHYD-----AREA---QPEAK-TpeakDate_hh:mm---R,V
CALIB NASHYD 02:B1 33 035 No_date 7:00 149.52
[CN=84.0;N=3.00]
[TP=17;DT=1.00]
00710#-----
00711#-----
00712#-----
00713#-----
00714# 001:0085-----ID:NHYD-----AREA---QPEAK-TpeakDate_hh:mm---R,V
ADD HYD 02:B1 33 035 No_date 7:00 149.52
[DT=1.00] SUM= 04:SumB1 17.82 2.070 No_date 7:00 183.87
00718#-----
00719#-----
00720#-----
00721#-----
00722# 001:0086-----ID:NHYD-----AREA---QPEAK-TpeakDate_hh:mm---R,V
CALIB NASHYD 01:EXT2 1.90 337 No_date 7:00 162.18
[CN=89.0;N=3.00]
[TP=19;DT=1.00]
00725#-----
00726#-----
00727#-----
00728# 001:0087-----ID:NHYD-----AREA---QPEAK-TpeakDate_hh:mm---R,V
CALIB STANDHYD 02:Goodall 2.91 329 No_date 7:00 178.02
[XIMP=56;TIMP=70]
[LOSS=2;CN=84.0]
[Pervious area: IAPER=5.00;SLPP=50;LGP=40;MNP=250;SCP=0]
[Impervious area: IAIMP=2.00;SLPI=50;LGI=240;MNI=013;SCI=0]
00734#-----
00735# 001:0088-----ID:NHYD-----AREA---QPEAK-TpeakDate_hh:mm---R,V
ADD HYD 01:EXT2 1.90 337 No_date 7:00 162.18
[DT=1.00] SUM= 02:Goodall 3.91 329 No_date 7:00 178.02
00738#-----
00739#-----
00740#-----
00741#-----
00742# 001:0089-----ID:NHYD-----AREA---QPEAK-TpeakDate_hh:mm---R,V
ADD HYD 04:SumB1 17.82 2.070 No_date 7:00 183.87
[DT=1.00] SUM= 05:GdsSum 4.81 543 No_date 7:00 171.76
00745#-----
00746#-----
00747#-----
00748#-----
00749#-----
00750#-----
00751# 001:0090-----ID:NHYD-----AREA---QPEAK-TpeakDate_hh:mm---R,V
DESIGN STANDHYD 06:R5 16 018 No_date 7:00 179.72
[XIMP=56;TIMP=70]
[SLP=50;DT=1.00]
00754#-----
00755# [LOSS=2;CN=84.0]
00756#-----
00757#-----
00758#-----
00759#-----
00760#-----
00761# 001:0091-----ID:NHYD-----AREA---QPEAK-TpeakDate_hh:mm---R,V
CALIB STANDHYD 07:Rev201 2.50 295 No_date 7:00 186.85
[XIMP=90;TIMP=90]
[LOSS=2;CN=84.0]
[Pervious area: IAPER=5.00;SLPP=2.00;LGP=40;MNP=250;SCP=0]
[Impervious area: IAIMP=2.00;SLPI=1.00;LGI=130;MNI=013;SCI=0]
00767#-----
00768# 001:0092-----
00769# FINISH
00770#-----
00771#-----
00772#-----
00773#-----
00774# Simulation ended on 2015-04-09 at 09:29:54
00775#-----
00776#-----

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00001> # Metric units
00002> #*****
00003> # Project Name: [West End Commercial, Collingwood] Project Number: [183-269]
00004> # Date: April 9, 2015
00005> # Modeller: [D. Cadouogall]
00006> # Company: [C.F. Crozier & Associates Inc.]
00007> # License #: [3737016]
00008> #*****
00009> # Uncontrolled Site Conditions - no ponds
00010> #*****
00011> # Rainfall Data: Storms are the SCS Volumes from MTO Design Chart 1.01(e)
00012> # District 5: Owen Sound, Basins West of and including Collingwood.
00013> #*****
00014> # START TZERO=[0.0], METOUT=[2], NSTORM=[0], NRAIN=[0]
00015> #*****
00016> #*****
00017> #*****
00018> #*****
00019> #*****
00020> #*****
00021> # MASS STORM POTATL=[25] (mm), CBSDT=[1] (min),
00022> # CURVE_FILENAME=[SCS24HI1_mst]
00023> #*****
00024> #*****
00025> #*****
00026> #*****
00027> #*****
00028> # CALIB STANDHYD ID=[1], NHYD=[EXT1], DT=[1] (min), AREA=[0.6] (ha),
00029> # XIMP=[0.75], TIMP=[0.94], DWF=[0] (cms), LOSS=[2],
00030> # SCS curve number CN=[84],
00031> # Pervious surfaces: IAPER=[5.0] (mm), SLEP=[0.5] (%),
00032> # LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00033> # Impervious surfaces: IAIMP=[2.0] (mm), SLEP=[1.0] (%),
00034> # LGI=[120] (m), MNI=[0.013], SCI=[0] (min)
00035> # RAINFALL=[ , , , ] (mm/hr) END=-1
00036> #*****
00037> #*****
00038> #*****
00039> # CALIB STANDHYD ID=[2], NHYD=[AREA], DT=[1] (min), AREA=[15] (ha),
00040> # XIMP=[0.68], TIMP=[0.85], DWF=[0] (cms), LOSS=[2],
00041> # SCS curve number CN=[84],
00042> # Pervious surfaces: IAPER=[5] (mm), SLEP=[0.5] (%),
00043> # LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00044> # Impervious surfaces: IAIMP=[2] (mm), SLEP=[0.5] (%),
00045> # LGI=[120] (m), MNI=[0.013], SCI=[0] (min)
00046> # RAINFALL=[ , , , ] (mm/hr) END=-1
00047> #*****
00048> # ADD HYD IDsum=[3], NHYD=[ToPond], IDs to add=[1+2]
00049> #*****
00050> #*****
00051> #*****
00052> # DESIGN STANDHYD ID=[2], NHYD=[B2], DT=[1] min, AREA=[0.73] (ha),
00053> # XIMP=[0.68], TIMP=[0.85], DWF=[0] (cms), LOSS=[2], CN=[84],
00054> # SLOPE=[0.5] (%), RAINFALL=[ , , , ] (mm/hr), END=-1
00055> #*****
00056> # ADD HYD IDsum=[4], NHYD=[SumB2], IDs to add=[2+3]
00057> #*****
00058> #*****
00059> #*****
00060> # DESIGN STANDHYD ID=[3], NHYD=[C], DT=[1] min, AREA=[0.48] (ha),
00061> # XIMP=[0.68], TIMP=[0.85], DWF=[0] (cms), LOSS=[2], CN=[84],
00062> # SLOPE=[1.0] (%), RAINFALL=[ , , , ] (mm/hr), END=-1
00063> #*****
00064> # ADD HYD IDsum=[1], NHYD=[SumC], IDs to add=[3+4]
00065> #*****
00066> #*****
00067> #*****
00068> # DESIGN STANDHYD ID=[2], NHYD=[R4], DT=[1] min, AREA=[0.48] (ha),
00069> # XIMP=[0.75], TIMP=[0.70], DWF=[0] (cms), LOSS=[2], CN=[84],
00070> # SLOPE=[0.5] (%), RAINFALL=[ , , , ] (mm/hr), END=-1
00071> #*****
00072> # ADD HYD IDsum=[3], NHYD=[HighSt], IDs to add=[1+2]
00073> #*****
00074> #*****
00075> #*****
00076> # CALIB NASHYD ID=[2], NHYD=[B1], DT=[1] min, AREA=[0.33] (ha),
00077> # DWF=[0] (cms), CN/C=[84], IA=[5.0] (mm),
00078> # N=[3], TP=[0.17] hrs,
00079> # RAINFALL=[ , , , ] (mm/hr), END=-1
00080> #*****
00081> #*****
00082> #*****
00083> # ADD HYD IDsum=[4], NHYD=[SumB1], IDs to add=[2+3]
00084> #*****
00085> #*****
00086> #*****
00087> # CALIB NASHYD ID=[1], NHYD=[EXT2], DT=[1] min, AREA=[1.9] (ha),
00088> # DWF=[0] (cms), CN/C=[89], IA=[3.9] (mm),
00089> # N=[3], TP=[0.19] hrs,
00090> # RAINFALL=[ , , , ] (mm/hr), END=-1
00091> #*****
00092> #*****
00093> #*****
00094> # CALIB STANDHYD ID=[2], NHYD=[Goodall], DT=[1] min, AREA=[2.9] (ha),
00095> # XIMP=[0.56], TIMP=[0.70], DWF=[0] (cms), LOSS=[2],
00096> # SCS curve number CN=[84],
00097> # Pervious surfaces: IAPER=[5.0] (mm), SLEP=[0.5] (%),
00098> # LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00099> # Impervious surfaces: IAIMP=[2.0] (mm), SLEP=[0.5] (%),
00100> # LGI=[120] (m), MNI=[0.013], SCI=[0] (min)
00101> # RAINFALL=[ , , , ] (mm/hr), END=-1
00102> #*****
00103> # ADD HYD IDsum=[5], NHYD=[GdSum], IDs to add=[1+2]
00104> #*****
00105> #*****
00106> #*****
00107> # ADD HYD IDsum=[3], NHYD=[HighTot], IDs to add=[4+5]
00108> #*****
00109> #*****
00110> #*****
00111> #*****
00112> #*****
00113> # DESIGN STANDHYD ID=[6], NHYD=[R5], DT=[1] min, AREA=[0.16] (ha),
00114> # XIMP=[0.9], TIMP=[0.70], DWF=[0] (cms), LOSS=[2], CN=[84],
00115> # SLOPE=[0.5] (%), RAINFALL=[ , , , ] (mm/hr), END=-1
00116> #*****
00117> #*****
00118> #*****
00119> #*****
00120> #*****
00121> # CALIB STANDHYD ID=[7], NHYD=[Rev201], DT=[1] (min), AREA=[2.50] (ha),
00122> # XIMP=[0.9], TIMP=[0.9], DWF=[0] (cms), LOSS=[2],
00123> # SCS curve number CN=[84],
00124> # Pervious surfaces: IAPER=[5.0] (mm), SLEP=[2] (%),
00125> # LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00126> # Impervious surfaces: IAIMP=[2] (mm), SLEP=[1] (%),
00127> # LGI=[130] (m), MNI=[0.013], SCI=[0] (min)
00128> # RAINFALL=[ , , , ] (mm/hr), END=-1
00129> #*****
00130> #*****
00131> #*****
00132> #*****
00133> #*****
00134> # MASS STORM POTATL=[86.4] (mm), CBSDT=[1] (min),
00135> # CURVE_FILENAME=[SCS24HI1_mst]

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00136> #*****
00137> #*****
00138> #*****
00139> #*****
00140> #*****
00141> # EXTERNAL AREA #1
00142> # CALIB STANDHYD ID=[1], NHYD=[EXT1], DT=[1] (min), AREA=[0.6] (ha),
00143> # XIMP=[0.75], TIMP=[0.94], DWF=[0] (cms), LOSS=[2],
00144> # SCS curve number CN=[84],
00145> # Pervious surfaces: IAPER=[5.0] (mm), SLEP=[0.5] (%),
00146> # LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00147> # Impervious surfaces: IAIMP=[2.0] (mm), SLEP=[1.0] (%),
00148> # LGI=[120] (m), MNI=[0.013], SCI=[0] (min)
00149> # RAINFALL=[ , , , ] (mm/hr) END=-1
00150> #*****
00151> #*****
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00153> #*****
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00268> #*****
00269> #*****
00270> #*****
00271> #*****
00272> #*****

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00271> LGI=300(m), MNI=0.013, SCI=0(min)
00272> RAINFALL=[ , , , ](mm/hr), END=1
00273>
00274> ADD HYD IDsum=3, NHYD=["ToPond"], IDs to add=[1+2]
00275>
00276> B2
00277>
00278> DESIGN STANDHYD ID=[2], NHYD=["B2"], DT=[1]min, AREA=[0.73](ha),
XIMP=[0.68], TIMP=[0.85], DWF=[0](cms), LOSS=[2], CN=[84],
SLOPE=[0.5](%), RAINFALL=[ , , , ](mm/hr), END=1
00279>
00280>
00281>
00282> ADD HYD IDsum=4, NHYD=["SumB2"], IDs to add=[2+3]
00283>
00284>
00285>
00286> DESIGN STANDHYD ID=[3], NHYD=["C"], DT=[1]min, AREA=[0.68](ha),
XIMP=[0.68], TIMP=[0.85], DWF=[0](cms), LOSS=[2], CN=[84],
SLOPE=[1.0](%), RAINFALL=[ , , , ](mm/hr), END=1
00287>
00288>
00289>
00290> ADD HYD IDsum=1, NHYD=["SumC"], IDs to add=[3+4]
00291>
00292>
00293>
00294> DESIGN STANDHYD ID=[2], NHYD=["R4"], DT=[1]min, AREA=[0.48](ha),
XIMP=[0.56], TIMP=[0.70], DWF=[0](cms), LOSS=[2], CN=[84],
SLOPE=[0.5](%), RAINFALL=[ , , , ](mm/hr), END=1
00295>
00296>
00297>
00298> ADD HYD IDsum=3, NHYD=["HighSt"], IDs to add=[1+2]
00299>
00300>
00301>
00302> CALIB NASHYD ID=[2], NHYD=["B1"], DT=[1]min, AREA=[0.33](ha),
DWF=[0](cms), CN/C=[84], IA=[5.0](mm),
N=[3], TP=[0.17]hrs,
RAINFALL=[ , , , ](mm/hr), END=1
00303>
00304>
00305>
00306>
00307> TOTAL DISCHARGE TO HIGH STREET FROM SITE
00308>
00309>
00310> ADD HYD IDsum=4, NHYD=["SumB1"], IDs to add=[2+3]
00311>
00312> EXTERNAL AREA #2
00313>
00314> CALIB NASHYD ID=[1], NHYD=["EXT2"], DT=[1]min, AREA=[1.9](ha),
DWF=[0](cms), CN/C=[89], IA=[3.9](mm),
N=[3], TP=[0.19]hrs,
RAINFALL=[ , , , ](mm/hr), END=1
00315>
00316>
00317>
00318>
00319>
00320> CALIB STANDHYD ID=[2], NHYD=["Goodall"], DT=[1]min, AREA=[2.91](ha),
XIMP=[0.56], TIMP=[0.70], DWF=[0](cms), LOSS=[2],
SCS curve number CN=[84],
Pervious surfaces: IAPER=[5.0](mm), SLPP=[0.5](%),
LGP=[40](mm), MNP=[0.25], SCP=[0](min),
Impervious surfaces: IAIMP=[2.0](mm), SLP=[0.5](%),
LGI=[240](m), MNI=[0.013], SCI=[0](min)
RAINFALL=[ , , , ](mm/hr), END=1
00321>
00322>
00323>
00324>
00325>
00326>
00327>
00328>
00329> ADD HYD IDsum=5, NHYD=["GdSum"], IDs to add=[1+2]
00330>
00331> TOTAL DISCHARGE TO HIGH STREET
00332>
00333> ADD HYD IDsum=3, NHYD=["HighTot"], IDs to add=[4+5]
00334>
00335>
00336>
00337>
00338>
00339>
00340> DESIGN STANDHYD ID=[6], NHYD=["R5"], DT=[1]min, AREA=[0.16](ha),
XIMP=[0.56], TIMP=[0.70], DWF=[0](cms), LOSS=[2], CN=[84],
SLOPE=[0.5](%), RAINFALL=[ , , , ](mm/hr), END=1
00341>
00342>
00343>
00344>
00345>
00346>
00347> CALIB STANDHYD ID=[7], NHYD=["Rev201"], DT=[1]min, AREA=[3.50](ha),
XIMP=[0.9], TIMP=[0.91], DWF=[0](cms), LOSS=[2],
SCS curve number CN=[84],
Pervious surfaces: IAPER=[5.0](mm), SLPP=[0.5](%),
LGP=[40](mm), MNP=[0.25], SCP=[0](min),
Impervious surfaces: IAIMP=[2](mm), SLP=[1](%),
LGI=[300](m), MNI=[0.013], SCI=[0](min)
RAINFALL=[ , , , ](mm/hr), END=1
00348>
00349>
00350>
00351>
00352>
00353>
00354>
00355>
00356>
00357>
00358>
00359>
00360> MASS STORM POTATL=[108.0](mm), CSDT=[12](min),
CURVE_FILENAME=["SCS24H11.MST"]
00361>
00362>
00363>
00364>
00365>
00366>
00367> CALIB STANDHYD ID=[1], NHYD=["EXT1"], DT=[1](min), AREA=[0.6](ha),
XIMP=[0.75], TIMP=[0.94], DWF=[0](cms), LOSS=[2],
SCS curve number CN=[84],
Pervious surfaces: IAPER=[5.0](mm), SLPP=[0.5](%),
LGP=[40](mm), MNP=[0.25], SCP=[0](min),
Impervious surfaces: IAIMP=[2](mm), SLP=[1](%),
LGI=[300](m), MNI=[0.013], SCI=[0](min)
RAINFALL=[ , , , ](mm/hr), END=1
00368>
00369>
00370>
00371>
00372>
00373>
00374>
00375>
00376>
00377>
00378> CALIB STANDHYD ID=[2], NHYD=["AREA"], DT=[1](min), AREA=[15](ha),
XIMP=[0.68], TIMP=[0.85], DWF=[0](cms), LOSS=[2],
SCS curve number CN=[84],
Pervious surfaces: IAPER=[5](mm), SLPP=[0.5](%),
LGP=[40](mm), MNP=[0.25], SCP=[0](min),
Impervious surfaces: IAIMP=[2](mm), SLP=[0.5](%),
LGI=[300](m), MNI=[0.013], SCI=[0](min)
RAINFALL=[ , , , ](mm/hr), END=1
00379>
00380>
00381>
00382>
00383>
00384>
00385>
00386>
00387> ADD HYD IDsum=1, NHYD=["ToPond"], IDs to add=[1+2]
00388>
00389>
00390>
00391> DESIGN STANDHYD ID=[2], NHYD=["B2"], DT=[1]min, AREA=[0.73](ha),
XIMP=[0.68], TIMP=[0.85], DWF=[0](cms), LOSS=[2], CN=[84],
SLOPE=[0.5](%), RAINFALL=[ , , , ](mm/hr), END=1
00392>
00393>
00394>
00395> ADD HYD IDsum=4, NHYD=["SumB2"], IDs to add=[2+3]
00396>
00397>
00398>
00399> DESIGN STANDHYD ID=[3], NHYD=["C"], DT=[1]min, AREA=[0.68](ha),
XIMP=[0.68], TIMP=[0.85], DWF=[0](cms), LOSS=[2], CN=[84],
SLOPE=[1.0](%), RAINFALL=[ , , , ](mm/hr), END=1
00400>
00401>
00402>
00403> ADD HYD IDsum=1, NHYD=["SumC"], IDs to add=[3+4]
00404>
00405>

```

```

00406> #
00407> DESIGN STANDHYD ID=[2], NHYD=["R4"], DT=[1]min, AREA=[0.48](ha),
XIMP=[0.56], TIMP=[0.70], DWF=[0](cms), LOSS=[2], CN=[84],
SLOPE=[0.5](%), RAINFALL=[ , , , ](mm/hr), END=1
00408>
00409>
00410>
00411> ADD HYD IDsum=3, NHYD=["HighSt"], IDs to add=[1+2]
00412>
00413>
00414>
00415> CALIB NASHYD ID=[2], NHYD=["B1"], DT=[1]min, AREA=[0.33](ha),
DWF=[0](cms), CN/C=[84], IA=[5.0](mm),
N=[3], TP=[0.17]hrs,
RAINFALL=[ , , , ](mm/hr), END=1
00416>
00417>
00418>
00419>
00420>
00421>
00422> ADD HYD IDsum=4, NHYD=["SumB1"], IDs to add=[2+3]
00423>
00424>
00425>
00426>
00427> CALIB NASHYD ID=[3], NHYD=["EXT2"], DT=[1]min, AREA=[1.9](ha),
DWF=[0](cms), CN/C=[89], IA=[3.9](mm),
N=[3], TP=[0.19]hrs,
RAINFALL=[ , , , ](mm/hr), END=1
00428>
00429>
00430>
00431>
00432>
00433> CALIB STANDHYD ID=[2], NHYD=["Goodall"], DT=[1](min), AREA=[2.91](ha),
XIMP=[0.56], TIMP=[0.70], DWF=[0](cms), LOSS=[2],
SCS curve number CN=[84],
Pervious surfaces: IAPER=[5.0](mm), SLPP=[0.5](%),
LGP=[40](mm), MNP=[0.25], SCP=[0](min),
Impervious surfaces: IAIMP=[2.0](mm), SLP=[0.5](%),
LGI=[240](m), MNI=[0.013], SCI=[0](min)
RAINFALL=[ , , , ](mm/hr), END=1
00434>
00435>
00436>
00437>
00438>
00439>
00440>
00441>
00442> ADD HYD IDsum=5, NHYD=["GdSum"], IDs to add=[1+2]
00443>
00444>
00445>
00446>
00447>
00448>
00449>
00450>
00451>
00452> DESIGN STANDHYD ID=[6], NHYD=["R5"], DT=[1]min, AREA=[0.16](ha),
XIMP=[0.56], TIMP=[0.70], DWF=[0](cms), LOSS=[2], CN=[84],
SLOPE=[0.5](%), RAINFALL=[ , , , ](mm/hr), END=1
00453>
00454>
00455>
00456>
00457>
00458>
00459>
00460> CALIB STANDHYD ID=[7], NHYD=["Rev201"], DT=[1](min), AREA=[2.50](ha),
XIMP=[0.9], TIMP=[0.91], DWF=[0](cms), LOSS=[2],
SCS curve number CN=[84],
Pervious surfaces: IAPER=[5.0](mm), SLPP=[0.5](%),
LGP=[40](mm), MNP=[0.25], SCP=[0](min),
Impervious surfaces: IAIMP=[2](mm), SLP=[1](%),
LGI=[300](m), MNI=[0.013], SCI=[0](min)
RAINFALL=[ , , , ](mm/hr), END=1
00461>
00462>
00463>
00464>
00465>
00466>
00467>
00468>
00469>
00470>
00471>
00472>
00473>
00474>
00475>
00476>
00477>
00478>
00479> CALIB STANDHYD ID=[1], NHYD=["EXT1"], DT=[1](min), AREA=[0.6](ha),
XIMP=[0.75], TIMP=[0.94], DWF=[0](cms), LOSS=[2],
SCS curve number CN=[84],
Pervious surfaces: IAPER=[5.0](mm), SLPP=[0.5](%),
LGP=[40](mm), MNP=[0.25], SCP=[0](min),
Impervious surfaces: IAIMP=[2.0](mm), SLP=[1.0](%),
LGI=[220](m), MNI=[0.013], SCI=[0](min)
RAINFALL=[ , , , ](mm/hr), END=1
00480>
00481>
00482>
00483>
00484>
00485>
00486>
00487>
00488>
00489>
00490> CALIB STANDHYD ID=[2], NHYD=["AREA"], DT=[1](min), AREA=[15](ha),
XIMP=[0.68], TIMP=[0.85], DWF=[0](cms), LOSS=[2],
SCS curve number CN=[84],
Pervious surfaces: IAPER=[5](mm), SLPP=[0.5](%),
LGP=[40](mm), MNP=[0.25], SCP=[0](min),
Impervious surfaces: IAIMP=[2](mm), SLP=[0.5](%),
LGI=[300](m), MNI=[0.013], SCI=[0](min)
RAINFALL=[ , , , ](mm/hr), END=1
00491>
00492>
00493>
00494>
00495>
00496>
00497>
00498>
00499> ADD HYD IDsum=3, NHYD=["ToPond"], IDs to add=[1+2]
00500>
00501>
00502>
00503> DESIGN STANDHYD ID=[2], NHYD=["B2"], DT=[1]min, AREA=[0.73](ha),
XIMP=[0.68], TIMP=[0.85], DWF=[0](cms), LOSS=[2], CN=[84],
SLOPE=[0.5](%), RAINFALL=[ , , , ](mm/hr), END=1
00504>
00505>
00506>
00507> ADD HYD IDsum=4, NHYD=["SumB2"], IDs to add=[2+3]
00508>
00509>
00510>
00511> DESIGN STANDHYD ID=[3], NHYD=["C"], DT=[1]min, AREA=[0.68](ha),
XIMP=[0.68], TIMP=[0.85], DWF=[0](cms), LOSS=[2], CN=[84],
SLOPE=[1.0](%), RAINFALL=[ , , , ](mm/hr), END=1
00512>
00513>
00514>
00515> ADD HYD IDsum=1, NHYD=["SumC"], IDs to add=[3+4]
00516>
00517>
00518>
00519> DESIGN STANDHYD ID=[2], NHYD=["R4"], DT=[1]min, AREA=[0.48](ha),
XIMP=[0.56], TIMP=[0.70], DWF=[0](cms), LOSS=[2], CN=[84],
SLOPE=[0.5](%), RAINFALL=[ , , , ](mm/hr), END=1
00520>
00521>
00522>
00523> ADD HYD IDsum=3, NHYD=["HighSt"], IDs to add=[1+2]
00524>
00525>
00526>
00527> CALIB NASHYD ID=[3], NHYD=["B1"], DT=[1]min, AREA=[0.33](ha),
DWF=[0](cms), CN/C=[84], IA=[5.0](mm),
N=[3], TP=[0.17]hrs,
RAINFALL=[ , , , ](mm/hr), END=1
00528>
00529>
00530>
00531>
00532>
00533>
00534> ADD HYD IDsum=4, NHYD=["SumB1"], IDs to add=[2+3]
00535>
00536>
00537>
00538>
00539>
00540>
00541>
00542>
00543>
00544>
00545>
00546>
00547>
00548>
00549>
00550>

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```

00541> RAINFALL=[ , , , ](mm/hr), END=-1
00542> *#-----|-----
00543> *#-----|-----GOODALL SITE-----|-----
00544> *#-----|-----
00545> CALIB STANDHYD ID=[2], NHYD=["Goodall"], DT=[1](min), AREA=[2.91](ha),
00546> XIMP=[0.56], TIME=[0.70], DWF=[0](cms), LOSS=[2],
00547> SCS curve number CN=[84],
00548> Pervious surfaces: IApex=[5.0](mm), SLEPP=[0.5](%),
00549> LOP=[40](m), MNP=[0.25], SCP=[0](min),
00550> Impervious surfaces: IAImp=[2.0](mm), SLEPI=[0.5](%),
00551> LGI=[240](m), MNI=[0.013], SCI=[0](min)
00552> RAINFALL=[ , , , ](mm/hr), END=-1
00553> *#-----|-----
00554> ADD HYD IDname=[5], NHYD=["GdSum"], IDs to add=[1+2]
00555> *#-----|-----
00556> *#-----|-----TOTAL DISCHARGE TO HIGH STREET-----|-----
00557> *#-----|-----
00558> ADD HYD IDname=[3], NHYD=["HighTot"], IDs to add=[4+5]
00559> *#-----|-----
00560> *#-----|-----OUTLET: CAMBRIDGE STREET-----|-----
00561> *#-----|-----
00562> *#-----|-----RS-----|-----
00563> *#-----|-----
00564> DESIGN STANDHYD ID=[6], NHYD=["R5"], DT=[1]min, AREA=[0.16](ha),
00565> XIMP=[0.56], TIME=[0.70], DWF=[0](cms), LOSS=[2], CN=[84],
00566> SLOPE=[0.5](%), RAINFALL=[ , , , ](mm/hr), END=-1
00567> *#-----|-----
00568> *#-----|-----OUTLET: HOME DEPOT-----|-----
00569> *#-----|-----SWM POND-----|-----
00570> *#-----|-----REVISED 201-----|-----
00571> *#-----|-----
00572> CALIB STANDHYD ID=[7], NHYD=["Rev201"], DT=[1](min), AREA=[2.50](ha),
00573> XIMP=[0.9], TIME=[0.9], DWF=[0](cms), LOSS=[2],
00574> SCS curve number CN=[84],
00575> Pervious surfaces: IApex=[5.0](mm), SLEPP=[2](%),
00576> LOP=[40](m), MNP=[0.25], SCP=[0](min),
00577> Impervious surfaces: IAImp=[2](mm), SLEPI=[1](%),
00578> LGI=[130](m), MNI=[0.013], SCI=[0](min)
00579> RAINFALL=[ , , , ](mm/hr), END=-1
00580> *#-----|-----
00581> FINISH
00582>
00583>
00584>

```



```

00001 -----
00002 -----
00003 SSSSS W M M M M H H Y Y M M M O O O 999 999 *****
00004 S W W W M M M H H Y Y M M M O O O # # 9 9 9 Ver 4.05
00005 SSSSS W M M M M H H H H Y Y M M M O O O # # 9 9 9 Ver 4.05
00006 S W W W M M M H H Y Y M M M O O O 9999 9999 Sept 2011
00007 SSSSS W M M M M H H Y Y M M M O O O
00008 # 9 9 9 # 3737016
00009 Stormwater Management Hydrologic Model 999 999 *****
00010 -----
00011 ***** SWMHYMO Ver 4.05 *****
00012 ***** A single event and continuous hydrologic simulation model *****
00013 ***** based on the principles of HYMO and its successors *****
00014 ***** OTHYMO-83 and OTHYMO-89 *****
00015 ***** Distributed by: J.F. Sabourin and Associates Inc. *****
00016 ***** Ottawa, Ontario: (613) 836-3884 *****
00017 ***** Gatineau, Quebec: (819) 243-6858 *****
00018 ***** E-Mail: swmhymsj@isa.com *****
00019 *****
00020 *****
00021 *****
00022 *****
00023 ***** Licensed user: C.F. Crozier & Associates Inc *****
00024 ***** Collingwood SERIAL#:3737016 *****
00025 *****
00026 *****
00027 *****
00028 ***** PROGRAM ARRAY DIMENSIONS *****
00029 *****
00030 ***** Maximum value for ID numbers : 10 *****
00031 ***** Max. number of rainfall points: 105408 *****
00032 ***** Max. number of flow points: 105408 *****
00033 *****
00034 *****
00035 ***** DESCRIPTION SUMMARY TABLE HEADERS (units depend on METOUT in START) *****
00036 ***** ID: Hydrograph Identification numbers, (1-10) *****
00037 ***** NHYD: Hydrograph reference numbers, (6 digits or characters) *****
00038 ***** AREA: Drainage area associated with hydrograph, (ac.) or (ha.) *****
00039 ***** OPEAK: Peak flow of simulated hydrograph, (ft3/s) or (m3/s) *****
00040 ***** PeakDate: hh:mm is the date and time of the peak flow. *****
00041 ***** R.V.: Runoff Volume of simulated hydrograph, (in) or (cm) *****
00042 ***** R.C.: Runoff Coefficient of simulated hydrograph, (ratio) *****
00043 ***** *: see WARNING or NOTE message printed at end of run. *****
00044 ***** **: see ERROR message printed at end of run. *****
00045 *****
00046 *****
00047 *****
00048 *****
00049 *****
00050 *****
00051 *****
00052 *****
00053 ***** SUMMARY OUTPUT *****
00054 *****
00055 ***** DATE: 2015-04-09 TIME: 09:28:45 RUN COUNTER: 000142 *****
00056 *****
00057 ***** Input filename: C:\SWMHYMO\THIRDH-1\UNCONT-1\UNCSCS4.DAT *****
00058 ***** Output filename: C:\SWMHYMO\THIRDH-1\UNCONT-1\UNCSCS4.out *****
00059 ***** Summary filename: C:\SWMHYMO\THIRDH-1\UNCONT-1\UNCSCS4.sum *****
00060 *****
00061 *****
00062 *****
00063 *****
00064 *****
00065 *****
00066 *****
00067 *****
00068 ***** Project Name: [West End Commercial, Collingwood] Project Number: [183-269] *****
00069 ***** Date: [April 9, 2015] *****
00070 ***** Modeller: [T. MacDougall] *****
00071 ***** Company: [C.F. Crozier & Associates Inc.] *****
00072 ***** License #: [3737016] *****
00073 *****
00074 ***** Uncontrolled Site Conditions: no ponds *****
00075 *****
00076 ***** Rainfall Data: Storms are the SCS Volumes from MTO Design Chart 1.01(e) *****
00077 ***** District 5: Owen Sound, Basins West of and including Collingwood. *****
00078 *****
00079 ***** RUN: COMMAND# *****
00080 ***** 001:0001 *****
00081 ***** STRM *****
00082 ***** [ZERO = .00 hrs on 0] *****
00083 ***** [METOUT = 2 (1=imperial, 2=metric output)] *****
00084 ***** [INSTORM = 1] *****
00085 ***** [NRUN = 1] *****
00086 *****
00087 *****
00088 ***** 25mm event *****
00089 *****
00090 *****
00091 *****
00092 ***** 001:0002 *****
00093 ***** MASS STORM *****
00094 ***** File name = C:\SWMHYMO\THIRDH-1\UNCONT-1\SCS24HI1.mst *****
00095 ***** Comment = 24 hour SCS II storm mass curve *****
00096 ***** [SDT = 1.00;SDUR = 24.00;PTOT = 25.00] *****
00097 *****
00098 *****
00099 *****
00100 *****
00101 ***** 001:0003 -ID:NHYD -AREA -OPEAK-TpeakDate hh:mm -R.V. *****
00102 ***** CALIB STANDHYD 01:EXT1 .60 .036 No_date 12:12 21.25 *****
00103 ***** [XIMP = 75;TIMP = 94] *****
00104 ***** [LOSS = 2 ;CN = 84.0] *****
00105 ***** [Impervious area: IArea = 5.00;SLPP = 50;LGP = 40;MNP = 250;SCP = .0] *****
00106 ***** [Impervious area: IAImp = 2.00;SLPI = 1.00;LGI = 130;MMI = .013;SCI = .0] *****
00107 *****
00108 *****
00109 *****
00110 ***** 001:0004 -ID:NHYD -AREA -OPEAK-TpeakDate hh:mm -R.V. *****
00111 ***** CALIB STANDHYD 02:AREA 15.00 .627 No_date 12:14 19.26 *****
00112 ***** [XIMP = 68;TIMP = 85] *****
00113 ***** [LOSS = 2 ;CN = 84.0] *****
00114 ***** [Impervious area: IArea = 5.00;SLPP = 50;LGP = 40;MNP = 250;SCP = .0] *****
00115 ***** [Impervious area: IAImp = 2.00;SLPI = 1.00;LGI = 130;MMI = .013;SCI = .0] *****
00116 *****
00117 ***** 001:0005 -ID:NHYD -AREA -OPEAK-TpeakDate hh:mm -R.V. *****
00118 ***** ADD HYD 01:EXT1 .60 .036 No_date 12:12 21.25 *****
00119 ***** 02:AREA 15.00 .627 No_date 12:16 19.26 *****
00120 ***** [DT = 1.00] SUM = 03:ToPond 15.60 .658 No_date 12:15 19.34 *****
00121 *****
00122 *****
00123 *****
00124 ***** 001:0006 -ID:NHYD -AREA -OPEAK-TpeakDate hh:mm -R.V. *****
00125 ***** DESIGN STANDHYD 02:B2 .73 .040 No_date 12:12 20.48 *****
00126 ***** [XIMP = 40;TIMP = 85] *****
00127 ***** [SLP = 50;DT = 1.00] *****
00128 ***** [LOSS = 2 ;CN = 84.0] *****
00129 *****
00130 ***** 001:0007 -ID:NHYD -AREA -OPEAK-TpeakDate hh:mm -R.V. *****
00131 ***** ADD HYD 02:B2 .73 .040 No_date 12:12 20.48 *****
00132 ***** 03:ToPond 15.60 .658 No_date 12:15 19.34 *****
00133 ***** [DT = 1.00] SUM = 04:SumB2 16.33 .692 No_date 12:15 19.39 *****
00134 *****
00135 *****

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00136 # -----
00137 001:0008 -ID:NHYD -AREA -OPEAK-TpeakDate hh:mm -R.V. *****
00138 ***** DESIGN STANDHYD 03:C .68 .039 No_date 12:12 20.48 *****
00139 ***** [XIMP = 68;TIMP = 85] *****
00140 ***** [SLP = 50;DT = 1.00] *****
00141 ***** [LOSS = 2 ;CN = 84.0] *****
00142 *****
00143 ***** 001:0009 -ID:NHYD -AREA -OPEAK-TpeakDate hh:mm -R.V. *****
00144 ***** ADD HYD 03:C .68 .039 No_date 12:12 20.48 *****
00145 ***** 04:SumB2 16.33 .692 No_date 12:15 19.39 *****
00146 ***** [DT = 1.00] SUM = 01:SumC 17.01 .722 No_date 12:14 19.43 *****
00147 *****
00148 *****
00149 *****
00150 ***** 001:0010 -ID:NHYD -AREA -OPEAK-TpeakDate hh:mm -R.V. *****
00151 ***** DESIGN STANDHYD 02:R4 .48 .022 No_date 12:12 17.99 *****
00152 ***** [XIMP = 66;TIMP = 70] *****
00153 ***** [SLP = 50;DT = 1.00] *****
00154 ***** [LOSS = 2 ;CN = 84.0] *****
00155 *****
00156 ***** 001:0011 -ID:NHYD -AREA -OPEAK-TpeakDate hh:mm -R.V. *****
00157 ***** ADD HYD 01:SumC 17.01 .722 No_date 12:14 19.43 *****
00158 ***** 02:R4 .48 .022 No_date 12:12 17.99 *****
00159 ***** [DT = 1.00] SUM = 03:HighSt 17.49 .742 No_date 12:14 19.39 *****
00160 *****
00161 *****
00162 *****
00163 ***** 001:0012 -ID:NHYD -AREA -OPEAK-TpeakDate hh:mm -R.V. *****
00164 ***** CALIB NASHYD 02:B1 .33 .005 No_date 12:17 5.85 *****
00165 ***** [CN = 84.0; N = 3.00] *****
00166 ***** [Tp = 17;DT = 1.00] *****
00167 *****
00168 *****
00169 *****
00170 ***** 001:0013 -ID:NHYD -AREA -OPEAK-TpeakDate hh:mm -R.V. *****
00171 ***** ADD HYD 02:B1 .33 .005 No_date 12:17 5.85 *****
00172 ***** 03:HighSt 17.49 .742 No_date 12:14 19.39 *****
00173 ***** [DT = 1.00] SUM = 04:SumB1 17.82 .746 No_date 12:14 19.14 *****
00174 *****
00175 *****
00176 *****
00177 *****
00178 ***** 001:0014 -ID:NHYD -AREA -OPEAK-TpeakDate hh:mm -R.V. *****
00179 ***** CALIB NASHYD 01:EXT2 1.90 .040 No_date 12:10 8.48 *****
00180 ***** [CN = 89.0; N = 3.00] *****
00181 ***** [Tp = 19;DT = 1.00] *****
00182 *****
00183 *****
00184 *****
00185 ***** 001:0015 -ID:NHYD -AREA -OPEAK-TpeakDate hh:mm -R.V. *****
00186 ***** CALIB STANDHYD 02:Goodall 2.91 .104 No_date 12:15 16.64 *****
00187 ***** [XIMP = 56;TIMP = 70] *****
00188 ***** [LOSS = 2 ;CN = 84.0] *****
00189 ***** [Impervious area: IArea = 5.00;SLPP = 50;LGP = 40;MNP = 250;SCP = .0] *****
00190 ***** [Impervious area: IAImp = 2.00;SLPI = 1.00;LGI = 130;MMI = .013;SCI = .0] *****
00191 *****
00192 ***** 001:0016 -ID:NHYD -AREA -OPEAK-TpeakDate hh:mm -R.V. *****
00193 ***** ADD HYD 01:EXT2 1.90 .040 No_date 12:10 8.48 *****
00194 ***** 02:Goodall 2.91 .104 No_date 12:15 16.64 *****
00195 ***** [DT = 1.00] SUM = 05:GdSum 4.81 .142 No_date 12:16 13.42 *****
00196 *****
00197 *****
00198 *****
00199 ***** 001:0017 -ID:NHYD -AREA -OPEAK-TpeakDate hh:mm -R.V. *****
00200 ***** ADD HYD 04:SumB1 17.82 .746 No_date 12:14 19.14 *****
00201 ***** 05:GdSum 4.81 .142 No_date 12:16 13.42 *****
00202 ***** [DT = 1.00] SUM = 03:HighTot 22.63 .886 No_date 12:14 17.93 *****
00203 *****
00204 *****
00205 *****
00206 *****
00207 ***** 001:0018 -ID:NHYD -AREA -OPEAK-TpeakDate hh:mm -R.V. *****
00208 ***** DESIGN STANDHYD 04:R5 .16 .007 No_date 12:12 17.99 *****
00209 ***** [XIMP = 56;TIMP = 70] *****
00210 ***** [SLP = 50;DT = 1.00] *****
00211 ***** [LOSS = 2 ;CN = 84.0] *****
00212 *****
00213 *****
00214 *****
00215 *****
00216 *****
00217 ***** 001:0019 -ID:NHYD -AREA -OPEAK-TpeakDate hh:mm -R.V. *****
00218 ***** CALIB STANDHYD 07:Rev201 2.50 .163 No_date 12:12 21.28 *****
00219 ***** [XIMP = 90;TIMP = 90] *****
00220 ***** [LOSS = 2 ;CN = 84.0] *****
00221 ***** [Impervious area: IArea = 5.00;SLPP = 2.00;LGP = 40;MNP = 250;SCP = .0] *****
00222 ***** [Impervious area: IAImp = 2.00;SLPI = 1.00;LGI = 130;MMI = .013;SCI = .0] *****
00223 *****
00224 *****
00225 *****
00226 *****
00227 ***** 001:0020 *****
00228 ***** MASS STORM *****
00229 ***** File name = C:\SWMHYMO\THIRDH-1\UNCONT-1\SCS24HI1.mst *****
00230 ***** Comment = 24 hour SCS II storm mass curve *****
00231 ***** [SDT = 1.00;SDUR = 24.00;PTOT = 62.40] *****
00232 *****
00233 *****
00234 *****
00235 *****
00236 *****
00237 ***** 001:0021 -ID:NHYD -AREA -OPEAK-TpeakDate hh:mm -R.V. *****
00238 ***** CALIB STANDHYD 01:EXT1 .60 .036 No_date 12:12 21.25 *****
00239 ***** [XIMP = 75;TIMP = 94] *****
00240 ***** [LOSS = 2 ;CN = 84.0] *****
00241 ***** [Impervious area: IArea = 5.00;SLPP = 50;LGP = 40;MNP = 250;SCP = .0] *****
00242 ***** [Impervious area: IAImp = 2.00;SLPI = 1.00;LGI = 130;MMI = .013;SCI = .0] *****
00243 *****
00244 *****
00245 *****
00246 *****
00247 ***** 001:0022 -ID:NHYD -AREA -OPEAK-TpeakDate hh:mm -R.V. *****
00248 ***** CALIB STANDHYD 02:AREA 15.00 1.994 No_date 12:14 55.02 *****
00249 ***** [XIMP = 68;TIMP = 85] *****
00250 ***** [LOSS = 2 ;CN = 84.0] *****
00251 ***** [Impervious area: IArea = 5.00;SLPP = 50;LGP = 40;MNP = 250;SCP = .0] *****
00252 ***** [Impervious area: IAImp = 2.00;SLPI = 1.00;LGI = 130;MMI = .013;SCI = .0] *****
00253 *****
00254 ***** 001:0023 -ID:NHYD -AREA -OPEAK-TpeakDate hh:mm -R.V. *****
00255 ***** ADD HYD 01:EXT1 .60 .036 No_date 12:12 21.25 *****
00256 ***** 02:AREA 15.00 1.994 No_date 12:14 55.02 *****
00257 ***** [DT = 1.00] SUM = 03:ToPond 15.60 2.085 No_date 12:14 55.14 *****
00258 *****
00259 *****
00260 *****
00261 ***** 001:0024 -ID:NHYD -AREA -OPEAK-TpeakDate hh:mm -R.V. *****
00262 ***** DESIGN STANDHYD 02:B2 .73 .116 No_date 12:12 56.32 *****
00263 ***** [XIMP = 68;TIMP = 85] *****
00264 ***** [SLP = 50;DT = 1.00] *****
00265 ***** [LOSS = 2 ;CN = 84.0] *****
00266 *****
00267 ***** 001:0025 -ID:NHYD -AREA -OPEAK-TpeakDate hh:mm -R.V. *****
00268 ***** ADD HYD 02:B2 .73 .116 No_date 12:12 56.32 *****
00269 ***** 03:ToPond 15.60 2.085 No_date 12:14 55.14 *****
00270 ***** [DT = 1.00] SUM = 04:SumB3 16.33 2.195 No_date 12:13 55.20 *****

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00541# 03:ToPond 15.60 4.086 No date 12:13 100.06
00542# [DT= 1.00] SUM= 04:SumB2 16.33 4.284 No date 12:13 100.11
00543# ----- C -----
00544# -----
00545# -----
00546# 001:0062 ----- ID:NHYD ----- AREA ----- OPEAK-TpeakDate hh:mm ----- R,V
00547# DESIGN STANDHYD 03:C ----- 68 ----- 208 No date 12:12 101.24
00548# [XIMP= 68;TIMP= 85]
00549# [SLP= 1.00;DT= 1.00]
00550# [LOSS= 2 :CN= 84.0]
00551# -----
00552# 001:0063 ----- ID:NHYD ----- AREA ----- OPEAK-TpeakDate hh:mm ----- R,V
00553# ADD HYD 03:C ----- 68 ----- 208 No date 12:12 101.24
00554# [DT= 1.00] SUM= 04:SumB2 16.33 4.284 No date 12:13 100.11
00555# [SLP= 1.00;DT= 1.00]
00556# [LOSS= 2 :CN= 84.0]
00557# ----- R4 -----
00558# -----
00559# 001:0064 ----- ID:NHYD ----- AREA ----- OPEAK-TpeakDate hh:mm ----- R,V
00560# DESIGN STANDHYD 02:R4 ----- 48 ----- 129 No date 12:12 96.01
00561# [XIMP= 56;TIMP= 70]
00562# [SLP= 50;DT= 1.00]
00563# [LOSS= 2 :CN= 84.0]
00564# -----
00565# 001:0065 ----- ID:NHYD ----- AREA ----- OPEAK-TpeakDate hh:mm ----- R,V
00566# ADD HYD 01:SumC 17.01 4.471 No date 12:12 96.01
00567# [DT= 1.00] SUM= 03:HighSt 17.49 4.595 No date 12:12 100.04
00568# [SLP= 1.00;DT= 1.00]
00569# [LOSS= 2 :CN= 84.0]
00570# ----- R1 -----
00571# -----
00572# 001:0066 ----- ID:NHYD ----- AREA ----- OPEAK-TpeakDate hh:mm ----- R,V
00573# CALIB NASHYD 02:B1 ----- 33 ----- 062 No date 12:16 70.00
00574# [CN= 84.0;N= 3.00]
00575# [Tp= 17;DT= 1.00]
00576# -----
00577# ----- TOTAL DISCHARGE TO HIGH STREET FROM SITE -----
00578# -----
00579# 001:0067 ----- ID:NHYD ----- AREA ----- OPEAK-TpeakDate hh:mm ----- R,V
00580# ADD HYD 02:B1 ----- 33 ----- 062 No date 12:16 70.00
00581# [DT= 1.00] SUM= 03:HighSt 17.49 4.595 No date 12:12 100.04
00582# [SLP= 1.00;DT= 1.00]
00583# [LOSS= 2 :CN= 84.0]
00584# ----- EXTERNAL AREA #2 -----
00585# -----
00586# 001:0068 ----- ID:NHYD ----- AREA ----- OPEAK-TpeakDate hh:mm ----- R,V
00587# CALIB NASHYD 01:EXT2 1.90 1.90 No date 12:17 79.98
00588# [CN= 89.0;N= 3.00]
00589# [Tp= 19;DT= 1.00]
00590# -----
00591# ----- GOODALL SITE -----
00592# -----
00593# 001:0069 ----- ID:NHYD ----- AREA ----- OPEAK-TpeakDate hh:mm ----- R,V
00594# CALIB STANDHYD 02:Goodall 2.91 696 No date 12:13 94.35
00595# [XIMP= 56;TIMP= 70]
00596# [LOSS= 2 :CN= 84.0]
00597# [Previous area: IAPER= 5.00;SLPP= 50;LGP= 40;MNP= 250;SCP= 0]
00598# [ImperVIOUS area: IAIMP= 2.00;SLPI= 50;LGI= 240;MNI= 013;SCI= 0]
00599# -----
00600# 001:0070 ----- ID:NHYD ----- AREA ----- OPEAK-TpeakDate hh:mm ----- R,V
00601# ADD HYD 01:EXT2 1.90 1.90 No date 12:17 79.98
00602# [DT= 1.00] SUM= 02:Goodall 2.91 696 No date 12:13 94.35
00603# [SLP= 1.00;DT= 1.00]
00604# [LOSS= 2 :CN= 84.0]
00605# ----- TOTAL DISCHARGE TO HIGH STREET -----
00606# -----
00607# 001:0071 ----- ID:NHYD ----- AREA ----- OPEAK-TpeakDate hh:mm ----- R,V
00608# ADD HYD 04:SumB1 17.82 4.650 No date 12:12 99.49
00609# [DT= 1.00] SUM= 05:GdSum 4.81 1.050 No date 12:14 88.67
00610# [SLP= 1.00;DT= 1.00]
00611# [LOSS= 2 :CN= 84.0]
00612# -----
00613# ----- OUTLET: CAMBRIDGE STREET -----
00614# -----
00615# -----
00616# 001:0072 ----- ID:NHYD ----- AREA ----- OPEAK-TpeakDate hh:mm ----- R,V
00617# DESIGN STANDHYD 06:RS ----- 16 ----- 044 No date 12:12 96.01
00618# [XIMP= 56;TIMP= 70]
00619# [SLP= 50;DT= 1.00]
00620# [LOSS= 2 :CN= 84.0]
00621# -----
00622# -----
00623# ----- OUTLET: HOME DEPOT -----
00624# -----
00625# ----- SWM POND -----
00626# ----- REVISED 201 -----
00627# 001:0073 ----- ID:NHYD ----- AREA ----- OPEAK-TpeakDate hh:mm ----- R,V
00628# CALIB STANDHYD 07:Rev201 2.50 794 No date 12:12 102.41
00629# [XIMP= 90;TIMP= 90]
00630# [LOSS= 2 :CN= 84.0]
00631# [Previous area: IAPER= 5.00;SLPP= 2.00;LGP= 40;MNP= 250;SCP= 0]
00632# [ImperVIOUS area: IAIMP= 2.00;SLPI= 1.00;LGI= 130;MNI= 013;SCI= 0]
00633# -----
00634# ----- REGIONAL EVENT -----
00635# -----
00636# -----
00637# 001:0074 -----
00638# READ STORM
00639# File name = tim.stm
00640# Comment =
00641# [SDT=60.00;RDM= 12.00;PTOT= 193.00]
00642# -----
00643# ----- OUTLET: HIGH STREET -----
00644# -----
00645# ----- EXTERNAL AREA #1 -----
00646# -----
00647# 001:0075 ----- ID:NHYD ----- AREA ----- OPEAK-TpeakDate hh:mm ----- R,V
00648# CALIB STANDHYD 01:EXT1 60 071 No date 7:00 188.46
00649# [XIMP= 75;TIMP= 94]
00650# [LOSS= 2 :CN= 84.0]
00651# [Previous area: IAPER= 5.00;SLPP= 50;LGP= 40;MNP= 250;SCP= 0]
00652# [ImperVIOUS area: IAIMP= 2.00;SLPI= 1.00;LGI= 120;MNI= 013;SCI= 0]
00653# -----
00654# ----- SITE AREA CONTRIBUTING TO SWM FACILITY -----
00655# -----
00656# 001:0076 ----- ID:NHYD ----- AREA ----- OPEAK-TpeakDate hh:mm ----- R,V
00657# CALIB STANDHYD 02:AREA 15.00 1.742 No date 7:00 184.40
00658# [XIMP= 68;TIMP= 85]
00659# [LOSS= 2 :CN= 84.0]
00660# [Previous area: IAPER= 5.00;SLPP= 50;LGP= 40;MNP= 250;SCP= 0]
00661# [ImperVIOUS area: IAIMP= 2.00;SLPI= 50;LGI= 300;MNI= 013;SCI= 0]
00662# -----
00663# 001:0077 ----- ID:NHYD ----- AREA ----- OPEAK-TpeakDate hh:mm ----- R,V
00664# ADD HYD 01:EXT1 60 071 No date 7:00 188.46
00665# [DT= 1.00] SUM= 02:AREA 15.00 1.742 No date 7:00 184.40
00666# [SLP= 50;DT= 1.00]
00667# [LOSS= 2 :CN= 84.0]
00668# -----
00669# ----- B2 -----
00670# 001:0078 ----- ID:NHYD ----- AREA ----- OPEAK-TpeakDate hh:mm ----- R,V
00671# DESIGN STANDHYD 02:B2 73 086 No date 7:00 185.74
00672# [XIMP= 68;TIMP= 85]
00673# [SLP= 50;DT= 1.00]
00674# [LOSS= 2 :CN= 84.0]
00675# -----

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00676# 001:0079 ----- ID:NHYD ----- AREA ----- OPEAK-TpeakDate hh:mm ----- R,V
00677# ADD HYD 02:B2 73 086 No date 7:00 185.74
00678# [DT= 1.00] SUM= 03:ToPond 15.60 4.086 No date 12:13 100.06
00679# [SLP= 1.00;DT= 1.00]
00680# [LOSS= 2 :CN= 84.0]
00681# -----
00682# ----- C -----
00683# -----
00684# 001:0080 ----- ID:NHYD ----- AREA ----- OPEAK-TpeakDate hh:mm ----- R,V
00685# DESIGN STANDHYD 03:C ----- 68 ----- 208 No date 12:12 101.24
00686# [XIMP= 68;TIMP= 85]
00687# [SLP= 1.00;DT= 1.00]
00688# [LOSS= 2 :CN= 84.0]
00689# -----
00690# 001:0081 ----- ID:NHYD ----- AREA ----- OPEAK-TpeakDate hh:mm ----- R,V
00691# ADD HYD 03:C ----- 68 ----- 208 No date 12:12 101.24
00692# [DT= 1.00] SUM= 04:SumB2 16.33 4.284 No date 12:13 100.11
00693# [SLP= 1.00;DT= 1.00]
00694# [LOSS= 2 :CN= 84.0]
00695# ----- R4 -----
00696# -----
00697# 001:0082 ----- ID:NHYD ----- AREA ----- OPEAK-TpeakDate hh:mm ----- R,V
00698# DESIGN STANDHYD 02:R4 ----- 48 ----- 129 No date 7:00 179.72
00699# [XIMP= 56;TIMP= 70]
00700# [SLP= 50;DT= 1.00]
00701# [LOSS= 2 :CN= 84.0]
00702# -----
00703# 001:0083 ----- ID:NHYD ----- AREA ----- OPEAK-TpeakDate hh:mm ----- R,V
00704# ADD HYD 01:SumC 17.01 4.471 No date 12:12 96.01
00705# [DT= 1.00] SUM= 02:R4 48 129 No date 7:00 179.72
00706# [SLP= 1.00;DT= 1.00]
00707# [LOSS= 2 :CN= 84.0]
00708# ----- B1 -----
00709# -----
00710# 001:0084 ----- ID:NHYD ----- AREA ----- OPEAK-TpeakDate hh:mm ----- R,V
00711# CALIB NASHYD 02:B1 33 035 No date 7:00 149.52
00712# [CN= 84.0;N= 3.00]
00713# [Tp= 17;DT= 1.00]
00714# -----
00715# ----- TOTAL DISCHARGE TO HIGH STREET FROM SITE -----
00716# -----
00717# 001:0085 ----- ID:NHYD ----- AREA ----- OPEAK-TpeakDate hh:mm ----- R,V
00718# ADD HYD 02:B1 33 035 No date 7:00 149.52
00719# [DT= 1.00] SUM= 03:HighSt 17.49 4.595 No date 12:12 100.04
00720# [SLP= 1.00;DT= 1.00]
00721# [LOSS= 2 :CN= 84.0]
00722# ----- EXTERNAL AREA #2 -----
00723# -----
00724# 001:0086 ----- ID:NHYD ----- AREA ----- OPEAK-TpeakDate hh:mm ----- R,V
00725# CALIB NASHYD 01:EXT2 1.90 1.90 No date 7:00 162.18
00726# [CN= 89.0;N= 3.00]
00727# [Tp= 19;DT= 1.00]
00728# -----
00729# ----- GOODALL SITE -----
00730# -----
00731# 001:0087 ----- ID:NHYD ----- AREA ----- OPEAK-TpeakDate hh:mm ----- R,V
00732# CALIB STANDHYD 02:Goodall 2.91 329 No date 7:00 178.02
00733# [XIMP= 56;TIMP= 70]
00734# [LOSS= 2 :CN= 84.0]
00735# [Previous area: IAPER= 5.00;SLPP= 50;LGP= 40;MNP= 250;SCP= 0]
00736# [ImperVIOUS area: IAIMP= 2.00;SLPI= 50;LGI= 240;MNI= 013;SCI= 0]
00737# -----
00738# 001:0088 ----- ID:NHYD ----- AREA ----- OPEAK-TpeakDate hh:mm ----- R,V
00739# ADD HYD 01:EXT2 1.90 1.90 No date 7:00 162.18
00740# [DT= 1.00] SUM= 02:Goodall 2.91 329 No date 7:00 178.02
00741# [SLP= 1.00;DT= 1.00]
00742# [LOSS= 2 :CN= 84.0]
00743# ----- TOTAL DISCHARGE TO HIGH STREET -----
00744# -----
00745# 001:0089 ----- ID:NHYD ----- AREA ----- OPEAK-TpeakDate hh:mm ----- R,V
00746# ADD HYD 04:SumB1 17.82 4.650 No date 7:00 183.83
00747# [DT= 1.00] SUM= 05:GdSum 4.81 1.050 No date 12:14 88.67
00748# [SLP= 1.00;DT= 1.00]
00749# [LOSS= 2 :CN= 84.0]
00750# -----
00751# ----- OUTLET: CAMBRIDGE STREET -----
00752# -----
00753# -----
00754# 001:0090 ----- ID:NHYD ----- AREA ----- OPEAK-TpeakDate hh:mm ----- R,V
00755# DESIGN STANDHYD 06:RS 16 018 No date 7:00 179.72
00756# [XIMP= 56;TIMP= 70]
00757# [SLP= 50;DT= 1.00]
00758# [LOSS= 2 :CN= 84.0]
00759# -----
00760# ----- OUTLET: HOME DEPOT -----
00761# ----- SWM POND -----
00762# ----- REVISED 201 -----
00763# 001:0091 ----- ID:NHYD ----- AREA ----- OPEAK-TpeakDate hh:mm ----- R,V
00764# CALIB STANDHYD 07:Rev201 2.50 295 No date 7:00 186.85
00765# [XIMP= 90;TIMP= 90]
00766# [LOSS= 2 :CN= 84.0]
00767# [Previous area: IAPER= 5.00;SLPP= 2.00;LGP= 40;MNP= 250;SCP= 0]
00768# [ImperVIOUS area: IAIMP= 2.00;SLPI= 1.00;LGI= 130;MNI= 013;SCI= 0]
00769# -----
00770# 001:0092 -----
00771# FINISH
00772# -----
00773# -----
00774# ----- WARNINGS / ERRORS / NOTES -----
00775# -----
00776# Simulation ended on 2015-04-09 at 09:28:49
00777# -----
00778# -----

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Project Name: Third & High St
 Project Number: 183-2697
 Date: 4/8/2015
 By: TM

D.A. NAME EXT 1
 D.A. AREA (ha) 0.6

Hydrologic Parameters: CALIB STANDHYD Command
Post Development Drainage Area: EXT 1

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic Group	% Area	Area
Kemble Clay Loam	Kc	D	100	0.6
				0
				0
				0
Total Area Check				0.6

Impervious Landuses Present:												
Soils	Roadway		Sidewalk		Driveway		Building		SWMF		Subtotals	
	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN
Kc	0.451	98	0	98	0	98	0.113	98	0	98	0.564	55.272
	0	98		98		98		98		98	0	0
	0	98		98		98		98		98	0	0
	0	98		98		98		98		98	0	0
Subtotal Area	0.451		0		0		0.113		0			

Pervious Landuses Present:												
Soils	Woodland		Meadow/Pasture		Wetland		Lawn		Cultivated		Subtotals	
	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN
Kc	0		0		0		0.036	84	0		0.036	3.024
	0	0		0		0		0		0	0	0
	0	0		0		0		0		0	0	0
	0	0		0		0		0		0	0	0
Subtotal Area	0		0		0		0.036		0			

	Pervious Area Calculations	Total Pervious Area	0.036
		Composite Pervious Curve Number	84
Impervious Area Calculations	Total Directly Connected Area	0.451	
	Total Indirectly Connected Area	0.113	
	Total Impervious Area	0.564	
	% X imp	75	
	% T imp	94	
Total Area Check		0.6	

Initial Abstraction and Tp Calculations

Landuse	IA (mm)	Area (ha)	A * IA
Woodland	10	0	0
Meadow/Pastu	8	0	0
Wetland	16	0	0
Lawn	5	0.036	0.18
Cultivated	7	0	0

Land Use	IA (mm)	Slope (%)	Travel Length (m)	Manning's n
Pervious	5.0	0.5	40	0.25
Impervious	2.0	1	120	0.013



Project Name: Third & High St
 Project Number: 183-2697
 Date: April 8, 2015
 By: TM

D.A. NAME POND
 D.A. AREA (ha) 15.0

Hydrologic Parameters: STANDHYD Command
Post Development Drainage Area: POND

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic Group	% Area	Area
Kemble Clay	Kc	D	100	15.00
				0.00
				0.00
				0.00
Total Area Check				15.00

Impervious Landuses Present:												
Soils	Roadway		Sidewalk		Driveway		Building		SWMF		Subtotals	
	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN
Kc	9.20	98	0	98	0.00	98	2.30	98	0.67	98	12.17	1192.66
	0	98		98		98		98		98	0.00	0.00
	0	98		98		98		98		98	0.00	0.00
	0	98		98		98		98		98	0.00	0.00
Subtotal Area	9.20		0		0.00		2.30		0.67		12.17	

Pervious Landuses Present:												
Soils	Woodland		Meadow/Pasture		Wetland		Lawn		Cultivated		Subtotals	
	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN
Kc	0		0		0		2.83	84	0		2.83	237.72
	0		0		0		0.00		0		0.00	0.00
	0		0		0		0.00		0		0.00	0.00
	0		0		0		0.00		0		0.00	0.00
Subtotal Area	0		0		0		2.83		0			

	Pervious Area Calculations	Total Pervious Area	2.83
		Composite Pervious Curve Number (*)	84.00
	Impervious Area Calculations	Total Directly Connected Area	9.87
		Total Indirectly Connected Area	2.30
		Total Impervious Area	12
		% X imp (**)	66
		% T imp	81.13
Total Area Check		15.00	

Initial Abstraction and Tp Calculations

Landuse	IA (mm)	Area (ha)	A * IA
Woodland	10	0	0
Meadow/Pastu	8	0	0
Wetland	16	0	0
Lawn	5	2.83	14.15
Cultivated	7	0	0

Land Use	IA (mm)	Slope (%)	Travel Length (m)	Manning's n
Pervious	5.0	0.5%	40	0.25
Impervious	2.0	0.5%	450	0.013

*



Project Name: Third & High St
 Project Number: 183-2697
 Date: 4/8/2015
 By: TM

D.A. NAME B2
D.A. AREA (ha) 0.73

Hydrologic Parameters: CALIB STANDHYD Command
Post Development Drainage Area: B2

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic Group	% Area	Area
Kemble Clay Loam	Kc	D	100	0.73
				0
				0
				0
Total Area Check				0.73

Impervious Landuses Present:													
Soils	Roadway		Sidewalk		Driveway		Building		SWMF		Subtotals		
	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN	
Kc	0.5	98	0	98	0	98	0.12	98	0	98	0.62	60.76	
	0	98		98		98		98		98	0	0	
	0	98		98		98		98		98	0	0	
	0	98		98		98		98		98	0	0	
Subtotal Area	0.5		0		0		0.12		0				

Pervious Landuses Present:													
Soils	Woodland		Meadow/Pasture		Wetland		Lawn		Cultivated		Subtotals		
	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN	
Kc	0		0		0		0.11	84	0		0.11	9.24	
	0	0		0		0	0		0		0	0	
	0	0		0		0	0		0		0	0	
	0	0		0		0	0		0		0	0	
Subtotal Area	0		0		0		0.11		0				

	Pervious Area Calculations	Total Pervious Area	0.11
		Composite Pervious Curve Number	84
Impervious Area Calculations		Total Directly Connected Area	0.5
		Total Indirectly Connected Area	0.12
		Total Impervious Area	0.62
		% X imp	68
		% T imp	85
Total Area Check			0.73

Initial Abstraction and Tp Calculations

Landuse	IA (mm)	Area (ha)	A * IA
Woodland	10	0	0
Meadow/Pastu	8	0	0
Wetland	16	0	0
Lawn	5	0.11	0.55
Cultivated	7	0	0

Land Use	IA (mm)	Slope (%)	Travel Length (m)	Manning's n
Pervious	5.0	0.5	40	0.25
Impervious	2.0	0.5	70	0.013



Project Name: Third & High St
 Project Number: 183-2697
 Date: 4/8/2015
 By: TM

D.A. NAME C
D.A. AREA (ha) 0.68

Hydrologic Parameters: CALIB STANDHYD Command
Post Development Drainage Area: C

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic Group	% Area	Area
Kemble Clay Loam	Kc	D	100	0.68
				0
				0
				0
Total Area Check				0.68

Impervious Landuses Present:												Subtotals	
Soils	Roadway		Sidewalk		Driveway		Building		SWMF		Area	A*CN	
	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN			
Kc	0.464	98	0	98	0	98	0.116	98	0	98	0.58	56.84	
	0	98		98		98		98		98	0	0	
	0	98		98		98		98		98	0	0	
	0	98		98		98		98		98	0	0	
Subtotal Area	0.464		0		0		0.116		0				

Pervious Landuses Present:												Subtotals	
Soils	Woodland		Meadow/Pasture		Wetland		Lawn		Cultivated		Area	A*CN	
	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN			
Kc	0		0		0		0.1	84	0		0.1	8.4	
	0	0		0		0		0		0	0	0	
	0	0		0		0		0		0	0	0	
	0	0		0		0		0		0	0	0	
Subtotal Area	0		0		0		0.1		0				

	Pervious Area Calculations	Total Pervious Area	0.1
		Composite Pervious Curve Number	84
	Impervious Area Calculations	Total Directly Connected Area	0.464
		Total Indirectly Connected Area	0.116
		Total Impervious Area	0.58
		% X imp	68
		% T imp	85
Total Area Check			0.68

Initial Abstraction and Tp Calculations

Landuse	IA (mm)	Area (ha)	A * IA
Woodland	10	0	0
Meadow/Pastu	8	0	0
Wetland	16	0	0
Lawn	5	0.1	0.5
Cultivated	7	0	0

Land Use	IA (mm)	Slope (%)	Travel Length (m)	Manning's n
Pervious	5.0	1	40	0.25
Impervious	2.0	1	67	0.013



Project Name: Third & High St
 Project Number: 183-2697
 Date: 4/8/2015
 By: TM

D.A. NAME R4
D.A. AREA (ha) 0.48

Hydrologic Parameters: CALIB STANDHYD Command
Post Development Drainage Area: R4

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic Group	% Area	Area
Kemble Clay Loam	Kc	D	100	0.48
				0
				0
				0
Total Area Check				0.48

Impervious Landuses Present:												
Soils	Roadway		Sidewalk		Driveway		Building		SWMF		Subtotals	
	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN
Kc	0.269	98	0	98	0	98	0.067	98	0	98	0.336	32.928
	0	98		98		98		98		98	0	0
	0	98		98		98		98		98	0	0
	0	98		98		98		98		98	0	0
Subtotal Area	0.269		0		0		0.067		0			

Pervious Landuses Present:												
Soils	Woodland		Meadow/Pasture		Wetland		Lawn		Cultivated		Subtotals	
	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN
Kc	0		0		0		0.144	84	0		0.144	12.096
	0	0	0		0		0		0		0	0
	0	0	0		0		0		0		0	0
	0	0	0		0		0		0		0	0
Subtotal Area	0		0		0		0.144		0			

	Pervious Area Calculations	Total Pervious Area	0.144
		Composite Pervious Curve Number	84
Impervious Area Calculations		Total Directly Connected Area	0.269
		Total Indirectly Connected Area	0.067
		Total Impervious Area	0.336
		% X imp	56
		% T imp	70
Total Area Check			0.48

Initial Abstraction and Tp Calculations

Landuse	IA (mm)	Area (ha)	A * IA
Woodland	10	0	0
Meadow/Pastu	8	0	0
Wetland	16	0	0
Lawn	5	0.144	0.72
Cultivated	7	0	0

Land Use	IA (mm)	Slope (%)	Travel Length (m)	Manning's n
Pervious	5.0	0.5	40	0.25
Impervious	2.0	0.5	57	0.013



Project Third & High St
 Project 183-2697
 Date: 4/8/2015
 By: TM

D.A. B1
 D.A. 0.33

**Hydrologic Parameters: CALIB NASHYD Command
 Drainage Area B1**

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic Group	% Area	Area
Kemble Clay Loam	Kc	D	100	0.33
				0
				0
				0
Total Area				0.33

Impervious Landuses Present:												
Soils	Roadway		Sidewalk		Driveway		Building		SWMF		Subtotals	
	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN
Kc		98		98		98		98		98	0	0
	0	98		98		98		98		98	0	0
	0	98		98		98		98		98	0	0
	0	98		98		98		98		98	0	0
Subtotal Area		0		0		0		0		0		

Pervious Landuses Present:												
Soils	Woodland		Meadow/Pasture		Wetland		Lawn		Cultivated		Subtotals	
	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN
Kc	0.00		0.00		0.00		0.33	84	0.00		0.33	27.72
	0	0.00		0.00		0.00		0.00		0.00	0.00	0.00
	0	0.00		0.00		0.00		0.00		0.00	0.00	0.00
	0	0.00		0.00		0.00		0.00		0.00	0.00	0.00
Subtotal Area		0.00		0.00		0.00		0.33		0.00		

Composite Area Calculations			Total Pervious Area
			0.33
			Total Impervious Area
			0
			% Impervious
			0.0
			Composite Curve Number
			84.0
			Total Area Check
			0.33

Initial Abstraction and Tp Calculations

Landuse	Initial Abstraction			Composite Curve Number								
	IA (mm)	Area (ha)	A * IA	Kemble Clay Loam		0		0		0		A*RC
				RC	Area	RC	Area	RC	Area	RC	Area	
Woodland	10	0	0		0.00		0		0		0	0
Meadow/Past	8	0	0		0.00		0		0		0	0
Wetland	16	0	0		0.00		0		0		0	0
Lawn	5	0.33	1.65	0.40	0.33		0		0		0	0.132
Cultivated	7	0	0		0.00		0		0		0	0
Impervious	2	0	0		0.00		0		0		0	0
Composite IA		0.33	5	Composite Runoff Coefficient								0.4

Flow Path Description	Time to Peak Inputs					Uplands			Bransby Williams		Airport	
	Length (m)	Drop (m)	Slope (%)	V/S ^{0.5}	Velocity (m/s)	Tc (hr)	Tp (hr)	TOTAL Tp (hr)	Tc (hr)	Tp (hr)	Tc (hr)	Tp (hr)
		162	0.26	0.16%	2.3	0.09	0.49	0.33	0.33	0.25	0.17	0.89

Appropriate calculated time to peak: 0.17 Appropriate Method: B-W



Project Third & High St
 Project 183-2697
 Date: 4/8/2015
 By: TM

D.A. EXT 2
 D.A. 1.9

**Hydrologic Parameters: CALIB NASHYD Command
 Drainage Area EXT 2**

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic Group	% Area	Area
Kemble Clay Loam	Kc	D	100	1.9
				0
				0
				0
Total Area				1.9

Impervious Landuses Present:													
Soils	Roadway		Sidewalk		Driveway		Building		SWMF		Subtotals		
	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN	
Kc		98		98	0.48	98	0.2	98		98	0.68	66.64	
0		98		98		98		98		98	0	0	
0		98		98		98		98		98	0	0	
0		98		98		98		98		98	0	0	
Subtotal Area		0		0		0.48		0.2		0			

Pervious Landuses Present:													
Soils	Woodland		Meadow/Pasture		Wetland		Lawn		Cultivated		Subtotals		
	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN	
Kc	0.00		0.00		0.00		1.22	84	0.00		1.22	102.48	
0	0.00		0.00		0.00		0.00		0.00		0.00	0.00	
0	0.00		0.00		0.00		0.00		0.00		0.00	0.00	
0	0.00		0.00		0.00		0.00		0.00		0.00	0.00	
Subtotal Area		0.00		0.00		0.00		1.22		0.00			

Composite Area Calculations			Total Pervious Area
			1.22
			Total Impervious Area
			0.68
			% Impervious
			0.36
			Composite Curve Number
			89.0
			Total Area Check
			1.9

Initial Abstraction and Tp Calculations

Initial Abstraction				Composite Curve Number								
Landuse	IA (mm)	Area (ha)	A * IA	Kemble Clay Loam								
				RC	Area	RC	Area	RC	Area	RC	Area	A*RC
Woodland	10	0	0		0.00		0		0		0	0
Meadow/Past	8	0	0		0.00		0		0		0	0
Wetland	16	0	0		0.00		0		0		0	0
Lawn	5	1.22	6.1	0.28	1.22		0		0		0	0.3416
Cultivated	7	0	0		0.00		0		0		0	0
Impervious	2	0.68	1.36	0.90	0.68		0		0		0	0.612
Composite IA		1.9	3.926316	Composite Runoff Coefficient								0.50189

Time to Peak Inputs					Uplands			Bransby Williams		Airport		
Flow Path Description	Length (m)	Drop (m)	Slope (%)	V/S ^{0.5}	Velocity (m/s)	Tc (hr)	Tp (hr)	TOTAL Tp (hr)	Tc (hr)	Tp (hr)	Tc (hr)	Tp (hr)
	350	5.8	1.66%	2.3	0.30	0.33	0.22	0.22	0.28	0.19	0.51	0.34
			#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!				

Appropriate calculated time to peak: 0.19 Appropriate Method: B-W



Project Name: Third & High St
 Project Number: 183-2697
 Date: 4/8/2015
 By: TM

D.A. NAME Goodall
D.A. AREA (ha) 2.91

Hydrologic Parameters: CALIB STANDHYD Command
Post Development Drainage Area: Goodall

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic Group	% Area	Area
Kemble Clay Loam	Kc	D	100	2.91
				0
				0
				0
Total Area Check				2.91

Impervious Landuses Present:												
Soils	Roadway		Sidewalk		Driveway		Building		SWMF		Subtotals	
	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN
Kc	1.63	98	0	98	0	98	0.41	98	0	98	2.04	199.92
	0	98		98		98		98		98	0	0
	0	98		98		98		98		98	0	0
	0	98		98		98		98		98	0	0
Subtotal Area	1.63		0		0		0.41		0			

Pervious Landuses Present:												
Soils	Woodland		Meadow/Pasture		Wetland		Lawn		Cultivated		Subtotals	
	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN
Kc	0		0		0		0.87	84	0		0.87	73.08
	0		0		0		0		0		0	0
	0		0		0		0		0		0	0
	0		0		0		0		0		0	0
Subtotal Area	0		0		0		0.87		0			

	Pervious Area Calculations	Total Pervious Area	0.87
		Composite Pervious Curve Number	84
Impervious Area Calculations	Total Directly Connected Area	1.63	
	Total Indirectly Connected Area	0.41	
	Total Impervious Area	2.04	
	% X imp	56	
	% T imp	70	
Total Area Check		2.91	

Initial Abstraction and Tp Calculations

Landuse	IA (mm)	Area (ha)	A * IA
Woodland	10	0	0
Meadow/Pastu	8	0	0
Wetland	16	0	0
Lawn	5	0.87	4.35
Cultivated	7	0	0

Land Use	IA (mm)	Slope (%)	Travel Length (m)	Manning's n
Pervious	5.0	0.5	40	0.25
Impervious	2.0	0.5	240	0.013



Project Name: Third & High St
 Project Number: 183-2697
 Date: 4/8/2015
 By: TM

D.A. NAME R5
D.A. AREA (ha) 0.16

Hydrologic Parameters: CALIB STANDHYD Command
Post Development Drainage Area: R5

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic Group	% Area	Area
Kemble Clay Loam	Kc	D	100	0.16
				0
				0
				0
Total Area Check				0.16

Impervious Landuses Present:												
Soils	Roadway		Sidewalk		Driveway		Building		SWMF		Subtotals	
	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN
Kc	0.090	98	0	98	0	98	0.022	98	0	98	0.112	10.976
	0	98		98		98		98		98	0	0
	0	98		98		98		98		98	0	0
	0	98		98		98		98		98	0	0
Subtotal Area	0.0896		0		0		0.0224		0			

Pervious Landuses Present:												
Soils	Woodland		Meadow/Pasture		Wetland		Lawn		Cultivated		Subtotals	
	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN
Kc	0		0		0		0.048	84	0		0.048	4.032
	0		0		0		0		0		0	0
	0		0		0		0		0		0	0
	0		0		0		0		0		0	0
Subtotal Area	0		0		0		0.048		0			

	Pervious Area Calculations	Total Pervious Area	0.048
		Composite Pervious Curve Number	84
Impervious Area Calculations		Total Directly Connected Area	0.0896
		Total Indirectly Connected Area	0.0224
		Total Impervious Area	0.112
		% X imp	56
		% T imp	70
Total Area Check			0.16

Initial Abstraction and Tp Calculations

Landuse	IA (mm)	Area (ha)	A * IA
Woodland	10	0	0
Meadow/Pastu	8	0	0
Wetland	16	0	0
Lawn	5	0.048	0.24
Cultivated	7	0	0

Land Use	IA (mm)	Slope (%)	Travel Length (m)	Manning's n
Pervious	5.0	0.5	40	0.25
Impervious	2.0	0.5	33	0.013



Project Name: Third & High St
 Project Number: 183-2697
 Date: 4/8/2015
 By: TM

D.A. NAME
 D.A. AREA (ha) **REV 201**
2.5

**Hydrologic Parameters: CALIB STANDHYD Command
 Post Development Drainage Area: REV 201**

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic Group	% Area	Area
Kemble Clay Loam	Kc	D	100	2.5
				0
				0
				0
Total Area Check				2.5

Impervious Landuses Present:													
Soils	Roadway		Sidewalk		Driveway		Building		SWMF		Subtotals		
	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN	
Kc	2.25	98	0	98	0	98	0	98	0	98	2.25	220.5	
	0	98		98		98		98		98	0	0	
	0	98		98		98		98		98	0	0	
	0	98		98		98		98		98	0	0	
Subtotal Area	2.25		0		0		0		0				

Pervious Landuses Present:													
Soils	Woodland		Meadow/Pasture		Wetland		Lawn		Cultivated		Subtotals		
	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN	
Kc	0		0		0		0.25	84	0		0.25	21	
	0		0		0		0		0		0	0	
	0		0		0		0		0		0	0	
	0		0		0		0		0		0	0	
Subtotal Area	0		0		0		0.25		0				

	Pervious Area Calculations	Total Pervious Area	0.25
		Composite Pervious Curve Number	84
Impervious Area Calculations		Total Directly Connected Area	2.25
		Total Indirectly Connected Area	0
		Total Impervious Area	2.25
		% X imp	90
		% T imp	90
Total Area Check			2.5

Initial Abstraction and Tp Calculations

Landuse	IA (mm)	Area (ha)	A * IA
Woodland	10	0	0
Meadow/Pastu	8	0	0
Wetland	16	0	0
Lawn	5	0.25	1.25
Cultivated	7	0	0

Land Use	IA (mm)	Slope (%)	Travel Length (m)	Manning's n
Pervious	5.0	2	40	0.25
Impervious	2.0	1	129	0.013

APPENDIX G

Regional SWM Facility Design



WEST END COMMERCIAL - 4 POND SWM FACILITY

Project: Third St/High St
 Project No.: 183-2697
 File: Pond Hydraulic Design
 Design by: T. MacDougall
 Date: 9-Apr-15

Pond Stage - Storage - Discharge Calculations

Emergency Spill Elev. 182.3 m
 Emerg Spill Bot. Width 3 m
 Top. Side Slopes 6 :1 H:V

Permanent Pool Volumes
 NW, SW, SE Ponds (Individual)
 Forebay Area Volume Main Cell
 Elev. (ft) Area (sqm) (cu m) Elev. (ft) Area (sqm) Volume (cu m)
 179.20 105 363 180.10 840 288
 180.40 500 363 180.40 1078 288
 NE Pond
 Elev. (ft) Area (sqm) Volume (cu m) Elev. (ft) Area (sqm) Volume (cu m)
 179.20 87 322.2 180.10 670 221
 180.40 450 322.2 180.40 805 221

Total Permanent Pool Volume 2496 cu m

Elev. (ft)	Depth Above PP (ft)	NE Pond		SE Pond		SW Pond		NW Pond		Total Storage Vol. (cu m)	ED Office Discharge (cu m/s)	Upper Office Discharge (cu m/s)	E. Spillway Width (ft)	E. Spillway Discharge (cu m/s)	Total Discharge (cu m/s)	Storage (ho-m)
		Area (sqm)	Storage Vol. (cu m)	Area (sqm)	Storage Vol. (cu m)	Area (sqm)	Storage Vol. (cu m)	Area (sqm)	Storage Vol. (cu m)							
180.45	0.00	1255	0	1578	0	1578	0	1578	0	0	0.0000	0.000	0.0	0.000	0.000	0.000
180.45	0.05	1301	64	1647	81	1647	81	1647	81	306	0.0000	0.000	0.0	0.000	0.000	0.031
180.50	0.10	1347	130	1715	165	1715	165	1715	165	624	0.0064	0.000	0.0	0.000	0.006	0.062
180.55	0.15	1393	199	1784	252	1784	252	1784	252	955	0.0096	0.000	0.0	0.000	0.010	0.095
180.60	0.20	1439	267	1852	343	1852	343	1852	343	1298	0.0120	0.000	0.0	0.000	0.012	0.130
180.65	0.25	1485	342	1921	437	1921	437	1921	437	1654	0.0140	0.000	0.0	0.000	0.014	0.165
180.70	0.30	1531	418	1989	535	1989	535	1989	535	2023	0.0157	0.000	0.0	0.000	0.016	0.202
180.75	0.35	1576	495	2058	636	2058	636	2058	636	2404	0.0173	0.000	0.0	0.000	0.017	0.240
180.80	0.40	1622	575	2126	741	2126	741	2126	741	2798	0.0187	0.000	0.0	0.000	0.019	0.280
180.85	0.45	1668	658	2195	849	2195	849	2195	849	3204	0.0200	0.000	0.0	0.000	0.020	0.320
180.90	0.50	1714	742	2263	960	2263	960	2263	960	3623	0.0213	0.000	0.0	0.000	0.021	0.362
180.95	0.55	1760	829	2332	1075	2332	1075	2332	1075	4054	0.0224	0.000	0.0	0.000	0.022	0.405
181.00	0.60	1806	918	2400	1193	2400	1193	2400	1193	4499	0.0236	0.000	0.0	0.000	0.024	0.450
181.05	0.65	1872	1010	2447	1315	2447	1315	2447	1315	4954	0.0246	0.000	0.0	0.000	0.025	0.495
181.10	0.70	1938	1106	2494	1438	2494	1438	2494	1438	5420	0.0256	0.000	0.0	0.000	0.026	0.542
181.20	0.80	2004	1303	2540	1690	2540	1690	2540	1690	6372	0.0276	0.000	0.0	0.000	0.028	0.637
181.30	0.90	2070	1506	2587	1946	2587	1946	2587	1946	7345	0.0294	0.000	0.0	0.000	0.029	0.734
181.40	1.00	2136	1717	2634	2207	2634	2207	2634	2207	8338	0.0311	0.000	0.0	0.000	0.031	0.834
181.50	1.10	2202	1934	2681	2473	2681	2473	2681	2473	9352	0.0327	0.000	0.0	0.000	0.033	0.935
181.60	1.20	2268	2157	2728	2743	2728	2743	2728	2743	10387	0.0342	0.000	0.0	0.000	0.034	1.039
181.70	1.30	2334	2387	2775	3019	2775	3019	2775	3019	11443	0.0357	0.000	0.0	0.000	0.036	1.144
181.80	1.40	2400	2624	2821	3298	2821	3298	2821	3298	12519	0.0371	0.000	0.0	0.000	0.037	1.252
181.90	1.50	2466	2867	2868	3583	2868	3583	2868	3583	13616	0.0385	0.000	0.0	0.000	0.038	1.362
182.00	1.60	2532	3117	2915	3872	2915	3872	2915	3872	14733	0.0398	0.000	0.0	0.000	0.040	1.473
182.10	1.70	2652	3376	2962	4166	2962	4166	2962	4166	15874	0.0411	0.000	0.0	0.000	0.041	1.587
182.20	1.80	2771	3647	3009	4464	3009	4464	3009	4464	17040	0.0423	0.000	0.0	0.000	0.042	1.704
182.30	1.90	2891	3930	3055	4768	3055	4768	3055	4768	18233	0.0435	0.000	3.0	0.000	0.043	1.823
182.40	2.00	3011	4226	3056	5073	3056	5073	3056	5073	19445	0.0447	0.000	3.6	0.178	0.222	1.944
182.50	2.10	3130	4533	3057	5379	3057	5379	3057	5379	20669	0.0458	0.000	4.8	0.670	0.276	2.067
182.60	2.20	3250	4852	3058	5685	3058	5685	3058	5685	21905	0.0469	0.000	6.6	1.692	1.739	2.191



**CROZIER
& ASSOCIATES**
Consulting Engineers

Project: Third St/High St
Project No.: 183-2697
File: Pond Hydraulic Design
Design by: T. MacDougall
Date: 9-Apr-15

EXTENDED DETENTION SPECIFICATIONS

Extended Detention Volume (Area x runoff from 25mm event)	2925
t (drawdown time - seconds, <i>hours in italics</i>)	86.0
Ao (cross section area of orifice - sqm)	0.011
h (maximum water elevation above orifice for extended detention- m)	0.45
C (discharge coefficient)	0.64
Ap (average surface area for extended detention - sqm)	7408

$$t = 2 * A_p * (h^{0.5}) / (C * A_o * (g * 2)^{0.5})$$

Ao = 0.01132418 m

d = 120 mm

(max dia to provide control)

Extended Detention Orifice Diameter (as designed) d = 120 mm

APPENDIX H

Phase 1 Drainage Design



Date APRIL 8/15

Project No: 183-2697

Prepared By: DTWF

Reviewed By:

Project WEST END COMMERCIAL

Subject NE POND - WATER QUALITY REQUIREMENTS - PHASE I

P.P. vol :

<u>% imp.</u>	<u>Catchment</u>	<u>Area (ha)</u>	<u>% imp</u>
	WEST PPF	11.1	0%
	NORTH	1.01	78%
	SOUTH	0.57	90%
	<u>TOT AREA</u>	<u>0.79</u>	<u>70%</u>
		13.5	

$$\% \text{ imp} = 14\%$$

MOE (2003) - Table 3.2

$$\frac{105 - 80}{55 - 35} = \frac{105 - X}{55 - 14}$$

$$51.25 = 105 - X$$

$$X = 54 \text{ m}^3/\text{ha}$$

$$\therefore \text{PP vol} = (54 - 40) \frac{\text{m}^3}{\text{ha}} \times 13.5 \text{ ha}$$

$$= \underline{\underline{189 \text{ m}^3}}$$

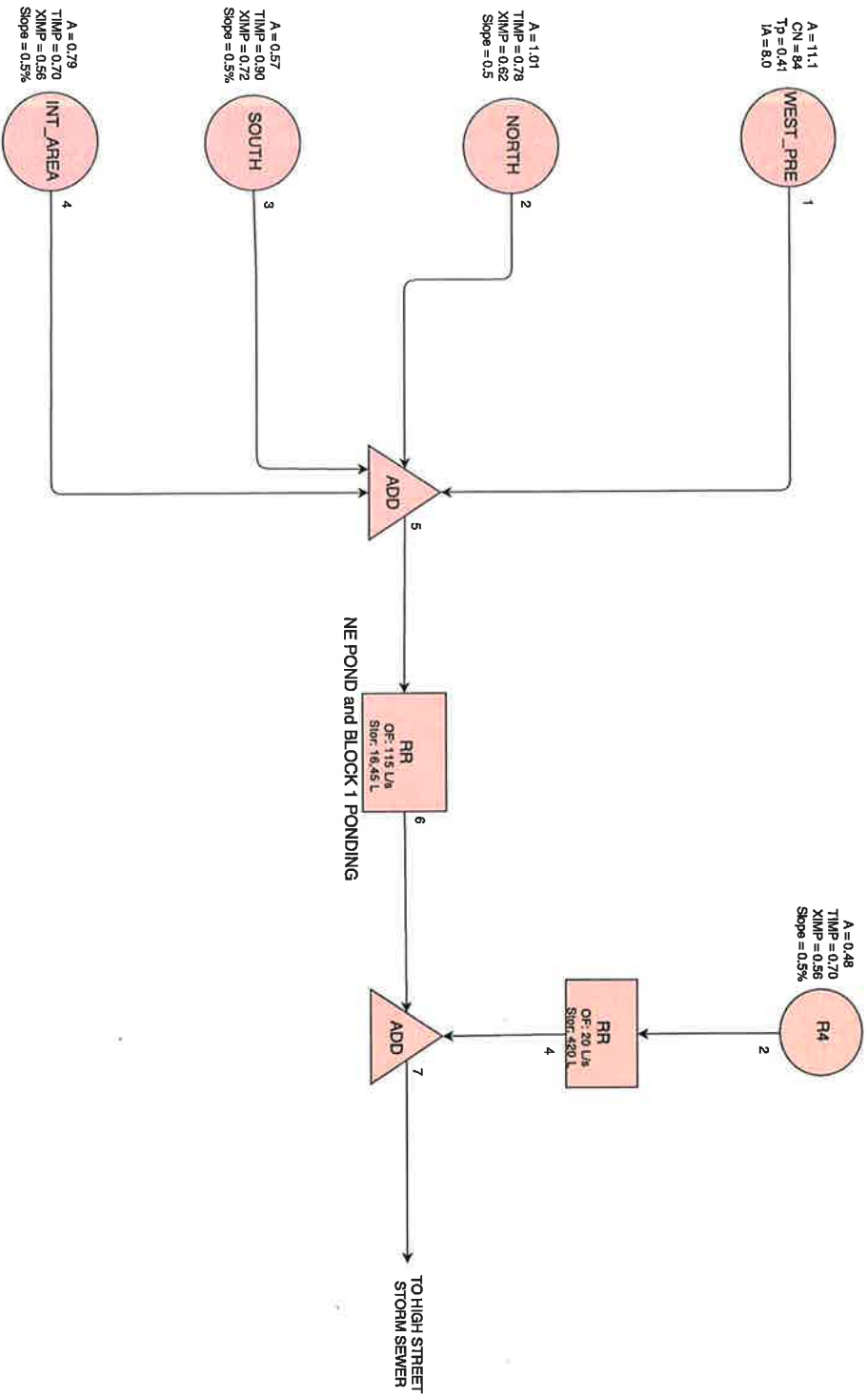
25mm ED.

Per Phase I Swmtrms,

$$13.5 \text{ ha} \times 6.8 \text{ mm} \times 10 = \underline{\underline{920 \text{ m}^3}}$$

West End Commercial - Interim Condition (Phase 1)

Apr. 9, 2015
183-2697



LEGEND



Ex. High St. Storm Sewer Outlet

```

00001> # Metric units
00002> #-----
00003> # Project Name: [West End Commercial, Collingwood] Project Number: [183-269]
00004> # Date: [April 9, 2015]
00005> # Modeler: [T. MacDougall]
00006> # Company: [C.F. Crozier & Associates Inc.]
00007> # License #: [3737016]
00008> #-----
00009> # Interim Condition - NE Pond & Block 1 Ponding Only
00010> #-----
00011> # Rainfall Data: Storms are the SCS Volumes from MTO Design Chart 1.01(e)
00012> # District 5: Owen Sound, Basins West of and including Collingwood.
00013> #-----
00014> # START TZERO=[0.0], METOUT=[2], NSTORM=[0], NRUN=[0]
00015> # [ ] <- storm filename, one per line for NSTORM time
00016> #-----
00017> #-----
00018> #-----
00019> #-----
00020> #-----
00021> # CHICAGO STORM UNITS=[2], TD=[4] (hrs), TPRAT=[0.333], CSDT=[5] (min),
00022> # ICASECS=[2],
00023> # A=[568.700], B=[6.662], and C=[0.819],
00024> #-----
00025> #-----
00026> #-----
00027> # CALIB NASHYD ID=[1], NHYD=["WEST PRE"], DT=[1] min, AREA=[11.1] (ha),
00028> # DWF=[0] (cms), CR/C=[84], IA=[8] (mm),
00029> # N=[3], TP=[0.41] hrs,
00030> # RAINFALL=[ , , , ] (mm/hr), END=-1
00031> #-----
00032> #-----
00033> #-----
00034> # CALIB STANDHYD ID=[2], NHYD=["NORTH"], DT=[1] (min), AREA=[1.01] (ha),
00035> # XIMP=[0.62], TIMP=[0.78], DWF=[0] (cms), LOSS=[2],
00036> # SCS curve number CN=[84],
00037> # Pervious surfaces: IAPER=[8] (mm), SLPP=[0.5] (%),
00038> # LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00039> # Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
00040> # LGI=[60] (m), MNI=[0.013], SCI=[0] (min),
00041> # RAINFALL=[ , , , ] (mm/hr), END=-1
00042> #-----
00043> #-----
00044> #-----
00045> # CALIB STANDHYD ID=[3], NHYD=["SOUTH"], DT=[1] (min), AREA=[0.57] (ha),
00046> # XIMP=[0.72], TIMP=[0.9], DWF=[0] (cms), LOSS=[2],
00047> # SCS curve number CN=[84],
00048> # Pervious surfaces: IAPER=[8] (mm), SLPP=[0.5] (%),
00049> # LGP=[10] (m), MNP=[0.25], SCP=[0] (min),
00050> # Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
00051> # LGI=[100] (m), MNI=[0.013], SCI=[0] (min)
00052> # RAINFALL=[ , , , ] (mm/hr), END=-1
00053> #-----
00054> #-----
00055> #-----
00056> # CALIB STANDHYD ID=[4], NHYD=["INT AREA"], DT=[1] (min), AREA=[0.79] (ha),
00057> # XIMP=[0.56], TIMP=[0.70], DWF=[0] (cms), LOSS=[2],
00058> # SCS curve number CN=[84],
00059> # Pervious surfaces: IAPER=[8] (mm), SLPP=[0.5] (%),
00060> # LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00061> # Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
00062> # LGI=[110] (m), MNI=[0.013], SCI=[0] (min)
00063> # RAINFALL=[ , , , ] (mm/hr), END=-1
00064> #-----
00065> #-----
00066> #-----
00067> # ADD HYD IDsum=[5], NHYD=["TO POND"], IDs to add=[1+2+3+4]
00068> #-----
00069> #-----
00070> #-----
00071> # ROUTE RESERVOIR IDout=[6], NHYD=["NE Pond"], IDin=[5],
00072> # RDT=[1] (min),
00073> #-----
00074> #-----
00075> #-----
00076> #-----
00077> #-----
00078> #-----
00079> #-----
00080> #-----
00081> #-----
00082> #-----
00083> #-----
00084> #-----
00085> #-----
00086> #-----
00087> #-----
00088> #-----
00089> # DESIGN STANDHYD ID=[2], NHYD=["R4"], DT=[1] min, AREA=[0.48] (ha),
00090> # XIMP=[0.56], TIMP=[0.70], DWF=[0] (cms), LOSS=[2], CN=[84],
00091> # SLOPE=[0.5] (%), RAINFALL=[ , , , ] (mm/hr), END=-1
00092> #-----
00093> #-----
00094> # ROUTE RESERVOIR IDout=[4], NHYD=["STR4"], IDin=[2],
00095> # RDT=[1] (min),
00096> #-----
00097> #-----
00098> #-----
00099> #-----
00100> #-----
00101> #-----
00102> #-----
00103> #-----
00104> # ADD HYD IDsum=[7], NHYD=["P1 HIGH"], IDs to add=[4+6]
00105> #-----
00106> #-----
00107> #-----
00108> #-----
00109> #-----
00110> #-----
00111> # CHICAGO STORM UNITS=[2], TD=[4] (hrs), TPRAT=[0.333], CSDT=[5] (min),
00112> # ICASECS=[2],
00113> # Enter ordinates of IDF curve below, at least seven points
00114> # TIME (min) Intensity (mm/hr)
00115> # [5] [130]
00116> # [10] [190]
00117> # [15] [277]
00118> # [30] [501]
00119> # [60] [871]
00120> # [120] [1200]
00121> # [360] [1633]
00122> # [720] [1449]
00123> # [1440] [2.6]
00124> #-----
00125> #-----
00126> #-----
00127> # CALIB NASHYD ID=[1], NHYD=["WEST PRE"], DT=[1] min, AREA=[11.1] (ha),
00128> # DWF=[0] (cms), CR/C=[84], IA=[8] (mm),
00129> # N=[3], TP=[0.41] hrs,
00130> # RAINFALL=[ , , , ] (mm/hr), END=-1
00131> #-----
00132> #-----
00133> #-----
00134> # CALIB STANDHYD ID=[2], NHYD=["NORTH"], DT=[1] (min), AREA=[1.01] (ha),
00135> # XIMP=[0.62], TIMP=[0.78], DWF=[0] (cms), LOSS=[2],

```

```

00136> # SCS curve number CN=[84],
00137> # Pervious surfaces: IAPER=[8] (mm), SLPP=[0.5] (%),
00138> # LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00139> # Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
00140> # LGI=[60] (m), MNI=[0.013], SCI=[0] (min),
00141> # RAINFALL=[ , , , ] (mm/hr), END=-1
00142> #-----
00143> #-----
00144> #-----
00145> # CALIB STANDHYD ID=[3], NHYD=["SOUTH"], DT=[1] (min), AREA=[0.57] (ha),
00146> # XIMP=[0.72], TIMP=[0.9], DWF=[0] (cms), LOSS=[2],
00147> # SCS curve number CN=[84],
00148> # Pervious surfaces: IAPER=[8] (mm), SLPP=[0.5] (%),
00149> # LGP=[10] (m), MNP=[0.25], SCP=[0] (min),
00150> # Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
00151> # LGI=[100] (m), MNI=[0.013], SCI=[0] (min)
00152> # RAINFALL=[ , , , ] (mm/hr), END=-1
00153> #-----
00154> #-----
00155> #-----
00156> # CALIB STANDHYD ID=[4], NHYD=["INT AREA"], DT=[1] (min), AREA=[0.79] (ha),
00157> # XIMP=[0.56], TIMP=[0.70], DWF=[0] (cms), LOSS=[2],
00158> # SCS curve number CN=[84],
00159> # Pervious surfaces: IAPER=[8] (mm), SLPP=[0.5] (%),
00160> # LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00161> # Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
00162> # LGI=[110] (m), MNI=[0.013], SCI=[0] (min)
00163> # RAINFALL=[ , , , ] (mm/hr), END=-1
00164> #-----
00165> #-----
00166> #-----
00167> #-----
00168> #-----
00169> #-----
00170> #-----
00171> # ROUTE RESERVOIR IDout=[6], NHYD=["NE Pond"], IDin=[5],
00172> # RDT=[1] (min),
00173> #-----
00174> #-----
00175> #-----
00176> #-----
00177> #-----
00178> #-----
00179> #-----
00180> #-----
00181> #-----
00182> #-----
00183> #-----
00184> #-----
00185> #-----
00186> #-----
00187> #-----
00188> #-----
00189> # DESIGN STANDHYD ID=[2], NHYD=["R4"], DT=[1] min, AREA=[0.48] (ha),
00190> # XIMP=[0.56], TIMP=[0.70], DWF=[0] (cms), LOSS=[2], CN=[84],
00191> # SLOPE=[0.5] (%), RAINFALL=[ , , , ] (mm/hr), END=-1
00192> #-----
00193> #-----
00194> #-----
00195> # ROUTE RESERVOIR IDout=[4], NHYD=["STR4"], IDin=[2],
00196> # RDT=[1] (min),
00197> #-----
00198> #-----
00199> #-----
00200> #-----
00201> #-----
00202> #-----
00203> #-----
00204> #-----
00205> #-----
00206> #-----
00207> #-----
00208> #-----
00209> #-----
00210> # CHICAGO STORM UNITS=[2], TD=[4] (hrs), TPRAT=[0.333], CSDT=[5] (min),
00211> # ICASECS=[2],
00212> # Enter ordinates of IDF curve below, at least seven points
00213> # TIME (min) Intensity (mm/hr)
00214> # [5] [130]
00215> # [10] [190]
00216> # [15] [277]
00217> # [30] [501]
00218> # [60] [871]
00219> # [120] [1200]
00220> # [360] [1633]
00221> # [720] [1449]
00222> # [1440] [2.6]
00223> #-----
00224> #-----
00225> #-----
00226> #-----
00227> # CALIB NASHYD ID=[1], NHYD=["WEST PRE"], DT=[1] min, AREA=[11.1] (ha),
00228> # DWF=[0] (cms), CR/C=[84], IA=[8] (mm),
00229> # N=[3], TP=[0.41] hrs,
00230> # RAINFALL=[ , , , ] (mm/hr), END=-1
00231> #-----
00232> #-----
00233> #-----
00234> # CALIB STANDHYD ID=[2], NHYD=["NORTH"], DT=[1] (min), AREA=[1.01] (ha),
00235> # XIMP=[0.62], TIMP=[0.78], DWF=[0] (cms), LOSS=[2],
00236> # SCS curve number CN=[84],
00237> # Pervious surfaces: IAPER=[8] (mm), SLPP=[0.5] (%),
00238> # LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00239> # Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
00240> # LGI=[60] (m), MNI=[0.013], SCI=[0] (min),
00241> # RAINFALL=[ , , , ] (mm/hr), END=-1
00242> #-----
00243> #-----
00244> #-----
00245> # CALIB STANDHYD ID=[3], NHYD=["SOUTH"], DT=[1] (min), AREA=[0.57] (ha),
00246> # XIMP=[0.72], TIMP=[0.9], DWF=[0] (cms), LOSS=[2],
00247> # SCS curve number CN=[84],
00248> # Pervious surfaces: IAPER=[8] (mm), SLPP=[0.5] (%),
00249> # LGP=[10] (m), MNP=[0.25], SCP=[0] (min),
00250> # Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
00251> # LGI=[100] (m), MNI=[0.013], SCI=[0] (min)
00252> # RAINFALL=[ , , , ] (mm/hr), END=-1
00253> #-----
00254> #-----
00255> #-----
00256> # CALIB STANDHYD ID=[4], NHYD=["INT AREA"], DT=[1] (min), AREA=[0.79] (ha),
00257> # XIMP=[0.56], TIMP=[0.70], DWF=[0] (cms), LOSS=[2],
00258> # SCS curve number CN=[84],
00259> # Pervious surfaces: IAPER=[8] (mm), SLPP=[0.5] (%),
00260> # LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00261> # Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
00262> # LGI=[110] (m), MNI=[0.013], SCI=[0] (min)
00263> # RAINFALL=[ , , , ] (mm/hr), END=-1
00264> #-----
00265> #-----
00266> #-----
00267> #-----
00268> #-----
00269> #-----
00270> #-----

```

```

00271> ROUTE RESERVOIR IDout=[6], NHYD=["NE_Pond"], IDin=[5],
00272> RDT=[1](min),
00273> TABLE of ( OUTFLOW-STORAGE ) values
00274> (cms) (ha-m)
00275> [ 0.0 0.0 ]
00276> [ 0.051 0.058 ]
00277> [ 0.066 0.092 ]
00278> [ 0.078 0.266 ]
00279> [ 0.093 0.662 ]
00280> [ 0.107 1.203 ]
00281> [ 0.115 1.645 ]
00282> [ 0.125 2.457 ]
00283> [ 0.136 3.471 ]
00284> [ -1 -1 ] (max twenty pts)
00285> IDovf=[9], NHYDovf=["OVF"]
00286> # R4
00287> #
00288> #
00289> DESIGN STANDHYD ID=[2], NHYD=["R4"], DT=[1]min, AREA=[0.48](ha),
00290> XIMP=[0.56], TIMP=[0.70], DWF=[0](cms), LOSS=[2], CN=[84],
00291> SLOPE=[0.5](%), RAINFALL=[, , , ](mm/hr), END=-1
00292> #
00293> ROUTE RESERVOIR IDout=[4], NHYD=["STR4"], IDin=[2],
00294> RDT=[1](min),
00295> TABLE of ( OUTFLOW-STORAGE ) values
00296> (cms) (ha-m)
00297> [ 0.0 0.0 ]
00298> [ 0.035 0.020 ]
00299> [ -1 -1 ] (max twenty pts)
00300> IDovf=[9], NHYDovf=["OVF"]
00301> #
00302> # DISCHARGE TO HIGH STREET (PHASE 1)
00303> #
00304> #
00305> #
00306> #
00307> # 4 hour Chicago 100-year
00308> #
00309> #
00310> CHICAGO STORM IUNITS=[2], TD=[4](hrs), TPRAT=[0.333], CSDET=[5](min),
00311> ICASESS=[2],
00312> Enter ordinates of IDF curve below, at least seven points
00313> TIME (min) Intensity(mm/hr)
00314> [ 5] [145]
00315> [ 10] [145]
00316> [ 15] [125]
00317> [ 30] [92]
00318> [ 60] [56]
00319> [ 120] [34]
00320> [ 360] [16]
00321> [ 720] [8.0]
00322> [ 1440] [4.5]
00323> [ -1 -1 ]
00324> # AREA WEST OF INTERSECTION (LOHA)
00325> #
00326> #
00327> CALIB NASHYD ID=[1], NHYD=["WEST_PRE"], DT=[1]min, AREA=[11.1](ha),
00328> DWF=[0](cms), CN/C=[84], IA=[8](mm),
00329> N=[3], TP=[0.41]hrs,
00330> RAINFALL=[, , , ](mm/hr), END=-1
00331> #
00332> # AREA NORTH OF POND (&INC POND)
00333> #
00334> CALIB STANDHYD ID=[2], NHYD=["NORTH"], DT=[1]min, AREA=[1.01](ha),
00335> XIMP=[0.62], TIMP=[0.78], DWF=[0](cms), LOSS=[2],
00336> SCS curve number CN=[84],
00337> Pervious surfaces: IAPex=[8](mm), SLPP=[0.5](%),
00338> LGP=[40](m), MNP=[0.25], SCP=[0](min),
00339> Impervious surfaces: IAImp=[2](mm), SLPI=[0.5](%),
00340> LGI=[60](m), MNI=[0.013], SCI=[0](min)
00341> RAINFALL=[, , , ](mm/hr), END=-1
00342> #
00343> # AREA SOUTH OF POND
00344> #
00345> CALIB STANDHYD ID=[3], NHYD=["SOUTH"], DT=[1]min, AREA=[0.57](ha),
00346> XIMP=[0.72], TIMP=[0.9], DWF=[0](cms), LOSS=[2],
00347> SCS curve number CN=[84],
00348> Pervious surfaces: IAPex=[8](mm), SLPP=[0.5](%),
00349> LGP=[40](m), MNP=[0.25], SCP=[0](min),
00350> Impervious surfaces: IAImp=[2](mm), SLPI=[0.5](%),
00351> LGI=[100](m), MNI=[0.013], SCI=[0](min)
00352> RAINFALL=[, , , ](mm/hr), END=-1
00353> #
00354> # INTERSECTION AREA (TO NE POND PHASE 1)
00355> #
00356> CALIB STANDHYD ID=[4], NHYD=["INT AREA"], DT=[1]min, AREA=[0.79](ha),
00357> XIMP=[0.70], TIMP=[0.70], DWF=[0](cms), LOSS=[2],
00358> SCS curve number CN=[84],
00359> Pervious surfaces: IAPex=[8](mm), SLPP=[0.5](%),
00360> LGP=[40](m), MNP=[0.25], SCP=[0](min),
00361> Impervious surfaces: IAImp=[2.0](mm), SLPI=[0.5](%),
00362> LGI=[110](m), MNI=[0.013], SCI=[0](min)
00363> RAINFALL=[, , , ](mm/hr), END=-1
00364> #
00365> # TOTAL AREA CONTRIBUTING TO NE POND (PHASE 1)
00366> #
00367> ADD HYD IDsum=[5], NHYD=["TO_POND"], IDs to add=[1+2+3+4]
00368> #
00369> # NE SWM POND (PHASE 1)
00370> #
00371> ROUTE RESERVOIR IDout=[6], NHYD=["NE_Pond"], IDin=[5],
00372> RDT=[1](min),
00373> TABLE of ( OUTFLOW-STORAGE ) values
00374> (cms) (ha-m)
00375> [ 0.0 0.0 ]
00376> [ 0.051 0.058 ]
00377> [ 0.066 0.092 ]
00378> [ 0.078 0.266 ]
00379> [ 0.093 0.662 ]
00380> [ 0.107 1.203 ]
00381> [ 0.115 1.645 ]
00382> [ 0.125 2.457 ]
00383> [ 0.136 3.471 ]
00384> [ -1 -1 ] (max twenty pts)
00385> IDovf=[9], NHYDovf=["OVF"]
00386> # R4
00387> #
00388> #
00389> DESIGN STANDHYD ID=[2], NHYD=["R4"], DT=[1]min, AREA=[0.48](ha),
00390> XIMP=[0.56], TIMP=[0.70], DWF=[0](cms), LOSS=[2], CN=[84],
00391> SLOPE=[0.5](%), RAINFALL=[, , , ](mm/hr), END=-1
00392> #
00393> ROUTE RESERVOIR IDout=[4], NHYD=["STR4"], IDin=[2],
00394> RDT=[1](min),
00395> TABLE of ( OUTFLOW-STORAGE ) values
00396> (cms) (ha-m)
00397> [ 0.0 0.0 ]
00398> [ 0.035 0.020 ]
00399> [ -1 -1 ] (max twenty pts)
00400> IDovf=[9], NHYDovf=["OVF"]
00401> #
00402> # DISCHARGE TO HIGH STREET (PHASE 1)
00403> #
00404> #
00405> #
00406> #

```

```

00406> # REGIONAL EVENT
00407> #
00408> #
00409> #
00410> READ STORM STORM_FILENAME=["c:\s\STM"]
00411> #
00412> # AREA WEST OF INTERSECTION (LOHA)
00413> #
00414> CALIB NASHYD ID=[1], NHYD=["WEST_PRE"], DT=[1]min, AREA=[11.1](ha),
00415> DWF=[0](cms), CN/C=[84], IA=[8](mm),
00416> N=[3], TP=[0.41]hrs,
00417> RAINFALL=[, , , ](mm/hr), END=-1
00418> #
00419> # AREA NORTH OF POND (&INC POND)
00420> #
00421> CALIB STANDHYD ID=[2], NHYD=["NORTH"], DT=[1]min, AREA=[1.01](ha),
00422> XIMP=[0.62], TIMP=[0.78], DWF=[0](cms), LOSS=[2],
00423> SCS curve number CN=[84],
00424> Pervious surfaces: IAPex=[8](mm), SLPP=[0.5](%),
00425> LGP=[40](m), MNP=[0.25], SCP=[0](min),
00426> Impervious surfaces: IAImp=[2](mm), SLPI=[0.5](%),
00427> LGI=[60](m), MNI=[0.013], SCI=[0](min)
00428> RAINFALL=[, , , ](mm/hr), END=-1
00429> #
00430> # AREA SOUTH OF POND
00431> #
00432> CALIB STANDHYD ID=[3], NHYD=["SOUTH"], DT=[1]min, AREA=[0.57](ha),
00433> XIMP=[0.72], TIMP=[0.9], DWF=[0](cms), LOSS=[2],
00434> SCS curve number CN=[84],
00435> Pervious surfaces: IAPex=[8](mm), SLPP=[0.5](%),
00436> LGP=[40](m), MNP=[0.25], SCP=[0](min),
00437> Impervious surfaces: IAImp=[2](mm), SLPI=[0.5](%),
00438> LGI=[100](m), MNI=[0.013], SCI=[0](min)
00439> RAINFALL=[, , , ](mm/hr), END=-1
00440> #
00441> # INTERSECTION AREA (TO NE POND PHASE 1)
00442> #
00443> CALIB STANDHYD ID=[4], NHYD=["INT AREA"], DT=[1]min, AREA=[0.79](ha),
00444> XIMP=[0.56], TIMP=[0.70], DWF=[0](cms), LOSS=[2],
00445> SCS curve number CN=[84],
00446> Pervious surfaces: IAPex=[8](mm), SLPP=[0.5](%),
00447> LGP=[40](m), MNP=[0.25], SCP=[0](min),
00448> Impervious surfaces: IAImp=[2.0](mm), SLPI=[0.5](%),
00449> LGI=[110](m), MNI=[0.013], SCI=[0](min)
00450> RAINFALL=[, , , ](mm/hr), END=-1
00451> #
00452> # TOTAL AREA CONTRIBUTING TO NE POND (PHASE 1)
00453> #
00454> ADD HYD IDsum=[5], NHYD=["TO_POND"], IDs to add=[1+2+3+4]
00455> #
00456> # NE SWM POND (PHASE 1)
00457> #
00458> ROUTE RESERVOIR IDout=[6], NHYD=["NE_Pond"], IDin=[5],
00459> RDT=[1](min),
00460> TABLE of ( OUTFLOW-STORAGE ) values
00461> (cms) (ha-m)
00462> [ 0.0 0.0 ]
00463> [ 0.051 0.058 ]
00464> [ 0.066 0.092 ]
00465> [ 0.078 0.266 ]
00466> [ 0.093 0.662 ]
00467> [ 0.107 1.203 ]
00468> [ 0.115 1.645 ]
00469> [ 0.125 2.457 ]
00470> [ 0.136 3.471 ]
00471> [ -1 -1 ] (max twenty pts)
00472> IDovf=[9], NHYDovf=["OVF"]
00473> # R4
00474> #
00475> #
00476> DESIGN STANDHYD ID=[2], NHYD=["R4"], DT=[1]min, AREA=[0.48](ha),
00477> XIMP=[0.56], TIMP=[0.70], DWF=[0](cms), LOSS=[2], CN=[84],
00478> SLOPE=[0.5](%), RAINFALL=[, , , ](mm/hr), END=-1
00479> #
00480> ROUTE RESERVOIR IDout=[4], NHYD=["STR4"], IDin=[2],
00481> RDT=[1](min),
00482> TABLE of ( OUTFLOW-STORAGE ) values
00483> (cms) (ha-m)
00484> [ 0.0 0.0 ]
00485> [ 0.035 0.020 ]
00486> [ -1 -1 ] (max twenty pts)
00487> IDovf=[9], NHYDovf=["OVF"]
00488> #
00489> # DISCHARGE TO HIGH STREET (PHASE 1)
00490> #
00491> #
00492> #
00493> #
00494> #
00495> #
00496> #
00497> #
00498> #

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```

00271# [Pervious area: IArea= 8.00:SLPP= 50:LGP= 40:MNP=250:SCP= 0]
00272# [Impervious area: IArea= 2.00:SLPI= 50:LGI= 60:MNI= 013:SCI= 0]
00273# -----
00274# AREA SOUTH OF POND
00275# -----
00276# ID:NHYD-----AREA-----OPEAK-TpeakDate_hh:mm-----R,V
00277# CALIB STANDHYD 03:SOUTH .57 196 No_date 1:21 57.84
00278# [XIMP= 72:TIMP= 90]
00279# [LOSS= 2 :CN= 84.0]
00280# [Pervious area: IArea= 8.00:SLPP= 50:LGP= 40:MNP=250:SCP= 0]
00281# [Impervious area: IArea= 2.00:SLPI= 50:LGI= 60:MNI= 013:SCI= 0]
00282# -----
00283# INTERSECTION AREA (TO NE POND - PHASE 1)
00284# -----
00285# 001:0026-----ID:NHYD-----AREA-----OPEAK-TpeakDate_hh:mm-----R,V
00286# CALIB STANDHYD 04:INT_AREA .79 186 No_date 1:21 51.05
00287# [XIMP= 56:TIMP= 70]
00288# [LOSS= 2 :CN= 84.0]
00289# [Pervious area: IArea= 8.00:SLPP= 50:LGP= 40:MNP=250:SCP= 0]
00290# [Impervious area: IArea= 2.00:SLPI= 50:LGI= 60:MNI= 013:SCI= 0]
00291# -----
00292# TOTAL AREA CONTRIBUTING TO NE POND (PHASE 1)
00293# -----
00294# 001:0027-----ID:NHYD-----AREA-----OPEAK-TpeakDate_hh:mm-----R,V
00295# ADD HYD 01:WEST PRE 11.10 .667 No_date 1:54 29.92
00296# 02:NORTH 1.01 .288 No_date 1:20 53.62
00297# 03:SOUTH .57 196 No_date 1:21 57.84
00298# 04:INT_AREA .79 186 No_date 1:21 51.05
00299# [DT= 1.00] SUM 05:TO_POND 13.47 .802 No_date 1:50 34.12
00300# -----
00301# NE SWM POND (PHASE 1)
00302# -----
00303# 001:0030-----ID:NHYD-----AREA-----OPEAK-TpeakDate_hh:mm-----R,V
00304# ROUTE RESERVOIR -> 05:TO_POND 13.47 .802 No_date 1:50 34.12
00305# [RDT= 1.00] out<= 06:NE_Pond 13.47 .082 No_date 4:17 34.12
00306# overflow <= 09:OVF .00 0.00 No_date 0:00 0.00
00307# [MxStoUsed=.3618:0.0, TotOvfVol=.0000:0.0, N-Ovf= 0, TotDurOvf= 0 hrs]
00308# -----
00309# R4
00310# -----
00311# 001:0029-----ID:NHYD-----AREA-----OPEAK-TpeakDate_hh:mm-----R,V
00312# DESIGN STANDHYD 02:R4 .48 127 No_date 1:20 53.43
00313# [XIMP= 56:TIMP= 70]
00314# [SLP= 50:DT= 1.00]
00315# [LOSS= 2 :CN= 84.0]
00316# -----
00317# 001:0030-----ID:NHYD-----AREA-----OPEAK-TpeakDate_hh:mm-----R,V
00318# ROUTE RESERVOIR -> 02:R4 .48 127 No_date 1:20 53.43
00319# [RDT= 1.00] out<= 04:STR4 .48 .023 No_date 1:58 53.43
00320# overflow <= 09:OVF .00 0.00 No_date 0:00 0.00
00321# [MxStoUsed=.13418:0.1, TotOvfVol=.0000:0.0, N-Ovf= 0, TotDurOvf= 0 hrs]
00322# -----
00323# DISCHARGE TO HIGH STREET (PHASE 1)
00324# -----
00325# 001:0031-----ID:NHYD-----AREA-----OPEAK-TpeakDate_hh:mm-----R,V
00326# ADD HYD 04:STR4 .48 .023 No_date 1:58 53.43
00327# 06:NE_Pond 13.47 .082 No_date 4:17 34.12
00328# [DT= 1.00] SUM 07:PI_HIGH 13.95 1.00 No_date 2:23 34.78
00329# -----
00330# NE SWM POND (PHASE 1)
00331# -----
00332# 4 hour Chicago 100-year
00333# -----
00334# 001:0032-----ID:NHYD-----AREA-----OPEAK-TpeakDate_hh:mm-----R,V
00335# CHICAGO STORM
00336# [SDT= 5.00:SDUR= 4.00:PIOT= 78.22]
00337# [A/B/C=1660.507/ 9.012/ .805:R= 9989]
00338# -----
00339# AREA WEST OF INTERSECTION (10HA)
00340# -----
00341# 001:0003-----ID:NHYD-----AREA-----OPEAK-TpeakDate_hh:mm-----R,V
00342# CALIB NASHYD 01:WEST_PRE 11.10 .937 No_date 1:53 41.57
00343# [CN= 84.0: N= 3.00]
00344# [Tp= 41:DT= 1.00]
00345# -----
00346# AREA NORTH OF POND (&INC POND)
00347# -----
00348# 001:0033-----ID:NHYD-----AREA-----OPEAK-TpeakDate_hh:mm-----R,V
00349# CALIB STANDHYD 02:NORTH 1.01 .358 No_date 1:20 67.51
00350# [XIMP= 62:TIMP= 78]
00351# [LOSS= 2 :CN= 84.0]
00352# [Pervious area: IArea= 8.00:SLPP= 50:LGP= 40:MNP=250:SCP= 0]
00353# [Impervious area: IArea= 2.00:SLPI= 50:LGI= 60:MNI= 013:SCI= 0]
00354# -----
00355# AREA SOUTH OF POND
00356# -----
00357# 001:0035-----ID:NHYD-----AREA-----OPEAK-TpeakDate_hh:mm-----R,V
00358# CALIB STANDHYD 03:SOUTH .57 244 No_date 1:20 72.04
00359# [XIMP= 72:TIMP= 90]
00360# [LOSS= 2 :CN= 84.0]
00361# [Pervious area: IArea= 8.00:SLPP= 50:LGP= 40:MNP=250:SCP= 0]
00362# [Impervious area: IArea= 2.00:SLPI= 50:LGI= 60:MNI= 013:SCI= 0]
00363# -----
00364# INTERSECTION AREA (TO NE POND - PHASE 1)
00365# -----
00366# 001:0036-----ID:NHYD-----AREA-----OPEAK-TpeakDate_hh:mm-----R,V
00367# CALIB STANDHYD 04:INT_AREA .79 233 No_date 1:21 64.71
00368# [XIMP= 56:TIMP= 70]
00369# [LOSS= 2 :CN= 84.0]
00370# [Pervious area: IArea= 8.00:SLPP= 50:LGP= 40:MNP=250:SCP= 0]
00371# [Impervious area: IArea= 2.00:SLPI= 50:LGI= 60:MNI= 013:SCI= 0]
00372# -----
00373# TOTAL AREA CONTRIBUTING TO NE POND (PHASE 1)
00374# -----
00375# 001:0037-----ID:NHYD-----AREA-----OPEAK-TpeakDate_hh:mm-----R,V
00376# ADD HYD 01:WEST PRE 11.10 .937 No_date 1:53 41.57
00377# 02:NORTH 1.01 .358 No_date 1:20 67.51
00378# 03:SOUTH .57 244 No_date 1:20 72.04
00379# 04:INT_AREA .79 233 No_date 1:21 64.71
00380# [DT= 1.00] SUM 05:TO_POND 13.47 1.108 No_date 1:50 46.16
00381# -----
00382# NE SWM POND (PHASE 1)
00383# -----
00384# 001:0038-----ID:NHYD-----AREA-----OPEAK-TpeakDate_hh:mm-----R,V
00385# ROUTE RESERVOIR -> 05:TO_POND 13.47 1.108 No_date 1:50 46.16
00386# [RDT= 1.00] out<= 06:NE_Pond 13.47 .088 No_date 4:24 46.16
00387# overflow <= 09:OVF .00 0.00 No_date 0:00 0.00
00388# [MxStoUsed=.1689:0.0, TotOvfVol=.0000:0.0, N-Ovf= 0, TotDurOvf= 0 hrs]
00389# -----
00390# R4
00391# -----
00392# 001:0039-----ID:NHYD-----AREA-----OPEAK-TpeakDate_hh:mm-----R,V
00393# DESIGN STANDHYD 02:R4 .48 157 No_date 1:20 67.15
00394# [XIMP= 56:TIMP= 70]
00395# [SLP= 50:DT= 1.00]
00396# [LOSS= 2 :CN= 84.0]
00397# -----
00398# 001:0040-----ID:NHYD-----AREA-----OPEAK-TpeakDate_hh:mm-----R,V
00399# ROUTE RESERVOIR -> 02:R4 .48 157 No_date 1:20 67.15
00400# [RDT= 1.00] out<= 04:STR4 .48 .030 No_date 1:57 67.15
00401# overflow <= 09:OVF .00 0.00 No_date 0:00 0.00
00402# [MxStoUsed=.1689:0.1, TotOvfVol=.0000:0.0, N-Ovf= 0, TotDurOvf= 0 hrs]
00403# -----
00404# DISCHARGE TO HIGH STREET (PHASE 1)
00405# -----

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00406# 001:0041-----ID:NHYD-----AREA-----OPEAK-TpeakDate_hh:mm-----R,V
00407# ADD HYD 04:STR4 .48 .030 No_date 1:57 67.15
00408# 06:NE_Pond 13.47 .088 No_date 4:24 46.16
00409# [DT= 1.00] SUM 07:PI_HIGH 13.95 1.09 No_date 2:25 46.89
00410# -----
00411# REGIONAL EVENT
00412# -----
00413# -----
00414# -----
00415# 001:0042-----ID:NHYD-----AREA-----OPEAK-TpeakDate_hh:mm-----R,V
00416# READ STORM
00417# Filename = tm,STM
00418# Comment =
00419# [SDT=60.00:SDUR= 12.00:PIOT= 193.00]
00420# -----
00421# AREA WEST OF INTERSECTION (10HA)
00422# -----
00423# 001:0043-----ID:NHYD-----AREA-----OPEAK-TpeakDate_hh:mm-----R,V
00424# CALIB NASHYD 01:WEST_PRE 11.10 1.087 No_date 7:06 146.65
00425# [CN= 84.0: N= 3.00]
00426# [Tp= 41:DT= 1.00]
00427# -----
00428# AREA NORTH OF POND (&INC POND)
00429# -----
00430# 001:0044-----ID:NHYD-----AREA-----OPEAK-TpeakDate_hh:mm-----R,V
00431# CALIB STANDHYD 02:NORTH 1.01 117 No_date 7:00 180.73
00432# [XIMP= 62:TIMP= 78]
00433# [LOSS= 2 :CN= 84.0]
00434# [Pervious area: IArea= 8.00:SLPP= 50:LGP= 40:MNP=250:SCP= 0]
00435# [Impervious area: IArea= 2.00:SLPI= 50:LGI= 60:MNI= 013:SCI= 0]
00436# -----
00437# AREA SOUTH OF POND
00438# -----
00439# 001:0045-----ID:NHYD-----AREA-----OPEAK-TpeakDate_hh:mm-----R,V
00440# CALIB STANDHYD 03:SOUTH .57 .068 No_date 7:00 186.32
00441# [XIMP= 72:TIMP= 90]
00442# [LOSS= 2 :CN= 84.0]
00443# [Pervious area: IArea= 8.00:SLPP= 50:LGP= 40:MNP=250:SCP= 0]
00444# [Impervious area: IArea= 2.00:SLPI= 50:LGI= 60:MNI= 013:SCI= 0]
00445# -----
00446# INTERSECTION AREA (TO NE POND - PHASE 1)
00447# -----
00448# 001:0046-----ID:NHYD-----AREA-----OPEAK-TpeakDate_hh:mm-----R,V
00449# CALIB STANDHYD 04:INT_AREA .79 .090 No_date 7:00 177.14
00450# [XIMP= 56:TIMP= 70]
00451# [LOSS= 2 :CN= 84.0]
00452# [Pervious area: IArea= 8.00:SLPP= 50:LGP= 40:MNP=250:SCP= 0]
00453# [Impervious area: IArea= 2.00:SLPI= 50:LGI= 60:MNI= 013:SCI= 0]
00454# -----
00455# TOTAL AREA CONTRIBUTING TO NE POND (PHASE 1)
00456# -----
00457# 001:0047-----ID:NHYD-----AREA-----OPEAK-TpeakDate_hh:mm-----R,V
00458# ADD HYD 01:WEST PRE 11.10 1.087 No_date 7:06 146.65
00459# 02:NORTH 1.01 117 No_date 7:00 180.73
00460# 03:SOUTH .57 .068 No_date 7:00 186.32
00461# 04:INT_AREA .79 .090 No_date 7:00 177.14
00462# [DT= 1.00] SUM 05:TO_POND 13.47 1.341 No_date 7:01 152.67
00463# -----
00464# NE SWM POND (PHASE 1)
00465# -----
00466# 001:0048-----ID:NHYD-----AREA-----OPEAK-TpeakDate_hh:mm-----R,V
00467# ROUTE RESERVOIR -> 05:TO_POND 13.47 1.341 No_date 7:01 152.67
00468# [RDT= 1.00] out<= 06:NE_Pond 13.47 .115 No_date 12:34 152.67
00469# overflow <= 09:OVF .00 0.00 No_date 0:00 0.00
00470# [MxStoUsed=.1673:0.1, TotOvfVol=.0000:0.0, N-Ovf= 0, TotDurOvf= 0 hrs]
00471# -----
00472# R4
00473# -----
00474# 001:0049-----ID:NHYD-----AREA-----OPEAK-TpeakDate_hh:mm-----R,V
00475# DESIGN STANDHYD 02:R4 .48 .055 No_date 7:00 179.72
00476# [XIMP= 56:TIMP= 70]
00477# [SLP= 50:DT= 1.00]
00478# [LOSS= 2 :CN= 84.0]
00479# -----
00480# 001:0050-----ID:NHYD-----AREA-----OPEAK-TpeakDate_hh:mm-----R,V
00481# ROUTE RESERVOIR -> 02:R4 .48 .055 No_date 7:00 179.72
00482# [RDT= 1.00] out<= 04:STR4 .48 .033 No_date 7:19 179.72
00483# overflow <= 09:OVF .00 0.00 No_date 0:00 0.00
00484# [MxStoUsed=.1862:0.1, TotOvfVol=.0000:0.0, N-Ovf= 0, TotDurOvf= 0 hrs]
00485# -----
00486# DISCHARGE TO HIGH STREET (PHASE 1)
00487# -----
00488# 001:0051-----ID:NHYD-----AREA-----OPEAK-TpeakDate_hh:mm-----R,V
00489# ADD HYD 04:STR4 .48 .033 No_date 7:19 179.72
00490# 06:NE_Pond 13.47 .115 No_date 12:34 152.67
00491# [DT= 1.00] SUM 07:PI_HIGH 13.95 1.38 No_date 9:07 153.60
00492# -----
00493# 001:0052-----ID:NHYD-----AREA-----OPEAK-TpeakDate_hh:mm-----R,V
00494# FINISH
00495# -----
00496# -----
00497# WARNINGS / ERRORS / NOTES
00498# -----
00499# Simulation ended on 2015-04-09 at 09:27:36
00500# -----
00501# -----

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00001> 2 Metric units
00002> #-----
00003> # Project Name [West End Commercial, Collingswood] Project Number: 183-269
00004> # Date [April 9, 2015]
00005> # Modeller [T. MacDougall]
00006> # Company [CF Crozier & Associates Inc.]
00007> # License # [3737016]
00008> #-----
00009> # Interim Condition - NE Pond & Block 1 Ponding Only
00010> #-----
00011> # Rainfall Data: Storms are the SCS Volumes from MTO Design Chart 1.01(e)
00012> # District 5: Owen Sound, Basins West of and including Collingswood.
00013> #-----
00014> START TZEORO=[0.0] WETOUT=[2] NSTORM=[0] NRUN=[0]
00015> # [ ] storm filename, one per line for NSTORM time
00016> #-----
00017> #-----
00018> #-----
00019> #-----
00020> #-----
00021> MASS STORM PTOTAL=[25] (mm), CSDD=[1] (min),
00022> CURVE_FILENAME=[\"SCS24H11_mst\"]
00023> #-----
00024> #-----
00025> #-----
00026> CALIB NASHYD ID=[1], NHYD=[\"WEST PRE\"], DT=[1] (min), AREA=[11.1] (ha),
00027> DWF=[0] (cms), CN/C=[84], IA=[8] (mm),
00028> N=[3], TP=[0.41] hrs,
00029> RAINFALL=[ , , , ] (mm/hr), END=-1
00030> #-----
00031> #-----
00032> #-----
00033> CALIB STANDHYD ID=[2], NHYD=[\"NORTH\"], DT=[1] (min), AREA=[1.01] (ha),
00034> XIMP=[0.62], TIMP=[0.76], DWF=[0] (cms), LOSS=[2],
00035> SCS curve number CN=[84],
00036> Pervious surfaces: IAPER=[8] (mm), SLPP=[0.5] (%),
00037> LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00038> Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
00039> LGI=[60] (m), MNI=[0.013], SCI=[0] (min),
00040> RAINFALL=[ , , , ] (mm/hr), END=-1
00041> #-----
00042> #-----
00043> #-----
00044> CALIB STANDHYD ID=[3], NHYD=[\"SOUTH\"], DT=[1] (min), AREA=[0.57] (ha),
00045> XIMP=[0.72], TIMP=[0.9], DWF=[0] (cms), LOSS=[2],
00046> SCS curve number CN=[84],
00047> Pervious surfaces: IAPER=[8] (mm), SLPP=[0.5] (%),
00048> LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00049> Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
00050> LGI=[100] (m), MNI=[0.013], SCI=[0] (min),
00051> RAINFALL=[ , , , ] (mm/hr), END=-1
00052> #-----
00053> #-----
00054> #-----
00055> CALIB STANDHYD ID=[4], NHYD=[\"INT AREA\"], DT=[1] (min), AREA=[0.79] (ha),
00056> XIMP=[0.56], TIMP=[0.70], DWF=[0] (cms), LOSS=[2],
00057> SCS curve number CN=[84],
00058> Pervious surfaces: IAPER=[8] (mm), SLPP=[0.5] (%),
00059> LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00060> Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
00061> LGI=[100] (m), MNI=[0.013], SCI=[0] (min),
00062> RAINFALL=[ , , , ] (mm/hr), END=-1
00063> #-----
00064> #-----
00065> #-----
00066> ADD HYD IDaum=[5], NHYD=[\"TO_POND\"], IDa to add=[1+2+3+4]
00067> #-----
00068> #-----
00069> #-----
00070> ROUTE RESERVOIR IDout=[6], NHYD=[\"NE_Pond\"], IDin=[5],
00071> RDT=[1] (min),
00072> TABLE OF ( OUTFLOW-STORAGE ) values
00073> (cms) - (ha-m)
00074> [ 0.0, 0.0 ]
00075> [ 0.051, 0.058 ]
00076> [ 0.066, 0.092 ]
00077> [ 0.078, 0.266 ]
00078> [ 0.093, 0.662 ]
00079> [ 0.107, 1.203 ]
00080> [ 0.115, 1.645 ]
00081> [ 0.125, 2.457 ]
00082> [ 0.136, 3.471 ]
00083> [ -1, -1 ] (max twenty pts)
00084> IDovf=[9], NHYDovf=[\"OVFP\"]
00085> #-----
00086> #-----
00087> #-----
00088> DESIGN STANDHYD ID=[2], NHYD=[\"R4\"], DT=[1] min, AREA=[0.48] (ha),
00089> XIMP=[0.56], TIMP=[0.70], DWF=[0] (cms), LOSS=[2], CN=[84],
00090> SCS curve number CN=[84],
00091> Pervious surfaces: IAPER=[8] (mm), SLPP=[0.5] (%),
00092> LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00093> Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
00094> LGI=[100] (m), MNI=[0.013], SCI=[0] (min),
00095> RAINFALL=[ , , , ] (mm/hr), END=-1
00096> #-----
00097> #-----
00098> #-----
00099> #-----
00100> #-----
00101> #-----
00102> #-----
00103> ADD HYD IDaum=[7], NHYD=[\"P1 HIGH\"], IDa to add=[4+6]
00104> #-----
00105> #-----
00106> #-----
00107> #-----
00108> #-----
00109> MASS STORM PTOTAL=[62.4] (mm), CSDD=[1] (min),
00110> CURVE_FILENAME=[\"SCS24H11_mst\"]
00111> #-----
00112> #-----
00113> #-----
00114> CALIB NASHYD ID=[1], NHYD=[\"WEST PRE\"], DT=[1] min, AREA=[11.1] (ha),
00115> DWF=[0] (cms), CN/C=[84], IA=[8] (mm),
00116> N=[3], TP=[0.41] hrs,
00117> RAINFALL=[ , , , ] (mm/hr), END=-1
00118> #-----
00119> #-----
00120> #-----
00121> CALIB STANDHYD ID=[2], NHYD=[\"NORTH\"], DT=[1] (min), AREA=[1.01] (ha),
00122> XIMP=[0.62], TIMP=[0.76], DWF=[0] (cms), LOSS=[2],
00123> SCS curve number CN=[84],
00124> Pervious surfaces: IAPER=[8] (mm), SLPP=[0.5] (%),
00125> LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00126> Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
00127> LGI=[60] (m), MNI=[0.013], SCI=[0] (min),
00128> RAINFALL=[ , , , ] (mm/hr), END=-1
00129> #-----
00130> #-----
00131> #-----
00132> CALIB STANDHYD ID=[3], NHYD=[\"SOUTH\"], DT=[1] (min), AREA=[0.57] (ha),
00133> XIMP=[0.72], TIMP=[0.9], DWF=[0] (cms), LOSS=[2],
00134> SCS curve number CN=[84],
00135> Pervious surfaces: IAPER=[8] (mm), SLPP=[0.5] (%),

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00136> LGP=[10] (m), MNP=[0.25], SCP=[0] (min),
00137> Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
00138> LGI=[100] (m), MNI=[0.013], SCI=[0] (min),
00139> RAINFALL=[ , , , ] (mm/hr), END=-1
00140> #-----
00141> #-----
00142> #-----
00143> CALIB STANDHYD ID=[4], NHYD=[\"INT AREA\"], DT=[1] (min), AREA=[0.79] (ha),
00144> XIMP=[0.56], TIMP=[0.70], DWF=[0] (cms), LOSS=[2],
00145> SCS curve number CN=[84],
00146> Pervious surfaces: IAPER=[8] (mm), SLPP=[0.5] (%),
00147> LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00148> Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
00149> LGI=[100] (m), MNI=[0.013], SCI=[0] (min),
00150> RAINFALL=[ , , , ] (mm/hr), END=-1
00151> #-----
00152> #-----
00153> #-----
00154> #-----
00155> #-----
00156> #-----
00157> #-----
00158> ROUTE RESERVOIR IDout=[6], NHYD=[\"NE_Pond\"], IDin=[5],
00159> RDT=[1] (min),
00160> TABLE OF ( OUTFLOW-STORAGE ) values
00161> (cms) - (ha-m)
00162> [ 0.0, 0.0 ]
00163> [ 0.051, 0.058 ]
00164> [ 0.066, 0.092 ]
00165> [ 0.078, 0.266 ]
00166> [ 0.093, 0.662 ]
00167> [ 0.107, 1.203 ]
00168> [ 0.115, 1.645 ]
00169> [ 0.125, 2.457 ]
00170> [ 0.136, 3.471 ]
00171> [ -1, -1 ] (max twenty pts)
00172> IDovf=[9], NHYDovf=[\"OVFP\"]
00173> #-----
00174> #-----
00175> #-----
00176> DESIGN STANDHYD ID=[2], NHYD=[\"R4\"], DT=[1] min, AREA=[0.48] (ha),
00177> XIMP=[0.56], TIMP=[0.70], DWF=[0] (cms), LOSS=[2], CN=[84],
00178> SCS curve number CN=[84],
00179> Pervious surfaces: IAPER=[8] (mm), SLPP=[0.5] (%),
00180> LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00181> Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
00182> LGI=[100] (m), MNI=[0.013], SCI=[0] (min),
00183> RAINFALL=[ , , , ] (mm/hr), END=-1
00184> #-----
00185> #-----
00186> #-----
00187> #-----
00188> #-----
00189> #-----
00190> #-----
00191> ADD HYD IDaum=[7], NHYD=[\"P1 HIGH\"], IDa to add=[4+6]
00192> #-----
00193> #-----
00194> #-----
00195> #-----
00196> #-----
00197> MASS STORM PTOTAL=[86.4] (mm), CSDD=[1] (min),
00198> CURVE_FILENAME=[\"SCS24H11_mst\"]
00199> #-----
00200> #-----
00201> #-----
00202> CALIB NASHYD ID=[1], NHYD=[\"WEST PRE\"], DT=[1] min, AREA=[11.1] (ha),
00203> DWF=[0] (cms), CN/C=[84], IA=[8] (mm),
00204> N=[3], TP=[0.41] hrs,
00205> RAINFALL=[ , , , ] (mm/hr), END=-1
00206> #-----
00207> #-----
00208> #-----
00209> CALIB STANDHYD ID=[2], NHYD=[\"NORTH\"], DT=[1] (min), AREA=[1.01] (ha),
00210> XIMP=[0.62], TIMP=[0.76], DWF=[0] (cms), LOSS=[2],
00211> SCS curve number CN=[84],
00212> Pervious surfaces: IAPER=[8] (mm), SLPP=[0.5] (%),
00213> LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00214> Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
00215> LGI=[60] (m), MNI=[0.013], SCI=[0] (min),
00216> RAINFALL=[ , , , ] (mm/hr), END=-1
00217> #-----
00218> #-----
00219> #-----
00220> CALIB STANDHYD ID=[3], NHYD=[\"SOUTH\"], DT=[1] (min), AREA=[0.57] (ha),
00221> XIMP=[0.72], TIMP=[0.9], DWF=[0] (cms), LOSS=[2],
00222> SCS curve number CN=[84],
00223> Pervious surfaces: IAPER=[8] (mm), SLPP=[0.5] (%),
00224> LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00225> Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
00226> LGI=[100] (m), MNI=[0.013], SCI=[0] (min),
00227> RAINFALL=[ , , , ] (mm/hr), END=-1
00228> #-----
00229> #-----
00230> #-----
00231> CALIB STANDHYD ID=[4], NHYD=[\"INT AREA\"], DT=[1] (min), AREA=[0.79] (ha),
00232> XIMP=[0.56], TIMP=[0.70], DWF=[0] (cms), LOSS=[2],
00233> SCS curve number CN=[84],
00234> Pervious surfaces: IAPER=[8] (mm), SLPP=[0.5] (%),
00235> LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00236> Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
00237> LGI=[100] (m), MNI=[0.013], SCI=[0] (min),
00238> RAINFALL=[ , , , ] (mm/hr), END=-1
00239> #-----
00240> #-----
00241> #-----
00242> #-----
00243> #-----
00244> #-----
00245> #-----
00246> #-----
00247> #-----
00248> #-----
00249> #-----
00250> #-----
00251> #-----
00252> #-----
00253> #-----
00254> #-----
00255> #-----
00256> #-----
00257> #-----
00258> #-----
00259> #-----
00260> #-----
00261> #-----
00262> #-----
00263> #-----
00264> DESIGN STANDHYD ID=[2], NHYD=[\"R4\"], DT=[1] min, AREA=[0.48] (ha),
00265> XIMP=[0.56], TIMP=[0.70], DWF=[0] (cms), LOSS=[2], CN=[84],
00266> SCS curve number CN=[84],
00267> Pervious surfaces: IAPER=[8] (mm), SLPP=[0.5] (%),
00268> LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00269> Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
00270> LGI=[100] (m), MNI=[0.013], SCI=[0] (min),
00271> RAINFALL=[ , , , ] (mm/hr), END=-1
00272> #-----
00273> #-----
00274> #-----
00275> #-----
00276> #-----
00277> #-----
00278> #-----
00279> #-----
00280> #-----
00281> #-----
00282> #-----
00283> #-----
00284> #-----
00285> #-----
00286> #-----
00287> #-----
00288> #-----
00289> #-----
00290> #-----
00291> #-----
00292> #-----
00293> #-----
00294> #-----
00295> #-----
00296> #-----
00297> #-----
00298> #-----
00299> #-----
00300> #-----
00301> #-----
00302> #-----
00303> #-----
00304> #-----
00305> #-----
00306> #-----
00307> #-----
00308> #-----
00309> #-----
00310> #-----
00311> #-----
00312> #-----
00313> #-----
00314> #-----
00315> #-----

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00271# (cms) - (ha-m)
00272# 0.0, 0.0
00273# 0.035, 0.020
00274# -1 -1 (max twenty pts)
00275# IDovf=[9], NHYDovf=["OVF"]
00276# DISCHARGE TO HIGH STREET (PHASE 1)
00277#
00278# ADD HYD IDsum=[7], NHYD=["P1_HIGH"], IDs to add=[4+6]
00280#
00281# 24 hour SCS 100-year
00282#
00283#
00284# MASS STORM PPTOTAL=[108.0] (mm), CSDT=[12] (min),
00285# CURVE_FILENAME=["SCS24H11.MST"]
00286#
00287# AREA WEST OF INTERSECTION (10HA)
00288#
00290# CALIB NASHYD ID=[1], NHYD=["WEST PRE"], DT=[1]min, AREA=[11.1] (ha),
00291# DWF=[0] (cms), CN/C=[84], IA=[8] (mm),
00292# N=[3], TP=[0.41] hrs,
00293# RAINFALL=[ , , , ] (mm/hr), END=-1
00294#
00295# AREA NORTH OF POND (&INC POND)
00296#
00297# CALIB STANDHYD ID=[2], NHYD=["NORTH"], DT=[1] (min), AREA=[1.01] (ha),
00298# XIMP=[0.62], TIMP=[0.78], DWF=[0] (cms), LOSS=[2],
00299# SCS curve number CN=[84],
00300# Pervious surfaces: IAPER=[8] (mm), SLPP=[0.5] (%),
00301# LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00302# Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
00303# LGI=[60] (m), MNI=[0.013], SCI=[0] (min),
00304# RAINFALL=[ , , , ] (mm/hr), END=-1
00305# AREA SOUTH OF POND
00306#
00307# CALIB STANDHYD ID=[3], NHYD=["SOUTH"], DT=[1] (min), AREA=[0.57] (ha),
00308# XIMP=[0.72], TIMP=[0.9], DWF=[0] (cms), LOSS=[2],
00309# SCS curve number CN=[84],
00310# Pervious surfaces: IAPER=[8] (mm), SLPP=[0.5] (%),
00311# LGP=[10] (m), MNP=[0.25], SCP=[0] (min),
00312# Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
00313# LGI=[100] (m), MNI=[0.013], SCI=[0] (min),
00314# RAINFALL=[ , , , ] (mm/hr), END=-1
00315# INTERSECTION AREA (TO NE POND - PHASE 1)
00316#
00317# CALIB STANDHYD ID=[4], NHYD=["INT AREA"], DT=[1] (min), AREA=[0.79] (ha),
00318# XIMP=[0.56], TIMP=[0.70], DWF=[0] (cms), LOSS=[2],
00319# SCS curve number CN=[84],
00320# Pervious surfaces: IAPER=[8] (mm), SLPP=[0.5] (%),
00321# LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00322# Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
00323# LGI=[110] (m), MNI=[0.013], SCI=[0] (min),
00324# RAINFALL=[ , , , ] (mm/hr), END=-1
00325# TOTAL AREA CONTRIBUTING TO NE POND (PHASE 1)
00326#
00327# ADD HYD IDsum=[5], NHYD=["TO_POND"], IDs to add=[1+2+3+4]
00328#
00329# NE SWM POND (PHASE 1)
00330#
00331# ROUTE RESERVOIR IDout=[6], NHYD=["NE_Pond"], IDin=[5],
00332# RDT=[1] (min),
00333#
00334# TABLE of ( OUTFLOW-STORAGE ) values
00335# (cms) - (ha-m)
00336# 0.0, 0.0
00337# 0.051, 0.058
00338# 0.066, 0.092
00339# 0.078, 0.266
00340# 0.093, 0.662
00341# 0.107, 1.203
00342# 0.115, 1.645
00343# 0.125, 2.457
00344# 0.136, 3.471
00345# -1 -1 (max twenty pts)
00346# IDovf=[9], NHYDovf=["OVF"]
00347#
00348# DISCHARGE TO HIGH STREET (PHASE 1)
00349#
00350# ADD HYD IDsum=[7], NHYD=["P1_HIGH"], IDs to add=[4+6]
00351#
00352# REGIONAL EVENT
00353#
00354# READ STORM STORM_FILENAME=["11m_STM"]
00355#
00356# AREA WEST OF INTERSECTION (10HA)
00357#
00358# CALIB NASHYD ID=[1], NHYD=["WEST PRE"], DT=[1]min, AREA=[11.1] (ha),
00359# DWF=[0] (cms), CN/C=[84], IA=[8] (mm),
00360# N=[3], TP=[0.41] hrs,
00361# RAINFALL=[ , , , ] (mm/hr), END=-1
00362# AREA NORTH OF POND (&INC POND)
00363#
00364# CALIB STANDHYD ID=[2], NHYD=["NORTH"], DT=[1] (min), AREA=[1.01] (ha),
00365# XIMP=[0.62], TIMP=[0.78], DWF=[0] (cms), LOSS=[2],
00366# SCS curve number CN=[84],
00367# Pervious surfaces: IAPER=[8] (mm), SLPP=[0.5] (%),
00368# LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00369# Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
00370# LGI=[60] (m), MNI=[0.013], SCI=[0] (min),
00371# RAINFALL=[ , , , ] (mm/hr), END=-1
00372# AREA SOUTH OF POND
00373#
00374# CALIB STANDHYD ID=[3], NHYD=["SOUTH"], DT=[1] (min), AREA=[0.57] (ha),
00375# XIMP=[0.72], TIMP=[0.9], DWF=[0] (cms), LOSS=[2],
00376# SCS curve number CN=[84],
00377# Pervious surfaces: IAPER=[8] (mm), SLPP=[0.5] (%),
00378# LGP=[10] (m), MNP=[0.25], SCP=[0] (min),
00379# Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
00380# LGI=[100] (m), MNI=[0.013], SCI=[0] (min),
00381# RAINFALL=[ , , , ] (mm/hr), END=-1
00382# INTERSECTION AREA (TO NE POND - PHASE 1)
00383#
00384#
00400#
00401#
00402#
00403#
00404#
00405#

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00406# CALIB STANDHYD ID=[4], NHYD=["INT AREA"], DT=[1] (min), AREA=[0.79] (ha),
00407# XIMP=[0.56], TIMP=[0.70], DWF=[0] (cms), LOSS=[2],
00408# SCS curve number CN=[84],
00409# Pervious surfaces: IAPER=[8] (mm), SLPP=[0.5] (%),
00410# LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00411# Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
00412# LGI=[110] (m), MNI=[0.013], SCI=[0] (min),
00413# RAINFALL=[ , , , ] (mm/hr), END=-1
00414#
00415# TOTAL AREA CONTRIBUTING TO NE POND (PHASE 1)
00416#
00417# ADD HYD IDsum=[5], NHYD=["TO_POND"], IDs to add=[1+2+3+4]
00418#
00419# NE SWM POND (PHASE 1)
00420#
00421# ROUTE RESERVOIR IDout=[6], NHYD=["NE_Pond"], IDin=[5],
00422# RDT=[1] (min),
00423#
00424# TABLE of ( OUTFLOW-STORAGE ) values
00425# (cms) - (ha-m)
00426# 0.0, 0.0
00427# 0.051, 0.058
00428# 0.066, 0.092
00429# 0.078, 0.266
00430# 0.093, 0.662
00431# 0.107, 1.203
00432# 0.115, 1.645
00433# 0.125, 2.457
00434# 0.136, 3.471
00435# -1 -1 (max twenty pts)
00436# IDovf=[9], NHYDovf=["OVF"]
00437#
00438# R4
00439#
00440# DESIGN STANDHYD ID=[2], NHYD=["R4"], DT=[1]min, AREA=[0.48] (ha),
00441# XIMP=[0.56], TIMP=[0.70], DWF=[0] (cms), LOSS=[2], CN=[84],
00442# SLOPE=[0.5] (%), RAINFALL=[ , , , ] (mm/hr), END=-1
00443#
00444# ROUTE RESERVOIR IDout=[4], NHYD=["STR4"], IDin=[2],
00445# RDT=[1] (min),
00446#
00447# TABLE of ( OUTFLOW-STORAGE ) values
00448# (cms) - (ha-m)
00449# 0.0, 0.0
00450# 0.035, 0.020
00451# -1 -1 (max twenty pts)
00452# IDovf=[9], NHYDovf=["OVF"]
00453#
00454# DISCHARGE TO HIGH STREET (PHASE 1)
00455#
00456# ADD HYD IDsum=[7], NHYD=["P1_HIGH"], IDs to add=[4+6]
00457#
00458# FINISH
00459#
00460#
00461#
00462#
00463#
00464#
00465#
00466#
00467#
00468#
00469#
00470#

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00001 *****
00002 *****
00003 SSSSS W W M M H H Y Y M M O O 999 999 *****
00004 S W W M M M H H Y Y M M O O 9 9 9 9 Ver 4.05
00005 SSSSS W W M M H H H H Y Y M M O O # 9 9 9 9 Sept 2011
00006 S W W M M H H Y Y M M O O 9999 9999
00007 SSSSS W W M M H H Y Y M M O O 9 9 9 9 # 1737016
00008 StormWater Management Hydrologic Model 999 999 *****
00009 *****
00010 *****
00011 *****
00012 ***** SWMHYMO Ver/4.05 *****
00013 ***** A single event and continuous hydrologic simulation model *****
00014 ***** based on the principles of HYMO and its successors *****
00015 ***** OTHYMO-83 and OTHYMO-89 *****
00016 *****
00017 ***** Distributed by: J.P. Sabourin and Associates Inc *****
00018 ***** Ottawa, Ontario: (613) 836-3884 *****
00019 ***** Gatineau, Quebec: (819) 243-6858 *****
00020 ***** E-Mail: swmhymo@jfsa.com *****
00021 *****
00022 *****
00023 *****
00024 ***** Licensed user: C.F. Crozier & Associates Inc *****
00025 ***** Collingwood SERIAL#:3737016 *****
00026 *****
00027 *****
00028 *****
00029 ***** ***** PROGRAM ARRAY DIMENSIONS *****
00030 ***** Maximum value for ID numbers: 10 *****
00031 ***** Max number of rainfall points: 10540 *****
00032 ***** Max number of flow points: 10540 *****
00033 *****
00034 *****
00035 ***** DESCRIPTION SUMMARY TABLE HEADERS (units depend on METOUT in START) *****
00036 *****
00037 ***** ID: Hydrograph Identification numbers, (1-10) *****
00038 ***** RHYD: Hydrograph reference numbers, (6 digits or characters) *****
00039 ***** AREA: Drainage area associated with hydrograph, (ac) or (ha) *****
00040 ***** OPEAK: Peak flow of simulated hydrograph, (ft3/s) or (m3/s) *****
00041 ***** TpeakDate_hh:mm is the date and time of the peak flow *****
00042 ***** R.V.: Runoff volume of simulated hydrograph, (in) or (mm) *****
00043 ***** R.C.: Runoff Coefficient of simulated hydrograph, (ratio) *****
00044 ***** *: see WARNING or NOTE message printed at end of run *****
00045 ***** **: see ERROR message printed at end of run *****
00046 *****
00047 *****
00048 *****
00049 *****
00050 *****
00051 *****
00052 *****
00053 ***** SUMMARY OUTPUT *****
00054 *****
00055 ***** DATE: 2015-04-09 TIME: 09:27:04 RUN COUNTER: 000139 *****
00056 *****
00057 ***** Input filename: C:\SWMHYMO\THIRDH-1\PHASE1-1\PoSCS4p1.DAT *****
00058 ***** Output filename: C:\SWMHYMO\THIRDH-1\PHASE1-1\PoSCS4p1.out *****
00059 ***** Summary filename: C:\SWMHYMO\THIRDH-1\PHASE1-1\PoSCS4p1.sum *****
00060 ***** User comments: *****
00061 ***** 1: *****
00062 ***** 2: *****
00063 ***** 3: *****
00064 *****
00065 *****
00066 *****
00067 *****
00068 ***** Project Name: [West End Commercial, Collingwood] Project Number: [163-269] *****
00069 ***** Date: [April 9, 2015] *****
00070 ***** Modeller: [T. MacDougall] *****
00071 ***** Company: [CF Crozier & Associates Inc.] *****
00072 ***** License #: [3737016] *****
00073 *****
00074 ***** Interim Condition - NE Pond & Block 1 Ponding Only *****
00075 *****
00076 ***** Rainfall Data: Storms are the SCS Volumes from NYO Design Chart 1-01(e) *****
00077 ***** Direct to Own Sound, Basin West of and including Collingwood *****
00078 *****
00079 ***** RUN:COMMAND# *****
00080 ***** 001.0001 *****
00081 *****
00082 ***** START *****
00083 ***** [METRO = 00 hrs on 0] *****
00084 ***** [METOUT = 2 (imperial, 2=metric output)] *****
00085 ***** [NINUM = 1] *****
00086 *****
00087 *****
00088 ***** ***** 15mm event *****
00089 *****
00090 *****
00091 ***** 001.0002 *****
00092 ***** MASS STORM *****
00093 ***** Filename = C:\SWMHYMO\THIRDH-1\PHASE1-1\SCS24HII.mst *****
00094 ***** Comment = 24 hour SCS II storm mass curve *****
00095 ***** [SDT= 1.00;SDUR= 24.00;PIOT= 25.00] *****
00096 *****
00097 ***** AREA WEST OF INTERSECTION (10HA) *****
00098 *****
00099 ***** 001.0003 ID:RHYD AREA OPEAK TpeakDate_hh:mm R.V.
00100 CALIB NASHYD 01:WEST_PRE 11.10 061 No_date 12:37 4.42
00101 [CN= 84.0; N= 3.00]
00102 [Tp= 41;DT= 1.00]
00103
00104 AREA NORTH OF POND (&INC POND)
00105
00106 001.0004 ID:RHYD AREA OPEAK TpeakDate_hh:mm R.V.
00107 CALIB STANDHYD 02:NORTH 1.81 049 No_date 12:12 17.52
00108 [XIMP= 62;TIMP= 78]
00109 [LOSS= 2 ;CN= 84.0]
00110 [Pervious area IAPER= 8.00;SLPP= 50;LGP= 40;MNP= 250;SCP= 0]
00111 [Impervious area IAIMP= 2.00;SLPI= 50;LGI= 60;MMI= 013;SCI= 0]
00112
00113 AREA SOUTH OF POND
00114
00115 001.0005 ID:RHYD AREA OPEAK TpeakDate_hh:mm R.V.
00116 CALIB STANDHYD 03:SOUTH .57 034 No_date 12:13 20.04
00117 [XIMP= 72;TIMP= 90]
00118 [LOSS= 2 ;CN= 84.0]
00119 [Pervious area IAPER= 8.00;SLPP= 50;LGP= 10;MNP= 250;SCP= 0]
00120 [Impervious area IAIMP= 2.00;SLPI= 50;LGI= 100;MMI= 013;SCI= 0]
00121
00122 INTERSECTION AREA (TO NE POND PHASE 1)
00123
00124 001.0006 ID:RHYD AREA OPEAK TpeakDate_hh:mm R.V.
00125 CALIB STANDHYD 04:INT_AREA .79 032 No_date 12:13 16.08
00126 [XIMP= 56;TIMP= 70]
00127 [LOSS= 2 ;CN= 84.0]
00128 [Pervious area IAPER= 8.00;SLPP= 50;LGP= 40;MNP= 250;SCP= 0]
00129 [Impervious area IAIMP= 2.00;SLPI= 50;LGI= 110;MMI= 013;SCI= 0]
00130
00131 TOTAL AREA CONTRIBUTING TO NE POND (PHASE 1)
00132
00133 001.0007 ID:RHYD AREA OPEAK TpeakDate_hh:mm R.V.
00134 ADD HYD 01:WEST_PRE 11.10 061 No_date 12:37 4.42
00135 02:NORTH 1.01 049 No_date 12:12 17.52

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00136 03:SOUTH .57 034 No_date 12:13 20.04
00137 04:INT_AREA .79 032 No_date 12:13 16.08
00138 [DT= 1.00] SUM 05:TO_POND 13.47 134 No_date 12:13 6.75
00139
00140 NE SWM POND (PHASE 1)
00141
00142 001.0008 ID:RHYD AREA OPEAK TpeakDate_hh:mm R.V.
00143 ROUTE RESERVOIR -> 05:TO_POND 13.47 134 No_date 12:13 6.75
00144 [ROT= 1.00] out< 06:NE_POND 13.47 031 No_date 13:34 6.75
00145 overflow <= 09:OVF .00 000 No_date 0:00 .00
00146 [MxStoUsed= 3519E-01; TotOvfVol= 0.000E+00; N-Ovf= 0; TotDurOvf= 0.hrs]
00147
00148 R4
00149
00150 001.0009 ID:RHYD AREA OPEAK TpeakDate_hh:mm R.V.
00151 DESIGN STANDHYD 02:R4 .48 022 No_date 12:12 17.99
00152 [XIMP= 56;TIMP= 70]
00153 [SLP= 50;DT= 1.00]
00154 [LOSS= 2 ;CN= 84.0]
00155
00156 001.0010 ID:RHYD AREA OPEAK TpeakDate_hh:mm R.V.
00157 ROUTE RESERVOIR -> 02:R4 .48 022 No_date 12:12 17.99
00158 [ROT= 1.00] out< 04:SCR4 .48 000 No_date 12:39 17.99
00159 overflow <= 09:OVF .00 000 No_date 0:00 .00
00160 [MxStoUsed= 2946E-02; TotOvfVol= 0.000E+00; N-Ovf= 0; TotDurOvf= 0.hrs]
00161
00162 DISCHARGE TO HIGH STREET (PHASE 1)
00163
00164 001.0011 ID:RHYD AREA OPEAK TpeakDate_hh:mm R.V.
00165 ADD HYD 04:SCR4 .48 005 No_date 12:39 17.99
00166 06:NE_Pond 13.47 031 No_date 13:34 6.75
00167 [DT= 1.00] SUM 07:P1_HIGH 13.95 035 No_date 13:26 7.13
00168
00169 24 hour SCS 5-year
00170
00171 001.0012 MASS STORM
00172
00173 Filename = C:\SWMHYMO\THIRDH-1\PHASE1-1\SCS24HII.mst
00174 Comment = 24 hour SCS II storm mass curve
00175 [SDT= 1.00;SDUR= 24.00;PIOT= 62.40]
00176
00177 AREA WEST OF INTERSECTION (10HA)
00178
00179 001.0013 ID:RHYD AREA OPEAK TpeakDate_hh:mm R.V.
00180 CALIB NASHYD 01:WEST_PRE 11.10 504 No_date 12:31 28.79
00181 [CN= 84.0; N= 3.00]
00182 [Tp= 41;DT= 1.00]
00183
00184 AREA NORTH OF POND (&INC POND)
00185
00186 001.0014 ID:RHYD AREA OPEAK TpeakDate_hh:mm R.V.
00187 CALIB STANDHYD 02:NORTH 1.01 148 No_date 12:12 52.23
00188 [XIMP= 62;TIMP= 78]
00189 [Pervious area IAPER= 8.00;SLPP= 50;LGP= 40;MNP= 250;SCP= 0]
00190 [Impervious area IAIMP= 2.00;SLPI= 50;LGI= 60;MMI= 013;SCI= 0]
00191
00192 AREA SOUTH OF POND
00193
00194 001.0015 ID:RHYD AREA OPEAK TpeakDate_hh:mm R.V.
00195 CALIB STANDHYD 03:SOUTH .57 099 No_date 12:12 56.41
00196 [XIMP= 72;TIMP= 90]
00197 [LOSS= 2 ;CN= 84.0]
00198 [Pervious area IAPER= 8.00;SLPP= 50;LGP= 10;MNP= 250;SCP= 0]
00199 [Impervious area IAIMP= 2.00;SLPI= 50;LGI= 100;MMI= 013;SCI= 0]
00200
00201 INTERSECTION AREA (TO NE POND PHASE 1)
00202
00203 001.0016 ID:RHYD AREA OPEAK TpeakDate_hh:mm R.V.
00204 CALIB STANDHYD 04:INT_AREA .79 101 No_date 12:12 49.69
00205 [XIMP= 56;TIMP= 70]
00206 [LOSS= 2 ;CN= 84.0]
00207 [Pervious area IAPER= 8.00;SLPP= 50;LGP= 40;MNP= 250;SCP= 0]
00208 [Impervious area IAIMP= 2.00;SLPI= 50;LGI= 110;MMI= 013;SCI= 0]
00209
00210 TOTAL AREA CONTRIBUTING TO NE POND (PHASE 1)
00211
00212 001.0017 ID:RHYD AREA OPEAK TpeakDate_hh:mm R.V.
00213 ADD HYD 01:WEST_PRE 11.10 504 No_date 12:31 28.79
00214 02:NORTH 1.01 148 No_date 12:12 52.23
00215 03:SOUTH .57 099 No_date 12:12 56.41
00216 04:INT_AREA .79 101 No_date 12:12 49.69
00217 [DT= 1.00] SUM 05:TO_POND 13.47 625 No_date 12:13 32.94
00218
00219 NE SWM POND (PHASE 1)
00220
00221 001.0018 ID:RHYD AREA OPEAK TpeakDate_hh:mm R.V.
00222 ROUTE RESERVOIR -> 05:TO_POND 13.47 625 No_date 12:13 32.94
00223 [ROT= 1.00] out< 06:NE_POND 13.47 076 No_date 14:33 32.94
00224 overflow <= 09:OVF .00 000 No_date 0:00 .00
00225 [MxStoUsed= 2349E-02; TotOvfVol= 0.000E+00; N-Ovf= 0; TotDurOvf= 0.hrs]
00226
00227 DISCHARGE TO HIGH STREET (PHASE 1)
00228
00229 R4
00230
00231 001.0019 ID:RHYD AREA OPEAK TpeakDate_hh:mm R.V.
00232 DESIGN STANDHYD 02:R4 .48 066 No_date 12:12 52.06
00233 [XIMP= 56;TIMP= 70]
00234 [SLP= 50;DT= 1.00]
00235 [LOSS= 2 ;CN= 84.0]
00236
00237 001.0020 ID:RHYD AREA OPEAK TpeakDate_hh:mm R.V.
00238 ROUTE RESERVOIR -> 02:R4 .48 066 No_date 12:12 52.06
00239 [ROT= 1.00] out< 04:SCR4 .48 016 No_date 12:37 52.06
00240 overflow <= 09:OVF .00 000 No_date 0:00 .00
00241 [MxStoUsed= 9165E-02; TotOvfVol= 0.000E+00; N-Ovf= 0; TotDurOvf= 0.hrs]
00242
00243 DISCHARGE TO HIGH STREET (PHASE 1)
00244
00245 001.0021 ID:RHYD AREA OPEAK TpeakDate_hh:mm R.V.
00246 ADD HYD 04:SCR4 .48 016 No_date 12:37 52.06
00247 06:NE_Pond 13.47 076 No_date 14:33 32.94
00248 [DT= 1.00] SUM 07:P1_HIGH 13.95 088 No_date 13:09 33.60
00249
00250 24 hour SCS 25-year
00251
00252 001.0022 MASS STORM
00253
00254 Filename = C:\SWMHYMO\THIRDH-1\PHASE1-1\SCS24HII.mst
00255 Comment = 24 hour SCS II storm mass curve
00256 [SDT= 1.00;SDUR= 24.00;PIOT= 86.40]
00257
00258 AREA WEST OF INTERSECTION (10HA)
00259
00260 001.0023 ID:RHYD AREA OPEAK TpeakDate_hh:mm R.V.
00261 CALIB NASHYD 01:WEST_PRE 11.10 860 No_date 12:31 46.48
00262 [CN= 84.0; N= 3.00]
00263 [Tp= 41;DT= 1.00]
00264
00265 AREA NORTH OF POND (&INC POND)
00266
00267 001.0024 ID:RHYD AREA OPEAK TpeakDate_hh:mm R.V.
00268 CALIB STANDHYD 02:NORTH 1.01 218 No_date 12:12 75.47
00269 [XIMP= 62;TIMP= 78]

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00271# [LOSS= 2 :CN= 84.0]
00272# [Pervious area: IAPER= 9.00:SLPP= 50:LGP= 40:MNP= 250:SCP= 0]
00273# [Impervious area: IAIMP= 2.00:SLPI= 50:LGI= 60:MNI= 013:SCI= 0]
00274# -----
00275# AREA SOUTH OF POND
00276# -----
00277# 001.0025-----ID:NHYD-----AREA-----QPEAK-TpeakDate hh:mm-----R,V
00278# CALIB STANDHYD 03:SOUTH 57 143 No_date 12:12 80.15
00279# [XIMP= 72:TIMP= 90]
00280# [LOSS= 2 :CN= 84.0]
00281# [Pervious area: IAPER= 8.00:SLPP= 50:LGP= 10:MNP= 250:SCP= 0]
00282# [Impervious area: IAIMP= 2.00:SLPI= 50:LGI= 100:MNI= 013:SCI= 0]
00283# -----
00284# INTERSECTION AREA (TO NE POND - PHASE 1)
00285# -----
00286# 001.0026-----ID:NHYD-----AREA-----QPEAK-TpeakDate hh:mm-----R,V
00287# CALIB STANDHYD 04:INT_AREA 79 153 No_date 12:12 72.57
00288# [XIMP= 56:TIMP= 70]
00289# [LOSS= 2 :CN= 84.0]
00290# [Pervious area: IAPER= 8.00:SLPP= 50:LGP= 40:MNP= 250:SCP= 0]
00291# [Impervious area: IAIMP= 2.00:SLPI= 50:LGI= 110:MNI= 013:SCI= 0]
00292# -----
00293# TOTAL AREA CONTRIBUTING TO NE POND (PHASE 1)
00294# -----
00295# 001.0027-----ID:NHYD-----AREA-----QPEAK-TpeakDate hh:mm-----R,V
00296# ADD HYD 01:WEST_PRE 11.10 360 No_date 12:11 48.48
00297# + 02:NORTH 1.01 218 No_date 12:12 75.47
00298# + 03:SOUTH 57 143 No_date 12:12 80.15
00299# + 04:INT_AREA 79 153 No_date 12:13 72.57
00300# [DT= 1.00] SUM= 05:TO_POND 13.47 1.002 No_date 12:13 53.26
00301# -----
00302# NE SWM POND (PHASE 1)
00303# -----
00304# 001.0028-----ID:NHYD-----AREA-----QPEAK-TpeakDate hh:mm-----R,V
00305# ROUTE RESERVOIR -> 02:R4 48 099 No_date 12:12 75.03
00306# [RDT= 1.00] out<= 06:NE_Pond 13.47 084 No_date 15:17 53.26
00307# overflow <= 09:OVF 00 000 No_date 0:00 0.00
00308# [MxStoUsed= 4306E+00, TotOvfVol= 0000E+00, N-Ovf= 0, TotDurOvf= 0 hrs]
00309# -----
00310# R4
00311# -----
00312# 001.0029-----ID:NHYD-----AREA-----QPEAK-TpeakDate hh:mm-----R,V
00313# DESIGN STANDHYD 02:R4 48 099 No_date 12:12 75.03
00314# [XIMP= 56:TIMP= 70]
00315# [SLP= 50:DT= 1.00]
00316# [LOSS= 2 :CN= 84.0]
00317# -----
00318# 001.0030-----ID:NHYD-----AREA-----QPEAK-TpeakDate hh:mm-----R,V
00319# ROUTE RESERVOIR -> 02:R4 48 099 No_date 12:12 75.03
00320# [RDT= 1.00] out<= 04:SCR4 48 024 No_date 12:34 75.03
00321# overflow <= 09:OVF 00 000 No_date 0:00 0.00
00322# [MxStoUsed= 1350E+01, TotOvfVol= 0000E+00, N-Ovf= 0, TotDurOvf= 0 hrs]
00323# -----
00324# DISCHARGE TO HIGH STREET (PHASE 1)
00325# -----
00326# 001.0031-----ID:NHYD-----AREA-----QPEAK-TpeakDate hh:mm-----R,V
00327# ADD HYD 04:SCR4 48 024 No_date 12:34 75.03
00328# + 06:NE_Pond 13.47 084 No_date 15:17 53.26
00329# [DT= 1.00] SUM= 07:PI_HIGH 13.95 102 No_date 12:59 54.01
00330# -----
00331# 24 hour SCS 100-year
00332# -----
00333# -----
00334# -----
00335# 001.0032-----ID:NHYD-----AREA-----QPEAK-TpeakDate hh:mm-----R,V
00336# MASS STORM
00337# Filename = C:\SWMHYMO\THIRDH-1\PHASE1-1\SCS24HII.MST
00338# Comment = 24 hour SCS II storm mass curve
00339# [SDT=12.00:SDUR= 24.00:PTOT= 108.00]
00340# -----
00341# AREA WEST OF INTERSECTION (10HA)
00342# -----
00343# 001.0033-----ID:NHYD-----AREA-----QPEAK-TpeakDate hh:mm-----R,V
00344# CALIB NASHYD 01:WEST_PRE 11.10 1.199 No_date 12:30 67.39
00345# [CN= 84.0: N= 3.00]
00346# [Tp= 41:DT= 1.00]
00347# -----
00348# AREA NORTH OF POND (&INC POND)
00349# -----
00350# 001.0034-----ID:NHYD-----AREA-----QPEAK-TpeakDate hh:mm-----R,V
00351# CALIB STANDHYD 02:NORTH 1.01 285 No_date 12:12 96.63
00352# [XIMP= 62:TIMP= 78]
00353# [LOSS= 2 :CN= 84.0]
00354# [Pervious area: IAPER= 8.00:SLPP= 50:LGP= 40:MNP= 250:SCP= 0]
00355# [Impervious area: IAIMP= 2.00:SLPI= 50:LGI= 60:MNI= 013:SCI= 0]
00356# -----
00357# AREA SOUTH OF POND
00358# -----
00359# 001.0035-----ID:NHYD-----AREA-----QPEAK-TpeakDate hh:mm-----R,V
00360# CALIB STANDHYD 03:SOUTH 57 181 No_date 12:12 101.60
00361# [XIMP= 72:TIMP= 90]
00362# [LOSS= 2 :CN= 84.0]
00363# [Pervious area: IAPER= 8.00:SLPP= 50:LGP= 10:MNP= 250:SCP= 0]
00364# [Impervious area: IAIMP= 2.00:SLPI= 50:LGI= 100:MNI= 013:SCI= 0]
00365# -----
00366# INTERSECTION AREA (TO NE POND - PHASE 1)
00367# -----
00368# 001.0036-----ID:NHYD-----AREA-----QPEAK-TpeakDate hh:mm-----R,V
00369# CALIB STANDHYD 04:INT_AREA 79 204 No_date 12:12 93.50
00370# [XIMP= 56:TIMP= 70]
00371# [LOSS= 2 :CN= 84.0]
00372# [Pervious area: IAPER= 8.00:SLPP= 50:LGP= 40:MNP= 250:SCP= 0]
00373# [Impervious area: IAIMP= 2.00:SLPI= 50:LGI= 110:MNI= 013:SCI= 0]
00374# -----
00375# TOTAL AREA CONTRIBUTING TO NE POND (PHASE 1)
00376# -----
00377# 001.0037-----ID:NHYD-----AREA-----QPEAK-TpeakDate hh:mm-----R,V
00378# ADD HYD 01:WEST_PRE 11.10 1.199 No_date 12:30 67.39
00379# + 03:SOUTH 57 181 No_date 12:12 101.60
00380# + 04:INT_AREA 79 204 No_date 12:12 93.50
00381# [DT= 1.00] SUM= 05:TO_POND 13.47 1.372 No_date 12:25 72.56
00382# -----
00383# NE SWM POND (PHASE 1)
00384# -----
00385# -----
00386# 001.0038-----ID:NHYD-----AREA-----QPEAK-TpeakDate hh:mm-----R,V
00387# ROUTE RESERVOIR -> 05:TO_POND 13.47 1.372 No_date 12:25 72.56
00388# [RDT= 1.00] out<= 06:NE_Pond 13.47 091 No_date 16:14 72.56
00389# overflow <= 09:OVF 00 000 No_date 0:00 0.00
00390# [MxStoUsed= 4212E+00, TotOvfVol= 0000E+00, N-Ovf= 0, TotDurOvf= 0 hrs]
00391# -----
00392# R4
00393# -----
00394# 001.0039-----ID:NHYD-----AREA-----QPEAK-TpeakDate hh:mm-----R,V
00395# DESIGN STANDHYD 02:R4 48 129 No_date 12:12 96.01
00396# [XIMP= 56:TIMP= 70]
00397# [SLP= 50:DT= 1.00]
00398# [LOSS= 2 :CN= 84.0]
00399# -----
00400# 001.0040-----ID:NHYD-----AREA-----QPEAK-TpeakDate hh:mm-----R,V
00401# ROUTE RESERVOIR -> 02:R4 48 129 No_date 12:12 96.01
00402# [RDT= 1.00] out<= 04:SCR4 48 031 No_date 12:33 96.01
00403# overflow <= 09:OVF 00 000 No_date 0:00 0.00
00404# [MxStoUsed= 1745E+00, TotOvfVol= 0000E+00, N-Ovf= 0, TotDurOvf= 0 hrs]
00405# -----

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00406# ----- DISCHARGE TO HIGH STREET (PHASE 1) -----
00407# -----
00408# 001.0041-----ID:NHYD-----AREA-----QPEAK-TpeakDate hh:mm-----R,V
00409# ADD HYD 04:SCR4 48 031 No_date 12:33 96.01
00410# + 06:NE_Pond 13.47 091 No_date 16:14 72.56
00411# [DT= 1.00] SUM= 07:PI_HIGH 13.95 114 No_date 13:01 73.37
00412# -----
00413# REGIONAL EVENT
00414# -----
00415# -----
00416# -----
00417# 001.0042-----ID:NHYD-----AREA-----QPEAK-TpeakDate hh:mm-----R,V
00418# HEAD STORM
00419# Filename = tim.STM
00420# Comment =
00421# [BDT=60.00:SDUR= 12.00:PTOT= 193.00]
00422# -----
00423# AREA WEST OF INTERSECTION (10HA)
00424# -----
00425# 001.0043-----ID:NHYD-----AREA-----QPEAK-TpeakDate hh:mm-----R,V
00426# CALIB NASHYD 01:WEST_PRE 11.10 1.087 No_date 7:06 146.65
00427# [CN= 84.0: N= 3.00]
00428# [Tp= 41:DT= 1.00]
00429# -----
00430# AREA NORTH OF POND (&INC POND)
00431# -----
00432# 001.0044-----ID:NHYD-----AREA-----QPEAK-TpeakDate hh:mm-----R,V
00433# CALIB STANDHYD 02:NORTH 1.01 117 No_date 7:00 180.73
00434# [XIMP= 62:TIMP= 78]
00435# [LOSS= 2 :CN= 84.0]
00436# [Pervious area: IAPER= 8.00:SLPP= 50:LGP= 40:MNP= 250:SCP= 0]
00437# [Impervious area: IAIMP= 2.00:SLPI= 50:LGI= 60:MNI= 013:SCI= 0]
00438# -----
00439# AREA SOUTH OF POND
00440# -----
00441# 001.0045-----ID:NHYD-----AREA-----QPEAK-TpeakDate hh:mm-----R,V
00442# CALIB STANDHYD 03:SOUTH 57 068 No_date 7:00 186.32
00443# [XIMP= 72:TIMP= 90]
00444# [LOSS= 2 :CN= 84.0]
00445# [Pervious area: IAPER= 8.00:SLPP= 50:LGP= 10:MNP= 250:SCP= 0]
00446# [Impervious area: IAIMP= 2.00:SLPI= 50:LGI= 100:MNI= 013:SCI= 0]
00447# -----
00448# INTERSECTION AREA (TO NE POND - PHASE 1)
00449# -----
00450# 001.0046-----ID:NHYD-----AREA-----QPEAK-TpeakDate hh:mm-----R,V
00451# CALIB STANDHYD 04:INT_AREA 79 090 No_date 7:00 177.14
00452# [XIMP= 56:TIMP= 70]
00453# [LOSS= 2 :CN= 84.0]
00454# [Pervious area: IAPER= 8.00:SLPP= 50:LGP= 40:MNP= 250:SCP= 0]
00455# [Impervious area: IAIMP= 2.00:SLPI= 50:LGI= 110:MNI= 013:SCI= 0]
00456# -----
00457# TOTAL AREA CONTRIBUTING TO NE POND (PHASE 1)
00458# -----
00459# 001.0047-----ID:NHYD-----AREA-----QPEAK-TpeakDate hh:mm-----R,V
00460# ADD HYD 01:WEST_PRE 11.10 1.087 No_date 7:06 146.65
00461# + 02:NORTH 1.01 117 No_date 7:00 180.73
00462# + 03:SOUTH 57 068 No_date 7:00 186.32
00463# + 04:INT_AREA 79 090 No_date 7:00 177.14
00464# [DT= 1.00] SUM= 05:TO_POND 13.47 1.341 No_date 7:01 152.47
00465# -----
00466# NE SWM POND (PHASE 1)
00467# -----
00468# 001.0048-----ID:NHYD-----AREA-----QPEAK-TpeakDate hh:mm-----R,V
00469# ROUTE RESERVOIR -> 05:TO_POND 13.47 1.341 No_date 7:01 152.47
00470# [RDT= 1.00] out<= 06:NE_Pond 13.47 115 No_date 12:34 152.47
00471# overflow <= 09:OVF 00 000 No_date 0:00 0.00
00472# [MxStoUsed= 1673E+01, TotOvfVol= 0000E+00, N-Ovf= 0, TotDurOvf= 0 hrs]
00473# -----
00474# R4
00475# -----
00476# 001.0049-----ID:NHYD-----AREA-----QPEAK-TpeakDate hh:mm-----R,V
00477# DESIGN STANDHYD 02:R4 48 055 No_date 7:00 179.72
00478# [XIMP= 56:TIMP= 70]
00479# [SLP= 50:DT= 1.00]
00480# [LOSS= 2 :CN= 84.0]
00481# -----
00482# 001.0050-----ID:NHYD-----AREA-----QPEAK-TpeakDate hh:mm-----R,V
00483# ROUTE RESERVOIR -> 02:R4 48 055 No_date 7:00 179.72
00484# [RDT= 1.00] out<= 04:SCR4 48 033 No_date 7:13 179.72
00485# overflow <= 09:OVF 00 000 No_date 0:00 0.00
00486# [MxStoUsed= 1862E+01, TotOvfVol= 0000E+00, N-Ovf= 0, TotDurOvf= 0 hrs]
00487# -----
00488# DISCHARGE TO HIGH STREET (PHASE 1)
00489# -----
00490# 001.0051-----ID:NHYD-----AREA-----QPEAK-TpeakDate hh:mm-----R,V
00491# ADD HYD 04:SCR4 48 033 No_date 7:13 179.72
00492# + 06:NE_Pond 13.47 115 No_date 12:34 152.47
00493# [DT= 1.00] SUM= 07:PI_HIGH 13.95 138 No_date 9:07 153.60
00494# -----
00495# 001.0052-----ID:NHYD-----AREA-----QPEAK-TpeakDate hh:mm-----R,V
00496# FINISH
00497# -----
00498# -----
00499# -----
00500# -----
00501# -----
00502# Simulation ended on 2015-04-09 at 09:27:06
00503# -----

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00001> 2 Metric units
00002> *****
00003> # Project Name: [West End Commercial, Collingwood] Project Number: [183-269]
00004> # Date : April 9, 2015
00005> # Modeller : [T. MacDougall]
00006> # Company : CF Crozier & Associates Inc.
00007> # License # : 3737016
00008> *****
00009> # Interim Condition - NE Pond & Block 1 Ponding Only
00010> *****
00011> # Rainfall Data: Storms are the SCS Volumes from MTO Design Chart 1.01(e)
00012> # District 5: Owen Sound, Basins West of and including Collingwood.
00013> *****
00014> START TZERO=[0.0], METOUT=[2], NSTORM=[0], NRUN=[0]
00015> # [ ] <- storm filename, one per line for NSTORM time
00016> *****
00017> #*****
00018> # 25mm Event
00019> *****
00020> *****
00021> CHICAGO STORM IUNITS=[2], TD=[4] (hrs), TPRAT=[0.333], CSMT=[5] (min),
00022> ICASECS=[1],
00023> A=[568.700], B=[6.662], and C=[0.819],
00024> *****
00025> # AREA WEST OF INTERSECTION (10HA)
00026> *****
00027> CALIB NASHYD ID=[1], NHYD=["WEST PRE"], DT=[1]min, AREA=[11.1] (ha),
00028> DWF=[0] (cms), CN/C=[84], IA=[8] (mm),
00029> N=[3], TP=[0.41]hrs,
00030> RAINFALL=[ , , , ] (mm/hr), END=-1
00031> *****
00032> # AREA NORTH OF POND (4INC POND)
00033> *****
00034> CALIB STANDHYD ID=[2], NHYD=["NORTH"], DT=[1] (min), AREA=[1.01] (ha),
00035> XIMP=[0.62], TIMP=[0.78], DWF=[0] (cms), LOSS=[2],
00036> SCS curve number CN=[84],
00037> Pervious surfaces: IAPER=[8] (mm), SLPP=[0.5] (%),
00038> LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00039> Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
00040> LGI=[60] (m), MNI=[0.013], SCI=[0] (min),
00041> RAINFALL=[ , , , ] (mm/hr), END=-1
00042> *****
00043> # AREA SOUTH OF POND
00044> *****
00045> CALIB STANDHYD ID=[3], NHYD=["SOUTH"], DT=[1] (min), AREA=[0.57] (ha),
00046> XIMP=[0.72], TIMP=[0.9], DWF=[0] (cms), LOSS=[2],
00047> SCS curve number CN=[84],
00048> Pervious surfaces: IAPER=[8] (mm), SLPP=[0.5] (%),
00049> LGP=[10] (m), MNP=[0.25], SCP=[0] (min),
00050> Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
00051> LGI=[100] (m), MNI=[0.013], SCI=[0] (min),
00052> RAINFALL=[ , , , ] (mm/hr), END=-1
00053> *****
00054> # INTERSECTION AREA (TO NE POND - PHASE 1)
00055> *****
00056> CALIB STANDHYD ID=[4], NHYD=["INT AREA"], DT=[1] (min), AREA=[0.79] (ha),
00057> XIMP=[0.56], TIMP=[0.70], DWF=[0] (cms), LOSS=[2],
00058> SCS curve number CN=[84],
00059> Pervious surfaces: IAPER=[8] (mm), SLPP=[0.5] (%),
00060> LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00061> Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
00062> LGI=[110] (m), MNI=[0.013], SCI=[0] (min),
00063> RAINFALL=[ , , , ] (mm/hr), END=-1
00064> *****
00065> # TOTAL AREA CONTRIBUTING TO NE POND (PHASE 1)
00066> *****
00067> ADD HYD IDsum=[5], NHYD=["TO_POND"], IDs to add=[1+2+3+4]
00068> *****
00069> # R4
00070> *****
00071> DESIGN STANDHYD ID=[2], NHYD=["R4"], DT=[1]min, AREA=[0.48] (ha),
00072> XIMP=[0.56], TIMP=[0.70], DWF=[0] (cms), LOSS=[2], CN=[84],
00073> SLOPE=[0.5] (%), RAINFALL=[ , , , ] (mm/hr), END=-1
00074> *****
00075> # DISCHARGE TO HIGH STREET (PHASE 1)
00076> *****
00077> ADD HYD IDsum=[7], NHYD=["P1_HIGH"], IDs to add=[5+2]
00078> *****
00079> #*****
00080> # 4 hour Chicago 5-year
00081> *****
00082> #
00083> CHICAGO STORM IUNITS=[2], TD=[4] (hrs), TPRAT=[0.333], CSMT=[5] (min),
00084> ICASECS=[2],
00085> Enter ordinates of IDF curve below, at least seven points
00086> TIME (min) Intensity (mm/hr)
00087> [5] [130]
00088> [10] [90]
00089> [15] [77]
00090> [30] [50]
00091> [60] [33]
00092> [120] [21]
00093> [360] [8.8]
00094> [720] [4.7]
00095> [1440] [2.6]
00096> *****
00097> # -1
00098> *****
00099> # AREA WEST OF INTERSECTION (10HA)
00100> *****
00101> CALIB NASHYD ID=[1], NHYD=["WEST PRE"], DT=[1]min, AREA=[11.1] (ha),
00102> DWF=[0] (cms), CN/C=[84], IA=[8] (mm),
00103> N=[3], TP=[0.41]hrs,
00104> RAINFALL=[ , , , ] (mm/hr), END=-1
00105> *****
00106> # AREA NORTH OF POND (4INC POND)
00107> *****
00108> CALIB STANDHYD ID=[2], NHYD=["NORTH"], DT=[1] (min), AREA=[1.01] (ha),
00109> XIMP=[0.62], TIMP=[0.78], DWF=[0] (cms), LOSS=[2],
00110> SCS curve number CN=[84],
00111> Pervious surfaces: IAPER=[8] (mm), SLPP=[0.5] (%),
00112> LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00113> Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
00114> LGI=[60] (m), MNI=[0.013], SCI=[0] (min),
00115> RAINFALL=[ , , , ] (mm/hr), END=-1
00116> *****
00117> # AREA SOUTH OF POND
00118> *****
00119> CALIB STANDHYD ID=[3], NHYD=["SOUTH"], DT=[1] (min), AREA=[0.57] (ha),
00120> XIMP=[0.72], TIMP=[0.9], DWF=[0] (cms), LOSS=[2],
00121> SCS curve number CN=[84],
00122> Pervious surfaces: IAPER=[8] (mm), SLPP=[0.5] (%),
00123> LGP=[10] (m), MNP=[0.25], SCP=[0] (min),
00124> Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
00125> LGI=[100] (m), MNI=[0.013], SCI=[0] (min),
00126> RAINFALL=[ , , , ] (mm/hr), END=-1
00127> *****
00128> # INTERSECTION AREA (TO NE POND - PHASE 1)
00129> *****
00130> CALIB STANDHYD ID=[4], NHYD=["INT AREA"], DT=[1] (min), AREA=[0.79] (ha),
00131> XIMP=[0.56], TIMP=[0.70], DWF=[0] (cms), LOSS=[2],
00132> SCS curve number CN=[84],
00133> Pervious surfaces: IAPER=[8] (mm), SLPP=[0.5] (%),
00134> LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00135> Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
00136> LGI=[110] (m), MNI=[0.013], SCI=[0] (min)

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00136> RAINFALL=[ , , , ] (mm/hr), END=-1
00137> *****
00138> # TOTAL AREA CONTRIBUTING TO NE POND (PHASE 1)
00139> *****
00140> ADD HYD IDsum=[5], NHYD=["TO_POND"], IDs to add=[1+2+3+4]
00141> *****
00142> # R4
00143> *****
00144> DESIGN STANDHYD ID=[2], NHYD=["R4"], DT=[1]min, AREA=[0.48] (ha),
00145> XIMP=[0.56], TIMP=[0.70], DWF=[0] (cms), LOSS=[2], CN=[84],
00146> SLOPE=[0.5] (%), RAINFALL=[ , , , ] (mm/hr), END=-1
00147> *****
00148> # DISCHARGE TO HIGH STREET (PHASE 1)
00149> *****
00150> ADD HYD IDsum=[7], NHYD=["P1_HIGH"], IDs to add=[5+2]
00151> *****
00152> #*****
00153> # 4 hour Chicago 25-year
00154> *****
00155> #
00156> CHICAGO STORM IUNITS=[2], TD=[4] (hrs), TPRAT=[0.333], CSMT=[5] (min),
00157> ICASECS=[2],
00158> Enter ordinates of IDF curve below, at least seven points
00159> TIME (min) Intensity (mm/hr)
00160> [5] [180]
00161> [10] [120]
00162> [15] [105]
00163> [30] [67]
00164> [60] [46]
00165> [120] [28]
00166> [360] [13]
00167> [720] [6.5]
00168> [1440] [3.6]
00169> *****
00170> # -1
00171> *****
00172> # AREA WEST OF INTERSECTION (10HA)
00173> *****
00174> CALIB NASHYD ID=[1], NHYD=["WEST PRE"], DT=[1]min, AREA=[11.1] (ha),
00175> DWF=[0] (cms), CN/C=[84], IA=[8] (mm),
00176> N=[3], TP=[0.41]hrs,
00177> RAINFALL=[ , , , ] (mm/hr), END=-1
00178> *****
00179> # AREA NORTH OF POND (4INC POND)
00180> *****
00181> CALIB STANDHYD ID=[2], NHYD=["NORTH"], DT=[1] (min), AREA=[1.01] (ha),
00182> XIMP=[0.62], TIMP=[0.78], DWF=[0] (cms), LOSS=[2],
00183> SCS curve number CN=[84],
00184> Pervious surfaces: IAPER=[8] (mm), SLPP=[0.5] (%),
00185> LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00186> Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
00187> LGI=[60] (m), MNI=[0.013], SCI=[0] (min),
00188> RAINFALL=[ , , , ] (mm/hr), END=-1
00189> *****
00190> # AREA SOUTH OF POND
00191> *****
00192> CALIB STANDHYD ID=[3], NHYD=["SOUTH"], DT=[1] (min), AREA=[0.57] (ha),
00193> XIMP=[0.72], TIMP=[0.9], DWF=[0] (cms), LOSS=[2],
00194> SCS curve number CN=[84],
00195> Pervious surfaces: IAPER=[8] (mm), SLPP=[0.5] (%),
00196> LGP=[10] (m), MNP=[0.25], SCP=[0] (min),
00197> Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
00198> LGI=[100] (m), MNI=[0.013], SCI=[0] (min),
00199> RAINFALL=[ , , , ] (mm/hr), END=-1
00200> *****
00201> # INTERSECTION AREA (TO NE POND - PHASE 1)
00202> *****
00203> CALIB STANDHYD ID=[4], NHYD=["INT AREA"], DT=[1] (min), AREA=[0.79] (ha),
00204> XIMP=[0.56], TIMP=[0.70], DWF=[0] (cms), LOSS=[2],
00205> SCS curve number CN=[84],
00206> Pervious surfaces: IAPER=[8] (mm), SLPP=[0.5] (%),
00207> LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00208> Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
00209> LGI=[110] (m), MNI=[0.013], SCI=[0] (min),
00210> RAINFALL=[ , , , ] (mm/hr), END=-1
00211> *****
00212> # TOTAL AREA CONTRIBUTING TO NE POND (PHASE 1)
00213> *****
00214> ADD HYD IDsum=[5], NHYD=["TO_POND"], IDs to add=[1+2+3+4]
00215> *****
00216> # R4
00217> *****
00218> DESIGN STANDHYD ID=[2], NHYD=["R4"], DT=[1]min, AREA=[0.48] (ha),
00219> XIMP=[0.56], TIMP=[0.70], DWF=[0] (cms), LOSS=[2], CN=[84],
00220> SLOPE=[0.5] (%), RAINFALL=[ , , , ] (mm/hr), END=-1
00221> *****
00222> # DISCHARGE TO HIGH STREET (PHASE 1)
00223> *****
00224> ADD HYD IDsum=[7], NHYD=["P1_HIGH"], IDs to add=[5+2]
00225> *****
00226> #*****
00227> # 4 hour Chicago 100-year
00228> *****
00229> #
00230> CHICAGO STORM IUNITS=[2], TD=[4] (hrs), TPRAT=[0.333], CSMT=[5] (min),
00231> ICASECS=[2],
00232> Enter ordinates of IDF curve below, at least seven points
00233> TIME (min) Intensity (mm/hr)
00234> [5] [215]
00235> [10] [145]
00236> [15] [125]
00237> [30] [82]
00238> [60] [56]
00239> [120] [34]
00240> [360] [16]
00241> [720] [8.0]
00242> [1440] [4.5]
00243> *****
00244> # -1
00245> *****
00246> # AREA WEST OF INTERSECTION (10HA)
00247> *****
00248> CALIB NASHYD ID=[1], NHYD=["WEST PRE"], DT=[1]min, AREA=[11.1] (ha),
00249> DWF=[0] (cms), CN/C=[84], IA=[8] (mm),
00250> N=[3], TP=[0.41]hrs,
00251> RAINFALL=[ , , , ] (mm/hr), END=-1
00252> *****
00253> # AREA NORTH OF POND (4INC POND)
00254> *****
00255> CALIB STANDHYD ID=[2], NHYD=["NORTH"], DT=[1] (min), AREA=[1.01] (ha),
00256> XIMP=[0.62], TIMP=[0.78], DWF=[0] (cms), LOSS=[2],
00257> SCS curve number CN=[84],
00258> Pervious surfaces: IAPER=[8] (mm), SLPP=[0.5] (%),
00259> LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00260> Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
00261> LGI=[60] (m), MNI=[0.013], SCI=[0] (min),
00262> RAINFALL=[ , , , ] (mm/hr), END=-1
00263> *****
00264> # AREA SOUTH OF POND
00265> *****
00266> CALIB STANDHYD ID=[3], NHYD=["SOUTH"], DT=[1] (min), AREA=[0.57] (ha),
00267> XIMP=[0.72], TIMP=[0.9], DWF=[0] (cms), LOSS=[2],
00268> SCS curve number CN=[84],
00269> Pervious surfaces: IAPER=[8] (mm), SLPP=[0.5] (%),
00270> LGP=[10] (m), MNP=[0.25], SCP=[0] (min),
00271> Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
00272> LGI=[100] (m), MNI=[0.013], SCI=[0] (min)

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00271> RAINFALL=[ , , , ](mm/hr) , END=-1
00272> *#-----
00273> *#----- INTERSECTION AREA (TO NE POND - PHASE 1) -----
00274> *#-----
00275> CALIB STANDHYD ID=[4], NHYD=["INT AREA"], DT=[1](min), AREA=[0.79](ha),
00276> XIMP=[0.56], TIMP=[0.70], DWF=[0](cms), LOSS=[2],
00277> SCS curve number CN=[84],
00278> Pervious surfaces: IAPER=[8](mm), SLPP=[0.5](%),
00279> LGP=[40](m), MNP=[0.25], SCP=[0](min),
00280> Impervious surfaces: IAIMP=[2.0](mm), SLPI=[0.5](%),
00281> LGI=[110](m), MNI=[0.013], SCI=[0](min)
00282> RAINFALL=[ , , , ](mm/hr) , END=-1
00283> *#-----
00284> *#----- TOTAL AREA CONTRIBUTING TO NE POND (PHASE 1) -----
00285> *#-----
00286> ADD HYD IDsum=[5], NHYD=["TO POND"], IDs to add=[1+2+3+4]
00287> *#-----
00288> *#----- R4 -----
00289> *#-----
00290> DESIGN STANDHYD ID=[2], NHYD=["R4"], DT=[1]min, AREA=[0.48](ha),
00291> XIMP=[0.56], TIMP=[0.70], DWF=[0](cms), LOSS=[2], CN=[84],
00292> SLOPE=[0.5](%), RAINFALL=[ , , , ](mm/hr), END=-1
00293> *#-----
00294> *#----- DISCHARGE TO HIGH STREET (PHASE 1) -----
00295> *#-----
00296> ADD HYD IDsum=[7], NHYD=["P1 HIGH"], IDs to add=[5+2]
00297> *#-----
00298> *#----- REGIONAL EVENT -----
00299> *#-----
00300> *#-----
00301> *#-----
00302> READ STORM STORM_FILENAME=["tim.STM"]
00303> *#-----
00304> *#----- AREA WEST OF INTERSECTION (10HA) -----
00305> *#-----
00306> CALIB NASHYD ID=[1], NHYD=["WEST PRE"], DT=[1]min, AREA=[11.1](ha),
00307> DWF=[0](cms), CN/C=[84], IA=[8](mm),
00308> N=[3], TP=[0.41]hrs,
00309> RAINFALL=[ , , , ](mm/hr), END=-1
00310> *#-----
00311> *#----- AREA NORTH OF POND (&INC POND)-----
00312> *#-----
00313> CALIB STANDHYD ID=[2], NHYD=["NORTH"], DT=[1](min), AREA=[1.01](ha),
00314> XIMP=[0.62], TIMP=[0.78], DWF=[0](cms), LOSS=[2],
00315> SCS curve number CN=[84],
00316> Pervious surfaces: IAPER=[8](mm), SLPP=[0.5](%),
00317> LGP=[40](m), MNP=[0.25], SCP=[0](min),
00318> Impervious surfaces: IAIMP=[2](mm), SLPI=[0.5](%),
00319> LGI=[60](m), MNI=[0.013], SCI=[0](min),
00320> RAINFALL=[ , , , ](mm/hr) , END=-1
00321> *#-----
00322> *#----- AREA SOUTH OF POND -----
00323> *#-----
00324> CALIB STANDHYD ID=[3], NHYD=["SOUTH"], DT=[1](min), AREA=[0.57](ha),
00325> XIMP=[0.72], TIMP=[0.9], DWF=[0](cms), LOSS=[2],
00326> SCS curve number CN=[84],
00327> Pervious surfaces: IAPER=[8](mm), SLPP=[0.5](%),
00328> LGP=[10](m), MNP=[0.25], SCP=[0](min),
00329> Impervious surfaces: IAIMP=[2](mm), SLPI=[0.5](%),
00330> LGI=[100](m), MNI=[0.013], SCI=[0](min)
00331> RAINFALL=[ , , , ](mm/hr) , END=-1
00332> *#-----
00333> *#----- INTERSECTION AREA (TO NE POND - PHASE 1) -----
00334> *#-----
00335> CALIB STANDHYD ID=[4], NHYD=["INT AREA"], DT=[1](min), AREA=[0.79](ha),
00336> XIMP=[0.56], TIMP=[0.70], DWF=[0](cms), LOSS=[2],
00337> SCS curve number CN=[84],
00338> Pervious surfaces: IAPER=[8](mm), SLPP=[0.5](%),
00339> LGP=[40](m), MNP=[0.25], SCP=[0](min),
00340> Impervious surfaces: IAIMP=[2.0](mm), SLPI=[0.5](%),
00341> LGI=[110](m), MNI=[0.013], SCI=[0](min)
00342> RAINFALL=[ , , , ](mm/hr) , END=-1
00343> *#-----
00344> *#----- TOTAL AREA CONTRIBUTING TO NE POND (PHASE 1) -----
00345> *#-----
00346> ADD HYD IDsum=[5], NHYD=["TO POND"], IDs to add=[1+2+3+4]
00347> *#-----
00348> *#----- R4 -----
00349> *#-----
00350> DESIGN STANDHYD ID=[2], NHYD=["R4"], DT=[1]min, AREA=[0.48](ha),
00351> XIMP=[0.56], TIMP=[0.70], DWF=[0](cms), LOSS=[2], CN=[84],
00352> SLOPE=[0.5](%), RAINFALL=[ , , , ](mm/hr), END=-1
00353> *#-----
00354> *#----- DISCHARGE TO HIGH STREET (PHASE 1) -----
00355> *#-----
00356> ADD HYD IDsum=[7], NHYD=["P1 HIGH"], IDs to add=[5+2]
00357> *#-----
00358> FINISH
00359>

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00271> [DT= 1.00] SUM= 05:TO_POND 13.47 .802 No_date 1:50 34.12
00272> ----- R4 -----
00273> -----
00274> -----
00275> 001:0024-----ID:NHYD-----AREA---QPEAK-TpeakDate_hh:mm---R.V.
00276> DESIGN STANDHYD 02:R4 .48 .127 No_date 1:20 53.43
00277> [XIMP=.56:TIMP=.70]
00278> [SLP=.50:DT= 1.00]
00279> [LOSS= 2 :CN= 84.0]
00280> -----
00281> DISCHARGE TO HIGH STREET (PHASE 1) -----
00282> -----
00283> 001:0025-----ID:NHYD-----AREA---QPEAK-TpeakDate_hh:mm---R.V.
00284> ADD HYD 05:TO_POND 13.47 .802 No_date 1:50 34.12
00285> + 02:R4 .48 .127 No_date 1:20 53.43
00286> [DT= 1.00] SUM= 07:P1_HIGH 13.95 .836 No_date 1:21 34.78
00287> -----
00288> *****
00289> 4 hour Chicago 100-WRAE -----
00290> -----
00291> -----
00292> 001:0026-----
00293> CHICAGO STORM
00294> [SDT= 5.00:SDUR= 4.00:PTOT= 78.22]
00295> [A/B/C=1660.507/ 9.012/ .805: R=-.9989]
00296> -----
00297> ----- AREA WEST OF INTERSECTION (10HA) -----
00298> -----
00299> 001:0027-----ID:NHYD-----AREA---QPEAK-TpeakDate_hh:mm---R.V.
00300> CALIB NASHYD 01:WEST_PRE 11.10 .937 No_date 1:53 41.57
00301> [CN= 84.0: N= 3.00]
00302> [Tp= .41:DT= 1.00]
00303> -----
00304> ----- AREA NORTH OF POND (INC POND) -----
00305> -----
00306> 001:0028-----ID:NHYD-----AREA---QPEAK-TpeakDate_hh:mm---R.V.
00307> CALIB STANDHYD 02:NORTH 1.01 .358 No_date 1:20 67.51
00308> [XIMP=.62:TIMP=.78]
00309> [LOSS= 2 :CN= 84.0]
00310> [Previous area: IAper= 8.00:SLPP= .50:LGP= 40.:MNP=.250:SCP= .0]
00311> [Impervious area: IAimp= 2.00:SLPI= .50:LGI= 60.:MNI=.013:SCI= .0]
00312> -----
00313> ----- AREA SOUTH OF POND -----
00314> -----
00315> 001:0029-----ID:NHYD-----AREA---QPEAK-TpeakDate_hh:mm---R.V.
00316> CALIB STANDHYD 03:SOUTH .57 .244 No_date 1:20 72.04
00317> [XIMP=.72:TIMP=.90]
00318> [LOSS= 2 :CN= 84.0]
00319> [Previous area: IAper= 8.00:SLPP= .50:LGP= 10.:MNP=.250:SCP= .0]
00320> [Impervious area: IAimp= 2.00:SLPI= .50:LGI= 100.:MNI=.013:SCI= .0]
00321> -----
00322> ----- INTERSECTION AREA (TO NE POND - PHASE 1) -----
00323> -----
00324> 001:0030-----ID:NHYD-----AREA---QPEAK-TpeakDate_hh:mm---R.V.
00325> CALIB STANDHYD 04:INT_AREA .79 .233 No_date 1:21 64.71
00326> [XIMP=.56:TIMP=.70]
00327> [LOSS= 2 :CN= 84.0]
00328> [Previous area: IAper= 8.00:SLPP= .50:LGP= 40.:MNP=.250:SCP= .0]
00329> [Impervious area: IAimp= 2.00:SLPI= .50:LGI= 110.:MNI=.013:SCI= .0]
00330> -----
00331> ----- TOTAL AREA CONTRIBUTING TO NE POND (PHASE 1) -----
00332> -----
00333> 001:0031-----ID:NHYD-----AREA---QPEAK-TpeakDate_hh:mm---R.V.
00334> ADD HYD 01:WEST_PRE 11.10 .937 No_date 1:53 41.57
00335> + 02:NORTH 1.01 .358 No_date 1:20 67.51
00336> + 03:SOUTH .57 .244 No_date 1:20 72.04
00337> + 04:INT_AREA .79 .233 No_date 1:21 64.71
00338> [DT= 1.00] SUM= 05:TO_POND 13.47 1.108 No_date 1:50 46.16
00339> -----
00340> ----- R4 -----
00341> -----
00342> 001:0032-----ID:NHYD-----AREA---QPEAK-TpeakDate_hh:mm---R.V.
00343> DESIGN STANDHYD 02:R4 .48 .157 No_date 1:20 67.15
00344> [XIMP=.56:TIMP=.70]
00345> [SLP=.50:DT= 1.00]
00346> [LOSS= 2 :CN= 84.0]
00347> -----
00348> DISCHARGE TO HIGH STREET (PHASE 1) -----
00349> -----
00350> 001:0033-----ID:NHYD-----AREA---QPEAK-TpeakDate_hh:mm---R.V.
00351> ADD HYD 05:TO_POND 13.47 1.108 No_date 1:50 46.16
00352> + 02:R4 .48 .157 No_date 1:20 67.15
00353> [DT= 1.00] SUM= 07:P1_HIGH 13.95 1.149 No_date 1:46 46.89
00354> -----
00355> *****
00356> REGIONAL EVENT -----
00357> -----
00358> -----
00359> 001:0034-----
00360> READ STORM
00361> Filename = tim.STM
00362> Comment =
00363> [SDT=60.00:SDUR= 12.00:PTOT= 193.00]
00364> -----
00365> ----- AREA WEST OF INTERSECTION (10HA) -----
00366> -----
00367> 001:0035-----ID:NHYD-----AREA---QPEAK-TpeakDate_hh:mm---R.V.
00368> CALIB NASHYD 01:WEST_PRE 11.10 1.087 No_date 7:06 146.65
00369> [CN= 84.0: N= 3.00]
00370> [Tp= .41:DT= 1.00]
00371> -----
00372> ----- AREA NORTH OF POND (INC POND) -----
00373> -----
00374> 001:0036-----ID:NHYD-----AREA---QPEAK-TpeakDate_hh:mm---R.V.
00375> CALIB STANDHYD 02:NORTH 1.01 .117 No_date 7:00 180.73
00376> [XIMP=.62:TIMP=.78]
00377> [LOSS= 2 :CN= 84.0]
00378> [Previous area: IAper= 8.00:SLPP= .50:LGP= 40.:MNP=.250:SCP= .0]
00379> [Impervious area: IAimp= 2.00:SLPI= .50:LGI= 60.:MNI=.013:SCI= .0]
00380> -----
00381> ----- AREA SOUTH OF POND -----
00382> -----
00383> 001:0037-----ID:NHYD-----AREA---QPEAK-TpeakDate_hh:mm---R.V.
00384> CALIB STANDHYD 03:SOUTH .57 .068 No_date 7:00 186.32
00385> [XIMP=.72:TIMP=.90]
00386> [LOSS= 2 :CN= 84.0]
00387> [Previous area: IAper= 8.00:SLPP= .50:LGP= 10.:MNP=.250:SCP= .0]
00388> [Impervious area: IAimp= 2.00:SLPI= .50:LGI= 100.:MNI=.013:SCI= .0]
00389> -----
00390> ----- INTERSECTION AREA (TO NE POND - PHASE 1) -----
00391> -----
00392> 001:0038-----ID:NHYD-----AREA---QPEAK-TpeakDate_hh:mm---R.V.
00393> CALIB STANDHYD 04:INT_AREA .79 .090 No_date 7:00 177.14
00394> [XIMP=.56:TIMP=.70]
00395> [LOSS= 2 :CN= 84.0]
00396> [Previous area: IAper= 8.00:SLPP= .50:LGP= 40.:MNP=.250:SCP= .0]
00397> [Impervious area: IAimp= 2.00:SLPI= .50:LGI= 110.:MNI=.013:SCI= .0]
00398> -----
00399> ----- TOTAL AREA CONTRIBUTING TO NE POND (PHASE 1) -----
00400> -----
00401> 001:0039-----ID:NHYD-----AREA---QPEAK-TpeakDate_hh:mm---R.V.
00402> ADD HYD 01:WEST_PRE 11.10 1.087 No_date 7:06 146.65
00403> + 02:NORTH 1.01 .117 No_date 7:00 180.73
00404> + 03:SOUTH .57 .068 No_date 7:00 186.32
00405> + 04:INT_AREA .79 .090 No_date 7:00 177.14
    
```

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00406> [DT= 1.00] SUM= 05:TO_POND 13.47 1.341 No_date 7:01 152.67
00407> ----- R4 -----
00408> -----
00409> -----
00410> 001:0040-----ID:NHYD-----AREA---QPEAK-TpeakDate_hh:mm---R.V.
00411> DESIGN STANDHYD 02:R4 .48 .055 No_date 7:00 179.72
00412> [XIMP=.56:TIMP=.70]
00413> [SLP=.50:DT= 1.00]
00414> [LOSS= 2 :CN= 84.0]
00415> -----
00416> DISCHARGE TO HIGH STREET (PHASE 1) -----
00417> -----
00418> 001:0041-----ID:NHYD-----AREA---QPEAK-TpeakDate_hh:mm---R.V.
00419> ADD HYD 05:TO_POND 13.47 1.341 No_date 7:01 152.67
00420> + 02:R4 .48 .055 No_date 7:00 179.72
00421> [DT= 1.00] SUM= 07:P1_HIGH 13.95 1.395 No_date 7:00 153.60
00422> -----
00423> 001:0042-----
00424> FINISH -----
00425> -----
00426> -----
00427> WARNINGS / ERRORS / NOTES
00428> -----
00429> Simulation ended on 2015-04-09 at 11:40:19
00430> -----
00431> -----
    
```

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00001# 2 Metric units
00002# *****
00003# Project Name: [West End Commercial, Collingwood] Project Number: [183-269]
00004# Date: [April 9, 2015]
00005# Modeller: [T. MacDougall]
00006# Company: [C.F. Crozier & Associates Inc.]
00007# License #: [3737016]
00008# *****
00009# Interim Condition - Uncontrolled
00010# *****
00011# Rainfall Data: Storms are the SCS Volumes from MTO Design Chart 1.01(e)
00012# District 5: Owen Sound, Basins West of and including Collingwood.
00013# *****
00014# START TZERO=[0.0], METOUT=[2], NSTORM=[0], NRUN=[0]
00015# [ ] <-- storm filename, one per line for NSTORM time
00016# *****
00017# ***** 25mm event *****
00018# *****
00019# *****
00020# *****
00021# MASS STORM PTOTAL=[25] (mm), CSDT=[1] (min),
00022# CURVE_FILENAME=["SCS24HI1.mst"]
00023# *****
00024# AREA WEST OF INTERSECTION (10HA)
00025# *****
00026# CALIB NASHYD ID=[1], NHYD=["WEST PRE"], DT=[1] (min), AREA=[11.1] (ha),
00027# DWF=[0] (cms), CN/C=[84], IA=[8] (mm),
00028# N=[3], TP=[0.41] hrs,
00029# RAINFALL=[ , , , ] (mm/hr), END=-1
00030# *****
00031# AREA NORTH OF POND (4INC POND)
00032# *****
00033# CALIB STANDHYD ID=[2], NHYD=["NORTH"], DT=[1] (min), AREA=[1.01] (ha),
00034# XIMP=[0.62], TIMP=[0.78], DWF=[0] (cms), LOSS=[2],
00035# SCS curve number CN=[84],
00036# Pervious surfaces: IAPER=[8] (mm), SLPP=[0.5] (%),
00037# LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00038# Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
00039# LGI=[60] (m), MNI=[0.013], SCI=[0] (min),
00040# RAINFALL=[ , , , ] (mm/hr), END=-1
00041# *****
00042# AREA SOUTH OF POND
00043# *****
00044# CALIB STANDHYD ID=[3], NHYD=["SOUTH"], DT=[1] (min), AREA=[0.57] (ha),
00045# XIMP=[0.72], TIMP=[0.9], DWF=[0] (cms), LOSS=[2],
00046# SCS curve number CN=[84],
00047# Pervious surfaces: IAPER=[8] (mm), SLPP=[0.5] (%),
00048# LGP=[10] (m), MNP=[0.25], SCP=[0] (min),
00049# Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
00050# LGI=[100] (m), MNI=[0.013], SCI=[0] (min),
00051# RAINFALL=[ , , , ] (mm/hr), END=-1
00052# *****
00053# INTERSECTION AREA (TO NE POND - PHASE 1)
00054# *****
00055# CALIB STANDHYD ID=[4], NHYD=["INT AREA"], DT=[1] (min), AREA=[0.79] (ha),
00056# XIMP=[0.56], TIMP=[0.70], DWF=[0] (cms), LOSS=[2],
00057# SCS curve number CN=[84],
00058# Pervious surfaces: IAPER=[8] (mm), SLPP=[0.5] (%),
00059# LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00060# Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
00061# LGI=[110] (m), MNI=[0.013], SCI=[0] (min),
00062# RAINFALL=[ , , , ] (mm/hr), END=-1
00063# *****
00064# TOTAL AREA CONTRIBUTING TO NE POND (PHASE 1)
00065# *****
00066# ADD HYD IDsum=[5], NHYD=["TO POND"], IDs to add=[1+2+3+4]
00067# *****
00068# R4
00069# *****
00070# DESIGN STANDHYD ID=[2], NHYD=["R4"], DT=[1] (min), AREA=[0.48] (ha),
00071# XIMP=[0.56], TIMP=[0.70], DWF=[0] (cms), LOSS=[2], CN=[84],
00072# SLOPE=[0.5] (%), RAINFALL=[ , , , ] (mm/hr), END=-1
00073# *****
00074# DISCHARGE TO HIGH STREET (PHASE 1)
00075# *****
00076# ADD HYD IDsum=[7], NHYD=["P1 HIGH"], IDs to add=[5+2]
00077# *****
00078# ***** 24 hour SCS 5-year *****
00079# *****
00080# *****
00081# *****
00082# MASS STORM PTOTAL=[62.4] (mm), CSDT=[1] (min),
00083# CURVE_FILENAME=["SCS24HI1.mst"]
00084# *****
00085# AREA WEST OF INTERSECTION (10HA)
00086# *****
00087# CALIB NASHYD ID=[1], NHYD=["WEST PRE"], DT=[1] (min), AREA=[11.1] (ha),
00088# DWF=[0] (cms), CN/C=[84], IA=[8] (mm),
00089# N=[3], TP=[0.41] hrs,
00090# RAINFALL=[ , , , ] (mm/hr), END=-1
00091# *****
00092# AREA NORTH OF POND (4INC POND)
00093# *****
00094# CALIB STANDHYD ID=[2], NHYD=["NORTH"], DT=[1] (min), AREA=[1.01] (ha),
00095# XIMP=[0.62], TIMP=[0.78], DWF=[0] (cms), LOSS=[2],
00096# SCS curve number CN=[84],
00097# Pervious surfaces: IAPER=[8] (mm), SLPP=[0.5] (%),
00098# LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00099# Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
00100# LGI=[60] (m), MNI=[0.013], SCI=[0] (min),
00101# RAINFALL=[ , , , ] (mm/hr), END=-1
00102# *****
00103# AREA SOUTH OF POND
00104# *****
00105# CALIB STANDHYD ID=[3], NHYD=["SOUTH"], DT=[1] (min), AREA=[0.57] (ha),
00106# XIMP=[0.72], TIMP=[0.9], DWF=[0] (cms), LOSS=[2],
00107# SCS curve number CN=[84],
00108# Pervious surfaces: IAPER=[8] (mm), SLPP=[0.5] (%),
00109# LGP=[10] (m), MNP=[0.25], SCP=[0] (min),
00110# Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
00111# LGI=[100] (m), MNI=[0.013], SCI=[0] (min),
00112# RAINFALL=[ , , , ] (mm/hr), END=-1
00113# *****
00114# INTERSECTION AREA (TO NE POND - PHASE 1)
00115# *****
00116# CALIB STANDHYD ID=[4], NHYD=["INT AREA"], DT=[1] (min), AREA=[0.79] (ha),
00117# XIMP=[0.56], TIMP=[0.70], DWF=[0] (cms), LOSS=[2],
00118# SCS curve number CN=[84],
00119# Pervious surfaces: IAPER=[8] (mm), SLPP=[0.5] (%),
00120# LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00121# Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
00122# LGI=[110] (m), MNI=[0.013], SCI=[0] (min),
00123# RAINFALL=[ , , , ] (mm/hr), END=-1
00124# *****
00125# TOTAL AREA CONTRIBUTING TO NE POND (PHASE 1)
00126# *****
00127# ADD HYD IDsum=[5], NHYD=["TO POND"], IDs to add=[1+2+3+4]
00128# *****
00129# R4
00130# *****
00131# DESIGN STANDHYD ID=[2], NHYD=["R4"], DT=[1] (min), AREA=[0.48] (ha),
00132# XIMP=[0.56], TIMP=[0.70], DWF=[0] (cms), LOSS=[2], CN=[84],
00133# SLOPE=[0.5] (%), RAINFALL=[ , , , ] (mm/hr), END=-1
00134# *****
00135# DISCHARGE TO HIGH STREET (PHASE 1)

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00136# *****
00137# ADD HYD IDsum=[7], NHYD=["P1 HIGH"], IDs to add=[5+2]
00138# *****
00139# *****
00140# ***** 24 hour SCS 25-year *****
00141# *****
00142# *****
00143# MASS STORM PTOTAL=[86.4] (mm), CSDT=[1] (min),
00144# CURVE_FILENAME=["SCS24HI1.mst"]
00145# *****
00146# AREA WEST OF INTERSECTION (10HA)
00147# *****
00148# CALIB NASHYD ID=[1], NHYD=["WEST PRE"], DT=[1] (min), AREA=[11.1] (ha),
00149# DWF=[0] (cms), CN/C=[84], IA=[8] (mm),
00150# N=[3], TP=[0.41] hrs,
00151# RAINFALL=[ , , , ] (mm/hr), END=-1
00152# *****
00153# AREA NORTH OF POND (4INC POND)
00154# *****
00155# CALIB STANDHYD ID=[2], NHYD=["NORTH"], DT=[1] (min), AREA=[1.01] (ha),
00156# XIMP=[0.62], TIMP=[0.78], DWF=[0] (cms), LOSS=[2],
00157# SCS curve number CN=[84],
00158# Pervious surfaces: IAPER=[8] (mm), SLPP=[0.5] (%),
00159# LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00160# Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
00161# LGI=[60] (m), MNI=[0.013], SCI=[0] (min),
00162# RAINFALL=[ , , , ] (mm/hr), END=-1
00163# *****
00164# AREA SOUTH OF POND
00165# *****
00166# CALIB STANDHYD ID=[3], NHYD=["SOUTH"], DT=[1] (min), AREA=[0.57] (ha),
00167# XIMP=[0.72], TIMP=[0.9], DWF=[0] (cms), LOSS=[2],
00168# SCS curve number CN=[84],
00169# Pervious surfaces: IAPER=[8] (mm), SLPP=[0.5] (%),
00170# LGP=[10] (m), MNP=[0.25], SCP=[0] (min),
00171# Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
00172# LGI=[100] (m), MNI=[0.013], SCI=[0] (min),
00173# RAINFALL=[ , , , ] (mm/hr), END=-1
00174# *****
00175# INTERSECTION AREA (TO NE POND - PHASE 1)
00176# *****
00177# CALIB STANDHYD ID=[4], NHYD=["INT AREA"], DT=[1] (min), AREA=[0.79] (ha),
00178# XIMP=[0.56], TIMP=[0.70], DWF=[0] (cms), LOSS=[2],
00179# SCS curve number CN=[84],
00180# Pervious surfaces: IAPER=[8] (mm), SLPP=[0.5] (%),
00181# LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00182# Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
00183# LGI=[110] (m), MNI=[0.013], SCI=[0] (min),
00184# RAINFALL=[ , , , ] (mm/hr), END=-1
00185# *****
00186# TOTAL AREA CONTRIBUTING TO NE POND (PHASE 1)
00187# *****
00188# ADD HYD IDsum=[5], NHYD=["TO POND"], IDs to add=[1+2+3+4]
00189# *****
00190# R4
00191# *****
00192# DESIGN STANDHYD ID=[2], NHYD=["R4"], DT=[1] (min), AREA=[0.48] (ha),
00193# XIMP=[0.56], TIMP=[0.70], DWF=[0] (cms), LOSS=[2], CN=[84],
00194# SLOPE=[0.5] (%), RAINFALL=[ , , , ] (mm/hr), END=-1
00195# *****
00196# DISCHARGE TO HIGH STREET (PHASE 1)
00197# *****
00198# ADD HYD IDsum=[7], NHYD=["P1 HIGH"], IDs to add=[5+2]
00199# *****
00200# *****
00201# ***** 24 hour SCS 100-year *****
00202# *****
00203# *****
00204# MASS STORM PTOTAL=[108.0] (mm), CSDT=[12] (min),
00205# CURVE_FILENAME=["SCS24HI1.MST"]
00206# *****
00207# AREA WEST OF INTERSECTION (10HA)
00208# *****
00209# CALIB NASHYD ID=[1], NHYD=["WEST PRE"], DT=[1] (min), AREA=[11.1] (ha),
00210# DWF=[0] (cms), CN/C=[84], IA=[8] (mm),
00211# N=[3], TP=[0.41] hrs,
00212# RAINFALL=[ , , , ] (mm/hr), END=-1
00213# *****
00214# AREA NORTH OF POND (4INC POND)
00215# *****
00216# CALIB STANDHYD ID=[2], NHYD=["NORTH"], DT=[1] (min), AREA=[1.01] (ha),
00217# XIMP=[0.62], TIMP=[0.78], DWF=[0] (cms), LOSS=[2],
00218# SCS curve number CN=[84],
00219# Pervious surfaces: IAPER=[8] (mm), SLPP=[0.5] (%),
00220# LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00221# Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
00222# LGI=[60] (m), MNI=[0.013], SCI=[0] (min),
00223# RAINFALL=[ , , , ] (mm/hr), END=-1
00224# *****
00225# AREA SOUTH OF POND
00226# *****
00227# CALIB STANDHYD ID=[3], NHYD=["SOUTH"], DT=[1] (min), AREA=[0.57] (ha),
00228# XIMP=[0.72], TIMP=[0.9], DWF=[0] (cms), LOSS=[2],
00229# SCS curve number CN=[84],
00230# Pervious surfaces: IAPER=[8] (mm), SLPP=[0.5] (%),
00231# LGP=[10] (m), MNP=[0.25], SCP=[0] (min),
00232# Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
00233# LGI=[100] (m), MNI=[0.013], SCI=[0] (min),
00234# RAINFALL=[ , , , ] (mm/hr), END=-1
00235# *****
00236# INTERSECTION AREA (TO NE POND - PHASE 1)
00237# *****
00238# CALIB STANDHYD ID=[4], NHYD=["INT AREA"], DT=[1] (min), AREA=[0.79] (ha),
00239# XIMP=[0.56], TIMP=[0.70], DWF=[0] (cms), LOSS=[2],
00240# SCS curve number CN=[84],
00241# Pervious surfaces: IAPER=[8] (mm), SLPP=[0.5] (%),
00242# LGP=[40] (m), MNP=[0.25], SCP=[0] (min),
00243# Impervious surfaces: IAIMP=[2] (mm), SLPI=[0.5] (%),
00244# LGI=[110] (m), MNI=[0.013], SCI=[0] (min),
00245# RAINFALL=[ , , , ] (mm/hr), END=-1
00246# *****
00247# TOTAL AREA CONTRIBUTING TO NE POND (PHASE 1)
00248# *****
00249# ADD HYD IDsum=[5], NHYD=["TO POND"], IDs to add=[1+2+3+4]
00250# *****
00251# R4
00252# *****
00253# DESIGN STANDHYD ID=[2], NHYD=["R4"], DT=[1] (min), AREA=[0.48] (ha),
00254# XIMP=[0.56], TIMP=[0.70], DWF=[0] (cms), LOSS=[2], CN=[84],
00255# SLOPE=[0.5] (%), RAINFALL=[ , , , ] (mm/hr), END=-1
00256# *****
00257# DISCHARGE TO HIGH STREET (PHASE 1)
00258# *****
00259# ADD HYD IDsum=[7], NHYD=["P1 HIGH"], IDs to add=[5+2]
00260# *****
00261# *****
00262# REGIONAL EVENT
00263# *****
00264# *****
00265# READ STORM STORM_FILENAME=["tim.stm"]
00266# *****
00267# AREA WEST OF INTERSECTION (10HA)
00268# *****
00269# CALIB NASHYD ID=[1], NHYD=["WEST PRE"], DT=[1] (min), AREA=[11.1] (ha),
00270# DWF=[0] (cms), CN/C=[84], IA=[8] (mm),

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00271> N=[3], TP=[0.41]hrs,
00272> RAINFALL=[ , , , ](mm/hr), END=-1
00273> *#-----|
00274> *#-----| AREA NORTH OF POND (LINC POND)-----|
00275> *#-----|
00276> CALIB STANDHYD ID=[2], NHYD=["NORTH"], DT=[1](min), AREA=[1.01](ha),
00277> XIMP=[0.62], TIMP=[0.70], DWF=[0](cms), LOSS=[2],
00278> SCS curve number CN=[84],
00279> Pervious surfaces: IApex=[8](mm), SLPP=[0.5](%),
00280> LGP=[40](m), MNP=[0.25], SCP=[0](min),
00281> Impervious surfaces: IAimp=[2](mm), SLPI=[0.5](%),
00282> LGI=[60](m), MNI=[0.013], SCI=[0](min),
00283> RAINFALL=[ , , , ](mm/hr), END=-1
00284> *#-----|
00285> *#-----| AREA SOUTH OF POND -----|
00286> *#-----|
00287> CALIB STANDHYD ID=[3], NHYD=["SOUTH"], DT=[1](min), AREA=[0.57](ha),
00288> XIMP=[0.72], TIMP=[0.9], DWF=[0](cms), LOSS=[2],
00289> SCS curve number CN=[84],
00290> Pervious surfaces: IApex=[8](mm), SLPP=[0.5](%),
00291> LGP=[10](m), MNP=[0.25], SCP=[0](min),
00292> Impervious surfaces: IAimp=[2](mm), SLPI=[0.5](%),
00293> LGI=[100](m), MNI=[0.013], SCI=[0](min)
00294> RAINFALL=[ , , , ](mm/hr), END=-1
00295> *#-----|
00296> *#-----| INTERSECTION AREA (TO NE POND - PHASE 1) -----|
00297> *#-----|
00298> CALIB STANDHYD ID=[4], NHYD=["INT AREA"], DT=[1](min), AREA=[0.79](ha),
00299> XIMP=[0.56], TIMP=[0.70], DWF=[0](cms), LOSS=[2],
00300> SCS curve number CN=[84],
00301> Pervious surfaces: IApex=[8](mm), SLPP=[0.5](%),
00302> LGP=[40](m), MNP=[0.25], SCP=[0](min),
00303> Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
00304> LGI=[110](m), MNI=[0.013], SCI=[0](min)
00305> RAINFALL=[ , , , ](mm/hr), END=-1
00306> *#-----|
00307> *#-----| TOTAL AREA CONTRIBUTING TO NE POND (PHASE 1) -----|
00308> *#-----|
00309> ADD HYD IDsum=[5], NHYD=["TO POND"], IDs to add=[1+2+3+4]
00310> *#-----|
00311> *#-----| R4 -----|
00312> *#-----|
00313> DESIGN STANDHYD ID=[2], NHYD=["R4"], DT=[1]min, AREA=[0.40](ha),
00314> XIMP=[0.56], TIMP=[0.70], DWF=[0](cms), LOSS=[2], CN=[84],
00315> SLOPE=[0.5](%), RAINFALL=[ , , , ](mm/hr), END=-1
00316> *#-----|
00317> *#-----| DISCHARGE TO HIGH STREET (PHASE 1) -----|
00318> *#-----|
00319> ADD HYD IDsum=[7], NHYD=["P1 HIGH"], IDs to add=[5+2]
00320> *#-----|
00321> FINISH
00322>

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00271> + 04:INT AREA .79 .153 No_date 12:12 72.57
00272> [DT= 1.00] SUM= 05:TO_POND 13.47 1.002 No_date 12:13 53.26
00273> ----- R4 -----
00274> ----- R4 -----
00275> ----- R4 -----
00276> 001:0024 ID:NHYD AREA QPEAK-TpeakDate hh:mm R.V.
00277> DESIGN STANDHYD 02:R4 .48 .099 No_date 12:12 75.03
00278> [XIMP=.56:TIMP=.70]
00279> [SLP=.50:DT= 1.00]
00280> [LOSS= 2 :CN= 84.0]
00281> -----
00282> DISCHARGE TO HIGH STREET (PHASE 1)
00283> -----
00284> 001:0025 ID:NHYD AREA QPEAK-TpeakDate hh:mm R.V.
00285> ADD HYD 05:TO_POND 13.47 1.002 No_date 12:13 53.26
00286> + 02:R4 .48 .099 No_date 12:12 75.03
00287> [DT= 1.00] SUM= 07:P1_HIGH 13.95 1.094 No_date 12:13 54.01
00288> -----
00289> -----
00290> ----- 24 hour SCS 100-year -----
00291> -----
00292> -----
00293> 001:0026 -----
00294> MASS STORM
00295> Filename = C:\SWMHYMO\THIRDHI-1\UNCONT-2\SCS24HI1.MST
00296> Comment = 24 hour SCS II storm mass curve
00297> [SDT=12.00:SDUR= 24.00:PTOT= 108.00]
00298> -----
00299> AREA WEST OF INTERSECTION (10HA)
00300> -----
00301> 001:0027 ID:NHYD AREA QPEAK-TpeakDate hh:mm R.V.
00302> CALIB NASHYD 01:WEST_PRE 11.10 1.199 No_date 12:30 67.39
00303> [CN= 84.0: N= 3.00]
00304> [Tp= .41:DT= 1.00]
00305> -----
00306> AREA NORTH OF POND (4INC POND)
00307> -----
00308> 001:0028 ID:NHYD AREA QPEAK-TpeakDate hh:mm R.V.
00309> CALIB STANDHYD 02:NORTH 1.01 .285 No_date 12:12 96.63
00310> [XIMP=.62:TIMP=.78]
00311> [LOSS= 2 :CN= 84.0]
00312> [Pervious area: IAper= 8.00:SLPP= .50:LGP= 40.:MNP=.250:SCP= .0]
00313> [Impervious area: IAimp= 2.00:SLPI= .50:LGI= 60.:MNI=.013:SCI= .0]
00314> -----
00315> AREA SOUTH OF POND
00316> -----
00317> 001:0029 ID:NHYD AREA QPEAK-TpeakDate hh:mm R.V.
00318> CALIB STANDHYD 03:SOUTH .57 .181 No_date 12:12 101.60
00319> [XIMP=.72:TIMP=.90]
00320> [LOSS= 2 :CN= 84.0]
00321> [Pervious area: IAper= 8.00:SLPP= .50:LGP= 10.:MNP=.250:SCP= .0]
00322> [Impervious area: IAimp= 2.00:SLPI= .50:LGI= 100.:MNI=.013:SCI= .0]
00323> -----
00324> INTERSECTION AREA (TO NE POND - PHASE 1)
00325> -----
00326> 001:0030 ID:NHYD AREA QPEAK-TpeakDate hh:mm R.V.
00327> CALIB STANDHYD 04:INT_AREA .79 .204 No_date 12:12 93.50
00328> [XIMP=.56:TIMP=.70]
00329> [LOSS= 2 :CN= 84.0]
00330> [Pervious area: IAper= 8.00:SLPP= .50:LGP= 40.:MNP=.250:SCP= .0]
00331> [Impervious area: IAimp= 2.00:SLPI= .50:LGI= 110.:MNI=.013:SCI= .0]
00332> -----
00333> TOTAL AREA CONTRIBUTING TO NE POND (PHASE 1)
00334> -----
00335> 001:003 ID:NHYD AREA QPEAK-TpeakDate hh:mm R.V.
00336> ADD HYD 01:WEST_PRE 11.10 1.199 No_date 12:30 67.39
00337> + 02:NORTH 1.01 .285 No_date 12:12 96.63
00338> + 03:SOUTH .57 .181 No_date 12:12 101.60
00339> + 04:INT_AREA .79 .204 No_date 12:12 93.50
00340> [DT= 1.00] SUM= 05:TO_POND 13.47 1.372 No_date 12:25 72.56
00341> -----
00342> ----- R4 -----
00343> -----
00344> 001:0032 ID:NHYD AREA QPEAK-TpeakDate hh:mm R.V.
00345> DESIGN STANDHYD 02:R4 .48 .129 No_date 12:12 96.01
00346> [XIMP=.56:TIMP=.70]
00347> [SLP=.50:DT= 1.00]
00348> [LOSS= 2 :CN= 84.0]
00349> -----
00350> DISCHARGE TO HIGH STREET (PHASE 1)
00351> -----
00352> 001:0033 ID:NHYD AREA QPEAK-TpeakDate hh:mm R.V.
00353> ADD HYD 05:TO_POND 13.47 1.372 No_date 12:25 72.56
00354> + 02:R4 .48 .129 No_date 12:12 96.01
00355> [DT= 1.00] SUM= 07:P1_HIGH 13.95 1.490 No_date 12:13 73.37
00356> -----
00357> -----
00358> REGIONAL EVENT
00359> -----
00360> -----
00361> 001:0034 -----
00362> READ STORM
00363> Filename = tim.STM
00364> Comment =
00365> [SDT=60.00:SDUR= 12.00:PTOT= 193.00]
00366> -----
00367> AREA WEST OF INTERSECTION (10HA)
00368> -----
00369> 001:0035 ID:NHYD AREA QPEAK-TpeakDate hh:mm R.V.
00370> CALIB NASHYD 01:WEST_PRE 11.10 1.087 No_date 7:06 146.65
00371> [CN= 84.0: N= 3.00]
00372> [Tp= .41:DT= 1.00]
00373> -----
00374> AREA NORTH OF POND (4INC POND)
00375> -----
00376> 001:0036 ID:NHYD AREA QPEAK-TpeakDate hh:mm R.V.
00377> CALIB STANDHYD 02:NORTH 1.01 .117 No_date 7:00 180.73
00378> [XIMP=.62:TIMP=.78]
00379> [LOSS= 2 :CN= 84.0]
00380> [Pervious area: IAper= 8.00:SLPP= .50:LGP= 40.:MNP=.250:SCP= .0]
00381> [Impervious area: IAimp= 2.00:SLPI= .50:LGI= 60.:MNI=.013:SCI= .0]
00382> -----
00383> AREA SOUTH OF POND
00384> -----
00385> 001:0037 ID:NHYD AREA QPEAK-TpeakDate hh:mm R.V.
00386> CALIB STANDHYD 03:SOUTH .57 .068 No_date 7:00 186.32
00387> [XIMP=.72:TIMP=.90]
00388> [LOSS= 2 :CN= 84.0]
00389> [Pervious area: IAper= 8.00:SLPP= .50:LGP= 10.:MNP=.250:SCP= .0]
00390> [Impervious area: IAimp= 2.00:SLPI= .50:LGI= 100.:MNI=.013:SCI= .0]
00391> -----
00392> INTERSECTION AREA (TO NE POND - PHASE 1)
00393> -----
00394> 001:0038 ID:NHYD AREA QPEAK-TpeakDate hh:mm R.V.
00395> CALIB STANDHYD 04:INT_AREA .79 .090 No_date 7:00 177.14
00396> [XIMP=.56:TIMP=.70]
00397> [LOSS= 2 :CN= 84.0]
00398> [Pervious area: IAper= 8.00:SLPP= .50:LGP= 40.:MNP=.250:SCP= .0]
00399> [Impervious area: IAimp= 2.00:SLPI= .50:LGI= 110.:MNI=.013:SCI= .0]
00400> -----
00401> TOTAL AREA CONTRIBUTING TO NE POND (PHASE 1)
00402> -----
00403> 001:0039 ID:NHYD AREA QPEAK-TpeakDate hh:mm R.V.
00404> ADD HYD 01:WEST_PRE 11.10 1.087 No_date 7:06 146.65
00405> + 02:NORTH 1.01 .117 No_date 7:00 180.73

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00406> + 03:SOUTH .57 .068 No_date 7:00 186.32
00407> + 04:INT_AREA .79 .090 No_date 7:00 177.14
00408> [DT= 1.00] SUM= 05:TO_POND 13.47 1.341 No_date 7:01 152.67
00409> -----
00410> ----- R4 -----
00411> ----- R4 -----
00412> 001:0040 ID:NHYD AREA QPEAK-TpeakDate hh:mm R.V.
00413> DESIGN STANDHYD 02:R4 .48 .055 No_date 7:00 179.72
00414> [XIMP=.56:TIMP=.70]
00415> [SLP=.50:DT= 1.00]
00416> [LOSS= 2 :CN= 84.0]
00417> -----
00418> DISCHARGE TO HIGH STREET (PHASE 1)
00419> -----
00420> 001:0041 ID:NHYD AREA QPEAK-TpeakDate hh:mm R.V.
00421> ADD HYD 05:TO_POND 13.47 1.341 No_date 7:01 152.67
00422> + 02:R4 .48 .055 No_date 7:00 179.72
00423> [DT= 1.00] SUM= 07:P1_HIGH 13.95 1.395 No_date 7:00 153.60
00424> -----
00425> 001:0042 -----
00426> FINISH
00427> -----
00428> -----
00429> WARNINGS / ERRORS / NOTES
00430> -----
00431> Simulation ended on 2015-04-09 at 11:38:07
00432> -----
00433> -----

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Project Third & High St
 Project 183-2697
 Date: 4/8/2015
 By: TM

D.A. WEST_PRE
 D.A. 11.1

**Hydrologic Parameters: CALIB NASHYD Command
 Interim Drainage Area: WEST_PRE**

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic Group	% Area	Area
Kemble Clay Loam	Kc	D	100	11.1
				0
				0
				0
Total Area				11.1

Impervious Landuses Present:												Subtotals	
Soils	Roadway		Sidewalk		Driveway		Building		SWMF		Area	A*CN	
	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN			
Kc		98		98		98		98		98	0	0	
0		98		98		98		98		98	0	0	
0		98		98		98		98		98	0	0	
0		98		98		98		98		98	0	0	
Subtotal Area		0		0		0		0		0			

Pervious Landuses Present:												Subtotals	
Soils	Woodland		Meadow/Pasture		Wetland		Lawn		Cultivated		Area	A*CN	
	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN			
Kc	0.00		11.10	84	0.00		0.00		0.00		11.10	932.40	
0	0.00		0.00		0.00		0.00		0.00		0.00	0.00	
0	0.00		0.00		0.00		0.00		0.00		0.00	0.00	
0	0.00		0.00		0.00		0.00		0.00		0.00	0.00	
Subtotal Area		0.00		11.10		0.00		0.00		0.00			
Composite Area Calculations										Total Pervious Area		11.10	
										Total Impervious Area		0	
										% Impervious		0.00	
										Composite Curve Number		84.0	
										Total Area Check		11.1	

Initial Abstraction and Tp Calculations

Initial Abstraction				Composite Curve Number								
Landuse	IA (mm)	Area (ha)	A * IA	Kemble Clay Loam								
				RC	Area	RC	Area	RC	Area	RC	Area	A*RC
Woodland	10	0	0		0.00		0		0		0	0
Meadow/Past	8	11.1	88.8	0.40	11.10		0		0		0	4.44
Wetland	16	0	0		0.00		0		0		0	0
Lawn	5	0	0		0.00		0		0		0	0
Cultivated	7	0	0		0.00		0		0		0	0
Impervious	2	0	0		0.00		0		0		0	0
Composite IA		11.1	8	Composite Runoff Coefficient								0.4

Time to Peak Inputs						Uplands			Bransby Williams		Airport	
Flow Path Description	Length (m)	Drop (m)	Slope (%)	V/S ^{0.5}	Velocity (m/s)	Tc (hr)	Tp (hr)	TOTAL Tp (hr)	Tc (hr)	Tp (hr)	Tc (hr)	Tp (hr)
	380	6.8	1.79%	2.3	0.31	0.34	0.23	0.23	0.25	0.17	0.61	0.41
			#DIV/0!		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!				

Appropriate calculated time to peak: 0.41 Appropriate Method: Airport



Project Name: Third & High St
 Project Number: 183-2697
 Date: 4/8/2015
 By: TM

D.A. NAME NORTH
D.A. AREA (ha) 1.01

Hydrologic Parameters: CALIB STANDHYD Command
Interim Drainage Area: NORTH

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic Group	% Area	Area
Kemble Clay Loam	Kc	D	100	1.01
				0
				0
				0
Total Area Check				1.01

Impervious Landuses Present:													
Soils	Roadway		Sidewalk		Driveway		Building		SWMF		Subtotals		
	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN	
Kc	0	98	0	98	0.46	98	0.16	98	0.17	98	0.79	77.42	
	0	98		98		98		98		98	0	0	
	0	98		98		98		98		98	0	0	
	0	98		98		98		98		98	0	0	
Subtotal Area	0		0		0.46		0.16		0.17				

Pervious Landuses Present:													
Soils	Woodland		Meadow/Pasture		Wetland		Lawn		Cultivated		Subtotals		
	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN	
Kc	0	98	0.22	84	0	98	0	98	0	98	0.22	18.48	
	0	98	0	98	0	98	0	98	0	98	0	0	
	0	98	0	98	0	98	0	98	0	98	0	0	
	0	98	0	98	0	98	0	98	0	98	0	0	
Subtotal Area	0		0.22		0		0		0				

Pervious Area Calculations	Total Pervious Area	0.22
	Composite Pervious Curve Number	84
Impervious Area Calculations	Total Directly Connected Area	0.63
	Total Indirectly Connected Area	0.16
	Total Impervious Area	0.79
	% X imp	62
	% T imp	78
Total Area Check		1.01

Initial Abstraction and Tp Calculations

Landuse	IA (mm)	Area (ha)	A * IA
Woodland	10	0	0
Meadow/Pastu	8	0.22	1.76
Wetland	16	0	0
Lawn	5	0	0
Cultivated	7	0	0

Land Use	IA (mm)	Slope (%)	Travel Length (m)	Manning's n
Pervious	8.0	0.5	40	0.25
Impervious	2.0	0.5	60	0.013



Project Name: Third & High St
 Project Number: 183-2697
 Date: 4/8/2015
 By: TM

D.A. NAME SOUTH
D.A. AREA (ha) 0.57

Hydrologic Parameters: CALIB STANDHYD Command
Interim Drainage Area: SOUTH

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic Group	% Area	Area
Kemble Clay Loam	Kc	D	100	0.57
				0
				0
				0
Total Area Check				0.57

Impervious Landuses Present:												
Soils	Roadway		Sidewalk		Driveway		Building		SWMF		Subtotals	
	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN
Kc	0	98	0	98	0.41	98	0.10	98	0	98	0.513	50.274
	0	98		98		98		98		98	0	0
	0	98		98		98		98		98	0	0
	0	98		98		98		98		98	0	0
Subtotal Area	0		0		0.41		0.10		0			

Pervious Landuses Present:												
Soils	Woodland		Meadow/Pasture		Wetland		Lawn		Cultivated		Subtotals	
	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN
Kc	0		0.06	84	0		0.00		0		0.057	4.788
	0	0	0		0		0		0		0	0
	0	0	0		0		0		0		0	0
	0	0	0		0		0		0		0	0
Subtotal Area	0		0.06		0		0.00		0			

	Pervious Area Calculations	Total Pervious Area	0.057
		Composite Pervious Curve Number	84
Impervious Area Calculations		Total Directly Connected Area	0.41
		Total Indirectly Connected Area	0.103
		Total Impervious Area	0.513
		% X imp	72
		% T imp	90
		Total Area Check	0.57

Initial Abstraction and Tp Calculations

Landuse	IA (mm)	Area (ha)	A * IA
Woodland	10	0	0
Meadow/Pastu	8	0.057	0.456
Wetland	16	0	0
Lawn	5	0	0
Cultivated	7	0	0

Land Use	IA (mm)	Slope (%)	Travel Length (m)	Manning's n
Pervious	8.0	0.5	10	0.25
Impervious	2.0	0.5	100	0.013



Project Name: Third & High St
 Project Number: 183-2697
 Date: 4/8/2015
 By: TM

D.A. NAME INT_AREA
 D.A. AREA (ha) 0.79

Hydrologic Parameters: CALIB STANDHYD Command
Interim Drainage Area: INT_AREA

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic Group	% Area	Area
Kemble Clay Loam	Kc	D	100	0.79
				0
				0
				0
Total Area Check				0.79

Impervious Landuses Present:												
Soils	Roadway		Sidewalk		Driveway		Building		SWMF		Subtotals	
	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN
Kc	0.44	98	0	98	0	98	0.11	98	0	98	0.553	54.194
	0	98		98		98		98		98	0	0
	0	98		98		98		98		98	0	0
	0	98		98		98		98		98	0	0
Subtotal Area	0.44		0		0		0.11		0			

Pervious Landuses Present:												
Soils	Woodland		Meadow/Pasture		Wetland		Lawn		Cultivated		Subtotals	
	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN
Kc	0		0.24	84	0		0		0		0.237	19.908
	0		0		0		0		0		0	0
	0		0		0		0		0		0	0
	0		0		0		0		0		0	0
Subtotal Area	0		0.24		0		0		0			

	Pervious Area Calculations	Total Pervious Area	0.237
		Composite Pervious Curve Number	84
	Impervious Area Calculations	Total Directly Connected Area	0.4424
		Total Indirectly Connected Area	0.1106
		Total Impervious Area	0.553
		% X imp	56
		% T imp	70
Total Area Check			0.79

Initial Abstraction and Tp Calculations

Landuse	IA (mm)	Area (ha)	A * IA
Woodland	10	0	0
Meadow/Pastu	8	0.237	1.896
Wetland	16	0	0
Lawn	5	0	0
Cultivated	7	0	0

Land Use	IA (mm)	Slope (%)	Travel Length (m)	Manning's n
Pervious	8.0	0.5	40	0.25
Impervious	2.0	0.5	110	0.013



WEST END COMMERCIAL - PHASE 1 - NE POND/BLOCK 1 PONDING

Pond Stage - Storage - Discharge Calculations

Ext Detention Orifice Diameter: 0.205 m
Ext Detention Orifice Invert Elevation: 180.4 m

*Block 1 ponding storage begins at 181.00 (the existing elevation at the upstream end of the NE SWM pond culvert)

	Elev.	Depth	NE Pond		Block 1 Ponding		Total Storage Vol (cu.m)	ED Orifice Discharge (cu.m/s)	Total Discharge (cu.m/s)	Storage (ha-m)
			Area (sqm)	Storage Vol (cu.m)	Area (sqm)	Storage Vol (cu.m)				
	(m)	(m)								
	180.35									0
PP	180.40	0.00	1255	0		0	0.000	0.000	0.000	0.000
	180.45	0.05	1301	64		64	0.000	0.000	0.000	0.006
	180.50	0.10	1347	130		130	0.000	0.000	0.000	0.013
	180.55	0.15	1393	199		199	0.020	0.020	0.020	0.020
	180.60	0.20	1439	269		269	0.029	0.029	0.029	0.027
	180.65	0.25	1485	342		342	0.036	0.036	0.036	0.034
	180.70	0.30	1531	418		418	0.042	0.042	0.042	0.042
	180.75	0.35	1576	495		495	0.047	0.047	0.047	0.050
	180.80	0.40	1622	575		575	0.051	0.051	0.051	0.058
	180.85	0.45	1668	658		658	0.055	0.055	0.055	0.066
	180.90	0.50	1714	742		742	0.059	0.059	0.059	0.074
ED Volume	180.95	0.55	1760	829		829	0.063	0.063	0.063	0.083
	181.00	0.60	1806	918	4077	0	918	0.066	0.066	0.092
	181.05	0.65	1872	1010	5632	243	1253	0.069	0.069	0.125
	181.10	0.70	1938	1106	7188	563	1669	0.072	0.072	0.167
	181.20	0.80	2004	1303	8743	1360	2662	0.078	0.078	0.266
	181.30	0.90	2070	1506	10298	2312	3818	0.084	0.084	0.382
100 YR HWL	181.40	1.00	2136	1717	11854	3419	5136	0.089	0.089	0.514
	181.50	1.10	2202	1934	13409	4683	6616	0.093	0.093	0.662
	181.60	1.20	2268	2157	14965	6101	8258	0.098	0.098	0.826
	181.70	1.30	2334	2387	16520	7676	10063	0.102	0.102	1.006
	181.80	1.40	2400	2624	18075	9405	12029	0.107	0.107	1.203
	181.90	1.50	2466	2867	19631	11291	14158	0.111	0.111	1.416
Regional	182.00	1.60	2532	3117	21186	13331	16448	0.115	0.115	1.645
	182.10	1.70	2652	3376	23306	15556	18932	0.118	0.118	1.893
	182.20	1.80	2771	3647	25426	17993	21640	0.122	0.122	2.164
TOB	182.30	1.90	2891	3930	27546	20641	24572	0.125	0.125	2.457



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& ASSOCIATES**
Consulting Engineers

Project: Third St/High St
Project No.: 183-2697
File: Pond Hydraulic Design
Design by: T. MacDougall
Date: 9-Apr-15

EXTENDED DETENTION SPECIFICATIONS

Extended Detention Volume (Area x runoff from 25mm event)	920
t (drawdown time - seconds, <i>hours in italics</i>)	34.0 122400
Ao (cross section area of orifice - sqm)	0.033
h (maximum water elevation above orifice for extended detention- m)	0.60
C (discharge coefficient)	0.64
Ap (average surface area for extended detention - sqm)	7408

$$t = 2 * A_p * (h^{0.5}) / (C * A_o * (g * 2)^{0.5})$$

Ao = 0.03307468 m

d = 205 mm

(max dia to provide control)

Extended Detention Orifice Diameter (as designed)

d = **205** mm

FIGURES

- Figure 1: Site Location
- Figure 2: Draft Plan
- Figure 3: Preliminary Sanitary Servicing Plan
- Figure 4: Preliminary Watermain Servicing Plan
- Figure 5: Preliminary Trunk Storm Sewer Routing Plan
- Figure 6: Preliminary Grading and Drainage Plan
- Figure 7: Stormwater Management Facility Plan
- Figure 8: Phase 1 Drainage Plan



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PROJECT

WEST END
COMMERCIAL

DRAWN BY:
J.O.

PROJECT No.:
183-2697-701

DATE:
April 9, 2015

SCALE:
N.T.S.

TITLE

SITE
LOCATION

DRAWING No.:

FIG. 1

DRAFT PLAN OF SUBDIVISION
PART OF THE SOUTH HALF OF LOT 44
CONCESSION 10
PART OF THE NORTH HALF LOT 43
CONCESSION 10
 (FORMERLY TOWNSHIP OF NOTTAWASAGA)
AND LOTS 1, 2, 10, 12, 14, 16
AND 18 TO 32 BOTH INCLUSIVE
AND DUNDONALD STREET AND
PART OF THIRD STREET AND
PART OF THE LANES ADJACENT THERETO
REGISTERED PLAN 484
TOWN OF COLLINGWOOD
COUNTY OF SIMCOE

SCALE 1:1250
 0 5 10 15 20 METRES
 ZUBEK, EMO, PATTEN & THOMSEN LTD.
 2015

METRIC
 DISTANCES ON THIS PLAN ARE IN METRES AND CAN
 BE CONVERTED TO FEET BY DIVIDING BY 0.3048

ADDITIONAL INFORMATION REQUIRED
UNDER SECTION 51(17) OF THE
PLANNING ACT

- A. AS SHOWN
- B. AS SHOWN
- C. AS SHOWN
- D. AS SHOWN
- E. AS SHOWN
- F. AS SHOWN
- G. AS SHOWN
- H. MUNICIPAL WATER SUPPLY
- I. CLAY LOAM
- J. AS SHOWN
- K. MUNICIPAL SANITARY SEWERS
- L. AS SHOWN

LAND USE SCHEDULE

PROPOSED LAND USE	AREA (ha)
BLOCKS	
1 COMMERCIAL	10.072
2 COMMERCIAL	5.964
3 COMMERCIAL	2.708
4 COMMERCIAL	1.019
5 ROAD WIDENING	0.057
ROADS	
STREET A	1.215
TOTAL	21.035

SURVEYOR'S CERTIFICATE

I CERTIFY THAT:
 THE BOUNDARIES OF THE LANDS TO BE SUBDIVIDED AND
 THEIR RELATIONSHIP TO THE ADJACENT LANDS ARE
 ACCURATELY SHOWN ON THIS PLAN.

APRIL 2015 O.L.S.

LYNN H. PATTEN
 ONTARIO LAND SURVEYOR
 COLLINGWOOD

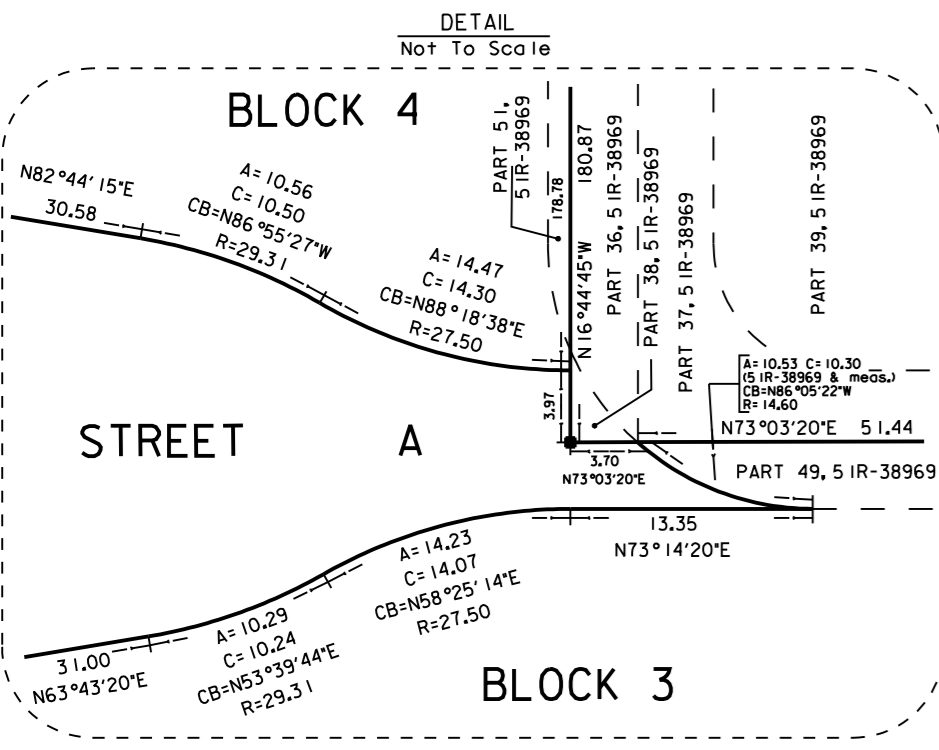
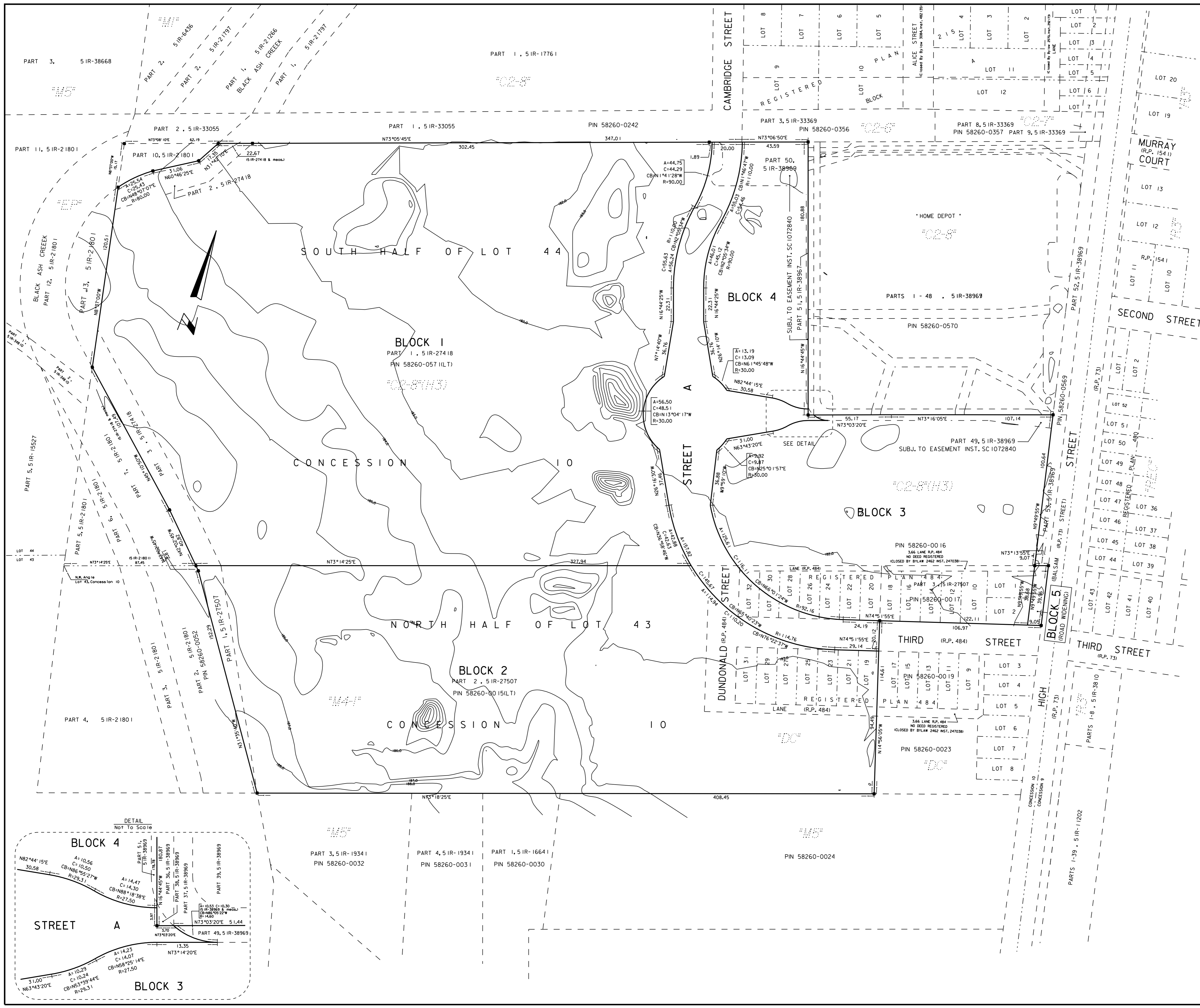
OWNER'S CERTIFICATE

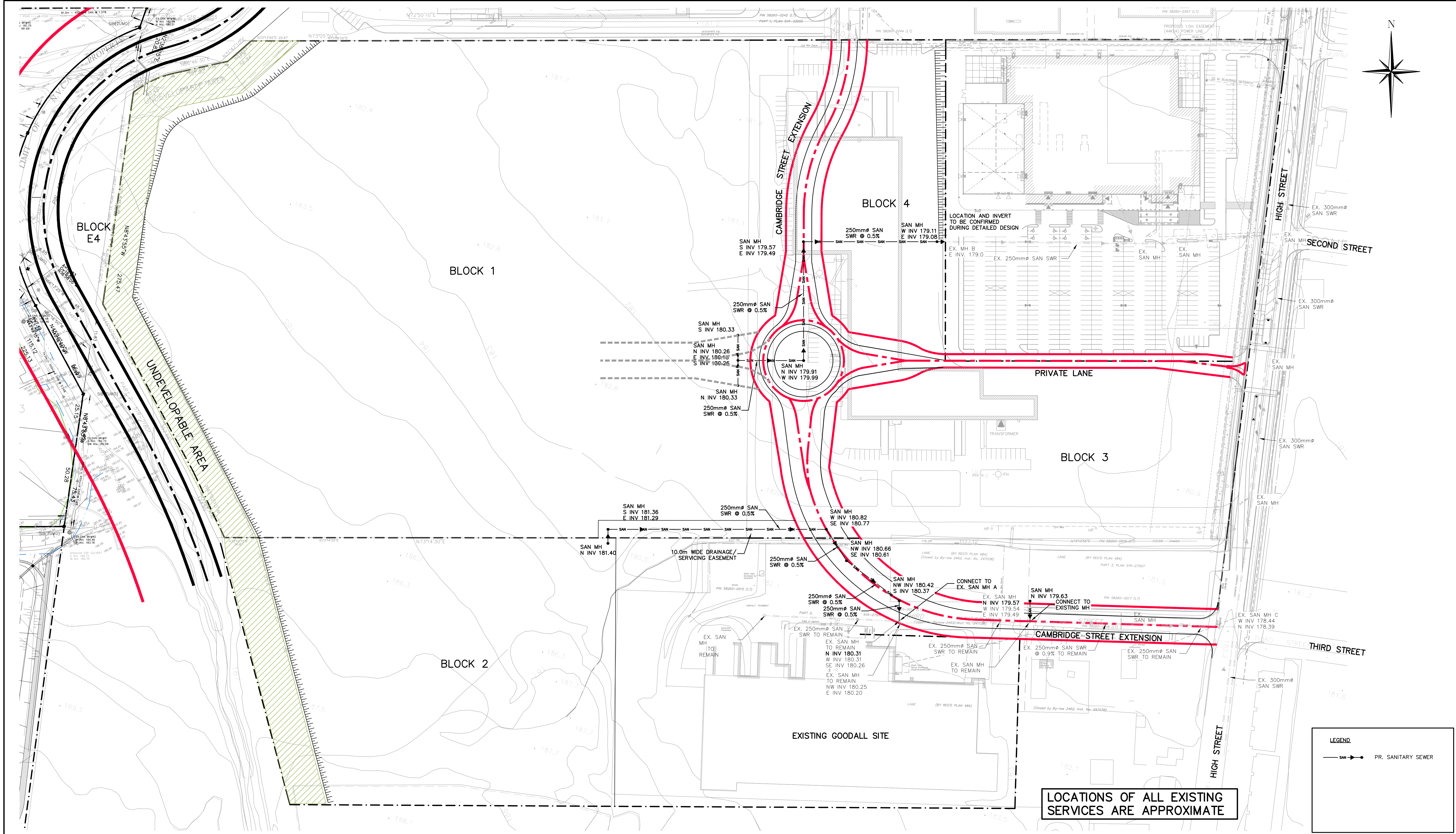
LANDEX EQUITY CORPORATION HEREBY AUTHORIZES
 THE SUBMISSION OF THIS DRAFT PLAN OF SUBDIVISION
 TO THE TOWN OF COLLINGWOOD PLANNING DEPARTMENT

APRIL 2015

PER LARRY DUNN

ZUBEK, EMO PATTEN & THOMSEN LIMITED	ONTARIO LAND SURVEYORS 39 STEWART ROAD COLLINGWOOD, ONTARIO L9Y 4M7
	PHONE: (705) 445-4910 FAX: (705) 445-5866
	JOB No. 67-67 SURVEY FOR: LANDEX EQUITY CORP.





LOCATIONS OF ALL EXISTING SERVICES ARE APPROXIMATE

LEGEND

— SAN — PR. SANITARY SEWER

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TEMPORARY BENCHMARKS

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TBM#3—

No.	ISSUE / REVISION	DATE: MM/DD/YYYY	Engineer
0	ISSUED FOR CLIENT REVIEW	02/20/2015	
1	ISSUED FOR DRAFT PLAN APPROVAL	04/09/2015	

No.	ISSUE / REVISION	DATE: MM/DD/YYYY	Engineer

Project: WEST END COMMERCIAL TOWN OF COLLINGWOOD

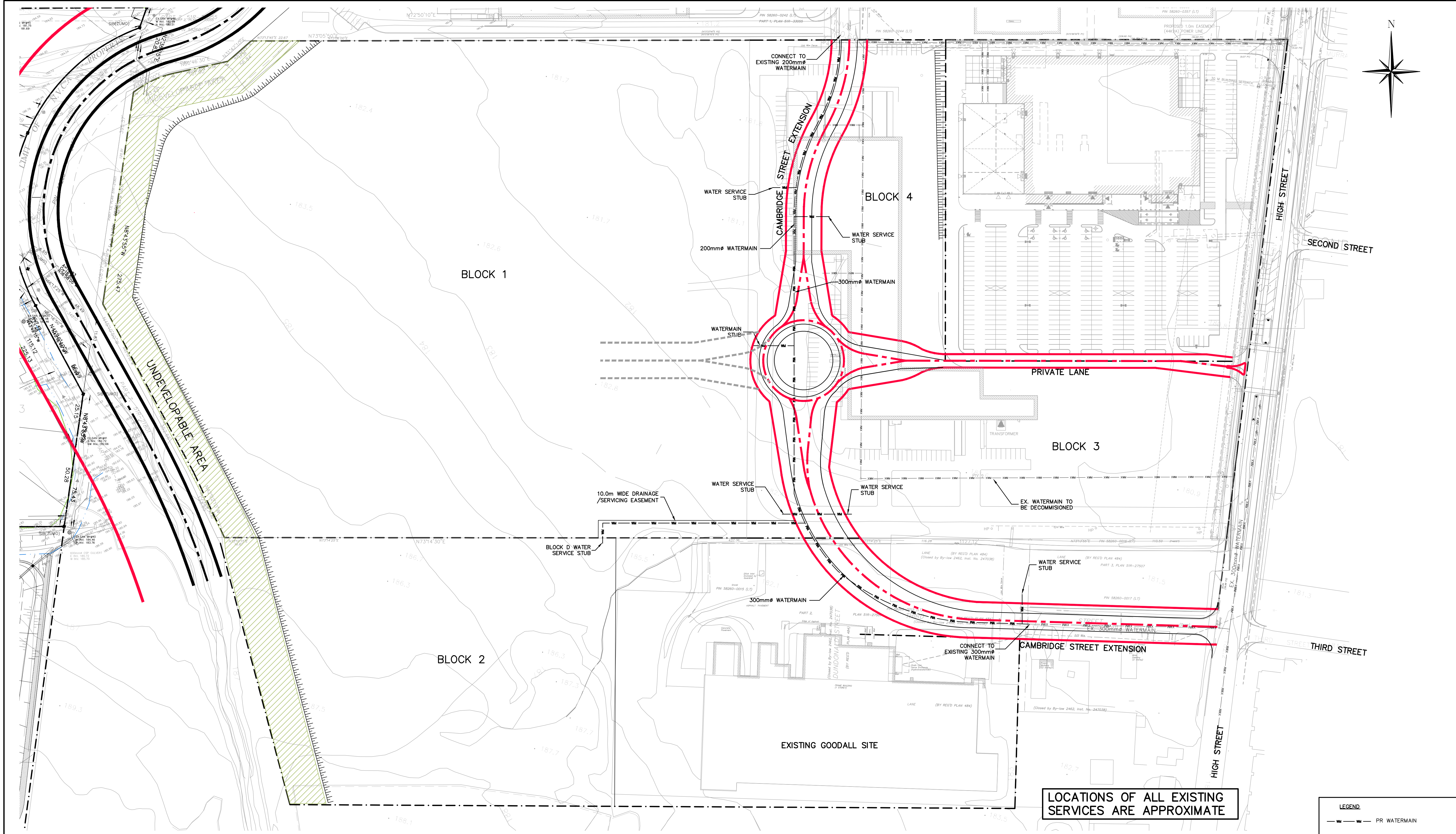
Drawing: PRELIMINARY SANITARY SERVICING PLAN

Scale: 1:1000 Date: 08/01/2014 Check By: D.T. Drawing: FIG. 3

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Drawn By: L.W. Design By: L.W. Project: 183-2697



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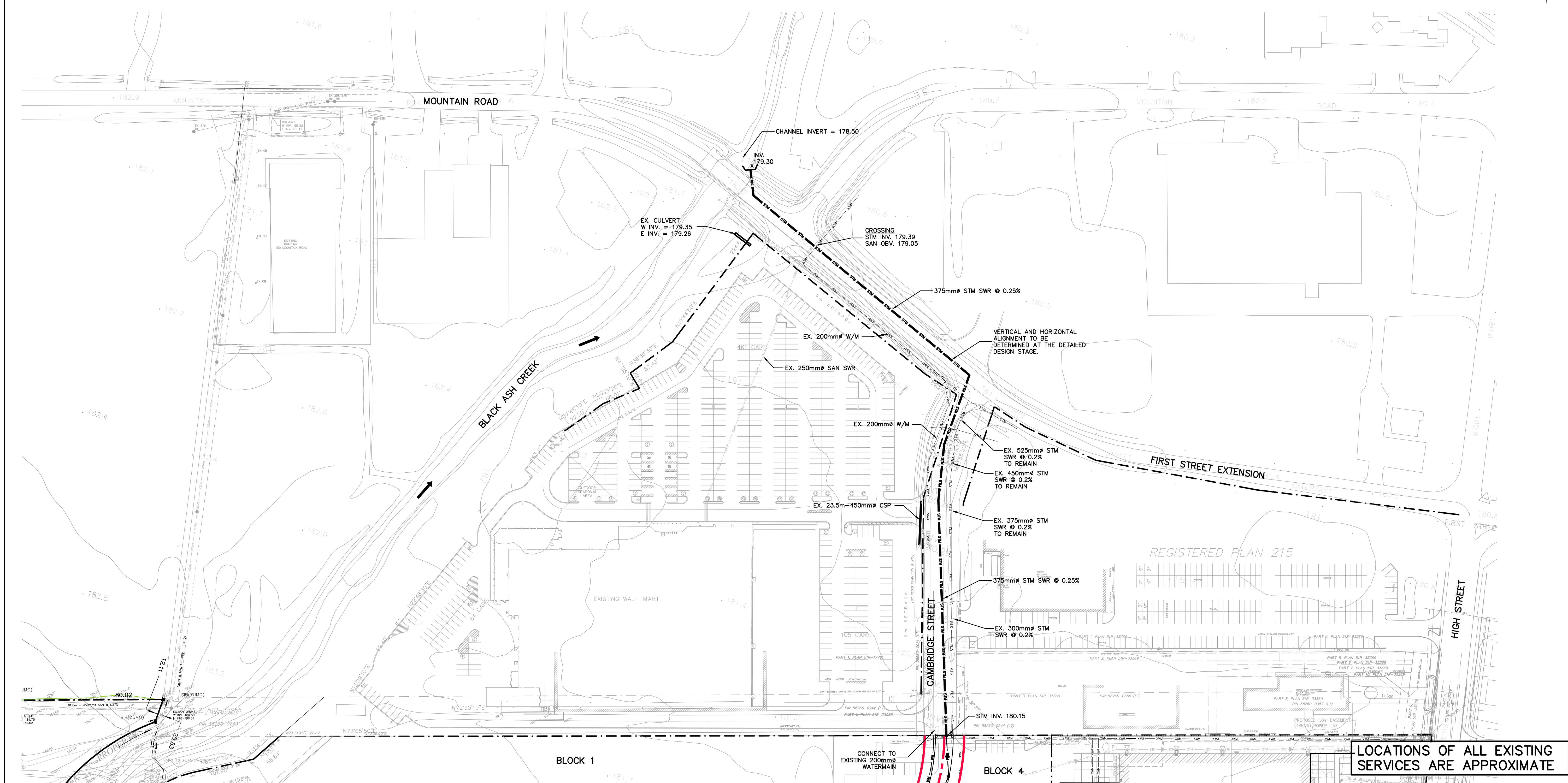
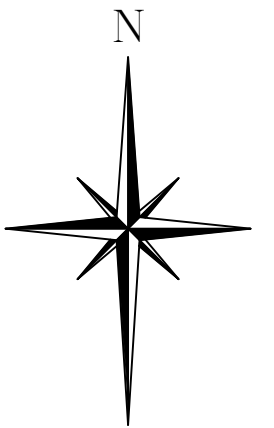
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Engineer	Engineer	Project
		WEST END COMMERCIAL TOWN OF COLLINGWOOD
		PRELIMINARY WATER DISTRIBUTION PLAN

Drawn By	Design By	Project
L.W.	L.W.	183-2697
Scale: 1:1000	Date: 08/01/2014	Check By: D.T. Drawing: FIG. 4

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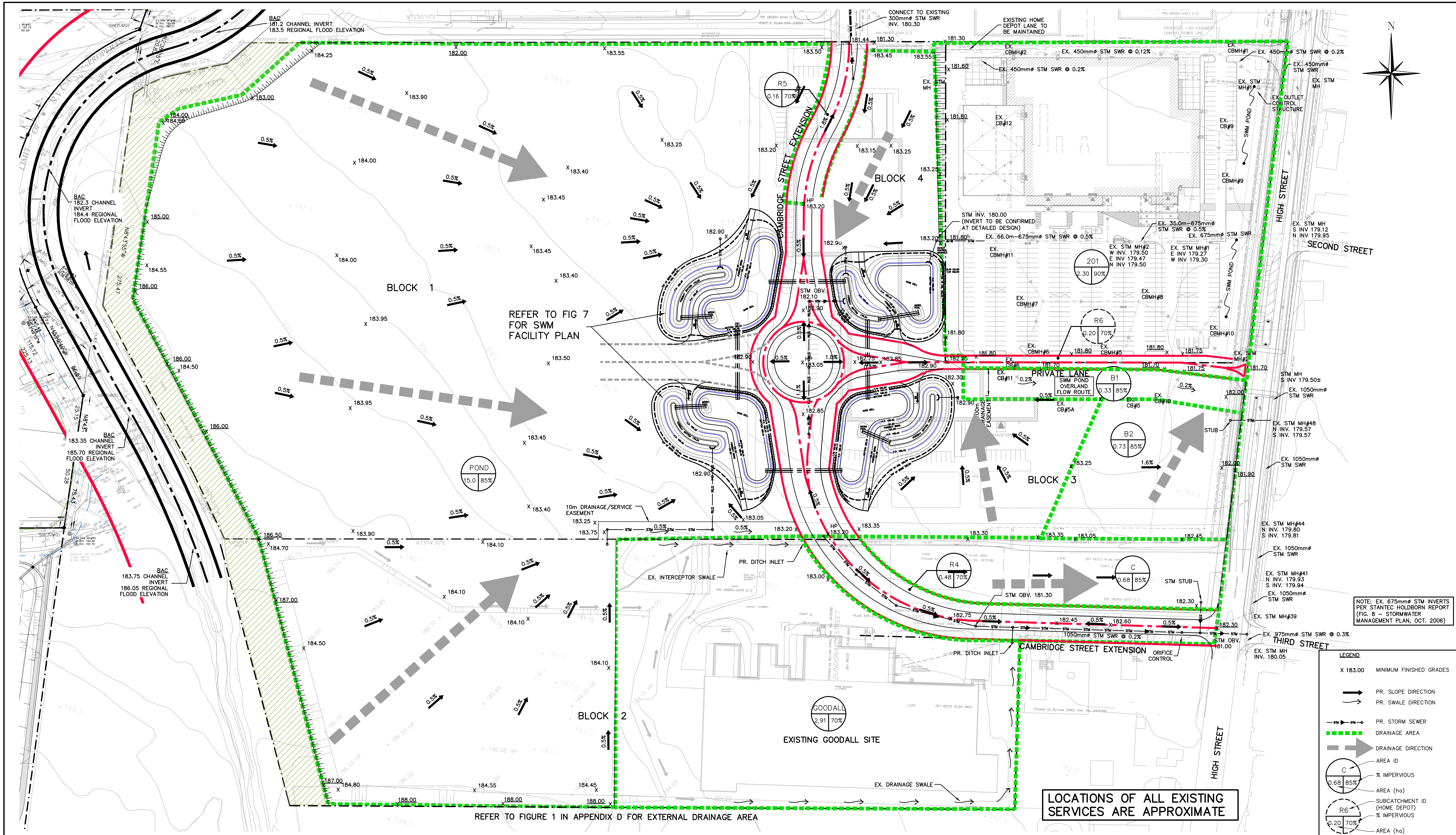
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Engineer	Project
	WEST END COMMERCIAL TOWN OF COLLINGWOOD
	PRELIMINARY TRUNK SEWER ROUTING PLAN

Drawn By	Design By	Project
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NOTE: EX. 675mm^Ø STM INVERTS PER STANTEC HOLDBORN REPORT (FIG. 8 - STORMWATER MANAGEMENT PLAN, OCT. 2006)

LEGEND

- X 183.00 MINIMUM FINISHED GRADES
- PR. SLOPE DIRECTION
- PR. SWALE DIRECTION
- PR. STORM SEWER
- DRAINAGE AREA
- DRAINAGE DIRECTION
- C AREA ID
- 0.68 85% AREA (ha)
- R6 SUBCATCHMENT ID (HOME DEPOT)
- 0.20 70% AREA (ha)

LOCATIONS OF ALL EXISTING SERVICES ARE APPROXIMATE

REFER TO FIGURE 1 IN APPENDIX D FOR EXTERNAL DRAINAGE AREA

REFER TO FIG 7 FOR SWM FACILITY PLAN

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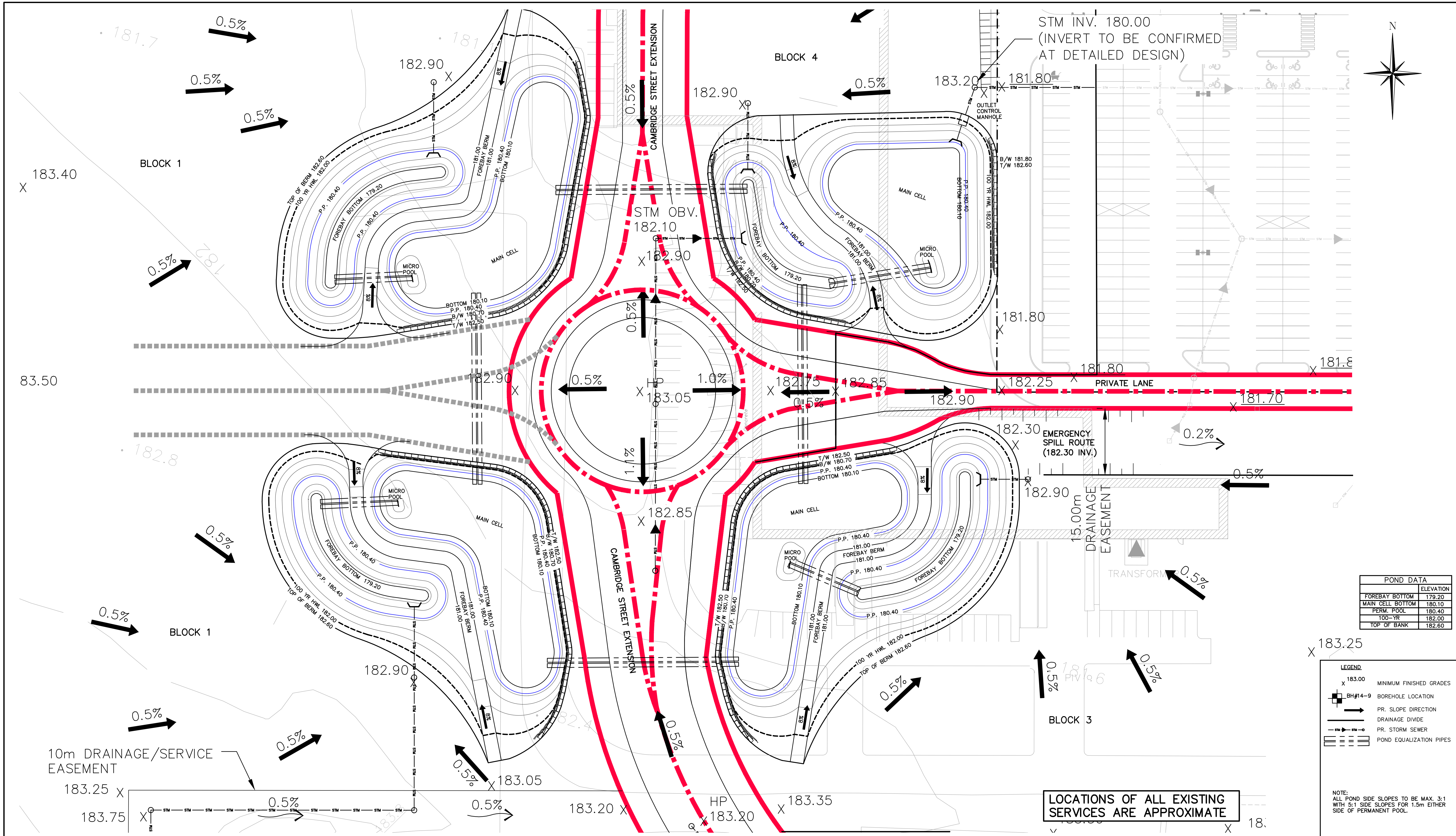
Project	WEST END COMMERCIAL TOWN OF COLLINGWOOD
Drawing	WEST END COMMERCIAL REGIONAL SWM FACILITY

Drawn By	L.W.	Design By	L.W.	Project	183-2697
Scale	1:1000	Date	08/01/2014	Check By	D.T.

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183-2697
FIG. 6



POND DATA	
	ELEVATION
FOREBAY BOTTOM	179.20
MAIN CELL BOTTOM	180.10
PERM. POOL	180.40
100-YR	182.00
TOP OF BANK	182.60

LEGEND	
x 183.00	MINIMUM FINISHED GRADES
BH#14-9	BOREHOLE LOCATION
→	PR. SLOPE DIRECTION
—	DRAINAGE DIVIDE
—	PR. STORM SEWER
—	POND EQUALIZATION PIPES

NOTE:
ALL POND SIDE SLOPES TO BE MAX. 3:1
WITH 5:1 SIDE SLOPES FOR 1.5m EITHER
SIDE OF PERMANENT POOL.

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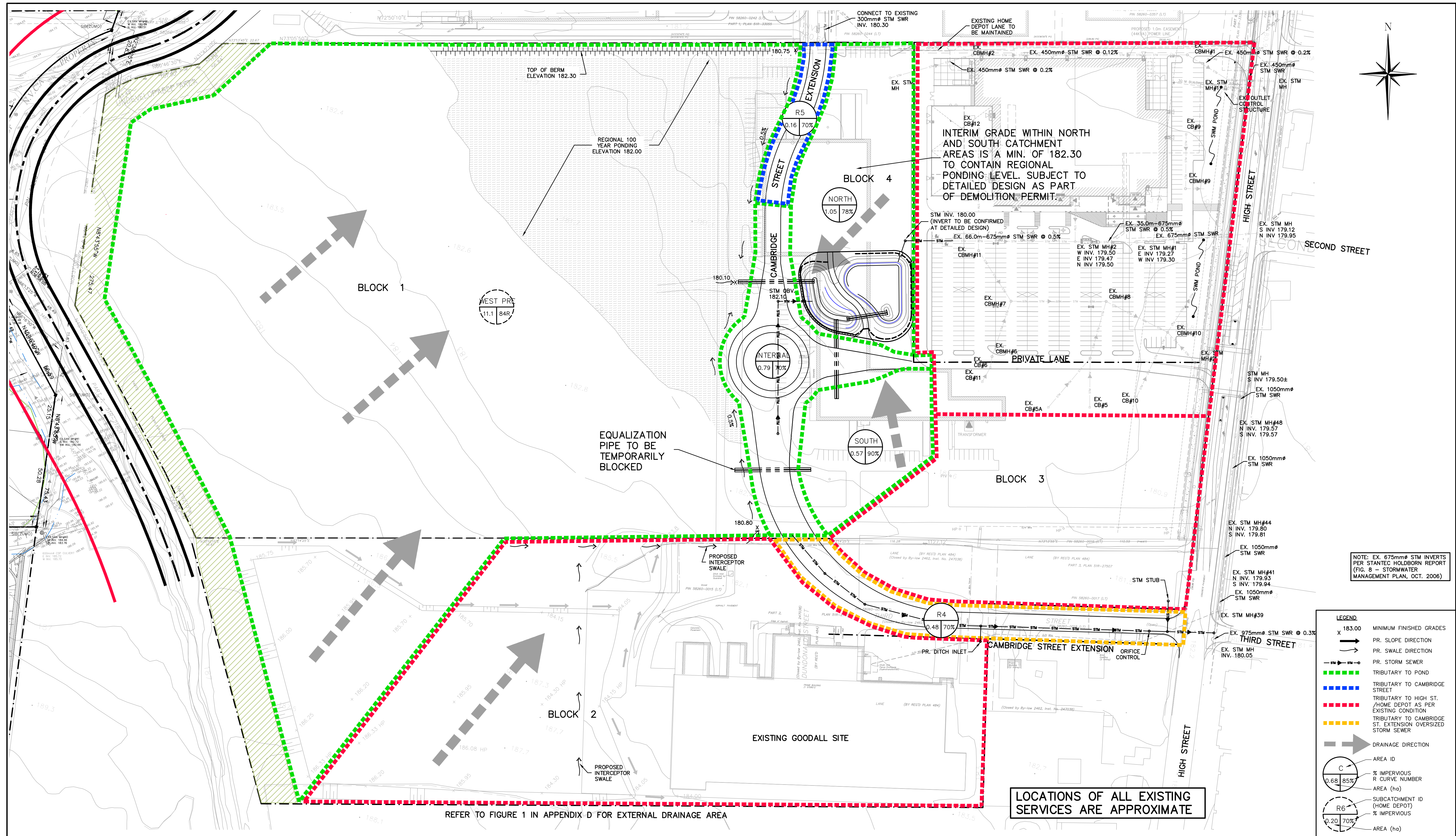
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Project	
Project	WEST END COMMERCIAL TOWN OF COLLINGWOOD
Drawing	STORMWATER MANAGEMENT FACILITY PLAN

Project	
Project	183-2697
Scale	1:400
Date	08/01/2014
Check By	D.T.
Drawing	FIG. 7

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NOTE: EX. 675mm STM INVERTS PER STANTEC HOLDORN REPORT (FIG. 8 - STORMWATER MANAGEMENT PLAN, OCT. 2006)

LEGEND	
X	183.00 MINIMUM FINISHED GRADES
→	PR. SLOPE DIRECTION
→	PR. SWALE DIRECTION
— STM — STM —	PR. STORM SEWER
—	TRIBUTARY TO POND
—	TRIBUTARY TO CAMBRIDGE STREET
—	TRIBUTARY TO HIGH ST. / HOME DEPOT AS PER EXISTING CONDITION
—	TRIBUTARY TO CAMBRIDGE ST. EXTENSION OVERSIZED STORM SEWER
→	DRAINAGE DIRECTION
C	AREA ID
0.68 85%	% IMPERVIOUS R CURVE NUMBER
	AREA (ha)
R6	SUBCATCHMENT ID (HOME DEPOT)
0.20 70%	% IMPERVIOUS AREA (ha)

LOCATIONS OF ALL EXISTING SERVICES ARE APPROXIMATE

REFER TO FIGURE 1 IN APPENDIX D FOR EXTERNAL DRAINAGE AREA

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Project	
WEST END COMMERCIAL TOWN OF COLLINGWOOD	
Drawing	
WEST END COMMERCIAL PHASE 1 GRADING AND DRAINAGE PLAN	

Project	
WEST END COMMERCIAL TOWN OF COLLINGWOOD	
Drawing	
WEST END COMMERCIAL PHASE 1 GRADING AND DRAINAGE PLAN	

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Scale: 1:1000 Date: 08/01/2014 Check By: D.T. Drawing: **183-2697 FIG. 8**