

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.

Mr. Greg Jackson

April 24, 2023

Page 2 of 2

- 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.

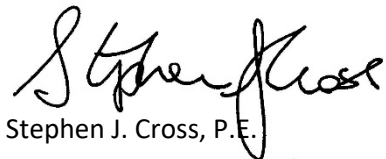
Water Supply

- 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



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: No:

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

- (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 Supplemental Information (per specific request):

- _____ 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).

- Fully completed Application with applicable supplementary information
- Non-refundable Filing Fee. Amount: \$ _____
- Planning Filing Fees. Amount: \$ _____
- 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

Name of Owner



Signature of Owner

4-11-23
Date

Stephen Cross, P.E.

Name of Applicant



Signature of Applicant

4/19/23

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 THROUGH 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 OF THE 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

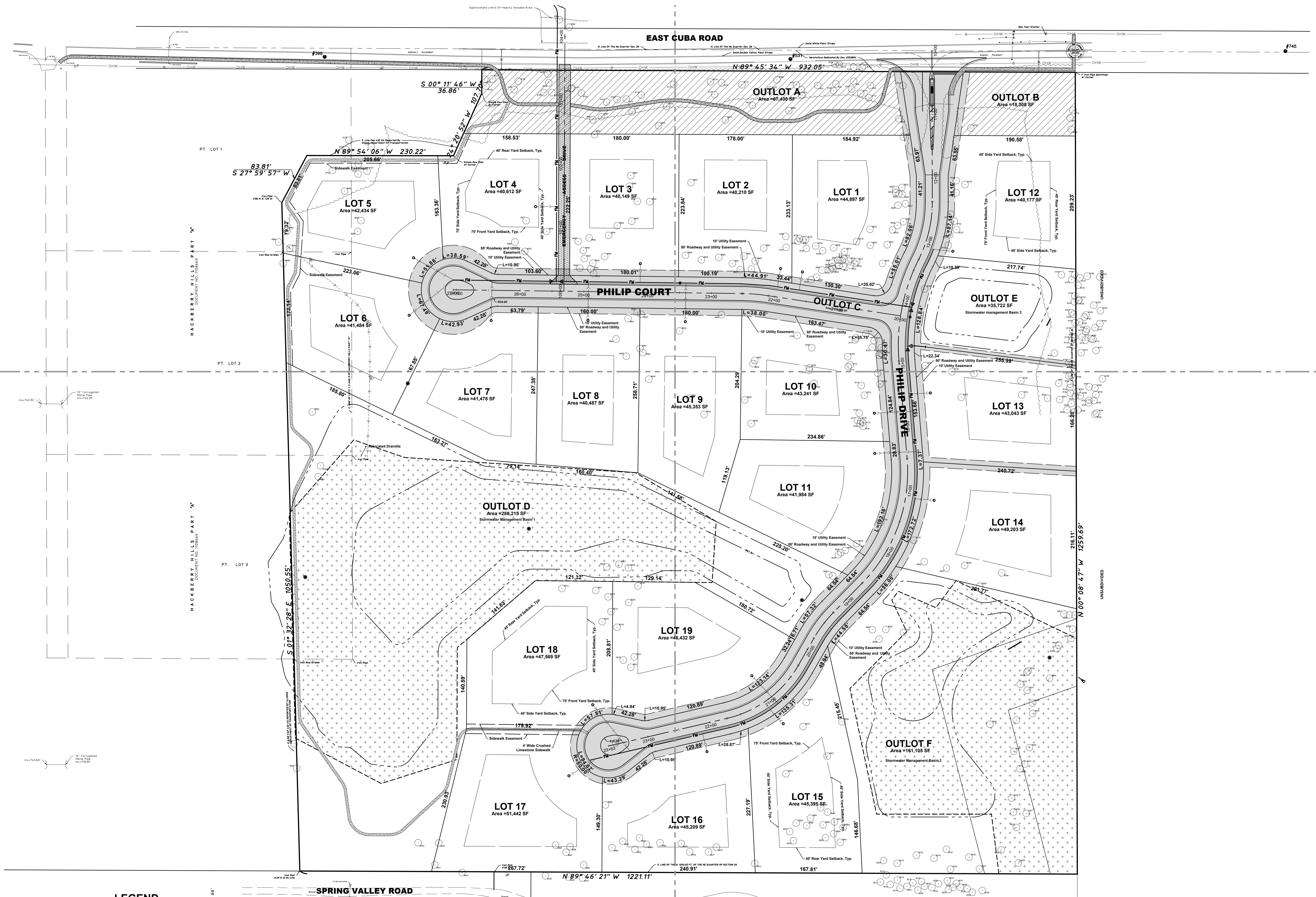
Lawrence Dziurdzik, ASLA
President
The JNL Design Group Inc.
1955 Raymond Drive, Suite 119
Northbrook, IL 60062
Office: 224-269-4290
ldziurdzik@jnlgroup.net

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	Existing Symbol	Description	Proposed Symbol	Existing Symbol	Description	Proposed Symbol
	Storm Sewer Manhole			Fire Hydrant			Guy Wire	
	Catch Basin			Valve Vault			Utility Pole	
	Inlet			Valve Box			Telephone Pedestal	
	Flared End Section			B-Box			Telephone Manhole	
	Headwall			Well Head			Telephone Line	
	Area Drain			Light Pole			Cable TV Line	
	Sanitary Sewer Manhole			Fence			Cable TV Pedestal	
	Clean Out			Sign			Contour Line	
	Storm Sewer			Gas Valve			Deciduous Tree	
	Storm Sewer Service			Gas Line			Coniferous Tree	
	Perforated Underdrain			Electric Line			Bush	
	Sanitary Sewer			Overhead Utility Line			San. Sewer Force Main	
	Sanitary Sewer Service			Fiber Optic Line				
	Combined Sewer			Electrical Pedestal				
	Water Main			Electric Manhole				

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

HAGER ENGINEERING
consulting engineers • land surveys
100 East State Parkway, Schaumburg, IL 60173 • 630.847.2944 • Fax: 630.236.6698
Illinois Professional Design Firm License No. 184.003152
www.hagerengineering.com

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

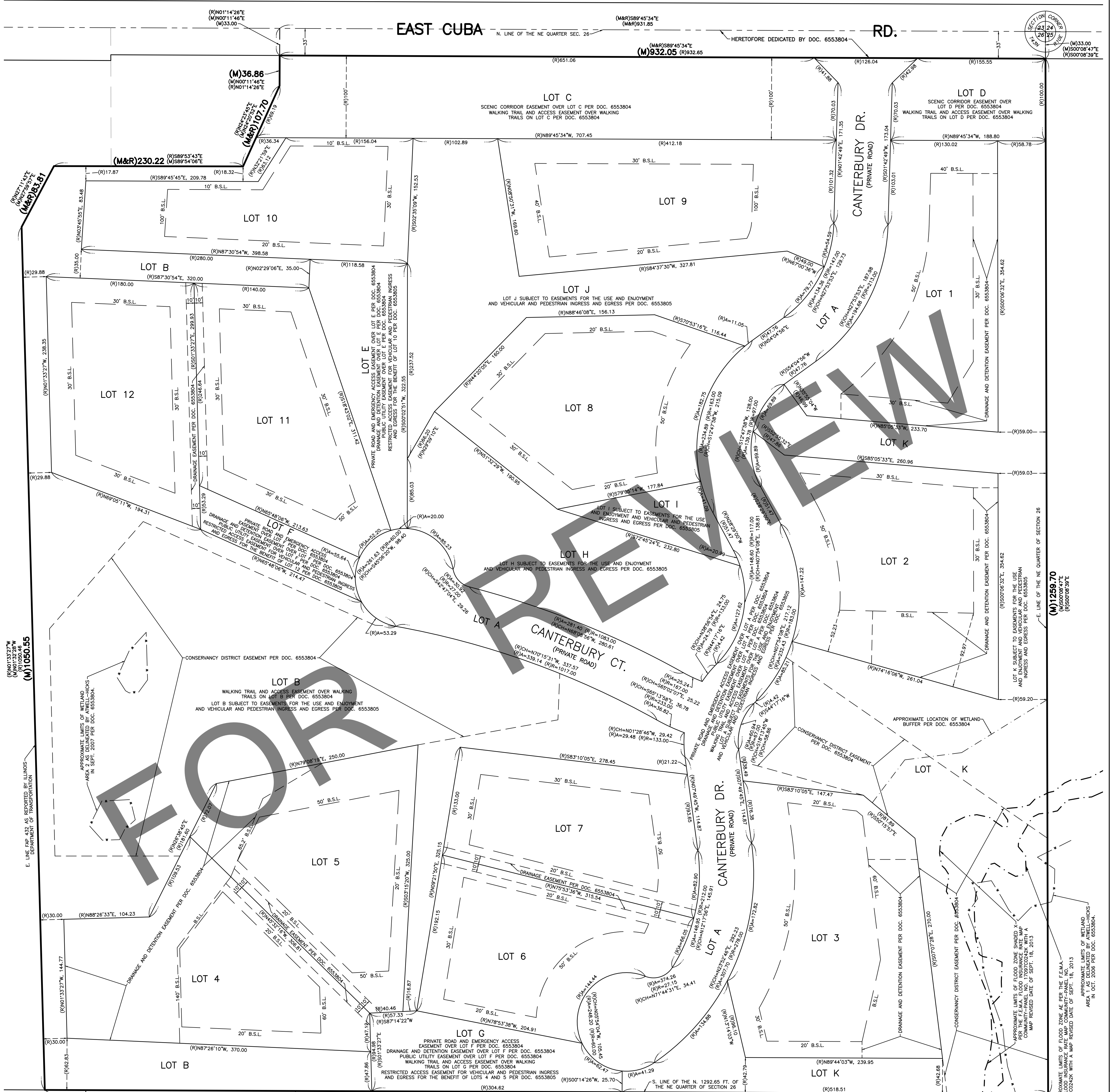
Project Manager: P.A.L.
Engineer: K.M.L.
Date: 03-20-2023
Project No. 22001
Sheet 1

Plot Date: Nov 29, 2023 - 11:38am - Plotted By: ghl
File Name: P:\2022\22001\Drawings\Final Engineering\22001 Final PUD Plat.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.



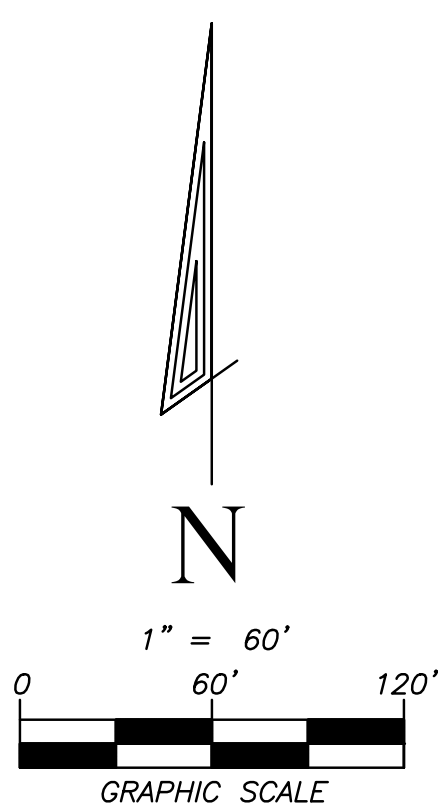
DETAIL OF UNDERLYING LOTS AND PER CANTERBURY PARK PUD RECORDED DECEMBER 22, 2009 AS DOCUMENT 6553804, IN LAKE COUNTY, ILLINOIS.

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.

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.



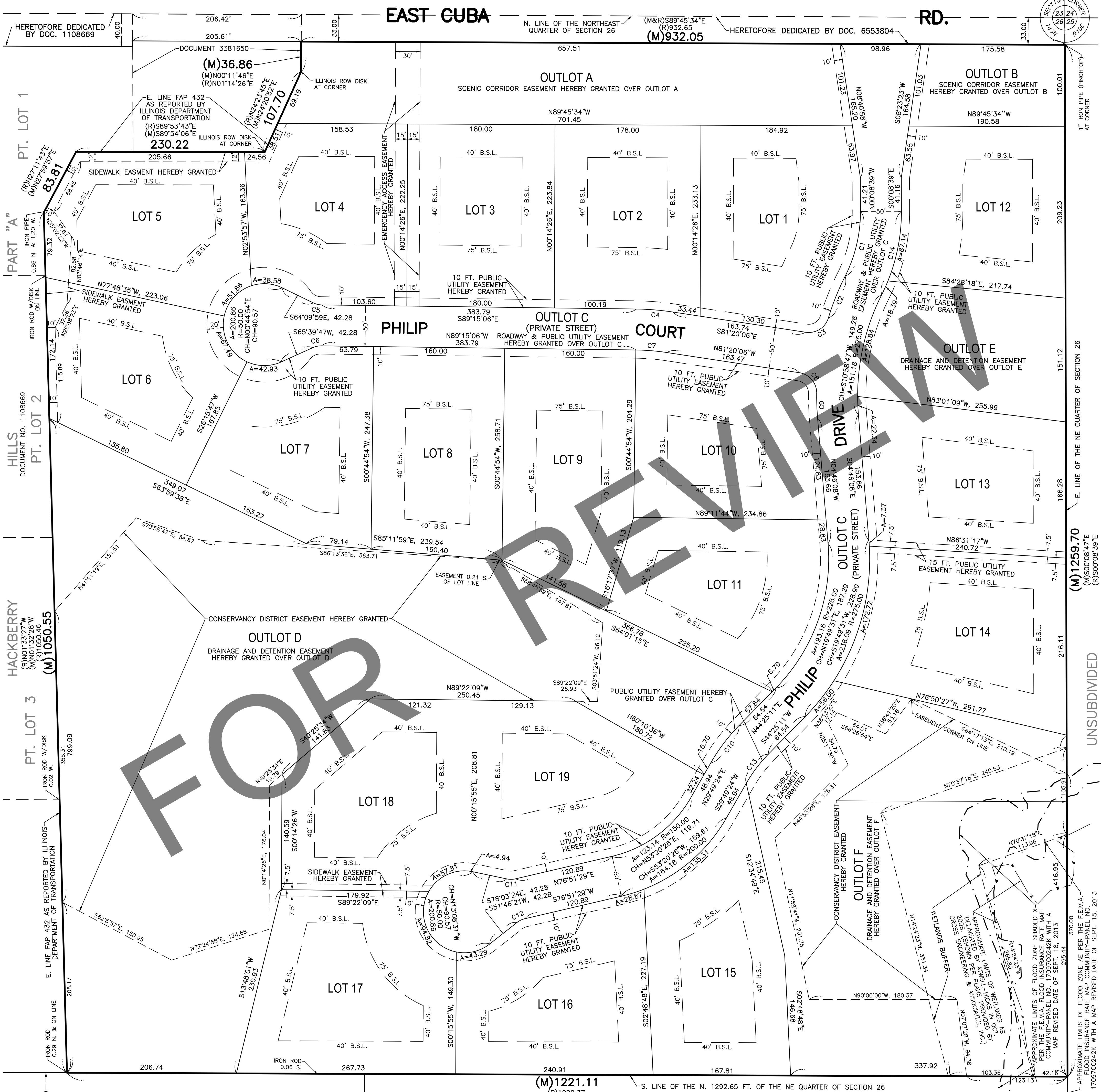
MAR. 29, 2023	220036	COMMENTS REC. 3/29/2023
MAR. 16, 2023	220036	FINAL SUBDIVISION PLAT
JULY 11, 2022	220036	REVISED LOT CONFIGURATION (PLANS REC. 6/23/22)
APR. 8, 2022	220036	REVISED LOT CONFIGURATION (PLANS REC. 3/30/22)
FEB. 9, 2021	210025	REVISED LOT CONFIGURATION
MAR. 10, 2020	190173A	COMMENTS 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: 1 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

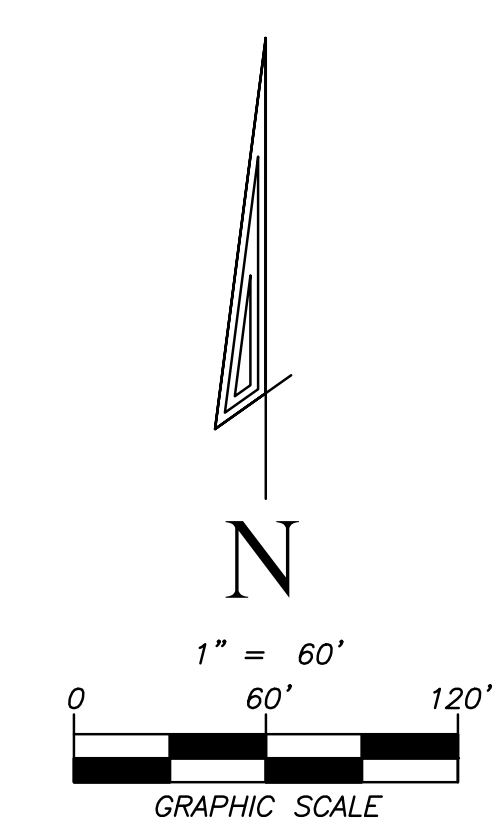
FINAL PLAT PHILIP ESTATES SUBDIVISION

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.



SPRING VALLEY RD.
(PRIVATE ROAD)

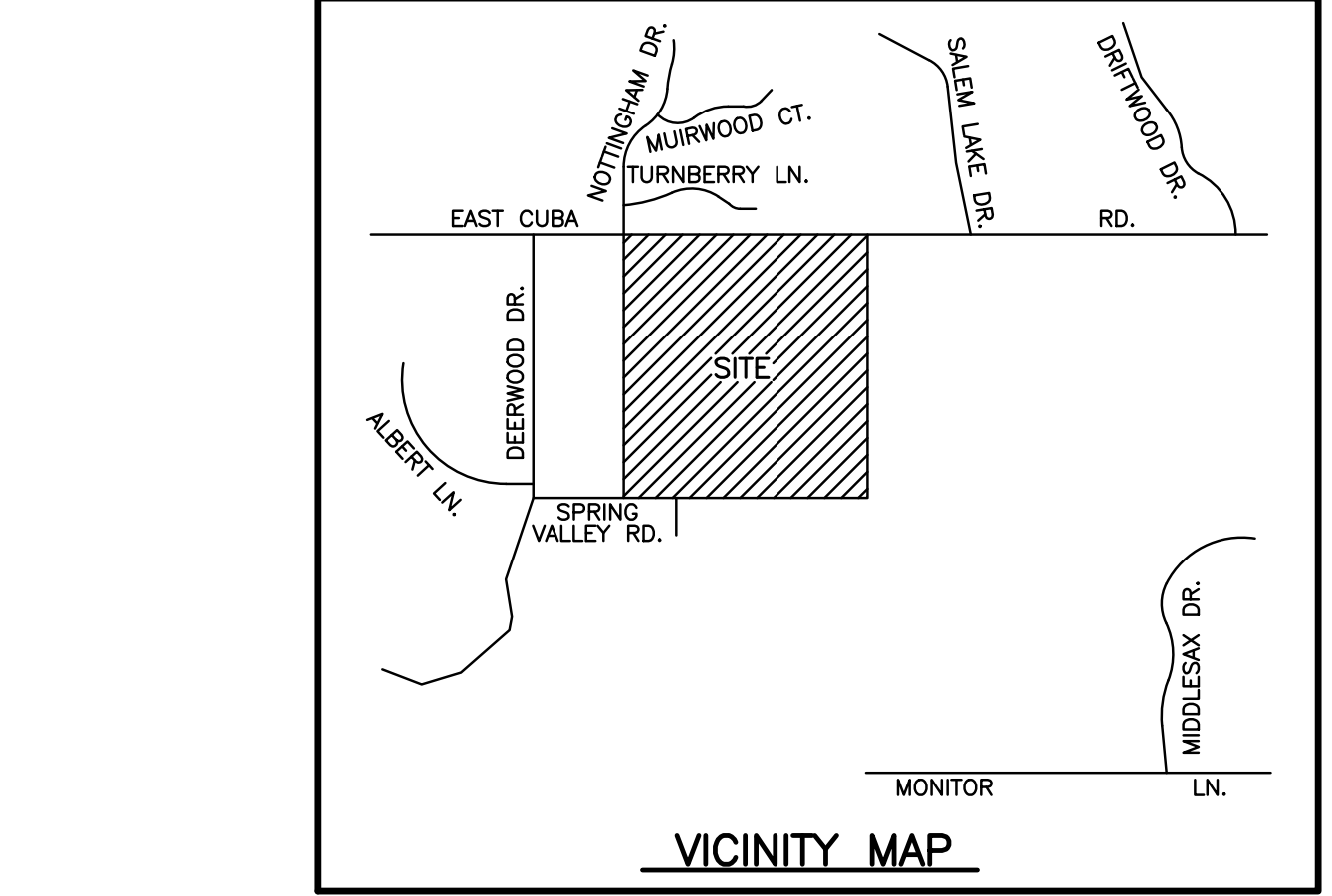
CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	82.08	175.00	N13°17'31"E	81.33
C2	55.01	325.00	N21°52'45"E	54.95
C3	35.62	25.00	N57°50'51"E	32.68
C4	44.91	325.00	S85°17'36"E	44.87
C5	10.95	25.00	S76°42'32"E	10.86
C6	10.95	25.00	S78°12'20"W	10.86
C7	38.00	275.00	N85°17'36"W	37.97
C8	35.75	25.00	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



LEGEND:
 (R) Record
 (M) Measured
 A Arc
 R Radius
 CH Chord
 B.S.L. Building Setback Line
 DIMENSIONS SHOWN HEREON ARE MEASURED AND RECORDED UNLESS OTHERWISE NOTED.

LOT 1
SPRING VALLEY NEUMAN RESUBDIVISION
 DOCUMENT NO. 2201412

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 1.0658 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



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

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)
COUNTY OF COOK) SS
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)
COUNTY OF COOK)) SS
I, _____, A NOTARY PUBLIC IN AND FOR SAID COUNTY, IN THE STATE AFORESAID, DO HEREBY CERTIFY THAT _____, 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)
COUNTY OF LAKE) SS
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)
COUNTY OF LAKE) SS
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)
COUNTY OF LAKE) SS
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)
COUNTY OF LAKE) SS
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)
COUNTY OF LAKE) SS
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 WATERS 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 INGRESS 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 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 THIS PLAT. ALSO THE RIGHT OF INGRESS 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:

- NO MAN-MADE STRUCTURE OF ANY KIND SHALL BE CONSTRUCTED IN THE FLOOD PLAIN.
- THE FLOOD PLAIN SHALL NOT BE FILLED NOR SHALL THE GRADE BE ALTERED IN ANY RESPECT.
- NO MATERIALS SHALL BE UTILIZED OR STORED WHICH SHALL HAVE THE POTENTIAL FOR POLLUTING EITHER SURFACE OR GROUND WATER.
- THERE SHALL BE NO FLOODWAY ALTERATION.
- THERE SHALL BE NO DISTURBING OF NATURAL VEGETATION.

DRAINAGE AND DETENTION EASEMENT PROVISIONS - OUTLOTS D, E 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:

- 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.
- 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.
- 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.
- 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)
COUNTY OF LAKE) SS
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)
COUNTY OF _____) SS
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)
COUNTY OF _____) SS
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)
COUNTY OF _____) SS
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)
COUNTY OF _____) SS
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)
COUNTY OF _____) SS
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)
COUNTY OF LAKE) SS

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 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:

- 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 [REDACTED] COUNTY WATERSHED DEVELOPMENT PERMIT # AND/OR U.S. ARMY CORPS OF ENGINEERS PERMIT #.
- 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:
 - DIVISION. ANY DIVISION OR SUBDIVISION OF THE WETLAND AND BUFFER AREAS IS PROHIBITED.
 - COMMERCIAL ACTIVITIES. ANY COMMERCIAL ACTIVITY ON THE WETLAND AND BUFFER AREAS, EXCEPT FOR PASSIVE RECREATIONAL ACTIVITY, IS PROHIBITED.
 - INDUSTRIAL ACTIVITIES. ANY INDUSTRIAL ACTIVITY ON THE WETLAND AND BUFFER AREAS IS PROHIBITED.
 - 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.
 - 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.
 - 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 DEVELOPING AND EXTRACTING OIL, GAS, HYDROCARBONS, OR PETROLEUM PRODUCTS ARE ALL PROHIBITED ACTIVITIES IN THE WETLAND AND BUFFER AREAS.
 - 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.
 - DUMPING. WASTE, DEBRIS, AND UNSIGHTLY OR OFFENSIVE MATERIAL IS NOT ALLOWED AND MAY NOT BE ACCUMULATED ON THE WETLAND AND BUFFER AREAS.
 - WATER COURSES. NATURAL WATER COURSES, LAKES, WETLANDS, OR OTHER BODIES OF WATER MAY NOT BE ALTERED.
 - 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.
 - 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.
- 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.
- 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 GRANTEE 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").
- 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)
COUNTY OF DUPAGE) SS

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 THE COPIES OF THIS PLAT IN THE COUNTY RECORDER'S 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)
COUNTY OF DUPAGE) SS

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 DRAWN 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. 170970242K WITH A MAP REVISED DATE OF SEPT. 18, 2013, SHOWS THAT THE PROPERTY SUBDIVIDED 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.

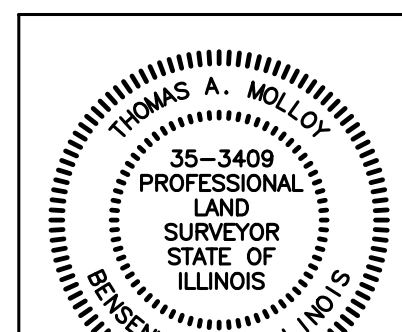
I FURTHER CERTIFY THAT THE LAND SURVEYED HEREIN IS WITHIN THE CORPORATE LIMITS OF THE VILLAGE OF LONG GROVE, ILLINOIS, WHICH HAS ADOPTED A CITY PLAN AND IS EXERCISING THE SPECIFIC POWERS AUTHORIZED BY DIVISION 12 OF ARTICLE 11 OF THE MUNICIPAL CODE, AS NOW OR HEREAFTER AMENDED.

I FURTHER CERTIFY THAT THE IRON PIPE/ROD SURVEY STAKES NOTED ON THE ANNEXED PLAT HAVE BEEN ESTABLISHED 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)

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.



VALID ONLY WITH EMBOSSED SEAL

DATE	REVISION	DESCRIPTION
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

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

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



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

1. Introduction
2. Existing Conditions
3. Existing Conditions Stormwater Computations
4. Proposed Conditions
5. Proposed Conditions Stormwater Computations
6. Wetland Review
7. Regulatory Floodplain
8. Drain Tile Investigation
9. Soils

EXHIBITS

1. Aerial Photo
2. FEMA Firmette
3. Draintile Investigation Plan
4. Final Stormwater Management Plans
5. Soils and Rainfall (Bulletin 75)
6. SWMM Calculations and Results Summary

APPENDICES

- Appendix A Wetland Delineation Report (Partial)

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).

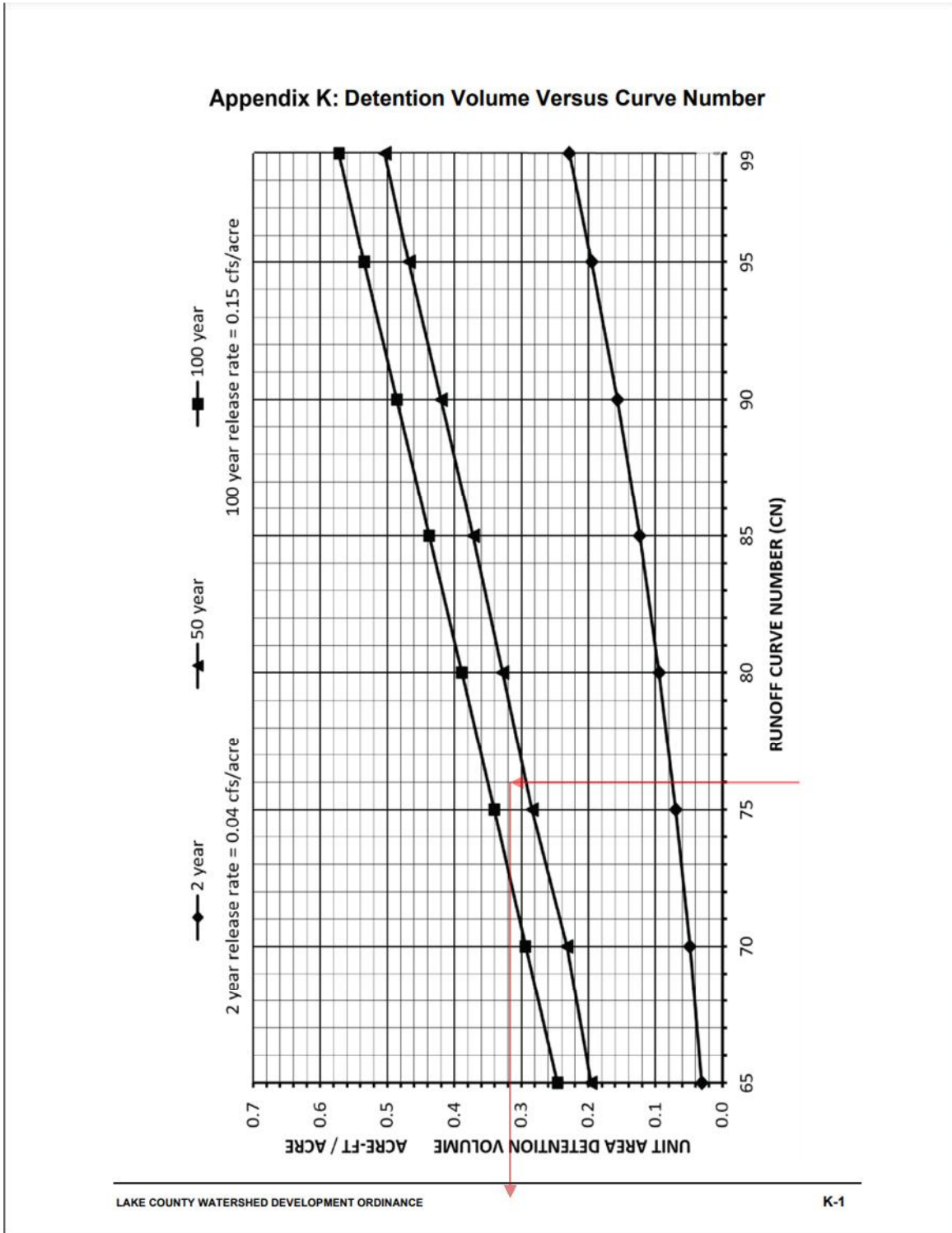


Figure 1

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
	<u>34.82</u>	sum A	<u>2714.6</u> sum A x RCN

$$78.0 \quad \text{avg RCN} = \frac{\text{sum A x RCN}}{\text{sum A}}$$

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 Drintile Investigation Record Drawing was issued and is dated October 8, 2015. See Exhibit 3 for the Drintile Investigation Plan.

9. SOILS

See Wetland Delineation Report for soil maps and information.

Exhibit 1

Aerial Photo



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

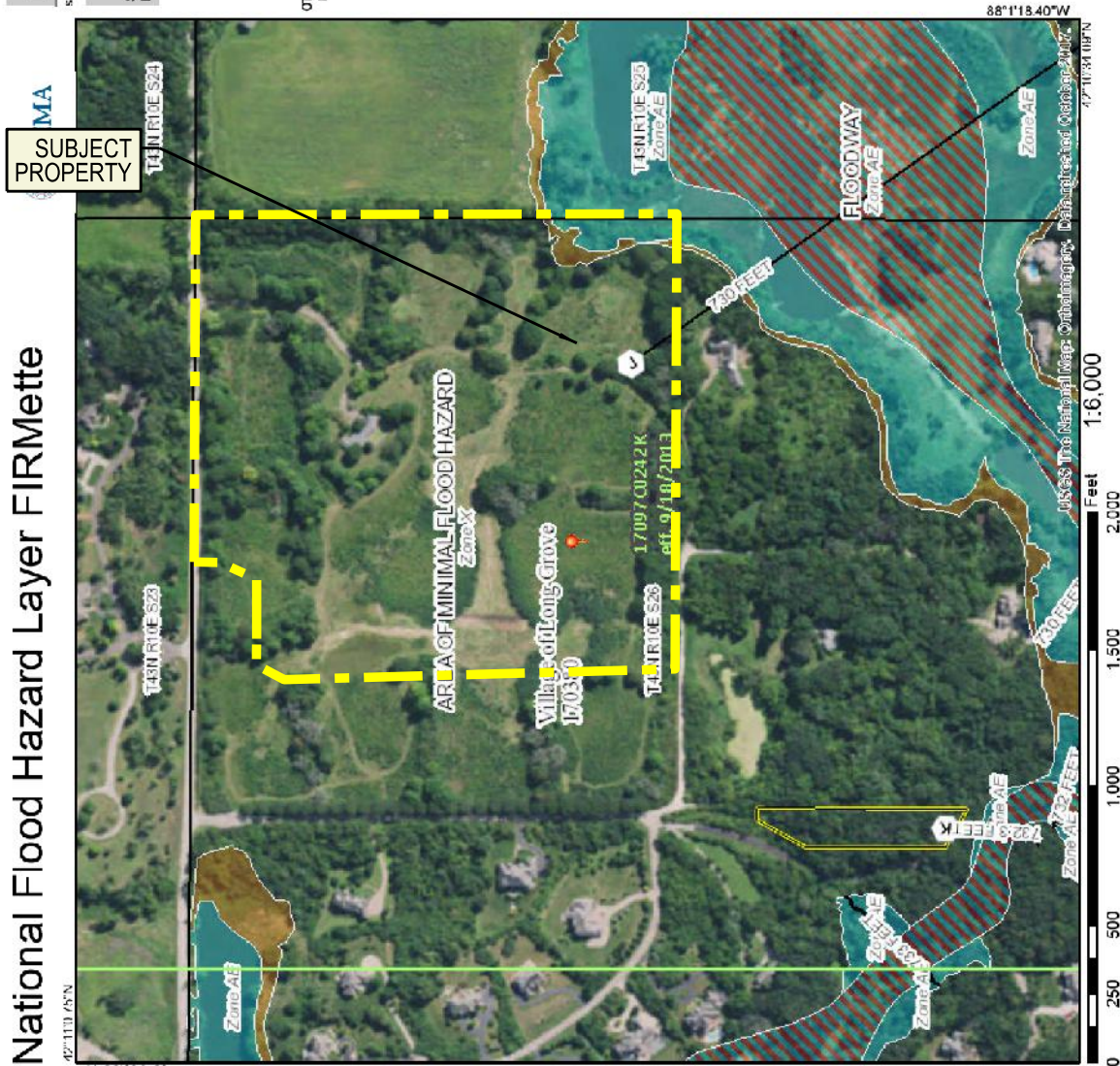
Sheet #:

Exhibit 1

Exhibit 2

FEMA Firmette

National Flood Hazard Layer FIRMette



Legend
SEE THIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS

- Without Base Flood Elevation (BFE) Zone AE, AP, AH, VE, AP
- With BFE or Depth Zone AE, AP, AH, VE, AP
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD

- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
- Future Conditions 1% Annual Chance Flood Hazard Zone X
- Area with Reduced Flood Risk due to Levees, See Notes, 2019 X
- Area with Flood Risk due to Levee Zone D

OTHER AREAS

- Area of Minimal Flood Hazard Zone X
- Effective LOMHR
- Area of Undetermined Flood Hazard Zone D

GENERAL STRUCTURES

- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES

- Cross Sections with 1% Annual Chance Water Surface Elevation
- Coastal Transact
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transact Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS

- Digital Data Available
- No Digital Data Available
- Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards.

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 8/18/2018 at 12:04:33 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

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

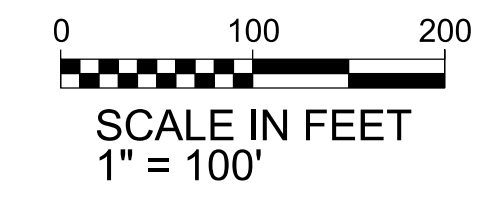
Title: FEMA Firmette		Sheet #: Exhibit 2	
Project: Canterbury Parc Re-subdivision		Date: 2/1/23	
Project #: 1291	Date: 2/1/23		

Exhibit 3

Drain Tile Investigation Plan

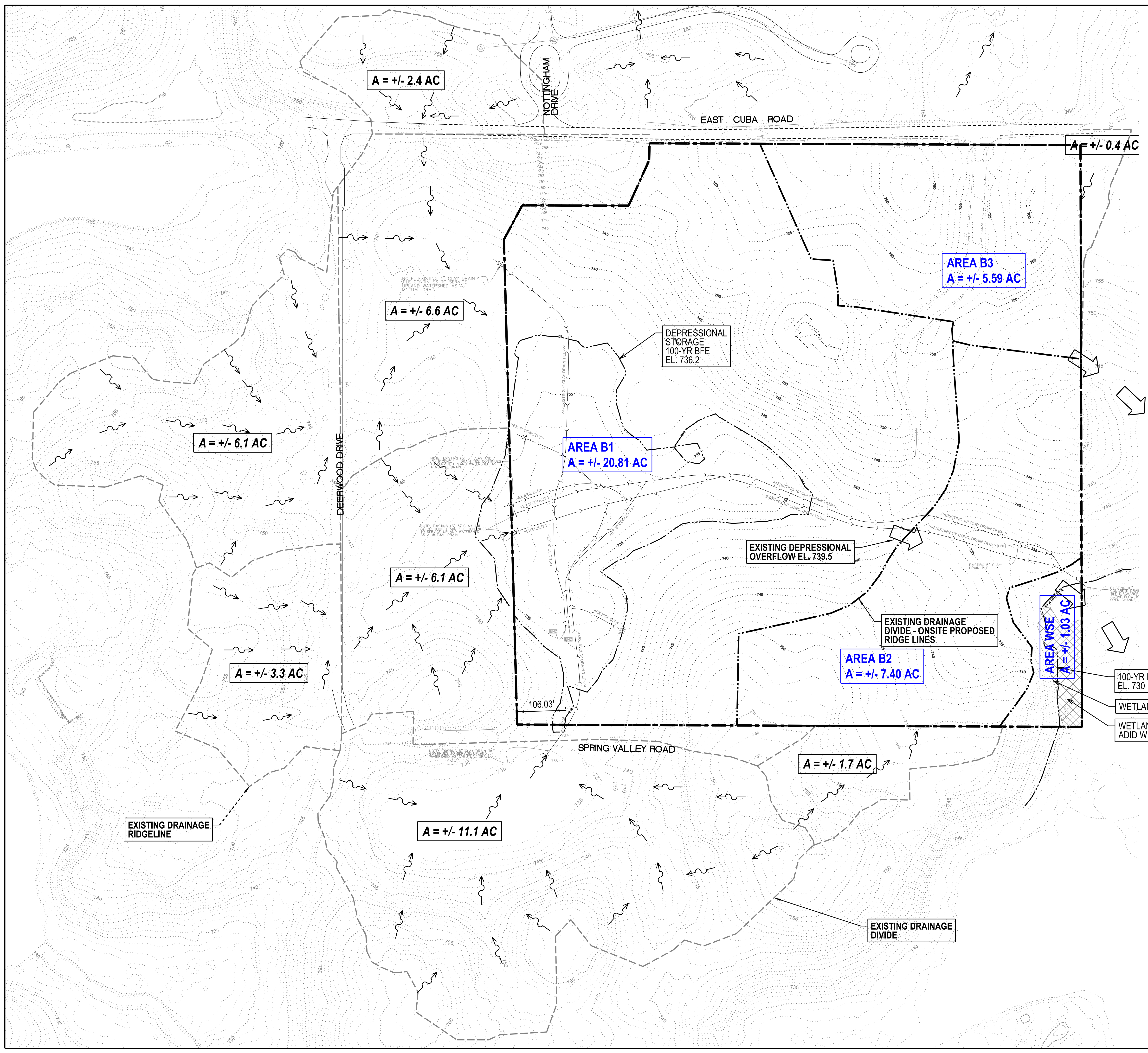
Exhibit 4

Final Stormwater Management Plans



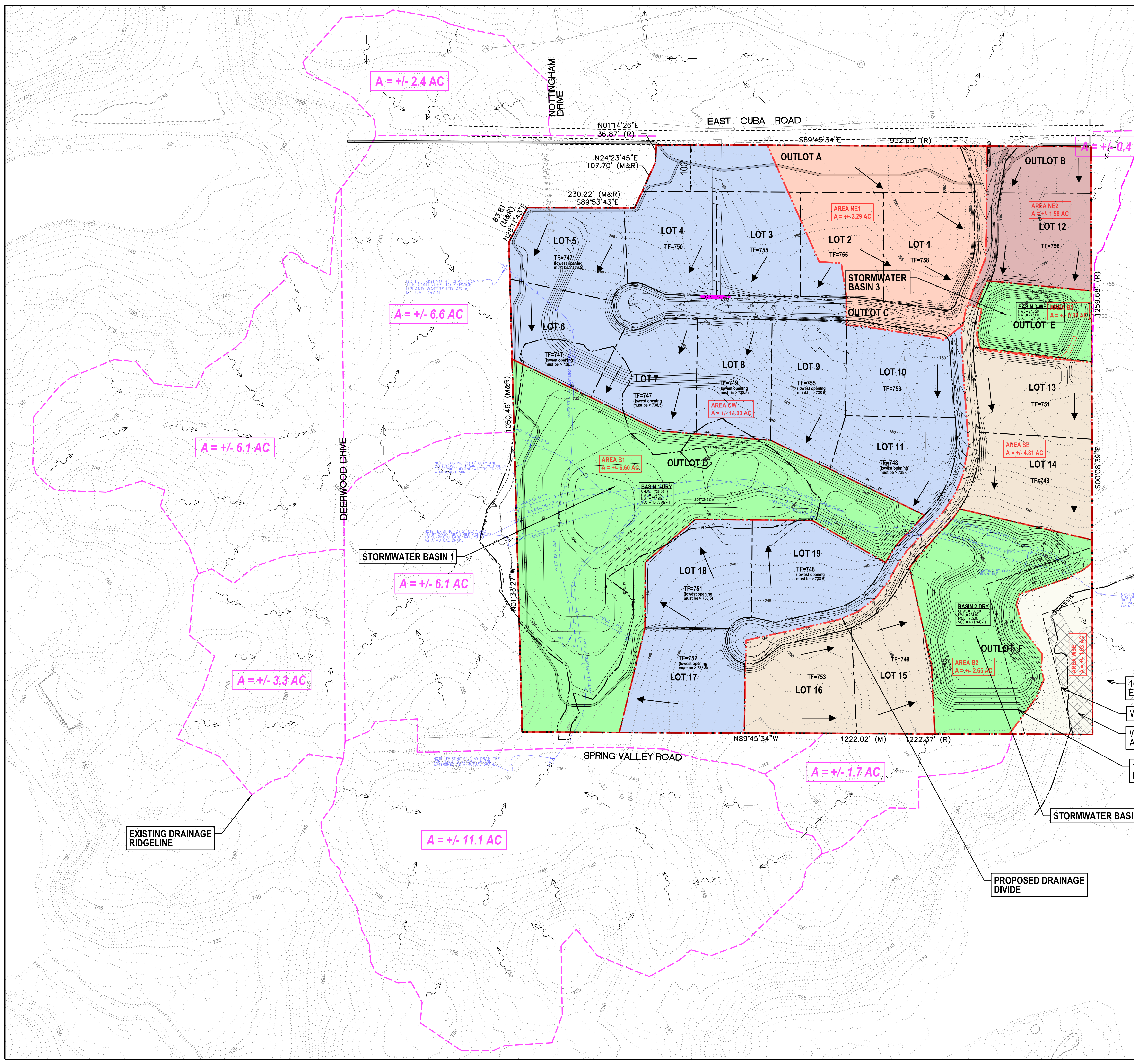
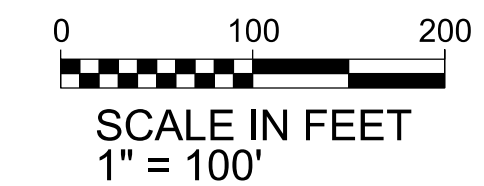
NO.	DATE	DESCRIPTION
1	2/1/23	Date Issued

CROSS ENGINEERING & ASSOCIATES, INC. © 2023



NOTES:

- EXISTING DRAIN TILE SURVEY BY HUDDLESTON MCBRIDGE, FIELD FILE NO. 10-6-26, UPDATED 10/8/15.
- TOPOGRAPHIC SURVEY BY MOLLOY & ASSOCIATES, INC. DATED 8/19/21.
- 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.



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	345,000	5.62	5.62	1.12	17.77	Existing BFE
736.00	1.00	244,995	5.62	5.15	5.15	16.65	100-yr BFE
735.00	0.70	203,992	4.68	4.40	3.08	11.50	100-yr BFE
734.30	0.300	179,439	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	1.39	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	100-yr BFE
735.00	0.70	57,701	1.32	1.25	0.88	3.74	100-yr BFE
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	45,300	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	1.02	
748.29	0.29	21,275	0.49	0.48	0.14	1.46	HWL 748.29
748.00	1.00	20,637	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					2.82	ac-ft	

STORMWATER SUMMARY FOR TOTAL STORAGE PROVIDED TO DESIGN HWL				TOTAL SITE VOLUME Basins 1 & 2 TO EX. BFE 736.2	
	HWL	NWL	DEPTH (R)	STORAGE (ac-ft)	STORAGE (ac-ft)
BASIN 1	734.30	731.00	3.30	8.41	17.77
BASIN 2	734.30	731.00	3.30	2.86	5.44
BASIN 3	748.29	744.00	4.29	1.66	748.29
TOTAL STORMWATER STORAGE TO HWL				12.94	24.67

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	12,089	0.28	0.00	0.00	0.00	BOTTOM
Total					10.72	ac-ft	

NOTES:

- 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.
- THERE IS EXISTING DEPRESSIONAL STORAGE WITHIN BASIN 1 THAT WILL BE MAINTAINED WITHIN THE PROPOSED BASIN DESIGN.
- 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.

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

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

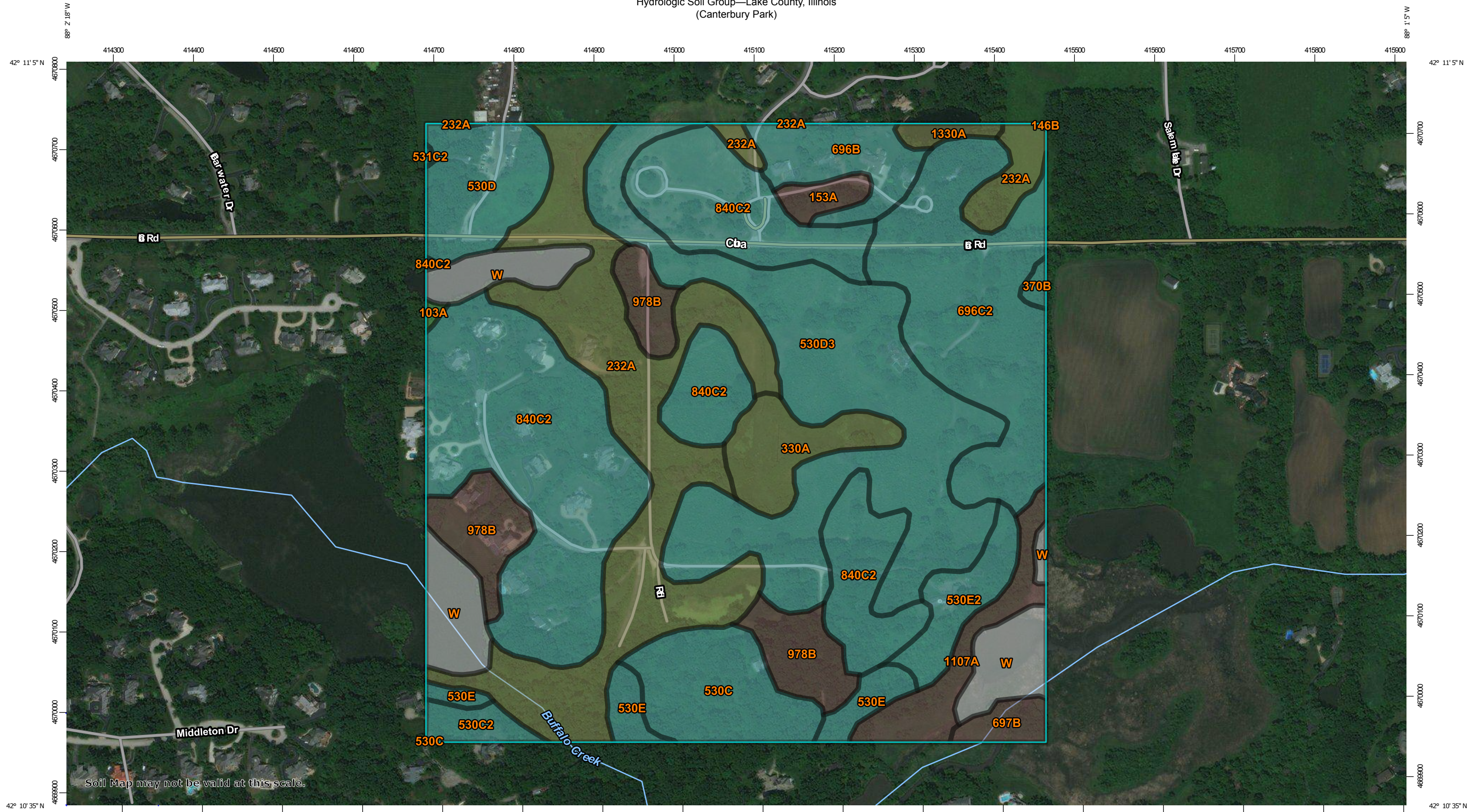
NO.	DATE	DESCRIPTION
1	2/1/23	Date Issued

FINAL STORMWATER MANAGEMENT PLAN - PROPOSED CONDITIONS

Exhibit 5

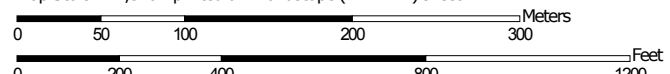
Soils and Rainfall (Bulletin 75)

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



Soil Map may not be valid at this scale.

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



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

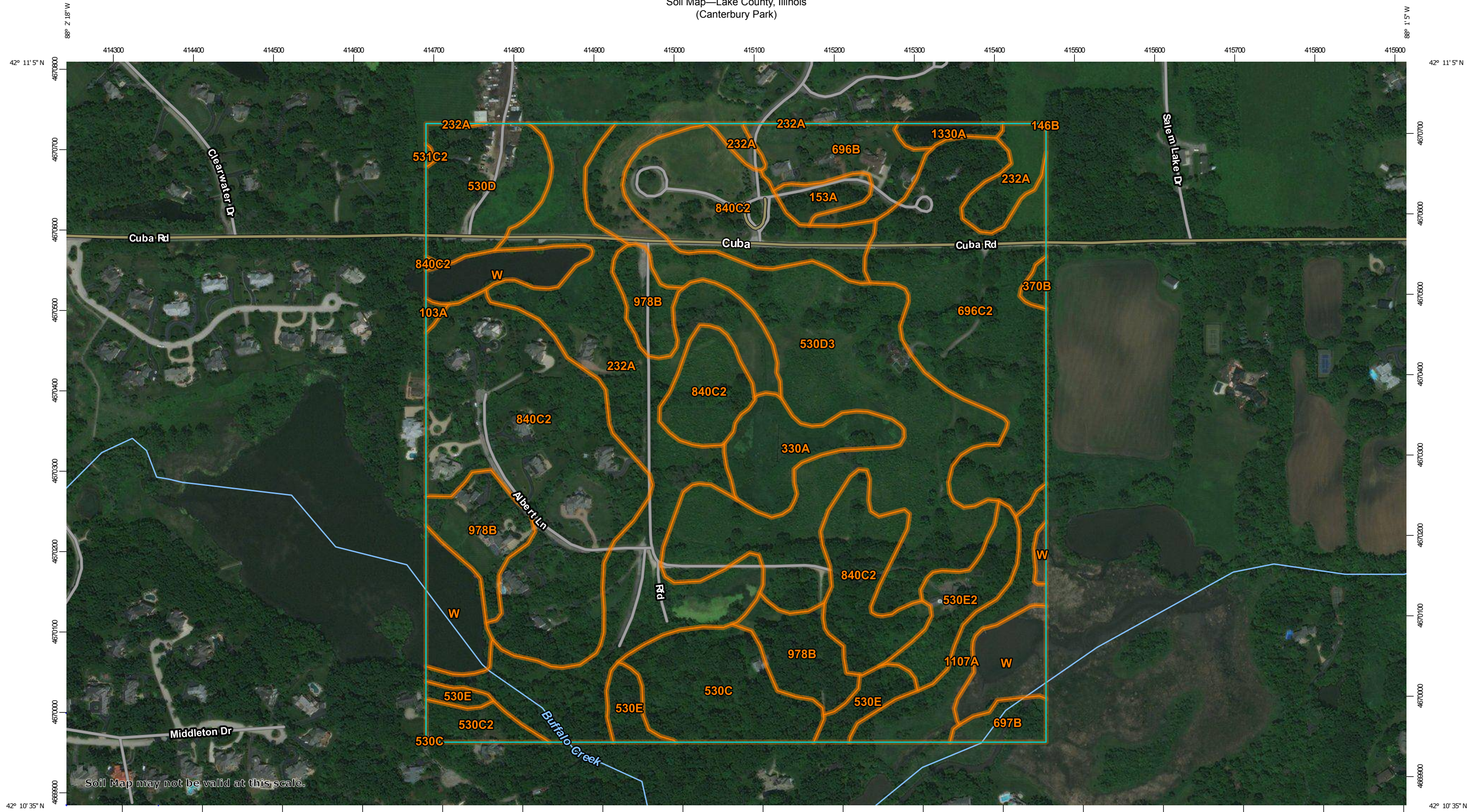


Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

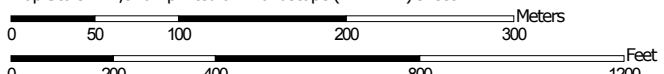
9/18/2017
Page 1 of 5

Soil Map—Lake County, Illinois
(Canterbury Park)



Soil Map may not be valid at this scale.

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



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




Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

9/18/2017
Page 1 of 4


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
NE Illinois Rainfall					3	6	12	18	24	48	72	120	240
Quartile				Depth (in)	2.14	2.51	2.91	3.14	3.34	3.66	3.97	4.42	5.6
First	Second	Third	Fourth										
0	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	5.3782
100	100	100	100	2.1400	2.5100	2.9100	3.1400	3.3400	3.6600	3.9700	4.4200	5.6000	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	
NE Illinois Rainfall				3	6	12	18	24	48	72	120	240		
Quartile					Depth (in)	5.49	6.43	7.46	8.06	8.57	9.28	9.85	10.66	12.65
First	Second	Third	Fourth	0	0	0	0	0	0	0	0	0	0	0
0	0	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		
			<u>Computed 2-year</u>				<u>3.83</u>	<u>Total Allowable Q, 2-year</u>		
			<u>Computed 100-year</u>			<u>9.24</u>		<u>Total Allowable Q, 100-year</u>		

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	<u>OK</u>
				100-year	Delta =	-0.55	cfs	<u>OK</u>

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)

SWMM ID =>	Max to Philip Drive										Max to Basin 2			Max to Basin 3				
	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: $Q = C * L * (H^{1.5}) + 2 * (2/5) * C * Z * (H^{2.5})$

<u>Existing Road Overflow</u>						
	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

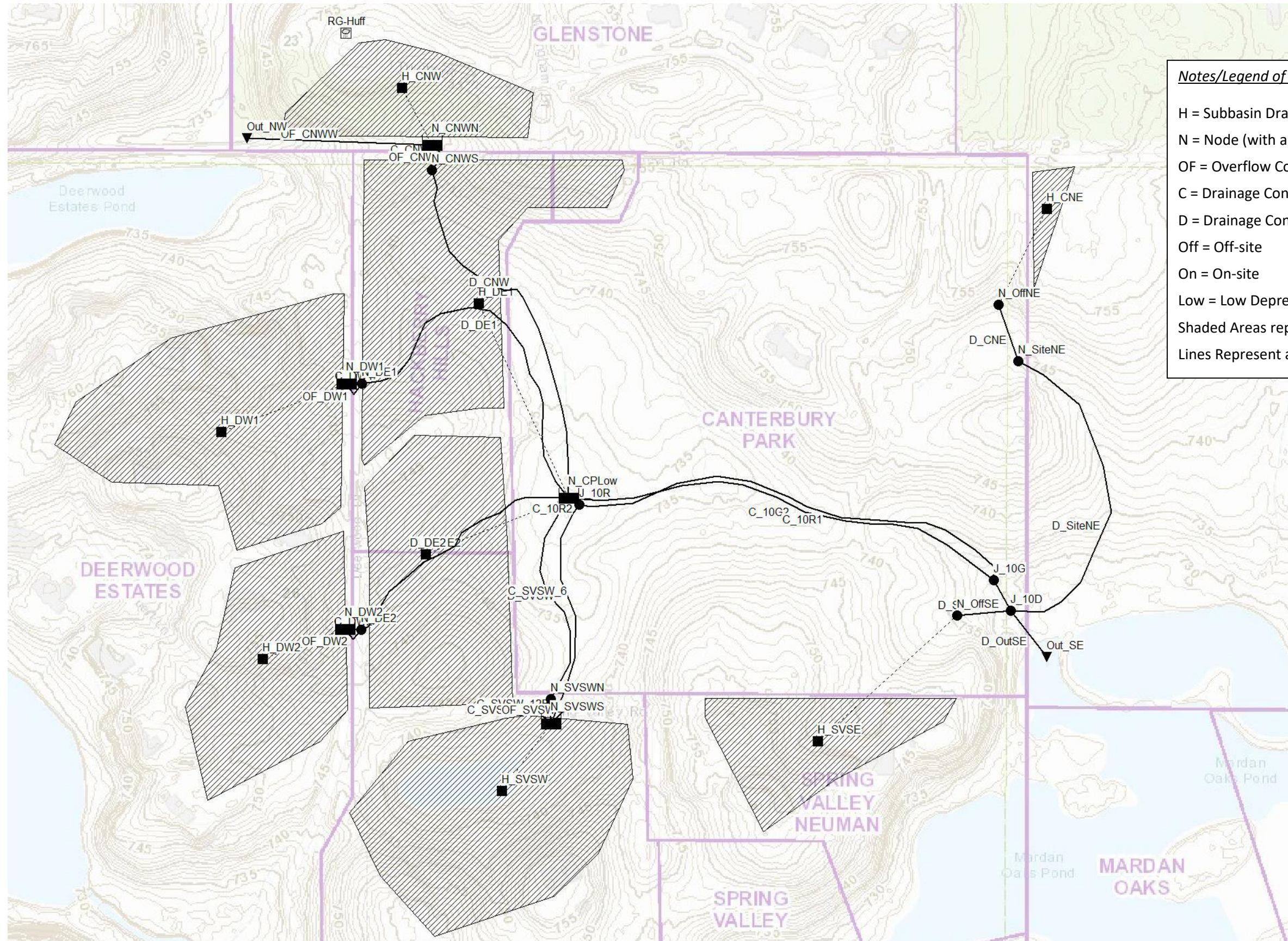
<u>Basin 1 - Proposed Philip Drive Overflow</u>						
	L (ft)	Z	H (ft)	Q (cfs)	Total Length	Overflow
Elevation F	0	0.0	0	0.0	0	739.52
Elevation E	20	35.0	0.48	27.8	90	740.0
Elevation E	20	45.8	0.75	77.4	112	740.27
Elevation G	B		C		A	N/A

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

<u>Basin 2 - Berm Concrete Weir</u>						
	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

<u>Basin 3 - Berm Concrete Weir</u>						
	L (ft)	Z	H (ft)	Q (cfs)	Total Length	Overflow
Elevation F	6	2.0	0.7	13.2	11	749.3
Elevation E						750.0
Elevation G	B		C		A	746.0

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

Philip Estates Subdivision – Long Grove, IL
 Cross Engineering & Associates, Inc. (Proj. #1291)

Input File: SWMM 2-year, 48-hour
 File Name: 220625_2yCP6FF_NO75048.inp

```
[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_SVSW        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
Out_NW      750        NORMAL

[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_SVSW     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_SVSW     N_SVSWN      48      0.024     735.25    735.15    0          0
D_SVSW      N_SVSW     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_SVSW     N_SVSWN      20      0.024     736.11    735.85    0          0
OF_SVSW     N_SVSW     N_SVSWN      24      0.025     737.6     737.55    0          0
C_SVSW_6    N_SVSW     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
;
```

Philip Estates Subdivision – Long Grove, IL
 Cross Engineering & Associates, Inc. (Proj. #1291)

Input File: SWMM 2-year, 48-hour
 File Name: 220625_2yCP6FF_NO75048.inp

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

Philip Estates Subdivision – Long Grove, IL
 Cross Engineering & Associates, Inc. (Proj. #1291)

Input File: SWMM 2-year, 48-hour
 File Name: 220625_2yCP6FF_NO75048.inp

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

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

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\aeon\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 acre-feet	Depth 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 acre-feet	Volume 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_SVSW	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_SVSW	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 Pcmt Full	Evap Pcmt Loss	Exfil Pcmt Loss	Maximum Volume 1000 ft3	Max Pcmt 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_SVSW	5.206	1	0	0	25.770	4	2 02:57	0.41

 Outfall Loading Summary

Outfall Node	Flow Freq Pcmt	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			Hours	Hours
	Both Ends	Upstream	Dnstream	Above Full Normal Flow	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_SVSW          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
Out_NW      750        NORMAL

[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_SVSW      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_SVSW     N_SVSWN      48      0.024      735.25     735.15     0          0
D_SVSW      N_SVSW     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_SVSW     N_SVSWN      20      0.024      736.11     735.85     0          0
OF_SVSW     N_SVSW     N_SVSWN      24      0.025      737.6      737.55     0          0
C_SVSW_6    N_SVSW     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
;
    
```


Philip Estates Subdivision – Long Grove, IL
 Cross Engineering & Associates, Inc. (Proj. #1291)

Input File: SWMM 100-year, 24-hour
 File Name: 202011_CP6FF_NO19024.inp

NC 0.025	0.1	0.1							
X1 OF_XCNW	7	12.	28.	0.0	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	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	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_SVSW     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
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]	X-Coord	Y-Coord
;;Subcatchment		
;;-----		
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

```
[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\aeon\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
 Surge 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 acre-feet	Depth 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 acre-feet	Volume 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_SVSW	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_SVSW	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_SVSW	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			Hours	Hours
	Both Ends	Upstream	Dnstream	Above Full Normal Flow	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


```
[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_SVSW         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
```

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_SVSW	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_SVSW	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_SVSW	N_SVSWN	20	0.024	736.11	735.85	0	0
OF_SVSW	N_SVSW	N_SVSWN	24	0.025	737.6	737.55	0	0
C_SVSW_6	N_SVSW	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

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
-----
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_CNW     IRREGULAR  OF_XCNW 0      0      0      1
OF_CNW     TRIANGULAR 0.2     110    0      0      1
CF_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      0
RP2_Out    CIRCULAR  0.5     0      0      0      0
RP_NE      CIRCULAR  0.45    0      0      0      0
RP100_Out  CIRCULAR  0.75    0      0      0      0
WP_RD      RECT_OPEN  1.0     6      0      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
CF_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
    
```

```

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

```

```

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

```

```

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
    
```

```

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_OfNE	8925.224	6750.900
J_10R	4344.802	4752.448
NF_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_SVSW	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\aeon\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
 Surge 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 acre-feet	Depth 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 acre-feet	Volume 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

 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 03:04	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_SVSW	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

 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	38.42	2.093	5.077

 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	0.009	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_SVSW	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

 Outfall Loading Summary

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

 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 03:04	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

 Flow Classification Summary

Conduit	Adjusted /Actual Length	Fraction of Time in Flow Class								
		Up Dry	Down Dry	Sub Dry	Sup Crit	Up Crit	Down Crit	Norm Ltd	Inlet 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

 Conduit Surge Summary

Conduit	Hours				
	Both Ends	Full Upstream	Full Dnstream	Above Full Normal Flow	Capacity 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