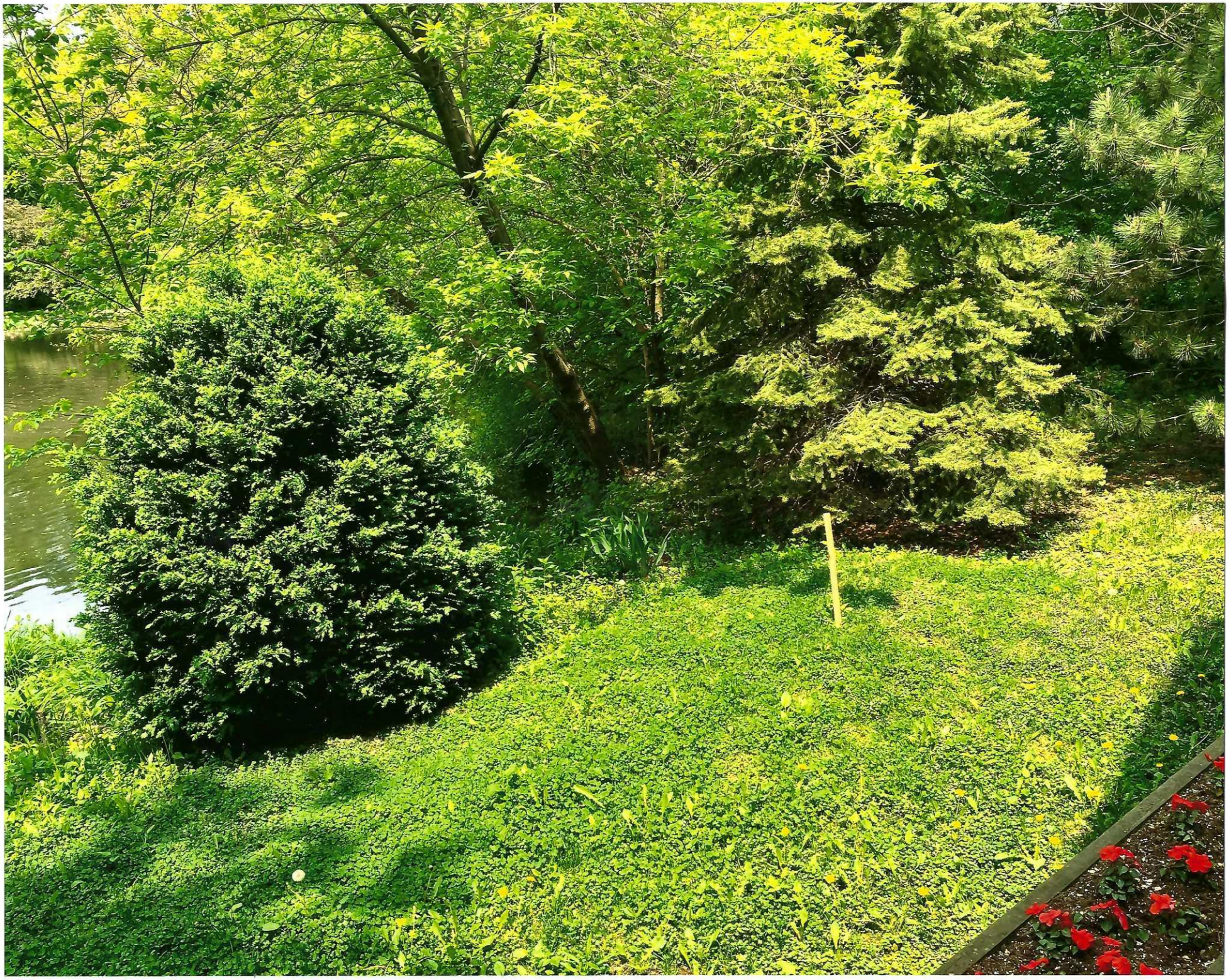



HDR
8:01
Quiet whisper
3015 Hz
882 Hz
AVG
50.9
48.7
MAX
59.4
00:05

Video Submitted by Applicant

PCZBA -05-2023
Philip Estates - Final PUD/Subdivision

CROSS ENGINEERING & ASSOCIATES, INC.

April 25, 2023

Mr. Greg Jackson
Village of Long Grove
3110 Old McHenry Road
Long Grove, IL 60047

Re: **PHILIP ESTATES SUBDIVISION – FINAL PUD SUBMITTAL**
LONG GROVE, IL
(CEAI Project # 1291)

Dear Mr. Jackson:

On behalf of our client, Philip Estates, LLC, we are pleased to be submitting the following documents in support of our Final PUD application for the referenced project:

1. Signed General Zoning Application with Riders.
2. Final PUD Plat by Haeger Engineering, dated 3/20/23.
3. Final Plat of Philip Estates Subdivision by Edward J. Molloy & Associates, Inc., last revised February 9, 2021.
4. Final Stormwater Management Summary by Cross Engineering & Associates, Inc. including SWMM Modeling, last revised February 2023.
5. Final Engineering plans for Philip Estates Subdivision prepared by Haeger Engineering, dated 09/30/22.
6. Storm sewer calculations by Haeger Engineering, dated 2/16/23.
7. Final Landscape Plan, Existing Tree Survey and Preservation Plan and Tree Inventory by JNL Design Group, Inc, dated 4/17/23.

The CCR's are being submitted under separate cover by Mr. Shaw.

The Final Site Plan, road layout and lot configurations/sizes are in general conformance with the approved Preliminary PUD, except for elimination of the proposed lift station and its outlot. With the elimination of the lift station, we have developed a better alternative design utilizing individual grinders. Following is a summary of the utility changes from the approved Preliminary PUD that we previously submitted informally to your office via email on 5/18/22. The plans have essentially been unchanged since then.

Wastewater

- During Final Engineering design we contacted Lake County to discuss the proposed lift station and forcemain design, and were strongly suggested to look at the E-One low pressure sewer system instead of a traditional gravity sewer system and central lift station.
- The system is essentially a grinder pump installed in each home, which then pumps wastewater out to a small diameter low pressure force main running within the private roadways, and ultimately discharges into the County sanitary sewer in Turnberry Lane.

- Pumps would be placed in the lower level of the homes and would essentially be an upgrade of grinder pumps that are typically installed in basements to pump basement wastewater discharge to overhead sewers.
- In reviewing the E-One system and consulting with the manufacturer's technical staff, we have determined that this would be a perfect application for this system. These pumps and systems have been installed for approximately 50 years, with the manufacturer claiming over 2 million users. The system has a proven track record, and the County is supportive of it. Final Plans are also being submitted to the County.
- To eliminate the homeowner burden of maintaining these grinder pumps, the HOA would be responsible for maintenance of the grinder pumps and low pressure lines to the County sewer. The HOA would have spare pumps on hand to replace pumps at short notice with little to no disruption to homeowners.
- In addition, to provide trouble-free backup of the wastewater system during power outages, backup generators will be required for each of the homes.
- We have revised our wastewater design to provide the E-One low pressure sewer system.

Water Supply

- Glenstone recently reviewed their private water system's well capacity, and, unfortunately came to the conclusion that the system could not provide the required water supply to Philip Estates homes. The issue is the potential for homeowners within Philip Estates to install irrigation systems that would overtax the water system and draw more water than the wells can provide.
- We are proposing to use individual wells for the Philip Estates lots, and will not be extending the Glenstone Subdivision private water system into Philip Estates.

We look forward to working through these Final PUD submittal documents. Please don't hesitate to contact me for any clarifications or if you have any questions.

Sincerely,

CROSS ENGINEERING & ASSOCIATES, INC.

Stephen J. Cross, P.E.

cc.

Taylor Wegrzyn – Village Planner – twegrzyn@mundeline.org
Geoff Perry – Village Engineer – gperry@gha-engineers.com
Victor Filippini – Village Attorney – victor.filippini@filippinilawfirm.com
Greg Jackson _Village Manager – gjackson@longgroveil.gov
David Shaw – Horwitch Goldstone & Shaw LLC, via email
Dan McMillan, Philip Estates LLC, via email
Larry Dziurdzik, JNL Design Group, via email

Village of Long Grove Illinois

3110 Old McHenry Road 60047-9635
Phone: 847-634-9440 Fax: 847-634-9408
www.longgroveil.gov

PLAN COMMISSION ZONING BOARD OF APPEALS GENERAL ZONING APPLICATION

1.0 General Information (See Subsection 5-11-8(E) of the Long Grove Zoning Code).

1.1 Applicant Name: Stephen Cross, P.E. Cross Engineering & Associates, Inc.

Address: 1955 Raymond Drive, Suite 119, Northbrook, IL 60062

Telephone Number: 847-498-0800 E-mail Address: scross@crossengineering.net

Fax number: _____

Applicant's Interest in Property: Civil Engineering consultant representing Owner

1.2 Owner (if different from Applicant).

Name: Philip Estates, LLC Attn: Dan McMillan

Address: 8150 W. 159th Street, Orland Park, IL 60462

Telephone Number: 708-764-3612 E-mail Address: dmcmillan@rizzacars.com

Fax number: _____

1.3 Property.

Address of Property: 3699 Cuba Road, Long Grove, IL

Legal Description: Please attach Parcel Index Number(s): See attached Schedule A

Present Zoning Classification R-2 PUD Size of Property (in acres) 34.82

Has any zoning reclassification, variation, or special use permit/PUD been granted for the Property?
Yes: X No: _____

If yes, please identify the ordinance or other document granting such zoning relief: 2021-O-

Describe the nature of the zoning relief granted: _____

Present use of Property:

Residential _____ Commercial_____ Office_____ Open Space _____ Vacant __X__

Other (explain) _____

Present zoning and land use of surrounding properties within 250' of Property:

	Zoning Classification	Land Use
North:	R-1, R-2	Single Family
South:	R-1 PUD	Single Family and vacant
East:	R-1 PUD	Single Family and vacant
West:	R-1	Single Family

1.4 Trustees Disclosure.

Is title to the Property in a land trust? Yes_____ No_____

If yes, full disclosure of all trustees, beneficiaries and their legal and equitable interests is required. Attach a copy of all documents showing ownership of the Property and the Applicant's and/ or Owner's control of or interest in the Property.

1.5 Requested Action (Check as many as are applicable).

_____ Appeal

_____ Code Interpretation

_____ Variation

_____ Special Use Permit (non-PUD)

_____ Zoning Map Amendment (rezoning)

_____ Zoning Code Text Amendment

_____ Preliminary PUD Plat

__X__ Final PUD Plat

1.6 Supplemental Information (General):**

Every Application filed shall, in addition to the data and information required above, provide the following general information when applicable to the use or development for which approval is being sought:

(a) A description or graphic representation of any development or construction that will occur or any use that will be established or maintained if the requested relief is granted.

(b) A table showing the following, as applicable:

- the total lot area of the lot, in acres and in square feet; and
- the total existing and proposed lot area, expressed in acres, in square feet and as a percent of the total development area, devoted to: residential uses, business uses; office uses; college uses; institutional uses; open space; rights-of-way; streets; and off-street parking and loading areas; and
- the existing and proposed number of dwelling units; and gross and net floor area devoted to residential uses, business uses, office uses, college uses, and institutional uses.

(c) A table listing all bulk, space, and yard requirements; all parking requirements; and all loading requirements applicable to any proposed development or construction and showing the compliance of such proposed development or construction with each such requirement. When any lack of compliance is shown, the reason therefore shall be stated and an explanation of the village's authority, if any, to approve the Application despite such lack of compliance shall be set forth.

(d) The certificate of a registered architect or civil engineer licensed by the State of Illinois, or of an owner-designer, that any proposed use, construction, or development complies with all provisions of this code and other village ordinances or complies with such provisions except in the manner and to the extent specifically set forth in said certificate.

(e) A landscape development plan, including the location, size and species of plant materials.

1.7 <u>Supplemental Information (per specific request)</u>:

_____ Appeals, Code Interpretations, and Variations: See 5-11-8(E)3, 4, & 5 of the Zoning Code and Form "A"

_____ Special Use Permit (non-PUD): See 5-11-8(E)7 of the Zoning Code and Form "B"

_____ Zoning Map Amendment (rezoning): See 5-11-8(E) 8 of the Zoning Code and Form "C"

_____ Zoning Code Text Amendment: See Form "D"

_____ Preliminary PUD Plat: See 5-11-18(D)(2) of the Zoning Code and Form "E"

__X__ Final PUD Plat: See 5-11-18(D)(3) of the Zoning Code and Form "F"

** The scope and detail of information shall be appropriate to the subject matter of the Application, with special emphasis on those matters likely to be affected or impacted by the approval being sought in the Application. Information required in the application shall be considered the minimum information required for filing an application. Additional information including but not limited to graphic depictions, environmental impacts, plans for sewer and water service and storm water management, photometric plans, traffic studies and effects on property values, among others, should also be considered and may be helpful in detailing the Application.

Special Data Requests. In addition to the data and information required pursuant to this Application, every Applicant/Owner shall submit such other additional data, information, or documentation as the building superintendent or any board or commission before which the Application is pending may deem necessary or appropriate to a full and proper consideration and disposition of the particular Application.

1.8 Consultants.

Please provide the name, address, and telephone number of each professional or consultant advising Applicant with respect to this Application, including architects, contractors, engineers or attorneys:

SEE ATTACHED CONSULTANT SCHEDULE

Name: _____ Name: _____

Professional: _____ Professional: _____

Address: _____ Address: _____

Telephone: _____ Telephone: _____

E-mail: _____ E-mail: _____

Name: _____ Name: _____

Professional: _____ Professional: _____

Address: _____ Address: _____

Telephone: _____ Telephone: _____

E-mail: _____ E-mail: _____

1.9 Village Officials or Employees.

Does any official or employee of the Village have an interest, either directly or indirectly, in the Property? Yes: _____ No: X

If yes, please identify the name of such official or employee and the nature and extent of that interest. (Use a separate sheet of paper if necessary.)

1.10 Successive Applications (5-11-9).

Second Applications Without New Grounds Barred. Whenever any Application filed pursuant to this code has been finally denied on its merits, a second Application seeking essentially the same relief, whether or not in the same form or on the same theory, shall not be brought unless in the opinion of the officer, board, or commission before which it is brought there is substantial new evidence available or a mistake of law or fact significantly affected the prior denial.

New Grounds to Be Stated. Any such second Application shall include a detailed statement of the grounds justifying consideration of such Application.

Summary Denial With or Without Hearing. Any such second Application may be denied by the building superintendent summarily, and without hearing, on a finding that no grounds appear that warrant a new hearing. In any case where such Application is set for hearing, the owner shall be required to establish grounds warranting reconsideration of the merits of its Application prior to being allowed to offer any evidence on the merits. Unless such grounds are established, the Application may be summarily dismissed for such failure.

Exception. Whether or not new grounds are stated, any such second Application filed more than two years after the final denial of a prior Application shall be heard on the merits as though no prior Application had been filed. The Applicant or Owner shall, however, be required to place in the record all evidence available concerning changes of conditions or new facts that have developed since the denial of the first Application. In the absence of such evidence, it shall be presumed that no new facts exist to support the new petition that did not exist at the time of the denial of the first Application.

2.0 Required Submittals (See Specific Supplemental Information Form for filing Fees).

X	Fully completed Application with applicable supplementary information	
n/a	Non-refundable Filing Fee.	Amount: $_____
n/a	Planning Filing Fees.	Amount: $_____
X	Minimum Professional Fee/deposit Escrow.	Amount $ 5,000.00

3.0 Certifications. The Applicant and Owner certify that this Application is filed with the permission and consent of the Owner of the Property and that the person signing this Application is fully authorized to do so.

3.1 The Applicant certifies that all information contained in this Application is true and correct to the best of Applicant's knowledge.

3.2 The Applicant acknowledges that the Village may seek additional information relating to this Application and agrees to provide the Village with such information in a timely manner. Failure to provide such information may be grounds for denying an Application.

3.3 The Applicant and Owner agree to reimburse the Village for any and all costs relating to the processing of this Application, including any consultants' fees. By signing this Application, Applicant and Owner agree to be jointly and severally liable for such costs, and Owner further agrees to the filing and foreclosure of a lien against the Property for all such costs plus all expenses relating to collection, if such costs are not paid within 30 days after mailing of a demand for payment.

3.4 The Applicant agrees that the Village and its representatives have the right, and are hereby granted permission and a license, to enter upon the Property, and into any structures located there on, for purposes of conducting any inspections that may be necessary in connection with this Application.

3.5 **The Owner, Applicant, and/or designated representative is *required* to be present during the meeting.**

Joseph Rizza	Stephen Cross, P.E.
Name of Owner	Name of Applicant
4-11-23	4/19/23
Signature of Owner Date	Signature of Applicant Date

Village of Long Grove
Plan Commission Zoning Board of Appeals
Supplemental Application Information
(Final PUD Plat)

FORM "F"

In addition to the information required by the General Zoning Application, the Applicant must provide specific supplemental information as required below for Applications for approval of a Final PUD Plat.

Applications for Planned Unit Development Final Plat Approval. In addition to the information required by the General Zoning Application, every Application filed pursuant to Section 5-11-18 of the Zoning Code for approval of a final planned unit development (PUD) plat shall provide at least ten (10) sets of the following plans and documents:

(a) Final Plat. A final land use and zoning plat, suitable for recording with the County Recorder of Deeds, shall be prepared. The purpose of the land use and zoning plat is to designate with particularity the land subdivided into conventional lots as well as the division of other land not so treated into common open areas and building areas. The final land use and zoning plat shall include, but not be limited to:

_X_ Legal Description of Entire Area. An accurate legal description of the entire area under immediate development within the planned development.

_X_ Subdivision Plat. A subdivision plat of all subdivided lands in the same form and meeting all the Village, County, and State of Illinois Plat Act requirements for a final plat of subdivision.

_X_ Legal Description of Unsubdivided Use Area. An accurate legal description of each separate unsubdivided use area, including common open space.

_X_ Location of all Buildings to be Constructed. Designation of the exact location of all buildings to be constructed.

_X_ Certificates, Seals and Signatures. Certificates, seals and signatures required for the dedication of lands and recording the document.

_X_ Tabulations on Separate Unsubdivided Use Area. Tabulations on separate unsubdivided use area, including land area, number of buildings, number of dwelling units and dwelling units per acre.

_X_ Water Facilities. The location of all lakes, ponds, detention sites, retention sites and dams shall be depicted and accurately located on the final plat.

(b) Public Open Space Documents. All common open space shall be either conveyed to a municipal or public corporation, conveyed to a not for profit corporation or entity established for the purpose of benefiting the owners and residents of the planned development or retained by the developer with legally binding guarantees, in a form approved by the village attorney, that the common open space will be permanently preserved as open area. All land conveyed to a not for profit corporation or like entity shall be subject to the right of said corporation to impose a legally enforceable lien for maintenance and improvement of the common open space.

(c) Public Facilities. The construction of all public facilities and improvements made necessary as a result of the planned unit development shall either be completed prior to final plat approval, or be guaranteed by a security deposit. Security deposits shall be governed by the provisions of section 12-1-3 of the Village Code.

(d) Security Deposit. The satisfactory installation of the facilities required to be constructed within the planned unit development shall be guaranteed by a security deposit in an amount equal to one hundred ten percent (110%) of the estimated cost of public facility installations. Security deposits shall be governed by the provisions of section 12-1-3 of the Village Code, provided, however, that the balance of the security deposit shall not be returned after the completion of the public facility installations unless a guarantee security deposit in an amount of ten percent (10%) of the total cost of the required facilities is first delivered to the village. Such guarantee security deposit shall be maintained for a period of no less than twenty four (24) months.

(e) Delinquent Taxes. A certificate shall be furnished from the proper collector that all special assessments constituting a lien on the whole or any part of the lot of the planned unit development have been paid.

(f) Covenants. Final agreements, provisions, or covenants which will govern the use, maintenance, and continued protection of the planned unit development.

Fee Schedule for Final Planned Unit Development Plat:

Fees are to be paid at the time of application for preliminary plat submittal. No additional filing or planning fees are associated with a Final PUD plat request; provided, however, that Applicant and Owner shall be jointly and severally responsible for all recordation fees, consultant expenses, and other costs incurred by the Village, including without limitation those costs and expenses referenced in the Zoning Code and the General Zoning Application. Professional fee escrows must be maintained at the $5,000.00 minimum deposit level.

RIDER "A"

LEGAL DESCRIPTION

LOTS 1 THOUGH 12, BOTH INCLUSIVE, AND LOTS A THROUGH K, BOTH INCLUSIVE, IN CANTERBURY PARK PUD, BEING A SUBDIVISION OF PART OF THE NORTHEAST ¼ OF SECTION 26, TOWNSHIP 43 NORTH, RANGE 10, EAST OFTHE THIRD PRINCIPAL MERIDIAN AS DESCRIBED ON THE PLAT THEREOF RECORDED IN THE OFFICE OF THE RECORDER OF DEEDS, LAKE COUNTY, ILLINOIS ON DECEMBER 22, 2009, AS DOCUMENT NO. 6553804.

Pins;

14-26-201-010 through 14-26-201-032, sequentially.

RIDER TO GENERAL ZONING APPLICATION

CONSULTANTS

PLANNING/ENGINEERING

Stephen Cross, PE
Cross Engineering & Associates, Inc.
1955 Raymond Drive, Suite 119
Northbrook, IL 60062

Office: 847-498-0800
scross@crossengineering.net

ATTORNEY

David L. Shaw
Horwitch Goldstone & Shaw LLC
1528 Shermer Rd.
Northbrook, IL 60062

Cell: 847-910-9619
dshaw@hgslegal.com

LANDSCAPE DESIGN

Lawrence Dziurdzik, ASLA
President
The JNL Design Group Inc.
1955 Raymond Drive, Suite 119
Northbrook, IL 60062
Office: 224-269-4290
ldziurdzik@jnlgroup.net

TRAFFIC CONSULTANT

Luay Aboona
KLOA
9575 W. Higgins Road, Suite 400
Rosemont, IL 60018

Office 847-518-9900
laboona@kloainc.com

FINAL PUD PLAT, PHILIP ESTATES SUBDIVISION
LONG GROVE, ILLINOIS

LEGEND

Existing Symbol	Description	Proposed Symbol
	Storm Sewer Manhole	
	Catch Basin	
	Inlet	
	Flared End Section	
	Headwall	
	Area Drain	
	Sanitary Sewer Manhole	
	Clean Out	C.O.
	Storm Sewer	
	Storm Sewer Service	
	Perforated Underdrain	
	Sanitary Sewer	
	Sanitary Sewer Service	
	Combined Sewer	
W	Water Main	W

Existing Symbol	Description	Proposed Symbol
	Fire Hydrant	
	Valve Vault	
	Valve Box	
B	B-Box	B
	Well Head	
	Light Pole	
	Fence	
	Sign	
G	Gas Valve	G
G	Gas Line	G
E	Electric Line	E
OHW	Overhead Utility Line	OHW
FO	Fiber Optic Line	FO
	Electrical Pedestal	
E	Electric Manhole	E

Existing Symbol	Description	Proposed Symbol
	Guy Wire	
	Utility Pole	
	Telephone Pedestal	
T	Telephone Manhole	T
T	Telephone Line	T
CATV	Cable TV Line	CATV
	Cable TV Pedestal	
XXX	Contour Line	XXX
	Deciduous Tree	
	Coniferous Tree	
	Bush	
	San. Sewer Forcemain	FM

SITE DATA

Total Site Area	1,515,931.00 Sq. Ft.	34.801 Ac.
Lot 1 to Lot 19	830,799.00 Sq. Ft.	19.073 Ac.
Outlot A, Scenic Corridor Easement	67,430.00 Sq. Ft.	1.548 Ac.
Outlot B, Scenic Corridor Easement	18,308.00 Sq. Ft.	0.420 Ac.
Outlot C, Philip Court and Philip Drive	116,352.00 Sq. Ft.	2.671 Ac.
Outlot D, Stormwater Management Basin 1	286,215.00 Sq. Ft.	6.571 Ac.
Outlot E, Stormwater Management Basin 3	35,722.00 Sq. Ft.	0.820 Ac.
Outlot F, Stormwater Management Basin 2	161,105.00 Sq. Ft.	3.698 Ac.

NOTE:
LOTS TO HAVE INDIVIDUAL WELLS.

CONSERVANCY DISTRICT EASEMENT

PROPOSED ROADWAY AND UTILITY EASEMENT

SCENIC CORRIDOR EASEMENT

LOT 1
ING VALLEY NEUMAN RESUBDIVISION
DOCUMENT NO. 2201412

No.	Date	Revision

HAEGER ENGINEERING
consulting engineers • land surveyors
100 East State Parkway, Schaumburg, IL 60173 • Tel. 847.394.6400 Fax 847.394.6608
Illinois Professional Design Firm License No. 184.003152
www.haegerengineering.com

FINAL PUD PLAT
PHILIP ESTATES SUBDIVISION
SITE IMPROVEMENT PLANS
LONG GROVE, ILLINOIS

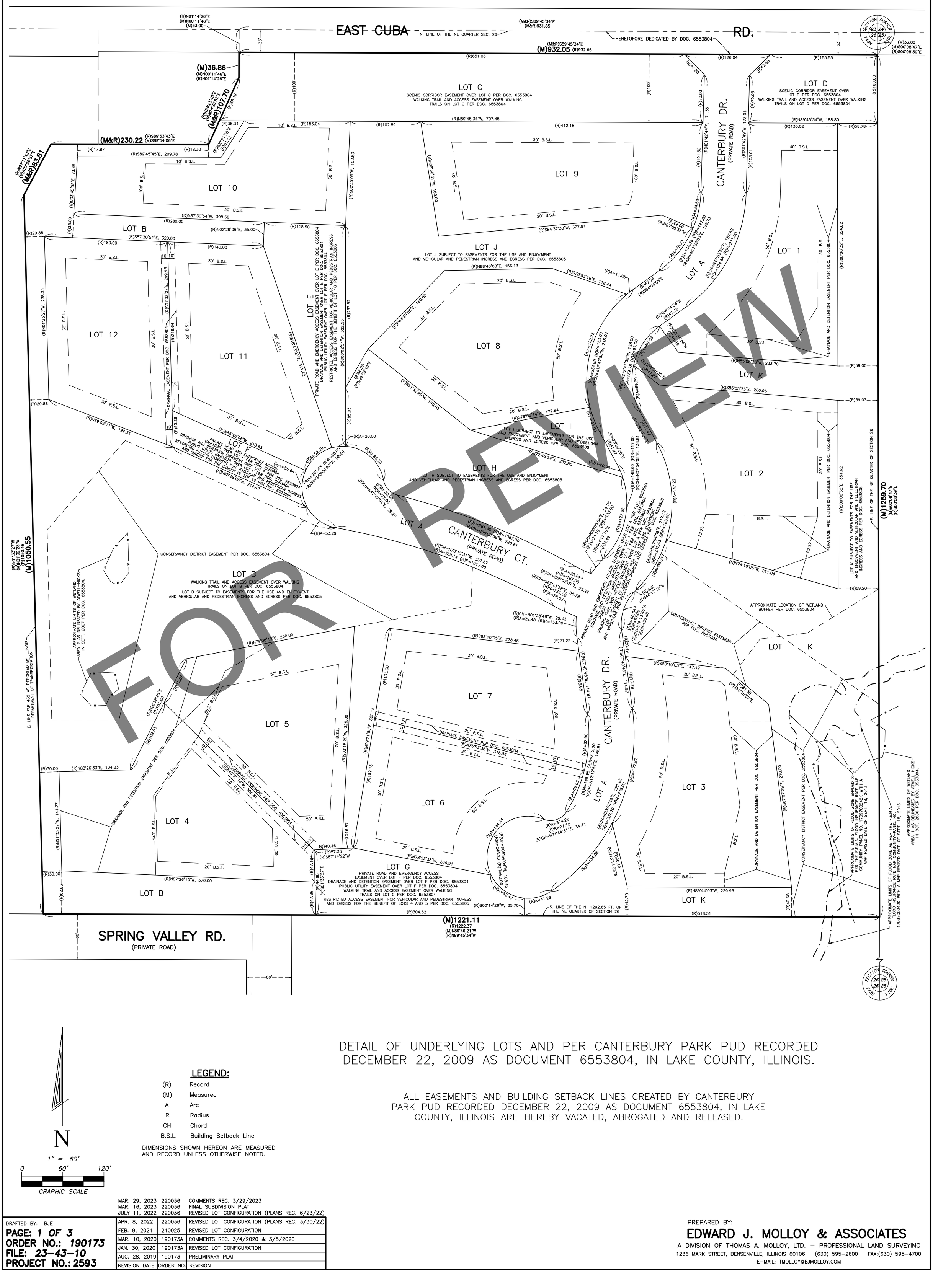
Project Manager:	P A L
Engineer:	K M L
Date:	03-20-2023
Project No.	22001
Sheet	1 / 1

Plot Date: Mar 29, 2023 - 11:38am Plotted By: glhr
File Name: P:\2022\22001\Drawing\Final Engineering\22001 Final PUD Plot.dwg

FINAL PLAT

PHILIP ESTATES SUBDIVISION

BEING A RESUBDIVISION OF LOTS 1 TO 12, INCLUSIVE, AND LOTS "A", "B", "C", "D", "E", "F", "G", "H", "I", "J" AND "K" IN CANTERBURY PARK PUD, BEING PART OF THE NORTHEAST QUARTER OF SECTION 26, TOWNSHIP 43 NORTH, RANGE 10, EAST OF THE THIRD PRINCIPAL MERIDIAN, ACCORDING TO THE PLAT OF SAID CANTERBURY PARK PUD RECORDED DECEMBER 22, 2009 AS DOCUMENT 6553804, IN LAKE COUNTY, ILLINOIS.



N

1" = 60'

0 60' 120'

GRAPHIC SCALE

LEGEND:

(R)	Record
(M)	Measured
A	Arc
R	Radius
CH	Chord
B.S.L.	Building Setback Line

DIMENSIONS SHOWN HEREON ARE MEASURED AND RECORD UNLESS OTHERWISE NOTED.

DETAIL OF UNDERLYING LOTS AND PER CANTERBURY PARK PUD RECORDED DECEMBER 22, 2009 AS DOCUMENT 6553804, IN LAKE COUNTY, ILLINOIS.

ALL EASEMENTS AND BUILDING SETBACK LINES CREATED BY CANTERBURY PARK PUD RECORDED DECEMBER 22, 2009 AS DOCUMENT 6553804, IN LAKE COUNTY, ILLINOIS ARE HEREBY VACATED, ABROGATED AND RELEASED.

MAR. 29, 2023	220036	COMMENTS REC. 3/29/2023
MAR. 16, 2023	220036	FINAL SUBDIVISION PLAT
JULY 11, 2022	220036	REVISED LOT CONFIGURATION (PLANS REC. 6/23/22)

DRAFTED BY: BJE

PAGE: 1 OF 3
ORDER NO.: 190173
FILE: 23-43-10
PROJECT NO.: 2593

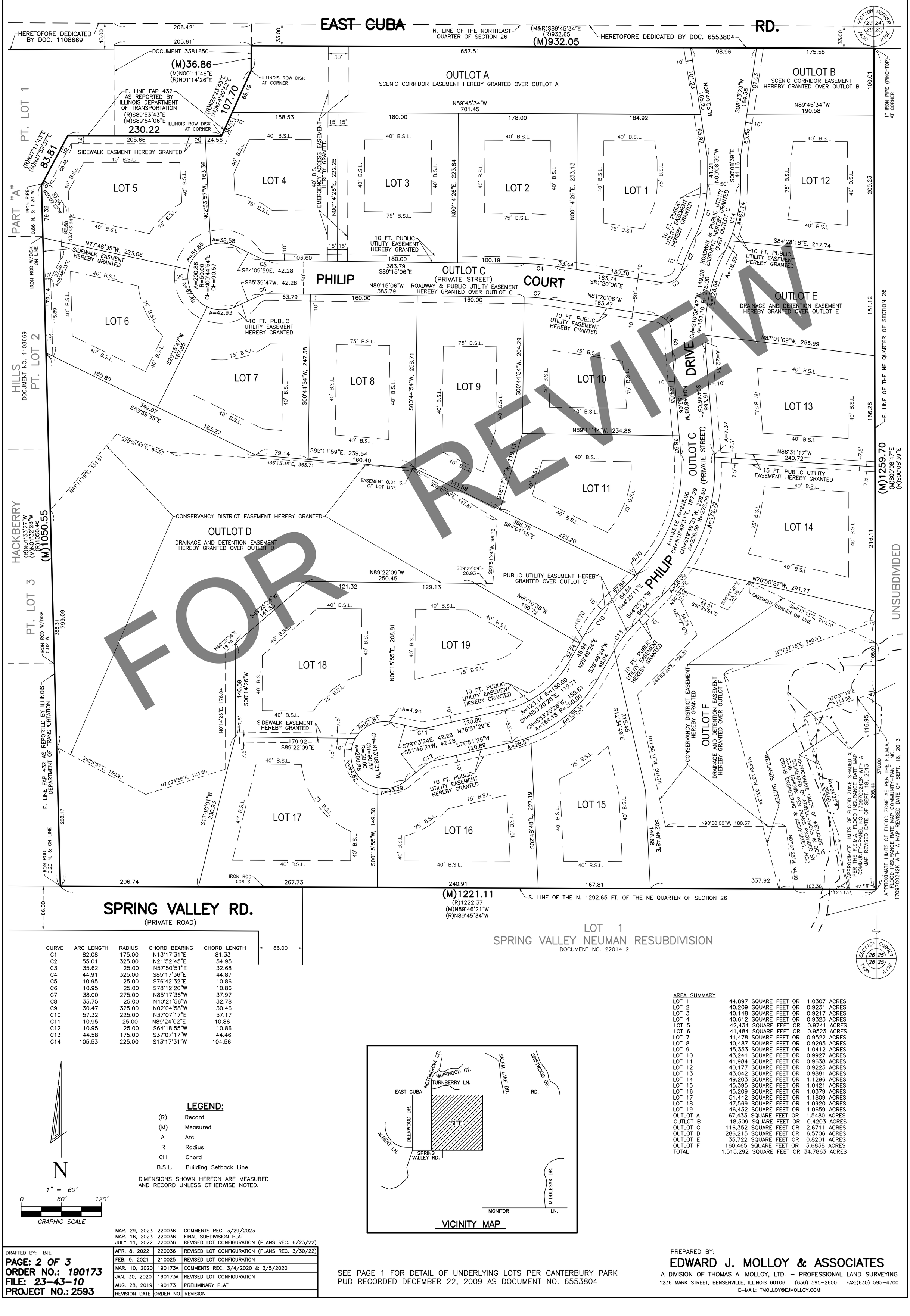
REVISION DATE	ORDER NO.	REVISION
APR. 8, 2022	220036	REVISED LOT CONFIGURATION (PLANS REC. 3/30/22)
FEB. 9, 2021	210025	REVISED LOT CONFIGURATION
MAR. 10, 2020	190173A	COMMENTS REC. 3/4/2020 & 3/5/2020
JAN. 30, 2020	190173A	REVISED LOT CONFIGURATION
AUG. 28, 2019	190173	PRELIMINARY PLAT

PREPARED BY:
EDWARD J. MOLLOY & ASSOCIATES
A DIVISION OF THOMAS A. MOLLOY, LTD. – PROFESSIONAL LAND SURVEYING
1236 MARK STREET, BENSENVILLE, ILLINOIS 60106 (630) 595-2600 FAX:(630) 595-4700
E-MAIL: TMOLLOY@EJMOLLOY.COM

FINAL PLAT

PHILIP ESTATES SUBDIVISION

BEING A RESUBDIVISION OF LOTS 1 TO 12, INCLUSIVE, AND LOTS "A", "B", "C", "D", "E", "F", "G", "H", "I", "J" AND "K" IN CANTERBURY PARK PUD, BEING PART OF THE NORTHEAST QUARTER OF SECTION 26, TOWNSHIP 43 NORTH, RANGE 10, EAST OF THE THIRD PRINCIPAL MERIDIAN, ACCORDING TO THE PLAT OF SAID CANTERBURY PARK PUD RECORDED DECEMBER 22, 2009 AS DOCUMENT 6553804, IN LAKE COUNTY, ILLINOIS.



CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	82.08	175.00	N13°17'31"E	81.33
C2	55.01	325.00	N21°52'45"E	54.95
C3	35.62	25.00	N57°50'51"E	32.68
C4	44.91	325.00	S85°17'36"E	44.87
C5	10.95	25.00	S76°42'32"E	10.86
C6	10.95	25.00	S78°12'20"W	10.86
C7	38.00	275.00	N85°17'36"W	37.97
C8	35.75	25.00	N40°21'56"W	32.78
C9	30.47	325.00	N02°04'58"W	30.46
C10	57.32	225.00	N37°07'17"E	57.17
C11	10.95	25.00	N89°24'02"E	10.86
C12	10.95	25.00	S64°18'55"W	10.86
C13	44.58	175.00	S37°07'17"W	44.46
C14	105.53	225.00	S13°17'31"W	104.56

N

1" = 60'

0 60' 120'

GRAPHIC SCALE

LEGEND:

(R)	Record
(M)	Measured
A	Arc
R	Radius
CH	Chord
B.S.L.	Building Setback Line

DIMENSIONS SHOWN HEREON ARE MEASURED AND RECORD UNLESS OTHERWISE NOTED.

VICINITY MAP

AREA SUMMARY

LOT 1	44,897 SQUARE FEET OR	1.0307 ACRES
LOT 2	40,209 SQUARE FEET OR	0.9231 ACRES
LOT 3	40,148 SQUARE FEET OR	0.9217 ACRES
LOT 4	40,612 SQUARE FEET OR	0.9323 ACRES
LOT 5	42,434 SQUARE FEET OR	0.9741 ACRES
LOT 6	41,484 SQUARE FEET OR	0.9523 ACRES
LOT 7	41,478 SQUARE FEET OR	0.9522 ACRES
LOT 8	40,487 SQUARE FEET OR	0.9295 ACRES
LOT 9	45,353 SQUARE FEET OR	1.0412 ACRES
LOT 10	43,241 SQUARE FEET OR	0.9927 ACRES
LOT 11	41,984 SQUARE FEET OR	0.9638 ACRES
LOT 12	40,177 SQUARE FEET OR	0.9223 ACRES
LOT 13	43,042 SQUARE FEET OR	0.9881 ACRES
LOT 14	49,203 SQUARE FEET OR	1.1296 ACRES
LOT 15	45,395 SQUARE FEET OR	1.0421 ACRES
LOT 16	45,209 SQUARE FEET OR	1.0379 ACRES
LOT 17	51,442 SQUARE FEET OR	1.1809 ACRES
LOT 18	47,569 SQUARE FEET OR	1.0920 ACRES
LOT 19	46,432 SQUARE FEET OR	1.0659 ACRES
OUTLOT A	67,433 SQUARE FEET OR	1.5480 ACRES
OUTLOT B	18,309 SQUARE FEET OR	0.4203 ACRES
OUTLOT C	116,352 SQUARE FEET OR	2.6711 ACRES
OUTLOT D	286,215 SQUARE FEET OR	6.5706 ACRES
OUTLOT E	35,722 SQUARE FEET OR	0.8201 ACRES
OUTLOT F	160,465 SQUARE FEET OR	3.6838 ACRES
TOTAL	1,515,292 SQUARE FEET OR	34.7863 ACRES

MAR. 29, 2023	220036	COMMENTS REC. 3/29/2023
MAR. 16, 2023	220036	FINAL SUBDIVISION PLAT
JULY 11, 2022	220036	REVISED LOT CONFIGURATION (PLANS REC. 6/23/22)
APR. 8, 2022	220036	REVISED LOT CONFIGURATION (PLANS REC. 3/30/22)
FEB. 9, 2021	210025	REVISED LOT CONFIGURATION
MAR. 10, 2020	190173A	COMMENTS REC. 3/4/2020 & 3/5/2020
JAN. 30, 2020	190173A	REVISED LOT CONFIGURATION
AUG. 28, 2019	190173	PRELIMINARY PLAT
REVISION DATE	ORDER NO.	REVISION

DRAFTED BY: BJE

PAGE: 2 OF 3
ORDER NO.: 190173
FILE: 23-43-10
PROJECT NO.: 2593

SEE PAGE 1 FOR DETAIL OF UNDERLYING LOTS PER CANTERBURY PARK PUD RECORDED DECEMBER 22, 2009 AS DOCUMENT NO. 6553804

PREPARED BY:
EDWARD J. MOLLOY & ASSOCIATES
A DIVISION OF THOMAS A. MOLLOY, LTD. – PROFESSIONAL LAND SURVEYING
1236 MARK STREET, BENSENVILLE, ILLINOIS 60106 (630) 595-2600 FAX:(630) 595-4700
E-MAIL: TMOLLOY@EJMOLLOY.COM

FINAL PLAT

PHILIP ESTATES SUBDIVISION

BEING A RESUBDIVISION OF LOTS 1 TO 12, INCLUSIVE, AND LOTS "A", "B", "C", "D", "E", "F", "G", "H", "I", "J" AND "K" IN CANTERBURY PARK PUD, BEING PART OF THE NORTHEAST QUARTER OF SECTION 26, TOWNSHIP 43 NORTH, RANGE 10, EAST OF THE THIRD PRINCIPAL MERIDIAN, ACCORDING TO THE PLAT OF SAID CANTERBURY PARK PUD RECORDED DECEMBER 22, 2009 AS DOCUMENT 6553804, IN LAKE COUNTY, ILLINOIS.

OWNER'S CERTIFICATE AND SCHOOL DISTRICT STATEMENT

STATE OF ILLINOIS)
) SS
COUNTY OF COOK)

CANTERBURY PARK, L.L.C., AN ILLINOIS LIMITED LIABILITY COMPANY, DOES HEREBY CERTIFY THAT IT IS THE OWNER OF THE PROPERTY DESCRIBED HEREON AND THAT IT HAS CAUSED SAID PROPERTY TO BE SURVEYED AND RESUBDIVIDED AS SHOWN HEREON FOR THE USES AND PURPOSES THEREIN SET FORTH AND DOES HEREBY ACKNOWLEDGE AND ADOPT THE SAME UNDER THE STYLE AND TITLE HEREON SHOWN. IT FURTHER CERTIFIES TO THE BEST OF ITS KNOWLEDGE, THAT THE LAND INCLUDED HEREIN FALLS WITHIN THE FOLLOWING SCHOOL DISTRICTS: KILDEER COUNTRYSIDE COMMUNITY CONSOLIDATED SCHOOL DISTRICT 96 ELEMENTARY SCHOOL DISTRICT; KILDEER COUNTRYSIDE COMMUNITY CONSOLIDATED SCHOOL DISTRICT 96 MIDDLE SCHOOL DISTRICT; ADLAI E. STEVENSON HIGH SCHOOL DISTRICT 125. THE UNDERSIGNED FURTHER HEREBY RESERVES FOR THE VILLAGE OF LONG GROVE, AT&T, NICOR GAS COMPANY AND THE COMMONWEALTH EDISON COMPANY, THE EASEMENT PROVISIONS WHICH ARE STATED ON THEIR STANDARD FORM WHICH IS ATTACHED HERETO.

SIGNED AT ORLAND PARK, ILLINOIS THIS ______ DAY OF ______________________, A.D. 2023

CANTERBURY PARK, L.L.C., AN ILLINOIS LIMITED LIABILITY COMPANY

BY: ________________________________

ITS: MANAGING MEMBER

NOTARY PUBLIC CERTIFICATE:

STATE OF ILLINOIS)
) SS
COUNTY OF COOK)

I, ____________________________________, A NOTARY PUBLIC IN AND FOR SAID COUNTY, IN THE STATE AFORESAID, DO HEREBY CERTIFY THAT ____________________________________ OF CANTERBURY PARK, L.L.C., PERSONALLY KNOWN TO ME TO BE THE SAME PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT, APPEARED BEFORE ME THIS DAY IN PERSON AND ACKNOWLEDGED THAT HE SIGNED AND DELIVERED THE SAID INSTRUMENT AS HIS OWN FREE AND VOLUNTARY ACT AND AS THE FREE AND VOLUNTARY ACT OF SAID LIMITED LIABILITY COMPANY, FOR THE USES AND PURPOSES THEREIN SET FORTH.

GIVEN UNDER MY HAND AND NOTARIAL SEAL THIS _____ DAY OF ______________________, A.D. 2023 AT ORLAND PARK, ILLINOIS

MY COMMISSION EXPIRES: ____________________________________

____
NOTARY PUBLIC

COUNTY CLERK'S CERTIFICATE

STATE OF ILLINOIS)
) SS
COUNTY OF LAKE)

I, ANTHONY VEGA, COUNTY CLERK OF LAKE COUNTY, ILLINOIS, DO HEREBY CERTIFY THAT THERE ARE NO DELINQUENT GENERAL TAXES, NO UNPAID CURRENT GENERAL TAXES, NO DELINQUENT SPECIAL ASSESSMENTS OR UNPAID SPECIAL ASSESSMENTS, NO UNPAID FORFEITED TAXES AND NO REDEEMABLE TAX SALES AGAINST ANY OF THE LAND INCLUDED IN THE ANNEXED PLAT. I FURTHER CERTIFY THAT I HAVE RECEIVED ALL STATUTORY FEES IN CONNECTION WITH THE ANNEXED PLAT.

GIVEN UNDER MY HAND AND SEAL OF THE COUNTY CLERK OF LAKE COUNTY AT WAUKEGAN, ILLINOIS, THIS _____ DAY OF ________________________, A.D. 2023.

____
COUNTY CLERK

VILLAGE CERTIFICATE

STATE OF ILLINOIS)
) SS
COUNTY OF LAKE)

APPROVED AND ACCEPTED BY THE PRESIDENT AND BOARD OF TRUSTEES OF THE VILLAGE OF LONG GROVE, LAKE COUNTY, ILLINOIS, AT A MEETING HELD THIS ______ DAY OF ______________________, A.D. 2023.

BY: ____________________________________
PLAT OFFICER

SIGNED: ____________________________________
VILLAGE PRESIDENT

ATTEST: ____________________________________
VILLAGE CLERK

VILLAGE ENGINEER'S CERTIFICATE

STATE OF ILLINOIS)
) SS
COUNTY OF LAKE)

I, ____, VILLAGE ENGINEER FOR THE VILLAGE OF LONG GROVE, DO HEREBY CERTIFY THAT THE ANNEXED PLAT HAS BEEN EXAMINED BY ME AND FOUND TO COMPLY WITH THE ENGINEERING REQUIREMENTS AS SET FORTH IN THE SUBDIVISION REGULATIONS OF THE VILLAGE OF LONG GROVE, LAKE COUNTY, ILLINOIS.

DATED THIS ______ DAY OF ________________________________, A.D. 2023.

____
VILLAGE ENGINEER
LONG GROVE

RECORDER'S CERTIFICATE

STATE OF ILLINOIS)
) SS
COUNTY OF LAKE)

THIS INSTRUMENT NO. ______________________________ WAS FILED FOR RECORD IN THE RECORDER'S OFFICE OF LAKE COUNTY, AFORESAID ON THE _____ DAY OF ________________________, A.D., 2023 AT _________ O'CLOCK ___M.

____
LAKE COUNTY RECORDER

HEALTH DEPARTMENT CERTIFICATE

STATE OF ILLINOIS)
) SS
COUNTY OF LAKE)

I, ____, HEALTH OFFICER OF LAKE COUNTY, DO HEREBY CERTIFY THAT THE ANNEXED PLAT HAS BEEN EXAMINED BY ME AND FOUND TO COMPLY WITH THE LAKE COUNTY BOARD OF HEALTH ORDINANCE, ARTICLE V, AS SET FORTH IN THE REGULATIONS GOVERNING PLATS OF SUBDIVISION AND ADOPTED BY THE COUNTY BOARD OF LAKE COUNTY, ILLINOIS.

DATED THIS ______ DAY OF ________________________________, A.D. 2023.

____
HEALTH OFFICER, LAKE COUNTY
LONG GROVE

DESIGN ENGINEER DRAINAGE CERTIFICATION

TO THE BEST OF OUR KNOWLEDGE AND BELIEF THE DRAINAGE OF SURFACE WATERS WILL NOT BE CHANGED BY THE CONSTRUCTION OF SUCH SUBDIVISION OR ANY PARTS THEREOF OR THAT IF SUCH SURFACE WATER DRAINAGE WILL CHANGE, ADEQUATE PROVISION HAS BEEN MADE FOR THE COLLECTION AND DIVERSION OF SUCH SURFACE WATERS INTO PUBLIC AREAS OR DRAINS WHICH THE SUBDIVIDER HAS A RIGHT TO USE, AND THAT SUCH SURFACE WATER5 WILL NOT BE DEPOSITED ON THE PROPERTY OF ADJOINING LAND OWNERS IN SUCH CONCENTRATION AS MAY CAUSE DAMAGE TO THE ADJOINING PROPERTY BECAUSE. OF THE CONSTRUCTION OF THE SUBDIVISION.

DATED AT NORTHBROOK, IL THIS ______ DAY OF __________________________, A.D. 2023

____
STEPHEN J. CROSS, P.E. – DESIGN ENGINEER

WALKING TRAIL AND ACCESS EASEMENT

THE WALKING TRAILS ON LOTS 4, 5, 6, 17, 18 AND OUTLOTS A, B, C AND D SHALL BE AVAILABLE FOR THE USE BY LOT OWNERS WITHIN THE DEVELOPMENT AND THEIR INVITED GUESTS AS WELL AS THE GENERAL PUBLIC.

ALL WALKING TRAILS WITHIN THE PLANNED UNIT DEVELOPMENT SHALL REMAIN PRIVATE TRAILS AND THE RESPONSIBILITY FOR THE MAINTENANCE OF THE TRAILS SHALL REST SOLELY UPON THE LOT OWNERS WITHIN THE PLANNED UNIT DEVELOPMENT IN ACCORDANCE WITH THE COVENANTS AND RESTRICTIONS RECORDED IN CONJUNCTION WITH THE RECORDING OF PLAT. ALL WALKING TRAILS WITHIN THE PLANNED UNIT DEVELOPMENT SHALL BE PRESERVED AND MAINTAINED TO PERMIT THEIR USE FOR PEDESTRIAN PURPOSES. FOR PURPOSES HEREIN, PEDESTRIANS INCLUDE PERSONS REQUIRING MOTORIZED OR NON–MOTORIZED DEVICES FOR INDIVIDUAL PERSONAL MOBILITY.

ALSO THE RIGHT OF INGRE5S AND EGRESS IS HEREBY GRANTED OVER, UPON AND THROUGH THE WALKING TRAILS EASEMENTS AT ALL TIMES FOR EMERGENCY VEHICLES OF ANY AND ALL TYPES AND FOR THE VILLAGE OF LONG GROVE MUNICIPAL STAFF AND THE LAKE COUNTY PUBLIC WORKS DEPARTMENT STAFF FOR ANY PURPOSE WHATSOEVER.

PRIVATE ROAD AND EMERGENCY ACCESS EASEMENT PROVISIONS AND RESTRICTIONS

THE PRIVATE ROADS SHALL BE AVAILABLE FOR THE USE BY LOT OWNERS WITHIN THE DEVELOPMENT AND THEIR INVITED GUESTS. ALL ROADS WITHIN THE PLANNED UNIT DEVELOPMENT SHALL REMAIN PRIVATE ROADS AND RESPONSIBILITY FOR THE MAINTENANCE OF THE ROADS REST SOLELY UPON THE LOT OWNERS WITHIN THE PLANNED UNIT DEVELOPMENT IN ACCORDANCE WITH THE COVENANTS AND RESTRICTIONS RECORDED IN CONJUNCTION WITH THE RECORDING OF THIS PLAT. ALSO THE RIGHT OF INGRE5S AND EGRESS IS HEREBY GRANTED OVER, UPON AND THROUGH THE PRIVATE ROAD AND EMERGENCY ACCESS EASEMENT AT ALL TIMES FOR EMERGENCY VEHICLES OF ANY AND ALL TYPES AND FOR THE VILLAGE OF LONG GROVE MUNICIPAL STAFF AND THE LAKE COUNTY PUBLIC WORKS DEPARTMENT STAFF FOR ANY PURPOSE WHATSOEVER.

CONSERVANCY DISTRICT EASEMENT PROVISIONS

THE FOLLOWING PROHIBITIONS WILL PERTAIN TO ALL CONSERVANCY DISTRICT EASEMENT AREAS DEPICTED ON THE FACE OF THIS PLAT, EXCEPT AS MAY BE OTHERWISE INCIDENTAL TO INITIAL DEVELOPMENT WORK AUTHORIZED BY THE VILLAGE:
PROHIBITED USES:

(A) NO MAN–MADE STRUCTURE OF ANY KIND SHALL BE CONSTRUCTED IN THE FLOOD PLAIN.

(B) THE FLOOD PLAIN SHALL NOT BE FILLED NOR SHALL THE GRADE BE ALTERED IN ANY RESPECT.

(C) NO MATERIALS SHALL BE UTILIZED OR STORED WHICH SHALL HAVE THE POTENTIAL FOR POLLUTING EITHER SURFACE OR GROUND WATER.

(D) THERE SHALL BE NO FLOODWAY ALTERATION.

(E) THERE SHALL BE NO DISTURBING OF NATURAL VEGETATION.

DRAINAGE AND DETENTION EASEMENT PROVISIONS – OUTLOTS D, F AND G

THE STORMWATER MANAGEMENT SYSTEM IN THE FINAL ENGINEERING FOR THIS SUBDIVISION, INCLUDING STORM SEWER PIPES, RETAINING WALLS, IF ANY, SWALES, SLOPES, OR STRUCTURES WITHIN THE PROPERTY DESIGNED AS PART OF THE COMMON DRAINAGE SYSTEM FOR THE PROJECTS APPROVED OR TO BE APPROVED ON THE SUBDIVISION PROPERTY SHALL BE PERPETUALLY MAINTAINED IN THE DESIGNED FUNCTIONAL CONDITION BY THE PHILIP ESTATES ASSOCIATION IN A SAFE, SANITARY, FUNCTIONAL AND SIGHTLY MANNER. THE VILLAGE, ITS ENGINEERS, AGENTS AND CONTRACTORS SHALL HAVE THE RIGHT, BUT NOT THE OBLIGATION, TO ENTER UPON THE SUBDIVISION PROPERTY TO INSPECT, MAINTAIN, REPAIR, OR RECONSTRUCT THE STORMWATER FACILITIES, WITHOUT ANY OBLIGATION TO RESTORE THE PROPERTY TO ITS ORIGINAL CONDITION, AFTER (30) DAYS' NOTICE TO THE PHILIP ESTATES ASSOCIATION OF ANY SUCH PROPOSED ACTION OF THEIR FAILURE TO FULFILL THEIR MAINTENANCE OBLIGATION UNDER THIS COVENANT. NOTICE TO THE PHILIP ESTATES ASSOCIATION AS OF THE DATE OF THE NOTICE SHALL BE CONCLUSIVELY PRESUMED TO BE SUFFICIENT NOTICE TO THE PHILIP ESTATES ASSOCIATION. PHILIP ESTATES ASSOCIATION SHALL BE LIABLE FOR ALL REASONABLE COSTS INCURRED BY THE VILLAGE FOR ANY MAINTENANCE, REPAIR OR RECONSTRUCTION OF ANY PORTION OF THE STORMWATER MANAGEMENT. THE VILLAGE SHALL INVOICE ITS COSTS WITH PAYMENT DUE IN THIRTY (30) DAYS OF THE DATE OF INVOICE. IF PAYMENT IS NOT RECEIVED WITHIN THIRTY (30) DAYS OF THE DATE OF INVOICE, THE BALANCE DUE SHALL BEAR INTEREST AT THE RATE OF EIGHT PERCENT (8%) PER ANNUM, COMPOUNDED ANNUALLY. ANY TIME PRIOR TO RECEIPT OF PAYMENT IN FULL OF THE AMOUNT(S) SO DUE, THE VILLAGE MAY FILE WITH THE OFFICE OF LAKE COUNTY RECORDER OF DEEDS A NOTICE OF LIEN AGAINST ANY OF THE SUBDIVISION LOTS OR INTEREST THEREIN FOR THE AMOUNT SO DUE FROM TIME TO TIME, IN ADDITION TO THE FILING OF A LIEN, THE VILLAGE MAY UTILIZE ANY LAWFUL REMEDY TO COLLECT THE AMOUNTS DUE, SAID REMEDIES BEING CUMULATIVE AND NOT EXCLUSIVE. ANYTHING IN THIS PLAT TO THE CONTRARY NOTWITHSTANDING, THE PROVISIONS OF THIS COVENANT MAY NOT BE ALTERED, AMENDED OR OTHERWISE ABROGATED WITHOUT THE WRITTEN CONSENT OF THE CORPORATE AUTHORITY OF THE VILLAGE OF LONG GROVE, ILLINOIS AND DULY RECORDED WITH REFERENCE TO THIS PLAT.

PUBLIC UTILITY EASEMENT PROVISIONS

A NON–EXCLUSIVE EASEMENT FOR SERVING THE SUBDIVISION AND OTHER PROPERTY WITH ELECTRIC, COMMUNICATIONS, SEWER, WATER, GAS AND DRAINAGE SERVICE IS HEREBY RESERVED TO THE VILLAGE OF LONG GROVE, OTHER GOVERNMENTAL AUTHORITIES HAVING JURISDICTION OVER THE LAND SUBDIVIDED HEREON, AND THOSE PUBLIC UTILITY AND CATV COMPANIES OPERATING UNDER FRANCHISE FROM THE VILLAGE OF LONG GROVE OR PURSUANT TO SOME OTHER LAWFUL AUTHORITY, INCLUDING BUT NOT LIMITED TO COMMONWEALTH EDISON COMPANY, AT&T, NICOR AND COMCAST, THEIR RESPECTIVE SUCCESSORS AND ASSIGNS, JOINTLY AND SEVERALLY, TO INSTALL, OPERATE, MAINTAIN, REPLACE AND REMOVE, FROM TIME TO TIME, FACILITIES USED IN CONNECTION WITH UNDERGROUND TRANSMISSION AND DISTRIBUTION OF ELECTRICITY, SOUNDS AND SIGNALS, GAS MAINS OF ANY SUCH FACILITIES, IN, UNDER, ACROSS, ALONG AND UPON THE SURFACE OF THE PROPERTY SHOWN WITHIN THE DASHED OR DOTTED LINES ON THE PLAT AND MARKED "PUBLIC UTILITY EASEMENT". THE GRADE OF THE SUBDIVIDED PROPERTY SHALL NOT BE ALTERED IN A MANNER SO AS TO INTERFERE WITH THE PROPER OPERATION AND MAINTENANCE THEREOF.

SCENIC CORRIDOR EASEMENT PROVISIONS

A SCENIC CORRIDOR EASEMENT IN FAVOR OF THE VILLAGE IS HEREBY GRANTED OVER THOSE PARTS DESIGNATED AS "SCENIC CORRIDOR EASEMENT" SHOWN HEREON WHICH SHALL BE SUBJECT TO THE FOLLOWING CONDITIONS:

A) ALL SIGNIFICANT NATURAL VEGETATION SHALL BE PRESERVED AND MAINTAINED, AND SHALL NOT BE MOWED, CULTIVATED, SPRAYED OR IN ANY WAY DISTURBED, EXCEPT AS OTHERWISE PROVIDED IN THE APPROVED PLANS AND SPECIFICATIONS FOR THE PLANNED UNIT DEVELOPMENT.

B) NON NATIVE VEGETATION MAY BE EXISED, CONTROLLED, OR DESTROYED, IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS FOR THIS P.U.D. OR WITH THE PRIOR WRITTEN APPROVAL OF THE CSC.

C) EXISTING WOODLANDS AND HEDGEROWS WITHIN THE SCENIC CORRIDOR SHALL NOT BE DESTROYED, EXCEPT AS OTHERWISE PROVIDED IN THE APPROVED PLANS AND SPECIFICATIONS FOR THE PLANNED UNIT DEVELOPMENT.

D) BERMS MAY BE CONSTRUCTED IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS FOR THE P.U.D. NON NATIVE FLOWERING PLANTS AND EVERGREEN TREES MAY BE UTILIZED IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS FOR THE P.U.D. IT IS THE INTENT THAT THE VEGETATION, WHETHER IT BE NATIVE OR OTHERWISE, SHALL CONSTITUTE A SUITABLE SCREEN BETWEEN THE DEVELOPMENT'S LOTS AND THE ADJACENT ROAD RIGHT–OF–WAY TO ENSURE THAT VISUAL EVIDENCE OF HUMAN OCCUPANCY IS MINIMAL.

VILLAGE OF LONG GROVE EASEMENT VACATION, ABROGATION AND RELEASE CERTIFICATE

STATE OF ILLINOIS)
)SS
COUNTY OF LAKE)

VACATION, ABROGATION AND RELEASE OF ALL EASEMENTS AND BUILDING SETBACK LINES CREATED BY CANTERBURY PARK PUD RECORDED DECEMBER 22, 2009 AS DOCUMENT 6553804 SHOWN HEREON APPROVED AND ACCEPTED THIS _____ DAY OF _____________, 2023

VILLAGE OF LONG GROVE

BY: ________________________________

ITS: ________________________________

COMMONWEALTH EDISON COMPANY EASEMENT VACATION, ABROGATION AND RELEASE CERTIFICATE

STATE OF ILLINOIS)
)SS
COUNTY OF _______)

VACATION, ABROGATION AND RELEASE OF ALL PUBLIC UTILITY EASEMENTS CREATED BY CANTERBURY PARK PUD RECORDED DECEMBER 22, 2009 AS DOCUMENT 6553804 SHOWN HEREON APPROVED AND ACCEPTED THIS ______ DAY OF ___________________, 2023

COMMONWEALTH EDISON COMPANY

BY: ________________________________

ITS: ________________________________

SBC ILLINOIS A.K.A. ILLINOIS BELL TELEPHONE COMPANY DBA AT&T ILLINOIS EASEMENT VACATION, ABROGATION AND RELEASE CERTIFICATE

STATE OF ILLINOIS)
)SS
COUNTY OF _______)

VACATION, ABROGATION AND RELEASE OF ALL PUBLIC UTILITY EASEMENTS CREATED BY CANTERBURY PARK PUD RECORDED DECEMBER 22, 2009 AS DOCUMENT 6553804 SHOWN HEREON APPROVED AND ACCEPTED THIS ______ DAY OF ___________________, 2023

SBC ILLINOIS A.K.A. ILLINOIS BELL TELEPHONE COMPANY DBA AT&T ILLINOIS

BY: ________________________________

ITS: ________________________________

AMERITECH EASEMENT VACATION, ABROGATION AND RELEASE CERTIFICATE

STATE OF ILLINOIS)
)SS
COUNTY OF _______)

VACATION, ABROGATION AND RELEASE OF ALL PUBLIC UTILITY EASEMENTS CREATED BY CANTERBURY PARK PUD RECORDED DECEMBER 22, 2009 AS DOCUMENT 6553804 SHOWN HEREON APPROVED AND ACCEPTED THIS ______ DAY OF ___________________, 2023

AMERITECH

BY: ________________________________

ITS: ________________________________

NORTHERN ILLINOIS GAS COMPANY EASEMENT VACATION, ABROGATION AND RELEASE CERTIFICATE

STATE OF ILLINOIS)
)SS
COUNTY OF _______)

VACATION, ABROGATION AND RELEASE OF ALL PUBLIC UTILITY EASEMENTS CREATED BY CANTERBURY PARK PUD RECORDED DECEMBER 22, 2009 AS DOCUMENT 6553804 SHOWN HEREON APPROVED AND ACCEPTED THIS ______ DAY OF ___________________, 2023

NORTHERN ILLINOIS GAS COMPANY

BY: ________________________________

ITS: ________________________________

JONES INTERCABLE EASEMENT VACATION, ABROGATION AND RELEASE CERTIFICATE

STATE OF ILLINOIS)
)SS
COUNTY OF _______)

VACATION, ABROGATION AND RELEASE OF ALL PUBLIC UTILITY EASEMENTS CREATED BY CANTERBURY PARK PUD RECORDED DECEMBER 22, 2009 AS DOCUMENT 6553804 SHOWN HEREON APPROVED AND ACCEPTED THIS ______ DAY OF ___________________, 2023

JONES INTERCABLE

BY: ________________________________

ITS: ________________________________

STATE OF ILLINOIS)
) SS:
COUNTY OF LAKE)

WETLAND AND WETLAND BUFFER RESTRICTIVE COVENANT BY PLAT

__________________________, FEE OWNER OF THE FOLLOWING DESCRIBED REAL PROPERTY LOCATED WITHIN THE VILLAGE/CITY OF ______________________, COUNTY OF LAKE, STATE OF ILLINOIS, SUCH PROPERTY BEING THE REAL PROPERTY NOW DULY PLATTED AS ___________________________, AS SUCH PLAT IS NOW RECORDED AS DOCUMENT NO. _______________________________, IN THE OFFICE OF THE RECORDER OF DEEDS OF THE COUNTY OF LAKE, STATE OF ILLINOIS, HEREBY MAKES THE FOLLOWING DECLARATIONS AS TO LIMITATIONS, RESTRICTIONS AND USES TO WHICH THOSE AREAS DESIGNATED AS "WETLAND" AND "WETLAND BUFFER" IN SAID PARCEL/SUBDIVISION MAY BE PUT, AND SPECIFIES THAT SUCH DECLARATIONS SHALL CONSTITUTE COVENANTS TO RUN WITH ALL THE LAND, AS PROVIDED BY LAW, AND SHALL BE BINDING ON ALL PARTIES AND THEIR SUCCESSORS, AND ALL PERSONS CLAIMING UNDER THEM, AND FOR THE BENEFIT OF AND LIMITATIONS ON ALL FUTURE OWNERS IN SUCH PARCEL/SUBDIVISION AND THE SURROUNDING AND DOWNSTREAM AND UPSTREAM AREAS, THIS DECLARATION BEING IN COMPLIANCE WITH APPLICABLE STORMWATER AND DRAINAGE RULES, REGULATIONS, AND ORDINANCES AS SPECIFIED HEREIN:

1. PURPOSE. THE PURPOSE OF THIS RESTRICTIVE COVENANT IS TO PERPETUALLY PRESERVE THE WETLAND(S) AND ASSOCIATED BUFFER(S) IN THEIR NATURAL CONDITION. SPECIFICALLY, THIS COVENANT WILL SERVE TO PROTECT THE WETLAND AND BUFFER AREAS IDENTIFIED IN THE PERMIT DOCUMENTS **[REFERENCE LAKE COUNTY WATERSHED DEVELOPMENT PERMIT # AND/OR U.S. ARMY CORPS OF ENGINEERS PERMIT #]**.

2. PROHIBITED ACTIONS. ANY ACTIVITY ON, OR USE OF, THE WETLAND AND BUFFER THAT IS INCONSISTENT WITH THE PURPOSE OF THIS COVENANT IS EXPRESSLY PROHIBITED. BY WAY OF EXAMPLE, BUT NOT BY WAY OF LIMITATION, THE FOLLOWING ACTIVITIES AND USES ARE EXPLICITLY PROHIBITED:

   I. DIVISION. ANY DIVISION OR SUBDIVISION OF THE WETLAND AND BUFFER AREAS IS PROHIBITED.

   II. COMMERCIAL ACTIVITIES. ANY COMMERCIAL ACTIVITY ON THE WETLAND AND BUFFER AREAS, EXCEPT FOR PASSIVE RECREATIONAL ACTIVITY, IS PROHIBITED.

   III. INDUSTRIAL ACTIVITIES. ANY INDUSTRIAL ACTIVITY ON THE WETLAND AND BUFFER AREAS IS PROHIBITED.

   IV. CONSTRUCTION. THE PLACEMENT OR CONSTRUCTION OF ANY HUMAN–MADE STRUCTURE OR FEATURE ON THE WETLAND AND BUFFER AREAS INCLUDING, BUT NOT LIMITED TO, BUILDINGS, FENCES, ROADS, AND PARKING LOTS IS PROHIBITED.

   V. VEGETATION. ANY CUTTING, MOWING, PLOWING, OR REMOVAL OF TREES OR OTHER VEGETATION IN THE WETLAND AND BUFFER AREAS IS PROHIBITED, EXCEPT FOR THE CUTTING OR REMOVAL OF TREES WHICH POSE A THREAT TO HUMAN LIFE OR PROPERTY. REMOVAL OF NON–NATIVE VEGETATION FROM THE WETLAND AND BUFFER AREAS IS PERMITTED, IF CONDUCTED IN ACCORDANCE WITH AN APPROVED MAINTENANCE PLAN.

   VI. LAND SURFACE ALTERATION. ANY ALTERATION OF THE LAND SURFACE IN THE WETLAND AND BUFFER AREAS IS PROHIBITED, INCLUDING, BUT NOT LIMITED TO, THE PLACEMENT OF DREDGED OR FILL MATERIAL, EXCAVATION, AND GRADING. IN ADDITION, MINING OF ANY SUBSTANCE THAT MUST BE QUARRIED OR REMOVED BY METHODS THAT WILL CONSUME OR DEPLETE THE SURFACE ESTATE, INCLUDING, BUT NOT LIMITED TO, THE REMOVAL OF TOPSOIL, SAND, GRAVEL, ROCK, AND PEAT, AND EXPLORING FOR, DEVELOPING, AND EXTRACTING OIL, GAS, HYDROCARBONS, OR PETROLEUM PRODUCTS ARE ALL PROHIBITED ACTIVITIES IN THE WETLAND AND BUFFER AREAS.

   VII. UTILITIES. UNLESS INCLUDED AS PART OF THE PERMITTED PLANS, NO UNDERGROUND OR OVERHEAD UTILITY LINES SHALL BE ALLOWED IN THE WETLAND AND BUFFER AREAS, INCLUDING, BUT NOT LIMITED TO SEWER, WATER, ELECTRICAL, GAS, TELEPHONE, AND CABLE TELEVISION. EXISTING LINES MAY REMAIN, BUT ANY PROPOSED MAINTENANCE WORK REQUIRING INTRUSION INTO WETLAND AND BUFFER AREAS SHALL REQUIRE PRIOR WRITTEN AUTHORIZATION FROM THE LAKE COUNTY STORMWATER MANAGEMENT COMMISSION ("SMC"), EXCEPT FOR EMERGENCY REPAIR OF UTILITY LINES THAT POSE A THREAT TO HUMAN HEALTH AND SAFETY.

   VIII. DUMPING. WASTE, DEBRIS, AND UNSIGHTLY OR OFFENSIVE MATERIAL IS NOT ALLOWED AND MAY NOT BE ACCUMULATED ON THE WETLAND AND BUFFER AREAS.

   IX. WATER COURSES. NATURAL WATER COURSES, LAKES, WETLANDS, OR OTHER BODIES OF WATER MAY NOT BE ALTERED.

   X. OFF–ROAD RECREATIONAL VEHICLES. MOTORIZED OFF–ROAD VEHICLES INCLUDING, BUT NOT LIMITED TO, SNOWMOBILES, DUNE BUGGIES, ALL–TERRAIN VEHICLES, AND MOTORCYCLES MAY NOT BE OPERATED ON THE WETLAND AND BUFFER AREAS, EXCEPT ON DESIGNATED TRAILS SHOWN ON THE PERMITTED PLANS.

   XI. SIGNS AND BILLBOARDS. BILLBOARDS ARE PROHIBITED. SIGNS ARE PROHIBITED, EXCEPT THE FOLLOWING SIGNS MAY BE DISPLAYED TO SPECIFICALLY STATE: 1) THE NAME AND ADDRESS OF THE PROPERTY OR THE OWNER'S NAME;.2) THE AREA IS A PROTECTED WETLAND/CONSERVATION AREA; 3) PROHIBITION OF ANY UNAUTHORIZED ENTRY OR USE; OR 4) AN ADVERTISEMENT FOR THE SALE OR RENT OF THE PROPERTY.

3. TERM. THIS COVENANT IS TO RUN WITH THE LAND AND SHALL BE BINDING ON ALL PARTIES AND THEIR SUCCESSORS AND ALL PERSONS CLAIMING UNDER THEM, AND ALL PUBLIC AGENCIES, FOR PERPETUITY FROM THE DATE THESE COVENANTS ARE RECORDED.

4. ENFORCEMENT. ENFORCEMENT SHALL BE BY PROCEEDINGS AT LAW OR IN EQUITY AGAINST ANY PERSON VIOLATING OR THREATENING TO VIOLATE ANY COVENANT EITHER TO RESTRAIN VIOLATION OR TO RECOVER DAMAGES. ENFORCEMENT MAY BE UNDERTAKEN BY ANY GRANTOR OR GRANTEE IN THE CHAIN OF TITLE, ANY PROPERTY OWNER IN THE SUBDIVISION, ANY PROPERTY OWNER LYING DOWNSTREAM OR UPSTREAM ADVERSELY EFFECTED BY ANY VIOLATION OR THREAT TO VIOLATE THIS COVENANT, THE HOST MUNICIPALITY, THE SMC, OR THE U.S. ARMY CORPS OF ENGINEERS ("USACE").

5. REFERENCE. THIS RESTRICTIVE COVENANT SHALL BE REFERENCED ON THE DEED OR OTHER INSTRUMENTS OF CONVEYANCE FOR SAID PROPERTY.

IN WITNESS WHEREOF ______________________________________, THE FEE OWNER, HAS CAUSED THESE PRESENTS TO BE SIGNED AND ACKNOWLEDGED, THIS ______ DAY OF _______________, 2023.

____

BY: ____________________________________

TAX PARCEL PERMANENT INDEX NUMBERS:

14–26–201–010
14–26–201–011
14–26–201–012
14–26–201–013
14–26–201–014
14–26–201–015
14–26–201–016
14–26–201–017
14–26–201–018
14–26–201–019
14–26–201–020
14–26–201–021
14–26–201–022
14–26–201–023
14–26–201–024
14–26–201–025
14–26–201–026
14–26–201–027
14–26–201–028
14–26–201–029
14–26–201–030
14–26–201–031
14–26–201–032

PLAT SUBMITTED BY AND SEND TAX BILLS TO:

PHILIP ESTATES, LLC
8150 W. 159TH STREET
ORLAND PARK, IL 60462

PROFESSIONAL AUTHORIZATION:

STATE OF ILLINOIS)
) SS
COUNTY OF DUPAGE)

I, **THOMAS A. MOLLOY**, A PROFESSIONAL LAND SURVEYOR OF THE STATE OF ILLINOIS, LICENSE NUMBER 35–3409, DO HEREBY AUTHORIZE THE VILLAGE OF LONG GROVE, ITS STAFF OR AUTHORIZED AGENT, TO PLACE THIS DOCUMENT OF RECORD IN THE COUNTY RECORDERS OFFICE IN MY NAME AND IN COMPLIANCE WITH ILLINOIS STATUTES CHAPTER 109 PARAGRAPH 2, AS AMENDED.

SIGNED AT BENSENVILLE, ILLINOIS THIS 16TH DAY OF MARCH , A.D. 2023.

EDWARD J. MOLLOY AND ASSOCIATES, A DIVISION OF THOMAS A. MOLLOY, LTD.
AN ILLINOIS PROFESSIONAL DESIGN FIRM – LICENSE NO. 184–004840

____
THOMAS A. MOLLOY
ILLINOIS PROFESSIONAL LAND SURVEYOR NO. 35–3409
(EXPIRES NOVEMBER 30, 2024 AND IS RENEWABLE)

LAND SURVEYOR'S CERTIFICATE:

STATE OF ILLINOIS)
) SS
COUNTY OF DUPAGE)

I, **THOMAS A. MOLLOY**, AN ILLINOIS PROFESSIONAL LAND SURVEYOR, HEREBY CERTIFY THAT I HAVE SURVEYED AND RESUBDIVIDED THE FOLLOWING DESCRIBED PROPERTY TO–WIT:

LOTS 1 TO 12, INCLUSIVE, AND LOTS "A", "B", "C", "D", "E", "F", "G", "H", "I", "J" AND "K" IN CANTERBURY PARK PUD, BEING PART OF THE NORTHEAST QUARTER OF SECTION 26, TOWNSHIP 43 NORTH, RANGE 10, EAST OF THE THIRD PRINCIPAL MERIDIAN, ACCORDING TO THE PLAT OF SAID CANTERBURY PARK PUD RECORDED DECEMBER 22, 2009 AS DOCUMENT 6553804, IN LAKE COUNTY, ILLINOIS.

AND THAT THE PLAT HEREON DRAWIN IS A REPRESENTATION OF SAID SURVEY AND RESUBDIVISION. DIMENSIONS ARE SHOWN IN FEET AND DECIMAL PARTS THEREOF.

I FURTHER CERTIFY THAT AN EXAMINATION OF THE FEDERAL EMERGENCY MANAGEMENT AGENCY (F.E.M.A.) FLOOD INSURANCE RATE MAP COMMUNITY–PANEL NO. 17097C0242K WITH A MAP REVISED DATE OF SEPT. 18, 2013, SHOWS THAT THE PROPERTY SUBDVIDED HEREON FALLS WITHIN THE FOLLOWING FLOOD ZONES:
– ZONE "AE" DEFINED AS SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD. BASE FLOOD ELEVATION DETERMINED
– SHADED ZONE "X" DEFINED AS AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD.
– ZONE "X" DEFINED AS AREAS DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN.

I FURTHER CERTIFY THAT THE LAND SURVEYED HEREIN IS WITHIN THE CORPORATE LIMITS OF THE VILLAGE OF LONG GROVE, ILLINOIS, WHICH HAS ADOPTED A CITY PLAN AND IS EXERCISING THE SPECIAL POWERS AUTHORIZED BY DIVISION 12 OF ARTICLE 11 OF THE MUNICIPAL CODE, AS NOW OR HEREAFTER AMENDED.

I FURTHER CERTIFY THAT THE IRON PIPE/ROD SURVEY STAKES NOTED ON THE ANNEXED PLAT HAVE BEEN ESTABLISHED ON THE SITE OR, WILL BE SET UPON COMPLETION OF CONSTRUCTION OR WITHIN 12 MONTHS AFTER RECORDING DATE OF THIS SUBDIVISION.

I FURTHER CERTIFY THAT PART OF THE PROPERTY COVERED BY THIS PLAT OF RESUBDIVISION IS NOT SITUATED WITHIN 500 FEET OF A SURFACE DRAIN OR WATER COURSE SERVING A TRIBUTARY AREA OF 640 ACRES OR MORE.

SIGNED AT BENSENVILLE, ILLINOIS THIS 16TH DAY OF MARCH , A.D. 2023.

EDWARD J. MOLLOY AND ASSOCIATES, A DIVISION OF THOMAS A. MOLLOY, LTD.
AN ILLINOIS PROFESSIONAL DESIGN FIRM – LICENSE NO. 184–004840

____
THOMAS A. MOLLOY
ILLINOIS PROFESSIONAL LAND SURVEYOR NO. 35–3409
(EXPIRES NOVEMBER 30, 2024 AND IS RENEWABLE)

THOMAS A. MOLLOY
35–3409
PROFESSIONAL LAND SURVEYOR
STATE OF ILLINOIS
BENSENVILLE, ILLINOIS

VALID ONLY WITH EMBOSSED SEAL

REVISION DATE	ORDER NO.	REVISION
MAR. 29, 2023	220036	COMMENTS REC. 3/29/2023
MAR. 16, 2023	220036	FINAL SUBDIVISION PLAT
JULY 11, 2022	220036	REVISED LOT CONFIGURATION (PLANS REC. 6/23/22)
APR. 8, 2022	220036	REVISED LOT CONFIGURATION (PLANS REC. 3/30/22)
FEB. 9, 2021	210025	REVISED LOT CONFIGURATION
MAR. 10, 2020	190173A	COMMENTS REC. 3/4/2020 & 3/5/2020
JAN. 30, 2020	190173A	REVISED LOT CONFIGURATION
AUG. 28, 2019	190173	PRELIMINARY PLAT

DRAFTED BY: BJE
PAGE: 3 OF 3
ORDER NO.: 190173
FILE: 23–43–10
PROJECT NO.: 2593

PREPARED BY:
EDWARD J. MOLLOY & ASSOCIATES
A DIVISION OF THOMAS A. MOLLOY, LTD. – PROFESSIONAL LAND SURVEYING
1236 MARK STREET, BENSENVILLE, ILLINOIS 60106 (630) 595–2600 FAX:(630) 595–4700
E–MAIL: TMOLLOY@EJMOLLOY.COM

CROSS ENGINEERING & ASSOCIATES, INC.

PHILIP ESTATES SUBDIVISION

Long Grove, IL

FINAL STORMWATER MANAGEMENT SUMMARY

Prepared for:

Philip Estates, LLC
8150 W. 159th Street
Orland Park, IL 60462

Prepared by:

Stephen J. Cross, P.E.
Cross Engineering & Associates, Inc.
1955 Raymond Drive, Suite 119
Northbrook, IL 60062

License: 062-049984
Dated Prepared: February 2023

INDEX

PROJECT NARRATIVE

EXHIBITS

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PROJECT NARRATIVE

1. INTRODUCTION

Canterbury Park Subdivision was previously approved in approximately 2007 for 12 residential lots. The final engineering plans and final stormwater management report were prepared by Atwell-Hicks, and the Plat of Subdivision was recorded on December 22, 2009. As such, an approved Stormwater Management Report was prepared by Atwell-Hicks for the 12-lot subdivision that complied with the Watershed Development Ordinance effective at that time. Due to market conditions the 12-lot subdivision was not built, and the site remains undisturbed from its undeveloped conditions. The 12-lot subdivision was based on the lots being served with a community wastewater system and individual water wells. Subsequently a plan has been developed to provide municipal sanitary sewers to serve the property. As a result of these changes, it is now proposed to re-subdivide and rename the Canterbury Park Subdivision to Philip Estates Subdivision and to provide approximately 19 residential lots. Therefore, the Stormwater Management Plan needs to be updated to reflect the 19-lot subdivision, and to incorporate any updates that have been made to the Watershed Development Ordinance since the 12-lot subdivision plans were approved.

In addition, the Stormwater modeling in the previously approved report was performed using Win-TR20. The new modeling will be performed using the EPA SWMM package that is an unsteady dynamic hydrologic and hydraulic modeling system that better describes the interaction between the drain tiles and the surface storage. It also provides a better detail of the offsite versus onsite results.

The Philip Estates development consists of approximately 34.82 acres located just east of Deerwood Drive, south of Cuba Road and north of Spring Valley Road in Long Grove, Lake County, Illinois. The property is a part of the Buffalo Creek headwaters, and no special storm water discharge restrictions are imposed on the development under the Lake County Watershed Development Ordinance (the Ordinance). The rolling topography of the region results in approximately 37.4 acres of off-site areas from the west draining through the Philip Estates Subdivision. The Village of Long Grove has adopted the Lake County Watershed Development Ordinance, and under the Ordinance, the low area on the western portion of the site retains more than 0.75 AC-FT of storage during the 100-year storm event and therefore would be classified as floodplain, with a computed 100-year High Water Level (HWL). The narrative below provides basic information on the storm water aspects of the proposed Philip Estates Subdivision.

2. EXISTING CONDITIONS

The on-site storm water runoff collects in, or flows through, three separate locations on the project site. The three areas are: (1) the area tributary to the western low area, (2) the area tributary to the east property line on the north and (3) the area tributary to the east property line on the south. The western area drains out by drain tile and surface flow to the southeastern portion of the site and out to a Buffalo Creek headwaters pond just east of the southeast corner of the property. The northeastern portion of the property drains to the east property line. Flow leaving the property at

the northeast property line migrates to the south and into the same Buffalo Creek headwaters pond to which storm water flow leaving the southeast portion of the property heads.

Off-site storm water runoff drains to all three of these areas as well. The western low area receives the bulk of off-site flow from north of Cuba Road, west of the property line and Deerwood Road and from south of Spring Valley Road. The southeastern portion receives storm water runoff from approximately 1.7 acres south of Spring Valley Road and the northeastern portion receives storm water runoff from a small upslope slice south of Cuba Road and just east of the eastern property line. See Exhibit 4, Existing Stormwater Management Plan.

3. EXISTING CONDITIONS STORM WATER COMPUTATIONS

The storm water computations for this project have been performed using the US EPA SWMM 5.1 hydrologic and hydraulic program, which allows greater understanding of the interaction of surface and subsurface flow for properties like the one under study in this narrative. The on-site and off-site areas were subdivided into sub-basins for the purpose of evaluating the impact of existing storage elements within this small watershed. For example, Deerwood Drive is a low barrier to flow west of the road surface and pockets of water develop west of Deerwood Drive during significant storm events. The same is true for the area just north of Cuba Road. The area to the southwest (and south of Spring Valley Road) is a larger low area with three outlets consisting of a low flow six-inch drain tile (Huddleston Tile Survey) and two small diameter culverts. This southwest area provides significant storage relative to the size of the off-site drainage area and has a HWL somewhat controlled by the conditions in the on-site western low area during large magnitude events.

Using the EPA SWMM program with the identified on-site and off-site drain tile, on-site and off-site drainage areas, storage and surface flow characteristics results in an on-site HWL in the on-site western low area of approximately 736.2 NAVD88 and an existing 100-year discharge (including the northeastern area) into the headwaters pond of Buffalo Creek of approximately 10.3 CFS. The rainfall has changed from the preliminary submittal to the final submittal, which now uses Bulletin 75 rainfall depths in the SWMM analysis. See Exhibit 5, Bulletin 75 Rainfall Depth and Duration Curves.

To establish appropriate bypass flows for the existing off-site drainage, runoff from the existing off-site area was routed through the existing on-site depressional storage, which resulted in 2-year peak flows of approximately 2.44 CFS and 100-year peak flows of approximately 4.02 CFS. It should be noted that larger critical duration peak bypass flows were computed but lower flows coincidental with critical duration on-site developmental peak flows were selected for use in determining allowable release rates for the development. See Exhibit 6, SWMM Critical Duration Results Summary.

4. PROPOSED CONDITIONS

The proposed conditions largely preserve the existing on-site storm water runoff characteristics. The proposed plan cuts in the roadway and provides for minimal grading to achieve the proposed lot configurations. The on-site storm water system creates storage and enhances the existing western low area with additional storage through expansion of the low area to meet the detention requirements of the proposed developmental improvements.

There are three proposed storage basins provided on the plan with a total storage amount of approximately 12.94 AC-FT of storm water storage to the calculated proposed detention HWLs (without consideration of the required depressional storage volumes which goes on top of the detention volume per discussions with LCSMC and Village of Long Grove). The basins are divided up to provide water quality benefits as well as necessary storage. The three basins include one for the expanded western low area (Basin 1), one at the eastern more centrally located outlet prior to discharge off-site into the Buffalo Creek headwaters pond (Basin 2), and one for the northeast section (Basin 3). It should be noted that the northeastern portion of the site is discharged to the east consistent with the proposed controlled storm water runoff being directed to essentially the same outlet locations as in existing conditions. See Exhibit 4, Proposed Stormwater Management Plan.

5. PROPOSED CONDITIONS STORM WATER COMPUTATIONS

The EPA SWMM proposed conditions includes the change in land use due to the development, additional storage facilities and volumes with various sizes of restricted outlets to accomplish the objective of storm water control and reduced discharges to the downstream Buffalo Creek headwaters. Using the EPA SWMM program with the identified on-site and off-site drain tile, existing and proposed storage and existing and proposed surface flow characteristics results in an on-site HWL in the on-site expanded western low area of approximately 736.06 NAVD88 when considering all the off-site flow. The associated proposed 100-year discharge into the headwaters pond of Buffalo Creek is computed to be approximately 8.69 CFS, which is less than existing condition discharge of 10.3 CFS, and less than the calculated allowable of approximately 9.24 CFS. See Exhibit 6, SWMM Critical Duration Results Summary.

In order to identify the required detention storage, the use of the on-site low area for off-site storage and the allowable release rate, three models were created for establishment of existing and proposed conditions together as follows: (1) an existing model with all the on-site and off-site tributary drainage area and storm water features as discussed under the Existing Conditions section above, (2) an existing model with all the on-site and off-site tributary drainage area and storm water features as discussed under the Existing Conditions section above with the exception that the on-site storm water runoff was excluded from the calculations to determine the on-site storage usage from off-site areas and the release from this system only due to contributions from the off-site storm water runoff and (3) a proposed model with all the on-site and off-site tributary drainage area and storm water features as discussed under the Proposed Conditions section above.

The complete “existing conditions model” (1 – 170918_CP6FF.INP/RPT) establishes the on-site HWL of 736.2 with an existing discharge of 10.3 CFS to the Buffalo Creek headwaters pond. The “off-site only existing conditions model” (2 – 202011_CP6FF_NO19024.INP/RPT) establishes the 100-year off-site only discharge of 4.02 CFS. The “proposed model” (3 – 220910_CP6FF_DEV75024.INP/RPT) shows a reduced HWL for the western on-site low area (proposed HWL of 736.06) with a proposed discharge of 8.69 CFS to the Buffalo Creek headwaters pond. The proposed 100-year allowable discharge is computed as 0.15 CFS/AC times the on-site area of 34.82 acres for an on-site allowable discharge of 5.22 CFS. This is added to the off-site only 100-year discharge of 4.02 CFS for a total

allowable discharge of 9.24 CFS (which is more than the computed proposed condition discharge to the southeast).

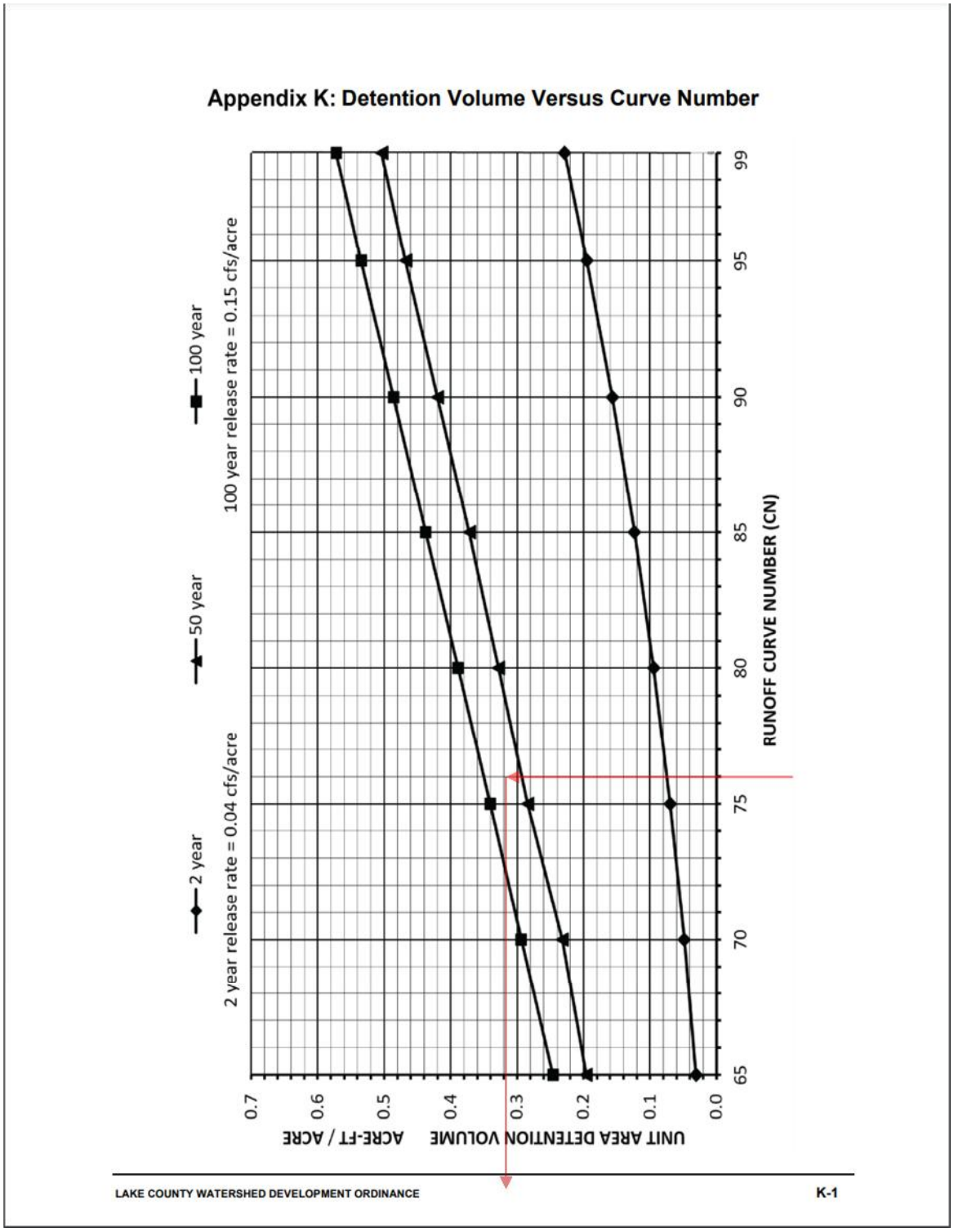


Figure 1

0.37 ac-ft / ac

The required proposed storage volume consists of adding the depressional on-site storage of 10.72 AC-FT to the Ordinance recommended developmental storage volume of 0.37 AC-FT per acre of development times 34.82 acres for an on-site detention volume of 12.88 AC-FT (see annotated chart Figure 1 above) for a total volume requirement of 23.60 AC-FT, which is less than the proposed plan volume of approximately 24.87 AC-FT. The site average developmental Runoff Curve Number (RCN) is computed below:

SWMM ID	Area (ac)	RCN	*A x RCN*	
HP_NE1	3.29	80	*263.2*	
HP_NE2	1.58	80	*126.4*	
HP_B3	0.83	74	*61.4*	
HP_CW	14.03	80	*1122.4*	
HP_B1	6.60	74.4	*491.0*	
HP_SE	4.81	80	*384.8*	
HP_B2	2.65	74	*196.1*	
HE_WSE	1.03	67.2	*69.2*	
	34.82	sum A	*2714.6*	*sum A x RCN*
		78.0	**avg RCN = sum A x RCN / sum A**	

To achieve the storm water controls proposed, the main-line western and eastern central storage basins will have restrictor controls of about 9-inch diameter equivalent for the 100-year discharge and a 6-inch diameter equivalent for the 2-year control. The northeast basin (Basin 3) will have a restrictor control of 5.4-inch diameter to minimize discharge to the south Basin 2 while minimizing restrictor maintenance problems. The discharge characteristics have been split into the 2-year and 100-year controls in this final plan development phase, with corresponding 2-year and 100- year discharges accounting to show that there are no increases above existing, off-site only flows (to determine the discharges due only to off-site contribution given the existing storage and drainage system) and, the allowable release is not exceeded, even with the significant increase in rainfall amounts due to Bulletin 75.

6. WETLAND REVIEW

A Wetland Delineation Report, dated May 20, 2017, and updated November 6, 2020, was prepared by Midwest Ecological. The report identified a single wetland totaling approximately 0.37 acres in size at the southeast corner of the property. This wetland, identified as Wetland A, is part of a larger off-site wetland complex located to the east. Wetland A is jurisdictionally connected to Buffalo Creek. The proposed plan does not include any impacts to Wetland A. A partial copy of the Wetland Delineation Report is included in this report in Appendix A.

7. REGULATORY FLOODPLAIN

The subject property is tributary to Buffalo Creek which runs to the south of the property. The 100-year Base Flood Elevation (BFE) across the southern boundary of the property is elevation 730. Based on the existing topography, the 100-year floodplain encroaches minimally into the southeast corner of the property. The proposed grading will not impact the Buffalo Creek 100-year floodplain. See Exhibit 2 for the FEMA Firmette.

8. DRAINTILE INVESTIGATION

A draintile investigation was originally completed in 2006 by Huddleston-McBride Co. The draintile investigation was subsequently updated in 2015. The 2015 updated investigation revealed some sections of the existing tiles that had become clogged and caused a blow-out. The sections of tiles were repaired using polyethylene drain tiles and a revised Draintile Investigation Record Drawing was issued and is dated October 8, 2015. See Exhibit 3 for the Draintile Investigation Plan.

9. SOILS

See Wetland Delineation Report for soil maps and information.

Exhibit 1

Aerial Photo

0 200 400 600 800

SCALE IN FEET

SOURCE IMAGE:
GOOGLEARTH 2021

Cross Engineering & Associates, Inc.
1955 Raymond Drive, Suite 119
Northbrook, IL 60062
Tel: 847/498-0800

Prepared for:

Canterbury Parc, LLC.
8150 W. 159th Street
Orland Park, IL 60462

Title: Aerial Photo		
Project: Canterbury Parc Re-subdivision		
Project #: 1291	Date: 2/1/23	Sheet #: Exhibit 1

Exhibit 2

FEMA Firmette

Cross Engineering & Associates, Inc.
1955 Raymond Drive, Suite 119
Northbrook, IL 60062
Tel: 847/498-0800

Prepared for:

Canterbury Parc, LLC.
8150 W. 159th Street
Orland Park, IL 60462

Title:	FEMA Firmette
Project:	Canterbury Parc Re-subdivision
Project #: 1291	Date: 2/1/23
Sheet #:	Exhibit 2

Exhibit 3

Draintile Investigation Plan

AGRICULTURAL EXISTING DRAIN TILE INVESTIGATION PLAN

CANTERBURY PARK

PREPARED FOR JOE RIZZA ENTERPRISES

SECTION NO. 26, ELA TWP., LAKE CO., IL.

RECORD DRAWING

EXISTING SUBSURFACE AGRICULTURAL DRAIN TILE INVESTIGATION REPORT

CANTERBURY PARK

JOE RIZZA ENTERPRISES

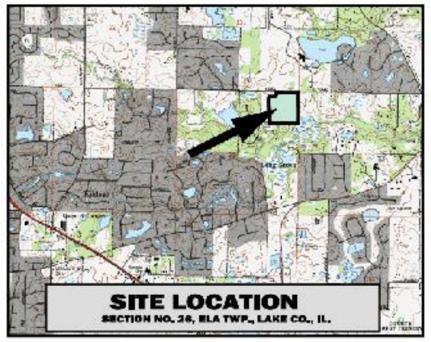
CANTERBURY PARK / JOE RIZZA ENTERPRISES , FIELD FILE NO. 10-6-26 , DATE: 9/29/2006 , IN ACCORDANCE WITH LAKE COUNTY STORM WATER COMMISSION DRAIN TILE INVESTIGATION STANDARDS

DESCRIPTION CHART NO. 1A : INVESTIGATION SLIT TRENCH LOCATIONS

ID NO.	SZ.	TYPE / QUALITY	FLOW %	SILT %	DEPTH GRD/INV	FIELD NOTES:
A	—	NO DRAIN TILE	—	—	—	NO DRAIN TILE LOCATED
B	—	NO DRAIN TILE	—	—	—	NO DRAIN TILE LOCATED
C1	4"	CLAY / FAIR	NONE	FULL	28"	SILT RESTRICTED / NO CAPACITY
D1	6"	CONC. / GOOD	SLIGHT	SLIGHT	38"	ACTIVE FLOW RATE AND CAPACITY
D2	6"	CLAY / POOR	NONE	FULL	24"	SILT RESTRICTED / NO CAPACITY
D3	8"	CONC. / GOOD	FLOODED	SLIGHT	44"	RESTRICTED FLOW AND SURCHARGE
D4	5"	CLAY / POOR	NONE	80%	28"	SILT RESTRICTED / PARTIAL CAPACITY
D5	6"	CLAY / POOR	NONE	FULL	24"	SILT RESTRICTED / NO CAPACITY
D6	6"	CONC. / POOR	SLIGHT	20%	30"	ACTIVE FLOW RATE AND CAPACITY
E1	5"	CLAY / FAIR	NONE	70%	24"	ACTIVE FLOW RATE AND CAPACITY
F		NO DRAIN TILE				NO DRAIN TILE LOCATED
G		NO DRAIN TILE				NO DRAIN TILE LOCATED
H	—	NO DRAIN TILE	—	—	—	NO DRAIN TILE LOCATED
I1	10"	CONC. / GOOD	30%	SLIGHT	62"	ACTIVE FLOW RATE AND CAPACITY
I2	5"	CLAY / POOR	NONE	40%	30"	ACTIVE FLOW RATE AND CAPACITY
I3	10"	CLAY / FAIR	10%	SLIGHT	52"	ACTIVE FLOW RATE AND CAPACITY
J	—	NO DRAIN TILE	—	—	—	NO DRAIN TILE LOCATED

DESCRIPTION CHART NO. 1B : SURVEY DATA POINT LOCATIONS

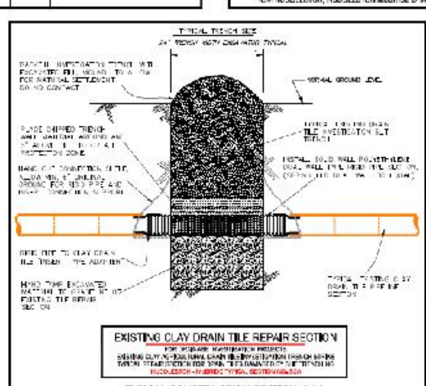
DATA POINT	SZ.	TYPE / QUALITY	FLOW %	SILT %	DEPTH HUB/INV	FIELD NOTES:
1	6"	CLAY / POOR	NONE	10%	37"	LATERAL AT PROPERTY INGRESS
2	4"	CLAY / POOR	NONE	FULL	26"	LATERAL AT PROPERTY EGRESS
3	5"	CLAY / POOR	NONE	80%	35"	MAINLINE AT PROPERTY INGRESS
4	8"	CONC. / GOOD	FLOODED	SLIGHT	50"	MAINLINE AT PROPERTY INGRESS
5	6"	CLAY / POOR	NONE	FULL	36"	LATERAL AT PROPERTY INGRESS
6	4"	CLAY / FAIR	NONE	FULL	30"	LATERAL AT PROPERTY EGRESS
7	6"	CONC. / GOOD	SLIGHT	SLIGHT	45"	LATERAL AT PROPERTY INGRESS
8	4"	CLAY / FAIR	NONE	FULL	30"	LATERAL AT PROPERTY INGRESS



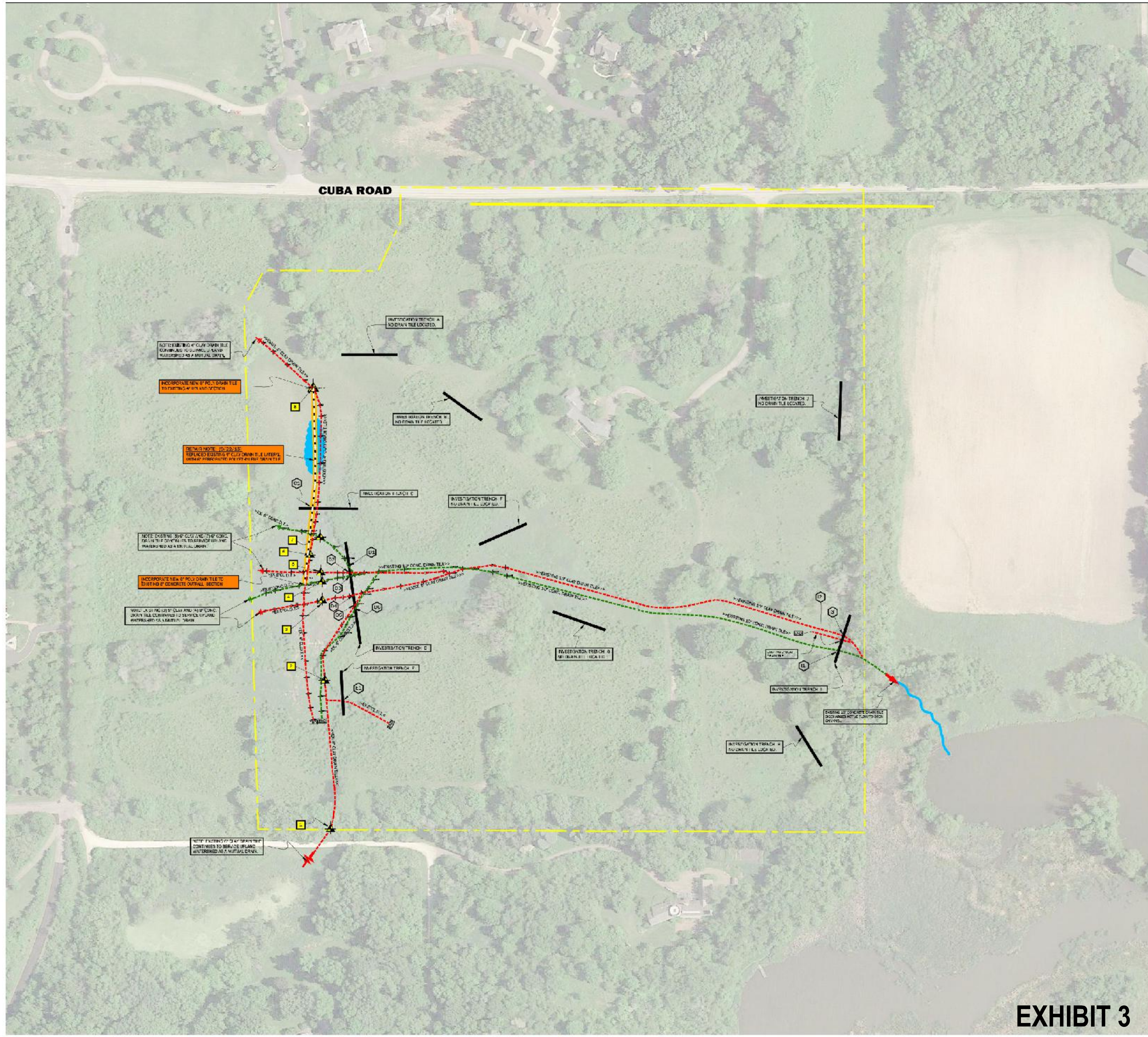
MAP LEGEND :

REPORT LEGEND :

SPECIAL NOTES :



THESE SYMBOLS REPRESENT SURVEY DATA POINTS WHICH HAVE BEEN STAKED IN THE FIELD FOR THE SPECIFIC PURPOSE OF ELECTRONIC LOCATION AND ELEVATION DETERMINATION BY THE PROJECT SURVEYOR.



PROJECT CLIENT: **JOE RIZZA ENTERPRISES** CATHY MILLER , PROJECT MANAGER 8450 WEST 159TH STREET, ORLAND PARK, IL., 60462	APPROVED BY AND DATE: TOM HUDDLESTON 9/29/2006	PROJECT DATE: 9/29/2006	REVISIONS: DATE 8/22/2015, BY TLH3, DESCRIPTION: ADD PROPOSAL AND CURRENT EVALUATION INFO.		
	ACKNOWLEDGMENTS: HUDDLESTON MCBRIDE MAPPING SYSTEM	FIELD FILE NO: 10-6-26	10/8/2015, TLH3, ADD DRAIN TILE REPLACEMENT NOTES		
	DRAWN BY AND DATE: TOM HUDDLESTON 9/29/2006	DRAWING NO: 10-6-26	WEATHER CONDITIONS: SUNNY/ WARM - 50o	DRAWING SCALE: 1" TO 100'	SHEET NO: ONE OF ONE

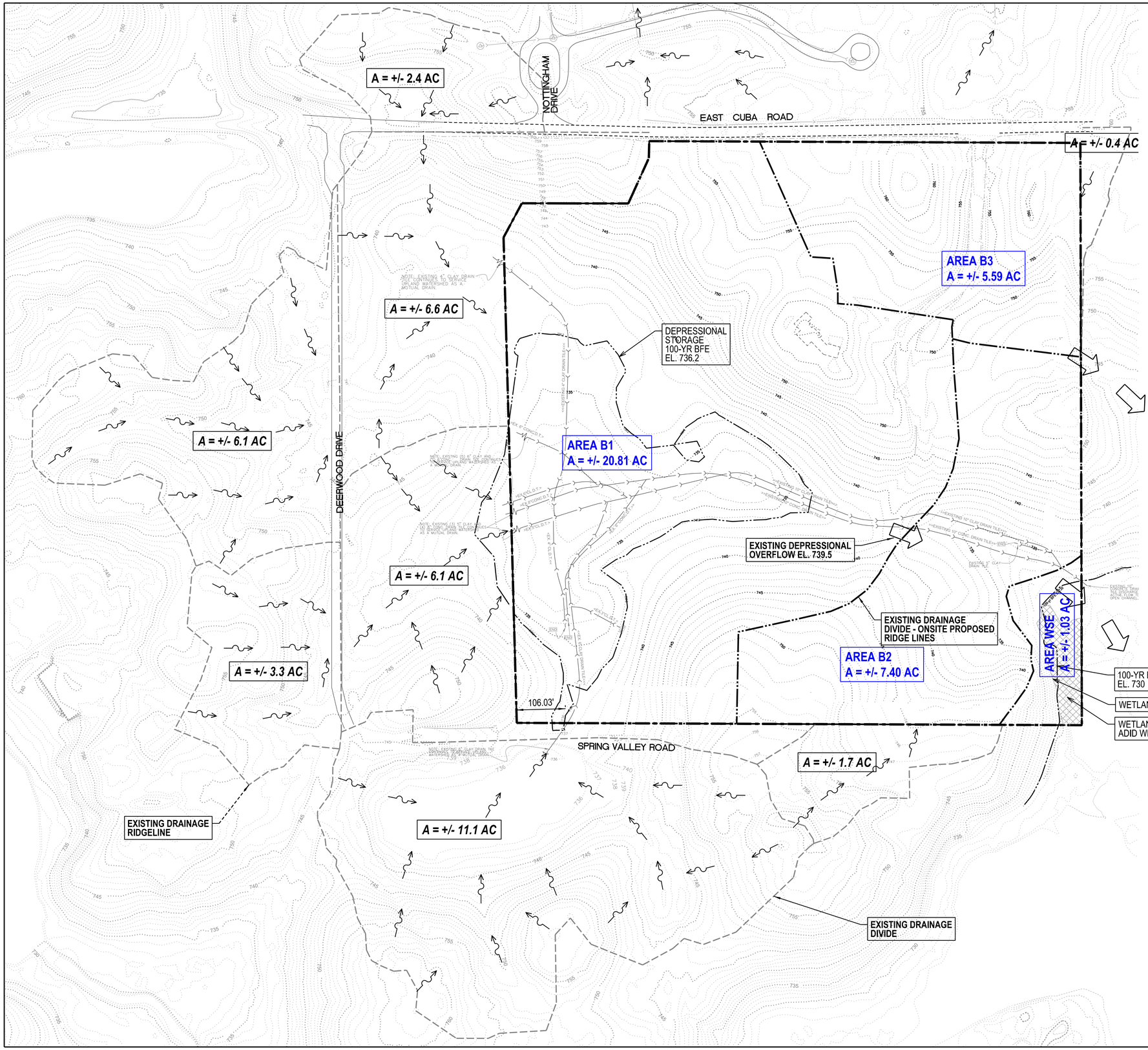
NORTH

CANTERBURY PARK

HUDDLESTON McBRIDE
PROFESSIONAL LAND DRAINAGE SERVICES

Exhibit 4

Final Stormwater Management Plans



0 100 200
SCALE IN FEET
1" = 100'

N

NOTES:

1. EXISTING DRAIN TILE SURVEY BY HUDDLESTON MCBRIDGE, FIELD FILE NO. 10-6-26, UPDATED 10/8/15.
2. TOPOGRAPHIC SURVEY BY MOLLOY & ASSOCIATES, INC, DATED 8/19/21.
3. EXISTING BASE FLOOD ELEVATION (BFE) IS TAKEN FROM THE FINAL STORMWATER MANAGEMENT SUMMARY REPORT TITLED "PHILIP ESTATES SUBDIVISION, LONG GROVE, ILLINOIS" PREPARED BY CROSS ENGINEERING & ASSOCIATES, INC. LAST REVISED FEBRUARY 2023.

Cross Engineering & Associates, Inc.
1955 Raymond Drive, Suite 119
Northbrook, IL 60062
Tel: 847/498-0800

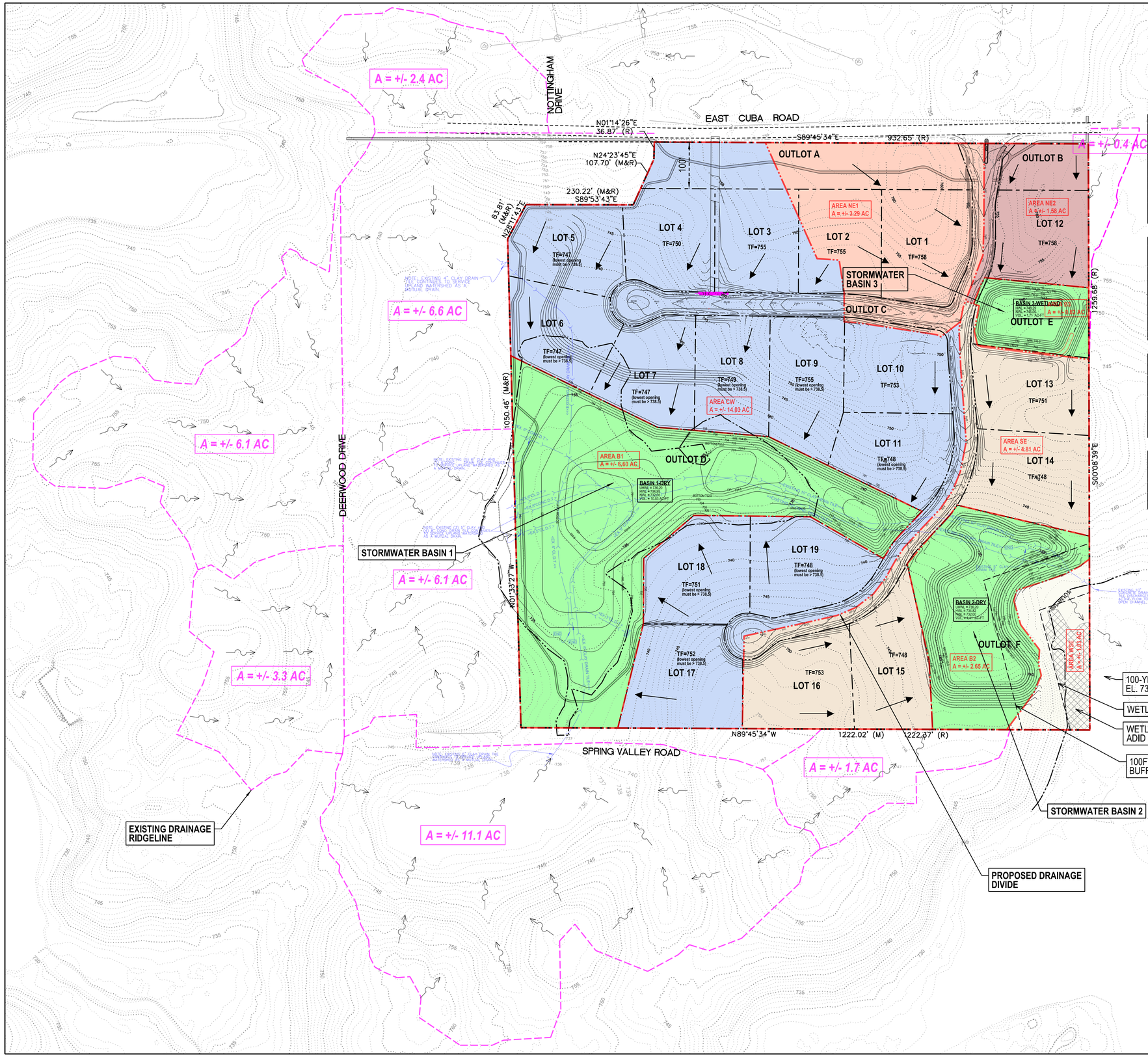
PROJECT:
PHILIP ESTATES SUBDIVISION
CUBA ROAD, LONG GROVE, IL

PREPARED FOR:
PHILIP ESTATES, LLC
8150 W. 159th Street
Orland Park, IL 60462

NO.	DATE	DESCRIPTION
1	2/1/23	Date Issued

FINAL STORMWATER MANAGEMENT PLAN - EXISTING CONDITIONS

JOB NO.	1291
Page	1 of 2



0 100 200
SCALE IN FEET
1" = 100'

N

FINAL STORMWATER STORAGE CALCULATIONS

Note: All elevations shown are based on Project Datum.

BASIN 1		AREA DATA			VOLUME CALCULATIONS		WEST
Elev.	Depth (FT)	Pond Surface Area (sf)	Pond Surface Area (ac)	Average Surface Area (ac)	Incr. Storage (ac-ft)	Cumulative Storage (ac-ft)	Notes
736.20	0.20	245,000	5.62	5.62	1.12	17.77	*Existing BFE*
736.00	1.00	244,995	5.62	5.15	5.15	16.65	*UPWL 736.06 wsoffsite*
735.00	0.70	203,992	4.68	4.40	3.08	11.50	
734.30	***0.300***	***175,439***	***4.12***	***4.01***	***1.20***	***8.41***	***HWL***
734.00	0.50	170,256	3.91	3.68	1.84	7.21	
733.50	0.50	150,000	3.44	3.23	1.61	5.37	Structure Outlet Elev.
733.00	1.00	131,180	3.01	2.51	2.51	3.76	
732.00	0.50	87,698	2.01	1.59	0.80	1.25	
731.50	0.50	51,186	1.18	0.90	0.45	0.45	
731.00	0.00	27,051	0.62	0.00	0.00	0.00	Drain tile discharge
					Total	*17.77*	*ac-ft*

BASIN 2		AREA DATA			VOLUME CALCULATIONS		EAST-CENTRAL
Elev.	Depth (FT)	Pond Surface Area (sf)	Pond Surface Area (ac)	Average Surface Area (ac)	Incr. Storage (ac-ft)	Cumulative Storage (ac-ft)	Notes
736.20	0.20	65,462	1.50	1.49	0.30	5.44	*Existing BFE*
736.00	1.00	64,152	1.47	1.40	1.40	5.14	*UPWL 735.97 wsoffsite*
735.00	0.70	57,701	1.32	1.25	0.88	3.74	
734.30	***0.30***	***53,071***	***1.22***	***1.20***	***0.36***	***2.86***	***HWL***
734.00	1.00	51,339	1.18	1.11	1.11	2.50	
733.00	1.00	45,200	1.04	0.97	0.97	1.40	
732.00	0.50	39,282	0.90	0.64	0.32	0.43	Structure Outlet Elev.
731.50	0.50	16,327	0.37	0.22	0.11	0.11	
731.00	0.00	2,424	0.06	0.00	0.00	0.00	Drain tile discharge
					Total	*5.44*	*ac-ft*

BASIN 3		AREA DATA			VOLUME CALCULATIONS		EAST-NORTH
Elev.	Depth (FT)	Pond Surface Area (sf)	Pond Surface Area (ac)	Average Surface Area (ac)	Incr. Storage (ac-ft)	Cumulative Storage (ac-ft)	Notes
749.00	***0.71***	***22,862***	***0.52***	***0.51***	***0.36***	***2.02***	
748.29	***0.29***	***21,275***	***0.49***	***0.48***	***0.14***	***1.66***	***HWL 748.29***
748.00	1.00	20,627	0.47	0.45	0.45	1.52	
747.00	1.00	18,494	0.42	0.40	0.40	1.07	
746.00	1.00	16,461	0.38	0.36	0.36	0.67	
745.00	1.00	14,528	0.33	0.31	0.31	0.31	
744.00	0	12,678	0.29	0.00	0.00	0.00	Pipe Outlet Elevation
					Total	*2.02*	*ac-ft*

STORMWATER SUMMARY FOR TOTAL STORAGE PROVIDED TO DESIGN HWL					TOTAL SITE VOLUME Basins 1 & 2 TO EX. BFE 736.2 + Basin 3	
	HWL	NWL	DEPTH (ft)	STORAGE (ac-ft)	HWL	STORAGE (ac-ft)
BASIN 1	734.30	731.00	3.30	8.41	736.20	17.77
BASIN 2	734.30	731.00	3.30	2.86	736.20	5.44
BASIN 3	748.29	744.00	4.29	1.66	748.29	1.66
TOTAL STORMWATER STORAGE TO HWL				*12.94*		*24.87*

DEPRESSIONAL STORMWATER STORAGE CALCULATIONS

Note: All elevations shown are based on Project Datum.

BASIN 1		AREA DATA			VOLUME CALCULATIONS		WEST
Elev.	Depth (FT)	Depressional Surface Area (sf)	Surface Area (ac)	Average Surface Area (ac)	Incr. Storage (ac-ft)	Cumulative Storage (ac-ft)	Notes
736.20	0.20	253,392	5.82	5.61	1.12	10.72	100-yr BFE
736.00	1.00	235,672	5.41	4.49	4.49	9.59	
735.00	1.00	155,438	3.57	2.87	2.87	5.11	
734.00	1.00	94,217	2.16	1.59	1.59	2.24	
733.00	1.00	44,407	1.02	0.65	0.65	0.65	
732.00	0.00	12,099	0.28	0.00	0.00	0.00	BOTTOM
					Total	*10.72*	*ac-ft*

NOTES:

1. STORMWATER MANAGEMENT: THE STORMWATER MANAGEMENT SYSTEM HAS BEEN DESIGNED TO COMPLY WITH THE CURRENT LAKE COUNTY WATERSHED DEVELOPMENT ORDINANCE USING A SERIES OF DETENTION BASINS.
2. THERE IS EXISTING DEPRESSIONAL STORAGE WITHIN BASIN 1 THAT WILL BE MAINTAINED WITHIN THE PROPOSED BASIN DESIGN.
3. THE ROADWAYS WILL BE PRIVATE ROADS DESIGNED WITH A RURAL CROSS-SECTION. DITCHES WILL BE PROVIDED ON BOTH SIDES OF THE ROAD TO CONVEY STORMWATER TO THE DETENTION BASINS. CULVERTS WILL BE PROVIDED UNDER ALL DRIVEWAYS AND AT ROADWAY INTERSECTIONS.

Cross Engineering & Associates, Inc.
1955 Raymond Drive, Suite 119
Northbrook, IL 60062
Tel: 847/498-0800

PROJECT:
PHILIP ESTATES SUBDIVISION
CUBA ROAD, LONG GROVE, IL

PREPARED FOR:
PHILIP ESTATES, LLC
8150 W. 159th Street
Orland Park, IL 60462

NO.	DATE	DESCRIPTION
1	2/1/23	Date Issued

FINAL STORMWATER MANAGEMENT PLAN - PROPOSED CONDITIONS

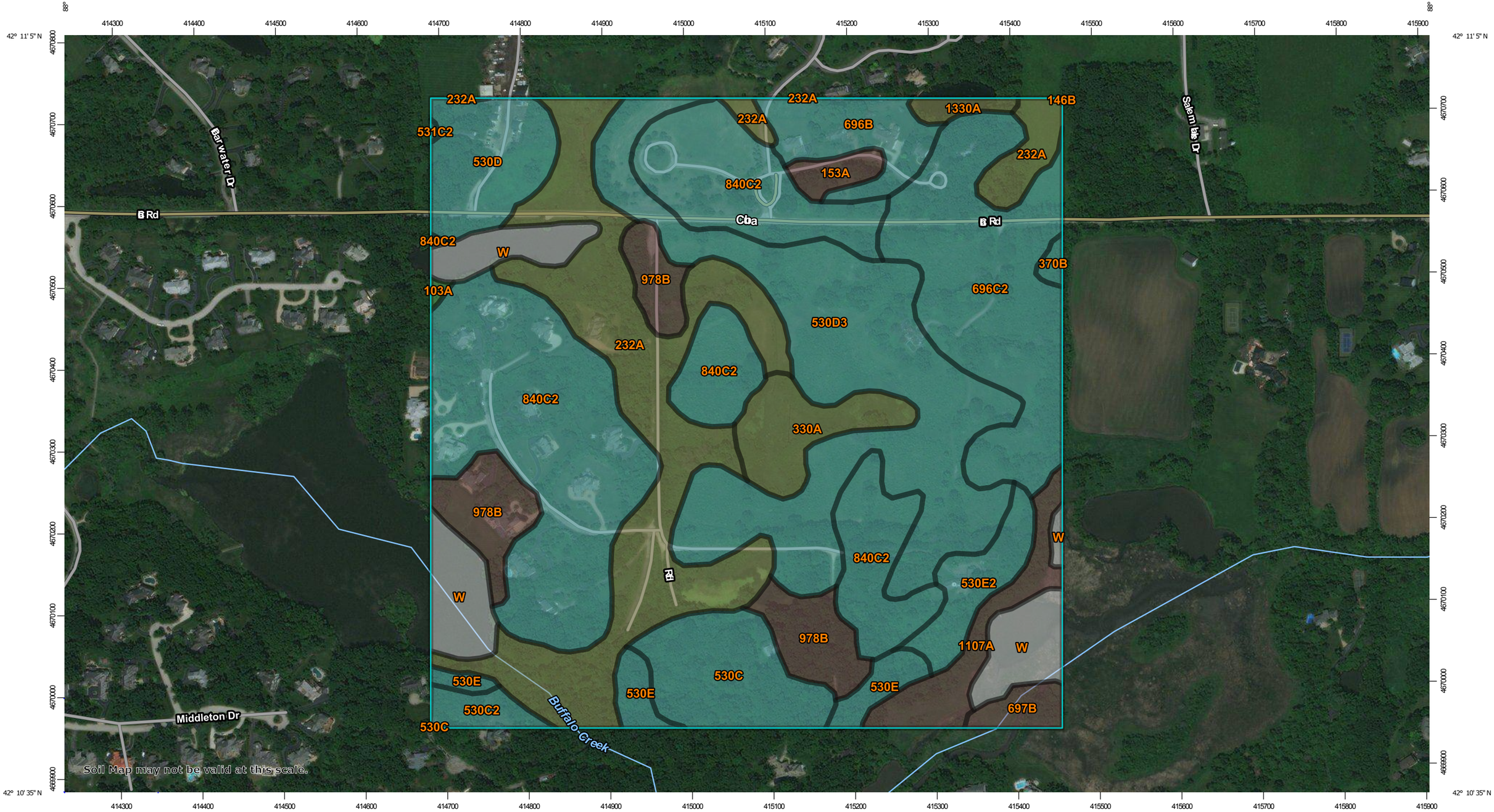
JOB NO. 1291

Page 2 of 2

Exhibit 5

Soils and Rainfall (Bulletin 75)

Hydrologic Soil Group—Lake County, Illinois
(Canterbury Park)



88° 2' 18" W 88° 1' 5" W
42° 11' 5" N 42° 10' 35" N
414300 414400 414500 414600 414700 414800 414900 415000 415100 415200 415300 415400 415500 415600 415700 415800 415900
4670800 4670700 4670600 4670500 4670400 4670300 4670200 4670100 4670000 4669900

Map Scale: 1:4,510 if printed on B landscape (17" x 11") sheet.

N

0 50 100 200 300 Meters

0 200 400 800 1200 Feet

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

Soil Map—Lake County, Illinois
(Canterbury Park)

88° 2' 18" W — 88° 1' 5" W

42° 11' 5" N — 42° 10' 35" N

414300 414400 414500 414600 414700 414800 414900 415000 415100 415200 415300 415400 415500 415600 415700 415800 415900

4670800 4670700 4670600 4670500 4670400 4670300 4670200 4670100 4670000 4669900

232A 531C2 530D 232A 232A 696B 1330A 146B 232A 153A 840C2 Clearwater Dr Salem Lake Dr Cuba Rd Cuba Cuba Rd 840C2 W 978B 103A 370B 696C2 530D3 232A 840C2 840C2 330A Albert Ln Rd 978B W W 840C2 530E2 978B 1107A W 530C 530E 530E 530E 530C2 530C 697B Buffalo Creek Middleton Dr

Soil Map may not be valid at this scale.

Map Scale: 1:4,510 if printed on B landscape (17" x 11") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Lake County, Illinois
Survey Area Data: Version 10, Sep 16, 2016

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 3, 2011—Oct 22, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Lake County, Illinois (IL097)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
103A	Houghton muck, 0 to 2 percent slopes	0.1	0.1%
146B	Elliott silt loam, 2 to 4 percent slopes	0.0	0.0%
153A	Pella silty clay loam, 0 to 2 percent slopes	1.1	0.8%
232A	Ashkum silty clay loam, 0 to 2 percent slopes	23.6	16.0%
330A	Peotone silty clay loam, 0 to 2 percent slopes	4.0	2.7%
370B	Saylesville silt loam, 2 to 4 percent slopes	0.3	0.2%
530C	Ozaukee silt loam, 4 to 6 percent slopes	6.3	4.3%
530C2	Ozaukee silt loam, 4 to 6 percent slopes, eroded	1.4	0.9%
530D	Ozaukee silt loam, 6 to 12 percent slopes	5.5	3.7%
530D3	Ozaukee silty clay loam, 6 to 12 percent slopes, severely eroded	24.5	16.6%
530E	Ozaukee silt loam, 12 to 20 percent slopes	2.8	1.9%
530E2	Ozaukee silt loam, 12 to 20 percent slopes, eroded	3.1	2.1%
531C2	Markham silt loam, 4 to 6 percent slopes, eroded	0.0	0.0%
696B	Zurich silt loam, 2 to 4 percent slopes	4.2	2.9%
696C2	Zurich silt loam, 4 to 6 percent slopes, eroded	15.3	10.4%
697B	Wauconda silt loam, 2 to 4 percent slopes	1.3	0.9%
840C2	Zurich and Ozaukee silt loams, 4 to 6 percent slopes, eroded	34.0	23.1%
978B	Wauconda and Beecher silt loams, 2 to 4 percent slopes	7.8	5.3%
1107A	Sawmill silty clay loam, undrained, 0 to 2 percent slopes, frequently flooded	3.7	2.5%
1330A	Peotone silty clay loam, undrained, 0 to 2 percent slopes	0.7	0.5%

Lake County, Illinois (IL097)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
W	Water	7.8	5.3%
Totals for Area of Interest		**147.7**	**100.0%**

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Soil Rating Lines

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Soil Rating Points

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Water Features

Streams and Canals

Transportation

Rails
Interstate Highways
US Routes
Major Roads
Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Lake County, Illinois
Survey Area Data: Version 10, Sep 16, 2016

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 3, 2011—Oct 22, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Hydrologic Soil Group— Summary by Map Unit — Lake County, Illinois (IL097)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
103A	Houghton muck, 0 to 2 percent slopes	A/D	0.1	0.1%
146B	Elliott silt loam, 2 to 4 percent slopes	C/D	0.0	0.0%
153A	Pella silty clay loam, 0 to 2 percent slopes	B/D	1.1	0.8%
232A	Ashkum silty clay loam, 0 to 2 percent slopes	C/D	23.6	16.0%
330A	Peotone silty clay loam, 0 to 2 percent slopes	C/D	4.0	2.7%
370B	Saylesville silt loam, 2 to 4 percent slopes	C	0.3	0.2%
530C	Ozaukee silt loam, 4 to 6 percent slopes	C	6.3	4.3%
530C2	Ozaukee silt loam, 4 to 6 percent slopes, eroded	C	1.4	0.9%
530D	Ozaukee silt loam, 6 to 12 percent slopes	C	5.5	3.7%
530D3	Ozaukee silty clay loam, 6 to 12 percent slopes, severely eroded	C	24.5	16.6%
530E	Ozaukee silt loam, 12 to 20 percent slopes	C	2.8	1.9%
530E2	Ozaukee silt loam, 12 to 20 percent slopes, eroded	C	3.1	2.1%
531C2	Markham silt loam, 4 to 6 percent slopes, eroded	C	0.0	0.0%
696B	Zurich silt loam, 2 to 4 percent slopes	C	4.2	2.9%
696C2	Zurich silt loam, 4 to 6 percent slopes, eroded	C	15.3	10.4%
697B	Wauconda silt loam, 2 to 4 percent slopes	B/D	1.3	0.9%
840C2	Zurich and Ozaukee silt loams, 4 to 6 percent slopes, eroded	C	34.0	23.1%
978B	Wauconda and Beecher silt loams, 2 to 4 percent slopes	B/D	7.8	5.3%

Hydrologic Soil Group— Summary by Map Unit — Lake County, Illinois (IL097)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
1107A	Sawmill silty clay loam, undrained, 0 to 2 percent slopes, frequently flooded	B/D	3.7	2.5%
1330A	Peotone silty clay loam, undrained, 0 to 2 percent slopes	C/D	0.7	0.5%
W	Water		7.8	5.3%
Totals for Area of Interest			**147.7**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Bulletin 75 **2- year Storm Durations and Rainfall Distributions**

Huff Distribution

				Time Step (minutes)	7.5	15	30	45	60	120	180	300	600
				Duration (days)	0.125	0.25	0.5	0.75	1	2	3	5	10
				Duration (hours)	3	6	12	18	24	48	72	120	240
				Duration (minutes)	180	360	720	1080	1440	2880	4320	7200	14400
Quartile				**NE Illinois Rainfall**	3	6	12	18	24	48	72	120	240
First	Second	Third	Fourth	**Depth (in)**	**2.14**	**2.51**	**2.91**	**3.14**	**3.34**	**3.66**	**3.97**	**4.42**	**5.6**
0	0	0	0		0	0	0	0	0	0	0	0	0
8.36	2.29	2.05	2.31		0.1789	0.0575	0.0666	0.0719	0.0685	0.0845	0.0917	0.1021	0.1294
17.73	4.82	4.31	4.79		0.3794	0.1210	0.1403	0.1513	0.1440	0.1753	0.1902	0.2117	0.2682
28.11	7.78	6.67	7.12		0.6016	0.1953	0.2264	0.2443	0.2228	0.2606	0.2827	0.3147	0.3987
38.33	11.33	9.12	9.78		0.8203	0.2844	0.3297	0.3558	0.3046	0.3579	0.3883	0.4323	0.5477
47.45	15.79	11.71	12.53		1.0154	0.3963	0.4595	0.4958	0.3911	0.4586	0.4974	0.5538	0.7017
55.5	21.39	14.36	15.23		1.1877	0.5369	0.6224	0.6716	0.4796	0.5574	0.6046	0.6732	0.8529
62.25	28.41	16.91	17.91		1.3322	0.7131	0.8267	0.8921	0.5648	0.6555	0.7110	0.7916	1.0030
67.22	36.44	19.64	20.33		1.4385	0.9146	1.0604	1.1442	0.6560	0.7441	0.8071	0.8986	1.1385
70.82	45.29	22.78	22.83		1.5155	1.1368	1.3179	1.4221	0.7609	0.8356	0.9064	1.0091	1.2785
74.17	54.35	26.33	25.41		1.5872	1.3642	1.5816	1.7066	0.8794	0.9300	1.0088	1.1231	1.4230
76.97	62.38	30.93	28.35		1.6472	1.5657	1.8153	1.9587	1.0331	1.0376	1.1255	1.2531	1.5876
79.81	69.76	36.35	31.25		1.7079	1.7510	2.0300	2.1905	1.2141	1.1438	1.2406	1.3813	1.7500
82.55	75.48	43.92	33.9		1.7666	1.8945	2.1965	2.3701	1.4669	1.2407	1.3458	1.4984	1.8984
85.18	80.38	52.11	36.33		1.8229	2.0175	2.3391	2.5239	1.7405	1.3297	1.4423	1.6058	2.0345
87.4	84.7	61.02	38.61		1.8704	2.1260	2.4648	2.6596	2.0381	1.4131	1.5328	1.7066	2.1622
89.47	87.81	69.89	41.24		1.9147	2.2040	2.5553	2.7572	2.3343	1.5094	1.6372	1.8228	2.3094
91.17	90.22	78.19	45.08		1.9510	2.2645	2.6254	2.8329	2.6115	1.6499	1.7897	1.9925	2.5245
92.7	92.17	84.92	51.29		1.9838	2.3135	2.6821	2.8941	2.8363	1.8772	2.0362	2.2670	2.8722
94.03	93.81	89.74	59.31		2.0122	2.3546	2.7299	2.9456	2.9973	2.1707	2.3546	2.6215	3.3214
95.36	95.29	93.11	69.19		2.0407	2.3918	2.7729	2.9921	3.1099	2.5324	2.7468	3.0582	3.8746
96.56	96.57	95.34	80.05		2.0664	2.4239	2.8102	3.0323	3.1844	2.9298	3.1780	3.5382	4.4828
97.74	97.74	97.06	89.71		2.0916	2.4533	2.8442	3.0690	3.2418	3.2834	3.5615	3.9652	5.0238
98.85	98.84	98.56	96.04		2.1154	2.4809	2.8762	3.1036	3.2919	3.5151	3.8128	4.2450	5.3782
100	100	100	100		2.1400	2.5100	2.9100	3.1400	3.3400	3.6600	3.9700	4.4200	5.6000

Bulletin 75 **100- year Storm Durations and Rainfall Distributions**

Huff Distribution

				Time Step (minutes)	7.5	15	30	45	60	120	180	300	600
				Duration (days)	0.125	0.25	0.5	0.75	1	2	3	5	10
				Duration (hours)	3	6	12	18	24	48	72	120	240
				Duration (minutes)	180	360	720	1080	1440	2880	4320	7200	14400
Quartile				**NE Illinois Rainfall**	3	6	12	18	24	48	72	120	240
First	Second	Third	Fourth	**Depth (in)**	**5.49**	**6.43**	**7.46**	**8.06**	**8.57**	**9.28**	**9.85**	**10.66**	**12.65**
0	0	0	0		0	0	0	0	0	0	0	0	0
8.36	2.29	2.05	2.31		0.4590	0.1472	0.1708	0.1846	0.1757	0.2144	0.2275	0.2462	0.2922
17.73	4.82	4.31	4.79		0.9734	0.3099	0.3596	0.3885	0.3694	0.4445	0.4718	0.5106	0.6059
28.11	7.78	6.67	7.12		1.5432	0.5003	0.5804	0.6271	0.5716	0.6607	0.7013	0.7590	0.9007
38.33	11.33	9.12	9.78		2.1043	0.7285	0.8452	0.9132	0.7816	0.9076	0.9633	1.0425	1.2372
47.45	15.79	11.71	12.53		2.6050	1.0153	1.1779	1.2727	1.0035	1.1628	1.2342	1.3357	1.5850
55.5	21.39	14.36	15.23		3.0470	1.3754	1.5957	1.7240	1.2307	1.4133	1.5002	1.6235	1.9266
62.25	28.41	16.91	17.91		3.4175	1.8268	2.1194	2.2898	1.4492	1.6620	1.7641	1.9092	2.2656
67.22	36.44	19.64	20.33		3.6904	2.3431	2.7184	2.9371	1.6831	1.8866	2.0025	2.1672	2.5717
70.82	45.29	22.78	22.83		3.8880	2.9121	3.3786	3.6504	1.9522	2.1186	2.2488	2.4337	2.8880
74.17	54.35	26.33	25.41		4.0719	3.4947	4.0545	4.3806	2.2565	2.3580	2.5029	2.7087	3.2144
76.97	62.38	30.93	28.35		4.2257	4.0110	4.6535	5.0278	2.6507	2.6309	2.7925	3.0221	3.5863
79.81	69.76	36.35	31.25		4.3816	4.4856	5.2041	5.6227	3.1152	2.9000	3.0781	3.3313	3.9531
82.55	75.48	43.92	33.9		4.5320	4.8534	5.6308	6.0837	3.7639	3.1459	3.3392	3.6137	4.2884
85.18	80.38	52.11	36.33		4.6764	5.1684	5.9963	6.4786	4.4658	3.3714	3.5785	3.8728	4.5957
87.4	84.7	61.02	38.61		4.7983	5.4462	6.3186	6.8268	5.2294	3.5830	3.8031	4.1158	4.8842
89.47	87.81	69.89	41.24		4.9119	5.6462	6.5506	7.0775	5.9896	3.8271	4.0621	4.3962	5.2169
91.17	90.22	78.19	45.08		5.0052	5.8011	6.7304	7.2717	6.7009	4.1834	4.4404	4.8055	5.7026
92.7	92.17	84.92	51.29		5.0892	5.9265	6.8759	7.4289	7.2776	4.7597	5.0521	5.4675	6.4882
94.03	93.81	89.74	59.31		5.1622	6.0320	6.9982	7.5611	7.6907	5.5040	5.8420	6.3224	7.5027
95.36	95.29	93.11	69.19		5.2353	6.1271	7.1086	7.6804	7.9795	6.4208	6.8152	7.3757	8.7525
96.56	96.57	95.34	80.05		5.3011	6.2095	7.2041	7.7835	8.1706	7.4286	7.8849	8.5333	10.1263
97.74	97.74	97.06	89.71		5.3659	6.2847	7.2914	7.8778	8.3180	8.3251	8.8364	9.5631	11.3483
98.85	98.84	98.56	96.04		5.4269	6.3554	7.3735	7.9665	8.4466	8.9125	9.4599	10.2379	12.1491
100	100	100	100		5.4900	6.4300	7.4600	8.0600	8.5700	9.2800	9.8500	10.6600	12.6500

Exhibit 6

SWMM Calculations and Results Summary

Critical Duration Bulletin 75 Flows for Determination of Proposed Release (less than Allowable)

Frequency of Recurrence	SWMM ID	Bypass Flow (cfs) for Specific Storm Duration (hours) 3	6	12	18	24	48	72	120	240
Existing, No Site Development Area - Use Outflows Associated with Peak Developed Outflows (Blue Highlight)										
2-year	**Out_SE**	2.47	2.59	2.57	2.51	2.56	**2.44**	2.31	1.01	0.19
100-year	**Out_SE**	4.58	4.89	4.37	4.03	**4.02**	3.66	3.41	2.33	0.72
Site Area (ac)	34.82	*2-year*	*0.04*	*cfs/ac =>*			1.39	Allowable Q for Site, 2-year		
Site Area (ac)	34.82	*100-year*	*0.15*	*cfs/ac =>*		5.22		Allowable Q for Site, 100-year		
			Computed 2-year				**3.83**	**Total Allowable Q, 2-year**		
			Computed 100-year			**9.24**		**Total Allowable Q, 100-year**		
Proposed, Full Site Development Area plus Off-site Area - Peak Outflows										
2-year	**Out_SE**				3.05	3.24	**3.41**	3.32		
100-year	**Out_SE**				8.47	**8.69**	8.60			
				2-year	**Delta =**		**-0.42**	**cfs**	**OK**	
				100-year	**Delta =**	**-0.55**		**cfs**	**OK**	
Proposed, Full Site Development Area plus Off-site Area - Peak Elevations										
2-year	**N_CWLow (Basin 1)**				732.72	**732.84**	732.69	732.58		
	SP_SE (Basin 2)				732.81	732.91	**733.00**	732.98		
	SP_NE (Basin 3)				745.06	**745.14**	744.94	744.77		
100-year	**N_CWLow (Basin 1)**				735.84	**736.06**	735.94			
	SP_SE (Basin 2)				735.74	**735.97**	735.82			
	SP_NE (Basin 3)				748.17	**748.29**	747.49			

Critical Duration Flows for Overflow Design (Rural condition - use 3-hour duration - no storage)

										Max to Philip Drive								Max to Basin 2								Max to Basin 3
										70.2								83.4								13.2
SWMM ID =>	D_CNW	D_DE1	H_DE1	D_DE2	H_DE2	D_SVSW	C_SVSW_6	HP_CW	HP_B1	Q_{Drive}	HP_SVSE	HP_SE	HP_B2	Q_{Berm}	HP_NE1	HP_NE2	HP_B3	Q_{Berm}
Elapsed Time	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)
0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.08	0.01	0.01	0.00	0.10	0.01	0.01	0.00	0.02
0.5	0.08	0.02	0.82	0.03	1.73	0.00	0.32	12.90	2.47	18.36	2.34	1.13	1.07	22.90	2.34	1.13	1.07	4.54
0.75	1.58	0.52	3.66	0.85	6.54	0.00	0.30	31.77	8.52	53.73	6.46	3.10	2.03	65.32	6.46	3.10	2.03	11.59
1	3.37	1.82	6.42	2.30	9.49	0.00	0.28	34.58	11.89	**70.16**	7.67	3.68	1.89	**83.40**	7.67	3.68	1.89	**13.25**
1.25	4.02	3.02	7.03	3.44	8.58	0.00	0.27	25.49	10.59	62.44	6.06	2.91	1.22	72.63	6.06	2.91	1.22	10.19
1.5	4.02	3.89	6.80	4.05	7.23	0.00	0.26	19.39	8.84	54.49	4.74	2.28	0.92	62.43	4.74	2.28	0.92	7.93
1.75	3.49	4.70	6.52	4.31	6.41	0.11	0.26	16.70	7.78	50.28	4.07	1.96	0.84	57.14	4.07	1.96	0.84	6.86
2	2.79	5.37	6.12	4.34	5.69	0.42	0.25	14.51	6.86	46.36	3.54	1.70	0.73	52.33	3.54	1.70	0.73	5.97
2.25	2.36	5.60	5.53	4.23	4.87	0.73	0.25	12.05	5.85	41.46	2.96	1.42	0.60	46.43	2.96	1.42	0.60	4.98
2.5	1.98	5.49	4.85	4.01	4.06	0.98	0.24	9.77	4.87	36.26	2.42	1.16	0.47	40.32	2.42	1.16	0.47	4.06
2.75	1.67	5.21	4.30	3.68	3.49	1.18	0.24	8.33	4.18	32.29	2.07	0.99	0.41	35.76	2.07	0.99	0.41	3.47
3	1.44	4.90	3.85	3.13	3.08	1.37	0.24	7.36	3.68	29.05	1.82	0.87	0.37	32.11	1.82	0.87	0.37	3.06
3.25	1.24	4.66	3.10	2.39	2.26	1.56	0.23	5.08	2.75	23.27	1.32	0.63	0.20	25.42	1.32	0.63	0.20	2.14
3.5	0.88	4.42	2.23	1.75	1.36	1.67	0.23	2.78	1.75	17.06	0.79	0.38	0.06	18.28	0.79	0.38	0.06	1.23
3.75	0.60	3.99	1.63	1.23	0.84	1.74	0.23	1.62	1.15	13.02	0.50	0.24	0.02	13.77	0.50	0.24	0.02	0.75
4	0.41	2.85	1.20	0.87	0.51	1.74	0.23	0.97	0.76	9.55	0.32	0.15	0.00	10.02	0.32	0.15	0.00	0.48

Trapezoidal Weir Formula: $Q = C * L * (H ^{1.5}) + 2 * (2/5) * C * Z * (H ^{2.5})$

Existing Road Overflow

	Overflow	L (ft)	Z	H (ft)	*Q (cfs)*	Total Length
Elevation F	739.47	**20**	30.5	0.797	*0.0*	**81**
Elevation E	***740.27***				***70.2***	
Elevation G	N/A	B		C		A

Note: *Compute existing overflow based on Gravel Drive low sag location*

Basin 1 - Proposed Philip Drive Overflow

	L (ft)	Z	H (ft)	*Q (cfs)*	Total Length	Overflow	
Elevation F	**0**	0.0	0	*0.0*	0	739.52	Elevation F
	20	35.0	0.48	*27.8*	90	740.0	
Elevation E	**20**	45.8	0.75	***77.4***	**112**	***740.27***	Elevation E
Elevation G	B		C		A	N/A	Elevation G

Note: *Proposed length @ 740 = 90 ft and length @ 740.5 = 130 ft*

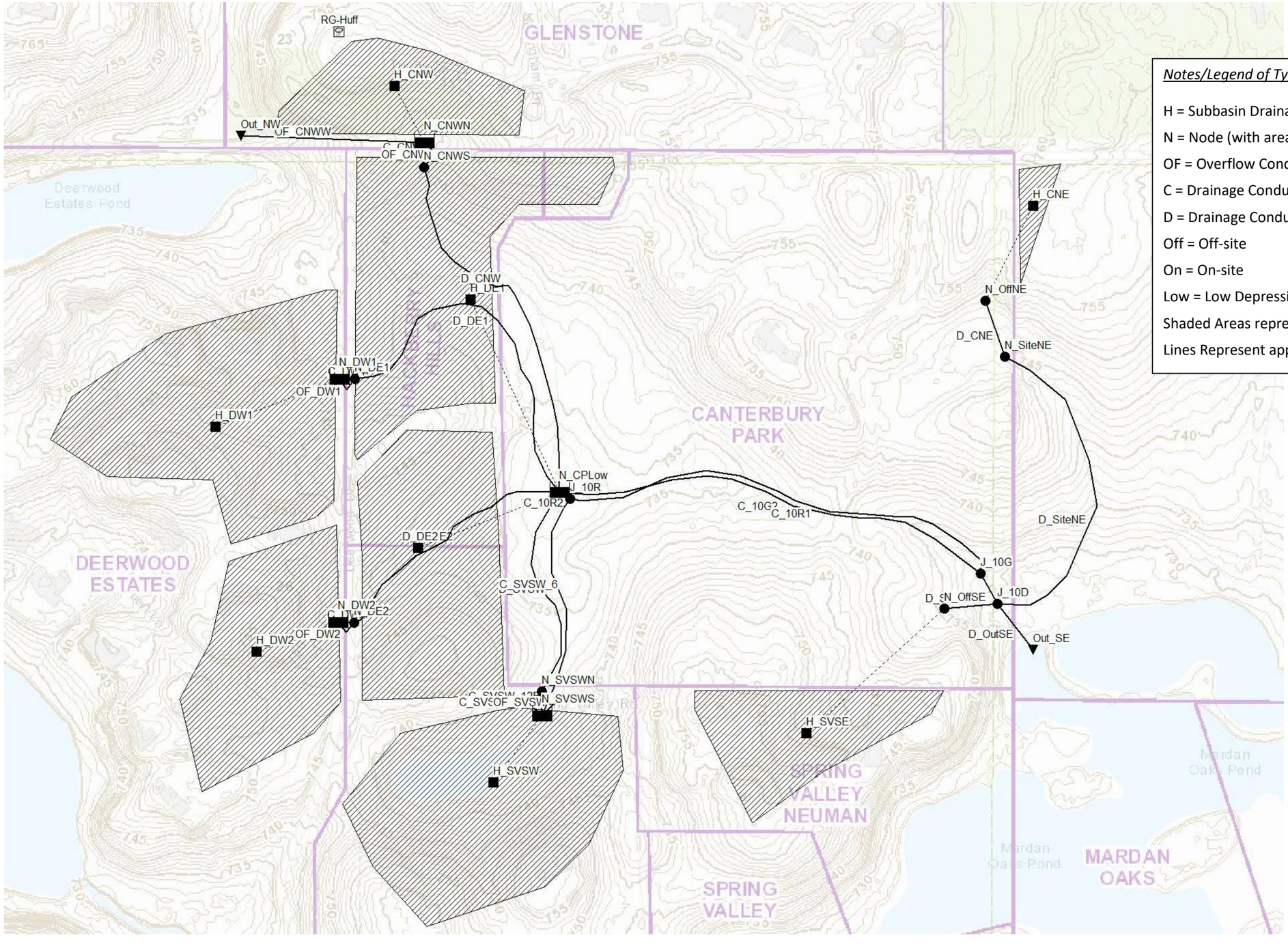
Basin 2 - Berm Concrete Weir

	Overflow	L (ft)	Z	H (ft)	*Q (cfs)*	Total Length
Elevation F	736.0	**26**	2.0	1	*83.4*	**32**
Elevation E	737.0					
Elevation G	733.0	B		C		A

Basin 3 - Berm Concrete Weir

	L (ft)	Z	H (ft)	*Q (cfs)*	Total Length	Overflow	
Elevation F	**6**	2.0	0.7	*13.2*	**11**	749.3	Elevation F
Elevation E						750.0	Elevation E
Elevation G	B		C		A	746.0	Elevation G

EPA SWMM 5.1: Final Stormwater Calculations – Existing Conditions Bypass Flow, SWMM Flow Schematic for Philip Estates Subdivision, Long Grove, IL



Notes/Legend of Typical Schematic References

H = Subbasin Drainage Area (with area location as unique identifier)

N = Node (with area location as unique identifier)

OF = Overflow Condition (with area location as unique identifier)

C = Drainage Conduit (Pipe or Drain Tile – where number is tile size)

D = Drainage Conduit (Ditch)

Off = Off-site

On = On-site

Low = Low Depressional Area

Shaded Areas represent approximate subbasin shapes / boundaries

Lines Represent approximate flow conveyance path

```
[TITLE]
;;Project Title/Notes

[OPTIONS]
;;Option             Value
FLOW_UNITS           CFS
INFILTRATION         CURVE_NUMBER
FLOW_ROUTING         DYNWAVE
LINK_OFFSETS         ELEVATION
MIN_SLOPE            0
ALLOW_PONDING        NO
SKIP_STEADY_STATE    NO

START_DATE           09/17/2017
START_TIME           00:00:00
REPORT_START_DATE    09/17/2017
REPORT_START_TIME    00:00:00
END_DATE             09/20/2017
END_TIME             23:00:00
SWEEP_START          01/01
SWEEP_END            12/31
DRY_DAYS             0
REPORT_STEP          00:15:00
WET_STEP             00:05:00
DRY_STEP             01:00:00
ROUTING_STEP         0:00:05
RULE_STEP            00:00:00

INERTIAL_DAMPING     PARTIAL
NORMAL_FLOW_LIMITED  BOTH
FORCE_MAIN_EQUATION  H-W
VARIABLE_STEP        0.75
LENGTHENING_STEP     0
MIN_SURFAREA         12.557
MAX_TRIALS           8
HEAD_TOLERANCE       0.005
SYS_FLOW_TOL         5
LAT_FLOW_TOL         5
MINIMUM_STEP         0.5
THREADS              1

[EVAPORATION]
;;Data Source    Parameters
;;--------------- ----------------
CONSTANT         0.0
DRY_ONLY         NO

[RAINGAGES]
;;Name           Format    Interval SCF      Source
;;-------------- --------- ------ ------ ----------
RG-Huff          CUMULATIVE 2:00     1.0      TIMESERIES 048Huff4Q2_75
RG-2_75003       CUMULATIVE 0:07:30  1.0      TIMESERIES 003Huff1Q2_75
RG-2_75006       CUMULATIVE 0:15     1.0      TIMESERIES 006Huff2Q2_75
RG-2_75012       CUMULATIVE 0:30     1.0      TIMESERIES 012Huff2Q2_75
RG-2_75018       CUMULATIVE 0:45     1.0      TIMESERIES 018Huff2Q2_75
RG-2_75024       CUMULATIVE 1:00     1.0      TIMESERIES 024Huff3Q2_75
RG-2_75048       CUMULATIVE 2:00     1.0      TIMESERIES 048Huff4Q2_75
RG-2_75072       CUMULATIVE 3:00     1.0      TIMESERIES 072Huff4Q2_75
RG-2_75120       CUMULATIVE 5:00     1.0      TIMESERIES 120Huff4Q2_75
RG-2_75240       CUMULATIVE 10:00    1.0      TIMESERIES 240Huff4Q2_75

[SUBCATCHMENTS]
;;Name           Rain Gage        Outlet           Area     %Imperv  Width    %Slope   CurbLen  SnowPack
;;-------------- ---------------- ---------------- -------- -------- -------- -------- -------- ----------------
H_SVSW           RG-Huff          N_SVSWS          11.05    0        1086.9   2.10     0
H_CNW            RG-Huff          N_CNWN           2.38     0        295.1    2.99     0
H_DW1            RG-Huff          N_DW1            6.08     0        352.7    2.66     0
H_DW2            RG-Huff          N_DW2            3.21     0        323.8    3.36     0
H_DE2            RG-Huff          N_CPLow          6.01     0        733.1    2.52     0
H_DE1            RG-Huff          N_CPLow          6.58     0        463.9    1.46     0
H_CNE            RG-Huff          N_OffNE          0.42     0        50.9     2.93     0
H_SVSE           RG-Huff          N_OffSE          1.67     0        257.5    4.95     0

[SUBAREAS]
;;Subcatchment   N-Imperv   N-Perv     S-Imperv   S-Perv     PctZero    RouteTo    PctRouted
;;-------------- ---------- ---------- ---------- ---------- ---------- ---------- ----------
H_SVSW           0.02       0.4        0.05       0.05       25         OUTLET
H_CNW            0.02       0.24       0.05       0.05       25         OUTLET
H_DW1            0.02       0.4        0.05       0.05       25         OUTLET
H_DW2            0.02       0.24       0.05       0.05       25         OUTLET
H_DE2            0.02       0.24       0.05       0.05       25         OUTLET
H_DE1            0.02       0.24       0.05       0.05       25         OUTLET
H_CNE            0.02       0.4        0.05       0.05       25         OUTLET
H_SVSE           0.02       0.4        0.05       0.05       25         OUTLET

[INFILTRATION]
;;Subcatchment   CurveNum              DryTime
;;-------------- ---------- ---------- ----------
H_SVSW           65.4       0.5        4
H_CNW            75.4       0.5        4
H_DW1            72.0       0.5        4
H_DW2            76.9       0.5        4
H_DE2            68.9       0.5        4
H_DE1            67.7       0.5        4
H_CNE            70.5       0.5        4
H_SVSE           67.8       0.5        4
```

```
[JUNCTIONS]
;;Name           Elevation  MaxDepth   InitDepth  SurDepth   Aponded
;;-------------- ---------- ---------- ---------- ---------- ----------
N_SVSWN          735.15     5          0          0          0
N_DE2            739.87     6          0          0          0
N_DE1            740.29     5          0          0          0
N_CNWS           746.       5          0          0          0
J_10D            726.5      13         0          0          0
J_10G            726.83     6          0          0          0
N_OffSE          747        3          0          0          0
N_SiteNE         745        3          0          0          0
N_OffNE          750        3          0          0          0
J_10R            729.7      8          0          0          0

[OUTFALLS]
;;Name           Elevation  Type       Stage Data       Gated    Route To
;;-------------- ---------- ---------- ---------------- -------- ----------------
Out_SE           726        NORMAL                      NO
Out_NW           750        NORMAL                      NO

[STORAGE]
;;Name           Elev.    MaxDepth   InitDepth  Shape      Curve Name/Params            N/A      Fevap    Psi      Ksat     IMD
;;-------------- -------- ---------- ---------- ---------- ---------------------------- -------- --------          -------- --------
N_CNWN           747.67   5          0          TABULAR    S_CNW                        0        0
N_DW1            740.92   5          0          TABULAR    S_DW1                        0        0
N_DW2            740.63   5          0          TABULAR    S_DW2                        0        0
N_CPLow          729.75   10         0          TABULAR    S_CP                         0        0
N_SVSWS          732.72   8          0          TABULAR    S_SVSW                       0        0

[CONDUITS]
;;Name           From Node        To Node          Length     Roughness  InOffset   OutOffset  InitFlow   MaxFlow
;;-------------- ---------------- ---------------- ---------- ---------- ---------- ---------- ---------- ----------
C_SVSW_12E       N_SVSWS          N_SVSWN          48         0.024      735.25     735.15     0          0
D_SVSW           N_SVSWN          N_CPLow          119        0.1        735.15     734.5      0          0
C_DW2            N_DW2            N_DE2            20         0.024      740.63     739.87     0          0
D_DE2            N_DE2            N_CPLow          370        0.1        739.87     736        0          0
C_DW1            N_DW1            N_DE1            20         0.024      740.92     740.29     0          0
D_DE1            N_DE1            N_CPLow          513        0.1        740.29     736        0          0
C_CNW            N_CNWN           N_CNWS           27         0.024      747.67     746.57     0          0
D_CNW            N_CNWS           N_CPLow          529        0.1        746        736        0          0
C_10G2           N_CPLow          J_10G            998        0.015      730.05     726.83     0          0
C_10G1           J_10G            J_10D            75         0.015      726.83     726.5      0          0
D_OutSE          J_10D            Out_SE           60         0.08       726.5      726        0          0
C_10R1           J_10R            J_10G            858        0.015      729.7      729.08     0          0
D_SVSE           N_OffSE          J_10D            316        0.1        747        736        0          0
D_SiteNE         N_SiteNE         J_10D            706        0.1        745        726        0          0
D_CNE            N_OffNE          N_SiteNE         166        0.1        750        745        0          0
C_SVSW_12W       N_SVSWS          N_SVSWN          20         0.024      736.11     735.85     0          0
OF_SVSW          N_SVSWS          N_SVSWN          24         0.025      737.6      737.55     0          0
C_SVSW_6         N_SVSWS          J_10R            786        0.015      732.72     729.7      0          0
C_10R2           N_CPLow          J_10R            20         0.015      729.75     729.7      0          0
OF_DW2           N_DW2            N_DE2            20         0.025      743        742.95     0          0
OF_DW1           N_DW1            N_DE1            20         0.025      743        742.95     0          0
OF_CNWW          N_CNWN           Out_NW           44         0.1        750.2      750        0          0
OF_CNW           N_CNWN           N_CNWS           24         0.025      751.1      751.05     0          0

[XSECTIONS]
;;Link           Shape        Geom1            Geom2      Geom3      Geom4      Barrels    Culvert
;;-------------- ------------ ---------------- ---------- ---------- ---------- ---------- ----------
C_SVSW_12E       CIRCULAR     1                0          0          0          1
D_SVSW           TRAPEZOIDAL  4                5          6          6          1
C_DW2            CIRCULAR     1                0          0          0          1
D_DE2            IRREGULAR    D_XDE2           0          0          0          1
C_DW1            CIRCULAR     1                0          0          0          1
D_DE1            IRREGULAR    D_XDE1           0          0          0          1
C_CNW            CIRCULAR     1                0          0          0          1
D_CNW            TRAPEZOIDAL  3                10         6          6          1
C_10G2           CIRCULAR     0.83             0          0          0          1
C_10G1           CIRCULAR     0.83             0          0          0          1
D_OutSE          TRAPEZOIDAL  4                3          3          3          1
C_10R1           CIRCULAR     0.83             0          0          0          1
D_SVSE           TRAPEZOIDAL  3                10         6          6          1
D_SiteNE         IRREGULAR    D_XDE2           0          0          0          1
D_CNE            TRAPEZOIDAL  2                3          6          6          1
C_SVSW_12W       CIRCULAR     1                0          0          0          1
OF_SVSW          TRIANGULAR   0.4              135        0          0          1
C_SVSW_6         CIRCULAR     0.5              0          0          0          1
C_10R2           CIRCULAR     0.83             0          0          0          1
OF_DW2           TRIANGULAR   0.5              150        0          0          1
OF_DW1           TRIANGULAR   1                85         0          0          1
OF_CNWW          IRREGULAR    OF_XCNW          0          0          0          1
OF_CNW           TRIANGULAR   0.2              110        0          0          1

[TRANSECTS]
;;Transect Data in HEC-2 format
;
NC 0.025    0.1      0.1
X1 OF_XCNW           7        12.      28.      0.0      0.0      0.0      0.0      0.0
GR 753      0        751.2    0.1      750.8    12       750.2    22       750.3    28
GR 751      43       752      68
;
NC 0.1      0.1      0.1
X1 D_XDE1            5        -35      37       0.0      0.0      0.0      0.0      0.0
GR 742      -35.1    741      -35      740      0        741      37       742      37.1
;
```

```
NC 0.1      0.1      0.1
X1 D_XDE2             5        -39      48       0.0      0.0      0.0      0.0      0.0
GR 741      -56      740      -39      739      0        740      48       741      70

[LOSSES]
;;Link           Kentry     Kexit      Kavg       Flap Gate  Seepage
;;-------------- ---------- ---------- ---------- ---------- ----------
C_SVSW_12E       0.5        0.8        0          NO         0
C_DW2            0.5        0.8        0          NO         0
C_DW1            0.5        0.8        0          NO         0
C_CNW            0.5        0.8        0          NO         0
C_10G2           0.5        0.8        0          NO         0
C_10G1           0.3        0.5        0          NO         0
C_10R1           0.2        0.8        0          NO         0
C_SVSW_12W       0.5        0.8        0          NO         0
C_SVSW_6         0.5        1.0        0          NO         0
C_10R2           0.5        0.8        0          NO         0

[CURVES]
;;Name           Type       X-Value    Y-Value
;;-------------- ---------- ---------- ----------
S_CNW            Storage    0          100
S_CNW                       1.33       945.23
S_CNW                       2.33       7604.33
S_CNW                       3.33       16786.86
S_CNW                       4.33       24925.33
;
S_DW1            Storage    0          100
S_DW1                       1.08       553.64
S_DW1                       2.08       5327.2
S_DW1                       3.08       29350.38
;
S_DW2            Storage    0          100
S_DW2                       2.37       6800.97
S_DW2                       3.37       14047.6
;
S_SVSW           Storage    0          10
S_SVSW                      1.75       10
S_SVSW                      1.78       2003.45
S_SVSW                      2.28       30880.18
S_SVSW                      2.53       39547.405
S_SVSW                      3.28       65549.08
S_SVSW                      4.28       80968.51
S_SVSW                      5.28       101926.96
;
S_CP             Storage    0          10
S_CP                        1.8        10
S_CP                        1.85       100
S_CP                        2.25       12099.3
S_CP                        3.25       44419.43
S_CP                        4.25       94221.01
S_CP                        5.25       155461.26
S_CP                        6.25       237121.1
S_CP                        7.25       335851.03

[TIMESERIES]
;;Name           Date       Time       Value
;;-------------- ---------- ---------- ----------
;First Quartile Huff distribution for 3-hour storm - 2-year, Bulletin 75 NE IL values
003Huff1Q2_75                00:00:00   0.0000
003Huff1Q2_75                00:07:30   0.1789
003Huff1Q2_75                00:15:00   0.3794
003Huff1Q2_75                00:22:30   0.6016
003Huff1Q2_75                00:30:00   0.8203
003Huff1Q2_75                00:37:30   1.0154
003Huff1Q2_75                00:45:00   1.1877
003Huff1Q2_75                00:52:30   1.3322
003Huff1Q2_75                01:00:00   1.4385
003Huff1Q2_75                01:07:30   1.5155
003Huff1Q2_75                01:15:00   1.5872
003Huff1Q2_75                01:22:30   1.6472
003Huff1Q2_75                01:30:00   1.7079
003Huff1Q2_75                01:37:30   1.7666
003Huff1Q2_75                01:45:00   1.8229
003Huff1Q2_75                01:52:30   1.8704
003Huff1Q2_75                02:00:00   1.9147
003Huff1Q2_75                02:07:30   1.9510
003Huff1Q2_75                02:15:00   1.9838
003Huff1Q2_75                02:22:30   2.0122
003Huff1Q2_75                02:30:00   2.0407
003Huff1Q2_75                02:37:30   2.0664
003Huff1Q2_75                02:45:00   2.0916
003Huff1Q2_75                02:52:30   2.1154
003Huff1Q2_75                03:00:00   2.1400
;
;Second Quartile Huff distribution for 6-hour storm - 2-year, Bulletin 75 NE IL values
006Huff2Q2_75                00:00      0.0000
006Huff2Q2_75                00:15      0.0575
006Huff2Q2_75                00:30      0.1210
006Huff2Q2_75                00:45      0.1953
006Huff2Q2_75                01:00      0.2844
006Huff2Q2_75                01:15      0.3963
006Huff2Q2_75                01:30      0.5369
006Huff2Q2_75                01:45      0.7131
006Huff2Q2_75                02:00      0.9146
006Huff2Q2_75                02:15      1.1368
```

```
006Huff2Q2_75               02:30      1.3642
006Huff2Q2_75               02:45      1.5657
006Huff2Q2_75               03:00      1.7510
006Huff2Q2_75               03:15      1.8945
006Huff2Q2_75               03:30      2.0175
006Huff2Q2_75               03:45      2.1260
006Huff2Q2_75               04:00      2.2040
006Huff2Q2_75               04:15      2.2645
006Huff2Q2_75               04:30      2.3135
006Huff2Q2_75               04:45      2.3546
006Huff2Q2_75               05:00      2.3918
006Huff2Q2_75               05:15      2.4239
006Huff2Q2_75               05:30      2.4533
006Huff2Q2_75               05:45      2.4809
006Huff2Q2_75               06:00      2.5100
;
;Second Quartile Huff distribution for 12-hour storm - 2-year, Bulletin 75 NE IL values
012Huff2Q2_75               00:00      0.0000
012Huff2Q2_75               00:30      0.0666
012Huff2Q2_75               01:00      0.1403
012Huff2Q2_75               01:30      0.2264
012Huff2Q2_75               02:00      0.3297
012Huff2Q2_75               02:30      0.4595
012Huff2Q2_75               03:00      0.6224
012Huff2Q2_75               03:30      0.8267
012Huff2Q2_75               04:00      1.0604
012Huff2Q2_75               04:30      1.3179
012Huff2Q2_75               05:00      1.5816
012Huff2Q2_75               05:30      1.8153
012Huff2Q2_75               06:00      2.0300
012Huff2Q2_75               06:30      2.1965
012Huff2Q2_75               07:00      2.3391
012Huff2Q2_75               07:30      2.4648
012Huff2Q2_75               08:00      2.5553
012Huff2Q2_75               08:30      2.6254
012Huff2Q2_75               09:00      2.6821
012Huff2Q2_75               09:30      2.7299
012Huff2Q2_75               10:00      2.7729
012Huff2Q2_75               10:30      2.8102
012Huff2Q2_75               11:00      2.8442
012Huff2Q2_75               11:30      2.8762
012Huff2Q2_75               12:00      2.9100
;
;Second Quartile Huff distribution for 18-hour storm - 2-year, Bulletin 75 NE IL values
018Huff2Q2_75               00:00      0.0000
018Huff2Q2_75               00:45      0.0719
018Huff2Q2_75               01:30      0.1513
018Huff2Q2_75               02:15      0.2443
018Huff2Q2_75               03:00      0.3558
018Huff2Q2_75               03:45      0.4958
018Huff2Q2_75               04:30      0.6716
018Huff2Q2_75               05:15      0.8921
018Huff2Q2_75               06:00      1.1442
018Huff2Q2_75               06:45      1.4221
018Huff2Q2_75               07:30      1.7066
018Huff2Q2_75               08:15      1.9587
018Huff2Q2_75               09:00      2.1905
018Huff2Q2_75               09:45      2.3701
018Huff2Q2_75               10:30      2.5239
018Huff2Q2_75               11:15      2.6596
018Huff2Q2_75               12:00      2.7572
018Huff2Q2_75               12:45      2.8329
018Huff2Q2_75               13:30      2.8941
018Huff2Q2_75               14:15      2.9456
018Huff2Q2_75               15:00      2.9921
018Huff2Q2_75               15:45      3.0323
018Huff2Q2_75               16:30      3.0690
018Huff2Q2_75               17:15      3.1036
018Huff2Q2_75               18:00      3.1400
;
;Third Quartile Huff distribution for 24-hour storm - 2-year, Bulletin 75 NE IL values
024Huff3Q2_75               00:00      0.0000
024Huff3Q2_75               01:00      0.0685
024Huff3Q2_75               02:00      0.1440
024Huff3Q2_75               03:00      0.2228
024Huff3Q2_75               04:00      0.3046
024Huff3Q2_75               05:00      0.3911
024Huff3Q2_75               06:00      0.4796
024Huff3Q2_75               07:00      0.5648
024Huff3Q2_75               08:00      0.6560
024Huff3Q2_75               09:00      0.7609
024Huff3Q2_75               10:00      0.8794
024Huff3Q2_75               11:00      1.0331
024Huff3Q2_75               12:00      1.2141
024Huff3Q2_75               13:00      1.4669
024Huff3Q2_75               14:00      1.7405
024Huff3Q2_75               15:00      2.0381
024Huff3Q2_75               16:00      2.3343
024Huff3Q2_75               17:00      2.6115
024Huff3Q2_75               18:00      2.8363
024Huff3Q2_75               19:00      2.9973
024Huff3Q2_75               20:00      3.1099
024Huff3Q2_75               21:00      3.1844
024Huff3Q2_75               22:00      3.2418
024Huff3Q2_75               23:00      3.2919
024Huff3Q2_75               24:00      3.3400
```

```
;
;Fourth Quartile Huff distribution for 48-hour storm - 2-year, Bulletin 75 NE IL values
048Huff4Q2_75               00:00      0.0000
048Huff4Q2_75               02:00      0.0845
048Huff4Q2_75               04:00      0.1753
048Huff4Q2_75               06:00      0.2606
048Huff4Q2_75               08:00      0.3579
048Huff4Q2_75               10:00      0.4586
048Huff4Q2_75               12:00      0.5574
048Huff4Q2_75               14:00      0.6555
048Huff4Q2_75               16:00      0.7441
048Huff4Q2_75               18:00      0.8356
048Huff4Q2_75               20:00      0.9300
048Huff4Q2_75               22:00      1.0376
048Huff4Q2_75               24:00      1.1438
048Huff4Q2_75               26:00      1.2407
048Huff4Q2_75               28:00      1.3297
048Huff4Q2_75               30:00      1.4131
048Huff4Q2_75               32:00      1.5094
048Huff4Q2_75               34:00      1.6499
048Huff4Q2_75               36:00      1.8772
048Huff4Q2_75               38:00      2.1707
048Huff4Q2_75               40:00      2.5324
048Huff4Q2_75               42:00      2.9298
048Huff4Q2_75               44:00      3.2834
048Huff4Q2_75               46:00      3.5151
048Huff4Q2_75               48:00      3.6600
;
;Fourth Quartile Huff distribution for 72-hour storm - 2-year, Bulletin 75 NE IL values
072Huff4Q2_75               00:00      0.0000
072Huff4Q2_75               03:00      0.0917
072Huff4Q2_75               06:00      0.1902
072Huff4Q2_75               09:00      0.2827
072Huff4Q2_75               12:00      0.3883
072Huff4Q2_75               15:00      0.4974
072Huff4Q2_75               18:00      0.6046
072Huff4Q2_75               21:00      0.7110
072Huff4Q2_75               24:00      0.8071
072Huff4Q2_75               27:00      0.9064
072Huff4Q2_75               30:00      1.0088
072Huff4Q2_75               33:00      1.1255
072Huff4Q2_75               36:00      1.2406
072Huff4Q2_75               39:00      1.3458
072Huff4Q2_75               42:00      1.4423
072Huff4Q2_75               45:00      1.5328
072Huff4Q2_75               48:00      1.6372
072Huff4Q2_75               51:00      1.7897
072Huff4Q2_75               54:00      2.0362
072Huff4Q2_75               57:00      2.3546
072Huff4Q2_75               60:00      2.7468
072Huff4Q2_75               63:00      3.1780
072Huff4Q2_75               66:00      3.5615
072Huff4Q2_75               69:00      3.8128
072Huff4Q2_75               72:00      3.9700
;
;Fourth Quartile Huff distribution for 120-hour storm - 2-year, Bulletin 75 NE IL values
120Huff4Q2_75               00:00      0.0000
120Huff4Q2_75               05:00      0.1021
120Huff4Q2_75               10:00      0.2117
120Huff4Q2_75               15:00      0.3147
120Huff4Q2_75               20:00      0.4323
120Huff4Q2_75               25:00      0.5538
120Huff4Q2_75               30:00      0.6732
120Huff4Q2_75               35:00      0.7916
120Huff4Q2_75               40:00      0.8986
120Huff4Q2_75               45:00      1.0091
120Huff4Q2_75               50:00      1.1231
120Huff4Q2_75               55:00      1.2531
120Huff4Q2_75               60:00      1.3813
120Huff4Q2_75               65:00      1.4984
120Huff4Q2_75               70:00      1.6058
120Huff4Q2_75               75:00      1.7066
120Huff4Q2_75               80:00      1.8228
120Huff4Q2_75               85:00      1.9925
120Huff4Q2_75               90:00      2.2670
120Huff4Q2_75               95:00      2.6215
120Huff4Q2_75               100:00     3.0582
120Huff4Q2_75               105:00     3.5382
120Huff4Q2_75               110:00     3.9652
120Huff4Q2_75               115:00     4.2450
120Huff4Q2_75               120:00     4.4200
;
;Fourth Quartile Huff distribution for 240-hour storm - 2-year, Bulletin 75 NE IL values
240Huff4Q2_75               00:00      0.0000
240Huff4Q2_75               10:00      0.1294
240Huff4Q2_75               20:00      0.2682
240Huff4Q2_75               30:00      0.3987
240Huff4Q2_75               40:00      0.5477
240Huff4Q2_75               50:00      0.7017
240Huff4Q2_75               60:00      0.8529
240Huff4Q2_75               70:00      1.0030
240Huff4Q2_75               80:00      1.1385
240Huff4Q2_75               90:00      1.2785
240Huff4Q2_75               100:00     1.4230
240Huff4Q2_75               110:00     1.5876
240Huff4Q2_75               120:00     1.7500
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240Huff4Q2_75               130:00     1.8984
240Huff4Q2_75               140:00     2.0345
240Huff4Q2_75               150:00     2.1622
240Huff4Q2_75               160:00     2.3094
240Huff4Q2_75               170:00     2.5245
240Huff4Q2_75               180:00     2.8722
240Huff4Q2_75               190:00     3.3214
240Huff4Q2_75               200:00     3.8746
240Huff4Q2_75               210:00     4.4828
240Huff4Q2_75               220:00     5.0238
240Huff4Q2_75               230:00     5.3782
240Huff4Q2_75               240:00     5.6000

[REPORT]
;;Reporting Options
SUBCATCHMENTS ALL
NODES ALL
LINKS ALL

[TAGS]

[MAP]
DIMENSIONS -2579.657 0.000 12579.657 10000.000
Units      None

[COORDINATES]
;;Node           X-Coord            Y-Coord
;;-------------- ------------------ ------------------
N_SVSWN          4058.434           2787.223
N_DE2            2141.746           3488.203
N_DE1            2148.519           5973.802
N_CNWS           2856.366           8128.400
J_10D            8702.894           3681.948
J_10G            8531.444           3986.272
N_OffSE          8162.827           3630.513
N_SiteNE         8780.047           6197.977
N_OffNE          8579.978           6768.226
J_10R            4344.802           4752.448
Out_SE           9071.512           3210.461
Out_NW           991.166            8446.720
N_CNWN           2856.271           8378.128
N_DW1            1992.745           5970.415
N_DW2            1982.586           3491.589
N_CPLow          4238.303           4820.457
N_SVSWS          4061.820           2536.631

[VERTICES]
;;Link           X-Coord            Y-Coord
;;-------------- ------------------ ------------------
D_SVSW           4163.412           2976.860
D_SVSW           4251.457           3146.179
D_SVSW           4261.616           3461.112
D_SVSW           4197.275           3667.681
D_SVSW           4024.570           3840.386
D_SVSW           3946.684           4080.818
D_SVSW           4000.866           4412.683
D_SVSW           4160.025           4693.752
D_DE2            2219.632           3522.066
D_DE2            2290.746           3640.590
D_DE2            2426.201           3874.249
D_DE2            2632.770           4043.568
D_DE2            2768.225           4165.478
D_DE2            2937.544           4246.751
D_DE2            3089.931           4328.024
D_DE2            3161.045           4466.865
D_DE2            3357.454           4592.161
D_DE2            3543.705           4666.661
D_DE2            3692.705           4791.957
D_DE2            3811.229           4825.821
D_DE2            3973.775           4819.048
D_DE1            2344.928           6000.893
D_DE1            2500.702           6055.075
D_DE1            2629.384           6221.007
D_DE1            2714.043           6407.258
D_DE1            2787.679           6580.744
D_DE1            2951.089           6674.781
D_DE1            3252.477           6742.509
D_DE1            3448.886           6708.645
D_DE1            3612.865           6561.847
D_DE1            3786.091           6325.630
D_DE1            3845.933           6067.365
D_DE1            3940.420           5925.635
D_DE1            3987.320           5763.847
D_DE1            3973.775           5448.914
D_DE1            3994.093           5238.958
D_DE1            4105.843           4984.980
D_CNW            2912.170           7942.481
D_CNW            2882.166           7813.894
D_CNW            2929.315           7638.158
D_CNW            2980.750           7466.708
D_CNW            3036.471           7299.544
D_CNW            3165.059           7166.670
D_CNW            3452.237           6965.216
D_CNW            3602.256           6909.495
D_CNW            3717.985           6922.354
D_CNW            3782.279           6832.342
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D_CNW            3928.011           6540.877
D_CNW            4005.164           6322.279
D_CNW            4103.747           5983.665
D_CNW            4168.041           5730.776
D_CNW            4215.190           5495.032
D_CNW            4232.335           5237.857
C_10G2           4558.090           4792.087
C_10G2           4900.990           4817.805
C_10G2           5381.050           4942.106
C_10G2           5758.240           4980.682
C_10G2           6002.556           4950.679
C_10G2           6336.884           4822.091
C_10G2           6624.063           4676.358
C_10G2           7035.543           4582.061
C_10G2           7275.573           4556.343
C_10G2           7515.603           4547.771
C_10G2           7768.492           4509.195
C_10G2           8059.957           4342.031
C_10R1           4463.792           4732.080
C_10R1           4892.417           4762.083
C_10R1           5329.615           4959.251
C_10R1           5732.523           5036.404
C_10R1           6083.995           4984.969
C_10R1           6465.471           4826.377
C_10R1           6645.494           4727.793
C_10R1           6988.394           4620.637
C_10R1           7382.729           4590.633
C_10R1           7725.629           4564.916
C_10R1           7837.072           4573.488
C_10R1           8042.812           4496.336
C_10R1           8342.849           4299.168
C_10R1           8535.730           4127.718
D_SiteNE         9032.935           6060.817
D_SiteNE         9397.267           5760.780
D_SiteNE         9641.583           5143.560
D_SiteNE         9723.022           4672.072
D_SiteNE         9526.659           4243.743
D_SiteNE         9410.125           3964.841
D_SiteNE         9211.099           3764.962
D_SiteNE         9036.997           3667.029
C_SVSW_12W       3930.681           2664.846
OF_SVSW          4183.114           2664.846
C_SVSW_6         4205.658           2873.229
C_SVSW_6         4298.150           3188.790
C_SVSW_6         4314.472           3618.605
C_SVSW_6         4162.133           3988.572
C_SVSW_6         4162.133           4412.946
C_SVSW_6         4276.387           4652.337
OF_DW2           2060.183           3387.790
OF_DW1           2067.737           5858.706
OF_CNW           2971.579           8278.058

[Polygons]
;;Subcatchment   X-Coord            Y-Coord
;;-------------- ------------------ ------------------
H_SVSW           3563.656           2589.771
H_SVSW           3563.656           2589.771
H_SVSW           3813.928           2622.416
H_SVSW           4836.779           2535.365
H_SVSW           4891.186           1980.413
H_SVSW           4542.982           1229.597
H_SVSW           4096.844           794.342
H_SVSW           2889.010           391.730
H_SVSW           2334.059           1001.088
H_SVSW           2029.380           1643.090
H_SVSW           2616.975           2361.262
H_SVSW           3585.419           2589.771
H_CNW            2388.466           9445.049
H_CNW            2932.535           9303.591
H_CNW            3879.217           8911.861
H_CNW            3824.810           8454.842
H_CNW            1354.733           8476.605
H_CNW            1376.496           8705.114
H_CNW            2116.431           9412.405
H_DW1            1974.973           6877.040
H_DW1            1942.329           4722.524
H_DW1            1746.464           4559.304
H_DW1            886.834            4287.269
H_DW1            701.850            4940.152
H_DW1            -375.408           4972.797
H_DW1            -952.122           5353.645
H_DW1            -734.494           5788.901
H_DW1            223.069            6430.903
H_DW1            1866.159           6877.040
H_DW2            963.003            4145.811
H_DW2            1964.091           4483.134
H_DW2            2007.617           2676.823
H_DW2            1735.582           2361.262
H_DW2            593.036            1762.786
H_DW2            364.527            2709.467
H_DW2            680.087            3297.062
H_DW2            865.071            4113.166
H_DE2            2225.245           4167.573
H_DE2            2181.719           4929.271
H_DE2            2682.263           5451.578
H_DE2            3552.775           5429.815
```

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H_DE2            3618.063           4385.201
H_DE2            3672.470           2742.111
H_DE2            2225.245           2698.585
H_DE2            2225.245           4167.573
H_DE1            2149.075           5201.306
H_DE1            2159.956           6420.022
H_DE1            2170.838           8226.333
H_DE1            4782.372           8226.333
H_DE1            4804.135           8128.400
H_DE1            4630.033           7747.552
H_DE1            3824.810           7747.552
H_DE1            3531.012           7421.110
H_DE1            3585.419           5723.613
H_DE1            3346.028           5723.613
H_DE1            2780.196           5647.443
H_DE1            2181.719           5146.899
H_CNE            8928.183           8106.638
H_CNE            8939.064           6931.447
H_CNE            9352.557           8161.045
H_SVSE           5620.239           2796.518
H_SVSE           8155.604           2796.518
H_SVSE           8025.027           2557.127
H_SVSE           6926.007           1969.532
H_SVSE           6207.835           1447.225
H_SVSE           5620.239           2600.653

[SYMBOLS]
;;Gage           X-Coord            Y-Coord
;;-------------- ------------------ ------------------
RG-Huff          2000.000           9500.000


[BACKDROP]
FILE       "G:\N_Drive\aenon\projects\2017\17004-Cross\E14-CanterburyPark\Final_Models\SWMM_P220625\1291_county 1ft topo GIS_BOUNDARY_2017-09-
13.JPG"
DIMENSIONS -2579.657 0.000 12579.657 10000.000

[PROFILES]
;;Name           Links
;;-------------- ----------
"Green           " C_CNW D_CNW C_10G2 C_10G1 12
```

```
EPA STORM WATER MANAGEMENT MODEL - VERSION 5.1 (Build 5.1.013)
--------------------------------------------------------------

WARNING 03: negative offset ignored for Link D_SiteNE
WARNING 02: maximum depth increased for Node N_CNWS

***********************************************************
NOTE: The summary statistics displayed in this report are
based on results found at every computational time step,
not just on results from each reporting time step.
***********************************************************

***************
Analysis Options
***************
Flow Units ............... CFS
Process Models:
  Rainfall/Runoff ........ YES
  RDII ................... NO
  Snowmelt ............... NO
  Groundwater ............ NO
  Flow Routing ........... YES
  Ponding Allowed ........ NO
  Water Quality .......... NO
Infiltration Method ...... CURVE_NUMBER
Flow Routing Method ...... DYNWAVE
Surcharge Method ......... EXTRAN
Starting Date ............ 09/17/2017 00:00:00
Ending Date .............. 09/20/2017 23:00:00
Antecedent Dry Days ...... 0.0
Report Time Step ......... 00:15:00
Wet Time Step ............ 00:05:00
Dry Time Step ............ 01:00:00
Routing Time Step ........ 5.00 sec
Variable Time Step ....... YES
Maximum Trials ........... 8
Number of Threads ........ 1
Head Tolerance ........... 0.005000 ft


*************************        Volume         Depth
Runoff Quantity Continuity     acre-feet        inches
*************************     ---------       -------
Total Precipitation ......        11.407         3.660
Evaporation Loss .........         0.000         0.000
Infiltration Loss ........         6.578         2.111
Surface Runoff ...........         4.676         1.500
Final Storage ............         0.153         0.049
Continuity Error (%) .....        -0.001


*************************        Volume        Volume
Flow Routing Continuity        acre-feet      10^6 gal
*************************     ---------     ---------
Dry Weather Inflow .......         0.000         0.000
Wet Weather Inflow .......         4.676         1.524
Groundwater Inflow .......         0.000         0.000
RDII Inflow ..............         0.000         0.000
External Inflow ..........         0.000         0.000
External Outflow .........         4.675         1.523
Flooding Loss ............         0.000         0.000
Evaporation Loss .........         0.000         0.000
Exfiltration Loss ........         0.000         0.000
Initial Stored Volume ....         0.000         0.000
Final Stored Volume ......         0.000         0.000
Continuity Error (%) .....         0.009


*************************
Highest Continuity Errors
*************************
Node N_SiteNE (-1.65%)


***************************
Time-Step Critical Elements
***************************
Link C_10R2 (46.26%)
Link C_DW1 (20.88%)


*******************************
Highest Flow Instability Indexes
*******************************
All links are stable.


************************
Routing Time Step Summary
************************
Minimum Time Step           :     0.50 sec
Average Time Step           :     3.84 sec
Maximum Time Step           :     5.00 sec
Percent in Steady State     :    -0.00
Average Iterations per Step :     2.00
```

Percent Not Converging : 0.00

****
Subcatchment Runoff Summary
****

Subcatchment	Total Precip in	Total Runon in	Total Evap in	Total Infil in	Imperv Runoff in	Perv Runoff in	Total Runoff in	Total Runoff 10^6 gal	Peak Runoff CFS	Runoff Coeff
H_SVSW	3.66	0.00	0.00	2.29	0.00	1.32	1.32	0.40	1.18	0.361
H_CNW	3.66	0.00	0.00	1.79	0.00	1.82	1.82	0.12	0.33	0.498
H_DW1	3.66	0.00	0.00	2.04	0.00	1.57	1.57	0.26	0.73	0.429
H_DW2	3.66	0.00	0.00	1.72	0.00	1.89	1.89	0.17	0.46	0.517
H_DE2	3.66	0.00	0.00	2.09	0.00	1.52	1.52	0.25	0.73	0.414
H_DE1	3.66	0.00	0.00	2.19	0.00	1.42	1.42	0.25	0.74	0.387
H_CNE	3.66	0.00	0.00	2.05	0.00	1.56	1.56	0.02	0.05	0.427
H_SVSE	3.66	0.00	0.00	2.14	0.00	1.47	1.47	0.07	0.20	0.402

****
Node Depth Summary
****

Node	Type	Average Depth Feet	Maximum Depth Feet	Maximum HGL Feet	Time of Max Occurrence days hr:min	Reported Max Depth Feet
N_SVSWN	JUNCTION	0.01	0.11	735.26	2 03:16	0.11
N_DE2	JUNCTION	0.09	0.27	740.14	1 20:21	0.27
N_DE1	JUNCTION	0.13	0.37	740.66	1 22:05	0.37
N_CNWS	JUNCTION	0.04	0.13	746.13	1 20:13	0.13
J_10D	JUNCTION	0.23	0.56	727.06	1 22:38	0.56
J_10G	JUNCTION	0.51	1.70	728.53	2 00:58	1.70
N_OffSE	JUNCTION	0.02	0.08	747.08	1 20:08	0.08
N_SiteNE	JUNCTION	0.02	0.07	745.07	1 22:04	0.07
N_OffNE	JUNCTION	0.01	0.05	750.05	1 20:02	0.05
J_10R	JUNCTION	0.82	2.98	732.68	2 00:50	2.98
Out_SE	OUTFALL	0.23	0.56	726.56	1 22:38	0.56
Out_NW	OUTFALL	0.00	0.00	750.00	0 00:00	0.00
N_CNWN	STORAGE	0.06	0.21	747.88	1 20:00	0.21
N_DW1	STORAGE	0.09	0.34	741.26	1 22:00	0.34
N_DW2	STORAGE	0.07	0.25	740.88	1 20:01	0.25
N_CPLow	STORAGE	0.80	3.00	732.75	2 00:49	3.00
N_SVSWS	STORAGE	1.05	2.73	735.45	2 02:57	2.73

****
Node Inflow Summary
****

Node	Type	Maximum Lateral Inflow CFS	Maximum Total Inflow CFS	Time of Max Occurrence days hr:min	Lateral Inflow Volume 10^6 gal	Total Inflow Volume 10^6 gal	Flow Balance Error Percent
N_SVSWN	JUNCTION	0.00	0.06	2 03:03	0	0.00841	-0.007
N_DE2	JUNCTION	0.00	0.46	1 20:01	0	0.165	0.047
N_DE1	JUNCTION	0.00	0.73	1 22:00	0	0.259	0.048
N_CNWS	JUNCTION	0.00	0.33	1 20:00	0	0.118	-0.003
J_10D	JUNCTION	0.00	2.45	1 22:09	0	1.52	0.025
J_10G	JUNCTION	0.00	2.25	2 00:48	0	1.44	-0.013
N_OffSE	JUNCTION	0.20	0.20	1 20:00	0.0668	0.0668	-0.008
N_SiteNE	JUNCTION	0.00	0.05	1 20:02	0	0.0178	-1.626
N_OffNE	JUNCTION	0.05	0.05	1 20:00	0.0178	0.0178	-0.007
J_10R	JUNCTION	0.00	1.04	2 00:49	0	0.774	0.014
Out_SE	OUTFALL	0.00	2.44	1 22:38	0	1.52	0.000
Out_NW	OUTFALL	0.00	0.00	0 00:00	0	0	0.000 gal
N_CNWN	STORAGE	0.33	0.33	1 20:00	0.118	0.118	0.000
N_DW1	STORAGE	0.73	0.73	1 22:00	0.259	0.259	-0.000
N_DW2	STORAGE	0.46	0.46	1 20:00	0.165	0.165	-0.000
N_CPLow	STORAGE	1.45	2.93	1 22:00	0.5	1.1	0.003
N_SVSWS	STORAGE	1.18	1.18	1 22:00	0.396	0.396	-0.002

****
Node Surcharge Summary
****

Surcharging occurs when water rises above the top of the highest conduit.

Node	Type	Hours Surcharged	Max. Height Above Crown Feet	Min. Depth Below Rim Feet
J_10R	JUNCTION	17.34	2.148	5.022

****
Node Flooding Summary
****

No nodes were flooded.

****
Storage Volume Summary
****

Storage Unit	Average Volume 1000 ft3	Avg Pcnt Full	Evap Pcnt Loss	Exfil Pcnt Loss	Maximum Volume 1000 ft3	Max Pcnt Full	Time of Max Occurrence days hr:min	Maximum Outflow CFS
N_CNWN	0.008	0	0	0	0.034	0	1 20:00	0.33
N_DW1	0.013	0	0	0	0.059	0	1 22:00	0.73
N_DW2	0.023	0	0	0	0.113	0	1 20:01	0.46
N_CPLow	2.235	0	0	0	20.606	1	2 00:49	1.96
N_SVSWS	5.206	1	0	0	25.770	4	2 02:57	0.41

****
Outfall Loading Summary
****

Outfall Node	Flow Freq Pcnt	Avg Flow CFS	Max Flow CFS	Total Volume 10^6 gal
Out_SE	75.47	0.97	2.44	1.523
Out_NW	0.00	0.00	0.00	0.000
System	37.74	0.97	0.00	1.523

****
Link Flow Summary
****

Link	Type	Maximum |Flow| CFS	Time of Max Occurrence days hr:min	Maximum |Veloc| ft/sec	Max/ Full Flow	Max/ Full Depth
C_SVSW_12E	CONDUIT	0.06	2 03:03	0.76	0.07	0.15
D_SVSW	CONDUIT	0.06	2 03:16	0.18	0.00	0.02
C_DW2	CONDUIT	0.46	1 20:01	2.82	0.12	0.26
D_DE2	CHANNEL	0.45	1 20:21	0.31	0.00	0.09
C_DW1	CONDUIT	0.73	1 22:00	2.94	0.21	0.35
D_DE1	CHANNEL	0.73	1 22:05	0.34	0.00	0.12
C_CNW	CONDUIT	0.33	1 20:00	2.93	0.09	0.20
D_CNW	CONDUIT	0.33	1 20:13	0.38	0.00	0.03
C_10G2	CONDUIT	1.21	2 00:44	2.23	1.13	1.00
C_10G1	CONDUIT	2.25	2 00:52	4.65	1.80	0.84
D_OutSE	CONDUIT	2.44	1 22:38	0.92	0.01	0.14
C_10R1	CONDUIT	1.04	2 00:50	2.31	2.06	0.77
D_SVSE	CONDUIT	0.20	1 20:08	0.37	0.00	0.02
D_SiteNE	CHANNEL	0.05	1 22:04	0.03	0.00	0.16
D_CNE	CONDUIT	0.05	1 20:02	0.27	0.00	0.03
C_SVSW_12W	CONDUIT	0.00	0 00:00	0.00	0.00	0.00
OF_SVSW	CONDUIT	0.00	0 00:00	0.00	0.00	0.00
C_SVSW_6	CONDUIT	0.39	2 07:14	1.97	1.28	1.00
C_10R2	CONDUIT	0.75	2 00:35	1.39	0.80	1.00
OF_DW2	CONDUIT	0.00	0 00:00	0.00	0.00	0.00
OF_DW1	CONDUIT	0.00	0 00:00	0.00	0.00	0.00
OF_CNWW	CHANNEL	0.00	0 00:00	0.00	0.00	0.00
OF_CNW	CONDUIT	0.00	0 00:00	0.00	0.00	0.00

****
Flow Classification Summary
****

Conduit	Adjusted /Actual Length	Fraction of Time in Flow Class: Dry	Up Dry	Down Dry	Sub Crit	Sup Crit	Up Crit	Down Crit	Norm Ltd	Inlet Ctrl
C_SVSW_12E	1.00	0.68	0.17	0.00	0.15	0.00	0.00	0.00	0.39	0.00
D_SVSW	1.00	0.68	0.00	0.00	0.00	0.00	0.00	0.32	0.00	0.00
C_DW2	1.00	0.09	0.33	0.00	0.35	0.24	0.00	0.00	0.71	0.00
D_DE2	1.00	0.09	0.00	0.00	0.00	0.00	0.00	0.91	0.00	0.00
C_DW1	1.00	0.10	0.29	0.00	0.50	0.12	0.00	0.00	0.69	0.00
D_DE1	1.00	0.10	0.00	0.00	0.00	0.00	0.00	0.90	0.00	0.00
C_CNW	1.00	0.09	0.00	0.00	0.00	0.00	0.00	0.91	0.00	0.00
D_CNW	1.00	0.10	0.00	0.00	0.00	0.00	0.00	0.90	0.00	0.00
C_10G2	1.00	0.10	0.22	0.00	0.68	0.00	0.00	0.00	0.66	0.00
C_10G1	1.00	0.10	0.00	0.00	0.62	0.28	0.00	0.00	0.00	0.00
D_OutSE	1.00	0.11	0.00	0.00	0.89	0.00	0.00	0.00	0.24	0.00
C_10R1	1.00	0.10	0.00	0.00	0.00	0.00	0.00	0.90	0.00	0.00
D_SVSE	1.00	0.28	0.00	0.00	0.00	0.00	0.00	0.72	0.00	0.00
D_SiteNE	1.00	0.10	0.00	0.00	0.90	0.00	0.00	0.00	0.68	0.00
D_CNE	1.00	0.10	0.32	0.00	0.58	0.00	0.00	0.00	0.83	0.00
C_SVSW_12W	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OF_SVSW	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C_SVSW_6	1.00	0.10	0.09	0.00	0.81	0.00	0.00	0.00	0.49	0.00
C_10R2	1.00	0.09	0.00	0.00	0.91	0.00	0.00	0.00	0.21	0.00

OF_DW2	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OF_DW1	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OF_CNWW	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OF_CNW	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

****
Conduit Surcharge Summary
****

Conduit	Hours Full: Both Ends	Hours Full: Upstream	Hours Full: Dnstream	Hours Above Full Normal Flow	Hours Capacity Limited
C_10G2	15.53	15.53	16.62	15.24	15.25
C_10G1	0.01	16.62	0.01	17.29	0.01
C_10R1	0.01	17.34	0.01	17.76	0.01
C_SVSW_6	34.55	34.55	50.72	22.07	22.94
C_10R2	16.97	16.97	17.34	0.01	10.39

Analysis begun on: Sat Jun 25 19:10:04 2022
Analysis ended on: Sat Jun 25 19:10:07 2022
Total elapsed time: 00:00:03

```
[TITLE]
;;Project Title/Notes

[OPTIONS]
;;Option             Value
FLOW_UNITS           CFS
INFILTRATION         CURVE_NUMBER
FLOW_ROUTING         DYNWAVE
LINK_OFFSETS         ELEVATION
MIN_SLOPE            0
ALLOW_PONDING        NO
SKIP_STEADY_STATE    NO

START_DATE           09/17/2017
START_TIME           00:00:00
REPORT_START_DATE    09/17/2017
REPORT_START_TIME    00:00:00
END_DATE             09/20/2017
END_TIME             23:00:00
SWEEP_START          01/01
SWEEP_END            12/31
DRY_DAYS             0
REPORT_STEP          00:15:00
WET_STEP             00:05:00
DRY_STEP             01:00:00
ROUTING_STEP         0:00:05
RULE_STEP            00:00:00

INERTIAL_DAMPING     PARTIAL
NORMAL_FLOW_LIMITED  BOTH
FORCE_MAIN_EQUATION  H-W
VARIABLE_STEP        0.75
LENGTHENING_STEP     0
MIN_SURFAREA         12.557
MAX_TRIALS           8
HEAD_TOLERANCE       0.005
SYS_FLOW_TOL         5
LAT_FLOW_TOL         5
MINIMUM_STEP         0.5
THREADS              1

[EVAPORATION]
;;Data Source    Parameters
;;-------------- ----------------
CONSTANT         0.0
DRY_ONLY         NO

[RAINGAGES]
;;Name           Format    Interval SCF      Source
;;-------------- --------- ------ ------ ----------
RG-Huff          CUMULATIVE  1:00    1.0      TIMESERIES 024Huff3Q100_19
RG-1QH           CUMULATIVE 0:01     1.0      TIMESERIES HHuff1Q
RG-1Q1           CUMULATIVE 0:03     1.0      TIMESERIES 1Huff1Q
RG-1Q2           CUMULATIVE 0:06     1.0      TIMESERIES 2Huff1Q
RG-1             CUMULATIVE 1:12     1.0      TIMESERIES 24Huff3Q1
RG-2             CUMULATIVE 1:12     1.0      TIMESERIES 24Huff3Q2
RG-5             CUMULATIVE 1:12     1.0      TIMESERIES 24Huff3Q5
RG-10            CUMULATIVE 1:12     1.0      TIMESERIES 24Huff3Q10
RG-100           CUMULATIVE 1:12     1.0      TIMESERIES 24Huff3Q100
RG-100_19003     CUMULATIVE 0:07:30  1.0      TIMESERIES 003Huff1Q100_19
RG-100_19006     CUMULATIVE  0:15    1.0      TIMESERIES 006Huff2Q100_19
RG-100_19012     CUMULATIVE  0:30    1.0      TIMESERIES 012Huff2Q100_19
RG-100_19018     CUMULATIVE  0:45    1.0      TIMESERIES 018Huff2Q100_19
RG-100_19024     CUMULATIVE  1:00    1.0      TIMESERIES 024Huff3Q100_19
RG-100_19048     CUMULATIVE  2:00    1.0      TIMESERIES 048Huff4Q100_19
RG-100_19072     CUMULATIVE  3:00    1.0      TIMESERIES 072Huff4Q100_19
RG-100_19120     CUMULATIVE  5:00    1.0      TIMESERIES 120Huff4Q100_19
RG-100_19240     CUMULATIVE 10:00    1.0      TIMESERIES 240Huff4Q100_19
RG-120           CUMULATIVE 6:00     1.0      TIMESERIES 120Huff4Q100

[SUBCATCHMENTS]
;;Name           Rain Gage        Outlet           Area     %Imperv  Width    %Slope   CurbLen  SnowPack
;;-------------- ---------------- ---------------- -------- -------- -------- -------- -------- ----------------
H_SVSW           RG-Huff          N_SVSWS          11.05    0        1086.9   2.10     0
H_CNW            RG-Huff          N_CNWN           2.38     0        295.1    2.99     0
H_DW1            RG-Huff          N_DW1            6.08     0        352.7    2.66     0
H_DW2            RG-Huff          N_DW2            3.21     0        323.8    3.36     0
H_DE2            RG-Huff          N_CPLow          6.01     0        733.1    2.52     0
H_DE1            RG-Huff          N_CPLow          6.58     0        463.9    1.46     0
H_CNE            RG-Huff          N_OffNE          0.42     0        50.9     2.93     0
H_SVSE           RG-Huff          N_OffSE          1.67     0        257.5    4.95     0

[SUBAREAS]
;;Subcatchment   N-Imperv   N-Perv     S-Imperv   S-Perv     PctZero    RouteTo    PctRouted
;;-------------- ---------- ---------- ---------- ---------- ---------- ---------- ----------
H_SVSW           0.02       0.4        0.05       0.05       25         OUTLET
H_CNW            0.02       0.24       0.05       0.05       25         OUTLET
H_DW1            0.02       0.4        0.05       0.05       25         OUTLET
H_DW2            0.02       0.24       0.05       0.05       25         OUTLET
H_DE2            0.02       0.24       0.05       0.05       25         OUTLET
H_DE1            0.02       0.24       0.05       0.05       25         OUTLET
H_CNE            0.02       0.4        0.05       0.05       25         OUTLET
H_SVSE           0.02       0.4        0.05       0.05       25         OUTLET

[INFILTRATION]
;;Subcatchment   CurveNum              DryTime
```

```
;;-------------- ---------- ---------- ----------
H_SVSW           65.4       0.5        4
H_CNW            75.4       0.5        4
H_DW1            72.0       0.5        4
H_DW2            76.9       0.5        4
H_DE2            68.9       0.5        4
H_DE1            67.7       0.5        4
H_CNE            70.5       0.5        4
H_SVSE           67.8       0.5        4

[JUNCTIONS]
;;Name           Elevation  MaxDepth   InitDepth  SurDepth   Aponded
;;-------------- ---------- ---------- ---------- ---------- ----------
N_SVSWN          735.15     5          0          0          0
N_DE2            739.87     6          0          0          0
N_DE1            740.29     5          0          0          0
N_CNWS           746.       5          0          0          0
J_10D            726.5      13         0          0          0
J_10G            726.83     6          0          0          0
N_OffSE          747        3          0          0          0
N_SiteNE         745        3          0          0          0
N_OffNE          750        3          0          0          0
J_10R            729.7      8          0          0          0

[OUTFALLS]
;;Name           Elevation  Type       Stage Data       Gated    Route To
;;-------------- ---------- ---------- ---------------- -------- ----------------
Out_SE           726        NORMAL                      NO
Out_NW           750        NORMAL                      NO

[STORAGE]
;;Name           Elev.    MaxDepth   InitDepth  Shape      Curve Name/Params            N/A      Fevap    Psi      Ksat     IMD
;;-------------- -------- ---------- ---------- ---------- ---------------------------- -------- -------- -------- -------- --------
N_CNWN           747.67   5          0          TABULAR    S_CNW                        0        0
N_DW1            740.92   5          0          TABULAR    S_DW1                        0        0
N_DW2            740.63   5          0          TABULAR    S_DW2                        0        0
N_CPLow          729.75   10         0          TABULAR    S_CP                         0        0
N_SVSWS          732.72   8          0          TABULAR    S_SVSW                       0        0

[CONDUITS]
;;Name           From Node        To Node          Length     Roughness  InOffset   OutOffset  InitFlow   MaxFlow
;;-------------- ---------------- ---------------- ---------- ---------- ---------- ---------- ---------- ----------
C_SVSW_12E       N_SVSWS          N_SVSWN          48         0.024      735.25     735.15     0          0
D_SVSW           N_SVSWN          N_CPLow          119        0.1        735.15     734.5      0          0
C_DW2            N_DW2            N_DE2            20         0.024      740.63     739.87     0          0
D_DE2            N_DE2            N_CPLow          370        0.1        739.87     736        0          0
C_DW1            N_DW1            N_DE1            20         0.024      740.92     740.29     0          0
D_DE1            N_DE1            N_CPLow          513        0.1        740.29     736        0          0
C_CNW            N_CNWN           N_CNWS           27         0.024      747.67     746.57     0          0
D_CNW            N_CNWS           N_CPLow          529        0.1        746        736        0          0
C_10G2           N_CPLow          J_10G            998        0.015      730.05     726.83     0          0
C_10G1           J_10G            J_10D            75         0.015      726.83     726.5      0          0
D_OutSE          J_10D            Out_SE           60         0.08       726.5      726        0          0
C_10R1           J_10R            J_10G            858        0.015      729.7      729.08     0          0
D_SVSE           N_OffSE          J_10D            316        0.1        747        736        0          0
D_SiteNE         N_SiteNE         J_10D            706        0.1        745        726        0          0
D_CNE            N_OffNE          N_SiteNE         166        0.1        750        745        0          0
C_SVSW_12W       N_SVSWS          N_SVSWN          20         0.024      736.11     735.85     0          0
OF_SVSW          N_SVSWS          N_SVSWN          24         0.025      737.6      737.55     0          0
C_SVSW_6         N_SVSWS          J_10R            786        0.015      732.72     729.7      0          0
C_10R2           N_CPLow          J_10R            20         0.015      729.75     729.7      0          0
OF_DW2           N_DW2            N_DE2            20         0.025      743        742.95     0          0
OF_DW1           N_DW1            N_DE1            20         0.025      743        742.95     0          0
OF_CNWW          N_CNWN           Out_NW           44         0.1        750.2      750        0          0
OF_CNW           N_CNWN           N_CNWS           24         0.025      751.1      751.05     0          0

[XSECTIONS]
;;Link           Shape        Geom1            Geom2      Geom3      Geom4      Barrels    Culvert
;;-------------- ------------ ---------------- ---------- ---------- ---------- ---------- ----------
C_SVSW_12E       CIRCULAR     1                0          0          0          1
D_SVSW           TRAPEZOIDAL  4                5          6          6          1
C_DW2            CIRCULAR     1                0          0          0          1
D_DE2            IRREGULAR    D_XDE2           0          0          0          1
C_DW1            CIRCULAR     1                0          0          0          1
D_DE1            IRREGULAR    D_XDE1           0          0          0          1
C_CNW            CIRCULAR     1                0          0          0          1
D_CNW            TRAPEZOIDAL  3                10         6          6          1
C_10G2           CIRCULAR     0.83             0          0          0          1
C_10G1           CIRCULAR     0.83             0          0          0          1
D_OutSE          TRAPEZOIDAL  4                3          3          3          1
C_10R1           CIRCULAR     0.83             0          0          0          1
D_SVSE           TRAPEZOIDAL  3                10         6          6          1
D_SiteNE         IRREGULAR    D_XDE2           0          0          0          1
D_CNE            TRAPEZOIDAL  2                3          6          6          1
C_SVSW_12W       CIRCULAR     1                0          0          0          1
OF_SVSW          TRIANGULAR   0.4              135        0          0          1
C_SVSW_6         CIRCULAR     0.5              0          0          0          1
C_10R2           CIRCULAR     0.83             0          0          0          1
OF_DW2           TRIANGULAR   0.5              150        0          0          1
OF_DW1           TRIANGULAR   1                85         0          0          1
OF_CNWW          IRREGULAR    OF_XCNW          0          0          0          1
OF_CNW           TRIANGULAR   0.2              110        0          0          1

[TRANSECTS]
;;Transect Data in HEC-2 format
;
```

```
NC 0.025    0.1      0.1
X1 OF_XCNW           7        12.      28.      0.0      0.0      0.0      0.0      0.0
GR 753      0        751.2    0.1      750.8    12       750.2    22       750.3    28
GR 751      43       752      68
;
NC 0.1      0.1      0.1
X1 D_XDE1            5        -35      37       0.0      0.0      0.0      0.0      0.0
GR 742      -35.1    741      -35      740      0        741      37       742      37.1
;
NC 0.1      0.1      0.1
X1 D_XDE2            5        -39      48       0.0      0.0      0.0      0.0      0.0
GR 741      -56      740      -39      739      0        740      48       741      70

[LOSSES]
;;Link            Kentry     Kexit      Kavg       Flap Gate  Seepage
;;--------------- ---------- ---------- ---------- ---------- ----------
C_SVSW_12E        0.5        0.8        0          NO         0
C_DW2             0.5        0.8        0          NO         0
C_DW1             0.5        0.8        0          NO         0
C_CNW             0.5        0.8        0          NO         0
C_10G2            0.5        0.8        0          NO         0
C_10G1            0.3        0.5        0          NO         0
C_10R1            0.2        0.8        0          NO         0
C_SVSW_12W        0.5        0.8        0          NO         0
C_SVSW_6          0.5        1.0        0          NO         0
C_10R2            0.5        0.8        0          NO         0

[CURVES]
;;Name            Type       X-Value    Y-Value
;;--------------- ---------- ---------- ----------
S_CNW             Storage    0          100
S_CNW                        1.33       945.23
S_CNW                        2.33       7604.33
S_CNW                        3.33       16786.86
S_CNW                        4.33       24925.33
;
S_DW1             Storage    0          100
S_DW1                        1.08       553.64
S_DW1                        2.08       5327.2
S_DW1                        3.08       29350.38
;
S_DW2             Storage    0          100
S_DW2                        2.37       6800.97
S_DW2                        3.37       14047.6
;
S_SVSW            Storage    0          10
S_SVSW                       1.75       10
S_SVSW                       1.78       2003.45
S_SVSW                       2.28       30880.18
S_SVSW                       2.53       39547.405
S_SVSW                       3.28       65549.08
S_SVSW                       4.28       80968.51
S_SVSW                       5.28       101926.96
;
S_CP              Storage    0          10
S_CP                         1.8        10
S_CP                         1.85       100
S_CP                         2.25       12099.3
S_CP                         3.25       44419.43
S_CP                         4.25       94221.01
S_CP                         5.25       155461.26
S_CP                         6.25       237121.1
S_CP                         7.25       335851.03

[TIMESERIES]
;;Name            Date       Time       Value
;;--------------- ---------- ---------- ----------
;First Quartile Huff distribution for half-hour storm (100-yr)
HHuff1Q                      0:00       0.0000
HHuff1Q                      0:01       0.2987
HHuff1Q                      0:02       0.6067
HHuff1Q                      0:03       0.9240
HHuff1Q                      0:04       1.1107
HHuff1Q                      0:05       1.2880
HHuff1Q                      0:06       1.4560
HHuff1Q                      0:07       1.6053
HHuff1Q                      0:08       1.7360
HHuff1Q                      0:09       1.8480
HHuff1Q                      0:10       1.9413
HHuff1Q                      0:11       2.0253
HHuff1Q                      0:12       2.1000
HHuff1Q                      0:13       2.1747
HHuff1Q                      0:14       2.2400
HHuff1Q                      0:15       2.2960
HHuff1Q                      0:16       2.3333
HHuff1Q                      0:17       2.3707
HHuff1Q                      0:18       2.4080
HHuff1Q                      0:19       2.4453
HHuff1Q                      0:20       2.4827
HHuff1Q                      0:21       2.5200
HHuff1Q                      0:22       2.5573
HHuff1Q                      0:23       2.5947
HHuff1Q                      0:24       2.6320
HHuff1Q                      0:25       2.6693
HHuff1Q                      0:26       2.6973
HHuff1Q                      0:27       2.7160
```

```
HHuff1Q                 0:28       2.7347
HHuff1Q                 0:29       2.7627
HHuff1Q                 0:30       2.8000
;
;First Quartile Huff distribution for 1-hour storm (100-yr)
1Huff1Q                 0:00       0.0000
1Huff1Q                 0:03       0.5696
1Huff1Q                 0:06       1.1748
1Huff1Q                 0:09       1.5308
1Huff1Q                 0:12       1.8512
1Huff1Q                 0:15       2.1360
1Huff1Q                 0:18       2.3496
1Huff1Q                 0:21       2.5276
1Huff1Q                 0:24       2.6700
1Huff1Q                 0:27       2.8124
1Huff1Q                 0:30       2.9192
1Huff1Q                 0:33       2.9904
1Huff1Q                 0:36       3.0616
1Huff1Q                 0:39       3.1328
1Huff1Q                 0:42       3.2040
1Huff1Q                 0:45       3.2752
1Huff1Q                 0:48       3.3464
1Huff1Q                 0:51       3.4176
1Huff1Q                 0:54       3.4532
1Huff1Q                 0:57       3.4888
1Huff1Q                 1:00       3.5600
;
;First Quartile Huff distribution for 2-hour storm (100-yr)
2Huff1Q                 0:00       0.0000
2Huff1Q                 0:06       0.7152
2Huff1Q                 0:12       1.4751
2Huff1Q                 0:18       1.9221
2Huff1Q                 0:24       2.3244
2Huff1Q                 0:30       2.6820
2Huff1Q                 0:36       2.9502
2Huff1Q                 0:42       3.1737
2Huff1Q                 0:48       3.3525
2Huff1Q                 0:54       3.5313
2Huff1Q                 1:00       3.6654
2Huff1Q                 1:06       3.7548
2Huff1Q                 1:12       3.8442
2Huff1Q                 1:18       3.9336
2Huff1Q                 1:24       4.0230
2Huff1Q                 1:30       4.1124
2Huff1Q                 1:36       4.2018
2Huff1Q                 1:42       4.2912
2Huff1Q                 1:48       4.3359
2Huff1Q                 1:54       4.3806
2Huff1Q                 2:00       4.4700
;
;Annual 24-hour Rainfall
24Huff3Q1               0:00       0.0000
24Huff3Q1               1:12       0.0753
24Huff3Q1               2:24       0.1506
24Huff3Q1               3:36       0.2259
24Huff3Q1               4:48       0.3012
24Huff3Q1               6:00       0.3765
24Huff3Q1               7:12       0.4769
24Huff3Q1               8:24       0.5773
24Huff3Q1               9:36       0.6777
24Huff3Q1               10:48      0.8032
24Huff3Q1               12:00      0.9538
24Huff3Q1               13:12      1.1295
24Huff3Q1               14:24      1.4307
24Huff3Q1               15:36      1.7570
24Huff3Q1               16:48      1.9829
24Huff3Q1               18:00      2.1335
24Huff3Q1               19:12      2.2339
24Huff3Q1               20:24      2.3092
24Huff3Q1               21:36      2.3845
24Huff3Q1               22:48      2.4347
24Huff3Q1               24:00      2.5100
;
;2-year 24-hour Rainfall
24Huff3Q2               0:00       0.0000
24Huff3Q2               1:12       0.0912
24Huff3Q2               2:24       0.1824
24Huff3Q2               3:36       0.2736
24Huff3Q2               4:48       0.3648
24Huff3Q2               6:00       0.4560
24Huff3Q2               7:12       0.5776
24Huff3Q2               8:24       0.6992
24Huff3Q2               9:36       0.8208
24Huff3Q2               10:48      0.9728
24Huff3Q2               12:00      1.1552
24Huff3Q2               13:12      1.3680
24Huff3Q2               14:24      1.7328
24Huff3Q2               15:36      2.1280
24Huff3Q2               16:48      2.4016
24Huff3Q2               18:00      2.5840
24Huff3Q2               19:12      2.7056
24Huff3Q2               20:24      2.7968
24Huff3Q2               21:36      2.8880
24Huff3Q2               22:48      2.9488
24Huff3Q2               24:00      3.0400
;
```

```
;5-year 24-hour Rainfall
24Huff3Q5                 0:00       0.0000
24Huff3Q5                 1:12       0.1140
24Huff3Q5                 2:24       0.2280
24Huff3Q5                 3:36       0.3420
24Huff3Q5                 4:48       0.4560
24Huff3Q5                 6:00       0.5700
24Huff3Q5                 7:12       0.7220
24Huff3Q5                 8:24       0.8740
24Huff3Q5                 9:36       1.0260
24Huff3Q5                 10:48      1.2160
24Huff3Q5                 12:00      1.4440
24Huff3Q5                 13:12      1.7100
24Huff3Q5                 14:24      2.1660
24Huff3Q5                 15:36      2.6600
24Huff3Q5                 16:48      3.0020
24Huff3Q5                 18:00      3.2300
24Huff3Q5                 19:12      3.3820
24Huff3Q5                 20:24      3.4960
24Huff3Q5                 21:36      3.6100
24Huff3Q5                 22:48      3.6860
24Huff3Q5                 24:00      3.8000
;
;10-year 24-hour Rainfall
24Huff3Q10                0:00       0.0000
24Huff3Q10                1:12       0.1341
24Huff3Q10                2:24       0.2682
24Huff3Q10                3:36       0.4023
24Huff3Q10                4:48       0.5364
24Huff3Q10                6:00       0.6705
24Huff3Q10                7:12       0.8493
24Huff3Q10                8:24       1.0281
24Huff3Q10                9:36       1.2069
24Huff3Q10                10:48      1.4304
24Huff3Q10                12:00      1.6986
24Huff3Q10                13:12      2.0115
24Huff3Q10                14:24      2.5479
24Huff3Q10                15:36      3.1290
24Huff3Q10                16:48      3.5313
24Huff3Q10                18:00      3.7995
24Huff3Q10                19:12      3.9783
24Huff3Q10                20:24      4.1124
24Huff3Q10                21:36      4.2465
24Huff3Q10                22:48      4.3359
24Huff3Q10                24:00      4.4700
;
;Third Quartile Huff distribution for 24-hour storm - 100-year
24Huff3Q100               0:00       0.0000
24Huff3Q100               1:12       0.1950
24Huff3Q100               2:24       0.3900
24Huff3Q100               3:36       0.5850
24Huff3Q100               4:48       0.7800
24Huff3Q100               6:00       0.9750
24Huff3Q100               7:12       1.2350
24Huff3Q100               8:24       1.4950
24Huff3Q100               9:36       1.7550
24Huff3Q100               10:48      2.0800
24Huff3Q100               12:00      2.4700
24Huff3Q100               13:12      2.9250
24Huff3Q100               14:24      3.7050
24Huff3Q100               15:36      4.5500
24Huff3Q100               16:48      5.1350
24Huff3Q100               18:00      5.5250
24Huff3Q100               19:12      5.7850
24Huff3Q100               20:24      5.9800
24Huff3Q100               21:36      6.1750
24Huff3Q100               22:48      6.3050
24Huff3Q100               24:00      6.5000
;
;First Quartile Huff distribution for 3-hour storm - 100-year, 2019 NE IL values
003Huff1Q100_19           00:00:00   0.0000
003Huff1Q100_19           00:07:30   0.4590
003Huff1Q100_19           00:15:00   0.9734
003Huff1Q100_19           00:22:30   1.5432
003Huff1Q100_19           00:30:00   2.1043
003Huff1Q100_19           00:37:30   2.6050
003Huff1Q100_19           00:45:00   3.0470
003Huff1Q100_19           00:52:30   3.4175
003Huff1Q100_19           01:00:00   3.6904
003Huff1Q100_19           01:07:30   3.8880
003Huff1Q100_19           01:15:00   4.0719
003Huff1Q100_19           01:22:30   4.2257
003Huff1Q100_19           01:30:00   4.3816
003Huff1Q100_19           01:37:30   4.5320
003Huff1Q100_19           01:45:00   4.6764
003Huff1Q100_19           01:52:30   4.7983
003Huff1Q100_19           02:00:00   4.9119
003Huff1Q100_19           02:07:30   5.0052
003Huff1Q100_19           02:15:00   5.0892
003Huff1Q100_19           02:22:30   5.1622
003Huff1Q100_19           02:30:00   5.2353
003Huff1Q100_19           02:37:30   5.3011
003Huff1Q100_19           02:45:00   5.3659
003Huff1Q100_19           02:52:30   5.4269
003Huff1Q100_19           03:00:00   5.4900
;
```

```
;Second Quartile Huff distribution for 6-hour storm - 100-year, 2019 NE IL values
006Huff2Q100_19             00:00      0.0000
006Huff2Q100_19             00:15      0.1472
006Huff2Q100_19             00:30      0.3099
006Huff2Q100_19             00:45      0.5003
006Huff2Q100_19             01:00      0.7285
006Huff2Q100_19             01:15      1.0153
006Huff2Q100_19             01:30      1.3754
006Huff2Q100_19             01:45      1.8268
006Huff2Q100_19             02:00      2.3431
006Huff2Q100_19             02:15      2.9121
006Huff2Q100_19             02:30      3.4947
006Huff2Q100_19             02:45      4.0110
006Huff2Q100_19             03:00      4.4856
006Huff2Q100_19             03:15      4.8534
006Huff2Q100_19             03:30      5.1684
006Huff2Q100_19             03:45      5.4462
006Huff2Q100_19             04:00      5.6462
006Huff2Q100_19             04:15      5.8011
006Huff2Q100_19             04:30      5.9265
006Huff2Q100_19             04:45      6.0320
006Huff2Q100_19             05:00      6.1271
006Huff2Q100_19             05:15      6.2095
006Huff2Q100_19             05:30      6.2847
006Huff2Q100_19             05:45      6.3554
006Huff2Q100_19             06:00      6.4300
;
;Second Quartile Huff distribution for 12-hour storm - 100-year, 2019 NE IL values
012Huff2Q100_19             00:00      0.0000
012Huff2Q100_19             00:30      0.1708
012Huff2Q100_19             01:00      0.3596
012Huff2Q100_19             01:30      0.5804
012Huff2Q100_19             02:00      0.8452
012Huff2Q100_19             02:30      1.1779
012Huff2Q100_19             03:00      1.5957
012Huff2Q100_19             03:30      2.1194
012Huff2Q100_19             04:00      2.7184
012Huff2Q100_19             04:30      3.3786
012Huff2Q100_19             05:00      4.0545
012Huff2Q100_19             05:30      4.6535
012Huff2Q100_19             06:00      5.2041
012Huff2Q100_19             06:30      5.6308
012Huff2Q100_19             07:00      5.9963
012Huff2Q100_19             07:30      6.3186
012Huff2Q100_19             08:00      6.5506
012Huff2Q100_19             08:30      6.7304
012Huff2Q100_19             09:00      6.8759
012Huff2Q100_19             09:30      6.9982
012Huff2Q100_19             10:00      7.1086
012Huff2Q100_19             10:30      7.2041
012Huff2Q100_19             11:00      7.2914
012Huff2Q100_19             11:30      7.3735
012Huff2Q100_19             12:00      7.4600
;
;Second Quartile Huff distribution for 18-hour storm - 100-year, 2019 NE IL values
018Huff2Q100_19             00:00      0.0000
018Huff2Q100_19             00:45      0.1846
018Huff2Q100_19             01:30      0.3885
018Huff2Q100_19             02:15      0.6271
018Huff2Q100_19             03:00      0.9132
018Huff2Q100_19             03:45      1.2727
018Huff2Q100_19             04:30      1.7240
018Huff2Q100_19             05:15      2.2898
018Huff2Q100_19             06:00      2.9371
018Huff2Q100_19             06:45      3.6504
018Huff2Q100_19             07:30      4.3806
018Huff2Q100_19             08:15      5.0278
018Huff2Q100_19             09:00      5.6227
018Huff2Q100_19             09:45      6.0837
018Huff2Q100_19             10:30      6.4786
018Huff2Q100_19             11:15      6.8268
018Huff2Q100_19             12:00      7.0775
018Huff2Q100_19             12:45      7.2717
018Huff2Q100_19             13:30      7.4289
018Huff2Q100_19             14:15      7.5611
018Huff2Q100_19             15:00      7.6804
018Huff2Q100_19             15:45      7.7835
018Huff2Q100_19             16:30      7.8778
018Huff2Q100_19             17:15      7.9665
018Huff2Q100_19             18:00      8.0600
;
;Third Quartile Huff distribution for 24-hour storm - 100-year, 2019 NE IL values
024Huff3Q100_19             00:00      0.0000
024Huff3Q100_19             01:00      0.1757
024Huff3Q100_19             02:00      0.3694
024Huff3Q100_19             03:00      0.5716
024Huff3Q100_19             04:00      0.7816
024Huff3Q100_19             05:00      1.0035
024Huff3Q100_19             06:00      1.2307
024Huff3Q100_19             07:00      1.4492
024Huff3Q100_19             08:00      1.6831
024Huff3Q100_19             09:00      1.9522
024Huff3Q100_19             10:00      2.2565
024Huff3Q100_19             11:00      2.6507
024Huff3Q100_19             12:00      3.1152
024Huff3Q100_19             13:00      3.7639
```

```
024Huff3Q100_19             14:00      4.4658
024Huff3Q100_19             15:00      5.2294
024Huff3Q100_19             16:00      5.9896
024Huff3Q100_19             17:00      6.7009
024Huff3Q100_19             18:00      7.2776
024Huff3Q100_19             19:00      7.6907
024Huff3Q100_19             20:00      7.9795
024Huff3Q100_19             21:00      8.1706
024Huff3Q100_19             22:00      8.3180
024Huff3Q100_19             23:00      8.4466
024Huff3Q100_19             24:00      8.5700
;
;Fourth Quartile Huff distribution for 48-hour storm - 100-year, 2019 NE IL values
048Huff4Q100_19             00:00      0.0000
048Huff4Q100_19             02:00      0.2144
048Huff4Q100_19             04:00      0.4445
048Huff4Q100_19             06:00      0.6607
048Huff4Q100_19             08:00      0.9076
048Huff4Q100_19             10:00      1.1628
048Huff4Q100_19             12:00      1.4133
048Huff4Q100_19             14:00      1.6620
048Huff4Q100_19             16:00      1.8866
048Huff4Q100_19             18:00      2.1186
048Huff4Q100_19             20:00      2.3580
048Huff4Q100_19             22:00      2.6309
048Huff4Q100_19             24:00      2.9000
048Huff4Q100_19             26:00      3.1459
048Huff4Q100_19             28:00      3.3714
048Huff4Q100_19             30:00      3.5830
048Huff4Q100_19             32:00      3.8271
048Huff4Q100_19             34:00      4.1834
048Huff4Q100_19             36:00      4.7597
048Huff4Q100_19             38:00      5.5040
048Huff4Q100_19             40:00      6.4208
048Huff4Q100_19             42:00      7.4286
048Huff4Q100_19             44:00      8.3251
048Huff4Q100_19             46:00      8.9125
048Huff4Q100_19             48:00      9.2800
;
;Fourth Quartile Huff distribution for 72-hour storm - 100-year, 2019 NE IL values
072Huff4Q100_19             00:00      0.0000
072Huff4Q100_19             03:00      0.2275
072Huff4Q100_19             06:00      0.4718
072Huff4Q100_19             09:00      0.7013
072Huff4Q100_19             12:00      0.9633
072Huff4Q100_19             15:00      1.2342
072Huff4Q100_19             18:00      1.5002
072Huff4Q100_19             21:00      1.7641
072Huff4Q100_19             24:00      2.0025
072Huff4Q100_19             27:00      2.2488
072Huff4Q100_19             30:00      2.5029
072Huff4Q100_19             33:00      2.7925
072Huff4Q100_19             36:00      3.0781
072Huff4Q100_19             39:00      3.3392
072Huff4Q100_19             42:00      3.5785
072Huff4Q100_19             45:00      3.8031
072Huff4Q100_19             48:00      4.0621
072Huff4Q100_19             51:00      4.4404
072Huff4Q100_19             54:00      5.0521
072Huff4Q100_19             57:00      5.8420
072Huff4Q100_19             60:00      6.8152
072Huff4Q100_19             63:00      7.8849
072Huff4Q100_19             66:00      8.8364
072Huff4Q100_19             69:00      9.4599
072Huff4Q100_19             72:00      9.8500
;
;Fourth Quartile Huff distribution for 120-hour storm - 100-year, 2019 NE IL values
120Huff4Q100_19             00:00      0.0000
120Huff4Q100_19             05:00      0.2462
120Huff4Q100_19             10:00      0.5106
120Huff4Q100_19             15:00      0.7590
120Huff4Q100_19             20:00      1.0425
120Huff4Q100_19             25:00      1.3357
120Huff4Q100_19             30:00      1.6235
120Huff4Q100_19             35:00      1.9092
120Huff4Q100_19             40:00      2.1672
120Huff4Q100_19             45:00      2.4337
120Huff4Q100_19             50:00      2.7087
120Huff4Q100_19             55:00      3.0221
120Huff4Q100_19             60:00      3.3313
120Huff4Q100_19             65:00      3.6137
120Huff4Q100_19             70:00      3.8728
120Huff4Q100_19             75:00      4.1158
120Huff4Q100_19             80:00      4.3962
120Huff4Q100_19             85:00      4.8055
120Huff4Q100_19             90:00      5.4675
120Huff4Q100_19             95:00      6.3224
120Huff4Q100_19            100:00      7.3757
120Huff4Q100_19            105:00      8.5333
120Huff4Q100_19            110:00      9.5631
120Huff4Q100_19            115:00     10.2379
120Huff4Q100_19            120:00     10.6600
;
;Fourth Quartile Huff distribution for 240-hour storm - 100-year, 2019 NE IL values
240Huff4Q100_19             00:00      0.0000
240Huff4Q100_19             10:00      0.2922
```

```
240Huff4Q100_19             20:00      0.6059
240Huff4Q100_19             30:00      0.9007
240Huff4Q100_19             40:00      1.2372
240Huff4Q100_19             50:00      1.5850
240Huff4Q100_19             60:00      1.9266
240Huff4Q100_19             70:00      2.2656
240Huff4Q100_19             80:00      2.5717
240Huff4Q100_19             90:00      2.8880
240Huff4Q100_19            100:00      3.2144
240Huff4Q100_19            110:00      3.5863
240Huff4Q100_19            120:00      3.9531
240Huff4Q100_19            130:00      4.2884
240Huff4Q100_19            140:00      4.5957
240Huff4Q100_19            150:00      4.8842
240Huff4Q100_19            160:00      5.2169
240Huff4Q100_19            170:00      5.7026
240Huff4Q100_19            180:00      6.4882
240Huff4Q100_19            190:00      7.5027
240Huff4Q100_19            200:00      8.7525
240Huff4Q100_19            210:00     10.1263
240Huff4Q100_19            220:00     11.3483
240Huff4Q100_19            230:00     12.1491
240Huff4Q100_19            240:00     12.6500
;
;Fourth Quartile Huff distribution for 120-hour storm - 100-year
120Huff4Q100                0:00       0.0000
120Huff4Q100                6:00       0.1704
120Huff4Q100               12:00       0.4260
120Huff4Q100               18:00       0.6816
120Huff4Q100               24:00       0.8520
120Huff4Q100               30:00       1.1076
120Huff4Q100               36:00       1.3632
120Huff4Q100               42:00       1.6188
120Huff4Q100               48:00       1.8744
120Huff4Q100               54:00       2.1300
120Huff4Q100               60:00       2.3856
120Huff4Q100               66:00       2.7264
120Huff4Q100               72:00       2.9820
120Huff4Q100               78:00       3.3228
120Huff4Q100               84:00       3.8340
120Huff4Q100               90:00       4.3452
120Huff4Q100               96:00       5.0268
120Huff4Q100              102:00       6.1344
120Huff4Q100              108:00       7.1568
120Huff4Q100              114:00       7.8384
120Huff4Q100              120:00       8.5200

[REPORT]
;;Reporting Options
SUBCATCHMENTS ALL
NODES ALL
LINKS ALL

[TAGS]

[MAP]
DIMENSIONS -2579.657 0.000 12579.657 10000.000
Units      None

[COORDINATES]
;;Node           X-Coord            Y-Coord
;;-------------- ------------------ ------------------
N_SVSWN          4058.434           2787.223
N_DE2            2141.746           3488.203
N_DE1            2148.519           5973.802
N_CNWS           2856.366           8128.400
J_10D            8702.894           3681.948
J_10G            8531.444           3986.272
N_OffSE          8162.827           3630.513
N_SiteNE         8780.047           6197.977
N_OffNE          8579.978           6768.226
J_10R            4344.802           4752.448
Out_SE           9071.512           3210.461
Out_NW           991.166            8446.720
N_CNWN           2856.271           8378.128
N_DW1            1992.745           5970.415
N_DW2            1982.586           3491.589
N_CPLow          4238.303           4820.457
N_SVSWS          4061.820           2536.631

[VERTICES]
;;Link           X-Coord            Y-Coord
;;-------------- ------------------ ------------------
D_SVSW           4163.412           2976.860
D_SVSW           4251.457           3146.179
D_SVSW           4261.616           3461.112
D_SVSW           4197.275           3667.681
D_SVSW           4024.570           3840.386
D_SVSW           3946.684           4080.818
D_SVSW           4000.866           4412.683
D_SVSW           4160.025           4693.752
D_DE2            2219.632           3522.066
D_DE2            2290.746           3640.590
D_DE2            2426.201           3874.249
D_DE2            2632.770           4043.568
D_DE2            2768.225           4165.478
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D_DE2            2937.544           4246.751
D_DE2            3089.931           4328.024
D_DE2            3161.045           4466.865
D_DE2            3357.454           4592.161
D_DE2            3543.705           4666.661
D_DE2            3692.705           4791.957
D_DE2            3811.229           4825.821
D_DE2            3973.775           4819.048
D_DE1            2344.928           6000.893
D_DE1            2500.702           6055.075
D_DE1            2629.384           6221.007
D_DE1            2714.043           6407.258
D_DE1            2787.679           6580.744
D_DE1            2951.089           6674.781
D_DE1            3252.477           6742.509
D_DE1            3448.886           6708.645
D_DE1            3612.865           6561.847
D_DE1            3786.091           6325.630
D_DE1            3845.933           6067.365
D_DE1            3940.420           5925.635
D_DE1            3987.320           5763.847
D_DE1            3973.775           5448.914
D_DE1            3994.093           5238.958
D_DE1            4105.843           4984.980
D_CNW            2912.170           7942.481
D_CNW            2882.166           7813.894
D_CNW            2929.315           7638.158
D_CNW            2980.750           7466.708
D_CNW            3036.471           7299.544
D_CNW            3165.059           7166.670
D_CNW            3452.237           6965.216
D_CNW            3602.256           6909.495
D_CNW            3717.985           6922.354
D_CNW            3782.279           6832.342
D_CNW            3928.011           6540.877
D_CNW            4005.164           6322.279
D_CNW            4103.747           5983.665
D_CNW            4168.041           5730.776
D_CNW            4215.190           5495.032
D_CNW            4232.335           5237.857
C_10G2           4558.090           4792.087
C_10G2           4900.990           4817.805
C_10G2           5381.050           4942.106
C_10G2           5758.240           4980.682
C_10G2           6002.556           4950.679
C_10G2           6336.884           4822.091
C_10G2           6624.063           4676.358
C_10G2           7035.543           4582.061
C_10G2           7275.573           4556.343
C_10G2           7515.603           4547.771
C_10G2           7768.492           4509.195
C_10G2           8059.957           4342.031
C_10R1           4463.792           4732.080
C_10R1           4892.417           4762.083
C_10R1           5329.615           4959.251
C_10R1           5732.523           5036.404
C_10R1           6083.995           4984.969
C_10R1           6465.471           4826.377
C_10R1           6645.494           4727.793
C_10R1           6988.394           4620.637
C_10R1           7382.729           4590.633
C_10R1           7725.629           4564.916
C_10R1           7837.072           4573.488
C_10R1           8042.812           4496.336
C_10R1           8342.849           4299.168
C_10R1           8535.730           4127.718
D_SiteNE         9032.935           6060.817
D_SiteNE         9397.267           5760.780
D_SiteNE         9641.583           5143.560
D_SiteNE         9723.022           4672.072
D_SiteNE         9526.659           4243.743
D_SiteNE         9410.125           3964.841
D_SiteNE         9211.099           3764.962
D_SiteNE         9036.997           3667.029
C_SVSW_12W       3930.681           2664.846
OF_SVSW          4183.114           2664.846
C_SVSW_6         4205.658           2873.229
C_SVSW_6         4298.150           3188.790
C_SVSW_6         4314.472           3618.605
C_SVSW_6         4162.133           3988.572
C_SVSW_6         4162.133           4412.946
C_SVSW_6         4276.387           4652.337
OF_DW2           2060.183           3387.790
OF_DW1           2067.737           5858.706
OF_CNW           2971.579           8278.058

[Polygons]
;;Subcatchment   X-Coord            Y-Coord
;;-------------- ------------------ ------------------
H_SVSW           3563.656           2589.771
H_SVSW           3563.656           2589.771
H_SVSW           3813.928           2622.416
H_SVSW           4836.779           2535.365
H_SVSW           4891.186           1980.413
H_SVSW           4542.982           1229.597
H_SVSW           4096.844           794.342
```

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H_SVSW           2889.010           391.730
H_SVSW           2334.059           1001.088
H_SVSW           2029.380           1643.090
H_SVSW           2616.975           2361.262
H_SVSW           3585.419           2589.771
H_CNW            2388.466           9445.049
H_CNW            2932.535           9303.591
H_CNW            3879.217           8911.861
H_CNW            3824.810           8454.842
H_CNW            1354.733           8476.605
H_CNW            1376.496           8705.114
H_CNW            2116.431           9412.405
H_DW1            1974.973           6877.040
H_DW1            1942.329           4722.524
H_DW1            1746.464           4559.304
H_DW1            886.834            4287.269
H_DW1            701.850            4940.152
H_DW1            -375.408           4972.797
H_DW1            -952.122           5353.645
H_DW1            -734.494           5788.901
H_DW1            223.069            6430.903
H_DW1            1866.159           6877.040
H_DW2            963.003            4145.811
H_DW2            1964.091           4483.134
H_DW2            2007.617           2676.823
H_DW2            1735.582           2361.262
H_DW2            593.036            1762.786
H_DW2            364.527            2709.467
H_DW2            680.087            3297.062
H_DW2            865.071            4113.166
H_DE2            2225.245           4167.573
H_DE2            2181.719           4929.271
H_DE2            2682.263           5451.578
H_DE2            3552.775           5429.815
H_DE2            3618.063           4385.201
H_DE2            3672.470           2742.111
H_DE2            2225.245           2698.585
H_DE2            2225.245           4167.573
H_DE1            2149.075           5201.306
H_DE1            2159.956           6420.022
H_DE1            2170.838           8226.333
H_DE1            4782.372           8226.333
H_DE1            4804.135           8128.400
H_DE1            4630.033           7747.552
H_DE1            3824.810           7747.552
H_DE1            3531.012           7421.110
H_DE1            3585.419           5723.613
H_DE1            3346.028           5723.613
H_DE1            2780.196           5647.443
H_DE1            2181.719           5146.899
H_CNE            8928.183           8106.638
H_CNE            8939.064           6931.447
H_CNE            9352.557           8161.045
H_SVSE           5620.239           2796.518
H_SVSE           8155.604           2796.518
H_SVSE           8025.027           2557.127
H_SVSE           6926.007           1969.532
H_SVSE           6207.835           1447.225
H_SVSE           5620.239           2600.653

[SYMBOLS]
;;Gage            X-Coord            Y-Coord
;;--------------- ------------------ ------------------
RG-Huff          2000.000           9500.000
RG-1QH           2500.000           9500.000
RG-1Q1           3000.000           9500.000
RG-1Q2           3500.000           9500.000
RG-1             4000.000           9500.000
RG-2             4500.000           9500.000
RG-5             5000.000           9500.000
RG-10            5500.000           9500.000
RG-100           6000.000           9500.000
RG-120           6500.000           9500.000


[BACKDROP]
FILE       "D:\N_Drive\aenon\projects\2017\17004-Cross\E14-CanterburyPark\SWMM_Models\SWMM_P202009\1291_county 1ft topo GIS_BOUNDARY_2017-09-13.JPG"
DIMENSIONS -2579.657 0.000 12579.657 10000.000

[PROFILES]
;;Name            Links
;;--------------- ----------
"Green           " C_CNW D_CNW C_10G2 C_10G1 12
```

```
EPA STORM WATER MANAGEMENT MODEL - VERSION 5.1 (Build 5.1.013)
--------------------------------------------------------------

WARNING 03: negative offset ignored for Link D_SiteNE
WARNING 02: maximum depth increased for Node N_CNWS

***********************************************************
NOTE: The summary statistics displayed in this report are
based on results found at every computational time step,
not just on results from each reporting time step.
***********************************************************

***************
Analysis Options
***************
Flow Units ............... CFS
Process Models:
  Rainfall/Runoff ........ YES
  RDII ................... NO
  Snowmelt ............... NO
  Groundwater ............ NO
  Flow Routing ........... YES
  Ponding Allowed ........ NO
  Water Quality .......... NO
Infiltration Method ...... CURVE_NUMBER
Flow Routing Method ...... DYNWAVE
Surcharge Method ......... EXTRAN
Starting Date ............ 09/17/2017 00:00:00
Ending Date .............. 09/20/2017 23:00:00
Antecedent Dry Days ...... 0.0
Report Time Step ......... 00:15:00
Wet Time Step ............ 00:05:00
Dry Time Step ............ 01:00:00
Routing Time Step ........ 5.00 sec
Variable Time Step ....... YES
Maximum Trials ........... 8
Number of Threads ........ 1
Head Tolerance ........... 0.005000 ft


*************************        Volume         Depth
Runoff Quantity Continuity     acre-feet        inches
*************************     ---------       -------
Total Precipitation ......        26.710         8.570
Evaporation Loss .........         0.000         0.000
Infiltration Loss ........         9.457         3.034
Surface Runoff ...........        17.100         5.487
Final Storage ............         0.154         0.049
Continuity Error (%) .....        -0.001


*************************        Volume        Volume
Flow Routing Continuity        acre-feet      10^6 gal
*************************     ---------     ---------
Dry Weather Inflow .......         0.000         0.000
Wet Weather Inflow .......        17.100         5.572
Groundwater Inflow .......         0.000         0.000
RDII Inflow ..............         0.000         0.000
External Inflow ..........         0.000         0.000
External Outflow .........        17.097         5.571
Flooding Loss ............         0.000         0.000
Evaporation Loss .........         0.000         0.000
Exfiltration Loss ........         0.000         0.000
Initial Stored Volume ....         0.000         0.000
Final Stored Volume ......         0.000         0.000
Continuity Error (%) .....         0.013


*************************
Highest Continuity Errors
*************************
Node N_SiteNE (-1.62%)


***************************
Time-Step Critical Elements
***************************
Link C_DW1 (39.08%)
Link C_10G1 (18.88%)
Link C_10R2 (8.13%)
Link C_DW2 (2.61%)


*******************************
Highest Flow Instability Indexes
*******************************
All links are stable.


************************
Routing Time Step Summary
************************
Minimum Time Step           :     0.50 sec
Average Time Step           :     3.64 sec
Maximum Time Step           :     5.00 sec
```

```
Percent in Steady State     :    -0.00
Average Iterations per Step :     2.00
Percent Not Converging      :     0.00
```

****
Subcatchment Runoff Summary
****

Subcatchment	Total Precip in	Total Runon in	Total Evap in	Total Infil in	Imperv Runoff in	Perv Runoff in	Total Runoff in	Total Runoff 10^6 gal	Peak Runoff CFS	Runoff Coeff
H_SVSW	8.57	0.00	0.00	3.40	0.00	5.12	5.12	1.54	6.29	0.597
H_CNW	8.57	0.00	0.00	2.42	0.00	6.10	6.10	0.39	1.58	0.712
H_DW1	8.57	0.00	0.00	2.82	0.00	5.70	5.70	0.94	3.72	0.665
H_DW2	8.57	0.00	0.00	2.28	0.00	6.24	6.24	0.54	2.16	0.728
H_DE2	8.57	0.00	0.00	3.03	0.00	5.49	5.49	0.90	3.68	0.641
H_DE1	8.57	0.00	0.00	3.19	0.00	5.33	5.33	0.95	3.86	0.622
H_CNE	8.57	0.00	0.00	2.90	0.00	5.62	5.62	0.06	0.26	0.655
H_SVSE	8.57	0.00	0.00	3.13	0.00	5.39	5.39	0.24	1.01	0.629

****
Node Depth Summary
****

Node	Type	Average Depth Feet	Maximum Depth Feet	Maximum HGL Feet	Time of Max Occurrence days hr:min	Reported Max Depth Feet
N_SVSWN	JUNCTION	0.26	0.85	736.00	1 02:25	0.85
N_DE2	JUNCTION	0.16	0.48	740.35	0 17:11	0.48
N_DE1	JUNCTION	0.22	0.66	740.95	0 18:12	0.66
N_CNWS	JUNCTION	0.09	0.32	746.32	0 17:05	0.32
J_10D	JUNCTION	0.51	0.73	727.23	0 18:14	0.73
J_10G	JUNCTION	1.86	2.97	729.80	1 03:13	2.97
N_OffSE	JUNCTION	0.05	0.20	747.20	0 17:03	0.20
N_SiteNE	JUNCTION	0.04	0.12	745.12	0 17:29	0.12
N_OffNE	JUNCTION	0.03	0.12	750.12	0 17:01	0.12
J_10R	JUNCTION	3.71	6.01	735.71	1 01:23	6.01
Out_SE	OUTFALL	0.51	0.73	726.73	0 18:15	0.73
Out_NW	OUTFALL	0.00	0.00	750.00	0 00:00	0.00
N_CNWN	STORAGE	0.13	0.50	748.17	0 17:00	0.50
N_DW1	STORAGE	0.30	1.43	742.35	0 18:02	1.43
N_DW2	STORAGE	0.17	0.65	741.28	0 17:01	0.65
N_CPLow	STORAGE	3.80	6.24	735.99	1 02:44	6.24
N_SVSWS	STORAGE	2.50	3.99	736.71	0 20:47	3.99

****
Node Inflow Summary
****

Node	Type	Maximum Lateral Inflow CFS	Maximum Total Inflow CFS	Time of Max Occurrence days hr:min	Lateral Inflow Volume 10^6 gal	Total Inflow Volume 10^6 gal	Flow Balance Error Percent
N_SVSWN	JUNCTION	0.00	3.30	0 21:01	0	1.13	0.125
N_DE2	JUNCTION	0.00	2.15	0 17:01	0	0.544	0.012
N_DE1	JUNCTION	0.00	3.70	0 18:02	0	0.941	0.011
N_CNWS	JUNCTION	0.00	1.58	0 17:00	0	0.394	-0.002
J_10D	JUNCTION	0.00	4.05	0 18:02	0	5.57	0.020
J_10G	JUNCTION	0.00	3.11	1 02:34	0	5.26	-0.004
N_OffSE	JUNCTION	1.01	1.01	0 17:00	0.245	0.245	-0.002
N_SiteNE	JUNCTION	0.00	0.26	0 17:01	0	0.0641	-1.592
N_OffNE	JUNCTION	0.26	0.26	0 17:00	0.0641	0.0641	-0.007
J_10R	JUNCTION	0.00	1.65	1 02:42	0	2.64	-0.003
Out_SE	OUTFALL	0.00	4.02	0 18:15	0	5.57	0.000
Out_NW	OUTFALL	0.00	0.00	0 00:00	0	0	0.000 gal
N_CNWN	STORAGE	1.58	1.58	0 17:00	0.394	0.394	-0.000
N_DW1	STORAGE	3.72	3.72	0 18:00	0.941	0.941	-0.000
N_DW2	STORAGE	2.16	2.16	0 17:00	0.544	0.544	-0.000
N_CPLow	STORAGE	7.54	17.04	0 18:00	1.85	4.87	-0.012
N_SVSWS	STORAGE	6.29	6.29	0 18:00	1.54	1.54	0.001

****
Node Surcharge Summary
****

Surcharging occurs when water rises above the top of the highest conduit.

Node	Type	Hours Surcharged	Max. Height Above Crown Feet	Min. Depth Below Rim Feet
J_10R	JUNCTION	71.60	5.184	1.986

****
Node Flooding Summary

****

No nodes were flooded.

****
Storage Volume Summary
****

Storage Unit	Average Volume 1000 ft3	Avg Pcnt Full	Evap Pcnt Loss	Exfil Pcnt Loss	Maximum Volume 1000 ft3	Max Pcnt Full	Time of Max Occurrence days hr:min	Maximum Outflow CFS
N_CNWN	0.029	0	0	0	0.128	0	0 17:00	1.58
N_DW1	0.102	0	0	0	0.845	1	0 18:02	3.70
N_DW2	0.129	0	0	0	0.659	1	0 17:01	2.15
N_CPLow	161.286	8	0	0	418.239	21	1 02:44	2.98
N_SVSWS	36.959	6	0	0	106.563	19	0 20:47	3.49

****
Outfall Loading Summary
****

Outfall Node	Flow Freq Pcnt	Avg Flow CFS	Max Flow CFS	Total Volume 10^6 gal
Out_SE	92.52	2.61	4.02	5.571
Out_NW	0.00	0.00	0.00	0.000
System	46.26	2.61	0.00	5.571

****
Link Flow Summary
****

Link	Type	Maximum |Flow| CFS	Time of Max Occurrence days hr:min	Maximum |Veloc| ft/sec	Max/ Full Flow	Max/ Full Depth
C_SVSW_12E	CONDUIT	2.15	0 21:13	3.15	2.44	0.93
D_SVSW	CONDUIT	3.29	0 20:40	0.63	0.02	0.29
C_DW2	CONDUIT	2.15	0 17:01	4.73	0.57	0.56
D_DE2	CHANNEL	2.14	0 17:11	0.47	0.01	0.16
C_DW1	CONDUIT	3.70	0 18:02	5.32	1.08	0.83
D_DE1	CHANNEL	3.68	0 18:12	0.52	0.02	0.22
C_CNW	CONDUIT	1.58	0 17:00	4.35	0.40	0.47
D_CNW	CONDUIT	1.57	0 17:05	0.67	0.01	0.07
C_10G2	CONDUIT	1.48	1 00:58	2.73	1.38	1.00
C_10G1	CONDUIT	3.11	1 02:54	6.12	2.50	0.94
D_OutSE	CONDUIT	4.02	0 18:15	1.06	0.02	0.18
C_10R1	CONDUIT	1.65	1 02:42	3.20	3.27	0.93
D_SVSE	CONDUIT	1.01	0 17:03	0.69	0.00	0.04
D_SiteNE	CHANNEL	0.26	0 17:29	0.03	0.00	0.21
D_CNE	CONDUIT	0.26	0 17:01	0.56	0.00	0.06
C_SVSW_12W	CONDUIT	1.15	0 20:47	2.77	0.52	0.52
OF_SVSW	CONDUIT	0.00	0 00:00	0.00	0.00	0.00
C_SVSW_6	CONDUIT	0.37	3 06:45	1.89	1.23	1.00
C_10R2	CONDUIT	1.52	1 04:51	2.81	1.62	1.00
OF_DW2	CONDUIT	0.00	0 00:00	0.00	0.00	0.00
OF_DW1	CONDUIT	0.00	0 00:00	0.00	0.00	0.00
OF_CNWW	CHANNEL	0.00	0 00:00	0.00	0.00	0.00
OF_CNW	CONDUIT	0.00	0 00:00	0.00	0.00	0.00

****
Flow Classification Summary
****

Conduit	Adjusted /Actual Length	Fraction of Time in Flow Class: Dry	Up Dry	Down Dry	Sub Crit	Sup Crit	Up Crit	Down Crit	Norm Ltd	Inlet Ctrl
C_SVSW_12E	1.00	0.26	0.13	0.00	0.61	0.00	0.00	0.00	0.31	0.00
D_SVSW	1.00	0.26	0.00	0.00	0.45	0.00	0.00	0.29	0.15	0.00
C_DW2	1.00	0.02	0.47	0.00	0.10	0.41	0.00	0.00	0.73	0.00
D_DE2	1.00	0.03	0.00	0.00	0.00	0.00	0.00	0.97	0.00	0.00
C_DW1	1.00	0.03	0.42	0.00	0.32	0.23	0.00	0.00	0.72	0.00
D_DE1	1.00	0.03	0.00	0.00	0.00	0.00	0.00	0.97	0.00	0.00
C_CNW	1.00	0.03	0.00	0.00	0.00	0.00	0.00	0.97	0.00	0.00
D_CNW	1.00	0.19	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00
C_10G2	1.00	0.03	0.10	0.00	0.87	0.00	0.00	0.00	0.20	0.00
C_10G1	1.00	0.03	0.00	0.00	0.51	0.46	0.00	0.00	0.00	0.00
D_OutSE	1.00	0.03	0.00	0.00	0.97	0.00	0.00	0.00	0.11	0.00
C_10R1	1.00	0.03	0.00	0.00	0.08	0.00	0.00	0.89	0.00	0.00
D_SVSE	1.00	0.39	0.00	0.00	0.00	0.00	0.00	0.61	0.00	0.00
D_SiteNE	1.00	0.03	0.00	0.00	0.97	0.00	0.00	0.00	0.91	0.00
D_CNE	1.00	0.03	0.46	0.00	0.51	0.00	0.00	0.00	0.93	0.00
C_SVSW_12W	1.00	0.73	0.02	0.00	0.02	0.00	0.00	0.23	0.70	0.00
OF_SVSW	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

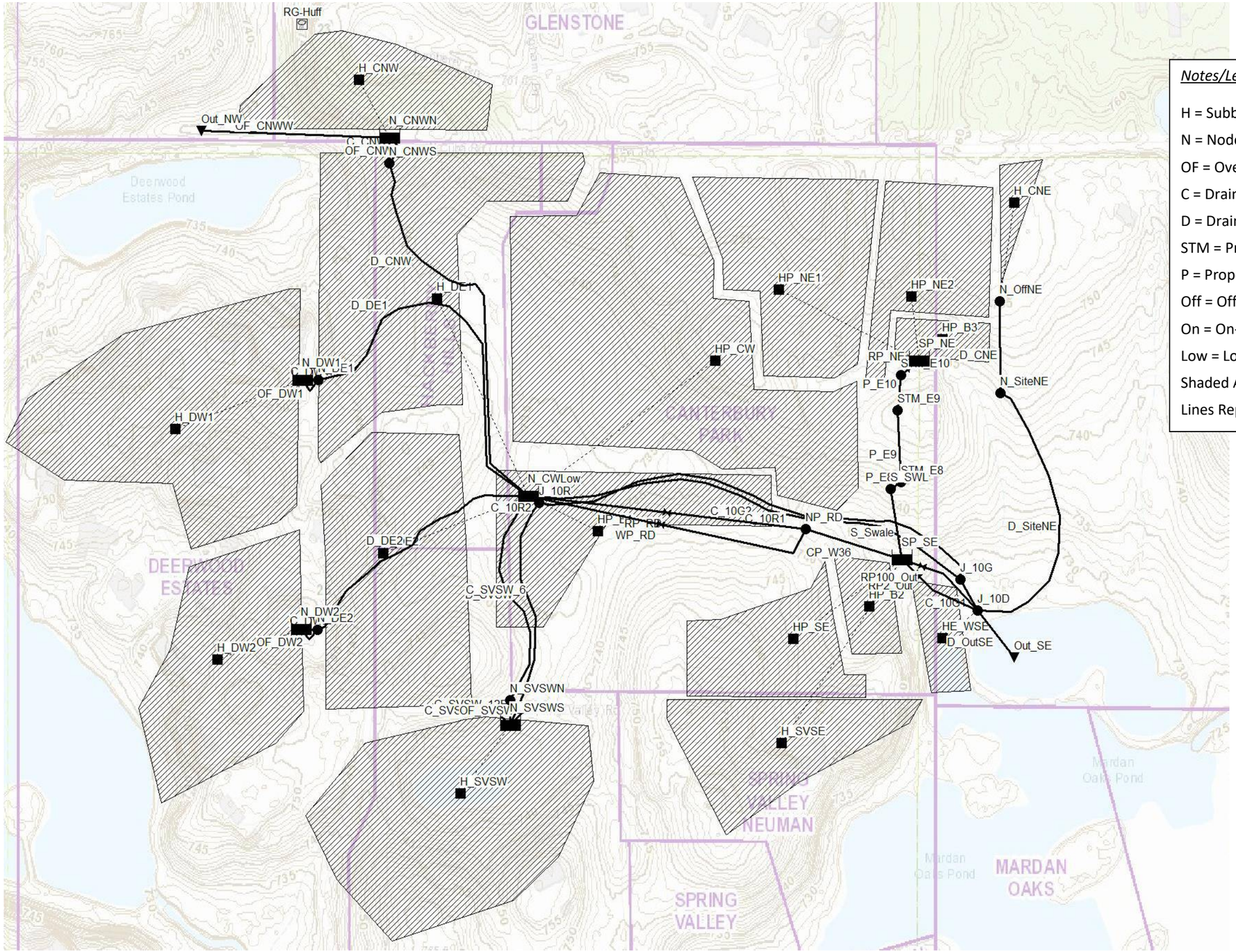
C_SVSW_6	1.00	0.03	0.00	0.00	0.97	0.00	0.00	0.00	0.16	0.00
C_10R2	1.00	0.03	0.00	0.00	0.97	0.00	0.00	0.00	0.08	0.00
OF_DW2	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OF_DW1	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OF_CNWW	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OF_CNW	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

****
Conduit Surcharge Summary
****

Conduit	Hours Full: Both Ends	Hours Full: Upstream	Hours Full: Dnstream	Hours Above Full Normal Flow	Hours Capacity Limited
C_SVSW_12E	0.01	11.42	0.01	15.80	0.01
C_DW1	0.01	3.99	0.01	2.62	0.01
C_10G2	70.67	70.67	71.25	70.49	70.47
C_10G1	0.01	71.25	0.01	71.58	0.01
C_10R1	0.01	71.60	0.01	71.76	0.01
C_SVSW_6	76.12	76.12	77.65	6.02	6.23
C_10R2	71.42	71.42	71.60	55.61	66.98

Analysis begun on: Thu Dec 3 15:44:48 2020
Analysis ended on: Thu Dec 3 15:44:52 2020
Total elapsed time: 00:00:04

EPA SWMM 5.1: Final Stormwater Calculations – Proposed Conditions, SWMM Flow Schematic for Philip Estates Subdivision, Long Grove, IL



Notes/Legend of Typical Schematic References

H = Subbasin Drainage Area (with area location as unique identifier)

N = Node (with area location as unique identifier)

OF = Overflow Condition (with area location as unique identifier)

C = Drainage Conduit (Pipe or Drain Tile – where number is tile size)

D = Drainage Conduit (Ditch)

STM = Proposed Storm Structure (where number is plan assignment)

P = Proposed Storm Line (where number is associated with structure)

Off = Off-site

On = On-site

Low = Low Depressional Area

Shaded Areas represent approximate subbasin shapes / boundaries

Lines Represent approximate flow conveyance path

```
[TITLE]
;;Project Title/Notes

[OPTIONS]
;;Option             Value
FLOW_UNITS           CFS
INFILTRATION         CURVE_NUMBER
FLOW_ROUTING         DYNWAVE
LINK_OFFSETS         ELEVATION
MIN_SLOPE            0
ALLOW_PONDING        NO
SKIP_STEADY_STATE    NO

START_DATE           09/17/2017
START_TIME           00:00:00
REPORT_START_DATE    09/17/2017
REPORT_START_TIME    00:00:00
END_DATE             09/20/2017
END_TIME             23:00:00
SWEEP_START          01/01
SWEEP_END            12/31
DRY_DAYS             0
REPORT_STEP          00:15:00
WET_STEP             00:05:00
DRY_STEP             01:00:00
ROUTING_STEP         0:00:05
RULE_STEP            00:00:00

INERTIAL_DAMPING     PARTIAL
NORMAL_FLOW_LIMITED  BOTH
FORCE_MAIN_EQUATION  H-W
VARIABLE_STEP        0.75
LENGTHENING_STEP     0
MIN_SURFAREA         12.557
MAX_TRIALS           8
HEAD_TOLERANCE       0.005
SYS_FLOW_TOL         5
LAT_FLOW_TOL         5
MINIMUM_STEP         0.5
THREADS              1

[EVAPORATION]
;;Data Source    Parameters
;;-------------- ----------------
CONSTANT         0.0
DRY_ONLY         NO

[RAINGAGES]
;;Name           Format    Interval SCF      Source
;;-------------- --------- ------ ------ ----------
RG-Huff          CUMULATIVE 2:00     1.0      TIMESERIES 048Huff4Q2_75
RG-100_75003     CUMULATIVE 0:07:30  1.0      TIMESERIES 003Huff1Q100_75
RG-100_75006     CUMULATIVE 0:15     1.0      TIMESERIES 006Huff2Q100_75
RG-100_75012     CUMULATIVE 0:30     1.0      TIMESERIES 012Huff2Q100_75
RG-100_75018     CUMULATIVE 0:45     1.0      TIMESERIES 018Huff2Q100_75
RG-100_75024     CUMULATIVE 1:00     1.0      TIMESERIES 024Huff3Q100_75
RG-100_75048     CUMULATIVE 2:00     1.0      TIMESERIES 048Huff4Q100_75
RG-100_75072     CUMULATIVE 3:00     1.0      TIMESERIES 072Huff4Q100_75
RG-100_75120     CUMULATIVE 5:00     1.0      TIMESERIES 120Huff4Q100_75
RG-100_75240     CUMULATIVE 10:00    1.0      TIMESERIES 240Huff4Q100_75
RG-2_75003       CUMULATIVE 0:07:30  1.0      TIMESERIES 003Huff1Q2_75
RG-2_75006       CUMULATIVE 0:15     1.0      TIMESERIES 006Huff2Q2_75
RG-2_75012       CUMULATIVE 0:30     1.0      TIMESERIES 012Huff2Q2_75
RG-2_75018       CUMULATIVE 0:45     1.0      TIMESERIES 018Huff2Q2_75
RG-2_75024       CUMULATIVE 1:00     1.0      TIMESERIES 024Huff3Q2_75
RG-2_75048       CUMULATIVE 2:00     1.0      TIMESERIES 048Huff4Q2_75
RG-2_75072       CUMULATIVE 3:00     1.0      TIMESERIES 072Huff4Q2_75
RG-2_75120       CUMULATIVE 5:00     1.0      TIMESERIES 120Huff4Q2_75
RG-2_75240       CUMULATIVE 10:00    1.0      TIMESERIES 240Huff4Q2_75

[SUBCATCHMENTS]
;;Name           Rain Gage        Outlet           Area     %Imperv  Width    %Slope   CurbLen  SnowPack
;;-------------- ---------------- ---------------- -------- -------- -------- -------- -------- ----------------
H_SVSW           RG-Huff          N_SVSWS          11.05    0        1086.9   2.10     0
H_CNW            RG-Huff          N_CNWN           2.38     0        295.1    2.99     0
H_DW1            RG-Huff          N_DW1            6.08     0        352.7    2.66     0
H_DW2            RG-Huff          N_DW2            3.21     0        323.8    3.36     0
H_DE2            RG-Huff          N_CWLow          6.01     0        733.1    2.52     0
H_DE1            RG-Huff          N_CWLow          6.58     0        463.9    1.46     0
H_CNE            RG-Huff          N_OffNE          0.42     0        50.9     2.93     0
H_SVSE           RG-Huff          SP_SE            1.67     0        257.5    4.95     0
HP_SE            RG-Huff          SP_SE            4.81     0        1047.6   3.6      0
HP_B1            RG-Huff          N_CWLow          6.60     0        821.4    2        0
HP_B2            RG-Huff          SP_SE            2.65     0        1154.3   5        0
HP_B3            RG-Huff          SP_NE            0.83     0        361.5    5        0
HP_NE1           RG-Huff          SP_NE            3.29     0        716.6    1.3      0
HP_CW            RG-Huff          N_CWLow          14.03    0        3055.7   2.5      0
HE_WSE           RG-Huff          J_10D            1.03     0        224.3    2.8      0
HP_NE2           RG-Huff          SP_NE            1.58     0        344.1    1.3      0

[SUBAREAS]
;;Subcatchment   N-Imperv   N-Perv     S-Imperv   S-Perv     PctZero    RouteTo    PctRouted
;;-------------- ---------- ---------- ---------- ---------- ---------- ---------- ----------
H_SVSW           0.02       0.4        0.05       0.05       25         OUTLET
H_CNW            0.02       0.24       0.05       0.05       25         OUTLET
H_DW1            0.02       0.4        0.05       0.05       25         OUTLET
```

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H_DW2            0.02       0.24       0.05       0.05       25         OUTLET
H_DE2            0.02       0.24       0.05       0.05       25         OUTLET
H_DE1            0.02       0.24       0.05       0.05       25         OUTLET
H_CNE            0.02       0.4        0.05       0.05       25         OUTLET
H_SVSE           0.02       0.4        0.05       0.05       25         OUTLET
HP_SE            0.02       0.24       0.05       0.05       25         OUTLET
HP_B1            0.02       0.24       0.05       0.05       25         OUTLET
HP_B2            0.02       0.24       0.05       0.05       25         OUTLET
HP_B3            0.02       0.24       0.05       0.05       25         OUTLET
HP_NE1           0.02       0.24       0.05       0.05       25         OUTLET
HP_CW            0.02       0.24       0.05       0.05       25         OUTLET
HE_WSE           0.02       0.24       0.05       0.05       25         OUTLET
HP_NE2           0.02       0.24       0.05       0.05       25         OUTLET

[INFILTRATION]
;;Subcatchment   Param1     Param2     Param3     Param4     Param5
;;-------------- ---------- ---------- ---------- ---------- ----------
H_SVSW           65.4       0.5        4          7          0
H_CNW            75.4       0.5        4          7          0
H_DW1            72.0       0.5        4          7          0
H_DW2            76.9       0.5        4          7          0
H_DE2            68.9       0.5        4          7          0
H_DE1            67.7       0.5        4          7          0
H_CNE            70.5       0.5        4          7          0
H_SVSE           67.8       0.5        4          7          0
HP_SE            80         0.5        4          7          0
HP_B1            74.4       0.5        4          7          0
HP_B2            74         0.5        4          7          0
HP_B3            74         0.5        4          7          0
HP_NE1           80         0.5        4          7          0
HP_CW            80         0.5        4          7          0
HE_WSE           67.2       0.5        4          7          0
HP_NE2           80         0.5        4          7          0

[JUNCTIONS]
;;Name           Elevation  MaxDepth   InitDepth  SurDepth   Aponded
;;-------------- ---------- ---------- ---------- ---------- ----------
N_SVSWN          735.15     5          0          0          0
N_DE2            739.87     6          0          0          0
N_DE1            740.29     5          0          0          0
N_CNWS           746.       5          0          0          0
J_10D            726.5      13         0          0          0
J_10G            726.83     6          0          0          0
N_SiteNE         744.5      3          0          0          0
N_OffNE          750        3          0          0          0
J_10R            729.7      8          0          0          0
NP_RD            732.5      5          0          0          0
STM_E10          744        6          0          0          0
STM_E9           743.2      7          0          0          0
STM_E8           742.7      7          0          0          0
S_SWL            742.5      3          0          0          0

[OUTFALLS]
;;Name           Elevation  Type       Stage Data       Gated    Route To
;;-------------- ---------- ---------- ---------------- -------- ----------------
Out_SE           726        NORMAL                      NO
Out_NW           750        NORMAL                      NO

[STORAGE]
;;Name           Elev.    MaxDepth   InitDepth  Shape      Curve Name/Params            N/A      Fevap    Psi      Ksat     IMD
;;-------------- -------- ---------- ---------- ---------- ---------------------------- -------- -------- -------- --------
N_CNWN           747.67   5          0          TABULAR    S_CNW                        0        0
N_DW1            740.92   5          0          TABULAR    S_DW1                        0        0
N_DW2            740.63   5          0          TABULAR    S_DW2                        0        0
N_CWLow          729.75   7          0          TABULAR    SP_CW                        0        0
N_SVSWS          732.72   8          0          TABULAR    S_SVSW                       0        0
SP_NE            744      6          0          TABULAR    SP_NE                        0        0
SP_SE            731      6          0          TABULAR    SP_SE                        0        0

[CONDUITS]
;;Name           From Node        To Node          Length     Roughness  InOffset   OutOffset  InitFlow   MaxFlow
;;-------------- ---------------- ---------------- ---------- ---------- ---------- ---------- ---------- ----------
C_SVSW_12E       N_SVSWS          N_SVSWN          48         0.024      735.25     735.15     0          0
D_SVSW           N_SVSWN          N_CWLow          119        0.1        735.15     734.5      0          0
C_DW2            N_DW2            N_DE2            20         0.024      740.63     739.87     0          0
D_DE2            N_DE2            N_CWLow          370        0.1        739.87     736        0          0
C_DW1            N_DW1            N_DE1            20         0.024      740.92     740.29     0          0
D_DE1            N_DE1            N_CWLow          410        0.1        740.29     737        0          0
C_CNW            N_CNWN           N_CNWS           27         0.024      747.67     746.57     0          0
D_CNW            N_CNWS           N_CWLow          430        0.1        746        737        0          0
C_10G2           N_CWLow          J_10G            998        0.015      730.05     726.83     0          0
C_10G1           J_10G            J_10D            75         0.015      726.83     726.5      0          0
D_OutSE          J_10D            Out_SE           60         0.08       726.5      726        0          0
C_10R1           J_10R            J_10G            858        0.015      729.7      729.08     0          0
D_SiteNE         N_SiteNE         J_10D            706        0.1        744.5      726        0          0
D_CNE            N_OffNE          N_SiteNE         166        0.1        750        745        0          0
C_SVSW_12W       N_SVSWS          N_SVSWN          20         0.024      736.11     735.85     0          0
OF_SVSW          N_SVSWS          N_SVSWN          24         0.025      737.6      737.55     0          0
C_SVSW_6         N_SVSWS          J_10R            786        0.015      732.72     729.7      0          0
C_10R2           N_CWLow          J_10R            20         0.015      729.75     729.7      0          0
OF_DW2           N_DW2            N_DE2            20         0.025      743        742.95     0          0
OF_DW1           N_DW1            N_DE1            20         0.025      743        742.95     0          0
OF_CNWW          N_CNWN           Out_NW           44         0.1        750.2      750        0          0
OF_CNW           N_CNWN           N_CNWS           24         0.025      751.1      751.05     0          0
CP_W36           NP_RD            SP_SE            176        0.013      732.5      731.5      0          0
P_E10            STM_E10          STM_E9           79         0.013      744.0      743.6      0          0
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P_E9             STM_E9           STM_E8           116        0.013      743.2      742.7      0          0
P_E8             STM_E8           S_SWL            34         0.013      742.7      742.5      0          0
S_Swale          S_SWL            SP_SE            130        0.03       742.5      737.5      0          0

[ORIFICES]
;;Name           From Node        To Node          Type         Offset     Qcoeff     Gated    CloseTime
;;-------------- ---------------- ---------------- ------------ ---------- ---------- -------- ----------
RP_RD            N_CWLow          NP_RD            SIDE         733.5      0.61       NO       0
RP2_Out          SP_SE            J_10D            SIDE         732.0      0.61       NO       0
RP_NE            SP_NE            STM_E10          SIDE         744        0.61       NO       0
RP100_Out        SP_SE            J_10D            SIDE         732.75     0.61       NO       0

[WEIRS]
;;Name           From Node        To Node          Type         CrestHt    Qcoeff     Gated    EndCon   EndCoeff   Surcharge  RoadWidth  RoadSurf
Coeff. Curve
;;-------------- ---------------- ---------------- ------------ ---------- ---------- -------- -------- ---------- ---------- ---------- ----------
----------------
WP_RD            N_CWLow          NP_RD            TRANSVERSE   735.5      2.7        NO       0        0          YES

[XSECTIONS]
;;Link           Shape        Geom1            Geom2      Geom3      Geom4      Barrels    Culvert
;;-------------- ------------ ---------------- ---------- ---------- ---------- ---------- ----------
C_SVSW_12E       CIRCULAR     1                0          0          0          1
D_SVSW           TRAPEZOIDAL  4                5          6          6          1
C_DW2            CIRCULAR     1                0          0          0          1
D_DE2            IRREGULAR    D_XDE2           0          0          0          1
C_DW1            CIRCULAR     1                0          0          0          1
D_DE1            IRREGULAR    D_XDE1           0          0          0          1
C_CNW            CIRCULAR     1                0          0          0          1
D_CNW            TRAPEZOIDAL  3                10         6          6          1
C_10G2           CIRCULAR     0.83             0          0          0          1
C_10G1           CIRCULAR     0.83             0          0          0          1
D_OutSE          TRAPEZOIDAL  4                3          3          3          1
C_10R1           CIRCULAR     0.83             0          0          0          1
D_SiteNE         IRREGULAR    D_XDE2           0          0          0          1
D_CNE            TRAPEZOIDAL  2                3          6          6          1
C_SVSW_12W       CIRCULAR     1                0          0          0          1
OF_SVSW          TRIANGULAR   0.4              135        0          0          1
C_SVSW_6         CIRCULAR     0.5              0          0          0          1
C_10R2           CIRCULAR     0.83             0          0          0          1
OF_DW2           TRIANGULAR   0.5              150        0          0          1
OF_DW1           TRIANGULAR   1                85         0          0          1
OF_CNWW          IRREGULAR    OF_XCNW          0          0          0          1
OF_CNW           TRIANGULAR   0.2              110        0          0          1
CP_W36           CIRCULAR     2                0          0          0          1
P_E10            CIRCULAR     1                0          0          0          1
P_E9             CIRCULAR     1                0          0          0          1
P_E8             CIRCULAR     1                0          0          0          1
S_Swale          TRAPEZOIDAL  2                2          4          3          1
RP_RD            CIRCULAR     1.5              0          0          0
RP2_Out          CIRCULAR     0.5              0          0          0
RP_NE            CIRCULAR     0.45             0          0          0
RP100_Out        CIRCULAR     0.75             0          0          0
WP_RD            RECT_OPEN    1.0              6          0          0

[TRANSECTS]
;;Transect Data in HEC-2 format
;
NC 0.025    0.1      0.1
X1 OF_XCNW           7        12.      28.      0.0      0.0      0.0      0.0      0.0
GR 753      0        751.2    0.1      750.8    12       750.2    22       750.3    28
GR 751      43       752      68
;
NC 0.1      0.1      0.1
X1 D_XDE1            5        -35      37       0.0      0.0      0.0      0.0      0.0
GR 742      -35.1    741      -35      740      0        741      37       742      37.1
;
NC 0.1      0.1      0.1
X1 D_XDE2            5        -39      48       0.0      0.0      0.0      0.0      0.0
GR 741      -56      740      -39      739      0        740      48       741      70

[LOSSES]
;;Link           Kentry     Kexit      Kavg       Flap Gate  Seepage
;;-------------- ---------- ---------- ---------- ---------- ----------
C_SVSW_12E       0.5        0.8        0          NO         0
C_DW2            0.5        0.8        0          NO         0
C_DW1            0.5        0.8        0          NO         0
C_CNW            0.5        0.8        0          NO         0
C_10G2           0.5        0.2        0          NO         0
C_10G1           0.3        0.5        0          NO         0
C_10R1           0.2        0.8        0          NO         0
C_SVSW_12W       0.5        0.8        0          NO         0
C_SVSW_6         0.5        1.0        0          NO         0
C_10R2           0.5        0.8        0          NO         0
CP_W36           0.5        0.8        0          NO         0
P_E10            0.1        0.3        0          NO         0
P_E9             0.2        0.5        0          NO         0
P_E8             0.2        1.0        0          NO         0

[CURVES]
;;Name           Type       X-Value    Y-Value
;;-------------- ---------- ---------- ----------
S_CNW            Storage    0          100
S_CNW                       1.33       945.23
S_CNW                       2.33       7604.33
S_CNW                       3.33       16786.86
```

```
S_CNW                      4.33       24925.33
;
S_DW1            Storage   0          100
S_DW1                      1.08       553.64
S_DW1                      2.08       5327.2
S_DW1                      3.08       29350.38
;
S_DW2            Storage   0          100
S_DW2                      2.37       6800.97
S_DW2                      3.37       14047.6
;
S_SVSW           Storage   0          10
S_SVSW                     1.75       10
S_SVSW                     1.78       2003.45
S_SVSW                     2.28       30880.18
S_SVSW                     2.53       39547.405
S_SVSW                     3.28       65549.08
S_SVSW                     4.28       80968.51
S_SVSW                     5.28       101926.96
;
S_CP             Storage   0          10
S_CP                       1.8        10
S_CP                       1.85       100
S_CP                       2.25       12099.3
S_CP                       3.25       44419.43
S_CP                       4.25       94221.01
S_CP                       5.25       155461.26
S_CP                       6.25       237121.1
S_CP                       7.25       335851.03
;
SP_WN            Storage   0          3311.86
SP_WN                      1          6209.3
SP_WN                      2          10346.33
SP_WN                      3          15972.02
SP_WN                      4          18784.865
;
SP_NE            Storage   0          12678
SP_NE                      1          14528
SP_NE                      2          16461
SP_NE                      3          18494
SP_NE                      4          20627
SP_NE                      5          22862
SP_NE                      5.5        24016
;
SP_SE            Storage   0          2424
SP_SE                      0.5        16327
SP_SE                      1          39282
SP_SE                      2          45200
SP_SE                      3          51339
SP_SE                      4          57701
SP_SE                      5          64152
SP_SE                      5.2        65462
;
SP_ES            Storage   0          3088.42
SP_ES                      1          4695.46
SP_ES                      2          6611.57
SP_ES                      3          8700.83
SP_ES                      4          9745.46
;
SP_CW            Storage   0          10
SP_CW                      1.2        10
SP_CW                      1.25       27051
SP_CW                      1.75       51186
SP_CW                      2.25       87698
SP_CW                      3.25       131180
SP_CW                      3.75       150000
SP_CW                      4.25       170256
SP_CW                      5.25       203992
SP_CW                      6.25       244995
SP_CW                      6.75       245000

[TIMESERIES]
;;Name           Date       Time       Value
;;-------------- ---------- ---------- ----------
;First Quartile Huff distribution for 3-hour storm - 100-year, Bulletin 75 NE IL values
003Huff1Q100_75              00:00:00   0.0000
003Huff1Q100_75              00:07:30   0.4590
003Huff1Q100_75              00:15:00   0.9734
003Huff1Q100_75              00:22:30   1.5432
003Huff1Q100_75              00:30:00   2.1043
003Huff1Q100_75              00:37:30   2.6050
003Huff1Q100_75              00:45:00   3.0470
003Huff1Q100_75              00:52:30   3.4175
003Huff1Q100_75              01:00:00   3.6904
003Huff1Q100_75              01:07:30   3.8880
003Huff1Q100_75              01:15:00   4.0719
003Huff1Q100_75              01:22:30   4.2257
003Huff1Q100_75              01:30:00   4.3816
003Huff1Q100_75              01:37:30   4.5320
003Huff1Q100_75              01:45:00   4.6764
003Huff1Q100_75              01:52:30   4.7983
003Huff1Q100_75              02:00:00   4.9119
003Huff1Q100_75              02:07:30   5.0052
003Huff1Q100_75              02:15:00   5.0892
003Huff1Q100_75              02:22:30   5.1622
003Huff1Q100_75              02:30:00   5.2353
```

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003Huff1Q100_75             02:37:30   5.3011
003Huff1Q100_75             02:45:00   5.3659
003Huff1Q100_75             02:52:30   5.4269
003Huff1Q100_75             03:00:00   5.4900
;
;Second Quartile Huff distribution for 6-hour storm - 100-year, Bulletin 75 NE IL values
006Huff2Q100_75             00:00      0.0000
006Huff2Q100_75             00:15      0.1472
006Huff2Q100_75             00:30      0.3099
006Huff2Q100_75             00:45      0.5003
006Huff2Q100_75             01:00      0.7285
006Huff2Q100_75             01:15      1.0153
006Huff2Q100_75             01:30      1.3754
006Huff2Q100_75             01:45      1.8268
006Huff2Q100_75             02:00      2.3431
006Huff2Q100_75             02:15      2.9121
006Huff2Q100_75             02:30      3.4947
006Huff2Q100_75             02:45      4.0110
006Huff2Q100_75             03:00      4.4856
006Huff2Q100_75             03:15      4.8534
006Huff2Q100_75             03:30      5.1684
006Huff2Q100_75             03:45      5.4462
006Huff2Q100_75             04:00      5.6462
006Huff2Q100_75             04:15      5.8011
006Huff2Q100_75             04:30      5.9265
006Huff2Q100_75             04:45      6.0320
006Huff2Q100_75             05:00      6.1271
006Huff2Q100_75             05:15      6.2095
006Huff2Q100_75             05:30      6.2847
006Huff2Q100_75             05:45      6.3554
006Huff2Q100_75             06:00      6.4300
;
;Second Quartile Huff distribution for 12-hour storm - 100-year, Bulletin 75 NE IL values
012Huff2Q100_75             00:00      0.0000
012Huff2Q100_75             00:30      0.1708
012Huff2Q100_75             01:00      0.3596
012Huff2Q100_75             01:30      0.5804
012Huff2Q100_75             02:00      0.8452
012Huff2Q100_75             02:30      1.1779
012Huff2Q100_75             03:00      1.5957
012Huff2Q100_75             03:30      2.1194
012Huff2Q100_75             04:00      2.7184
012Huff2Q100_75             04:30      3.3786
012Huff2Q100_75             05:00      4.0545
012Huff2Q100_75             05:30      4.6535
012Huff2Q100_75             06:00      5.2041
012Huff2Q100_75             06:30      5.6308
012Huff2Q100_75             07:00      5.9963
012Huff2Q100_75             07:30      6.3186
012Huff2Q100_75             08:00      6.5506
012Huff2Q100_75             08:30      6.7304
012Huff2Q100_75             09:00      6.8759
012Huff2Q100_75             09:30      6.9982
012Huff2Q100_75             10:00      7.1086
012Huff2Q100_75             10:30      7.2041
012Huff2Q100_75             11:00      7.2914
012Huff2Q100_75             11:30      7.3735
012Huff2Q100_75             12:00      7.4600
;
;Second Quartile Huff distribution for 18-hour storm - 100-year, Bulletin 75 NE IL values
018Huff2Q100_75             00:00      0.0000
018Huff2Q100_75             00:45      0.1846
018Huff2Q100_75             01:30      0.3885
018Huff2Q100_75             02:15      0.6271
018Huff2Q100_75             03:00      0.9132
018Huff2Q100_75             03:45      1.2727
018Huff2Q100_75             04:30      1.7240
018Huff2Q100_75             05:15      2.2898
018Huff2Q100_75             06:00      2.9371
018Huff2Q100_75             06:45      3.6504
018Huff2Q100_75             07:30      4.3806
018Huff2Q100_75             08:15      5.0278
018Huff2Q100_75             09:00      5.6227
018Huff2Q100_75             09:45      6.0837
018Huff2Q100_75             10:30      6.4786
018Huff2Q100_75             11:15      6.8268
018Huff2Q100_75             12:00      7.0775
018Huff2Q100_75             12:45      7.2717
018Huff2Q100_75             13:30      7.4289
018Huff2Q100_75             14:15      7.5611
018Huff2Q100_75             15:00      7.6804
018Huff2Q100_75             15:45      7.7835
018Huff2Q100_75             16:30      7.8778
018Huff2Q100_75             17:15      7.9665
018Huff2Q100_75             18:00      8.0600
;
;Third Quartile Huff distribution for 24-hour storm - 100-year, Bulletin 75 NE IL values
024Huff3Q100_75             00:00      0.0000
024Huff3Q100_75             01:00      0.1757
024Huff3Q100_75             02:00      0.3694
024Huff3Q100_75             03:00      0.5716
024Huff3Q100_75             04:00      0.7816
024Huff3Q100_75             05:00      1.0035
024Huff3Q100_75             06:00      1.2307
024Huff3Q100_75             07:00      1.4492
024Huff3Q100_75             08:00      1.6831
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024Huff3Q100_75             09:00      1.9522
024Huff3Q100_75             10:00      2.2565
024Huff3Q100_75             11:00      2.6507
024Huff3Q100_75             12:00      3.1152
024Huff3Q100_75             13:00      3.7639
024Huff3Q100_75             14:00      4.4658
024Huff3Q100_75             15:00      5.2294
024Huff3Q100_75             16:00      5.9896
024Huff3Q100_75             17:00      6.7009
024Huff3Q100_75             18:00      7.2776
024Huff3Q100_75             19:00      7.6907
024Huff3Q100_75             20:00      7.9795
024Huff3Q100_75             21:00      8.1706
024Huff3Q100_75             22:00      8.3180
024Huff3Q100_75             23:00      8.4466
024Huff3Q100_75             24:00      8.5700
;
;Fourth Quartile Huff distribution for 48-hour storm - 100-year, Bulletin 75 NE IL values
048Huff4Q100_75             00:00      0.0000
048Huff4Q100_75             02:00      0.2144
048Huff4Q100_75             04:00      0.4445
048Huff4Q100_75             06:00      0.6607
048Huff4Q100_75             08:00      0.9076
048Huff4Q100_75             10:00      1.1628
048Huff4Q100_75             12:00      1.4133
048Huff4Q100_75             14:00      1.6620
048Huff4Q100_75             16:00      1.8866
048Huff4Q100_75             18:00      2.1186
048Huff4Q100_75             20:00      2.3580
048Huff4Q100_75             22:00      2.6309
048Huff4Q100_75             24:00      2.9000
048Huff4Q100_75             26:00      3.1459
048Huff4Q100_75             28:00      3.3714
048Huff4Q100_75             30:00      3.5830
048Huff4Q100_75             32:00      3.8271
048Huff4Q100_75             34:00      4.1834
048Huff4Q100_75             36:00      4.7597
048Huff4Q100_75             38:00      5.5040
048Huff4Q100_75             40:00      6.4208
048Huff4Q100_75             42:00      7.4286
048Huff4Q100_75             44:00      8.3251
048Huff4Q100_75             46:00      8.9125
048Huff4Q100_75             48:00      9.2800
;
;Fourth Quartile Huff distribution for 72-hour storm - 100-year, Bulletin 75 NE IL values
072Huff4Q100_75             00:00      0.0000
072Huff4Q100_75             03:00      0.2275
072Huff4Q100_75             06:00      0.4718
072Huff4Q100_75             09:00      0.7013
072Huff4Q100_75             12:00      0.9633
072Huff4Q100_75             15:00      1.2342
072Huff4Q100_75             18:00      1.5002
072Huff4Q100_75             21:00      1.7641
072Huff4Q100_75             24:00      2.0025
072Huff4Q100_75             27:00      2.2488
072Huff4Q100_75             30:00      2.5029
072Huff4Q100_75             33:00      2.7925
072Huff4Q100_75             36:00      3.0781
072Huff4Q100_75             39:00      3.3392
072Huff4Q100_75             42:00      3.5785
072Huff4Q100_75             45:00      3.8031
072Huff4Q100_75             48:00      4.0621
072Huff4Q100_75             51:00      4.4404
072Huff4Q100_75             54:00      5.0521
072Huff4Q100_75             57:00      5.8420
072Huff4Q100_75             60:00      6.8152
072Huff4Q100_75             63:00      7.8849
072Huff4Q100_75             66:00      8.8364
072Huff4Q100_75             69:00      9.4599
072Huff4Q100_75             72:00      9.8500
;
;Fourth Quartile Huff distribution for 120-hour storm - 100-year, Bulletin 75 NE IL values
120Huff4Q100_75             00:00      0.0000
120Huff4Q100_75             05:00      0.2462
120Huff4Q100_75             10:00      0.5106
120Huff4Q100_75             15:00      0.7590
120Huff4Q100_75             20:00      1.0425
120Huff4Q100_75             25:00      1.3357
120Huff4Q100_75             30:00      1.6235
120Huff4Q100_75             35:00      1.9092
120Huff4Q100_75             40:00      2.1672
120Huff4Q100_75             45:00      2.4337
120Huff4Q100_75             50:00      2.7087
120Huff4Q100_75             55:00      3.0221
120Huff4Q100_75             60:00      3.3313
120Huff4Q100_75             65:00      3.6137
120Huff4Q100_75             70:00      3.8728
120Huff4Q100_75             75:00      4.1158
120Huff4Q100_75             80:00      4.3962
120Huff4Q100_75             85:00      4.8055
120Huff4Q100_75             90:00      5.4675
120Huff4Q100_75             95:00      6.3224
120Huff4Q100_75             100:00     7.3757
120Huff4Q100_75             105:00     8.5333
120Huff4Q100_75             110:00     9.5631
120Huff4Q100_75             115:00     10.2379
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120Huff4Q100_75             120:00     10.6600
;
;Fourth Quartile Huff distribution for 240-hour storm - 100-year, Bulletin 75 NE IL values
240Huff4Q100_75             00:00      0.0000
240Huff4Q100_75             10:00      0.2922
240Huff4Q100_75             20:00      0.6059
240Huff4Q100_75             30:00      0.9007
240Huff4Q100_75             40:00      1.2372
240Huff4Q100_75             50:00      1.5850
240Huff4Q100_75             60:00      1.9266
240Huff4Q100_75             70:00      2.2656
240Huff4Q100_75             80:00      2.5717
240Huff4Q100_75             90:00      2.8880
240Huff4Q100_75             100:00     3.2144
240Huff4Q100_75             110:00     3.5863
240Huff4Q100_75             120:00     3.9531
240Huff4Q100_75             130:00     4.2884
240Huff4Q100_75             140:00     4.5957
240Huff4Q100_75             150:00     4.8842
240Huff4Q100_75             160:00     5.2169
240Huff4Q100_75             170:00     5.7026
240Huff4Q100_75             180:00     6.4882
240Huff4Q100_75             190:00     7.5027
240Huff4Q100_75             200:00     8.7525
240Huff4Q100_75             210:00     10.1263
240Huff4Q100_75             220:00     11.3483
240Huff4Q100_75             230:00     12.1491
240Huff4Q100_75             240:00     12.6500
;
;First Quartile Huff distribution for 3-hour storm - 2-year, Bulletin 75 NE IL values
003Huff1Q2_75               00:00:00   0.0000
003Huff1Q2_75               00:07:30   0.1789
003Huff1Q2_75               00:15:00   0.3794
003Huff1Q2_75               00:22:30   0.6016
003Huff1Q2_75               00:30:00   0.8203
003Huff1Q2_75               00:37:30   1.0154
003Huff1Q2_75               00:45:00   1.1877
003Huff1Q2_75               00:52:30   1.3322
003Huff1Q2_75               01:00:00   1.4385
003Huff1Q2_75               01:07:30   1.5155
003Huff1Q2_75               01:15:00   1.5872
003Huff1Q2_75               01:22:30   1.6472
003Huff1Q2_75               01:30:00   1.7079
003Huff1Q2_75               01:37:30   1.7666
003Huff1Q2_75               01:45:00   1.8229
003Huff1Q2_75               01:52:30   1.8704
003Huff1Q2_75               02:00:00   1.9147
003Huff1Q2_75               02:07:30   1.9510
003Huff1Q2_75               02:15:00   1.9838
003Huff1Q2_75               02:22:30   2.0122
003Huff1Q2_75               02:30:00   2.0407
003Huff1Q2_75               02:37:30   2.0664
003Huff1Q2_75               02:45:00   2.0916
003Huff1Q2_75               02:52:30   2.1154
003Huff1Q2_75               03:00:00   2.1400
;
;Second Quartile Huff distribution for 6-hour storm - 2-year, Bulletin 75 NE IL values
006Huff2Q2_75               00:00      0.0000
006Huff2Q2_75               00:15      0.0575
006Huff2Q2_75               00:30      0.1210
006Huff2Q2_75               00:45      0.1953
006Huff2Q2_75               01:00      0.2844
006Huff2Q2_75               01:15      0.3963
006Huff2Q2_75               01:30      0.5369
006Huff2Q2_75               01:45      0.7131
006Huff2Q2_75               02:00      0.9146
006Huff2Q2_75               02:15      1.1368
006Huff2Q2_75               02:30      1.3642
006Huff2Q2_75               02:45      1.5657
006Huff2Q2_75               03:00      1.7510
006Huff2Q2_75               03:15      1.8945
006Huff2Q2_75               03:30      2.0175
006Huff2Q2_75               03:45      2.1260
006Huff2Q2_75               04:00      2.2040
006Huff2Q2_75               04:15      2.2645
006Huff2Q2_75               04:30      2.3135
006Huff2Q2_75               04:45      2.3546
006Huff2Q2_75               05:00      2.3918
006Huff2Q2_75               05:15      2.4239
006Huff2Q2_75               05:30      2.4533
006Huff2Q2_75               05:45      2.4809
006Huff2Q2_75               06:00      2.5100
;
;Second Quartile Huff distribution for 12-hour storm - 2-year, Bulletin 75 NE IL values
012Huff2Q2_75               00:00      0.0000
012Huff2Q2_75               00:30      0.0666
012Huff2Q2_75               01:00      0.1403
012Huff2Q2_75               01:30      0.2264
012Huff2Q2_75               02:00      0.3297
012Huff2Q2_75               02:30      0.4595
012Huff2Q2_75               03:00      0.6224
012Huff2Q2_75               03:30      0.8267
012Huff2Q2_75               04:00      1.0604
012Huff2Q2_75               04:30      1.3179
012Huff2Q2_75               05:00      1.5816
012Huff2Q2_75               05:30      1.8153
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012Huff2Q2_75               06:00      2.0300
012Huff2Q2_75               06:30      2.1965
012Huff2Q2_75               07:00      2.3391
012Huff2Q2_75               07:30      2.4648
012Huff2Q2_75               08:00      2.5553
012Huff2Q2_75               08:30      2.6254
012Huff2Q2_75               09:00      2.6821
012Huff2Q2_75               09:30      2.7299
012Huff2Q2_75               10:00      2.7729
012Huff2Q2_75               10:30      2.8102
012Huff2Q2_75               11:00      2.8442
012Huff2Q2_75               11:30      2.8762
012Huff2Q2_75               12:00      2.9100
;
;Second Quartile Huff distribution for 18-hour storm - 2-year, Bulletin 75 NE IL values
018Huff2Q2_75               00:00      0.0000
018Huff2Q2_75               00:45      0.0719
018Huff2Q2_75               01:30      0.1513
018Huff2Q2_75               02:15      0.2443
018Huff2Q2_75               03:00      0.3558
018Huff2Q2_75               03:45      0.4958
018Huff2Q2_75               04:30      0.6716
018Huff2Q2_75               05:15      0.8921
018Huff2Q2_75               06:00      1.1442
018Huff2Q2_75               06:45      1.4221
018Huff2Q2_75               07:30      1.7066
018Huff2Q2_75               08:15      1.9587
018Huff2Q2_75               09:00      2.1905
018Huff2Q2_75               09:45      2.3701
018Huff2Q2_75               10:30      2.5239
018Huff2Q2_75               11:15      2.6596
018Huff2Q2_75               12:00      2.7572
018Huff2Q2_75               12:45      2.8329
018Huff2Q2_75               13:30      2.8941
018Huff2Q2_75               14:15      2.9456
018Huff2Q2_75               15:00      2.9921
018Huff2Q2_75               15:45      3.0323
018Huff2Q2_75               16:30      3.0690
018Huff2Q2_75               17:15      3.1036
018Huff2Q2_75               18:00      3.1400
;
;Third Quartile Huff distribution for 24-hour storm - 2-year, Bulletin 75 NE IL values
024Huff3Q2_75               00:00      0.0000
024Huff3Q2_75               01:00      0.0685
024Huff3Q2_75               02:00      0.1440
024Huff3Q2_75               03:00      0.2228
024Huff3Q2_75               04:00      0.3046
024Huff3Q2_75               05:00      0.3911
024Huff3Q2_75               06:00      0.4796
024Huff3Q2_75               07:00      0.5648
024Huff3Q2_75               08:00      0.6560
024Huff3Q2_75               09:00      0.7609
024Huff3Q2_75               10:00      0.8794
024Huff3Q2_75               11:00      1.0331
024Huff3Q2_75               12:00      1.2141
024Huff3Q2_75               13:00      1.4669
024Huff3Q2_75               14:00      1.7405
024Huff3Q2_75               15:00      2.0381
024Huff3Q2_75               16:00      2.3343
024Huff3Q2_75               17:00      2.6115
024Huff3Q2_75               18:00      2.8363
024Huff3Q2_75               19:00      2.9973
024Huff3Q2_75               20:00      3.1099
024Huff3Q2_75               21:00      3.1844
024Huff3Q2_75               22:00      3.2418
024Huff3Q2_75               23:00      3.2919
024Huff3Q2_75               24:00      3.3400
;
;Fourth Quartile Huff distribution for 48-hour storm - 2-year, Bulletin 75 NE IL values
048Huff4Q2_75               00:00      0.0000
048Huff4Q2_75               02:00      0.0845
048Huff4Q2_75               04:00      0.1753
048Huff4Q2_75               06:00      0.2606
048Huff4Q2_75               08:00      0.3579
048Huff4Q2_75               10:00      0.4586
048Huff4Q2_75               12:00      0.5574
048Huff4Q2_75               14:00      0.6555
048Huff4Q2_75               16:00      0.7441
048Huff4Q2_75               18:00      0.8356
048Huff4Q2_75               20:00      0.9300
048Huff4Q2_75               22:00      1.0376
048Huff4Q2_75               24:00      1.1438
048Huff4Q2_75               26:00      1.2407
048Huff4Q2_75               28:00      1.3297
048Huff4Q2_75               30:00      1.4131
048Huff4Q2_75               32:00      1.5094
048Huff4Q2_75               34:00      1.6499
048Huff4Q2_75               36:00      1.8772
048Huff4Q2_75               38:00      2.1707
048Huff4Q2_75               40:00      2.5324
048Huff4Q2_75               42:00      2.9298
048Huff4Q2_75               44:00      3.2834
048Huff4Q2_75               46:00      3.5151
048Huff4Q2_75               48:00      3.6600
;
;Fourth Quartile Huff distribution for 72-hour storm - 2-year, Bulletin 75 NE IL values
```

```
072Huff4Q2_75               00:00      0.0000
072Huff4Q2_75               03:00      0.0917
072Huff4Q2_75               06:00      0.1902
072Huff4Q2_75               09:00      0.2827
072Huff4Q2_75               12:00      0.3883
072Huff4Q2_75               15:00      0.4974
072Huff4Q2_75               18:00      0.6046
072Huff4Q2_75               21:00      0.7110
072Huff4Q2_75               24:00      0.8071
072Huff4Q2_75               27:00      0.9064
072Huff4Q2_75               30:00      1.0088
072Huff4Q2_75               33:00      1.1255
072Huff4Q2_75               36:00      1.2406
072Huff4Q2_75               39:00      1.3458
072Huff4Q2_75               42:00      1.4423
072Huff4Q2_75               45:00      1.5328
072Huff4Q2_75               48:00      1.6372
072Huff4Q2_75               51:00      1.7897
072Huff4Q2_75               54:00      2.0362
072Huff4Q2_75               57:00      2.3546
072Huff4Q2_75               60:00      2.7468
072Huff4Q2_75               63:00      3.1780
072Huff4Q2_75               66:00      3.5615
072Huff4Q2_75               69:00      3.8128
072Huff4Q2_75               72:00      3.9700
;
;Fourth Quartile Huff distribution for 120-hour storm - 2-year, Bulletin 75 NE IL values
120Huff4Q2_75               00:00      0.0000
120Huff4Q2_75               05:00      0.1021
120Huff4Q2_75               10:00      0.2117
120Huff4Q2_75               15:00      0.3147
120Huff4Q2_75               20:00      0.4323
120Huff4Q2_75               25:00      0.5538
120Huff4Q2_75               30:00      0.6732
120Huff4Q2_75               35:00      0.7916
120Huff4Q2_75               40:00      0.8986
120Huff4Q2_75               45:00      1.0091
120Huff4Q2_75               50:00      1.1231
120Huff4Q2_75               55:00      1.2531
120Huff4Q2_75               60:00      1.3813
120Huff4Q2_75               65:00      1.4984
120Huff4Q2_75               70:00      1.6058
120Huff4Q2_75               75:00      1.7066
120Huff4Q2_75               80:00      1.8228
120Huff4Q2_75               85:00      1.9925
120Huff4Q2_75               90:00      2.2670
120Huff4Q2_75               95:00      2.6215
120Huff4Q2_75               100:00     3.0582
120Huff4Q2_75               105:00     3.5382
120Huff4Q2_75               110:00     3.9652
120Huff4Q2_75               115:00     4.2450
120Huff4Q2_75               120:00     4.4200
;
;Fourth Quartile Huff distribution for 240-hour storm - 2-year, Bulletin 75 NE IL values
240Huff4Q2_75               00:00      0.0000
240Huff4Q2_75               10:00      0.1294
240Huff4Q2_75               20:00      0.2682
240Huff4Q2_75               30:00      0.3987
240Huff4Q2_75               40:00      0.5477
240Huff4Q2_75               50:00      0.7017
240Huff4Q2_75               60:00      0.8529
240Huff4Q2_75               70:00      1.0030
240Huff4Q2_75               80:00      1.1385
240Huff4Q2_75               90:00      1.2785
240Huff4Q2_75               100:00     1.4230
240Huff4Q2_75               110:00     1.5876
240Huff4Q2_75               120:00     1.7500
240Huff4Q2_75               130:00     1.8984
240Huff4Q2_75               140:00     2.0345
240Huff4Q2_75               150:00     2.1622
240Huff4Q2_75               160:00     2.3094
240Huff4Q2_75               170:00     2.5245
240Huff4Q2_75               180:00     2.8722
240Huff4Q2_75               190:00     3.3214
240Huff4Q2_75               200:00     3.8746
240Huff4Q2_75               210:00     4.4828
240Huff4Q2_75               220:00     5.0238
240Huff4Q2_75               230:00     5.3782
240Huff4Q2_75               240:00     5.6000

[REPORT]
;;Reporting Options
SUBCATCHMENTS ALL
NODES ALL
LINKS ALL

[TAGS]

[MAP]
DIMENSIONS -2579.657 0.000 12579.657 10000.000
Units      None

[COORDINATES]
;;Node           X-Coord            Y-Coord
;;-------------- ------------------ ------------------
N_SVSWN          4058.434           2787.223
```

```
N_DE2            2141.746           3488.203
N_DE1            2148.519           5973.802
N_CNWS           2856.366           8128.400
J_10D            8702.894           3681.948
J_10G            8531.444           3986.272
N_SiteNE         8934.790           5840.730
N_OffNE          8925.224           6750.900
J_10R            4344.802           4752.448
NP_RD            6994.870           4489.106
STM_E10          7944.121           6016.045
STM_E9           7908.368           5671.922
STM_E8           7944.121           4956.860
S_SWL            7841.331           4889.823
Out_SE           9071.512           3210.461
Out_NW           991.166            8446.720
N_CNWN           2856.271           8378.128
N_DW1            1992.745           5970.415
N_DW2            1982.586           3491.589
N_CWLow          4238.303           4820.457
N_SVSWS          4061.820           2536.631
SP_NE            8125.734           6159.949
SP_SE            7948.440           4185.388

[VERTICES]
;;Link            X-Coord            Y-Coord
;;--------------- ------------------ ------------------
D_SVSW           4163.412           2976.860
D_SVSW           4251.457           3146.179
D_SVSW           4261.616           3461.112
D_SVSW           4197.275           3667.681
D_SVSW           4024.570           3840.386
D_SVSW           3946.684           4080.818
D_SVSW           4000.866           4412.683
D_SVSW           4160.025           4693.752
D_DE2            2219.632           3522.066
D_DE2            2290.746           3640.590
D_DE2            2426.201           3874.249
D_DE2            2632.770           4043.568
D_DE2            2768.225           4165.478
D_DE2            2937.544           4246.751
D_DE2            3089.931           4328.024
D_DE2            3161.045           4466.865
D_DE2            3357.454           4592.161
D_DE2            3543.705           4666.661
D_DE2            3692.705           4791.957
D_DE2            3811.229           4825.821
D_DE2            3973.775           4819.048
D_DE1            2500.702           6055.075
D_DE1            2565.043           6138.041
D_DE1            2629.384           6221.007
D_DE1            2714.043           6407.258
D_DE1            2787.679           6580.744
D_DE1            2951.089           6674.781
D_DE1            3252.477           6742.509
D_DE1            3448.886           6708.645
D_DE1            3612.865           6561.847
D_DE1            3786.091           6325.630
D_DE1            3823.981           5115.893
D_CNW            2912.170           7942.481
D_CNW            2882.166           7813.894
D_CNW            2929.315           7638.158
D_CNW            2980.750           7466.708
D_CNW            3036.471           7299.544
D_CNW            3165.059           7166.670
D_CNW            3452.237           6965.216
D_CNW            3602.256           6909.495
D_CNW            3717.985           6922.354
D_CNW            3798.826           6805.421
D_CNW            3861.712           5141.048
C_10G2           4558.090           4792.087
C_10G2           4900.990           4817.805
C_10G2           5381.050           4942.106
C_10G2           5758.240           4980.682
C_10G2           6002.556           4950.679
C_10G2           6336.884           4822.091
C_10G2           6624.063           4676.358
C_10G2           7035.543           4582.061
C_10G2           7275.573           4556.343
C_10G2           7515.603           4547.771
C_10G2           7768.492           4509.195
C_10G2           8059.957           4342.031
C_10R1           4463.792           4732.080
C_10R1           4892.417           4762.083
C_10R1           5329.615           4959.251
C_10R1           5732.523           5036.404
C_10R1           6083.995           4984.969
C_10R1           6465.471           4826.377
C_10R1           6645.494           4727.793
C_10R1           6988.394           4620.637
C_10R1           7382.729           4590.633
C_10R1           7725.629           4564.916
C_10R1           7837.072           4573.488
C_10R1           8042.812           4496.336
C_10R1           8342.849           4299.168
C_10R1           8535.730           4127.718
D_SiteNE         9033.858           5785.692
```

```
D_SiteNE         9215.483           5460.969
D_SiteNE         9413.619           5015.163
D_SiteNE         9523.695           4618.890
D_SiteNE         9512.687           4250.137
D_SiteNE         9410.125           3964.841
D_SiteNE         9211.099           3764.962
D_SiteNE         9036.997           3667.029
C_SVSW_12W       3930.681           2664.846
OF_SVSW          4183.114           2664.846
C_SVSW_6         4205.658           2873.229
C_SVSW_6         4298.150           3188.790
C_SVSW_6         4314.472           3618.605
C_SVSW_6         4162.133           3988.572
C_SVSW_6         4162.133           4412.946
C_SVSW_6         4276.387           4652.337
OF_DW2           2060.183           3387.790
OF_DW1           2067.737           5858.706
OF_CNW           2971.579           8278.058
RP2_Out          8264.539           3878.653
RP100_Out        8370.571           4044.704
WP_RD            6876.354           4247.135

[Polygons]
;;Subcatchment   X-Coord            Y-Coord
;;-------------- ------------------ ------------------
H_SVSW           3563.656           2589.771
H_SVSW           3563.656           2589.771
H_SVSW           3813.928           2622.416
H_SVSW           4836.779           2535.365
H_SVSW           4891.186           1980.413
H_SVSW           4542.982           1229.597
H_SVSW           4096.844           794.342
H_SVSW           2889.010           391.730
H_SVSW           2334.059           1001.088
H_SVSW           2029.380           1643.090
H_SVSW           2616.975           2361.262
H_SVSW           3585.419           2589.771
H_CNW            2388.466           9445.049
H_CNW            2932.535           9303.591
H_CNW            3879.217           8911.861
H_CNW            3824.810           8454.842
H_CNW            1354.733           8476.605
H_CNW            1376.496           8705.114
H_CNW            2116.431           9412.405
H_DW1            1974.973           6877.040
H_DW1            1942.329           4722.524
H_DW1            1746.464           4559.304
H_DW1            886.834            4287.269
H_DW1            701.850            4940.152
H_DW1            -375.408           4972.797
H_DW1            -952.122           5353.645
H_DW1            -734.494           5788.901
H_DW1            223.069            6430.903
H_DW1            1866.159           6877.040
H_DW2            963.003            4145.811
H_DW2            1964.091           4483.134
H_DW2            2007.617           2676.823
H_DW2            1735.582           2361.262
H_DW2            593.036            1762.786
H_DW2            364.527            2709.467
H_DW2            680.087            3297.062
H_DW2            865.071            4113.166
H_DE2            2225.245           4167.573
H_DE2            2181.719           4929.271
H_DE2            2682.263           5451.578
H_DE2            3552.775           5429.815
H_DE2            3618.063           4385.201
H_DE2            3672.470           2742.111
H_DE2            2225.245           2698.585
H_DE2            2225.245           4167.573
H_DE1            2149.075           5201.306
H_DE1            2159.956           6420.022
H_DE1            2170.838           8226.333
H_DE1            4782.372           8226.333
H_DE1            4804.135           8128.400
H_DE1            4630.033           7747.552
H_DE1            3824.810           7747.552
H_DE1            3531.012           7421.110
H_DE1            3585.419           5723.613
H_DE1            3346.028           5723.613
H_DE1            2780.196           5647.443
H_DE1            2181.719           5146.899
H_CNE            8928.183           8106.638
H_CNE            8939.064           6931.447
H_CNE            9352.557           8161.045
H_SVSE           5620.239           2796.518
H_SVSE           8155.604           2796.518
H_SVSE           8025.027           2557.127
H_SVSE           6926.007           1969.532
H_SVSE           6207.835           1447.225
H_SVSE           5620.239           2600.653
HP_SE            6150.442           3590.358
HP_SE            7044.252           3896.525
HP_SE            7187.459           4168.124
HP_SE            7271.408           3610.110
HP_SE            7380.048           3042.220
```

```
HP_SE            7592.390           3037.282
HP_SE            7592.390           2815.064
HP_SE            5814.647           2829.879
HP_SE            5814.647           3575.543
HP_B1            3927.941           5070.811
HP_B1            6654.136           5027.367
HP_B1            6664.013           4518.735
HP_B1            5022.589           4546.470
HP_B1            4392.452           3516.285
HP_B1            3923.326           3516.285
HP_B1            3922.955           5080.784
HP_B2            7276.346           4222.444
HP_B2            7829.422           4153.310
HP_B2            7947.938           3254.562
HP_B2            7454.121           3249.624
HP_B3            8829.010           6534.465
HP_B3            8815.603           6150.119
HP_B3            7877.084           6221.625
HP_B3            7903.899           6588.094
HP_NE1           7716.195           7960.119
HP_NE1           7515.084           6132.243
HP_NE1           7282.689           5989.230
HP_NE1           6576.565           6011.576
HP_NE1           6545.496           6854.491
HP_NE1           6180.072           6869.306
HP_NE1           6175.133           7175.473
HP_NE1           5868.967           7990.272
HP_CW            5740.574           7985.333
HP_CW            6086.246           7160.658
HP_CW            6076.370           6780.419
HP_CW            6436.857           6750.790
HP_CW            6481.300           5876.733
HP_CW            7271.408           5852.042
HP_CW            7508.441           5955.744
HP_CW            7518.317           4894.036
HP_CW            7305.975           4671.818
HP_CW            6713.394           4824.901
HP_CW            6693.642           5096.501
HP_CW            6170.195           5086.625
HP_CW            5864.028           5269.337
HP_CW            4089.744           5358.311
HP_CW            4061.877           7596.958
HP_CW            4721.396           7606.247
HP_CW            4953.620           8033.540
HE_WSE           8491.137           3906.401
HE_WSE           8639.283           2879.261
HE_WSE           8244.229           2864.446
HE_WSE           8045.891           3976.565
HP_NE2           8855.825           7888.613
HP_NE2           8815.603           6597.033
HP_NE2           7841.331           6664.070
HP_NE2           7769.825           5904.317
HP_NE2           7586.590           5926.662
HP_NE2           7662.565           6673.008
HP_NE2           7792.170           7951.181

[SYMBOLS]
;;Gage           X-Coord            Y-Coord
;;-------------- ------------------ ------------------
RG-Huff          2000.000           9500.000


[BACKDROP]
FILE       "G:\N_Drive\aenon\projects\2017\17004-Cross\E14-CanterburyPark\Final_Models\SWMM_P220625\1291_county 1ft topo GIS_BOUNDARY_2017-09-
13.JPG"
DIMENSIONS -77.000 430.000 12423.000 10430.000

[PROFILES]
;;Name           Links
;;-------------- ----------
"Green           " C_CNW D_CNW C_10G2 C_10G1 12
```

```
EPA STORM WATER MANAGEMENT MODEL - VERSION 5.1 (Build 5.1.015)
--------------------------------------------------------------

WARNING 03: negative offset ignored for Link D_SiteNE
WARNING 02: maximum depth increased for Node N_CNWS

*****************************************************
NOTE: The summary statistics displayed in this report are
based on results found at every computational time step,
not just on results from each reporting time step.
*****************************************************

***************
Analysis Options
***************
Flow Units ............... CFS
Process Models:
  Rainfall/Runoff ........ YES
  RDII ................... NO
  Snowmelt ............... NO
  Groundwater ............ NO
  Flow Routing ........... YES
  Ponding Allowed ........ NO
  Water Quality .......... NO
Infiltration Method ...... CURVE_NUMBER
Flow Routing Method ...... DYNWAVE
Surcharge Method ......... EXTRAN
Starting Date ............ 09/17/2017 00:00:00
Ending Date .............. 09/20/2017 23:00:00
Antecedent Dry Days ...... 0.0
Report Time Step ......... 00:15:00
Wet Time Step ............ 00:05:00
Dry Time Step ............ 01:00:00
Routing Time Step ........ 5.00 sec
Variable Time Step ....... YES
Maximum Trials ........... 8
Number of Threads ........ 1
Head Tolerance ........... 0.005000 ft


*************************        Volume         Depth
Runoff Quantity Continuity     acre-feet        inches
*************************     ---------       -------
Total Precipitation ......        22.027         3.660
Evaporation Loss .........         0.000         0.000
Infiltration Loss ........        11.326         1.882
Surface Runoff ...........        10.404         1.729
Final Storage ............         0.297         0.049
Continuity Error (%) .....        -0.001


*************************        Volume        Volume
Flow Routing Continuity        acre-feet      10^6 gal
*************************     ---------     ---------
Dry Weather Inflow .......         0.000         0.000
Wet Weather Inflow .......        10.404         3.390
Groundwater Inflow .......         0.000         0.000
RDII Inflow ..............         0.000         0.000
External Inflow ..........         0.000         0.000
External Outflow .........         9.876         3.218
Flooding Loss ............         0.000         0.000
Evaporation Loss .........         0.000         0.000
Exfiltration Loss ........         0.000         0.000
Initial Stored Volume ....         0.000         0.000
Final Stored Volume ......         0.527         0.172
Continuity Error (%) .....         0.006


*************************
Highest Continuity Errors
*************************
Node N_SiteNE (-2.90%)


**************************
Time-Step Critical Elements
**************************
Link C_10R2 (36.12%)
Link C_DW1 (23.38%)


********************************
Highest Flow Instability Indexes
********************************
All links are stable.


************************
Routing Time Step Summary
************************
Minimum Time Step           :     0.50 sec
Average Time Step           :     3.71 sec
Maximum Time Step           :     5.00 sec
Percent in Steady State     :    -0.00
Average Iterations per Step :     2.00
```

```
Percent Not Converging      :     0.00
Time Step Frequencies       :
    5.000 -  3.155 sec      :    57.64 %
    3.155 -  1.991 sec      :    38.92 %
    1.991 -  1.256 sec      :     2.74 %
    1.256 -  0.792 sec      :     0.35 %
    0.792 -  0.500 sec      :     0.36 %
```

****
Subcatchment Runoff Summary
****

Subcatchment	Total Precip in	Total Runon in	Total Evap in	Total Infil in	Imperv Runoff in	Perv Runoff in	Total Runoff in	Total Runoff 10^6 gal	Peak Runoff CFS	Runoff Coeff
H_SVSW	3.66	0.00	0.00	2.29	0.00	1.32	1.32	0.40	1.18	0.361
H_CNW	3.66	0.00	0.00	1.79	0.00	1.82	1.82	0.12	0.33	0.498
H_DW1	3.66	0.00	0.00	2.04	0.00	1.57	1.57	0.26	0.73	0.429
H_DW2	3.66	0.00	0.00	1.72	0.00	1.89	1.89	0.17	0.46	0.517
H_DE2	3.66	0.00	0.00	2.09	0.00	1.52	1.52	0.25	0.73	0.414
H_DE1	3.66	0.00	0.00	2.19	0.00	1.42	1.42	0.25	0.74	0.387
H_CNE	3.66	0.00	0.00	2.05	0.00	1.56	1.56	0.02	0.05	0.427
H_SVSE	3.66	0.00	0.00	2.14	0.00	1.47	1.47	0.07	0.20	0.402
HP_SE	3.66	0.00	0.00	1.52	0.00	2.09	2.09	0.27	0.75	0.570
HP_B1	3.66	0.00	0.00	1.85	0.00	1.76	1.76	0.32	0.90	0.482
HP_B2	3.66	0.00	0.00	1.82	0.00	1.79	1.79	0.13	0.37	0.490
HP_B3	3.66	0.00	0.00	1.82	0.00	1.79	1.79	0.04	0.12	0.490
HP_NE1	3.66	0.00	0.00	1.54	0.00	2.07	2.07	0.19	0.51	0.566
HP_CW	3.66	0.00	0.00	1.53	0.00	2.08	2.08	0.79	2.18	0.569
HE_WSE	3.66	0.00	0.00	2.14	0.00	1.47	1.47	0.04	0.12	0.401
HP_NE2	3.66	0.00	0.00	1.54	0.00	2.07	2.07	0.09	0.24	0.566

****
Node Depth Summary
****

Node	Type	Average Depth Feet	Maximum Depth Feet	Maximum HGL Feet	Time of Max Occurrence days hr:min	Reported Max Depth Feet
N_SVSWN	JUNCTION	0.01	0.11	735.26	2 03:18	0.11
N_DE2	JUNCTION	0.10	0.27	740.14	1 20:21	0.27
N_DE1	JUNCTION	0.13	0.37	740.66	1 22:04	0.37
N_CNWS	JUNCTION	0.04	0.13	746.13	1 20:09	0.13
J_10D	JUNCTION	0.35	0.67	727.17	2 02:03	0.67
J_10G	JUNCTION	0.73	1.64	728.47	2 02:46	1.64
N_SiteNE	JUNCTION	0.03	0.07	744.57	1 22:07	0.07
N_OffNE	JUNCTION	0.02	0.08	750.08	1 20:09	0.08
J_10R	JUNCTION	1.11	2.92	732.62	2 02:33	2.92
NP_RD	JUNCTION	0.07	0.50	733.00	2 02:02	0.50
STM_E10	JUNCTION	0.13	0.34	744.34	1 23:04	0.34
STM_E9	JUNCTION	0.13	0.35	743.55	1 23:04	0.35
STM_E8	JUNCTION	0.16	0.42	743.12	1 23:04	0.42
S_SWL	JUNCTION	0.04	0.12	742.62	1 23:05	0.12
Out_SE	OUTFALL	0.35	0.67	726.67	2 02:03	0.67
Out_NW	OUTFALL	0.00	0.00	750.00	0 00:00	0.00
N_CNWN	STORAGE	0.06	0.21	747.88	1 20:00	0.21
N_DW1	STORAGE	0.10	0.34	741.26	1 22:00	0.34
N_DW2	STORAGE	0.07	0.25	740.88	1 20:01	0.25
N_CWLow	STORAGE	1.09	2.94	732.69	2 02:32	2.94
N_SVSWS	STORAGE	0.98	2.73	735.45	2 02:58	2.73
SP_NE	STORAGE	0.26	0.94	744.94	1 23:03	0.94
SP_SE	STORAGE	1.04	2.00	733.00	2 02:01	2.00

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Node Inflow Summary
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Node	Type	Maximum Lateral Inflow CFS	Maximum Total Inflow CFS	Time of Max Occurrence days hr:min	Lateral Inflow Volume 10^6 gal	Total Inflow Volume 10^6 gal	Flow Balance Error Percent
N_SVSWN	JUNCTION	0.00	0.06	2 03:04	0	0.00837	-0.009
N_DE2	JUNCTION	0.00	0.46	1 20:02	0	0.165	0.047
N_DE1	JUNCTION	0.00	0.73	1 22:00	0	0.259	0.035
N_CNWS	JUNCTION	0.00	0.33	1 20:00	0	0.118	-0.005
J_10D	JUNCTION	0.12	3.42	2 02:00	0.0411	3.22	0.034
J_10G	JUNCTION	0.00	2.24	2 02:31	0	2.55	-0.004
N_SiteNE	JUNCTION	0.00	0.05	1 20:09	0	0.0178	-2.818
N_OffNE	JUNCTION	0.05	0.05	1 20:00	0.0178	0.0178	-0.008
J_10R	JUNCTION	0.00	1.03	2 02:32	0	1.14	0.007
NP_RD	JUNCTION	0.00	0.00	1 20:00	0	0.000519	0.019
STM_E10	JUNCTION	0.00	0.60	1 23:03	0	0.312	0.002
STM_E9	JUNCTION	0.00	0.60	1 23:04	0	0.312	0.001
STM_E8	JUNCTION	0.00	0.60	1 23:04	0	0.312	0.001
S_SWL	JUNCTION	0.00	0.60	1 23:05	0	0.312	0.003
Out_SE	OUTFALL	0.00	3.41	2 02:03	0	3.22	0.000
Out_NW	OUTFALL	0.00	0.00	0 00:00	0	0	0.000 gal

N_CNWN	STORAGE	0.33	0.33	1	20:00	0.118	0.118	-0.000
N_DW1	STORAGE	0.73	0.73	1	22:00	0.259	0.259	-0.000
N_DW2	STORAGE	0.46	0.46	1	20:00	0.165	0.165	-0.000
N_CWLow	STORAGE	4.53	5.97	1	20:00	1.61	2.17	0.001
N_SVSWS	STORAGE	1.18	1.18	1	22:00	0.396	0.396	0.001
SP_NE	STORAGE	0.87	0.87	1	20:00	0.314	0.314	0.000
SP_SE	STORAGE	1.32	1.85	1	20:00	0.468	0.78	0.058

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Node Surcharge Summary
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Surcharging occurs when water rises above the top of the highest conduit.

Node	Type	Hours Surcharged	Max. Height Above Crown Feet	Min. Depth Below Rim Feet
J_10R	JUNCTION	38.42	2.093	5.077

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Node Flooding Summary
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No nodes were flooded.

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Storage Volume Summary
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Storage Unit	Average Volume 1000 ft3	Avg Pcnt Full	Evap Pcnt Loss	Exfil Pcnt Loss	Maximum Volume 1000 ft3	Max Pcnt Full	Time of Max Occurrence days hr:min	Maximum Outflow CFS
N_CNWN	0.009	0	0	0	0.034	0	1 20:00	0.33
N_DW1	0.014	0	0	0	0.059	0	1 22:00	0.73
N_DW2	0.023	0	0	0	0.113	0	1 20:01	0.46
N_CWLow	23.469	3	0	0	126.035	14	2 02:32	1.95
N_SVSWS	4.835	1	0	0	25.623	4	2 02:58	0.36
SP_NE	3.414	3	0	0	12.802	11	1 23:03	0.60
SP_SE	24.313	8	0	0	60.954	21	2 02:01	1.09

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Outfall Loading Summary
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Outfall Node	Flow Freq Pcnt	Avg Flow CFS	Max Flow CFS	Total Volume 10^6 gal
Out_SE	90.82	1.47	3.41	3.218
Out_NW	0.00	0.00	0.00	0.000
System	45.41	1.47	3.41	3.218

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Link Flow Summary
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Link	Type	Maximum |Flow| CFS	Time of Max Occurrence days hr:min	Maximum |Veloc| ft/sec	Max/ Full Flow	Max/ Full Depth
C_SVSW_12E	CONDUIT	0.06	2 03:04	0.75	0.06	0.15
D_SVSW	CONDUIT	0.06	2 03:18	0.17	0.00	0.02
C_DW2	CONDUIT	0.46	1 20:02	2.82	0.12	0.26
D_DE2	CHANNEL	0.45	1 20:21	0.31	0.00	0.09
C_DW1	CONDUIT	0.73	1 22:00	2.93	0.21	0.36
D_DE1	CHANNEL	0.73	1 22:04	0.34	0.00	0.12
C_CNW	CONDUIT	0.33	1 20:00	2.93	0.09	0.20
D_CNW	CONDUIT	0.33	1 20:09	0.39	0.00	0.03
C_10G2	CONDUIT	1.21	2 02:27	2.24	1.14	1.00
C_10G1	CONDUIT	2.24	2 02:34	4.37	1.80	0.90
D_OutSE	CONDUIT	3.41	2 02:03	1.02	0.02	0.17
C_10R1	CONDUIT	1.03	2 02:33	2.29	2.03	0.77
D_SiteNE	CHANNEL	0.05	1 22:07	0.01	0.00	0.18
D_CNE	CONDUIT	0.05	1 20:09	0.32	0.00	0.02
C_SVSW_12W	CONDUIT	0.00	0 00:00	0.00	0.00	0.00
OF_SVSW	CONDUIT	0.00	0 00:00	0.00	0.00	0.00
C_SVSW_6	CONDUIT	0.36	3 00:57	1.85	1.21	1.00
C_10R2	CONDUIT	0.74	2 02:30	1.36	0.79	1.00
OF_DW2	CONDUIT	0.00	0 00:00	0.00	0.00	0.00
OF_DW1	CONDUIT	0.00	0 00:00	0.00	0.00	0.00
OF_CNWW	CHANNEL	0.00	0 00:00	0.00	0.00	0.00
OF_CNW	CONDUIT	0.00	0 00:00	0.00	0.00	0.00
CP_W36	CONDUIT	0.00	1 20:00	0.00	0.00	0.50
P_E10	CONDUIT	0.60	1 23:04	2.64	0.24	0.33
P_E9	CONDUIT	0.60	1 23:04	2.20	0.26	0.38

P_E8	CONDUIT	0.60	1	23:05	3.58	0.22	0.27
S_Swale	CONDUIT	0.60	1	23:05	2.10	0.00	0.06
RP_RD	ORIFICE	0.00	0	00:00			0.00
RP2_Out	ORIFICE	0.83	2	02:01			1.00
RP_NE	ORIFICE	0.60	1	23:03			1.00
RP100_Out	ORIFICE	0.26	2	02:01			0.34
WP_RD	WEIR	0.00	0	00:00			0.00

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Flow Classification Summary
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	Adjusted	Fraction of Time in Flow Class							
	/Actual		Up	Down	Sub	Sup	Up	Down	Norm	Inlet
Conduit	Length	Dry	Dry	Dry	Crit	Crit	Crit	Crit	Ltd	Ctrl
C_SVSW_12E	1.00	0.73	0.13	0.00	0.14	0.00	0.00	0.00	0.38	0.00
D_SVSW	1.00	0.73	0.00	0.00	0.00	0.00	0.00	0.27	0.00	0.00
C_DW2	1.00	0.09	0.29	0.00	0.41	0.22	0.00	0.00	0.71	0.00
D_DE2	1.00	0.09	0.00	0.00	0.00	0.00	0.00	0.91	0.00	0.00
C_DW1	1.00	0.10	0.26	0.00	0.56	0.09	0.00	0.00	0.70	0.00
D_DE1	1.00	0.10	0.00	0.00	0.00	0.00	0.00	0.90	0.00	0.00
C_CNW	1.00	0.09	0.00	0.00	0.00	0.00	0.00	0.91	0.00	0.00
D_CNW	1.00	0.14	0.00	0.00	0.00	0.00	0.00	0.86	0.00	0.00
C_10G2	1.00	0.08	0.18	0.00	0.74	0.00	0.00	0.00	0.48	0.00
C_10G1	1.00	0.08	0.00	0.00	0.81	0.11	0.00	0.00	0.21	0.00
D_OutSE	1.00	0.08	0.00	0.00	0.92	0.00	0.00	0.00	0.09	0.00
C_10R1	1.00	0.08	0.00	0.00	0.00	0.00	0.00	0.92	0.00	0.00
D_SiteNE	1.00	0.08	0.02	0.00	0.89	0.00	0.00	0.00	0.86	0.00
D_CNE	1.00	0.35	0.00	0.00	0.00	0.00	0.00	0.65	0.00	0.00
C_SVSW_12W	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OF_SVSW	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C_SVSW_6	1.00	0.08	0.08	0.00	0.84	0.00	0.00	0.00	0.45	0.00
C_10R2	1.00	0.08	0.00	0.00	0.92	0.00	0.00	0.00	0.17	0.00
OF_DW2	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OF_DW1	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OF_CNWW	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OF_CNW	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CP_W36	1.00	0.20	0.56	0.00	0.24	0.00	0.00	0.00	0.34	0.00
P_E10	1.00	0.09	0.00	0.00	0.00	0.00	0.00	0.91	0.00	0.00
P_E9	1.00	0.09	0.00	0.00	0.91	0.00	0.00	0.00	0.87	0.00
P_E8	1.00	0.09	0.00	0.00	0.01	0.90	0.00	0.00	0.00	0.00
S_Swale	1.00	0.10	0.00	0.00	0.00	0.00	0.00	0.90	0.00	0.00

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Conduit Surcharge Summary
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	Hours Full			Hours Above Full	Hours Capacity
Conduit	Both Ends	Upstream	Dnstream	Normal Flow	Limited
C_10G2	36.44	36.44	37.84	31.71	32.27
C_10G1	0.01	37.84	0.01	38.44	0.01
C_10R1	0.01	38.42	0.01	40.05	0.01
C_SVSW_6	38.08	38.08	59.22	21.40	23.77
C_10R2	38.14	38.14	38.42	0.01	14.93

Analysis begun on: Tue Oct 11 01:01:48 2022
Analysis ended on: Tue Oct 11 01:01:51 2022
Total elapsed time: 00:00:03