Site Servicing and Stormwater Management Report

The Birches

Project No. 19-02

Our File: 19021

March 15, 2021

Prepared by:

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APPENDICES

1. INTRODUCTION

Superville Engineering Corporation has been retained by Ball Technical Services (BTS) to provide engineering services associated with a proposed site development in the Town of Gananoque. This report summarizes the general servicing and stormwater management for the proposed development.

The proposed development is located on a property approximately 2.6 hectares (6.5 acres) in area located between Second Street and Third Street and between Maple Street and Elm Street; west of the Gananoque River. The property address is identified as 460 Second Street.

2. SITE DESCRIPTION

2.1 Existing Conditions

The current site terrain is undeveloped and mostly unvegetated with sparse brush cover. A storm sewer network exists on the site primarily draining to the existing ditch at Elm Street. A drainage structure exists at the south west quadrant of the site, receives local surface waters and drains these waters to the west ditch along Maple Street.

Existing drawings received from the municipality suggests that there are existing utilities associated with storm drainage, water distribution, and sanitary sewerage that may be utilized to service the site on Second Street; between Elm and Maple.

2.1.1 Storm Sewer

Record drawings indicate that an existing storm sewer on Second Street drains from west to east then north via the unused Elm Street ROW eventually to Third Street. Between Second Street and Third Street, two ditch inlets exist; one approximately half way between Second Street and Third Street and one behind house number 290 on Victoria Street. Runoff arriving at Third Street, drains east to the storm sewer at Victoria and Third Streets.

2.1.2 Sanitary Sewer

An existing sanitary sewer exists on Second Street and runs past the site entrance, draining easterly from MH 888 (at the corner of Birch Street and Second Street) to MH 885 (corner of Elm Street and Second Street). The sanitary sewer pipe is identified as both 200mm AC and 225 VC.

2.1.3 Potable Water Servicing

An existing 150 mm diameter watermain pipe runs along Second Street.

2.2 Proposed Development

The proposed development consists of fifteen (15) new housing units; fourteen (14) buildings with four dwelling units and one (1) building with single dwelling unit for a total of 57 dwelling units. Additional features proposed for the site, include a utility building, recreational facilities and site parking; generally located within the center of the site.

The site will be services by an asphalt “ring road” looping around the interior of the site with buildings located primarily along the perimeter of the property boundaries and the within the center of the site.

The main entrance to the site will originate on the north side of Second Street, between Maple Street and Elm Street, directly across from Birch Street. An access route approximately 60 m long will extend from Second Street into the site, running between two existing residential properties. The developed site will be recognized with the address 460 Second Street.

Paved parking spaces are proposed for each dwelling unit. It is proposed that each dwelling unit will be provided with one parking space each. Additional parking for visitors to the site will be provide within the central portion of the site. Refer to *Appendix A.*

3. TRAFFIC AND ROADS

A traffic impact assessment was carried out for the development and is contained in *Appendix B.* In general, its findings indicate that the development will not have an adverse impact to the local community.

The interior road network for the site will not be under the jurisdiction of the municipality. The road geometry for the site will be designed based on standard low volume road guidelines as well as having appropriate geometry to allow for emergency vehicles to access all dwelling units.

The interior road network will have a paved surface over a granular pavement structure consisting of (thicknesses) 90mm of asphalt, 150mm of granular A and 300mm of granular B with a central crown generally with 2% cross fall in each direction form centerline of the road. No line painting will be provided on the road network. Line painting will be limited to the parking areas.

4. DRAINAGE AND STORMWATER MANAGEMENT

Stormwater Management (SWM) for the proposed development will be provided by the use of on-site quantity and quality controls. The following sections describes the stormwater management criteria being applied to the development, the existing drainage conditions, the proposed conditions, and the existing, proposed and attenuated hydrologic responses.

Stormwater Management Criteria

The following stormwater management (SWM) criteria will be applied:

Quantity Control

For discharge into municipal sewers and ditches, attenuation of the post development peak flows for the 2 through to the 100-year Gananoque storm events to the pre-development peak flows is to be achieved by providing onsite storage for all storms up to and including 100-year storm. Post-development peak flow rates are not to be greater than the pre-development peak flow rates.

Storm durations of 1-hour, 6-hour and 12-hour were evaluated for each storm return period. SCS Type II distributions were used for the 6-hour and 12-hour storms. For the 1-hour storm duration an Atmospheric Environment Service (AES) distribution was used.

Quality Control

A Normal (70% TSS removal) level of water quality protection will be provided.

4.1 Quantity Control

4.1.1 Existing Condition (Pre-development)

The existing site is an undeveloped parcel of vacant land consisting of two drainage areas; one draining to the west and one draining to the east. Refer to Appendix C, Exhibit 1. Pre-Development Catchment Areas.

Runoff from the existing westerly catchment generally sheet flow drains to the west. Runoff enters the municipal ditch at the western property boundary and drains northward to a roadway cross-culvert. From the cross-culvert runoff continues westerly over private property, meandering around the house located at the end of Maple Street to a low point in the terrain, eventually to the Gananoque River via a series of culverts and ditches. Exhibit 2 shows the westerly drainage route beyond the site. Along this route runoff does not enter the municipal storm sewers.

Runoff from the existing easterly catchment generally sheet flow drains to the east. Runoff enters the municipal ditch at the eastern property boundary and flows northward to the municipal storm sewer system.

It is noted that a site visit was completed with both the Town of Gananoque and the CRCA in order to assess the general state of the existing site terrain and drainage patterns. A few notable observations are;

- The house located at the end of Maple Street has reported minor flooding at the rear of the property; before the low-lying area to the north just and just south of Fourth Street.
- East of the site, beyond the first municipal storm sewer inlet on the Elm Street right-of-way (ROW) and before the storm sewer at Victoria and Third Streets, there are properties on Victoria that have lands that are situated relatively low compared to the adjacent terrain. Under a major storm event, these lands are at risk of accumulating runoff if the storm sewer inlet was not able to accept the upstream flows and where runoff flows overland. Exhibit 3 shows the locations of lands at risk of flooding under a major storm event.

The peak flows associated with the predevelopment condition are shown in Table 1 and are based on the NASH instantaneous unit hydrograph with a CN value of 82 and an IA of 5mm.

Table 1 – Pre-Development Peak Flows of the West and East Catchments

		West Catchment - Pre Development NASHYD Area = 1.44 ha	East Catchment - Pre Development NASHYD Area = 2.76 ha
Storm Frequency (year)	Storm Duration (hr)	Peak Flow Qpeak (m3/s)	Peak Flow Qpeak (m3/s)
2	1	0.025	0.047
2	6	0.052	0.099
2	12	0.066	0.127
10	1	0.062	0.119
10	6	0.116	0.221
10	12	0.141	0.270
100	1	0.123	0.235
100	6	0.209	0.401
100	12	0.247	0.473

4.1.2 Proposed Conditions (Post Development)

Under the proposed conditions, the proponent plans to construct fifteen (15) housing units; fourteen (14) four dwelling units and one single dwelling unit each complete with related driveway and landscaped areas. A comparison between proposed and existing conditions shows that the property will become 32% impervious. The proposed development introduces an increase in the runoff characteristics of the site. As such storm water quantity controls will be required for the development.

4.1.3 West – Post Development Catchment Characteristics

The western post development condition consists of five (5) sub-catchment areas. Table 2 shows characteristics of the sub-catchments; plan areas, composite CN values and impervious cover associated with each. Exhibit 4, Appendix C provides an illustration of the proposed post-development sub-catchment areas.

Exhibit 6, Appendix C contains detailed hydrologic modeling parameters and input/output printouts for the proposed conditions.

Table 2 – Western Sub-Catchment Areas

West Catchment #	Area (ha)	CN	% Impervious
W1	0.658	81.7	32%
W2	0.397	83.9	41%
W3	0.579	86.2	51%
W4	0.154	88.9	62%
W5	0.104	77.7	15%
Composite CN based on CN = 74 for Grass and CN = 98 for Roof and Pavement			

4.1.4 West - Water Quantity Control

Table 3 summarizes the stage-storage-discharge characteristics for an orifice-controlled storage facility for the west post development catchment; This information has been used in the hydrologic model.

Table 3 – Stage-Storage-Discharge

Head (m)	Storage Volume (m3)	Discharge (m3/s)
0.0	0.0	0.000
0.20	37.5	0.009
0.45	75	0.014
0.70	112.5	0.017
1.00	150	0.020

The proposed conditions were assessed using OTTHYMO hydrologic modeling for the 2 year to 100 year, 1-hour (AES), 6-hour (SCS) and 12-hour (SCS) design storms.

The attenuation of the peak flows with the use of a storage facility having a top surface area of 15m x 11m and a storage volume of 150 cubic meters above the discharge invert is proposed at the point of discharge. This storage facility would be situated between building I and building J.

Table 4 summarizes the peak flow rates for the 2, 10 and 100-year storm events. The peak flow rates for proposed catchments draining toward the west are less than the pre development peak flow rates.

Appendix C contains detailed hydrologic modeling parameters and input/output printouts for the proposed conditions.

Table 4 – West Catchment Peak Flows

		Pre Development NASHYD Area = 1.44 ha	Post Development STAHYD Area = 1.89 ha	Attenuated Post Development STAHYD Area = 1.89 ha
Storm Frequency (year)	Storm Duration (hr)	Peak Flow Qpeak (m3/s)	Peak Flow Qpeak (m3/s)	Peak Flow Qpeak (m3/s)
2	1	0.025	0.093	0.019
2	6	0.052	0.121	0.024
2	12	0.066	0.136	0.026
10	1	0.062	0.163	0.027
10	6	0.116	0.230	0.038
10	12	0.141	0.258	0.042
100	1	0.123	0.271	0.041
100	6	0.209	0.390	0.058
100	12	0.247	0.430	0.064

4.1.5 East – Post Development Catchment Characteristics

The eastern post development condition consists of seven (7) sub-catchment areas. Table 5 shows characteristics of the sub-catchments; areas, composite CN values and impervious cover associated with each. Exhibit 4 provides an illustration of the proposed post-development sub-catchment areas.

For the post development conditions the east catchment will discharge at two locations. One at the north east quadrant and one at the south east quadrant of the of the property. The peak flow rates associated with the east sub-catchment arrangements are to be attenuated with storage ponds at these two locations.

Appendix C contains detailed hydrologic modeling parameters and input/output printouts for the proposed conditions.

Table 5 - Proposed Conditions Catchment Areas

West Catchment #	Area (ha)	CN	% Impervious
W6	0.602	76.0	8%
E1	0.539	79.7	24%
E2	0.185	88.7	61%
E3	0.222	83.3	39%
E4	0.327	74.0	0%
E5	0.082	74.0	0%
E6	0.359	84.7	44%
Composite CN based on CN = 74 for Grass and CN = 98 for Roof and Pavement			

4.1.6 East Water Quantity Control

Table 6 summarizes the stage-storage-discharge characteristics for the orifice-controlled storage ponds for the east post development catchment; This information has been used in the hydrologic model.

Table 6 – Stage-Storage-Discharge

Head (m)	Storage Volume (m3)	Discharge (m3/s)
0.0	0.000	0.000
0.20	13.8	0.009
0.45	31.8	0.014
0.70	54.1	0.017

The proposed conditions were assessed using the OTTHYMO hydrologic modeling program for the 2 year to 100 year, 1-hour (AES), 6-hour (SCS) and 12-hiour (SCS) distribution design storms.

The attenuation of the peak flows with the use of storage ponds having top surface area of 11m x 9m and a volume of 55 cubic meters above the discharge invert is proposed for the points of discharge for the east.

The attenuated peaks from the site's east catchment have been combined with portions of the terrain immediately external to the eastern property boundaries in order to include the full pre development area considered.

Table 7 summarizes the peak flow rates for the 2, 10 and 100-year storm events. The peak flow rates for the proposed east catchment draining toward the east are less than the pre development peak flow rates.

Appendix C contains detailed hydrologic modeling parameters and input/output printouts for the proposed conditions.

Table 7 – East Catchment Peak Flows

		Pre Development NASHYD Area = 2.76 ha	Un-Attenuated Post Development STAHYD and NASHYD Area = 2.32 ha	Attenuated Post Development STAHYD and NASHYD Area = 2.32 ha
Storm Frequency (year)	Storm Duration (hr)	Peak Flow Qpeak (m3/s)	Peak Flow Qpeak (m3/s)	Peak Flow Qpeak (m3/s)
2	1	0.047	0.084	0.032
2	6	0.099	0.111	0.043
2	12	0.127	0.130	0.049
10	1	0.119	0.145	0.053
10	6	0.221	0.229	0.074
10	12	0.270	0.259	0.086
100	1	0.235	0.243	0.085
100	6	0.401	0.404	0.122
100	12	0.473	0.455	0.141

4.1.7 Findings of Evaluation

The hydrologic evaluation indicates the following:

· For the 2-year to 100-year storm events, the post development peak discharge rates to the west can be mitigated to the pre development peak discharge rates to the west with the use of an attenuation facility on the site.

· For the 2-year to 100-year storm events, the post development peak discharge rates to the east can be mitigated to the pre development peak discharge rates to the east with the use of two attenuation ponds discharging at the two locations.

· The site will be graded such that overland flows (greater than the 100-year storm event) generated within the site will be directed away from the site via suitable overland flow routes. Should the storm sewer system plug, there is the risk of flooding at the east. Therefore, particular grading upstream of the flood risk zones may have to be completed within the Elm Street ROW.

- Drainage routes such as the existing ditches along the public right of way as well as possible alterations to the existing road way grades may have to be completed beyond the site to mitigate for the major storm event; one greater than the 100-year peak.

- The maintenance of these stormwater facilities will become part of the overall condominium site management.

4.2 Quality Control

Water quality control for the west discharge will be provided by an oil / grit manhole; installed upstream of the proposed western facility.

The following parameters were used to size the oil/grit device:

· Upstream Catchment Area = 1.8 ha

· % Impervious = 41%

· Particle Distribution = FINE

The analysis indicates that a Hydro First Defense (1200mm diameter drainage structure) by Hydro International would provide 84% TSS removal. The sizing information is included in Appendix C Exhibit 5.

Water quality control for the east discharge will be provided with a permanent pool volume below the discharge invert within the same pond utilized for attenuating the peak post development discharges rates at the south east quadrant and at the north east quadrant of the east catchment area.

5. WATER DISTRIBUTION SYSTEM

The development will be serviced by a 150 mm diameter watermain extending from the existing watermain on Second Street at the Second and Birch Street intersection.

6. SANITARY SERVICING

Sanitary sewerage servicing will be via 200 mm pipes buried within the roadway of the site. Two sanitary sewers will drain south along the west and east roads of the ring road and converge where the ring road meets the entrance leg for the site. From the internal intersection, the sanitary sewer will drain south to the existing sanitary sewer located at Second Street. The new sanitary sewer will connect to the existing MH structure located immediately in front of the site entrance; Sanitary MH 888. Sanitary sewerage will be directed east to Victoria Street. Sanitary sewer design sheets are provided in Appendix D and have been prepared in accordance with MOE guidelines. Building lateral will be 150 mm pipes.

7. GEOTECHNICAL

No geotechnical investigations have been completed as part of this reporting.

8. NATURAL GAS DISTRIBUTION

All design and installation will be in accordance with the distributor's specifications. The results of the natural gas service designs will be included on the Utility Coordination Plan where it is expected that servicing the site will generally be in common trench; to be presented with the detailed engineering drawings.

9. ELECTRICAL UTILITIES AND OTHER WIRED SERVICES

The electrical, communication, and cable services for the proposed development will be installed within the common trench. All design and installation will be in accordance with the distributor's specifications. The results of the electrical and other wiring service designs will be included on the Utility Coordination Plan to be presented with the detailed engineering drawings.

10. CONCLUSIONS

The development will not have an adverse impact on the existing traffic patterns.

Quantity control of the stormwater post development peak flows can be attenuated with the use of storage facilities and ponds.

Quality control of the stormwater post development flows for the west catchment will be treated with an OGS unit.

Quality control of the stormwater post development flows for the east catchments will be treated with ponds having permanent pools.

The site potable water and sanitary systems will be serviced via connections located at the intersection of Birch and Second Street.

The site will be serviced by a 150 mm diameter watermain looping the development and connecting to the existing watermain systems on Second Street at Second and Birch Streets.

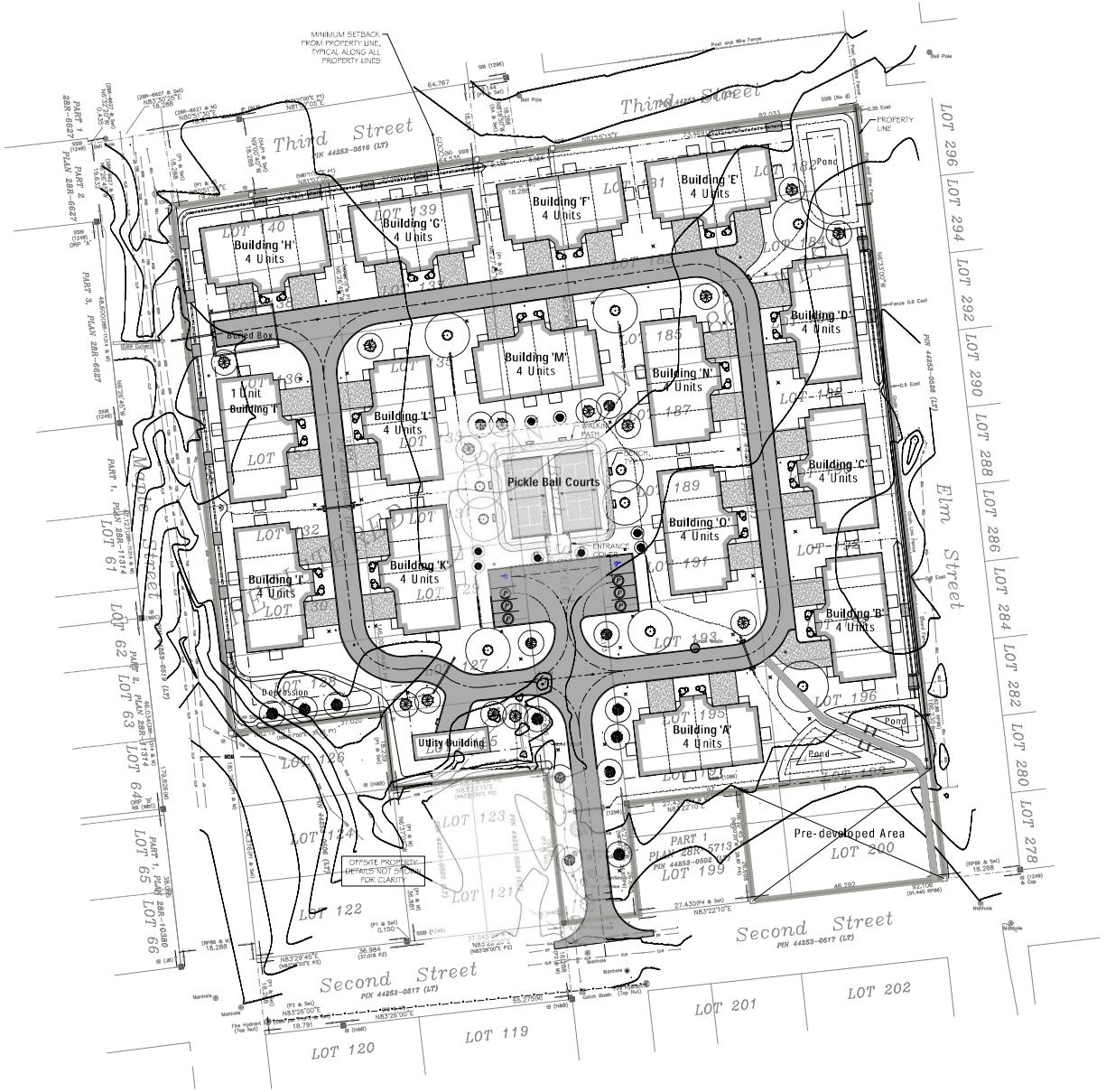
The site will be serviced by 200 mm diameter sanitary sewer pipes connecting to the existing sanitary sewer systems on Second Street at Second and Birch Streets.

On site street lighting will be provided.

Natural gas, electrical distribution, and other servicing will be in accordance with the individual utility companies' specifications.

APPENDIX 'A'

Proposed Development



PLAN 1:500 — ORIGINAL PROPERTY AND PROPOSED PROPOSED SITE PLAN OVERVIEW

LEGEND:

SSIBS PLANTED DUE TO INSUFFICIENT OVERBURDEN

- denotes Planted Survey Monument
- Survey Monument
- SIB — Standard Iron Bar
- SSIB — Short Standard Iron Bar
- IB — Iron Bar
- IBØ — Iron Bar (round)
- RB — Rock Bar
- RPL — Rock Plug
- (WIT) — Witness
- (M) — Measured
- CC — Cut Cross
- (OU) — Origin Unknown
- (HP) — Hydro Pole
- (H&B) — Humphreys & Bingham Ltd.
- (WSC) — Collett Surveying Ltd.
- (G.L.) — Raymond F. Mucklestone-O.L.S.
- (1242) — Martin H. Kaldeway-O.L.S.
- (1296) — Ronald H. Smith-O.L.S.
- (1626) — Robert J. Jonsen-O.L.S.
- (1886) — Hopkins Chitty Land Surveyors Inc.-O.L.S.
- (P1) — Plan by (1242) dated October 18, 1994
- (P2) — Plan by (1626) dated February 22, 2001
- (P3) — Plan by (H&B) dated April 16, 1968
- (P4) — Reference Plan 28R-5713
- CLF — Chain Link Fence
- WGR — West of the Gananoque River
- TOB — Top of Bank
- BOB — Bottom of Bank
- EP — Edge of Pavement
- EG — Edge of Gravel
- OHL — Overhead Hydro Line
- CLR — Centreline of Road
- SL — Overhead Service Line
- OUL — Overhead Utility Line
- 99.05 — Proposed Grade Elevation Marker
- Contour Line
- 86.5 — Existing Contour Elevation Mark
- Fences: CLF - Chain Link, BF - Pressaure Treated Board, WF - Post and Wire, RF - Rail, SRF - Snake Rail
- Sign
- Light Standard
- Parking Space, Additional
- Handicapped Parking Space

ELEVATION NOTE:

ELEVATIONS ARE GEODETIC AND ARE REFERRED TO THE HT2_0 GEOID MODEL BEING A PRODUCT OF THE GEODETIC SURVEY DIVISION (GSD) OF NATURAL RESOURCES CANADA, DERIVED FROM REAL-TIME NETWORK GPS OBSERVATIONS.

THE ELEVATIONS ARE REFERRED TO SITE BENCHMARKS 1 AND 2 NEAR THE SOUTH LIMIT OF SECOND STREET.

BENCHMARK 1 BEING THE TOP NUT OF A FIRE HYDRANT 16.8 m SOUTH OF THE SOUTHWEST CORNER OF LOT 199, REGISTERED PLAN 86 WEST HAVING AN ELEVATION OF 88.31m AND SITE BENCHMARK 2, BEING THE TOP NUT OF A FIRE HYDRANT LOCATED 15.4m SOUTH OF THE SOUTHWEST CORNER OF LOT 122 REGISTERED PLAN 86 WEST HAVING AN ELEVATION OF 89.98m.

BEARINGS ARE UTM GRID, DERIVED FROM MULTIPLE REAL TIME KINETIC (GPS) OBSERVATIONS FROM MONUMENT 'A' TO 'B', UTM ZONE 18 (75° WEST LONGITUDE) NAD83 (CSRS) (2010)

FOR BEARING COMPARISONS, A ROTATION OF 0°50'00" CLOCKWISE WAS APPLIED TO BEARINGS ON (P1), (P2) AND (P3)

FOR BEARING COMPARISONS, A ROTATION OF 1°03'00" CLOCKWISE WAS APPLIED TO BEARINGS ON (P1), (P2) AND (P3)

DISTANCES ARE GROUND AND CAN BE CONVERTED TO GRID BY MULTIPLYING BY THE COMBINED SCALE FACTOR OF 0.999699

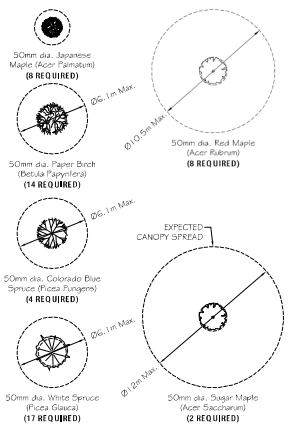
DISTANCES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048

EXISTING INFORMATION COMPILED BY HOPKINS CHITTY LAND SURVEYING INC., PROJECT NO. 2019-293

38mm dia. PYRAMIDAL CEDAR (THUJA OCCIDENTALIS)
50mm dia. JAPANESE MAPLE (ACER PALMATUM)
25mm dia. JUNIPER (JUNIPERUS SPP.)

TYPICAL PLANTING CLUSTER IN FRONT OF UNITS

NTS (30 REQUIRED)



PRIMARY LANDSCAPING TREES

NTS

Zoning	Residential R-X3	
	PROVIDED	REQUIRED
Typical End Unit	89.1 m2	80.0 m2
Typical Centre Unit	100.9 m2	80.0 m2
Building Height	5.36 m	10m Max.
Unit Parking	120 spaces (*)	120 spaces
(*) Garages = 60 Spaces plus Exterior = 60 Spaces		
Additional Parking = 6 Spaces plus 2 Handicapped		
Allowable Development = 44 units/ha Proposed Development has a Unit Density = 35.73 units/ha		
	AREA	COVERAGE (%)
Lot	26422 m2	100 %
15 - 4 Unit Buildings	5700 m2	21.6 %
Utility Area	111.5 m2	0.4 %
Ex. Developed Area	1234.3 m2	4.7 %
Paved Area	3481.5 m2	13.2 %
Recreation Area	716.0 m2	2.7 %
Concreted Area	2148.6 m2	8.1%
Grassed Area	13166.2 m2	49.3 %
Undeveloped Area	0 m2	0.0 %

PROJECT COMPLETED FOR:

THE BIRCHES Community Living

Project Drafting Services Provided by:

Ball Technical Services
BTS
Cell: (613)-331-1823 Email: bballt@cogeco.ca
Site Investigation/Inspection/Reporting
Drawing and Document Preparation
Project Design Coordination
Heritage Recording

PROJECT: The Birches - Phase I
Birch Street - Gananoque, Ontario

DRAWING TITLE: Proposed Development Concept

MEASURED SCALE FOR PAPER COPY
0 10mm 50mm
In general - Do Not scale drawing

REVISIONS

1	-	-
2	-	-
3	-	-
4	-	-

BTS Project Number: 19-02

Client Project Number: -

Initial Drawing Issue Date: 11 January, 2021

Current Drawing Issue Date: 28 March, 2022

Designed by: -

Checked by: -

Drawn by: MGB

DRAWING No. SP1

Sheet 1 of 7

APPENDIX 'B'

Traffic Study

MEMORANDUM

Ainley & Associates Limited
550 Welham Road, Barrie, ON, L4N 8Z7
Tel: (705) 726-3371 P Fax: (705) 726-4391
Email: Barrie@ainleygroup.com

To: **Town of Gananoque** Copies to: **Andrew Superville, Superville Engineering Corporation**

From: **Lilly Chen**

Date: **December 19, 2019**

Ref: **Town of Gananoque, The Birches Development Transportation Brief** File: **219088**

Per our client's request, we have prepared the following site specific traffic evaluation for the proposed residential development on Second Street at Birch Street. Based on the Town's direction, it is our understanding that the transportation brief is required to assess the following:

- Current traffic conditions in the area including Highway 2/King Street West and Birch Street, Second Street and Victoria Avenue;
- Future traffic conditions without site traffic
- Future traffic plus the site traffic conditions; and
- Traffic impacts and mitigating measures if any.

Site Location & Access

The site is located on Second Street at Birch Street, in the Town of Gananoque, County of Leeds and Grenville as illustrated in Figure 1. The development site plan is illustrated in Figure 2. A single site access will be provided on Second Street at Birch Street.

Proposed Land Use & Phasing

The proposed development is to consist of a total of 56 retirement community townhouse units. It is anticipated that the development will be fully completed and in operation in 2020.

Site Generated Trips

Trip generation rates have been determined from the Institute of Transportation Engineer's *Trip Generation Manual*. Based on the proposed land uses and applicable ITE land use categories, the following have been employed:

- Retirement community townhouse units – trip rates correspond to "senior adult housing - attached" (ITE land use code 252)

The applicable trip rates and corresponding trip estimates for the peak hours of the adjacent road are provided in Table 1. In total, the development is expected to generate 11 trips in the AM peak hour and 15 trips in the PM peak hour (both inbound and outbound trips).

TABLE 1 – SITE TRIP GENERATION ESTIMATES

Land Use	Rate/ Estimate	Unit/ Size	WEEKDAY AM PEAK			WEEKDAY PM PEAK		
			In	Out	Total	In	Out	Total
Senior adult housing - attached	rate	unit	0.07	0.13	0.20	0.14	0.12	0.26
	estimate	56	4	7	11	8	7	15

The distribution of the trip to be generated by the proposed development has been developed based on the existing traffic pattern at the intersections of Victoria Avenue at Second Street and King Street West at Birch Street. The following distribution was developed:

AM Peak hour

- 39% to the east via King Street West
- 15% to the west via King Street West
- 6% to the east via Second Street
- 39% to the south via Victoria Avenue
- 1 % to the north via Victoria Avenue
- 24% from the east via King Street West
- 29% from the west via King Street West
- 0% from the east via Second Street
- 47% from the south via Victoria Avenue
- 0% from the north via Victoria Avenue

PM Peak hour

- 21% to the east via King Street West
- 12% to the west via King Street West
- 3% to the east via Second Street
- 52% to the south via Victoria Avenue
- 12 % to the north via Victoria Avenue
- 58% from the east via King Street West
- 15% from the west via King Street West
- 3% from the east via Second Street
- 15% from the south via Victoria Avenue
- 9% from the north via Victoria Avenue

As there will be one site access via Birch Street, thus, all site traffic is assigned to it. The resulting site generated traffic volumes are illustrated in Figure 3.

Existing Road Network

The road network to be addressed by this report consists of King Street West (Highway 2/County Road 2), Birch Street, Victoria Avenue, and Second Street. King Street West is under the jurisdiction of the County, whereas Birch Street, Victoria Avenue and Second Street are under the jurisdiction of the Town.

As per the Town's Official Plan, King Street West is an arterial road. Through the study area, King Street West has one lane in each direction. The road has an urban cross-section with bike lanes, mountable curbs and sidewalks on both sides. The alignment of King Street West in the area is relatively straight and flat. The road has a posted speed limit of 50 km/h and hence a design speed of 60 km/h has been assumed (speed limit + 10 km/h for lower speed roads).

Victoria Avenue is a collector as identified in the Town's Official Plan. It has one lane in each direction and a parking lane on the west side. The road has an urban cross-section with curbs, gutters and sidewalks on both

sides. There is no speed limit posted on the road. A 50 km/h posted speed limit was assumed hence a design speed of 60 km/h is applied. The alignment of the road in the area is relatively straight and flat.

Birch Street and Second Street are local roads as per the Town's Official Plan. Both roads also have one lane in each direction. The roads have a rural cross-section with minimal gravel shoulders. The alignments of both roads are relatively straight and flat. There is no speed limit posted on the roads. A 50 km/h posted speed limit was assumed, thus a 60 km/h design speed is applied. No sidewalks are provided on both roads.

The intersections of King Street West at Birch Street and Second Street at Birch Street are "T" intersections with stop control on Birch Street. Whereas, the intersection of Victoria Avenue at Second Street is a 4-leg intersection with stop control on Second Street. Each approach has a single shared lane with no exclusive turn lanes/tapers. Existing road and intersection configurations are illustrated in Figure 4.

Existing Traffic Volumes

To assess road improvement needs, typical weekday AM and PM peak hours have been considered.

Traffic counts were conducted at the intersections of King Street West with Birch Street and Second Street with Victoria Avenue on Tuesday November 5th, 2019 from 7:00 to 10:00 and 15:00 to 18:00. Traffic count information is provided in Appendix A. Given the time of the year, the counts represent the average conditions. To reflect the peak summer condition, the data has been increased by 23 %. Based on the 2016 traffic volumes on the section of Highway 2 at Highway 401 interchange from MTO, the Summer Average Weekday Daily Traffic is approximately 23% higher than the Annual Average Daily Traffic.

Traffic volumes at the intersection of Second Street with Birch Street were estimated based on the existing development level in the area and the existing traffic volumes at the intersections of King Street West with Birch Street, Second Street with Victoria Avenue. The resulting 2019 summer weekday AM and PM peak hour volumes are presented in Figure 5.

Existing Traffic Operations

The assessment of existing conditions will provide the baseline from which the future traffic volumes and operations (both with and without the subject site) can be assessed.

The capacity, and hence operations, of a road system is effectively dictated by its intersections. As such, the analysis focused on the operation of the intersections of King Street West with Birch Street, Second Street with Victoria Avenue, and Second Street with Birch Street. The methodology applied was consistent with the *Highway Capacity Manual 2010* method for unsignalized intersections as employed in the software program Synchro 10. The analysis is based on the 2019 traffic volumes, the existing intersection configuration and control.

Table 2 summarizes the results of the analysis showing the level of service (LOS), estimated delays (measured in seconds) and the volume to capacity (v/c) ratio for the critical movement of the intersection. Level of service A, corresponding to minimal delays, is the best whereas level of service F, corresponding to high delays, is generally considered a poor condition. When volume is less than capacity, v/c ratio is less than 1. Otherwise, v/c ratio equals to 1 or more than 1, which means volume reaches capacity or is more than capacity.

For unsignalized intersections, the level of service corresponds to the minor street lane groups given that the major street movements proceed relatively unimpeded. For signalized intersections, the results pertain to the average intersection delay and assume optimal signal timing and phasing to achieve the most efficient overall network operations through signal coordination. If the actual situations are under expectations, adjustments to the signal timing and/or phasing can be readily implemented. Level of service definitions and the corresponding detailed worksheets are included in Appendix B.

TABLE 2 – INTERSECTION OPERATIONS – EXISTING 2019 TRAFFIC VOLUMES

INTERSECTION		CONTROL	PM PEAK HOUR			WEEKEND PEAK HOUR		
			Delay(s)	LOS	v/c	Delay(s)	LOS	v/c
King St W & Birch St	EBL	free	7.8	A	0.00	7.8	A	0.01
	SB	stop	11.4	B	0.04	12.4	B	0.03
Victoria Ave & Second St	NBL	free	7.3	A	0.01	7.4	A	0.00
	EB	stop	8.9	A	0.02	9.1	A	0.03
	WB		9.5	A	0.01	9.5	A	0.01
	SBL	free	7.3	A	0.00	0	A	-
Second St & Birch St	NB	stop	8.4	A	0.01	8.5	A	0.01
	WBL	free	7.2	A	0.00	7.2	A	0.00

As per the analysis, excellent levels of service B or better occur at the intersections under the existing conditions and thus no improvements related to intersection operations are required at this time on the basis of the intersection operational analysis.

Future Background Traffic Volumes

As per the Town's direction, a growth rate of 1% per year has been used. The resulting 2020 and 2025 background traffic volumes are presented in Figures 6 and 7 respectively.

Future Background Traffic Operations

Intersection operational analysis was carried out for the 2020 and 2025 background traffic volumes. Tables 3 and 4 summarize the results of the analysis.

TABLE 3 – INTERSECTION OPERATIONS – 2020 BACKGROUND TRAFFIC VOLUMES

INTERSECTION		CONTROL	PM PEAK HOUR			WEEKEND PEAK HOUR		
			Delay(s)	LOS	v/c	Delay(s)	LOS	v/c
King St W & Birch St	EBL	free	7.8	A	0.00	7.9	A	0.01
	SB	stop	11.4	B	0.04	12.5	B	0.03
Victoria Ave & Second St	NBL	free	7.3	A	0.01	7.4	A	0.00
	EB	stop	8.9	A	0.02	9.1	A	0.03
	WB		9.5	A	0.01	9.5	A	0.01
	SBL	free	7.3	A	0.00	0	A	-
Second St & Birch St	NB	stop	8.4	A	0.01	8.5	A	0.01
	WBL	free	7.2	A	0.00	7.2	A	0.00

TABLE 4 – INTERSECTION OPERATIONS – 2025 BACKGROUND TRAFFIC VOLUMES

INTERSECTION		CONTROL	PM PEAK HOUR			WEEKEND PEAK HOUR		
			Delay(s)	LOS	v/c	Delay(s)	LOS	v/c
King St W & Birch St	EBL	free	7.9	A	0.00	7.9	A	0.01
	SB	stop	11.6	B	0.05	12.7	B	0.03
Victoria Ave & Second St	NBL	free	7.3	A	0.01	7.4	A	0.01
	EB	stop	9.0	A	0.02	9.1	A	0.03
	WB		9.6	A	0.01	9.6	A	0.01
	SBL	free	7.3	A	0.00	0	A	-
Second St & Birch St	NB	stop	8.4	A	0.01	8.5	A	0.01
	WBL	free	7.2	A	0.00	7.2	A	0.00

Despite the increase in background traffic volumes, excellent levels of service B or better are provided at the intersections under the 2020 and 2025 background conditions and thus no improvements related to intersection operations are required at this time on the basis of the intersection operational analysis.

Future Total Traffic Volumes

Site traffic volumes were combined with the future background traffic volumes. The resulting future 2020 and 2025 total traffic volumes are illustrated in Figures 8 and 9 respectively.

Future Traffic Operations

Intersection operational analysis was carried out based on the future total traffic volumes. Given the site access is added on Second Street on the opposite side of Birch Street, future configurations are illustrated in Figure 10. Tables 5 and 6 summarize the results of the analysis.

TABLE 5 – INTERSECTION OPERATIONS – FUTURE 2020 TOTAL TRAFFIC VOLUMES

INTERSECTION		CONTROL	AM PEAK HOUR			PM PEAK HOUR		
			Delay(s)	LOS	v/c	Delay(s)	LOS	v/c
King St W & Birch St	EBL	free	7.8	A	0.00	7.9	A	0.01
	SB	stop	11.5	B	0.05	12.4	B	0.03
Victoria Ave & Second St	NBL	free	7.3	A	0.01	7.4	A	0.00
	EB	stop	9.0	A	0.03	9.1	A	0.03
	WB		9.6	A	0.01	9.5	A	0.01
	SBL	free	7.3	A	0.00	0	A	-
Second St & Birch St	NB	stop	8.6	A	0.01	8.7	A	0.02
	EBL	free	0	A	-	0	A	-
	WBL		7.2	A	0.00	7.2	A	0.00
	SB	stop	8.9	A	0.01	8.8	A	0.01

TABLE 6 – INTERSECTION OPERATIONS – FUTURE 2025 TOTAL TRAFFIC VOLUMES

INTERSECTION		CONTROL	AM PEAK HOUR			PM PEAK HOUR		
			Delay(s)	LOS	v/c	Delay(s)	LOS	v/c
King St W & Birch St	EBL	free	7.9	A	0.00	7.9	A	0.01
	SB	stop	11.7	B	0.05	12.9	B	0.04
Victoria Ave & Second St	NBL	free	7.3	A	0.01	7.4	A	0.01
	EB	stop	9.0	A	0.03	9.2	A	0.04
	WB		9.7	A	0.01	9.7	A	0.01
	SBL	free	7.3	A	0.00	0	A	-
Second St & Birch St	NB	stop	8.6	A	0.01	8.7	A	0.02
	EBL	free	0	A	-	0	A	-
	WBL		7.2	A	0.00	7.2	A	0.00
	SB	stop	8.9	A	0.01	8.8	A	0.01

As per the analyses, excellent levels of service B or better continue to occur at the intersections and thus no improvements related to intersection operations are required on the basis of the intersection operational analysis.

Transportation Impacts
Despite the excellent levels of service, the need for a left turn lane at the intersections of King Street West with Birch Street, Victoria Avenue with Second Street and Second Street with Birch Street was reviewed. Based on MTO left turn lane warrant criteria, the 2025 total traffic volumes and a design speed of 60 km/h, no left turn lanes are warranted.

With respect to the need for a right turn lane, MTO criteria indicate that they should be considered when the turning volume exceeds 60 vehicles per hour at an unsignalized intersection. Based on the projected traffic volumes, no right turn lanes are warranted at the intersections.

Sight Line Analysis
The alignments of Second Street at the site access are relatively straight and flat.

Based on the TAC *Geometric Design Guide for Canadian Roads*, the minimum stopping sight distance for design speeds of 60 km/h is 85 metres. This requirement provides sufficient distance for an approaching vehicle to observe a stationary hazard on the road (i.e. a vehicle stopped at an intersection waiting to complete a turn for example) and bring their vehicle to a complete stop prior to the hazard.

The available sight lines along Second Street as determined at the site access are more than 200 m to the east and to the west the end of the road is visible. Therefore, sightlines are in excess of the minimum sight distance requirements.

Summary
This study has addressed the transportation impacts associated with the proposed development on Second Street at Birch Street, in the Town of Gananoque, County of Leeds and Grenville. It is estimated that the site will generate 11 and 15 trips during the AM and PM peak hours respectively.

To address the potential impacts of the proposed development, peak hour operations at the intersections of King Street West at Birch Street, Victoria Avenue at Second Street, and Second Street at Birch Street were reviewed for the existing 2019 and future 2020 and 2025 summer conditions. Based on the assessment, it was determined that all three intersections will provide excellent levels of service (LOS B or better) with delays less than 13 seconds.

The need for a left turn lane or right turn lane was reviewed at the study area key intersections based on MTO warrant criteria. It was determined that no left turn lanes or right turn lanes are warranted.

Sightlines were reviewed on Second Street at the site access. Sufficient sightlines are provided on Second Street for a design speed of 60 km/h.

We trust that the above meets with your purpose. Should you have any questions, please do not hesitate to contact the undersigned.

Yours truly,

AINLEY & ASSOCIATES LIMITED

Lilly Chen

Lilly Chen, P. Eng.
Senior Transportation Engineer

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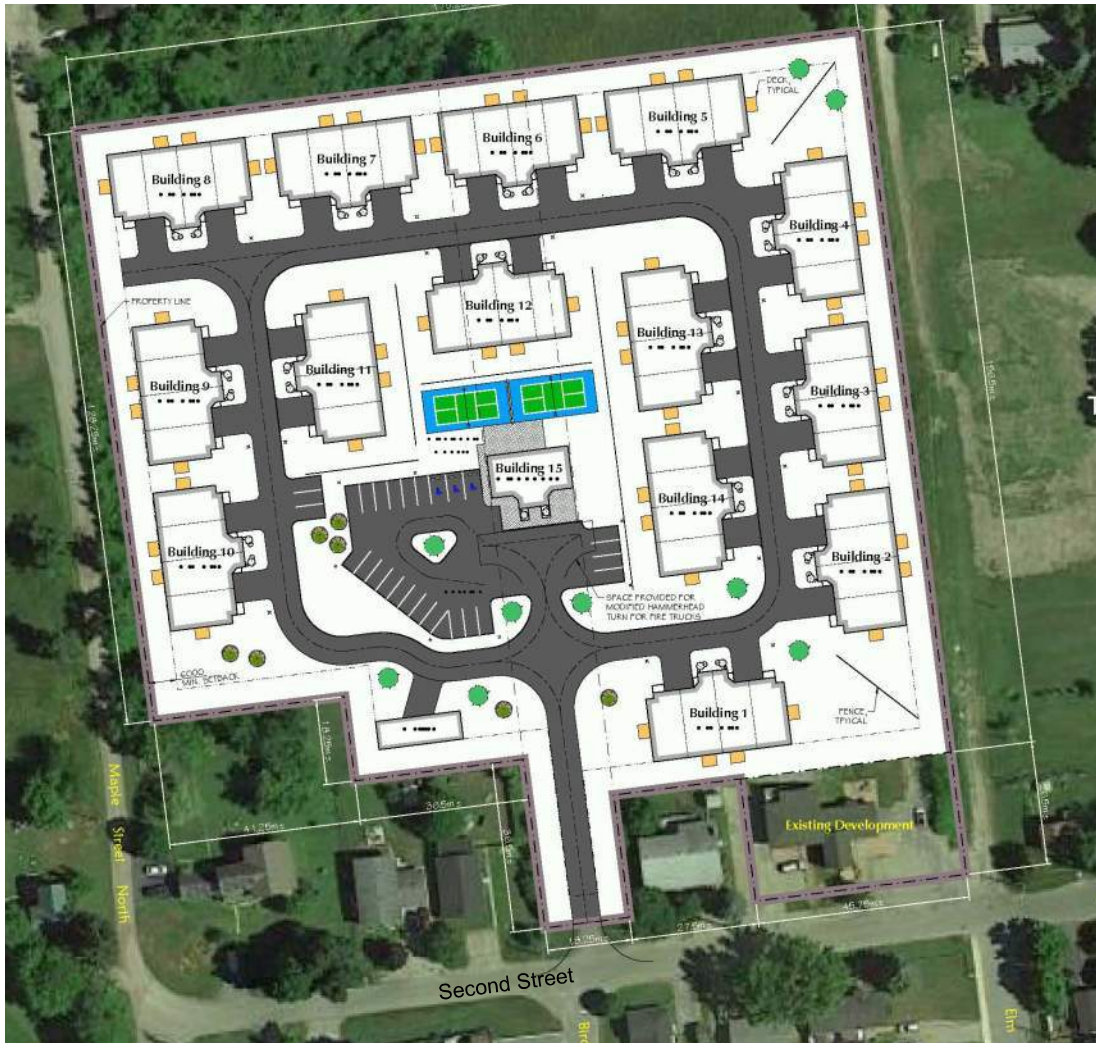
Source: Google Maps



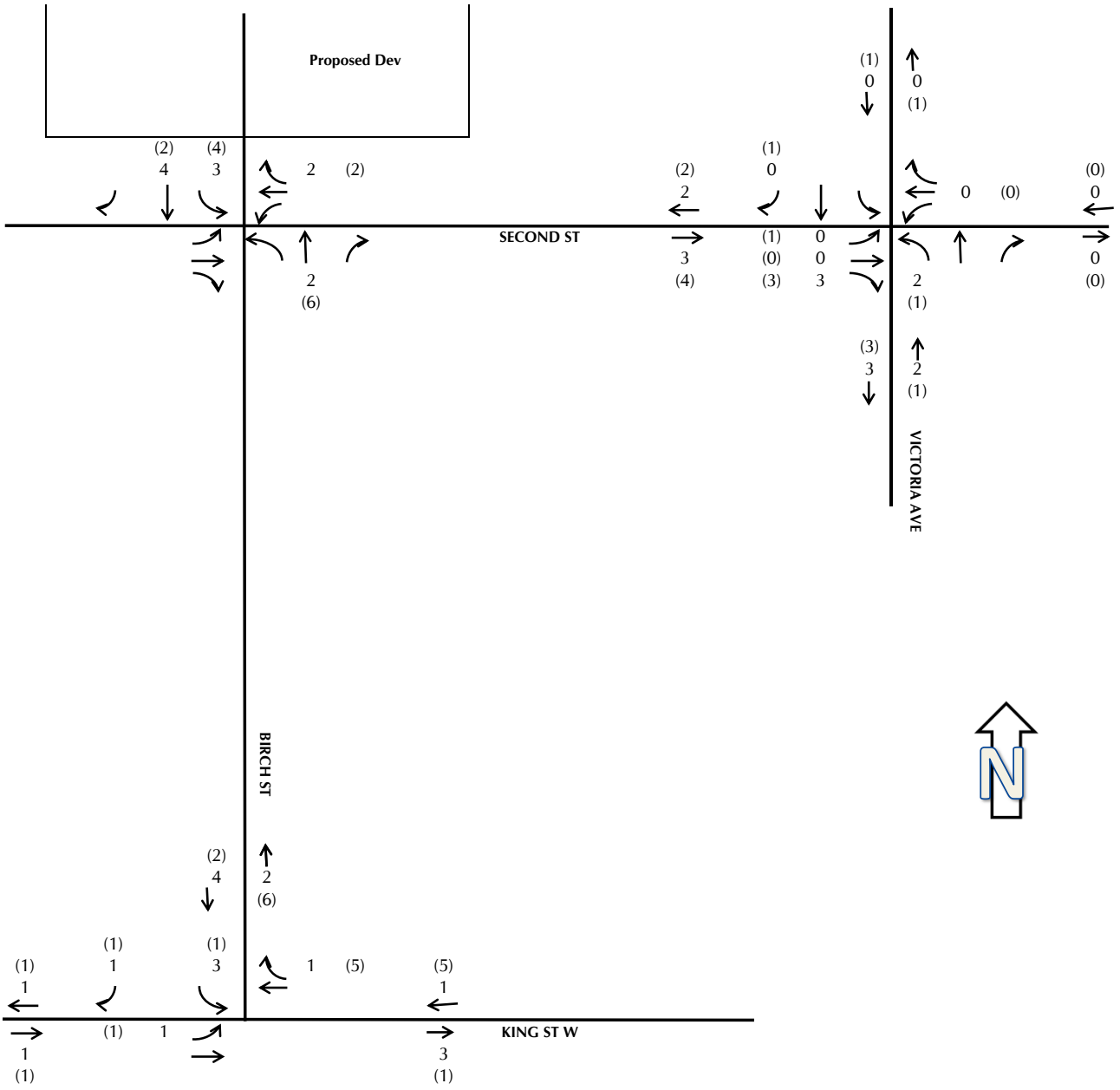
Source: Ball Technical Services

Ainley GROUP CONSULTING ENGINEERS PLANNERS

TOWN OF GANANOQUE

THE BIRCHES DEVELOPMENT TRANSPORTATION BRIEF

FIGURE 2 – SITE CONCEPT PLAN



100 (100) AM (PM) Peak Hour

Figure 3

Site Generated Traffic Volumes

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Town of Gananoque

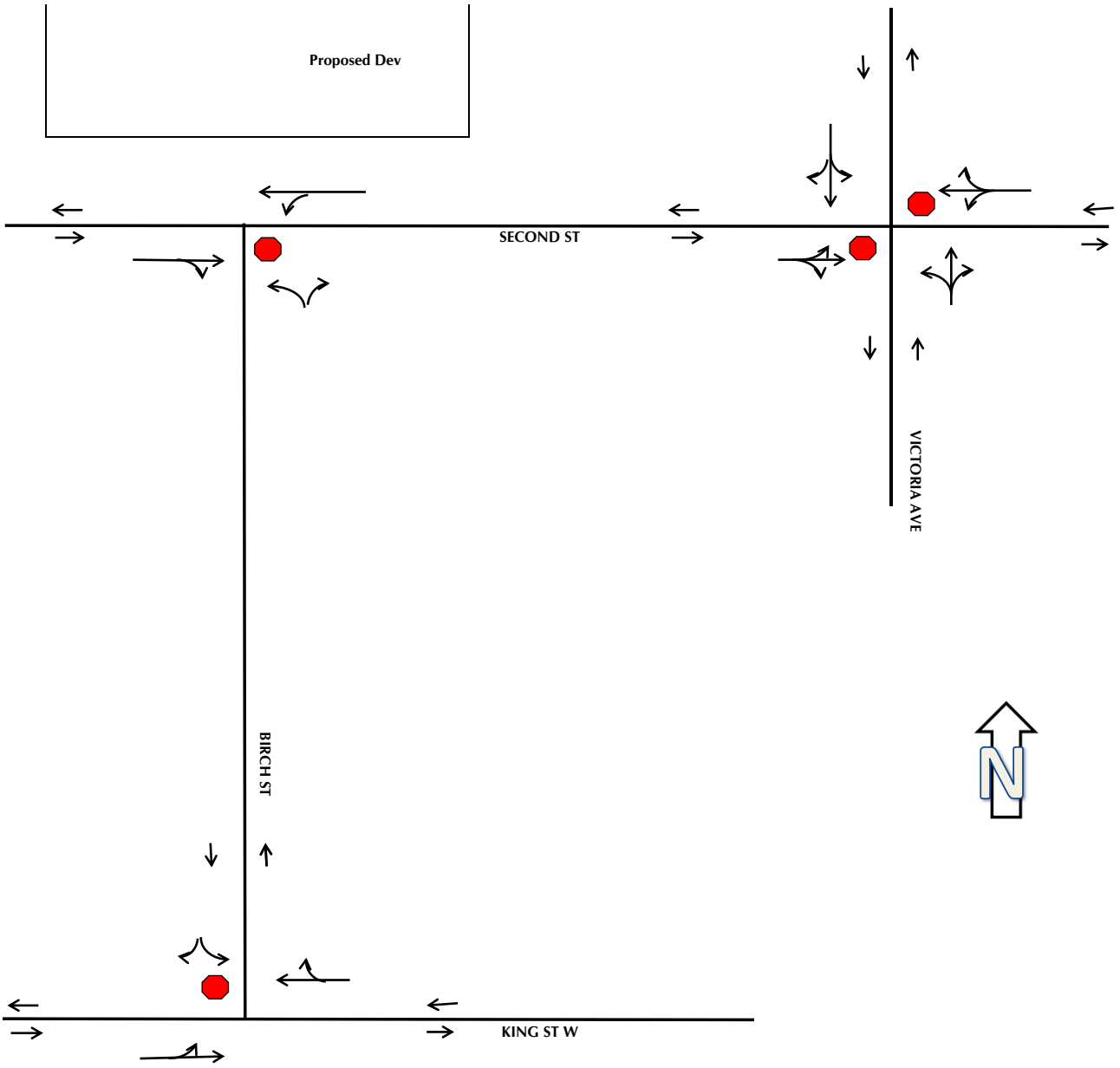

Figure 4

Existing Configurations

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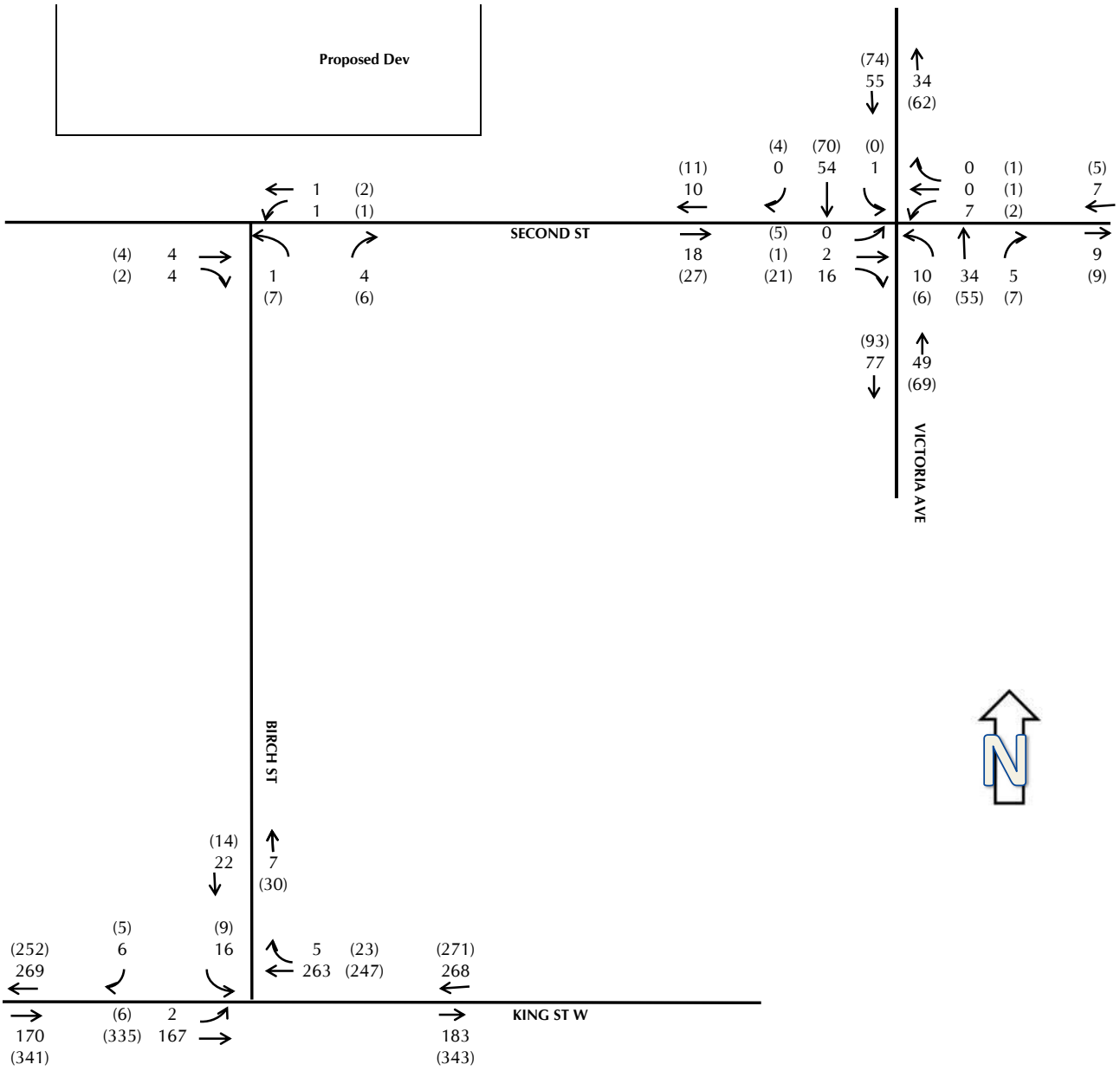

100 (100) AM (PM) Peak Hour

Figure 5

Exisitng 2019 Summer Traffic Volumes
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Town of Gananoque

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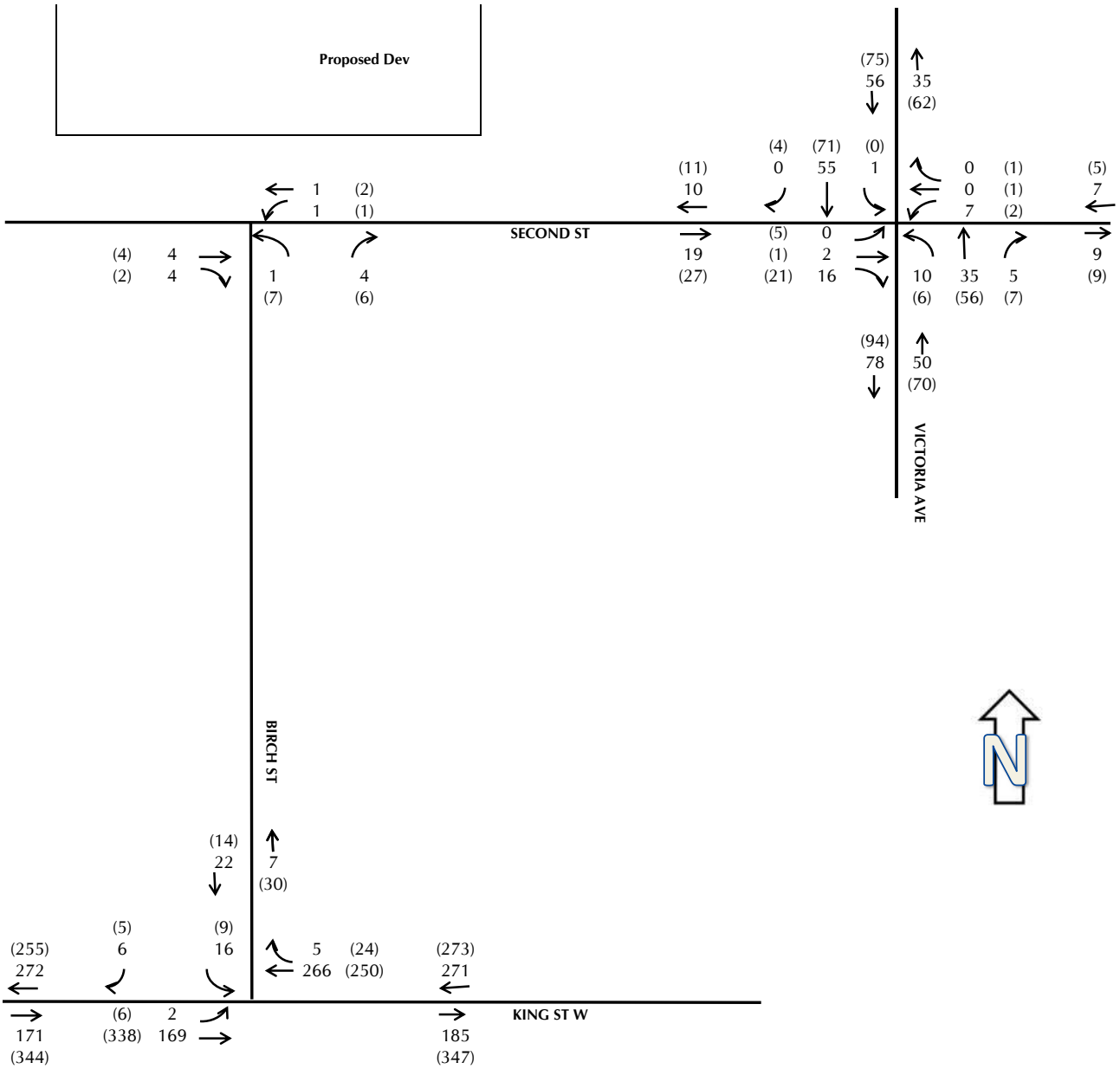

100 (100) AM (PM) Peak Hour

Figure 6

2020 Background Traffic Volumes

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Town of Gananoque

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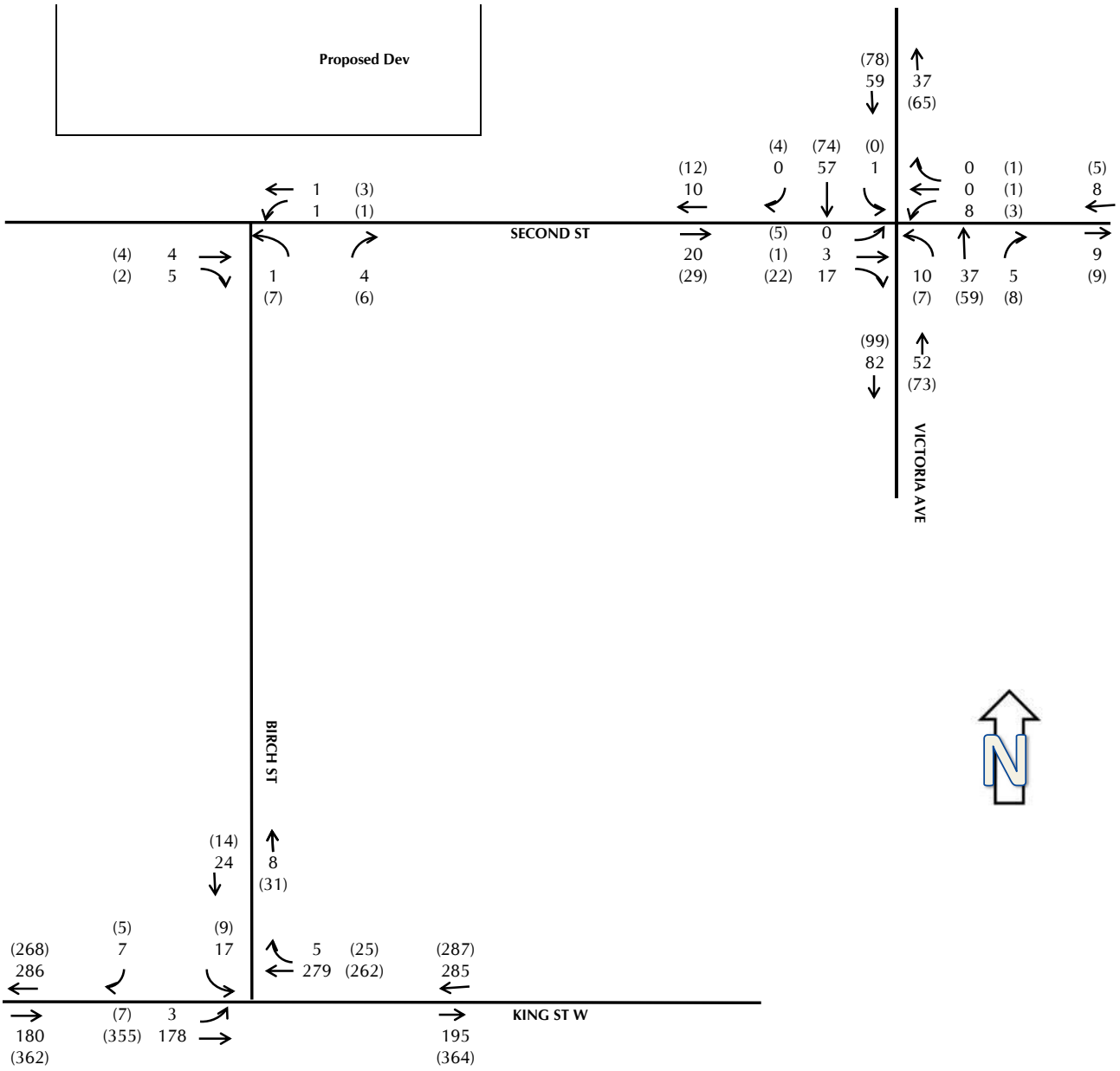

100 (100) AM (PM) Peak Hour

Figure 7

2025 Background Traffic Volumes

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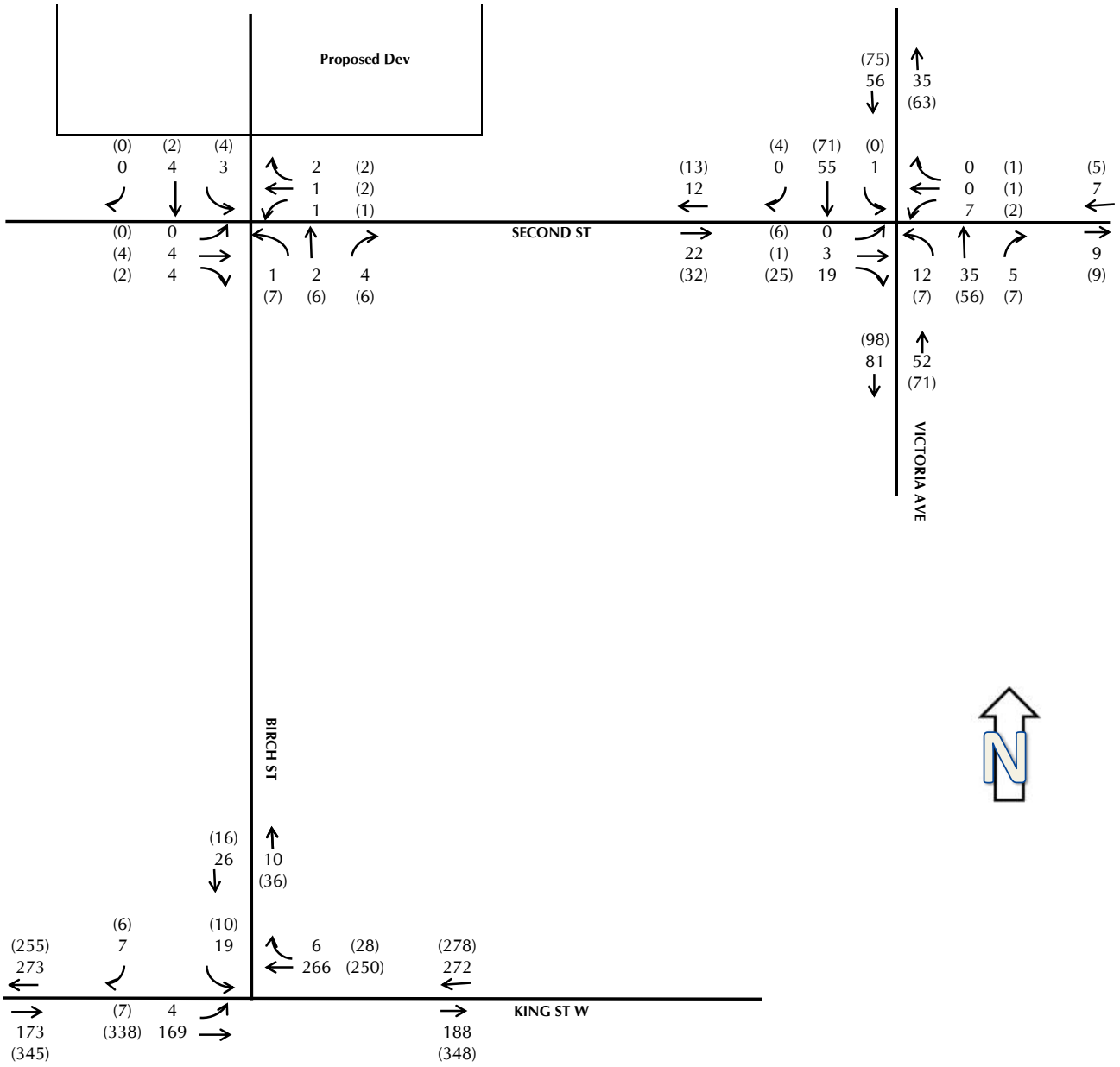

100 (100) AM (PM) Peak Hour

Figure 8

2020 Total Traffic Volumes

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Town of Gananoque

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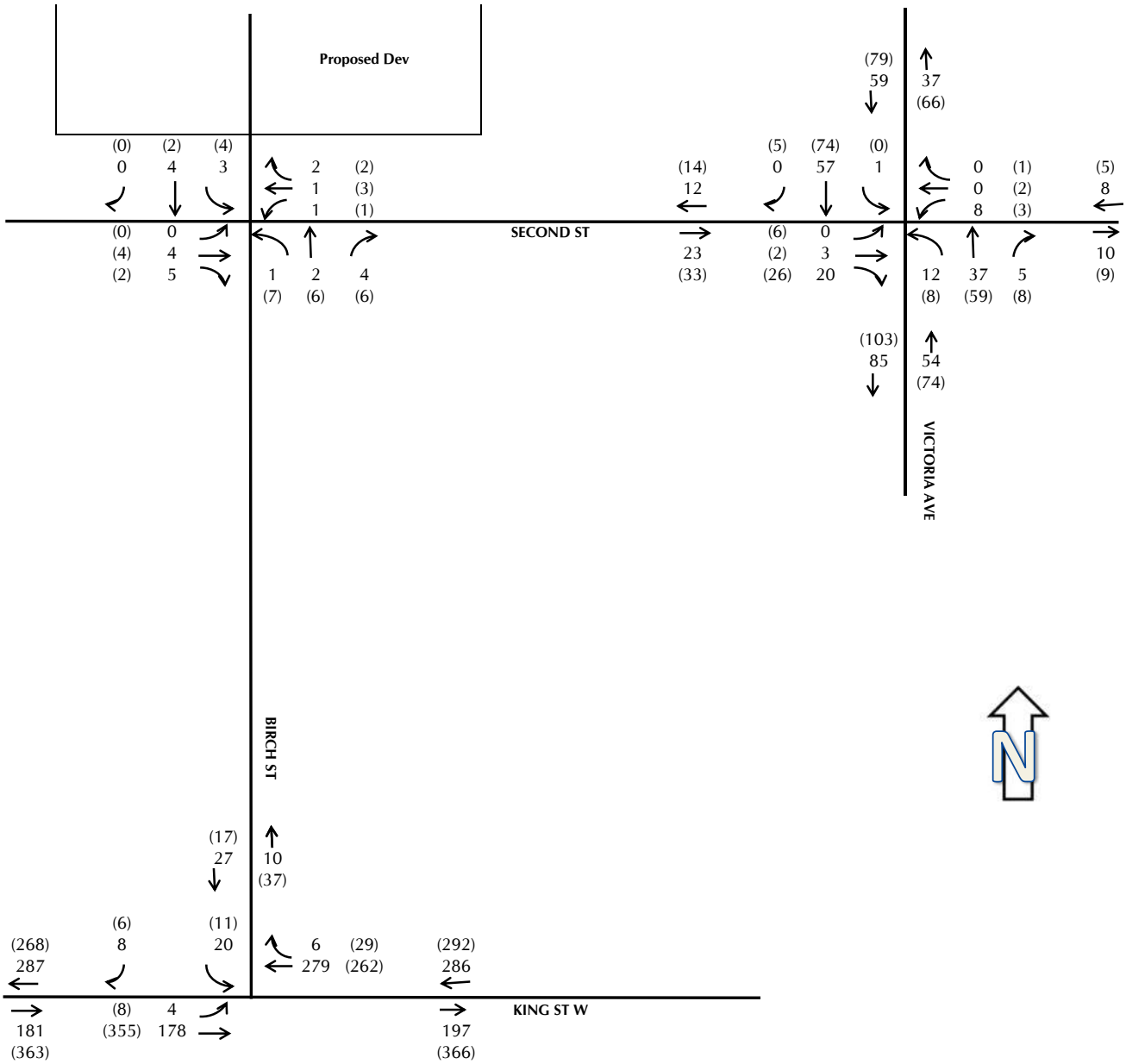

100 (100) AM (PM) Peak Hour

Figure 9

2025 Total Traffic Volumes

The Birches Development Transportation Brief

Town of Gananoque

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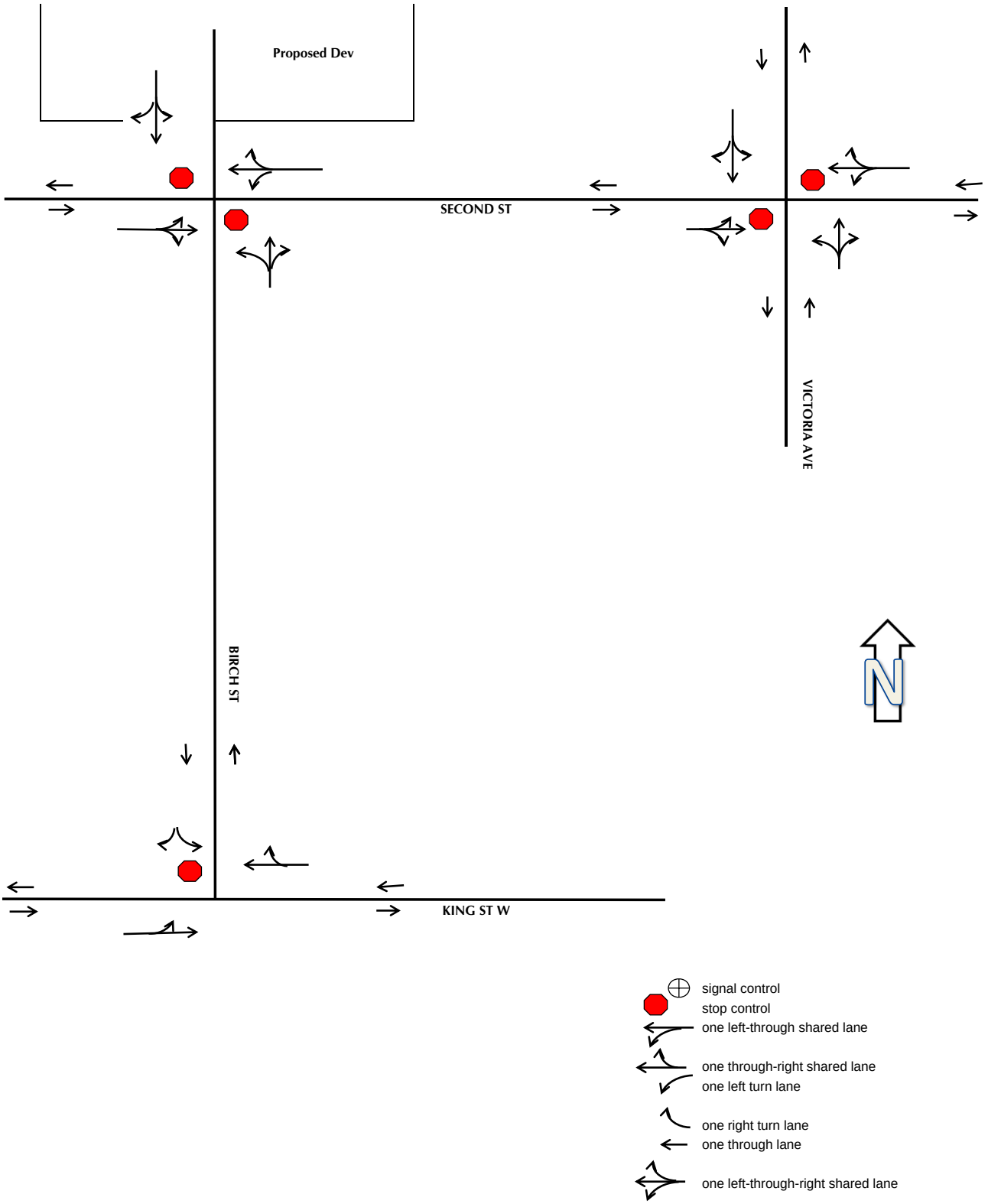

Figure 10

Future Configurations

The Birches Development Transportation Brief

Town of Gananoque

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APPENDIX A

Traffic Counts

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 10:00:00

One Hour Peak
From: 7:00:00
To: 8:00:00

Municipality: Gananoque
Site #: 1918100001
Intersection: Hwy 2 & Birch St
TFR File #: 1
Count date: 6-Nov-19

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Non-Signalized Intersection ****

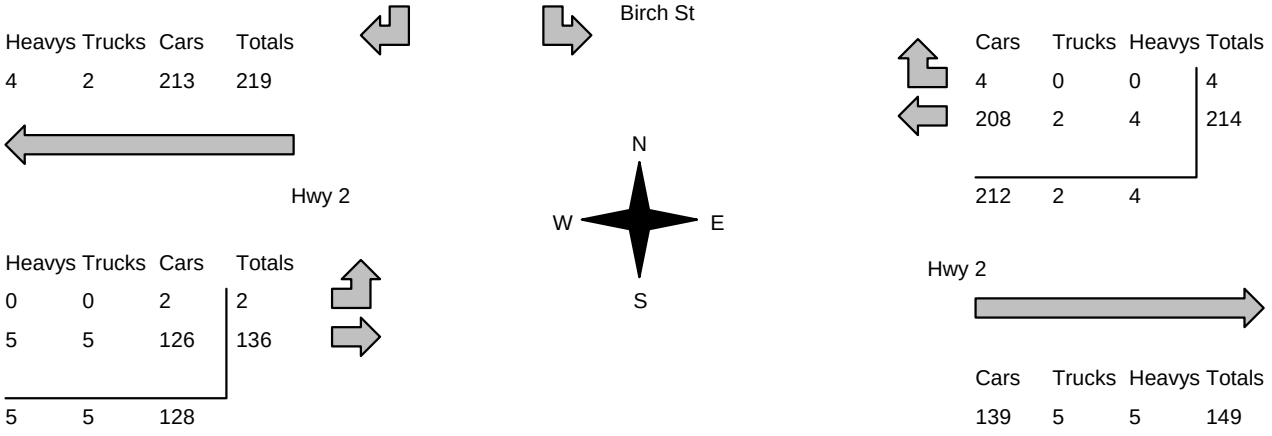
Major Road: Hwy 2 runs W/E

North Leg Total: 24
North Entering: 18
North Peds: 4
Peds Cross: ⋈

Heavys	0	0	0
Trucks	0	0	0
Cars	5	13	18
Totals	5	13	

Heavys	0
Trucks	0
Cars	6
Totals	6

East Leg Total: 367
East Entering: 218
East Peds: 1
Peds Cross: ⧖



Peds Cross: ⧖
West Peds: 1
West Entering: 138
West Leg Total: 357

Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Afternoon Peak Diagram

Specified Period
From: 15:00:00
To: 18:00:00

One Hour Peak
From: 15:45:00
To: 16:45:00

Municipality: Gananoque
Site #: 1918100001
Intersection: Hwy 2 & Birch St
TFR File #: 1
Count date: 6-Nov-19

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Non-Signalized Intersection ****

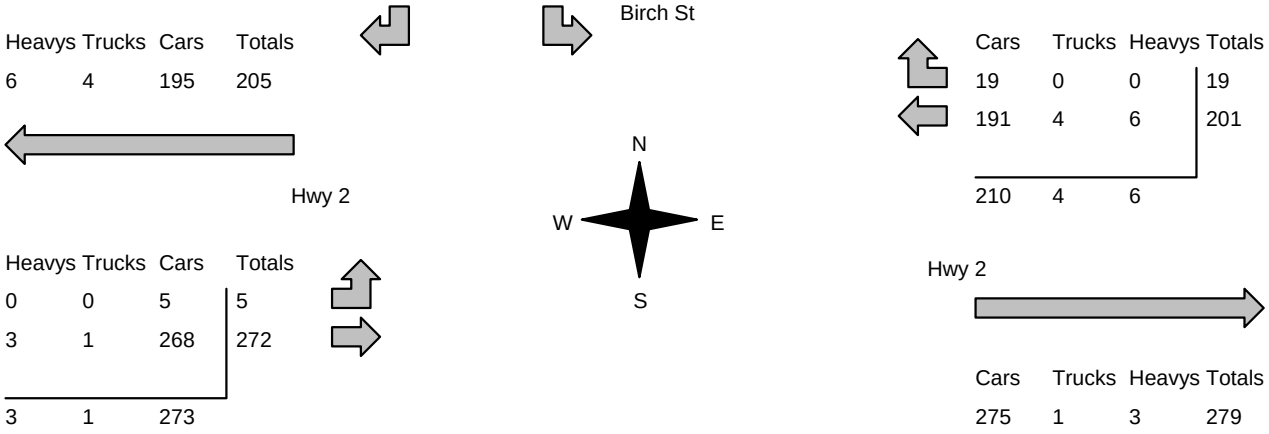
Major Road: Hwy 2 runs W/E

North Leg Total: 35
North Entering: 11
North Peds: 3
Peds Cross: ⋈

Heavys	0	0	0
Trucks	0	0	0
Cars	4	7	11
Totals	4	7	

Heavys	0
Trucks	0
Cars	24
Totals	24

East Leg Total: 499
East Entering: 220
East Peds: 0
Peds Cross: ⧖



Peds Cross: ⧖
West Peds: 2
West Entering: 277
West Leg Total: 482

Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Total Count Diagram

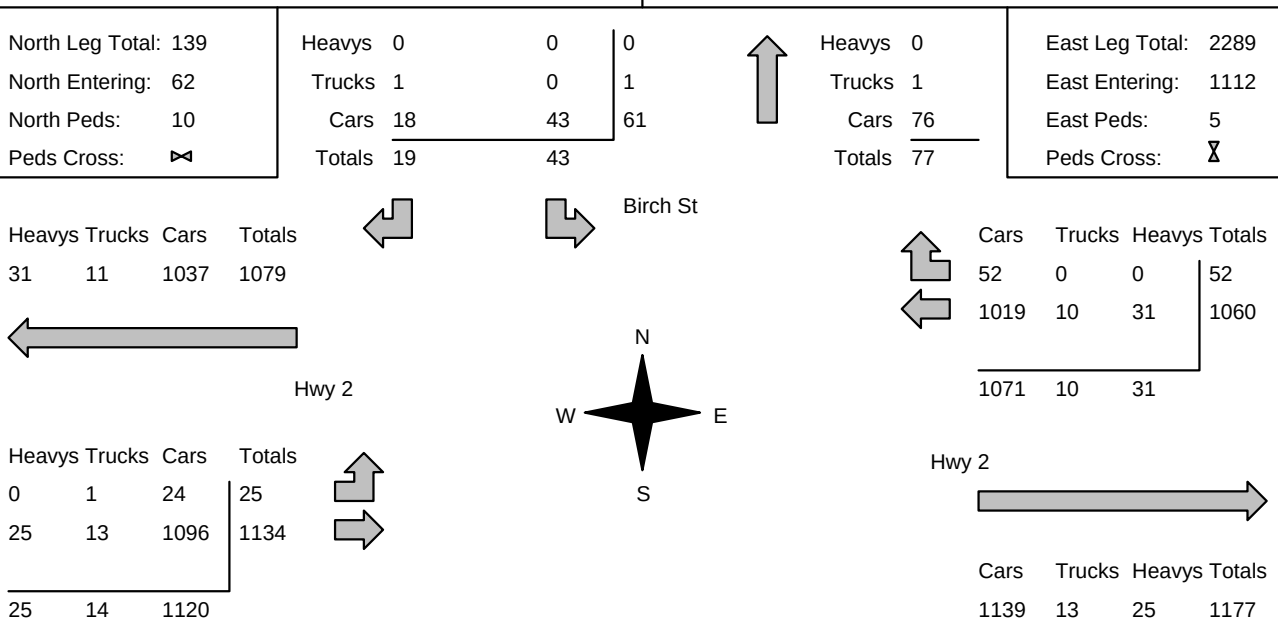
Municipality: Gananoque
Site #: 1918100001
Intersection: Hwy 2 & Birch St
TFR File #: 1
Count date: 6-Nov-19

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Non-Signalized Intersection ****

Major Road: Hwy 2 runs W/E



Peds Cross:
West Peds: 6
West Entering: 1159
West Leg Total: 2238

Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Traffic Count Summary

Intersection: Hwy 2 & Birch St | **Count Date:** 6-Nov-19 | **Municipality:** Gananoque

North Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total	
7:00:00	*0*	*0*	*0*	*0*	*0*
8:00:00	*13*	*0*	*5*	*18*	*4*
9:00:00	*8*	*0*	*2*	*10*	*1*
10:00:00	*6*	*0*	*6*	*12*	*0*
15:00:00	*0*	*0*	*0*	*0*	*0*
16:00:00	*9*	*0*	*4*	*13*	*4*
17:00:00	*4*	*0*	*2*	*6*	*1*
18:00:00	*3*	*0*	*0*	*3*	*0*
Totals:	43	0	19	62	10

North/South Total Approaches: *0* / *18* / *10* / *12* / *0* / *13* / *6* / *3* / 62

South Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total	
7:00:00	*0*	*0*	*0*	*0*	*0*
8:00:00	*0*	*0*	*0*	*0*	*0*
9:00:00	*0*	*0*	*0*	*0*	*0*
10:00:00	*0*	*0*	*0*	*0*	*0*
15:00:00	*0*	*0*	*0*	*0*	*0*
16:00:00	*0*	*0*	*0*	*0*	*0*
17:00:00	*0*	*0*	*0*	*0*	*0*
18:00:00	*0*	*0*	*0*	*0*	*0*
S Totals:	0	0	0	0	0

East Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total	
7:00:00	*0*	*0*	*0*	*0*	*0*
8:00:00	*0*	*214*	*4*	*218*	*1*
9:00:00	*0*	*155*	*2*	*157*	*4*
10:00:00	*0*	*159*	*10*	*169*	*0*
15:00:00	*0*	*0*	*0*	*0*	*0*
16:00:00	*0*	*169*	*10*	*179*	*0*
17:00:00	*0*	*206*	*15*	*221*	*0*
18:00:00	*0*	*157*	*11*	*168*	*0*
Totals:	0	1060	52	1112	5

East/West Total Approaches: *0* / *356* / *319* / *323* / *0* / *429* / *495* / *349* / 2271

West Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total	
7:00:00	*0*	*0*	*0*	*0*	*0*
8:00:00	*2*	*136*	*0*	*138*	*1*
9:00:00	*2*	*160*	*0*	*162*	*2*
10:00:00	*4*	*150*	*0*	*154*	*0*
15:00:00	*0*	*0*	*0*	*0*	*0*
16:00:00	*5*	*245*	*0*	*250*	*2*
17:00:00	*4*	*270*	*0*	*274*	*1*
18:00:00	*8*	*173*	*0*	*181*	*0*
W Totals:	25	1134	0	1159	6

Calculated Values for Traffic Crossing Major Street

Hours Ending:	*7:00*	*8:00*	*9:00*	*10:00*	*15:00*	*16:00*	*17:00*	*18:00*
Crossing Values:	*0*	*15*	*14*	*6*	*0*	*11*	*5*	*3*

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Count Date: 6-Nov-19 Site #: 1918100001

Interval Time	Passenger Cars - North Approach						Trucks - North Approach						Heavys - North Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		North Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	2	2	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30:00	7	5	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45:00	10	3	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00:00	13	3	0	0	5	3	0	0	0	0	0	0	0	0	0	0	0	0	4	4
8:15:00	15	2	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5	1
8:30:00	17	2	0	0	5	0	0	0	0	0	1	1	0	0	0	0	0	0	5	0
8:45:00	19	2	0	0	6	1	0	0	0	0	1	0	0	0	0	0	0	0	5	0
9:00:00	21	2	0	0	6	0	0	0	0	0	1	0	0	0	0	0	0	0	5	0
9:15:00	21	0	0	0	6	0	0	0	0	0	1	0	0	0	0	0	0	0	5	0
9:30:00	22	1	0	0	8	2	0	0	0	0	1	0	0	0	0	0	0	0	5	0
9:45:00	26	4	0	0	11	3	0	0	0	0	1	0	0	0	0	0	0	0	5	0
10:00:00	27	1	0	0	12	1	0	0	0	0	1	0	0	0	0	0	0	0	5	0
10:15:00	27	0	0	0	12	0	0	0	0	0	1	0	0	0	0	0	0	0	5	0
15:00:00	27	0	0	0	12	0	0	0	0	0	1	0	0	0	0	0	0	0	5	0
15:15:00	27	0	0	0	12	0	0	0	0	0	1	0	0	0	0	0	0	0	6	1
15:30:00	32	5	0	0	13	1	0	0	0	0	1	0	0	0	0	0	0	0	7	1
15:45:00	33	1	0	0	14	1	0	0	0	0	1	0	0	0	0	0	0	0	7	0
16:00:00	36	3	0	0	16	2	0	0	0	0	1	0	0	0	0	0	0	0	9	2
16:15:00	38	2	0	0	17	1	0	0	0	0	1	0	0	0	0	0	0	0	10	1
16:30:00	38	0	0	0	17	0	0	0	0	0	1	0	0	0	0	0	0	0	10	0
16:45:00	40	2	0	0	18	1	0	0	0	0	1	0	0	0	0	0	0	0	10	0
17:00:00	40	0	0	0	18	0	0	0	0	0	1	0	0	0	0	0	0	0	10	0
17:15:00	40	0	0	0	18	0	0	0	0	0	1	0	0	0	0	0	0	0	10	0
17:30:00	40	0	0	0	18	0	0	0	0	0	1	0	0	0	0	0	0	0	10	0
17:45:00	43	3	0	0	18	0	0	0	0	0	1	0	0	0	0	0	0	0	10	0
18:00:00	43	0	0	0	18	0	0	0	0	0	1	0	0	0	0	0	0	0	10	0
18:15:00	43	0	0	0	18	0	0	0	0	0	1	0	0	0	0	0	0	0	10	0
18:15:15	43	0	0	0	18	0	0	0	0	0	1	0	0	0	0	0	0	0	10	0

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Count Date: 6-Nov-19 Site #: 1918100001

Interval Time	Passenger Cars - East Approach						Trucks - East Approach						Heavys - East Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		East Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	0	0	50	50	1	1	0	0	1	1	0	0	0	0	1	1	0	0	0	0
7:30:00	0	0	100	50	1	0	0	0	1	0	0	0	0	0	2	1	0	0	0	0
7:45:00	0	0	152	52	1	0	0	0	2	1	0	0	0	0	4	2	0	0	0	0
8:00:00	0	0	208	56	4	3	0	0	2	0	0	0	0	0	4	0	0	0	1	1
8:15:00	0	0	244	36	4	0	0	0	3	1	0	0	0	0	6	2	0	0	5	4
8:30:00	0	0	284	40	4	0	0	0	3	0	0	0	0	0	8	2	0	0	5	0
8:45:00	0	0	319	35	6	2	0	0	3	0	0	0	0	0	8	0	0	0	5	0
9:00:00	0	0	357	38	6	0	0	0	3	0	0	0	0	0	9	1	0	0	5	0
9:15:00	0	0	392	35	12	6	0	0	3	0	0	0	0	0	13	4	0	0	5	0
9:30:00	0	0	426	34	14	2	0	0	5	2	0	0	0	0	15	2	0	0	5	0
9:45:00	0	0	468	42	15	1	0	0	5	0	0	0	0	0	16	1	0	0	5	0
10:00:00	0	0	506	38	16	1	0	0	5	0	0	0	0	0	17	1	0	0	5	0
10:15:00	0	0	506	0	16	0	0	0	5	0	0	0	0	0	17	0	0	0	5	0
15:00:00	0	0	506	0	16	0	0	0	5	0	0	0	0	0	17	0	0	0	5	0
15:15:00	0	0	541	35	18	2	0	0	5	0	0	0	0	0	19	2	0	0	5	0
15:30:00	0	0	581	40	19	1	0	0	5	0	0	0	0	0	20	1	0	0	5	0
15:45:00	0	0	623	42	22	3	0	0	6	1	0	0	0	0	22	2	0	0	5	0
16:00:00	0	0	666	43	26	4	0	0	8	2	0	0	0	0	23	1	0	0	5	0
16:15:00	0	0	710	44	33	7	0	0	9	1	0	0	0	0	25	2	0	0	5	0
16:30:00	0	0	756	46	37	4	0	0	9	0	0	0	0	0	27	2	0	0	5	0
16:45:00	0	0	814	58	41	4	0	0	10	1	0	0	0	0	28	1	0	0	5	0
17:00:00	0	0	863	49	41	0	0	0	10	0	0	0	0	0	30	2	0	0	5	0
17:15:00	0	0	921	58	47	6	0	0	10	0	0	0	0	0	31	1	0	0	5	0
17:30:00	0	0	964	43	49	2	0	0	10	0	0	0	0	0	31	0	0	0	5	0
17:45:00	0	0	998	34	51	2	0	0	10	0	0	0	0	0	31	0	0	0	5	0
18:00:00	0	0	1019	21	52	1	0	0	10	0	0	0	0	0	31	0	0	0	5	0
18:15:00	0	0	1019	0	52	0	0	0	10	0	0	0	0	0	31	0	0	0	5	0
18:15:15	0	0	1019	0	52	0	0	0	10	0	0	0	0	0	31	0	0	0	5	0

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Count Date: 6-Nov-19 Site #: 1918100001

Interval Time	Passenger Cars - South Approach						Trucks - South Approach						Heavys - South Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		South Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Count Date: 6-Nov-19 Site #: 1918100001

Interval Time	Passenger Cars - West Approach						Trucks - West Approach						Heavys - West Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		West Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	1	1	19	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30:00	1	0	57	38	0	0	0	0	2	2	0	0	0	0	2	2	0	0	0	0
7:45:00	1	0	89	32	0	0	0	0	2	0	0	0	0	0	4	2	0	0	0	0
8:00:00	2	1	126	37	0	0	0	0	5	3	0	0	0	0	5	1	0	0	1	1
8:15:00	3	1	148	22	0	0	0	0	6	1	0	0	0	0	8	3	0	0	2	1
8:30:00	3	0	196	48	0	0	1	1	8	2	0	0	0	0	8	0	0	0	2	0
8:45:00	3	0	230	34	0	0	1	0	8	0	0	0	0	0	8	0	0	0	3	1
9:00:00	3	0	278	48	0	0	1	0	8	0	0	0	0	0	10	2	0	0	3	0
9:15:00	3	0	309	31	0	0	1	0	8	0	0	0	0	0	11	1	0	0	3	0
9:30:00	3	0	344	35	0	0	1	0	8	0	0	0	0	0	12	1	0	0	3	0
9:45:00	6	3	391	47	0	0	1	0	8	0	0	0	0	0	12	0	0	0	3	0
10:00:00	7	1	420	29	0	0	1	0	11	3	0	0	0	0	15	3	0	0	3	0
10:15:00	7	0	420	0	0	0	1	0	11	0	0	0	0	0	15	0	0	0	3	0
15:00:00	7	0	420	0	0	0	1	0	11	0	0	0	0	0	15	0	0	0	3	0
15:15:00	9	2	468	48	0	0	1	0	11	0	0	0	0	0	19	4	0	0	3	0
15:30:00	10	1	522	54	0	0	1	0	11	0	0	0	0	0	21	2	0	0	4	1
15:45:00	11	1	585	63	0	0	1	0	12	1	0	0	0	0	22	1	0	0	4	0
16:00:00	12	1	656	71	0	0	1	0	12	0	0	0	0	0	23	1	0	0	5	1
16:15:00	14	2	723	67	0	0	1	0	12	0	0	0	0	0	23	0	0	0	6	1
16:30:00	15	1	786	63	0	0	1	0	13	1	0	0	0	0	23	0	0	0	6	0
16:45:00	16	1	853	67	0	0	1	0	13	0	0	0	0	0	25	2	0	0	6	0
17:00:00	16	0	923	70	0	0	1	0	13	0	0	0	0	0	25	0	0	0	6	0
17:15:00	18	2	973	50	0	0	1	0	13	0	0	0	0	0	25	0	0	0	6	0
17:30:00	19	1	1013	40	0	0	1	0	13	0	0	0	0	0	25	0	0	0	6	0
17:45:00	21	2	1061	48	0	0	1	0	13	0	0	0	0	0	25	0	0	0	6	0
18:00:00	24	3	1096	35	0	0	1	0	13	0	0	0	0	0	25	0	0	0	6	0
18:15:00	24	0	1096	0	0	0	1	0	13	0	0	0	0	0	25	0	0	0	6	0
18:15:15	24	0	1096	0	0	0	1	0	13	0	0	0	0	0	25	0	0	0	6	0

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 10:00:00

One Hour Peak
From: 7:30:00
To: 8:30:00

Municipality: Gananoque
Site #: 1918100002
Intersection: Victoria Ave & Second St
TFR File #: 1
Count date: 6-Nov-19

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Non-Signalized Intersection ****

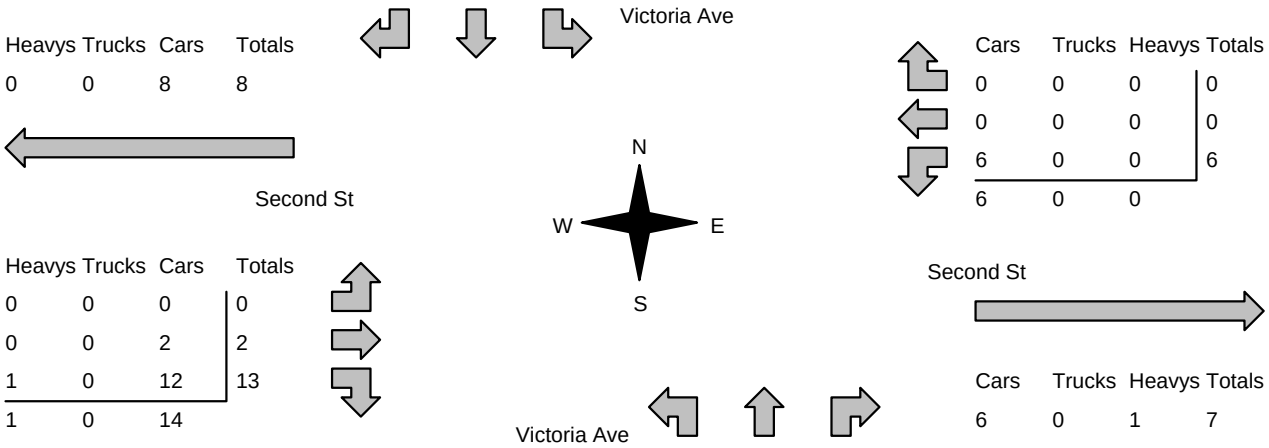
Major Road: Victoria Ave runs N/S

North Leg Total: 73
North Entering: 45
North Peds: 1
Peds Cross: ⋈

Heavys	0	1	0	1
Trucks	0	0	0	0
Cars	0	43	1	44
Totals	0	44	1	

Heavys	1
Trucks	1
Cars	26
Totals	28

East Leg Total: 13
East Entering: 6
East Peds: 4
Peds Cross: ⧖



Heavys	Trucks	Cars	Totals
0	0	8	8

Cars	Trucks	Heavys	Totals
0	0	0	0
0	0	0	0
6	0	0	6
6	0	0	

Heavys	Trucks	Cars	Totals
0	0	0	0
0	0	2	2
1	0	12	13
1	0	14	

Cars	Trucks	Heavys	Totals
6	0	1	7

Peds Cross: ⧖
West Peds: 1
West Entering: 15
West Leg Total: 23

Cars	61
Trucks	0
Heavys	2
Totals	63

Cars	8	26	3	37
Trucks	0	1	0	1
Heavys	0	1	1	2
Totals	8	28	4	

Peds Cross: ⋈
South Peds: 6
South Entering: 40
South Leg Total: 103

Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Afternoon Peak Diagram

Specified Period
From: 15:00:00
To: 18:00:00

One Hour Peak
From: 15:00:00
To: 16:00:00

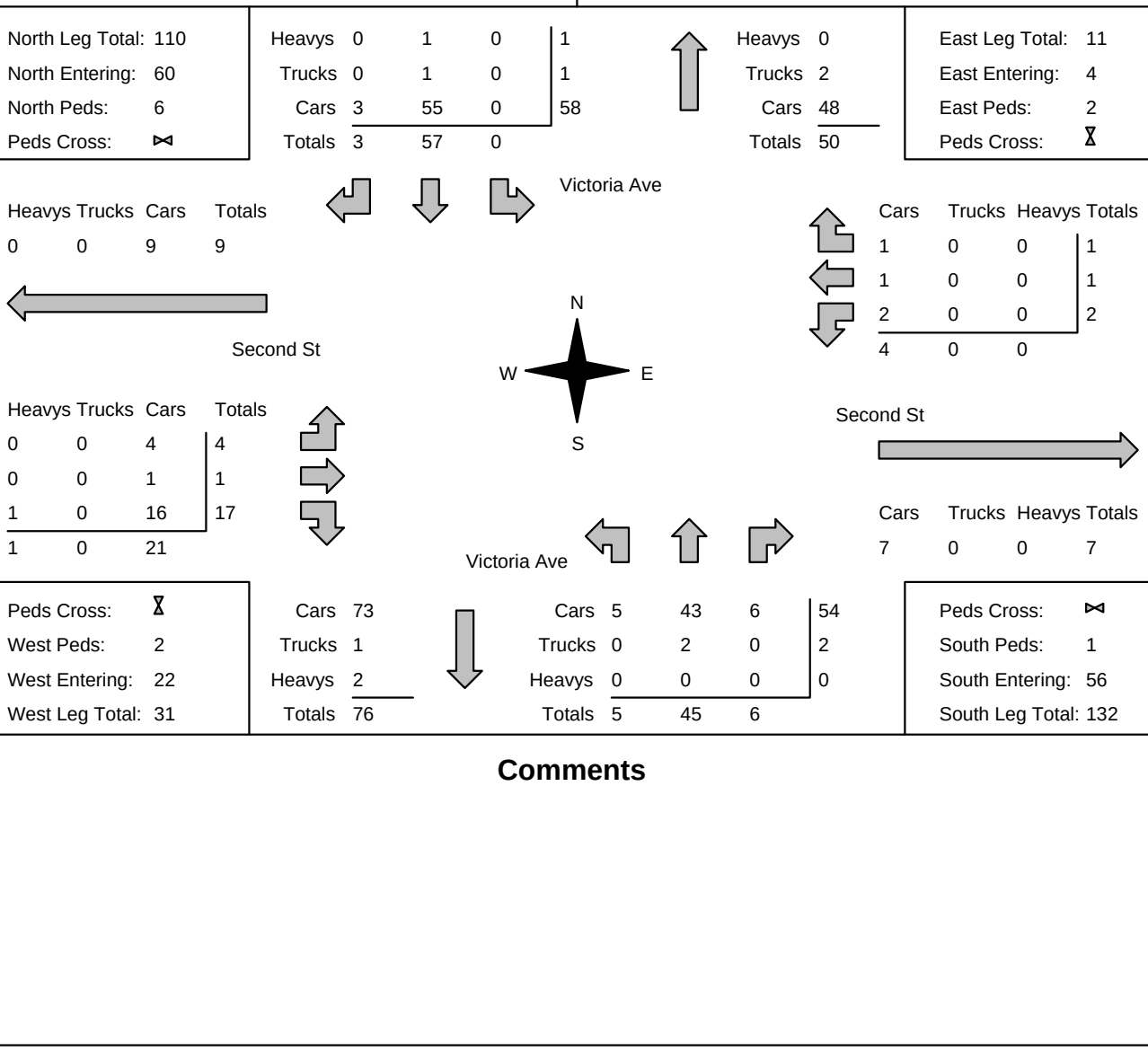
Municipality: Gananoque
Site #: 1918100002
Intersection: Victoria Ave & Second St
TFR File #: 1
Count date: 6-Nov-19

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Non-Signalized Intersection ****

Major Road: Victoria Ave runs N/S



Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Total Count Diagram

Municipality: Gananoque
Site #: 1918100002
Intersection: Victoria Ave & Second St
TFR File #: 1
Count date: 6-Nov-19

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Non-Signalized Intersection ****

Major Road: Victoria Ave runs N/S

North Leg Total:	438			
North Entering:	218			
North Peds:	22			
Peds Cross:	⋈			

Heavys	0	5	0	5
Trucks	0	4	0	4
Cars	7	199	3	209
Totals	7	208	3	

Heavys	4
Trucks	5
Cars	211
Totals	220

East Leg Total:	55
East Entering:	24
East Peds:	9
Peds Cross:	⧖

Victoria Ave

Heavys	Trucks	Cars	Totals
0	0	32	32

Second St

Cars	Trucks	Heavys	Totals
6	0	0	6
1	0	0	1
17	0	0	17
24	0	0	

N
W E
S

Heavys	Trucks	Cars	Totals
0	0	13	13
0	0	5	5
3	0	51	54
3	0	69	

Second St

Cars	Trucks	Heavys	Totals
30	0	1	31

Victoria Ave

Peds Cross:	⧖			
West Peds:	16			
West Entering:	72			
West Leg Total:	104			

Cars	267			
Trucks	4			
Heavys	8			
Totals	279			

Cars	24	192	22	238
Trucks	0	5	0	5
Heavys	0	4	1	5
Totals	24	201	23	

Peds Cross:	⋈			
South Peds:	18			
South Entering:	248			
South Leg Total:	527			

Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Traffic Count Summary

Intersection: Victoria Ave & Second St | **Count Date:** 6-Nov-19 | **Municipality:** Gananoque

North Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total	
7:00:00	*0*	*0*	*0*	*0*	*0*
8:00:00	*1*	*30*	*0*	*31*	*2*
9:00:00	*1*	*44*	*1*	*46*	*3*
10:00:00	*0*	*31*	*2*	*33*	*1*
15:00:00	*0*	*0*	*0*	*0*	*0*
16:00:00	*0*	*57*	*3*	*60*	*6*
17:00:00	*0*	*33*	*1*	*34*	*6*
18:00:00	*1*	*13*	*0*	*14*	*4*
Totals:	3	208	7	218	22

North/South Total Approaches: 466

South Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total	
7:00:00	*0*	*0*	*0*	*0*	*0*
8:00:00	*4*	*17*	*2*	*23*	*1*
9:00:00	*5*	*29*	*3*	*37*	*8*
10:00:00	*1*	*30*	*2*	*33*	*0*
15:00:00	*0*	*0*	*0*	*0*	*0*
16:00:00	*5*	*45*	*6*	*56*	*1*
17:00:00	*5*	*46*	*7*	*58*	*4*
18:00:00	*4*	*34*	*3*	*41*	*4*
S Totals:	24	201	23	248	18

East Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total	
7:00:00	*0*	*0*	*0*	*0*	*0*
8:00:00	*7*	*0*	*0*	*7*	*3*
9:00:00	*2*	*0*	*2*	*4*	*3*
10:00:00	*1*	*0*	*1*	*2*	*1*
15:00:00	*0*	*0*	*0*	*0*	*0*
16:00:00	*2*	*1*	*1*	*4*	*2*
17:00:00	*1*	*0*	*2*	*3*	*0*
18:00:00	*4*	*0*	*0*	*4*	*0*
Totals:	17	1	6	24	9

East/West Total Approaches: 96

West Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total	
7:00:00	*0*	*0*	*0*	*0*	*0*
8:00:00	*0*	*1*	*7*	*8*	*2*
9:00:00	*1*	*1*	*7*	*9*	*4*
10:00:00	*0*	*1*	*9*	*10*	*0*
15:00:00	*0*	*0*	*0*	*0*	*0*
16:00:00	*4*	*1*	*17*	*22*	*2*
17:00:00	*7*	*0*	*8*	*15*	*4*
18:00:00	*1*	*1*	*6*	*8*	*4*
W Totals:	13	5	54	72	16

Calculated Values for Traffic Crossing Major Street

Hours Ending:	*7:00*	*8:00*	*9:00*	*10:00*	*15:00*	*16:00*	*17:00*	*18:00*
Crossing Values:	*0*	*11*	*15*	*3*	*0*	*14*	*18*	*14*

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Count Date: 6-Nov-19 Site #: 1918100002

Interval Time	Passenger Cars - North Approach						Trucks - North Approach						Heavys - North Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		North Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	0	0	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
7:30:00	0	0	11	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
7:45:00	0	0	18	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
8:00:00	1	1	30	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
8:15:00	1	0	47	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
8:30:00	1	0	54	7	0	0	0	0	0	0	0	0	0	0	1	1	0	0	3	1
8:45:00	1	0	62	8	0	0	0	0	0	0	0	0	0	0	1	0	0	0	5	2
9:00:00	2	1	73	11	1	1	0	0	0	0	0	0	0	0	1	0	0	0	5	0
9:15:00	2	0	79	6	1	0	0	0	1	1	0	0	0	0	2	1	0	0	5	0
9:30:00	2	0	86	7	1	0	0	0	2	1	0	0	0	0	2	0	0	0	5	0
9:45:00	2	0	92	6	2	1	0	0	2	0	0	0	0	0	3	1	0	0	6	1
10:00:00	2	0	100	8	3	1	0	0	2	0	0	0	0	0	3	0	0	0	6	0
10:15:00	2	0	100	0	3	0	0	0	2	0	0	0	0	0	3	0	0	0	6	0
15:00:00	2	0	100	0	3	0	0	0	2	0	0	0	0	0	3	0	0	0	6	0
15:15:00	2	0	116	16	3	0	0	0	2	0	0	0	0	0	3	0	0	0	10	4
15:30:00	2	0	127	11	3	0	0	0	2	0	0	0	0	0	3	0	0	0	12	2
15:45:00	2	0	147	20	5	2	0	0	3	1	0	0	0	0	4	1	0	0	12	0
16:00:00	2	0	155	8	6	1	0	0	3	0	0	0	0	0	4	0	0	0	12	0
16:15:00	2	0	163	8	7	1	0	0	4	1	0	0	0	0	4	0	0	0	15	3
16:30:00	2	0	169	6	7	0	0	0	4	0	0	0	0	0	5	1	0	0	15	0
16:45:00	2	0	181	12	7	0	0	0	4	0	0	0	0	0	5	0	0	0	16	1
17:00:00	2	0	186	5	7	0	0	0	4	0	0	0	0	0	5	0	0	0	18	2
17:15:00	3	1	188	2	7	0	0	0	4	0	0	0	0	0	5	0	0	0	18	0
17:30:00	3	0	192	4	7	0	0	0	4	0	0	0	0	0	5	0	0	0	20	2
17:45:00	3	0	196	4	7	0	0	0	4	0	0	0	0	0	5	0	0	0	22	2
18:00:00	3	0	199	3	7	0	0	0	4	0	0	0	0	0	5	0	0	0	22	0
18:15:00	3	0	199	0	7	0	0	0	4	0	0	0	0	0	5	0	0	0	22	0
18:15:15	3	0	199	0	7	0	0	0	4	0	0	0	0	0	5	0	0	0	22	0

Accu-Traffic Inc.

Count Date: 6-Nov-19 Site #: 1918100002

Interval Time	Passenger Cars - East Approach						Trucks - East Approach						Heavys - East Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		East Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
7:30:00	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
7:45:00	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
8:00:00	7	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1
8:15:00	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	3
8:30:00	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0
8:45:00	9	1	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	6	0
9:00:00	9	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0
9:15:00	9	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	7	1
9:30:00	9	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0
9:45:00	9	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0
10:00:00	10	1	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0
10:15:00	10	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0
15:00:00	10	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0
15:15:00	11	1	1	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0
15:30:00	11	0	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0
15:45:00	12	1	1	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	8	1
16:00:00	12	0	1	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	9	1
16:15:00	12	0	1	0	5	1	0	0	0	0	0	0	0	0	0	0	0	0	9	0
16:30:00	12	0	1	0	6	1	0	0	0	0	0	0	0	0	0	0	0	0	9	0
16:45:00	12	0	1	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0
17:00:00	13	1	1	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0
17:15:00	16	3	1	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0
17:30:00	16	0	1	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0
17:45:00	17	1	1	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0
18:00:00	17	0	1	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0
18:15:00	17	0	1	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0
18:15:15	17	0	1	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Count Date: 6-Nov-19 Site #: 1918100002

Interval Time	Passenger Cars - South Approach						Trucks - South Approach						Heavys - South Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		South Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
7:30:00	0	0	8	4	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
7:45:00	2	2	11	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
8:00:00	4	2	17	6	2	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
8:15:00	7	3	31	14	3	1	0	0	0	0	0	0	0	0	1	1	1	1	7	6
8:30:00	8	1	34	3	4	1	0	0	1	1	0	0	0	0	1	0	1	0	7	0
8:45:00	9	1	39	5	4	0	0	0	1	0	0	0	0	0	1	0	1	0	7	0
9:00:00	9	0	43	4	4	0	0	0	1	0	0	0	0	0	2	1	1	0	9	2
9:15:00	10	1	48	5	4	0	0	0	2	1	0	0	0	0	3	1	1	0	9	0
9:30:00	10	0	53	5	4	0	0	0	2	0	0	0	0	0	3	0	1	0	9	0
9:45:00	10	0	60	7	6	2	0	0	2	0	0	0	0	0	3	0	1	0	9	0
10:00:00	10	0	70	10	6	0	0	0	3	1	0	0	0	0	3	0	1	0	9	0
10:15:00	10	0	70	0	6	0	0	0	3	0	0	0	0	0	3	0	1	0	9	0
15:00:00	10	0	70	0	6	0	0	0	3	0	0	0	0	0	3	0	1	0	9	0
15:15:00	11	1	79	9	8	2	0	0	3	0	0	0	0	0	3	0	1	0	9	0
15:30:00	11	0	97	18	9	1	0	0	3	0	0	0	0	0	3	0	1	0	10	1
15:45:00	13	2	106	9	10	1	0	0	4	1	0	0	0	0	3	0	1	0	10	0
16:00:00	15	2	113	7	12	2	0	0	5	1	0	0	0	0	3	0	1	0	10	0
16:15:00	17	2	122	9	14	2	0	0	5	0	0	0	0	0	3	0	1	0	13	3
16:30:00	18	1	141	19	15	1	0	0	5	0	0	0	0	0	4	1	1	0	14	1
16:45:00	18	0	150	9	16	1	0	0	5	0	0	0	0	0	4	0	1	0	14	0
17:00:00	20	2	158	8	19	3	0	0	5	0	0	0	0	0	4	0	1	0	14	0
17:15:00	20	0	170	12	19	0	0	0	5	0	0	0	0	0	4	0	1	0	16	2
17:30:00	21	1	175	5	21	2	0	0	5	0	0	0	0	0	4	0	1	0	18	2
17:45:00	24	3	184	9	21	0	0	0	5	0	0	0	0	0	4	0	1	0	18	0
18:00:00	24	0	192	8	22	1	0	0	5	0	0	0	0	0	4	0	1	0	18	0
18:15:00	24	0	192	0	22	0	0	0	5	0	0	0	0	0	4	0	1	0	18	0
18:15:15	24	0	192	0	22	0	0	0	5	0	0	0	0	0	4	0	1	0	18	0

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Count Date: 6-Nov-19 Site #: 1918100002

Interval Time	Passenger Cars - West Approach						Trucks - West Approach						Heavys - West Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		West Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
7:30:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1
7:45:00	0	0	1	1	4	3	0	0	0	0	0	0	0	0	0	0	1	1	2	0
8:00:00	0	0	1	0	6	2	0	0	0	0	0	0	0	0	0	0	1	0	2	0
8:15:00	0	0	1	0	9	3	0	0	0	0	0	0	0	0	0	0	1	0	2	0
8:30:00	0	0	2	1	13	4	0	0	0	0	0	0	0	0	0	0	1	0	3	1
8:45:00	1	1	2	0	13	0	0	0	0	0	0	0	0	0	0	0	1	0	3	0
9:00:00	1	0	2	0	13	0	0	0	0	0	0	0	0	0	0	0	1	0	6	3
9:15:00	1	0	2	0	15	2	0	0	0	0	0	0	0	0	0	0	1	0	6	0
9:30:00	1	0	2	0	18	3	0	0	0	0	0	0	0	0	0	0	2	1	6	0
9:45:00	1	0	2	0	19	1	0	0	0	0	0	0	0	0	0	0	2	0	6	0
10:00:00	1	0	3	1	21	2	0	0	0	0	0	0	0	0	0	0	2	0	6	0
10:15:00	1	0	3	0	21	0	0	0	0	0	0	0	0	0	0	0	2	0	6	0
15:00:00	1	0	3	0	21	0	0	0	0	0	0	0	0	0	0	0	2	0	6	0
15:15:00	2	1	3	0	25	4	0	0	0	0	0	0	0	0	0	0	3	1	6	0
15:30:00	4	2	3	0	27	2	0	0	0	0	0	0	0	0	0	0	3	0	7	1
15:45:00	5	1	3	0	32	5	0	0	0	0	0	0	0	0	0	0	3	0	8	1
16:00:00	5	0	4	1	37	5	0	0	0	0	0	0	0	0	0	0	3	0	8	0
16:15:00	7	2	4	0	38	1	0	0	0	0	0	0	0	0	0	0	3	0	8	0
16:30:00	7	0	4	0	39	1	0	0	0	0	0	0	0	0	0	0	3	0	10	2
16:45:00	8	1	4	0	42	3	0	0	0	0	0	0	0	0	0	0	3	0	11	1
17:00:00	12	4	4	0	45	3	0	0	0	0	0	0	0	0	0	0	3	0	12	1
17:15:00	13	1	4	0	45	0	0	0	0	0	0	0	0	0	0	0	3	0	12	0
17:30:00	13	0	4	0	48	3	0	0	0	0	0	0	0	0	0	0	3	0	14	2
17:45:00	13	0	5	1	50	2	0	0	0	0	0	0	0	0	0	0	3	0	16	2
18:00:00	13	0	5	0	51	1	0	0	0	0	0	0	0	0	0	0	3	0	16	0
18:15:00	13	0	5	0	51	0	0	0	0	0	0	0	0	0	0	0	3	0	16	0
18:15:15	13	0	5	0	51	0	0	0	0	0	0	0	0	0	0	0	3	0	16	0

APPENDIX B

Operational Analyses

LEVEL OF SERVICE

CAPACITY ANALYSIS AT UNSIGNALIZED INTERSECTIONS
Highway Capacity Manual Methodology

The level of service (LOS) for a Two-Way Stop-Controlled (TWSC) intersection is determined by the computed or measured control delay. For motor vehicles, LOS is determined on the basis of control delay for each minor-street movement (or shared movement) as well as major-street left turns by using criteria given in the following Table.

The level-of-service (LOS) criteria for All-Way Stop-Controlled (AWSC) intersections are the same as in the following Table. For assessment of LOS at the approach and intersection levels, LOS is based solely on control delay.

The above methods of analysis are taken from Chapters 19 and 20 of the Highway Capacity Manual 2010 respectively, by the Transportation Research Board, December 2010.

Level of Service by Volume-to-Capacity Ratio [1,2]		Control Delay 'd' (s/vehicle)
v/c < or = 1	v/c > 1	
A	F	$0 < d \leq 10$
B	F	$10 < d \leq 15$
C	F	$15 < d \leq 25$
D	F	$25 < d \leq 35$
E	F	$35 < d \leq 50$
F	F	$d > 50$

[1] For TWSC intersections, the LOS criteria apply to each lane on a given approach and to each approach on the minor street, LOS is not calculated for major-street approaches or for the intersection as a whole.
[2] For AWSC intersections, for approaches and intersectionwide assessment, LOS is defined solely by control delay.

LOS F is assigned if the volume-to-capacity ratio for a movement/lane exceeds 1.0, regardless of the control delay.

280 Pretty River Parkway
Collingwood, Ontario L9Y 4J5
Tel: (705) 445-3451 Fax: (705) 445-0968

LEVEL OF SERVICE

CAPACITY ANALYSIS AT SIGNALIZED INTERSECTIONS
Highway Capacity Manual Methodology

The capacity of signalized intersections has been determined in terms of delay taken from Chapter 18 of the Highway Capacity Manual 2010, by the Transportation Research Board, December 2010.

To assist in clarifying the arithmetic analysis associated with traffic engineering, it is often useful to refer to "Level of Service". Control delay and volume-to-capacity ratio are used to characterize Level of Service (LOS) for a lane group. For approach-based and intersectionwide assessment, LOS for automobile mode at a signalized intersection is defined solely by control delay. The following table describes in detail the characteristics of each level:

Level of Service	Features	Control Delay 'd' (s/veh)
A	Describes operations with a control delay of 10 seconds/vehicle or less and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is exceptionally favourable or the cycle length is very short. If it is due to favourable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.	**$d \leq 10$**
B	Describes operations with control delay between 10 and 20 seconds/vehicle and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is highly favourable or cycle length is short. More vehicles stop than with LOS A.	**$10 < d \leq 20$**
C	Describes operations with control delay between 20 and 35 seconds/vehicle and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when progression is favourable or the cycle length is moderate. Individual *cycle failures* (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.	**$20 < d \leq 35$**
D	Describes operations with control delay between 35 and 55 seconds/vehicle and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop, and individual cycle failures become noticeable.	**$35 < d \leq 55$**
E	Describes operations with control delay between 55 and 80 seconds/vehicle and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high, progression is unfavourable, and the cycle length is long. Individual cycle failures are frequent.	**$55 < d \leq 80$**
F	**LOS F** describes operations with control delay exceeding 80 seconds/vehicle or a volume-to-capacity ratio greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.	**$d > 80$**

A lane group can incur a delay less than 80s/veh when the v/c exceeds 1.0. This condition typically occurs when the cycle length is short, the signal progression is favourable, or both. As a result, both the delay and v/c are considered when lane group LOS is established. A ratio of 1.0 or more indicates that cycle capacity is fully utilized and represents failure from a capacity perspective.

280 Pretty River Parkway
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2019 Existing Traffic Volumes

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	167	263	5	16	6
Future Vol, veh/h	2	167	263	5	16	6
Conflicting Peds, #/hr	4	0	0	4	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	4	3	0	0	0
Mvmt Flow	2	182	286	5	17	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	295	0	-	0	480	294
Stage 1	-	-	-	-	293	-
Stage 2	-	-	-	-	187	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1278	-	-	-	548	750
Stage 1	-	-	-	-	762	-
Stage 2	-	-	-	-	850	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1273	-	-	-	543	747
Mov Cap-2 Maneuver	-	-	-	-	543	-
Stage 1	-	-	-	-	757	-
Stage 2	-	-	-	-	847	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	11.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1273	-	-	-	587
HCM Lane V/C Ratio	0.002	-	-	-	0.041
HCM Control Delay (s)	7.8	0	-	-	11.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	3.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	4	4	1	1	1	4
Future Vol, veh/h	4	4	1	1	1	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	4	1	1	1	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	8	0	9	6
Stage 1	-	-	-	-	6	-
Stage 2	-	-	-	-	3	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1612	-	1011	1077
Stage 1	-	-	-	-	1017	-
Stage 2	-	-	-	-	1020	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1612	-	1010	1077
Mov Cap-2 Maneuver	-	-	-	-	1010	-
Stage 1	-	-	-	-	1016	-
Stage 2	-	-	-	-	1020	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.6	8.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1063	-	-	1612	-
HCM Lane V/C Ratio	0.005	-	-	0.001	-
HCM Control Delay (s)	8.4	-	-	7.2	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	2	16	7	0	0	10	34	5	1	54	0
Future Vol, veh/h	0	2	16	7	0	0	10	34	5	1	54	0
Conflicting Peds, #/hr	1	0	6	6	0	1	1	0	4	4	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	8	0	0	0	0	4	25	0	2	2
Mvmt Flow	0	2	17	8	0	0	11	37	5	1	59	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	125	130	66	143	128	45	60	0	0	46	0	0
Stage 1	62	62	-	66	66	-	-	-	-	-	-	-
Stage 2	63	68	-	77	62	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.28	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.372	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	854	764	981	831	766	1031	1556	-	-	1575	-	-
Stage 1	954	847	-	950	844	-	-	-	-	-	-	-
Stage 2	953	842	-	937	847	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	847	754	975	802	756	1026	1555	-	-	1569	-	-
Mov Cap-2 Maneuver	847	754	-	802	756	-	-	-	-	-	-	-
Stage 1	946	845	-	940	835	-	-	-	-	-	-	-
Stage 2	945	833	-	912	845	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.9	9.5	1.5	0.1
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1555	-	-	944	802	1569	-	-
HCM Lane V/C Ratio	0.007	-	-	0.021	0.009	0.001	-	-
HCM Control Delay (s)	7.3	0	-	8.9	9.5	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	335	247	23	9	5
Future Vol, veh/h	6	335	247	23	9	5
Conflicting Peds, #/hr	3	0	0	3	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	1	5	0	0	0
Mvmt Flow	7	364	268	25	10	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	296	0	-	0	662	286
Stage 1	-	-	-	-	284	-
Stage 2	-	-	-	-	378	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1277	-	-	-	430	758
Stage 1	-	-	-	-	769	-
Stage 2	-	-	-	-	697	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1273	-	-	-	424	755
Mov Cap-2 Maneuver	-	-	-	-	424	-
Stage 1	-	-	-	-	761	-
Stage 2	-	-	-	-	695	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	12.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1273	-	-	-	503
HCM Lane V/C Ratio	0.005	-	-	-	0.03
HCM Control Delay (s)	7.8	0	-	-	12.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	5.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	4	2	1	2	7	6
Future Vol, veh/h	4	2	1	2	7	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	2	1	2	8	7

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	6	0	9	5
Stage 1	-	-	-	-	5	-
Stage 2	-	-	-	-	4	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1615	-	1011	1078
Stage 1	-	-	-	-	1018	-
Stage 2	-	-	-	-	1019	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1615	-	1010	1078
Mov Cap-2 Maneuver	-	-	-	-	1010	-
Stage 1	-	-	-	-	1017	-
Stage 2	-	-	-	-	1019	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.4	8.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1040	-	-	1615	-
HCM Lane V/C Ratio	0.014	-	-	0.001	-
HCM Control Delay (s)	8.5	-	-	7.2	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	1	21	2	1	1	6	55	7	0	70	4
Future Vol, veh/h	5	1	21	2	1	1	6	55	7	0	70	4
Conflicting Peds, #/hr	6	0	1	1	0	6	2	0	2	2	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	6	0	0	0	0	4	0	0	2	0
Mvmt Flow	5	1	23	2	1	1	7	60	8	0	76	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	165	164	81	171	162	72	82	0	0	70	0	0
Stage 1	80	80	-	80	80	-	-	-	-	-	-	-
Stage 2	85	84	-	91	82	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.26	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.354	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	804	732	968	797	734	996	1528	-	-	1544	-	-
Stage 1	934	832	-	934	832	-	-	-	-	-	-	-
Stage 2	928	829	-	921	831	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	794	725	965	772	727	989	1525	-	-	1541	-	-
Mov Cap-2 Maneuver	794	725	-	772	727	-	-	-	-	-	-	-
Stage 1	927	830	-	927	826	-	-	-	-	-	-	-
Stage 2	916	823	-	897	829	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.1	9.5	0.7	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1525	-	-	917	804	1541	-	-
HCM Lane V/C Ratio	0.004	-	-	0.032	0.005	-	-	-
HCM Control Delay (s)	7.4	0	-	9.1	9.5	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

2020 Background Traffic Volumes

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	169	266	5	16	6
Future Vol, veh/h	2	169	266	5	16	6
Conflicting Peds, #/hr	4	0	0	4	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	4	3	0	0	0
Mvmt Flow	2	184	289	5	17	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	298	0	-	0	485	297
Stage 1	-	-	-	-	296	-
Stage 2	-	-	-	-	189	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1275	-	-	-	545	747
Stage 1	-	-	-	-	759	-
Stage 2	-	-	-	-	848	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1270	-	-	-	540	744
Mov Cap-2 Maneuver	-	-	-	-	540	-
Stage 1	-	-	-	-	754	-
Stage 2	-	-	-	-	845	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	11.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1270	-	-	-	584
HCM Lane V/C Ratio	0.002	-	-	-	0.041
HCM Control Delay (s)	7.8	0	-	-	11.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	3.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	4	4	1	1	1	4
Future Vol, veh/h	4	4	1	1	1	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	4	1	1	1	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	8	0	9	6
Stage 1	-	-	-	-	6	-
Stage 2	-	-	-	-	3	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1612	-	1011	1077
Stage 1	-	-	-	-	1017	-
Stage 2	-	-	-	-	1020	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1612	-	1010	1077
Mov Cap-2 Maneuver	-	-	-	-	1010	-
Stage 1	-	-	-	-	1016	-
Stage 2	-	-	-	-	1020	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.6	8.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1063	-	-	1612	-
HCM Lane V/C Ratio	0.005	-	-	0.001	-
HCM Control Delay (s)	8.4	-	-	7.2	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	2	16	7	0	0	10	35	5	1	55	0
Future Vol, veh/h	0	2	16	7	0	0	10	35	5	1	55	0
Conflicting Peds, #/hr	1	0	6	6	0	1	1	0	4	4	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	8	0	0	0	0	4	25	0	2	2
Mvmt Flow	0	2	17	8	0	0	11	38	5	1	60	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	127	132	67	145	130	46	61	0	0	47	0	0
Stage 1	63	63	-	67	67	-	-	-	-	-	-	-
Stage 2	64	69	-	78	63	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.28	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.372	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	851	762	980	828	764	1029	1555	-	-	1573	-	-
Stage 1	953	846	-	948	843	-	-	-	-	-	-	-
Stage 2	952	841	-	936	846	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	844	752	974	799	754	1024	1554	-	-	1567	-	-
Mov Cap-2 Maneuver	844	752	-	799	754	-	-	-	-	-	-	-
Stage 1	945	844	-	938	834	-	-	-	-	-	-	-
Stage 2	944	832	-	911	844	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.9	9.5	1.5	0.1
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1554	-	-	943	799	1567	-	-
HCM Lane V/C Ratio	0.007	-	-	0.021	0.01	0.001	-	-
HCM Control Delay (s)	7.3	0	-	8.9	9.5	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	338	250	24	9	5
Future Vol, veh/h	6	338	250	24	9	5
Conflicting Peds, #/hr	3	0	0	3	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	1	5	0	0	0
Mvmt Flow	7	367	272	26	10	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	301	0	-	0	669	290
Stage 1	-	-	-	-	288	-
Stage 2	-	-	-	-	381	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1272	-	-	-	426	754
Stage 1	-	-	-	-	766	-
Stage 2	-	-	-	-	695	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1268	-	-	-	420	751
Mov Cap-2 Maneuver	-	-	-	-	420	-
Stage 1	-	-	-	-	758	-
Stage 2	-	-	-	-	693	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	12.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1268	-	-	-	498
HCM Lane V/C Ratio	0.005	-	-	-	0.031
HCM Control Delay (s)	7.9	0	-	-	12.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	5.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	4	2	1	2	7	6
Future Vol, veh/h	4	2	1	2	7	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	2	1	2	8	7

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	6	0	9	5
Stage 1	-	-	-	-	5	-
Stage 2	-	-	-	-	4	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1615	-	1011	1078
Stage 1	-	-	-	-	1018	-
Stage 2	-	-	-	-	1019	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1615	-	1010	1078
Mov Cap-2 Maneuver	-	-	-	-	1010	-
Stage 1	-	-	-	-	1017	-
Stage 2	-	-	-	-	1019	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.4	8.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1040	-	-	1615	-
HCM Lane V/C Ratio	0.014	-	-	0.001	-
HCM Control Delay (s)	8.5	-	-	7.2	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	1	21	2	1	1	6	56	7	0	71	4
Future Vol, veh/h	5	1	21	2	1	1	6	56	7	0	71	4
Conflicting Peds, #/hr	6	0	1	1	0	6	2	0	2	2	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	6	0	0	0	0	4	0	0	2	0
Mvmt Flow	5	1	23	2	1	1	7	61	8	0	77	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	167	166	82	173	164	73	83	0	0	71	0	0
Stage 1	81	81	-	81	81	-	-	-	-	-	-	-
Stage 2	86	85	-	92	83	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.26	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.354	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	802	730	967	794	732	995	1527	-	-	1542	-	-
Stage 1	932	832	-	932	832	-	-	-	-	-	-	-
Stage 2	927	828	-	920	830	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	792	723	964	769	725	988	1524	-	-	1539	-	-
Mov Cap-2 Maneuver	792	723	-	769	725	-	-	-	-	-	-	-
Stage 1	925	830	-	925	826	-	-	-	-	-	-	-
Stage 2	915	822	-	896	828	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.1	9.5	0.6	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1524	-	-	916	801	1539	-	-
HCM Lane V/C Ratio	0.004	-	-	0.032	0.005	-	-	-
HCM Control Delay (s)	7.4	0	-	9.1	9.5	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

2025 Background Traffic Volumes

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	178	279	5	17	7
Future Vol, veh/h	3	178	279	5	17	7
Conflicting Peds, #/hr	4	0	0	4	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	4	3	0	0	0
Mvmt Flow	3	193	303	5	18	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	312	0	-	0	510	311
Stage 1	-	-	-	-	310	-
Stage 2	-	-	-	-	200	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1260	-	-	-	527	734
Stage 1	-	-	-	-	748	-
Stage 2	-	-	-	-	838	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1255	-	-	-	521	731
Mov Cap-2 Maneuver	-	-	-	-	521	-
Stage 1	-	-	-	-	743	-
Stage 2	-	-	-	-	835	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	11.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1255	-	-	-	569
HCM Lane V/C Ratio	0.003	-	-	-	0.046
HCM Control Delay (s)	7.9	0	-	-	11.6
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	3.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	4	5	1	1	1	4
Future Vol, veh/h	4	5	1	1	1	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	5	1	1	1	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	9	0	10	7
Stage 1	-	-	-	-	7	-
Stage 2	-	-	-	-	3	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1611	-	1010	1075
Stage 1	-	-	-	-	1016	-
Stage 2	-	-	-	-	1020	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1611	-	1009	1075
Mov Cap-2 Maneuver	-	-	-	-	1009	-
Stage 1	-	-	-	-	1015	-
Stage 2	-	-	-	-	1020	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.6	8.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1061	-	-	1611	-
HCM Lane V/C Ratio	0.005	-	-	0.001	-
HCM Control Delay (s)	8.4	-	-	7.2	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	3	17	8	0	0	10	37	5	1	57	0
Future Vol, veh/h	0	3	17	8	0	0	10	37	5	1	57	0
Conflicting Peds, #/hr	1	0	6	6	0	1	1	0	4	4	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	8	0	0	0	0	4	25	0	2	2
Mvmt Flow	0	3	18	9	0	0	11	40	5	1	62	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	131	136	69	150	134	48	63	0	0	49	0	0
Stage 1	65	65	-	69	69	-	-	-	-	-	-	-
Stage 2	66	71	-	81	65	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.28	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.372	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	846	759	977	822	760	1027	1553	-	-	1571	-	-
Stage 1	951	845	-	946	841	-	-	-	-	-	-	-
Stage 2	950	840	-	932	845	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	839	749	971	792	750	1022	1552	-	-	1565	-	-
Mov Cap-2 Maneuver	839	749	-	792	750	-	-	-	-	-	-	-
Stage 1	943	843	-	936	832	-	-	-	-	-	-	-
Stage 2	942	831	-	905	843	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9	9.6	1.4	0.1
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1552	-	-	930	792	1565	-	-
HCM Lane V/C Ratio	0.007	-	-	0.023	0.011	0.001	-	-
HCM Control Delay (s)	7.3	0	-	9	9.6	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	355	262	25	9	5
Future Vol, veh/h	6	355	262	25	9	5
Conflicting Peds, #/hr	3	0	0	3	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	1	5	0	0	0
Mvmt Flow	7	386	285	27	10	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	315	0	-	0	702	304
Stage 1	-	-	-	-	302	-
Stage 2	-	-	-	-	400	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1257	-	-	-	407	740
Stage 1	-	-	-	-	755	-
Stage 2	-	-	-	-	681	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1254	-	-	-	402	737
Mov Cap-2 Maneuver	-	-	-	-	402	-
Stage 1	-	-	-	-	747	-
Stage 2	-	-	-	-	679	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	12.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1254	-	-	-	480
HCM Lane V/C Ratio	0.005	-	-	-	0.032
HCM Control Delay (s)	7.9	0	-	-	12.7
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	5.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	4	2	1	3	7	6
Future Vol, veh/h	4	2	1	3	7	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	2	1	3	8	7

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	6	0	10	5
Stage 1	-	-	-	-	5	-
Stage 2	-	-	-	-	5	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1615	-	1010	1078
Stage 1	-	-	-	-	1018	-
Stage 2	-	-	-	-	1018	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1615	-	1009	1078
Mov Cap-2 Maneuver	-	-	-	-	1009	-
Stage 1	-	-	-	-	1017	-
Stage 2	-	-	-	-	1018	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.8	8.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1040	-	-	1615	-
HCM Lane V/C Ratio	0.014	-	-	0.001	-
HCM Control Delay (s)	8.5	-	-	7.2	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	5	1	22	3	1	1	7	59	8	0	74	4
Future Vol, veh/h	5	1	22	3	1	1	7	59	8	0	74	4
Conflicting Peds, #/hr	6	0	1	1	0	6	2	0	2	2	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	6	0	0	0	0	4	0	0	2	0
Mvmt Flow	5	1	24	3	1	1	8	64	9	0	80	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	176	175	85	183	173	77	86	0	0	75	0	0
Stage 1	84	84	-	87	87	-	-	-	-	-	-	-
Stage 2	92	91	-	96	86	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.26	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.354	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	791	722	963	783	724	990	1523	-	-	1537	-	-
Stage 1	929	829	-	926	827	-	-	-	-	-	-	-
Stage 2	920	823	-	916	827	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	781	716	960	758	717	983	1520	-	-	1534	-	-
Mov Cap-2 Maneuver	781	716	-	758	717	-	-	-	-	-	-	-
Stage 1	922	827	-	920	821	-	-	-	-	-	-	-
Stage 2	908	817	-	891	825	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.1	9.6	0.7	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1520	-	-	912	785	1534	-	-
HCM Lane V/C Ratio	0.005	-	-	0.033	0.007	-	-	-
HCM Control Delay (s)	7.4	0	-	9.1	9.6	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

2020 Total Traffic Volumes

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	169	266	6	19	7
Future Vol, veh/h	4	169	266	6	19	7
Conflicting Peds, #/hr	4	0	0	4	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	4	3	0	0	0
Mvmt Flow	4	184	289	7	21	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	300	0	-	0	490	298
Stage 1	-	-	-	-	297	-
Stage 2	-	-	-	-	193	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1273	-	-	-	541	746
Stage 1	-	-	-	-	758	-
Stage 2	-	-	-	-	845	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1268	-	-	-	535	743
Mov Cap-2 Maneuver	-	-	-	-	535	-
Stage 1	-	-	-	-	752	-
Stage 2	-	-	-	-	842	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	11.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1268	-	-	-	579
HCM Lane V/C Ratio	0.003	-	-	-	0.049
HCM Control Delay (s)	7.8	0	-	-	11.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	4	4	1	1	2	1	2	4	3	4	0
Future Vol, veh/h	0	4	4	1	1	2	1	2	4	3	4	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	4	4	1	1	2	1	2	4	3	4	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	3	0	0	8	0	0	12	11	6	13	12	2
Stage 1	-	-	-	-	-	-	6	6	-	4	4	-
Stage 2	-	-	-	-	-	-	6	5	-	9	8	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1619	-	-	1612	-	-	1005	884	1077	1004	883	1082
Stage 1	-	-	-	-	-	-	1016	891	-	1018	892	-
Stage 2	-	-	-	-	-	-	1016	892	-	1012	889	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1619	-	-	1612	-	-	1000	883	1077	997	882	1082
Mov Cap-2 Maneuver	-	-	-	-	-	-	1000	883	-	997	882	-
Stage 1	-	-	-	-	-	-	1016	891	-	1018	891	-
Stage 2	-	-	-	-	-	-	1010	891	-	1005	889	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.8	8.6	8.9
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1003	1619	-	-	1612	-	-	928
HCM Lane V/C Ratio	0.008	-	-	-	0.001	-	-	0.008
HCM Control Delay (s)	8.6	0	-	-	7.2	0	-	8.9
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	3	19	7	0	0	12	35	5	1	55	0
Future Vol, veh/h	0	3	19	7	0	0	12	35	5	1	55	0
Conflicting Peds, #/hr	1	0	6	6	0	1	1	0	4	4	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	8	0	0	0	0	4	25	0	2	2
Mvmt Flow	0	3	21	8	0	0	13	38	5	1	60	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	131	136	67	151	134	46	61	0	0	47	0	0
Stage 1	63	63	-	71	71	-	-	-	-	-	-	-
Stage 2	68	73	-	80	63	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.28	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.372	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	846	759	980	821	760	1029	1555	-	-	1573	-	-
Stage 1	953	846	-	944	840	-	-	-	-	-	-	-
Stage 2	947	838	-	934	846	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	838	748	974	787	749	1024	1554	-	-	1567	-	-
Mov Cap-2 Maneuver	838	748	-	787	749	-	-	-	-	-	-	-
Stage 1	943	844	-	932	829	-	-	-	-	-	-	-
Stage 2	938	827	-	905	844	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9	9.6	1.7	0.1
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1554	-	-	935	787	1567	-	-
HCM Lane V/C Ratio	0.008	-	-	0.026	0.01	0.001	-	-
HCM Control Delay (s)	7.3	0	-	9	9.6	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	338	250	28	10	6
Future Vol, veh/h	7	338	250	28	10	6
Conflicting Peds, #/hr	3	0	0	3	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	1	5	0	0	0
Mvmt Flow	8	367	272	30	11	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	305	0	-	0	673	292
Stage 1	-	-	-	-	290	-
Stage 2	-	-	-	-	383	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1267	-	-	-	424	752
Stage 1	-	-	-	-	764	-
Stage 2	-	-	-	-	694	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1263	-	-	-	418	749
Mov Cap-2 Maneuver	-	-	-	-	418	-
Stage 1	-	-	-	-	756	-
Stage 2	-	-	-	-	692	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	12.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1263	-	-	-	501
HCM Lane V/C Ratio	0.006	-	-	-	0.035
HCM Control Delay (s)	7.9	0	-	-	12.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	6.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	4	2	1	2	2	7	6	6	4	2	0
Future Vol, veh/h	0	4	2	1	2	2	7	6	6	4	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	4	2	1	2	2	8	7	7	4	2	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	4	0	0	6	0	0	11	11	5	17	11	3
Stage 1	-	-	-	-	-	-	5	5	-	5	5	-
Stage 2	-	-	-	-	-	-	6	6	-	12	6	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1618	-	-	1615	-	-	1007	884	1078	998	884	1081
Stage 1	-	-	-	-	-	-	1017	892	-	1017	892	-
Stage 2	-	-	-	-	-	-	1016	891	-	1009	891	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1618	-	-	1615	-	-	1004	883	1078	986	883	1081
Mov Cap-2 Maneuver	-	-	-	-	-	-	1004	883	-	986	883	-
Stage 1	-	-	-	-	-	-	1017	892	-	1017	891	-
Stage 2	-	-	-	-	-	-	1013	890	-	996	891	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.4	8.7	8.8
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	983	1618	-	-	1615	-	-	949
HCM Lane V/C Ratio	0.021	-	-	-	0.001	-	-	0.007
HCM Control Delay (s)	8.7	0	-	-	7.2	0	-	8.8
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	1	25	2	1	1	7	56	7	0	71	4
Future Vol, veh/h	6	1	25	2	1	1	7	56	7	0	71	4
Conflicting Peds, #/hr	6	0	1	1	0	6	2	0	2	2	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	6	0	0	0	0	4	0	0	2	0
Mvmt Flow	7	1	27	2	1	1	8	61	8	0	77	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	169	168	82	177	166	73	83	0	0	71	0	0
Stage 1	81	81	-	83	83	-	-	-	-	-	-	-
Stage 2	88	87	-	94	83	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.26	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.354	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	799	728	967	790	730	995	1527	-	-	1542	-	-
Stage 1	932	832	-	930	830	-	-	-	-	-	-	-
Stage 2	925	827	-	918	830	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	789	721	964	762	723	988	1524	-	-	1539	-	-
Mov Cap-2 Maneuver	789	721	-	762	723	-	-	-	-	-	-	-
Stage 1	925	830	-	923	824	-	-	-	-	-	-	-
Stage 2	913	821	-	890	828	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.1	9.5	0.7	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1524	-	-	916	797	1539	-	-
HCM Lane V/C Ratio	0.005	-	-	0.038	0.005	-	-	-
HCM Control Delay (s)	7.4	0	-	9.1	9.5	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

2025 Total Traffic Volumes

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	178	279	6	20	8
Future Vol, veh/h	4	178	279	6	20	8
Conflicting Peds, #/hr	4	0	0	4	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	4	3	0	0	0
Mvmt Flow	4	193	303	7	22	9

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	314	0	-	0	513	312
Stage 1	-	-	-	-	311	-
Stage 2	-	-	-	-	202	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1258	-	-	-	525	733
Stage 1	-	-	-	-	748	-
Stage 2	-	-	-	-	837	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1253	-	-	-	519	730
Mov Cap-2 Maneuver	-	-	-	-	519	-
Stage 1	-	-	-	-	742	-
Stage 2	-	-	-	-	834	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	11.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1253	-	-	-	566
HCM Lane V/C Ratio	0.003	-	-	-	0.054
HCM Control Delay (s)	7.9	0	-	-	11.7
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	4	5	1	1	2	1	2	4	3	4	0
Future Vol, veh/h	0	4	5	1	1	2	1	2	4	3	4	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	4	5	1	1	2	1	2	4	3	4	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	3	0	0	9	0	0	13	12	7	14	13	2
Stage 1	-	-	-	-	-	-	7	7	-	4	4	-
Stage 2	-	-	-	-	-	-	6	5	-	10	9	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1619	-	-	1611	-	-	1004	883	1075	1002	881	1082
Stage 1	-	-	-	-	-	-	1015	890	-	1018	892	-
Stage 2	-	-	-	-	-	-	1016	892	-	1011	888	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1619	-	-	1611	-	-	999	882	1075	995	880	1082
Mov Cap-2 Maneuver	-	-	-	-	-	-	999	882	-	995	880	-
Stage 1	-	-	-	-	-	-	1015	890	-	1018	891	-
Stage 2	-	-	-	-	-	-	1010	891	-	1004	888	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.8	8.6	8.9
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1002	1619	-	-	1611	-	-	926
HCM Lane V/C Ratio	0.008	-	-	-	0.001	-	-	0.008
HCM Control Delay (s)	8.6	0	-	-	7.2	0	-	8.9
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	3	20	8	0	0	12	37	5	1	57	0
Future Vol, veh/h	0	3	20	8	0	0	12	37	5	1	57	0
Conflicting Peds, #/hr	1	0	6	6	0	1	1	0	4	4	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	8	0	0	0	0	4	25	0	2	2
Mvmt Flow	0	3	22	9	0	0	13	40	5	1	62	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	135	140	69	156	138	48	63	0	0	49	0	0
Stage 1	65	65	-	73	73	-	-	-	-	-	-	-
Stage 2	70	75	-	83	65	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.28	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.372	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	841	755	977	815	757	1027	1553	-	-	1571	-	-
Stage 1	951	845	-	942	838	-	-	-	-	-	-	-
Stage 2	945	836	-	930	845	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	833	744	971	781	746	1022	1552	-	-	1565	-	-
Mov Cap-2 Maneuver	833	744	-	781	746	-	-	-	-	-	-	-
Stage 1	941	843	-	930	827	-	-	-	-	-	-	-
Stage 2	936	825	-	900	843	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9	9.7	1.6	0.1
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1552	-	-	934	781	1565	-	-
HCM Lane V/C Ratio	0.008	-	-	0.027	0.011	0.001	-	-
HCM Control Delay (s)	7.3	0	-	9	9.7	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	355	262	29	11	6
Future Vol, veh/h	8	355	262	29	11	6
Conflicting Peds, #/hr	3	0	0	3	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	1	5	0	0	0
Mvmt Flow	9	386	285	32	12	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	320	0	-	0	708	306
Stage 1	-	-	-	-	304	-
Stage 2	-	-	-	-	404	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1251	-	-	-	404	739
Stage 1	-	-	-	-	753	-
Stage 2	-	-	-	-	679	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1248	-	-	-	398	736
Mov Cap-2 Maneuver	-	-	-	-	398	-
Stage 1	-	-	-	-	744	-
Stage 2	-	-	-	-	677	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	12.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1248	-	-	-	475
HCM Lane V/C Ratio	0.007	-	-	-	0.039
HCM Control Delay (s)	7.9	0	-	-	12.9
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	6.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	4	2	1	3	2	7	6	6	4	2	0
Future Vol, veh/h	0	4	2	1	3	2	7	6	6	4	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	4	2	1	3	2	8	7	7	4	2	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	5	0	0	6	0	0	12	12	5	18	12	4
Stage 1	-	-	-	-	-	-	5	5	-	6	6	-
Stage 2	-	-	-	-	-	-	7	7	-	12	6	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1616	-	-	1615	-	-	1005	883	1078	996	883	1080
Stage 1	-	-	-	-	-	-	1017	892	-	1016	891	-
Stage 2	-	-	-	-	-	-	1015	890	-	1009	891	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1616	-	-	1615	-	-	1002	882	1078	984	882	1080
Mov Cap-2 Maneuver	-	-	-	-	-	-	1002	882	-	984	882	-
Stage 1	-	-	-	-	-	-	1017	892	-	1016	890	-
Stage 2	-	-	-	-	-	-	1012	889	-	996	891	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.2	8.7	8.8
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	982	1616	-	-	1615	-	-	947
HCM Lane V/C Ratio	0.021	-	-	-	0.001	-	-	0.007
HCM Control Delay (s)	8.7	0	-	-	7.2	0	-	8.8
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	2	26	3	2	1	8	59	8	0	74	5
Future Vol, veh/h	6	2	26	3	2	1	8	59	8	0	74	5
Conflicting Peds, #/hr	6	0	1	1	0	6	2	0	2	2	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	6	0	0	0	0	4	0	0	2	0
Mvmt Flow	7	2	28	3	2	1	9	64	9	0	80	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	179	178	86	188	176	77	87	0	0	75	0	0
Stage 1	85	85	-	89	89	-	-	-	-	-	-	-
Stage 2	94	93	-	99	87	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.26	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.354	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	787	719	962	777	721	990	1522	-	-	1537	-	-
Stage 1	928	828	-	923	825	-	-	-	-	-	-	-
Stage 2	918	822	-	912	827	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	775	712	959	747	714	983	1519	-	-	1534	-	-
Mov Cap-2 Maneuver	775	712	-	747	714	-	-	-	-	-	-	-
Stage 1	921	826	-	916	818	-	-	-	-	-	-	-
Stage 2	904	815	-	882	825	-	-	-	-	-	-	-

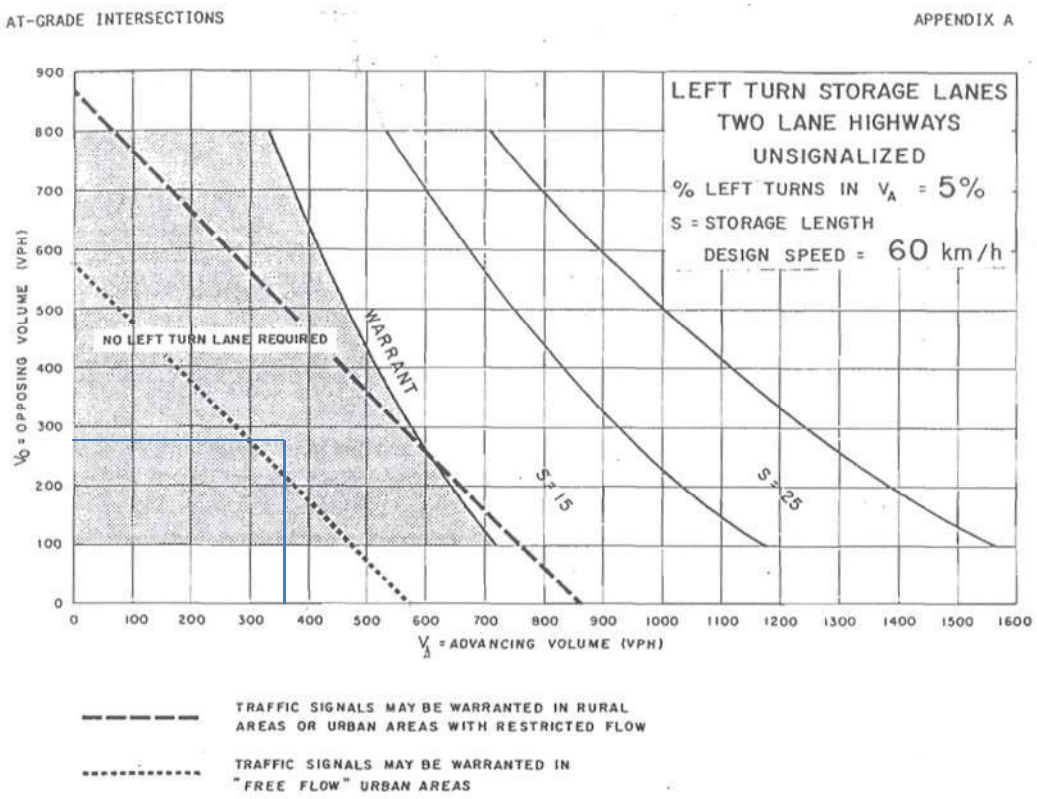
Approach	EB	WB	NB	SB
HCM Control Delay, s	9.2	9.7	0.8	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1519	-	-	903	766	1534	-	-
HCM Lane V/C Ratio	0.006	-	-	0.041	0.009	-	-	-
HCM Control Delay (s)	7.4	0	-	9.2	9.7	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

APPENDIX C

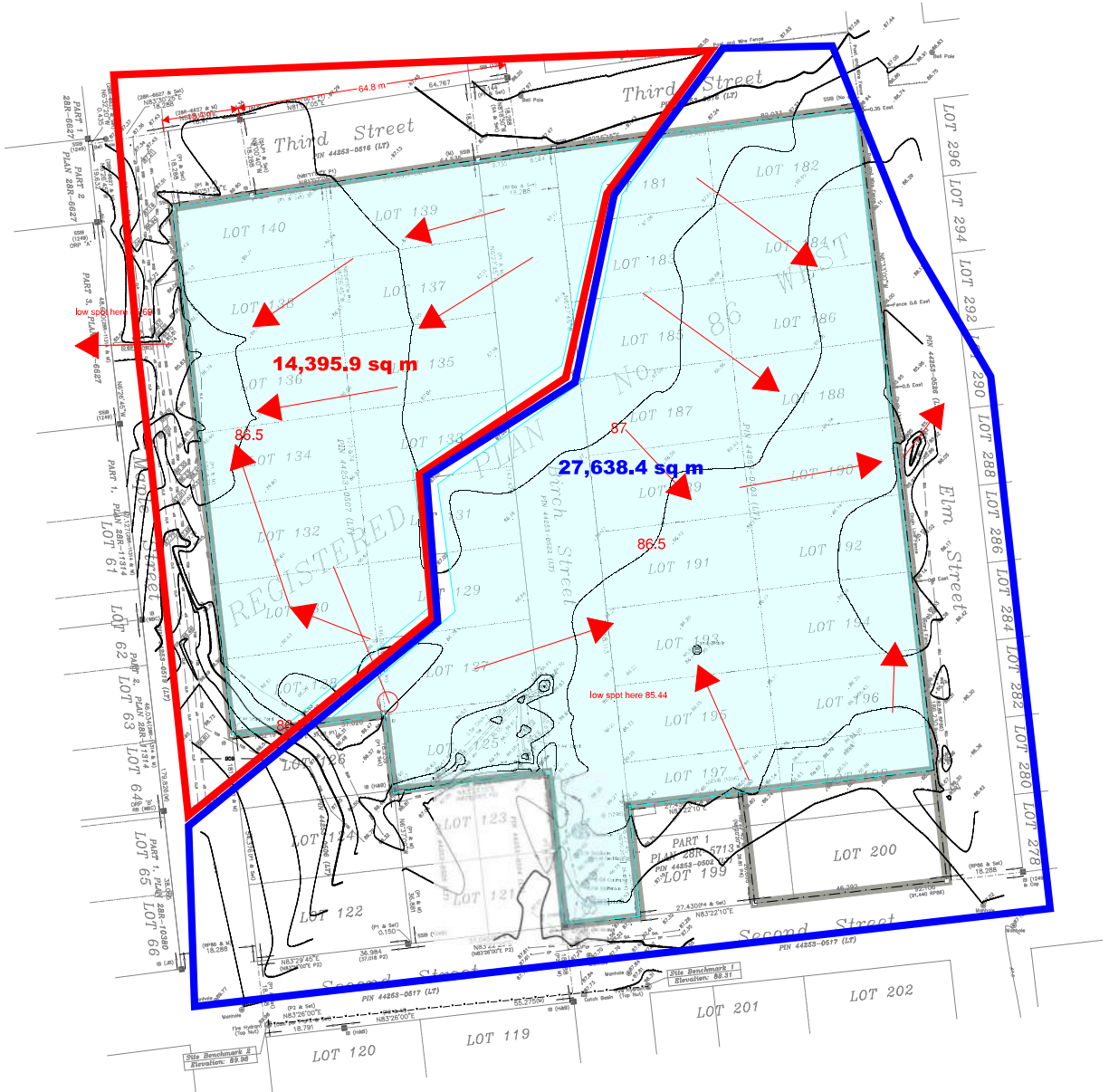
Left Turn Lane Warrants

King Street W & Birth St 2025 Total PM Peak Hour Volumes



APPENDIX 'C'

Drainage and Stormwater



LEGEND:

95IBS PLANTED DUE TO INSUFFICIENT OVERBURDEN

- denotes Planted Survey Monument
- Survey Monument
- SIB — Standard Iron Bar
- 95IB — Short Standard Iron Bar
- IB — Iron Bar
- IBØ — Iron Bar (round)
- RB — Rock Bar
- RPL — Rock Plug
- (WIT) — Witness
- (M) — Measured
- CC — Cut Cross
- (OU) — Origin Unknown
- (HP) — Hydro Pole
- (H&B) — Humphries & Burgham Ltd.
- (WSC) — Collett Surveying Ltd.
- (613) — Raymond F. Mackenzie-O.L.S.
- (1242) — Martin H. Kaldeway-O.L.S.
- (1296) — Ronald H. Smith-O.L.S.
- (1626) — Robert J. Jordan-O.L.S.
- (1886) — Hopkins Chitty Land Surveyors Inc.-O.L.S.
- (P1) — Plan by (1249) dated October 18, 1994
- (P2) — Plan by (1626) dated February 22, 2001
- (P3) — Plan by (1980) dated April 16, 1968
- (P4) — Reference Plan 28R-5713
- CLF — Chain Link Fence
- WGR — West of the Gananoque River
- TOB — Top of Bank
- BOB — Bottom of Bank
- EP — Edge of Pavement
- EG — Edge of Gravel
- OHL — Overhead Hydro Line
- CLR — CentreLine of Road
- SL — Overhead Service Line
- OUL — Overhead Utility Line
- 99.05 — Proposed Grade Elevation Marker
- Contour Line
- 86.5 — Contour Elevation Mark
- Fence: CLF - Chain Link, BF - Pressure Treated Board WF - Post and Wire, RF - Rail, SRF - Snake Rail
- S, LS — Sign, Light Standard
- Grade Direction
- P — Parking Space, Exterior

ELEVATION NOTE:

ELEVATIONS ARE GEODETIC AND ARE REFERRED TO THE HT2_0 GEOID MODEL BEING A PRODUCT OF THE GEODETIC SURVEY DIVISION (GSD) OF NATURAL RESOURCES CANADA, DERIVED FROM REAL-TIME NETWORK GPS OBSERVATIONS.

THE ELEVATIONS ARE REFERRED TO SITE BENCHMARKS 1 AND 2 NEAR THE SOUTH LIMIT OF SECOND STREET.

BENCHMARK 1 BEING THE TOP NUT OF A FIRE HYDRANT 16.8 m SOUTH OF THE SOUTHWEST CORNER OF LOT 199, REGISTERED PLAN 86 WEST HAVING AN ELEVATION OF 88.31 m AND SITE BENCHMARK 2, BEING THE TOP NUT OF A FIRE HYDRANT LOCATED 15.4m SOUTH OF THE SOUTHWEST CORNER OF LOT 122 REGISTERED PLAN 86 WEST HAVING AN ELEVATION OF 89.98m.

BEARINGS ARE UTM GRID, DERIVED FROM MULTIPLE REAL TIME KINETIC (GPS) OBSERVATIONS FROM MONUMENT 'A' TO 'B', UTM ZONE 18 (75° WEST LONGITUDE) NAD83 (CSRS) (2010)

FOR BEARING COMPARISONS, A ROTATION OF 0°50'00" CLOCKWISE WAS APPLIED TO BEARINGS ON (P1), (P2) AND (P3)

FOR BEARING COMPARISONS, A ROTATION OF 1°03'00" CLOCKWISE WAS APPLIED TO BEARINGS ON (P1), (P2) AND (P3)

DISTANCES ARE GROUND AND CAN BE CONVERTED TO GRID BY MULTIPLYING BY THE COMBINED SCALE FACTOR OF 0.999699

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

EXISTING INFORMATION COMPILED BY HOPKINS CHITTY LAND SURVEYING INC., PROJECT NO. 2019-293

PLAN 1:500 — ORIGINAL PROPERTY AND PROPOSED SITE PLAN OVERVIEW

PROJECT COMPLETED FOR:

Jaco Investments Ltd

THE BIRCHES Community Living

Project Structural Engineering Provided by:
Superville Engineering Corporation
Superville Engineering Corp. has been retained to engineering design and review for details shown on this drawing under Section 9 and Section 4 of the OBC. Work completed by the Contractor, not shown on this drawing, is not endorsed by Superville Engineering Corp.

The drawing shall not be considered valid unless the drawings bear the seal, signature and date of the Project Engineer.

Project Drafting Services Provided by:

Ball Technical Services

Cell: (613)-331-1823 Email: bball1@cogeco.ca
Site Investigation/Inspection/Reporting
Drawing and Document Preparation
Project Design Coordination
Heritage Recording

PROJECT: The Birches - Phase I
Birch Street - Gananoque, Ontario

DRAWING TITLE: Pre-Development Catchment

MEASURED SCALE FOR PAPER COPY
0 10mm 50mm
In general - Do Not scale drawing

REVISIONS

1	-	-
2	-	-
3	-	-
4	-	-

BTS Project Number: 19-02

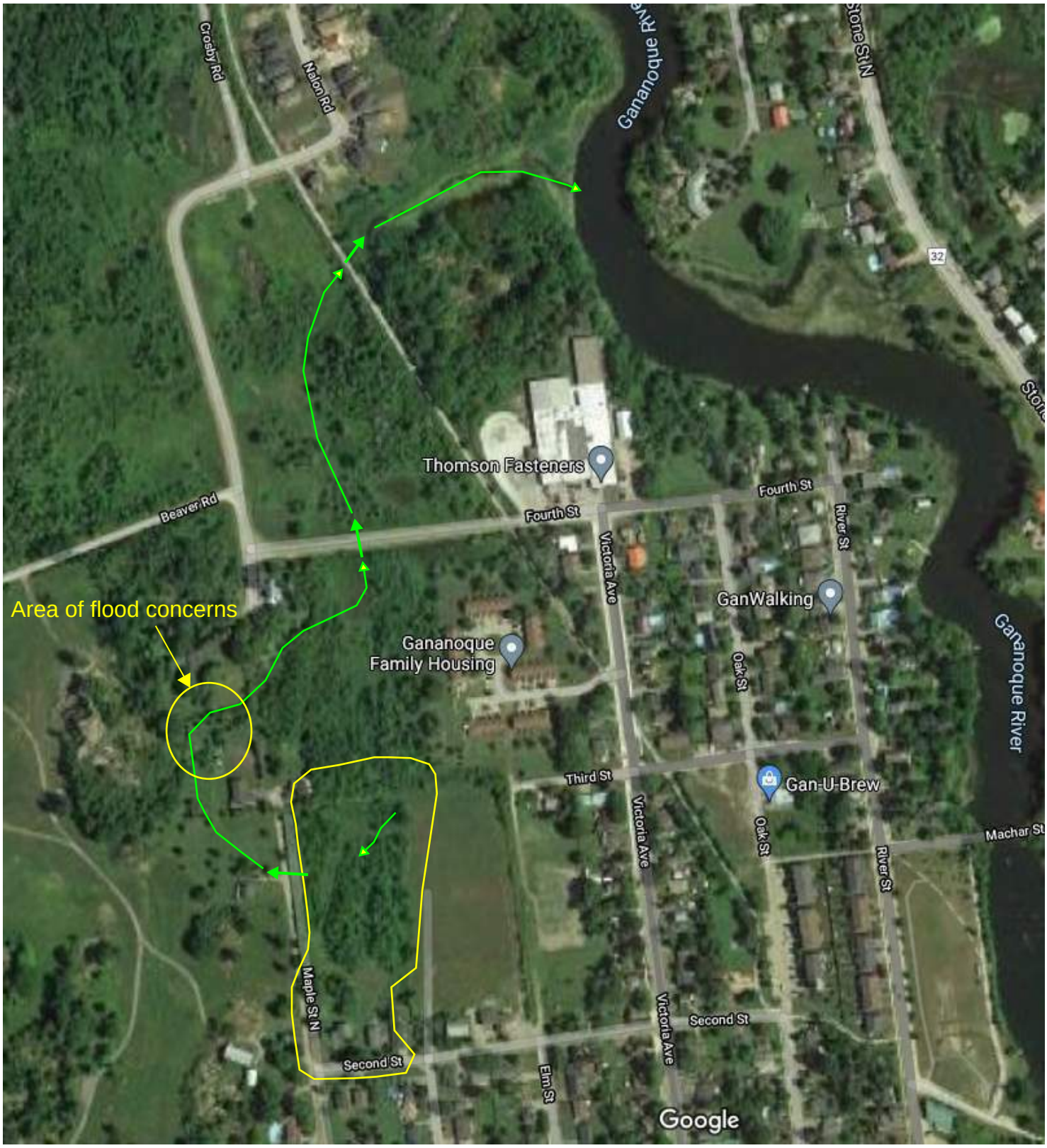
Client Project Number: -

Initial Drawing Issue Date: 11 January, 2021
Current Drawing Issue Date: 31 March, 2021

Designed by: -
Checked by: -
Drawn by: TMB

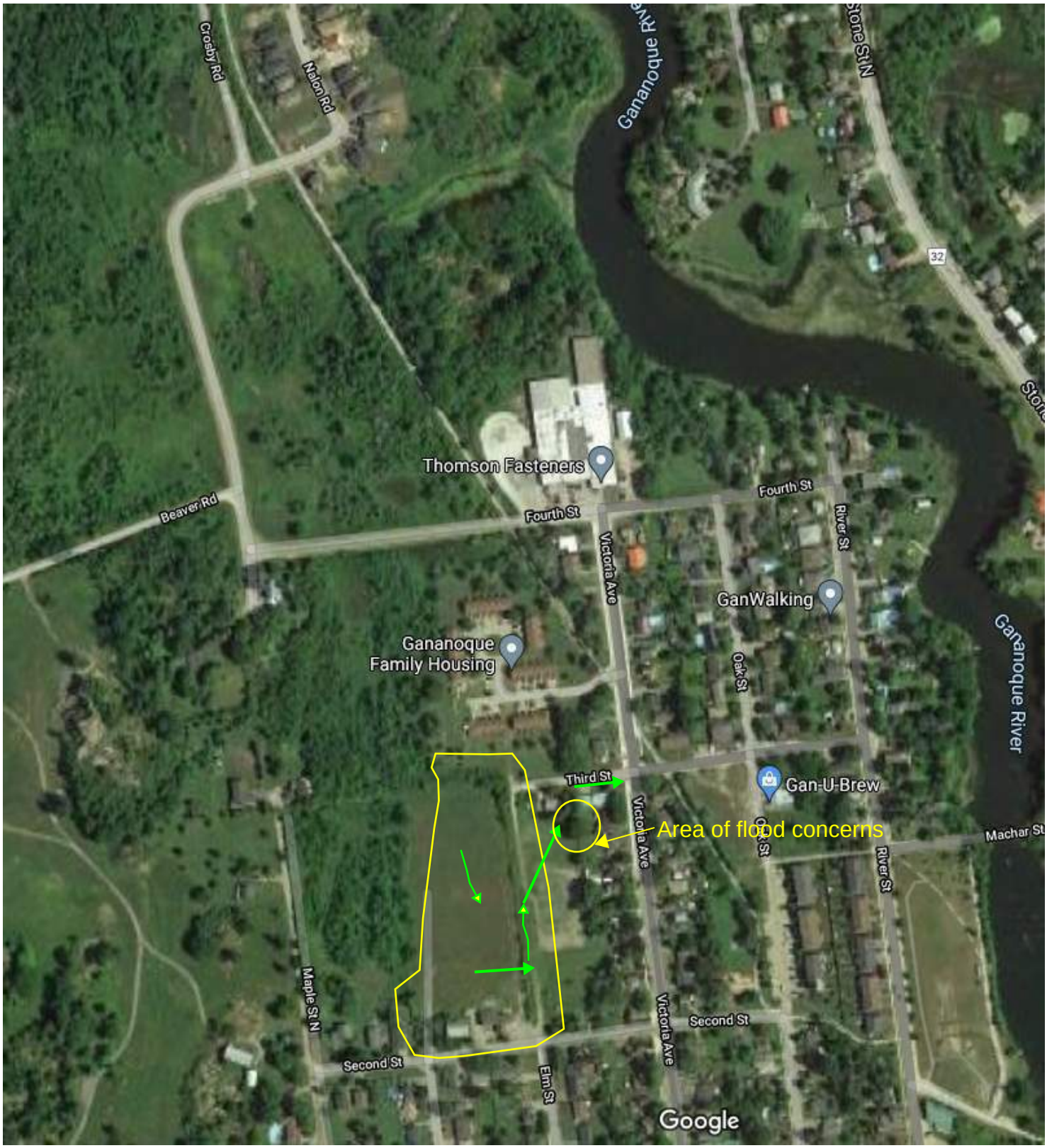
DRAWING No. SR1

Sheet 1 of 1



Pre - Western Drainage Area

Figure 1



Pre - Eastern Drainage Area

Figure 2

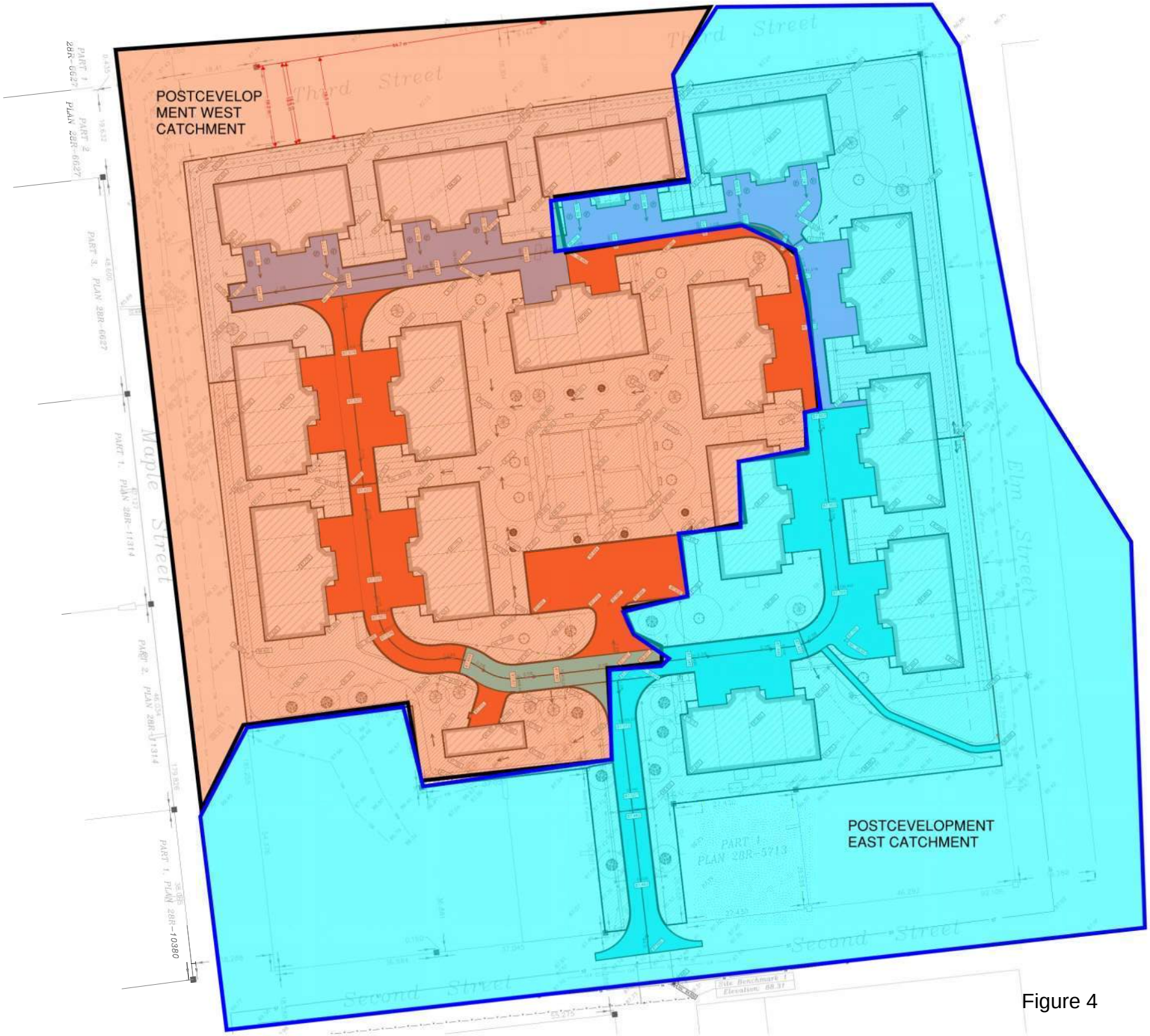

POSTCEVELOPMENT WEST CATCHMENT
POSTCEVELOPMENT EAST CATCHMENT
Third Street
Second Street
Maple Street
Elm Street
PART 1, PLAN 28R-6627
PART 2, PLAN 28R-6627
PART 3, PLAN 28R-6627
PART 1, PLAN 28R-11914
PART 2, PLAN 28R-11914
PART 1, PLAN 28R-10380
PART 1, PLAN 28R-5713

Figure 4

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

       V    V   I    SSSSS  U   U    A    L             (v 6.2.2006)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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


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  Summary filename:
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DATE: 03-14-2022                          TIME: 08:59:28

USER:



COMMENTS: _____________________________________________________________


--------------------------------------------------------------------------------
------------------------
  **********************************************
  ** SIMULATION : 100yr 12hr 5min SCS Type II   **
  **********************************************


--------------------
|    READ STORM    |    Filename: C:\Users\diver\AppD
|                  |              ata\Local\Temp\
```

| | 105ea1c3-8515-4ea5-9d65-0f313f466b7f\fe735bcb
| Ptotal= 96.34 mm | Comments: 100yr 12hr 5min SCS Type II

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	0.00	3.17	3.67	6.25	19.63	9.33	3.27
0.17	2.07	3.25	3.67	6.33	17.54	9.42	3.21
0.25	2.09	3.33	3.67	6.42	15.45	9.50	3.14
0.33	2.11	3.42	3.67	6.50	13.36	9.58	3.08
0.42	2.13	3.50	3.67	6.58	11.27	9.67	2.99
0.50	2.15	3.58	3.67	6.67	9.67	9.75	2.93
0.58	2.17	3.67	3.76	6.75	9.19	9.83	2.87
0.67	2.19	3.75	3.90	6.83	8.72	9.92	2.80
0.75	2.21	3.83	4.05	6.92	8.24	10.00	2.74
0.83	2.22	3.92	4.20	7.00	7.76	10.08	2.67
0.92	2.24	4.00	4.34	7.08	7.29	10.17	2.62
1.00	2.26	4.08	4.49	7.17	6.83	10.25	2.60
1.08	2.28	4.17	4.72	7.25	6.57	10.33	2.58
1.17	2.30	4.25	4.94	7.33	6.31	10.42	2.55
1.25	2.32	4.33	5.16	7.42	6.06	10.50	2.53
1.33	2.34	4.42	5.38	7.50	5.80	10.58	2.51
1.42	2.36	4.50	5.60	7.58	5.54	10.67	2.47
1.50	2.38	4.58	5.82	7.67	5.27	10.75	2.46
1.58	2.39	4.67	6.19	7.75	5.09	10.83	2.43
1.67	2.42	4.75	6.55	7.83	4.90	10.92	2.41
1.75	2.44	4.83	6.92	7.92	4.72	11.00	2.39
1.83	2.45	4.92	7.29	8.00	4.54	11.08	2.36
1.92	2.47	5.00	7.65	8.08	4.35	11.17	2.34
2.00	2.49	5.08	8.02	8.17	4.20	11.25	2.31
2.08	2.51	5.17	8.80	8.25	4.13	11.33	2.29
2.17	2.58	5.25	9.68	8.33	4.07	11.42	2.27
2.25	2.67	5.33	10.56	8.42	4.01	11.50	2.24
2.33	2.76	5.42	11.44	8.50	3.94	11.58	2.22
2.42	2.85	5.50	12.32	8.58	3.88	11.67	2.19
2.50	2.94	5.58	13.20	8.67	3.79	11.75	2.17
2.58	3.04	5.67	27.31	8.75	3.74	11.83	2.14
2.67	3.15	5.75	49.01	8.83	3.67	11.92	2.12
2.75	3.24	5.83	74.31	8.92	3.60	12.00	2.10
2.83	3.33	5.92	115.34	9.00	3.54	12.08	2.07
2.92	3.43	6.00	147.41	9.08	3.47		
3.00	3.52	6.08	108.99	9.17	3.40		
3.08	3.61	6.17	21.72	9.25	3.33		

CALIB	NASHYD (0022)	ID= 1 DT= 1.0 min

Area (ha)= 1.44 Curve Number (CN)= 82.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.20

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.050	3.61	6.083	108.86	9.12	3.40
0.033	0.00	3.067	3.61	6.100	21.72	9.13	3.40
0.050	0.00	3.083	3.61	6.117	21.72	9.15	3.40
0.067	0.00	3.100	3.67	6.133	21.72	9.17	3.40
0.083	0.00	3.117	3.67	6.150	21.72	9.18	3.33
0.100	2.07	3.133	3.67	6.167	21.72	9.20	3.33
0.117	2.07	3.150	3.67	6.183	19.63	9.22	3.33
0.133	2.07	3.167	3.67	6.200	19.63	9.23	3.33
0.150	2.07	3.183	3.67	6.217	19.63	9.25	3.33
0.167	2.07	3.200	3.67	6.233	19.63	9.27	3.27
0.183	2.09	3.217	3.67	6.250	19.63	9.28	3.27
0.200	2.09	3.233	3.67	6.267	17.54	9.30	3.27
0.217	2.09	3.250	3.67	6.283	17.54	9.32	3.27
0.233	2.09	3.267	3.67	6.300	17.54	9.33	3.27
0.250	2.09	3.283	3.67	6.317	17.54	9.35	3.21
0.267	2.11	3.300	3.67	6.333	17.54	9.37	3.21
0.283	2.11	3.317	3.67	6.350	15.45	9.38	3.21
0.300	2.11	3.333	3.67	6.367	15.45	9.40	3.21
0.317	2.11	3.350	3.67	6.383	15.45	9.42	3.21
0.333	2.11	3.367	3.67	6.400	15.45	9.43	3.14
0.350	2.13	3.383	3.67	6.417	15.45	9.45	3.14
0.367	2.13	3.400	3.67	6.433	13.36	9.47	3.14
0.383	2.13	3.417	3.67	6.450	13.36	9.48	3.14
0.400	2.13	3.433	3.67	6.467	13.36	9.50	3.14
0.417	2.13	3.450	3.67	6.483	13.36	9.52	3.08
0.433	2.15	3.467	3.67	6.500	13.36	9.53	3.08
0.450	2.15	3.483	3.67	6.517	11.27	9.55	3.08
0.467	2.15	3.500	3.67	6.533	11.27	9.57	3.08
0.483	2.15	3.517	3.67	6.550	11.27	9.58	3.08
0.500	2.15	3.533	3.67	6.567	11.27	9.60	2.99
0.517	2.17	3.550	3.67	6.583	11.27	9.62	2.99
0.533	2.17	3.567	3.67	6.600	9.67	9.63	2.99
0.550	2.17	3.583	3.67	6.617	9.67	9.65	2.99
0.567	2.17	3.600	3.76	6.633	9.67	9.67	2.99
0.583	2.17	3.617	3.76	6.650	9.67	9.68	2.93
0.600	2.19	3.633	3.76	6.667	9.67	9.70	2.93
0.617	2.19	3.650	3.76	6.683	9.19	9.72	2.93
0.633	2.19	3.667	3.76	6.700	9.19	9.73	2.93
0.650	2.19	3.683	3.90	6.717	9.19	9.75	2.93
0.667	2.19	3.700	3.90	6.733	9.19	9.77	2.87
0.683	2.21	3.717	3.90	6.750	9.19	9.78	2.87
0.700	2.21	3.733	3.90	6.767	8.72	9.80	2.87
0.717	2.21	3.750	3.90	6.783	8.72	9.82	2.87

0.733	2.21	3.767	4.05	6.800	8.72	9.83	2.87
0.750	2.21	3.783	4.05	6.817	8.72	9.85	2.80
0.767	2.22	3.800	4.05	6.833	8.71	9.87	2.80
0.783	2.22	3.817	4.05	6.850	8.24	9.88	2.80
0.800	2.22	3.833	4.05	6.867	8.24	9.90	2.80
0.817	2.22	3.850	4.20	6.883	8.24	9.92	2.80
0.833	2.22	3.867	4.20	6.900	8.24	9.93	2.74
0.850	2.24	3.883	4.20	6.917	8.24	9.95	2.74
0.867	2.24	3.900	4.20	6.933	7.76	9.97	2.74
0.883	2.24	3.917	4.20	6.950	7.76	9.98	2.74
0.900	2.24	3.933	4.34	6.967	7.76	10.00	2.74
0.917	2.24	3.950	4.34	6.983	7.76	10.02	2.67
0.933	2.26	3.967	4.34	7.000	7.76	10.03	2.67
0.950	2.26	3.983	4.34	7.017	7.29	10.05	2.67
0.967	2.26	4.000	4.34	7.033	7.29	10.07	2.67
0.983	2.26	4.017	4.49	7.050	7.29	10.08	2.67
1.000	2.26	4.033	4.49	7.067	7.29	10.10	2.62
1.017	2.28	4.050	4.49	7.083	7.28	10.12	2.62
1.033	2.28	4.067	4.49	7.100	6.83	10.13	2.62
1.050	2.28	4.083	4.49	7.117	6.83	10.15	2.62
1.067	2.28	4.100	4.72	7.133	6.83	10.17	2.62
1.083	2.28	4.117	4.72	7.150	6.83	10.18	2.60
1.100	2.30	4.133	4.72	7.167	6.83	10.20	2.60
1.117	2.30	4.150	4.72	7.183	6.57	10.22	2.60
1.133	2.30	4.167	4.72	7.200	6.57	10.23	2.60
1.150	2.30	4.183	4.94	7.217	6.57	10.25	2.60
1.167	2.30	4.200	4.94	7.233	6.57	10.27	2.58
1.183	2.32	4.217	4.94	7.250	6.57	10.28	2.58
1.200	2.32	4.233	4.94	7.267	6.31	10.30	2.58
1.217	2.32	4.250	4.94	7.283	6.31	10.32	2.58
1.233	2.32	4.267	5.16	7.300	6.31	10.33	2.58
1.250	2.32	4.283	5.16	7.317	6.31	10.35	2.55
1.267	2.34	4.300	5.16	7.333	6.31	10.37	2.55
1.283	2.34	4.317	5.16	7.350	6.06	10.38	2.55
1.300	2.34	4.333	5.16	7.367	6.06	10.40	2.55
1.317	2.34	4.350	5.38	7.383	6.06	10.42	2.55
1.333	2.34	4.367	5.38	7.400	6.06	10.43	2.53
1.350	2.36	4.383	5.38	7.417	6.06	10.45	2.53
1.367	2.36	4.400	5.38	7.433	5.80	10.47	2.53
1.383	2.36	4.417	5.38	7.450	5.80	10.48	2.53
1.400	2.36	4.433	5.60	7.467	5.80	10.50	2.53
1.417	2.36	4.450	5.60	7.483	5.80	10.52	2.51
1.433	2.38	4.467	5.60	7.500	5.80	10.53	2.51
1.450	2.38	4.483	5.60	7.517	5.54	10.55	2.51
1.467	2.38	4.500	5.60	7.533	5.54	10.57	2.51
1.483	2.38	4.517	5.82	7.550	5.54	10.58	2.51
1.500	2.38	4.533	5.82	7.567	5.54	10.60	2.47
1.517	2.39	4.550	5.82	7.583	5.54	10.62	2.47
1.533	2.39	4.567	5.82	7.600	5.27	10.63	2.47
1.550	2.39	4.583	5.82	7.617	5.27	10.65	2.47

1.567	2.39	4.600	6.19	7.633	5.27	10.67	2.47
1.583	2.39	4.617	6.19	7.650	5.27	10.68	2.46
1.600	2.42	4.633	6.19	7.667	5.27	10.70	2.46
1.617	2.42	4.650	6.19	7.683	5.09	10.72	2.46
1.633	2.42	4.667	6.19	7.700	5.09	10.73	2.46
1.650	2.42	4.683	6.55	7.717	5.09	10.75	2.46
1.667	2.42	4.700	6.55	7.733	5.09	10.77	2.43
1.683	2.44	4.717	6.55	7.750	5.09	10.78	2.43
1.700	2.44	4.733	6.55	7.767	4.90	10.80	2.43
1.717	2.44	4.750	6.55	7.783	4.90	10.82	2.43
1.733	2.44	4.767	6.92	7.800	4.90	10.83	2.43
1.750	2.44	4.783	6.92	7.817	4.90	10.85	2.41
1.767	2.45	4.800	6.92	7.833	4.90	10.87	2.41
1.783	2.45	4.817	6.92	7.850	4.72	10.88	2.41
1.800	2.45	4.833	6.92	7.867	4.72	10.90	2.41
1.817	2.45	4.850	7.29	7.883	4.72	10.92	2.41
1.833	2.45	4.867	7.29	7.900	4.72	10.93	2.39
1.850	2.47	4.883	7.29	7.917	4.72	10.95	2.39
1.867	2.47	4.900	7.29	7.933	4.54	10.97	2.39
1.883	2.47	4.917	7.29	7.950	4.54	10.98	2.39
1.900	2.47	4.933	7.65	7.967	4.54	11.00	2.39
1.917	2.47	4.950	7.65	7.983	4.54	11.02	2.36
1.933	2.49	4.967	7.65	8.000	4.54	11.03	2.36
1.950	2.49	4.983	7.65	8.017	4.35	11.05	2.36
1.967	2.49	5.000	7.65	8.033	4.35	11.07	2.36
1.983	2.49	5.017	8.02	8.050	4.35	11.08	2.36
2.000	2.49	5.033	8.02	8.067	4.35	11.10	2.34
2.017	2.51	5.050	8.02	8.083	4.35	11.12	2.34
2.033	2.51	5.067	8.02	8.100	4.20	11.13	2.34
2.050	2.51	5.083	8.02	8.117	4.20	11.15	2.34
2.067	2.51	5.100	8.80	8.133	4.20	11.17	2.34
2.083	2.51	5.117	8.80	8.150	4.20	11.18	2.31
2.100	2.58	5.133	8.80	8.167	4.20	11.20	2.31
2.117	2.58	5.150	8.80	8.183	4.13	11.22	2.31
2.133	2.58	5.167	8.80	8.200	4.13	11.23	2.31
2.150	2.58	5.183	9.68	8.217	4.13	11.25	2.31
2.167	2.58	5.200	9.68	8.233	4.13	11.27	2.29
2.183	2.67	5.217	9.68	8.250	4.13	11.28	2.29
2.200	2.67	5.233	9.68	8.267	4.07	11.30	2.29
2.217	2.67	5.250	9.68	8.283	4.07	11.32	2.29
2.233	2.67	5.267	10.56	8.300	4.07	11.33	2.29
2.250	2.67	5.283	10.56	8.317	4.07	11.35	2.27
2.267	2.76	5.300	10.56	8.333	4.07	11.37	2.27
2.283	2.76	5.317	10.56	8.350	4.01	11.38	2.27
2.300	2.76	5.333	10.56	8.367	4.01	11.40	2.27
2.317	2.76	5.350	11.44	8.383	4.01	11.42	2.27
2.333	2.76	5.367	11.44	8.400	4.01	11.43	2.24
2.350	2.85	5.383	11.44	8.417	4.01	11.45	2.24
2.367	2.85	5.400	11.44	8.433	3.94	11.47	2.24
2.383	2.85	5.417	11.44	8.450	3.94	11.48	2.24

2.400	2.85	5.433	12.32	8.467	3.94	11.50	2.24
2.417	2.85	5.450	12.32	8.483	3.94	11.52	2.22
2.433	2.94	5.467	12.32	8.500	3.94	11.53	2.22
2.450	2.94	5.483	12.32	8.517	3.88	11.55	2.22
2.467	2.94	5.500	12.32	8.533	3.88	11.57	2.22
2.483	2.94	5.517	13.20	8.550	3.88	11.58	2.22
2.500	2.94	5.533	13.20	8.567	3.88	11.60	2.19
2.517	3.04	5.550	13.20	8.583	3.88	11.62	2.19
2.533	3.04	5.567	13.20	8.600	3.79	11.63	2.19
2.550	3.04	5.583	13.21	8.617	3.79	11.65	2.19
2.567	3.04	5.600	27.31	8.633	3.79	11.67	2.19
2.583	3.04	5.617	27.31	8.650	3.79	11.68	2.17
2.600	3.15	5.633	27.31	8.667	3.79	11.70	2.17
2.617	3.15	5.650	27.31	8.683	3.74	11.72	2.17
2.633	3.15	5.667	27.33	8.700	3.74	11.73	2.17
2.650	3.15	5.683	49.01	8.717	3.74	11.75	2.17
2.667	3.15	5.700	49.01	8.733	3.74	11.77	2.14
2.683	3.24	5.717	49.01	8.750	3.74	11.78	2.14
2.700	3.24	5.733	49.01	8.767	3.67	11.80	2.14
2.717	3.24	5.750	49.04	8.783	3.67	11.82	2.14
2.733	3.24	5.767	74.31	8.800	3.67	11.83	2.14
2.750	3.24	5.783	74.31	8.817	3.67	11.85	2.12
2.767	3.33	5.800	74.31	8.833	3.67	11.87	2.12
2.783	3.33	5.817	74.31	8.850	3.60	11.88	2.12
2.800	3.33	5.833	74.36	8.867	3.60	11.90	2.12
2.817	3.33	5.850	115.34	8.883	3.60	11.92	2.12
2.833	3.33	5.867	115.34	8.900	3.60	11.93	2.10
2.850	3.43	5.883	115.34	8.917	3.60	11.95	2.10
2.867	3.43	5.900	115.34	8.933	3.54	11.97	2.10
2.883	3.43	5.917	115.38	8.950	3.54	11.98	2.10
2.900	3.43	5.933	147.41	8.967	3.54	12.00	2.10
2.917	3.43	5.950	147.41	8.983	3.54	12.02	2.07
2.933	3.52	5.967	147.41	9.000	3.54	12.03	2.07
2.950	3.52	5.983	147.41	9.017	3.47	12.05	2.07
2.967	3.52	6.000	147.36	9.033	3.47	12.07	2.07
2.983	3.52	6.017	108.99	9.050	3.47	12.08	2.07
3.000	3.52	6.033	108.99	9.067	3.47		
3.017	3.61	6.050	108.99	9.083	3.47		
3.033	3.61	6.067	108.99	9.100	3.40		

Unit Hyd Qpeak (cms)= 0.275

PEAK FLOW (cms)= 0.247 (i)
TIME TO PEAK (hrs)= 6.167
RUNOFF VOLUME (mm)= 56.717
TOTAL RAINFALL (mm)= 96.339
RUNOFF COEFFICIENT = 0.589

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

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|WATER QUALITY RESULTS |
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               TSS                                    (kg)=          22.05
               TP                                      (g)=         163.34
               Outflow Volume                         (m3)=         816.72
               TSS Average Outflow Concentration   (mg/l)=          27.00
               TP  Average Outflow Concentration   (mg/l)=           0.20
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0005)|   Area    (ha)=   0.66
|ID= 1 DT= 1.0 min |   Total Imp(%)=  32.00   Dir. Conn.(%)=  26.00
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                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.21         0.45
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       1.00         1.00
     Length            (m)=      66.18       100.00
     Mannings n           =      0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   1.0 MIN. TIME STEP.


                          ---- TRANSFORMED HYETOGRAPH ----
              TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
             0.017    0.00 | 3.050    3.61 | 6.083  108.86 |  9.12    3.40
             0.033    0.00 | 3.067    3.61 | 6.100   21.72 |  9.13    3.40
             0.050    0.00 | 3.083    3.61 | 6.117   21.72 |  9.15    3.40
             0.067    0.00 | 3.100    3.67 | 6.133   21.72 |  9.17    3.40
             0.083    0.00 | 3.117    3.67 | 6.150   21.72 |  9.18    3.33
             0.100    2.07 | 3.133    3.67 | 6.167   21.72 |  9.20    3.33
             0.117    2.07 | 3.150    3.67 | 6.183   19.63 |  9.22    3.33
             0.133    2.07 | 3.167    3.67 | 6.200   19.63 |  9.23    3.33
             0.150    2.07 | 3.183    3.67 | 6.217   19.63 |  9.25    3.33
             0.167    2.07 | 3.200    3.67 | 6.233   19.63 |  9.27    3.27
             0.183    2.09 | 3.217    3.67 | 6.250   19.63 |  9.28    3.27
             0.200    2.09 | 3.233    3.67 | 6.267   17.54 |  9.30    3.27
             0.217    2.09 | 3.250    3.67 | 6.283   17.54 |  9.32    3.27
             0.233    2.09 | 3.267    3.67 | 6.300   17.54 |  9.33    3.27
             0.250    2.09 | 3.283    3.67 | 6.317   17.54 |  9.35    3.21
             0.267    2.11 | 3.300    3.67 | 6.333   17.54 |  9.37    3.21
             0.283    2.11 | 3.317    3.67 | 6.350   15.45 |  9.38    3.21
             0.300    2.11 | 3.333    3.67 | 6.367   15.45 |  9.40    3.21
             0.317    2.11 | 3.350    3.67 | 6.383   15.45 |  9.42    3.21
             0.333    2.11 | 3.367    3.67 | 6.400   15.45 |  9.43    3.14
             0.350    2.13 | 3.383    3.67 | 6.417   15.45 |  9.45    3.14
             0.367    2.13 | 3.400    3.67 | 6.433   13.36 |  9.47    3.14
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0.383	2.13	3.417	3.67	6.450	13.36	9.48	3.14
0.400	2.13	3.433	3.67	6.467	13.36	9.50	3.14
0.417	2.13	3.450	3.67	6.483	13.36	9.52	3.08
0.433	2.15	3.467	3.67	6.500	13.36	9.53	3.08
0.450	2.15	3.483	3.67	6.517	11.27	9.55	3.08
0.467	2.15	3.500	3.67	6.533	11.27	9.57	3.08
0.483	2.15	3.517	3.67	6.550	11.27	9.58	3.08
0.500	2.15	3.533	3.67	6.567	11.27	9.60	2.99
0.517	2.17	3.550	3.67	6.583	11.27	9.62	2.99
0.533	2.17	3.567	3.67	6.600	9.67	9.63	2.99
0.550	2.17	3.583	3.67	6.617	9.67	9.65	2.99
0.567	2.17	3.600	3.76	6.633	9.67	9.67	2.99
0.583	2.17	3.617	3.76	6.650	9.67	9.68	2.93
0.600	2.19	3.633	3.76	6.667	9.67	9.70	2.93
0.617	2.19	3.650	3.76	6.683	9.19	9.72	2.93
0.633	2.19	3.667	3.76	6.700	9.19	9.73	2.93
0.650	2.19	3.683	3.90	6.717	9.19	9.75	2.93
0.667	2.19	3.700	3.90	6.733	9.19	9.77	2.87
0.683	2.21	3.717	3.90	6.750	9.19	9.78	2.87
0.700	2.21	3.733	3.90	6.767	8.72	9.80	2.87
0.717	2.21	3.750	3.90	6.783	8.72	9.82	2.87
0.733	2.21	3.767	4.05	6.800	8.72	9.83	2.87
0.750	2.21	3.783	4.05	6.817	8.72	9.85	2.80
0.767	2.22	3.800	4.05	6.833	8.71	9.87	2.80
0.783	2.22	3.817	4.05	6.850	8.24	9.88	2.80
0.800	2.22	3.833	4.05	6.867	8.24	9.90	2.80
0.817	2.22	3.850	4.20	6.883	8.24	9.92	2.80
0.833	2.22	3.867	4.20	6.900	8.24	9.93	2.74
0.850	2.24	3.883	4.20	6.917	8.24	9.95	2.74
0.867	2.24	3.900	4.20	6.933	7.76	9.97	2.74
0.883	2.24	3.917	4.20	6.950	7.76	9.98	2.74
0.900	2.24	3.933	4.34	6.967	7.76	10.00	2.74
0.917	2.24	3.950	4.34	6.983	7.76	10.02	2.67
0.933	2.26	3.967	4.34	7.000	7.76	10.03	2.67
0.950	2.26	3.983	4.34	7.017	7.29	10.05	2.67
0.967	2.26	4.000	4.34	7.033	7.29	10.07	2.67
0.983	2.26	4.017	4.49	7.050	7.29	10.08	2.67
1.000	2.26	4.033	4.49	7.067	7.29	10.10	2.62
1.017	2.28	4.050	4.49	7.083	7.28	10.12	2.62
1.033	2.28	4.067	4.49	7.100	6.83	10.13	2.62
1.050	2.28	4.083	4.49	7.117	6.83	10.15	2.62
1.067	2.28	4.100	4.72	7.133	6.83	10.17	2.62
1.083	2.28	4.117	4.72	7.150	6.83	10.18	2.60
1.100	2.30	4.133	4.72	7.167	6.83	10.20	2.60
1.117	2.30	4.150	4.72	7.183	6.57	10.22	2.60
1.133	2.30	4.167	4.72	7.200	6.57	10.23	2.60
1.150	2.30	4.183	4.94	7.217	6.57	10.25	2.60
1.167	2.30	4.200	4.94	7.233	6.57	10.27	2.58
1.183	2.32	4.217	4.94	7.250	6.57	10.28	2.58
1.200	2.32	4.233	4.94	7.267	6.31	10.30	2.58

1.217	2.32	4.250	4.94	7.283	6.31	10.32	2.58
1.233	2.32	4.267	5.16	7.300	6.31	10.33	2.58
1.250	2.32	4.283	5.16	7.317	6.31	10.35	2.55
1.267	2.34	4.300	5.16	7.333	6.31	10.37	2.55
1.283	2.34	4.317	5.16	7.350	6.06	10.38	2.55
1.300	2.34	4.333	5.16	7.367	6.06	10.40	2.55
1.317	2.34	4.350	5.38	7.383	6.06	10.42	2.55
1.333	2.34	4.367	5.38	7.400	6.06	10.43	2.53
1.350	2.36	4.383	5.38	7.417	6.06	10.45	2.53
1.367	2.36	4.400	5.38	7.433	5.80	10.47	2.53
1.383	2.36	4.417	5.38	7.450	5.80	10.48	2.53
1.400	2.36	4.433	5.60	7.467	5.80	10.50	2.53
1.417	2.36	4.450	5.60	7.483	5.80	10.52	2.51
1.433	2.38	4.467	5.60	7.500	5.80	10.53	2.51
1.450	2.38	4.483	5.60	7.517	5.54	10.55	2.51
1.467	2.38	4.500	5.60	7.533	5.54	10.57	2.51
1.483	2.38	4.517	5.82	7.550	5.54	10.58	2.51
1.500	2.38	4.533	5.82	7.567	5.54	10.60	2.47
1.517	2.39	4.550	5.82	7.583	5.54	10.62	2.47
1.533	2.39	4.567	5.82	7.600	5.27	10.63	2.47
1.550	2.39	4.583	5.82	7.617	5.27	10.65	2.47
1.567	2.39	4.600	6.19	7.633	5.27	10.67	2.47
1.583	2.39	4.617	6.19	7.650	5.27	10.68	2.46
1.600	2.42	4.633	6.19	7.667	5.27	10.70	2.46
1.617	2.42	4.650	6.19	7.683	5.09	10.72	2.46
1.633	2.42	4.667	6.19	7.700	5.09	10.73	2.46
1.650	2.42	4.683	6.55	7.717	5.09	10.75	2.46
1.667	2.42	4.700	6.55	7.733	5.09	10.77	2.43
1.683	2.44	4.717	6.55	7.750	5.09	10.78	2.43
1.700	2.44	4.733	6.55	7.767	4.90	10.80	2.43
1.717	2.44	4.750	6.55	7.783	4.90	10.82	2.43
1.733	2.44	4.767	6.92	7.800	4.90	10.83	2.43
1.750	2.44	4.783	6.92	7.817	4.90	10.85	2.41
1.767	2.45	4.800	6.92	7.833	4.90	10.87	2.41
1.783	2.45	4.817	6.92	7.850	4.72	10.88	2.41
1.800	2.45	4.833	6.92	7.867	4.72	10.90	2.41
1.817	2.45	4.850	7.29	7.883	4.72	10.92	2.41
1.833	2.45	4.867	7.29	7.900	4.72	10.93	2.39
1.850	2.47	4.883	7.29	7.917	4.72	10.95	2.39
1.867	2.47	4.900	7.29	7.933	4.54	10.97	2.39
1.883	2.47	4.917	7.29	7.950	4.54	10.98	2.39
1.900	2.47	4.933	7.65	7.967	4.54	11.00	2.39
1.917	2.47	4.950	7.65	7.983	4.54	11.02	2.36
1.933	2.49	4.967	7.65	8.000	4.54	11.03	2.36
1.950	2.49	4.983	7.65	8.017	4.35	11.05	2.36
1.967	2.49	5.000	7.65	8.033	4.35	11.07	2.36
1.983	2.49	5.017	8.02	8.050	4.35	11.08	2.36
2.000	2.49	5.033	8.02	8.067	4.35	11.10	2.34
2.017	2.51	5.050	8.02	8.083	4.35	11.12	2.34
2.033	2.51	5.067	8.02	8.100	4.20	11.13	2.34

2.050	2.51	5.083	8.02	8.117	4.20	11.15	2.34
2.067	2.51	5.100	8.80	8.133	4.20	11.17	2.34
2.083	2.51	5.117	8.80	8.150	4.20	11.18	2.31
2.100	2.58	5.133	8.80	8.167	4.20	11.20	2.31
2.117	2.58	5.150	8.80	8.183	4.13	11.22	2.31
2.133	2.58	5.167	8.80	8.200	4.13	11.23	2.31
2.150	2.58	5.183	9.68	8.217	4.13	11.25	2.31
2.167	2.58	5.200	9.68	8.233	4.13	11.27	2.29
2.183	2.67	5.217	9.68	8.250	4.13	11.28	2.29
2.200	2.67	5.233	9.68	8.267	4.07	11.30	2.29
2.217	2.67	5.250	9.68	8.283	4.07	11.32	2.29
2.233	2.67	5.267	10.56	8.300	4.07	11.33	2.29
2.250	2.67	5.283	10.56	8.317	4.07	11.35	2.27
2.267	2.76	5.300	10.56	8.333	4.07	11.37	2.27
2.283	2.76	5.317	10.56	8.350	4.01	11.38	2.27
2.300	2.76	5.333	10.56	8.367	4.01	11.40	2.27
2.317	2.76	5.350	11.44	8.383	4.01	11.42	2.27
2.333	2.76	5.367	11.44	8.400	4.01	11.43	2.24
2.350	2.85	5.383	11.44	8.417	4.01	11.45	2.24
2.367	2.85	5.400	11.44	8.433	3.94	11.47	2.24
2.383	2.85	5.417	11.44	8.450	3.94	11.48	2.24
2.400	2.85	5.433	12.32	8.467	3.94	11.50	2.24
2.417	2.85	5.450	12.32	8.483	3.94	11.52	2.22
2.433	2.94	5.467	12.32	8.500	3.94	11.53	2.22
2.450	2.94	5.483	12.32	8.517	3.88	11.55	2.22
2.467	2.94	5.500	12.32	8.533	3.88	11.57	2.22
2.483	2.94	5.517	13.20	8.550	3.88	11.58	2.22
2.500	2.94	5.533	13.20	8.567	3.88	11.60	2.19
2.517	3.04	5.550	13.20	8.583	3.88	11.62	2.19
2.533	3.04	5.567	13.20	8.600	3.79	11.63	2.19
2.550	3.04	5.583	13.21	8.617	3.79	11.65	2.19
2.567	3.04	5.600	27.31	8.633	3.79	11.67	2.19
2.583	3.04	5.617	27.31	8.650	3.79	11.68	2.17
2.600	3.15	5.633	27.31	8.667	3.79	11.70	2.17
2.617	3.15	5.650	27.31	8.683	3.74	11.72	2.17
2.633	3.15	5.667	27.33	8.700	3.74	11.73	2.17
2.650	3.15	5.683	49.01	8.717	3.74	11.75	2.17
2.667	3.15	5.700	49.01	8.733	3.74	11.77	2.14
2.683	3.24	5.717	49.01	8.750	3.74	11.78	2.14
2.700	3.24	5.733	49.01	8.767	3.67	11.80	2.14
2.717	3.24	5.750	49.04	8.783	3.67	11.82	2.14
2.733	3.24	5.767	74.31	8.800	3.67	11.83	2.14
2.750	3.24	5.783	74.31	8.817	3.67	11.85	2.12
2.767	3.33	5.800	74.31	8.833	3.67	11.87	2.12
2.783	3.33	5.817	74.31	8.850	3.60	11.88	2.12
2.800	3.33	5.833	74.36	8.867	3.60	11.90	2.12
2.817	3.33	5.850	115.34	8.883	3.60	11.92	2.12
2.833	3.33	5.867	115.34	8.900	3.60	11.93	2.10
2.850	3.43	5.883	115.34	8.917	3.60	11.95	2.10
2.867	3.43	5.900	115.34	8.933	3.54	11.97	2.10

2.883	3.43	5.917	115.38	8.950	3.54	11.98	2.10
2.900	3.43	5.933	147.41	8.967	3.54	12.00	2.10
2.917	3.43	5.950	147.41	8.983	3.54	12.02	2.07
2.933	3.52	5.967	147.41	9.000	3.54	12.03	2.07
2.950	3.52	5.983	147.41	9.017	3.47	12.05	2.07
2.967	3.52	6.000	147.36	9.033	3.47	12.07	2.07
2.983	3.52	6.017	108.99	9.050	3.47	12.08	2.07
3.000	3.52	6.033	108.99	9.067	3.47		
3.017	3.61	6.050	108.99	9.083	3.47		
3.033	3.61	6.067	108.99	9.100	3.40		

Max.Eff.Inten.(mm/hr)=	147.40	95.74	
over (min)	5.00	18.00	
Storage Coeff. (min)=	1.71 (ii)	17.03 (ii)	
Unit Hyd. Tpeak (min)=	5.00	18.00	
Unit Hyd. peak (cms)=	0.40	0.07	
			TOTALS
PEAK FLOW (cms)=	0.07	0.07	0.109 (iii)
TIME TO PEAK (hrs)=	6.02	6.25	6.07
RUNOFF VOLUME (mm)=	95.34	61.23	70.09
TOTAL RAINFALL (mm)=	96.34	96.34	96.34
RUNOFF COEFFICIENT =	0.99	0.64	0.73

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 81.7 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

|WATER QUALITY RESULTS |

TSS	(kg)=	36.50
TP	(g)=	120.15
Outflow Volume	(m3)=	460.51
TSS Average Outflow Concentration	(mg/l)=	79.27
TP Average Outflow Concentration	(mg/l)=	0.26

CALIB	
STANDHYD (0020)	Area (ha)= 0.40
ID= 1 DT= 1.0 min	Total Imp(%)= 41.00 Dir. Conn.(%)= 41.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.16	0.23
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	1.00	1.00
Length	(m)=	51.45	40.00

Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.050	3.61	6.083	108.86	9.12	3.40
0.033	0.00	3.067	3.61	6.100	21.72	9.13	3.40
0.050	0.00	3.083	3.61	6.117	21.72	9.15	3.40
0.067	0.00	3.100	3.67	6.133	21.72	9.17	3.40
0.083	0.00	3.117	3.67	6.150	21.72	9.18	3.33
0.100	2.07	3.133	3.67	6.167	21.72	9.20	3.33
0.117	2.07	3.150	3.67	6.183	19.63	9.22	3.33
0.133	2.07	3.167	3.67	6.200	19.63	9.23	3.33
0.150	2.07	3.183	3.67	6.217	19.63	9.25	3.33
0.167	2.07	3.200	3.67	6.233	19.63	9.27	3.27
0.183	2.09	3.217	3.67	6.250	19.63	9.28	3.27
0.200	2.09	3.233	3.67	6.267	17.54	9.30	3.27
0.217	2.09	3.250	3.67	6.283	17.54	9.32	3.27
0.233	2.09	3.267	3.67	6.300	17.54	9.33	3.27
0.250	2.09	3.283	3.67	6.317	17.54	9.35	3.21
0.267	2.11	3.300	3.67	6.333	17.54	9.37	3.21
0.283	2.11	3.317	3.67	6.350	15.45	9.38	3.21
0.300	2.11	3.333	3.67	6.367	15.45	9.40	3.21
0.317	2.11	3.350	3.67	6.383	15.45	9.42	3.21
0.333	2.11	3.367	3.67	6.400	15.45	9.43	3.14
0.350	2.13	3.383	3.67	6.417	15.45	9.45	3.14
0.367	2.13	3.400	3.67	6.433	13.36	9.47	3.14
0.383	2.13	3.417	3.67	6.450	13.36	9.48	3.14
0.400	2.13	3.433	3.67	6.467	13.36	9.50	3.14
0.417	2.13	3.450	3.67	6.483	13.36	9.52	3.08
0.433	2.15	3.467	3.67	6.500	13.36	9.53	3.08
0.450	2.15	3.483	3.67	6.517	11.27	9.55	3.08
0.467	2.15	3.500	3.67	6.533	11.27	9.57	3.08
0.483	2.15	3.517	3.67	6.550	11.27	9.58	3.08
0.500	2.15	3.533	3.67	6.567	11.27	9.60	2.99
0.517	2.17	3.550	3.67	6.583	11.27	9.62	2.99
0.533	2.17	3.567	3.67	6.600	9.67	9.63	2.99
0.550	2.17	3.583	3.67	6.617	9.67	9.65	2.99
0.567	2.17	3.600	3.76	6.633	9.67	9.67	2.99
0.583	2.17	3.617	3.76	6.650	9.67	9.68	2.93
0.600	2.19	3.633	3.76	6.667	9.67	9.70	2.93
0.617	2.19	3.650	3.76	6.683	9.19	9.72	2.93
0.633	2.19	3.667	3.76	6.700	9.19	9.73	2.93
0.650	2.19	3.683	3.90	6.717	9.19	9.75	2.93
0.667	2.19	3.700	3.90	6.733	9.19	9.77	2.87
0.683	2.21	3.717	3.90	6.750	9.19	9.78	2.87
0.700	2.21	3.733	3.90	6.767	8.72	9.80	2.87

0.717	2.21	3.750	3.90	6.783	8.72	9.82	2.87
0.733	2.21	3.767	4.05	6.800	8.72	9.83	2.87
0.750	2.21	3.783	4.05	6.817	8.72	9.85	2.80
0.767	2.22	3.800	4.05	6.833	8.71	9.87	2.80
0.783	2.22	3.817	4.05	6.850	8.24	9.88	2.80
0.800	2.22	3.833	4.05	6.867	8.24	9.90	2.80
0.817	2.22	3.850	4.20	6.883	8.24	9.92	2.80
0.833	2.22	3.867	4.20	6.900	8.24	9.93	2.74
0.850	2.24	3.883	4.20	6.917	8.24	9.95	2.74
0.867	2.24	3.900	4.20	6.933	7.76	9.97	2.74
0.883	2.24	3.917	4.20	6.950	7.76	9.98	2.74
0.900	2.24	3.933	4.34	6.967	7.76	10.00	2.74
0.917	2.24	3.950	4.34	6.983	7.76	10.02	2.67
0.933	2.26	3.967	4.34	7.000	7.76	10.03	2.67
0.950	2.26	3.983	4.34	7.017	7.29	10.05	2.67
0.967	2.26	4.000	4.34	7.033	7.29	10.07	2.67
0.983	2.26	4.017	4.49	7.050	7.29	10.08	2.67
1.000	2.26	4.033	4.49	7.067	7.29	10.10	2.62
1.017	2.28	4.050	4.49	7.083	7.28	10.12	2.62
1.033	2.28	4.067	4.49	7.100	6.83	10.13	2.62
1.050	2.28	4.083	4.49	7.117	6.83	10.15	2.62
1.067	2.28	4.100	4.72	7.133	6.83	10.17	2.62
1.083	2.28	4.117	4.72	7.150	6.83	10.18	2.60
1.100	2.30	4.133	4.72	7.167	6.83	10.20	2.60
1.117	2.30	4.150	4.72	7.183	6.57	10.22	2.60
1.133	2.30	4.167	4.72	7.200	6.57	10.23	2.60
1.150	2.30	4.183	4.94	7.217	6.57	10.25	2.60
1.167	2.30	4.200	4.94	7.233	6.57	10.27	2.58
1.183	2.32	4.217	4.94	7.250	6.57	10.28	2.58
1.200	2.32	4.233	4.94	7.267	6.31	10.30	2.58
1.217	2.32	4.250	4.94	7.283	6.31	10.32	2.58
1.233	2.32	4.267	5.16	7.300	6.31	10.33	2.58
1.250	2.32	4.283	5.16	7.317	6.31	10.35	2.55
1.267	2.34	4.300	5.16	7.333	6.31	10.37	2.55
1.283	2.34	4.317	5.16	7.350	6.06	10.38	2.55
1.300	2.34	4.333	5.16	7.367	6.06	10.40	2.55
1.317	2.34	4.350	5.38	7.383	6.06	10.42	2.55
1.333	2.34	4.367	5.38	7.400	6.06	10.43	2.53
1.350	2.36	4.383	5.38	7.417	6.06	10.45	2.53
1.367	2.36	4.400	5.38	7.433	5.80	10.47	2.53
1.383	2.36	4.417	5.38	7.450	5.80	10.48	2.53
1.400	2.36	4.433	5.60	7.467	5.80	10.50	2.53
1.417	2.36	4.450	5.60	7.483	5.80	10.52	2.51
1.433	2.38	4.467	5.60	7.500	5.80	10.53	2.51
1.450	2.38	4.483	5.60	7.517	5.54	10.55	2.51
1.467	2.38	4.500	5.60	7.533	5.54	10.57	2.51
1.483	2.38	4.517	5.82	7.550	5.54	10.58	2.51
1.500	2.38	4.533	5.82	7.567	5.54	10.60	2.47
1.517	2.39	4.550	5.82	7.583	5.54	10.62	2.47
1.533	2.39	4.567	5.82	7.600	5.27	10.63	2.47

1.550	2.39	4.583	5.82	7.617	5.27	10.65	2.47
1.567	2.39	4.600	6.19	7.633	5.27	10.67	2.47
1.583	2.39	4.617	6.19	7.650	5.27	10.68	2.46
1.600	2.42	4.633	6.19	7.667	5.27	10.70	2.46
1.617	2.42	4.650	6.19	7.683	5.09	10.72	2.46
1.633	2.42	4.667	6.19	7.700	5.09	10.73	2.46
1.650	2.42	4.683	6.55	7.717	5.09	10.75	2.46
1.667	2.42	4.700	6.55	7.733	5.09	10.77	2.43
1.683	2.44	4.717	6.55	7.750	5.09	10.78	2.43
1.700	2.44	4.733	6.55	7.767	4.90	10.80	2.43
1.717	2.44	4.750	6.55	7.783	4.90	10.82	2.43
1.733	2.44	4.767	6.92	7.800	4.90	10.83	2.43
1.750	2.44	4.783	6.92	7.817	4.90	10.85	2.41
1.767	2.45	4.800	6.92	7.833	4.90	10.87	2.41
1.783	2.45	4.817	6.92	7.850	4.72	10.88	2.41
1.800	2.45	4.833	6.92	7.867	4.72	10.90	2.41
1.817	2.45	4.850	7.29	7.883	4.72	10.92	2.41
1.833	2.45	4.867	7.29	7.900	4.72	10.93	2.39
1.850	2.47	4.883	7.29	7.917	4.72	10.95	2.39
1.867	2.47	4.900	7.29	7.933	4.54	10.97	2.39
1.883	2.47	4.917	7.29	7.950	4.54	10.98	2.39
1.900	2.47	4.933	7.65	7.967	4.54	11.00	2.39
1.917	2.47	4.950	7.65	7.983	4.54	11.02	2.36
1.933	2.49	4.967	7.65	8.000	4.54	11.03	2.36
1.950	2.49	4.983	7.65	8.017	4.35	11.05	2.36
1.967	2.49	5.000	7.65	8.033	4.35	11.07	2.36
1.983	2.49	5.017	8.02	8.050	4.35	11.08	2.36
2.000	2.49	5.033	8.02	8.067	4.35	11.10	2.34
2.017	2.51	5.050	8.02	8.083	4.35	11.12	2.34
2.033	2.51	5.067	8.02	8.100	4.20	11.13	2.34
2.050	2.51	5.083	8.02	8.117	4.20	11.15	2.34
2.067	2.51	5.100	8.80	8.133	4.20	11.17	2.34
2.083	2.51	5.117	8.80	8.150	4.20	11.18	2.31
2.100	2.58	5.133	8.80	8.167	4.20	11.20	2.31
2.117	2.58	5.150	8.80	8.183	4.13	11.22	2.31
2.133	2.58	5.167	8.80	8.200	4.13	11.23	2.31
2.150	2.58	5.183	9.68	8.217	4.13	11.25	2.31
2.167	2.58	5.200	9.68	8.233	4.13	11.27	2.29
2.183	2.67	5.217	9.68	8.250	4.13	11.28	2.29
2.200	2.67	5.233	9.68	8.267	4.07	11.30	2.29
2.217	2.67	5.250	9.68	8.283	4.07	11.32	2.29
2.233	2.67	5.267	10.56	8.300	4.07	11.33	2.29
2.250	2.67	5.283	10.56	8.317	4.07	11.35	2.27
2.267	2.76	5.300	10.56	8.333	4.07	11.37	2.27
2.283	2.76	5.317	10.56	8.350	4.01	11.38	2.27
2.300	2.76	5.333	10.56	8.367	4.01	11.40	2.27
2.317	2.76	5.350	11.44	8.383	4.01	11.42	2.27
2.333	2.76	5.367	11.44	8.400	4.01	11.43	2.24
2.350	2.85	5.383	11.44	8.417	4.01	11.45	2.24
2.367	2.85	5.400	11.44	8.433	3.94	11.47	2.24

2.383	2.85	5.417	11.44	8.450	3.94	11.48	2.24
2.400	2.85	5.433	12.32	8.467	3.94	11.50	2.24
2.417	2.85	5.450	12.32	8.483	3.94	11.52	2.22
2.433	2.94	5.467	12.32	8.500	3.94	11.53	2.22
2.450	2.94	5.483	12.32	8.517	3.88	11.55	2.22
2.467	2.94	5.500	12.32	8.533	3.88	11.57	2.22
2.483	2.94	5.517	13.20	8.550	3.88	11.58	2.22
2.500	2.94	5.533	13.20	8.567	3.88	11.60	2.19
2.517	3.04	5.550	13.20	8.583	3.88	11.62	2.19
2.533	3.04	5.567	13.20	8.600	3.79	11.63	2.19
2.550	3.04	5.583	13.21	8.617	3.79	11.65	2.19
2.567	3.04	5.600	27.31	8.633	3.79	11.67	2.19
2.583	3.04	5.617	27.31	8.650	3.79	11.68	2.17
2.600	3.15	5.633	27.31	8.667	3.79	11.70	2.17
2.617	3.15	5.650	27.31	8.683	3.74	11.72	2.17
2.633	3.15	5.667	27.33	8.700	3.74	11.73	2.17
2.650	3.15	5.683	49.01	8.717	3.74	11.75	2.17
2.667	3.15	5.700	49.01	8.733	3.74	11.77	2.14
2.683	3.24	5.717	49.01	8.750	3.74	11.78	2.14
2.700	3.24	5.733	49.01	8.767	3.67	11.80	2.14
2.717	3.24	5.750	49.04	8.783	3.67	11.82	2.14
2.733	3.24	5.767	74.31	8.800	3.67	11.83	2.14
2.750	3.24	5.783	74.31	8.817	3.67	11.85	2.12
2.767	3.33	5.800	74.31	8.833	3.67	11.87	2.12
2.783	3.33	5.817	74.31	8.850	3.60	11.88	2.12
2.800	3.33	5.833	74.36	8.867	3.60	11.90	2.12
2.817	3.33	5.850	115.34	8.883	3.60	11.92	2.12
2.833	3.33	5.867	115.34	8.900	3.60	11.93	2.10
2.850	3.43	5.883	115.34	8.917	3.60	11.95	2.10
2.867	3.43	5.900	115.34	8.933	3.54	11.97	2.10
2.883	3.43	5.917	115.38	8.950	3.54	11.98	2.10
2.900	3.43	5.933	147.41	8.967	3.54	12.00	2.10
2.917	3.43	5.950	147.41	8.983	3.54	12.02	2.07
2.933	3.52	5.967	147.41	9.000	3.54	12.03	2.07
2.950	3.52	5.983	147.41	9.017	3.47	12.05	2.07
2.967	3.52	6.000	147.36	9.033	3.47	12.07	2.07
2.983	3.52	6.017	108.99	9.050	3.47	12.08	2.07
3.000	3.52	6.033	108.99	9.067	3.47		
3.017	3.61	6.050	108.99	9.083	3.47		
3.033	3.61	6.067	108.99	9.100	3.40		

Max.Eff.Inten.(mm/hr)=	147.40	99.36	
over (min)	5.00	11.00	
Storage Coeff. (min)=	1.47 (ii)	10.07 (ii)	
Unit Hyd. Tpeak (min)=	5.00	11.00	
Unit Hyd. peak (cms)=	0.42	0.11	
			TOTALS
PEAK FLOW (cms)=	0.06	0.05	0.100 (iii)
TIME TO PEAK (hrs)=	6.02	6.15	6.05
RUNOFF VOLUME (mm)=	95.34	62.64	76.03

TOTAL RAINFALL (mm)=	96.34	96.34	96.34
RUNOFF COEFFICIENT =	0.99	0.65	0.79

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 83.9 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

WATER QUALITY RESULTS

TSS	(kg)=	23.69
TP	(g)=	76.58
Outflow Volume	(m3)=	301.86
TSS Average Outflow Concentration	(mg/l)=	78.47
TP Average Outflow Concentration	(mg/l)=	0.25

CALIB
STANDHYD (0027)
ID= 1 DT= 1.0 min

Area (ha)= 0.58
Total Imp(%)= 51.00 Dir. Conn.(%)= 17.30

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.30	0.28
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	1.00	1.00
Length	(m)=	62.13	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.050	3.61	6.083	108.86	9.12	3.40
0.033	0.00	3.067	3.61	6.100	21.72	9.13	3.40
0.050	0.00	3.083	3.61	6.117	21.72	9.15	3.40
0.067	0.00	3.100	3.67	6.133	21.72	9.17	3.40
0.083	0.00	3.117	3.67	6.150	21.72	9.18	3.33
0.100	2.07	3.133	3.67	6.167	21.72	9.20	3.33
0.117	2.07	3.150	3.67	6.183	19.63	9.22	3.33
0.133	2.07	3.167	3.67	6.200	19.63	9.23	3.33
0.150	2.07	3.183	3.67	6.217	19.63	9.25	3.33
0.167	2.07	3.200	3.67	6.233	19.63	9.27	3.27
0.183	2.09	3.217	3.67	6.250	19.63	9.28	3.27
0.200	2.09	3.233	3.67	6.267	17.54	9.30	3.27

0.217	2.09	3.250	3.67	6.283	17.54	9.32	3.27
0.233	2.09	3.267	3.67	6.300	17.54	9.33	3.27
0.250	2.09	3.283	3.67	6.317	17.54	9.35	3.21
0.267	2.11	3.300	3.67	6.333	17.54	9.37	3.21
0.283	2.11	3.317	3.67	6.350	15.45	9.38	3.21
0.300	2.11	3.333	3.67	6.367	15.45	9.40	3.21
0.317	2.11	3.350	3.67	6.383	15.45	9.42	3.21
0.333	2.11	3.367	3.67	6.400	15.45	9.43	3.14
0.350	2.13	3.383	3.67	6.417	15.45	9.45	3.14
0.367	2.13	3.400	3.67	6.433	13.36	9.47	3.14
0.383	2.13	3.417	3.67	6.450	13.36	9.48	3.14
0.400	2.13	3.433	3.67	6.467	13.36	9.50	3.14
0.417	2.13	3.450	3.67	6.483	13.36	9.52	3.08
0.433	2.15	3.467	3.67	6.500	13.36	9.53	3.08
0.450	2.15	3.483	3.67	6.517	11.27	9.55	3.08
0.467	2.15	3.500	3.67	6.533	11.27	9.57	3.08
0.483	2.15	3.517	3.67	6.550	11.27	9.58	3.08
0.500	2.15	3.533	3.67	6.567	11.27	9.60	2.99
0.517	2.17	3.550	3.67	6.583	11.27	9.62	2.99
0.533	2.17	3.567	3.67	6.600	9.67	9.63	2.99
0.550	2.17	3.583	3.67	6.617	9.67	9.65	2.99
0.567	2.17	3.600	3.76	6.633	9.67	9.67	2.99
0.583	2.17	3.617	3.76	6.650	9.67	9.68	2.93
0.600	2.19	3.633	3.76	6.667	9.67	9.70	2.93
0.617	2.19	3.650	3.76	6.683	9.19	9.72	2.93
0.633	2.19	3.667	3.76	6.700	9.19	9.73	2.93
0.650	2.19	3.683	3.90	6.717	9.19	9.75	2.93
0.667	2.19	3.700	3.90	6.733	9.19	9.77	2.87
0.683	2.21	3.717	3.90	6.750	9.19	9.78	2.87
0.700	2.21	3.733	3.90	6.767	8.72	9.80	2.87
0.717	2.21	3.750	3.90	6.783	8.72	9.82	2.87
0.733	2.21	3.767	4.05	6.800	8.72	9.83	2.87
0.750	2.21	3.783	4.05	6.817	8.72	9.85	2.80
0.767	2.22	3.800	4.05	6.833	8.71	9.87	2.80
0.783	2.22	3.817	4.05	6.850	8.24	9.88	2.80
0.800	2.22	3.833	4.05	6.867	8.24	9.90	2.80
0.817	2.22	3.850	4.20	6.883	8.24	9.92	2.80
0.833	2.22	3.867	4.20	6.900	8.24	9.93	2.74
0.850	2.24	3.883	4.20	6.917	8.24	9.95	2.74
0.867	2.24	3.900	4.20	6.933	7.76	9.97	2.74
0.883	2.24	3.917	4.20	6.950	7.76	9.98	2.74
0.900	2.24	3.933	4.34	6.967	7.76	10.00	2.74
0.917	2.24	3.950	4.34	6.983	7.76	10.02	2.67
0.933	2.26	3.967	4.34	7.000	7.76	10.03	2.67
0.950	2.26	3.983	4.34	7.017	7.29	10.05	2.67
0.967	2.26	4.000	4.34	7.033	7.29	10.07	2.67
0.983	2.26	4.017	4.49	7.050	7.29	10.08	2.67
1.000	2.26	4.033	4.49	7.067	7.29	10.10	2.62
1.017	2.28	4.050	4.49	7.083	7.28	10.12	2.62
1.033	2.28	4.067	4.49	7.100	6.83	10.13	2.62

1.050	2.28	4.083	4.49	7.117	6.83	10.15	2.62
1.067	2.28	4.100	4.72	7.133	6.83	10.17	2.62
1.083	2.28	4.117	4.72	7.150	6.83	10.18	2.60
1.100	2.30	4.133	4.72	7.167	6.83	10.20	2.60
1.117	2.30	4.150	4.72	7.183	6.57	10.22	2.60
1.133	2.30	4.167	4.72	7.200	6.57	10.23	2.60
1.150	2.30	4.183	4.94	7.217	6.57	10.25	2.60
1.167	2.30	4.200	4.94	7.233	6.57	10.27	2.58
1.183	2.32	4.217	4.94	7.250	6.57	10.28	2.58
1.200	2.32	4.233	4.94	7.267	6.31	10.30	2.58
1.217	2.32	4.250	4.94	7.283	6.31	10.32	2.58
1.233	2.32	4.267	5.16	7.300	6.31	10.33	2.58
1.250	2.32	4.283	5.16	7.317	6.31	10.35	2.55
1.267	2.34	4.300	5.16	7.333	6.31	10.37	2.55
1.283	2.34	4.317	5.16	7.350	6.06	10.38	2.55
1.300	2.34	4.333	5.16	7.367	6.06	10.40	2.55
1.317	2.34	4.350	5.38	7.383	6.06	10.42	2.55
1.333	2.34	4.367	5.38	7.400	6.06	10.43	2.53
1.350	2.36	4.383	5.38	7.417	6.06	10.45	2.53
1.367	2.36	4.400	5.38	7.433	5.80	10.47	2.53
1.383	2.36	4.417	5.38	7.450	5.80	10.48	2.53
1.400	2.36	4.433	5.60	7.467	5.80	10.50	2.53
1.417	2.36	4.450	5.60	7.483	5.80	10.52	2.51
1.433	2.38	4.467	5.60	7.500	5.80	10.53	2.51
1.450	2.38	4.483	5.60	7.517	5.54	10.55	2.51
1.467	2.38	4.500	5.60	7.533	5.54	10.57	2.51
1.483	2.38	4.517	5.82	7.550	5.54	10.58	2.51
1.500	2.38	4.533	5.82	7.567	5.54	10.60	2.47
1.517	2.39	4.550	5.82	7.583	5.54	10.62	2.47
1.533	2.39	4.567	5.82	7.600	5.27	10.63	2.47
1.550	2.39	4.583	5.82	7.617	5.27	10.65	2.47
1.567	2.39	4.600	6.19	7.633	5.27	10.67	2.47
1.583	2.39	4.617	6.19	7.650	5.27	10.68	2.46
1.600	2.42	4.633	6.19	7.667	5.27	10.70	2.46
1.617	2.42	4.650	6.19	7.683	5.09	10.72	2.46
1.633	2.42	4.667	6.19	7.700	5.09	10.73	2.46
1.650	2.42	4.683	6.55	7.717	5.09	10.75	2.46
1.667	2.42	4.700	6.55	7.733	5.09	10.77	2.43
1.683	2.44	4.717	6.55	7.750	5.09	10.78	2.43
1.700	2.44	4.733	6.55	7.767	4.90	10.80	2.43
1.717	2.44	4.750	6.55	7.783	4.90	10.82	2.43
1.733	2.44	4.767	6.92	7.800	4.90	10.83	2.43
1.750	2.44	4.783	6.92	7.817	4.90	10.85	2.41
1.767	2.45	4.800	6.92	7.833	4.90	10.87	2.41
1.783	2.45	4.817	6.92	7.850	4.72	10.88	2.41
1.800	2.45	4.833	6.92	7.867	4.72	10.90	2.41
1.817	2.45	4.850	7.29	7.883	4.72	10.92	2.41
1.833	2.45	4.867	7.29	7.900	4.72	10.93	2.39
1.850	2.47	4.883	7.29	7.917	4.72	10.95	2.39
1.867	2.47	4.900	7.29	7.933	4.54	10.97	2.39

1.883	2.47	4.917	7.29	7.950	4.54	10.98	2.39
1.900	2.47	4.933	7.65	7.967	4.54	11.00	2.39
1.917	2.47	4.950	7.65	7.983	4.54	11.02	2.36
1.933	2.49	4.967	7.65	8.000	4.54	11.03	2.36
1.950	2.49	4.983	7.65	8.017	4.35	11.05	2.36
1.967	2.49	5.000	7.65	8.033	4.35	11.07	2.36
1.983	2.49	5.017	8.02	8.050	4.35	11.08	2.36
2.000	2.49	5.033	8.02	8.067	4.35	11.10	2.34
2.017	2.51	5.050	8.02	8.083	4.35	11.12	2.34
2.033	2.51	5.067	8.02	8.100	4.20	11.13	2.34
2.050	2.51	5.083	8.02	8.117	4.20	11.15	2.34
2.067	2.51	5.100	8.80	8.133	4.20	11.17	2.34
2.083	2.51	5.117	8.80	8.150	4.20	11.18	2.31
2.100	2.58	5.133	8.80	8.167	4.20	11.20	2.31
2.117	2.58	5.150	8.80	8.183	4.13	11.22	2.31
2.133	2.58	5.167	8.80	8.200	4.13	11.23	2.31
2.150	2.58	5.183	9.68	8.217	4.13	11.25	2.31
2.167	2.58	5.200	9.68	8.233	4.13	11.27	2.29
2.183	2.67	5.217	9.68	8.250	4.13	11.28	2.29
2.200	2.67	5.233	9.68	8.267	4.07	11.30	2.29
2.217	2.67	5.250	9.68	8.283	4.07	11.32	2.29
2.233	2.67	5.267	10.56	8.300	4.07	11.33	2.29
2.250	2.67	5.283	10.56	8.317	4.07	11.35	2.27
2.267	2.76	5.300	10.56	8.333	4.07	11.37	2.27
2.283	2.76	5.317	10.56	8.350	4.01	11.38	2.27
2.300	2.76	5.333	10.56	8.367	4.01	11.40	2.27
2.317	2.76	5.350	11.44	8.383	4.01	11.42	2.27
2.333	2.76	5.367	11.44	8.400	4.01	11.43	2.24
2.350	2.85	5.383	11.44	8.417	4.01	11.45	2.24
2.367	2.85	5.400	11.44	8.433	3.94	11.47	2.24
2.383	2.85	5.417	11.44	8.450	3.94	11.48	2.24
2.400	2.85	5.433	12.32	8.467	3.94	11.50	2.24
2.417	2.85	5.450	12.32	8.483	3.94	11.52	2.22
2.433	2.94	5.467	12.32	8.500	3.94	11.53	2.22
2.450	2.94	5.483	12.32	8.517	3.88	11.55	2.22
2.467	2.94	5.500	12.32	8.533	3.88	11.57	2.22
2.483	2.94	5.517	13.20	8.550	3.88	11.58	2.22
2.500	2.94	5.533	13.20	8.567	3.88	11.60	2.19
2.517	3.04	5.550	13.20	8.583	3.88	11.62	2.19
2.533	3.04	5.567	13.20	8.600	3.79	11.63	2.19
2.550	3.04	5.583	13.21	8.617	3.79	11.65	2.19
2.567	3.04	5.600	27.31	8.633	3.79	11.67	2.19
2.583	3.04	5.617	27.31	8.650	3.79	11.68	2.17
2.600	3.15	5.633	27.31	8.667	3.79	11.70	2.17
2.617	3.15	5.650	27.31	8.683	3.74	11.72	2.17
2.633	3.15	5.667	27.33	8.700	3.74	11.73	2.17
2.650	3.15	5.683	49.01	8.717	3.74	11.75	2.17
2.667	3.15	5.700	49.01	8.733	3.74	11.77	2.14
2.683	3.24	5.717	49.01	8.750	3.74	11.78	2.14
2.700	3.24	5.733	49.01	8.767	3.67	11.80	2.14

2.717	3.24	5.750	49.04	8.783	3.67	11.82	2.14
2.733	3.24	5.767	74.31	8.800	3.67	11.83	2.14
2.750	3.24	5.783	74.31	8.817	3.67	11.85	2.12
2.767	3.33	5.800	74.31	8.833	3.67	11.87	2.12
2.783	3.33	5.817	74.31	8.850	3.60	11.88	2.12
2.800	3.33	5.833	74.36	8.867	3.60	11.90	2.12
2.817	3.33	5.850	115.34	8.883	3.60	11.92	2.12
2.833	3.33	5.867	115.34	8.900	3.60	11.93	2.10
2.850	3.43	5.883	115.34	8.917	3.60	11.95	2.10
2.867	3.43	5.900	115.34	8.933	3.54	11.97	2.10
2.883	3.43	5.917	115.38	8.950	3.54	11.98	2.10
2.900	3.43	5.933	147.41	8.967	3.54	12.00	2.10
2.917	3.43	5.950	147.41	8.983	3.54	12.02	2.07
2.933	3.52	5.967	147.41	9.000	3.54	12.03	2.07
2.950	3.52	5.983	147.41	9.017	3.47	12.05	2.07
2.967	3.52	6.000	147.36	9.033	3.47	12.07	2.07
2.983	3.52	6.017	108.99	9.050	3.47	12.08	2.07
3.000	3.52	6.033	108.99	9.067	3.47		
3.017	3.61	6.050	108.99	9.083	3.47		
3.033	3.61	6.067	108.99	9.100	3.40		

Max.Eff.Inten.(mm/hr)=	147.40	196.00	
over (min)	5.00	9.00	
Storage Coeff. (min)=	1.64 (ii)	8.28 (ii)	
Unit Hyd. Tpeak (min)=	5.00	9.00	
Unit Hyd. peak (cms)=	0.41	0.13	
			TOTALS
PEAK FLOW (cms)=	0.04	0.13	0.157 (iii)
TIME TO PEAK (hrs)=	6.02	6.12	6.08
RUNOFF VOLUME (mm)=	95.34	76.21	79.51
TOTAL RAINFALL (mm)=	96.34	96.34	96.34
RUNOFF COEFFICIENT =	0.99	0.79	0.83

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
YOU SHOULD CONSIDER SPLITTING THE AREA.

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 86.2 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

|WATER QUALITY RESULTS |

TSS	(kg)=	34.90
TP	(g)=	111.37
Outflow Volume	(m3)=	460.38
TSS Average Outflow Concentration	(mg/l)=	75.81

TP Average Outflow Concentration (mg/l)= 0.24

CALIB	
STANDHYD (0035)	Area (ha)= 0.10
ID= 1 DT= 1.0 min	Total Imp(%)= 15.20 Dir. Conn.(%)= 15.10

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.02	0.09
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	1.00	1.00
Length	(m)=	26.46	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.050	3.61	6.083	108.86	9.12	3.40
0.033	0.00	3.067	3.61	6.100	21.72	9.13	3.40
0.050	0.00	3.083	3.61	6.117	21.72	9.15	3.40
0.067	0.00	3.100	3.67	6.133	21.72	9.17	3.40
0.083	0.00	3.117	3.67	6.150	21.72	9.18	3.33
0.100	2.07	3.133	3.67	6.167	21.72	9.20	3.33
0.117	2.07	3.150	3.67	6.183	19.63	9.22	3.33
0.133	2.07	3.167	3.67	6.200	19.63	9.23	3.33
0.150	2.07	3.183	3.67	6.217	19.63	9.25	3.33
0.167	2.07	3.200	3.67	6.233	19.63	9.27	3.27
0.183	2.09	3.217	3.67	6.250	19.63	9.28	3.27
0.200	2.09	3.233	3.67	6.267	17.54	9.30	3.27
0.217	2.09	3.250	3.67	6.283	17.54	9.32	3.27
0.233	2.09	3.267	3.67	6.300	17.54	9.33	3.27
0.250	2.09	3.283	3.67	6.317	17.54	9.35	3.21
0.267	2.11	3.300	3.67	6.333	17.54	9.37	3.21
0.283	2.11	3.317	3.67	6.350	15.45	9.38	3.21
0.300	2.11	3.333	3.67	6.367	15.45	9.40	3.21
0.317	2.11	3.350	3.67	6.383	15.45	9.42	3.21
0.333	2.11	3.367	3.67	6.400	15.45	9.43	3.14
0.350	2.13	3.383	3.67	6.417	15.45	9.45	3.14
0.367	2.13	3.400	3.67	6.433	13.36	9.47	3.14
0.383	2.13	3.417	3.67	6.450	13.36	9.48	3.14
0.400	2.13	3.433	3.67	6.467	13.36	9.50	3.14
0.417	2.13	3.450	3.67	6.483	13.36	9.52	3.08
0.433	2.15	3.467	3.67	6.500	13.36	9.53	3.08
0.450	2.15	3.483	3.67	6.517	11.27	9.55	3.08
0.467	2.15	3.500	3.67	6.533	11.27	9.57	3.08
0.483	2.15	3.517	3.67	6.550	11.27	9.58	3.08
0.500	2.15	3.533	3.67	6.567	11.27	9.60	2.99

0.517	2.17	3.550	3.67	6.583	11.27	9.62	2.99
0.533	2.17	3.567	3.67	6.600	9.67	9.63	2.99
0.550	2.17	3.583	3.67	6.617	9.67	9.65	2.99
0.567	2.17	3.600	3.76	6.633	9.67	9.67	2.99
0.583	2.17	3.617	3.76	6.650	9.67	9.68	2.93
0.600	2.19	3.633	3.76	6.667	9.67	9.70	2.93
0.617	2.19	3.650	3.76	6.683	9.19	9.72	2.93
0.633	2.19	3.667	3.76	6.700	9.19	9.73	2.93
0.650	2.19	3.683	3.90	6.717	9.19	9.75	2.93
0.667	2.19	3.700	3.90	6.733	9.19	9.77	2.87
0.683	2.21	3.717	3.90	6.750	9.19	9.78	2.87
0.700	2.21	3.733	3.90	6.767	8.72	9.80	2.87
0.717	2.21	3.750	3.90	6.783	8.72	9.82	2.87
0.733	2.21	3.767	4.05	6.800	8.72	9.83	2.87
0.750	2.21	3.783	4.05	6.817	8.72	9.85	2.80
0.767	2.22	3.800	4.05	6.833	8.71	9.87	2.80
0.783	2.22	3.817	4.05	6.850	8.24	9.88	2.80
0.800	2.22	3.833	4.05	6.867	8.24	9.90	2.80
0.817	2.22	3.850	4.20	6.883	8.24	9.92	2.80
0.833	2.22	3.867	4.20	6.900	8.24	9.93	2.74
0.850	2.24	3.883	4.20	6.917	8.24	9.95	2.74
0.867	2.24	3.900	4.20	6.933	7.76	9.97	2.74
0.883	2.24	3.917	4.20	6.950	7.76	9.98	2.74
0.900	2.24	3.933	4.34	6.967	7.76	10.00	2.74
0.917	2.24	3.950	4.34	6.983	7.76	10.02	2.67
0.933	2.26	3.967	4.34	7.000	7.76	10.03	2.67
0.950	2.26	3.983	4.34	7.017	7.29	10.05	2.67
0.967	2.26	4.000	4.34	7.033	7.29	10.07	2.67
0.983	2.26	4.017	4.49	7.050	7.29	10.08	2.67
1.000	2.26	4.033	4.49	7.067	7.29	10.10	2.62
1.017	2.28	4.050	4.49	7.083	7.28	10.12	2.62
1.033	2.28	4.067	4.49	7.100	6.83	10.13	2.62
1.050	2.28	4.083	4.49	7.117	6.83	10.15	2.62
1.067	2.28	4.100	4.72	7.133	6.83	10.17	2.62
1.083	2.28	4.117	4.72	7.150	6.83	10.18	2.60
1.100	2.30	4.133	4.72	7.167	6.83	10.20	2.60
1.117	2.30	4.150	4.72	7.183	6.57	10.22	2.60
1.133	2.30	4.167	4.72	7.200	6.57	10.23	2.60
1.150	2.30	4.183	4.94	7.217	6.57	10.25	2.60
1.167	2.30	4.200	4.94	7.233	6.57	10.27	2.58
1.183	2.32	4.217	4.94	7.250	6.57	10.28	2.58
1.200	2.32	4.233	4.94	7.267	6.31	10.30	2.58
1.217	2.32	4.250	4.94	7.283	6.31	10.32	2.58
1.233	2.32	4.267	5.16	7.300	6.31	10.33	2.58
1.250	2.32	4.283	5.16	7.317	6.31	10.35	2.55
1.267	2.34	4.300	5.16	7.333	6.31	10.37	2.55
1.283	2.34	4.317	5.16	7.350	6.06	10.38	2.55
1.300	2.34	4.333	5.16	7.367	6.06	10.40	2.55
1.317	2.34	4.350	5.38	7.383	6.06	10.42	2.55
1.333	2.34	4.367	5.38	7.400	6.06	10.43	2.53

1.350	2.36	4.383	5.38	7.417	6.06	10.45	2.53
1.367	2.36	4.400	5.38	7.433	5.80	10.47	2.53
1.383	2.36	4.417	5.38	7.450	5.80	10.48	2.53
1.400	2.36	4.433	5.60	7.467	5.80	10.50	2.53
1.417	2.36	4.450	5.60	7.483	5.80	10.52	2.51
1.433	2.38	4.467	5.60	7.500	5.80	10.53	2.51
1.450	2.38	4.483	5.60	7.517	5.54	10.55	2.51
1.467	2.38	4.500	5.60	7.533	5.54	10.57	2.51
1.483	2.38	4.517	5.82	7.550	5.54	10.58	2.51
1.500	2.38	4.533	5.82	7.567	5.54	10.60	2.47
1.517	2.39	4.550	5.82	7.583	5.54	10.62	2.47
1.533	2.39	4.567	5.82	7.600	5.27	10.63	2.47
1.550	2.39	4.583	5.82	7.617	5.27	10.65	2.47
1.567	2.39	4.600	6.19	7.633	5.27	10.67	2.47
1.583	2.39	4.617	6.19	7.650	5.27	10.68	2.46
1.600	2.42	4.633	6.19	7.667	5.27	10.70	2.46
1.617	2.42	4.650	6.19	7.683	5.09	10.72	2.46
1.633	2.42	4.667	6.19	7.700	5.09	10.73	2.46
1.650	2.42	4.683	6.55	7.717	5.09	10.75	2.46
1.667	2.42	4.700	6.55	7.733	5.09	10.77	2.43
1.683	2.44	4.717	6.55	7.750	5.09	10.78	2.43
1.700	2.44	4.733	6.55	7.767	4.90	10.80	2.43
1.717	2.44	4.750	6.55	7.783	4.90	10.82	2.43
1.733	2.44	4.767	6.92	7.800	4.90	10.83	2.43
1.750	2.44	4.783	6.92	7.817	4.90	10.85	2.41
1.767	2.45	4.800	6.92	7.833	4.90	10.87	2.41
1.783	2.45	4.817	6.92	7.850	4.72	10.88	2.41
1.800	2.45	4.833	6.92	7.867	4.72	10.90	2.41
1.817	2.45	4.850	7.29	7.883	4.72	10.92	2.41
1.833	2.45	4.867	7.29	7.900	4.72	10.93	2.39
1.850	2.47	4.883	7.29	7.917	4.72	10.95	2.39
1.867	2.47	4.900	7.29	7.933	4.54	10.97	2.39
1.883	2.47	4.917	7.29	7.950	4.54	10.98	2.39
1.900	2.47	4.933	7.65	7.967	4.54	11.00	2.39
1.917	2.47	4.950	7.65	7.983	4.54	11.02	2.36
1.933	2.49	4.967	7.65	8.000	4.54	11.03	2.36
1.950	2.49	4.983	7.65	8.017	4.35	11.05	2.36
1.967	2.49	5.000	7.65	8.033	4.35	11.07	2.36
1.983	2.49	5.017	8.02	8.050	4.35	11.08	2.36
2.000	2.49	5.033	8.02	8.067	4.35	11.10	2.34
2.017	2.51	5.050	8.02	8.083	4.35	11.12	2.34
2.033	2.51	5.067	8.02	8.100	4.20	11.13	2.34
2.050	2.51	5.083	8.02	8.117	4.20	11.15	2.34
2.067	2.51	5.100	8.80	8.133	4.20	11.17	2.34
2.083	2.51	5.117	8.80	8.150	4.20	11.18	2.31
2.100	2.58	5.133	8.80	8.167	4.20	11.20	2.31
2.117	2.58	5.150	8.80	8.183	4.13	11.22	2.31
2.133	2.58	5.167	8.80	8.200	4.13	11.23	2.31
2.150	2.58	5.183	9.68	8.217	4.13	11.25	2.31
2.167	2.58	5.200	9.68	8.233	4.13	11.27	2.29

2.183	2.67	5.217	9.68	8.250	4.13	11.28	2.29
2.200	2.67	5.233	9.68	8.267	4.07	11.30	2.29
2.217	2.67	5.250	9.68	8.283	4.07	11.32	2.29
2.233	2.67	5.267	10.56	8.300	4.07	11.33	2.29
2.250	2.67	5.283	10.56	8.317	4.07	11.35	2.27
2.267	2.76	5.300	10.56	8.333	4.07	11.37	2.27
2.283	2.76	5.317	10.56	8.350	4.01	11.38	2.27
2.300	2.76	5.333	10.56	8.367	4.01	11.40	2.27
2.317	2.76	5.350	11.44	8.383	4.01	11.42	2.27
2.333	2.76	5.367	11.44	8.400	4.01	11.43	2.24
2.350	2.85	5.383	11.44	8.417	4.01	11.45	2.24
2.367	2.85	5.400	11.44	8.433	3.94	11.47	2.24
2.383	2.85	5.417	11.44	8.450	3.94	11.48	2.24
2.400	2.85	5.433	12.32	8.467	3.94	11.50	2.24
2.417	2.85	5.450	12.32	8.483	3.94	11.52	2.22
2.433	2.94	5.467	12.32	8.500	3.94	11.53	2.22
2.450	2.94	5.483	12.32	8.517	3.88	11.55	2.22
2.467	2.94	5.500	12.32	8.533	3.88	11.57	2.22
2.483	2.94	5.517	13.20	8.550	3.88	11.58	2.22
2.500	2.94	5.533	13.20	8.567	3.88	11.60	2.19
2.517	3.04	5.550	13.20	8.583	3.88	11.62	2.19
2.533	3.04	5.567	13.20	8.600	3.79	11.63	2.19
2.550	3.04	5.583	13.21	8.617	3.79	11.65	2.19
2.567	3.04	5.600	27.31	8.633	3.79	11.67	2.19
2.583	3.04	5.617	27.31	8.650	3.79	11.68	2.17
2.600	3.15	5.633	27.31	8.667	3.79	11.70	2.17
2.617	3.15	5.650	27.31	8.683	3.74	11.72	2.17
2.633	3.15	5.667	27.33	8.700	3.74	11.73	2.17
2.650	3.15	5.683	49.01	8.717	3.74	11.75	2.17
2.667	3.15	5.700	49.01	8.733	3.74	11.77	2.14
2.683	3.24	5.717	49.01	8.750	3.74	11.78	2.14
2.700	3.24	5.733	49.01	8.767	3.67	11.80	2.14
2.717	3.24	5.750	49.04	8.783	3.67	11.82	2.14
2.733	3.24	5.767	74.31	8.800	3.67	11.83	2.14
2.750	3.24	5.783	74.31	8.817	3.67	11.85	2.12
2.767	3.33	5.800	74.31	8.833	3.67	11.87	2.12
2.783	3.33	5.817	74.31	8.850	3.60	11.88	2.12
2.800	3.33	5.833	74.36	8.867	3.60	11.90	2.12
2.817	3.33	5.850	115.34	8.883	3.60	11.92	2.12
2.833	3.33	5.867	115.34	8.900	3.60	11.93	2.10
2.850	3.43	5.883	115.34	8.917	3.60	11.95	2.10
2.867	3.43	5.900	115.34	8.933	3.54	11.97	2.10
2.883	3.43	5.917	115.38	8.950	3.54	11.98	2.10
2.900	3.43	5.933	147.41	8.967	3.54	12.00	2.10
2.917	3.43	5.950	147.41	8.983	3.54	12.02	2.07
2.933	3.52	5.967	147.41	9.000	3.54	12.03	2.07
2.950	3.52	5.983	147.41	9.017	3.47	12.05	2.07
2.967	3.52	6.000	147.36	9.033	3.47	12.07	2.07
2.983	3.52	6.017	108.99	9.050	3.47	12.08	2.07
3.000	3.52	6.033	108.99	9.067	3.47		

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                3.017    3.61 | 6.050  108.99 | 9.083    3.47 |
                3.033    3.61 | 6.067  108.99 | 9.100    3.40 |

     Max.Eff.Inten.(mm/hr)=     147.40        86.13
               over (min)         5.00        11.00
     Storage Coeff.  (min)=       0.99 (ii)   10.21 (ii)
     Unit Hyd. Tpeak (min)=       5.00        11.00
     Unit Hyd. peak  (cms)=       0.48         0.11
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.01         0.02          0.019 (iii)
     TIME TO PEAK    (hrs)=       6.02         6.15           6.10
     RUNOFF VOLUME    (mm)=      95.34        53.65          59.89
     TOTAL RAINFALL   (mm)=      96.34        96.34          96.34
     RUNOFF COEFFICIENT   =       0.99         0.56           0.62

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  77.7    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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|WATER QUALITY RESULTS |
------------------------

              TSS                                  (kg)=           5.27
              TP                                    (g)=          15.56
              Outflow Volume                       (m3)=          62.88
              TSS Average Outflow Concentration   (mg/l)=          83.84
              TP  Average Outflow Concentration   (mg/l)=           0.25
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0036)|   Area    (ha)=   0.15
|ID= 1 DT= 1.0 min |   Total Imp(%)=  62.00   Dir. Conn.(%)=  36.30
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.09         0.06
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       1.00         1.00
     Length            (m)=      31.94        20.00
     Mannings n           =      0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   1.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.050	3.61	6.083	108.86	9.12	3.40
0.033	0.00	3.067	3.61	6.100	21.72	9.13	3.40
0.050	0.00	3.083	3.61	6.117	21.72	9.15	3.40
0.067	0.00	3.100	3.67	6.133	21.72	9.17	3.40
0.083	0.00	3.117	3.67	6.150	21.72	9.18	3.33
0.100	2.07	3.133	3.67	6.167	21.72	9.20	3.33
0.117	2.07	3.150	3.67	6.183	19.63	9.22	3.33
0.133	2.07	3.167	3.67	6.200	19.63	9.23	3.33
0.150	2.07	3.183	3.67	6.217	19.63	9.25	3.33
0.167	2.07	3.200	3.67	6.233	19.63	9.27	3.27
0.183	2.09	3.217	3.67	6.250	19.63	9.28	3.27
0.200	2.09	3.233	3.67	6.267	17.54	9.30	3.27
0.217	2.09	3.250	3.67	6.283	17.54	9.32	3.27
0.233	2.09	3.267	3.67	6.300	17.54	9.33	3.27
0.250	2.09	3.283	3.67	6.317	17.54	9.35	3.21
0.267	2.11	3.300	3.67	6.333	17.54	9.37	3.21
0.283	2.11	3.317	3.67	6.350	15.45	9.38	3.21
0.300	2.11	3.333	3.67	6.367	15.45	9.40	3.21
0.317	2.11	3.350	3.67	6.383	15.45	9.42	3.21
0.333	2.11	3.367	3.67	6.400	15.45	9.43	3.14
0.350	2.13	3.383	3.67	6.417	15.45	9.45	3.14
0.367	2.13	3.400	3.67	6.433	13.36	9.47	3.14
0.383	2.13	3.417	3.67	6.450	13.36	9.48	3.14
0.400	2.13	3.433	3.67	6.467	13.36	9.50	3.14
0.417	2.13	3.450	3.67	6.483	13.36	9.52	3.08
0.433	2.15	3.467	3.67	6.500	13.36	9.53	3.08
0.450	2.15	3.483	3.67	6.517	11.27	9.55	3.08
0.467	2.15	3.500	3.67	6.533	11.27	9.57	3.08
0.483	2.15	3.517	3.67	6.550	11.27	9.58	3.08
0.500	2.15	3.533	3.67	6.567	11.27	9.60	2.99
0.517	2.17	3.550	3.67	6.583	11.27	9.62	2.99
0.533	2.17	3.567	3.67	6.600	9.67	9.63	2.99
0.550	2.17	3.583	3.67	6.617	9.67	9.65	2.99
0.567	2.17	3.600	3.76	6.633	9.67	9.67	2.99
0.583	2.17	3.617	3.76	6.650	9.67	9.68	2.93
0.600	2.19	3.633	3.76	6.667	9.67	9.70	2.93
0.617	2.19	3.650	3.76	6.683	9.19	9.72	2.93
0.633	2.19	3.667	3.76	6.700	9.19	9.73	2.93
0.650	2.19	3.683	3.90	6.717	9.19	9.75	2.93
0.667	2.19	3.700	3.90	6.733	9.19	9.77	2.87
0.683	2.21	3.717	3.90	6.750	9.19	9.78	2.87
0.700	2.21	3.733	3.90	6.767	8.72	9.80	2.87
0.717	2.21	3.750	3.90	6.783	8.72	9.82	2.87
0.733	2.21	3.767	4.05	6.800	8.72	9.83	2.87
0.750	2.21	3.783	4.05	6.817	8.72	9.85	2.80
0.767	2.22	3.800	4.05	6.833	8.71	9.87	2.80
0.783	2.22	3.817	4.05	6.850	8.24	9.88	2.80

0.800	2.22	3.833	4.05	6.867	8.24	9.90	2.80
0.817	2.22	3.850	4.20	6.883	8.24	9.92	2.80
0.833	2.22	3.867	4.20	6.900	8.24	9.93	2.74
0.850	2.24	3.883	4.20	6.917	8.24	9.95	2.74
0.867	2.24	3.900	4.20	6.933	7.76	9.97	2.74
0.883	2.24	3.917	4.20	6.950	7.76	9.98	2.74
0.900	2.24	3.933	4.34	6.967	7.76	10.00	2.74
0.917	2.24	3.950	4.34	6.983	7.76	10.02	2.67
0.933	2.26	3.967	4.34	7.000	7.76	10.03	2.67
0.950	2.26	3.983	4.34	7.017	7.29	10.05	2.67
0.967	2.26	4.000	4.34	7.033	7.29	10.07	2.67
0.983	2.26	4.017	4.49	7.050	7.29	10.08	2.67
1.000	2.26	4.033	4.49	7.067	7.29	10.10	2.62
1.017	2.28	4.050	4.49	7.083	7.28	10.12	2.62
1.033	2.28	4.067	4.49	7.100	6.83	10.13	2.62
1.050	2.28	4.083	4.49	7.117	6.83	10.15	2.62
1.067	2.28	4.100	4.72	7.133	6.83	10.17	2.62
1.083	2.28	4.117	4.72	7.150	6.83	10.18	2.60
1.100	2.30	4.133	4.72	7.167	6.83	10.20	2.60
1.117	2.30	4.150	4.72	7.183	6.57	10.22	2.60
1.133	2.30	4.167	4.72	7.200	6.57	10.23	2.60
1.150	2.30	4.183	4.94	7.217	6.57	10.25	2.60
1.167	2.30	4.200	4.94	7.233	6.57	10.27	2.58
1.183	2.32	4.217	4.94	7.250	6.57	10.28	2.58
1.200	2.32	4.233	4.94	7.267	6.31	10.30	2.58
1.217	2.32	4.250	4.94	7.283	6.31	10.32	2.58
1.233	2.32	4.267	5.16	7.300	6.31	10.33	2.58
1.250	2.32	4.283	5.16	7.317	6.31	10.35	2.55
1.267	2.34	4.300	5.16	7.333	6.31	10.37	2.55
1.283	2.34	4.317	5.16	7.350	6.06	10.38	2.55
1.300	2.34	4.333	5.16	7.367	6.06	10.40	2.55
1.317	2.34	4.350	5.38	7.383	6.06	10.42	2.55
1.333	2.34	4.367	5.38	7.400	6.06	10.43	2.53
1.350	2.36	4.383	5.38	7.417	6.06	10.45	2.53
1.367	2.36	4.400	5.38	7.433	5.80	10.47	2.53
1.383	2.36	4.417	5.38	7.450	5.80	10.48	2.53
1.400	2.36	4.433	5.60	7.467	5.80	10.50	2.53
1.417	2.36	4.450	5.60	7.483	5.80	10.52	2.51
1.433	2.38	4.467	5.60	7.500	5.80	10.53	2.51
1.450	2.38	4.483	5.60	7.517	5.54	10.55	2.51
1.467	2.38	4.500	5.60	7.533	5.54	10.57	2.51
1.483	2.38	4.517	5.82	7.550	5.54	10.58	2.51
1.500	2.38	4.533	5.82	7.567	5.54	10.60	2.47
1.517	2.39	4.550	5.82	7.583	5.54	10.62	2.47
1.533	2.39	4.567	5.82	7.600	5.27	10.63	2.47
1.550	2.39	4.583	5.82	7.617	5.27	10.65	2.47
1.567	2.39	4.600	6.19	7.633	5.27	10.67	2.47
1.583	2.39	4.617	6.19	7.650	5.27	10.68	2.46
1.600	2.42	4.633	6.19	7.667	5.27	10.70	2.46
1.617	2.42	4.650	6.19	7.683	5.09	10.72	2.46

1.633	2.42	4.667	6.19	7.700	5.09	10.73	2.46
1.650	2.42	4.683	6.55	7.717	5.09	10.75	2.46
1.667	2.42	4.700	6.55	7.733	5.09	10.77	2.43
1.683	2.44	4.717	6.55	7.750	5.09	10.78	2.43
1.700	2.44	4.733	6.55	7.767	4.90	10.80	2.43
1.717	2.44	4.750	6.55	7.783	4.90	10.82	2.43
1.733	2.44	4.767	6.92	7.800	4.90	10.83	2.43
1.750	2.44	4.783	6.92	7.817	4.90	10.85	2.41
1.767	2.45	4.800	6.92	7.833	4.90	10.87	2.41
1.783	2.45	4.817	6.92	7.850	4.72	10.88	2.41
1.800	2.45	4.833	6.92	7.867	4.72	10.90	2.41
1.817	2.45	4.850	7.29	7.883	4.72	10.92	2.41
1.833	2.45	4.867	7.29	7.900	4.72	10.93	2.39
1.850	2.47	4.883	7.29	7.917	4.72	10.95	2.39
1.867	2.47	4.900	7.29	7.933	4.54	10.97	2.39
1.883	2.47	4.917	7.29	7.950	4.54	10.98	2.39
1.900	2.47	4.933	7.65	7.967	4.54	11.00	2.39
1.917	2.47	4.950	7.65	7.983	4.54	11.02	2.36
1.933	2.49	4.967	7.65	8.000	4.54	11.03	2.36
1.950	2.49	4.983	7.65	8.017	4.35	11.05	2.36
1.967	2.49	5.000	7.65	8.033	4.35	11.07	2.36
1.983	2.49	5.017	8.02	8.050	4.35	11.08	2.36
2.000	2.49	5.033	8.02	8.067	4.35	11.10	2.34
2.017	2.51	5.050	8.02	8.083	4.35	11.12	2.34
2.033	2.51	5.067	8.02	8.100	4.20	11.13	2.34
2.050	2.51	5.083	8.02	8.117	4.20	11.15	2.34
2.067	2.51	5.100	8.80	8.133	4.20	11.17	2.34
2.083	2.51	5.117	8.80	8.150	4.20	11.18	2.31
2.100	2.58	5.133	8.80	8.167	4.20	11.20	2.31
2.117	2.58	5.150	8.80	8.183	4.13	11.22	2.31
2.133	2.58	5.167	8.80	8.200	4.13	11.23	2.31
2.150	2.58	5.183	9.68	8.217	4.13	11.25	2.31
2.167	2.58	5.200	9.68	8.233	4.13	11.27	2.29
2.183	2.67	5.217	9.68	8.250	4.13	11.28	2.29
2.200	2.67	5.233	9.68	8.267	4.07	11.30	2.29
2.217	2.67	5.250	9.68	8.283	4.07	11.32	2.29
2.233	2.67	5.267	10.56	8.300	4.07	11.33	2.29
2.250	2.67	5.283	10.56	8.317	4.07	11.35	2.27
2.267	2.76	5.300	10.56	8.333	4.07	11.37	2.27
2.283	2.76	5.317	10.56	8.350	4.01	11.38	2.27
2.300	2.76	5.333	10.56	8.367	4.01	11.40	2.27
2.317	2.76	5.350	11.44	8.383	4.01	11.42	2.27
2.333	2.76	5.367	11.44	8.400	4.01	11.43	2.24
2.350	2.85	5.383	11.44	8.417	4.01	11.45	2.24
2.367	2.85	5.400	11.44	8.433	3.94	11.47	2.24
2.383	2.85	5.417	11.44	8.450	3.94	11.48	2.24
2.400	2.85	5.433	12.32	8.467	3.94	11.50	2.24
2.417	2.85	5.450	12.32	8.483	3.94	11.52	2.22
2.433	2.94	5.467	12.32	8.500	3.94	11.53	2.22
2.450	2.94	5.483	12.32	8.517	3.88	11.55	2.22

2.467	2.94	5.500	12.32	8.533	3.88	11.57	2.22
2.483	2.94	5.517	13.20	8.550	3.88	11.58	2.22
2.500	2.94	5.533	13.20	8.567	3.88	11.60	2.19
2.517	3.04	5.550	13.20	8.583	3.88	11.62	2.19
2.533	3.04	5.567	13.20	8.600	3.79	11.63	2.19
2.550	3.04	5.583	13.21	8.617	3.79	11.65	2.19
2.567	3.04	5.600	27.31	8.633	3.79	11.67	2.19
2.583	3.04	5.617	27.31	8.650	3.79	11.68	2.17
2.600	3.15	5.633	27.31	8.667	3.79	11.70	2.17
2.617	3.15	5.650	27.31	8.683	3.74	11.72	2.17
2.633	3.15	5.667	27.33	8.700	3.74	11.73	2.17
2.650	3.15	5.683	49.01	8.717	3.74	11.75	2.17
2.667	3.15	5.700	49.01	8.733	3.74	11.77	2.14
2.683	3.24	5.717	49.01	8.750	3.74	11.78	2.14
2.700	3.24	5.733	49.01	8.767	3.67	11.80	2.14
2.717	3.24	5.750	49.04	8.783	3.67	11.82	2.14
2.733	3.24	5.767	74.31	8.800	3.67	11.83	2.14
2.750	3.24	5.783	74.31	8.817	3.67	11.85	2.12
2.767	3.33	5.800	74.31	8.833	3.67	11.87	2.12
2.783	3.33	5.817	74.31	8.850	3.60	11.88	2.12
2.800	3.33	5.833	74.36	8.867	3.60	11.90	2.12
2.817	3.33	5.850	115.34	8.883	3.60	11.92	2.12
2.833	3.33	5.867	115.34	8.900	3.60	11.93	2.10
2.850	3.43	5.883	115.34	8.917	3.60	11.95	2.10
2.867	3.43	5.900	115.34	8.933	3.54	11.97	2.10
2.883	3.43	5.917	115.38	8.950	3.54	11.98	2.10
2.900	3.43	5.933	147.41	8.967	3.54	12.00	2.10
2.917	3.43	5.950	147.41	8.983	3.54	12.02	2.07
2.933	3.52	5.967	147.41	9.000	3.54	12.03	2.07
2.950	3.52	5.983	147.41	9.017	3.47	12.05	2.07
2.967	3.52	6.000	147.36	9.033	3.47	12.07	2.07
2.983	3.52	6.017	108.99	9.050	3.47	12.08	2.07
3.000	3.52	6.033	108.99	9.067	3.47		
3.017	3.61	6.050	108.99	9.083	3.47		
3.033	3.61	6.067	108.99	9.100	3.40		

Max.Eff.Inten.(mm/hr)=	147.40	201.04	
over (min)	5.00	7.00	
Storage Coeff. (min)=	1.10 (ii)	6.10 (ii)	
Unit Hyd. Tpeak (min)=	5.00	7.00	
Unit Hyd. peak (cms)=	0.46	0.18	
			TOTALS
PEAK FLOW (cms)=	0.02	0.03	0.049 (iii)
TIME TO PEAK (hrs)=	6.02	6.08	6.05
RUNOFF VOLUME (mm)=	95.34	79.65	85.33
TOTAL RAINFALL (mm)=	96.34	96.34	96.34
RUNOFF COEFFICIENT =	0.99	0.83	0.89

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

```
            CN*  =  88.9    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

------------------------
|WATER QUALITY RESULTS |
------------------------

              TSS                                    (kg)=          9.21
              TP                                      (g)=         29.37
              Outflow Volume                         (m3)=        130.55
              TSS Average Outflow Concentration   (mg/l)=         70.56
              TP  Average Outflow Concentration   (mg/l)=          0.23
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0045)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0035):     0.10   0.019     6.10    59.89
      + ID2= 2 (  0036):     0.15   0.049     6.05    85.33
        ================================================
        ID = 3 (  0045):     0.26   0.067     6.05    74.97

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| WATER QUALITY RESULTS|
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              TSS Average Outflow Concentration   (mg/l)=         74.88
              TP  Average Outflow Concentration   (mg/l)=          0.23
              TSS Outflow Loading                   (kg)=         14.48
              Tp  Outflow Loading                    (g)=         44.93
              Outflow Volume                         (m3)=        193.43
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0040)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0020):     0.40   0.100     6.05    76.03
      + ID2= 2 (  0027):     0.58   0.157     6.08    79.51
        ================================================
        ID = 3 (  0040):     0.98   0.254     6.07    78.10

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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WATER QUALITY RESULTS

TSS Average Outflow Concentration	(mg/l)=	76.86
TP Average Outflow Concentration	(mg/l)=	0.25
TSS Outflow Loading	(kg)=	58.59
Tp Outflow Loading	(g)=	187.95
Outflow Volume	(m3)=	762.24

ADD HYD (0040)					
3 + 2 = 1	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 3 (0040):	0.98	0.254	6.07	78.10	
+ ID2= 2 (0045):	0.26	0.067	6.05	74.97	
ID = 1 (0040):	1.23	0.321	6.07	77.45	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

WATER QUALITY RESULTS

TSS Average Outflow Concentration	(mg/l)=	76.46
TP Average Outflow Concentration	(mg/l)=	0.24
TSS Outflow Loading	(kg)=	73.07
Tp Outflow Loading	(g)=	232.88
Outflow Volume	(m3)=	955.67

ADD HYD (0040)					
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 1 (0040):	1.23	0.321	6.07	77.45	
+ ID2= 2 (0005):	0.66	0.109	6.07	70.09	
ID = 3 (0040):	1.89	0.430	6.07	74.89	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

WATER QUALITY RESULTS

TSS Average Outflow Concentration	(mg/l)=	77.37
TP Average Outflow Concentration	(mg/l)=	0.25
TSS Outflow Loading	(kg)=	109.58

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              Tp  Outflow Loading                    (g)=         353.03
              Outflow Volume                         (m3)=        1416.18
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0117)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0000   |   0.0170      0.0110
                          0.0090     0.0040   |   0.0200      0.0150
                          0.0140     0.0080   |   0.0000      0.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0040)      1.891      0.430      6.07      74.89
   OUTFLOW: ID= 1 (  0117)      1.891      0.064      6.82      74.83

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 14.81
                  TIME SHIFT OF PEAK FLOW         (min)= 45.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0731


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|WATER QUALITY RESULTS |
------------------------

              Design Removal Efficiency
              TSS Design Removal Efficiency          (%)=        0.00
              TP  Design Removal Efficiency          (%)=        0.00
              TSS Calculated Removal Efficiency      (%)=        0.08
              TP  Calculated Removal Efficiency      (%)=        0.08

              Overflow   TSS Concentration        (mg/l)=        0.00
              Overflow   TP  Concentration        (mg/l)=        0.00
              Overflow   TSS Loading               (Kg)=        0.00
              Overflow   TP  Loading                (g)=        0.00
              Overflow Volume                    (cu.m.)=        0.00

              Outflow    TSS Concentration        (mg/l)=       77.37
              Outflow    TP  Concentration        (mg/l)=        0.25
              Outflow    TSS Loading               (kg)=      109.49
              Outflow    TP  Loading                (g)=      352.75
              Outflow Volume                     (cu.m.)=     1415.06

              TSS Average Outflow Concentration   (mg/l)=       77.37
              TP  Average Outflow Concentration   (mg/l)=        0.25
              TSS Outflow Loading                   (kg)=      109.49
              TP  Outflow Loading                    (g)=      352.75
              Total volume                       (cu.m.)=     1415.06
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  | Junction Command(0042) |
  --------------------------

                           AREA     QPEAK   TPEAK     R.V.
                           (ha)     (cms)    (hrs)    (mm)
  INFLOW : ID= 1(  0117)    1.89     0.06    6.82    74.83
  OUTFLOW: ID= 2(  0042)    1.89     0.06    6.82    74.83

  --------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0057)|   Area    (ha)=   2.76   Curve Number   (CN)= 82.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.20

        NOTE:  RAINFALL WAS TRANSFORMED TO   1.0 MIN. TIME STEP.
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---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.050	3.61	6.083	108.86	9.12	3.40
0.033	0.00	3.067	3.61	6.100	21.72	9.13	3.40
0.050	0.00	3.083	3.61	6.117	21.72	9.15	3.40
0.067	0.00	3.100	3.67	6.133	21.72	9.17	3.40
0.083	0.00	3.117	3.67	6.150	21.72	9.18	3.33
0.100	2.07	3.133	3.67	6.167	21.72	9.20	3.33
0.117	2.07	3.150	3.67	6.183	19.63	9.22	3.33
0.133	2.07	3.167	3.67	6.200	19.63	9.23	3.33
0.150	2.07	3.183	3.67	6.217	19.63	9.25	3.33
0.167	2.07	3.200	3.67	6.233	19.63	9.27	3.27
0.183	2.09	3.217	3.67	6.250	19.63	9.28	3.27
0.200	2.09	3.233	3.67	6.267	17.54	9.30	3.27
0.217	2.09	3.250	3.67	6.283	17.54	9.32	3.27
0.233	2.09	3.267	3.67	6.300	17.54	9.33	3.27
0.250	2.09	3.283	3.67	6.317	17.54	9.35	3.21
0.267	2.11	3.300	3.67	6.333	17.54	9.37	3.21
0.283	2.11	3.317	3.67	6.350	15.45	9.38	3.21
0.300	2.11	3.333	3.67	6.367	15.45	9.40	3.21
0.317	2.11	3.350	3.67	6.383	15.45	9.42	3.21
0.333	2.11	3.367	3.67	6.400	15.45	9.43	3.14
0.350	2.13	3.383	3.67	6.417	15.45	9.45	3.14
0.367	2.13	3.400	3.67	6.433	13.36	9.47	3.14
0.383	2.13	3.417	3.67	6.450	13.36	9.48	3.14
0.400	2.13	3.433	3.67	6.467	13.36	9.50	3.14
0.417	2.13	3.450	3.67	6.483	13.36	9.52	3.08
0.433	2.15	3.467	3.67	6.500	13.36	9.53	3.08

0.450	2.15	3.483	3.67	6.517	11.27	9.55	3.08
0.467	2.15	3.500	3.67	6.533	11.27	9.57	3.08
0.483	2.15	3.517	3.67	6.550	11.27	9.58	3.08
0.500	2.15	3.533	3.67	6.567	11.27	9.60	2.99
0.517	2.17	3.550	3.67	6.583	11.27	9.62	2.99
0.533	2.17	3.567	3.67	6.600	9.67	9.63	2.99
0.550	2.17	3.583	3.67	6.617	9.67	9.65	2.99
0.567	2.17	3.600	3.76	6.633	9.67	9.67	2.99
0.583	2.17	3.617	3.76	6.650	9.67	9.68	2.93
0.600	2.19	3.633	3.76	6.667	9.67	9.70	2.93
0.617	2.19	3.650	3.76	6.683	9.19	9.72	2.93
0.633	2.19	3.667	3.76	6.700	9.19	9.73	2.93
0.650	2.19	3.683	3.90	6.717	9.19	9.75	2.93
0.667	2.19	3.700	3.90	6.733	9.19	9.77	2.87
0.683	2.21	3.717	3.90	6.750	9.19	9.78	2.87
0.700	2.21	3.733	3.90	6.767	8.72	9.80	2.87
0.717	2.21	3.750	3.90	6.783	8.72	9.82	2.87
0.733	2.21	3.767	4.05	6.800	8.72	9.83	2.87
0.750	2.21	3.783	4.05	6.817	8.72	9.85	2.80
0.767	2.22	3.800	4.05	6.833	8.71	9.87	2.80
0.783	2.22	3.817	4.05	6.850	8.24	9.88	2.80
0.800	2.22	3.833	4.05	6.867	8.24	9.90	2.80
0.817	2.22	3.850	4.20	6.883	8.24	9.92	2.80
0.833	2.22	3.867	4.20	6.900	8.24	9.93	2.74
0.850	2.24	3.883	4.20	6.917	8.24	9.95	2.74
0.867	2.24	3.900	4.20	6.933	7.76	9.97	2.74
0.883	2.24	3.917	4.20	6.950	7.76	9.98	2.74
0.900	2.24	3.933	4.34	6.967	7.76	10.00	2.74
0.917	2.24	3.950	4.34	6.983	7.76	10.02	2.67
0.933	2.26	3.967	4.34	7.000	7.76	10.03	2.67
0.950	2.26	3.983	4.34	7.017	7.29	10.05	2.67
0.967	2.26	4.000	4.34	7.033	7.29	10.07	2.67
0.983	2.26	4.017	4.49	7.050	7.29	10.08	2.67
1.000	2.26	4.033	4.49	7.067	7.29	10.10	2.62
1.017	2.28	4.050	4.49	7.083	7.28	10.12	2.62
1.033	2.28	4.067	4.49	7.100	6.83	10.13	2.62
1.050	2.28	4.083	4.49	7.117	6.83	10.15	2.62
1.067	2.28	4.100	4.72	7.133	6.83	10.17	2.62
1.083	2.28	4.117	4.72	7.150	6.83	10.18	2.60
1.100	2.30	4.133	4.72	7.167	6.83	10.20	2.60
1.117	2.30	4.150	4.72	7.183	6.57	10.22	2.60
1.133	2.30	4.167	4.72	7.200	6.57	10.23	2.60
1.150	2.30	4.183	4.94	7.217	6.57	10.25	2.60
1.167	2.30	4.200	4.94	7.233	6.57	10.27	2.58
1.183	2.32	4.217	4.94	7.250	6.57	10.28	2.58
1.200	2.32	4.233	4.94	7.267	6.31	10.30	2.58
1.217	2.32	4.250	4.94	7.283	6.31	10.32	2.58
1.233	2.32	4.267	5.16	7.300	6.31	10.33	2.58
1.250	2.32	4.283	5.16	7.317	6.31	10.35	2.55
1.267	2.34	4.300	5.16	7.333	6.31	10.37	2.55

1.283	2.34	4.317	5.16	7.350	6.06	10.38	2.55
1.300	2.34	4.333	5.16	7.367	6.06	10.40	2.55
1.317	2.34	4.350	5.38	7.383	6.06	10.42	2.55
1.333	2.34	4.367	5.38	7.400	6.06	10.43	2.53
1.350	2.36	4.383	5.38	7.417	6.06	10.45	2.53
1.367	2.36	4.400	5.38	7.433	5.80	10.47	2.53
1.383	2.36	4.417	5.38	7.450	5.80	10.48	2.53
1.400	2.36	4.433	5.60	7.467	5.80	10.50	2.53
1.417	2.36	4.450	5.60	7.483	5.80	10.52	2.51
1.433	2.38	4.467	5.60	7.500	5.80	10.53	2.51
1.450	2.38	4.483	5.60	7.517	5.54	10.55	2.51
1.467	2.38	4.500	5.60	7.533	5.54	10.57	2.51
1.483	2.38	4.517	5.82	7.550	5.54	10.58	2.51
1.500	2.38	4.533	5.82	7.567	5.54	10.60	2.47
1.517	2.39	4.550	5.82	7.583	5.54	10.62	2.47
1.533	2.39	4.567	5.82	7.600	5.27	10.63	2.47
1.550	2.39	4.583	5.82	7.617	5.27	10.65	2.47
1.567	2.39	4.600	6.19	7.633	5.27	10.67	2.47
1.583	2.39	4.617	6.19	7.650	5.27	10.68	2.46
1.600	2.42	4.633	6.19	7.667	5.27	10.70	2.46
1.617	2.42	4.650	6.19	7.683	5.09	10.72	2.46
1.633	2.42	4.667	6.19	7.700	5.09	10.73	2.46
1.650	2.42	4.683	6.55	7.717	5.09	10.75	2.46
1.667	2.42	4.700	6.55	7.733	5.09	10.77	2.43
1.683	2.44	4.717	6.55	7.750	5.09	10.78	2.43
1.700	2.44	4.733	6.55	7.767	4.90	10.80	2.43
1.717	2.44	4.750	6.55	7.783	4.90	10.82	2.43
1.733	2.44	4.767	6.92	7.800	4.90	10.83	2.43
1.750	2.44	4.783	6.92	7.817	4.90	10.85	2.41
1.767	2.45	4.800	6.92	7.833	4.90	10.87	2.41
1.783	2.45	4.817	6.92	7.850	4.72	10.88	2.41
1.800	2.45	4.833	6.92	7.867	4.72	10.90	2.41
1.817	2.45	4.850	7.29	7.883	4.72	10.92	2.41
1.833	2.45	4.867	7.29	7.900	4.72	10.93	2.39
1.850	2.47	4.883	7.29	7.917	4.72	10.95	2.39
1.867	2.47	4.900	7.29	7.933	4.54	10.97	2.39
1.883	2.47	4.917	7.29	7.950	4.54	10.98	2.39
1.900	2.47	4.933	7.65	7.967	4.54	11.00	2.39
1.917	2.47	4.950	7.65	7.983	4.54	11.02	2.36
1.933	2.49	4.967	7.65	8.000	4.54	11.03	2.36
1.950	2.49	4.983	7.65	8.017	4.35	11.05	2.36
1.967	2.49	5.000	7.65	8.033	4.35	11.07	2.36
1.983	2.49	5.017	8.02	8.050	4.35	11.08	2.36
2.000	2.49	5.033	8.02	8.067	4.35	11.10	2.34
2.017	2.51	5.050	8.02	8.083	4.35	11.12	2.34
2.033	2.51	5.067	8.02	8.100	4.20	11.13	2.34
2.050	2.51	5.083	8.02	8.117	4.20	11.15	2.34
2.067	2.51	5.100	8.80	8.133	4.20	11.17	2.34
2.083	2.51	5.117	8.80	8.150	4.20	11.18	2.31
2.100	2.58	5.133	8.80	8.167	4.20	11.20	2.31

2.117	2.58	5.150	8.80	8.183	4.13	11.22	2.31
2.133	2.58	5.167	8.80	8.200	4.13	11.23	2.31
2.150	2.58	5.183	9.68	8.217	4.13	11.25	2.31
2.167	2.58	5.200	9.68	8.233	4.13	11.27	2.29
2.183	2.67	5.217	9.68	8.250	4.13	11.28	2.29
2.200	2.67	5.233	9.68	8.267	4.07	11.30	2.29
2.217	2.67	5.250	9.68	8.283	4.07	11.32	2.29
2.233	2.67	5.267	10.56	8.300	4.07	11.33	2.29
2.250	2.67	5.283	10.56	8.317	4.07	11.35	2.27
2.267	2.76	5.300	10.56	8.333	4.07	11.37	2.27
2.283	2.76	5.317	10.56	8.350	4.01	11.38	2.27
2.300	2.76	5.333	10.56	8.367	4.01	11.40	2.27
2.317	2.76	5.350	11.44	8.383	4.01	11.42	2.27
2.333	2.76	5.367	11.44	8.400	4.01	11.43	2.24
2.350	2.85	5.383	11.44	8.417	4.01	11.45	2.24
2.367	2.85	5.400	11.44	8.433	3.94	11.47	2.24
2.383	2.85	5.417	11.44	8.450	3.94	11.48	2.24
2.400	2.85	5.433	12.32	8.467	3.94	11.50	2.24
2.417	2.85	5.450	12.32	8.483	3.94	11.52	2.22
2.433	2.94	5.467	12.32	8.500	3.94	11.53	2.22
2.450	2.94	5.483	12.32	8.517	3.88	11.55	2.22
2.467	2.94	5.500	12.32	8.533	3.88	11.57	2.22
2.483	2.94	5.517	13.20	8.550	3.88	11.58	2.22
2.500	2.94	5.533	13.20	8.567	3.88	11.60	2.19
2.517	3.04	5.550	13.20	8.583	3.88	11.62	2.19
2.533	3.04	5.567	13.20	8.600	3.79	11.63	2.19
2.550	3.04	5.583	13.21	8.617	3.79	11.65	2.19
2.567	3.04	5.600	27.31	8.633	3.79	11.67	2.19
2.583	3.04	5.617	27.31	8.650	3.79	11.68	2.17
2.600	3.15	5.633	27.31	8.667	3.79	11.70	2.17
2.617	3.15	5.650	27.31	8.683	3.74	11.72	2.17
2.633	3.15	5.667	27.33	8.700	3.74	11.73	2.17
2.650	3.15	5.683	49.01	8.717	3.74	11.75	2.17
2.667	3.15	5.700	49.01	8.733	3.74	11.77	2.14
2.683	3.24	5.717	49.01	8.750	3.74	11.78	2.14
2.700	3.24	5.733	49.01	8.767	3.67	11.80	2.14
2.717	3.24	5.750	49.04	8.783	3.67	11.82	2.14
2.733	3.24	5.767	74.31	8.800	3.67	11.83	2.14
2.750	3.24	5.783	74.31	8.817	3.67	11.85	2.12
2.767	3.33	5.800	74.31	8.833	3.67	11.87	2.12
2.783	3.33	5.817	74.31	8.850	3.60	11.88	2.12
2.800	3.33	5.833	74.36	8.867	3.60	11.90	2.12
2.817	3.33	5.850	115.34	8.883	3.60	11.92	2.12
2.833	3.33	5.867	115.34	8.900	3.60	11.93	2.10
2.850	3.43	5.883	115.34	8.917	3.60	11.95	2.10
2.867	3.43	5.900	115.34	8.933	3.54	11.97	2.10
2.883	3.43	5.917	115.38	8.950	3.54	11.98	2.10
2.900	3.43	5.933	147.41	8.967	3.54	12.00	2.10
2.917	3.43	5.950	147.41	8.983	3.54	12.02	2.07
2.933	3.52	5.967	147.41	9.000	3.54	12.03	2.07

2.950	3.52	5.983	147.41	9.017	3.47	12.05	2.07
2.967	3.52	6.000	147.36	9.033	3.47	12.07	2.07
2.983	3.52	6.017	108.99	9.050	3.47	12.08	2.07
3.000	3.52	6.033	108.99	9.067	3.47		
3.017	3.61	6.050	108.99	9.083	3.47		
3.033	3.61	6.067	108.99	9.100	3.40		

Unit Hyd Qpeak (cms)= 0.527

PEAK FLOW (cms)= 0.473 (i)
TIME TO PEAK (hrs)= 6.167
RUNOFF VOLUME (mm)= 56.717
TOTAL RAINFALL (mm)= 96.339
RUNOFF COEFFICIENT = 0.589

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

WATER QUALITY RESULTS

TSS	(kg)=	156.54
TP	(g)=	500.93
Outflow Volume	(m3)=	1565.39
TSS Average Outflow Concentration	(mg/l)=	100.00
TP Average Outflow Concentration	(mg/l)=	0.32

CALIB
NASHYD (0139)
ID= 1 DT= 1.0 min

Area (ha)= 0.08 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.20

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.050	3.61	6.083	108.86	9.12	3.40
0.033	0.00	3.067	3.61	6.100	21.72	9.13	3.40
0.050	0.00	3.083	3.61	6.117	21.72	9.15	3.40
0.067	0.00	3.100	3.67	6.133	21.72	9.17	3.40
0.083	0.00	3.117	3.67	6.150	21.72	9.18	3.33
0.100	2.07	3.133	3.67	6.167	21.72	9.20	3.33
0.117	2.07	3.150	3.67	6.183	19.63	9.22	3.33
0.133	2.07	3.167	3.67	6.200	19.63	9.23	3.33
0.150	2.07	3.183	3.67	6.217	19.63	9.25	3.33
0.167	2.07	3.200	3.67	6.233	19.63	9.27	3.27
0.183	2.09	3.217	3.67	6.250	19.63	9.28	3.27

0.200	2.09	3.233	3.67	6.267	17.54	9.30	3.27
0.217	2.09	3.250	3.67	6.283	17.54	9.32	3.27
0.233	2.09	3.267	3.67	6.300	17.54	9.33	3.27
0.250	2.09	3.283	3.67	6.317	17.54	9.35	3.21
0.267	2.11	3.300	3.67	6.333	17.54	9.37	3.21
0.283	2.11	3.317	3.67	6.350	15.45	9.38	3.21
0.300	2.11	3.333	3.67	6.367	15.45	9.40	3.21
0.317	2.11	3.350	3.67	6.383	15.45	9.42	3.21
0.333	2.11	3.367	3.67	6.400	15.45	9.43	3.14
0.350	2.13	3.383	3.67	6.417	15.45	9.45	3.14
0.367	2.13	3.400	3.67	6.433	13.36	9.47	3.14
0.383	2.13	3.417	3.67	6.450	13.36	9.48	3.14
0.400	2.13	3.433	3.67	6.467	13.36	9.50	3.14
0.417	2.13	3.450	3.67	6.483	13.36	9.52	3.08
0.433	2.15	3.467	3.67	6.500	13.36	9.53	3.08
0.450	2.15	3.483	3.67	6.517	11.27	9.55	3.08
0.467	2.15	3.500	3.67	6.533	11.27	9.57	3.08
0.483	2.15	3.517	3.67	6.550	11.27	9.58	3.08
0.500	2.15	3.533	3.67	6.567	11.27	9.60	2.99
0.517	2.17	3.550	3.67	6.583	11.27	9.62	2.99
0.533	2.17	3.567	3.67	6.600	9.67	9.63	2.99
0.550	2.17	3.583	3.67	6.617	9.67	9.65	2.99
0.567	2.17	3.600	3.76	6.633	9.67	9.67	2.99
0.583	2.17	3.617	3.76	6.650	9.67	9.68	2.93
0.600	2.19	3.633	3.76	6.667	9.67	9.70	2.93
0.617	2.19	3.650	3.76	6.683	9.19	9.72	2.93
0.633	2.19	3.667	3.76	6.700	9.19	9.73	2.93
0.650	2.19	3.683	3.90	6.717	9.19	9.75	2.93
0.667	2.19	3.700	3.90	6.733	9.19	9.77	2.87
0.683	2.21	3.717	3.90	6.750	9.19	9.78	2.87
0.700	2.21	3.733	3.90	6.767	8.72	9.80	2.87
0.717	2.21	3.750	3.90	6.783	8.72	9.82	2.87
0.733	2.21	3.767	4.05	6.800	8.72	9.83	2.87
0.750	2.21	3.783	4.05	6.817	8.72	9.85	2.80
0.767	2.22	3.800	4.05	6.833	8.71	9.87	2.80
0.783	2.22	3.817	4.05	6.850	8.24	9.88	2.80
0.800	2.22	3.833	4.05	6.867	8.24	9.90	2.80
0.817	2.22	3.850	4.20	6.883	8.24	9.92	2.80
0.833	2.22	3.867	4.20	6.900	8.24	9.93	2.74
0.850	2.24	3.883	4.20	6.917	8.24	9.95	2.74
0.867	2.24	3.900	4.20	6.933	7.76	9.97	2.74
0.883	2.24	3.917	4.20	6.950	7.76	9.98	2.74
0.900	2.24	3.933	4.34	6.967	7.76	10.00	2.74
0.917	2.24	3.950	4.34	6.983	7.76	10.02	2.67
0.933	2.26	3.967	4.34	7.000	7.76	10.03	2.67
0.950	2.26	3.983	4.34	7.017	7.29	10.05	2.67
0.967	2.26	4.000	4.34	7.033	7.29	10.07	2.67
0.983	2.26	4.017	4.49	7.050	7.29	10.08	2.67
1.000	2.26	4.033	4.49	7.067	7.29	10.10	2.62
1.017	2.28	4.050	4.49	7.083	7.28	10.12	2.62

1.033	2.28	4.067	4.49	7.100	6.83	10.13	2.62
1.050	2.28	4.083	4.49	7.117	6.83	10.15	2.62
1.067	2.28	4.100	4.72	7.133	6.83	10.17	2.62
1.083	2.28	4.117	4.72	7.150	6.83	10.18	2.60
1.100	2.30	4.133	4.72	7.167	6.83	10.20	2.60
1.117	2.30	4.150	4.72	7.183	6.57	10.22	2.60
1.133	2.30	4.167	4.72	7.200	6.57	10.23	2.60
1.150	2.30	4.183	4.94	7.217	6.57	10.25	2.60
1.167	2.30	4.200	4.94	7.233	6.57	10.27	2.58
1.183	2.32	4.217	4.94	7.250	6.57	10.28	2.58
1.200	2.32	4.233	4.94	7.267	6.31	10.30	2.58
1.217	2.32	4.250	4.94	7.283	6.31	10.32	2.58
1.233	2.32	4.267	5.16	7.300	6.31	10.33	2.58
1.250	2.32	4.283	5.16	7.317	6.31	10.35	2.55
1.267	2.34	4.300	5.16	7.333	6.31	10.37	2.55
1.283	2.34	4.317	5.16	7.350	6.06	10.38	2.55
1.300	2.34	4.333	5.16	7.367	6.06	10.40	2.55
1.317	2.34	4.350	5.38	7.383	6.06	10.42	2.55
1.333	2.34	4.367	5.38	7.400	6.06	10.43	2.53
1.350	2.36	4.383	5.38	7.417	6.06	10.45	2.53
1.367	2.36	4.400	5.38	7.433	5.80	10.47	2.53
1.383	2.36	4.417	5.38	7.450	5.80	10.48	2.53
1.400	2.36	4.433	5.60	7.467	5.80	10.50	2.53
1.417	2.36	4.450	5.60	7.483	5.80	10.52	2.51
1.433	2.38	4.467	5.60	7.500	5.80	10.53	2.51
1.450	2.38	4.483	5.60	7.517	5.54	10.55	2.51
1.467	2.38	4.500	5.60	7.533	5.54	10.57	2.51
1.483	2.38	4.517	5.82	7.550	5.54	10.58	2.51
1.500	2.38	4.533	5.82	7.567	5.54	10.60	2.47
1.517	2.39	4.550	5.82	7.583	5.54	10.62	2.47
1.533	2.39	4.567	5.82	7.600	5.27	10.63	2.47
1.550	2.39	4.583	5.82	7.617	5.27	10.65	2.47
1.567	2.39	4.600	6.19	7.633	5.27	10.67	2.47
1.583	2.39	4.617	6.19	7.650	5.27	10.68	2.46
1.600	2.42	4.633	6.19	7.667	5.27	10.70	2.46
1.617	2.42	4.650	6.19	7.683	5.09	10.72	2.46
1.633	2.42	4.667	6.19	7.700	5.09	10.73	2.46
1.650	2.42	4.683	6.55	7.717	5.09	10.75	2.46
1.667	2.42	4.700	6.55	7.733	5.09	10.77	2.43
1.683	2.44	4.717	6.55	7.750	5.09	10.78	2.43
1.700	2.44	4.733	6.55	7.767	4.90	10.80	2.43
1.717	2.44	4.750	6.55	7.783	4.90	10.82	2.43
1.733	2.44	4.767	6.92	7.800	4.90	10.83	2.43
1.750	2.44	4.783	6.92	7.817	4.90	10.85	2.41
1.767	2.45	4.800	6.92	7.833	4.90	10.87	2.41
1.783	2.45	4.817	6.92	7.850	4.72	10.88	2.41
1.800	2.45	4.833	6.92	7.867	4.72	10.90	2.41
1.817	2.45	4.850	7.29	7.883	4.72	10.92	2.41
1.833	2.45	4.867	7.29	7.900	4.72	10.93	2.39
1.850	2.47	4.883	7.29	7.917	4.72	10.95	2.39

1.867	2.47	4.900	7.29	7.933	4.54	10.97	2.39
1.883	2.47	4.917	7.29	7.950	4.54	10.98	2.39
1.900	2.47	4.933	7.65	7.967	4.54	11.00	2.39
1.917	2.47	4.950	7.65	7.983	4.54	11.02	2.36
1.933	2.49	4.967	7.65	8.000	4.54	11.03	2.36
1.950	2.49	4.983	7.65	8.017	4.35	11.05	2.36
1.967	2.49	5.000	7.65	8.033	4.35	11.07	2.36
1.983	2.49	5.017	8.02	8.050	4.35	11.08	2.36
2.000	2.49	5.033	8.02	8.067	4.35	11.10	2.34
2.017	2.51	5.050	8.02	8.083	4.35	11.12	2.34
2.033	2.51	5.067	8.02	8.100	4.20	11.13	2.34
2.050	2.51	5.083	8.02	8.117	4.20	11.15	2.34
2.067	2.51	5.100	8.80	8.133	4.20	11.17	2.34
2.083	2.51	5.117	8.80	8.150	4.20	11.18	2.31
2.100	2.58	5.133	8.80	8.167	4.20	11.20	2.31
2.117	2.58	5.150	8.80	8.183	4.13	11.22	2.31
2.133	2.58	5.167	8.80	8.200	4.13	11.23	2.31
2.150	2.58	5.183	9.68	8.217	4.13	11.25	2.31
2.167	2.58	5.200	9.68	8.233	4.13	11.27	2.29
2.183	2.67	5.217	9.68	8.250	4.13	11.28	2.29
2.200	2.67	5.233	9.68	8.267	4.07	11.30	2.29
2.217	2.67	5.250	9.68	8.283	4.07	11.32	2.29
2.233	2.67	5.267	10.56	8.300	4.07	11.33	2.29
2.250	2.67	5.283	10.56	8.317	4.07	11.35	2.27
2.267	2.76	5.300	10.56	8.333	4.07	11.37	2.27
2.283	2.76	5.317	10.56	8.350	4.01	11.38	2.27
2.300	2.76	5.333	10.56	8.367	4.01	11.40	2.27
2.317	2.76	5.350	11.44	8.383	4.01	11.42	2.27
2.333	2.76	5.367	11.44	8.400	4.01	11.43	2.24
2.350	2.85	5.383	11.44	8.417	4.01	11.45	2.24
2.367	2.85	5.400	11.44	8.433	3.94	11.47	2.24
2.383	2.85	5.417	11.44	8.450	3.94	11.48	2.24
2.400	2.85	5.433	12.32	8.467	3.94	11.50	2.24
2.417	2.85	5.450	12.32	8.483	3.94	11.52	2.22
2.433	2.94	5.467	12.32	8.500	3.94	11.53	2.22
2.450	2.94	5.483	12.32	8.517	3.88	11.55	2.22
2.467	2.94	5.500	12.32	8.533	3.88	11.57	2.22
2.483	2.94	5.517	13.20	8.550	3.88	11.58	2.22
2.500	2.94	5.533	13.20	8.567	3.88	11.60	2.19
2.517	3.04	5.550	13.20	8.583	3.88	11.62	2.19
2.533	3.04	5.567	13.20	8.600	3.79	11.63	2.19
2.550	3.04	5.583	13.21	8.617	3.79	11.65	2.19
2.567	3.04	5.600	27.31	8.633	3.79	11.67	2.19
2.583	3.04	5.617	27.31	8.650	3.79	11.68	2.17
2.600	3.15	5.633	27.31	8.667	3.79	11.70	2.17
2.617	3.15	5.650	27.31	8.683	3.74	11.72	2.17
2.633	3.15	5.667	27.33	8.700	3.74	11.73	2.17
2.650	3.15	5.683	49.01	8.717	3.74	11.75	2.17
2.667	3.15	5.700	49.01	8.733	3.74	11.77	2.14
2.683	3.24	5.717	49.01	8.750	3.74	11.78	2.14

2.700	3.24	5.733	49.01	8.767	3.67	11.80	2.14
2.717	3.24	5.750	49.04	8.783	3.67	11.82	2.14
2.733	3.24	5.767	74.31	8.800	3.67	11.83	2.14
2.750	3.24	5.783	74.31	8.817	3.67	11.85	2.12
2.767	3.33	5.800	74.31	8.833	3.67	11.87	2.12
2.783	3.33	5.817	74.31	8.850	3.60	11.88	2.12
2.800	3.33	5.833	74.36	8.867	3.60	11.90	2.12
2.817	3.33	5.850	115.34	8.883	3.60	11.92	2.12
2.833	3.33	5.867	115.34	8.900	3.60	11.93	2.10
2.850	3.43	5.883	115.34	8.917	3.60	11.95	2.10
2.867	3.43	5.900	115.34	8.933	3.54	11.97	2.10
2.883	3.43	5.917	115.38	8.950	3.54	11.98	2.10
2.900	3.43	5.933	147.41	8.967	3.54	12.00	2.10
2.917	3.43	5.950	147.41	8.983	3.54	12.02	2.07
2.933	3.52	5.967	147.41	9.000	3.54	12.03	2.07
2.950	3.52	5.983	147.41	9.017	3.47	12.05	2.07
2.967	3.52	6.000	147.36	9.033	3.47	12.07	2.07
2.983	3.52	6.017	108.99	9.050	3.47	12.08	2.07
3.000	3.52	6.033	108.99	9.067	3.47		
3.017	3.61	6.050	108.99	9.083	3.47		
3.033	3.61	6.067	108.99	9.100	3.40		

Unit Hyd Qpeak (cms)= 0.016

PEAK FLOW (cms)= 0.011 (i)
TIME TO PEAK (hrs)= 6.183
RUNOFF VOLUME (mm)= 46.193
TOTAL RAINFALL (mm)= 96.339
RUNOFF COEFFICIENT = 0.479

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

|WATER QUALITY RESULTS |

TSS	(kg)=	3.79
TP	(g)=	12.12
Outflow Volume	(m3)=	37.88
TSS Average Outflow Concentration	(mg/l)=	100.00
TP Average Outflow Concentration	(mg/l)=	0.32

CALIB					
NASHYD (0140)	Area (ha)=	0.33	Curve Number (CN)=	74.0
ID= 1 DT= 1.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	0.20		

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.050	3.61	6.083	108.86	9.12	3.40
0.033	0.00	3.067	3.61	6.100	21.72	9.13	3.40
0.050	0.00	3.083	3.61	6.117	21.72	9.15	3.40
0.067	0.00	3.100	3.67	6.133	21.72	9.17	3.40
0.083	0.00	3.117	3.67	6.150	21.72	9.18	3.33
0.100	2.07	3.133	3.67	6.167	21.72	9.20	3.33
0.117	2.07	3.150	3.67	6.183	19.63	9.22	3.33
0.133	2.07	3.167	3.67	6.200	19.63	9.23	3.33
0.150	2.07	3.183	3.67	6.217	19.63	9.25	3.33
0.167	2.07	3.200	3.67	6.233	19.63	9.27	3.27
0.183	2.09	3.217	3.67	6.250	19.63	9.28	3.27
0.200	2.09	3.233	3.67	6.267	17.54	9.30	3.27
0.217	2.09	3.250	3.67	6.283	17.54	9.32	3.27
0.233	2.09	3.267	3.67	6.300	17.54	9.33	3.27
0.250	2.09	3.283	3.67	6.317	17.54	9.35	3.21
0.267	2.11	3.300	3.67	6.333	17.54	9.37	3.21
0.283	2.11	3.317	3.67	6.350	15.45	9.38	3.21
0.300	2.11	3.333	3.67	6.367	15.45	9.40	3.21
0.317	2.11	3.350	3.67	6.383	15.45	9.42	3.21
0.333	2.11	3.367	3.67	6.400	15.45	9.43	3.14
0.350	2.13	3.383	3.67	6.417	15.45	9.45	3.14
0.367	2.13	3.400	3.67	6.433	13.36	9.47	3.14
0.383	2.13	3.417	3.67	6.450	13.36	9.48	3.14
0.400	2.13	3.433	3.67	6.467	13.36	9.50	3.14
0.417	2.13	3.450	3.67	6.483	13.36	9.52	3.08
0.433	2.15	3.467	3.67	6.500	13.36	9.53	3.08
0.450	2.15	3.483	3.67	6.517	11.27	9.55	3.08
0.467	2.15	3.500	3.67	6.533	11.27	9.57	3.08
0.483	2.15	3.517	3.67	6.550	11.27	9.58	3.08
0.500	2.15	3.533	3.67	6.567	11.27	9.60	2.99
0.517	2.17	3.550	3.67	6.583	11.27	9.62	2.99
0.533	2.17	3.567	3.67	6.600	9.67	9.63	2.99
0.550	2.17	3.583	3.67	6.617	9.67	9.65	2.99
0.567	2.17	3.600	3.76	6.633	9.67	9.67	2.99
0.583	2.17	3.617	3.76	6.650	9.67	9.68	2.93
0.600	2.19	3.633	3.76	6.667	9.67	9.70	2.93
0.617	2.19	3.650	3.76	6.683	9.19	9.72	2.93
0.633	2.19	3.667	3.76	6.700	9.19	9.73	2.93
0.650	2.19	3.683	3.90	6.717	9.19	9.75	2.93
0.667	2.19	3.700	3.90	6.733	9.19	9.77	2.87
0.683	2.21	3.717	3.90	6.750	9.19	9.78	2.87
0.700	2.21	3.733	3.90	6.767	8.72	9.80	2.87
0.717	2.21	3.750	3.90	6.783	8.72	9.82	2.87
0.733	2.21	3.767	4.05	6.800	8.72	9.83	2.87
0.750	2.21	3.783	4.05	6.817	8.72	9.85	2.80
0.767	2.22	3.800	4.05	6.833	8.71	9.87	2.80

0.783	2.22	3.817	4.05	6.850	8.24	9.88	2.80
0.800	2.22	3.833	4.05	6.867	8.24	9.90	2.80
0.817	2.22	3.850	4.20	6.883	8.24	9.92	2.80
0.833	2.22	3.867	4.20	6.900	8.24	9.93	2.74
0.850	2.24	3.883	4.20	6.917	8.24	9.95	2.74
0.867	2.24	3.900	4.20	6.933	7.76	9.97	2.74
0.883	2.24	3.917	4.20	6.950	7.76	9.98	2.74
0.900	2.24	3.933	4.34	6.967	7.76	10.00	2.74
0.917	2.24	3.950	4.34	6.983	7.76	10.02	2.67
0.933	2.26	3.967	4.34	7.000	7.76	10.03	2.67
0.950	2.26	3.983	4.34	7.017	7.29	10.05	2.67
0.967	2.26	4.000	4.34	7.033	7.29	10.07	2.67
0.983	2.26	4.017	4.49	7.050	7.29	10.08	2.67
1.000	2.26	4.033	4.49	7.067	7.29	10.10	2.62
1.017	2.28	4.050	4.49	7.083	7.28	10.12	2.62
1.033	2.28	4.067	4.49	7.100	6.83	10.13	2.62
1.050	2.28	4.083	4.49	7.117	6.83	10.15	2.62
1.067	2.28	4.100	4.72	7.133	6.83	10.17	2.62
1.083	2.28	4.117	4.72	7.150	6.83	10.18	2.60
1.100	2.30	4.133	4.72	7.167	6.83	10.20	2.60
1.117	2.30	4.150	4.72	7.183	6.57	10.22	2.60
1.133	2.30	4.167	4.72	7.200	6.57	10.23	2.60
1.150	2.30	4.183	4.94	7.217	6.57	10.25	2.60
1.167	2.30	4.200	4.94	7.233	6.57	10.27	2.58
1.183	2.32	4.217	4.94	7.250	6.57	10.28	2.58
1.200	2.32	4.233	4.94	7.267	6.31	10.30	2.58
1.217	2.32	4.250	4.94	7.283	6.31	10.32	2.58
1.233	2.32	4.267	5.16	7.300	6.31	10.33	2.58
1.250	2.32	4.283	5.16	7.317	6.31	10.35	2.55
1.267	2.34	4.300	5.16	7.333	6.31	10.37	2.55
1.283	2.34	4.317	5.16	7.350	6.06	10.38	2.55
1.300	2.34	4.333	5.16	7.367	6.06	10.40	2.55
1.317	2.34	4.350	5.38	7.383	6.06	10.42	2.55
1.333	2.34	4.367	5.38	7.400	6.06	10.43	2.53
1.350	2.36	4.383	5.38	7.417	6.06	10.45	2.53
1.367	2.36	4.400	5.38	7.433	5.80	10.47	2.53
1.383	2.36	4.417	5.38	7.450	5.80	10.48	2.53
1.400	2.36	4.433	5.60	7.467	5.80	10.50	2.53
1.417	2.36	4.450	5.60	7.483	5.80	10.52	2.51
1.433	2.38	4.467	5.60	7.500	5.80	10.53	2.51
1.450	2.38	4.483	5.60	7.517	5.54	10.55	2.51
1.467	2.38	4.500	5.60	7.533	5.54	10.57	2.51
1.483	2.38	4.517	5.82	7.550	5.54	10.58	2.51
1.500	2.38	4.533	5.82	7.567	5.54	10.60	2.47
1.517	2.39	4.550	5.82	7.583	5.54	10.62	2.47
1.533	2.39	4.567	5.82	7.600	5.27	10.63	2.47
1.550	2.39	4.583	5.82	7.617	5.27	10.65	2.47
1.567	2.39	4.600	6.19	7.633	5.27	10.67	2.47
1.583	2.39	4.617	6.19	7.650	5.27	10.68	2.46
1.600	2.42	4.633	6.19	7.667	5.27	10.70	2.46

1.617	2.42	4.650	6.19	7.683	5.09	10.72	2.46
1.633	2.42	4.667	6.19	7.700	5.09	10.73	2.46
1.650	2.42	4.683	6.55	7.717	5.09	10.75	2.46
1.667	2.42	4.700	6.55	7.733	5.09	10.77	2.43
1.683	2.44	4.717	6.55	7.750	5.09	10.78	2.43
1.700	2.44	4.733	6.55	7.767	4.90	10.80	2.43
1.717	2.44	4.750	6.55	7.783	4.90	10.82	2.43
1.733	2.44	4.767	6.92	7.800	4.90	10.83	2.43
1.750	2.44	4.783	6.92	7.817	4.90	10.85	2.41
1.767	2.45	4.800	6.92	7.833	4.90	10.87	2.41
1.783	2.45	4.817	6.92	7.850	4.72	10.88	2.41
1.800	2.45	4.833	6.92	7.867	4.72	10.90	2.41
1.817	2.45	4.850	7.29	7.883	4.72	10.92	2.41
1.833	2.45	4.867	7.29	7.900	4.72	10.93	2.39
1.850	2.47	4.883	7.29	7.917	4.72	10.95	2.39
1.867	2.47	4.900	7.29	7.933	4.54	10.97	2.39
1.883	2.47	4.917	7.29	7.950	4.54	10.98	2.39
1.900	2.47	4.933	7.65	7.967	4.54	11.00	2.39
1.917	2.47	4.950	7.65	7.983	4.54	11.02	2.36
1.933	2.49	4.967	7.65	8.000	4.54	11.03	2.36
1.950	2.49	4.983	7.65	8.017	4.35	11.05	2.36
1.967	2.49	5.000	7.65	8.033	4.35	11.07	2.36
1.983	2.49	5.017	8.02	8.050	4.35	11.08	2.36
2.000	2.49	5.033	8.02	8.067	4.35	11.10	2.34
2.017	2.51	5.050	8.02	8.083	4.35	11.12	2.34
2.033	2.51	5.067	8.02	8.100	4.20	11.13	2.34
2.050	2.51	5.083	8.02	8.117	4.20	11.15	2.34
2.067	2.51	5.100	8.80	8.133	4.20	11.17	2.34
2.083	2.51	5.117	8.80	8.150	4.20	11.18	2.31
2.100	2.58	5.133	8.80	8.167	4.20	11.20	2.31
2.117	2.58	5.150	8.80	8.183	4.13	11.22	2.31
2.133	2.58	5.167	8.80	8.200	4.13	11.23	2.31
2.150	2.58	5.183	9.68	8.217	4.13	11.25	2.31
2.167	2.58	5.200	9.68	8.233	4.13	11.27	2.29
2.183	2.67	5.217	9.68	8.250	4.13	11.28	2.29
2.200	2.67	5.233	9.68	8.267	4.07	11.30	2.29
2.217	2.67	5.250	9.68	8.283	4.07	11.32	2.29
2.233	2.67	5.267	10.56	8.300	4.07	11.33	2.29
2.250	2.67	5.283	10.56	8.317	4.07	11.35	2.27
2.267	2.76	5.300	10.56	8.333	4.07	11.37	2.27
2.283	2.76	5.317	10.56	8.350	4.01	11.38	2.27
2.300	2.76	5.333	10.56	8.367	4.01	11.40	2.27
2.317	2.76	5.350	11.44	8.383	4.01	11.42	2.27
2.333	2.76	5.367	11.44	8.400	4.01	11.43	2.24
2.350	2.85	5.383	11.44	8.417	4.01	11.45	2.24
2.367	2.85	5.400	11.44	8.433	3.94	11.47	2.24
2.383	2.85	5.417	11.44	8.450	3.94	11.48	2.24
2.400	2.85	5.433	12.32	8.467	3.94	11.50	2.24
2.417	2.85	5.450	12.32	8.483	3.94	11.52	2.22
2.433	2.94	5.467	12.32	8.500	3.94	11.53	2.22

2.450	2.94	5.483	12.32	8.517	3.88	11.55	2.22
2.467	2.94	5.500	12.32	8.533	3.88	11.57	2.22
2.483	2.94	5.517	13.20	8.550	3.88	11.58	2.22
2.500	2.94	5.533	13.20	8.567	3.88	11.60	2.19
2.517	3.04	5.550	13.20	8.583	3.88	11.62	2.19
2.533	3.04	5.567	13.20	8.600	3.79	11.63	2.19
2.550	3.04	5.583	13.21	8.617	3.79	11.65	2.19
2.567	3.04	5.600	27.31	8.633	3.79	11.67	2.19
2.583	3.04	5.617	27.31	8.650	3.79	11.68	2.17
2.600	3.15	5.633	27.31	8.667	3.79	11.70	2.17
2.617	3.15	5.650	27.31	8.683	3.74	11.72	2.17
2.633	3.15	5.667	27.33	8.700	3.74	11.73	2.17
2.650	3.15	5.683	49.01	8.717	3.74	11.75	2.17
2.667	3.15	5.700	49.01	8.733	3.74	11.77	2.14
2.683	3.24	5.717	49.01	8.750	3.74	11.78	2.14
2.700	3.24	5.733	49.01	8.767	3.67	11.80	2.14
2.717	3.24	5.750	49.04	8.783	3.67	11.82	2.14
2.733	3.24	5.767	74.31	8.800	3.67	11.83	2.14
2.750	3.24	5.783	74.31	8.817	3.67	11.85	2.12
2.767	3.33	5.800	74.31	8.833	3.67	11.87	2.12
2.783	3.33	5.817	74.31	8.850	3.60	11.88	2.12
2.800	3.33	5.833	74.36	8.867	3.60	11.90	2.12
2.817	3.33	5.850	115.34	8.883	3.60	11.92	2.12
2.833	3.33	5.867	115.34	8.900	3.60	11.93	2.10
2.850	3.43	5.883	115.34	8.917	3.60	11.95	2.10
2.867	3.43	5.900	115.34	8.933	3.54	11.97	2.10
2.883	3.43	5.917	115.38	8.950	3.54	11.98	2.10
2.900	3.43	5.933	147.41	8.967	3.54	12.00	2.10
2.917	3.43	5.950	147.41	8.983	3.54	12.02	2.07
2.933	3.52	5.967	147.41	9.000	3.54	12.03	2.07
2.950	3.52	5.983	147.41	9.017	3.47	12.05	2.07
2.967	3.52	6.000	147.36	9.033	3.47	12.07	2.07
2.983	3.52	6.017	108.99	9.050	3.47	12.08	2.07
3.000	3.52	6.033	108.99	9.067	3.47		
3.017	3.61	6.050	108.99	9.083	3.47		
3.033	3.61	6.067	108.99	9.100	3.40		

Unit Hyd Qpeak (cms)= 0.062

PEAK FLOW (cms)= 0.045 (i)
TIME TO PEAK (hrs)= 6.183
RUNOFF VOLUME (mm)= 46.198
TOTAL RAINFALL (mm)= 96.339
RUNOFF COEFFICIENT = 0.480

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

|WATER QUALITY RESULTS |

TSS	(kg)=	15.11
TP	(g)=	48.34
Outflow Volume	(m3)=	151.07
TSS Average Outflow Concentration	(mg/l)=	100.00
TP Average Outflow Concentration	(mg/l)=	0.32

CALIB STANDHYD (0058) ID= 1 DT= 1.0 min	Area (ha)= 0.36	Total Imp(%)= 44.00	Dir. Conn.(%)= 43.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.16	0.20
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	1.00	1.00
Length	(m)=	48.92	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.050	3.61	6.083	108.86	9.12	3.40
0.033	0.00	3.067	3.61	6.100	21.72	9.13	3.40
0.050	0.00	3.083	3.61	6.117	21.72	9.15	3.40
0.067	0.00	3.100	3.67	6.133	21.72	9.17	3.40
0.083	0.00	3.117	3.67	6.150	21.72	9.18	3.33
0.100	2.07	3.133	3.67	6.167	21.72	9.20	3.33
0.117	2.07	3.150	3.67	6.183	19.63	9.22	3.33
0.133	2.07	3.167	3.67	6.200	19.63	9.23	3.33
0.150	2.07	3.183	3.67	6.217	19.63	9.25	3.33
0.167	2.07	3.200	3.67	6.233	19.63	9.27	3.27
0.183	2.09	3.217	3.67	6.250	19.63	9.28	3.27
0.200	2.09	3.233	3.67	6.267	17.54	9.30	3.27
0.217	2.09	3.250	3.67	6.283	17.54	9.32	3.27
0.233	2.09	3.267	3.67	6.300	17.54	9.33	3.27
0.250	2.09	3.283	3.67	6.317	17.54	9.35	3.21
0.267	2.11	3.300	3.67	6.333	17.54	9.37	3.21
0.283	2.11	3.317	3.67	6.350	15.45	9.38	3.21
0.300	2.11	3.333	3.67	6.367	15.45	9.40	3.21
0.317	2.11	3.350	3.67	6.383	15.45	9.42	3.21
0.333	2.11	3.367	3.67	6.400	15.45	9.43	3.14
0.350	2.13	3.383	3.67	6.417	15.45	9.45	3.14
0.367	2.13	3.400	3.67	6.433	13.36	9.47	3.14
0.383	2.13	3.417	3.67	6.450	13.36	9.48	3.14
0.400	2.13	3.433	3.67	6.467	13.36	9.50	3.14
0.417	2.13	3.450	3.67	6.483	13.36	9.52	3.08

0.433	2.15	3.467	3.67	6.500	13.36	9.53	3.08
0.450	2.15	3.483	3.67	6.517	11.27	9.55	3.08
0.467	2.15	3.500	3.67	6.533	11.27	9.57	3.08
0.483	2.15	3.517	3.67	6.550	11.27	9.58	3.08
0.500	2.15	3.533	3.67	6.567	11.27	9.60	2.99
0.517	2.17	3.550	3.67	6.583	11.27	9.62	2.99
0.533	2.17	3.567	3.67	6.600	9.67	9.63	2.99
0.550	2.17	3.583	3.67	6.617	9.67	9.65	2.99
0.567	2.17	3.600	3.76	6.633	9.67	9.67	2.99
0.583	2.17	3.617	3.76	6.650	9.67	9.68	2.93
0.600	2.19	3.633	3.76	6.667	9.67	9.70	2.93
0.617	2.19	3.650	3.76	6.683	9.19	9.72	2.93
0.633	2.19	3.667	3.76	6.700	9.19	9.73	2.93
0.650	2.19	3.683	3.90	6.717	9.19	9.75	2.93
0.667	2.19	3.700	3.90	6.733	9.19	9.77	2.87
0.683	2.21	3.717	3.90	6.750	9.19	9.78	2.87
0.700	2.21	3.733	3.90	6.767	8.72	9.80	2.87
0.717	2.21	3.750	3.90	6.783	8.72	9.82	2.87
0.733	2.21	3.767	4.05	6.800	8.72	9.83	2.87
0.750	2.21	3.783	4.05	6.817	8.72	9.85	2.80
0.767	2.22	3.800	4.05	6.833	8.71	9.87	2.80
0.783	2.22	3.817	4.05	6.850	8.24	9.88	2.80
0.800	2.22	3.833	4.05	6.867	8.24	9.90	2.80
0.817	2.22	3.850	4.20	6.883	8.24	9.92	2.80
0.833	2.22	3.867	4.20	6.900	8.24	9.93	2.74
0.850	2.24	3.883	4.20	6.917	8.24	9.95	2.74
0.867	2.24	3.900	4.20	6.933	7.76	9.97	2.74
0.883	2.24	3.917	4.20	6.950	7.76	9.98	2.74
0.900	2.24	3.933	4.34	6.967	7.76	10.00	2.74
0.917	2.24	3.950	4.34	6.983	7.76	10.02	2.67
0.933	2.26	3.967	4.34	7.000	7.76	10.03	2.67
0.950	2.26	3.983	4.34	7.017	7.29	10.05	2.67
0.967	2.26	4.000	4.34	7.033	7.29	10.07	2.67
0.983	2.26	4.017	4.49	7.050	7.29	10.08	2.67
1.000	2.26	4.033	4.49	7.067	7.29	10.10	2.62
1.017	2.28	4.050	4.49	7.083	7.28	10.12	2.62
1.033	2.28	4.067	4.49	7.100	6.83	10.13	2.62
1.050	2.28	4.083	4.49	7.117	6.83	10.15	2.62
1.067	2.28	4.100	4.72	7.133	6.83	10.17	2.62
1.083	2.28	4.117	4.72	7.150	6.83	10.18	2.60
1.100	2.30	4.133	4.72	7.167	6.83	10.20	2.60
1.117	2.30	4.150	4.72	7.183	6.57	10.22	2.60
1.133	2.30	4.167	4.72	7.200	6.57	10.23	2.60
1.150	2.30	4.183	4.94	7.217	6.57	10.25	2.60
1.167	2.30	4.200	4.94	7.233	6.57	10.27	2.58
1.183	2.32	4.217	4.94	7.250	6.57	10.28	2.58
1.200	2.32	4.233	4.94	7.267	6.31	10.30	2.58
1.217	2.32	4.250	4.94	7.283	6.31	10.32	2.58
1.233	2.32	4.267	5.16	7.300	6.31	10.33	2.58
1.250	2.32	4.283	5.16	7.317	6.31	10.35	2.55

1.267	2.34	4.300	5.16	7.333	6.31	10.37	2.55
1.283	2.34	4.317	5.16	7.350	6.06	10.38	2.55
1.300	2.34	4.333	5.16	7.367	6.06	10.40	2.55
1.317	2.34	4.350	5.38	7.383	6.06	10.42	2.55
1.333	2.34	4.367	5.38	7.400	6.06	10.43	2.53
1.350	2.36	4.383	5.38	7.417	6.06	10.45	2.53
1.367	2.36	4.400	5.38	7.433	5.80	10.47	2.53
1.383	2.36	4.417	5.38	7.450	5.80	10.48	2.53
1.400	2.36	4.433	5.60	7.467	5.80	10.50	2.53
1.417	2.36	4.450	5.60	7.483	5.80	10.52	2.51
1.433	2.38	4.467	5.60	7.500	5.80	10.53	2.51
1.450	2.38	4.483	5.60	7.517	5.54	10.55	2.51
1.467	2.38	4.500	5.60	7.533	5.54	10.57	2.51
1.483	2.38	4.517	5.82	7.550	5.54	10.58	2.51
1.500	2.38	4.533	5.82	7.567	5.54	10.60	2.47
1.517	2.39	4.550	5.82	7.583	5.54	10.62	2.47
1.533	2.39	4.567	5.82	7.600	5.27	10.63	2.47
1.550	2.39	4.583	5.82	7.617	5.27	10.65	2.47
1.567	2.39	4.600	6.19	7.633	5.27	10.67	2.47
1.583	2.39	4.617	6.19	7.650	5.27	10.68	2.46
1.600	2.42	4.633	6.19	7.667	5.27	10.70	2.46
1.617	2.42	4.650	6.19	7.683	5.09	10.72	2.46
1.633	2.42	4.667	6.19	7.700	5.09	10.73	2.46
1.650	2.42	4.683	6.55	7.717	5.09	10.75	2.46
1.667	2.42	4.700	6.55	7.733	5.09	10.77	2.43
1.683	2.44	4.717	6.55	7.750	5.09	10.78	2.43
1.700	2.44	4.733	6.55	7.767	4.90	10.80	2.43
1.717	2.44	4.750	6.55	7.783	4.90	10.82	2.43
1.733	2.44	4.767	6.92	7.800	4.90	10.83	2.43
1.750	2.44	4.783	6.92	7.817	4.90	10.85	2.41
1.767	2.45	4.800	6.92	7.833	4.90	10.87	2.41
1.783	2.45	4.817	6.92	7.850	4.72	10.88	2.41
1.800	2.45	4.833	6.92	7.867	4.72	10.90	2.41
1.817	2.45	4.850	7.29	7.883	4.72	10.92	2.41
1.833	2.45	4.867	7.29	7.900	4.72	10.93	2.39
1.850	2.47	4.883	7.29	7.917	4.72	10.95	2.39
1.867	2.47	4.900	7.29	7.933	4.54	10.97	2.39
1.883	2.47	4.917	7.29	7.950	4.54	10.98	2.39
1.900	2.47	4.933	7.65	7.967	4.54	11.00	2.39
1.917	2.47	4.950	7.65	7.983	4.54	11.02	2.36
1.933	2.49	4.967	7.65	8.000	4.54	11.03	2.36
1.950	2.49	4.983	7.65	8.017	4.35	11.05	2.36
1.967	2.49	5.000	7.65	8.033	4.35	11.07	2.36
1.983	2.49	5.017	8.02	8.050	4.35	11.08	2.36
2.000	2.49	5.033	8.02	8.067	4.35	11.10	2.34
2.017	2.51	5.050	8.02	8.083	4.35	11.12	2.34
2.033	2.51	5.067	8.02	8.100	4.20	11.13	2.34
2.050	2.51	5.083	8.02	8.117	4.20	11.15	2.34
2.067	2.51	5.100	8.80	8.133	4.20	11.17	2.34
2.083	2.51	5.117	8.80	8.150	4.20	11.18	2.31

2.100	2.58	5.133	8.80	8.167	4.20	11.20	2.31
2.117	2.58	5.150	8.80	8.183	4.13	11.22	2.31
2.133	2.58	5.167	8.80	8.200	4.13	11.23	2.31
2.150	2.58	5.183	9.68	8.217	4.13	11.25	2.31
2.167	2.58	5.200	9.68	8.233	4.13	11.27	2.29
2.183	2.67	5.217	9.68	8.250	4.13	11.28	2.29
2.200	2.67	5.233	9.68	8.267	4.07	11.30	2.29
2.217	2.67	5.250	9.68	8.283	4.07	11.32	2.29
2.233	2.67	5.267	10.56	8.300	4.07	11.33	2.29
2.250	2.67	5.283	10.56	8.317	4.07	11.35	2.27
2.267	2.76	5.300	10.56	8.333	4.07	11.37	2.27
2.283	2.76	5.317	10.56	8.350	4.01	11.38	2.27
2.300	2.76	5.333	10.56	8.367	4.01	11.40	2.27
2.317	2.76	5.350	11.44	8.383	4.01	11.42	2.27
2.333	2.76	5.367	11.44	8.400	4.01	11.43	2.24
2.350	2.85	5.383	11.44	8.417	4.01	11.45	2.24
2.367	2.85	5.400	11.44	8.433	3.94	11.47	2.24
2.383	2.85	5.417	11.44	8.450	3.94	11.48	2.24
2.400	2.85	5.433	12.32	8.467	3.94	11.50	2.24
2.417	2.85	5.450	12.32	8.483	3.94	11.52	2.22
2.433	2.94	5.467	12.32	8.500	3.94	11.53	2.22
2.450	2.94	5.483	12.32	8.517	3.88	11.55	2.22
2.467	2.94	5.500	12.32	8.533	3.88	11.57	2.22
2.483	2.94	5.517	13.20	8.550	3.88	11.58	2.22
2.500	2.94	5.533	13.20	8.567	3.88	11.60	2.19
2.517	3.04	5.550	13.20	8.583	3.88	11.62	2.19
2.533	3.04	5.567	13.20	8.600	3.79	11.63	2.19
2.550	3.04	5.583	13.21	8.617	3.79	11.65	2.19
2.567	3.04	5.600	27.31	8.633	3.79	11.67	2.19
2.583	3.04	5.617	27.31	8.650	3.79	11.68	2.17
2.600	3.15	5.633	27.31	8.667	3.79	11.70	2.17
2.617	3.15	5.650	27.31	8.683	3.74	11.72	2.17
2.633	3.15	5.667	27.33	8.700	3.74	11.73	2.17
2.650	3.15	5.683	49.01	8.717	3.74	11.75	2.17
2.667	3.15	5.700	49.01	8.733	3.74	11.77	2.14
2.683	3.24	5.717	49.01	8.750	3.74	11.78	2.14
2.700	3.24	5.733	49.01	8.767	3.67	11.80	2.14
2.717	3.24	5.750	49.04	8.783	3.67	11.82	2.14
2.733	3.24	5.767	74.31	8.800	3.67	11.83	2.14
2.750	3.24	5.783	74.31	8.817	3.67	11.85	2.12
2.767	3.33	5.800	74.31	8.833	3.67	11.87	2.12
2.783	3.33	5.817	74.31	8.850	3.60	11.88	2.12
2.800	3.33	5.833	74.36	8.867	3.60	11.90	2.12
2.817	3.33	5.850	115.34	8.883	3.60	11.92	2.12
2.833	3.33	5.867	115.34	8.900	3.60	11.93	2.10
2.850	3.43	5.883	115.34	8.917	3.60	11.95	2.10
2.867	3.43	5.900	115.34	8.933	3.54	11.97	2.10
2.883	3.43	5.917	115.38	8.950	3.54	11.98	2.10
2.900	3.43	5.933	147.41	8.967	3.54	12.00	2.10
2.917	3.43	5.950	147.41	8.983	3.54	12.02	2.07

```
                2.933    3.52 | 5.967  147.41 | 9.000    3.54 | 12.03    2.07
                2.950    3.52 | 5.983  147.41 | 9.017    3.47 | 12.05    2.07
                2.967    3.52 | 6.000  147.36 | 9.033    3.47 | 12.07    2.07
                2.983    3.52 | 6.017  108.99 | 9.050    3.47 | 12.08    2.07
                3.000    3.52 | 6.033  108.99 | 9.067    3.47 |
                3.017    3.61 | 6.050  108.99 | 9.083    3.47 |
                3.033    3.61 | 6.067  108.99 | 9.100    3.40 |

     Max.Eff.Inten.(mm/hr)=     147.40       103.49
               over (min)        5.00        10.00
     Storage Coeff.  (min)=      1.42 (ii)    9.69 (ii)
     Unit Hyd. Tpeak (min)=      5.00        10.00
     Unit Hyd. peak  (cms)=      0.43         0.12
                                                        *TOTALS*
     PEAK FLOW       (cms)=      0.06         0.04          0.095 (iii)
     TIME TO PEAK    (hrs)=      6.02         6.13           6.05
     RUNOFF VOLUME    (mm)=     95.34        64.30          77.64
     TOTAL RAINFALL   (mm)=     96.34        96.34          96.34
     RUNOFF COEFFICIENT   =      0.99         0.67           0.81


       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  84.7    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

------------------------
|WATER QUALITY RESULTS |
------------------------

               TSS                                    (kg)=          21.07
               TP                                      (g)=          68.54
               Outflow Volume                         (m3)=         278.71
               TSS Average Outflow Concentration   (mg/l)=          75.58
               TP  Average Outflow Concentration   (mg/l)=           0.25
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0115)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0000   |   0.0140      0.0030
                          0.0090     0.0010   |   0.0170      0.0050

                                  AREA     QPEAK     TPEAK       R.V.
                                  (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0058)      0.359      0.095      6.05       77.64
   OUTFLOW: ID= 1 (  0115)      0.359      0.025      6.42       77.56
```

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                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 25.89
                    TIME SHIFT OF PEAK FLOW         (min)= 22.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0100


------------------------
|WATER QUALITY RESULTS |
------------------------

               Design Removal Efficiency
               TSS Design Removal Efficiency          (%)=       75.00
               TP  Design Removal Efficiency          (%)=       60.00
               TSS Calculated Removal Efficiency      (%)=       75.02
               TP  Calculated Removal Efficiency      (%)=       60.04

               Overflow   TSS Concentration        (mg/l)=        0.00
               Overflow   TP  Concentration        (mg/l)=        0.00
               Overflow   TSS Loading               (Kg)=        0.00
               Overflow   TP  Loading                (g)=        0.00
               Overflow Volume                   (cu.m.)=        0.00

               Outflow    TSS Concentration        (mg/l)=       18.90
               Outflow    TP  Concentration        (mg/l)=        0.10
               Outflow    TSS Loading               (kg)=        5.26
               Outflow    TP  Loading                (g)=       27.39
               Outflow Volume                    (cu.m.)=      278.44

               TSS Average Outflow Concentration   (mg/l)=       18.90
               TP  Average Outflow Concentration   (mg/l)=        0.10
               TSS Outflow Loading                  (kg)=        5.26
               TP  Outflow Loading                   (g)=       27.39
               Total volume                      (cu.m.)=      278.44
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0063)|   Area    (ha)=   0.19
|ID= 1 DT= 1.0 min |   Total Imp(%)=  61.00   Dir. Conn.(%)=  60.00
--------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.11         0.07
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       1.00         1.00
     Length            (m)=      35.12        40.00
     Mannings n           =      0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   1.0 MIN. TIME STEP.


                              ---- TRANSFORMED HYETOGRAPH ----
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TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.017	0.00	3.050	3.61	6.083	108.86	9.12	3.40
0.033	0.00	3.067	3.61	6.100	21.72	9.13	3.40
0.050	0.00	3.083	3.61	6.117	21.72	9.15	3.40
0.067	0.00	3.100	3.67	6.133	21.72	9.17	3.40
0.083	0.00	3.117	3.67	6.150	21.72	9.18	3.33
0.100	2.07	3.133	3.67	6.167	21.72	9.20	3.33
0.117	2.07	3.150	3.67	6.183	19.63	9.22	3.33
0.133	2.07	3.167	3.67	6.200	19.63	9.23	3.33
0.150	2.07	3.183	3.67	6.217	19.63	9.25	3.33
0.167	2.07	3.200	3.67	6.233	19.63	9.27	3.27
0.183	2.09	3.217	3.67	6.250	19.63	9.28	3.27
0.200	2.09	3.233	3.67	6.267	17.54	9.30	3.27
0.217	2.09	3.250	3.67	6.283	17.54	9.32	3.27
0.233	2.09	3.267	3.67	6.300	17.54	9.33	3.27
0.250	2.09	3.283	3.67	6.317	17.54	9.35	3.21
0.267	2.11	3.300	3.67	6.333	17.54	9.37	3.21
0.283	2.11	3.317	3.67	6.350	15.45	9.38	3.21
0.300	2.11	3.333	3.67	6.367	15.45	9.40	3.21
0.317	2.11	3.350	3.67	6.383	15.45	9.42	3.21
0.333	2.11	3.367	3.67	6.400	15.45	9.43	3.14
0.350	2.13	3.383	3.67	6.417	15.45	9.45	3.14
0.367	2.13	3.400	3.67	6.433	13.36	9.47	3.14
0.383	2.13	3.417	3.67	6.450	13.36	9.48	3.14
0.400	2.13	3.433	3.67	6.467	13.36	9.50	3.14
0.417	2.13	3.450	3.67	6.483	13.36	9.52	3.08
0.433	2.15	3.467	3.67	6.500	13.36	9.53	3.08
0.450	2.15	3.483	3.67	6.517	11.27	9.55	3.08
0.467	2.15	3.500	3.67	6.533	11.27	9.57	3.08
0.483	2.15	3.517	3.67	6.550	11.27	9.58	3.08
0.500	2.15	3.533	3.67	6.567	11.27	9.60	2.99
0.517	2.17	3.550	3.67	6.583	11.27	9.62	2.99
0.533	2.17	3.567	3.67	6.600	9.67	9.63	2.99
0.550	2.17	3.583	3.67	6.617	9.67	9.65	2.99
0.567	2.17	3.600	3.76	6.633	9.67	9.67	2.99
0.583	2.17	3.617	3.76	6.650	9.67	9.68	2.93
0.600	2.19	3.633	3.76	6.667	9.67	9.70	2.93
0.617	2.19	3.650	3.76	6.683	9.19	9.72	2.93
0.633	2.19	3.667	3.76	6.700	9.19	9.73	2.93
0.650	2.19	3.683	3.90	6.717	9.19	9.75	2.93
0.667	2.19	3.700	3.90	6.733	9.19	9.77	2.87
0.683	2.21	3.717	3.90	6.750	9.19	9.78	2.87
0.700	2.21	3.733	3.90	6.767	8.72	9.80	2.87
0.717	2.21	3.750	3.90	6.783	8.72	9.82	2.87
0.733	2.21	3.767	4.05	6.800	8.72	9.83	2.87
0.750	2.21	3.783	4.05	6.817	8.72	9.85	2.80
0.767	2.22	3.800	4.05	6.833	8.71	9.87	2.80
0.783	2.22	3.817	4.05	6.850	8.24	9.88	2.80
0.800	2.22	3.833	4.05	6.867	8.24	9.90	2.80

0.817	2.22	3.850	4.20	6.883	8.24	9.92	2.80
0.833	2.22	3.867	4.20	6.900	8.24	9.93	2.74
0.850	2.24	3.883	4.20	6.917	8.24	9.95	2.74
0.867	2.24	3.900	4.20	6.933	7.76	9.97	2.74
0.883	2.24	3.917	4.20	6.950	7.76	9.98	2.74
0.900	2.24	3.933	4.34	6.967	7.76	10.00	2.74
0.917	2.24	3.950	4.34	6.983	7.76	10.02	2.67
0.933	2.26	3.967	4.34	7.000	7.76	10.03	2.67
0.950	2.26	3.983	4.34	7.017	7.29	10.05	2.67
0.967	2.26	4.000	4.34	7.033	7.29	10.07	2.67
0.983	2.26	4.017	4.49	7.050	7.29	10.08	2.67
1.000	2.26	4.033	4.49	7.067	7.29	10.10	2.62
1.017	2.28	4.050	4.49	7.083	7.28	10.12	2.62
1.033	2.28	4.067	4.49	7.100	6.83	10.13	2.62
1.050	2.28	4.083	4.49	7.117	6.83	10.15	2.62
1.067	2.28	4.100	4.72	7.133	6.83	10.17	2.62
1.083	2.28	4.117	4.72	7.150	6.83	10.18	2.60
1.100	2.30	4.133	4.72	7.167	6.83	10.20	2.60
1.117	2.30	4.150	4.72	7.183	6.57	10.22	2.60
1.133	2.30	4.167	4.72	7.200	6.57	10.23	2.60
1.150	2.30	4.183	4.94	7.217	6.57	10.25	2.60
1.167	2.30	4.200	4.94	7.233	6.57	10.27	2.58
1.183	2.32	4.217	4.94	7.250	6.57	10.28	2.58
1.200	2.32	4.233	4.94	7.267	6.31	10.30	2.58
1.217	2.32	4.250	4.94	7.283	6.31	10.32	2.58
1.233	2.32	4.267	5.16	7.300	6.31	10.33	2.58
1.250	2.32	4.283	5.16	7.317	6.31	10.35	2.55
1.267	2.34	4.300	5.16	7.333	6.31	10.37	2.55
1.283	2.34	4.317	5.16	7.350	6.06	10.38	2.55
1.300	2.34	4.333	5.16	7.367	6.06	10.40	2.55
1.317	2.34	4.350	5.38	7.383	6.06	10.42	2.55
1.333	2.34	4.367	5.38	7.400	6.06	10.43	2.53
1.350	2.36	4.383	5.38	7.417	6.06	10.45	2.53
1.367	2.36	4.400	5.38	7.433	5.80	10.47	2.53
1.383	2.36	4.417	5.38	7.450	5.80	10.48	2.53
1.400	2.36	4.433	5.60	7.467	5.80	10.50	2.53
1.417	2.36	4.450	5.60	7.483	5.80	10.52	2.51
1.433	2.38	4.467	5.60	7.500	5.80	10.53	2.51
1.450	2.38	4.483	5.60	7.517	5.54	10.55	2.51
1.467	2.38	4.500	5.60	7.533	5.54	10.57	2.51
1.483	2.38	4.517	5.82	7.550	5.54	10.58	2.51
1.500	2.38	4.533	5.82	7.567	5.54	10.60	2.47
1.517	2.39	4.550	5.82	7.583	5.54	10.62	2.47
1.533	2.39	4.567	5.82	7.600	5.27	10.63	2.47
1.550	2.39	4.583	5.82	7.617	5.27	10.65	2.47
1.567	2.39	4.600	6.19	7.633	5.27	10.67	2.47
1.583	2.39	4.617	6.19	7.650	5.27	10.68	2.46
1.600	2.42	4.633	6.19	7.667	5.27	10.70	2.46
1.617	2.42	4.650	6.19	7.683	5.09	10.72	2.46
1.633	2.42	4.667	6.19	7.700	5.09	10.73	2.46

1.650	2.42	4.683	6.55	7.717	5.09	10.75	2.46
1.667	2.42	4.700	6.55	7.733	5.09	10.77	2.43
1.683	2.44	4.717	6.55	7.750	5.09	10.78	2.43
1.700	2.44	4.733	6.55	7.767	4.90	10.80	2.43
1.717	2.44	4.750	6.55	7.783	4.90	10.82	2.43
1.733	2.44	4.767	6.92	7.800	4.90	10.83	2.43
1.750	2.44	4.783	6.92	7.817	4.90	10.85	2.41
1.767	2.45	4.800	6.92	7.833	4.90	10.87	2.41
1.783	2.45	4.817	6.92	7.850	4.72	10.88	2.41
1.800	2.45	4.833	6.92	7.867	4.72	10.90	2.41
1.817	2.45	4.850	7.29	7.883	4.72	10.92	2.41
1.833	2.45	4.867	7.29	7.900	4.72	10.93	2.39
1.850	2.47	4.883	7.29	7.917	4.72	10.95	2.39
1.867	2.47	4.900	7.29	7.933	4.54	10.97	2.39
1.883	2.47	4.917	7.29	7.950	4.54	10.98	2.39
1.900	2.47	4.933	7.65	7.967	4.54	11.00	2.39
1.917	2.47	4.950	7.65	7.983	4.54	11.02	2.36
1.933	2.49	4.967	7.65	8.000	4.54	11.03	2.36
1.950	2.49	4.983	7.65	8.017	4.35	11.05	2.36
1.967	2.49	5.000	7.65	8.033	4.35	11.07	2.36
1.983	2.49	5.017	8.02	8.050	4.35	11.08	2.36
2.000	2.49	5.033	8.02	8.067	4.35	11.10	2.34
2.017	2.51	5.050	8.02	8.083	4.35	11.12	2.34
2.033	2.51	5.067	8.02	8.100	4.20	11.13	2.34
2.050	2.51	5.083	8.02	8.117	4.20	11.15	2.34
2.067	2.51	5.100	8.80	8.133	4.20	11.17	2.34
2.083	2.51	5.117	8.80	8.150	4.20	11.18	2.31
2.100	2.58	5.133	8.80	8.167	4.20	11.20	2.31
2.117	2.58	5.150	8.80	8.183	4.13	11.22	2.31
2.133	2.58	5.167	8.80	8.200	4.13	11.23	2.31
2.150	2.58	5.183	9.68	8.217	4.13	11.25	2.31
2.167	2.58	5.200	9.68	8.233	4.13	11.27	2.29
2.183	2.67	5.217	9.68	8.250	4.13	11.28	2.29
2.200	2.67	5.233	9.68	8.267	4.07	11.30	2.29
2.217	2.67	5.250	9.68	8.283	4.07	11.32	2.29
2.233	2.67	5.267	10.56	8.300	4.07	11.33	2.29
2.250	2.67	5.283	10.56	8.317	4.07	11.35	2.27
2.267	2.76	5.300	10.56	8.333	4.07	11.37	2.27
2.283	2.76	5.317	10.56	8.350	4.01	11.38	2.27
2.300	2.76	5.333	10.56	8.367	4.01	11.40	2.27
2.317	2.76	5.350	11.44	8.383	4.01	11.42	2.27
2.333	2.76	5.367	11.44	8.400	4.01	11.43	2.24
2.350	2.85	5.383	11.44	8.417	4.01	11.45	2.24
2.367	2.85	5.400	11.44	8.433	3.94	11.47	2.24
2.383	2.85	5.417	11.44	8.450	3.94	11.48	2.24
2.400	2.85	5.433	12.32	8.467	3.94	11.50	2.24
2.417	2.85	5.450	12.32	8.483	3.94	11.52	2.22
2.433	2.94	5.467	12.32	8.500	3.94	11.53	2.22
2.450	2.94	5.483	12.32	8.517	3.88	11.55	2.22
2.467	2.94	5.500	12.32	8.533	3.88	11.57	2.22

2.483	2.94	5.517	13.20	8.550	3.88	11.58	2.22
2.500	2.94	5.533	13.20	8.567	3.88	11.60	2.19
2.517	3.04	5.550	13.20	8.583	3.88	11.62	2.19
2.533	3.04	5.567	13.20	8.600	3.79	11.63	2.19
2.550	3.04	5.583	13.21	8.617	3.79	11.65	2.19
2.567	3.04	5.600	27.31	8.633	3.79	11.67	2.19
2.583	3.04	5.617	27.31	8.650	3.79	11.68	2.17
2.600	3.15	5.633	27.31	8.667	3.79	11.70	2.17
2.617	3.15	5.650	27.31	8.683	3.74	11.72	2.17
2.633	3.15	5.667	27.33	8.700	3.74	11.73	2.17
2.650	3.15	5.683	49.01	8.717	3.74	11.75	2.17
2.667	3.15	5.700	49.01	8.733	3.74	11.77	2.14
2.683	3.24	5.717	49.01	8.750	3.74	11.78	2.14
2.700	3.24	5.733	49.01	8.767	3.67	11.80	2.14
2.717	3.24	5.750	49.04	8.783	3.67	11.82	2.14
2.733	3.24	5.767	74.31	8.800	3.67	11.83	2.14
2.750	3.24	5.783	74.31	8.817	3.67	11.85	2.12
2.767	3.33	5.800	74.31	8.833	3.67	11.87	2.12
2.783	3.33	5.817	74.31	8.850	3.60	11.88	2.12
2.800	3.33	5.833	74.36	8.867	3.60	11.90	2.12
2.817	3.33	5.850	115.34	8.883	3.60	11.92	2.12
2.833	3.33	5.867	115.34	8.900	3.60	11.93	2.10
2.850	3.43	5.883	115.34	8.917	3.60	11.95	2.10
2.867	3.43	5.900	115.34	8.933	3.54	11.97	2.10
2.883	3.43	5.917	115.38	8.950	3.54	11.98	2.10
2.900	3.43	5.933	147.41	8.967	3.54	12.00	2.10
2.917	3.43	5.950	147.41	8.983	3.54	12.02	2.07
2.933	3.52	5.967	147.41	9.000	3.54	12.03	2.07
2.950	3.52	5.983	147.41	9.017	3.47	12.05	2.07
2.967	3.52	6.000	147.36	9.033	3.47	12.07	2.07
2.983	3.52	6.017	108.99	9.050	3.47	12.08	2.07
3.000	3.52	6.033	108.99	9.067	3.47		
3.017	3.61	6.050	108.99	9.083	3.47		
3.033	3.61	6.067	108.99	9.100	3.40		

Max.Eff.Inten.(mm/hr)=	147.40	113.58	
over (min)	5.00	8.00	
Storage Coeff. (min)=	1.17 (ii)	7.43 (ii)	
Unit Hyd. Tpeak (min)=	5.00	8.00	
Unit Hyd. peak (cms)=	0.45	0.15	
			TOTALS
PEAK FLOW (cms)=	0.04	0.02	0.060 (iii)
TIME TO PEAK (hrs)=	6.02	6.10	6.03
RUNOFF VOLUME (mm)=	95.34	71.20	85.66
TOTAL RAINFALL (mm)=	96.34	96.34	96.34
RUNOFF COEFFICIENT =	0.99	0.74	0.89

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 88.7 Ia = Dep. Storage (Above)

(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

WATER QUALITY RESULTS

TSS	(kg)=	13.29
TP	(g)=	39.21
Outflow Volume	(m3)=	158.47
TSS Average Outflow Concentration	(mg/l)=	83.84
TP Average Outflow Concentration	(mg/l)=	0.25

CALIB
STANDHYD (0075) | Area (ha)= 0.60
ID= 1 DT= 1.0 min | Total Imp(%)= 10.00 Dir. Conn.(%)= 10.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.06	0.54
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	1.00	1.00
Length	(m)=	63.35	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.050	3.61	6.083	108.86	9.12	3.40
0.033	0.00	3.067	3.61	6.100	21.72	9.13	3.40
0.050	0.00	3.083	3.61	6.117	21.72	9.15	3.40
0.067	0.00	3.100	3.67	6.133	21.72	9.17	3.40
0.083	0.00	3.117	3.67	6.150	21.72	9.18	3.33
0.100	2.07	3.133	3.67	6.167	21.72	9.20	3.33
0.117	2.07	3.150	3.67	6.183	19.63	9.22	3.33
0.133	2.07	3.167	3.67	6.200	19.63	9.23	3.33
0.150	2.07	3.183	3.67	6.217	19.63	9.25	3.33
0.167	2.07	3.200	3.67	6.233	19.63	9.27	3.27
0.183	2.09	3.217	3.67	6.250	19.63	9.28	3.27
0.200	2.09	3.233	3.67	6.267	17.54	9.30	3.27
0.217	2.09	3.250	3.67	6.283	17.54	9.32	3.27
0.233	2.09	3.267	3.67	6.300	17.54	9.33	3.27
0.250	2.09	3.283	3.67	6.317	17.54	9.35	3.21
0.267	2.11	3.300	3.67	6.333	17.54	9.37	3.21
0.283	2.11	3.317	3.67	6.350	15.45	9.38	3.21
0.300	2.11	3.333	3.67	6.367	15.45	9.40	3.21

0.317	2.11	3.350	3.67	6.383	15.45	9.42	3.21
0.333	2.11	3.367	3.67	6.400	15.45	9.43	3.14
0.350	2.13	3.383	3.67	6.417	15.45	9.45	3.14
0.367	2.13	3.400	3.67	6.433	13.36	9.47	3.14
0.383	2.13	3.417	3.67	6.450	13.36	9.48	3.14
0.400	2.13	3.433	3.67	6.467	13.36	9.50	3.14
0.417	2.13	3.450	3.67	6.483	13.36	9.52	3.08
0.433	2.15	3.467	3.67	6.500	13.36	9.53	3.08
0.450	2.15	3.483	3.67	6.517	11.27	9.55	3.08
0.467	2.15	3.500	3.67	6.533	11.27	9.57	3.08
0.483	2.15	3.517	3.67	6.550	11.27	9.58	3.08
0.500	2.15	3.533	3.67	6.567	11.27	9.60	2.99
0.517	2.17	3.550	3.67	6.583	11.27	9.62	2.99
0.533	2.17	3.567	3.67	6.600	9.67	9.63	2.99
0.550	2.17	3.583	3.67	6.617	9.67	9.65	2.99
0.567	2.17	3.600	3.76	6.633	9.67	9.67	2.99
0.583	2.17	3.617	3.76	6.650	9.67	9.68	2.93
0.600	2.19	3.633	3.76	6.667	9.67	9.70	2.93
0.617	2.19	3.650	3.76	6.683	9.19	9.72	2.93
0.633	2.19	3.667	3.76	6.700	9.19	9.73	2.93
0.650	2.19	3.683	3.90	6.717	9.19	9.75	2.93
0.667	2.19	3.700	3.90	6.733	9.19	9.77	2.87
0.683	2.21	3.717	3.90	6.750	9.19	9.78	2.87
0.700	2.21	3.733	3.90	6.767	8.72	9.80	2.87
0.717	2.21	3.750	3.90	6.783	8.72	9.82	2.87
0.733	2.21	3.767	4.05	6.800	8.72	9.83	2.87
0.750	2.21	3.783	4.05	6.817	8.72	9.85	2.80
0.767	2.22	3.800	4.05	6.833	8.71	9.87	2.80
0.783	2.22	3.817	4.05	6.850	8.24	9.88	2.80
0.800	2.22	3.833	4.05	6.867	8.24	9.90	2.80
0.817	2.22	3.850	4.20	6.883	8.24	9.92	2.80
0.833	2.22	3.867	4.20	6.900	8.24	9.93	2.74
0.850	2.24	3.883	4.20	6.917	8.24	9.95	2.74
0.867	2.24	3.900	4.20	6.933	7.76	9.97	2.74
0.883	2.24	3.917	4.20	6.950	7.76	9.98	2.74
0.900	2.24	3.933	4.34	6.967	7.76	10.00	2.74
0.917	2.24	3.950	4.34	6.983	7.76	10.02	2.67
0.933	2.26	3.967	4.34	7.000	7.76	10.03	2.67
0.950	2.26	3.983	4.34	7.017	7.29	10.05	2.67
0.967	2.26	4.000	4.34	7.033	7.29	10.07	2.67
0.983	2.26	4.017	4.49	7.050	7.29	10.08	2.67
1.000	2.26	4.033	4.49	7.067	7.29	10.10	2.62
1.017	2.28	4.050	4.49	7.083	7.28	10.12	2.62
1.033	2.28	4.067	4.49	7.100	6.83	10.13	2.62
1.050	2.28	4.083	4.49	7.117	6.83	10.15	2.62
1.067	2.28	4.100	4.72	7.133	6.83	10.17	2.62
1.083	2.28	4.117	4.72	7.150	6.83	10.18	2.60
1.100	2.30	4.133	4.72	7.167	6.83	10.20	2.60
1.117	2.30	4.150	4.72	7.183	6.57	10.22	2.60
1.133	2.30	4.167	4.72	7.200	6.57	10.23	2.60

1.150	2.30	4.183	4.94	7.217	6.57	10.25	2.60
1.167	2.30	4.200	4.94	7.233	6.57	10.27	2.58
1.183	2.32	4.217	4.94	7.250	6.57	10.28	2.58
1.200	2.32	4.233	4.94	7.267	6.31	10.30	2.58
1.217	2.32	4.250	4.94	7.283	6.31	10.32	2.58
1.233	2.32	4.267	5.16	7.300	6.31	10.33	2.58
1.250	2.32	4.283	5.16	7.317	6.31	10.35	2.55
1.267	2.34	4.300	5.16	7.333	6.31	10.37	2.55
1.283	2.34	4.317	5.16	7.350	6.06	10.38	2.55
1.300	2.34	4.333	5.16	7.367	6.06	10.40	2.55
1.317	2.34	4.350	5.38	7.383	6.06	10.42	2.55
1.333	2.34	4.367	5.38	7.400	6.06	10.43	2.53
1.350	2.36	4.383	5.38	7.417	6.06	10.45	2.53
1.367	2.36	4.400	5.38	7.433	5.80	10.47	2.53
1.383	2.36	4.417	5.38	7.450	5.80	10.48	2.53
1.400	2.36	4.433	5.60	7.467	5.80	10.50	2.53
1.417	2.36	4.450	5.60	7.483	5.80	10.52	2.51
1.433	2.38	4.467	5.60	7.500	5.80	10.53	2.51
1.450	2.38	4.483	5.60	7.517	5.54	10.55	2.51
1.467	2.38	4.500	5.60	7.533	5.54	10.57	2.51
1.483	2.38	4.517	5.82	7.550	5.54	10.58	2.51
1.500	2.38	4.533	5.82	7.567	5.54	10.60	2.47
1.517	2.39	4.550	5.82	7.583	5.54	10.62	2.47
1.533	2.39	4.567	5.82	7.600	5.27	10.63	2.47
1.550	2.39	4.583	5.82	7.617	5.27	10.65	2.47
1.567	2.39	4.600	6.19	7.633	5.27	10.67	2.47
1.583	2.39	4.617	6.19	7.650	5.27	10.68	2.46
1.600	2.42	4.633	6.19	7.667	5.27	10.70	2.46
1.617	2.42	4.650	6.19	7.683	5.09	10.72	2.46
1.633	2.42	4.667	6.19	7.700	5.09	10.73	2.46
1.650	2.42	4.683	6.55	7.717	5.09	10.75	2.46
1.667	2.42	4.700	6.55	7.733	5.09	10.77	2.43
1.683	2.44	4.717	6.55	7.750	5.09	10.78	2.43
1.700	2.44	4.733	6.55	7.767	4.90	10.80	2.43
1.717	2.44	4.750	6.55	7.783	4.90	10.82	2.43
1.733	2.44	4.767	6.92	7.800	4.90	10.83	2.43
1.750	2.44	4.783	6.92	7.817	4.90	10.85	2.41
1.767	2.45	4.800	6.92	7.833	4.90	10.87	2.41
1.783	2.45	4.817	6.92	7.850	4.72	10.88	2.41
1.800	2.45	4.833	6.92	7.867	4.72	10.90	2.41
1.817	2.45	4.850	7.29	7.883	4.72	10.92	2.41
1.833	2.45	4.867	7.29	7.900	4.72	10.93	2.39
1.850	2.47	4.883	7.29	7.917	4.72	10.95	2.39
1.867	2.47	4.900	7.29	7.933	4.54	10.97	2.39
1.883	2.47	4.917	7.29	7.950	4.54	10.98	2.39
1.900	2.47	4.933	7.65	7.967	4.54	11.00	2.39
1.917	2.47	4.950	7.65	7.983	4.54	11.02	2.36
1.933	2.49	4.967	7.65	8.000	4.54	11.03	2.36
1.950	2.49	4.983	7.65	8.017	4.35	11.05	2.36
1.967	2.49	5.000	7.65	8.033	4.35	11.07	2.36

1.983	2.49	5.017	8.02	8.050	4.35	11.08	2.36
2.000	2.49	5.033	8.02	8.067	4.35	11.10	2.34
2.017	2.51	5.050	8.02	8.083	4.35	11.12	2.34
2.033	2.51	5.067	8.02	8.100	4.20	11.13	2.34
2.050	2.51	5.083	8.02	8.117	4.20	11.15	2.34
2.067	2.51	5.100	8.80	8.133	4.20	11.17	2.34
2.083	2.51	5.117	8.80	8.150	4.20	11.18	2.31
2.100	2.58	5.133	8.80	8.167	4.20	11.20	2.31
2.117	2.58	5.150	8.80	8.183	4.13	11.22	2.31
2.133	2.58	5.167	8.80	8.200	4.13	11.23	2.31
2.150	2.58	5.183	9.68	8.217	4.13	11.25	2.31
2.167	2.58	5.200	9.68	8.233	4.13	11.27	2.29
2.183	2.67	5.217	9.68	8.250	4.13	11.28	2.29
2.200	2.67	5.233	9.68	8.267	4.07	11.30	2.29
2.217	2.67	5.250	9.68	8.283	4.07	11.32	2.29
2.233	2.67	5.267	10.56	8.300	4.07	11.33	2.29
2.250	2.67	5.283	10.56	8.317	4.07	11.35	2.27
2.267	2.76	5.300	10.56	8.333	4.07	11.37	2.27
2.283	2.76	5.317	10.56	8.350	4.01	11.38	2.27
2.300	2.76	5.333	10.56	8.367	4.01	11.40	2.27
2.317	2.76	5.350	11.44	8.383	4.01	11.42	2.27
2.333	2.76	5.367	11.44	8.400	4.01	11.43	2.24
2.350	2.85	5.383	11.44	8.417	4.01	11.45	2.24
2.367	2.85	5.400	11.44	8.433	3.94	11.47	2.24
2.383	2.85	5.417	11.44	8.450	3.94	11.48	2.24
2.400	2.85	5.433	12.32	8.467	3.94	11.50	2.24
2.417	2.85	5.450	12.32	8.483	3.94	11.52	2.22
2.433	2.94	5.467	12.32	8.500	3.94	11.53	2.22
2.450	2.94	5.483	12.32	8.517	3.88	11.55	2.22
2.467	2.94	5.500	12.32	8.533	3.88	11.57	2.22
2.483	2.94	5.517	13.20	8.550	3.88	11.58	2.22
2.500	2.94	5.533	13.20	8.567	3.88	11.60	2.19
2.517	3.04	5.550	13.20	8.583	3.88	11.62	2.19
2.533	3.04	5.567	13.20	8.600	3.79	11.63	2.19
2.550	3.04	5.583	13.21	8.617	3.79	11.65	2.19
2.567	3.04	5.600	27.31	8.633	3.79	11.67	2.19
2.583	3.04	5.617	27.31	8.650	3.79	11.68	2.17
2.600	3.15	5.633	27.31	8.667	3.79	11.70	2.17
2.617	3.15	5.650	27.31	8.683	3.74	11.72	2.17
2.633	3.15	5.667	27.33	8.700	3.74	11.73	2.17
2.650	3.15	5.683	49.01	8.717	3.74	11.75	2.17
2.667	3.15	5.700	49.01	8.733	3.74	11.77	2.14
2.683	3.24	5.717	49.01	8.750	3.74	11.78	2.14
2.700	3.24	5.733	49.01	8.767	3.67	11.80	2.14
2.717	3.24	5.750	49.04	8.783	3.67	11.82	2.14
2.733	3.24	5.767	74.31	8.800	3.67	11.83	2.14
2.750	3.24	5.783	74.31	8.817	3.67	11.85	2.12
2.767	3.33	5.800	74.31	8.833	3.67	11.87	2.12
2.783	3.33	5.817	74.31	8.850	3.60	11.88	2.12
2.800	3.33	5.833	74.36	8.867	3.60	11.90	2.12

2.817	3.33	5.850	115.34	8.883	3.60	11.92	2.12
2.833	3.33	5.867	115.34	8.900	3.60	11.93	2.10
2.850	3.43	5.883	115.34	8.917	3.60	11.95	2.10
2.867	3.43	5.900	115.34	8.933	3.54	11.97	2.10
2.883	3.43	5.917	115.38	8.950	3.54	11.98	2.10
2.900	3.43	5.933	147.41	8.967	3.54	12.00	2.10
2.917	3.43	5.950	147.41	8.983	3.54	12.02	2.07
2.933	3.52	5.967	147.41	9.000	3.54	12.03	2.07
2.950	3.52	5.983	147.41	9.017	3.47	12.05	2.07
2.967	3.52	6.000	147.36	9.033	3.47	12.07	2.07
2.983	3.52	6.017	108.99	9.050	3.47	12.08	2.07
3.000	3.52	6.033	108.99	9.067	3.47		
3.017	3.61	6.050	108.99	9.083	3.47		
3.033	3.61	6.067	108.99	9.100	3.40		

			TOTALS
Max.Eff.Inten.(mm/hr)=	147.40	82.72	
over (min)	5.00	12.00	
Storage Coeff. (min)=	1.66 (ii)	11.04 (ii)	
Unit Hyd. Tpeak (min)=	5.00	12.00	
Unit Hyd. peak (cms)=	0.40	0.10	
PEAK FLOW (cms)=	0.02	0.09	0.098 (iii)
TIME TO PEAK (hrs)=	6.02	6.17	6.12
RUNOFF VOLUME (mm)=	95.34	51.51	55.88
TOTAL RAINFALL (mm)=	96.34	96.34	96.34
RUNOFF COEFFICIENT =	0.99	0.53	0.58

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
YOU SHOULD CONSIDER SPLITTING THE AREA.

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 76.1 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

|WATER QUALITY RESULTS |

TSS	(kg)=	30.83
TP	(g)=	100.69
Outflow Volume	(m3)=	336.42
TSS Average Outflow Concentration	(mg/l)=	91.63
TP Average Outflow Concentration	(mg/l)=	0.30

CALIB	
STANDHYD (0080)	Area (ha)= 0.54
ID= 1 DT= 1.0 min	Total Imp(%)= 24.00 Dir. Conn.(%)= 23.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.13	0.41
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	1.00	1.00
Length	(m)=	59.94	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.050	3.61	6.083	108.86	9.12	3.40
0.033	0.00	3.067	3.61	6.100	21.72	9.13	3.40
0.050	0.00	3.083	3.61	6.117	21.72	9.15	3.40
0.067	0.00	3.100	3.67	6.133	21.72	9.17	3.40
0.083	0.00	3.117	3.67	6.150	21.72	9.18	3.33
0.100	2.07	3.133	3.67	6.167	21.72	9.20	3.33
0.117	2.07	3.150	3.67	6.183	19.63	9.22	3.33
0.133	2.07	3.167	3.67	6.200	19.63	9.23	3.33
0.150	2.07	3.183	3.67	6.217	19.63	9.25	3.33
0.167	2.07	3.200	3.67	6.233	19.63	9.27	3.27
0.183	2.09	3.217	3.67	6.250	19.63	9.28	3.27
0.200	2.09	3.233	3.67	6.267	17.54	9.30	3.27
0.217	2.09	3.250	3.67	6.283	17.54	9.32	3.27
0.233	2.09	3.267	3.67	6.300	17.54	9.33	3.27
0.250	2.09	3.283	3.67	6.317	17.54	9.35	3.21
0.267	2.11	3.300	3.67	6.333	17.54	9.37	3.21
0.283	2.11	3.317	3.67	6.350	15.45	9.38	3.21
0.300	2.11	3.333	3.67	6.367	15.45	9.40	3.21
0.317	2.11	3.350	3.67	6.383	15.45	9.42	3.21
0.333	2.11	3.367	3.67	6.400	15.45	9.43	3.14
0.350	2.13	3.383	3.67	6.417	15.45	9.45	3.14
0.367	2.13	3.400	3.67	6.433	13.36	9.47	3.14
0.383	2.13	3.417	3.67	6.450	13.36	9.48	3.14
0.400	2.13	3.433	3.67	6.467	13.36	9.50	3.14
0.417	2.13	3.450	3.67	6.483	13.36	9.52	3.08
0.433	2.15	3.467	3.67	6.500	13.36	9.53	3.08
0.450	2.15	3.483	3.67	6.517	11.27	9.55	3.08
0.467	2.15	3.500	3.67	6.533	11.27	9.57	3.08
0.483	2.15	3.517	3.67	6.550	11.27	9.58	3.08
0.500	2.15	3.533	3.67	6.567	11.27	9.60	2.99
0.517	2.17	3.550	3.67	6.583	11.27	9.62	2.99
0.533	2.17	3.567	3.67	6.600	9.67	9.63	2.99
0.550	2.17	3.583	3.67	6.617	9.67	9.65	2.99
0.567	2.17	3.600	3.76	6.633	9.67	9.67	2.99
0.583	2.17	3.617	3.76	6.650	9.67	9.68	2.93
0.600	2.19	3.633	3.76	6.667	9.67	9.70	2.93

0.617	2.19	3.650	3.76	6.683	9.19	9.72	2.93
0.633	2.19	3.667	3.76	6.700	9.19	9.73	2.93
0.650	2.19	3.683	3.90	6.717	9.19	9.75	2.93
0.667	2.19	3.700	3.90	6.733	9.19	9.77	2.87
0.683	2.21	3.717	3.90	6.750	9.19	9.78	2.87
0.700	2.21	3.733	3.90	6.767	8.72	9.80	2.87
0.717	2.21	3.750	3.90	6.783	8.72	9.82	2.87
0.733	2.21	3.767	4.05	6.800	8.72	9.83	2.87
0.750	2.21	3.783	4.05	6.817	8.72	9.85	2.80
0.767	2.22	3.800	4.05	6.833	8.71	9.87	2.80
0.783	2.22	3.817	4.05	6.850	8.24	9.88	2.80
0.800	2.22	3.833	4.05	6.867	8.24	9.90	2.80
0.817	2.22	3.850	4.20	6.883	8.24	9.92	2.80
0.833	2.22	3.867	4.20	6.900	8.24	9.93	2.74
0.850	2.24	3.883	4.20	6.917	8.24	9.95	2.74
0.867	2.24	3.900	4.20	6.933	7.76	9.97	2.74
0.883	2.24	3.917	4.20	6.950	7.76	9.98	2.74
0.900	2.24	3.933	4.34	6.967	7.76	10.00	2.74
0.917	2.24	3.950	4.34	6.983	7.76	10.02	2.67
0.933	2.26	3.967	4.34	7.000	7.76	10.03	2.67
0.950	2.26	3.983	4.34	7.017	7.29	10.05	2.67
0.967	2.26	4.000	4.34	7.033	7.29	10.07	2.67
0.983	2.26	4.017	4.49	7.050	7.29	10.08	2.67
1.000	2.26	4.033	4.49	7.067	7.29	10.10	2.62
1.017	2.28	4.050	4.49	7.083	7.28	10.12	2.62
1.033	2.28	4.067	4.49	7.100	6.83	10.13	2.62
1.050	2.28	4.083	4.49	7.117	6.83	10.15	2.62
1.067	2.28	4.100	4.72	7.133	6.83	10.17	2.62
1.083	2.28	4.117	4.72	7.150	6.83	10.18	2.60
1.100	2.30	4.133	4.72	7.167	6.83	10.20	2.60
1.117	2.30	4.150	4.72	7.183	6.57	10.22	2.60
1.133	2.30	4.167	4.72	7.200	6.57	10.23	2.60
1.150	2.30	4.183	4.94	7.217	6.57	10.25	2.60
1.167	2.30	4.200	4.94	7.233	6.57	10.27	2.58
1.183	2.32	4.217	4.94	7.250	6.57	10.28	2.58
1.200	2.32	4.233	4.94	7.267	6.31	10.30	2.58
1.217	2.32	4.250	4.94	7.283	6.31	10.32	2.58
1.233	2.32	4.267	5.16	7.300	6.31	10.33	2.58
1.250	2.32	4.283	5.16	7.317	6.31	10.35	2.55
1.267	2.34	4.300	5.16	7.333	6.31	10.37	2.55
1.283	2.34	4.317	5.16	7.350	6.06	10.38	2.55
1.300	2.34	4.333	5.16	7.367	6.06	10.40	2.55
1.317	2.34	4.350	5.38	7.383	6.06	10.42	2.55
1.333	2.34	4.367	5.38	7.400	6.06	10.43	2.53
1.350	2.36	4.383	5.38	7.417	6.06	10.45	2.53
1.367	2.36	4.400	5.38	7.433	5.80	10.47	2.53
1.383	2.36	4.417	5.38	7.450	5.80	10.48	2.53
1.400	2.36	4.433	5.60	7.467	5.80	10.50	2.53
1.417	2.36	4.450	5.60	7.483	5.80	10.52	2.51
1.433	2.38	4.467	5.60	7.500	5.80	10.53	2.51

1.450	2.38	4.483	5.60	7.517	5.54	10.55	2.51
1.467	2.38	4.500	5.60	7.533	5.54	10.57	2.51
1.483	2.38	4.517	5.82	7.550	5.54	10.58	2.51
1.500	2.38	4.533	5.82	7.567	5.54	10.60	2.47
1.517	2.39	4.550	5.82	7.583	5.54	10.62	2.47
1.533	2.39	4.567	5.82	7.600	5.27	10.63	2.47
1.550	2.39	4.583	5.82	7.617	5.27	10.65	2.47
1.567	2.39	4.600	6.19	7.633	5.27	10.67	2.47
1.583	2.39	4.617	6.19	7.650	5.27	10.68	2.46
1.600	2.42	4.633	6.19	7.667	5.27	10.70	2.46
1.617	2.42	4.650	6.19	7.683	5.09	10.72	2.46
1.633	2.42	4.667	6.19	7.700	5.09	10.73	2.46
1.650	2.42	4.683	6.55	7.717	5.09	10.75	2.46
1.667	2.42	4.700	6.55	7.733	5.09	10.77	2.43
1.683	2.44	4.717	6.55	7.750	5.09	10.78	2.43
1.700	2.44	4.733	6.55	7.767	4.90	10.80	2.43
1.717	2.44	4.750	6.55	7.783	4.90	10.82	2.43
1.733	2.44	4.767	6.92	7.800	4.90	10.83	2.43
1.750	2.44	4.783	6.92	7.817	4.90	10.85	2.41
1.767	2.45	4.800	6.92	7.833	4.90	10.87	2.41
1.783	2.45	4.817	6.92	7.850	4.72	10.88	2.41
1.800	2.45	4.833	6.92	7.867	4.72	10.90	2.41
1.817	2.45	4.850	7.29	7.883	4.72	10.92	2.41
1.833	2.45	4.867	7.29	7.900	4.72	10.93	2.39
1.850	2.47	4.883	7.29	7.917	4.72	10.95	2.39
1.867	2.47	4.900	7.29	7.933	4.54	10.97	2.39
1.883	2.47	4.917	7.29	7.950	4.54	10.98	2.39
1.900	2.47	4.933	7.65	7.967	4.54	11.00	2.39
1.917	2.47	4.950	7.65	7.983	4.54	11.02	2.36
1.933	2.49	4.967	7.65	8.000	4.54	11.03	2.36
1.950	2.49	4.983	7.65	8.017	4.35	11.05	2.36
1.967	2.49	5.000	7.65	8.033	4.35	11.07	2.36
1.983	2.49	5.017	8.02	8.050	4.35	11.08	2.36
2.000	2.49	5.033	8.02	8.067	4.35	11.10	2.34
2.017	2.51	5.050	8.02	8.083	4.35	11.12	2.34
2.033	2.51	5.067	8.02	8.100	4.20	11.13	2.34
2.050	2.51	5.083	8.02	8.117	4.20	11.15	2.34
2.067	2.51	5.100	8.80	8.133	4.20	11.17	2.34
2.083	2.51	5.117	8.80	8.150	4.20	11.18	2.31
2.100	2.58	5.133	8.80	8.167	4.20	11.20	2.31
2.117	2.58	5.150	8.80	8.183	4.13	11.22	2.31
2.133	2.58	5.167	8.80	8.200	4.13	11.23	2.31
2.150	2.58	5.183	9.68	8.217	4.13	11.25	2.31
2.167	2.58	5.200	9.68	8.233	4.13	11.27	2.29
2.183	2.67	5.217	9.68	8.250	4.13	11.28	2.29
2.200	2.67	5.233	9.68	8.267	4.07	11.30	2.29
2.217	2.67	5.250	9.68	8.283	4.07	11.32	2.29
2.233	2.67	5.267	10.56	8.300	4.07	11.33	2.29
2.250	2.67	5.283	10.56	8.317	4.07	11.35	2.27
2.267	2.76	5.300	10.56	8.333	4.07	11.37	2.27

2.283	2.76	5.317	10.56	8.350	4.01	11.38	2.27
2.300	2.76	5.333	10.56	8.367	4.01	11.40	2.27
2.317	2.76	5.350	11.44	8.383	4.01	11.42	2.27
2.333	2.76	5.367	11.44	8.400	4.01	11.43	2.24
2.350	2.85	5.383	11.44	8.417	4.01	11.45	2.24
2.367	2.85	5.400	11.44	8.433	3.94	11.47	2.24
2.383	2.85	5.417	11.44	8.450	3.94	11.48	2.24
2.400	2.85	5.433	12.32	8.467	3.94	11.50	2.24
2.417	2.85	5.450	12.32	8.483	3.94	11.52	2.22
2.433	2.94	5.467	12.32	8.500	3.94	11.53	2.22
2.450	2.94	5.483	12.32	8.517	3.88	11.55	2.22
2.467	2.94	5.500	12.32	8.533	3.88	11.57	2.22
2.483	2.94	5.517	13.20	8.550	3.88	11.58	2.22
2.500	2.94	5.533	13.20	8.567	3.88	11.60	2.19
2.517	3.04	5.550	13.20	8.583	3.88	11.62	2.19
2.533	3.04	5.567	13.20	8.600	3.79	11.63	2.19
2.550	3.04	5.583	13.21	8.617	3.79	11.65	2.19
2.567	3.04	5.600	27.31	8.633	3.79	11.67	2.19
2.583	3.04	5.617	27.31	8.650	3.79	11.68	2.17
2.600	3.15	5.633	27.31	8.667	3.79	11.70	2.17
2.617	3.15	5.650	27.31	8.683	3.74	11.72	2.17
2.633	3.15	5.667	27.33	8.700	3.74	11.73	2.17
2.650	3.15	5.683	49.01	8.717	3.74	11.75	2.17
2.667	3.15	5.700	49.01	8.733	3.74	11.77	2.14
2.683	3.24	5.717	49.01	8.750	3.74	11.78	2.14
2.700	3.24	5.733	49.01	8.767	3.67	11.80	2.14
2.717	3.24	5.750	49.04	8.783	3.67	11.82	2.14
2.733	3.24	5.767	74.31	8.800	3.67	11.83	2.14
2.750	3.24	5.783	74.31	8.817	3.67	11.85	2.12
2.767	3.33	5.800	74.31	8.833	3.67	11.87	2.12
2.783	3.33	5.817	74.31	8.850	3.60	11.88	2.12
2.800	3.33	5.833	74.36	8.867	3.60	11.90	2.12
2.817	3.33	5.850	115.34	8.883	3.60	11.92	2.12
2.833	3.33	5.867	115.34	8.900	3.60	11.93	2.10
2.850	3.43	5.883	115.34	8.917	3.60	11.95	2.10
2.867	3.43	5.900	115.34	8.933	3.54	11.97	2.10
2.883	3.43	5.917	115.38	8.950	3.54	11.98	2.10
2.900	3.43	5.933	147.41	8.967	3.54	12.00	2.10
2.917	3.43	5.950	147.41	8.983	3.54	12.02	2.07
2.933	3.52	5.967	147.41	9.000	3.54	12.03	2.07
2.950	3.52	5.983	147.41	9.017	3.47	12.05	2.07
2.967	3.52	6.000	147.36	9.033	3.47	12.07	2.07
2.983	3.52	6.017	108.99	9.050	3.47	12.08	2.07
3.000	3.52	6.033	108.99	9.067	3.47		
3.017	3.61	6.050	108.99	9.083	3.47		
3.033	3.61	6.067	108.99	9.100	3.40		

Max.Eff.Inten.(mm/hr)=	147.40	91.84
over (min)	5.00	11.00
Storage Coeff. (min)=	1.61 (ii)	10.60 (ii)

Unit Hyd. Tpeak (min)=	5.00	11.00		
Unit Hyd. peak (cms)=	0.41	0.11		
			TOTALS	
PEAK FLOW (cms)=	0.05	0.07	0.108	(iii)
TIME TO PEAK (hrs)=	6.02	6.15	6.08	
RUNOFF VOLUME (mm)=	95.34	56.69	65.57	
TOTAL RAINFALL (mm)=	96.34	96.34	96.34	
RUNOFF COEFFICIENT =	0.99	0.59	0.68	

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 79.7 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

WATER QUALITY RESULTS

TSS	(kg)=	30.42
TP	(g)=	98.85
Outflow Volume	(m3)=	353.43
TSS Average Outflow Concentration	(mg/l)=	86.08
TP Average Outflow Concentration	(mg/l)=	0.28

CALIB
STANDHYD (0095) | Area (ha)= 0.22
ID= 1 DT= 1.0 min | Total Imp(%)= 39.00 Dir. Conn.(%)= 10.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=		0.09	0.13
Dep. Storage (mm)=		1.00	1.50
Average Slope (%)=		1.00	2.00
Length (m)=		38.38	40.00
Mannings n =		0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.050	3.61	6.083	108.86	9.12	3.40
0.033	0.00	3.067	3.61	6.100	21.72	9.13	3.40
0.050	0.00	3.083	3.61	6.117	21.72	9.15	3.40
0.067	0.00	3.100	3.67	6.133	21.72	9.17	3.40
0.083	0.00	3.117	3.67	6.150	21.72	9.18	3.33
0.100	2.07	3.133	3.67	6.167	21.72	9.20	3.33

0.117	2.07	3.150	3.67	6.183	19.63	9.22	3.33
0.133	2.07	3.167	3.67	6.200	19.63	9.23	3.33
0.150	2.07	3.183	3.67	6.217	19.63	9.25	3.33
0.167	2.07	3.200	3.67	6.233	19.63	9.27	3.27
0.183	2.09	3.217	3.67	6.250	19.63	9.28	3.27
0.200	2.09	3.233	3.67	6.267	17.54	9.30	3.27
0.217	2.09	3.250	3.67	6.283	17.54	9.32	3.27
0.233	2.09	3.267	3.67	6.300	17.54	9.33	3.27
0.250	2.09	3.283	3.67	6.317	17.54	9.35	3.21
0.267	2.11	3.300	3.67	6.333	17.54	9.37	3.21
0.283	2.11	3.317	3.67	6.350	15.45	9.38	3.21
0.300	2.11	3.333	3.67	6.367	15.45	9.40	3.21
0.317	2.11	3.350	3.67	6.383	15.45	9.42	3.21
0.333	2.11	3.367	3.67	6.400	15.45	9.43	3.14
0.350	2.13	3.383	3.67	6.417	15.45	9.45	3.14
0.367	2.13	3.400	3.67	6.433	13.36	9.47	3.14
0.383	2.13	3.417	3.67	6.450	13.36	9.48	3.14
0.400	2.13	3.433	3.67	6.467	13.36	9.50	3.14
0.417	2.13	3.450	3.67	6.483	13.36	9.52	3.08
0.433	2.15	3.467	3.67	6.500	13.36	9.53	3.08
0.450	2.15	3.483	3.67	6.517	11.27	9.55	3.08
0.467	2.15	3.500	3.67	6.533	11.27	9.57	3.08
0.483	2.15	3.517	3.67	6.550	11.27	9.58	3.08
0.500	2.15	3.533	3.67	6.567	11.27	9.60	2.99
0.517	2.17	3.550	3.67	6.583	11.27	9.62	2.99
0.533	2.17	3.567	3.67	6.600	9.67	9.63	2.99
0.550	2.17	3.583	3.67	6.617	9.67	9.65	2.99
0.567	2.17	3.600	3.76	6.633	9.67	9.67	2.99
0.583	2.17	3.617	3.76	6.650	9.67	9.68	2.93
0.600	2.19	3.633	3.76	6.667	9.67	9.70	2.93
0.617	2.19	3.650	3.76	6.683	9.19	9.72	2.93
0.633	2.19	3.667	3.76	6.700	9.19	9.73	2.93
0.650	2.19	3.683	3.90	6.717	9.19	9.75	2.93
0.667	2.19	3.700	3.90	6.733	9.19	9.77	2.87
0.683	2.21	3.717	3.90	6.750	9.19	9.78	2.87
0.700	2.21	3.733	3.90	6.767	8.72	9.80	2.87
0.717	2.21	3.750	3.90	6.783	8.72	9.82	2.87
0.733	2.21	3.767	4.05	6.800	8.72	9.83	2.87
0.750	2.21	3.783	4.05	6.817	8.72	9.85	2.80
0.767	2.22	3.800	4.05	6.833	8.71	9.87	2.80
0.783	2.22	3.817	4.05	6.850	8.24	9.88	2.80
0.800	2.22	3.833	4.05	6.867	8.24	9.90	2.80
0.817	2.22	3.850	4.20	6.883	8.24	9.92	2.80
0.833	2.22	3.867	4.20	6.900	8.24	9.93	2.74
0.850	2.24	3.883	4.20	6.917	8.24	9.95	2.74
0.867	2.24	3.900	4.20	6.933	7.76	9.97	2.74
0.883	2.24	3.917	4.20	6.950	7.76	9.98	2.74
0.900	2.24	3.933	4.34	6.967	7.76	10.00	2.74
0.917	2.24	3.950	4.34	6.983	7.76	10.02	2.67
0.933	2.26	3.967	4.34	7.000	7.76	10.03	2.67

0.950	2.26	3.983	4.34	7.017	7.29	10.05	2.67
0.967	2.26	4.000	4.34	7.033	7.29	10.07	2.67
0.983	2.26	4.017	4.49	7.050	7.29	10.08	2.67
1.000	2.26	4.033	4.49	7.067	7.29	10.10	2.62
1.017	2.28	4.050	4.49	7.083	7.28	10.12	2.62
1.033	2.28	4.067	4.49	7.100	6.83	10.13	2.62
1.050	2.28	4.083	4.49	7.117	6.83	10.15	2.62
1.067	2.28	4.100	4.72	7.133	6.83	10.17	2.62
1.083	2.28	4.117	4.72	7.150	6.83	10.18	2.60
1.100	2.30	4.133	4.72	7.167	6.83	10.20	2.60
1.117	2.30	4.150	4.72	7.183	6.57	10.22	2.60
1.133	2.30	4.167	4.72	7.200	6.57	10.23	2.60
1.150	2.30	4.183	4.94	7.217	6.57	10.25	2.60
1.167	2.30	4.200	4.94	7.233	6.57	10.27	2.58
1.183	2.32	4.217	4.94	7.250	6.57	10.28	2.58
1.200	2.32	4.233	4.94	7.267	6.31	10.30	2.58
1.217	2.32	4.250	4.94	7.283	6.31	10.32	2.58
1.233	2.32	4.267	5.16	7.300	6.31	10.33	2.58
1.250	2.32	4.283	5.16	7.317	6.31	10.35	2.55
1.267	2.34	4.300	5.16	7.333	6.31	10.37	2.55
1.283	2.34	4.317	5.16	7.350	6.06	10.38	2.55
1.300	2.34	4.333	5.16	7.367	6.06	10.40	2.55
1.317	2.34	4.350	5.38	7.383	6.06	10.42	2.55
1.333	2.34	4.367	5.38	7.400	6.06	10.43	2.53
1.350	2.36	4.383	5.38	7.417	6.06	10.45	2.53
1.367	2.36	4.400	5.38	7.433	5.80	10.47	2.53
1.383	2.36	4.417	5.38	7.450	5.80	10.48	2.53
1.400	2.36	4.433	5.60	7.467	5.80	10.50	2.53
1.417	2.36	4.450	5.60	7.483	5.80	10.52	2.51
1.433	2.38	4.467	5.60	7.500	5.80	10.53	2.51
1.450	2.38	4.483	5.60	7.517	5.54	10.55	2.51
1.467	2.38	4.500	5.60	7.533	5.54	10.57	2.51
1.483	2.38	4.517	5.82	7.550	5.54	10.58	2.51
1.500	2.38	4.533	5.82	7.567	5.54	10.60	2.47
1.517	2.39	4.550	5.82	7.583	5.54	10.62	2.47
1.533	2.39	4.567	5.82	7.600	5.27	10.63	2.47
1.550	2.39	4.583	5.82	7.617	5.27	10.65	2.47
1.567	2.39	4.600	6.19	7.633	5.27	10.67	2.47
1.583	2.39	4.617	6.19	7.650	5.27	10.68	2.46
1.600	2.42	4.633	6.19	7.667	5.27	10.70	2.46
1.617	2.42	4.650	6.19	7.683	5.09	10.72	2.46
1.633	2.42	4.667	6.19	7.700	5.09	10.73	2.46
1.650	2.42	4.683	6.55	7.717	5.09	10.75	2.46
1.667	2.42	4.700	6.55	7.733	5.09	10.77	2.43
1.683	2.44	4.717	6.55	7.750	5.09	10.78	2.43
1.700	2.44	4.733	6.55	7.767	4.90	10.80	2.43
1.717	2.44	4.750	6.55	7.783	4.90	10.82	2.43
1.733	2.44	4.767	6.92	7.800	4.90	10.83	2.43
1.750	2.44	4.783	6.92	7.817	4.90	10.85	2.41
1.767	2.45	4.800	6.92	7.833	4.90	10.87	2.41

1.783	2.45	4.817	6.92	7.850	4.72	10.88	2.41
1.800	2.45	4.833	6.92	7.867	4.72	10.90	2.41
1.817	2.45	4.850	7.29	7.883	4.72	10.92	2.41
1.833	2.45	4.867	7.29	7.900	4.72	10.93	2.39
1.850	2.47	4.883	7.29	7.917	4.72	10.95	2.39
1.867	2.47	4.900	7.29	7.933	4.54	10.97	2.39
1.883	2.47	4.917	7.29	7.950	4.54	10.98	2.39
1.900	2.47	4.933	7.65	7.967	4.54	11.00	2.39
1.917	2.47	4.950	7.65	7.983	4.54	11.02	2.36
1.933	2.49	4.967	7.65	8.000	4.54	11.03	2.36
1.950	2.49	4.983	7.65	8.017	4.35	11.05	2.36
1.967	2.49	5.000	7.65	8.033	4.35	11.07	2.36
1.983	2.49	5.017	8.02	8.050	4.35	11.08	2.36
2.000	2.49	5.033	8.02	8.067	4.35	11.10	2.34
2.017	2.51	5.050	8.02	8.083	4.35	11.12	2.34
2.033	2.51	5.067	8.02	8.100	4.20	11.13	2.34
2.050	2.51	5.083	8.02	8.117	4.20	11.15	2.34
2.067	2.51	5.100	8.80	8.133	4.20	11.17	2.34
2.083	2.51	5.117	8.80	8.150	4.20	11.18	2.31
2.100	2.58	5.133	8.80	8.167	4.20	11.20	2.31
2.117	2.58	5.150	8.80	8.183	4.13	11.22	2.31
2.133	2.58	5.167	8.80	8.200	4.13	11.23	2.31
2.150	2.58	5.183	9.68	8.217	4.13	11.25	2.31
2.167	2.58	5.200	9.68	8.233	4.13	11.27	2.29
2.183	2.67	5.217	9.68	8.250	4.13	11.28	2.29
2.200	2.67	5.233	9.68	8.267	4.07	11.30	2.29
2.217	2.67	5.250	9.68	8.283	4.07	11.32	2.29
2.233	2.67	5.267	10.56	8.300	4.07	11.33	2.29
2.250	2.67	5.283	10.56	8.317	4.07	11.35	2.27
2.267	2.76	5.300	10.56	8.333	4.07	11.37	2.27
2.283	2.76	5.317	10.56	8.350	4.01	11.38	2.27
2.300	2.76	5.333	10.56	8.367	4.01	11.40	2.27
2.317	2.76	5.350	11.44	8.383	4.01	11.42	2.27
2.333	2.76	5.367	11.44	8.400	4.01	11.43	2.24
2.350	2.85	5.383	11.44	8.417	4.01	11.45	2.24
2.367	2.85	5.400	11.44	8.433	3.94	11.47	2.24
2.383	2.85	5.417	11.44	8.450	3.94	11.48	2.24
2.400	2.85	5.433	12.32	8.467	3.94	11.50	2.24
2.417	2.85	5.450	12.32	8.483	3.94	11.52	2.22
2.433	2.94	5.467	12.32	8.500	3.94	11.53	2.22
2.450	2.94	5.483	12.32	8.517	3.88	11.55	2.22
2.467	2.94	5.500	12.32	8.533	3.88	11.57	2.22
2.483	2.94	5.517	13.20	8.550	3.88	11.58	2.22
2.500	2.94	5.533	13.20	8.567	3.88	11.60	2.19
2.517	3.04	5.550	13.20	8.583	3.88	11.62	2.19
2.533	3.04	5.567	13.20	8.600	3.79	11.63	2.19
2.550	3.04	5.583	13.21	8.617	3.79	11.65	2.19
2.567	3.04	5.600	27.31	8.633	3.79	11.67	2.19
2.583	3.04	5.617	27.31	8.650	3.79	11.68	2.17
2.600	3.15	5.633	27.31	8.667	3.79	11.70	2.17

2.617	3.15	5.650	27.31	8.683	3.74	11.72	2.17
2.633	3.15	5.667	27.33	8.700	3.74	11.73	2.17
2.650	3.15	5.683	49.01	8.717	3.74	11.75	2.17
2.667	3.15	5.700	49.01	8.733	3.74	11.77	2.14
2.683	3.24	5.717	49.01	8.750	3.74	11.78	2.14
2.700	3.24	5.733	49.01	8.767	3.67	11.80	2.14
2.717	3.24	5.750	49.04	8.783	3.67	11.82	2.14
2.733	3.24	5.767	74.31	8.800	3.67	11.83	2.14
2.750	3.24	5.783	74.31	8.817	3.67	11.85	2.12
2.767	3.33	5.800	74.31	8.833	3.67	11.87	2.12
2.783	3.33	5.817	74.31	8.850	3.60	11.88	2.12
2.800	3.33	5.833	74.36	8.867	3.60	11.90	2.12
2.817	3.33	5.850	115.34	8.883	3.60	11.92	2.12
2.833	3.33	5.867	115.34	8.900	3.60	11.93	2.10
2.850	3.43	5.883	115.34	8.917	3.60	11.95	2.10
2.867	3.43	5.900	115.34	8.933	3.54	11.97	2.10
2.883	3.43	5.917	115.38	8.950	3.54	11.98	2.10
2.900	3.43	5.933	147.41	8.967	3.54	12.00	2.10
2.917	3.43	5.950	147.41	8.983	3.54	12.02	2.07
2.933	3.52	5.967	147.41	9.000	3.54	12.03	2.07
2.950	3.52	5.983	147.41	9.017	3.47	12.05	2.07
2.967	3.52	6.000	147.36	9.033	3.47	12.07	2.07
2.983	3.52	6.017	108.99	9.050	3.47	12.08	2.07
3.000	3.52	6.033	108.99	9.067	3.47		
3.017	3.61	6.050	108.99	9.083	3.47		
3.033	3.61	6.067	108.99	9.100	3.40		

Max.Eff.Inten.(mm/hr)=	147.40	160.66	
over (min)	5.00	8.00	
Storage Coeff. (min)=	1.23 (ii)	7.07 (ii)	
Unit Hyd. Tpeak (min)=	5.00	8.00	
Unit Hyd. peak (cms)=	0.45	0.15	
			TOTALS
PEAK FLOW (cms)=	0.01	0.05	0.058 (iii)
TIME TO PEAK (hrs)=	6.02	6.10	6.08
RUNOFF VOLUME (mm)=	95.34	69.98	72.50
TOTAL RAINFALL (mm)=	96.34	96.34	96.34
RUNOFF COEFFICIENT =	0.99	0.73	0.75

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
YOU SHOULD CONSIDER SPLITTING THE AREA.

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 83.3 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

|WATER QUALITY RESULTS |

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

              TSS                                    (kg)=         10.34
              TP                                      (g)=         37.12
              Outflow Volume                         (m3)=        160.23
              TSS Average Outflow Concentration   (mg/l)=         64.56
              TP  Average Outflow Concentration   (mg/l)=          0.23
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0074)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0063):     0.19   0.060     6.03    85.66
      + ID2= 2 (  0075):     0.60   0.098     6.12    55.88
        ================================================
        ID = 3 (  0074):     0.79   0.149     6.08    62.88

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

------------------------
| WATER QUALITY RESULTS|
------------------------

              TSS Average Outflow Concentration   (mg/l)=         89.14
              TP  Average Outflow Concentration   (mg/l)=          0.28
              TSS Outflow Loading                   (kg)=         44.11
              Tp  Outflow Loading                    (g)=        139.90
              Outflow Volume                        (m3)=        494.89
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0074)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0074):     0.79   0.149     6.08    62.88
      + ID2= 2 (  0080):     0.54   0.108     6.08    65.57
        ================================================
        ID = 1 (  0074):     1.33   0.258     6.08    63.98

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

------------------------
| WATER QUALITY RESULTS|
------------------------

              TSS Average Outflow Concentration   (mg/l)=         87.86
              TP  Average Outflow Concentration   (mg/l)=          0.28
              TSS Outflow Loading                   (kg)=         74.54
              Tp  Outflow Loading                    (g)=        238.75
```

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               Outflow Volume                          (m3)=         848.32
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0074)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0074):     1.33   0.258     6.08    63.98
      + ID2= 2 (  0095):     0.22   0.058     6.08    72.50
        ================================================
        ID = 3 (  0074):     1.55   0.316     6.08    65.19

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

------------------------
| WATER QUALITY RESULTS|
------------------------

               TSS Average Outflow Concentration   (mg/l)=          84.16
               TP  Average Outflow Concentration   (mg/l)=           0.27
               TSS Outflow Loading                   (kg)=          84.88
               Tp  Outflow Loading                    (g)=         275.88
               Outflow Volume                        (m3)=        1008.55
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0114)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------       (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000     0.0000   |   0.0140      0.0030
                           0.0090     0.0010   |   0.0170      0.0050

                                  AREA     QPEAK     TPEAK       R.V.
                                  (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0074)      1.547      0.316      6.08      65.19
   OUTFLOW: ID= 1 (  0114)      1.547      0.073      6.57      65.18

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 23.17
                  TIME SHIFT OF PEAK FLOW         (min)= 29.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0425


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|WATER QUALITY RESULTS |
------------------------

               Design Removal Efficiency
               TSS Design Removal Efficiency          (%)=       75.00
               TP  Design Removal Efficiency          (%)=       60.00
               TSS Calculated Removal Efficiency      (%)=       75.01
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                TP  Calculated Removal Efficiency       (%)=       60.01

                Overflow   TSS Concentration         (mg/l)=        0.00
                Overflow   TP  Concentration         (mg/l)=        0.00
                Overflow   TSS Loading                 (Kg)=        0.00
                Overflow   TP  Loading                  (g)=        0.00
                Overflow Volume                     (cu.m.)=        0.00

                Outflow    TSS Concentration         (mg/l)=       21.04
                Outflow    TP  Concentration         (mg/l)=        0.11
                Outflow    TSS Loading                 (kg)=       21.21
                Outflow    TP  Loading                  (g)=      110.32
                Outflow Volume                      (cu.m.)=     1008.28

                TSS Average Outflow Concentration    (mg/l)=       21.04
                TP  Average Outflow Concentration    (mg/l)=        0.11
                TSS Outflow Loading                   (kg)=       21.21
                TP  Outflow Loading                    (g)=      110.32
                Total volume                        (cu.m.)=     1008.28
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0089)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0114):     1.55   0.073     6.57    65.18
      + ID2= 2 (  0115):     0.36   0.025     6.42    77.56
        ================================================
        ID = 3 (  0089):     1.91   0.097     6.53    67.51

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

------------------------
| WATER QUALITY RESULTS|
------------------------

                TSS Average Outflow Concentration   (mg/l)=         20.58
                TP  Average Outflow Concentration   (mg/l)=          0.11
                TSS Outflow Loading                   (kg)=         26.48
                Tp  Outflow Loading                    (g)=        137.71
                Outflow Volume                        (m3)=       1286.72
-------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0089)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0089):     1.91   0.097     6.53    67.51
      + ID2= 2 (  0139):     0.08   0.011     6.18    46.19
```

```
        ==================================================
        ID = 1 (  0089):     1.99   0.103     6.42    66.63

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| WATER QUALITY RESULTS|
------------------------

               TSS Average Outflow Concentration   (mg/l)=          22.85
               TP  Average Outflow Concentration   (mg/l)=           0.11
               TSS Outflow Loading                   (kg)=          30.26
               Tp  Outflow Loading                    (g)=         149.83
               Outflow Volume                        (m3)=        1324.60
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0089)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0089):     1.99   0.103     6.42    66.63
      + ID2= 2 (  0140):     0.33   0.045     6.18    46.20
        ==================================================
        ID = 3 (  0089):     2.31   0.141     6.23    63.74

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

------------------------
| WATER QUALITY RESULTS|
------------------------

               TSS Average Outflow Concentration   (mg/l)=          30.75
               TP  Average Outflow Concentration   (mg/l)=           0.13
               TSS Outflow Loading                   (kg)=          45.37
               Tp  Outflow Loading                    (g)=         198.17
               Outflow Volume                        (m3)=        1475.67
--------------------------------------------------------------------------------

  --------------------------
  | Junction Command(0090) |
  --------------------------

                           AREA     QPEAK   TPEAK     R.V.
                           (ha)     (cms)    (hrs)    (mm)
  INFLOW : ID= 1(  0089)    2.32     0.14    6.23    63.74
  OUTFLOW: ID= 2(  0090)    2.32     0.14    6.23    63.74

  --------------------------------------------------------------------------------
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Hydro First Defense® - HC

Rev. 10.8

Project Name:		*Report Date:*	Paste
Street:		*City:*	
Province:		*Country:*	
Designer:		*email:*	

Treatment Parameters:

Structure ID:		
TSS Goal:	70	% Removal
TSS Particle Size:	Fine	
Area:	1.8	ha
Percent Impervious:	41%	
Rational C value:	0.55	Calc. Cn
Rainfall Station:	Kingston, ONT	MAP
Peak Storm Flow:	416	L/s

RESULTS SUMMARY

Model	TSS	Volume
FD-3HC	80.0%	95.3%
FD-4HC	**84.0%**	**99.5%**
FD-5HC	88.0%	99.8%
FD-6HC	91.0%	100.0%
FD-8HC	94.0%	99.9%
FD-10HC	96.0%	99.9%

Model Specification:

Model:	**FD-4HC**	
Diameter:	1200	mm
Peak Flow Capacity:	510.00	L/s
Sediment Storage:	0.54	m^3
Oil Storage:	723.00	L

Installation Configuration:

Placement:	Online		
Outlet Pipe Size:		mm	*OK*
Inlet Pipe 1 Size:		mm	*OK*
Inlet Pipe 2 Size:		mm	*OK*
Inlet Pipe 3 Size:		mm	*OK*
Rim Level:	100.000	m	Calc Invs.
Outlet Pipe Invert:		m	
Invert Pipe 1:		m	*OK!*
Invert Pipe 2:		m	
Invert Pipe 3:		m	

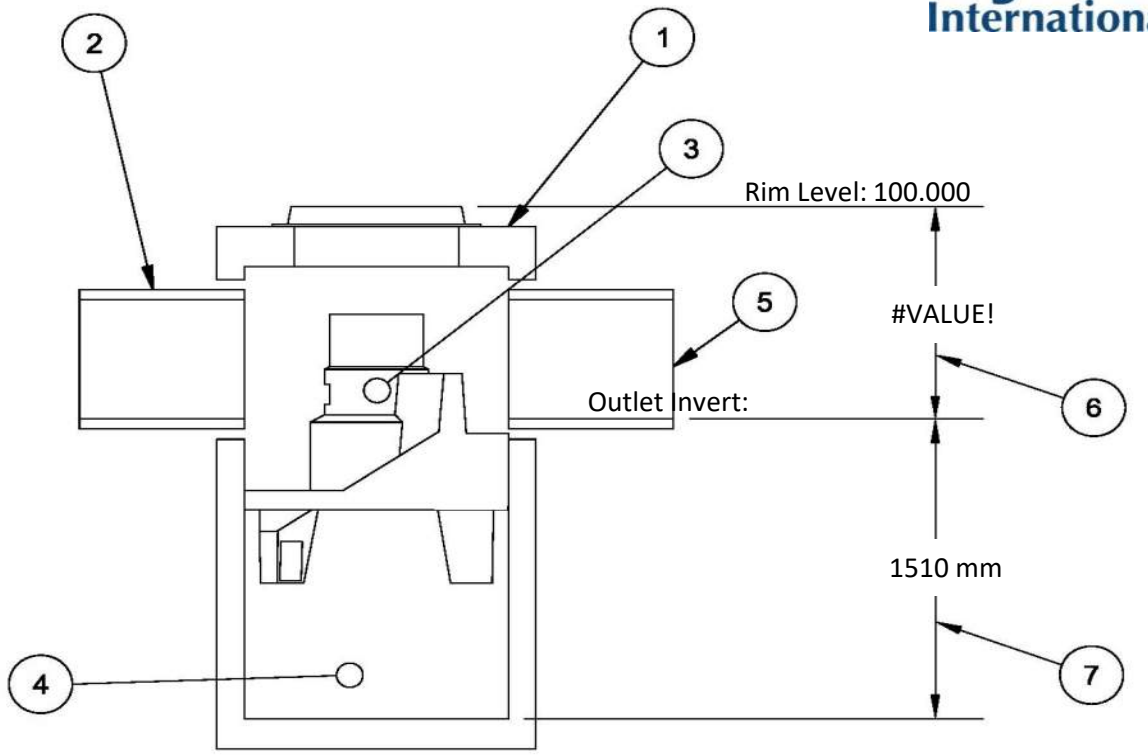
Net Annual Removal Model: FD-4HC

Intensity[1]	Fraction of Rainfall[1]	FD-4HC Removal Efficiency[2]	Weighted Net Annual Efficiency
(mm/hr)	(%)	(%)	(%)
0.50	0.2%	100.0%	0.2%
1.00	13.5%	94.7%	12.7%
1.50	15.4%	91.2%	14.0%
2.00	14.4%	88.8%	12.8%
2.50	3.3%	87.0%	2.8%
3.00	1.8%	85.5%	1.5%
3.50	8.7%	84.3%	7.3%
4.00	5.3%	83.3%	4.4%
4.50	1.4%	82.4%	1.2%
5.00	5.3%	81.5%	4.4%
6.00	4.2%	80.2%	3.4%
7.00	4.3%	79.0%	3.4%
8.00	3.6%	78.1%	2.8%
9.00	1.9%	77.2%	1.4%
10.00	2.4%	76.5%	1.8%
20.00	9.9%	71.7%	7.1%
30.00	2.6%	69.0%	1.8%
40.00	1.0%	67.2%	0.6%
50.00	0.4%	65.8%	0.3%
100.00	0.5%	61.7%	0.3%
150.00	0.0%	59.4%	0.0%
200.00	0.0%	57.9%	0.0%
Total Net Annual Removal Efficiency:			**84.0%**
Total Annual Runoff Volume Treated:			**99.5%**

1. Rainfall Data: 1960:2007, HLY03, Kingston AP, AB, 6104175.
2. Based on third party verified data and appoximating the removal of a PSD similar to the STC Fine distribution
3. Rainfall adjusted to 5 min peak intensity based on hourly average.

Designer Notes:

Hydro First Defense® - HC



All drawing elevations are metres.

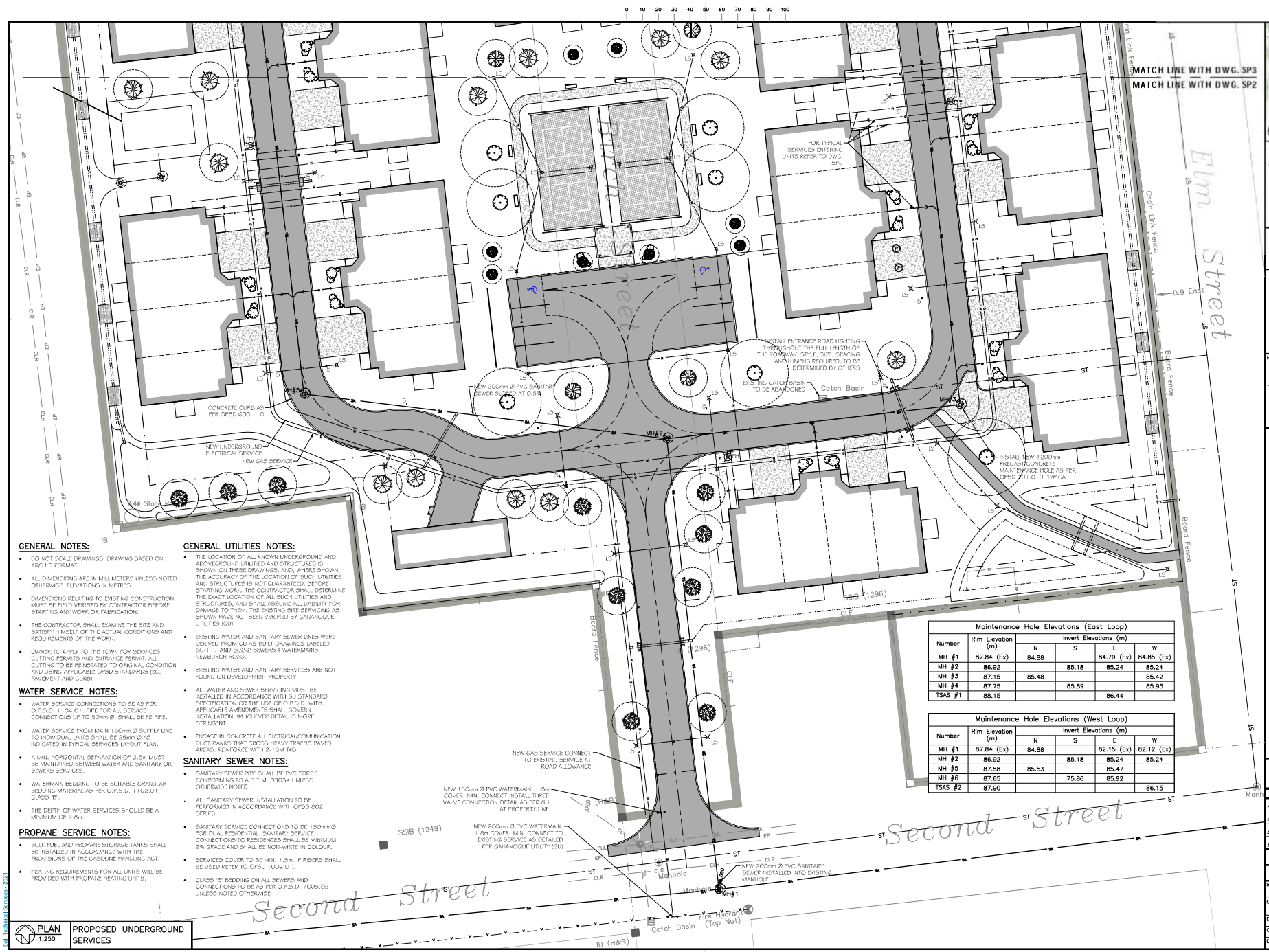
FD-4HC Specification

1	Vortex Chamber Diameter	1200	mm
2	Inlet Pipe Diameter	0	mm
3	Oil Storage Capacity	723.00	L
4	Min. Provided Sediment Storage Capacity	0.54	m^3
5	Outlet Pipe Diameter	0	mm
6	Height(Final Grade to Outlet Invert)	#VALUE!	mm
7	Sump Depth(Outlet Invert to Sump)	1800	mm
	Total Depth	**#VALUE!**	**mm**

Notes:

APPENDIX 'D'

Sanitary Sewer Design Sheets



GENERAL NOTES:

- DO NOT SCALE DRAWINGS. DRAWING BASED ON ARCH D FORMAT
- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE. ELEVATIONS IN METRES.
- DIMENSIONS RELATING TO EXISTING CONSTRUCTION MUST BE FIELD VERIFIED BY CONTRACTOR BEFORE STARTING ANY WORK OR FABRICATION.
- THE CONTRACTOR SHALL EXAMINE THE SITE AND SATISFY HIMSELF OF THE ACTUAL CONDITIONS AND REQUIREMENTS OF THE WORK.
- OWNER TO APPLY TO THE TOWN FOR SERVICES CUTTING PERMITS AND ENTRANCE PERMIT. ALL CUTTING TO BE REINSTATED TO ORIGINAL CONDITION AND USING APPLICABLE OPSD STANDARDS (EG. PAVEMENT AND CURB).

WATER SERVICE NOTES:

- WATER SERVICE CONNECTIONS TO BE AS PER O.P.S.D. 1104.01. PIPE FOR ALL SERVICE CONNECTIONS UP TO 50mm Ø, SHALL BE PE PIPE.
- WATER SERVICE FROM MAIN 150mm Ø SUPPLY LINE TO INDIVIDUAL UNITS SHALL BE 25mm Ø AS INDICATED IN TYPICAL SERVICES LAYOUT PLAN.
- A MIN. HORIZONTAL SEPARATION OF 2.5m MUST BE MAINTAINED BETWEEN WATER AND SANITARY OR SEWERS SERVICES.
- WATERMAIN BEDDING TO BE SUITABLE GRANULAR BEDDING MATERIAL AS PER O.P.S.D. 1102.01, CLASS 'B'.
- THE DEPTH OF WATER SERVICES SHOULD BE A MINIMUM OF 1.8m.

PROPANE SERVICE NOTES:

- BULK FUEL AND PROPANE STORAGE TANKS SHALL BE INSTALLED IN ACCORDANCE WITH THE PROVISIONS OF THE GASOLINE HANDLING ACT.
- HEATING REQUIREMENTS FOR ALL UNITS WILL BE PROVIDED WITH PROPANE HEATING UNITS.

GENERAL UTILITIES NOTES:

- THE LOCATION OF ALL KNOWN UNDERGROUND AND ABOVEGROUND UTILITIES AND STRUCTURES IS SHOWN ON THESE DRAWINGS, AND, WHERE SHOWN, THE ACCURACY OF THE LOCATION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM. THE EXISTING SITE SERVICING AS SHOWN HAVE NOT BEEN VERIFIED BY GANANOQUE UTILITIES (GU).
- EXISTING WATER AND SANITARY SEWER LINES WERE DERIVED FROM GU AS-BUILT DRAWINGS LABELED GU-111 AND 302-2 SEWERS & WATERMAINS NEWBURGH ROAD.
- EXISTING WATER AND SANITARY SERVICES ARE NOT FOUND ON DEVELOPMENT PROPERTY.
- ALL WATER AND SEWER SERVICING MUST BE INSTALLED IN ACCORDANCE WITH GU STANDARD SPECIFICATION OR THE USE OF O.P.S.D. WITH APPLICABLE AMENDMENTS SHALL GOVERN INSTALLATION, WHICHEVER DETAIL IS MORE STRINGENT.
- ENCASE IN CONCRETE ALL ELECTRICAL/COMUNICATION DUCT BANKS THAT CROSS HEAVY TRAFFIC PAVED AREAS. REINFORCE WITH 2-15M THB.

SANITARY SEWER NOTES:

- SANITARY SEWER PIPE SHALL BE PVC SDR35 CONFORMING TO A.S.T.M. D3034 UNLESS OTHERWISE NOTED.
- ALL SANITARY SEWER INSTALLATION TO BE PERFORMED IN ACCORDANCE WITH OPSD 802 SERIES.
- SANITARY SERVICE CONNECTIONS TO BE 150mm Ø FOR DUAL RESIDENTIAL. SANITARY SERVICE CONNECTIONS TO RESIDENCES SHALL BE MINIMUM 2% GRADE AND SHALL BE NON-WHITE IN COLOUR.
- SERVICES COVER TO BE MIN. 1.5m. IF RISERS SHALL BE USED REFER TO OPSD 1006.01.
- CLASS 'B' BEDDING ON ALL SEWERS AND CONNECTIONS TO BE AS PER O.P.S.D. 1005.02 UNLESS NOTED OTHERWISE

Maintenance Hole Elevations (East Loop)

Number	Rim Elevation (m)	Invert Elevations (m)			
		N	S	E	W
MH #1	87.84 (Ex)	84.88		84.79 (Ex)	84.85 (Ex)
MH #2	86.92		85.18	85.24	85.24
MH #3	87.15	85.48			85.42
MH #4	87.75		85.89		85.95
TSAS #1	88.15			86.44	

Maintenance Hole Elevations (West Loop)

Number	Rim Elevation (m)	Invert Elevations (m)			
		N	S	E	W
MH #1	87.84 (Ex)	84.88		82.15 (Ex)	82.12 (Ex)
MH #2	86.92		85.18	85.24	85.24
MH #5	87.58	85.53		85.47	
MH #6	87.65		75.86	85.92	
TSAS #2	87.90				86.15

PLAN 1:250 — PROPOSED UNDERGROUND SERVICES

GANANOQUE — SITE LOCATION — KEY PLAN N.T.S.

PROJECT COMPLETED FOR:
Jaco Investments Ltd
THE BIRCHES Community Living

Project Drafting Services Provided by:
Ball Technical Services
Cell: (613)-331-1823 E-mail: bball1@cogeco.ca
Site Investigation/Inspection/Reporting
Drawing and Document Preparation
Project Design Coordination
Heritage Recording

PROJECT: The Birches - Phase I
Birch Street - Gananoque, Ontario
DRAWING TITLE: Proposed Underground Services Plan

MEASURED SCALE FOR PAPER COPY
0 10mm 50mm
In general - Do Not scale drawing

REVISIONS

1	-	-
2	-	-
3	-	-
4	-	-

BTS Project Number: 19-02
Client Project Number: -
Initial Drawing Issue Date: 12 January, 2019
Current Drawing Issue Date: 24 July, 2019
Designed by: -
Checked by: -
Drawn by: MJB
DRAWING No. SP2
Sheet 2 of 7