



Lamarre Consulting Group Inc.

25 Brookside Terrace, Smithville, ON L0R 2A0

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December 14, 2022

Mr. Nick DeFilippis
DeFilippis Design
687 Barton Street East, Suite 201
Stoney Creek, ON L8E 5L6

Re: 5687 Ferry Street, 5660 Spring Street, Niagara Falls
Proposed Site Re-Development
Stormwater Management Brief

The subject property is approximately 3895m² in size and is located at 5687 Ferry Street/5660 Spring Creek in the City of Niagara Falls.

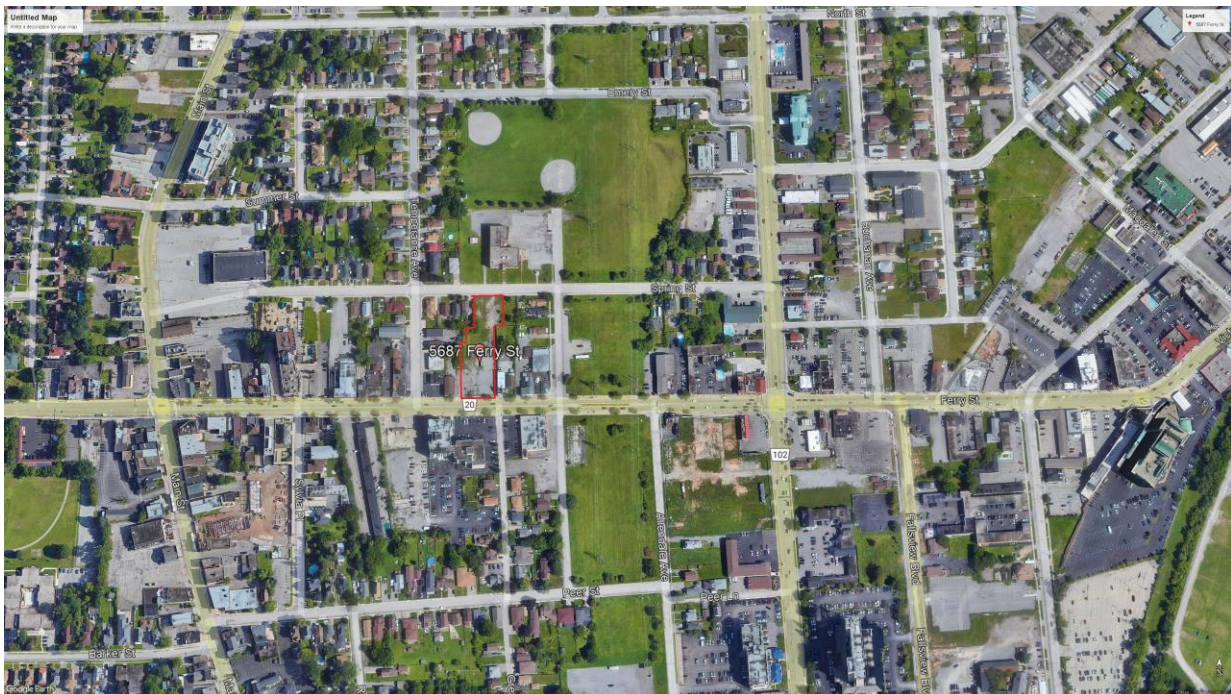


Figure 1 – Site Location

The development proposal includes a new multi-storey hotel to be constructed on the site of the former Midtown Bowling Niagara. Based on the existing site plan, topographic survey and aerial imagery, the development site was covered with approximately 95% impervious surfaces. Based on the preliminary plans for the re-development the site would be covered



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with approximately 92.5% impervious surfaces. The reduction is due to the incorporation of landscaped buffer strips along the site perimeter.

Of the 3895m² site, approximately 1195m² drains to Spring Creek and 2400m² drains to Ferry Street. With the Site Plan application these two properties these two municipal addresses would be merged. Hence, only one connection to the municipal storm sewer system would be permitted.

Based on discussions with City of Niagara Falls staff and comments received from the Region of Niagara the following criteria would be applicable to this development:

1. The City's policy is to only allow one service per property.
2. For pre-development flow calculations, the cumulative runoff from the entire site should be included. The pre-development flow level does not need to be limited only to the portion of the site that previously flowed in the direction of the proposed outlet.
3. The City requires controlling the post-development flows for the 5-year storm event to pre-development levels for the 5-year storm event, with post-development 100-year storm events directed to a suitable outlet via an overland flow route.
4. The Region of Niagara requires runoff from the paved areas of the site be captured and treated to a Normal level (70% TSS removal).
5. The Region requires post-development flows to be controlled to pre-development levels for all storms (2-yr up to and including the 100yr).

It is noted that the proposed impervious coverage of the site is proposed to be reduced marginally from existing conditions. With the slight reduction in impervious coverage the expected flows generated from the site would be reduced. Modeling was carried out using the SWMHYMO model and is attached as Appendix A and summarized in Table 1.



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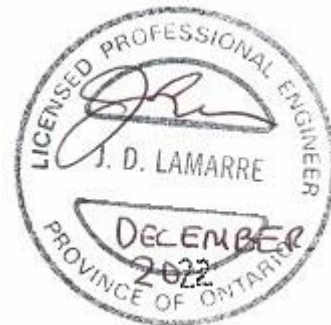
Table 1
Peak Flows

Event	Q _p m ³ /s PreDevelopment	Q _p m ³ /s PostDevelopment	% Decrease
2yr	0.120	0.115	4.2
5yr	0.159	0.153	3.8
10yr	0.185	0.179	3.2
25yr	0.219	0.211	3.6
50yr	0.243	0.235	3.7
100yr	0.268	0.259	3.4

The roof top runoff will be separated from the balance of the site. The storm water runoff quality criteria for the balance of the site, approximately 2557m² at 88.6% impervious, can be achieved through the installation of a Jellyfish® EFO-4 treatment unit. This unit can achieve 92% TSS removal based on manufacturers testing.

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John D. Lamarre, P.Eng.





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2

```
*
*
*      5756 Ferry Street      *
*
*
*      DATE: December 2022 *
*      FILE: Ferry1.dat      *
*
```

START TZERO=[0.0]hrs, METOUT=[2], NSTORM=[1], NRUN=[1]

*#*****

*# 2 YEAR

*#*****

```
CHICAGO STORM  IDFunits=2, TD=4hrs TPRAT=0.38 DT=5min ICASEcs=2
                TIME(min) Intensity(mm/hr)
                5      127.2
                10     78.4
                15     59.0
                30     36.4
                60     22.4
                120    13.8
                360     6.4
                720     3.9
                1440    2.4 -1 -1
```

*#-----

*# PRE DEVELOPMENT

*#-----

*#

*# TO SPRING

*#

```
CALIB STANDHYD  ID=1 NHYD=100 DT=5 min AREA=0.1195ha XIMP=0.95
                TIMP=0.95 DWF=0 cms, LOSS=2, CN=74
                IAper=5.0 mm SLPP=1.0% LGP=30m, MNP=0.250 SCP=0.0
                IAimp=1.0 mm SLPI=1.0% LGI=30m, MNI=0.014 SCI=0.0 -1
```

*#

*# TO FERRY

*#

```
CALIB STANDHYD  ID=2 NHYD=100 DT=5 min AREA=0.2700ha XIMP=0.95
                TIMP=0.95 DWF=0 cms, LOSS=2, CN=74
                IAper=5.0 mm SLPP=1.0% LGP=40m, MNP=0.250 SCP=0.0
                IAimp=1.0 mm SLPI=1.0% LGI=40m, MNI=0.014 SCI=0.0 -1
```

*# TOTAL SITE RUNOFF

```
ADD HYD      ID=3 NHYD=100 ID=1,2
```

*#-----

*# POST-DEVELOPMENT

*#-----

```
CALIB STANDHYD  ID=3 NHYD=200 DT=5 min AREA=0.3895ha XIMP=0.925
                TIMP=0.925 DWF=0 cms, LOSS=2, CN=74
                IAper=5.0 mm SLPP=1.0% LGP=50m, MNP=0.250 SCP=0.0
                IAimp=1.0 mm SLPI=1.0% LGI=50m, MNI=0.014 SCI=0.0 -1
```

*#*****

*# 5 YEAR

*#*****

```
CHICAGO STORM  IDFunits=2, TD=4hrs TPRAT=0.38 DT=5min ICASEcs=2
```



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TIME(min)	Intensity(mm/hr)
5	168.1
10	103.6
15	78.0
30	48.1
60	29.6
120	18.2
360	8.5
720	5.2
1440	3.2 -1 -1

*#-----

*# PRE DEVELOPMENT

*#-----

*#

*# TO SPRING

*#

CALIB STANDHYD ID=1 NHYD=100 DT=5 min AREA=0.1195ha XIMP=0.95
TIMP=0.95 DWF=0 cms, LOSS=2, CN=74
IAper=5.0 mm SLPP=1.0% LGP=30m, MNP=0.250 SCP=0.0
IAimp=1.0 mm SLPI=1.0% LGI=30m, MNI=0.014 SCI=0.0 -1

*#

*# TO FERRY

*#

CALIB STANDHYD ID=2 NHYD=100 DT=5 min AREA=0.2700ha XIMP=0.95
TIMP=0.95 DWF=0 cms, LOSS=2, CN=74
IAper=5.0 mm SLPP=1.0% LGP=40m, MNP=0.250 SCP=0.0
IAimp=1.0 mm SLPI=1.0% LGI=40m, MNI=0.014 SCI=0.0 -1

*# TOTAL SITE RUNOFF

ADD HYD ID=3 NHYD=100 ID=1,2

*#-----

*# POST-DEVELOPMENT

*#-----

CALIB STANDHYD ID=3 NHYD=200 DT=5 min AREA=0.3895ha XIMP=0.925
TIMP=0.925 DWF=0 cms, LOSS=2, CN=74
IAper=5.0 mm SLPP=1.0% LGP=50m, MNP=0.250 SCP=0.0
IAimp=1.0 mm SLPI=1.0% LGI=50m, MNI=0.014 SCI=0.0 -1

*#*****

*# 10 YEAR

*#*****

CHICAGO STORM IDFunits=2, TD=4hrs TPRAT=0.38 DT=5min ICASEcs=2

TIME(min)	Intensity(mm/hr)
5	195.4
10	120.4
15	90.7
30	55.8
60	34.4
120	21.2
360	9.8
720	6.1
1440	3.7 -1 -1

*#-----

*# PRE DEVELOPMENT

*#-----

*#

*# TO SPRING

*#



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CALIB STANDHYD ID=1 NHYD=100 DT=5 min AREA=0.1195ha XIMP=0.95
TIMP=0.95 DWF=0 cms, LOSS=2, CN=74
IAper=5.0 mm SLPP=1.0% LGP=30m, MNP=0.250 SCP=0.0
IAimp=1.0 mm SLPI=1.0% LGI=30m, MNI=0.014 SCI=0.0 -1

*#

*# TO FERRY

*#

CALIB STANDHYD ID=2 NHYD=100 DT=5 min AREA=0.2700ha XIMP=0.95
TIMP=0.95 DWF=0 cms, LOSS=2, CN=74
IAper=5.0 mm SLPP=1.0% LGP=40m, MNP=0.250 SCP=0.0
IAimp=1.0 mm SLPI=1.0% LGI=40m, MNI=0.014 SCI=0.0 -1

*# TOTAL SITE RUNOFF

ADD HYD ID=3 NHYD=100 ID=1,2

*#-----

*# POST-DEVELOPMENT

*#-----

CALIB STANDHYD ID=3 NHYD=200 DT=5 min AREA=0.3895ha XIMP=0.925
TIMP=0.925 DWF=0 cms, LOSS=2, CN=74
IAper=5.0 mm SLPP=1.0% LGP=50m, MNP=0.250 SCP=0.0
IAimp=1.0 mm SLPI=1.0% LGI=50m, MNI=0.014 SCI=0.0 -1

*#*****

*# 25 YEAR

*#*****

CHICAGO STORM IDFunits=2, TD=4hrs TPRAT=0.38 DT=5min ICASEcs=2

TIME(min) Intensity(mm/hr)

5	230.0
10	141.7
15	106.7
30	65.7
60	40.5
120	24.9
360	11.6
720	7.1
1440	4.4 -1 -1

*#-----

*# PRE DEVELOPMENT

*#-----

*#

*# TO SPRING

*#

CALIB STANDHYD ID=1 NHYD=100 DT=5 min AREA=0.1195ha XIMP=0.95
TIMP=0.95 DWF=0 cms, LOSS=2, CN=74
IAper=5.0 mm SLPP=1.0% LGP=30m, MNP=0.250 SCP=0.0
IAimp=1.0 mm SLPI=1.0% LGI=30m, MNI=0.014 SCI=0.0 -1

*#

*# TO FERRY

*#

CALIB STANDHYD ID=2 NHYD=100 DT=5 min AREA=0.2700ha XIMP=0.95
TIMP=0.95 DWF=0 cms, LOSS=2, CN=74
IAper=5.0 mm SLPP=1.0% LGP=40m, MNP=0.250 SCP=0.0
IAimp=1.0 mm SLPI=1.0% LGI=40m, MNI=0.014 SCI=0.0 -1

*# TOTAL SITE RUNOFF

ADD HYD ID=3 NHYD=100 ID=1,2

*#-----

*# POST-DEVELOPMENT



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*#-----

CALIB STANDHYD ID=3 NHYD=200 DT=5 min AREA=0.3895ha XIMP=0.925
TIMP=0.925 DWF=0 cms, LOSS=2, CN=74
IAper=5.0 mm SLPP=1.0% LGP=50m, MNP=0.250 SCP=0.0
IAimp=1.0 mm SLPI=1.0% LGI=50m, MNI=0.014 SCI=0.0 -1

*#*****

*# 50 YEAR

*#*****

CHICAGO STORM IDFunits=2, TD=4hrs TPRAT=0.38 DT=5min ICASEcs=2
TIME(min) Intensity(mm/hr)
5 255.0
10 157.1
15 118.3
30 72.9
60 44.9
120 27.7
360 12.8
720 7.9
1440 4.9 -1 -1

*#-----

*# PRE DEVELOPMENT

*#-----

*#

*# TO SPRING

*#

CALIB STANDHYD ID=1 NHYD=100 DT=5 min AREA=0.1195ha XIMP=0.95
TIMP=0.95 DWF=0 cms, LOSS=2, CN=74
IAper=5.0 mm SLPP=1.0% LGP=30m, MNP=0.250 SCP=0.0
IAimp=1.0 mm SLPI=1.0% LGI=30m, MNI=0.014 SCI=0.0 -1

*#

*# TO FERRY

*#

CALIB STANDHYD ID=2 NHYD=100 DT=5 min AREA=0.2700ha XIMP=0.95
TIMP=0.95 DWF=0 cms, LOSS=2, CN=74
IAper=5.0 mm SLPP=1.0% LGP=40m, MNP=0.250 SCP=0.0
IAimp=1.0 mm SLPI=1.0% LGI=40m, MNI=0.014 SCI=0.0 -1

*# TOTAL SITE RUNOFF

ADD HYD ID=3 NHYD=100 ID=1,2

*#-----

*# POST-DEVELOPMENT

*#-----

CALIB STANDHYD ID=3 NHYD=200 DT=5 min AREA=0.3895ha XIMP=0.925
TIMP=0.925 DWF=0 cms, LOSS=2, CN=74
IAper=5.0 mm SLPP=1.0% LGP=50m, MNP=0.250 SCP=0.0
IAimp=1.0 mm SLPI=1.0% LGI=50m, MNI=0.014 SCI=0.0 -1

*#*****

*# 100yr

*#*****

CHICAGO STORM IDFunits=2, TD=4hrs TPRAT=0.38 DT=5min ICASEcs=2
TIME(min) Intensity(mm/hr)
5 280.6
10 172.8
15 130.2
30 80.2
60 49.4
120 30.4



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360	14.1
720	8.7
1440	5.4 -1 -1

*#-----

*# PRE DEVELOPMENT

*#-----

*#

*# TO SPRING

*#

CALIB STANDHYD ID=1 NHYD=100 DT=5 min AREA=0.1195ha XIMP=0.95
TIMP=0.95 DWF=0 cms, LOSS=2, CN=74
IAper=5.0 mm SLPP=1.0% LGP=30m, MNP=0.250 SCP=0.0
IAimp=1.0 mm SLPI=1.0% LGI=30m, MNI=0.014 SCI=0.0 -1

*#

*# TO FERRY

*#

CALIB STANDHYD ID=2 NHYD=100 DT=5 min AREA=0.2700ha XIMP=0.95
TIMP=0.95 DWF=0 cms, LOSS=2, CN=74
IAper=5.0 mm SLPP=1.0% LGP=40m, MNP=0.250 SCP=0.0
IAimp=1.0 mm SLPI=1.0% LGI=40m, MNI=0.014 SCI=0.0 -1

*# TOTAL SITE RUNOFF

ADD HYD ID=3 NHYD=100 ID=1,2

*#-----

*# POST-DEVELOPMENT

*#-----

CALIB STANDHYD ID=3 NHYD=200 DT=5 min AREA=0.3895ha XIMP=0.925
TIMP=0.925 DWF=0 cms, LOSS=2, CN=74
IAper=5.0 mm SLPP=1.0% LGP=50m, MNP=0.250 SCP=0.0
IAimp=1.0 mm SLPI=1.0% LGI=50m, MNI=0.014 SCI=0.0 -1

FINISH



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```
***** SUMMARY OUTPUT *****
*****
*      RUN DATE: 2022-12-14  TIME: 11:08:08  RUN COUNTER: 000001      *
*****
* Input file: D:\WORK FILES\2022 Projects\2214 - Ferry Street Niagara Falls\Ferry1.dat *
* Output file: D:\WORK FILES\2022 Projects\2214 - Ferry Street Niagara Falls\Ferry1.out *
* Summary file: D:\WORK FILES\2022 Projects\2214 - Ferry Street Niagara Falls\Ferry1.sum *
* User comments: *
* 1: _____ *
* 2: _____ *
* 3: _____ *
*****
```

```
RUN#:COMMAND#
R0001:C00001-----
START
[TZERO = .00 hrs on 0]
[METOUT= 2 (1=imperial, 2=metric output)]
[NSTORM= 1 ]
[NRUN = 0001 ]
#*****
# 2 YEAR
#*****
R0001:C00002-----
CHICAGO STORM
[SDT= 5.00:SDUR= 4.00:PTOT= 34.32]
{A/B/C= 463.322/ 1.500/ .727: R=.9997}
#-----
# PRE DEVELOPMENT
#-----
#
# TO SPRING
#
R0001:C00003-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C----DWFcms
* CALIB STANDHYD 5.0 01: 100 .12 .037 No_date 1:30 32.01 .933 .000
[XIMP=.95:TIMP=.95]
[LOSS= 2 :CN= 74.0]
[Pervious area: IAper= 5.00:SLPP=1.00:LGP= 30.:MNP=.250:SCP= .0]
[Impervious area: IAimp= 1.00:SLPI=1.00:LGI= 30.:MNI=.014:SCI= .0]
#
# TO FERRY
#
R0001:C00004-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C----DWFcms
* CALIB STANDHYD 5.0 02: 100 .27 .083 No_date 1:30 32.01 .933 .000
[XIMP=.95:TIMP=.95]
[LOSS= 2 :CN= 74.0]
[Pervious area: IAper= 5.00:SLPP=1.00:LGP= 40.:MNP=.250:SCP= .0]
[Impervious area: IAimp= 1.00:SLPI=1.00:LGI= 40.:MNI=.014:SCI= .0]
# TOTAL SITE RUNOFF
R0001:C00005-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C----DWFcms
ADD HYD 5.0 01: 100 .12 .037 No_date 1:30 32.01 n/a .000
+ 5.0 02: 100 .27 .083 No_date 1:30 32.01 n/a .000
SUM= 5.0 03: 100 .39 .120 No_date 1:30 32.01 n/a .000
#-----
# POST-DEVELOPMENT
#-----
R0001:C00006-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C----DWFcms
* CALIB STANDHYD 5.0 03: 200 .39 .115 No_date 1:30 31.36 .914 .000
[XIMP=.93:TIMP=.93]
[LOSS= 2 :CN= 74.0]
[Pervious area: IAper= 5.00:SLPP=1.00:LGP= 50.:MNP=.250:SCP= .0]
```



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```
[Impervious area: IAimp= 1.00:SLPI=1.00:LGI= 50.:MNI=.014:SCI= .0]
*****
# 5 YEAR
*****
R0001:C00007-----
CHICAGO STORM
[SDT= 5.00:SDUR= 4.00:PTOT= 45.35]
{A/B/C= 608.948/ 1.500/ .726: R=.9997}
#-----
# PRE DEVELOPMENT
#-----
#
# TO SPRING
#
R0001:C00008-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
* CALIB STANDHYD 5.0 01: 100 .12 .049 No_date 1:30 42.76 .943 .000
[XIMP=.95:TIMP=.95]
[LOSS= 2 :CN= 74.0]
[Pervious area: IAper= 5.00:SLPP=1.00:LGP= 30.:MNP=.250:SCP= .0]
[Impervious area: IAimp= 1.00:SLPI=1.00:LGI= 30.:MNI=.014:SCI= .0]
#
# TO FERRY
#
R0001:C00009-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
* CALIB STANDHYD 5.0 02: 100 .27 .110 No_date 1:30 42.76 .943 .000
[XIMP=.95:TIMP=.95]
[LOSS= 2 :CN= 74.0]
[Pervious area: IAper= 5.00:SLPP=1.00:LGP= 40.:MNP=.250:SCP= .0]
[Impervious area: IAimp= 1.00:SLPI=1.00:LGI= 40.:MNI=.014:SCI= .0]
# TOTAL SITE RUNOFF
R0001:C00010-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
ADD HYD 5.0 01: 100 .12 .049 No_date 1:30 42.76 n/a .000
+ 5.0 02: 100 .27 .110 No_date 1:30 42.76 n/a .000
SUM= 5.0 03: 100 .39 .159 No_date 1:30 42.76 n/a .000
#-----
# POST-DEVELOPMENT
#-----
R0001:C00011-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
* CALIB STANDHYD 5.0 03: 200 .39 .153 No_date 1:30 41.97 .925 .000
[XIMP=.93:TIMP=.93]
[LOSS= 2 :CN= 74.0]
[Pervious area: IAper= 5.00:SLPP=1.00:LGP= 50.:MNP=.250:SCP= .0]
[Impervious area: IAimp= 1.00:SLPI=1.00:LGI= 50.:MNI=.014:SCI= .0]
*****
# 10 YEAR
*****
R0001:C00012-----
CHICAGO STORM
[SDT= 5.00:SDUR= 4.00:PTOT= 52.74]
{A/B/C= 708.239/ 1.503/ .726: R=.9997}
#-----
# PRE DEVELOPMENT
#-----
#
# TO SPRING
#
R0001:C00013-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
* CALIB STANDHYD 5.0 01: 100 .12 .057 No_date 1:30 49.99 .948 .000
[XIMP=.95:TIMP=.95]
[LOSS= 2 :CN= 74.0]
[Pervious area: IAper= 5.00:SLPP=1.00:LGP= 30.:MNP=.250:SCP= .0]
[Impervious area: IAimp= 1.00:SLPI=1.00:LGI= 30.:MNI=.014:SCI= .0]
```



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```
#
# TO FERRY
#
R0001:C00014-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
* CALIB STANDHYD 5.0 02: 100 .27 .128 No_date 1:30 49.99 .948 .000
  [XIMP=.95:TIMP=.95]
  [LOSS= 2 :CN= 74.0]
  [Pervious area: IAper= 5.00:SLPP=1.00:LGP= 40.:MNP=.250:SCP= .0]
  [Impervious area: IAimp= 1.00:SLPI=1.00:LGI= 40.:MNI=.014:SCI= .0]
# TOTAL SITE RUNOFF
R0001:C00015-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
  ADD HYD 5.0 01: 100 .12 .057 No_date 1:30 49.99 n/a .000
    + 5.0 02: 100 .27 .128 No_date 1:30 49.99 n/a .000
  SUM= 5.0 03: 100 .39 .185 No_date 1:30 49.99 n/a .000
#-----
# POST-DEVELOPMENT
#-----
R0001:C00016-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
* CALIB STANDHYD 5.0 03: 200 .39 .179 No_date 1:30 49.11 .931 .000
  [XIMP=.93:TIMP=.93]
  [LOSS= 2 :CN= 74.0]
  [Pervious area: IAper= 5.00:SLPP=1.00:LGP= 50.:MNP=.250:SCP= .0]
  [Impervious area: IAimp= 1.00:SLPI=1.00:LGI= 50.:MNI=.014:SCI= .0]
#*****
# 25 YEAR
#*****
R0001:C00017-----
  CHICAGO STORM
  [SDT= 5.00:SDUR= 4.00:PTOT= 62.30]
  {A/B/C= 831.944/ 1.500/ .725: R=.9997}
#-----
# PRE DEVELOPMENT
#-----
#
# TO SPRING
#
R0001:C00018-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
* CALIB STANDHYD 5.0 01: 100 .12 .068 No_date 1:30 59.35 .953 .000
  [XIMP=.95:TIMP=.95]
  [LOSS= 2 :CN= 74.0]
  [Pervious area: IAper= 5.00:SLPP=1.00:LGP= 30.:MNP=.250:SCP= .0]
  [Impervious area: IAimp= 1.00:SLPI=1.00:LGI= 30.:MNI=.014:SCI= .0]
#
# TO FERRY
#
R0001:C00019-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
* CALIB STANDHYD 5.0 02: 100 .27 .151 No_date 1:30 59.35 .953 .000
  [XIMP=.95:TIMP=.95]
  [LOSS= 2 :CN= 74.0]
  [Pervious area: IAper= 5.00:SLPP=1.00:LGP= 40.:MNP=.250:SCP= .0]
  [Impervious area: IAimp= 1.00:SLPI=1.00:LGI= 40.:MNI=.014:SCI= .0]
# TOTAL SITE RUNOFF
R0001:C00020-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
  ADD HYD 5.0 01: 100 .12 .068 No_date 1:30 59.35 n/a .000
    + 5.0 02: 100 .27 .151 No_date 1:30 59.35 n/a .000
  SUM= 5.0 03: 100 .39 .219 No_date 1:30 59.35 n/a .000
#-----
# POST-DEVELOPMENT
#-----
R0001:C00021-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
* CALIB STANDHYD 5.0 03: 200 .39 .211 No_date 1:30 58.38 .937 .000
  [XIMP=.93:TIMP=.93]
```



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[LOSS= 2 :CN= 74.0]
[Pervious area: IAper= 5.00:SLPP=1.00:LGP= 50.:MNP=.250:SCP= .0]
[Impervious area: IAimp= 1.00:SLPI=1.00:LGI= 50.:MNI=.014:SCI= .0]
#*****
# 50 YEAR
#*****
R0001:C00022-----
CHICAGO STORM
[SDT= 5.00:SDUR= 4.00:PTOT= 68.98]
{A/B/C= 921.146/ 1.500/ .725: R=.9997}
#-----
# PRE DEVELOPMENT
#-----
#
# TO SPRING
#
R0001:C00023-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
* CALIB STANDHYD 5.0 01: 100 .12 .075 No_date 1:30 65.92 .956 .000
[XIMP=.95:TIMP=.95]
[LOSS= 2 :CN= 74.0]
[Pervious area: IAper= 5.00:SLPP=1.00:LGP= 30.:MNP=.250:SCP= .0]
[Impervious area: IAimp= 1.00:SLPI=1.00:LGI= 30.:MNI=.014:SCI= .0]
#
# TO FERRY
#
R0001:C00024-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
* CALIB STANDHYD 5.0 02: 100 .27 .168 No_date 1:30 65.92 .956 .000
[XIMP=.95:TIMP=.95]
[LOSS= 2 :CN= 74.0]
[Pervious area: IAper= 5.00:SLPP=1.00:LGP= 40.:MNP=.250:SCP= .0]
[Impervious area: IAimp= 1.00:SLPI=1.00:LGI= 40.:MNI=.014:SCI= .0]
# TOTAL SITE RUNOFF
R0001:C00025-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
ADD HYD 5.0 01: 100 .12 .075 No_date 1:30 65.92 n/a .000
+ 5.0 02: 100 .27 .168 No_date 1:30 65.92 n/a .000
SUM= 5.0 03: 100 .39 .243 No_date 1:30 65.92 n/a .000
#-----
# POST-DEVELOPMENT
#-----
R0001:C00026-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
* CALIB STANDHYD 5.0 03: 200 .39 .235 No_date 1:30 64.88 .941 .000
[XIMP=.93:TIMP=.93]
[LOSS= 2 :CN= 74.0]
[Pervious area: IAper= 5.00:SLPP=1.00:LGP= 50.:MNP=.250:SCP= .0]
[Impervious area: IAimp= 1.00:SLPI=1.00:LGI= 50.:MNI=.014:SCI= .0]
#*****
# 100yr
#*****
R0001:C00027-----
CHICAGO STORM
[SDT= 5.00:SDUR= 4.00:PTOT= 75.82]
{A/B/C=1012.565/ 1.500/ .725: R=.9997}
#-----
# PRE DEVELOPMENT
#-----
#
# TO SPRING
#
R0001:C00028-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
* CALIB STANDHYD 5.0 01: 100 .12 .082 No_date 1:30 72.65 .958 .000
[XIMP=.95:TIMP=.95]
[LOSS= 2 :CN= 74.0]
```



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[Pervious area: IAper= 5.00:SLPP=1.00:LGP= 30.:MNP=.250:SCP= .0]
[Impervious area: IAimp= 1.00:SLPI=1.00:LGI= 30.:MNI=.014:SCI= .0]
#
# TO FERRY
#
R0001:C00029-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
* CALIB STANDHYD 5.0 02: 100 .27 .185 No_date 1:30 72.65 .958 .000
[XIMP=.95:TIMP=.95]
[LOSS= 2 :CN= 74.0]
[Pervious area: IAper= 5.00:SLPP=1.00:LGP= 40.:MNP=.250:SCP= .0]
[Impervious area: IAimp= 1.00:SLPI=1.00:LGI= 40.:MNI=.014:SCI= .0]
# TOTAL SITE RUNOFF
R0001:C00030-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
ADD HYD 5.0 01: 100 .12 .082 No_date 1:30 72.65 n/a .000
+ 5.0 02: 100 .27 .185 No_date 1:30 72.65 n/a .000
SUM= 5.0 03: 100 .39 .268 No_date 1:30 72.65 n/a .000
#-----
# POST-DEVELOPMENT
#-----
R0001:C00031-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
* CALIB STANDHYD 5.0 03: 200 .39 .259 No_date 1:30 71.56 .944 .000
[XIMP=.93:TIMP=.93]
[LOSS= 2 :CN= 74.0]
[Pervious area: IAper= 5.00:SLPP=1.00:LGP= 50.:MNP=.250:SCP= .0]
[Impervious area: IAimp= 1.00:SLPI=1.00:LGI= 50.:MNI=.014:SCI= .0]
R0001:C00032-----
FINISH
```