LAND DEVELOPMENT SOLUTIONS ENGINEERING INC.

Suite A – 2070 Huron Street East, London ON N5V 5A7 Phone: 226-289-2952

SWM FEASIBILITY REPORT

BYRON EAST SECONDARY PLAN

LDS PROJECT NO. 1614-00052

OCTOBER 26, 2015

Submitted to:

SIFTON PROPERTIES LIMITED.

Distribution (via courier):

Sifton Properties Limited – London Corporate Office

Table of Contents

List of Tables

List of Figures

Appendices

1.0 Introduction

Land Development Solutions has been retained by Sifton Properties Limited to investigate and develop a stormwater management strategy for the proposed Byron East Secondary Plan development area. The proposed development is located at 1030 Byron Baseline Road in the vicinity of the Springbank Drive and Commissioners Road intersection in the west end of the City of London. The 65 hectare site represents a parcel of vacant land which is the site of historic aggregate extraction activities. The site is bounded by vacant land to the south, existing residential properties to the east, by Byron Baseline Road to the north and Colonel Talbot Road to the west. A study site location plan is presented in Figure 1. The site is planned to be developed as a mixed medium, and high density residential development and will include a limited commercial component along the northerly limit of the site.

1.1 Background

The following reports were reviewed and referenced to assist in the design of the stormwater management strategy for the Byron East Secondary Plan development area.

- Functional Design Report and Stormwater Management Plan, Crestwood West Subdivision Phase 2, prepared by Whitney Engineering Inc. and accepted by the City of London on the 7th September 2012.

The information presented in this functional SWM report was used to delineate the external catchment area that drains off site to an existing stormwater management facility in the vicinity of Longworth Road and Cranbrook Road.

1.2 SWM Criteria

The subject property is located in the City of London within the Thames River watershed. Stormwater management design, review and approval for sites located within the City are completed by the Upper Thames River Conservation Authority (UTRCA). Stormwater management design criteria were developed for the subject site based upon site conditions and surrounding site characteristics (i.e. physical setting).

1.2.1 Water Quality Control

The water quality control criterion was selected using the guidance presented in the Stormwater Management Planning and Design Manual (MOE, 2003). To ensure the proper long term function of

planned infiltration basins, MOE "Enhanced" protection level water quality control was selected for the proposed site.

1.2.2 Erosion Control

Erosion control storage is required on some sites to attenuate stormwater discharges to magnitudes that do not cause stream bed and/or stream bank erosion in the downstream receiving watercourse. Since the runoff from the proposed site does not outlet to a receiving watercourse, but rather to an infiltration facility, erosion control in the traditional sense is not warranted. Erosion control, in the form of mats or interlocking concrete blocks may be necessary at the outlet of sewer pipes, however this is outside the scope of the current study.

1.2.3 Water Quantity Control

Peak flow control for the subject site is considered unnecessary as both minor and major system flows are planned to be infiltrated in a series of "at-source" and end of pipe infiltration basins. Since the flows are not discharging to a receiving watercourse, pre to post development flow control is not considered necessary. This however is not the case when speaking of volume based controls. In this application, extensive analysis has been completed to ensure that infiltration volumes will be matched on a pre to post development basis. Further, a small area drains to an existing stormwater management facility where peak flows will be controlled to predevelopment conditions.

2.0 Existing Conditions

The site represents a depleted aggregate extraction area which is bordered with vegetation along the site's southerly boundary. The site is characterized by steep slopes and significant changes in elevation, and within its relative centre, contains a large artificial water feature.

Existing catchment areas are listed below and their hydrologic characteristics can be found in Appendix A. Figure 2 shows a map of the existing catchments.

Catchment 101 – This external catchment area comprises 8.4 hectares and is situated at the southernmost border of the study site. It currently drains to an existing pond at the corner of Longworth Road and Cranbrook Road. The catchment area has been subject to previous extraction activities and is also partially vegetated. It was not included in the hydrologic modelling but delineated for clarity as it drains to an existing pond in the vicinity of Cranbrook and Longworth road.

Catchment 102 – This catchment area comprises the entire 65Ha of the study site and extends north from Catchment 101 to Byron Baseline Road. This catchment area drains to its centre where it pools and infiltrates through native sand and gravel soils to an underlying aquifer. The elevation of the phreatic surface of the water feature is approximately 242m, and for the purpose of this study, has been assumed to represent the stabilized groundwater level.

2.1 Site Soils

Given the historic aggregate resource potential of the site, soil conditions are assumed to be primarily sand and gravel, and consequently have higher than average infiltration capacity. Accordingly, soil conditions can be classified as Hydrologic Soil Group A. According to Table 4.4 of the MOE Stormwater Management Plan / SWMP Design Manual, sand has a percolation rate of 0.21 meters per hour.

2.2 Existing Volume

In accordance with City of London design requirements, hydrologic conditions were modelled using SWMHYMO to generate peak discharge volumes corresponding to the 2-year through to the 250-year storm event. The results of this modelling are summarized in Table 1 whereas model documentation can be found in Appendix A.

Table 1 - Existing Conditions Runoff Volumes

Return Period (Years)	Precipitation (mm)	Precipitation Volume (m^3)	Runoff to Pond (mm)	Volume (m^3)
25mm	25	19500	4	2724
2	33	26044	8	5025
5	45	35459	14	9146
10	53	41106	18	11967
25	61	47198	23	15249
50	66	51691	27	17791
100	72	56137	31	20410
250	87	67665	42	27560

3.0 Proposed Conditions

The proposed stormwater management delineation for the site is illustrated in Figure 3, and each drainage catchment is described below. All proposed catchments and their corresponding hydrologic characteristics can be found in Appendix B.

3.1 Catchments Draining South

The following catchment area drains south to an existing stormwater management facility located at the corner of Longworth Road and Cranbrook Road.

Catchment 201 – This external catchment was included purely for completeness, and does not drain to the SWM facility for the study site. The hydrologic modelling is beyond the scope of this feasibility review.

3.2 Predominantly Pervious Catchments

The following catchment areas are planned to be left in their current condition but may be subject to some regrading activity. These areas represent the steeper sloped embankments of the site and any runoff from these catchment areas will be captured by interceptor swales and directed to the proposed stormwater management infiltration facility. Flow from these catchment areas are considered "clean" as they are conveyed through grassed waterways and therefore are not subject to water quality treatment before entering the infiltration facility.

Catchment 202 - These catchments are steep sections of the old gravel pit, and in both minor and major events will drain to Ditch 1 along the eastern most edge of the catchment. It drains to a ditch-inlet catchbasin, however in major events will overtop this catchbasin and flow via a ditch to the major infiltration basin.

Catchment 203 – This catchment is a steep section of the old gravel pit, and in both minor and major events drains into Ditch 2 along the northern edge of the catchment. From here minor events are conveyed to the infiltration facility via storm sewers, while major events travel via the Springbank Dr extension to the major infiltration basin.

Catchment 204 - This catchment area is a steep section of the exhausted gravel pit and during both minor and major events runoff is directed to Ditch 3. This ditch is directed to a ditch inlet catchbasin which captures flow from minor events. During major events the catchbasin overflows and the flow is directed via a grassed waterway to the cul-de-sac and then directed via the streets to the major infiltration basin.

3.3 Development Catchments

Catchments described in the following section represent catchment areas proposed for development, each having its own local infiltration basin (LIB) along with an off-line oil and grit separator device to provide water quality treatment.

Catchment 205 – Land use within this catchment is planned to comprise of high density residential units. Under post development conditions, run off from this catchment is treated by an oil and grit separator (OGS) device and then drains to Local Infiltration Basin (LIB) No. 1. For major events the local system overtops and runoff is conveyed overland via Springbank drive to the Major Infiltration Basin (MIB).

Catchment 206 - Land use within this catchment is planned to comprise of medium density residential units. Under post development conditions, run off from this catchment is treated by an oil and grit separator (OGS) device and then drains to Local Infiltration Basin (LIB) No. 3. For major events the local system overtops and runoff is conveyed overland via Springbank drive to the Major Infiltration Basin (MIB).

Catchment 207 - Land use within this catchment is planned to comprise of high density residential units. Under post development conditions, run off from this catchment is treated by an oil and grit separator (OGS) device and then drains to Local Infiltration Basin (LIB) No. 2. For major events the local system overtops and runoff is conveyed overland via Springbank drive to the Major Infiltration Basin (MIB).

Catchment 208 – This catchment represents the area set aside for stormwater management and contains the Major Infiltration basin (MIB).

Catchment 209 - Land use within this catchment is planned to comprise of high density residential units. Under post development conditions, run off from this catchment is treated by an oil and grit separator (OGS) device and then drains to Local Infiltration Basin (LIB) No. 4. For major events the local system overtops and runoff is conveyed overland via Springbank drive to the Major Infiltration Basin (MIB).

Catchment 210 - Land use within this catchment is planned to comprise of an institutional area. Under post development conditions, run off from this catchment is treated by an oil and grit separator (OGS) device and then drains to Local Infiltration Basin (LIB) No. 7. For major events the local system overtops and runoff is conveyed overland via Street B to the Major Infiltration Basin (MIB).

Catchment 211 – Land use within this catchment is planned to comprise of medium density residential units and a small commercial area. Under post development conditions, run off from this catchment is treated by an oil and grit separator (OGS) device and then drains to Local Infiltration Basin (LIB) No. 6. For major events the local system overtops and runoff is conveyed overland via Springbank drive to the Major Infiltration Basin (MIB).

Catchment 212 – Land use within this catchment is planned to comprise of commercial. Under post development conditions, run off from this catchment is treated by an oil and grit separator (OGS) device and then drains to Local Infiltration Basin (LIB) No. 5. For major events the local system overtops and runoff is conveyed overland via Springbank drive to the Major Infiltration Basin (MIB).

Catchment 213 - This catchment comprises the road network and includes the corridor reserved for the future realignment of Commissioners Road. Under post development conditions, run off from this catchment is treated by an oil and grit separator (OGS) device and is then conveyed to the Major Infiltration Basin (MIB).

3.4 Proposed Stormwater Management System

3.4.1 Minor System

Runoff from the various development catchment areas will be controlled by a series of off line local infiltration basins (LIB's) that function as part of a treatment train in conjunction with oil and grit separator devices. Each LIB will be sized in accordance with MOE Guidelines and shall not drain areas greater than 5 hectares. Furthermore, LIB's cannot have more than 0.6m of ponding, as this results in soil compaction and a decreased infiltration rate. Each infiltration basin has a depth of 0.6m and side slopes of 8H:1V to achieve both the depth and volume requirements. Each LIB is designed assuming an initial infiltration rate of 65mm/hr, which is the minimum infiltration rate recommended by the MOE SWM manual. This approach provides a conservative result to ensure that each LIB is capable of storing run-off from the 25mm storm event.

Table 2 summarizes the runoff volumes produced by the 25mm storm event and provides the corresponding surface area requirements for the infiltration basin as well as the corresponding storage volume for each LIB.

Table 2 - Local Infiltration Basin (LIB) Summary

LIB ID No.	Contributing Catchment	Contributing Area(ha)	Infiltration Basin Area (m^2)	Runoff Volume (m^3)	Volume Provided (m^3)
1	205	2.6	300	401	422
2	207	4.0	500	497	510
3	206	4.4	375	543	647
4	209	4.5	600	682	760
5	212	1.7	300	302	422
6	211	4.3	500	613	647
7	210	3.6	480	674	714

3.4.2 Major System

For events greater than the 25mm event the inlets to the LIB's will be overtopped and will flow within the sewer along Cranbrook Road. Ultimately in major events the runoff will flow over Cranbrook Road to the Major Infiltration Basin (MIB). The first cell of the MIB is sized to infiltrate run-off from Catchment 214 under the 25mm event. For storm events greater than the 25mm event, the MIB stores the runoff that exceeds the capacity of the LIB's plus the previously mentioned runoff. To achieve this the existing water feature within the proposed stormwater management block must be filled using locally sourced select native sand and gravel to provide a minimum freeboard of one meter between the bottom of the infiltration basin and the stabilized groundwater table. The water quality cell of the MIB is 0.6m deep and depths in excess of this represent storage volumes for events greater than the 25mm event. Figure 3 illustrates the proposed location of all LIB's and the MIB, along with catchment delineations and proposed overland flow routes. The MIB will have a bottom area of 2500 m^2, and will then go up at a slope of 10H:1V to an area of 12600 m^2 and a maximum depth of 3m.

Table 3 – Major Infiltration Basin (MIB) Storage Volumes

Depth (m)	Area (m^2)	Volume (m^3)
0.0	2500	2147
0.2	3173	2820
0.6	4520	4493
1.0	5867	6671
1.4	7213	9422
1.8	8560	12711
2.2	9907	16540
2.6	11253	20900
3.0	12600	25800

3.5 Proposed Runoff Conditions

A hydrologic model was created to calculate post-development runoff volumes. The calculations were performed using the SWMHYMO hydrologic model and design storms developed from the City of London 3-hour Chicago storm distribution. The post-development condition volumes are summarized in the following table and the corresponding supporting documentation is presented in Appendix B.

Table 4 - Proposed Runoff Volumes to MIB's

Return Period (Year)	Precipitation (mm)	Precipitation Volume (m^3)	Runoff to MIB (mm)	Runoff Volume (m^3)
25mm	25	19500	5	2002
2	33	26044	9	4331
5	45	35459	16	8592
10	53	41106	21	11278
25	61	47198	25	14262
50	66	51691	29	16524
100	72	56137	33	18803
250	87	67665	42	24925

A comparison of the results from Table 4 and Table 3 demonstrate that the proposed major infiltration basin is capable of storing both the 25mm event in its water quality cell and that it is also capable of storing all runoff from the development site under the 250 - year event.

3.6 Oil & Grit Separator

To ensure the infiltration basins continue to operate effectively, it is imperative to remove suspended sediment from urban runoff before it enters the basins. To achieve this objective each LIB will require an oil and grit separator device. These devices will provide pre-treatment under low flow conditions thereby mitigating the potential for oil and other pollutants from entering the groundwater. These devices are proposed to be offline to enable higher flows to bypass the device to flow directly to the MIB.

3.7 Water Balance

Under proposed conditions all precipitation that falls within the limits of the proposed development will be infiltrated, thus simulating existing conditions.

4.0 Conclusion

The preceding report describes the proposed stormwater management strategy for the proposed Byron East Secondary Plan development. Based on the analysis contained herein, the following conclusions can be made:

- Events up to the 25mm storm are controlled by the local infiltration basins (LIB's) and the water quality cell of the major infiltration basin (MIB).
- Events greater than the 25mm event overtop the local infiltration basins (LIB's) and flow to the major infiltration basin (MIB) over local roads. The MIB is capable of storing all runoff from the 250 - year event.
- Oil and grit separators treat the majority of the annual precipitation volume and remove sediment and other pollutants before runoff enters the LIB's.

We trust this report sufficiently describes the proposed stormwater management strategy for the proposed Byron East Secondary Plan development area. Should you have any questions concerning the content of this report, please do not hesitate to contact the undersigned.

Sincerely,

LAND DEVELOPMENT SOLUTIONS ENGINEERING INC.

Anthony H. Gubbels, P. Eng.
Principal
Tel: (226) 289-2952
agubbels@land-development-solutions.com

Luke Moir, EIT
Water Resources
Tel: (519) 537 0039
luke.moir@land-development-solutions.com

APPENDIX A

EXISTING CONDITIONS

Project Name:	Byron Springs
Project Number:	1614-00052
Date:	26-Oct-15
Author:	LM
Checked By:	AG

Existing Catchment Summary Table

Catchment Type	Parameter		
Nashyd		102	Unit
	Soil Group	A	
	Area	65	ha
	H1	304	m
	H2	242	m
	Length	500	m
	Slope	12	%
	Width	1300	m
	RC	0.25	
	CN	77	
	IAPer	5	mm
	IAImp	2	mm
	Mnperv	0.25	
	MnImperv	0.013	

```
00001> ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
00002>
00003>    SSSSS  W   W  M   M  H   H  Y   Y  M   M   000         999    999     ~~~~~~~~~
00004>    S      W W W  MM MM  H   H   Y Y   MM MM  O   O       9   9  9   9
00005>    SSSSS  W W W  M M M  HHHHH    Y    M M M  O   O  **   9   9  9   9   Ver  4.05
00006>        S  W W W  M   M  H   H    Y    M   M  O   O        9999   9999   Sept 2011
00007>    SSSSS   W W   M   M  H   H    Y    M   M   000            9      9    ~~~~~~~~~
00008>                                                           9   9  9   9   # 4058874
00009>          StormWater Management Hydrologic Model           999    999     ~~~~~~~~~
00010>
00011> ********************************************************************************
00012> ************************** SWMHYMG Ver/4.05 ************************************
00013> *********  A single event and continuous hydrologic simulation model  **********
00014> *********       Based on the principles of HYMO and its successors       **********
00015> *********                  OTTHYMO-83 and OTTHYMO-89.                    **********
00016> ********************************************************************************
00017> ********* Distributed by:  J.F. Sabourin and Associates Inc.            **********
00018> *********                  Ottawa, Ontario: (613) 836-3884               **********
00019> *********                  Gatineau, Quebec: (819) 243-6858              **********
00020> *********                  E-Mail: swmhymo@jfsa.Com                      **********
00021> ********************************************************************************
00022>
00023> ................................................................................
00024> ......... Licensed user: Land Development Solutions                  .........
00025> .........                 London          SERIAL#:4058874            .........
00026> ................................................................................
00027>
00028> ********************************************************************************
00029> **********          ------ PROGRAM ARRAY DIMENSIONS ------              **********
00030> **********          Maximum value for ID numbers  :     10             **********
00031> **********          Max. number of rainfall points: 105408             **********
00032> **********          Max. number of flow points    : 105408             **********
00033> ********************************************************************************
00034>
00035> ***** DESCRIPTION SUMMARY TABLE HEADERS (units depend on METOUT in START) *****
00036> ***** ------------------------------------------------------------------ *****
00037> *****     ID:  Hydrograph Identification numbers, (1-10).                *****
00038> *****  NxYD:  Hydrograph reference numbers, (6 digits or characters).    *****
00039> *****  AREA:  Drainage area associated with hydrograph, (ac.) or (ha.).  *****
00040> ***** QPEAK:  Peak flow of simulated hydrograph, (ft^3/s) or (m^3/s).    *****
00041> ***** TpeakDate_hh:mm is the date and time of the peak flow.              *****
00042> *****  R.V.:  Runoff volume of simulated hydrograph, (in) or (mm).       *****
00043> *****  R.C.:  Runoff Coefficient of simulated hydrograph, (ratio).       *****
00044> *****     *:  see WARNING or NOTE message printed at end of run.         *****
00045> *****    **:  see  ERROR  message printed at end of run.                 *****
00046> ********************************************************************************
00047> ********************************************************************************
00048>
00049> ::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::
00050>
00051> ********************************************************************************
00052>
00053> ***********************  S U M M A R Y   O U T P U T  ***************************
00054> ********************************************************************************
00055> *          DATE: 2015-10-26     TIME: 09:26:21     RUN COUNTER: 000516          *
00056> ********************************************************************************
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00058> * Output  filename: C:\PROGRA~2\SWMHYMO\Projects\000528~1\Existing.out          *
00059> * Summary filename: C:\PROGRA~2\SWMHYMO\Projects\000528~1\Existing.sum          *
00060> * User comments:                                                              *
00061> * 1:_____________________________________________________________________     *
00062> * 2:_____________________________________________________________________     *
00063> * 3:_____________________________________________________________________     *
00064> ********************************************************************************
00065>
00066>
00067> #*******************************************************************************
00068> #  Project Name: [Byron Springs]    Project Number: [1614-00052]
00069> #  Date        : 06-17-2015
00070> #  Modeller    : [LM]
00071> #  Company     : Land Development Solutions Inc.
00072> #  License #   : 4058874
00073> #*******************************************************************************
00074> RUN:COMMAND#
00075> 001:0001 ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... .....
00076>     START
00077>       [TZERO =    .00 hrs on        0]
00078>       [METOUT=   2    (1=Imperial, 2=metric output)]
00079>       [NSTORM=   0 ]
00080>       [NRUN  =   1 ]
00081> 001:0002 ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... .....
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00083>       [SDT=   .08:SDUR=    .05:PTOT=  25.04]
00084>       [A/B/C= 548.000/   6.000/    .800]
00085> 001:0003 ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... .....
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00088>       [Tp=  .30:DT= 1.20]
00089> 001:0004 ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... .....
00090>     CHICAGO STORM
00091>       [SDT=   .08:SDUR=    .05:PTOT=  33.39]
00092>       [A/B/C= 724.690/   5.500/    .800]
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00094>     CALIB NASHYD       02:102           65.00   1.232 No_date    1:22    7.73 .232
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00096>       [Tp=  .30:DT= 1.20]
00097> 001:0006 ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... .....
00098>     CHICAGO STORM
00099>       [SDT=   .08:SDUR=    .05:PTOT=  45.46]
00100>       [A/B/C=1330.910/   7.938/    .855]
00101> 001:0007 ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... .....
00102>     CALIB NASHYD       02:103           65.00   2.462 No_date    1:21   14.07 .310
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00105> 001:0008 ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... .....
00106>     CHICAGO STORM
00107>       [SDT=   .08:SDUR=    .05:PTOT=  52.70]
00108>       [A/B/C=1497.190/   7.188/    .850]
00109> 001:0009 ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... .....
00110>     CALIB NASHYD       02:102           65.00   3.915 No_date    1:21   18.41 .349
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00113> 001:0010 ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... .....
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00115>       [SDT=   .08:SDUR=    .05:PTOT=  60.51]
00116>       [A/B/C=1455.000/   5.000/    .820]
00117> 001:0011 ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... .....
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00132>       [A/B/C=1499.530/   3.297/    .794]
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00146>     FINISH
00147> ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... .....
00148> ********************************************************************************
00149>     WARNINGS / ERRORS / NOTES
00150> ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
00151>   Simulation ended on 2015-10-26     at 09:26:21
00152> ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
00153>
00154>
```

APPENDIX B

PROPOSED CONDITIONS

Project Name:	Byron Springs
Project Number:	1614-00052
Date:	26-Oct-15
Author:	LM
Checked By:	AG

Proposed Catchment Summary Table

Catchment Type	Parameter				
Nashyd		202	203	204	Unit
	Soil Group	A	A	A	
	Area	20.3	6.2	5.8	ha
	H1	300	300	303	m
	H2	256	261	258	m
	Length	480	515	282	m
	Slope	9	8	16	%
	Width	423	120	206	m
	RC	0.3	0.3	0.3	
	CN	39	39	39	
	IAPer	5	5	5	mm
	IAImp	2	2	2	mm
	Mnperv	0.25	0.25	0.25	
	MnImperv	0.013	0.013	0.013	

Project Name:	Byron Springs
Project Number:	1614-00052
Date:	26-Oct-15
Author:	LM
Checked By:	AG

Proposed Catchment Summary Table

Catchment Type	Parameter									
Stanhyd		205	206	207	209	210	211	212	213	Unit
	Soil Group	A	A	A	A	A	A	A	A	
	Area	2.6	4.4	4.0	4.5	3.6	4.3	1.7	4.8	ha
	IMP Length	175	325	215	165	211	270	152	957	m
	Slope	4	2.5	2.5	2	2	2.5	2	4	%
	P Length	40	40	40	40	40	40	40	40	m
	Slope	2	2	2	2	2	2	2	2	%
	Width	149	135	186	273	171	159	112	50	m
	RC	0.8	0.6	0.6	0.7	0.9	0.7	0.9	0.9	
	CN	84	77	77	84	88	79	88	93	
	IAPer	5	5	5	5	5	5	5	5	mm
	IAImp	2	2	2	2	2	2	2	2	mm
	Mnperv	0.25	0.025	0.025	0.025	0.025	0.025	0.025	0.25	
	MnImperv	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	
	TIMP	0.8	0.7	0.7	0.8	0.9	0.7	0.9	0.9	%
	XIMP	0.6	0.5	0.5	0.6	0.8	0.5	0.8	1.0	%

```
 SSSSS  W   W  M   M  n   n  A   Y   Y  M   M   OOO         999     999     ----------
 S      W   W  MM MM  N N  N  A A   Y Y   MM MM  O   O       9   9   9   9
 SSSSS  W W W  M M M  N  N N AAAAA   Y    M M M  O   O  **   9   9   9   9   Ver  4.05
     S  W W W  M   M  N   NN A   A   Y    M   M  O   O        9999    9999   Sept 2011
 SSSSS   W W   M   M  N    N A   A   Y    M   M   OOO             9       9   ----------
                                                                 5   9   9   9  # 4058074

        StormWater Management Hydrologic Model                   999     999     ----------

 ************************************************************************************
 ************************************************************************************
 ********************** SWMHYMO Ver/4.05 ********************************************
 *********  A single event and continuous hydrologic simulation model  *********
 *********      Based on the principles of HYMO and its successors     *********
 *********                 OTTHYMO-83 and OTTHYMO-89.                  *********
 *********                                                            *********
 ********* Distributed by:  J.F. Sabourin and Associates Inc.          *********
 *********                  Ottawa,  Ontario: (613) 836-3884          *********
 *********                  Gatineau, Quebec: (819) 243-6858          *********
 *********                  E-Mail: swmhymo@jfsa.com                  *********
 ************************************************************************************
 ************************************************************************************


 ..... Licensed user: Land Development Solutions                      .....
 .....                London                 SERIAL#:4058074          .....


 ************************************************************************************
 *********          ------ PROGRAM ARRAY DIMENSIONS ------                *********
 *********          Maximum value for ID numbers  =    10                *********
 *********          Max. number of rainfall points: 105408               *********
 *********          Max. number of flow points    : 105408               *********
 ************************************************************************************


 ***** DESCRIPTION SUMMARY TABLE HEADERS (units depend on METOUT in START) *****
 *****                                                                      *****
 *****    ID:  Hydrograph Identification numbers, (1-10).                   *****
 *****  NHYD:  Hydrograph reference numbers, (6 digits or characters).      *****
 *****  AREA:  Drainage area associated with hydrograph, (ac.) or (ha.).    *****
 *****  QPEAK: Peak flow of simulated hydrograph, (ft^3/s) or (m^3/s).      *****
 *****  TpeakDate_hhimm: is the date and time of the peak flow.             *****
 *****  R.V.:  Runoff Volume of simulated hydrograph, (in) or (mm).         *****
 *****  R.C.:  Runoff Coefficient of simulated hydrograph, (ratio).         *****
 *****     *:  see WARNING or NOTE message printed at end of run.           *****
 *****    **:  see  ERROR  message printed at end of run.                   *****
 ************************************************************************************


 ::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::


 ************************************************************************************
 ***********************  S U M M A R Y   O U T P U T  ******************************
 ************************************************************************************
 *         DATE: 2015-10-26     TIME: 09:24:52     RUN COUNTER: 000515              *
 ************************************************************************************
 * Input  filename: C:\PROGRA~2\SWMHYMO\Projects\000528~1\Pre1rC.dat                 *
 * Output  filename: C:\PROGRA~2\SWMHYMO\Projects\000528~1\Pre1rC.out                *
 * Summary filename: C:\PROGRA~2\SWMHYMO\Projects\000528~1\Pre1rC.sum                *
 * User comments:                                                                   *
 * 1:_______________________________________________________________________________*
 * 2:_______________________________________________________________________________*
 * 3:_______________________________________________________________________________*
 ************************************************************************************


 #*********************************************************************************
 #  Project Name: [Byron Springs]     Project Number: [1614 00052]
 #  Date        : 08-17-2015
 #  Modeller    : [LM]
 #  Company     : Land Development Solutions Inc.
 #  License #   : 4058074
 #*********************************************************************************
 RUN:COMMAND#
 001:0001 ---------------------------------------------------------------------------
     START
      [TZERO =    .00 Hrs on      0]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  =   1 ]
 001:0002 ---------------------------------------------------------------------------
     CHICAGO STORM
      [SDT=  .08:SDUR=    .05:PTOT=  25.04]
      [A/B/C= 540.000/   4.000/    .800]
 001:0003 ---------------------ID:NHYD---------AREA----QPEAK-TpeakDate_hhimm----R.V.-R.C.-
     CALIB NASHYD      01:202            20.30     .042 No_date    1:26     .96 .038
      [CN= 39.0: N= 3.00]
      [Tp=  .33:DT= 1.20]
 001:0004 ---------------------ID:NHYD---------AREA----QPEAK-TpeakDate_hhimm----R.V.-R.C.-
     CALIB NASHYD      02:203             6.20     .013 No_date    1:26     .96 .038
      [CN= 39.0: N= 3.00]
      [Tp=  .33:DT= 1.20]
 001:0005 ---------------------ID:NHYD---------AREA----QPEAK-TpeakDate_hhimm----R.V.-R.C.-
     CALIB NASHYD      03:204             5.80     .016 No_date    1:15     .96 .038
      [CN= 39.0: N= 3.00]
      [Tp=  .20:DT= 1.20]
 001:0006 ---------------------ID:NHYD---------AREA----QPEAK-TpeakDate_hhimm----R.V.-R.C.-
     CALIB STANDHYD    04:205             2.60     .319 No_date    0:57   17.21 .687
      [XIMP=.55:TIMP=.75]
      [LOSS= 2 :CN= 84.0]
      [Pervious     area: [Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.200:SCP=   .0]
      [Impervious   area: [Aimp= 2.00:SLPI=2.00:LGI= 175.:MNI=.013:SCI=   .0]
 001:0007 ---------------------ID:NHYD---------AREA----QPEAK-TpeakDate_hhimm----R.V.-R.C.-
     ROUTE RESERVOIR  > 04:205             2.60     .313 No_date    0:57   17.21  n/a
      [RDT= 1.20] out<  10:Inf11           2.60     .005 No_date    0:47   17.21  n/a
            overflow <= 05:                 .00     .000 No_date    0:00     .00  n/a
      [MxStoUsed=.4009E-01, TotOvfVol=.0000E-00, N Ovf=    0, TotDurOvf=    0.hrs]
 001:0008 ---------------------ID:NHYD---------AREA----QPEAK-TpeakDate_hhimm----R.V.-R.C.-
     CALIB STANDHYD    06:207             4.00     .363 No_date    0:58   14.12 .564
      [XIMP=.45:TIMP=.65]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: [Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.200:SCP=   .0]
      [Impervious   area: [Aimp= 2.00:SLPI=2.00:LGI= 215.:MNI=.013:SCI=   .0]
 001:0009 ---------------------ID:NHYD---------AREA----QPEAK-TpeakDate_hhimm----R.V.-R.C.-
     ROUTE RESERVOIR  > 06:207             4.00     .363 No_date    0:58   14.12  n/a
      [RDT= 1.20] out<  10:Inf12           4.00     .007 No_date    0:47   14.12  n/a
            overflow <= 07:                 .00     .000 No_date    0:00     .00  n/a
      [MxStoUsed=.4972E-01, TotOvfVol=.0000E-00, N Ovf=    0, TotDurOvf=    0.hrs]
 001:0010 ---------------------ID:NHYD---------AREA----QPEAK-TpeakDate_hhimm----R.V.-R.C.-
     CALIB STANDHYD    08:206             4.40     .358 No_date    1:00   14.12 .564
      [XIMP=.45:TIMP=.65]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: [Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.200:SCP=   .0]
      [Impervious   area: [Aimp= 2.00:SLPI=2.00:LGI= 325.:MNI=.013:SCI=   .0]
 001:0011 ---------------------ID:NHYD---------AREA----QPEAK-TpeakDate_hhimm----R.V.-R.C.-
     ROUTE RESERVOIR  > 08:206             4.40     .358 No_date    1:00   14.12  n/a
      [RDT= 1.20] out<  10:Inf13           4.40     .008 No_date    0:49   14.12  n/a
            overflow <= 09:                 .00     .000 No_date    0:00     .00  n/a
      [MxStoUsed=.5435E-01, TotOvfVol=.0000E-00, N Ovf=    0, TotDurOvf=    0.hrs]
 001:0012 ---------------------ID:NHYD---------AREA----QPEAK-TpeakDate_hhimm----R.V.-R.C.-
     ADD HYD           09:                    .00     .000 No_date    0:00     .00  n/a
                     + 07:                    .00     .000 No_date    0:00     .00  n/a
                     + 05:                    .00     .000 No_date    0:00     .00  n/a
                     + 01:202              20.30     .042 No_date    1:26     .96  n/a
                     + 02:203               6.20     .013 No_date    1:26     .96  n/a
                     + 03:204               5.80     .016 No_date    1:15     .96  n/a
      [ID= 1.20]  SUM=  10:SStrtt11        32.30     .069 No_date    1:23     .96  n/a
 001:0013 ---------------------ID:NHYD---------AREA----QPEAK-TpeakDate_hhimm----R.V.-R.C.-
     CALIB STANDHYD    01:209             4.50     .574 No_date    0:57   17.21 .687
      [XIMP=.55:TIMP=.75]
      [LOSS= 2 :CN= 84.0]
      [Pervious     area: [Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.200:SCP=   .0]
      [Impervious   area: [Aimp= 2.00:SLPI=2.00:LGI= 130.:MNI=.013:SCI=   .0]
 001:0014 ---------------------ID:NHYD---------AREA----QPEAK-TpeakDate_hhimm----R.V.-R.C.-
     ROUTE RESERVOIR  > 01:209             4.50     .574 No_date    0:57   17.21  n/a
      [RDT= 1.20] out<  09:Inf14           4.50     .010 No_date    0:49   17.21  n/a
            overflow <= 02:                 .00     .000 No_date    0:00     .00  n/a
      [MxStoUsed=.6821E-01, TotOvfVol=.0000E-00, N Ovf=    0, TotDurOvf=    0.hrs]
 001:0015 ---------------------ID:NHYD---------AREA----QPEAK-TpeakDate_hhimm----R.V.-R.C.-
     CALIB STANDHYD    03:212             1.70     .263 No_date    0:58   20.35 .813
      [XIMP=.80:TIMP=.95]
      [LOSS= 2 :CN= 88.0]
      [Pervious     area: [Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.200:SCP=   .0]
      [Impervious   area: [Aimp= 2.00:SLPI=2.00:LGI= 250.:MNI=.013:SCI=   .0]
 001:0016 ---------------------ID:NHYD---------AREA----QPEAK-TpeakDate_hhimm----R.V.-R.C.-
     ROUTE RESERVOIR  > 03:212             1.70     .263 No_date    0:58   20.35  n/a
      [RDT= 1.20] out<  09:Inf15           1.70     .005 No_date    0:49   20.35  n/a
            overflow <= 04:                 .00     .000 No_date    0:00     .00  n/a
      [MxStoUsed=.3015E-01, TotOvfVol=.0000E-00, N Ovf=    0, TotDurOvf=    0.hrs]
 001:0017 ---------------------ID:NHYD---------AREA----QPEAK-TpeakDate_hhimm----R.V.-R.C.-
     ADD HYD           02:                    .00     .000 No_date    0:00     .00  n/a
                     + 04:                    .00     .000 No_date    0:00     .00  n/a
 001:0018 ---------------------ID:NHYD---------AREA----QPEAK-TpeakDate_hhimm----R.V.-R.C.-
     CALIB STANDHYD    01:211             4.30     .490 No_date    0:58   16.46 .657
      [XIMP=.60:TIMP=.70]
      [LOSS= 2 :CN= 86.0]
      [Pervious     area: [Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: [Aimp= 2.00:SLPI=2.00:LGI= 270.:MNI=.013:SCI=   .0]
 001:0019 ---------------------ID:NHYD---------AREA----QPEAK-TpeakDate_hhimm----R.V.-R.C.-
     ROUTE RESERVOIR  > 01:211             4.30     .490 No_date    0:58   16.46  n/a
      [RDT= 1.20] out<  08:Inf16           4.30     .010 No_date    0:46   16.46  n/a
            overflow <= 02:                 .00     .000 No_date    0:00     .00  n/a
      [MxStoUsed=.6127E-01, TotOvfVol=.0000E-00, N Ovf=    0, TotDurOvf=    0.hrs]
 001:0020 ---------------------ID:NHYD---------AREA----QPEAK-TpeakDate_hhimm----R.V.-R.C.-
     CALIB STANDHYD    03:210             3.60     .582 No_date    0:58   20.98 .838
      [XIMP=.80:TIMP=.90]
      [LOSS= 2 :CN= 88.0]
      [Pervious     area: [Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: [Aimp= 2.00:SLPI=2.00:LGI= 211.:MNI=.013:SCI=   .0]
 001:0021 ---------------------ID:NHYD---------AREA----QPEAK-TpeakDate_hhimm----R.V.-R.C.-
     ROUTE RESERVOIR  > 03:210             3.60     .582 No_date    0:58   20.96  n/a
      [RDT= 1.20] out<  06:Inf17           3.60     .009 No_date    0:45   20.98  n/a
            overflow <= 04:                 .00     .000 No_date    0:00     .00  n/a
      [MxStoUsed=.6741E-01, TotOvfVol=.0000E-00, N Ovf=    0, TotDurOvf=    0.hrs]
 001:0022 ---------------------ID:NHYD---------AREA----QPEAK-TpeakDate_hhimm----R.V.-R.C.-
     ADD HYD           02:                    .00     .000 No_date    0:00     .00  n/a
                     + 04:                    .00     .000 No_date    0:00     .00  n/a
 001:0023 ---------------------ID:NHYD---------AREA----QPEAK-TpeakDate_hhimm----R.V.-R.C.-
     CALIB STANDHYD    01:Roads213        4.75     .640 No_date    1:02   22.91 .915
      [XIMP=.99:TIMP=.99]
      [LOSS= 2 :CN= 93.0]
      [Pervious     area: [Aper= 5.00:SLPP=4.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: [Aimp= 2.00:SLPI=4.00:LGI= 957.:MNI=.013:SCI=   .0]
 001:0024 ---------------------ID:NHYD---------AREA----QPEAK-TpeakDate_hhimm----R.V.-R.C.-
     CALIB NASHYD      02:SWMblock2       3.40     .381 No_date    1:03   17.77 .710
      [CN= 99.0: N= 3.00]
      [Tp=  .10:DT= 1.20]
 001:0025 ---------------------ID:NHYD---------AREA----QPEAK-TpeakDate_hhimm----R.V.-R.C.-
     ADD HYD           01:Roads213        4.75     .640 No_date    1:02   22.91  n/a
                     + 02:SWMblock2       3.40     .381 No_date    1:03   17.77  n/a
                     + 08:NWStrt7          .00     .000 No_date    0:00     .00  n/a
                     + 09:NESStrt7         .00     .000 No_date    0:00     .00  n/a
                     + 10:SStrtt11       32.30     .069 No_date    1:23     .96  n/a
 002:0026 ---------------------ID:NHYD---------AREA----QPEAK-TpeakDate_hhimm----R.V.-R.C.-
      [ID= 1.20]  SUM=  03:Totaltobe     40.45    1.035 No_date    1:02    4.95  n/a
 002:0026 ---------------------------------------------------------------------------
     CHICAGO STORM
      [SDT=  .08:SDUR=    .05:PTOT=  33.39]
      [A/B/C= 724.690/   5.500/    .800]
 002:0027 ---------------------ID:NHYD---------AREA----QPEAK-TpeakDate_hhimm----R.V.-R.C.-
     CALIB NASHYD      01:202            20.30     .084 No_date    1:26     .89 .057
      [CN= 39.0: N= 3.00]
      [Tp=  .33:DT= 1.20]
 002:0028 ---------------------ID:NHYD---------AREA----QPEAK-TpeakDate_hhimm----R.V.-R.C.-
     CALIB NASHYD      02:203             6.20     .026 No_date    1:26     .89 .057
      [CN= 39.0: N= 3.00]
      [Tp=  .33:DT= 1.20]
 002:0029 ---------------------ID:NHYD---------AREA----QPEAK-TpeakDate_hhimm----R.V.-R.C.-
     CALIB NASHYD      03:204             5.80     .032 No_date    1:15     .89 .057
      [CN= 99.0: N= 3.00]
      [Tp=  .20:DT= 1.20]
 002:0030 ---------------------ID:NHYD---------AREA----QPEAK-TpeakDate_hhimm----R.V.-R.C.-
     CALIB STANDHYD    04:205             2.60     .396 No_date    0:57   24.60 .737
      [XIMP=.55:TIMP=.75]
      [LOSS= 2 :CN= 84.0]
      [Pervious     area: [Aper= 5.00:SLPP=2.00:LGP=  50.:MNP=.200:SCP=   .0]
      [Impervious   area: [Aimp= 2.00:SLPI=2.00:LGI= 175.:MNI=.013:SCI=   .0]
 002:0031 ---------------------ID:NHYD---------AREA----QPEAK-TpeakDate_hhimm----R.V.-R.C.-
     ROUTE RESERVOIR  > 04:205             2.60     .396 No_date    0:57   24.60  n/a
      [RDT= 1.20] out<  10:Inf11           1.91     .005 No_date    0:41   24.60  n/a
            overflow <= 05:                 .69     .083 No_date    1:23   24.60  n/a
      [MxStoUsed=.4220E-01, TotOvfVol=.1628E-01, N Ovf=    2, TotDurOvf=    2.hrs]
 002:0032 ---------------------ID:NHYD---------AREA----QPEAK-TpeakDate_hhimm----R.V.-R.C.-
     CALIB STANDHYD    06:207             4.00     .462 No_date    0:58   26.52 .815
      [XIMP=.45:TIMP=.65]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: [Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.200:SCP=   .0]
      [Impervious   area: [Aimp= 2.00:SLPI=2.00:LGI= 215.:MNI=.013:SCI=   .0]
 002:0033 ---------------------ID:NHYD---------AREA----QPEAK-TpeakDate_hhimm----R.V.-R.C.-
     ROUTE RESERVOIR  > 06:207             4.00     .462 No_date    0:58   26.52  n/a
      [RDT= 1.20] out<  10:Inf12           2.82     .007 No_date    0:41   26.52  n/a
            overflow <= 07:                1.17     .115 No_date    1:23   26.52  n/a
      [MxStoUsed=.5100E-01, TotOvfVol=.2402E-01, N Ovf=    2, TotDurOvf=    2.hrs]
 002:0034 ---------------------ID:NHYD---------AREA----QPEAK-TpeakDate_hhimm----R.V.-R.C.-
     CALIB STANDHYD    08:206             4.40     .468 No_date    0:58   26.52 .815
      [XIMP=.45:TIMP=.65]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: [Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.200:SCP=   .0]
      [Impervious   area: [Aimp= 2.00:SLPI=2.00:LGI= 325.:MNI=.013:SCI=   .0]
 002:0035 ---------------------ID:NHYD---------AREA----QPEAK-TpeakDate_hhimm----R.V.-R.C.-
     ROUTE RESERVOIR  > 08:206             4.40     .468 No_date    0:58   26.52  n/a
      [RDT= 1.20] out<  10:Inf13           3.55     .008 No_date    0:41   26.52  n/a
            overflow <= 09:                .85     .073 No_date    1:40   26.52  n/a
      [MxStoUsed=.6470E-01, TotOvfVol=.1744E-01, N Ovf=    2, TotDurOvf=    2.hrs]
 002:0036 ---------------------ID:NHYD---------AREA----QPEAK-TpeakDate_hhimm----R.V.-R.C.-
     ADD HYD           09:                    .85     .073 No_date    1:40   26.52  n/a
                     + 07:                   1.17     .115 No_date    1:23   26.52  n/a
                     + 05:                    .69     .083 No_date    1:23   24.60  n/a
                     + 01:202              20.10     .084 No_date    1:26    1.89  n/a
                     + 02:203               6.20     .026 No_date    1:26    1.89  n/a
                     + 03:204               5.80     .032 No_date    1:15    1.89  n/a
      [ID= 1.20]  SUM=  10:SStrtt11        35.01     .334 No_date    1:23    3.41  n/a
 002:0037 ---------------------ID:NHYD---------AREA----QPEAK-TpeakDate_hhimm----R.V.-R.C.-
     CALIB STANDHYD    01:209             4.50     .719 No_date    0:57   24.60 .737
      [XIMP=.55:TIMP=.75]
      [LOSS= 2 :CN= 84.0]
      [Pervious     area: [Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.200:SCP=   .0]
      [Impervious   area: [Aimp= 2.00:SLPI=2.00:LGI= 130.:MNI=.013:SCI=   .0]
 002:0038 ---------------------ID:NHYD---------AREA----QPEAK-TpeakDate_hhimm----R.V.-R.C.-
     ROUTE RESERVOIR  > 01:209             4.50     .719 No_date    0:57   24.60  n/a
      [RDT= 1.20] out<  09:Inf14           3.49     .016 No_date    0:28   24.60  n/a
            overflow <= 02:                1.01     .120 No_date    1:27   24.60  n/a
      [MxStoUsed=.7600E-01, TotOvfVol=.2496E-01, N Ovf=    2, TotDurOvf=    2.hrs]
```

```
00027>  00l:0029 ID:NHYD AREA QPEAK TpeakDate_hhmm R.V. R.C.
00274>      CALIB STANDHYD    03:212          1.70     .328 No_date    0:58  28.27 .847
00275>        [XIMP=.80:TIMP=.85]
00276>        [LOSS= 2 :CN= 86.0]
00277>        |Pervious     area: |Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.200:SCP=  .0|
00278>        |Impervious   area: |Aimp= 2.00:SLPI=2.00:LGI= 250.:MNI=.013:SCI=  .0|
00279>  00l:0040 ID:NHYD AREA QPEAK TpeakDate_hhmm R.V. R.C.
00280>      ROUTE RESERVOIR -> 03:212          1.70     .328 No_date    0:58  28.27  n/a
00281>        [RDT= 1.20] outs= 09:Inf15        1.66     .005 No_date    0:43  28.27  n/a
00282>              overflow <= 04:             .04     .009 No_date    2:38  28.27  n/a
00283>      {MxStoUsed=.4220E-01, TotOvfVol=.1166E-02, N-Ovf=    2, TotDurOvf=    0.hrs}
00284>  00l:0041 ID:NHYD AREA QPEAK TpeakDate_hhmm R.V. R.C.
00285>      ADD HYD           02:               1.01     .120 No_date    1:27  24.60  n/a
00286>                      + 04:               .04     .009 No_date    2:38  28.27  n/a
00287>        [DT= 1.20]  SUM= 09:NEStrt7       1.06     .120 No_date    1:27  24.75  n/a
00288>  00l:0042 ID:NHYD AREA QPEAK TpeakDate_hhmm R.V. R.C.
00289>      CALIB STANDHYD    01:211          4.30     .613 No_date    0:58  23.38 .700
00290>        [XIMP=.60:TIMP=.70]
00291>        [LOSS= 2 :CN= 80.0]
00292>        |Pervious     area: |Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.250:SCP=  .0|
00293>        |Impervious   area: |Aimp= 2.00:SLPI=2.00:LGI= 270.:MNI=.013:SCI=  .0|
00294>  00l:0043 ID:NHYD AREA QPEAK TpeakDate_hhmm R.V. R.C.
00295>      ROUTE RESERVOIR -> 01:211          4.30     .613 No_date    0:58  23.38  n/a
00296>        [RDT= 1.20] outs= 08:Inf16        3.20     .010 No_date    0:39  23.38  n/a
00297>              overflow <= 02:             1.10     .119 No_date    1:25  22.38  n/a
00298>      {MxStoUsed=.6470E-01, TotOvfVol=.2582E-01, N-Ovf=    1, TotDurOvf=    2.hrs}
00299>  00l:0044 ID:NHYD AREA QPEAK TpeakDate_hhmm R.V. R.C.
00300>      CALIB STANDHYD    03:210          3.60     .727 No_date    0:58  29.07 .871
00301>        [XIMP=.80:TIMP=.90]
00302>        [LOSS= 2 :CN= 88.0]
00303>        |Pervious     area: |Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.250:SCP=  .0|
00304>        |Impervious   area: |Aimp= 2.00:SLPI=2.00:LGI= 210.:MNI=.013:SCI=  .0|
00305>  00l:0045 ID:NHYD AREA QPEAK TpeakDate_hhmm R.V. R.C.
00306>      ROUTE RESERVOIR -> 03:210          3.60     .727 No_date    0:58  29.07  n/a
00307>        [RDT= 1.20] outs= 08:Inf17        2.75     .009 No_date    0:39  29.07  n/a
00308>              overflow <= 04:             .85     .124 No_date    1:22  29.07  n/a
00309>      {MxStoUsed=.7139E-01, TotOvfVol=.2470E-01, N-Ovf=    1, TotDurOvf=    2.hrs}
00310>  00l:0046 ID:NHYD AREA QPEAK TpeakDate_hhmm R.V. R.C.
00311>      ADD HYD           02:               1.10     .119 No_date    1:25  29.38  n/a
00312>                      + 04:               .85     .124 No_date    1:22  29.07  n/a
00313>        [DT= 1.20]  SUM= 08:NWStrt7       1.95     .230 No_date    1:25  25.86  n/a
00314>  00l:0047 ID:NHYD AREA QPEAK TpeakDate_hhmm R.V. R.C.
00315>      CALIB STANDHYD    01:Roads213     4.75     .940 No_date    0:57  31.25 .936
00316>        [XIMP=.99:TIMP=.99]
00317>        [LOSS= 2 :CN= 98.0]
00318>        |Pervious     area: |Aper= 5.00:SLPP=4.00:LGP=  40.:MNP=.250:SCP=  .0|
00319>        |Impervious   area: |Aimp= 2.00:SLPI=4.00:LGI= 957.:MNI=.013:SCI=  .0|
00320>  00l:0048 ID:NHYD AREA QPEAK TpeakDate_hhmm R.V. R.C.
00321>      CALIB NASHYD      02:SWMBlock21   3.40     .542 No_date    1:02  26.04 .780
00322>        [CN= 99.0: N= 3.00]
00323>        [Tp=  .10:DT= 1.20]
00324>  00l:0049 ID:NHYD AREA QPEAK TpeakDate_hhmm R.V. R.C.
00325>      ADD HYD           01:Roads213     4.75     .940 No_date    0:57  31.25  n/a
00326>                      + 02:SWMBlock21   3.40     .542 No_date    1:02  26.04  n/a
00327>                      + 08:NWStrt7      1.95     .230 No_date    1:25  25.86  n/a
00328>                      + 09:NEStrt7      1.06     .120 No_date    1:27  24.75  n/a
00329>                      + 10:SStrt7tl     35.01     .334 No_date    1:23   3.41  n/a
00330>        [DT= 1.20]  SUM= 03:TotaltoRel    46.17    1.367 No_date    1:01   9.38  n/a
00331>  00l:0050
00332>      CnCAGO STORM
00333>        [SDT=  .06:SDUR=    .05:PTOT=  45.46]
00334>        [A/B/C=1330.310/   7.938/    .855]
00335>  00l:0051 ID:NHYD AREA QPEAK TpeakDate_hhmm R.V. R.C.
00336>      CALIB NASHYD      01:202         20.30     .183 No_date    1:26   3.74 .082
00337>        [CN= 39.0: N= 3.00]
00338>        [Tp=  .33:DT= 1.20]
00339>  00l:0052 ID:NHYD AREA QPEAK TpeakDate_hhmm R.V. R.C.
00340>      CALIB NASHYD      02:203          6.20     .056 No_date    1:26   3.74 .082
00341>        [CN= 39.0: N= 3.00]
00342>        [Tp=  .33:DT= 1.20]
00343>  00l:0053 ID:NHYD AREA QPEAK TpeakDate_hhmm R.V. R.C.
00344>      CALIB NASHYD      03:204          5.80     .078 No_date    1:14   3.74 .082
00345>        [CN= 39.0: N= 3.00]
00346>        [Tp=  .20:DT= 1.20]
00347>  00l:0054 ID:NHYD AREA QPEAK TpeakDate_hhmm R.V. R.C.
00348>      CALIB STANDHYD    04:205          2.60     .581 No_date    0:57  35.69 .785
00349>        [XIMP=.55:TIMP=.75]
00350>        [LOSS= 2 :CN= 84.0]
00351>        |Pervious     area: |Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.200:SCP=  .0|
00352>        |Impervious   area: |Aimp= 2.00:SLPI=2.00:LGI= 175.:MNI=.013:SCI=  .0|
00353>  00l:0055 ID:NHYD AREA QPEAK TpeakDate_hhmm R.V. R.C.
00354>      ROUTE RESERVOIR -> 04:205          2.60     .581 No_date    0:57  35.69  n/a
00355>        [RDT= 1.20] outs= 10:Inf11        1.32     .005 No_date    0:37  35.69  n/a
00356>              overflow <= 05:             1.28     .364 No_date    1:06  35.69  n/a
00357>      {MxStoUsed=.4220E-01, TotOvfVol=.4564E-01, N-Ovf=    3, TotDurOvf=    2.hrs}
00358>  00l:0056 ID:NHYD AREA QPEAK TpeakDate_hhmm R.V. R.C.
00359>      CALIB STANDHYD    06:207          4.00     .691 No_date    0:58  36.41 .669
00360>        [XIMP=.45:TIMP=.65]
00361>        [LOSS= 2 :CN= 77.0]
00362>        |Pervious     area: |Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.200:SCP=  .0|
00363>        |Impervious   area: |Aimp= 2.00:SLPI=2.00:LGI= 215.:MNI=.013:SCI=  .0|
00364>  00l:0057 ID:NHYD AREA QPEAK TpeakDate_hhmm R.V. R.C.
00365>      ROUTE RESERVOIR -> 06:207          4.00     .691 No_date    0:58  36.41  n/a
00366>        [RDT= 1.20] outs= 10:Inf12        1.91     .007 No_date    0:37  36.41  n/a
00367>              overflow <= 07:             2.09     .458 No_date    1:06  36.41  n/a
00368>      {MxStoUsed=.5100E-01, TotOvfVol=.6352E-01, N-Ovf=    3, TotDurOvf=    2.hrs}
00369>  00l:0058 ID:NHYD AREA QPEAK TpeakDate_hhmm R.V. R.C.
00370>      CALIB STANDHYD    08:206          4.40     .700 No_date    0:58  36.41 .669
00371>        [XIMP=.45:TIMP=.65]
00372>        [LOSS= 2 :CN= 77.0]
00373>        |Pervious     area: |Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.200:SCP=  .0|
00374>        |Impervious   area: |Aimp= 2.00:SLPI=2.00:LGI= 325.:MNI=.013:SCI=  .0|
00375>  00l:0059 ID:NHYD AREA QPEAK TpeakDate_hhmm R.V. R.C.
00376>      ROUTE RESERVOIR -> 08:206          4.40     .700 No_date    0:58  36.41  n/a
00377>        [RDT= 1.20] outs= 10:Inf13        2.40     .008 No_date    0:37  36.41  n/a
00378>              overflow <= 09:             2.00     .413 No_date    1:10  36.41  n/a
00379>      {MxStoUsed=.6470E-01, TotOvfVol=.6091E-01, N-Ovf=    3, TotDurOvf=    2.hrs}
00380>  00l:0060 ID:NHYD AREA QPEAK TpeakDate_hhmm R.V. R.C.
00381>      ADD HYD           09:               2.00     .413 No_date    1:10  36.41  n/a
00382>                      + 07:               2.09     .458 No_date    1:06  36.41  n/a
00383>                      + 05:               1.28     .364 No_date    1:06  35.69  n/a
00384>                      + 01:202           20.30     .183 No_date    1:26   3.74  n/a
00385>                      + 02:203            6.20     .056 No_date    1:26   3.74  n/a
00386>                      + 03:204            5.80     .070 No_date    1:14   3.74  n/a
00387>        [DT= 1.20]  SUM= 10:SStrt7tl      37.67    1.247 No_date    1:10   7.72  n/a
00388>  00l:0061 ID:NHYD AREA QPEAK TpeakDate_hhmm R.V. R.C.
00389>      CALIB STANDHYD    01:209          4.50    1.064 No_date    0:57  35.69 .785
00390>        [XIMP=.55:TIMP=.75]
00391>        [LOSS= 2 :CN= 84.0]
00392>        |Pervious     area: |Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.200:SCP=  .0|
00393>        |Impervious   area: |Aimp= 2.00:SLPI=2.00:LGI= 130.:MNI=.013:SCI=  .0|
00394>  00l:0062 ID:NHYD AREA QPEAK TpeakDate_hhmm R.V. R.C.
00395>      ROUTE RESERVOIR -> 01:209          4.50    1.064 No_date    0:57  35.69  n/a
00396>        [RDT= 1.20] outs= 09:Inf14        2.41     .010 No_date    0:34  35.69  n/a
00397>              overflow <= 02:             2.09     .613 No_date    1:06  35.69  n/a
00398>      {MxStoUsed=.7600E-01, TotOvfVol=.7475E-01, N-Ovf=    3, TotDurOvf=    2.hrs}
00399>  00l:0063 ID:NHYD AREA QPEAK TpeakDate_hhmm R.V. R.C.
00400>      CALIB STANDHYD    03:212          1.70     .472 No_date    0:58  39.91 .878
00401>        [XIMP=.80:TIMP=.85]
00402>        [LOSS= 2 :CN= 88.0]
00403>        |Pervious     area: |Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.200:SCP=  .0|
00404>        |Impervious   area: |Aimp= 2.00:SLPI=2.00:LGI= 250.:MNI=.013:SCI=  .0|
00405>  00l:0064 ID:NHYD AREA QPEAK TpeakDate_hhmm R.V. R.C.
00406>      ROUTE RESERVOIR -> 03:212          1.70     .472 No_date    0:58  39.91  n/a
00407>        [RDT= 1.20] outs= 09:Inf15        1.18     .005 No_date    0:38  39.91  n/a
00408>              overflow <= 04:             .52     .151 No_date    1:19  39.91  n/a
00409>      {MxStoUsed=.4220E-01, TotOvfVol=.2088E-01, N-Ovf=    2, TotDurOvf=    2.hrs}
00410>  00l:0065 ID:NHYD AREA QPEAK TpeakDate_hhmm R.V. R.C.
00411>      ADD HYD           02:               2.09     .613 No_date    1:06  35.69  n/a
00412>                      + 04:               .52     .151 No_date    1:19  39.91  n/a
00413>        [DT= 1.20]  SUM= 09:NEStrt7       2.62     .613 No_date    1:06  36.53  n/a
00414>  00l:0066 ID:NHYD AREA QPEAK TpeakDate_hhmm R.V. R.C.
00415>      CALIB STANDHYD    01:211          4.30     .890 No_date    0:58  33.86 .745
00416>        [XIMP=.60:TIMP=.70]
00417>        [LOSS= 2 :CN= 80.0]
00418>        |Pervious     area: |Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.250:SCP=  .0|
00419>        |Impervious   area: |Aimp= 2.00:SLPI=2.00:LGI= 270.:MNI=.013:SCI=  .0|
00420>  00l:0067 ID:NHYD AREA QPEAK TpeakDate_hhmm R.V. R.C.
00421>      ROUTE RESERVOIR -> 01:211          4.30     .890 No_date    0:58  33.86  n/a
00422>        [RDT= 1.20] outs= 08:Inf16        2.21     .010 No_date    0:35  33.86  n/a
00423>              overflow <= 02:             2.09     .576 No_date    1:06  33.86  n/a
00424>      {MxStoUsed=.6470E-01, TotOvfVol=.7081E-01, N-Ovf=    2, TotDurOvf=    2.hrs}
00425>  00l:0068 ID:NHYD AREA QPEAK TpeakDate_hhmm R.V. R.C.
00426>      CALIB STANDHYD    03:210          3.60    1.067 No_date    0:57  40.89 .900
00427>        [XIMP=.80:TIMP=.90]
00428>        [LOSS= 2 :CN= 88.0]
00429>        |Pervious     area: |Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.250:SCP=  .0|
00430>        |Impervious   area: |Aimp= 2.00:SLPI=2.00:LGI= 210.:MNI=.013:SCI=  .0|
00431>  00l:0069 ID:NHYD AREA QPEAK TpeakDate_hhmm R.V. R.C.
00432>      ROUTE RESERVOIR -> 03:210          3.60    1.067 No_date    0:57  40.89  n/a
00433>        [RDT= 1.20] outs= 08:Inf17        1.96     .009 No_date    0:34  40.89  n/a
00434>              overflow <= 04:             1.64     .699 No_date    1:04  40.89  n/a
00435>      {MxStoUsed=.7139E-01, TotOvfVol=.6710E-01, N-Ovf=    3, TotDurOvf=    2.hrs}
00436>  00l:0070 ID:NHYD AREA QPEAK TpeakDate_hhmm R.V. R.C.
00437>      ADD HYD           02:               2.09     .576 No_date    1:06  33.86  n/a
00438>                      + 04:               1.64     .699 No_date    1:04  40.89  n/a
00439>        [DT= 1.20]  SUM= 08:NWStrt7       3.73    1.142 No_date    1:06  36.95  n/a
00440>  00l:0071 ID:NHYD AREA QPEAK TpeakDate_hhmm R.V. R.C.
00441>      CALIB STANDHYD    01:Roads213     4.75    1.361 No_date    0:57  43.30 .952
00442>        [XIMP=.99:TIMP=.99]
00443>        [LOSS= 2 :CN= 98.0]
00444>        |Pervious     area: |Aper= 5.00:SLPP=4.00:LGP=  40.:MNP=.250:SCP=  .0|
00445>        |Impervious   area: |Aimp= 2.00:SLPI=4.00:LGI= 957.:MNI=.013:SCI=  .0|
00446>  00l:0072 ID:NHYD AREA QPEAK TpeakDate_hhmm R.V. R.C.
00447>      CALIB NASHYD      02:SWMBlock21   3.40     .815 No_date    1:02  38.05 .837
00448>        [CN= 99.0: N= 3.00]
00449>        [Tp=  .10:DT= 1.20]
00450>  00l:0073 ID:NHYD AREA QPEAK TpeakDate_hhmm R.V. R.C.
00451>      ADD HYD           01:Roads213     4.75    1.361 No_date    0:57  43.30  n/a
00452>                      + 02:SWMBlock21   3.40     .815 No_date    1:02  38.05  n/a
00453>                      + 08:NWStrt7      3.73    1.142 No_date    1:06  36.95  n/a
00454>                      + 09:NEStrt7      2.62     .613 No_date    1:06  36.53  n/a
00455>                      + 10:SStrt7tl     37.67    1.247 No_date    1:10   7.72  n/a
00456>        [DT= 1.20]  SUM= 03:TotaltoRel    52.17    4.328 No_date    1:06  16.47  n/a
00457>  00l:0074
00458>      CnCAGO STORM
00459>        [SDT=  .06:SDUR=    .05:PTOT=  52.70]
00460>        [A/B/C=1997.1967/   7.188/    .850]
00461>  00l:0075 ID:NHYD AREA QPEAK TpeakDate_hhmm R.V. R.C.
00462>      CALIB NASHYD      01:202         20.30     .254 No_date    1:25   5.11 .097
00463>        [CN= 39.0: N= 3.00]
00464>        [Tp=  .33:DT= 1.20]
00465>  00l:0076 ID:NHYD AREA QPEAK TpeakDate_hhmm R.V. R.C.
00466>      CALIB NASHYD      02:203          6.20     .078 No_date    1:25   5.11 .097
00467>        [CN= 39.0: N= 3.00]
00468>        [Tp=  .33:DT= 1.20]
00469>  00l:0077 ID:NHYD AREA QPEAK TpeakDate_hhmm R.V. R.C.
00470>      CALIB NASHYD      03:204          5.80     .098 No_date    1:14   5.11 .097
00471>        [CN= 39.0: N= 3.00]
00472>        [Tp=  .20:DT= 1.20]
00473>  00l:0078 ID:NHYD AREA QPEAK TpeakDate_hhmm R.V. R.C.
00474>      CALIB STANDHYD    04:205          2.60     .732 No_date    0:57  42.49 .806
00475>        [XIMP=.55:TIMP=.75]
00476>        [LOSS= 2 :CN= 84.0]
00477>        |Pervious     area: |Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.200:SCP=  .0|
00478>        |Impervious   area: |Aimp= 2.00:SLPI=2.00:LGI= 175.:MNI=.013:SCI=  .0|
00479>  00l:0079 ID:NHYD AREA QPEAK TpeakDate_hhmm R.V. R.C.
00480>      ROUTE RESERVOIR -> 04:205          2.60     .732 No_date    0:57  42.49  n/a
00481>        [RDT= 1.20] outs= 10:Inf11        1.11     .005 No_date    0:34  42.49  n/a
00482>              overflow <= 05:             1.49     .581 No_date    1:02  42.49  n/a
00483>      {MxStoUsed=.4220E-01, TotOvfVol=.6325E-01, N-Ovf=    3, TotDurOvf=    2.hrs}
00484>  00l:0080 ID:NHYD AREA QPEAK TpeakDate_hhmm R.V. R.C.
00485>      CALIB STANDHYD    06:207          4.00     .869 No_date    0:58  36.60 .695
00486>        [XIMP=.45:TIMP=.65]
00487>        [LOSS= 2 :CN= 77.0]
00488>        |Pervious     area: |Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.200:SCP=  .0|
00489>        |Impervious   area: |Aimp= 2.00:SLPI=2.00:LGI= 215.:MNI=.013:SCI=  .0|
00490>  00l:0081 ID:NHYD AREA QPEAK TpeakDate_hhmm R.V. R.C.
00491>      ROUTE RESERVOIR -> 06:207          4.00     .869 No_date    0:58  36.60  n/a
00492>        [RDT= 1.20] outs= 10:Inf12        1.59     .007 No_date    0:33  36.60  n/a
00493>              overflow <= 07:             2.41     .711 No_date    1:02  36.60  n/a
00494>      {MxStoUsed=.5100E-01, TotOvfVol=.8819E-01, N-Ovf=    3, TotDurOvf=    2.hrs}
00495>  00l:0082 ID:NHYD AREA QPEAK TpeakDate_hhmm R.V. R.C.
00496>      CALIB STANDHYD    08:206          4.40     .883 No_date    0:58  36.60 .695
00497>        [XIMP=.45:TIMP=.65]
00498>        [LOSS= 2 :CN= 77.0]
00499>        |Pervious     area: |Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.200:SCP=  .0|
00500>        |Impervious   area: |Aimp= 2.00:SLPI=2.00:LGI= 325.:MNI=.013:SCI=  .0|
00501>  00l:0083 ID:NHYD AREA QPEAK TpeakDate_hhmm R.V. R.C.
00502>      ROUTE RESERVOIR -> 08:206          4.40     .883 No_date    0:58  36.60  n/a
00503>        [RDT= 1.20] outs= 10:Inf13        1.99     .008 No_date    0:34  36.60  n/a
00504>              overflow <= 09:             2.41     .881 No_date    1:08  36.60  n/a
00505>      {MxStoUsed=.6469E-01, TotOvfVol=.8805E-01, N-Ovf=    3, TotDurOvf=    2.hrs}
00506>  00l:0084 ID:NHYD AREA QPEAK TpeakDate_hhmm R.V. R.C.
00507>      ADD HYD           09:               2.41     .881 No_date    1:08  36.60  n/a
00508>                      + 07:               2.41     .711 No_date    1:02  36.60  n/a
00509>                      + 05:               1.49     .581 No_date    1:02  42.49  n/a
00510>                      + 01:202           20.30     .254 No_date    1:25   5.11  n/a
00511>                      + 02:203            6.20     .078 No_date    1:25   5.11  n/a
00512>                      + 03:204            5.80     .098 No_date    1:14   5.11  n/a
00513>        [DT= 1.20]  SUM= 10:SStrt7tl      38.60    1.813 No_date    1:07  10.48  n/a
00514>  00l:0085 ID:NHYD AREA QPEAK TpeakDate_hhmm R.V. R.C.
00515>      CALIB STANDHYD    01:209          4.50    1.315 No_date    0:57  42.49 .806
00516>        [XIMP=.55:TIMP=.75]
00517>        [LOSS= 2 :CN= 84.0]
00518>        |Pervious     area: |Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.200:SCP=  .0|
00519>        |Impervious   area: |Aimp= 2.00:SLPI=2.00:LGI= 130.:MNI=.013:SCI=  .0|
00520>  00l:0086 ID:NHYD AREA QPEAK TpeakDate_hhmm R.V. R.C.
00521>      ROUTE RESERVOIR -> 01:209          4.50    1.315 No_date    0:57  42.49  n/a
00522>        [RDT= 1.20] outs= 09:Inf14        2.02     .010 No_date    0:32  42.49  n/a
00523>              overflow <= 02:             2.48     .988 No_date    1:02  42.49  n/a
00524>      {MxStoUsed=.7599E-01, TotOvfVol=.1052E-00, N-Ovf=    2, TotDurOvf=    2.hrs}
00525>  00l:0087 ID:NHYD AREA QPEAK TpeakDate_hhmm R.V. R.C.
00526>      CALIB STANDHYD    03:212          1.70     .592 No_date    0:57  46.95 .891
00527>        [XIMP=.80:TIMP=.85]
00528>        [LOSS= 2 :CN= 88.0]
00529>        |Pervious     area: |Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.200:SCP=  .0|
00530>        |Impervious   area: |Aimp= 2.00:SLPI=2.00:LGI= 250.:MNI=.013:SCI=  .0|
00531>  00l:0088 ID:NHYD AREA QPEAK TpeakDate_hhmm R.V. R.C.
00532>      ROUTE RESERVOIR -> 03:212          1.70     .592 No_date    0:57  46.95  n/a
00533>        [RDT= 1.20] outs= 09:Inf15        1.00     .005 No_date    0:35  46.95  n/a
00534>              overflow <= 04:             .70     .309 No_date    1:06  46.95  n/a
00535>      {MxStoUsed=.4219E-01, TotOvfVol=.3277E-01, N-Ovf=    3, TotDurOvf=    2.hrs}
00536>  00l:0089 ID:NHYD AREA QPEAK TpeakDate_hhmm R.V. R.C.
00537>      ADD HYD           02:               2.48     .988 No_date    1:02  42.49  n/a
00538>                      + 04:               .70     .309 No_date    1:06  46.95  n/a
00539>        [DT= 1.20]  SUM= 09:NEStrt7       3.17    1.043 No_date    1:06  43.47  n/a
00540>  00l:0090 ID:NHYD AREA QPEAK TpeakDate_hhmm R.V. R.C.
00541>      CALIB STANDHYD    01:211          4.30    1.114 No_date    0:57  46.34 .766
00542>        [XIMP=.60:TIMP=.70]
00543>        [LOSS= 2 :CN= 80.0]
00544>        |Pervious     area: |Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.250:SCP=  .0|
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005459>       |Impervious     area: |Aimp= 2.00:SLP1=2.00:LG1= 270.:MN1=.013:SC1=   .0|
005460> 001:0091 ·····ID:NHYD·····AREA····QPEAK·TpeakDate_hhmm····R.V.·R.C.·
005461>     ROUTE RESERVOIR -> 01:211          4.30    1.114 No_date    0:57  40.34  n/a
005462>       |RDT= 1.20| out= 08:Inf16        1.86     .010 No_date    0:32  40.34  n/a
005463>              overflow <= 02:           2.44     .851 No_date    1:02  40.34  n/a
005464>       |MxStoUsed=.6470E-01, TotOvfVol=.9647E-01, N-Ovf=    4, TotDurOvf=   2.hrs|
005465> 001:0092 ·····ID:NHYD·····AREA····QPEAK·TpeakDate_hhmm····R.V.·R.C.·
005466>     CALIB STANDHYD    03:216           3.60    1.318 No_date    0:57  48.02 .911
005467>       |XIMP=.80:TIMP=.90|
005468>       |LOSS= 2 :CN= 88.0|
005469>       |Pervious       area: |Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0|
005470>       |Impervious     area: |Aimp= 2.00:SLP1=2.00:LG1= 211.:MN1=.013:SC1=   .0|
005471> 001:0093 ·····ID:NHYD·····AREA····QPEAK·TpeakDate_hhmm····R.V.·R.C.·
005472>     ROUTE RESERVOIR -> 03:216          3.60    1.318 No_date    0:57  48.02  n/a
005473>       |RDT= 1.20| out= 08:Inf17        1.67     .009 No_date    0:32  48.02  n/a
005474>              overflow <= 04:           1.93    1.041 No_date    1:01  48.02  n/a
005475>       |MxStoUsed=.7140E-01, TotOvfVol=.9264E-01, N-Ovf=    3, TotDurOvf=   2.hrs|
005476> 001:0094 ·····ID:NHYD·····AREA····QPEAK·TpeakDate_hhmm····R.V.·R.C.·
005477>     ADD HYD           02:              2.44     .851 No_date    1:02  40.34  n/a
005478>                     + 04:              1.93    1.041 No_date    1:01  48.02  n/a
005479>       |DT= 1.20|  SUM= 08:NWStrt7      4.37    1.665 No_date    1:03  42.73  n/a
005480> 001:0095 ·····ID:NHYD·····AREA····QPEAK·TpeakDate_hhmm····R.V.·R.C.·
005481>     CALIB STANDHYD    01:Roads213      4.75    1.678 No_date    0:57  50.53 .959
005482>       |XIMP=.99:TIMP=.99|
005483>       |LOSS= 2 :CN= 93.0|
005484>       |Pervious       area: |Aper= 5.00:SLPP=4.00:LGP=  40.:MNP=.250:SCP=   .0|
005485>       |Impervious     area: |Aimp= 2.00:SLP1=4.00:LG1= 957.:MN1=.013:SC1=   .0|
005486> 001:0096 ·····ID:NHYD·····AREA····QPEAK·TpeakDate_hhmm····R.V.·R.C.·
005487>     CALIB NASHYD      02:SWKBlock21    3.40     .984 No_date    1:02  45.26 .859
005488>       |CN= 99.0: N= 3.00|
005489>       |Ia=  .10:St= 1.20|
005490> 001:0097 ·····ID:NHYD·····AREA····QPEAK·TpeakDate_hhmm····R.V.·R.C.·
005491>     ADD HYD           01:Roads213      4.75    1.678 No_date    0:57  50.53  n/a
005492>                     + 02:SWKBlock21    3.40     .984 No_date    1:02  45.26  n/a
005493>                     + 08:NWStrt7       4.37    1.665 No_date    1:03  42.73  n/a
005494>                     + 09:NEStrt7       3.17    1.043 No_date    1:06  43.47  n/a
005495>                     + 10:SStrt7tl     28.60    8.813 No_date    1:07  10.48  n/a
005496>       |DT= 1.20|  SUM= 03:Totaltobe1   54.30    6.167 No_date    1:03  20.77  n/a
005497> 001:0098 ·····
005498>     CHICAGO STORM
005499>       |SDT=  .08:SDUR=    .05:PTOT=  60.51|
005500>       |A/B/C=1455.000/   5.000/    .820|
005501> 001:0099 ·····ID:NHYD·····AREA····QPEAK·TpeakDate_hhmm····R.V.·R.C.·
005502>     CALIB NASHYD      01:202           20.30     .935 No_date    1:23   6.81 .112
005503>       |CN= 39.0: N= 3.00|
005504>       |Ia=  .33:St= 1.20|
005505> 001:0100 ·····ID:NHYD·····AREA····QPEAK·TpeakDate_hhmm····R.V.·R.C.·
005506>     CALIB NASHYD      02:203           6.20     .102 No_date    1:23   6.81 .112
005507>       |CN= 39.0: N= 3.00|
005508>       |Ia=  .33:St= 1.20|
005509> 001:0101 ·····ID:NHYD·····AREA····QPEAK·TpeakDate_hhmm····R.V.·R.C.·
005510>     CALIB NASHYD      03:204           5.80     .130 No_date    1:13   6.81 .112
005511>       |CN= 39.0: N= 3.00|
005512>       |Ia=  .20:St= 1.20|
005513> 001:0102 ·····ID:NHYD·····AREA····QPEAK·TpeakDate_hhmm····R.V.·R.C.·
005514>     CALIB STANDHYD    04:205           2.60     .952 No_date    0:57  49.91 .825
005515>       |XIMP=.55:TIMP=.75|
005516>       |LOSS= 2 :CN= 84.0|
005517>       |Pervious       area: |Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.200:SCP=   .0|
005518>       |Impervious     area: |Aimp= 2.00:SLP1=2.00:LG1= 175.:MN1=.013:SC1=   .0|
005519> 001:0103 ·····ID:NHYD·····AREA····QPEAK·TpeakDate_hhmm····R.V.·R.C.·
005520>     ROUTE RESERVOIR -> 04:205          2.60     .952 No_date    0:57  49.91  n/a
005521>       |RDT= 1.20| out= 10:Inf11         .95     .005 No_date    0:31  49.91  n/a
005522>              overflow <= 05:           1.65     .871 No_date    1:00  49.91  n/a
005523>       |MxStoUsed=.4220E-01, TotOvfVol=.8245E-01, N-Ovf=    3, TotDurOvf=   2.hrs|
005524> 001:0104 ·····ID:NHYD·····AREA····QPEAK·TpeakDate_hhmm····R.V.·R.C.·
005525>     CALIB STANDHYD    06:207           4.00    1.125 No_date    0:57  43.45 .718
005526>       |XIMP=.65:TIMP=.65|
005527>       |LOSS= 2 :CN= 77.0|
005528>       |Pervious       area: |Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.200:SCP=   .0|
005529>       |Impervious     area: |Aimp= 2.00:SLP1=2.00:LG1= 215.:MN1=.013:SC1=   .0|
005530> 001:0105 ·····ID:NHYD·····AREA····QPEAK·TpeakDate_hhmm····R.V.·R.C.·
005531>     ROUTE RESERVOIR -> 06:207          4.00    1.125 No_date    0:57  43.45  n/a
005532>       |RDT= 1.20| out= 10:Inf12         .34     .007 No_date    0:30  43.45  n/a
005533>              overflow <= 07:           2.66    1.046 No_date    1:00  43.45  n/a
005534>       |MxStoUsed=.5100E-01, TotOvfVol=.1154E-00, N-Ovf=    3, TotDurOvf=   2.hrs|
005535> 001:0106 ·····ID:NHYD·····AREA····QPEAK·TpeakDate_hhmm····R.V.·R.C.·
005536>     CALIB STANDHYD    08:206           4.40    1.141 No_date    0:58  43.45 .718
005537>       |XIMP=.65:TIMP=.65|
005538>       |LOSS= 2 :CN= 77.0|
005539>       |Pervious       area: |Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.200:SCP=   .0|
005540>       |Impervious     area: |Aimp= 2.00:SLP1=2.00:LG1= 325.:MN1=.013:SC1=   .0|
005541> 001:0107 ·····ID:NHYD·····AREA····QPEAK·TpeakDate_hhmm····R.V.·R.C.·
005542>     ROUTE RESERVOIR -> 08:206          4.40    1.141 No_date    0:58  43.45  n/a
005543>       |RDT= 1.20| out= 10:Inf13         .68     .008 No_date    0:31  43.45  n/a
005544>              overflow <= 09:           2.72     .958 No_date    1:03  43.45  n/a
005545>       |MxStoUsed=.6470E-01, TotOvfVol=.1180E-00, N-Ovf=    3, TotDurOvf=   2.hrs|
005546> 001:0108 ·····ID:NHYD·····AREA····QPEAK·TpeakDate_hhmm····R.V.·R.C.·
005547>     ADD HYD           09:              2.72     .958 No_date    1:03  43.45  n/a
005548>                     + 07:              2.66    1.046 No_date    1:00  43.45  n/a
005549>                     + 05:              1.65     .871 No_date    1:00  49.91  n/a
005550>                     + 01:202          20.30     .935 No_date    1:23   6.81  n/a
005551>                     + 02:203           6.20     .102 No_date    1:23   6.81  n/a
005552>                     + 03:204           5.80     .130 No_date    1:13   6.81  n/a
005553>       |DT= 1.20|  SUM= 10:SStrt7tl    39.32    2.560 No_date    1:04  13.62  n/a
005554> 001:0109 ·····ID:NHYD·····AREA····QPEAK·TpeakDate_hhmm····R.V.·R.C.·
005555>     CALIB STANDHYD    01:209           4.50    1.748 No_date    0:57  49.91 .825
005556>       |XIMP=.55:TIMP=.75|
005557>       |LOSS= 2 :CN= 84.0|
005558>       |Pervious       area: |Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.200:SCP=   .0|
005559>       |Impervious     area: |Aimp= 2.00:SLP1=2.00:LG1= 130.:MN1=.013:SC1=   .0|
005560> 001:0110 ·····ID:NHYD·····AREA····QPEAK·TpeakDate_hhmm····R.V.·R.C.·
005561>     ROUTE RESERVOIR -> 01:209          4.50    1.748 No_date    0:57  49.91  n/a
005562>       |RDT= 1.20| out= 09:Inf14         .73     .010 No_date    0:27  49.91  n/a
005563>              overflow <= 02:           2.77    1.320 No_date    1:00  49.91  n/a
005564>       |MxStoUsed=.7600E-01, TotOvfVol=.1383E-00, N-Ovf=    3, TotDurOvf=   2.hrs|
005565> 001:0111 ·····ID:NHYD·····AREA····QPEAK·TpeakDate_hhmm····R.V.·R.C.·
005566>     CALIB STANDHYD    03:212           1.70     .749 No_date    0:57  54.60 .902
005567>       |XIMP=.80:TIMP=.85|
005568>       |LOSS= 2 :CN= 88.0|
005569>       |Pervious       area: |Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.200:SCP=   .0|
005570>       |Impervious     area: |Aimp= 2.00:SLP1=2.00:LG1= 250.:MN1=.013:SC1=   .0|
005571> 001:0112 ·····ID:NHYD·····AREA····QPEAK·TpeakDate_hhmm····R.V.·R.C.·
005572>     ROUTE RESERVOIR -> 03:212          1.70     .749 No_date    0:57  54.60  n/a
005573>       |RDT= 1.20| out= 08:Inf15         .86     .005 No_date    0:31  54.60  n/a
005574>              overflow <= 04:            .84     .508 No_date    1:02  54.60  n/a
005575>       |MxStoUsed=.4219E-01, TotOvfVol=.4565E-01, N-Ovf=    2, TotDurOvf=   2.hrs|
005576> 001:0113 ·····ID:NHYD·····AREA····QPEAK·TpeakDate_hhmm····R.V.·R.C.·
005577>     ADD HYD           02:              2.77    1.320 No_date    1:00  49.91  n/a
005578>                     + 04:              .84     .508 No_date    1:02  54.60  n/a
005579>       |DT= 1.20|  SUM= 09:NEStrt7       3.61    1.658 No_date    1:02  51.00  n/a
005580> 001:0114 ·····ID:NHYD·····AREA····QPEAK·TpeakDate_hhmm····R.V.·R.C.·
005581>     CALIB STANDHYD    01:211           4.30    1.415 No_date    0:57  47.45 .764
005582>       |XIMP=.80:TIMP=.90|
005583>       |LOSS= 2 :CN= 80.0|
005584>       |Pervious       area: |Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0|
005585>       |Impervious     area: |Aimp= 2.00:SLP1=2.00:LG1= 270.:MN1=.013:SC1=   .0|
005586> 001:0115 ·····ID:NHYD·····AREA····QPEAK·TpeakDate_hhmm····R.V.·R.C.·
005587>     ROUTE RESERVOIR -> 01:211          4.30    1.415 No_date    0:57  47.45  n/a
005588>       |RDT= 1.20| out= 08:Inf16         .59     .010 No_date    0:28  47.45  n/a
005589>              overflow <= 02:           2.71    1.275 No_date    1:00  47.45  n/a
005590>       |MxStoUsed=.6470E-01, TotOvfVol=.1288E-00, N-Ovf=    3, TotDurOvf=   2.hrs|
005591> 001:0116 ·····ID:NHYD·····AREA····QPEAK·TpeakDate_hhmm····R.V.·R.C.·
005592>     CALIB STANDHYD    03:210           3.60    1.655 No_date    0:57  55.74 .921
005593>       |XIMP=.80:TIMP=.90|
005594>       |LOSS= 2 :CN= 88.0|
005595>       |Pervious       area: |Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0|
005596>       |Impervious     area: |Aimp= 2.00:SLP1=2.00:LG1= 211.:MN1=.013:SC1=   .0|
005597> 001:0117 ·····ID:NHYD·····AREA····QPEAK·TpeakDate_hhmm····R.V.·R.C.·
005598>     ROUTE RESERVOIR -> 03:210          3.60    1.655 No_date    0:57  55.74  n/a
005599>       |RDT= 1.20| out= 08:Inf17         .44     .009 No_date    0:27  55.74  n/a
005600>              overflow <= 04:           2.16    1.446 No_date    1:00  55.74  n/a
005601>       |MxStoUsed=.7140E-01, TotOvfVol=.1202E-00, N-Ovf=    2, TotDurOvf=   2.hrs|
005602> 001:0118 ·····ID:NHYD·····AREA····QPEAK·TpeakDate_hhmm····R.V.·R.C.·
005603>     ADD HYD           02:              2.71    1.275 No_date    1:00  47.45  n/a
005604>                     + 04:              2.16    1.446 No_date    1:00  55.74  n/a
005605>       |DT= 1.20|  SUM= 08:NWStrt7       4.87    2.721 No_date    1:00  51.12  n/a
005606> 001:0119 ·····ID:NHYD·····AREA····QPEAK·TpeakDate_hhmm····R.V.·R.C.·
005607>   * CALIB STANDHYD    01:Roads213      4.75    2.112 No_date    0:57  58.34 .964
005608>       |XIMP=.99:TIMP=.99|
005609>       |LOSS= 2 :CN= 93.0|
005610>       |Pervious       area: |Aper= 5.00:SLPP=4.00:LGP=  40.:MNP=.250:SCP=   .0|
005611>       |Impervious     area: |Aimp= 2.00:SLP1=4.00:LG1= 957.:MN1=.013:SC1=   .0|
005612> 001:0120 ·····ID:NHYD·····AREA····QPEAK·TpeakDate_hhmm····R.V.·R.C.·
005613>     CALIB NASHYD      02:SWKBlock21    3.40    1.179 No_date    1:02  53.06 .877
005614>       |CN= 99.0: N= 3.00|
005615>       |Ia=  .10:St= 1.20|
005616> 001:0121 ·····ID:NHYD·····AREA····QPEAK·TpeakDate_hhmm····R.V.·R.C.·
005617>     ADD HYD           01:Roads213      4.75    2.112 No_date    0:57  58.34  n/a
005618>                     + 02:SWKBlock21    3.40    1.179 No_date    1:02  53.06  n/a
005619>                     + 08:NWStrt7       4.87    2.721 No_date    1:00  51.12  n/a
005620>                     + 09:NEStrt7       3.61    1.658 No_date    1:02  51.00  n/a
005621>                     + 10:SStrt7tl     39.32    2.501 No_date    1:04  13.62  n/a
005622>       |DT= 1.20|  SUM= 03:Totaltobe1   54.95    8.994 No_date    1:00  25.49  n/a
005623> 001:0122 ·····
005624>     CHICAGO STORM
005625>       |SDT=  .08:SDUR=    .05:PTOT=  66.27|
005626>       |A/B/C=1499.000/   4.188/    .809|
005627> 001:0123 ·····ID:NHYD·····AREA····QPEAK·TpeakDate_hhmm····R.V.·R.C.·
005628>     CALIB NASHYD      01:202           20.30     .602 No_date    1:23   8.19 .124
005629>       |CN= 39.0: N= 3.00|
005630>       |Ia=  .33:St= 1.20|
005631> 001:0124 ·····ID:NHYD·····AREA····QPEAK·TpeakDate_hhmm····R.V.·R.C.·
005632>     CALIB NASHYD      02:203           6.20     .123 No_date    1:23   8.19 .124
005633>       |CN= 39.0: N= 3.00|
005634>       |Ia=  .33:St= 1.20|
005635> 001:0125 ·····ID:NHYD·····AREA····QPEAK·TpeakDate_hhmm····R.V.·R.C.·
005636>     CALIB NASHYD      03:204           5.80     .157 No_date    1:13   8.19 .126
005637>       |CN= 39.0: N= 3.00|
005638>       |Ia=  .20:St= 1.20|
005639> 001:0126 ·····ID:NHYD·····AREA····QPEAK·TpeakDate_hhmm····R.V.·R.C.·
005640>     CALIB STANDHYD    04:205           2.60    1.098 No_date    0:57  55.42 .836
005641>       |XIMP=.55:TIMP=.75|
005642>       |LOSS= 2 :CN= 84.0|
005643>       |Pervious       area: |Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.200:SCP=   .0|
005644>       |Impervious     area: |Aimp= 2.00:SLP1=2.00:LG1= 175.:MN1=.013:SC1=   .0|
005645> 001:0127 ·····ID:NHYD·····AREA····QPEAK·TpeakDate_hhmm····R.V.·R.C.·
005646>     ROUTE RESERVOIR -> 04:205          2.60    1.098 No_date    0:57  55.42  n/a
005647>       |RDT= 1.20| out= 10:Inf11         .85     .005 No_date    0:28  55.42  n/a
005648>              overflow <= 05:           1.75    1.086 No_date    0:58  55.42  n/a
005649>       |MxStoUsed=.4220E-01, TotOvfVol=.9672E-01, N-Ovf=    3, TotDurOvf=   2.hrs|
005650> 001:0128 ·····ID:NHYD·····AREA····QPEAK·TpeakDate_hhmm····R.V.·R.C.·
005651>     CALIB STANDHYD    06:207           4.00    1.362 No_date    0:57  48.58 .733
005652>       |XIMP=.65:TIMP=.65|
005653>       |LOSS= 2 :CN= 77.0|
005654>       |Pervious       area: |Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.200:SCP=   .0|
005655>       |Impervious     area: |Aimp= 2.00:SLP1=2.00:LG1= 325.:MN1=.013:SC1=   .0|
005656> 001:0129 ·····ID:NHYD·····AREA····QPEAK·TpeakDate_hhmm····R.V.·R.C.·
005657>     ROUTE RESERVOIR -> 06:207          4.00    1.362 No_date    0:57  48.58  n/a
005658>       |RDT= 1.20| out= 10:Inf12         .20     .007 No_date    0:27  48.58  n/a
005659>              overflow <= 07:           2.80    1.260 No_date    1:00  48.58  n/a
005660>       |MxStoUsed=.5099E-01, TotOvfVol=.1359E-00, N-Ovf=    2, TotDurOvf=   2.hrs|
005661> 001:0130 ·····ID:NHYD·····AREA····QPEAK·TpeakDate_hhmm····R.V.·R.C.·
005662>     CALIB STANDHYD    08:206           4.40    1.321 No_date    0:58  48.58 .733
005663>       |XIMP=.65:TIMP=.65|
005664>       |LOSS= 2 :CN= 77.0|
005665>       |Pervious       area: |Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.200:SCP=   .0|
005666>       |Impervious     area: |Aimp= 2.00:SLP1=2.00:LG1= 215.:MN1=.013:SC1=   .0|
005667> 001:0131 ·····ID:NHYD·····AREA····QPEAK·TpeakDate_hhmm····R.V.·R.C.·
005668>     ROUTE RESERVOIR -> 08:206          4.40    1.321 No_date    0:58  48.58  n/a
005669>       |RDT= 1.20| out= 10:Inf13         .51     .008 No_date    0:27  48.58  n/a
005670>              overflow <= 09:           2.89    1.138 No_date    1:01  48.58  n/a
005671>       |MxStoUsed=.6470E-01, TotOvfVol=.1404E-00, N-Ovf=    3, TotDurOvf=   2.hrs|
005672> 001:0132 ·····ID:NHYD·····AREA····QPEAK·TpeakDate_hhmm····R.V.·R.C.·
005673>     ADD HYD           09:              2.89    1.138 No_date    1:01  48.58  n/a
005674>                     + 07:              2.80    1.260 No_date    1:00  48.58  n/a
005675>                     + 05:              1.75    1.086 No_date    0:58  55.42  n/a
005676>                     + 01:202          20.30     .602 No_date    1:23   8.19  n/a
005677>                     + 02:203           6.20     .123 No_date    1:23   8.19  n/a
005678>                     + 03:204           5.80     .157 No_date    1:13   8.19  n/a
005679>       |DT= 1.20|  SUM= 10:SStrt7tl    39.73    2.269 No_date    1:01  16.04  n/a
005680> 001:0133 ·····ID:NHYD·····AREA····QPEAK·TpeakDate_hhmm····R.V.·R.C.·
005681>     CALIB STANDHYD    01:209           4.50    2.012 No_date    0:57  55.42 .836
005682>       |XIMP=.55:TIMP=.75|
005683>       |LOSS= 2 :CN= 84.0|
005684>       |Pervious       area: |Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.200:SCP=   .0|
005685>       |Impervious     area: |Aimp= 2.00:SLP1=2.00:LG1= 130.:MN1=.013:SC1=   .0|
005686> 001:0134 ·····ID:NHYD·····AREA····QPEAK·TpeakDate_hhmm····R.V.·R.C.·
005687>     ROUTE RESERVOIR -> 01:209          4.50    2.012 No_date    0:57  55.42  n/a
005688>       |RDT= 1.20| out= 09:Inf14         .56     .010 No_date    0:25  55.42  n/a
005689>              overflow <= 02:           2.94    1.790 No_date    0:58  55.42  n/a
005690>       |MxStoUsed=.7600E-01, TotOvfVol=.1630E-00, N-Ovf=    3, TotDurOvf=   2.hrs|
005691> 001:0135 ·····ID:NHYD·····AREA····QPEAK·TpeakDate_hhmm····R.V.·R.C.·
005692>     CALIB STANDHYD    03:212           1.70     .860 No_date    0:57  60.25 .909
005693>       |XIMP=.80:TIMP=.85|
005694>       |LOSS= 2 :CN= 88.0|
005695>       |Pervious       area: |Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.200:SCP=   .0|
005696>       |Impervious     area: |Aimp= 2.00:SLP1=2.00:LG1= 250.:MN1=.013:SC1=   .0|
005697> 001:0136 ·····ID:NHYD·····AREA····QPEAK·TpeakDate_hhmm····R.V.·R.C.·
005698>     ROUTE RESERVOIR -> 03:212          1.70     .860 No_date    0:57  60.25  n/a
005699>       |RDT= 1.20| out= 09:Inf15         .78     .005 No_date    0:28  60.25  n/a
005700>              overflow <= 02:           2.94    1.629 No_date    1:01  60.25  n/a
005701>       |MxStoUsed=.4219E-01, TotOvfVol=.5518E-01, N-Ovf=    2, TotDurOvf=   2.hrs|
005702> 001:0137 ·····ID:NHYD·····AREA····QPEAK·TpeakDate_hhmm····R.V.·R.C.·
005703>     ADD HYD           02:              2.94    1.790 No_date    0:58  55.42  n/a
005704>                     + 04:              .92     .629 No_date    1:01  60.25  n/a
005705>       |DT= 1.20|  SUM= 09:NEStrt7       3.86    1.982 No_date    1:01  56.57  n/a
005706> 001:0138 ·····ID:NHYD·····AREA····QPEAK·TpeakDate_hhmm····R.V.·R.C.·
005707>     CALIB STANDHYD    01:211           4.30    1.643 No_date    0:57  52.76 .796
005708>       |XIMP=.80:TIMP=.90|
005709>       |LOSS= 2 :CN= 80.0|
005710>       |Pervious       area: |Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0|
005711>       |Impervious     area: |Aimp= 2.00:SLP1=2.00:LG1= 270.:MN1=.013:SC1=   .0|
005712> 001:0139 ·····ID:NHYD·····AREA····QPEAK·TpeakDate_hhmm····R.V.·R.C.·
005713>     ROUTE RESERVOIR -> 01:211          4.30    1.643 No_date    0:57  52.76  n/a
005714>       |RDT= 1.20| out= 08:Inf16         .43     .010 No_date    0:26  52.76  n/a
005715>              overflow <= 02:           2.87    1.614 No_date    0:58  52.76  n/a
005716>       |MxStoUsed=.6470E-01, TotOvfVol=.1515E-00, N-Ovf=    3, TotDurOvf=   2.hrs|
005717> 001:0140 ·····ID:NHYD·····AREA····QPEAK·TpeakDate_hhmm····R.V.·R.C.·
005718>     CALIB STANDHYD    03:210           3.60    1.919 No_date    0:57  61.45 .927
005719>       |XIMP=.80:TIMP=.90|
005720>       |LOSS= 2 :CN= 88.0|
005721>       |Pervious       area: |Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0|
005722>       |Impervious     area: |Aimp= 2.00:SLP1=2.00:LG1= 211.:MN1=.013:SC1=   .0|
005723> 001:0141 ·····ID:NHYD·····AREA····QPEAK·TpeakDate_hhmm····R.V.·R.C.·
005724>     ROUTE RESERVOIR -> 03:210          3.60    1.919 No_date    0:57  61.45  n/a
005725>       |RDT= 1.20| out= 08:Inf17         .31     .009 No_date    0:26  61.45  n/a
005726>              overflow <= 04:           2.29    1.870 No_date    0:58  61.45  n/a
005727>       |MxStoUsed=.7139E-01, TotOvfVol=.1406E-00, N-Ovf=    2, TotDurOvf=   2.hrs|
005728> 001:0142 ·····ID:NHYD·····AREA····QPEAK·TpeakDate_hhmm····R.V.·R.C.·
005729>     ADD HYD           02:              2.87    1.614 No_date    0:58  52.76  n/a
005730>                     + 04:              2.29    1.870 No_date    0:58  61.45  n/a
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00817>       |Ia= 1.20|  SUM=  08:NWStrt7          5.16    3.485 No_date    0:58   56.61  n/a
00818> 001:0143 ----------------ID:NxYD ----------AREA----QPEAK-TpeakDate_hhirm----R.V.-R.C.-
00819> *    CALIB STANDHYD     01:Roads213          4.75    2.427 No_date    0:57   64.10 .967
00820>       |XIMP=.99:TIMP=.99|
00821>       |LOSS= 2 :CN= 93.0|
00822>       |Pervious     area: |Aper= 5.00:SLPP=4.00:LGP=  40.:MNP=.250:SCP=  .0|
00823>       |Impervious   area: |Aimp= 2.00:SLPI=4.00:LGI= 957.:MNI=.013:SCI=  .0|
00824> 001:0144 ----------------ID:NHYD ----------AREA----QPEAK-TpeakDate_hhirm----R.V.-R.C.-
00825>       CALIB NASHYD       02:SWMBlock21        3.40    1.317 No_date    1:02   58.81 .887
00826>       |CN= 99.0: N= 3.00|
00827>       |Ia=  .10:SD=  1.20|
00828> 001:0145 ----------------ID:NxYD ----------AREA----QPEAK-TpeakDate_hhirm----R.V.-R.C.-
00829>       ADD HYD            01:Roads213          4.75    2.427 No_date    0:57   64.10  n/a
00830>                        + 02:SWMBlock21        3.40    1.317 No_date    1:02   58.81  n/a
00831>                        + 08:NWStrt7           5.16    3.485 No_date    0:58   56.61  n/a
00832>                        + 09:NEStrt7           3.86    1.982 No_date    1:01   56.57  n/a
00833>                        + 10:SStrtTl1         39.73    3.269 No_date    1:01   16.04  n/a
00834>       |Ia= 1.20|  SUM=  03:Totaltobe1       56.90   11.044 No_date    1:01   29.64  n/a
00835> 001:0146 ----------------------------------------------------------------------------
00836>       CHICAGO STORM
00837>        |SD=  .08:SDUR=  .05:PTOT=  71.97|
00838>        |A/A/C=1499.530/  3.297/  .794|
00839> 001:0147 ----------------ID:NHYD ----------AREA----QPEAK-TpeakDate_hhirm----R.V.-R.C.-
00840>       CALIB NASHYD       01:202              20.30     .471 No_date    1:22    9.66 .134
00841>       |CN= 39.0: N= 3.00|
00842>       |Ia=  .33:IA= 1.20|
00843> 001:0148 ----------------ID:NHYD ----------AREA----QPEAK-TpeakDate_hhirm----R.V.-R.C.-
00844>       CALIB NASHYD       02:203               6.20     .144 No_date    1:22    9.66 .134
00845>       |CN= 39.0: N= 3.00|
00846>       |Ia=  .33:IA= 1.20|
00847> 001:0149 ----------------ID:NHYD ----------AREA----QPEAK-TpeakDate_hhirm----R.V.-R.C.-
00848>       CALIB NASHYD       03:204               5.80     .185 No_date    1:11    9.66 .134
00849>       |CN= 39.0: N= 3.00|
00850>       |Ia=  .20:IA= 1.20|
00851> 001:0150 ----------------ID:NHYD ----------AREA----QPEAK-TpeakDate_hhirm----R.V.-R.C.-
00852>       CALIB STANDHYD     04:205               2.60    1.253 No_date    0:57   60.91 .846
00853>       |XIMP=.55:TIMP=.75|
00854>       |LOSS= 2 :CN= 84.0|
00855>       |Pervious     area: |Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.200:SCP=  .0|
00856>       |Impervious   area: |Aimp= 2.00:SLPI=2.00:LGI= 175.:MNI=.013:SCI=  .0|
00857> 001:0151 ----------------ID:NHYD ----------AREA----QPEAK-TpeakDate_hhirm----R.V.-R.C.-
00858>       ROUTE RESERVOIR  > 04:205               2.60    1.253 No_date    0:57   60.91  n/a
00859>        |RDT= 1.20| out<  10:Inf11            .78     .005 No_date    0:26   60.91  n/a
00860>                 overflow <= 05:              1.82    1.236 No_date    0:58   60.91  n/a
00861>       |MxStoUsed=.4220E-01, TotOvfVol=.1109E-00, N-Ovf=   3, TotDurOvf=   2.hrs|
00862> 001:0152 ----------------ID:NHYD ----------AREA----QPEAK-TpeakDate_hhirm----R.V.-R.C.-
00863>       CALIB STANDHYD     06:207               4.00    1.488 No_date    0:57   53.72 .746
00864>       |XIMP=.45:TIMP=.65|
00865>       |LOSS= 2 :CN= 77.0|
00866>       |Pervious     area: |Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.200:SCP=  .0|
00867>       |Impervious   area: |Aimp= 2.00:SLPI=2.00:LGI= 215.:MNI=.013:SCI=  .0|
00868> 001:0153 ----------------ID:NHYD ----------AREA----QPEAK-TpeakDate_hhirm----R.V.-R.C.-
00869>       ROUTE RESERVOIR  > 06:207               4.00    1.488 No_date    0:57   53.72  n/a
00870>        |RDT= 1.20| out<  10:Inf12            1.09     .007 No_date    0:25   53.72  n/a
00871>                 overflow <= 07:              2.91    1.472 No_date    0:58   53.72  n/a
00872>       |MxStoUsed=.5100E-01, TotOvfVol=.1563E-00, N-Ovf=   3, TotDurOvf=   2.hrs|
00873> 001:0154 ----------------ID:NHYD ----------AREA----QPEAK-TpeakDate_hhirm----R.V.-R.C.-
00874>       CALIB STANDHYD     08:206               4.40    1.552 No_date    0:58   53.72 .746
00875>       |XIMP=.45:TIMP=.65|
00876>       |LOSS= 2 :CN= 77.0|
00877>       |Pervious     area: |Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.200:SCP=  .0|
00878>       |Impervious   area: |Aimp= 2.00:SLPI=2.00:LGI= 325.:MNI=.013:SCI=  .0|
00879> 001:0155 ----------------ID:NHYD ----------AREA----QPEAK-TpeakDate_hhirm----R.V.-R.C.-
00880>       ROUTE RESERVOIR  > 08:206               4.40    1.552 No_date    0:58   53.72  n/a
00881>        |RDT= 1.20| out<  10:Inf13            1.37     .008 No_date    0:25   53.72  n/a
00882>                 overflow <= 09:              3.03    1.462 No_date    1:00   53.72  n/a
00883>       |MxStoUsed=.6470E-01, TotOvfVol=.1630E-00, N-Ovf=   3, TotDurOvf=   2.hrs|
00884> 001:0156 ----------------ID:NHYD ----------AREA----QPEAK-TpeakDate_hhirm----R.V.-R.C.-
00885>       ADD HYD            09:                  3.03    1.462 No_date    1:00   53.72  n/a
00886>                        + 07:                  2.91    1.472 No_date    0:58   53.72  n/a
00887>                        + 05:                  1.82    1.236 No_date    0:58   60.91  n/a
00888>                        + 01:202              20.30     .471 No_date    1:22    9.66  n/a
00889>                        + 02:203               6.20     .144 No_date    1:22    9.66  n/a
00890>                        + 03:204               5.80     .185 No_date    1:11    9.66  n/a
00891>       |Ia= 1.20|  SUM=  10:SStrtTl1         40.04    4.120 No_date    1:00   18.53  n/a
00892> 001:0157 ----------------ID:NHYD ----------AREA----QPEAK-TpeakDate_hhirm----R.V.-R.C.-
00893>       CALIB STANDHYD     01:209               4.50    2.293 No_date    0:57   60.91 .846
00894>       |XIMP=.55:TIMP=.75|
00895>       |LOSS= 2 :CN= 84.0|
00896>       |Pervious     area: |Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.200:SCP=  .0|
00897>       |Impervious   area: |Aimp= 2.00:SLPI=2.00:LGI= 130.:MNI=.013:SCI=  .0|
00898> 001:0158 ----------------ID:NHYD ----------AREA----QPEAK-TpeakDate_hhirm----R.V.-R.C.-
00899>       ROUTE RESERVOIR  > 01:209               4.50    2.293 No_date    0:57   60.91  n/a
00900>        |RDT= 1.20| out<  09:Inf14            1.42     .010 No_date    0:22   60.91  n/a
00901>                 overflow <= 02:              3.08    2.264 No_date    0:57   60.91  n/a
00902>       |MxStoUsed=.7600E-01, TotOvfVol=.1876E-00, N-Ovf=   2, TotDurOvf=   2.hrs|
00903> 001:0159 ----------------ID:NHYD ----------AREA----QPEAK-TpeakDate_hhirm----R.V.-R.C.-
00904>       CALIB STANDHYD     03:212               1.70     .976 No_date    0:57   65.86 .915
00905>       |XIMP=.80:TIMP=.85|
00906>       |LOSS= 2 :CN= 88.0|
00907>       |Pervious     area: |Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.200:SCP=  .0|
00908>       |Impervious   area: |Aimp= 2.00:SLPI=2.00:LGI= 250.:MNI=.013:SCI=  .0|
00909> 001:0160 ----------------ID:NHYD ----------AREA----QPEAK-TpeakDate_hhirm----R.V.-R.C.-
00910>       ROUTE RESERVOIR  > 03:212               1.70     .976 No_date    0:57   65.86  n/a
00911>        |RDT= 1.20| out<  09:Inf15            .72     .005 No_date    0:26   65.86  n/a
00912>                 overflow <= 04:              .98     .835 No_date    1:00   65.86  n/a
00913>       |MxStoUsed=.4219E-01, TotOvfVol=.6465E-01, N-Ovf=   3, TotDurOvf=   2.hrs|
00914> 001:0161 ----------------ID:NHYD ----------AREA----QPEAK-TpeakDate_hhirm----R.V.-R.C.-
00915>       ADD HYD            02:                  3.08    2.264 No_date    0:57   60.91  n/a
00916>                        + 04:                  .98     .835 No_date    1:00   65.86  n/a
00917>       |DT= 1.20|  SUM=  09:NEStrt7          4.06    2.264 No_date    0:57   62.11  n/a
00918> 001:0162 ----------------ID:NHYD ----------AREA----QPEAK-TpeakDate_hhirm----R.V.-R.C.-
00919>       CALIB STANDHYD     01:211               4.30    1.871 No_date    0:57   58.05 .807
00920>       |XIMP=.60:TIMP=.70|
00921>       |LOSS= 2 :CN= 80.0|
00922>       |Pervious     area: |Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.250:SCP=  .0|
00923>       |Impervious   area: |Aimp= 2.00:SLPI=2.00:LGI= 270.:MNI=.013:SCI=  .0|
00924> 001:0163 ----------------ID:NHYD ----------AREA----QPEAK-TpeakDate_hhirm----R.V.-R.C.-
00925>       ROUTE RESERVOIR  > 01:211               4.30    1.871 No_date    0:57   58.05  n/a
00926>        |RDT= 1.20| out<  08:Inf16            1.30     .010 No_date    0:23   58.05  n/a
00927>                 overflow <= 02:              3.00    1.833 No_date    0:58   58.05  n/a
00928>       |MxStoUsed=.6470E-01, TotOvfVol=.1741E-00, N-Ovf=   3, TotDurOvf=   2.hrs|
00929> 001:0164 ----------------ID:NHYD ----------AREA----QPEAK-TpeakDate_hhirm----R.V.-R.C.-
00930>       CALIB STANDHYD     03:210               3.60    2.177 No_date    0:57   67.10 .932
00931>       |XIMP=.80:TIMP=.90|
00932>       |LOSS= 2 :CN= 88.0|
00933>       |Pervious     area: |Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.250:SCP=  .0|
00934>       |Impervious   area: |Aimp= 2.00:SLPI=2.00:LGI= 211.:MNI=.013:SCI=  .0|
00935> 001:0165 ----------------ID:NHYD ----------AREA----QPEAK-TpeakDate_hhirm----R.V.-R.C.-
00936>       ROUTE RESERVOIR  > 03:210               3.60    2.177 No_date    0:57   67.10  n/a
00937>        |RDT= 1.20| out<  08:Inf17            1.20     .009 No_date    0:23   67.10  n/a
00938>                 overflow <= 04:              2.40    2.114 No_date    0:58   67.10  n/a
00939>       |MxStoUsed=.7139E-01, TotOvfVol=.1609E-00, N-Ovf=   2, TotDurOvf=   2.hrs|
00940> 001:0166 ----------------ID:NHYD ----------AREA----QPEAK-TpeakDate_hhirm----R.V.-R.C.-
00941>       ADD HYD            02:                  3.00    1.833 No_date    0:58   58.05  n/a
00942>                        + 04:                  2.40    2.114 No_date    0:58   67.10  n/a
00943>       |DT= 1.20|  SUM=  08:NWStrt7          5.40    3.947 No_date    0:58   62.07  n/a
00944> 001:0167 ----------------ID:NHYD ----------AREA----QPEAK-TpeakDate_hhirm----R.V.-R.C.-
00945> *    CALIB STANDHYD     01:Roads213          4.75    2.759 No_date    0:57   69.79 .970
00946>       |XIMP=.99:TIMP=.99|
00947>       |LOSS= 2 :CN= 93.0|
00948>       |Pervious     area: |Aper= 5.00:SLPP=4.00:LGP=  40.:MNP=.250:SCP=  .0|
00949>       |Impervious   area: |Aimp= 2.00:SLPI=4.00:LGI= 957.:MNI=.013:SCI=  .0|
00950> 001:0168 ----------------ID:NHYD ----------AREA----QPEAK-TpeakDate_hhirm----R.V.-R.C.-
00951>       CALIB NASHYD       02:SWMBlock21        3.40    1.451 No_date    1:02   64.50 .896
00952>       |CN= 99.0: N= 3.00|
00953>       |Ia=  .10:SD=  1.20|
00954> 001:0169 ----------------ID:NHYD ----------AREA----QPEAK-TpeakDate_hhirm----R.V.-R.C.-
00955>       ADD HYD            01:Roads213          4.75    2.759 No_date    0:57   69.79  n/a
00956>                        + 02:SWMBlock21        3.40    1.451 No_date    1:02   64.50  n/a
00957>                        + 08:NWStrt7           5.40    3.947 No_date    0:58   62.07  n/a
00958>                        + 09:NEStrt7           4.06    2.264 No_date    0:57   62.11  n/a
00959>                        + 10:SStrtTl1         40.06    4.120 No_date    1:00   18.53  n/a
00960>       |DT= 1.20|  SUM=  03:Totaltobe1       57.67   12.657 No_date    0:58   32.60  n/a
00961> 001:0170 ----------------------------------------------------------------------------
00962>       CHICAGO STORM
00963>        |SD=  .08:SDUR=  .05:PTOT=  86.75|
00964>        |A/A/C=3068.220/  10.030/  .888|
00965> 001:0171 ----------------ID:NHYD ----------AREA----QPEAK-TpeakDate_hhirm----R.V.-R.C.-
00966>       CALIB NASHYD       01:202              20.30     .726 No_date    1:25   13.95 .161
00967>       |CN= 39.0: N= 3.00|
00968>       |Ia=  .33:IA= 1.20|
00969> 001:0172 ----------------ID:NHYD ----------AREA----QPEAK-TpeakDate_hhirm----R.V.-R.C.-
00970>       CALIB NASHYD       02:203               6.20     .222 No_date    1:25   13.95 .161
00971>       |CN= 39.0: N= 3.00|
00972>       |Ia=  .33:IA= 1.20|
00973> 001:0173 ----------------ID:NHYD ----------AREA----QPEAK-TpeakDate_hhirm----R.V.-R.C.-
00974>       CALIB NASHYD       03:204               5.80     .278 No_date    1:14   13.95 .161
00975>       |CN= 39.0: N= 3.00|
00976>       |Ia=  .20:IA= 1.20|
00977> 001:0174 ----------------ID:NHYD ----------AREA----QPEAK-TpeakDate_hhirm----R.V.-R.C.-
00978>       CALIB STANDHYD     04:205               2.60    1.305 No_date    0:58   75.24 .867
00979>       |XIMP=.55:TIMP=.75|
00980>       |LOSS= 2 :CN= 84.0|
00981>       |Pervious     area: |Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.200:SCP=  .0|
00982>       |Impervious   area: |Aimp= 2.00:SLPI=2.00:LGI= 175.:MNI=.013:SCI=  .0|
00983> 001:0175 ----------------ID:NHYD ----------AREA----QPEAK-TpeakDate_hhirm----R.V.-R.C.-
00984>       ROUTE RESERVOIR  > 04:205               2.60    1.305 No_date    0:58   75.24  n/a
00985>        |RDT= 1.20| out<  10:Inf11            .63     .005 No_date    0:26   75.24  n/a
00986>                 overflow <= 05:              1.97    1.297 No_date    0:58   75.24  n/a
00987>       |MxStoUsed=.4219E-01, TotOvfVol=.1402E-00, N-Ovf=   4, TotDurOvf=   2.hrs|
00988> 001:0176 ----------------ID:NHYD ----------AREA----QPEAK-TpeakDate_hhirm----R.V.-R.C.-
00989>       CALIB STANDHYD     06:207               4.00    1.652 No_date    0:58   67.27 .775
00990>       |XIMP=.45:TIMP=.65|
00991>       |LOSS= 2 :CN= 77.0|
00992>       |Pervious     area: |Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.200:SCP=  .0|
00993>       |Impervious   area: |Aimp= 2.00:SLPI=2.00:LGI= 215.:MNI=.013:SCI=  .0|
00994> 001:0177 ----------------ID:NHYD ----------AREA----QPEAK-TpeakDate_hhirm----R.V.-R.C.-
00995>       ROUTE RESERVOIR  > 06:207               4.00    1.652 No_date    0:58   67.27  n/a
00996>        |RDT= 1.20| out<  10:Inf12            .87     .007 No_date    0:26   67.27  n/a
00997>                 overflow <= 07:              3.13    1.626 No_date    0:58   67.27  n/a
00998>       |MxStoUsed=.5069E-01, TotOvfVol=.2106E-00, N-Ovf=   4, TotDurOvf=   2.hrs|
00999> 001:0178 ----------------ID:NHYD ----------AREA----QPEAK-TpeakDate_hhirm----R.V.-R.C.-
01000>       CALIB STANDHYD     08:206               4.40    1.677 No_date    0:58   67.27 .775
01001>       |XIMP=.45:TIMP=.65|
01002>       |LOSS= 2 :CN= 77.0|
01003>       |Pervious     area: |Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.200:SCP=  .0|
01004>       |Impervious   area: |Aimp= 2.00:SLPI=2.00:LGI= 325.:MNI=.013:SCI=  .0|
01005> 001:0179 ----------------ID:NHYD ----------AREA----QPEAK-TpeakDate_hhirm----R.V.-R.C.-
01006>       ROUTE RESERVOIR  > 08:206               4.40    1.677 No_date    0:58   67.27  n/a
01007>        |RDT= 1.20| out<  10:Inf13            1.09     .008 No_date    0:26   67.27  n/a
01008>                 overflow <= 09:              3.31    1.641 No_date    0:58   67.27  n/a
01009>       |MxStoUsed=.6469E-01, TotOvfVol=.2227E-00, N-Ovf=   3, TotDurOvf=   2.hrs|
01010> 001:0180 ----------------ID:NHYD ----------AREA----QPEAK-TpeakDate_hhirm----R.V.-R.C.-
01011>       ADD HYD            09:                  3.31    1.641 No_date    0:58   67.27  n/a
01012>                        + 07:                  3.13    1.626 No_date    0:58   67.27  n/a
01013>                        + 05:                  1.97    1.297 No_date    0:58   75.24  n/a
01014>                        + 01:202              20.30     .726 No_date    1:25   13.95  n/a
01015>                        + 02:203               6.20     .222 No_date    1:25   13.95  n/a
01016>                        + 03:204               5.80     .278 No_date    1:14   13.95  n/a
01017>       |DT= 1.20|  SUM=  10:SStrtTl1         40.71    4.756 No_date    0:58   25.35  n/a
01018> 001:0181 ----------------ID:NHYD ----------AREA----QPEAK-TpeakDate_hhirm----R.V.-R.C.-
01019>       CALIB STANDHYD     01:209               4.50    2.452 No_date    0:57   75.24 .867
01020>       |XIMP=.55:TIMP=.75|
01021>       |LOSS= 2 :CN= 84.0|
01022>       |Pervious     area: |Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.200:SCP=  .0|
01023>       |Impervious   area: |Aimp= 2.00:SLPI=2.00:LGI= 130.:MNI=.013:SCI=  .0|
01024> 001:0182 ----------------ID:NHYD ----------AREA----QPEAK-TpeakDate_hhirm----R.V.-R.C.-
01025>       ROUTE RESERVOIR  > 01:209               4.50    2.452 No_date    0:57   75.24  n/a
01026>        |RDT= 1.20| out<  09:Inf14            1.15     .010 No_date    0:23   75.24  n/a
01027>                 overflow <= 02:              3.35    2.334 No_date    0:57   75.24  n/a
01028>       |MxStoUsed=.7600E-01, TotOvfVol=.2522E-00, N-Ovf=   3, TotDurOvf=   2.hrs|
01029> 001:0183 ----------------ID:NHYD ----------AREA----QPEAK-TpeakDate_hhirm----R.V.-R.C.-
01030>       CALIB STANDHYD     03:212               1.70     .991 No_date    0:57   80.44 .927
01031>       |XIMP=.80:TIMP=.85|
01032>       |LOSS= 2 :CN= 88.0|
01033>       |Pervious     area: |Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.200:SCP=  .0|
01034>       |Impervious   area: |Aimp= 2.00:SLPI=2.00:LGI= 250.:MNI=.013:SCI=  .0|
01035> 001:0184 ----------------ID:NHYD ----------AREA----QPEAK-TpeakDate_hhirm----R.V.-R.C.-
01036>       ROUTE RESERVOIR  > 03:212               1.70     .991 No_date    0:57   80.44  n/a
01037>        |RDT= 1.20| out<  09:Inf15            .59     .005 No_date    0:27   80.44  n/a
01038>                 overflow <= 04:              1.11     .975 No_date    0:58   80.44  n/a
01039>       |MxStoUsed=.4220E-01, TotOvfVol=.6947E-01, N-Ovf=   3, TotDurOvf=   2.hrs|
01040> 001:0185 ----------------ID:NHYD ----------AREA----QPEAK-TpeakDate_hhirm----R.V.-R.C.-
01041>       ADD HYD            02:                  3.35    2.324 No_date    0:57   75.24  n/a
01042>                        + 04:                  1.11     .975 No_date    0:58   80.44  n/a
01043>       |DT= 1.20|  SUM=  09:NEStrt7          4.46    3.238 No_date    0:58   76.53  n/a
01044> 001:0186 ----------------ID:NHYD ----------AREA----QPEAK-TpeakDate_hhirm----R.V.-R.C.-
01045>       CALIB STANDHYD     01:211               4.30    1.926 No_date    0:57   71.95 .829
01046>       |XIMP=.60:TIMP=.70|
01047>       |LOSS= 2 :CN= 80.0|
01048>       |Pervious     area: |Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.250:SCP=  .0|
01049>       |Impervious   area: |Aimp= 2.00:SLPI=2.00:LGI= 270.:MNI=.013:SCI=  .0|
01050> 001:0187 ----------------ID:NHYD ----------AREA----QPEAK-TpeakDate_hhirm----R.V.-R.C.-
01051>       ROUTE RESERVOIR  > 01:211               4.30    1.926 No_date    0:57   71.95  n/a
01052>        |RDT= 1.20| out<  08:Inf16            1.05     .010 No_date    0:25   71.94  n/a
01053>                 overflow <= 02:              3.25    1.911 No_date    0:58   71.95  n/a
01054>       |MxStoUsed=.6469E-01, TotOvfVol=.2340E-00, N-Ovf=   3, TotDurOvf=   2.hrs|
01055> 001:0188 ----------------ID:NHYD ----------AREA----QPEAK-TpeakDate_hhirm----R.V.-R.C.-
01056>       CALIB STANDHYD     03:210               3.60    2.202 No_date    0:57   81.78 .943
01057>       |XIMP=.80:TIMP=.90|
01058>       |LOSS= 2 :CN= 88.0|
01059>       |Pervious     area: |Aper= 5.00:SLPP=2.00:LGP=  40.:MNP=.250:SCP=  .0|
01060>       |Impervious   area: |Aimp= 2.00:SLPI=2.00:LGI= 211.:MNI=.013:SCI=  .0|
01061> 001:0189 ----------------ID:NHYD ----------AREA----QPEAK-TpeakDate_hhirm----R.V.-R.C.-
01062>       ROUTE RESERVOIR  > 03:210               3.60    2.202 No_date    0:57   81.78  n/a
01063>        |RDT= 1.20| out<  08:Inf17            .99     .009 No_date    0:23   81.78  n/a
01064>                 overflow <= 04:              2.61    2.165 No_date    0:58   81.78  n/a
01065>       |MxStoUsed=.7140E-01, TotOvfVol=.2138E-00, N-Ovf=   3, TotDurOvf=   2.hrs|
01066> 001:0190 ----------------ID:NHYD ----------AREA----QPEAK-TpeakDate_hhirm----R.V.-R.C.-
01067>       ADD HYD            02:                  3.25    1.911 No_date    0:58   71.95  n/a
01068>                        + 04:                  2.61    2.165 No_date    0:58   81.78  n/a
01069>       |DT= 1.20|  SUM=  08:NWStrt7          5.87    4.076 No_date    0:58   76.33  n/a
01070> 001:0191 ----------------ID:NHYD ----------AREA----QPEAK-TpeakDate_hhirm----R.V.-R.C.-
01071> *    CALIB STANDHYD     01:Roads213          4.75    2.812 No_date    0:57   84.56 .975
01072>       |XIMP=.99:TIMP=.99|
01073>       |LOSS= 2 :CN= 93.0|
01074>       |Pervious     area: |Aper= 5.00:SLPP=4.00:LGP=  40.:MNP=.250:SCP=  .0|
01075>       |Impervious   area: |Aimp= 2.00:SLPI=4.00:LGI= 957.:MNI=.013:SCI=  .0|
01076> 001:0192 ----------------ID:NHYD ----------AREA----QPEAK-TpeakDate_hhirm----R.V.-R.C.-
01077>       CALIB NASHYD       02:SWMBlock21        3.40    1.633 No_date    1:02   79.26 .924
01078>       |CN= 99.0: N= 3.00|
01079>       |Ia=  .10:SD=  1.20|
01080> 001:0193 ----------------ID:NHYD ----------AREA----QPEAK-TpeakDate_hhirm----R.V.-R.C.-
01081>       ADD HYD            01:Roads213          4.75    2.812 No_date    0:57   84.56  n/a
01082>                        + 02:SWMBlock21        3.40    1.633 No_date    1:02   79.26  n/a
01083>                        + 08:NWStrt7           5.87    4.076 No_date    0:58   76.33  n/a
01084>                        + 09:NEStrt7           4.46    3.238 No_date    0:58   76.53  n/a
01085>                        + 10:SStrtTl1         40.71    4.756 No_date    0:58   25.35  n/a
01086>       |DT= 1.20|  SUM=  03:Totaltobe1       59.19   16.115 No_date    0:58   42.11  n/a
01087> 001:0194 ----------------------------------------------------------------------------
01088>       FINish
```

FIGURES

EXISTING SERVICES	DRAWING #, SOURCE	DATE	CONSTRUCTED SERVICES	COMPLETION

DETAILS	
DESIGN	LM
DRAWN BY	JR
CHECKED	AG
APPROVED	AG
DATE	2015-10-26

No.	REVISIONS	DATE	CONSULTANT

1614-00052_SWM (10-20-2015).dwg

CONSULTANT OR DIVISION

LDS LAND DEVELOPMENT SOLUTIONS ENGINEERING INC.
Suite A – 2070 Huron Street East, London ON N5V 5A7 Phone: 226-289-2992

ENGINEER'S STAMP

CORPORATION OF THE CITY OF LONDON
London CANADA

SCALE: NOT TO SCALE

TITLE: BYRON EAST SECONDARY PLAN
SIFTON PROPERTIES LIMITED
KEY PLAN

PROJECT No. 1614-00052
SHEET No. FIG 1
PLAN FILE No.

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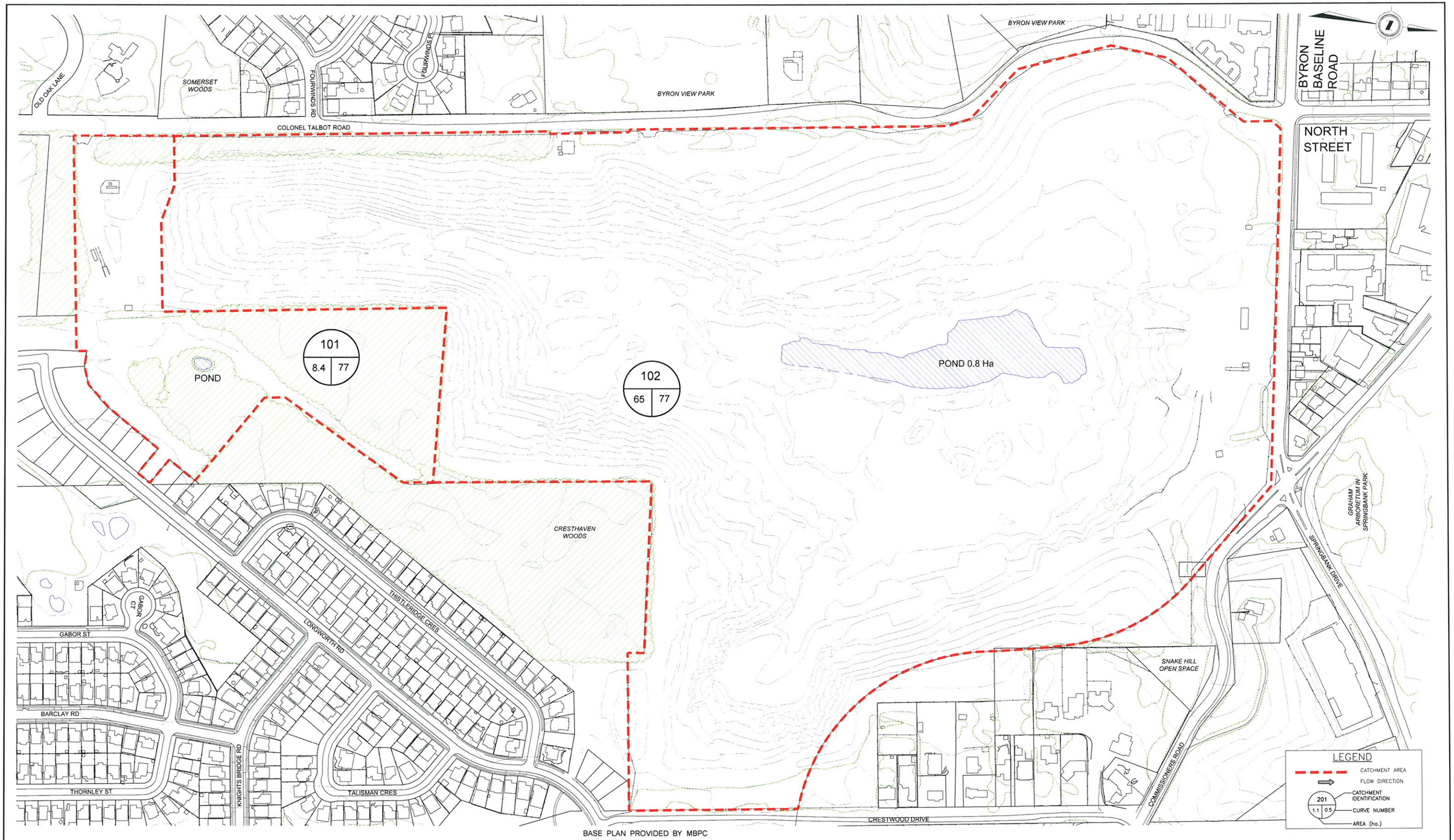
10/26/2015 11:50:50 PM Taylah Renaud



BASE PLAN PROVIDED BY MBPC

EXISTING SERVICES	DRAWING #, SOURCE	DATE	CONSTRUCTED SERVICES	COMPLETION

DETAILS		No.	REVISIONS	DATE	CONSULTANT
DESIGN	LM				
DRAWN BY	JR				
CHECKED	AG				
APPROVED	AC				
DATE	2015-10-20				

1614-00052_SWM (10-19-2015).dwg

CONSULTANT OR DIVISION

LDS LAND DEVELOPMENT SOLUTIONS ENGINEERING INC.
Suite A – 2070 Huron Street East, London ON N5V 5A7 Phone: 226-289-2662

ENGINEER'S STAMP

London CANADA
CORPORATION OF THE CITY OF LONDON

SCALE: NOT TO SCALE

TITLE
BYRON EAST SECONDARY PLAN
SIFTON PROPERTIES LIMITED
PRE-DEVELOPMENT STORMWATER MANAGEMENT PLAN

PROJECT No. 1614-00052
SHEET No. FIG 2
PLAN FILE No.

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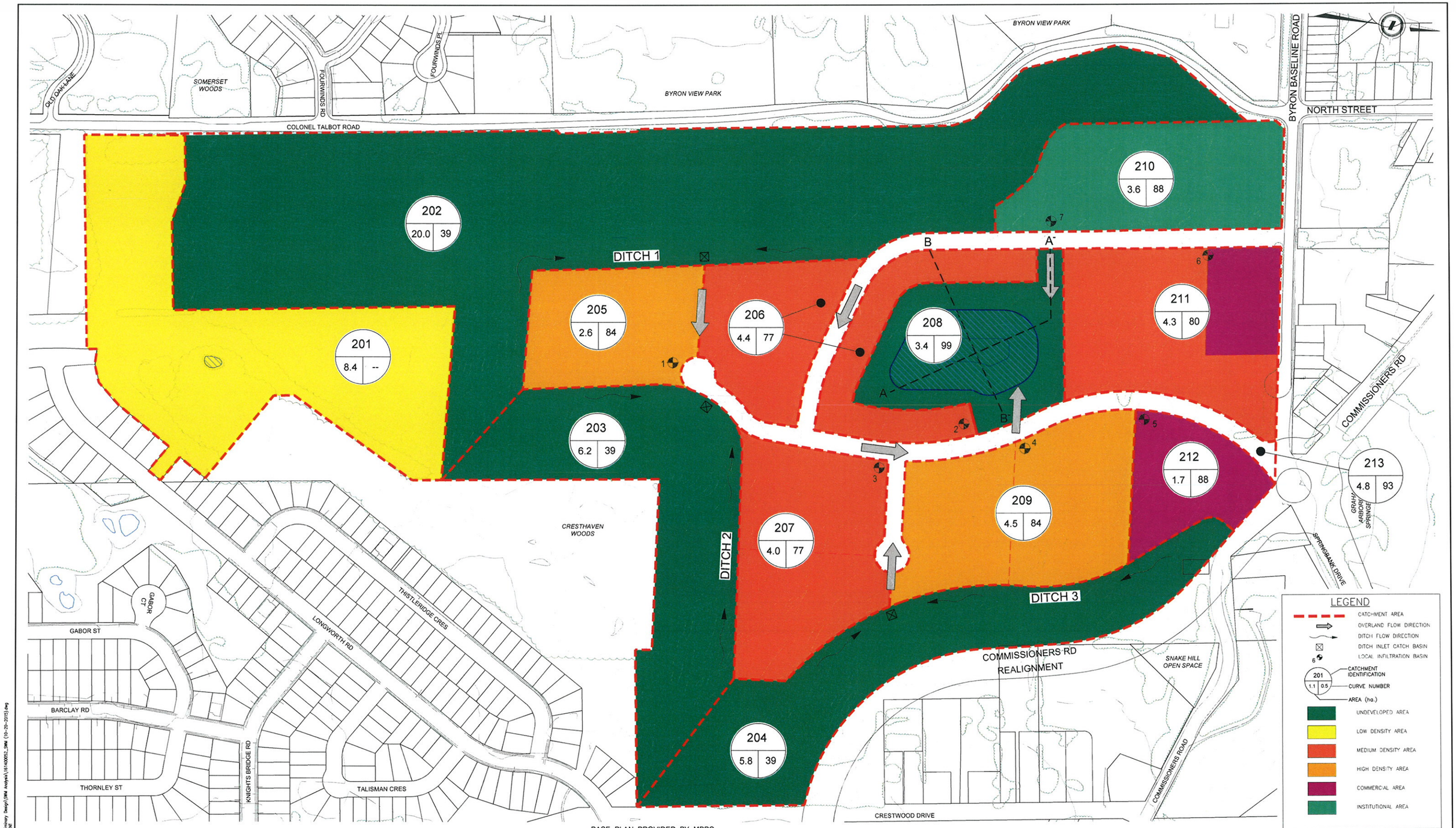
10/20/2015 11:44:03 AM Jason Rae



BASE PLAN PROVIDED BY MBPC

EXISTING SERVICES	DRAWING #, SOURCE	DATE	CONSTRUCTED SERVICES	COMPLETION

DETAILS	
DESIGN	LM
DRAWN BY	JR
CHECKED	AG
APPROVED	AG
DATE	2015-10-20

1614-00052_SWM (10-20-2015).dwg

No.	REVISIONS	DATE	CONSULTANT

CONSULTANT OR DIVISION

LDS LAND DEVELOPMENT SOLUTIONS ENGINEERING INC.
Suite A – 2070 Huron Street East, London ON N5V 5A7 Phone: 226-289-2952

ENGINEER'S STAMP

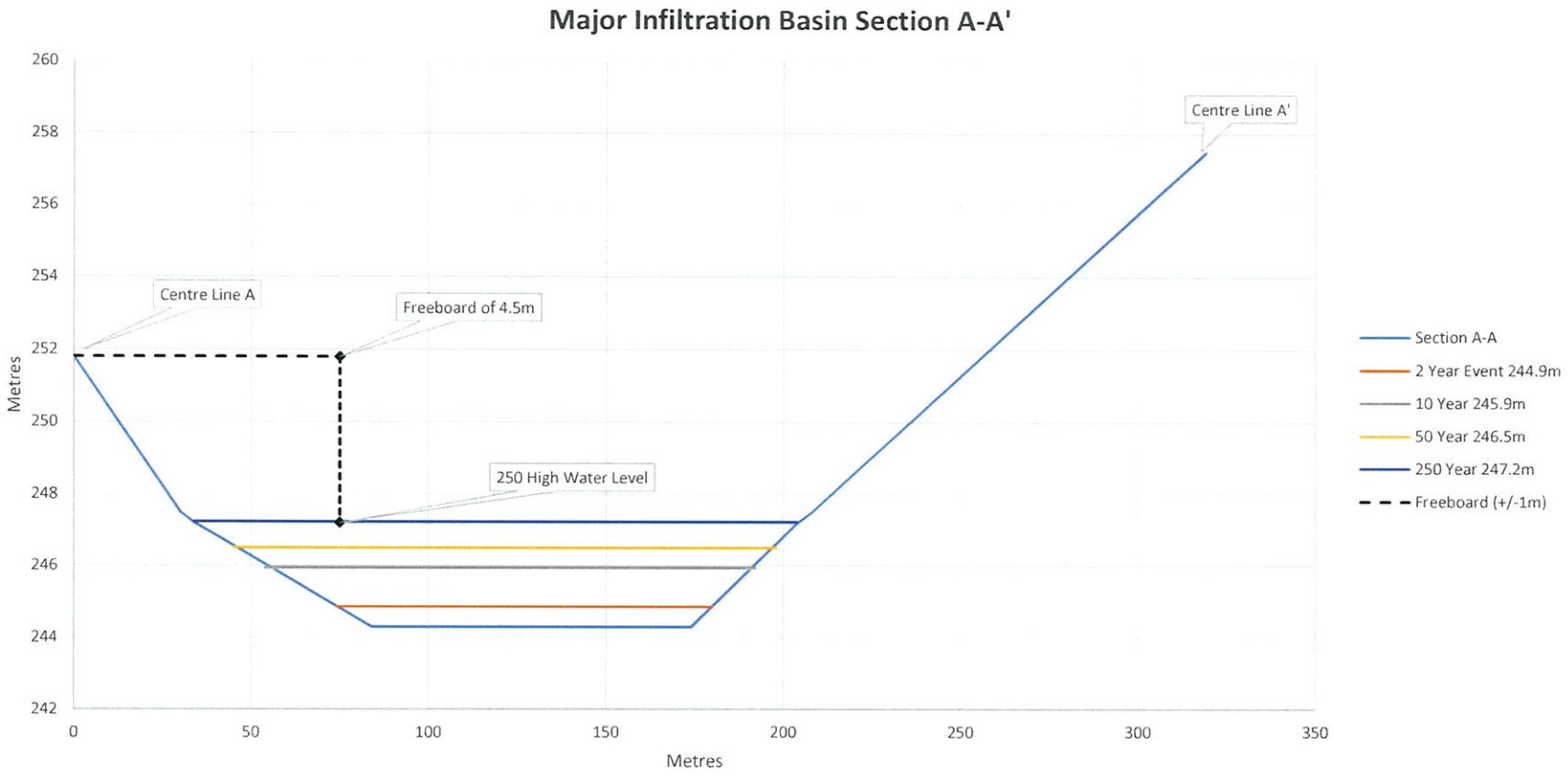
London CANADA
CORPORATION OF THE CITY OF LONDON

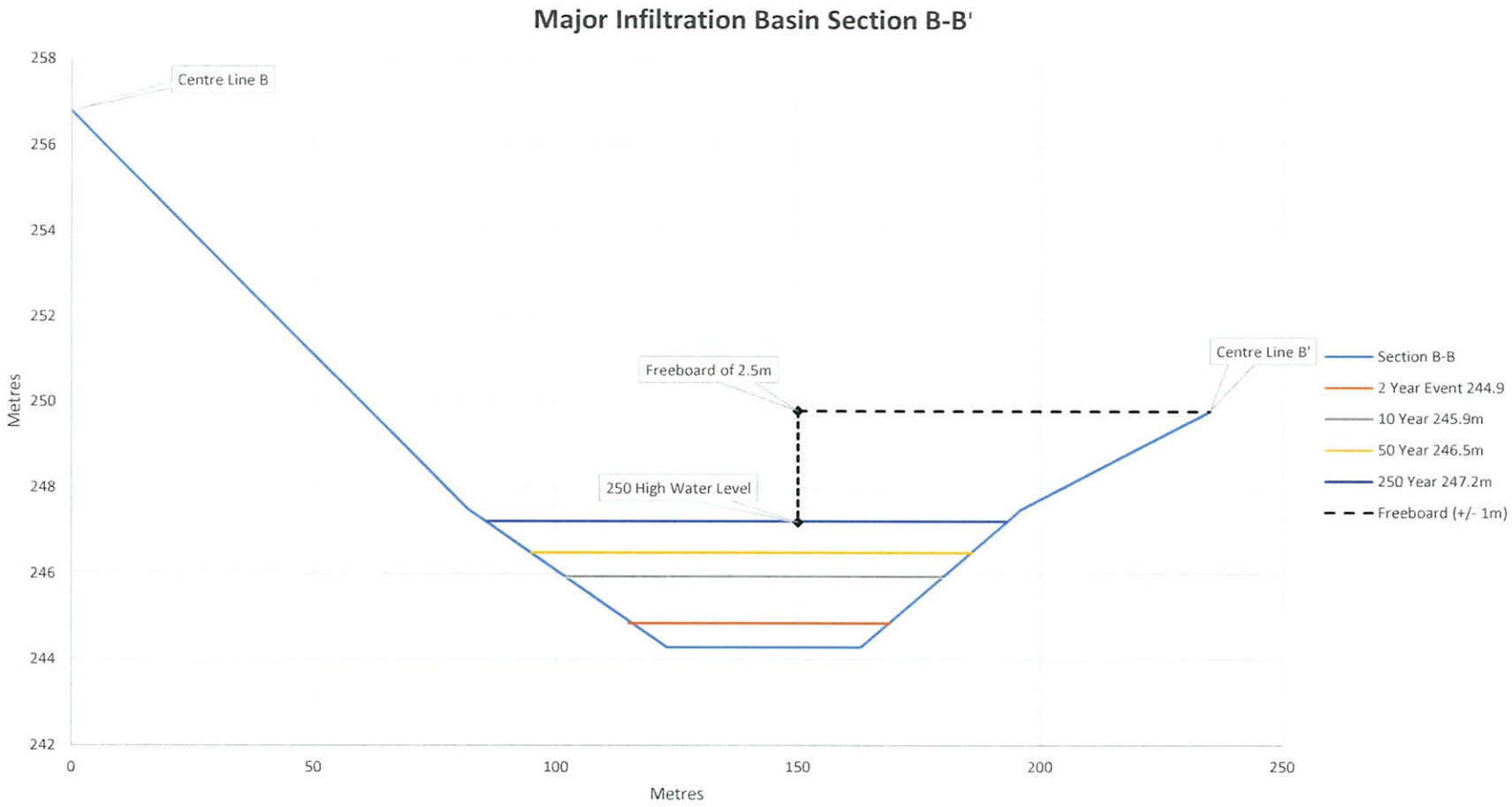
SCALE: NOT TO SCALE

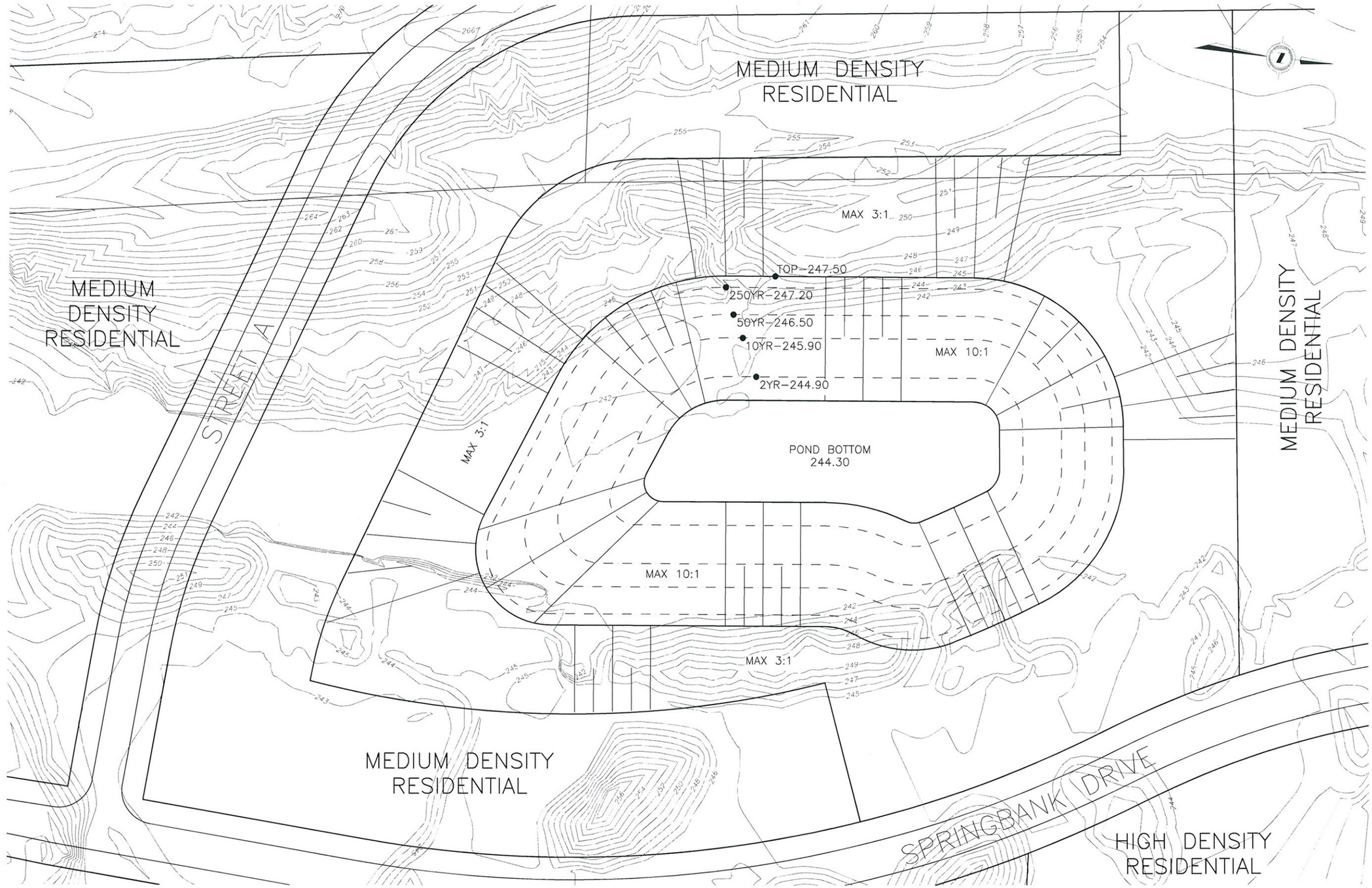
TITLE
BYRON EAST SECONDARY PLAN
SIFTON PROPERTIES LIMITED
POST-DEVELOPMENT STORMWATER MANAGEMENT PLAN

PROJECT No. 1614-00052
SHEET No. FIG 3
PLAN FILE No.

J:\1614-00052 - Byron East Secondary\Preliminary Design\SWM Analysis\1614-00052_SWM (10-20-2015).dwg
10/20/2015 10:04:00 AM by James Ryan (LDS)


Major Infiltration Basin Section A-A'
260
258
256
254
252
250
248
246
244
242
Metres
0
50
100
150
200
250
300
350
Metres
Centre Line A
Freeboard of 4.5m
Centre Line A'
250 High Water Level
Section A-A
2 Year Event 244.9m
10 Year 245.9m
50 Year 246.5m
250 Year 247.2m
Freeboard (+/-1m)


Major Infiltration Basin Section B-B'
Centre Line B
Freeboard of 2.5m
250 High Water Level
Centre Line B'
Section B-B
2 Year Event 244.9
10 Year 245.9m
50 Year 246.5m
250 Year 247.2m
Freeboard (+/- 1m)
Metres
258
256
254
252
250
248
246
244
242
0
50
100
150
200
250
Metres



EXISTING SERVICES	DRAWING #, SOURCE	DATE	CONSTRUCTED SERVICES	COMPLETION

DETAILS	
DESIGN	LM
DRAWN BY	JR
CHECKED	AG
APPROVED	AG
DATE	2015-10-23

16 400052_SWM_Grading.dwg

No	REVISIONS	DATE	CONSULTANT

CONSULTANT OR DIVISION

LDS LAND DEVELOPMENT SOLUTIONS ENGINEERING INC.
Suite A – 2070 Huron Street East, London ON N5V 5A7 Phone: 226-268-2992

ENGINEER'S STAMP

CORPORATION OF THE CITY OF LONDON
London CANADA

SCALE: NOT TO SCALE

TITLE: BYRON EAST SECONDARY PLAN
SIFTON PROPERTIES LIMITED
STORMWATER MANAGEMENT BLOCK

PROJECT No. 1614-00052
SHEET No. FIG 4
PLAN FILE No.

Z:\1614-00052 - Byron East Secondary\Preliminary Design\SWM Analysis\1614000052_SWM_Grading.dwg
26/10/2015 10:36:07 AM by Scott Brista

BYRON EAST SECONDARY PLAN
PRELIMINARY OPINION OF PROBABLE COST
October 28, 2015

Item	Description	Unit	Quantity	Unit Price	Total
PART A	**EARTHWORKS & AREA GRADING**				
A-1	Supply, install and maintain tree preservation fencing	m	1000	$ 8.00	$ 8,000.00
A-2	Complete site alteration surveys and provide AutoCAD drawing and digital files to the Contract Administrator:				
A-2.1	Existing conditions stage	ha	32	$ 650.00	$ 20,813.00
A-2.2	Final pregrade stage	ha	32	$ 650.00	$ 20,813.00
A-3	Clearing and grubbing including mulching and disposal of all stumps, logs, rocks, debris, etc., off site, complete.	LS	1	$ 20,000.00	$ 20,000.00
A-5	Cut to fill select native material within road allowances and development blocks to specified pregrades including placement and compaction of cut material as engineered fill to 98% SPMDD.				
A-5.1	Block 1 (cut: 7,110m^3; fill: 141,172m^3; net deficit: 134,062m^3)	m^3	7110	$ 4.50	$ 31,993.16
A-5.2	Block 2 (cut: 76,568m^3; fill: 96,134m^3; net: 19,566m^3)	m^3	76568	$ 4.50	$ 344,557.35
A-5.3	Block 3 (cut: 13,684m^3; fill: 77,664m^3; net: 63,979m^3)	m^3	13684	$ 4.50	$ 61,579.94
A-5.4	Block 4 (cut: 100,648m^3; fill: 24,641m^3; net: 76,007m^3)	m^3	100648	$ 4.50	$ 452,917.58
A-5.5	Block 5 (cut: 102,848m^3; fill:42,655m^3; net: 60,193m^3)	m^3	102848	$ 4.50	$ 462,815.15
A-5.6	Block 6 (cut: 25,523m^3; fill: 57,641m^3; net deficit: 32,119m^3)	m^3	25523	$ 4.50	$ 114,851.25
A-5.7	Block 7 (cut: 132,848m^3; fill: 55,623m^3; net: 77,224m^3)	m^3	132848	$ 4.50	$ 597,813.98
A-5.8	Block 8 (cut: 117,278m^3; fill: 33m^3; net: 117,244m^3)	m^3	117278	$ 4.50	$ 527,748.84
A-5.9	Block 9 (cut: 87,364m^3; fill: 87,232m^3; net: 132m^3)	m^3	87364	$ 4.50	$ 393,139.04
A-5.10	Block 10 (cut: 38,233m^3; fill: 0m^3; net: 38,233m^3)	m^3	38233	$ 4.50	$ 172,046.48
A-5.11	Block 11 (cut: 86,775m^3; fill: 8,074m^3; net: 78,700m^3)	m^3	86775	$ 4.50	$ 390,486.65
A-5.12	Block 12 (cut: 141m^3; fill: 157,482m^3; net deficit: 157,341m^3)	m^3	141	$ 4.50	$ 632.66
A-5.13	Road Allowances (cut: 76,786m^3; fill: 80,607m^3; net: 3,821m^3)	m^3	76786	$ 4.50	$ 345,537.54
A-6	Dewatering (allowance)	LS	1	$ 200,000.00	$ 200,000.00
	TOTAL THIS SECTION				**$ 4,165,745.58**
PART B	**SANITARY SEWERS AND APPURTENANCES**				
B-1	Supply and install the following sanitary sewers including excavation, bedding, backfilling with select native material to road subgrade, groundwater control, compaction, connection to MH's, complete.				
B-1.1	200mm dia. (average depth to invert: 3m)	m	1341	$ 125.00	$ 167,612.50
B-1.2	250mm dia. (average depth to invert: 3m)	m	196	$ 140.00	$ 27,440.00
B-2	Supply and install the following sanitary manholes including excavation, bedding and backfilling with select native material to road subgrade, ground water control, compaction, frame and cover to base asphalt grade, ladder rungs, benching, drop structures, safety landings and Parson manhole inserts, complete.				
B-2.1	1200 mm diameter (depth to lowest invert: 3m)	ea	22	$ 4,350.00	$ 95,700.00
B-3	Supply and install sanitary PDC's including excavation, bedding and backfill with native material to subgrade, groundwater control, compaction, complete with factory fabricated 'tee', plug and 50 x 100 mm marker (painted brown) from invert to 1m above finished grade at street line.				
B-3.1	100mm diameter	ea	65	$ 710.00	$ 46,150.00
B-3.2	200mm diameter (10m long)	ea	11	$ 710.00	$ 7,810.00
B-4	Infiltration / Exfiltration Testing:				
B-4.1	Sewers	m	1537	$ 4.50	$ 6,916.05
B-4.2	Manholes	ea	22	$ 475.00	$ 10,450.00
B-4.3	Cleaning, flushing, deflection testing and video inspection	m	1537	$ 9.00	$ 13,832.10
B-5	Pumping Station and Genset:				
B-5.1	Supply and install 5.8m deep x 3000mm diameter wet well pumping station including excavation, bedding and backfilling with select native material to subgrade, dewatering, compaction, frame and cover, ladder rungs, benching, etc., complete.	LS	1	$ 150,000.00	$ 150,000.00

BYRON EAST SECONDARY PLAN
PRELIMINARY OPINION OF PROBABLE COST
October 28, 2015

B-5.2	Supply and install pump station equipment including pumps, valving, control panel, conduit, wiring, housing enclosure, etc., complete to City of London standards.	LS	1	$ 250,000.00	$ 250,000.00
B-5.3	Supply and install standby generator including transfer switch, 3075mm x 1200mm x 150mm reinforced concrete pad, conduit / wiring, commissioning, complete.	LS	1	$ 80,000.00	$ 80,000.00
B-5.4	Supply and install 75mm knife gate valve, complete.	LS	1	$ 980.00	$ 980.00
B-5.5	Supply and install 200mm diameter forcemain including connections to valves, air valve chamber, pumping station, outlet, etc., complete.	m	540	$ 150.00	$ 81,000.00
B-5.6	Supply and install air valve chamber	LS	1	$ 40,000.00	$ 40,000.00
	TOTAL THIS SECTION				**$ 977,890.65**
PART C	**STORM SEWERS AND APPURTENANCES**				
B-1	Supply and install the following storm sewers including excavation, bedding, backfilling with select native material to road subgrade, groundwater control, compaction and connection to MH's, complete.				
C-1.1	300 mm dia. (av. depth to invert = 2.5m)	m	207	$ 110.00	$ 22,715.00
C-1.2	450 mm dia. (av. depth to invert = 2.5m)	m	415	$ 155.00	$ 64,247.50
C-1.3	525 mm dia. (av. depth to invert = 2.5m)	m	438	$ 182.00	$ 79,716.00
C-1.4	600 mm dia. (av. depth to invert = 2.5m)	m	90	$ 210.00	$ 18,900.00
C-1.5	675 mm dia. (av. depth to invert = 2.5m)	m	48	$ 285.00	$ 13,680.00
C-1.6	750 mm dia. (av. depth to invert = 2.5m)	m	10	$ 350.00	$ 3,500.00
C-1.7	825 mm dia. (av. depth to invert = 2.5m)	m	447	$ 420.00	$ 187,824.00
C-1.8	900 mm dia. (av. depth to invert = 2.5m)	m	57	$ 510.00	$ 28,968.00
C-1.9	1500 mm dia. (av. depth to invert = 3.3m)	m	315	$ 1,100.00	$ 346,830.00
C-2	Supply and install the following storm manholes, catchbasin-manholes, catchbasins, etc., including excavation, bedding and backfilling with select native material to road subgrade, ground water control, compaction, frame and cover to base asphalt grade, ladder rungs, benching, drop structures and safety landings complete				
C-2.1	1200 mm dia. (ave depth to lowest invert = 2.8m)	ea	11	$ 4,400.00	$ 48,400.00
C-2.2	1500 mm dia. (ave depth to lowest invert = 2.8m)	ea	6	$ 6,750.00	$ 40,500.00
C-2.3	1800 mm dia. (ave depth to lowest invert = 2.8m)	ea	3	$ 8,400.00	$ 25,200.00
C-2.4	2400 mm dia. (ave depth to lowest invert = 2.9m)	ea	4	$ 14,400.00	$ 57,600.00
C-2.5	3000 mm dia. (ave depth to lowest invert = 3.6m)	ea	1	$ 18,750.00	$ 18,750.00
C-4	Supply and install the following catchbasins, including excavation, bedding and backfilling with select native material to road subgrade, groundwater control, compaction, frame and grate / cover to finished grade, subdrains, complete				
C-4.1	Single precast catchbasins	ea	34	$ 1,550.00	$ 52,700.00
C-4.2	Curb-inlet precast catchbasins	ea	2	$ 1,950.00	$ 3,900.00
C-4.3	Ditch-inlet precast catchbasins	ea	1	$ 2,100.00	$ 2,100.00
C-5	Supply and install 250mm diameter PVC SDR 35 catchbasin leads including connection to sewer or manhole, excavation, bedding and backfill with select native material to subgrade, compaction, complete (depth varies)	m	380	$ 165.00	$ 62,700.00
C-6	Supply and install 100 mm dia. PVC SDR 28 storm PDCs including excavation, bedding and backfill with select native material to road subgrade, groundwater control, compaction, complete with factory fabricated "tee", plug and 50 x 100 mm marker (painted green) from invert to 1 m above finished grade at street line	ea	65	$ 710.00	$ 46,150.00
C-7	Cleaning, flushing, deflection testing and video inspection:	m	2026	$ 9.00	$ 18,236.70
	TOTAL THIS SECTION				**$ 1,142,617.20**
PART D	**WATERMAIN AND APPURTENANCES**				
D-1	Supply and install PVC DR18 C-900 (CL 150) watermain complete, including connection to existing watermain, with all fittings, reducers, tracing wire, excavation, bedding, thrust restraints, backfill with select native material to road subgrade, compaction, complete				

BYRON EAST SECONDARY PLAN
PRELIMINARY OPINION OF PROBABLE COST
October 28, 2015

D-1.1	250mm diameter	m	1235	$ 130.00	$ 160,550.00
D-1.2	300mm diameter	m	334	$ 130.00	$ 43,420.00
D-2	Supply and install 20mm dia. water services including main stop, curb stop, complete with 50mm x100mm marker (painted blue) from curb stop to 1 m above finished grade, including excavation, bedding, backfilling with select native material to road subgrade	ea	65	$ 815.00	$ 52,975.00
D-3	Supply and install 250mm diameter mechanical joint offset including insulation in accordance with W-CS-12 and W-CS-68, complete				$ -
D-3.1	250mm diameter	ea	1	$ 2,500.00	$ 2,500.00
D-3.2	300mm diameter	ea	1	$ 3,500.00	$ 3,500.00
D-4	Supply and install watermain valve including valve box, extension rod and restraints			$ 1,650.00	$ 1,650.00
D-4.1	250mm diameter	ea	8	$ 3,200.00	$ 25,600.00
D-4.2	300mm diameter	ea	3	$ 4,200.00	$ 12,600.00
D-5	Supply and install 600mm x 300mm tapping sleeve and valve including valve box, extension rod and restraints	ea	2	$ 5,800.00	$ 11,600.00
D-6	Supply and install 3-way hydrant with storz connection complete with valve, lead and anchor tee, complete	ea	10	$ 5,800.00	$ 58,000.00
D-7	Connect new watermain to existing watermain	ea	2	$ 3,500.00	$ 7,000.00
D-8	Testing and disinfection including pressure, leakage tests, chlorination and flushing of watermain to City of London standards	m	1569	$ 10.00	$ 15,690.00
	TOTAL THIS SECTION				**$ 395,085.00**
PART E	**INTERNAL ROADS**				
E-1	Shape, proof roll and fine grade subgrade prior to the placement of Granular 'B'	m^2	18218	$ 0.75	$ 13,663.65
E-2	Shape, compact and pregrade boulevards to subgrade	m^2	16448	$ 0.50	$ 8,223.80
E-3	Supply, place, fine grade and compact granular base and sub base:				
E-3.1	400 mm Granular 'B'	t	19238	$ 13.25	$ 254,908.80
E-3.2	150 mm Granular 'A'	t	7870	$ 15.61	$ 122,855.38
E-4	Supply, place, fine grade and compact asphalts:				
E-4.1	50 mm HL-8 base course	t	1969	$ 90.00	$ 177,201.00
E-4.2	40 mm HL-3 surface course	t	1718	$ 95.00	$ 163,238.50
E-5	Supply and apply tack coat	m^2	14611	$ 0.47	$ 6,867.31
E-6	Construct new concrete curb and gutter (all types)	m	3286	$ 34.00	$ 111,707.00
E-7	Supply and install permanent street name signs including posts, two sign blades per post, hardware, complete	ea	4	$ 750.00	$ 3,000.00
E-8	Supply and install concrete sidewalk	m^2	4659	$ 42.00	$ 195,694.80
E-9	Cleaning, flushing and video inspection of sewer systems following completion of base asphalt:				
E-9.1	Sanitary sewers	m	1537	$ 9.00	$ 13,832.10
E-9.2	Storm sewers	m	2026	$ 9.00	$ 18,236.70
E-10	Supply and install filter cloth on CB's within road allowances including removal and disposal of straw bales off site	ea	36	$ 75.00	$ 2,700.00
E-11	Topsoil and sod boulevards (non-builder frontage)	m^2	620	$ 12.00	$ 7,441.20
E-12	Raise manhole frame and covers to finished grade	ea	47	$ 550.00	$ 25,850.00
E-13	Raise watermain valve boxes to finished grade	ea	11	$ 150.00	$ 1,650.00
E-14	Cleaning, flushing and video inspection of sewer systems following completion of surface asphalt:				
E-14.1	Sanitary sewers	m	1537	$ 9.00	$ 13,832.10
E-14.2	Storm sewers	m	2026	$ 9.00	$ 18,236.70
E-15	Supply and install street light cable	m	1672	$ 8.15	$ 13,627.62
E-16	Supply and install street lights (45m spacing) and power pedestals	m	38	$ 4,300.00	$ 163,400.00
E-17	Boulevard tree planting (at 15m spacing)	ea	206	$ 525.00	$ 108,150.00
E-18	Mill lap joint at Byron Base Line Road and Springbank Drive	m	45	$ 25.00	$ 1,125.00
E-19	Mill asphalt ramps at catchbasins	ea	36	$ 75.00	$ 2,700.00
	TOTAL THIS SECTION				**$ 1,448,141.66**
PART F	**STORMWATER MANAGEMENT FACILITY**				
F-1	Supply, install and maintain heavy duty silt fence	m	1283	$ 12.50	$ 16,035.00
F-2	Excavate SWM basin and inlet channel to specified subgrades	Included in Part A ($708,669)			$ -

BYRON EAST SECONDARY PLAN
PRELIMINARY OPINION OF PROBABLE COST
October 28, 2015

F-3	OGS device (Vortechs M5000)	LS	1	$ 60,000.00	$ 60,000.00
F-4	Supply and place 75mm multi-use asphalt pathway complete with 150mm Granular 'A' base and 375mm Granular 'B' subbase per SPO-1.14A	m^2	757	$ 34.90	$ 26,419.30
F-5	Supply and place 50mm asphalt pathway complete with 150mm Granular 'A' base per SPO-1.1	m^2	910	$ 18.50	$ 16,835.00
F-6	Supply and place 600mm angular rip rap (variable sizes - 1m depth) over geotextile in major overland flow route spillway.	m^2	101	$ 150.00	$ 15,187.50
F-7	Outlet headwall (1500mm diameter)	LS	1	$ 14,000.00	$ 14,000.00
F-8	Supply, place, fine grade and scarify 200mm topsoil in landscaped areas	m^3	6466	$ 10.00	$ 64,660.00
F-9	Landscape planting allowance	LS	1	$ 120,000.00	$ 120,000.00
F-10	Flexterra erosion control c/w seed mixture	m^2	32332	$ 6.00	$ 193,992.00
	TOTAL THIS SECTION				**$ 527,128.80**
PART G	**PROVISIONAL ITEMS**				
G-1	19mm crushed stone bedding	t	500	$ 10.00	$ 5,000.00
G-2	Geotextile fabric surround	m^2	500	$ 2.50	$ 1,250.00
G-3	Trench subexcavation including disposal on site	m^3	500	$ 6.00	$ 3,000.00
G-4	Subgrade (road) subexcavation including disposal on site	m^3	5000	$ 4.00	$ 20,000.00
G-5	Supply and place calcium chloride (40kg bags)	ea	100	$ 30.00	$ 3,000.00
G-6	Mechanical street sweeping	hr	50	$ 125.00	$ 6,250.00
G-7	Supply and install temporary hickenbottom inlet and stub, complete	ea	10	$ 400.00	$ 4,000.00
G-8	Reinstate displaced SIB's as directed by the Contract Administrator	ea	50	$ 120.00	$ 6,000.00
	TOTAL THIS SECTION				**$ 48,500.00**
PART H	**MISCELLANEOUS ITEMS**				
H-1	Traffic control and maintenance	LS	1	$ 5,000.00	$ 5,000.00
H-2	Engineer's Field office	LS	1	$ 2,000.00	$ 2,000.00
H-3	Construction layout and control	LS	1	$ 22,500.00	$ 22,500.00
H-4	Mobilization and demobilization	LS	1	$ 5,000.00	$ 5,000.00
H-5	Publication of Substantial Performance	LS	1	$ 1,000.00	$ 1,000.00
H-6	Bonding & Insurance	LS	1	$ 121,870.00	$ 121,870.00
	TOTAL THIS SECTION				**$ 157,370.00**

	SUMMARY	**TOTAL**
	PART A EARTHWORKS & AREA GRADING	$ 4,165,745.58
	PART B SANITARY SEWERS AND APPURTENANCES	$ 977,890.65
	PART C STORM SEWERS AND APPURTENANCES	$ 1,142,617.20
	PART D WATERMAIN AND APPURTENANCES	$ 395,085.00
	PART E INTERNAL ROADS	$ 1,448,141.66
	PART F STORMWATER MANAGEMENT FACILITY	$ 527,128.80
	PART G PROVISIONAL ITEMS	$ 48,500.00
	PART H MISCELLANEOUS ITEMS	$ 157,370.00
	Subtotal	**$ 8,862,478.88**
	10% Contingency Allowance	$ 886,247.89
	15% Engineering Allowance	$ 1,462,309.02
	Total (excluding HST)	**$ 11,211,035.79**
	Gross cost per centerline meter	$ 6,704.76
	Gross cost per developable acre	$ 179,204.54
	Net cost per centreline meter (i.e. net of claims)	$ 4,498.03
	Net cost per developable acre (i.e. net of claims)	$ 120,223.02

Notes & Assumptions

1. Boulevard topsoil and sod is assumed to be completed by the developer of the individual blocks at the block developer's expense.

2. Road improvements completed by the subdivider on Commissioners Road and / or Byron Baseline Road (if any) are assumed to be cost neutral following settlement of the subdivider's claim to the Development Charges Reserve Fund.

3. OPC excludes cost of electrical and telecommunication services and HST.

OLD OAK LANE
SOMERSET WOODS
FOURWINDS RD
FOURWINDS PL
PARK
BYRON VIEW PARK
BYRON
NORTH STREET
COLONEL TALBOT ROAD
STUDY LIMITS
OPEN SPACE /PARK 32.1 Ha
COMMUNITY FACILITY 3.6 Ha
LOW DENSITY RESIDENTIAL 2.2 Ha
STUDY LIMITS
LOW DENSITY RESIDENTIAL 6.2 Ha
HIGH DENSITY RESIDENTIAL 2.6Ha
MEDIUM DENSITY RESIDENTIAL 2.5 Ha
MEDIUM DENSITY RESIDENTIAL 1.9 Ha
SWM 3.4 Ha
MEDIUM DENSITY RESIDENTIAL 3.4 Ha
NEIGHBORHOOD SHOPPING AREA 0.9Ha
COMMISSIONERS RD
BUSH
ND
TH
MEDIUM DENSITY RESIDENTIAL 2.0 Ha
HIGH DENSITY RESIDENTIAL 2.0 Ha
HIGH DENSITY RESIDENTIAL 2.5 Ha
NEIGHBORHOOD SHOPPING AREA 1.7Ha
turn circle
Graham Arboretum in Springbank Park
CRESTHAVEN WOODS
THISTLERIDGE CRES
LONGWORTH RD
GABOR CT
ABOR ST
SPRINGBANK DRIVE
MEDIUM DENSITY RESIDENTIAL 2.0 Ha
COMMISSIONERS RD Realignment
SNAKE HILL OPEN SPACE
10%
BARCLAY RD
S BRIDGE RD
TALISMAN CRES
THORNLEY ST
STUDY LIMITS
CRESTWOOD DRIVE
ONERS ROAD

PRELIMINARY

EXISTING SERVICES	DRAWING # SOURCE	DATE	CONSTRUCTED SERVICES	COMPLETION

DETAILS	
DESIGN	SGWB
DRAWN BY	SGWB
CHECKED	AG
APPROVED	AG
DATE	2015-10-19

LDS Concept2.dwg

NO	REVISIONS	DATE	CONSULTANT

CONSULTANT OR DIVISION

LDS LAND DEVELOPMENT SOLUTIONS ENGINEERING INC.
Suite A – 2070 Huron Street East, London ON N5V 5A7 Phone: 226-289-2952

ENGINEER'S STAMP

CORPORATION OF THE CITY OF LONDON
London CANADA

SCALE: NOT TO SCALE

TITLE
BYRON EAST SECONDARY PLAN
SIFTON PROPERTIES LIMITED
LAND USE CONCEPT PLAN

PROJECT No.

SHEET No. 1

PLAN FILE No.

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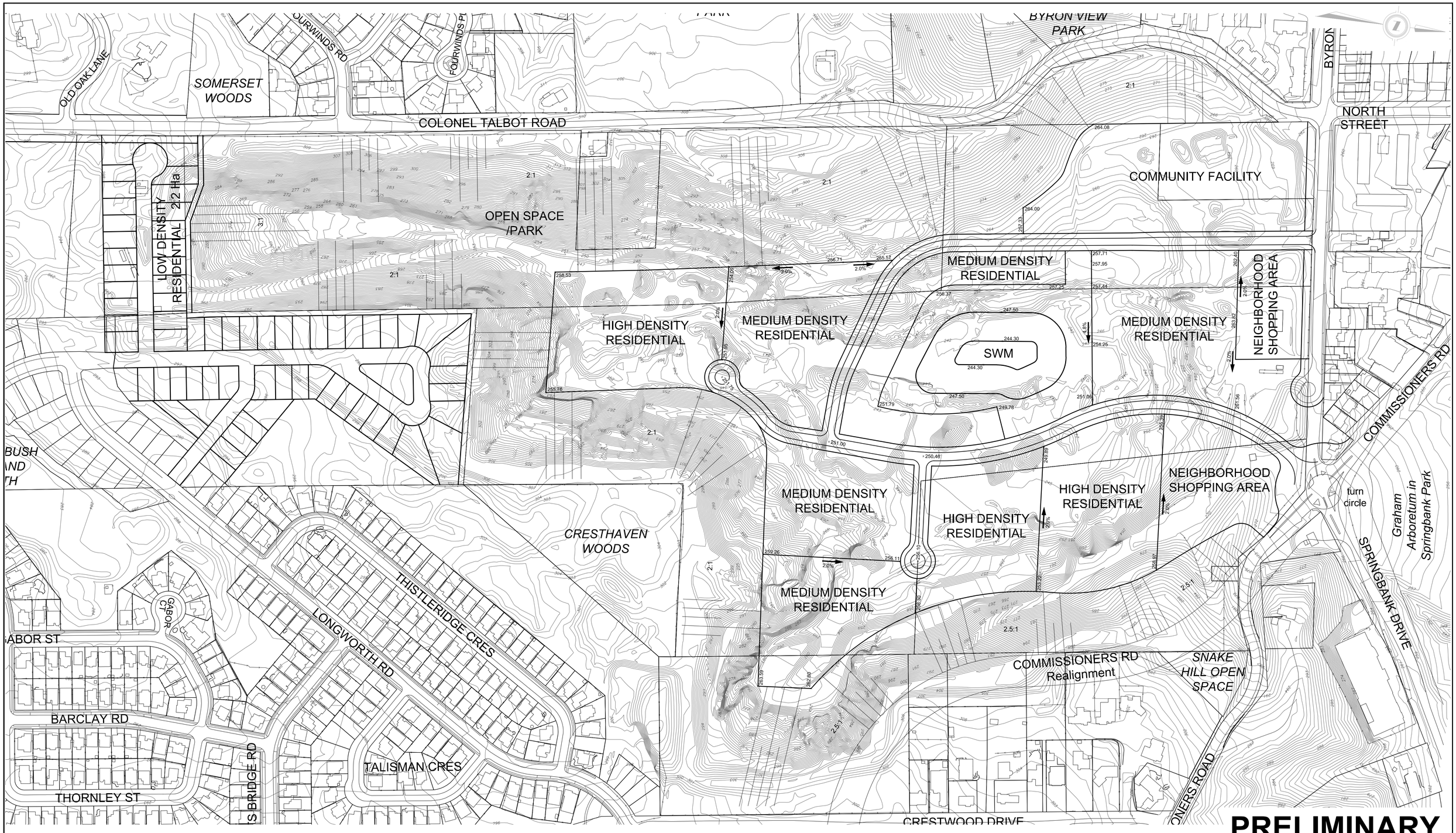

PRELIMINARY

EXISTING SERVICES	DRAWING #, SOURCE	DATE	CONSTRUCTED SERVICES	COMPLETION

DETAILS	
DESIGN	SOWB
DRAWN BY	SOWB
CHECKED	AG
APPROVED	AG
DATE	2015-10-26

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NO.	REVISIONS	DATE	CONSULTANT

CONSULTANT OR DIVISION

LDS LAND DEVELOPMENT SOLUTIONS ENGINEERING INC.
Suite A – 2070 Huron Street East, London ON N5V 5A7 Phone: 226-289-2952

ENGINEER'S STAMP

CORPORATION OF THE CITY OF LONDON
London CANADA

SCALE: NOT TO SCALE

TITLE: BYRON EAST SECONDARY PLAN
SIFTON PROPERTIES LIMITED
GRADING

PROJECT No.

SHEET No. 1

PLAN FILE No.

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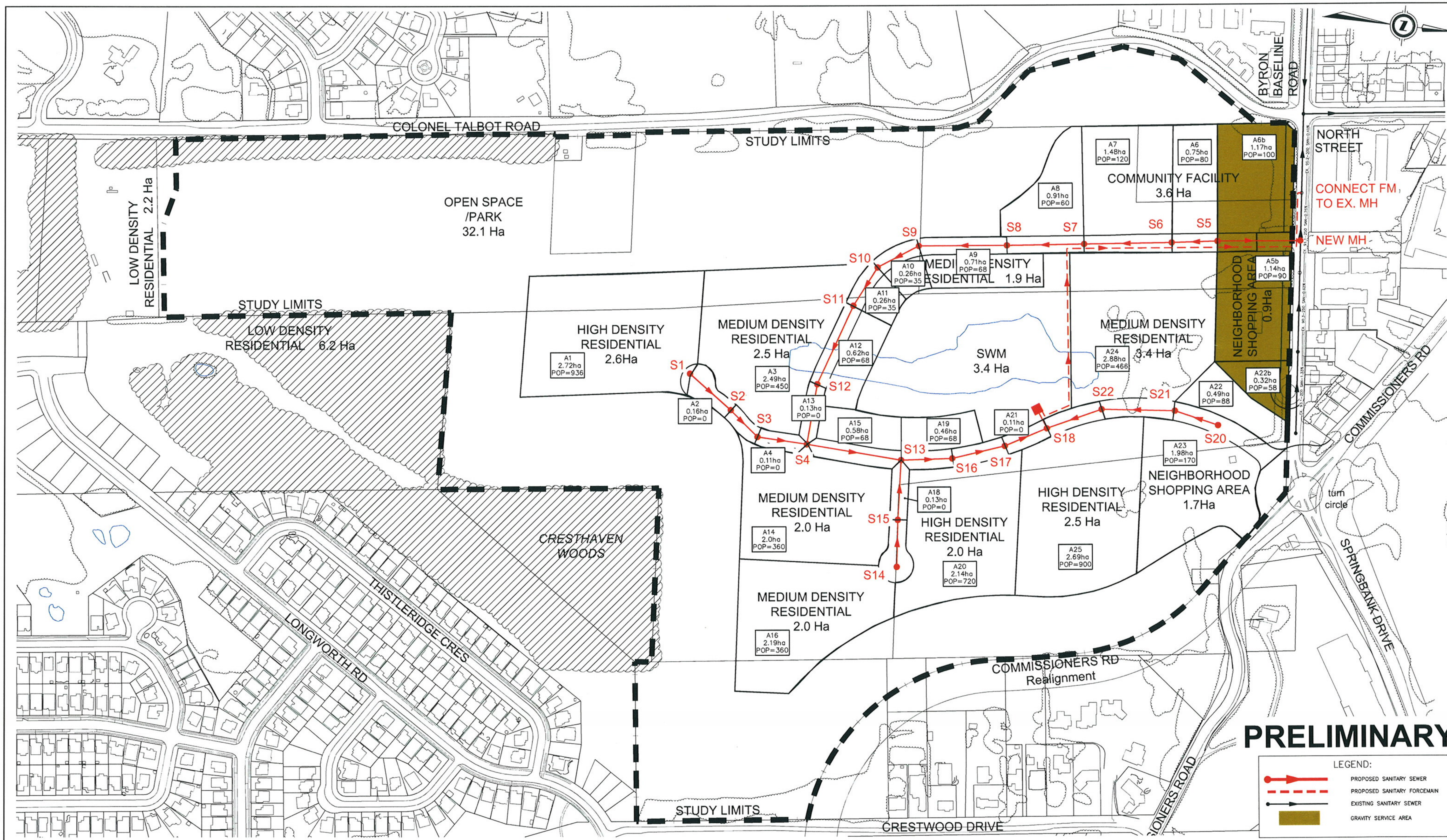
COLONEL TALBOT ROAD
STUDY LIMITS
BYRON BASELINE ROAD
NORTH STREET
OPEN SPACE /PARK 32.1 Ha
LOW DENSITY RESIDENTIAL 2.2 Ha
LOW DENSITY RESIDENTIAL 6.2 Ha
COMMUNITY FACILITY 3.6 Ha
CONNECT FM TO EX. MH
NEW MH
HIGH DENSITY RESIDENTIAL 2.6Ha
MEDIUM DENSITY RESIDENTIAL 2.5 Ha
MEDIUM DENSITY RESIDENTIAL 1.9 Ha
SWM 3.4 Ha
MEDIUM DENSITY RESIDENTIAL 3.4 Ha
NEIGHBORHOOD SHOPPING AREA 0.9Ha
MEDIUM DENSITY RESIDENTIAL 2.0 Ha
HIGH DENSITY RESIDENTIAL 2.0 Ha
HIGH DENSITY RESIDENTIAL 2.5 Ha
NEIGHBORHOOD SHOPPING AREA 1.7Ha
MEDIUM DENSITY RESIDENTIAL 2.0 Ha
CRESTHAVEN WOODS
THISTLERIDGE CRES
LONGWORTH RD
COMMISSIONERS RD
SPRINGBANK DRIVE
turn circle
COMMISSIONERS RD Realignment
CRESTWOOD DRIVE
A1 2.72ha POP=936
A2 0.16ha POP=0
A3 2.49ha POP=450
A4 0.11ha POP=0
A5b 1.14ha POP=90
A6 0.75ha POP=80
A6b 1.17ha POP=100
A7 1.48ha POP=120
A8 0.91ha POP=60
A9 0.71ha POP=68
A10 0.26ha POP=35
A11 0.26ha POP=35
A12 0.62ha POP=68
A13 0.13ha POP=0
A14 2.0ha POP=360
A15 0.58ha POP=68
A16 2.19ha POP=360
A18 0.13ha POP=0
A19 0.46ha POP=68
A20 2.14ha POP=720
A21 0.11ha POP=0
A22 0.49ha POP=88
A22b 0.32ha POP=58
A23 1.98ha POP=170
A24 2.88ha POP=466
A25 2.69ha POP=900
S1 S2 S3 S4 S5 S6 S7 S8 S9 S10 S11 S12 S13 S14 S15 S16 S17 S18 S20 S21 S22
PRELIMINARY
LEGEND:
PROPOSED SANITARY SEWER
PROPOSED SANITARY FORCEMAIN
EXISTING SANITARY SEWER
GRAVITY SERVICE AREA

DESIGN	SGWB
DRAWN BY	SGWB
CHECKED	AG
APPROVED	AG
DATE	2015-10-20

161400052_SAN.dwg

CONSULTANT OR DIVISION

LDS LAND DEVELOPMENT SOLUTIONS ENGINEERING INC.

Suite A – 2070 Huron Street East, London ON N5V 5A7 Phone: 226-289-2952

ENGINEER'S STAMP

CORPORATION OF THE CITY OF LONDON

London CANADA

SCALE

TITLE

BYRON EAST SECONDARY PLAN

SIFTON PROPERTIES LIMITED

SANITARY DRAINAGE AREA PLAN

PROJECT No. 161400052

SHEET No. 1

PLAN FILE No.

SANITARY SEWER DESIGN SHEET
MIDDLESEX CENTRE

THE FOLLOWING POPULATION ALLOWANCES WILL APPLY WHEN DESIGNING SANITARY SEWERS:

LOW DENSITY (SINGLE-FAMILY / SEMI-DETACHED)	= 30 UNITS / HECTARE @ 3 PEOPLE / UNIT
MEDIUM DENSITY (MULTI-FAMILY / TOWNHOUSE / ROWHOUSE)	= 75 UNITS / HECTARE @ 2.4 PEOPLE / UNIT
HIGH DENSITY (APARTMENTS)	= 150 - 300 UNIT / HECTARE @ 1.6 PEOPLE / UNIT
COMMERCIAL / INSTITUTIONAL	= 100 PEOPLE / HECTARE
SECONDARY SCHOOL	= 1500 PEOPLE
ELEMENTARY SCHOOL	= 600 PEOPLE

DESIGN CRITERIA
SEWAGE = 230 LITRE / CAPITA / DAY
INFILTRATION = 8640 LITRES / HECTARE / DAY
PEAKING FACTOR: $\frac{1 + 14}{4 + P^{0.5}}$

DATE: Oct 21 2015
DESIGNED BY: AH

PROJECT NAME: BYRON EAST SECONDARY PLAN

PROJECT FILE NO. 161400052

LOCATION				AREA			POPULATION						SEWAGE FLOWS			SEWER DESIGN						PROFILE				
																									INVERT ELEVATION	
AREA No.	STREET	FROM MANHOLE	TO MANHOLE	NET OR GROSS	DELTA HECTARES	TOTAL HECTARES	PER HECTARE	PER LOT	NO. OF LOTS	DELTA POP.	TOTAL POP.	PEAKING FACTOR	INFILT L / s	SEWAGE L / s	Q TOTAL L / s	PIPE SIZE mm	n	SLOPE %	CAP L / s	VELOCITY m / s	LENGTH m	FALL IN SEWER	HEADLOSS IN U.S. MH	DROP IN MANHOLE	U.S.	D.S.
	Springbank Drive	STUB	S1	G	2.72	2.72	-	-	-	936	936	3.82	0.27	10.47	10.74	200	0.013	1.00	32.80	1.04	10.0	0.100	-	-	248.915	248.815
A2	Springbank Drive	S1	S2	G	0.16	2.88	-	-	-	0	936	3.82	0.29	10.47	10.75	200	0.013	0.40	20.74	0.66	62.4	0.250	0.000	0.030	248.785	248.535
A3	Springbank Drive	S2	S3	G	2.49	5.37	-	-	-	450	1386	3.70	0.54	15.03	15.57	200	0.013	0.40	20.74	0.66	43.1	0.172	0.000	0.030	248.505	248.333
A4	Springbank Drive	S3	S4	G	0.11	5.48	-	-	-	0	1386	3.70	0.55	15.03	15.58	200	0.013	0.40	20.74	0.66	56.5	0.226	0.000	0.030	248.303	248.077
A6	Street A	S5	S6	G	0.75	0.75	-	-	-	80	80	4.27	0.08	1.00	1.08	200	0.013	4.00	65.60	2.09	52.3	2.092	0.000	0.030	258.439	256.347
A7	Street A	S6	S7	G	1.48	2.23	-	-	-	120	200	4.15	0.22	2.43	2.65	200	0.013	2.60	52.88	1.68	100.4	2.610	0.000	0.030	256.317	253.707
A8	Street A	S7	S8	G	0.91	3.14	-	-	-	60	260	4.10	0.31	3.12	3.44	200	0.013	0.40	20.74	0.66	87.3	0.349	0.000	0.030	253.677	253.327
A9	Street A	S8	S9	G	0.71	3.85	-	-	-	68	328	4.06	0.39	3.90	4.29	200	0.013	0.90	31.11	0.99	100.7	0.906	0.000	0.030	253.297	252.391
A10	Street A	S9	S10	G	0.26	4.11	-	-	-	35	363	4.04	0.41	4.30	4.71	200	0.013	1.00	32.80	1.04	53.1	0.531	0.000	0.030	252.361	251.830
A11	Street A	S10	S11	G	0.26	4.37	-	-	-	35	398	4.02	0.44	4.69	5.13	200	0.013	0.50	23.19	0.74	51.7	0.259	0.000	0.030	251.800	251.542
A12	Street A	S11	S12	G	0.62	4.99	-	-	-	68	466	3.99	0.50	5.44	5.94	200	0.013	2.00	46.38	1.48	98.4	1.968	0.000	0.030	251.512	249.544
A13	Street A	S12	S4	G	0.13	5.12	-	-	-	0	466	3.99	0.51	5.44	5.96	200	0.013	2.00	46.38	1.48	69.6	1.392	0.000	0.030	249.514	248.122
A14	Springbank Drive	STUB	S4	G	2.00	2.00	-	-	-	360	360	4.04	0.20	4.26	4.46	200	0.013	1.00	32.80	1.04	10.0	0.100	-	-	248.177	248.077
A15	Springbank Drive	S4	S13	G	0.58	13.18	-	-	-	68	2280	3.54	1.32	23.64	24.96	200	0.013	0.80	29.34	0.93	108.0	0.864	0.000	0.030	248.047	247.183
A16	Street B	STUB	S14	G	2.00	2.00	-	-	-	360	360	4.04	0.20	4.26	4.46	200	0.013	2.00	46.38	1.48	10.0	0.200	-	-	253.303	253.103
A17	Street B	S14	S15	G	0.19	2.19	-	-	-	0	360	4.04	0.22	4.26	4.48	200	0.013	7.00	86.77	2.76	53.8	3.766	0.000	0.030	253.073	249.307
A18	Street B	S15	S13	G	0.13	2.32	-	-	-	0	360	4.04	0.23	4.26	4.49	200	0.013	3.00	56.81	1.81	68.3	2.049	0.000	0.030	249.277	247.228
A19	Springbank Drive	S13	S16	G	0.46	15.96	-	-	-	68	2708	3.48	1.60	27.59	29.19	250	0.013	0.30	32.57	0.66	58.7	0.176	0.000	0.030	247.153	246.977
A20	Springbank Drive	S16	S17	G	2.14	18.10	-	-	-	720	3428	3.39	1.81	34.05	35.86	250	0.013	0.40	37.61	0.77	61.7	0.247	0.000	0.030	246.947	246.700
A21	Springbank Drive	S17	S18	G	0.11	18.21	-	-	-	0	3428	3.39	1.82	34.05	35.88	250	0.013	0.40	37.61	0.77	51.3	0.205	0.000	0.030	246.670	246.465
A22	Springbank Drive	STUB	S20	G	0.49	0.49	-	-	-	88	88	4.26	0.05	1.10	1.15	200	0.013	1.00	32.80	1.04	10.0	0.100	-	-	258.189	258.089
A23	Springbank Drive	S20	S21	G	1.98	2.47	-	-	-	170	258	4.11	0.25	3.10	3.35	200	0.013	6.00	80.34	2.56	52.0	3.120	0.000	0.030	258.059	254.939
A24	Springbank Drive	S21	S22	G	2.68	5.15	-	-	-	466	724	3.89	0.52	8.24	8.75	200	0.013	6.50	83.62	2.66	83.9	5.454	0.000	0.030	254.909	249.456
A25	Springbank Drive	S22	S18	G	2.69	7.84	-	-	-	900	1624	3.65	0.78	17.38	18.16	200	0.013	4.50	69.57	2.21	65.8	2.961	0.000	0.030	249.426	246.465
	Springbank Drive	S18	PS	G	0.00	26.05	-	-	-	0	5052	3.24	2.61	47.94	50.55	250	0.013	0.78	52.52	1.07	24.3	0.190	0.000	0.075	246.390	246.200
Area Tributary to Base Line Road Sewers																										
A22b	Byron Base Line Road	Ex.MH on Base Line		G	0.32	0.32	-	-	-	58	58	4.30	0.03	0.73	0.76											
A5b	Springbank Drive		S5	G	1.14	1.14	-	-	-	90	90	4.26	0.11	1.12	1.24											
A6b	Springbank Drive	S5	NEW MH	G	1.17	2.31	-	-	-	100	190	4.16	0.23	2.31	2.54	200	0.013	1.00	32.80	1.04	93.6	0.936	-	-	259.836	258.900

OLD OAK LANE
SOMERSET WOODS
FOURWINDS RD
FOURWINDS PL
COLONEL TALBOT ROAD
BYRON VIEW PARK
BYRON
NORTH STREET
STUDY LIMITS
LOW DENSITY RESIDENTIAL 2.2 Ha
OPEN SPACE /PARK 32.1 Ha
A1 20.00ha C=**
COMMUNITY FACILITY 3.6 Ha
A13 3.60ha C=0.90
A10 0.23ha C=0.90
A15 0.22ha C=0.65
R18
R17
R16
R15
R14
R19
CBMH1
MEDIUM DENSITY RESIDENTIAL 1.9 Ha
A14 0.66ha C=0.65
A12 0.21ha C=0.90
A11 0.21ha C=0.90
NEIGHBORHOOD SHOPPING AREA 0.9Ha
A9 0.90ha C=0.90
A32 2.40ha C=0.65
A2 0.10ha C=0.90
R20
R23
R21
A17 0.33ha C=0.65
A16 0.17ha C=0.65
STUDY LIMITS
LOW DENSITY RESIDENTIAL 6.2 Ha
HIGH DENSITY RESIDENTIAL 2.6Ha
A3 2.60ha C=0.90
MEDIUM DENSITY RESIDENTIAL 2.5 Ha
A18 0.41ha C=0.65
SWM 3.4 Ha
MEDIUM DENSITY RESIDENTIAL 3.4 Ha
A31 0.16ha C=0.90
R1
R22
A7 2.50ha C=0.65
R2
A19 0.31ha C=0.65
OUTLET
R10
R9
A30 0.29ha C=0.90
A4 0.18ha C=0.90
R11
R3
A21 0.52ha C=0.65
A26 0.47ha C=0.65
A33 0.17ha C=0.90
DICB2
A6 0.09ha C=0.90
R5
R8
A5 6.20ha C=**
R7
A35 0.12ha C=0.90
A29 1.70ha C=0.90
A8 0.12ha C=0.90
R4
R6
A28 0.14ha C=0.90
NEIGHBORHOOD SHOPPING AREA 1.7Ha
A25 0.11ha C=0.90
MEDIUM DENSITY RESIDENTIAL 2.0 Ha
R13
HIGH DENSITY RESIDENTIAL 2.0 Ha
HIGH DENSITY RESIDENTIAL 2.5 Ha
A34 2.50ha C=0.90
turn circle
COMMISSIONERS RD
Graham Arboretum in Springbank Park
SPRINGBANK DRIVE
A20 2.0ha C=0.65
A24 0.20ha C=0.90
A27 2.00ha C=0.90
R12
CRESTHAVEN WOODS
THISTLERIDGE CRES
LONGWORTH RD
GABOR CT
ST
BARCLAY RD
MEDIUM DENSITY RESIDENTIAL 2.0 Ha
CBMH3
A23 2.00ha C=0.65
A22 5.80ha C=**
COMMISSIONERS RD Realignment
SNAKE HILL OPEN SPACE
TALISMAN CRES
THORNLEY ST
STUDY LIMITS
CRESTWOOD DRIVE
COMMISSIONERS ROAD

PRELIMINARY

LEGEND:
C=** PROPOSED STORM SEWER
REFER TO SWM REPORT

BASE PLAN PROVIDED BY LDS

DESIGN	AH
DRAWN BY	AH
CHECKED	AG
APPROVED	AG
DATE	2015-10-26
	161400052_STM.dwg

CONSULTANT OR DIVISION
LDS LAND DEVELOPMENT SOLUTIONS ENGINEERING INC.
Suite A - 2070 Huron Street East, London ON N5V 5A7 Phone: 226-289-2960

ENGINEER'S STAMP

CORPORATION OF THE CITY OF LONDON
London CANADA

SCALE

TITLE
BYRON EAST SECONDARY PLAN
SIFTON PROPERTIES LIMITED
STORM DRAINAGE AREA PLAN

PROJECT No.
SHEET No. 3
PLAN FILE No.

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10/26/2015 12:18:03 PM by Laing Development

RUNOFF COEFFICIENT 'C' VALUES

THE FOLLOWING 'C' VALUES WILL APPLY WHEN DESIGNING STORM SEWERS:

PARKS, OPEN SPACE	0.20
SINGLE FAMILY / SEMI DETACHED	0.50 - 0.55
TOWNHOUSE / ROWHOUSE	0.65
APARTMENTS	0.65 - 0.70
COMMERCIAL, INSTITUTIONAL & INDUSTRIAL	0.70 - 0.90
DENSELY BUILT, PAVED	0.90

STORM SEWER DESIGN SHEET
MIDDLESEX CENTRE

FLOW Q - 2.78 x C x A x I
WHERE Q=PEAK FLOW IN LITRES PER SECOND (L / s)
A=AREA IN HECTARES (Ha)
C=RUNOFF COEFFICIENT
I=RAINFALL INTENSITY (mm / hr)
RETURN PERIOD = 2 YEARS

DATE: Oct-15
DESIGNED BY: AH

PROJECT NAME: BYRON EAST SECONDARY PLAN

PROJECT FILE NO. 1614-00052

LOCATION				AREA		TOTAL (A x C)						RAINFALL INTENSITY			Q	SEWER DESIGN							PROFILE				
												TIME ENTRY mm														INVERT ELEVATION	
AREA No.	STREET	FROM MANHOLE	TO MANHOLE	DELTA HECTARE	TOTAL HECTARES	'C'	AxC	TOTAL SECTION	TOTAL LATERAL	TOTAL SEWER	TOTAL 2.78AxC	SECTION	ACCUM.	INTENSITY mm/hr	L / s	PIPE SIZE mm	n	SLOPE %	CAP L / s	VELOCITY m / s	LENGTH m	TIME OF FLOW	FALL IN SEWER	HEADLOSS IN U.S. MH	DROP IN MANHOLE	U.S.	D.S.
A1	OPEN SPACE	CBMH1	R23	20.00	20.00			from SWM Report					30.0		84.0	300	0.013	2.00	136.8	1.93	52.6	0.45	1.052	-		287.500	286.448
A2	OPEN SPACE	R23	R1	0.10	20.10	0.90	0.090	0.000	0.000	0.090	0.250	0.45	30.5	56.1	98.0	300	0.013	2.00	136.8	1.93	76.3	0.66	1.526	0.000		286.448	284.922
A3	HD BLOCK	STUB	R1	2.50	2.50	0.90	2.250	0.000	0.000	2.250	6.255	0.00	16.0	84.1	526.0	525	0.013	2.00	608.2	2.81	10.0	0.06	0.200	-		285.122	284.922
A4	SPRINGBANK DRIVE	R1	R2	0.18	22.78	0.90	0.162	0.090	2.250	2.502	6.956	0.06	16.1	84.1	669.0	675	0.013	1.00	840.6	2.35	48.0	0.34	0.460	-	-	248.475	247.995
A5	OPEN SPACE	CBMH2	R2	6.20	6.20			from SWM Report					30.0		26.0	300	0.013	0.50	68.4	0.97	15.0	0.26	0.075	-		287.500	287.425
A6	SPRINGBANK DRIVE	R2	R3	0.09	29.07	0.90	0.081	2.502	0.000	2.583	7.181	0.34	16.4	83.1	706.7	825	0.013	0.30	786.2	1.47	44.4	0.50	0.133	-	0.150	248.145	248.012
A7	MD BLOCK	STUB	R3	2.50	2.50	0.65	1.625	0.000	0.000	1.625	4.518	0.00	16.1	83.8	378.6	450	0.013	2.00	403.2	2.54	10.0	0.07	0.200	-		248.212	248.012
A8	SPRINGBANK DRIVE	R3	R4	0.12	31.69	0.90	0.108	2.583	1.625	4.316	11.998	*	16.2	83.6	1113.1	900	0.013	0.40	1144.9	1.80	56.8	0.53	0.227	0.149	0.149	247.863	247.636
A9	HD BLOCK	STUB	R14	0.90	0.90	0.90	0.810	0.000	0.000	0.810	2.252	*	14.9	87.4	196.8	300	0.013	1.50	118.4	1.68	10.0	0.10	0.150	-		257.772	257.622
A10	STREET A	R14	R15	0.23	1.13	0.90	0.207	0.810	0.000	1.017	2.827	0.10	15.0	87.4	247.1	450	0.013	3.00	493.8	3.10	55.5	0.30	1.665			257.622	255.957
A11	STREET A	R15	R16	0.21	1.34	0.90	0.189	1.017	0.000	1.206	3.353	0.30	15.3	86.4	289.7	450	0.013	2.50	450.8	2.83	99.0	0.58	2.475			255.957	253.482
A12	STREET A	R16	R17	0.21	1.55	0.90	0.189	1.206	0.000	1.395	3.878	0.58	15.9	84.6	328.1	525	0.013	0.60	333.1	1.54	97.0	1.05	0.582			253.482	252.900
A13	MD BLOCK	STUB	R17	3.60	3.60	0.90	3.240	0.000	0.000	3.240	9.007	*	17.1	80.8	727.8	750	0.013	0.50	787.2	1.78	10.0	0.09	0.050	-		252.725	252.675
A14	STREET A	R17	R18	0.66	5.81	0.65	0.429	1.395	3.240	5.064	14.078	0.09	17.2	80.8	1137.5	825	0.013	0.70	1200.9	2.25	101.5	0.75	0.711	-	0.300	252.600	251.890
A15	STREET A	R18	R19	0.22	6.03	0.65	0.143	5.064	0.000	5.207	14.475	0.75	17.9	78.5	1136.3	825	0.013	0.70	1200.9	2.25	46.0	0.34	0.322	0.085	0.085	251.805	251.483
A16	STREET A	R19	R20	0.17	6.20	0.65	0.111	5.207	0.000	5.318	14.783	0.34	18.3	78.0	1153.0	825	0.013	0.70	1200.9	2.25	38.0	0.28	0.266	0.193	0.193	251.289	251.023
A17	STREET A	R20	R21	0.33	6.53	0.65	0.215	5.318	0.000	5.532	15.379	0.28	18.6	77.0	1184.2	825	0.013	0.70	1200.9	2.25	60.0	0.45	0.420	0.193	0.193	250.830	250.410
A18	STREET A	R21	R22	0.41	6.94	0.65	0.267	5.532	0.000	5.799	16.120	0.45	19.0	76.0	1225.1	825	0.013	3.00	2486.2	4.65	70.0	0.25	2.100	-	0.030	250.380	248.280
A19	STREET A	R22	R4	0.31	7.25	0.65	0.202	5.799	0.000	6.000	16.680	0.25	19.3	75.4	1257.7	825	0.013	1.00	1435.4	2.69	77.3	0.48	0.773	0.166	0.166	248.115	247.342
A20	MD BLOCK	STUB	R4	2.00	2.00	0.65	1.300	0.000	0.000	1.300	3.614	0.00	15.7	84.8	306.5	450	0.013	1.30	325.1	2.04	10.0	0.08	0.130	-	-	247.472	247.342
A21	SPRINGBANK DRIVE	R4	R5	0.52	41.46	0.65	0.338	6.000	5.616	11.954	33.232	*	17.8	87.7	3024.5	1500	0.013	0.20	3161.2	1.79	99.0	0.92	0.198	0.306	0.306	247.036	246.838
A22	OPEN SPACE	CBMH3	R12	5.80	5.80			from SWM Report					18.0		32.0	300	0.013	0.60	74.9	1.06	52.6	0.83	0.316	-		252.753	252.438
A23	MD BLOCK	STUB	R12	2.00	2.00	0.65	1.300	0.000	0.000	1.300	3.614	-	16.5	82.6	298.5	450	0.013	1.30	325.1	2.04	58.0	0.47	0.754	0.000		253.117	252.363
A24	STREET B	R12	R13	0.20	8.00	0.90	0.180	1.300	0.000	1.480	4.114	0.47	17.0	81.3	366.5	450	0.013	3.00	493.8	3.10	91.0	0.49	2.730	0.000	0.075	252.288	249.558
A25	STREET B	R13	R5	0.11	8.11	0.90	0.099	1.480	0.000	1.579	4.390	0.49	17.5	80.3	384.5	450	0.013	2.00	403.2	2.54	91.0	0.60	1.820	-	0.900	248.658	246.838
A26	SPRINGBANK DRIVE	R5	R6	0.47	50.04	0.65	0.306	11.954	1.579	13.839	38.471	0.92	18.8	76.5	3085.0	1500	0.013	0.20	3161.2	1.79	89.0	0.83	0.178	0.081	0.081	246.757	246.579
A27	HD BLOCK	STUB	R6	2.00	2.00	0.90	1.800	0.000	0.000	1.800	5.004	-	14.9	87.4	437.3	600	0.013	1.00	614.0	2.17	10.0	0.08	0.100	-	-	0.100	0.000
A28	SPRINGBANK DRIVE	R6	R7	0.14	52.18	0.90	0.126	1.800	13.839	15.765	43.825	0.83	19.6	74.4	3402.6	1500	0.013	0.30	3871.6	2.19	67.3	0.51	0.202	0.073	0.073	246.505	246.303
A29	N.S.A.	STUB	R8	1.70	1.70	0.90	1.530	0.000	0.000	1.530	4.253	-	14.8	87.6	372.6	525	0.013	1.00	430.0	1.99	10.0	0.08	0.100	-	-	260.880	260.780
A30	SPRINGBANK DRIVE	R8	R9	0.29	1.99	0.90	0.261	1.530	0.000	1.791	4.979	0.08	14.9	87.6	436.2	525	0.013	5.00	961.6	4.44	86.0	0.32	4.300	0.453	0.900	259.880	255.580
A31	SPRINGBANK DRIVE	R9	R10	0.16	2.15	0.90	0.144	1.791	0.000	1.935	5.379	0.32	15.2	86.4	464.8	525	0.013	5.00	961.6	4.44	75.0	0.28	3.750	0.453	0.900	254.680	250.930
A32	MD BLOCK	STUB	R10	3.40	3.40	0.65	2.210	0.000	0.000	2.210	6.144	-	16.3	83.1	510.5	525	0.013	1.50	526.7	2.43	80.0	0.55	1.200	-	-	251.772	250.572
A33	SPRINGBANK DRIVE	R10	R11	0.17	5.72	0.90	0.153	2.210	1.935	4.298	11.948	*	15.8	84.8	1013.2	600	0.013	4.00	1228.0	4.34	80.0	0.31	3.200	0.433	0.433	250.497	247.297
A34	HD BLOCK	STUB	R11	2.50	2.50	0.90	2.250	0.000	0.000	2.250	6.255	0.31	15.8	84.6	529.2	525	0.013	1.50	526.7	2.43	80.0	0.55	1.200	-	-	248.598	247.398
A35	SPRINGBANK DRIVE	R11	R7	0.12	2.62	0.90	0.108	2.250	4.298	6.656	18.504	0.31	16.1	84.1	1556.2	825	0.013	1.20	1572.4	2.94	10.0	0.06	0.120	0.199	0.199	247.098	246.978
	SWM	R7	OUTLET	0.00	54.80	0.90	0.000	6.656	15.765	22.421	62.329	0.51	18.5	77.2	4953.8	1500	0.013	0.55	5242.2	2.97	60.0	0.34	0.330	0.673	0.673	245.630	245.300

Byron East Secondary Plan
Sifton Properies Limited
Water Summary and Results
October 23, 2015

LDS LAND DEVELOPMENT SOLUTIONS ENGINEERING INC.

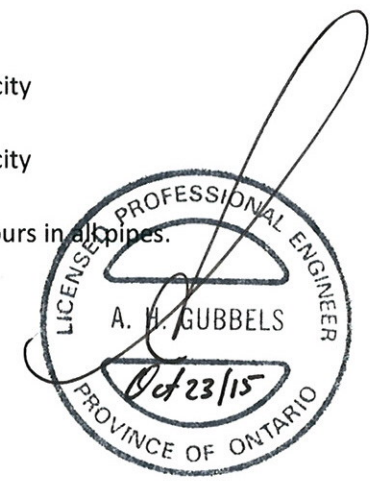
City of London Design Criteria	
Average day demands	270 L/cap/day
Med Density Fire flow (O.B.C.)	4,500 L/min.
High Density Fire flow (O.B.C.)	9,000 L/min.
Maximum day peaking factor	3.50
Maximum hour peaking factor	7.80
Minimum maximum hour pressure	40 psi.
Minimum maximum day + fire pressure	20 psi.
Maximum maximum hour velocity	1.5 m/s
Maximum maximum day + fire velocity	2.4 m/s
Hazen-Williams C factor for watermains:	
100-150mm diameter	100.0
200-250mm diameter	110.0
300-450mm diameter	120.0
600mm and larger	130.0

a) Low level hydraulic grade line elevation = 301.8m

Neighbourhood Shopping Area (2.6 ha.)	260 persons		=	48.8	L/min
Community Facility (3.6 ha.)	360 persons		=	67.5	L/min
Medium Density Development (11.8 ha.)	2124 persons		=	398.3	L/min
High Density Development (7.1 ha.)	2556 persons		=	479.3	L/min
Total	5300 persons		=	993.8	L/min
Maximum Hour Demand	994 L/min.	x 7.80	=	7,751.3	L/min
Maximum Day Demand	994 L/min.	x 3.50	=	3,478.1	L/min
Fire Demand (S.F and M.D.)				4,500.0	L/min
Fire Demand (H.D.)				9,000.0	L/min
Maximum Day + Fire Demand (S.F and M.D.)			=	7,978.1	L/min
Maximum Day + Fire Demand (H.D.)			=	12,478.1	L/min

Results

1) All municipal requirements were met and fall within the allowable pressure and velocity constraints under the maximum hour demand.
2) All municipal requirements were met and fall within the allowable pressure and velocity constraints under the maximum day + fire demand.
3) Water age analysis confirms the water turn-over rate is less than the maximum 72 hours in all pipes.



COLONEL TALBOT ROAD

STUDY LIMITS

OPEN SPACE
/PARK
32.3 Ha

LOW DENSITY
RESIDENTIAL 2.2 Ha

STUDY LIMITS

LOW DENSITY
RESIDENTIAL 7.0 Ha

HIGH DENSITY
RESIDENTIAL
2.6Ha

MEDIUM DENSITY
RESIDENTIAL
2.5 Ha

COMMUNITY FACILITY
3.6 Ha

BYRON BASELINE ROAD

NORTH
STREET

MEDIUM DENSITY
RESIDENTIAL 1.9 Ha

SWM
3.4 Ha

MEDIUM DENSITY
RESIDENTIAL
3.4 Ha

NEIGHBORHOOD
SHOPPING AREA
0.9Ha

J-10 P-47 250ø J-24 J-25 P-50 300ø J-11 P-12 300ø J-12

P-10 250ø

P-49 300ø

P-53 600ø

J-6 P-7 300ø J-7 P-8 300ø J-8 P-9 250ø J-9 P-14 250ø J-13 P-15 250ø J-14 P-16 250ø J-15 P-17 250ø J-16 P-51 250ø

COMMISSION

MEDIUM DENSITY
RESIDENTIAL
2.0 Ha

P-23 250ø

J-20

HIGH DENSITY
RESIDENTIAL
2.0 Ha

HIGH DENSITY
RESIDENTIAL
2.5 Ha

NEIGHBORHOOD
SHOPPING AREA
1.7Ha

J-26 P-52 1200ø R-3
HGL=301.8m

MEDIUM DENSITY
RESIDENTIAL
2.0 Ha

SPRINGBANK DRIVE

COMMISSIONERS RD
Realignment

COMMISSIONERS ROAD

GABOR CT

GABOR ST

LONGWORTH RD

THISTLERIDGE CRES

BARCLAY RD

HTS BRIDGE RD

TALISMAN CRES

THORNLEY ST

STUDY LIMITS

CRESTWOOD DRIVE

DESIGN	AH
DRAWN BY	AH
CHECKED	AG
APPROVED	AG
DATE	2015-10-20

Water Distribution Plan.dwg

CONSULTANT OR DIVISION

LDS LAND DEVELOPMENT SOLUTIONS ENGINEERING INC.

Suite A - 2070 Huron Street East, London ON N5V 5A7 Phone: 226-289-2952

ENGINEER'S STAPP

London CANADA CORPORATION OF THE CITY OF LONDON

SCALE

TITLE

BYRON EAST SECONDARY PLAN

SIFTON PROPERTIES LIMITED

WATER DISTRIBUTION PLAN

PROJECT No. 1614-00052

SHEET No. 1 of 1

PLAN FILE No.

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10/29/2015 6:45:45 AM by Land Development

Active Scenario: Max Hour
FlexTable: Junction Table

Label	Elevation (m)	Demand (L/min)	Hydraulic Grade (m)	Pressure (psi)
J-14	249.80	1,053.0	299.41	70.4
J-13	250.50	0.0	299.33	69.3
J-8	251.00	526.5	299.31	68.6
J-7	251.40	658.3	299.24	67.9
J-6	251.80	1,368.9	299.20	67.3
J-15	253.60	1,316.6	299.76	65.5
J-9	254.50	0.0	299.60	64.0
J-10	257.00	500.0	300.36	61.5
J-24	259.00	526.5	301.16	59.8
J-25	259.30	895.4	301.23	59.5
J-20	257.50	526.5	299.31	59.3
J-16	261.00	248.8	300.65	56.3
J-12	263.50	0.0	301.77	54.3
J-11	263.40	131.8	301.59	54.2
J-26	265.50	0.0	301.80	51.5

Active Scenario: Max Hour

FlexTable: Pipe Table

Label	Length (Scaled) (m)	Start Node	Stop Node	Diameter (mm)	Material	Hazen-Williams C	Flow (L/min)	Velocity (m/s)
P-51	139	J-16	J-26	250.0	PVC	110.0	-3,610.6	1.23
P-17	121	J-15	J-16	250.0	PVC	110.0	-3,361.7	1.14
P-12	48	J-11	J-12	300.0	PVC	120.0	-4,141.9	0.98
P-50	101	J-25	J-11	300.0	PVC	120.0	-4,010.0	0.95
P-47	179	J-10	J-24	250.0	PVC	110.0	-2,588.1	0.88
P-49	33	J-24	J-25	300.0	PVC	120.0	-3,114.6	0.73
P-9	97	J-8	J-9	250.0	PVC	110.0	-2,088.1	0.71
P-10	250	J-9	J-10	250.0	PVC	110.0	-2,088.1	0.71
P-16	124	J-14	J-15	250.0	PVC	110.0	-2,045.1	0.69
P-8	69	J-7	J-8	300.0	PVC	120.0	-2,027.2	0.48
P-15	97	J-13	J-14	250.0	PVC	110.0	-992.1	0.34
P-7	83	J-6	J-7	300.0	PVC	120.0	-1,368.9	0.32
P-53	272	J-12	J-26	600.0	PVC	130.0	-4,141.9	0.24
P-23	119	J-20	J-13	250.0	PVC	120.0	-526.5	0.18
P-14	109	J-8	J-13	250.0	PVC	110.0	-465.6	0.16
P-52	41	J-26	R-3	1,200.0	PVC	130.0	-7,752.4	0.11

Active Scenario: Max Day + Fire at J6

FlexTable: Junction Table

Label	Elevation (m)	Demand (L/min)	Hydraulic Grade (m)	Pressure (psi)
J-14	249.80	472.5	293.85	62.5
J-15	253.60	590.8	296.07	60.3
J-13	250.50	0.0	292.38	59.4
J-24	259.00	236.2	300.29	58.6
J-25	259.30	401.8	300.53	58.5
J-10	257.00	224.4	296.93	56.7
J-8	251.00	236.2	290.87	56.6
J-12	263.50	0.0	301.73	54.3
J-7	251.40	295.4	289.57	54.2
J-9	254.50	0.0	292.56	54.0
J-11	263.40	59.2	301.34	53.9
J-16	261.00	111.7	298.69	53.5
J-26	265.50	0.0	301.80	51.5
J-6	251.80	9,614.2	288.09	51.5
J-20	257.50	236.2	292.37	49.5

Active Scenario: Max Day + Fire at J6

FlexTable: Pipe Table

Label	Length (Scaled) (m)	Start Node	Stop Node	Diameter (mm)	Material	Hazen-Williams C	Flow (L/min)	Velocity (m/s)
P-8	69	J-7	J-8	300.0	PVC	120.0	-9,909.6	2.34
P-7	83	J-6	J-7	300.0	PVC	120.0	-9,614.2	2.27
P-51	139	J-16	J-26	250.0	PVC	110.0	-6,167.6	2.09
P-17	121	J-15	J-16	250.0	PVC	110.0	-6,055.9	2.06
P-47	179	J-10	J-24	250.0	PVC	110.0	-5,613.8	1.91
P-16	124	J-14	J-15	250.0	PVC	110.0	-5,465.1	1.86
P-9	97	J-8	J-9	250.0	PVC	110.0	-5,389.4	1.83
P-10	250	J-9	J-10	250.0	PVC	110.0	-5,389.4	1.83
P-15	97	J-13	J-14	250.0	PVC	110.0	-4,992.6	1.70
P-14	109	J-8	J-13	250.0	PVC	110.0	-4,756.4	1.61
P-12	48	J-11	J-12	300.0	PVC	120.0	-6,311.0	1.49
P-50	101	J-25	J-11	300.0	PVC	120.0	-6,251.8	1.47
P-49	33	J-24	J-25	300.0	PVC	120.0	-5,850.0	1.38
P-53	272	J-12	J-26	600.0	PVC	130.0	-6,311.0	0.37
P-52	41	J-26	R-3	1,200.0	PVC	130.0	-12,478.5	0.18
P-23	119	J-20	J-13	250.0	PVC	120.0	-236.2	0.08

Active Scenario: Max Day + Fire at J20

FlexTable: Junction Table

Label	Elevation (m)	Demand (L/min)	Hydraulic Grade (m)	Pressure (psi)
J-14	249.80	472.5	298.13	68.6
J-13	250.50	0.0	297.56	66.8
J-8	251.00	236.2	297.84	66.5
J-7	251.40	295.4	297.82	65.9
J-6	251.80	614.3	297.81	65.3
J-15	253.60	590.8	299.07	64.5
J-9	254.50	0.0	298.43	62.4
J-10	257.00	224.4	299.94	61.0
J-24	259.00	236.2	301.18	59.9
J-25	259.30	401.8	301.27	59.6
J-16	261.00	111.7	300.31	55.8
J-20	257.50	4,869.5	296.10	54.8
J-12	263.50	0.0	301.77	54.3
J-11	263.40	59.2	301.60	54.2
J-26	265.50	0.0	301.80	51.5

Active Scenario: Max Day + Fire at J20

FlexTable: Pipe Table

Label	Length (Scaled) (m)	Start Node	Stop Node	Diameter (mm)	Material	Hazen-Williams C	Flow (L/min)	Velocity (m/s)
P-23	119	J-20	J-13	250.0	PVC	120.0	-4,869.5	1.65
P-51	139	J-16	J-26	250.0	PVC	110.0	-4,147.8	1.41
P-17	121	J-15	J-16	250.0	PVC	110.0	-4,036.1	1.37
P-16	124	J-14	J-15	250.0	PVC	110.0	-3,445.3	1.17
P-47	179	J-10	J-24	250.0	PVC	110.0	-3,267.0	1.11
P-9	97	J-8	J-9	250.0	PVC	110.0	-3,042.6	1.03
P-10	250	J-9	J-10	250.0	PVC	110.0	-3,042.6	1.03
P-15	97	J-13	J-14	250.0	PVC	110.0	-2,972.8	1.01
P-12	48	J-11	J-12	300.0	PVC	120.0	-3,964.2	0.93
P-50	101	J-25	J-11	300.0	PVC	120.0	-3,905.0	0.92
P-49	33	J-24	J-25	300.0	PVC	120.0	-3,503.2	0.83
P-14	109	J-8	J-13	250.0	PVC	110.0	1,896.7	0.64
P-53	272	J-12	J-26	600.0	PVC	130.0	-3,964.2	0.23
P-8	69	J-7	J-8	300.0	PVC	120.0	-909.7	0.21
P-7	83	J-6	J-7	300.0	PVC	120.0	-614.3	0.14
P-52	41	J-26	R-3	1,200.0	PVC	130.0	-8,111.9	0.12

Active Scenario: Max Day + Fire at J24

FlexTable: Junction Table

Label	Elevation (m)	Demand (L/min)	Hydraulic Grade (m)	Pressure (psi)
J-14	249.80	472.5	299.47	70.5
J-13	250.50	0.0	299.17	69.1
J-8	251.00	236.2	298.90	68.0
J-7	251.40	295.4	298.88	67.4
J-6	251.80	614.3	298.87	66.8
J-15	253.60	590.8	300.03	65.9
J-9	254.50	0.0	298.85	63.0
J-10	257.00	224.4	298.74	59.3
J-20	257.50	236.2	299.16	59.1
J-25	259.30	401.8	299.20	56.6
J-16	261.00	111.7	300.83	56.5
J-24	259.00	9,321.5	298.70	56.4
J-12	263.50	0.0	301.67	54.2
J-11	263.40	59.2	300.86	53.2
J-26	265.50	0.0	301.80	51.5

Active Scenario: Max Day + Fire at J24

FlexTable: Pipe Table

Label	Length (Scaled) (m)	Start Node	Stop Node	Diameter (mm)	Material	Hazen-Williams C	Flow (L/min)	Velocity (m/s)
P-12	48	J-11	J-12	300.0	PVC	120.0	-9,267.4	2.19
P-50	101	J-25	J-11	300.0	PVC	120.0	-9,208.3	2.17
P-49	33	J-24	J-25	300.0	PVC	120.0	-8,806.5	2.08
P-51	139	J-16	J-26	250.0	PVC	110.0	-3,296.5	1.12
P-17	121	J-15	J-16	250.0	PVC	110.0	-3,184.9	1.08
P-16	124	J-14	J-15	250.0	PVC	110.0	-2,594.1	0.88
P-15	97	J-13	J-14	250.0	PVC	110.0	-2,121.6	0.72
P-14	109	J-8	J-13	250.0	PVC	110.0	-1,885.3	0.64
P-53	272	J-12	J-26	600.0	PVC	130.0	-9,267.4	0.55
P-9	97	J-8	J-9	250.0	PVC	110.0	739.4	0.25
P-10	250	J-9	J-10	250.0	PVC	110.0	739.4	0.25
P-8	69	J-7	J-8	300.0	PVC	120.0	-909.7	0.21
P-52	41	J-26	R-3	1,200.0	PVC	130.0	-12,564.0	0.19
P-47	179	J-10	J-24	250.0	PVC	110.0	515.1	0.17
P-7	83	J-6	J-7	300.0	PVC	120.0	-614.3	0.14
P-23	119	J-20	J-13	250.0	PVC	120.0	-236.2	0.08

Active Scenario: Age Analysis
FlexTable: Pipe Table

Current Time: 72.000 hours

Label	Length (Scaled) (m)	Start Node	Stop Node	Diameter (mm)	Material	Hazen-Williams C	Flow (L/min)	Velocity (m/s)	Age (Calculated) (hours)
P-51	139	J-16	J-26	250.0	PVC	110.0	-462.9	0.16	0.851
P-17	121	J-15	J-16	250.0	PVC	110.0	-431.0	0.15	1.088
P-12	48	J-11	J-12	300.0	PVC	120.0	-531.0	0.13	3.193
P-50	101	J-25	J-11	300.0	PVC	120.0	-514.1	0.12	3.363
P-47	179	J-10	J-24	250.0	PVC	110.0	-331.8	0.11	3.797
P-49	33	J-24	J-25	300.0	PVC	120.0	-399.3	0.09	3.524
P-9	97	J-8	J-9	250.0	PVC	110.0	-267.7	0.09	4.928
P-10	250	J-9	J-10	250.0	PVC	110.0	-267.7	0.09	4.399
P-16	124	J-14	J-15	250.0	PVC	110.0	-262.2	0.09	1.393
P-8	69	J-7	J-8	300.0	PVC	120.0	-259.9	0.06	4.984
P-15	97	J-13	J-14	250.0	PVC	110.0	-127.2	0.04	1.899
P-7	83	J-6	J-7	300.0	PVC	120.0	-175.5	0.04	5.419
P-53	272	J-12	J-26	600.0	PVC	130.0	-531.0	0.03	1.930
P-23	119	J-20	J-13	250.0	PVC	120.0	-67.5	0.02	2.931
P-14	109	J-8	J-13	250.0	PVC	110.0	-59.7	0.02	2.957
P-52	41	J-26	R-3	1,200.0	PVC	130.0	-993.9	0.01	0.338