

January 13, 2022 Planning Commission Meeting

Review of Preliminary/Final Land Development Plan
for 401-433 Washington Street (subject to 10.22.2014
Settlement Agreement) – page 2

BOROUGH OF CONSHOHOCKEN
MONTGOMERY COUNTY, PENNSYLVANIA

APPLICATION FOR SUBDIVISION/ LAND DEVELOPMENT

To be completed by the Borough:

Submission Information:

File Number: LD-2021-06 File Date: 12/3/21
Project Title: 401/433 Washington St. Date Complete: 12/3/21
Received By: B. Rogers 90 Day Date: Waived

REQUIRED MATERIALS FOR ALL LAND DEVELOPMENT/SUBDIVISION APPLICATIONS

1. This form MUST be completed and submitted with the Borough's Land Development/Subdivision application.
2. A Land Development/Subdivision Application MUST include all of the items listed in the application checklist to be considered complete.

Incomplete applications will NOT be placed on a Planning Commission agenda. Incomplete applications will be returned to the applicant.
3. Complete applications must be received at least 38 DAYS (see schedule) prior to the Planning Commission meeting at which it will be heard.

It is highly encouraged to submit applications in a digital format.
4. One (1) digital copy plus seven (7) paper copies of the complete application are required if submitting digitally, or fifteen (15) paper copies of the complete application are required.

Applicant Information: Equitable Owner

Name: KRE Acquisition Corp
Address: 520 US Highway 22
Bridgewater, NJ 08807
Phone: 908-725-8100
Fax: _____
E-Mail*: nchrimer@thekregroup.com

Property Owner Information (if different):

Name: Spectrum-C LLC
Address: 47 Whitney Street
Westport, CT 06880
Phone: 212-687-9555
Fax: _____
E-Mail*: _____

Architect/Planner: BartonPartners

Address: 700 E Main St. Suite 301, Norristown, PA 19401
E-mail*: sshapiro@bartonpartners.com Phone/Fax: 610-930-2800

Engineer/Surveyor: Colliers Engineering & Design

Address: 941 Marcon Blvd., Suite 801, Allentown, PA 18109
E-mail*: nicole.galio@colliersengineering.com Phone/Fax: 484-240-8124

Landscape Architect: Melillo / Bauer / Carman

Address: 200 Union Avenue, Brielle, NJ 08730
E-mail*: tbauer@mbcla.design Phone/Fax: 732-528-0664

Attorney: Joseph M. Blackburn WislerPearlstine, LLP

Address: 301 North Sycamore Street, Newtown, PA 18940
E-mail*: jblackburn@wispearl.com Phone/Fax: 215-579-5995

*All correspondence regarding this application from the Planning Commission and staff will be made via e-mail. All persons involved with this application should provide their e-mail addresses so that information including, but not limited to, meeting dates and plan reviews replaces revisions here, is distributed appropriately.

List of Requested Waivers:

Section/Requirement:

Relief Requested:

Have you met with the Zoning Officer regarding this plan? Yes No
 Are there known variances/any zoning relief necessary for this project? Yes No
 If YES, have you submitted an application for the Zoning Hearing Board? Yes No
 Has this plan been reviewed by the Zoning Hearing Board? Yes No

*Please be advised that if any variances are found to be necessary during the course of the review of this plan, you will be required to go to the Zoning Hearing Board prior to proceeding to the Planning Commission. In addition, you will be requested to grant the Borough a waiver to the 90-day action period or an immediate denial of this application will be made, and you will be required to resubmit the application.

The undersigned represents that to the best of his/her knowledge and belief, all the above statements are true, correct and complete.

Jeremy Kaplan, Vice President
 Signature of Applicant KRE Acquisitions Corp. Signature of Property Owner (if not the same as applicant)
12/2/21 Date _____

ALL MAJOR subdivision/land use applications require a pre-submission meeting to discuss the project prior to full application submittal.
 MINOR subdivision/land use applications may request a pre-submission meeting; if one is desired.
 Meetings are held the second and fourth Tuesday of each month beginning at 1:30pm at the Borough Administrative Offices.
 Applicants assume responsibility of any fees associated with this meeting.
_____ 12/2/21
 Applicant signature date
 To schedule a pre-submission meeting, please contact the office of the Borough Manager
 ph: 610.828.1092
 e: landuse@conshohockenpa.gov

Borough Use Only:			
<input checked="" type="checkbox"/> Filing Fee	Amount \$	<u>1,000.00</u>	Check No. <u>258791</u>
<input checked="" type="checkbox"/> Pre-Construction Professional Services Escrow	Amount \$	<u>5,000.00</u>	Check No. <u>258790</u>

Decision Information:
 Approval _____ Denial _____ Decision Date: _____

Comments/Conditions:

BOROUGH OF CONSHOHOCKEN
MONTGOMERY COUNTY, PENNSYLVANIA

Planning Process Extension Agreement

The Pennsylvania Municipality Planning Code (MPC) and the Conshohocken Borough Subdivision and Land Development Ordinance state that action must be taken by the Borough within ninety (90) days after a complete application is filed with the Borough. In the Borough, larger and complicated projects have historically required additional time in order to complete a thorough review before being considered for approval. As such, an applicant may voluntarily waive the timing requirement at any time, but is encouraged to submit this waiver with the completed application.

I, the applicant, hereby voluntarily waive the timing requirement as set forth in the MPC (Section 509) and the Conshohocken Borough Subdivision and Land Development Ordinance (Section 22-308).

Applicant signature

Jeremy Kaplan
Jeremy Kaplan Vice President
KRE Acquisitions Corp.

Date

12/2/21

Received by (Borough)

Brittany Rogers

Date

12/3/21

BOROUGH OF CONSHOHOCKEN
MONTGOMERY COUNTY, PENNSYLVANIA

ESCROW AGREEMENT
FOR PROFESSIONAL REVIEW FEES

SUBDIVISION/LAND DEVELOPMENT APPLICATIONS

The undersigned hereby agrees to post an escrow to cover the costs of the review of subdivision and land development applications by the Borough Planner, Engineer, and Solicitor. The amount of said escrow shall be according to the attached "Schedule of Fees" and shall be posted at the time of initial submission of an application to the Borough. Said fees shall be placed in an escrow account and any balance remaining shall be returned to the applicant subsequent to the receipt of final approval.

The applicant is advised that the "Schedule of Fees" represents only an estimate of the costs associated with plan review. The completeness and quality of the submission, the complexity of the project, the number of revisions and other factors may cause costs to exceed the established escrow amounts. If during the course of a subdivision/land development review an escrow amount falls to 10% of the original escrow amount or \$250, whichever is greater, the Borough may require the posting of additional escrow.

NOTE: NO FINAL APPROVALS, CONSTRUCTION, BUILDING OR OCCUPANCY PERMITS SHALL BE ISSUED UNTIL ALL OUTSTANDING PROFESSIONAL REVIEW FEES HAVE BEEN SATISFIED.

Signed _____

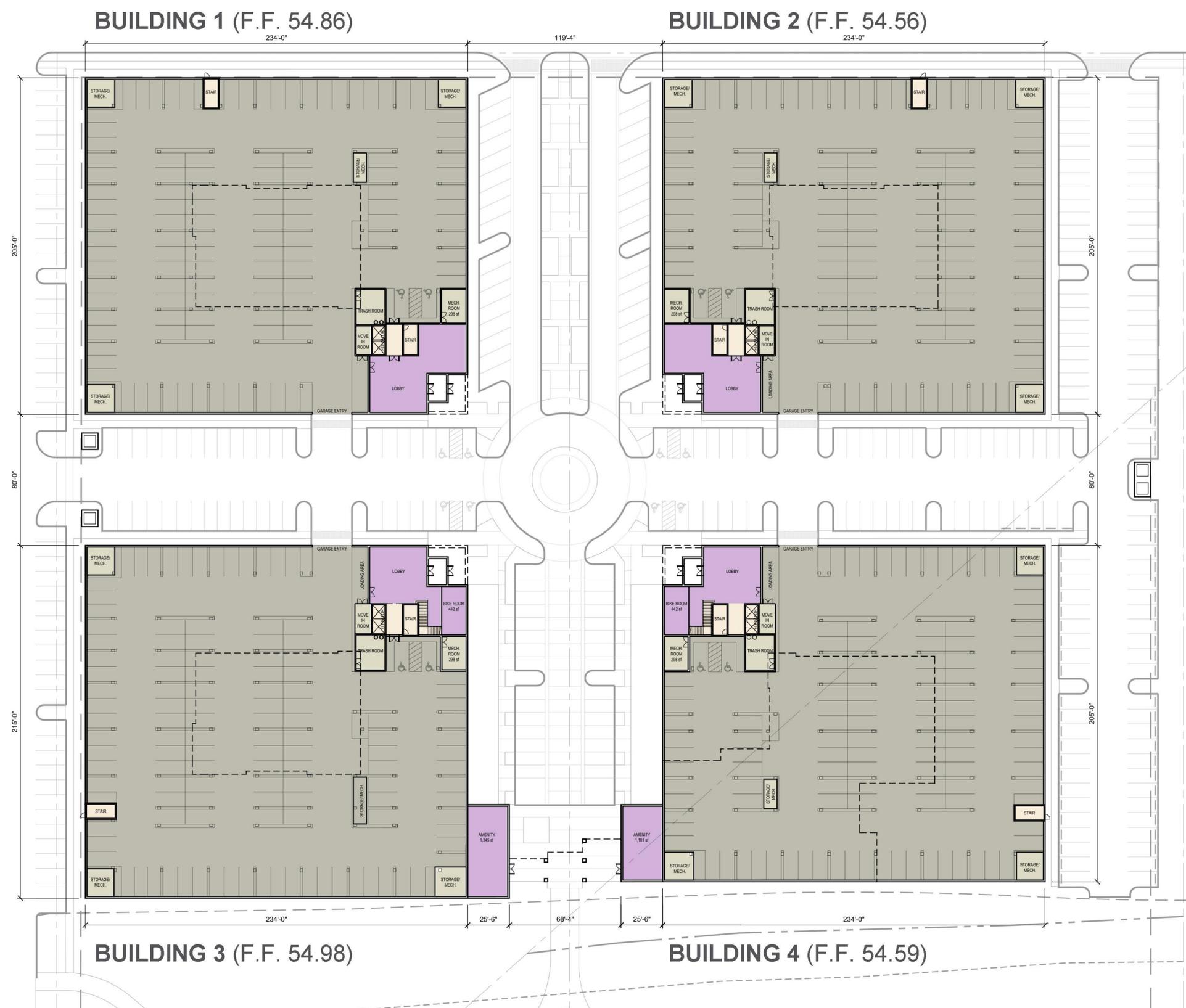


Applicant

Jeremy Kaplan, Vice President
KRE Acquisitions Corp.

Date: _____

12/2/21



GROUND FLOOR PLAN
Scale: 1/32" = 1'-0"

The above illustrations are representative of the architectural style. They are not meant to illustrate the final design or materials but are intended to depict the size, mass, and general materials of the proposed building.
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A1

401 & 403 Washington Street
Conshohocken, PA

Project Number: 21033
Client: KRE Group
Date: 2021.12.03

Major

BARTONPARTNERS
urban design + architecture

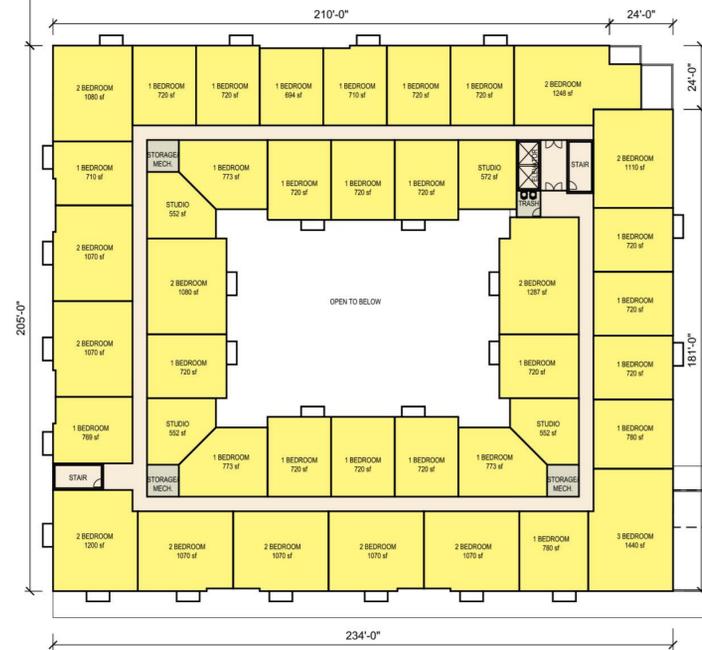
700 East Main Street, Suite 301, Norristown, Pa 19401
www.bartonpartners.com | t:610.930.2800 | e:design@bartonpartners.com



BUILDING 1 (F.F. 80.02)



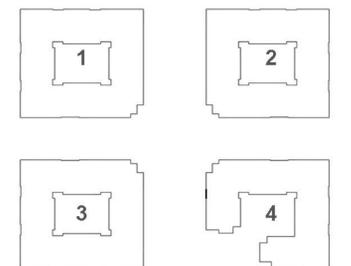
BUILDING 2 (F.F. 79.72)



BUILDING 3 (F.F. 80.15)



BUILDING 4 (F.F. 79.76)



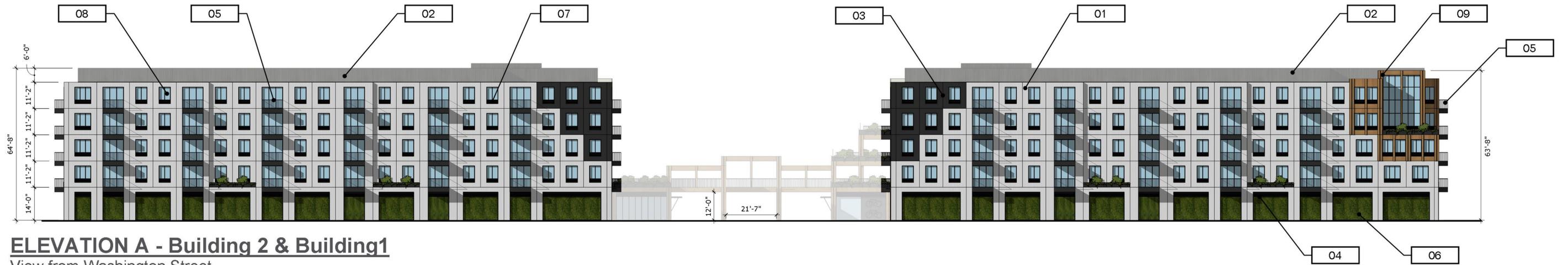
KEY PLAN

SECOND RESIDENTIAL FLOOR PLAN

Scale: 1/32" = 1'-0"

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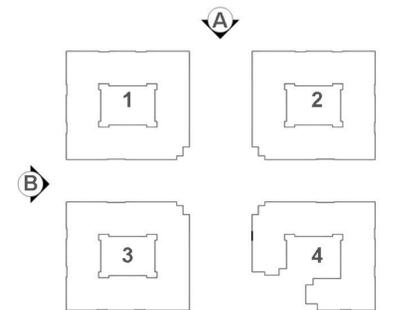
ELEVATION A - Building 2 & Building 1

View from Washington Street
Scale: 1" = 20'-0"



ELEVATION B - Building 1 and Building 3

View from Cherry Street
Scale: 1" = 20'-0"

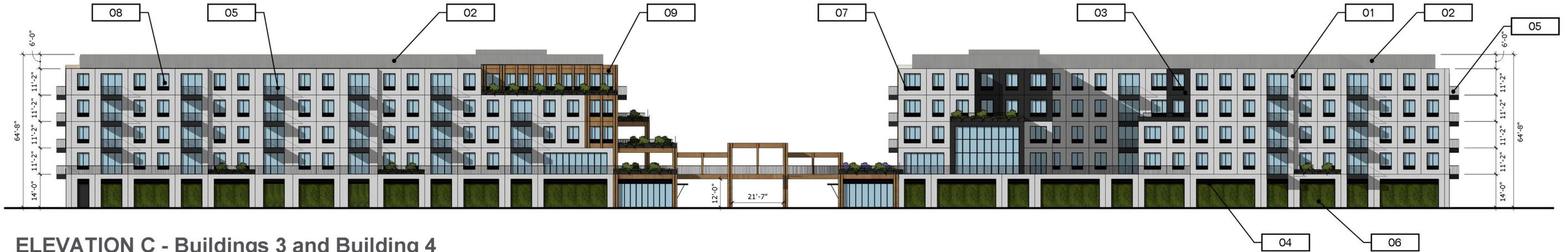


KEY PLAN

MATERIAL LEGEND	
01 -	CORRUGATED METAL/ VERTICAL CLADDING -TBD
02 -	MECHANICAL SCREENS
03 -	FIBER CEMENT PANELS / METAL PANEL- TBD
04 -	METAL VENTING LOUVERS
05 -	METAL RAILINGS
06 -	GREEN LIVING WALL SCREEN
07 -	METAL LOUVERS / METAL PANELS
08 -	WINDOWS (METAL FIXED PANELS)
09 -	PRECAST CONCRETE / HEAVY TIMBERS TBD

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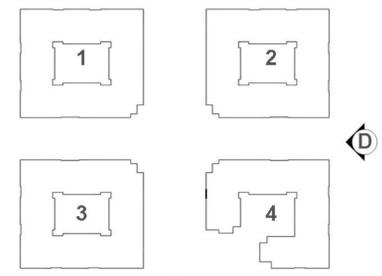
ELEVATION C - Buildings 3 and Building 4

View from the Schuylkill River
Scale: 1" = 20'-0"



ELEVATION D - Building 4 and Building 2

View from the Parking Lot
Scale: 1" = 20'-0"



KEY PLAN

MATERIAL LEGEND	
01 -	CORRUGATED METAL/ VERTICAL CLADDING -TBD
02 -	MECHANICAL SCREENS
03 -	FIBER CEMENT PANELS / METAL PANEL- TBD
04 -	METAL VENTING LOUVERS
05 -	METAL RAILINGS
06 -	GREEN LIVING WALL SCREEN
07 -	METAL LOUVERS / METAL PANELS
08 -	WINDOWS (METAL FIXED PANELS)
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A7

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Conshohocken, PA

Project Number: 21033
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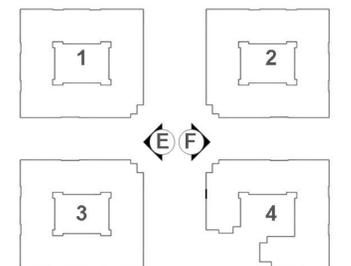
ELEVATION E - Buildings 3 and Building 1

View from Boulevard Allee and The Woonerf
Scale: 1" = 20'-0"



ELEVATION F - Building 2 and Building 4

View from Boulevard Allee and The Woonerf
Scale: 1" = 20'-0"



KEY PLAN

MATERIAL LEGEND	
01 -	CORRUGATED METAL/ VERTICAL CLADDING - TBD
02 -	MECHANICAL SCREENS
03 -	FIBER CEMENT PANELS / METAL PANEL- TBD
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07 -	METAL LOUVERS / METAL PANELS
08 -	WINDOWS (METAL FIXED PANELS)
09 -	PRECAST CONCRETE / HEAVY TIMBERS TBD

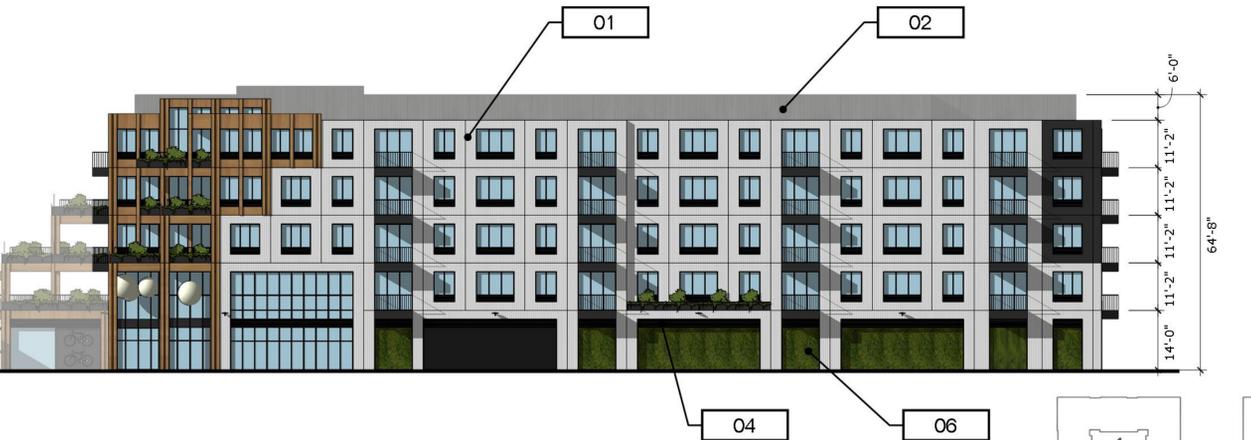
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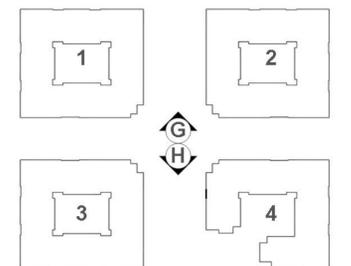
ELEVATION G - Buildings 1 and Building 2

View from internal drive
Scale: 1" = 20'-0"



ELEVATION H - Building 4 and Building 3

View from internal drive
Scale: 1" = 20'-0"



KEY PLAN

MATERIAL LEGEND	
01 -	CORRUGATED METAL/ VERTICAL CLADDING - TBD
02 -	MECHANICAL SCREENS
03 -	FIBER CEMENT PANELS / METAL PANEL- TBD
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05 -	METAL RAILINGS
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A9

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CONCEPT PERSPECTIVE VIEW

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A10

401 & 403 Washington Street
 Conshohocken, PA

Project Number: 21033
 Client: KRE Group
 Date: 2021.12.03

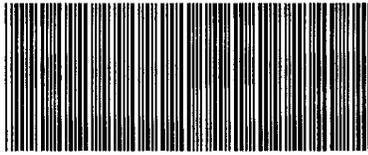
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DEED BK 6221 PG 02635 to 02643.1
 INSTRUMENT # : 2021045082
 RECORDED DATE: 04/21/2021 10:50:49 AM



5938246-0011W

RECORDER OF DEEDS
MONTGOMERY COUNTY
Jeanne Sorg

One Montgomery Plaza
 Swede and Airy Streets ~ Suite 303
 P.O. Box 311 ~ Norristown, PA 19404
 Office: (610) 278-3289 ~ Fax: (610) 278-3869

MONTGOMERY COUNTY ROD

OFFICIAL RECORDING COVER PAGE

Page 1 of 10

Document Type: Deed	Transaction #: 6314283 - 3 Doc (s)
Document Date: 02/26/2021	Document Page Count: 8
Reference Info:	Operator Id: dkrasley

RETURN TO: (Mail) LAND SERVICES USA, INC 1835 MARKET STREET SUITE 420 PHILADELPHIA, PA 19103	PAID BY: LAND SERVICES USA INC
---	--

* PROPERTY DATA:		
Parcel ID #: 05-00-11904-00-7	05-00-11908-00-3	65-00-11904-00-7
Address: 401 WASHINGTON ST	433 WASHINGTON ST	WASHINGTON ST
Municipality: PA Conshohocken Borough (100%)	PA Conshohocken Borough (0%)	PA Whitmarsh Township (0%)
School District: Colonial	Colonial	Colonial

*** ASSOCIATED DOCUMENT(S):**

CONSIDERATION/SECURED AMT:	\$1.00
FEES / TAXES:	
Recording Fee:Deed	\$86.75
Affidavit Fee	\$1.50
Additional Pages Fee	\$8.00
Additional Parcels Fee	\$45.00
Additional Names Fee	\$1.00
Unique Muni Fee	\$5.50
Affordable Housing Pages	\$8.00
Affordable Housing Names	\$1.00
Affordable Housing Parcels	\$1.50
Misc Fee	\$5.00
Total:	\$163.25

DEED BK 6221 PG 02635 to 02643.1
 Recorded Date: 04/21/2021 10:50:49 AM
 I hereby CERTIFY that this document is recorded in the Recorder of Deeds Office in Montgomery County, Pennsylvania.



Jeanne Sorg

Jeanne Sorg
 Recorder of Deeds

Rev1a 2016-01-29

PLEASE DO NOT DETACH

THIS PAGE IS NOW PART OF THIS LEGAL DOCUMENT

NOTE: If document data differs from cover sheet, document data always supersedes.
 *COVER PAGE DOES NOT INCLUDE ALL DATA, PLEASE SEE INDEX AND DOCUMENT FOR ANY ADDITIONAL

Record + Return:
Land Services USA
1074 Westwood Dr.
West Chester PA

PREPARED BY:

Michael V. Phillips, Esquire
Obermayer Rebmann Maxwell & Hippel LLP
Centre Square West
1500 Market Street, Suite 3400
Philadelphia, PA 19102
(215) 665-3000

PAFA 20-5240

RECORD AND RETURN TO:

Etan Moskovic, Esq.
Cassin & Cassin LLP
711 Third Avenue, 20th Floor
New York, New York 10017
(215) 972-6161

RECORDER OF DEEDS
MONTGOMERY COUNTY

2021 MAR 25 A 9:42

Montgomery County

APR 16 2021

Recorder of Deeds

Tax Parcel Nos.: 05-00-11904-00-7 and 65-00-11904-00-7
05-00-11908-00-3 and 65-00-12685-01-2

DEED IN LIEU OF FORECLOSURE

This Instrument evidences a transfer by a mortgagor to the holder of a bona fide mortgage in default in lieu of a foreclosure, and is intended to be excluded from real estate transfer tax under 72 P.S. §8102-C.3.(16) and the regulations promulgated thereunder.

THIS INDENTURE, dated February 26, 2021 and effective as of the 17th day of March, 2021, is given by 401 Washington Street Associates, L.P., a Pennsylvania limited partnership, and Washington Street Associates, III, L.P., a Pennsylvania limited partnership, parties of the first part, (together, hereinafter referred to as "Grantor") to and in favor of Spectrum-C LLC, a Delaware limited liability company, party of the second part (hereinafter referred to as "Grantee").

WITNESSETH:

WHEREAS, Grantor gave that certain Open-End Mortgage, with an effective date of May 26, 2015 (the "Mortgage"), recorded on May 28, 2015, with the Montgomery County Recorder of Deeds in Mortgage Book 13951, pages 2049, *et seq.*, bearing Instrument Number 2015037456, in favor of Spectrum Origination LLC ("Lender"), on those certain premises known as 401 Washington Street, Borough of Conshohocken, Township of Whitemarsh, County of Montgomery, Commonwealth of Pennsylvania, being identified as Parcel Identification Numbers 05-00-11904-00-7 and 65-00-11904-00-7 [REDACTED] and 433 Washington Street, Borough of Conshohocken, Township of Whitemarsh, County of Montgomery, Commonwealth of Pennsylvania, being identified as Parcel Identification Numbers 05-00-11908-00-3 and 65-00-12685-01-2 (together, the "Premises"), as more particularly described on Exhibit "A" attached hereto and made part hereof.

9/6

WHEREAS, in addition to the Mortgage, Grantor entered into a Term Loan Agreement with Lender dated May 26, 2015 (as amended, modified, extended, renewed or supplemented, the "Loan Agreement"), and Borrower executed and delivered in favor of Lender a Secured Promissory Note in the original principal amount of \$18,500,000 dated May 26, 2015 (as amended, modified, extended, renewed or supplemented, the "Note" and, together with the Mortgage, the Loan Agreement and all documents, instruments and agreements executed in connection therewith, as amended, restated, modified and supplemented from time to time, the "Loan Documents");

WHEREAS, Lender executed an Assignment of Mortgage dated March 2, 2021 and effective as of March 17, 2021, and recorded simultaneously with this Instrument with the Montgomery County Recorder of Deeds, in favor of Grantee;

WHEREAS, Grantee alleges that Grantor has defaulted on the Mortgage and the other Loan Documents, and Grantor hereby intends to convey title to the Premises to Grantee in lieu of foreclosure of the Mortgage or the exercise of one or more of the other remedies in the Mortgage and the other Loan Documents.

NOW, THEREFORE, the said Grantor, for and in consideration of the sum of One Dollar (\$1.00), lawful money of the United States of America, paid by the said Grantee at and before the sealing and delivery hereof, the receipt whereof is hereby acknowledged, and intending to be legally bound hereby, has granted, conveyed, bargained, sold, aliened, enfeoffed, released and confirmed the Premises, and by these presents does hereby grant, convey, bargain, sell, alien enfeoff, release and confirm the said Premises, unto the said Grantee, its successors and assigns, forever.

TOGETHER WITH all and singular the buildings, improvements, ways, waters, water-courses, driveways, rights, liberties, privileges, hereditaments and appurtenances whatsoever thereunto belonging, or in anywise appertaining, and the reversions and remainders, rents, issues and profits thereof; and also the estate, right, title interest, use, trust, property, possession, claim and demand whatsoever, of Grantor, its heirs, personal representatives and assigns, in law, equity, or otherwise howsoever, of, in, to or out of the same and every part thereof.

TO HAVE AND TO HOLD the said interest in land, hereditaments, and premises hereby granted and released or mentioned and intended so to be, with the appurtenances, unto the said Grantee, its heirs, personal representatives and assigns, to and for the only proper use and behoof of the said Grantee, its heirs, personal representatives and assigns, forever.

AND the said Grantor, for itself, its successors and assigns, does hereby covenant, promise, and agree, to and with the said Grantee, its successors and assigns, by these presents that it, the said Grantor, its successors and assigns, SHALL and WILL WARRANT AND FOREVER DEFEND the herein above-described premises, with the improvements, easements, hereditaments and appurtenances, unto the said Grantee, its heirs, personal representatives and assigns, against the said Grantor, its successors and assigns, and against every other person lawfully claiming or who shall hereafter claim the same or any part thereof, by, from or under the said Grantor or its successors or assigns, or any of them.

AND for the purpose of avoiding, and in lieu of foreclosure proceedings, it is the intention of the Grantor to convey the Premises to Grantee immediately upon execution of this deed in lieu of foreclosure without the prior filing of this deed in lieu of foreclosure or any other action on the part of Grantor or Grantee. **It is further the intention of the Grantor and the Grantee that the fee interest conveyed by this deed in lieu of foreclosure not merge with the liens, security interests or other rights in and to the Mortgage.** This deed in lieu of foreclosure shall not constitute a satisfaction of, nor be deemed to satisfy, in whole or in part, any portion of the debt secured by the Mortgage. The rights of the Grantee pursuant to the Mortgage and other documents related thereto shall not be deemed to have been extinguished by the acceptance and recording of this deed in lieu of foreclosure and shall remain in full force and effect, and the Grantee shall have, and does not relinquish, the right to proceed to foreclosure or otherwise in accordance with the terms thereof, including but not limited to, foreclosing against any occupants or tenants of the Premises or others whose interest in the Premises are subordinate to the Mortgage.

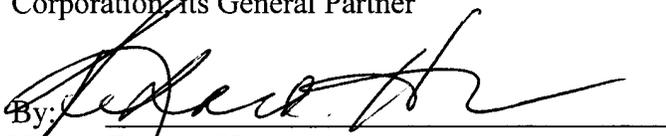
[THIS SPACE LEFT BLANK INTENTIONALLY]

IN WITNESS WHEREOF, the Grantor has caused this Deed to be duly executed the day, month and year first above written.

GRANTOR:

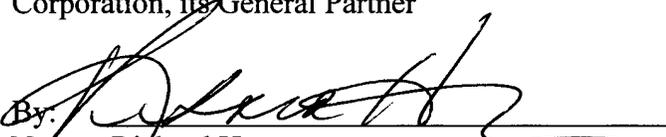
401 WASHINGTON STREET ASSOCIATES, L.P.,
a Pennsylvania limited partnership

By: 401 Washington Street Associates Acquisition
Corporation, its General Partner

By: 
Name: Richard Heany
Title: President

WASHINGTON STREET ASSOCIATES, III, L.P.,
a Pennsylvania limited partnership

By: Washington Street Associates III Acquisition
Corporation, its General Partner

By: 
Name: Richard Heany
Title: President

Address of Grantee:
47 Whitney Street
Westport, Connecticut 06880

By: _____

IN WITNESS WHEREOF, the Grantor has caused this Deed to be duly executed the day, month and year first above written.

GRANTOR:

401 WASHINGTON STREET ASSOCIATES, L.P.,
a Pennsylvania limited partnership

By: 401 Washington Street Associates Acquisition
Corporation, its General Partner

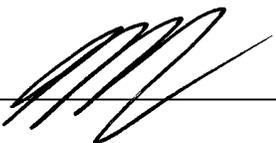
By: _____
Name: J. Brian O'Neill
Title: Vice President

WASHINGTON STREET ASSOCIATES, III, L.P.,
a Pennsylvania limited partnership

By: Washington Street Associates III Acquisition
Corporation, its General Partner

By: _____
Name: J. Brian O'Neill
Title: Vice President

Address of Grantee:
47 Whitney Street
Westport, Connecticut 06880

By:  _____

Deed in Lieu

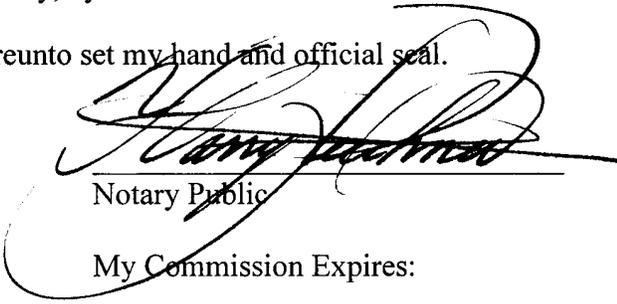
ACKNOWLEDGMENT

COMMONWEALTH OF PENNSYLVANIA :
: ss.
COUNTY OF MONTGOMERY :

On this 26th day of February, 2021, before me, a Notary Public, personally appeared Richard Heany, who acknowledged himself to be the resident of 401 Washington Street Associates Acquisition Corporation, the general partner of 401 Washington Street Associates, L.P., a Pennsylvania limited partnership, and that he, as such officer, being authorized to do so, executed the foregoing instrument for the purposes therein contained by signing the name of the limited liability company, by himself as such officer.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

[NOTARIAL SEAL]


Notary Public
My Commission Expires:

Commonwealth of Pennsylvania - Notary Seal
Harry A. Reichner, Notary Public
Philadelphia County
My commission expires November 13, 2022
Commission number 1194882
Member, Pennsylvania Association of Notaries

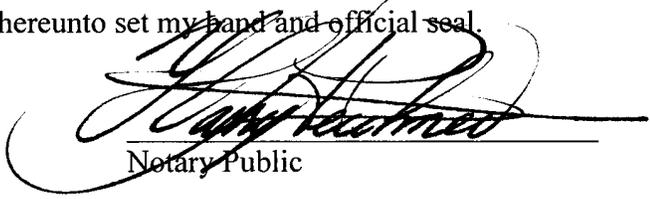
ACKNOWLEDGMENT

COMMONWEALTH OF PENNSYLVANIA :
: ss.
COUNTY OF MONTGOMERY :

On this 26th day of February, 2021, before me, a Notary Public, personally appeared Richard Heany who acknowledged himself to be the President of Washington Street Associates III Acquisition Corporation, the general partner of Washington Street Associates, III, L.P., a Pennsylvania limited partnership, and that he, as such officer, being authorized to do so, executed the foregoing instrument for the purposes therein contained by signing the name of the limited liability company, by himself as such officer.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

[NOTARIAL SEAL]


Notary Public
My Commission Expires:

Commonwealth of Pennsylvania - Notary Seal
Harry A. Reichner, Notary Public
Philadelphia County
My commission expires November 13, 2022
Commission number 1194882
Member, Pennsylvania Association of Notaries

Exhibit "A"

Legal Description of Premises

PREMISES "A"

ALL THAT CERTAIN LOT OR PIECE OF GROUND WITH THE BUILDINGS AND IMPROVEMENTS THEREON ERECTED SITUATE IN CONSHOHOCKEN BOROUGH AND WHITEMARSH TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA AND DESCRIBED ACCORDING TO A PLAN OF SURVEY MADE FOR C&D POWER SYSTEMS BY URWILER AND WALTER ON OCTOBER 29, 1985 AND DESCRIBED AS FOLLOWS, TO WIT:

BEGINNING AT A POINT IN THE TITLE LINE OF WASHINGTON STREET AND (ULTIMATE WIDTH 60 FEET), SAID POINT BEING THE INTERSECTION OF SAID TITLE LINE WITH THE CENTERLINE OF CHERRY STREET EXTENDED; THENCE EXTENDING ALONG SAID TITLE LINE OF WASHINGTON STREET NORTH 84 DEGREES 02 MINUTES 08 SECONDS EAST, 337.60 FEET TO A POINT IN THE LINE OF LANDS OF HALE FIRE PUMP COMPANY; THENCE EXTENDING ALONG SAID LANDS, CROSSING THE CONSHOHOCKEN BOROUGH, WHITEMARSH TOWNSHIP LINE SOUTH 06 DEGREES 13 MINUTES 00 SECONDS EAST 689.71 FEET TO A POINT; THENCE EXTENDING SOUTH 78 DEGREES 55 MINUTES 56 SECONDS WEST, 338.82 FEET TO A POINT IN LINE OF LANDS OF BERNARD K. WEISSMAN; THENCE EXTENDING ALONG SAID LANDS NORTH 06 DEGREES 13 MINUTES 00 SECONDS WEST 734.73 FEET TO THE POINT AND PLACE OF BEGINNING.

CONTAINING 5.421 ACRES OF LAND, MORE OR LESS.

BEING KNOWN AS 401 WASHINGTON STREET.

BEING TAX PARCEL NOS.: 05-00-11904-00-7 AND 65-00-11904-00-7

AND NOW AS MORE PARTICULARLY BOUNDED AND DESCRIBED BY THAT CERTAIN ALTA/ACSM SURVEY DATED DECEMBER 16, 2011, AS LAST REVISED MAY 21, 2015, PREPARED BY MOMENEE SURVEY GROUP, INC., FILE NO. 11-260:

ALL THAT CERTAIN TRACT OF LAND SITUATE IN THE BOROUGH OF CONSHOHOCKEN AND IN THE TOWNSHIP OF WHITEMARSH IN ACCORDANCE WITH A SURVEY PREPARED BY MOMENEE SURVEY GROUP INC. DATED DECEMBER 23, 2002, FILE NO. 01139.

BEGINNING AT A POINT ON THE SOUTHERLY SIDE OF WASHINGTON STREET (30' WIDE) SAID POINT MARKING THE NORTHWESTERLY CORNER OF THE ABOUT TO BE DESCRIBED TRACT OF LAND BEING ALSO AT THE INTERSECTION OF THE SOUTH SIDE OF WASHINGTON STREET WITH THE CENTER LINE OF CHERRY STREET EXTENDED; THENCE FROM SAID BEGINNING POINT ALONG THE SOUTHERLY SIDE OF WASHINGTON STREET NORTH 81 DEGREES 54 MINUTES 00 SECONDS EAST 338.60' TO A POINT; THENCE LEAVING WASHINGTON STREET BY LAND NOW OR FORMERLY OF HALE FIRE PUMP CO. SOUTH 8 DEGREES 06 MINUTES 00 SECONDS EAST, CROSSING OVER THE TOWNSHIP LINE DIVIDING THE BOROUGH OF CONSHOHOCKEN AND WHITEMARSH TOWNSHIP 689.71' TO A POINT ON OR NEAR THE LOW WATER MARK OF THE SCHUYLKILL RIVER; THENCE ALONG THE SCHUYLKILL RIVER SOUTH 77 DEGREES 07 MINUTES 00 SECONDS WEST 340.51' TO A POINT; THENCE BY LAND NOW OR FORMERLY OF WASHINGTON STREET

ASSOCIATES, L.P. NORTH 8 DEGREES 02 MINUTES 34 SECONDS WEST 718.11' TO THE FIRST MENTIONED POINT AND PLACE OF BEGINNING.

CONTAINING: 5.477 ACRES OF LAND, BE THE SAME MORE OR LESS.

LEGAL DESCRIPTIONS DESCRIBE SAME PARCEL.

PREMISES "B"

ALL THAT CERTAIN LOT OR PIECE OF GROUND WITH THE BUILDINGS AND IMPROVEMENTS THEREON ERECTED, SITUATE PARTLY IN WHITEMARSH TOWNSHIP AND PARTLY IN CONSHOHOCKEN BOROUGH, MONTGOMERY COUNTY, PENNSYLVANIA AND DESCRIBED ACCORDING TO A MAJOR SUBDIVISION PLAN PREPARED BY ROBERT E. CHESTER AND ASSOCIATES FOR HALE PRODUCTS, INC., DATED DECEMBER 22, 1994 AND LAST REVISED OCTOBER 10, 1995 AND RECORDED IN MONTGOMERY COUNTY IN PLAN BOOK A-55 PAGE 488, AS FOLLOWS, TO WIT:

BEGINNING AT A POINT ON THE SOUTHERLY ULTIMATE RIGHT OF WAY LINE OF WASHINGTON STREET WHICH POINT OF BEGINNING IS COMMON TO THIS LOT AND LOT NO. 1 AS SHOWN ON SAID PLAN; THENCE EXTENDING FROM SAID POINT OF BEGINNING, ALONG LOT NO. 1, SOUTH 6 DEGREES 13 MINUTES 00 SECONDS EAST, CROSSING THE LINE DIVIDING THE BOROUGH OF CONSHOHOCKEN AND THE TOWNSHIP OF WHITEMARSH, 651.54 FEET TO A POINT ON THE MEAN LOW WATER MARK OF THE SCHUYLKILL RIVER; THENCE ALONG THE SAME, THE 4 FOLLOWING COURSES AND DISTANCES, VIZ: (1) SOUTH 80 DEGREES, 49 MINUTES, 54 SECONDS WEST 100 FEET TO A POINT; (2) SOUTH 82 DEGREES 11 MINUTES 00 SECONDS WEST 165 FEET TO A POINT; (3) SOUTH 79 DEGREES 7 MINUTES 00 SECONDS WEST 70 FEET TO A POINT; AND (4) SOUTH 77 DEGREES, 17 MINUTES 21 SECONDS WEST 41.43 FEET TO A POINT, A CORNER OF LAND, NOW OR LATE OF C. AND D. POWER SYSTEMS, INC.; THENCE EXTENDING ALONG THE SAME, NORTH 6 DEGREES 13 MINUTES 00 SECONDS WEST, RE-CROSSING THE LINE DIVIDING THE BOROUGH OF CONSHOHOCKEN AND THE TOWNSHIP OF WHITEMARSH, 671.68 FEET TO A POINT ON THE SAID SOUTHERLY ULTIMATE RIGHT OF WAY LINE OF WASHINGTON STREET; THENCE EXTENDING ALONG THE SAME, NORTH 83 DEGREES 47 MINUTES 00 SECONDS EAST 375.74 FEET TO THE FIRST MENTIONED POINT AND PLACE OF BEGINNING.

BEING LOT NO. 2 AS SHOWN ON SAID PLAN.

BEING KNOWN AS 433 WASHINGTON STREET.

BEING TAX PARCEL NOS.: 05-00-11908-00-3 AND 65-00-12685-01-2.

MONTGOMERY COUNTY COMMISSIONERS REGISTRY
05-00-11904-00-7 CONSHOHOCKEN
401 WASHINGTON ST
401 WASHINGTON ST ASSOCIATES LP \$15.00
B 025 U 008 L 2208 DATE: 04/16/2021 JU

MONTGOMERY COUNTY COMMISSIONERS REGISTRY
65-00-11904-00-7 WHITEMARSH
WASHINGTON ST
401 WASHINGTON ST ASSOCIATES LP \$15.00
B 012 U 010 L 2204 DATE: 04/16/2021 JU

MONTGOMERY COUNTY COMMISSIONERS REGISTRY
05-00-11908-00-3 CONSHOHOCKEN
433 WASHINGTON ST
WASHINGTON STREET ASSOCIATES III \$15.00
B 025 U 009 L 2 3327 DATE: 04/16/2021 JU

MONTGOMERY COUNTY COMMISSIONERS REGISTRY
65-00-12685-01-2 WHITEMARSH
WASHINGTON ST
WASHINGTON STREET ASSOCIATES III \$15.00
B 012 U 018 L 2201 DATE: 04/16/2021 JU



1830019105

RECORDER'S USE ONLY

REV-183 BUREAU OF INDIVIDUAL TAXES PO BOX 280603 HARRISBURG, PA 17128-0603

REALTY TRANSFER TAX STATEMENT OF VALUE COMPLETE EACH SECTION

State Tax Paid: 0 Book: U221 Page: 2635 Instrument Number: Date Recorded: 4-21-2021

SECTION I TRANSFER DATA

Date of Acceptance of Document Grantor(s) 401 Washington Street Associates, L.P., c/o O'Neill Properties Group, L.P. Telephone Number 610-239-6100 Grantee(s)/Lessee(s) Spectrum-C LLC Telephone Number 212-687-9555 Mailing Address 201 King of Prussia Road Mailing Address 47 Whitney Street City Radnor State PA ZIP Code 19087 City Westport State CT ZIP Code 06880

SECTION II REAL ESTATE LOCATION

Street Address 401 Washington Street, 433 Washington Street City, Township, Borough Conshohocken Borough and Whitemarsh Township County Montgomery School District Colonial and Whitemarsh Telephone Numbers 610-00-1104-00-7; 65-00-11094-00-7; 05-00-11908-00-3; 65-00-12685-01-2

SECTION III VALUATION DATA

Was transaction part of an assignment or relocation? YES NO 1. Actual Cash Consideration 0 2. Other Consideration + 0 3. Total Consideration = 0 4. County Assessed Value 499,000 5. Common Level Ratio Factor X 2.13 6. Computed Value = 1,062,870

SECTION IV EXEMPTION DATA - Refer to instructions for exemption status

1a. Amount of Exemption Claimed \$1,062,870 1b. Percentage of Grantor's Interest in Real Estate 100% 1c. Percentage of Grantor's Interest Conveyed 100%

- 2. Check Appropriate Box Below for Exemption Claimed. Will or intestate succession. Transfer to a trust. Transfer from a trust. Transfer between principal and agent/straw party. Transfers to the commonwealth, the U.S. and instrumentalities by gift, dedication, condemnation or in lieu of condemnation. Transfer from mortgagor to a holder of a mortgage in default. Corrective or confirmatory deed. Statutory corporate consolidation, merger or division. Other

SECTION V CORRESPONDENT INFORMATION - All inquiries may be directed to the following person:

Name 401 Washington Street Associates, L.P. Telephone Number Mailing Address 201 King of Prussia Road City Radnor State PA ZIP Code 19087

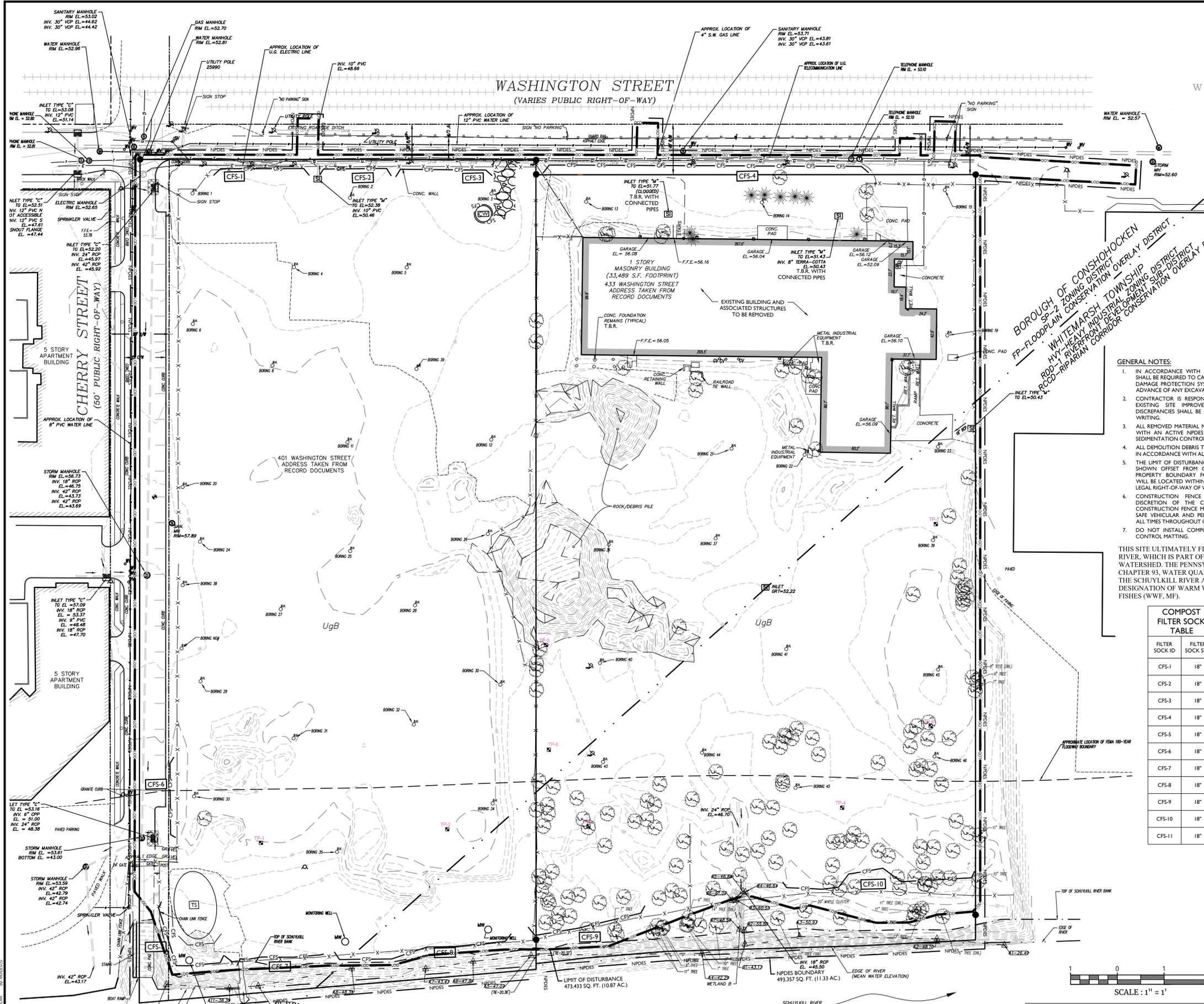
Under penalties of law, I declare that I have examined this statement, including accompanying information, and to the best of my knowledge and belief, it is true, correct and complete. Signature of Correspondent or Responsible Party Date 2/26/2021

FAILURE TO COMPLETE THIS FORM PROPERLY OR ATTACH REQUESTED DOCUMENTATION MAY RESULT IN THE RECORDER'S REFUSAL TO RECORD THE DEED.



1830019105

1830019105



TEST PIT TABLE

TEST PIT ID	TEST PIT DEPTH (IN)
TP-1	75.00
TP-2	51.75
TP-3	33.00
TP-4	48.00
TP-5	33.00
TP-6	28.30
TP-7	44.80
TP-8	74.50

ENVIRONMENTAL NOTE:
 THIS SET OF PLANS IS NOT DEPICTING ENVIRONMENTAL CONDITIONS OR A CERTIFICATION WARRANTY REGARDING THE PRESENCE OR ABSENCE OF ENVIRONMENTALLY IMPACTED SITE CONDITIONS. COLLIER ENGINEERING & DESIGN HAS PERFORMED NO EXPLORATORY OR TESTING SERVICES, INTERPRETATIONS, CONCLUSIONS, OR OTHER SITE ENVIRONMENTAL SERVICES RELATED TO THE DETERMINATION OF THE POTENTIAL FOR CHEMICAL, TOXIC, RADIOACTIVE, OR OTHER TYPE OF CONTAMINANTS AFFECTING THE PROPERTY AND THE UNDERGROUND ENVIRONMENT. IT IS THE RESPONSIBILITY OF THE PROFESSIONAL IS NOT QUALIFIED TO DETERMINE THE EXISTENCE OF SAME. SHOULD ENVIRONMENTAL CONTAMINATION OR WASTE BE DISCOVERED, THE OWNER AND CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE LAWS AND REGULATIONS.

- THE LIMIT OF DISTURBANCE AND NPDES BOUNDARIES ARE SHOWN OFFSET FROM OBJECTS AND OUTSIDE OF THE PROPERTY BOUNDARY FOR CLARITY. DISTURBANCE WILL BE LOCATED WITHIN THE PROPERTY BOUNDARY AND LEGAL RIGHT-OF-WAY OF WASHINGTON STREET AND CHERRY STREET.
- CONSTRUCTION FENCE TO BE INSTALLED AT THE DISCRETION OF THE CONSTRUCTION MANAGER. THE CONSTRUCTION FENCE MUST BE INSTALLED TO MAINTAIN SAFE VEHICULAR AND PEDESTRIAN TRAFFIC PATTERNS AT ALL TIMES THROUGHOUT CONSTRUCTION.
- DO NOT INSTALL COMPOST FILTER SOCKS ON EROSION CONTROL MATTING.

- ### GENERAL NOTES:
1. IN ACCORDANCE WITH STATE LAW, THE CONTRACTOR SHALL BE REQUIRED TO CALL THE PENNSYLVANIA ONE CALL DAMAGE PROTECTION SYSTEM FOR UTILITY MARK OUT IN ADVANCE OF ANY EXCAVATION.
 2. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL EXISTING SITE IMPROVEMENTS AND UTILITIES. ALL DISCREPANCIES SHALL BE IDENTIFIED TO THE ENGINEER IN WRITING.
 3. ALL REMOVED MATERIAL MUST BE TRANSPORTED TO A SITE WITH AN ACTIVE NPDES PERMIT OR ACTIVE EROSION & SEDIMENTATION CONTROL PLAN.
 4. ALL DEMOLITION DEBRIS TO BE REMOVED BY CONTRACTOR IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS.
 5. THE LIMIT OF DISTURBANCE AND NPDES BOUNDARIES ARE SHOWN OFFSET FROM OBJECTS AND OUTSIDE OF THE PROPERTY BOUNDARY FOR CLARITY. ALL DISTURBANCE WILL BE LOCATED WITHIN THE PROPERTY BOUNDARY AND LEGAL RIGHT-OF-WAY OF WINDSOR DRIVE.
 6. CONSTRUCTION FENCE TO BE INSTALLED AT THE DISCRETION OF THE CONSTRUCTION MANAGER. THE CONSTRUCTION FENCE MUST BE INSTALLED TO MAINTAIN SAFE VEHICULAR AND PEDESTRIAN TRAFFIC PATTERNS AT ALL TIMES THROUGHOUT CONSTRUCTION.
 7. DO NOT INSTALL COMPOST FILTER SOCKS ON EROSION CONTROL MATTING.

- ### EROSION CONTROL LEGEND
- | | |
|--------------------------------------|----------------|
| NPDES BOUNDARY | PROPOSED NPDES |
| LIMIT OF DISTURBANCE | LOD |
| COMPOST FILTER SOCK | CFS |
| ROCK CONSTRUCTION ENTRANCE AND LABEL | CE |
| TOPSOIL STOCKPILE & 24" CFS | TS |
| INLET PROTECTION | |

THIS SITE ULTIMATELY FLOWS TO THE SCHUYLKILL RIVER, WHICH IS PART OF THE SCHUYLKILL RIVER WATERSHED. THE PENNSYLVANIA CODE, TITLE 25, CHAPTER 93, WATER QUALITY STANDARDS ASSIGNS THE SCHUYLKILL RIVER A WATER QUALITY DESIGNATION OF WARM WATER FISHERY, MIGRATORY FISHES (WWF, MF).

COMPOST FILTER SOCK TABLE

FILTER SOCK ID	FILTER SOCK SIZE
CFS-1	18"
CFS-2	18"
CFS-3	18"
CFS-4	18"
CFS-5	18"
CFS-6	18"
CFS-7	18"
CFS-8	18"
CFS-9	18"
CFS-10	18"
CFS-11	18"

LEGEND

12+00	134+00	WETLAND MARKER
TRaverse LINE, CENTER LINE OR BASELINE	PROPERTY LINE	TREE
RIGHT OF WAY LINE	FACE OF PAVEMENT	ROADWAY SIGNS
EDGE OF PAVEMENT	D.C. BACK	TRAFFIC FLOW
CURB LINE	DEPRESSED CURB	MAILBOX
CHAIN FENCE	WETLAND LINE	TRAFFIC SIGNAL POLE
MUNICIPAL BOUNDARY	TREELINE	POLE MOUNTED LIGHT
FIRE DEPT. CONNECTION	ELECTRICAL MANHOLE	UTILITY POLE
FIRE HYDRANT	WATER MANHOLE	GUY WIRE
WATER VALVE	TELEPHONE MANHOLE	TRANSFORMER
GAS VALVE	UNMARKED MANHOLE	MINOR CONTOUR
SANITARY CLEANOUT	SANITARY MANHOLE	SPOT ELEVATION
CONCRETE MONUMENT	DRAINAGE MANHOLE	X TC 29.0
CAPPED REBAR/IRON PIPE	MAJOR CONTOUR	X BC 29.0
	MINOR CONTOUR	U/G CABLE TV LINE
	SPOT ELEVATION	U/G FIBER OPTIC LINE
	X TC 29.0	U/G TELEPHONE LINE
	X BC 29.0	U/G ELECTRIC LINE
	U/G CABLE TV LINE	OVERHEAD WIRE
	U/G FIBER OPTIC LINE	WATER MAIN
	U/G TELEPHONE LINE	GAS MAIN
	OVERHEAD WIRE	SAN. SEWER LATERAL
	WATER MAIN	SAN. SEWER MAIN
	GAS MAIN	STORM PIPE
	SAN. SEWER LATERAL	
	SAN. SEWER MAIN	
	STORM PIPE	

ABBREVIATIONS

D.C. = DEPRESSED CURB	TF = FINISH FLOOR	MHWL = MEAN HIGH WATER LEVEL
BC = BOTTOM OF CURB	UV = UNDERDRAIN VALVE	WL = WATER LINE
TC = TOP OF CURB	MH = MANHOLE	MLWL = MEAN LOW WATER LEVEL
BGL = BOLLARD	DEP = DEPRESSED	
CP = CENTERLINE	EL = ELEVATION	
MB = MAILBOX	PM = PARKING METER	



SOILS SCHEDULE

TAKEN FROM USDA NATURAL RESOURCE CONSERVATION SERVICE (NRCS)

MAP SYMBOL	SOIL	HYDROLOGIC SOILS GROUP	DEPTH TO BEDROCK (FT. BELOW GRADE)	DEPTH TO SEASONAL WATER TABLE (FT. BELOW GRADE)	FLOOD HAZARD POTENTIAL	HYDRIC/HYDRIC COMPONENT
UgB	URBAN LAND, 0 TO 8 PERCENT SLOPES	B	VARIABLE	0.75 - 3.3	NONE	NONE

SOIL LIMITATIONS

DEPTH TO SATURATED ZONE / SEASONAL HIGH WATER TABLE	SOIL RESOLUTIONS
PERFORM TEST PITS TO DETERMINE DEPTH OF SATURATED ZONE. INSTALL UNDERDRAINS AS APPROPRIATE TO DIVERT GROUNDWATER FROM FOUNDATIONS OR ROAD SUBBASE. USE PUMPED WATER FILTER BAGS DURING CONSTRUCTION.	CONSTRUCT FOOTINGS IN ACCORDANCE WITH CODE.

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Doing Business as **MASER CONSULTING**
811 PROTECT YOURSELF
 ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE. Call before you dig. 20210843125 & 20210843126
 FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

C. Richard Roseberry
 REGISTERED PROFESSIONAL ENGINEER
 No. 46162
 PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER
 LICENSE NUMBER: PE046162R
 COLLIER ENGINEERING & DESIGN, INC.

EROSION AND SEDIMENTATION POLLUTION CONTROL PLANS
 FOR
401/433 WASHINGTON STREET APARTMENTS
 401 & 403 WASHINGTON STREET
 CONSHOHOCKEN BOROUGH & WHITEMARSH TOWNSHIP
 MONTGOMERY COUNTY PENNSYLVANIA

Colliers Engineering & Design
 941 Marcon Boulevard, Suite 801
 Allentown, PA 18109
 Phone: 610.868.4201
 COLLIER ENGINEERING & DESIGN, INC.
 DOING BUSINESS AS MASER CONSULTING

SCALE: AS SHOWN	DATE: 12/03/2021	DRAWN BY: SF	CHECKED BY: CRR
PROJECT NUMBER: 14000908C	DRAWING NUMBER: C-ESC-PH51		

EROSION AND SEDIMENTATION POLLUTION CONTROL DEMOLITION PLAN
 SHEET NUMBER: E2 of E5
 NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

STANDARD EROSION AND SEDIMENT CONTROL NOTES

- ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH THE APPROVED E&S PLAN. A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED AND DATED BY THE REVIEWING AGENCY) MUST BE AVAILABLE AT ALL TIMES. THE REVIEWING AGENCY SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.
- AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, THE PCSM PLAN PREPARER, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN, AND A REPRESENTATIVE FROM THE LOCAL CONSERVATION DISTRICT TO AN ON-SITE PRE-CONSTRUCTION MEETING.
- AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC. SHALL BE NOTIFIED AT 1-800-242-1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
- ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM THE LOCAL CONSERVATION DISTRICT OR BY THE DEPARTMENT PRIOR TO IMPLEMENTATION.
- AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.
- CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE. GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING MAY NOT COMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPs SPECIFIED BY THE BMP SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS E&S PLAN.
- AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS. THESE AREAS MUST BE CLEARLY MARKED AND FENCED OFF BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN.
- TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN MAP(S) IN THE AMOUNT NECESSARY TO COMPLETE THE FINAL GRADING OF ALL EXPOSED AREAS THAT ARE TO BE STABILIZED BY VEGETATION. EACH STOCKPILE SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET. STOCKPILE SLOPES SHALL BE 3H:1V OR FLATTER.
- IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENT POLLUTION AND NOTIFY THE LOCAL CONSERVATION DISTRICT AND/OR THE REGIONAL OFFICE OF THE DEPARTMENT.
- ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENTS SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1, AND 287.1 ET SEQ. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THIS SITE.
- RECYCLING AND DISPOSAL OF MATERIALS. OPERATOR/PERMITTEE SHALL INSURE THAT PROPER MECHANISMS ARE IN PLACE TO CONTROL WASTE MATERIALS. CONSTRUCTION WASTES INCLUDE, BUT ARE NOT LIMITED TO, EXCESS SOIL MATERIALS, BUILDING MATERIALS, CONCRETE WASH WATER, SANITARY WASTES, ETC. THAT COULD ADVERSELY IMPACT WATER QUALITY. MEASURES SHOULD BE PLANNED AND IMPLEMENTED FOR HOUSEKEEPING, MATERIALS MANAGEMENT, AND LITTER CONTROL. WHEREVER POSSIBLE, RECYCLING IS PREFERRED RATHER THAN DISPOSAL. OFF-SITE TRANSPORT OF MATERIALS REQUIRES THAT THE RECEIVING FACILITY HAVE ITS OWN APPROVED, ACTIVE PERMIT TO RECEIVE SUCH MATERIALS.
- ALL OFF-SITE WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.
- THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM FR-001 MUST BE RETAINED BY THE PROPERTY OWNER FOR ANY FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE BUT QUALIFYING AS CLEAN FILL DUE TO ANALYTICAL TESTING.
- ALL PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OVER UNDISTURBED VEGETATED AREAS. ALL PUMPING OF SEDIMENT LADEN WATER SHALL BE THROUGH A SEDIMENT CONTROL BMP. SUCH AS A PUMPED WATER FILTER BAG DISCHARGING OVER NON-DISTURBED AREAS.
- VEHICLES AND EQUIPMENT MAY NEITHER ENTER DIRECTLY NOR EXIT DIRECTLY FROM THE SITE ONTO WINDSOR DRIVE. VEHICLES AND EQUIPMENT MAY ONLY ENTER AND EXIT THE CONSTRUCTION SITE VIA A STABILIZED ROCK CONSTRUCTION ENTRANCE.
- UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPs SHALL BE MAINTAINED PROPERLY. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT BMPs AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. THE OPERATOR WILL MAINTAIN AND MAKE AVAILABLE TO THE COUNTY CONSERVATION DISTRICT COMPLETE, WRITTEN INSPECTION LOGS OF ALL THOSE INSPECTIONS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, RESEEDING, REGRADING, AND RE-NETTING, MUST BE PERFORMED IMMEDIATELY. IF THE E&S BMPs FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPs, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.
- A LOG SHOWING DATES THAT E&S BMPs WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE AND BE MADE AVAILABLE TO REGULATORY AGENCY OFFICIALS AT THE TIME OF INSPECTION.
- SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORK DAY AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEEP INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.
- ALL SEDIMENT REMOVED FROM BMPs SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS. SEDIMENT REMOVED FROM BMPs SHALL BE DISPOSED OF IN LANDSCAPED AREAS OUTSIDE OF STEEP SLOPES, WETLANDS, FLOODPLAINS OR DRAINAGE SWALES AND IMMEDIATELY STABILIZED, OR PLACED IN TOPSOIL STOCKPILES.
- AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES - 6 TO 12 INCHES ON COMPACTED SOILS - PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL OUTSLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.
- ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
- ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.
- FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
- FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.
- FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
- SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
- ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED. SEEDED AREAS WITHIN 50 FEET OF A SURFACE WATER, OR AS OTHERWISE SHOWN ON THE PLAN DRAWINGS, SHALL BE BLANKETTED ACCORDING TO THE STANDARDS OF THIS PLAN.
- IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE IN ANY AREA OR SUBAREA OF THE PROJECT, THE OPERATOR SHALL STABILIZE ALL DISTURBED AREAS, DURING NON-GERMINATING MONTHS, MULCH OR OTHER PROTECTIVE BLANKETING SHALL BE APPLIED AS DESCRIBED IN THE PLAN. AREAS NOT AT FINISHED GRADE, WHICH WILL BE REACTIVATED WITHIN 1 YEAR, MAY BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY STABILIZATION SPECIFICATIONS. THOSE AREAS WHICH WILL NOT BE REACTIVATED WITHIN 1 YEAR SHALL BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION SPECIFICATIONS.
- PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM, PERENNIAL 70% VEGETATIVE COVER AND OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION CUT AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO SLUMPING, SLIDING, OR MOTHER MOVEMENTS.
- EROSION AND SEDIMENT BMPs MUST BE CONSTRUCTED, STABILIZED, AND FUNCTIONAL BEFORE SITE DISTURBANCE BEGINS WITHIN THE TRIBUTARY AREAS OF THOSE BMPs. E&S BMPs SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED OR UNTIL THEY ARE REPLACED BY ANOTHER BMP APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
- UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL/CONVERSION OF THE E&S BMPs.
- AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPs MUST BE REMOVED OR CONVERTED TO PERMANENT POST CONSTRUCTION MANAGEMENT BMPs. AREAS DISTURBED DURING REMOVAL OR CONVERSION OF THE BMPs SHALL BE STABILIZED IMMEDIATELY. IN ORDER TO ENSURE RAPID REVEGETATION OF DISTURBED AREAS, SUCH REMOVAL/CONVERSIONS ARE TO BE DONE ONLY DURING THE GERMINATING SEASON.
- UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT TO SCHEDULE A FINAL INSPECTION.
- FAILURE TO CORRECTLY INSTALL E&S BMPs, FAILURE TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE OR FAILURE TO TAKE IMMEDIATE CORRECTIVE ACTION TO RESOLVE FAILURE OF E&S BMPs MAY RESULT IN ADMINISTRATIVE, CIVIL, AND/OR CRIMINAL PENALTIES BEING INSTITUTED BY THE DEPARTMENT AS DEFINED IN SECTION 602 OF THE CLEAN STREAMS LAW. THE CLEAN STREAMS LAW PROVIDES FOR UP TO \$10,000 PER DAY IN CIVIL PENALTIES, UP TO \$10,000 IN SUMMARY CRIMINAL PENALTIES, AND UP TO \$25,000 IN MISDEMEANOR CRIMINAL PENALTIES FOR EACH VIOLATION.
- IN THE EVENT OF SINKHOLE DISCOVERY A PROFESSIONAL GEOLOGIST OR ENGINEER WILL BE CONTACTED CONCERNING MITIGATION. ADDITIONALLY, THE COUNTY CONSERVATION DISTRICT WILL BE MADE AWARE OF THE SINKHOLE DISCOVERY IMMEDIATELY.
- THE OPERATOR SHALL ASSURE THAT THE APPROVED EROSION AND SEDIMENT CONTROL PLAN IS PROPERLY AND COMPLETELY IMPLEMENTED.
- THE CONTRACTOR IS ADVISED TO BECOME THOROUGHLY FAMILIAR WITH THE PROVISIONS OF THE APPENDIX 64, EROSION CONTROL RULES AND REGULATIONS, TITLE 25, PART 11, DEPARTMENT OF ENVIRONMENTAL PROTECTION, SUBPART C, PROTECTION OF NATURAL RESOURCES, ARTICLE III, WATER RESOURCES, CHAPTER 102, EROSION CONTROL.
- STRAW MULCH SHALL BE APPLIED IN LONG STRANDS, NOT CHOPPED OR FINELY BROKEN.
- CONCRETE WASH WATER SHALL BE HANDLED IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS. IN NO CASE SHALL IT BE ALLOWED TO ENTER ANY SURFACE WATERS OR GROUNDWATER SYSTEMS.
- EROSION CONTROL MATTING SHALL BE INSTALLED ON ALL SLOPES 3H:1V OR STEEPER, WITHIN 50 FEET OF A SURFACE WATER AND ON ALL OTHER DISTURBED AREAS SPECIFIED ON THE PLAN MAPS AND/OR DETAIL SHEETS.

CONSTRUCTION SEQUENCE NOTES:

- ALL WORK IS TO OCCUR WITHIN THE LIMIT OF DISTURBANCE BOUNDARIES AS INDICATED ON THE PLAN. AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS. THESE AREAS MUST BE CLEARLY MARKED AND FENCED OFF BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN.
- CONSTRUCT ALL DRAINAGE APPURTENANCES FROM DOWNSTREAM TO UPSTREAM UNLESS OTHERWISE NOTED.
- LIMIT TREE REMOVAL TO ONLY WHAT IS REQUIRED FOR CONSTRUCTION.
- UPON REACHING FINAL GRADE, AREAS TO BE STABILIZED BY VEGETATION MUST NOT EXCEED 15,000 SQUARE FEET WITHOUT BEING STABILIZED.
- THE SITE MUST BE IMMEDIATELY SEED, MULCHED, OR OTHERWISE PROTECTED FROM ACCELERATED EROSION AND SEDIMENTATION WHEN A TEMPORARY CESSATION OF EARTH DISTURBANCE ACTIVITIES EXCEEDS 5 DAYS. DURING NON-GERMINATING MONTHS, MULCH OR PROTECTIVE BLANKETING SHALL BE APPLIED AS DESCRIBED IN THE PLAN. AREAS NOT AT FINISHED GRADE WHICH WILL BE REACTIVATED WITHIN ONE YEAR, MAY BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY STABILIZATION SPECIFICATIONS. THOSE AREAS WHICH WILL NOT BE REACTIVATED WITHIN ONE YEAR SHALL BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION SPECIFICATIONS.
- STABILIZE SLOPES, CHANNELS, DITCHES, AND OTHER DISTURBED AREAS AS THEY REACH FINAL GRADE. ROUND CUT AND FILL SLOPES SUCH THAT RUNOFF IS DIRECTED AWAY FROM THE INTERSECTION OF THE CONSTRUCTED SLOPE AND THE EXISTING GRADE.
- CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE. GENERAL SITE CLEARING, GRUBBING, AND TOPSOIL STRIPPING MAY NOT COMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPs SPECIFIED BY THE CONSTRUCTION SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS E&S PLAN.

CONSTRUCTION SEQUENCE:

- ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING SEQUENCE. DEVIATION FROM THIS SEQUENCE MUST BE APPROVED IN WRITING FROM THE LOCAL CONSERVATION DISTRICT OR BY THE DEPARTMENT PRIOR TO IMPLEMENTATION.
- AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, THE PCSM PLAN PREPARER, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN, AND A REPRESENTATIVE FROM THE LOCAL COUNTY CONSERVATION DISTRICT TO AN ON-SITE PRE-CONSTRUCTION MEETING.
 - ALL EXISTING UTILITIES SHOWN ON THE PLAN ARE SHOWN AT APPROXIMATE LOCATIONS. THE ENGINEER DOES NOT GUARANTEE ALL EXISTING UTILITIES ON SITE ARE SHOWN ON THE PLAN. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE OF ALL UTILITIES AND TO CALL THE PENNSYLVANIA ONE CALL SYSTEM (1-800-242-1776) AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES OR EXPANDING INTO A PREVIOUSLY UNMARKED AREA.

SITE WORK:

- INSTALL WESTERN ROCK CONSTRUCTION ENTRANCE, CLEAR AND GRUB AS NEEDED.
- INSTALL INLET FILTER BAGS IN EXISTING INLETS ALONG CHERRY STREET, AND COMPOST FILTER SOCKS 1 THROUGH 10. COMPOST FILTER SOCKS SHALL BE INSTALLED PARALLEL TO EXISTING CONTOURS OR CONSTRUCTED LEVEL ALIGNMENTS. NOTE: ADDITIONAL COMPOST FILTER SOCKS SHALL BE INSTALLED DOWNGRADE OF ANY DISTURBANCE AREAS AS NEEDED. ALL EROSION AND SEDIMENT CONTROL DEVICES MUST BE INSTALLED IN ACCORDANCE WITH THEIR RESPECTIVE DETAIL AND IN WORKING ORDER PRIOR TO DISTURBING AN AREA.
- REMOVE WOODED AREAS, DEBRIS PILES, AND ALL ITEMS LISTED AS TO BE REMOVED WITHIN THE SITE, AS SHOWN ON THE PLANS.
- ESTABLISH STOCKPILE AND CONCRETE WASHOUT LOCATION AND PLACE DOWNSLOPE COMPOST FILTER SOCKS. ENSURE THAT COMPOST FILTER SOCKS ARE LOCATED DOWNSLOPE OF THE TOPSOIL STOCKPILE AT ALL TIMES. AS THE SITE GRADING PROGRESSES, COMPOST FILTER SOCKS SHALL BE INSTALLED PARALLEL TO EXISTING CONTOURS OR CONSTRUCTED LEVEL ALIGNMENTS. NOTE: ADDITIONAL COMPOST FILTER SOCKS SHALL BE INSTALLED DOWNGRADE OF ANY DISTURBANCE AREAS AS NEEDED. ALL EROSION AND SEDIMENT CONTROL DEVICES MUST BE INSTALLED IN ACCORDANCE WITH THEIR RESPECTIVE DETAIL AND IN WORKING ORDER PRIOR TO DISTURBING AN AREA.
- CONSTRUCT UNDERGROUND DETENTION BASIN B. INSTALL OUTFALL STORMSEWER SYSTEM, STARTING AT HW S-100 AND WORKING UPSLOPE TO MH S-81. CONSTRUCT UNDERGROUND DETENTION BASIN C. INSTALL OUTFALL STORMSEWER SYSTEM, STARTING AT MH S-81 AND WORKING UPSLOPE TO MH S-81. CONSTRUCT UNDERGROUND DETENTION BASIN A. INSTALL OUTFALL STORMSEWER SYSTEM, STARTING AT MH S-81 AND WORKING UPSLOPE TO MH S-81. LIMIT DAILY TRENCH EXCAVATION TO THE LENGTH OF PIPE PLACEMENT AND BACKFILLING THAT CAN BE COMPLETED THE SAME DAY. ALL OPEN TRENCHES MUST BE PROTECTED. WATER, WHICH ACCUMULATES IN THE OPEN TRENCH, WILL BE COMPLETELY REMOVED BY FILTER BAG PUMPING, BEFORE PIPE PLACEMENT AND/OR BACKFILLING BEGINS.
- INSTALL EASTERN ROCK CONSTRUCTION ENTRANCE AS SHOWN ON PLANS.
- ROUGH GRADE SITE AND BUILDING PADS, ROUGH GRADE DRIVEWAYS, AISLES, CONCRETE PATIOS AND PARKING LOTS. REPLACE COMPOST FILTER SOCKS 8 AND 10 WITH COMPOST FILTER SOCKS 8A AND 10A RESPECTIVELY. IMMEDIATELY STABILIZE ANY STEEP SLOPES WITH EROSION CONTROL MATTING. DO NOT PLACE EROSION CONTROL MATTING ON OR UNDER COMPOST FILTER SOCKS. ADJUST COMPOST FILTER SOCKS AS NEEDED TO FIT PROPOSED IMPROVEMENTS. NOTE: ADDITIONAL COMPOST FILTER SOCKS SHALL BE INSTALLED DOWNGRADE OF ANY DISTURBANCE AREAS AS NEEDED.
- CONSTRUCT DOMESTIC AND FIRE WATER SYSTEMS TO PROPOSED HYDRANTS AND BUILDINGS. CONSTRUCT SANITARY SEWER SYSTEM DOWNSTREAM TO UPSTREAM, FROM THE PROPOSED TIE-IN WITH THE EXISTING SEWER LATERAL AT MH SS-100 TO MH SS-103, AND THE LATERAL CONNECTIONS TO EACH BUILDING.

SEEDING AND SOIL SUPPLEMENTS

THE FOLLOWING SPECIFICATIONS ARE IN ACCORDANCE WITH PENNDOT PUBLICATION 408, SECTION 804.

TEMPORARY SEED MIXTURES	% BY WEIGHT	PURITY	MAX. WEED SEED
SEED TYPE (PENNDOT FORMULA E) ANNUAL RYEGRASS	100	95%	0.10%

APPLY SEED AT A RATE OF 10 LBS. PER 1,000 SQ. Y.
APPLY STRAW MULCH (SEE MULCH APPLICATION RATES TABLE)
SEEDING SEASON DATES: MARCH 15 TO OCTOBER 15

PERMANENT SEED MIXTURES	% BY WEIGHT	PURITY	MAX. WEED SEED
SEED TYPE (PENNDOT FORMULA B) PERENNIAL RYEGRASS MIXTURE * (LOLIUM PERENNE)	20	97%	0.10%
CREeping REED FESCUE	30	97%	0.10%
KENTUCKY BLUEGRASS MIXTURE ** (POA PRATENSIS)	50	97%	0.15%

APPLY SEED AT A RATE OF 42 LBS. PER 1,000 SQ. Y.
APPLY STRAW OR HAY MULCH (SEE MULCH APPLICATION RATES TABLE).
APPLY PULVERIZED AGRICULTURAL LIMESTONE AT A RATE OF 2 TONS/ACRE UNLESS TESTING HAS BEEN PERFORMED.
APPLY 10-20-20 ANALYSIS COMMERCIAL FERTILIZER AT A RATE OF 678 LBS./ACRE UNLESS TESTING HAS BEEN PERFORMED.
SEEDING SEASON DATES: MARCH 15 TO JUNE 1; AUGUST 1 TO OCTOBER 15
APPLY FLEXTERRA FGM (OR EQUIV) ACCORDING TO MANUFACTURER'S SPECIFICATIONS.

* A COMBINATION OF IMPROVED CERTIFIED VARIETIES WITH NO ONE VARIETY EXCEEDING 50% OF THE TOTAL RYEGRASS COMPONENT.
** A COMBINATION OF IMPROVED CERTIFIED VARIETIES WITH NO ONE VARIETY EXCEEDING 50% OF THE TOTAL BLUEGRASS COMPONENT.

PERMANENT SEED MIXTURES ON STEEP SLOPES (SLOPES EXCEEDING 3:1)

SEED TYPE	% BY WEIGHT	PURITY	MAX. WEED SEED
HARD FESCUE (FESTUCA LONGIFOLIA***)	55	97%	0.10%
CREeping REED FESCUE (FESTUCA RUBRA)	35	97%	0.10%
ANNUAL RYEGRASS (LOLIUM MULTIFLORUM)	10	95%	0.10%

APPLY SEED AT A RATE OF 48 LBS./1,000 SQ. Y.
MULCH WITH MULCH CONTROL NETTING OR EROSION CONTROL BLANKETS MUST BE INSTALLED.
APPLY PULVERIZED AGRICULTURAL LIMESTONE AT A RATE OF 2 TONS/ACRE UNLESS TESTING HAS BEEN PERFORMED.
APPLY 10-20-20 ANALYSIS COMMERCIAL FERTILIZER AT A RATE OF 678 LBS./ACRE UNLESS TESTING HAS BEEN PERFORMED.
SEEDING SEASON DATES: MARCH 15 TO JUNE 1; AUGUST 1 TO OCTOBER 15

*** A COMBINATION OF IMPROVED CERTIFIED VARIETIES WITH NO ONE VARIETY EXCEEDING 50% OF THE TOTAL HARD FESCUE COMPONENT.

Proposed Storm Network Pipe Table					
Pipe I.D.	Description	Length	Invert Up	Invert Dn	Slope
P-2	24"RCP	65'	49.20	48.80	0.62%
P-3	24"RCP	87'	49.85	49.40	0.52%
P-4	24"RCP	87'	50.50	50.05	0.52%
P-5	18"RCP	77'	51.40	51.00	0.52%
P-6	18"RCP	105'	52.15	51.60	0.52%
P-7	18"RCP	33'	52.55	52.35	0.60%
P-8	18"RCP	38'	51.10	50.80	0.79%
P-9	18"RCP	110'	51.85	51.30	0.50%
P-10	18"RCP	59'	52.35	52.05	0.51%
P-11	18"RCP	64'	51.90	51.60	0.47%
P-12	18"RCP	59'	51.60	51.30	0.51%
P-13	18"RCP	25'	50.90	50.05	3.42%
P-14	18"RCP	33'	50.90	50.05	2.60%
P-15	18"RCP	28'	50.10	49.40	2.51%
P-16	18"RCP	31'	50.10	49.40	2.26%
P-17	18"RCP	24'	49.10	48.80	1.23%
P-18	18"RCP	127'	51.25	49.30	1.53%
P-20	18"RCP	15'	48.90	48.80	0.68%
P-21	18"RCP	19'	49.60	49.50	0.50%
P-22	18"RCP	19'	49.20	49.30	0.53%

Proposed Storm Network Pipe Table					
Pipe I.D.	Description	Length	Invert Up	Invert Dn	Slope
P-23	18"RCP	28'	48.95	48.80	0.54%
P-24	18"RCP	16'	49.25	49.15	0.64%
P-25	18"RCP	16'	49.55	49.45	0.61%
P-30	18"RCP	9'	46.40	45.95	5.00%
P-32	18"RCP	9'	46.40	45.95	5.00%
P-34	18"RCP	23'	46.10	45.95	0.65%
P-35	18"RCP	23'	46.45	46.30	0.66%
P-36	18"RCP	118'	47.25	46.65	0.51%
P-37	18"RCP	107'	47.90	47.35	0.51%
P-38	18"RCP	77'	48.50	48.10	0.52%
P-39	18"RCP	15'	48.80	48.90	0.67%
P-40	18"RCP	15'	49.20	49.10	0.68%
P-42	18"RCP	190'	48.50	47.55	0.50%
P-43	18"RCP	59'	49.00	48.70	0.50%
P-45	18"RCP	39'	48.33	47.00	3.41%
P-51	18"RCP	19'	47.80	47.70	0.52%
P-52	18"RCP	127'	50.60	48.00	2.05%
P-102	18"RCP	99'	47.95	47.35	0.60%
P-A1	18"RCP	85'	48.50	48.05	0.54%
P-B1	24"RCP	19'	47.15	47.00	0.81%

Proposed Storm Network Pipe Table					
Pipe I.D.	Description	Length	Invert Up	Invert Dn	Slope
P-BASIN B	18"RCP	15'	48.80	48.51	2.00%
P-R1	18"RCP	23'	48.25	48.10	0.65%
P-R2	18"RCP	258'	50.30	48.45	0.72%
P-R3	18"RCP	42'	48.90	48.66	0.57%
P-R4	18"RCP	114'	49.65	49.05	0.53%
P-R5	18"RCP	17'	49.95	49.85	0.60%
P-R6	18"RCP	19'	50.25	50.15	0.53%

Proposed Storm Network Structure Table						
Structure I.D.	Description	Rim/Grate	Pipes (In)	Inverts (In)	Pipes (Out)	Inverts (Out)
EW-1	60 in. x 18 in. x 60 in. CONC. HW	52.75	18" RCP	48.66		
EW-100	84 in. x 18 in. x 60 in. CONC. HW	50.84	24" RCP	47.00		
R-1	60 in. x 60 in. "C" INLET	52.28	18" RCP	48.45	18" RCP	48.25
R-2	24 in. x 45 in. "C" INLET	53.97			18" RCP	50.30
R-3	24 in. x 45 in. "C" INLET	52.99	18" RCP	49.05	18" RCP	48.90
R-4	24 in. x 45 in. "M" INLET	53.00	18" RCP	49.85	18" RCP	49.65
R-5	48 in. dia. CYLINDER MH	53.00	18" RCP	50.15	18" RCP	49.95
R-6	24 in. x 45 in. "M" INLET	53.00			18" RCP	50.25
S-2	60 in. dia. CYLINDER MH	53.24	24" RCP	49.40	18" RCP	49.40
S-3	48 in. dia. CYLINDER MH	54.13	24" RCP	50.05	24" RCP	49.85
S-4	48 in. dia. CYLINDER MH	54.62	18" RCP	51.00	24" RCP	50.50
S-5	24 in. x 45 in. "C" INLET	54.17	18" RCP	51.60	18" RCP	51.40
S-6	24 in. x 45 in. "C" INLET	55.79	18" RCP	52.35	18" RCP	52.15
S-7	24 in. x 45 in. "C" INLET	55.84			18" RCP	52.55
S-8	24 in. x 45 in. "C" INLET	54.71	18" RCP	51.30	18" RCP	51.10
S-9	24 in. x 45 in. "C" INLET	55.52	18" RCP	52.05	18" RCP	51.85
S-10	24 in. x 45 in. "C" INLET	55.46			18" RCP	52.35
S-11	24 in. x 45 in. "C" INLET	54.09			18" RCP	51.90
S-12	24 in. x 45 in. "C" INLET	54.71			18" RCP	51.60
S-13	24 in. x 45 in. "C" INLET	54.08			18" RCP	50.90
S-14	24 in. x 45 in. "C" INLET	54.09			18" RCP	50.90
S-15	24 in. x 45 in. "C" INLET	53.30			18" RCP	50.10

Proposed Storm Network Structure Table						
Structure I.D.	Description	Rim/Grate	Pipes (In)	Inverts (In)	Pipes (Out)	Inverts (Out)
S-16	24 in. x 45 in. "C" INLET	53.30			18" RCP	50.10
S-17	24 in. x 45 in. "C" INLET	54.45	18" RCP	49.30	18" RCP	49.10
S-18	24 in. x 45 in. "C" INLET	56.04				

401 WASHINGTON STREET

CONSHOHOCKEN BOROUGH & WHITEMARSH TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA

SUBMISSION LANDSCAPE PLANS

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LANDSCAPE ARCHITECT

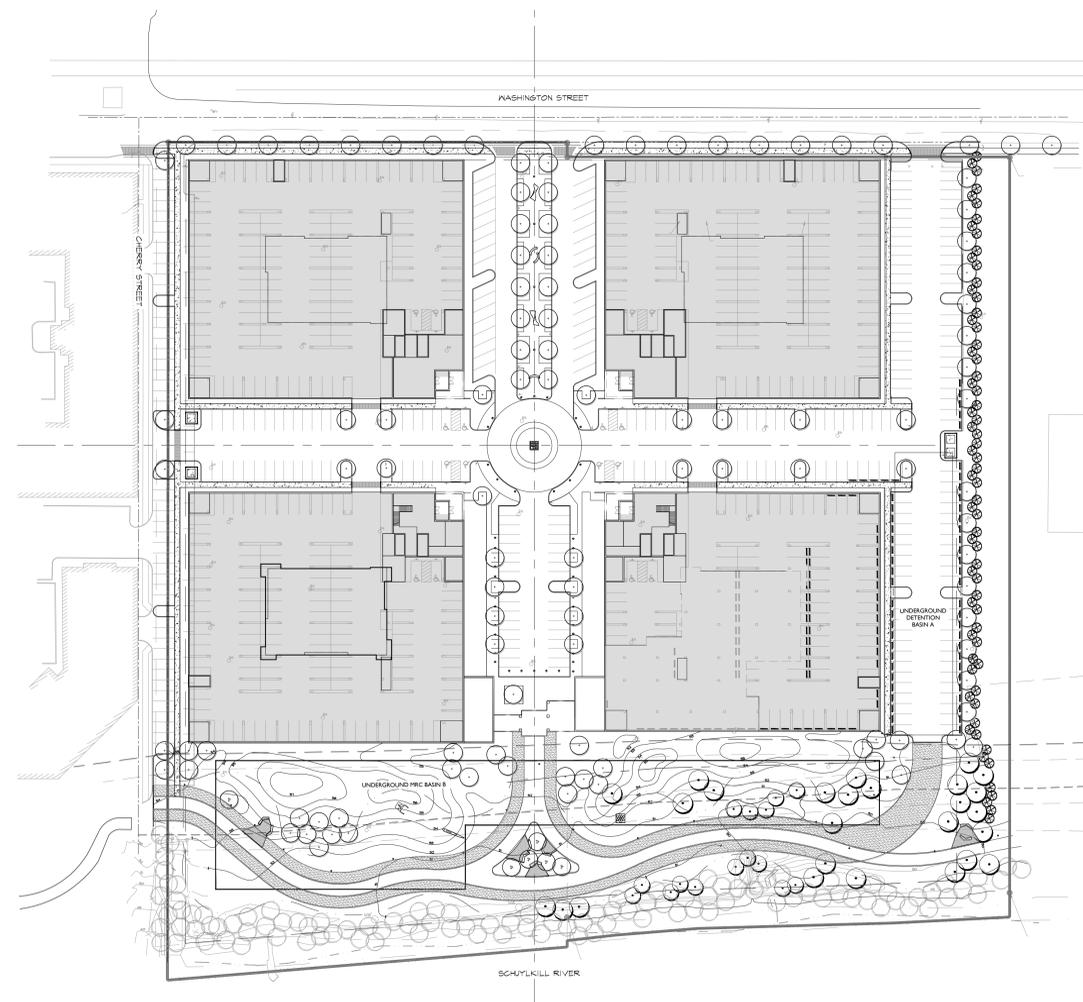
MELILLO | BAUER | CARMAN
LANDSCAPE ARCHITECTURE
200 UNION AVENUE
BRIELLE, NEW JERSEY 08730
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12.03.2021 (Landscape Submission)

Project: KRE Conshohocken (21-167)			
DRAWING LIST	LANDSCAPE SUBMISSION	DATE	STATUS
	Cover Sheet		
L-101	Landscape Plan	12.03.2021	Landscape Submission
L-102	Landscape Plan	12.03.2021	Landscape Submission
L-103	Landscape Plan	12.03.2021	Landscape Submission
L-104	Lighting Plan	12.03.2021	Landscape Submission
L-105	Lighting Plan	12.03.2021	Landscape Submission
L-106	Lighting Plan	12.03.2021	Landscape Submission
L-200	Site Details	12.03.2021	Landscape Submission
L-201	Site Details	12.03.2021	Landscape Submission
L-202	Site Details - Planting Details and Notes	12.03.2021	Landscape Submission

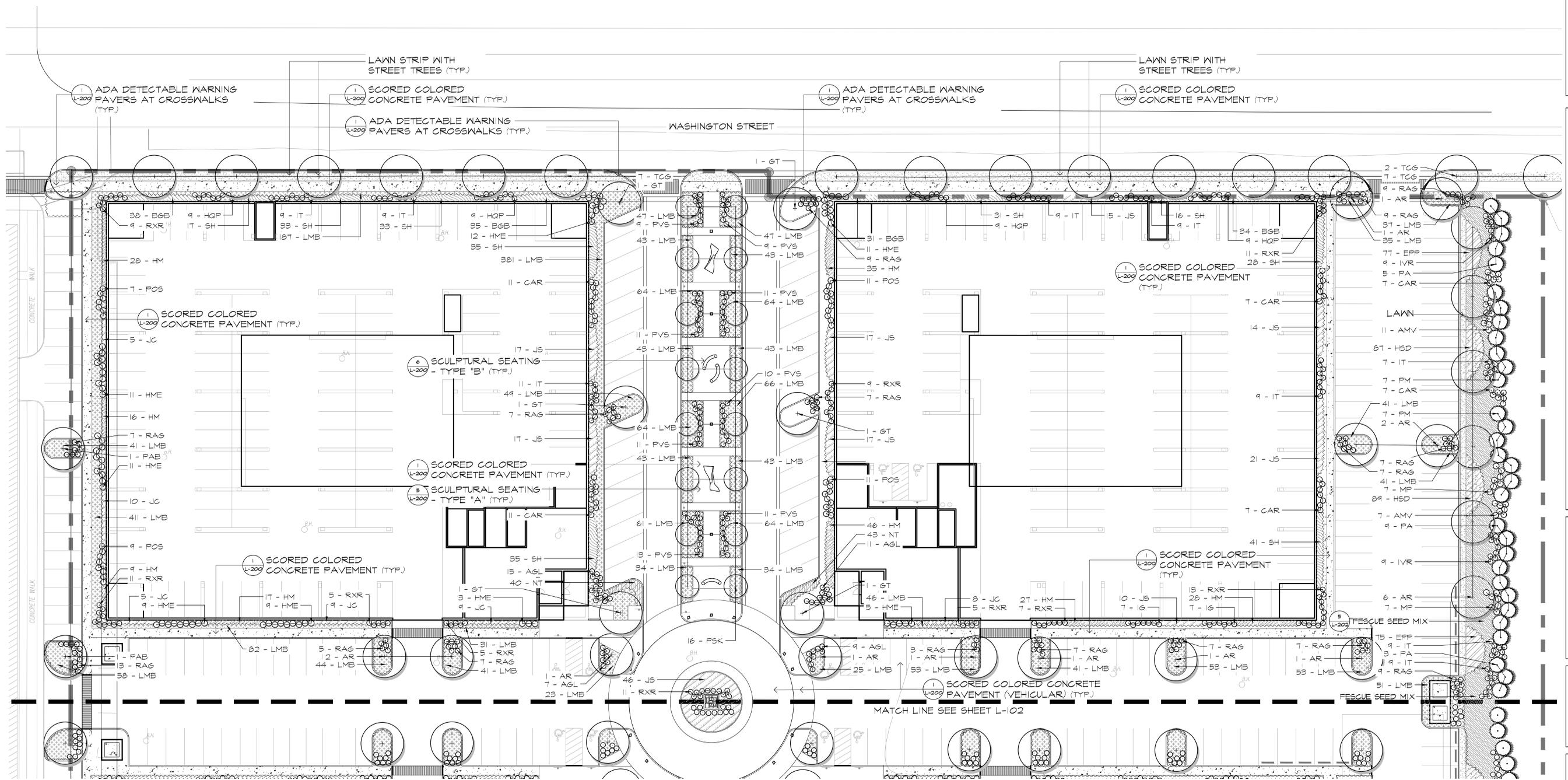
General Notes:

1. THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY BEARING ON THE PERFORMANCE OF THE WORK.
2. ALL GRADING SHALL BE VERIFIED IN THE FIELD BEFORE CONSTRUCTION AND SHALL BE COORDINATED WITH THE LANDSCAPE ARCHITECT AND CIVIL ENGINEER.
3. ALL PAVING SURFACES SHALL BE FLUSH AND MEET SMOOTHLY AND EVENLY. NO WALKS SHALL EXCEED 3% OR A 2% CROSS-PITCH. ALL WALKS TO BE LAID OUT IN THE FIELD UNDER THE DIRECTION OF THE LANDSCAPE ARCHITECT.
4. ALL SITE DETAILS SHALL BE REVIEWED AND SUPPLEMENTED BY A PROFESSIONAL LICENSED STRUCTURAL ENGINEER WHO SHALL SPECIFY ALL STRUCTURAL DATA, FOOTINGS, REINFORCEMENT, HARDWARE, ETC. REQUIRED FOR STRUCTURAL INTEGRITY, SAFETY AND COMPLIANCE WITH LOCAL CODES AND CONDITIONS PRIOR TO CONSTRUCTION.
5. ALL PLANTED AREAS SHALL BE IRRIGATED WITH DRIP IRRIGATION. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS.
6. ALL PLANT MATERIAL/LANDSCAPE MATERIALS SUBSTITUTIONS SHALL BE APPROVED BY THE L.A./OWNERS REPRESENTATIVE.



PLANT SCHEDULE L-101 PLANTING SCHEDULE

TREES	QTY	BOTANICAL / COMMON NAME	CAL	HT.	SPRD.	CONT.	COMMENTS
AR	18	Acer rubrum / Red Maple	3-3.5'	12'-14'	B&B	Full Specimens, Headed to 7'	
GT	6	Gleditsia triacanthos f. inermis / Thornless Honey Locust	3-3.5'	12'-14'	B&B	Full Specimens, Headed to 7'	
PAB	2	Platanus x acerifolia 'Bloodgood' / Bloodgood London Plane Tree	3-3.5'	12'-14'	B&B	Full Specimens, Headed to 7'	
TCG	16	Tilia cordata 'Greenspire' / Greenspire Littleleaf Linden	3-3.5'	13'-15'	B&B	Full Specimens, Headed to 7'	
EVERGREEN TREES	QTY	BOTANICAL / COMMON NAME	CAL	HT.	SPRD.	CONT.	COMMENTS
PA	17	Picea abies / Norway Spruce	-	8'-10'	B&B	Heavy, well formed specimens	
PM	14	Picea mariana / Black Spruce	-	8'-10'	B&B	Heavy, well formed specimens	
ORNAMENTAL TREES	QTY	BOTANICAL / COMMON NAME	CAL	HT.	SPRD.	CONT.	COMMENTS
PSK	16	Prunus serrulata 'Kwanzan' / Kwanzan Japanese Flowering Cherry	2-2.5'	10'-12'	B&B	Full Specimens	
SHRUBS	QTY	BOTANICAL / COMMON NAME	CAL	HT.	SPRD.	CONT.	COMMENTS
AGL	42	Abelia x grandiflora 'Little Richard' / Little Richard Abelia	-	2'-2.5'	-	#5 cont.	Full Plants, 2.5' O.C.
AMV	18	Aronia melanocarpa 'Viking' / Viking Black Chokeberry	-	2.5'-3'	-	#7 cont.	Full Plants, 2.5' O.C.
CAR	50	Clethra alnifolia 'Rosea' / Pink Summersweet	-	2'-2.5'	-	#5 cont.	Full Plants, 2.5' O.C.
HME	71	Hydrangea macrophylla 'Endless Summer' TM / Endless Summer Hydrangea	-	2'-2.5'	-	#5 cont.	Full Plants, 3' O.C.
HOP	36	Hydrangea quercifolia 'Pee Wee' / Pee Wee Oakleaf Hydrangea	-	2'-2.5'	-	#5 cont.	Full Plants, 2.5' O.C.
IG	14	Ilex crenata 'Green Lustre' / Green Lustre Japanese Holly	-	2.5'-3'	-	#7 cont.	Full Plants, 2.5' O.C.
IT	81	Itea virginica 'Sprich' TM / Little Henry Virginia Sweetspire	-	2'-2.5'	-	#5 cont.	Full Plants, 2.5' O.C.
IVR	18	Ilex verticillata 'Red Sprite' / Red Sprite Winterberry	-	2'-2.5'	-	#5 cont.	Full Plants, 2.5' O.C.
MP	14	Morella pennsylvanica / Northern Bayberry	-	2.5'-3'	-	#7 cont.	Full Plants, 3' O.C.
POS	38	Physocarpus opulifolius 'Snowfall' / Snowfall Ninebark	-	2.5'-3'	-	#7 cont.	Full Plants, 2.5' O.C.
PVS	85	Panicum virgatum 'Shenandoah' / Shenandoah Switch Grass	-	2.5'-3'	-	2 Gal.	Full Plants, 24" O.C.
RAG	120	Rhus aromatica 'Gro-Low' / Gro-Low Fragrant Sumac	-	2'-2.5'	-	#5 cont.	Full Plants, 2' O.C.
RXR	86	Rosa x 'Radrazz' / Knock Out Shrub Rose	-	2.5'-3'	-	#7 cont.	Full Plants, 2.5' O.C.
GROUND COVERS	QTY	BOTANICAL / COMMON NAME	CAL	HT.	SPRD.	CONT.	COMMENTS
BGB	138	Bouteloua gracilis 'Blonde Ambition' / Blonde Ambition Blue Grama	-	-	-	2 Gal.	Full Plants, 18" O.C.
EPP	152	Echinacea purpurea 'PowWow Wildberry' / PowWow Wildberry Coneflower	-	-	-	2 Gal.	Full Plants, 18" O.C.
HM	206	Hakonechloa macra / Japanese Forest Grass	-	-	-	2 Gal.	Full Plants, 18" O.C.
HSD	176	Hemerocallis x 'Stella de Oro' / Stella de Oro Daylily	-	-	-	2 Gal.	Full Plants, 18" O.C.
JC	46	Juniperus conferta / Shore Juniper	-	18'-24'	18'-24'	#5 cont.	Full Plants, 30" O.C.
JS	128	Juniperus chinensis var. 'sargentii' / Sargent Juniper	-	18'-24'	18'-24'	#5 cont.	Full Plants, 30" O.C.
LMB	2,627	Liriope muscari 'Big Blue' / Big Blue Lilyturf	-	-	-	1 Gal.	Full Plants, 18" O.C.
NT	83	Nassella tenuissima / Texas Needle Grass	-	-	-	2 Gal.	Full Plants, 18" O.C.
SH	269	Sporobolus heterolepis / Prairie Dropseed	-	-	-	2 Gal.	Full Plants, 18" O.C.

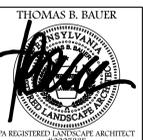


Landscape Plan

401 Washington
Conshohocken Borough & Whitemarsh Township, PA

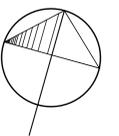
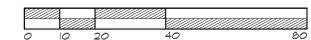


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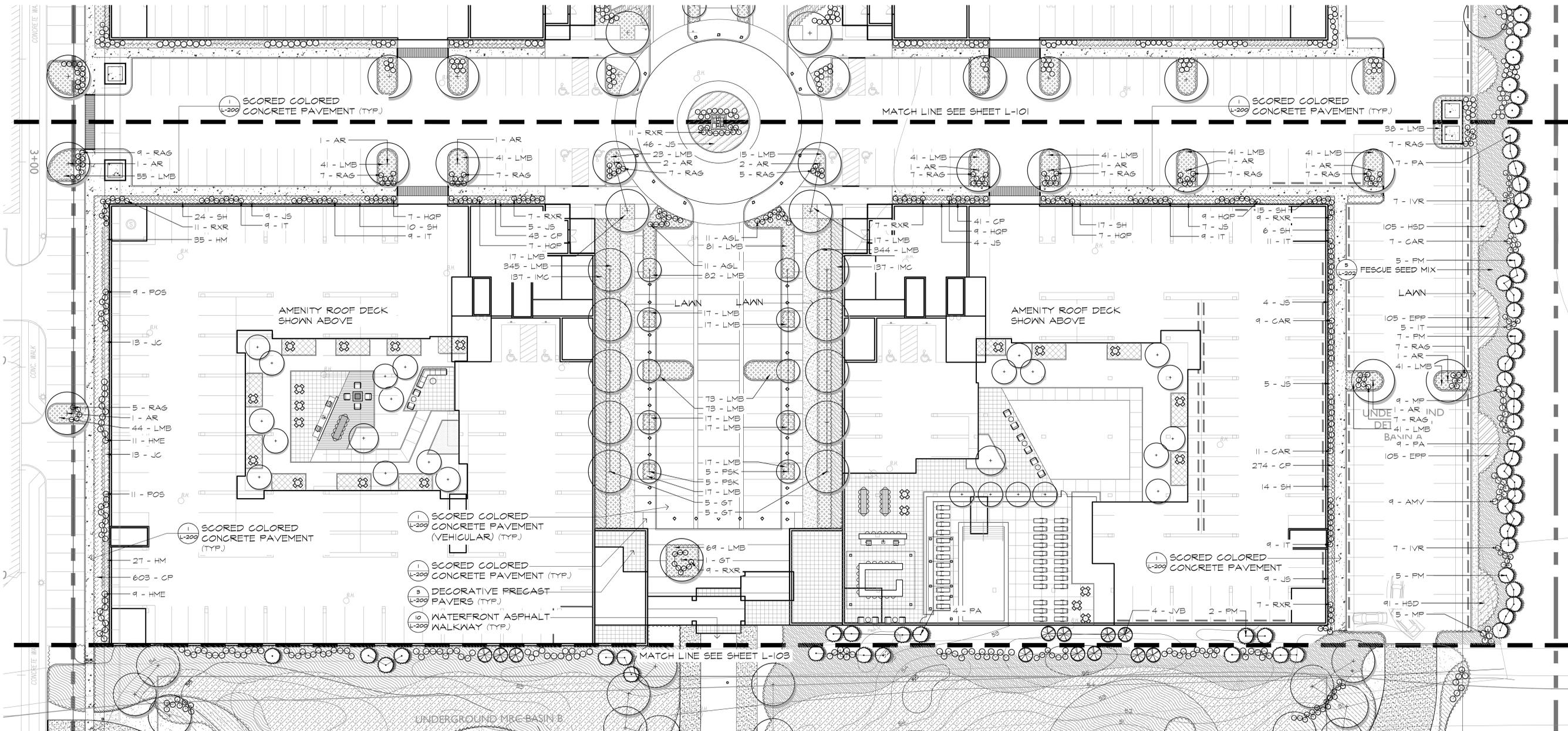
NO. DATE REVISION
SCALE: 1" = 20'-0"
DATE: 12-03-2021 JOB NO.: 21-167

DRAWING NO.
L-101



PLANT SCHEDULE L-102 PLANTING SCHEDULE

TREES	QTY	BOTANICAL / COMMON NAME	CAL	HT.	SPRD.	CONT.	COMMENTS
AR	14	Acer rubrum / Red Maple	3-3.5' cal.	12'-14'	B&B	B&B	Full Specimens, Headed to 7'
GT	11	Gleditsia triacanthos f. inermis / Thornless Honey Locust	3-3.5' cal.	12'-14'	B&B	B&B	Full Specimens, Headed to 7'
EVERGREEN TREES	QTY	BOTANICAL / COMMON NAME	CAL	HT.	SPRD.	CONT.	COMMENTS
JVB	4	Juniperus virginiana 'Brodie' / Eastern Red Cedar 'Brodie'	-	8'-10'	B&B	B&B	Full, uniform specimens, branched to the ground
PA	20	Picea abies / Norway Spruce	-	8'-10'	B&B	B&B	Heavy, well formed specimens
PM	19	Picea mariana / Black Spruce	-	8'-10'	B&B	B&B	Heavy, well formed specimens
ORNAMENTAL TREES	QTY	BOTANICAL / COMMON NAME	CAL	HT.	SPRD.	CONT.	COMMENTS
FSK	10	Prunus serrulata 'Kwanzan' / Kwanzan Japanese Flowering Cherry	2-2.5' cal.	10'-12'	B&B	B&B	Full Specimens
SHRUBS	QTY	BOTANICAL / COMMON NAME	CAL	HT.	SPRD.	CONT.	COMMENTS
AGL	22	Abelia x grandiflora 'Little Richard' / Little Richard Abelia	-	2'-2.5'	-	#5 cont.	Full Plants, 2.5' O.C.
AMV	9	Aronia melanocarpa 'Viking' / Viking Black Chokeberry	-	2.5'-3'	-	#7 cont.	Full Plants, 2.5' O.C.
CAR	27	Clethra alnifolia 'Rosea' / Pink Summersweet	-	2'-2.5'	-	#5 cont.	Full Plants, 2.5' O.C.
HME	20	Hydrangea macrophylla 'Endless Summer' TM / Endless Summer Hydrangea	-	2'-2.5'	-	#5 cont.	Full Plants, 3' O.C.
HQP	39	Hydrangea quercifolia 'Pee Wee' / Pee Wee Oakleaf Hydrangea	-	2'-2.5'	-	#5 cont.	Full Plants, 2.5' O.C.
IT	52	Itea virginica 'Sprich' TM / Little Henry Virginia Sweetspire	-	2'-2.5'	-	#5 cont.	Full Plants, 2.5' O.C.
IVR	14	Ilex verticillata 'Red Sprite' / Red Sprite Winterberry	-	2'-2.5'	-	#5 cont.	Full Plants, 2.5' O.C.
MP	14	Morella pensylvanica / Northern Bayberry	-	2.5'-3'	-	#7 cont.	Full Plants, 3' O.C.
POS	20	Physocarpus opulifolius 'Snowfall' / Snowfall Ninebark	-	2.5'-3'	-	#7 cont.	Full Plants, 2.5' O.C.
RAG	89	Rhus aromatica 'Gro-Low' / Gro-Low Fragrant Sumac	-	2'-2.5'	-	#5 cont.	Full Plants, 2' O.C.
RXR	61	Rosa x 'Radrazz' / Knock Out Shrub Rose	-	2.5'-3'	-	#7 cont.	Full Plants, 2.5' O.C.
SHRUB AREAS	QTY	BOTANICAL / COMMON NAME	CAL	HT.	SPRD.	CONT.	COMMENTS
IMC	274	Ilex x meserveae 'China Girl' TM / China Girl Holly	-	2.5'-3'	-	#7 cont.	Full Plants, 2.5' O.C.
GROUND COVERS	QTY	BOTANICAL / COMMON NAME	CAL	HT.	SPRD.	CONT.	COMMENTS
CP	961	Carex pensylvanica / Pennsylvania Sedge	-	-	-	1 Gal.	Full Plants, 18" O.C.
EPP	210	Echinacea purpurea 'PowWow Wildberry' / PowWow Wildberry Coneflower	-	-	-	2 Gal.	Full Plants, 18" O.C.
HM	62	Hakonechloa macra / Japanese Forest Grass	-	-	-	2 Gal.	Full Plants, 18" O.C.
HSD	196	Hemerocallis x 'Stella de Oro' / Stella de Oro Daylily	-	-	-	2 Gal.	Full Plants, 18" O.C.
JC	25	Juniperus conferta / Shore Juniper	-	-	-	#5 cont.	Full Plants, 30" O.C.
JS	135	Juniperus chinensis var. sargentii / Sargent Juniper	-	18'-24"	18'-24"	#5 cont.	Full Plants, 30" O.C.
LMB	1,706	Liriope muscari 'Big Blue' / Big Blue Lilyturf	-	-	-	1 Gal.	Full Plants, 18" O.C.
SH	86	Sporobolus heterolepis / Prairie Dropseed	-	-	-	2 Gal.	Full Plants, 18" O.C.



Landscape Plan

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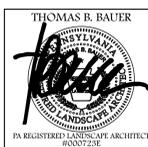
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THOMAS B. BAUER
REGISTERED LANDSCAPE ARCHITECT

NO.	DATE	REVISION
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DATE:	12-03-2021	JOB NO.: 21-167
DRAWING NO.:	L-102	



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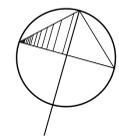
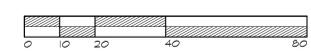
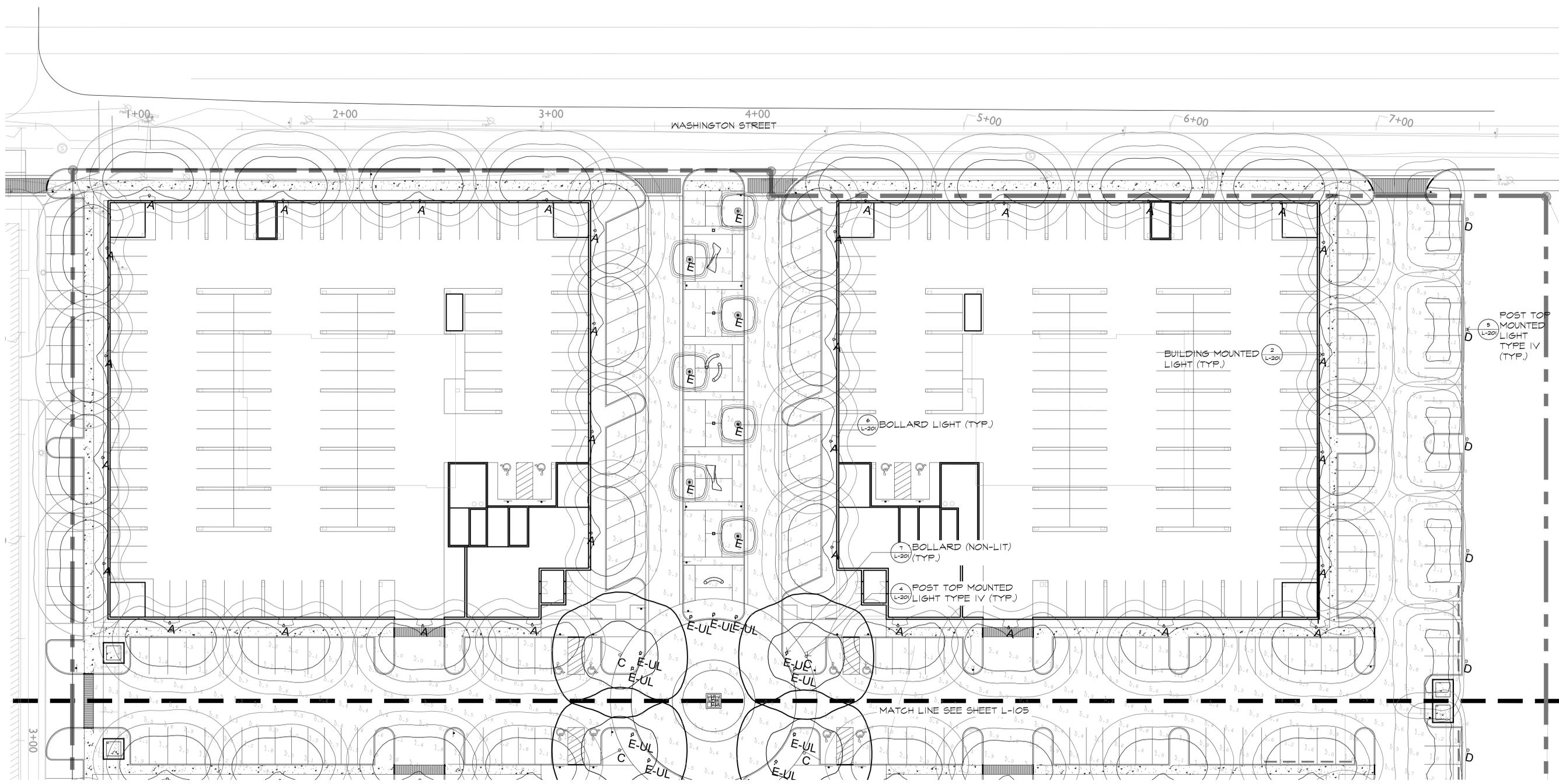
NO.	DATE	REVISION
SCALE: 1" = 20'-0"		
DATE: 12-03-2021	JOB NO.: 21-167	

DRAWING NO.
L-104

OVERALL LIGHTING SCHEDULE

Label	CalcType	Units	Avg	Max	Min	AvgMin	MaxMin
PAVING AREA	Illuminance	Fc	0.29	10.9	0.0	N/A	N/A
ROADWAY	Illuminance	Fc	1.01	11.7	0.2	0.05	0.50

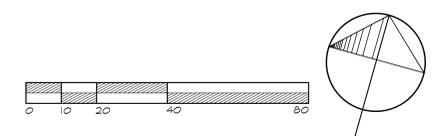
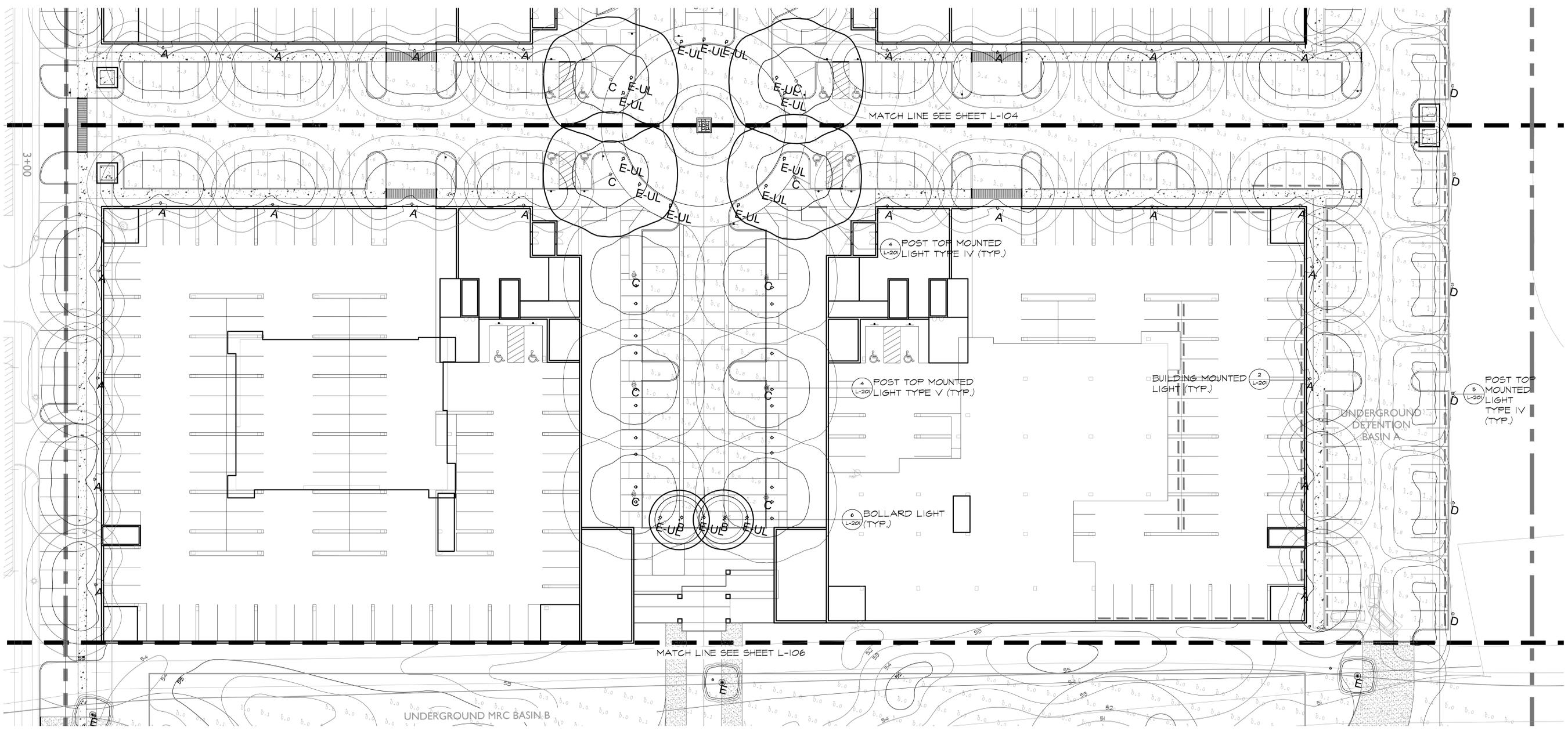
Quantity	Qty	Type	Arrangement	Symbol	Manufacturer	Light Fixture	CCT	Lum. Lumens	LLF	Lum. Watts	Pole / Bracket	Mounting AFG (FT)
48	A	Single		⊙	KIM LIGHTING	UR20-06L-30-308-3-VOLTS-WB-COLOR-R56	3000K	3359	0.880	28.2	WALL MOUNTED @ 13' AFG	13
7	B	Single		⊙	WE-EF USA	115-1780-300-0989-VOLTS-COLOR-R56	3000K	2031	0.880	20	1'3" COLUMN LIGHT	3.6, 10
16	C	Single		⊙	Kim Lighting	FM UR20 24L-25 308 300 VOLTS FM44 COLOR R56	3000K	2079	0.880	25	PR413-4188-FM-COLOR-R56	13, 15
10	D	Single		⊙	Kim Lighting	FM UR20 24L-25 308 400 VOLTS FM44 COLOR R56	3000K	1809	0.880	26	PR413-4188-FM-COLOR-R56	15
22	E	Single		⊙	KIM LIGHTING	PAIR CT NLS-5 12L-020 3K7 44RB-820 COLOR VOLTS R56	3000K	1641	0.880	21.73	LIGHTED IMPACT RATED BOLLARD AT 44" AFG	3.5
16	E-UL	Single		⊙	KIM LIGHTING	PAIR CT NLS-5 12L-020 3K7 44RB-8 COLOR VOLTS R56	3000K	1641	0.010	0	NON LIT IMPACT RATED BOLLARD AT 44" AFG	3.5, 3.6



OVERALL LIGHTING SCHEDULE

Label	CalcType	Units	Avg	Max	Min	AvgMin	MaxMin
PATH AREA	Bumance	Fc	0.29	10.9	0.0	N.A.	N.A.
ROADWAY	Bumance	Fc	1.01	11.7	0.2	5.0	8.50

Qty	Type	Arrangement	Symbol	Manufacturer	Light Fixture	OCF	Lum. Lumens	LPF	Lum. Watts	Post / Bracket	Mounting AFG (FT)
45	A	Single	○	KIM LIGHTING	L802-8L-30-3K3-3-VOLTS-WB-COLOR-R56	300%	3360	0.880	28.2	WALL MOUNTED @ 17' AFG	13'
7	B	Single	●	WE-EF USA	115-1780-300-0449 VOLTS COLOR R56	300%	2031	0.880	20	1' COLLUM LIGHT	3.6, 15
10	C	Single	○	Kim Lighting	FM UR20 24L-25 3K8 5W VOLTS FM44 COLOR R56	300%	2879	0.880	25	PR4134188-FM-COLOR-R56	13, 15
10	D	Single	○	Kim Lighting	FM UR20 24L-25 3K8 4W VOLTS FM44 COLOR R56	300%	1800	0.880	26	PR4134188-FM-COLOR-R56	15
22	E	Single	⊙	KIM LIGHTING	PAIR CT M4-S 12L-020 3K7 44RB-S20 COLOR VOLTS R56	300%	1841	0.880	21.73	LIGHTED IMPACT RATED BOLLARD AT 44" AFG	3.5
16	E-L	Single	⊙	KIM LIGHTING	PAIR CT M4-S 12L-020 3K7 44RB-B COLOR VOLTS R56	300%	1841	0.010	0	NON LIT IMPACT RATED BOLLARD AT 44" AFG	3.5, 3.6



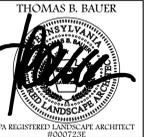


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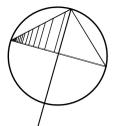
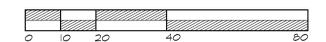
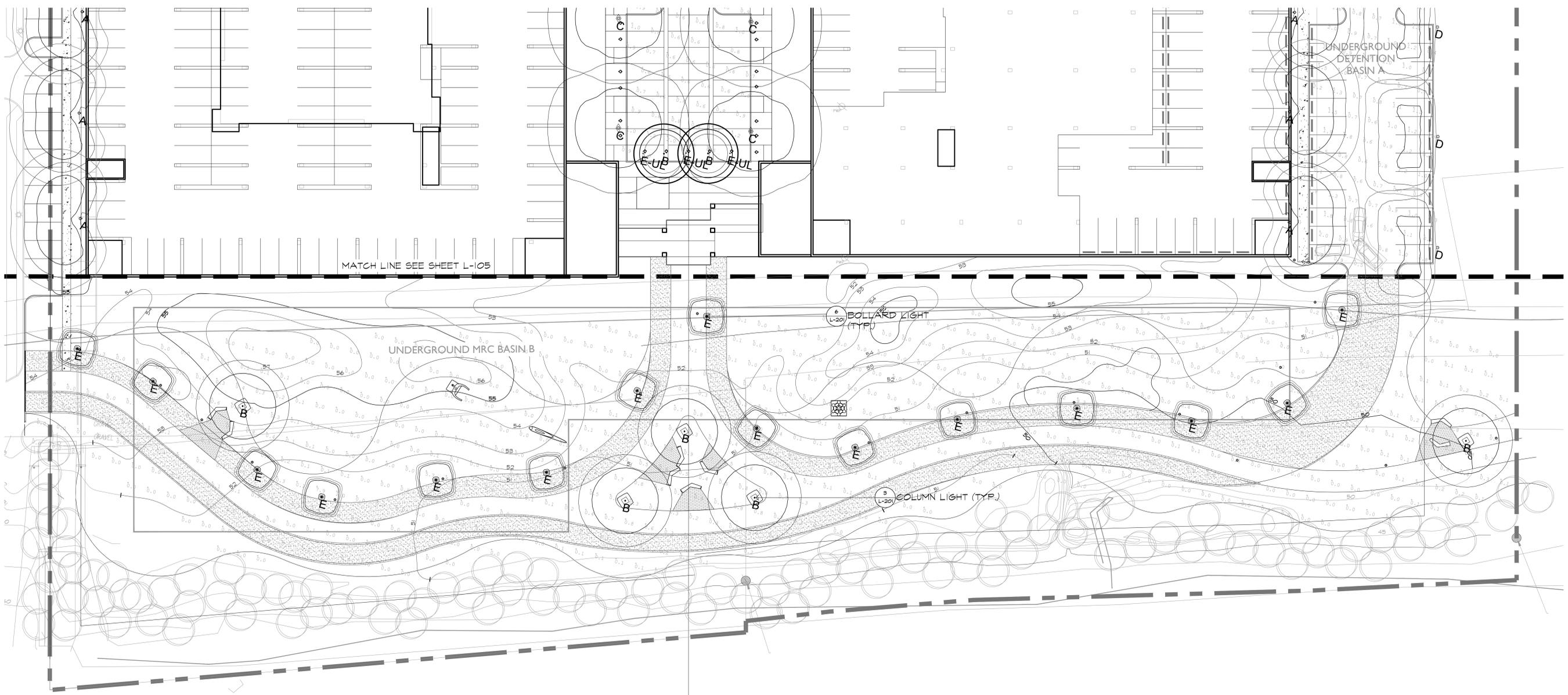
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PA REGISTERED LANDSCAPE ARCHITECT
NO. 211W-00001700

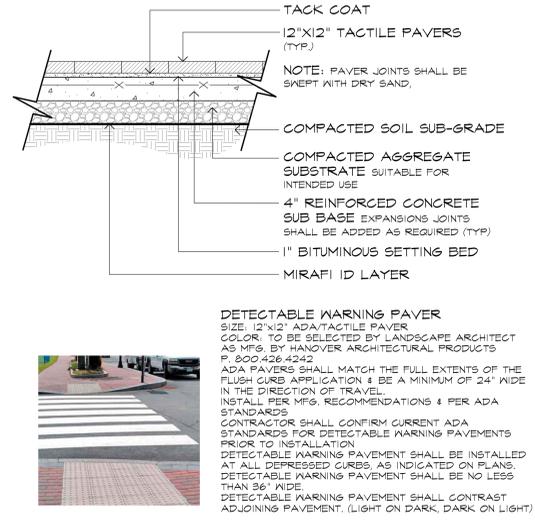
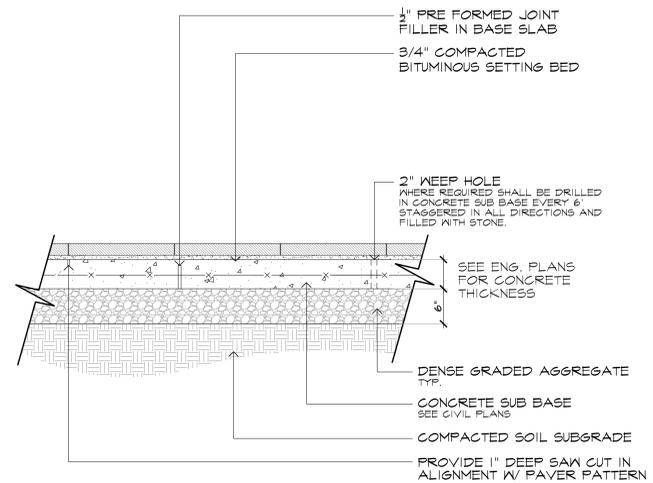
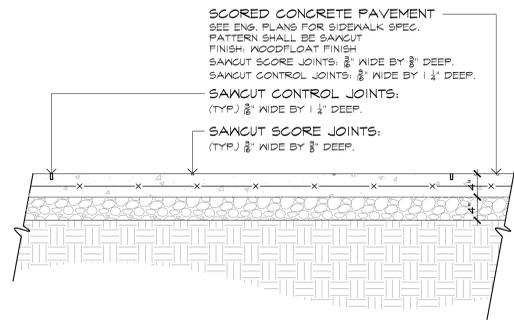
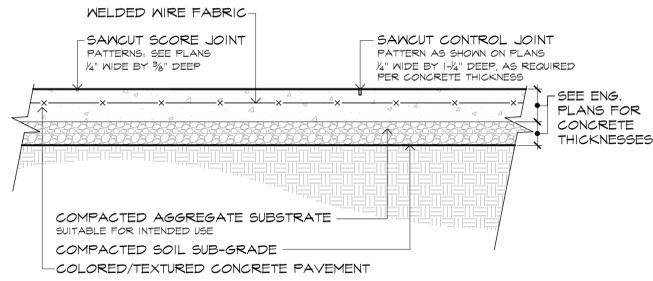
NO.	DATE	REVISION
SCALE: 1" = 20'-0"		
DATE: 12-03-2021	JOB NO.: 211-167	
DRAWING NO.		
L-106		

OVERALL LIGHTING SCHEDULE

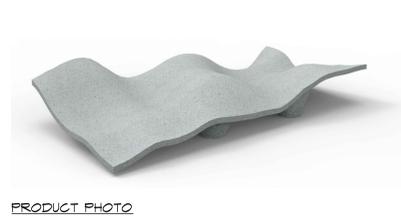
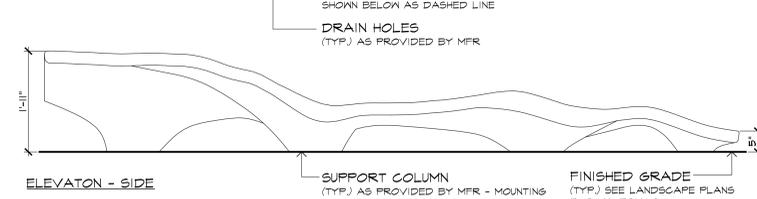
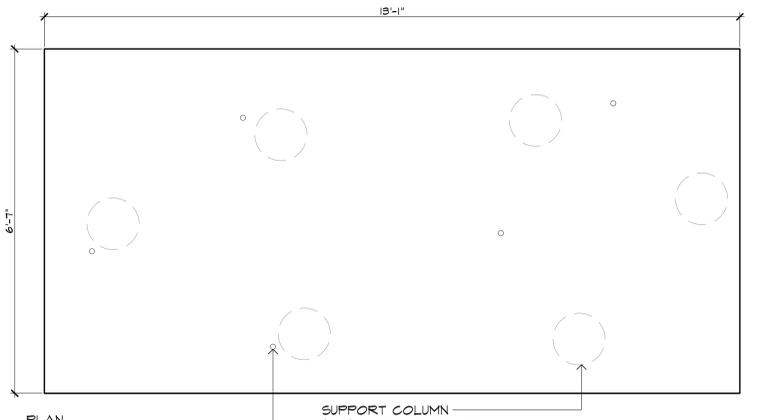
Label	CalcType	Units	Avg	Max	Min	ArgMin	MaxMin
PATH AREA	Illuminance	Fc	0.29	19.9	0.0	N.A.	N.A.
ROADWAY	Illuminance	Fc	1.01	11.7	0.2	0.05	58.90

Qty	Type	Arrangement	Symbol	Manufacturer	Light Fixture	CCT	Lum. Lumens	LPF	Lum. Watts	Pole / Bracket	Mounting AFG (FT)
46	A	Single	⊙	KIM LIGHTING	LR20-46-30-30K-3-VOLTS-W8-COLOR-R56	3000K	3360	0.880	28.2	WALL MOUNTED @ 13' AFG	13
7	B	Single	●	WE-EF USA	115-1780-300-0948 VOLTS COLOR R56	3000K	2031	0.880	20	1" COLUMN LIGHT	3.6, 15
10	C	Single	○	Kim Lighting	FM LR20 24L-25 30K 5W VOLTS FM44 COLOR R56	3000K	2874	0.880	25	PR413-4186-FM-COLOR-R56	13, 15
10	D	Single	○	Kim Lighting	FM LR20 24L-25 30K 6W VOLTS FM44 COLOR R56	3000K	1609	0.880	26	PR413-4186-FM-COLOR-R56	15
22	E	Single	⊙	KIM LIGHTING	PAIR CT NLS 15L-020 3K7 44R8-B20 COLOR VOLTS R56	3000K	1641	0.880	21.73	LIGHTED IMPACT RATED BOLLARD AT 44' AFG	3.5
16	E-UL	Single	⊙	KIM LIGHTING	PAIR CT NLS 15L-020 3K7 44R8-B COLOR VOLTS R56	3000K	1641	0.810	0	NON LIT IMPACT RATED BOLLARD AT 44' AFG	3.5, 3.6

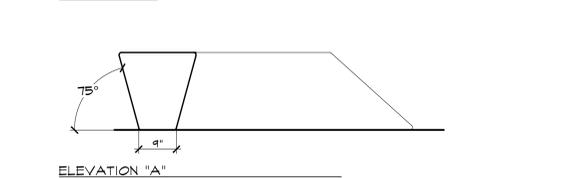
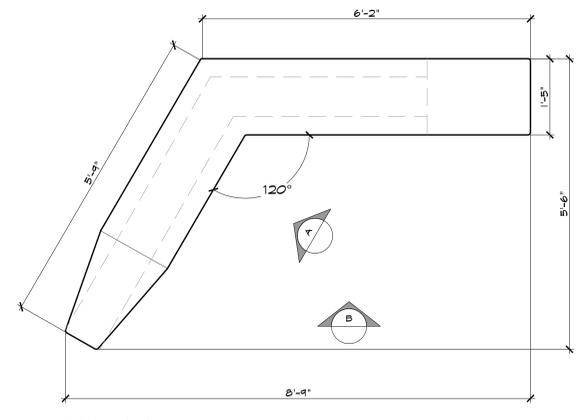




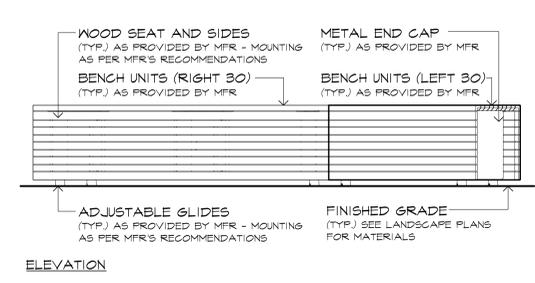
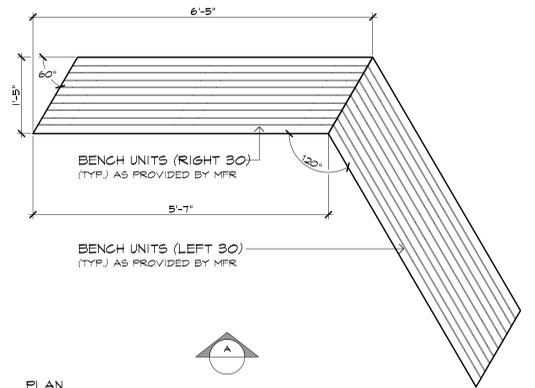
1 DETAIL: COLORED SCORED CONCRETE PAVEMENT 1"=1'-0"
2 DETAIL: COLORED SCORED CONCRETE PAVEMENT 1"=1'-0"
3 DETAIL: DECORATIVE PRECAST CONCRETE PAVERS 1"=1'-0"
4 DETAIL: ADA DECTABLE WARNING PAVERS 1"=1'-0"



SCULPTURAL SEATING - TYPE "A":
MODEL: LUNGO MARE MODULE "A"
MOUNTING: SURFACE
COLOR: TO BE SELECTED BY L.A.
FINISH: TO BE SELECTED BY L.A.
AS MFG. BY ESCOFET / LANDSCAPE FORMS, INC. P. 800.521.2546 | WWW.LANDSCAPEFORMS.COM (OR APPROVED EQUAL)



SCULPTURAL SEATING - TYPE "B":
MODEL: MILENO (ANGLED LEFT AND RIGHT UNITS)
MOUNTING: SURFACE
COLOR: TO BE SELECTED BY L.A.
FINISH: TO BE SELECTED BY L.A.
AS MFG. BY ESCOFET / LANDSCAPE FORMS, INC. P. 800.521.2546 | WWW.LANDSCAPEFORMS.COM (OR APPROVED EQUAL)

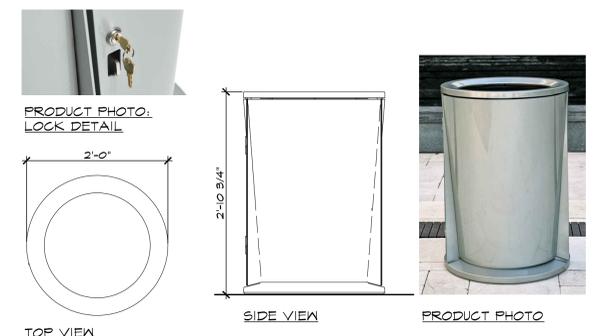


WATERFRONT SEATING:
MODEL: PARALLEL 42 (LEFT 30 AND RIGHT 30 UNITS)
MOUNTING: SURFACE
COLOR: TO BE SELECTED BY L.A.
FINISH: TO BE SELECTED BY L.A.
AS MFG. BY ESCOFET / LANDSCAPE FORMS, INC. P. 800.521.2546 | WWW.LANDSCAPEFORMS.COM (OR APPROVED EQUAL)

5 DETAIL: SCULPTURAL SEATING - TYPE "A" 3/4"=1'-0"

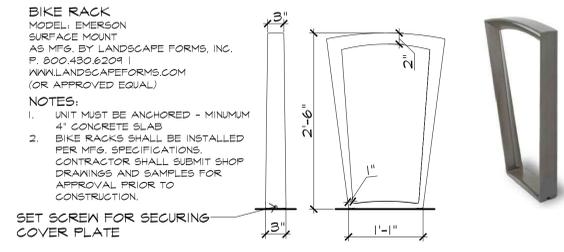
6 DETAIL: SCULPTURAL SEATING - TYPE "B" 3/4"=1'-0"

7 DETAIL: BENCH SEATING AT WATERFRONT WALKWAY 3/4"=1'-0"

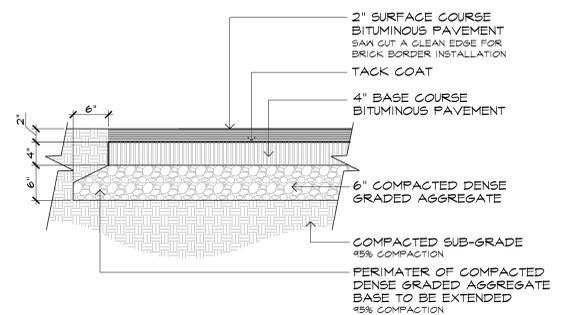


TRASH / RECYCLE RECEPTACLES
MODEL: AUSTIN
COLOR: TO BE SELECTED BY L.A.
MFG. BY: LANDSCAPE FORMS, INC. P. 1 800.521.2546 7800 E. MICHIGAN AVE. KALAMAZOO, MI 49048

8 DETAIL: TRASH / RECYCLE RECEPTACLES 1"=1'-0"



9 DETAIL: BIKE RACK 1"=1'-0"



10 DETAIL: WATERFRONT ASPHALT WALKWAY 1"=1'-0"

Site Details

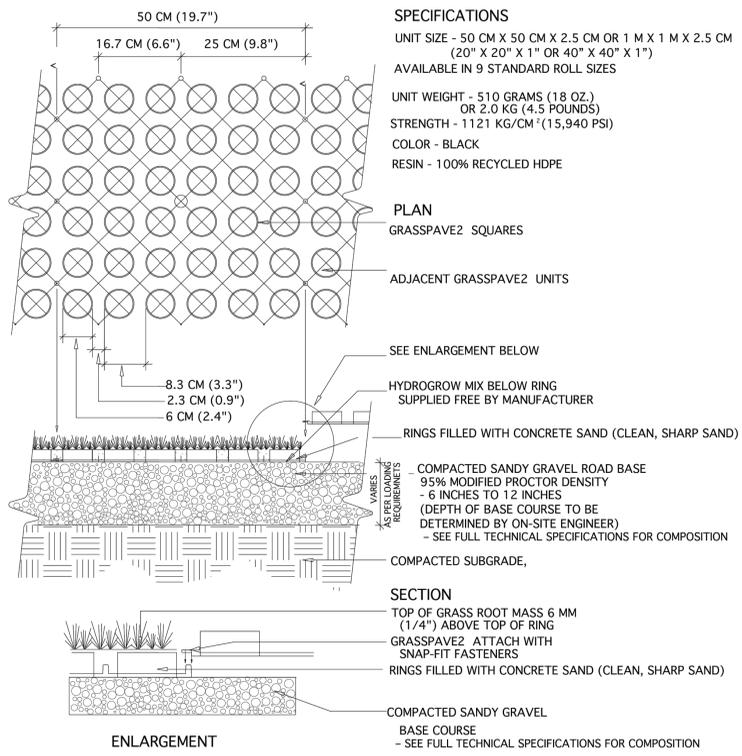
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NO. 07302

NO.	DATE	REVISION
SCALE:	AS SHOWN	
DATE:	12-03-2021	JOB NO.: 21-147

DRAWING NO.
L-200



SPECIFICATIONS
 UNIT SIZE - 50 CM X 50 CM X 2.5 CM OR 1 M X 1 M X 2.5 CM
 (20" X 20" X 1" OR 40" X 40" X 1")
 AVAILABLE IN 9 STANDARD ROLL SIZES
 UNIT WEIGHT - 510 GRAMS (18 OZ.)
 OR 2.0 KG (4.5 POUNDS)
 STRENGTH - 1121 KG/CM² (15,940 PSI)
 COLOR - BLACK
 RESIN - 100% RECYCLED HDPE

PLAN
 GRASSPAVE2 SQUARES

ADJACENT GRASSPAVE2 UNITS

SEE ENLARGEMENT BELOW

HYDROGROW MIX BELOW RING
 SUPPLIED FREE BY MANUFACTURER

RINGS FILLED WITH CONCRETE SAND (CLEAN, SHARP SAND)

COMPACTED SANDY GRAVEL ROAD BASE
 95% MODIFIED PROCTOR DENSITY
 - 6 INCHES TO 12 INCHES
 (DEPTH OF BASE COURSE TO BE
 DETERMINED BY ON-SITE ENGINEER)
 - SEE FULL TECHNICAL SPECIFICATIONS FOR COMPOSITION

COMPACTED SUBGRADE,

SECTION

TOP OF GRASS ROOT MASS 6 MM
 (1/4") ABOVE TOP OF RING

GRASSPAVE2 ATTACH WITH
 SNAP-FIT FASTENERS

RINGS FILLED WITH CONCRETE SAND (CLEAN, SHARP SAND)

COMPACTED SANDY GRAVEL

BASE COURSE
 - SEE FULL TECHNICAL SPECIFICATIONS FOR COMPOSITION

NOTE: GRASS/PLANT TYPES SHALL BE SPECIFIED BY A LANDSCAPE ARCHITECT OR
 LANDSCAPE DESIGNER.

TYPICAL GRASSPAVE2 DETAIL

CHOOSE THIS PRODUCT FOR REINFORCING GRASS WEARING SURFACES

1
 1 OF 1

NOT TO SCALE



NOTE:
 RINGS TO BE FILLED WITH CONCRETE SAND
 & LOAM MIX
 - 80% SAND
 - 20% LOAM
 COMPACTED GRAVEL COMPOSITION
 - 1 PART SAND
 - 2 PARTS STONE
 - STONE TO BE #1 PLUS FINES
 GRASS Pavers TO BE PLANTED WITH FINE FESCUE SOD
 SEE DETAIL 2/L-400 FOR SOD INSTALLATION GUIDELINES

16265 E. 33RD DR., SUITE 20
 AURORA, COLORADO 80011
 800-233-1510 OR 303-233-8383
 FAX: 800-233-1522 OR
 303-233-8282
 www.invisiblestructures.com
 rev. 1/18

1
 L-201
 DETAIL: STABILIZED LAWN
 NOT TO SCALE



(A) BUILDING MOUNTED AREA LIGHT
 MODEL: OURO - UR20 SERIES
 MODEL #: UR20-46L-30-3K8-3-VOLTS-WB-COLOR-R56
 FINISH: (BMT) BLACK MATTE TEXTURED
 TEMPERATURE: 3000K
 MOUNTING TYPE: WALL BRACKET
 MOUNTING HT.: 13' AFS
 AS MFG. BY:
 KIM LIGHTING
 P: 626-968-5666
 WWW.HUBBELL.COM/KIMLIGHTING/
 INSTALL PER MFG. RECOMMENDATIONS
 (OR APPROVED EQUAL)

2
 L-201
 DETAIL: LIGHTING "TYPE "A" - WALL MOUNTED AREA LIGHT
 NOT TO SCALE



(C) POLE MOUNTED AREA LIGHT
 MODEL: OURO - UR20 SERIES
 MODEL #: FM UR20-24L-25-3K8-5W-VOLTS-FM44-COLOR-R56
 FINISH: (BMT) BLACK MATTE TEXTURED
 TEMPERATURE: 3000K
 MOUNTING TYPE: FRA18-4188-FM-COLOR-R56
 MOUNTING HT.: 13' + 15' (SEE PLAN FOR LOCATIONS)
 AS MFG. BY:
 KIM LIGHTING
 P: 626-968-5666
 WWW.HUBBELL.COM/KIMLIGHTING/
 INSTALL PER MFG. RECOMMENDATIONS
 (OR APPROVED EQUAL)

4
 L-201
 DETAIL: LIGHTING "TYPE "C" - POLE MOUNTED AREA LIGHT
 NOT TO SCALE



(E) BOLLARD LIGHT
 MODEL: PATR
 MODEL #: PATR-GT-NU-5-12L-020-3KT-441RB-S20-COLOR-VOLTS-R56
 FINISH: (BMT) BLACK MATTE TEXTURED
 TEMPERATURE: 3000K
 MOUNTING TYPE: IMPACT RATED BOLLARD
 BOLLARD HT.: 44' AFS
 AS MFG. BY:
 KIM LIGHTING
 P: 626-968-5666
 WWW.HUBBELL.COM/KIMLIGHTING/
 INSTALL PER MFG. RECOMMENDATIONS
 (OR APPROVED EQUAL)

6
 L-201
 DETAIL: LIGHTING "TYPE "E" - BOLLARD LIGHT
 NOT TO SCALE



(B) COLUMN LIGHT
 MODEL: LTM 400 - 115-1T80
 MODEL #: 115-1T80-300-0949-VOLTS-COLOR-R56
 FINISH: (RAL9005) BLACK
 TEMPERATURE: 3000K
 MOUNTING TYPE: COLUMN LIGHT 13'
 MOUNTING HT.: 15'
 FIXTURE HT.: 3.6'
 AS MFG. BY:
 KE-EP LIGHTING USA LLC
 P: 724-742-0030
 WWW.KE-EP.COM
 INSTALL PER MFG. RECOMMENDATIONS
 (OR APPROVED EQUAL)

3
 L-201
 DETAIL: LIGHTING TYPE "B" - LIGHT COLUMN
 NOT TO SCALE



(D) POLE MOUNTED AREA LIGHT
 MODEL: OURO - UR20 SERIES
 MODEL #: FM UR20-24L-25-3K8-4W-VOLTS-FM44-COLOR-R56
 FINISH: (BMT) BLACK MATTE TEXTURED
 TEMPERATURE: 3000K
 MOUNTING TYPE: FRA18-4188-FM-COLOR-R56
 MOUNTING HT.: 15'
 AS MFG. BY:
 KIM LIGHTING
 P: 626-968-5666
 WWW.HUBBELL.COM/KIMLIGHTING/
 INSTALL PER MFG. RECOMMENDATIONS
 (OR APPROVED EQUAL)

5
 L-201
 DETAIL: LIGHTING "TYPE "D" - POLE MOUNTED AREA LIGHT
 NOT TO SCALE



(E-UL) BOLLARD - UN-LIT
 MODEL: PATR
 MODEL #: PATR-GT-NU-5-12L-020-3KT-441RB-B-COLOR-VOLTS-R56
 FINISH: (BMT) BLACK MATTE TEXTURED
 TEMPERATURE: N/A
 MOUNTING TYPE: IMPACT RATED BOLLARD
 BOLLARD HT.: 44' AFS
 AS MFG. BY:
 KIM LIGHTING
 P: 626-968-5666
 WWW.HUBBELL.COM/KIMLIGHTING/
 INSTALL PER MFG. RECOMMENDATIONS
 (OR APPROVED EQUAL)

7
 L-201
 DETAIL: LIGHTING "TYPE "E-UL" - BOLLARD (UN-LIT)
 NOT TO SCALE

Site Details

401 Washington
 Conshohocken Borough & Whitemarsh Township, PA

MBC
MELILLO-BAUER-CARMAN
 LANDSCAPE ARCHITECTURE

200 Union Avenue
 Bala, NJ
 08730

295 Newark Avenue
 Jersey City, NJ
 07302

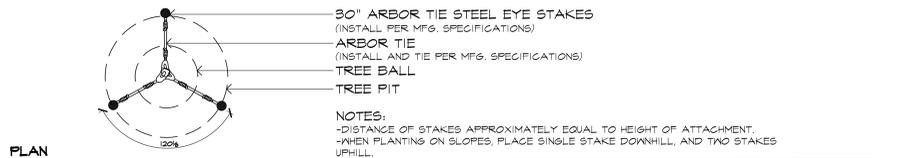
732-528-0664
 www.mbcldesign.com
 NCA No. 2114-90001700

THOMAS B. BAUER
 REGISTERED LANDSCAPE ARCHITECT
 PENNSYLVANIA

PA REGISTERED LANDSCAPE ARCHITECT
 0007238

NO.	DATE	REVISION
SCALE: AS SHOWN		
DATE: 12-03-2021	JOB NO: 21-147	

DRAWING NO.
 L-201



PLAN

30" ARBOR TIE STEEL EYE STAKES (INSTALL PER MFG. SPECIFICATIONS)

ARBOR TIE (INSTALL AND TIE PER MFG. SPECIFICATIONS)

TREE BALL

TREE PIT

NOTES:

- DISTANCE OF STAKES APPROXIMATELY EQUAL TO HEIGHT OF ATTACHMENT.
- WHEN PLANTING ON SLOPES, PLACE SINGLE STAKE DOWNHILL, AND TWO STAKES UPHILL.

PRUNE DAMAGED AND CONFLICTING BRANCHES MAINTAINING NORMAL TREE SHAPE. NEVER CUT CENTRAL TRUNK OR LEADER AND DO NOT REMOVE THE TERMINAL BUDS OF BRANCHES THAT EXTEND TO THE EDGE OF THE CROWN.

ARBOR TIE

TREE WRAP - WRAP TREE WITH BREATHABLE FABRIC FROM TRUNK FLARE TO THE FIRST BRANCH. SECURE WITH BIO-DEGRADABLE TAPE

THE TRUNK FLARE OF EACH TREE SHALL BE VISIBLE AT THE TOP OF THE ROOT BALL. IF NURSERY GRADE IS ABOVE THE FLARE THE CONTRACTOR SHALL CAREFULLY EXCAVATE THE TOP OF THE ROOT BALL TO EXPOSE THE TRUNK FLARE. TREES WHOSE TRUNK FLARE IS NOT VISIBLE SHALL BE REJECTED. DO NOT COVER THE TOP OF THE ROOT BALL WITH SOIL.

REMOVE ALL ROPE FROM TRUNK AND TOP OF BALL. REMOVE BURLAP FROM THE TOP (HALF) 1/2 OF THE ROOT BALL. WHEN A WIRE BASKET IS PRESENT THE WIRE BASKET SHALL BE REMOVED FROM THE TOP HALF OF THE ROOT BALL OR AS MUCH AS POSSIBLE TO PRESERVE THE INTEGRITY OF THE ROOT BALL.

3" SHREDDED HARDWOOD BARK MULCH, UNIFORMLY SPREAD. MULCH SHALL NOT BE IN CONTACT WITH THE TRUNK OF THE TREE

3" SAUCER RIM

30" ARBOR TIE STEEL EYE STAKE, 3 PER TREE (INSTALL PER MFG. SPECIFICATIONS)

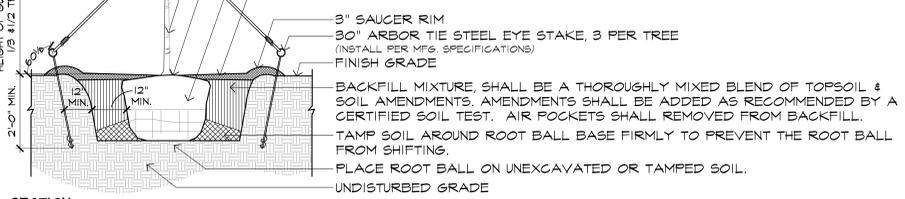
FINISH GRADE

BACKFILL MIXTURE, SHALL BE A THOROUGHLY MIXED BLEND OF TOPSOIL & SOIL AMENDMENTS. AMENDMENTS SHALL BE ADDED AS RECOMMENDED BY A CERTIFIED SOIL TEST. AIR POCKETS SHALL REMOVED FROM BACKFILL.

TAMP SOIL AROUND ROOT BALL BASE FIRMLY TO PREVENT THE ROOT BALL FROM SHIFTING.

PLACE ROOT BALL ON UNEXCAVATED OR TAMPED SOIL.

UNDISTURBED GRADE

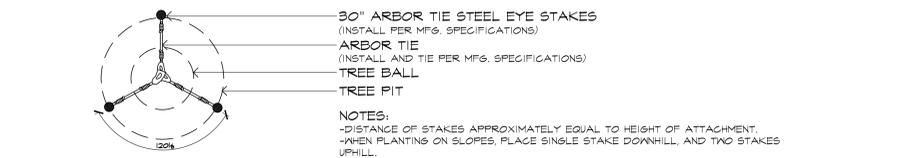


SECTION

NOTES:

- CONTRACTOR SHALL PARTIALLY FILL WITH WATER A REPRESENTATIVE NUMBER OF PITS IN EACH AREA OF THE PROJECT PRIOR TO PLANTING TO DETERMINE IF THERE IS ADEQUATE PERCOLATION. IF PIT DOESN'T PERCOLATE, MEASURES MUST BE TAKEN TO ASSURE PROPER DRAINAGE BEFORE PLANTING.
- CONTRACTOR SHALL REMOVE STAKING, GUYING AND WRAP AT END OF GUARANTEE PERIOD. ALL PLANTING MUST BE GUARANTEED FOR ONE FULL GROWING SEASON FROM THE TIME OF FINAL ACCEPTANCE BY THE OWNER OR GOVERNING AUTHORITY.
- ON ALL TALL PLANTINGS THE CONTRACTOR SHALL WRAP THE TREES SPECIFIED BY THE LANDSCAPE ARCHITECT (ACER spp.) FROM THE TRUNK FLARE TO THE FIRST BRANCH. TREE WRAP SHALL BE REMOVED BY APRIL 1. TREE WRAP SHALL BE BREATHABLE AND AS APPROVED BY THE LANDSCAPE ARCHITECT.
- TREE WRAP SHALL BE INSTALLED AT THE TIME OF PLANTING AND BE REMOVED AS DIRECTED BY THE LANDSCAPE ARCHITECT.
- TREE WRAP SHALL BE REMOVED NO LATER THAN 12 MONTHS AFTER PLANTING.
- TREES WHOSE NORTH ORIENTATION IS NOT CHANGED FROM THE NURSERY DO NOT NEED TO BE WRAPPED UNLESS OTHERWISE DIRECTED BY THE LANDSCAPE ARCHITECT.
- GUYS ON MULTI-STEM TREES TO BE MADE ON HEAVIEST BRANCHES OF PLANT.

1 -202 **DETAIL: 3" CALIPER OR MORE DECIDUOUS TREE PLANTING** NOT TO SCALE



PLAN

30" ARBOR TIE STEEL EYE STAKES (INSTALL PER MFG. SPECIFICATIONS)

ARBOR TIE (INSTALL AND TIE PER MFG. SPECIFICATIONS)

TREE BALL

TREE PIT

NOTES:

- DISTANCE OF STAKES APPROXIMATELY EQUAL TO HEIGHT OF ATTACHMENT.
- WHEN PLANTING ON SLOPES, PLACE SINGLE STAKE DOWNHILL, AND TWO STAKES UPHILL.

PRUNE DAMAGED AND CONFLICTING BRANCHES MAINTAINING NORMAL TREE SHAPE. NEVER CUT CENTRAL TRUNK OR LEADER AND DO NOT REMOVE THE TERMINAL BUDS OF BRANCHES THAT EXTEND TO THE EDGE OF THE CROWN.

ARBOR TIE

TREE WRAP - WRAP TREE WITH BREATHABLE FABRIC FROM TRUNK FLARE TO THE FIRST BRANCH. SECURE WITH BIO-DEGRADABLE TAPE

THE TRUNK FLARE OF EACH TREE SHALL BE VISIBLE AT THE TOP OF THE ROOT BALL. IF NURSERY GRADE IS ABOVE THE FLARE THE CONTRACTOR SHALL CAREFULLY EXCAVATE THE TOP OF THE ROOT BALL TO EXPOSE THE TRUNK FLARE. TREES WHOSE TRUNK FLARE IS NOT VISIBLE SHALL BE REJECTED. DO NOT COVER THE TOP OF THE ROOT BALL WITH SOIL.

REMOVE ALL ROPE FROM TRUNK AND TOP OF BALL. REMOVE BURLAP FROM THE TOP (HALF) 1/2 OF THE ROOT BALL. WHEN A WIRE BASKET IS PRESENT THE WIRE BASKET SHALL BE REMOVED FROM THE TOP HALF OF THE ROOT BALL OR AS MUCH AS POSSIBLE TO PRESERVE THE INTEGRITY OF THE ROOT BALL.

30" ARBOR TIE STEEL EYE STAKE, 3 PER TREE (INSTALL PER MFG. SPECIFICATIONS)

3" SAUCER RIM

3" SHREDDED HARDWOOD BARK MULCH, UNIFORMLY SPREAD. MULCH SHALL NOT BE IN CONTACT WITH THE TRUNK OF THE TREE

BACKFILL MIXTURE, SHALL BE A THOROUGHLY MIXED BLEND OF TOPSOIL & SOIL AMENDMENTS. AMENDMENTS SHALL BE ADDED AS RECOMMENDED BY A CERTIFIED SOIL TEST. AIR POCKETS SHALL REMOVED FROM THE BACKFILL.

TAMP SOIL AROUND ROOT BALL BASE FIRMLY TO PREVENT THE ROOT BALL FROM SHIFTING.

PLACE ROOT BALL ON UNEXCAVATED OR TAMPED SOIL.

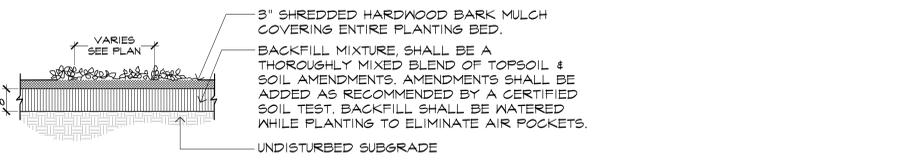
UNDISTURBED GRADE

SECTION

NOTES:

- CONTRACTOR SHALL PARTIALLY FILL WITH WATER A REPRESENTATIVE NUMBER OF PITS IN EACH AREA OF THE PROJECT PRIOR TO PLANTING TO DETERMINE IF THERE IS ADEQUATE PERCOLATION. IF PIT DOESN'T PERCOLATE, MEASURES MUST BE TAKEN TO ASSURE PROPER DRAINAGE BEFORE PLANTING.
- CONTRACTOR SHALL REMOVE STAKING, GUYING AND WRAP AT THE END OF THE GUARANTEE PERIOD.
- ALL PLANTING MUST BE GUARANTEED FOR TWO FULL GROWING SEASONS FROM THE TIME OF FINAL ACCEPTANCE BY TOWNSHIP LANDSCAPE ARCHITECT.

2 -202 **DETAIL: EVERGREEN TREE PLANTING** NOT TO SCALE



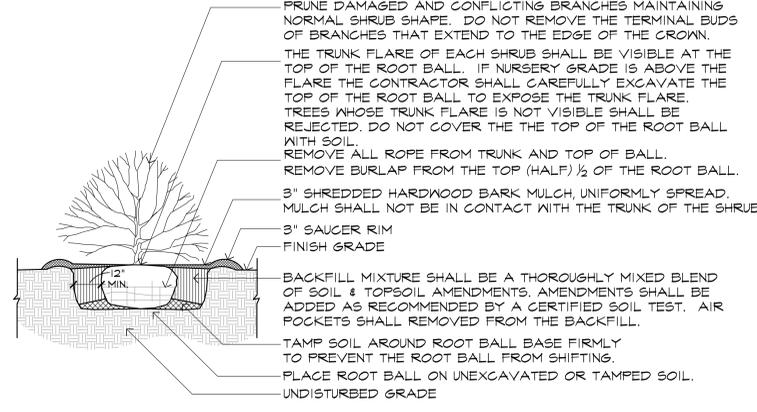
SECTION

3" SHREDDED HARDWOOD BARK MULCH COVERING ENTIRE PLANTING BED.

BACKFILL MIXTURE, SHALL BE A THOROUGHLY MIXED BLEND OF TOPSOIL & SOIL AMENDMENTS. AMENDMENTS SHALL BE ADDED AS RECOMMENDED BY A CERTIFIED SOIL TEST. BACKFILL SHALL BE WATERED WHILE PLANTING TO ELIMINATE AIR POCKETS.

UNDISTURBED SUBGRADE

3 -202 **DETAIL: PERENNIAL PLANTING** NOT TO SCALE



4 -202 **DETAIL: SHRUB PLANTING** NOT TO SCALE

PRUNE DAMAGED AND CONFLICTING BRANCHES MAINTAINING NORMAL SHRUB SHAPE. DO NOT REMOVE THE TERMINAL BUDS OF BRANCHES THAT EXTEND TO THE EDGE OF THE CROWN.

THE TRUNK FLARE OF EACH SHRUB SHALL BE VISIBLE AT THE TOP OF THE ROOT BALL. IF NURSERY GRADE IS ABOVE THE FLARE THE CONTRACTOR SHALL CAREFULLY EXCAVATE THE TOP OF THE ROOT BALL TO EXPOSE THE TRUNK FLARE. TREES WHOSE TRUNK FLARE IS NOT VISIBLE SHALL BE REJECTED. DO NOT COVER THE TOP OF THE ROOT BALL WITH SOIL.

REMOVE ALL ROPE FROM TRUNK AND TOP OF BALL.

3" SHREDDED HARDWOOD BARK MULCH, UNIFORMLY SPREAD. MULCH SHALL NOT BE IN CONTACT WITH THE TRUNK OF THE SHRUB.

3" SAUCER RIM

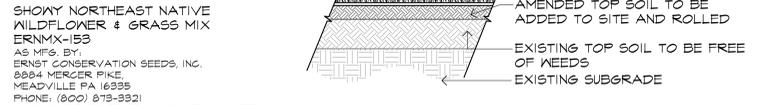
FINISH GRADE

BACKFILL MIXTURE SHALL BE A THOROUGHLY MIXED BLEND OF SOIL & TOPSOIL AMENDMENTS. AMENDMENTS SHALL BE ADDED AS RECOMMENDED BY A CERTIFIED SOIL TEST. AIR POCKETS SHALL REMOVED FROM THE BACKFILL.

TAMP SOIL AROUND ROOT BALL BASE FIRMLY TO PREVENT THE ROOT BALL FROM SHIFTING.

PLACE ROOT BALL ON UNEXCAVATED OR TAMPED SOIL.

UNDISTURBED GRADE



SHOW NORTHEAST NATIVE WILDFLOWER & GRASS MIX ERNMX-123

AS SUPPLIED BY ERNST CONSERVATION SEEDS, INC. 8804 MERGER PIKE, MEADVILLE, PA 16935. PHONE: (800) 878-9321

1. CLEAR THE SITE OF ALL BUILDING MATERIALS (WOOD, CEMENT, BRICK, ETC.) AS WELL AS ANY BURIED STUMPS, ROCKS, STONES OR OTHER DEBRIS THAT IS LARGER THAN 2-3" DIAMETER.

2. APPLY A NONSELECTIVE HERBICIDE IF WEEDS ARE A PROBLEM. FOLLOW MANUFACTURERS RECOMMENDATIONS IN REGARDS TO SEED APPLICATION TIME FRAME.

3. ROUGH GRADE THE ENTIRE AREA TO ELIMINATE ANY DRAINAGE PROBLEMS ON THE PROPERTY. THIS WOULD INCLUDE SLOPING THE GRADE AWAY FROM BUILDING FOUNDATIONS.

5. INITIAL TILLING, TO A DEPTH OF AT LEAST 4", SHOULD BE COMPLETED PRIOR TO ADDING ANY TOPSOIL OR SOIL AMENDMENTS. TILLING SHALL BE PERFORMED TO ALLEVIATE SOIL COMPACTION, PERMIT BONDING OF TOPSOIL TO THE SUBSOIL, AND IMPROVE OVERALL ROOT PENETRATION.

4. ADD TOPSOIL TO ACHIEVE A TOTAL DEPTH OF 4-6" AFTER ROLLING. ALL TOPSOIL, BOTH NEWLY FURNISHED AND STOCKPILED (IF ANY), SHALL BE NATURAL TOPSOIL, SANDY LOAM FREE FROM SUBSOIL, AND OBTAINED FROM AN AREA WHICH HAS NEVER BEEN STRIPPED. TOPSOIL SHALL BE OF UNIFORM QUALITY, FREE FROM HARD GLOBS, STIFF CLAY, HARD PAN, STONES LARGER THAN 1/2", LIME CEMENT, ASHES, SLAG, CONCRETE, TAR RESIDUES, TARRIED PAPER, BOARDS, CHIPS, STICKS OR ANY OTHER UNDESIRABLE MATERIAL. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST. TOPSOIL SHALL NOT BE PLACED WHILE FROZEN OR EXCESSIVELY WET THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEED BED PREPARATION.

5. TOP SOIL SHALL BE TESTED BY CERTIFIED SOIL TESTING LABORATORY. TOPSOIL TEST RESULTS SHALL INCLUDE RECOMMENDATIONS FOR TOPSOIL AMENDMENTS AND FERTILIZER RATES IN ORDER TO ENSURE A PROPER GROWTH MEDIUM FOR SEED MIX OR SOD.

7. FINISH GRADE THE ENTIRE SITE ACCORDING TO GRADING PLANS AND ROLL THE AREAS WITH LAWN ROLLER 1/8" FULL OF WATER TO REVEAL LOW SPOTS THAT SHOULD BE FILLED TO MATCH SURROUNDING GRADE. IF TIME PERMITS ALLOW THE AREA TO SETTLE FURTHER BY APPLYING IRRIGATION WATER.

NOTES:

- FINAL LIMITS OF SEEDED ZONES TO BE LAID OUT IN THE FIELD UNDER THE DIRECTION OF THE PROJECT LANDSCAPE ARCHITECT.
- CONTRACTOR SHALL SUBMIT SEED SPECIFICATION TO LANDSCAPE ARCHITECT FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
- INSTALL PER MFG. RECOMMENDATIONS.
- CONTRACTOR SHALL CONTACT SEED SUPPLIER PRIOR TO APPLICATION TO VERIFY APPROPRIATE APPLICATION TIMING FOR THE SPECIFIED SEED MIX PER SEASONAL CONDITIONS. GENERAL SEEDING PERIOD IS AUGUST 21ST TILL SEPTEMBER 21ST.
- IRRIGATION/SUPPLEMENTAL WATER SHALL BE PROVIDED AS NEEDED PRIOR TO INSTALLATION.
- ALL SEEDED AREAS MUST BE KEPT CONSTANTLY MOIST TO PROMOTE GERMINATION.
- ALL AREAS THAT HAVE BEEN DISTURBED DURING CONSTRUCTION SHALL BE SEEDED OR SODDED TO REESTABLISH PLANT MATERIAL.

6 -202 **DETAIL: SEED MIX & INSTALLATION** NOT TO SCALE

LAWN

ATHLETIC FIELD MIX

30.0% FESTUCA ARUNDINACEA, FAWN (TALL FESCUE, FAWN)

30.0% LOLIUM PERENNE, CONFETTI III (PERENNIAL RYEGRASS, CONFETTI III) (TURF TYPE)

15.0% POA PRATENSIS, SELWAY (KENTUCKY BLUEGRASS, SELWAY)

15.0% POA PRATENSIS, APPALACHIAN (KENTUCKY BLUEGRASS, APPALACHIAN)

10.0% LOLIUM MULTIFLORUM (ANNUAL RYEGRASS)

ITEM NUMBER: ERNMX-106

HEIGHT: 1.0 - 4.0 FT

SEEDING RATE: 75-150 LB PER ACRE, OR 3-5 LB PER 1,000 SQ FT

MAINTENANCE MOYING: SHALL BE MAINTAINED AS TURF GRASS LAWN.

AS SUPPLIED BY ERNST CONSERVATION SEEDS, INC. 8006 MERGER PIKE, MEADVILLE, PA 16935. 800-878-9321.

5 -202 **DETAIL: SOD / SEED LAWN** NOT TO SCALE

TOPSOIL NOTES:

-TESTING FOR ALL SITE TOPSOIL SHALL BE DONE PRIOR TO PLANTING AND SHALL BE CONDUCTED BY A CERTIFIED SOIL TESTING LABORATORY.

-TOPSOIL TEST RESULTS SHALL INCLUDE RECOMMENDATIONS FOR TOPSOIL AMENDMENTS AND FERTILIZER RATES IN ORDER TO ENSURE A PROPER GROWTH MEDIUM FOR SEED MIX AND SOD.

-TOPSOIL SHALL CONTAIN AT LEAST 3% ORGANIC MATTER DETERMINED BY LOSS ON IGNITION OF MOISTURE FREE SAMPLES. THE ACIDITY RANGE SHALL BE PH 5.0 TO 7.0 INCLUSIVE.

-THE MECHANICAL ANALYSIS OF THE SOIL SHALL BE:

- ALL TOPSOIL, BOTH NEWLY FURNISHED AND STOCKPILED (IF ANY), SHALL BE NATURAL TOPSOIL, SANDY LOAM FREE FROM SUBSOIL, AND OBTAINED FROM AN AREA WHICH HAS NEVER BEEN STRIPPED.
- TOPSOIL SHALL BE OF UNIFORM QUALITY, FREE FROM HARD GLOBS, STIFF CLAY, HARD PAN, STONES LARGER THAN 1/2", LIME, CEMENT, ASHES, SLAG, CONCRETE, TAR RESIDUES, TARRIED PAPER, BOARDS, CHIPS, STICKS OR ANY OTHER UNDESIRABLE MATERIAL.
- SUBMIT RESULTS TO THE ENGINEER AND LANDSCAPE ARCHITECT.

PASSING	RETAINED	PERCENTAGE
1" SCREEN	100%	100%
1/4" SCREEN	1/4" SCREEN (GRAVEL NOT MORE THAN)	3%
1/4" SCREEN	#100 USS SIEVE (COARSE, MEDIUM & FINE SAND)	40% - 60%
#100 USS SIEVE	(VERY FINE SAND, SILT AND CLAY IN EQUAL PROPORTION)	40% - 60%

IRRIGATION NOTES:

- ALL PLANTED AREAS AND LAWN SHALL BE IRRIGATED. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS PROVIDING IRRIGATION LAYOUT DETAILS ETC. PRIOR TO CONSTRUCTION.
- PLANTER WALLS SHALL BE SLEEVED TO MINIMIZE PENETRATIONS THROUGH PLANTER BOTTOMS FOR IRRIGATION LINES.
- IRRIGATION LINES SHALL BE RUN WITHIN PLANTING AREAS.
- IRRIGATION REQUIREMENTS - NEP PLANS SHALL INCLUDE A 1 INCH IRRIGATION EXCLUSIVE WATER METER AND A 1 INCH REDUCED-PRESSURE BACK FLOW PREVENTION DEVICE WITH A 1 INCH ISOLATION SHUT-OFF IMMEDIATELY DOWNSTREAM OF THE BACKFLOW PREVENTER AND A 1 INCH DRAIN IN THE PIPE TO REMOVE WATER IN THE LINE.
- THE IRRIGATION SYSTEM WILL REQUIRE 35 PSI DYNAMIC PRESSURE AT A MAXIMUM FLOW RATE OF 30-GPM AT THE IRRIGATION CONTRACTORS POINT OF CONNECTION OUTSIDE OF THE BUILDING AT THE STREETSCAPE LEVEL.
- THE POINT OF CONNECTION SHALL BE A COPPER PIPE STUBBED OUT OF THE BUILDING INTO THE PLANTING MEDIA ONE SUB OUT SHALL BE PROVIDED WITH MALE PIPE THREADS. THIS ALLOWS THE IRRIGATION CONTRACTOR TO THREAD A GATE VALVE TO THE COPPER PIPE OUTSIDE OF THE BUILDING. A WATERIZATION POINT SHALL BE INSTALLED BY THE IRRIGATION CONTRACTOR IMMEDIATELY DOWNSTREAM OF THE COPPER STUB.
- A DEDICATED 10 AMP 120-VOLT CIRCUIT WILL BE REQUIRED TO OPERATE THE IRRIGATION CONTROLLER. THE IRRIGATION CONTROLLER WILL NEED TO BE INSTALLED WITH A MECHANICAL ROOM AN APPROXIMATELY 10 INCH X 18 INCH SQUARE WALL SPACE IS REQUIRED AND NEEDS TO BE PROPERLY GROUNDED. A 15 INCH ELECTRICAL CONDUIT TO BE USED FOR THE 24-VOLT IRRIGATION CONTROL WIRING WILL BE NEEDED TO BE ROUTED FROM THE IRRIGATION CONTROLLER AND STUBBED OUT OF THE BUILDING TO THE LOCATION OF THE WATER SUPPLY STUB OUT AT THE STREETSCAPE.

FESCUE SEED MIX

30.0% FESTUCA RUBRA (CREEPING RED FESCUE)

25.0% POA PRATENSIS, SELWAY (KENTUCKY BLUEGRASS, SELWAY)

25.0% POA PRATENSIS, APPALACHIAN (KENTUCKY BLUEGRASS, APPALACHIAN)

10.0% LOLIUM MULTIFLORUM (ANNUAL RYEGRASS)

10.0% LOLIUM PERENNE, CONFETTI III (PERENNIAL RYEGRASS, CONFETTI III) (TURF TYPE)

NOTES:

- SEEDING RATE: 100-200 LBS/ACRE
- RECOMMENDED SEEDING PERIOD: MARCH 15 TO JUNE 1/ AUGUST 1 TO OCTOBER 15
- MAINTENANCE MOYING: ANNUALLY IN DECEMBER.
- AS SUPPLIED BY ERNST CONSERVATION SEEDS, INC. 8006 MERGER PIKE, MEADVILLE, PA 16935. 800-878-9321.
- IF FESCUE SEED AREAS DO NOT THRIVE WITHIN 2 YEARS AN ALTERNATIVE GROUNDCOVER PLANTING WILL BE PROVIDED.

SEED MIX 123:

SEASONALLY FLOODED WILDLIFE FOOD MIX:

21.5% PANICUM CLANDESTINUM, TIOGA (DEERTONGUE, TIOGA)

20.0% ELYMUS VIRGINICUS, MADISON-NY ECOTYPE (VIRGINIA WILDRYE, MADISON-NY ECOTYPE)

16.6% ANDROPOGON GERARDII, NIAGARA (BIG BLUESTEM, NIAGARA)

15.0% ECHINOCHLOA CRUSSALLI VAR. FRUMENTACEA (JAPANESE MILLET)

10.0% CAREX VULPINOIDEA, PA ECOTYPE (FOX SEDGE, PA ECOTYPE)

8.0% PANICUM VIRGATUM, LAMONT'S (SAITCHGRASS, LAMONT'S)

4.0% CHAMAECRISTA FASCGULATA, PA ECOTYPE (PARTRIDGE PEA, PA ECOTYPE)

1.8% VERBENA HASTATA, PA ECOTYPE (BLUE VERVAIN, PA ECOTYPE)

1.0% HELIOPSIS HELIANTHODES, PA ECOTYPE (OXEYE SUNFLOWER, PA ECOTYPE)

1.0% JUNCUS EFFUSUS (SOFT RUSH)

0.8% AGROSTIS PERENNANS, ALBANY PINE BUSHNY ECOTYPE (AUTUMN BENTGRASS, ALBANY PINE BUSHNY ECOTYPE)

0.1% ASCLEPIAS INCARNATA, PA ECOTYPE (SWAMP MILKWEED, PA ECOTYPE)

0.1% ASTER NOVAE-ANGLIAE, PA ECOTYPE (NEW ENGLAND ASTER, PA ECOTYPE)

0.1% EUPATORIUM FISTULOSUM, PA ECOTYPE (JOE PYE WEED, PA ECOTYPE)

0.1% EUPATORIUM PERFORIATUM, PA ECOTYPE (BONSET, PA ECOTYPE)

0.1% MONARDA FISTULOSA, FORT INDIANTOWN GAP-PA ECOTYPE (WILD BERGAMOT, FORT INDIANTOWN GAP-PA ECOTYPE)

0.1% PYCNANTHEMUM TENIFOLIUM (NARROWLEAF MOUNTAINMINT)

ITEM NUMBER: ERNMX-123

PRODUCT CATEGORIES: WET MEADOWS & WETLANDS, WILDLIFE HABITAT & FOOD PLOTS

HEIGHT: 0.5 - 7.0 FT

SEEDING RATE: 20 LB PER ACRE, OR 1/2 LB PER 1,000 SQ FT WITH A COVER CROP. FOR A COVER CROP USE ONE OF THE FOLLOWING: GRAIN RYE (1 SEP TO 30 APR, 30 LBS/ACRE), JAPANESE MILLET (1 MAY TO 31 AUG, 10 LBS/ACRE) OR BARNYARD GRASS (1 MAY TO 31 AUG, 10 LBS/ACRE).

AS SUPPLIED BY ERNSTSEED.COM SALES@ERNSTSEED.COM 1-800-878-9321

SEED MIX 128:

SEASONALLY FLOODED WILDLIFE FOOD MIX:

21.5% PANICUM CLANDESTINUM, TIOGA (DEERTONGUE, TIOGA)

20.0% ELYMUS VIRGINICUS, MADISON-NY ECOTYPE (VIRGINIA WILDRYE, MADISON-NY ECOTYPE)

16.6% ANDROPOGON GERARDII, NIAGARA (BIG BLUESTEM, NIAGARA)

15.0% ECHINOCHLOA CRUSSALLI VAR. FRUMENTACEA (JAPANESE MILLET)

10.0% CAREX VULPINOIDEA, PA ECOTYPE (FOX SEDGE, PA ECOTYPE)

8.0% PANICUM VIRGATUM, LAMONT'S (SAITCHGRASS, LAMONT'S)

4.0% CHAMAECRISTA FASCGULATA, PA ECOTYPE (PARTRIDGE PEA, PA ECOTYPE)

1.8% VERBENA HASTATA, PA ECOTYPE (BLUE VERVAIN, PA ECOTYPE)

1.0% HELIOPSIS HELIANTHODES, PA ECOTYPE (OXEYE SUNFLOWER, PA ECOTYPE)

1.0% JUNCUS EFFUSUS (SOFT RUSH)

0.8% AGROSTIS PERENNANS, ALBANY PINE BUSHNY ECOTYPE (AUTUMN BENTGRASS, ALBANY PINE BUSHNY ECOTYPE)

0.1% ASCLEPIAS INCARNATA, PA ECOTYPE (SWAMP MILKWEED, PA ECOTYPE)

0.1% ASTER NOVAE-ANGLIAE, PA ECOTYPE (NEW ENGLAND ASTER, PA ECOTYPE)

0.1% EUPATORIUM FISTULOSUM, PA ECOTYPE (JOE PYE WEED, PA ECOTYPE)

0.1% EUPATORIUM PERFORIATUM, PA ECOTYPE (BONSET, PA ECOTYPE)

0.1% MONARDA FISTULOSA, FORT INDIANTOWN GAP-PA ECOTYPE (WILD BERGAMOT, FORT INDIANTOWN GAP-PA ECOTYPE)

0.1% PYCNANTHEMUM TENIFOLIUM (NARROWLEAF MOUNTAINMINT)

ITEM NUMBER: ERNMX-128

PRODUCT CATEGORIES: WET MEADOWS & WETLANDS, WILDLIFE HABITAT & FOOD PLOTS

HEIGHT: 0.5 - 7.0 FT

SEEDING RATE: 20 LB PER ACRE WITH A COVER CROP AT 30 LB PER ACRE (DRY SITES - GRAIN OATS, JAN 1-AUG 1, OR, GRAIN RYE, AUG 1-AUG 15, MOIST SITES - GRAIN RYE YEAR-ROUND)

AS SUPPLIED BY ERNSTSEED.COM SALES@ERNSTSEED.COM 1-800-878-9321

SEED MIX 129:

SEASONALLY FLOODED WILDLIFE FOOD MIX:

21.5% PANICUM CLANDESTINUM, TIOGA (DEERTONGUE, TIOGA)

20.0% ELYMUS VIRGINICUS, MADISON-NY ECOTYPE (VIRGINIA WILDRYE, MADISON-NY ECOTYPE)

16.6% ANDROPOGON GERARDII, NIAGARA (BIG BLUESTEM, NIAGARA)

15.0% ECHINOCHLOA CRUSSALLI VAR. FRUMENTACEA (JAPANESE MILLET)

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4.0% CHAMAECRISTA FASCGULATA, PA ECOTYPE (PARTRIDGE PEA, PA ECOTYPE)

1.8% VERBENA HASTATA, PA ECOTYPE (BLUE VERVAIN, PA ECOTYPE)

1.0% HELIOPSIS HELIANTHODES, PA ECOTYPE (OXEYE SUNFLOWER, PA ECOTYPE)

1.0% JUNCUS EFFUSUS (SOFT RUSH)

0.8% AGROSTIS PERENNANS, ALBANY PINE BUSHNY ECOTYPE (AUTUMN BENTGRASS, ALBANY PINE BUSHNY ECOTYPE)

0.1% ASCLEPIAS INCARNATA, PA ECOTYPE (SWAMP MILKWEED, PA ECOTYPE)

0.1% ASTER NOVAE-ANGLIAE, PA ECOTYPE (NEW ENGLAND ASTER, PA ECOTYPE)

0.1% EUPATORIUM FISTULOSUM, PA ECOTYPE (JOE PYE WEED, PA ECOTYPE)

0.1% EUPATORIUM PERFORIATUM, PA ECOTYPE (BONSET, PA ECOTYPE)

0.1% MONARDA FISTULOSA, FORT INDIANTOWN GAP-PA ECOTYPE (WILD BERGAMOT, FORT INDIANTOWN GAP-PA ECOTYPE)

0.1% PYCNANTHEMUM TENIFOLIUM (NARROWLEAF MOUNTAINMINT)

ITEM NUMBER: ERNMX-129

PRODUCT CATEGORIES: WET MEADOWS & WETLANDS, WILDLIFE HABITAT & FOOD PLOTS

HEIGHT: 0.5 - 7.0 FT

SEEDING RATE: 20 LB PER ACRE WITH A COVER CROP AT 30 LB PER ACRE (DRY SITES - GRAIN OATS, JAN 1-AUG 1, OR, GRAIN RYE, AUG 1-AUG 15, MOIST SITES - GRAIN RYE YEAR-ROUND)

AS SUPPLIED BY ERNSTSEED.COM SALES@ERNSTSEED.COM 1-800-878-9321

NOTES:

- FINAL LIMITS OF SEEDED ZONES TO BE LAID OUT IN THE FIELD UNDER THE DIRECTION OF THE PROJECT LANDSCAPE ARCHITECT.
- CONTRACTOR SHALL CONTACT SEED SUPPLIER PRIOR TO APPLICATION TO VERIFY APPROPRIATE APPLICATION TIMING FOR THE SPECIFIED SEED MIX PER SEASONAL CONDITIONS. GENERAL SEEDING PERIOD IS AUGUST 21ST TILL SEPTEMBER 21ST.
- CONTRACTOR SHALL SUBMIT ANTICIPATED SEED APPLICATION/PREPARATION PROCEDURE TO LANDSCAPE ARCHITECT FOR REVIEW AND APPROVAL PRIOR TO SEED APPLICATION/PREPARATION.
- INSTALL PER MFG. RECOMMENDATIONS.
- IRRIGATION/SUPPLEMENTAL WATER SHALL BE PROVIDED TO ESTABLISH SEED MIX AT INSTALLATION.
- ALL SEEDED AREAS MUST BE KEPT CONSTANTLY MOIST TO PROMOTE GERMINATION.
- SEEDED AREAS SHALL BE MOVED AS DESIRED. MOYING SHALL BE DONE ONCE PER YEAR IN DECEMBER.
- SEED MIXES TO BE APPLIED PER MFG. RECOMMENDATIONS.

6 -202 **DETAIL: SEED MIX & INSTALLATION** NOT TO SCALE

PLANT NOTES:

- THE CONTRACTOR SHALL FURNISH QUANTITIES NECESSARY TO COMPLETE THE PLANTING AS SHOWN ON THE PLANTING PLANS.
- ALL PLANTS SHALL BE MEASURED BEFORE PLANTING. NECESSARY PRUNING SHALL BE PERFORMED AFTER THE PLANT IS INSTALLED AND PRIOR TO INSTALLATION. LANDSCAPE ARCHITECT SHALL BE NOTIFIED OF ANY MAJOR PRUNING REQUIREMENTS DUE TO DAMAGE. THE LANDSCAPE ARCHITECT RESERVES THE RIGHT TO REJECT ANY PLANTS THAT ARE DAMAGED, DEFECTIVE, OR UNUSABLE.
- WHEN FORMAL ARRANGEMENTS OR CONSECUTIVE ORDER OF TREES OR SHRUBS IS SHOWN, STOCK SHALL BE SELECTED FOR UNIFORM HEIGHT AND SPREAD AND LABELED BY NUMBER TO ASSURE SYMMETRY IN PLANTING.
- WHEN ALL PLANT MATERIAL HAS BEEN SELECTED AND APPROVED BY THE LANDSCAPE ARCHITECT, THE LANDSCAPE ARCHITECT SHALL BE NOTIFIED IN ORDER TO SCHEDULE HIS NURSERY INSPECTION WITH A MINIMUM OF 3 DAYS ADVANCE NOTICE.
- THE CONTRACTOR SHALL ACCOMPANY THE LANDSCAPE ARCHITECT ON ALL INSPECTIONS.
- THE CONTRACTOR SHALL HAVE SUFFICIENT ALTERNATE CHOICES TO PREVENT LOSS OF TIME IN THE EVENT THAT SPECIFIC PLANT MATERIAL IS UNAVAILABLE.
- ALL TREES MUST BE APPROVED IN THE FIELD BY THE LANDSCAPE ARCHITECT BEFORE DIGGING BEGINS.
- LOCATIONS OF PLANT MATERIAL SHOWN ON PLANS ARE APPROXIMATE. FINAL LOCATIONS WILL VARY FROM PLAN AND SHALL BE DETERMINED IN THE FIELD UNDER THE DIRECTION OF THE LANDSCAPE ARCHITECT.
- CONTRACTOR SHALL PROVIDE PRE-MARKED, COLOR-CODED FLAGS FOR ALL SHADE TREES, EVERGREEN TREES, AND FLOWERING TREES.
- LANDSCAPE ARCHITECT SHALL PLACE THE COLOR-CODED FLAGS TO INDICATE PLANT LOCATIONS.
- CONTRACTOR SHALL PLACE TREES ABOVE GROUND IN ACCORDANCE WITH THE FLAGGED LOCATION. THE LANDSCAPE ARCHITECT MAY REQUEST THE CONTRACTOR TO MOVE TREES OR RELocate THE PLANT MATERIAL AT THIS TIME. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR PRE-DIG TREE PITS.
- UPON FINAL APPROVAL BY THE LANDSCAPE ARCHITECT OF TREE PLACEMENT, CONTRACTOR SHALL PAINT A CIRCLE AROUND THE BALL OF THE TREE. MOVIE TRUCKS AND EXCAVATORS SHALL NOT BE ALLOWED TO ENTER THE CIRCLE.
- ALL PLANTS SHALL BE TYPICAL OF THEIR SPECIES AND VARIETY; HAVE NORMAL GROWTH HABITS; WELL DEVELOPED AND DENSELY FOLIATED; VIGOROUS ROOT SYSTEMS; BE FREE FROM DEFECTS AND INJURIES; AND COMPLY WITH ANY SPECIAL INSTRUCTIONS NOTED WITHIN THE PLANT LIST.
- PLANT MATERIAL SHALL BE PLANTED ON THE DAY OF DELIVERY. IN THE EVENT THIS IS NOT POSSIBLE, THE CONTRACTOR SHALL PROTECT AND STORE PLANTS IN A SHADY, WIND-PROTECTED AREA. PLANTS SHALL NOT REMAIN UNPLANTED FOR LONGER THAN A THREE DAY PERIOD AFTER DELIVERY.
- QUALITY BRANCHING AND SIZE OF PLANTS, INCLUDING ROOT SYSTEM, SHALL BE IN ACCORDANCE WITH AMERICAN STANDARDS FOR NURSERY STOCK (ANS Z60-1204, OR MOST RECENT EDITION) AS PUBLISHED BY THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION.
- BIB PLANTS SHALL BE HANDLED FROM THE BOTTOM OF THE ROOT BALL ONLY. PLANTS WITH BROKEN, SPLIT OR DAMAGED ROOT BALLS SHALL BE REJECTED.
- ALL PLANTING BEDS SHALL BE MULCHED TO A DEPTH OF 3-4 INCHES WITH SHREDDED HARDWOOD BARK. MULCH SHALL NOT COME INTO CONTACT WITH THE ROOT COLLAR OF TREES OR SHRUBS. THE TOP OF THE ROOT BALL FOR ALL BIB PLANTS SHALL BE EXCAVATED TO PROVIDE A WELL DEFINED EDGE. THE LAYOUT OF THE ROOT BALL FOR ALL BIB PLANTS SHALL BE EXCAVATED TO PROVIDE A WELL FINISHED GRADE. ALL BEDLINES SHALL BE 1/2" ABOVE FINISHED GRADE. ALL BEDS SHALL BE 1/2" ABOVE FINISHED GRADE. THE LAYOUT OF ALL BEDLINES SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT ON-SITE PRIOR TO CUTTING.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL UTILITY MARKS, DOTS AND COMPLIANCE WITH ALL FEDERAL, STATE OR LOCAL CODES, LAWFUL ORDERS OR REGULATIONS GOVERNING UPON THIS WORK.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER INSTALLATION AND MAINTENANCE OF ALL TREE STAKES, SUPPORTS AND MULCH RINGS OR BEDS DURING THE CONSTRUCTION AND MAINTENANCE PERIOD.
- THE CONTRACTOR SHALL REPORT ANY SOIL OR DRAINAGE CONDITIONS CONSIDERED DETRIMENTAL TO THE GROWTH OF THE PROPOSED PLANT MATERIAL. TREES SHALL BE PRUNED ONLY BY BRANCHES THAT INTERFERE WITH PEDESTRIANS, VEHICLES OR SIGNS. SHADE TREES MUST BE SINGLE TRUNK, TREE FORM SPECIMENS. ALL PARKING LOT AND STREET TREES SHALL BE LIMBED TO A HEIGHT OF SEVEN FEET.
- ANY DISCREPANCY BETWEEN THE PLANS AND FIELD CONDITIONS SHALL BE RESOLVED BY THE LANDSCAPE ARCHITECT IN THE FIELD.
- ALL PLANTED AREAS & LAWN AREAS SHALL BE IRRIGATED WITH AN AUTOMATIC IRRIGATION SYSTEM THROUGH THE USE OF SURFACE OR DRIP-IRRIGATION TO PROVIDE ADEQUATE WATER TO PROMOTE HEALTHY PLANT MATERIAL AND SOUND HORTICULTURAL PRACTICE. IRRIGATION CONTRACTOR SHALL SUBMIT PROPOSED IRRIGATION PLANS TO LANDSCAPE ARCHITECT FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
- PLANTING OPERATIONS SHALL BE PERFORMED DURING PERIODS WITHIN THE PLANTING SEASON WHEN WEATHER AND SOIL CONDITIONS ARE FAVORABLE AND IN ACCORDANCE WITH ACCEPTABLE LOCAL PRACTICE. TREES AND SHRUBS SHOULD BE INSTALLED DURING THE FOLLOWING FALL AND SPRING SEASONS, WITH THE EXCEPTION OF TREES WHICH EXPERIENCE A FALL DIGGING HAZARD WHICH SHOULD ONLY BE PLANTED IN THE SPRING.
- ALL PLANT MATERIAL SHALL BE GUARANTEED FOR A MINIMUM PERIOD OF 2 YEARS FROM THE TIME OF LANDSCAPE APPROVAL BY TOWNSHIP LANDSCAPE ARCHITECT AND/OR REVIEWING AUTHORITY.
- A MINIMUM OF 40 PERCENT OF ALL NEW TREES AND SHRUBS SHALL BE NATIVE TO NEW JERSEY.

FALL AUG 15-DEC 15 EVERGREEN TREES

FALL OCT 15-DEC 15 DECIDUOUS TREES

SPRING MAR 1-MAY 15 ALL PLANTS

FALL DIGGING HAZARD

BETULA VARIETIES

MAHURIA VARIETIES

CELTIS VARIETIES

OSTRYA VARIETIES

CRATAEGUS VARIETIES

FAGUS VARIETIES

QUERCUS VARIETIES

ILEX OPACAE VARIETIES

ALL TREES/EVERGREEN ILEX VARIETIES

LIGUSTRUM VARIETIES

LIRIODENDRON TULIPIFERA

MAHURIA VARIETIES

NYSSA SYLVATICA

OSTRYA VARIETIES

PRUNUS-ALL STONE FRUITS

RYBUS VARIETIES

QUERCUS-ALL OAKS EXCEPT Q. VARIETIES

PALESTRA VARIETIES

TILIA TORENTOSA VARIETIES

ZELKOVA VARIETIES

NO. DATE REVISION

SCALE: AS SHOWN

DATE: 12-03-2021 JOB NO.: 21-167

DRAWING NO. L-202

401 Washington
Conshohocken Borough & Whitmarsh Township, PA

MBC
MELILLO-BAUER-CARMAN
LANDSCAPE ARCHITECTURE

200 Linton Avenue
Bellaire, NJ 08750

25 Newark Avenue
Lacey City, NJ 07302

732-528-0664
www.mbcldesign.com
NCA No. 21149001702

THOMAS R. BAUER
REGISTERED LANDSCAPE ARCHITECT
NO. 21149001702

Applicant Request for County Review



This request should be filled out by the applicant and submitted to the municipality where the application is being filed along with digital copies of all plan sets/information. Municipal staff will electronically file the application with the county, and a notice for the prompt payment of any fees will be emailed to the Applicant's Representative.

Date: 12/3/2021
 Municipality: Borough of Conshohocken & Whitmarsh Township
 Proposal Name: 401/433 Washington Street Apartments

Applicant's Representative: C. Richard Roseberry, P.E.
 Colliers Engineering & Design
 Address: 941 Marcon Blvd., Suite 801
 City/State/Zip: Allentown, PA 18109
 Business Phone (required): 484 240 8124
 Business Email (required): richard.roseberry@colliersengineering.com

Applicant Name: KRE Acquisition Corp
 Address: 520 US Highway 22, PO Box 6872
 City/State/Zip: Bridgewater, NJ 08807
 Phone: 908-725-8100
 Email: nchrimer@thekregroup.com

Type of Review Requested:

(Check All Appropriate Boxes)

- Land Development Plan
- Subdivision Plan
- Residential Lot Line Change
- Nonresidential Lot Line Change
- Zoning Ordinance Amendment
- Zoning Map Amendment
- Subdivision Ordinance Amendment
- Curative Amendment
- Comprehensive / Other Plan
- Conditional Use
- Special Review*

**(Not included in any other category - includes parking lot or structures that are not associated with new building square footage)*

Type of Plan:

Tentative (Sketch)
 Preliminary / Final

Type of Submission:

- New Proposal
- Resubmission*

** A proposal is NOT a resubmission if A) The proposed land use changes, or B) The amount of residential units or square footage proposed changes more than 40%, or C) The previous submission was over 5 years ago.*

Zoning:

Existing District: Borough: SP-2, FP; Twp.: HVY, RDD-1, RCCD, SS, & FLPL
 Special Exception Granted Yes No
 Variance Granted Yes No

Plan Information:

Tax Parcel Number(s)

050011904007 650011904007
 050011908003 650012685012

Location 401 & 433 Washington Street
 Nearest Cross Street Cherry Street
 Total Tract Area 10.66 acres
 Total Tract Area Impacted By Development 10.66 acres

(If the development is a building expansion, or additional building on existing development, or only impacts a portion of the tract, please provide a rough estimate of the land impacted, including associated yards, drives, and facilities.)

Land Use(s)	Number of New		Senior Housing		Open Space Acres*	Nonresidential New Square Feet
	Lots	Units	Yes	No		
Single-Family						
Townhouses/Twins						
Apartments	2	598		X		
Commercial						
Industrial						
Office						
Institutional						
Other						

**Only indicate Open Space if it will be on a separate lot or deed restricted with an easement shown on the plan.*

Additional Information:

RESET

Effective 5/1/18

941 Marcon Boulevard
Suite 801
Allentown, Pennsylvania 18109
Main: 877 627 3772
<http://colliersengineering.com>

Site Photos

Views from Washington Street:



Maser Consulting is now Colliers Engineering & Design



From End of Adjacent Riverfront Walkway looking east:





R:\Projects\2014\14000908C\Photos\Photos for Submission\Site Photos.docx

POST-CONSTRUCTION STORMWATER MANAGEMENT GENERAL NOTES

- FOR THE PURPOSES OF THIS PLAN, "BMP" REFERS TO A PROPOSED PCSM BEST MANAGEMENT PRACTICE.
- DO NOT STOCKPILE EQUIPMENT, SOIL, OR MACHINERY WITHIN THE AREA OF AN INFILTRATION BAY.
- DO NOT COMPACT INFILTRATION BMP SOIL BEDS DURING CONSTRUCTION. PROHIBIT ALL HEAVY EQUIPMENT FROM THE FLOOR AREA AND MINIMIZE ALL OTHER TRAFFIC. WHERE POSSIBLE, PERFORM WORK FROM THE PERIMETER OF THE BMP TO AVOID EXCESSIVE SOIL COMPACTION WITHIN THE LEVEL EARTH AREAS OF THE BMP.
- A COMPLETE AND SITE SPECIFIC CONSTRUCTION SEQUENCE INCLUDING THE CONSTRUCTION OF ALL BMPS CAN BE FOUND ON THE EROSION AND SEDIMENT POLLUTION CONTROL PLANS.
- THE PERMITTEE MUST PROVIDE ENGINEERING CONSTRUCTION OVERSIGHT FOR THE PROPOSED STORMWATER BMPS.
- BEFORE INITIATING ANY REVISIONS TO THE APPROVED PCSM PLANS OR REVISIONS TO OTHER PLANS WHICH MAY AFFECT THE EFFECTIVENESS OF THE APPROVED PCSM PLAN, THE CONTRACTOR MUST RECEIVE APPROVAL OF THE REVISIONS FROM THE MONTGOMERY COUNTY CONSERVATION DISTRICT AND/OR PADEP.
- ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1, AND 287.1 ET. SEQ. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THIS SITE.
- IN THE EVENT OF SINKHOLE DISCOVERY A PROFESSIONAL GEOLOGIST OR ENGINEER MUST BE CONTACTED CONCERNING MITIGATION. ADDITIONALLY, THE MONTGOMERY COUNTY CONSERVATION DISTRICT MUST BE MADE AWARE OF THE SINKHOLE DISCOVERY IMMEDIATELY.
- THE CONTRACTOR SHALL ASSURE THAT THE APPROVED POST-CONSTRUCTION STORMWATER MANAGEMENT PLAN IS PROPERLY AND COMPLETELY IMPLEMENTED.
- PCSM PLAN HAS BEEN DESIGNED TO MINIMIZE IMPERVIOUS AREAS. IMPERVIOUS AREAS WILL BE LIMITED TO ROADWAY MAINTENANCE AND IMPROVEMENT AREAS, AND PERVIOUS AREAS WILL BE RESTORED IN OTHER AREAS WITHIN THE LIMIT OF DISTURBANCE.
- PCSM PLAN HAS BEEN DESIGNED TO MAXIMIZE THE PROTECTION OF EXISTING DRAINAGE FEATURES AND EXISTING VEGETATION. THE PROPOSED DEVELOPMENT MAINTAINS THE GENERAL DRAINAGE PATTERN, VOLUME, AND RATE OF RUNOFF TO THE SURFACE WATER DISCHARGE. EXISTING VEGETATION IS PROTECTED BY RESTRICTING DISTURBED AREA.
- PCSM PLAN HAS BEEN DESIGNED TO MINIMIZE LAND CLEARING AND GRADING. EARTH DISTURBANCE IS LIMITED ONLY TO AREAS OF PROPOSED IMPROVEMENTS. DISTURBED AREAS ARE TO BE STABILIZED IMMEDIATELY AFTER GRADING AND/OR IMPROVEMENTS ARE COMPLETED.
- THE PCSM PLAN MINIMIZES SOIL COMPACTION. USE OF EXISTING ROADWAYS AND STABILIZED AREAS AND CONTROL OF DISTURBED AREAS FOR THE PLANNED IMPROVEMENTS LIMIT THE IMPACT OF SOIL COMPACTION.
- PCSM PLAN UTILIZES STRUCTURAL AND NON-STRUCTURAL BMPS THAT PREVENT OR MINIMIZE CHANGES IN STORMWATER RUNOFF. SITE BMPS PREVENT OR MINIMIZE CHANGES IN STORMWATER RUNOFF BY CONTROLLING VOLUME AND PEAK RATE RUNOFF FROM THE SITE.
- THE PCSM PLANS ARE SEPARATE FROM THE EROSION AND SEDIMENT POLLUTION CONTROL (E&SPC) PLANS, ARE CONSISTENT WITH THE E&SPC PLANS, AND ARE THE FINAL PLANS FOR CONSTRUCTION.
- A SEALER WILL BE USED IN ALL INLETS LOCATED WITHIN GRASSSED AREAS AND WITHIN AREAS OF PCSM BMPS.

PCSM REQUIREMENTS

PCSM REPORTING AND RECORDKEEPING: THE PCSM PLAN, INSPECTION REPORTS AND MONITORING RECORDS MUST BE AVAILABLE FOR REVIEW AND INSPECTION BY PADEP OR THE CONSERVATION DISTRICT.

RESPONSIBLE PARTY & OWNER:

THE STORMWATER BMPS IN THE PROJECT SITE WILL BE OWNED, OPERATED, AND MAINTAINED BY:

401 WASHINGTON STREET ASSOCIATES, L.P. & WASHINGTON STREET ASSOCIATES III, L.P.
2701 RENAISSANCE BOULEVARD, FOURTH FLOOR
KING OF PRUSSIA, PA 19406
P: (908) 725-8100

LICENSED PROFESSIONAL OVERSIGHT OF CRITICAL STAGES: A LICENSED PROFESSIONAL OR A DESIGNEE MUST BE PRESENT ONSITE AND BE RESPONSIBLE DURING CRITICAL STAGES OF PCSM BMP IMPLEMENTATION OF THE APPROVED PCSM PLAN. FOR THE PURPOSES OF THIS PCSM PLAN, THE CRITICAL STAGES ARE CONSIDERED TO BE:

CRITICAL STAGES OF CONSTRUCTION - LICENSED PROFESSIONAL TO BE PRESENT ON SITE	
1	PRE-CONSTRUCTION MEETING TO BE HELD PRIOR TO THE START OF CONSTRUCTION ACTIVITIES.
2	INSTALLATION OF ALL UNDERGROUND DETENTION FACILITY, IMPERMEABLE LINER, AND OUTLET CONTROL STRUCTURES.
3	INSPECTION PRIOR TO REMOVAL OF E&S CONTROLS.
4	FINAL INSPECTION AT PROJECT COMPLETION.

FINAL CERTIFICATION: THE PERMITTEE MUST INCLUDE WITH THE NOTICE OF TERMINATION "RECORD DRAWINGS" WITH A FINAL CERTIFICATION STATEMENT FROM A LICENSED PROFESSIONAL, WHICH READS AS FOLLOWS, OR AS THE CURRENT STANDARD READS:

I, (NAME) DO HEREBY CERTIFY PURSUANT TO THE PENALTIES OF 18 PA.C.S.A. CHAPTER 4904 TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF, THAT THE ACCOMPANYING RECORD DRAWINGS ACCURATELY REFLECT THE AS-BUILT CONDITIONS, ARE TRUE AND CORRECT, AND ARE IN CONFORMANCE WITH CHAPTER 102 OF THE RULES AND REGULATIONS OF PADEP OF ENVIRONMENTAL PROTECTION AND THAT THE PROJECT SITE WAS CONSTRUCTED IN ACCORDANCE WITH THE APPROVED PCSM PLAN, ALL APPROVED PLAN CHANGES AND ACCEPTED CONSTRUCTION PRACTICES.*

(1) THE PERMITTEE MUST RETAIN A COPY OF THE RECORD DRAWINGS AS A PART OF THE APPROVED PCSM PLAN.

(2) THE PERMITTEE MUST PROVIDE A COPY OF THE RECORD DRAWINGS AS A PART OF THE APPROVED PCSM PLAN TO THE PERSONS OR ENTITIES IDENTIFIED IN THIS SECTION AS BEING RESPONSIBLE FOR THE LONG-TERM OPERATION AND MAINTENANCE OF THE PCSM BMPS.

PCSM LONG TERM OPERATIONS AND MAINTENANCE REQUIREMENTS

UNTIL THE PERMITTEE OR CO-PERMITTEE HAS RECEIVED WRITTEN APPROVAL OF A NOTICE OF TERMINATION, THE PERMITTEE OR CO-PERMITTEE WILL REMAIN RESPONSIBLE FOR COMPLIANCE WITH THE PERMIT TERMS AND CONDITIONS INCLUDING LONG-TERM OPERATION AND MAINTENANCE OF ALL PCSM BMPS ON THE PROJECT SITE AND IS RESPONSIBLE FOR VIOLATIONS OCCURRING ON THE PROJECT SITE. PADEP AND/OR THE CONSERVATION DISTRICT WILL CONDUCT A FINAL INSPECTION AND APPROVE OR DENY THE NOTICE OF TERMINATION WITHIN 30 DAYS.

THE PERMITTEE OR CO-PERMITTEE IS RESPONSIBLE FOR LONG-TERM OPERATION AND MAINTENANCE OF PCSM BMPS UNLESS A DIFFERENT PERSON OR ENTITY IS IDENTIFIED IN THE NOTICE OF TERMINATION AND HAS AGREED TO LONG-TERM OPERATION AND MAINTENANCE OF PCSM BMPS.

FOR ANY PROPERTY CONTAINING A PCSM BMP, THE PERMITTEE OR CO-PERMITTEE SHALL RECORD AN INSTRUMENT WITH THE RECORDER OF DEEDS WHICH WILL ASSURE DISCLOSURE OF THE PCSM BMP AND THE RELATED OBLIGATIONS IN THE ORDINARY COURSE OF A TITLE SEARCH OF THE SUBJECT PROPERTY. THE RECORDED INSTRUMENT MUST IDENTIFY THE PCSM BMP, PROVIDE FOR NECESSARY ACCESS RELATED TO LONG-TERM OPERATION AND MAINTENANCE FOR PCSM BMPS AND PROVIDE NOTICE THAT THE RESPONSIBILITY FOR LONG-TERM OPERATION AND MAINTENANCE OF THE PCSM BMP IS A COVENANT THAT RUNS WITH THE LAND THAT IS BINDING UPON AND ENFORCEABLE BY SUBSEQUENT GRANTEE, AND PROVIDE PROOF OF FILING WITH THE NOTICE OF TERMINATION UNDER § 102.7(b)(5) (RELATING TO PERMIT TERMINATION).

THE PERSON RESPONSIBLE FOR PERFORMING LONG-TERM OPERATION AND MAINTENANCE MAY ENTER INTO AN AGREEMENT WITH ANOTHER PERSON INCLUDING A CONSERVATION DISTRICT, NONPROFIT ORGANIZATION, MUNICIPALITY, AUTHORITY, PRIVATE CORPORATION OR OTHER PERSON, TO TRANSFER THE RESPONSIBILITY FOR PCSM BMPS OR TO PERFORM LONG-TERM OPERATION AND MAINTENANCE AND PROVIDE NOTICE THEREOF TO THE DEPARTMENT.

A PERMITTEE OR CO-PERMITTEE THAT FAILS TO TRANSFER LONG-TERM OPERATION AND MAINTENANCE OF THE PCSM BMP OR OTHERWISE FAILS TO COMPLY WITH THIS REQUIREMENT SHALL REMAIN JOINTLY AND SEVERALLY RESPONSIBLE WITH THE LANDOWNER FOR LONG-TERM OPERATION AND MAINTENANCE OF THE PCSM BMPS LOCATED ON THE PROPERTY.

OPERATION AND MAINTENANCE FOR PCSM BMPS

OWNERSHIP OF THE PERMANENT BMPS INDICATED ON THE PCSM PLANS RESIDES WITHIN THE PROPERTY BOUNDARY FOR THE SUBJECT LOTS. THE OPERATIONS AND MAINTENANCE OF THESE BMPS WILL BECOME THE RESPONSIBILITY OF THE PROPERTY OWNER OR THEIR DESIGNEE. THIS OPERATION AND MAINTENANCE PLAN IS BASED ON CHAPTER 4 OF THE PENNSYLVANIA STORMWATER BEST MANAGEMENT PRACTICES MANUAL AND SECTIONS 7 AND 8 OF THE PENNSYLVANIA HANDBOOK OF BEST MANAGEMENT PRACTICES FOR DEVELOPING AREAS.

FOLLOWING THIS OPERATION AND MAINTENANCE PLAN WILL ALLOW THE BMPS TO FUNCTION PROPERLY. EACH BMP MUST BE INSPECTED ANNUALLY (UNLESS OTHERWISE NOTED) AND AFTER ANY MAJOR RUNOFF EVENTS, AS INDICATED.

LIMIT VEHICULAR OPERATION OVER THE BMPS TO AVOID COMPACTION OF THE SOILS OR AGGREGATE MATERIAL. TAKE CARE TO AVOID EXCESSIVE COMPACTION WHEN ACCESS IS REQUIRED. WHEN PERFORMING MAINTENANCE ACTIVITIES IN BMPS, OPERATE EQUIPMENT WITHOUT ENTERING THE FLOOR AREA, OR USE LIGHTWEIGHT, LOW GROUND PRESSURE, TRACK MOUNTED EQUIPMENT.

BMP MINIMUM INSPECTION CHECKLIST

- EXCESSIVE EROSION OR SEDIMENTATION
- UNSTABLE SIDE SLOPES AND EMBANKMENTS
- SEEPAGE THROUGH OUTSIDE FACE OF EMBANKMENTS
- CRACKING OR SETTLING
- SINKHOLES
- ANIMAL BURROWING
- DETERIORATION OF VEGETATION
- INVASIVE PLANT GROWTH
- SLUGGISH DRAINING
- ALGAE, STAGNANT POOLS, OR NOXIOUS ODORS
- RUTS, WASHOUTS, BULGES, SLIDES, SLOUGHS, SCARPS, OR SLUMPS
- RIP-RAP DISPLACEMENT OR FAILURE
- CRACKS OR RUST ON PIPING
- OBSTRUCTIONS BY TRASH AND DEBRIS
- SIGNS OF VANDALISM

IF DURING OPERATION, A SIGN OF FAILURE IS NOTED DURING INSPECTION, CORRECTIVE ACTION MUST BE COMPLETED BASED ON THE TYPE OF PROBLEM OBSERVED.

SEDIMENT REMOVAL

SEDIMENT MAY ACCUMULATE OVER TIME WITHIN BMPS AND STORM SEWER INLETS. THE DISTURBED AREAS OF THE BMPS MUST BE STABILIZED IMMEDIATELY. SEDIMENT ACCUMULATION IN STORM SEWER INLETS AND MANHOLES MUST BE REMOVED AND PROPERLY DISPOSED OF IN ACCORDANCE WITH PADEP REGULATIONS. SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF IN LANDSCAPED AREAS OUTSIDE OF STEEP SLOPES, WETLANDS, FLOODPLAINS OR DRAINAGE SWALES. THE SEDIMENT DISPOSAL AREA MUST BE STABILIZED IMMEDIATELY. ANY POTENTIALLY HAZARDOUS ACCUMULATIONS REMOVED FROM SUCH STRUCTURES MUST BE PROPERLY DISPOSED OF IN ACCORDANCE WITH PADEP REGULATIONS.

TERRESTRIAL VEGETATION MAINTENANCE

VEGETATIVE COVER MUST BE MOVED AT LEAST TWICE ANNUALLY, ALLOWING THE DEVELOPMENT OF THICK STANDS OF TALL GRASS AND OTHER PLANT VEGETATION.

INSPECT THE SEEDING AREAS AFTER ONE (1) YEAR. IF AN AREA HAS LESS THAN A UNIFORM 70 PERCENT VEGETATIVE PERENNIAL COVER, REEVALUATE THE CHOICE OF PLANT MATERIALS AND THE QUANTITIES OF SOIL SUPPLEMENTS USED. PREPARE THE SEEDBED AND REESTABLISH SEEDING, IF THE SEASON PREVENTS RE-SOWING, APPLY MULCH OR EROSION CONTROL MATTING FOR TEMPORARY STABILIZATION AND SEED THE AREA AS SOON AS PRACTICAL.

SPILLS

IN THE EVENT OF A SPILL, IMMEDIATELY INSPECT THE DOWNGRADIENT BMPS FOR CONTAMINATION. REMOVE AND PROPERLY DISPOSE OF SPILLED SUBSTANCES AND CONTAMINATED SOIL MATERIALS. RESTORE THE AFFECTED BMPS.

ALL RESTORATION AND REMEDIATION PROCEDURES FOR A SPILL FROM MATERIALS STORED ONSITE MUST COMPLY WITH THE MEASURES LISTED IN PENNSYLVANIA'S CLEAN STREAMS LAW.

UNDERGROUND DETENTION BASINS (PADEP BMP 6.6.3)

INSPECT THE UNDERGROUND DETENTION BASIN FOUR TIMES PER YEAR OR AS OFTEN AS FUTURE POLICIES ON STORMWATER BMP INSPECTIONS DICTATE.

- ALL BASIN STRUCTURES (INCLUDING PIPES, STONE, TRASH RACKS, OUTLETS STRUCTURES, AND INLETS) EXPECTED TO RECEIVE AND/OR TRAP DEBRIS AND SEDIMENT SHOULD BE INSPECTED FOR CLOGGING AND EXCESSIVE DEBRIS AND SEDIMENT ACCUMULATION.
- SEDIMENT REMOVAL SHOULD BE CONDUCTED WHEN THE BASIN IS COMPLETELY DRY. SEDIMENT SHOULD BE DISPOSED OF PROPERLY AND ONCE SEDIMENT IS REMOVED, DISTURBED AREAS NEED TO BE IMMEDIATELY STABILIZED AND REVEGETATED.
- VACUUMING OF THE SYSTEM MAY BE REQUIRED.
- PAVED AREAS AT EACH INLET DISCHARGING INTO THE UNDERGROUND DETENTION SYSTEM SHOULD BE INSPECTED FOR SEDIMENT, CLOGGING, AND PONDED WATER.
- WATER SHOULD NOT BE PRESENT WITHIN THE UNDERGROUND DETENTION BASINS 24-48 HOURS AFTER A RAINFALL EVENT. IF WATER IS PRESENT AFTER THIS TIME, A DESIGN PROFESSIONAL SHOULD BE CONSULTED TO EVALUATE THE UNDERGROUND DETENTION BASIN.

ROCK APRONS

ADD ROCK AS NECESSARY TO RESTORE THE ROCK APRON TO THE APPROVED DESIGN SPECIFICATIONS.

SEEDING AND SOIL SUPPLEMENTS

THE FOLLOWING SPECIFICATIONS ARE IN ACCORDANCE WITH PENNDOT PUBLICATION 408, SECTION 804.

TEMPORARY SEED MIXTURES

SEED TYPE (PENNDOT FORMULA E)	% BY WEIGHT	PURITY	MAX. WEED SEED
ANNUAL RYEGRASS	100	95%	0.10%

APPLY SEED AT A RATE OF 10 LBS. PER 1,000 SY.

APPLY STRAW MULCH (SEE MULCH APPLICATION RATES TABLE)

SEEDING SEASON DATES: MARCH 15 TO OCTOBER 15

PERMANENT SEED MIXTURES

SEED TYPE (PENNDOT FORMULA B)	% BY WEIGHT	PURITY	MAX. WEED SEED
PERENNIAL RYEGRASS MIXTURE * (LOULIM PERENNE)	20	97%	0.10%
CREeping RED FESCUE	30	97%	0.10%
KENTUCKY BLUEGRASS MIXTURE ** (POA PRATENSIS)	50	97%	0.15%

APPLY SEED AT A RATE OF 42 LBS. PER 1,000 SY.

APPLY STRAW OR HAY MULCH (SEE MULCH APPLICATION RATES TABLE).

APPLY PULVERIZED AGRICULTURAL LIMESTONE AT A RATE OF 2 TONS/ACRE UNLESS TESTING HAS BEEN PERFORMED.

APPLY 10-20-20 ANALYSIS COMMERCIAL FERTILIZER AT A RATE OF 678 LBS./ACRE UNLESS TESTING HAS BEEN PERFORMED.

SEEDING SEASON DATES: MARCH 15 TO JUNE 1; AUGUST 1 TO OCTOBER 15
APPLY FLEXITERRA FGM (OR EQUAL) ACCORDING TO MANUFACTURER'S SPECIFICATIONS.

* A COMBINATION OF IMPROVED CERTIFIED VARIETIES WITH NO ONE VARIETY EXCEEDING 50% OF THE TOTAL RYEGRASS COMPONENT.
** A COMBINATION OF IMPROVED CERTIFIED VARIETIES WITH NO ONE VARIETY EXCEEDING 50% OF THE TOTAL BLUEGRASS COMPONENT.

PERMANENT SEED MIXTURES ON STEEP SLOPES (SLOPES EXCEEDING 3:1)

(PENNDOT FORMULA L)	SEED TYPE	% BY WEIGHT	PURITY	MAX. WEED SEED
HARD FESCUE (FESTUCA LONGIFOLIA***)	55	97%	0.10%	
CREeping RED FESCUE (FESTUCA RUBRA)	35	97%	0.10%	
ANNUAL RYEGRASS (LOULIM MULTIFLORUM)	10	95%	0.10%	

APPLY SEED AT A RATE OF 48 LBS / 1,000 SY.

MULCH WITH MULCH CONTROL NETTING OR EROSION CONTROL BLANKETS MUST BE INSTALLED.

APPLY PULVERIZED AGRICULTURAL LIMESTONE AT A RATE OF 2 TONS/ACRE UNLESS TESTING HAS BEEN PERFORMED.

APPLY 10-20-20 ANALYSIS COMMERCIAL FERTILIZER AT A RATE OF 678 LBS./ACRE UNLESS TESTING HAS BEEN PERFORMED.

SEEDING SEASON DATES: MARCH 15 TO JUNE 1; AUGUST 1 TO OCTOBER 15

*** A COMBINATION OF IMPROVED CERTIFIED VARIETIES WITH NO ONE VARIETY EXCEEDING 50% OF THE TOTAL HARD FESCUE COMPONENT.

MULCH TYPE	MULCH APPLICATION RATE			NOTES
	PER ACRE	PER 1,000 SF	PER 1,000 SY	
STRAW	3 TONS	18 LB	160 LB	EITHER WHEAT OR OAT STRAW, FREE OF WEEDS, NOT CHOPPED OR FINELY BROKEN
HAY	3 TONS	18 LB	160 LB	TIMOTHY, MIXED CLOVER AND TIMOTHY OR OTHER NATIVE FORAGE GRASSES

PREPARATION OF AREAS TO BE TOPSOILED

GRADE THE AREAS TO BE COVERED BY TOPSOIL USING ACCEPTABLE METHODS. LOOSEN SOIL TO A MINIMUM DEPTH OF 2 INCHES. BEFORE PLACING THE TOPSOIL, REMOVE STONES AND OTHER FOREIGN MATERIAL 2 INCHES OR LARGER IN DIMENSION. REMOVE AND SATISFACTORILY DISPOSE OF UNSUITABLE AND SURPLUS MATERIAL.

MEASURES PROVIDED TO MINIMIZE THERMAL IMPACTS

ALL RUNOFF FROM THE ROOF AREAS WILL BE CAPTURED AND DIRECTED TO SUBSURFACE UNDERDRAINS. RUNOFF FROM PAVED AREAS OF THE PROJECT DISCHARGE THROUGH BURIED PIPE. THEREBY CREATING AMPLE OPPORTUNITY FOR COOLING PRIOR TO REACHING THE SURFACE WATERS. THE MAJORITY OF THE SITE WILL BE DIRECTED TO UNDERGROUND DETENTION FACILITIES WHICH WILL PROVIDE ADDITIONAL TIME FOR WATER TO COOL. AS SUCH, THE PROJECT WILL NOT HAVE AN ADVERSE IMPACT ON THE NATURAL TEMPERATURES OF THE RECEIVING WATERS.

RECYCLING OR DISPOSAL OF MATERIALS

THE CONTRACTOR SHALL REMOVE FROM THE SITE, RECYCLE, OR DISPOSE OF ALL BUILDING MATERIALS AND WASTES IN ACCORDANCE WITH PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA CODE 260.1 ET SEQ., 271.1 ET SEQ., AND 287.1 ET SEQ. THE CONTRACTOR SHALL NOT LEGALLY BURY, DUMP OR DISCHARGE ANY BUILDING MATERIAL OR WASTES AT THE SITE.

PROCEDURE FOR MANAGING SOIL, GROUNDWATER, AND OTHER POTENTIALLY CONTAMINATED MATERIALS GENERATED OR EXPOSED DURING CONSTRUCTION AND FOR THE REUSE AND/OR OFF-SITE DISPOSAL OF GENERATED MATERIALS

- ANY EXCAVATED SOIL WHICH IS CONTAMINATED AT CONCENTRATIONS WHICH EXCEED THE PADEP CLEAN FILL STANDARDS FOR RESIDENCES SHOULD BE DISPOSED OFF-SITE AT A PERMITTED FACILITY. DISPOSAL MANIFESTS SHOULD BE MAINTAINED. EXCAVATED SOILS SHOULD BE PLACED IMMEDIATELY INTO TRUCKS FOR OFF-SITE DISPOSAL. SOIL AWAITING OFF-SITE DISPOSAL SHALL BE PLACED ON AND COVERED BY POLYETHYLENE SHEETING.
- IF THE SITE WILL NEED TO IMPORT OR EXPORT MATERIAL FROM THE SITE, THE RESPONSIBILITY FOR PERFORMING ENVIRONMENTAL DUE DILIGENCE AND DETERMINATION OF CLEAN FILL WILL REST WITH THE CONTRACTOR.
- IF THE FILL MAY HAVE BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE, IT MUST BE TESTED TO DETERMINE IF IT QUALIFIES AS CLEAN FILL. TESTING SHOULD BE PERFORMED IN ACCORDANCE WITH APPENDIX A OF THE DEPARTMENT'S POLICY "MANAGEMENT OF FILL".
- FILL MATERIAL THAT DOES NOT QUALIFY AS CLEAN FILL IS REGULATED FILL. REGULATED FILL IS WASTE AND MUST BE MANAGED IN ACCORDANCE WITH THE DEPARTMENT'S MUNICIPAL OR RESIDUAL WASTE REGULATIONS BASED ON 25 PA CODE CHAPTERS 287 RESIDUAL WASTE MANAGEMENT OR 371 MUNICIPAL WASTE MANAGEMENT, WHICHEVER IS APPLICABLE. THIS REGULATIONS ARE AVAILABLE ON-LINE AT WWW.PACODE.COM.

STORMSEWER PIPE TRENCH EXCAVATION NOTES

- LIMIT ADVANCED CLEARING AND GRUBBING OPERATIONS TO A DISTANCE EQUAL TO TWO TIMES THE LENGTH OF PIPE INSTALLATION THAT CAN BE COMPLETED IN ONE DAY.
- WORK CREWS AND EQUIPMENT FOR TRENCHING, PLACEMENT OF PIPE, PLUG CONSTRUCTION AND BACKFILLING WILL BE SELF CONTAINED AND SEPARATE FROM CLEARING AND GRUBBING AND SITE RESTORATION AND STABILIZATION OPERATIONS.
- ALL SOIL EXCAVATED FROM THE TRENCH WILL BE PLACED ON THE UPHILL SIDE OF THE TRENCH.
- LIMIT DAILY TRENCH EXCAVATION TO THE LENGTH OF PIPE PLACEMENT, PLUG INSTALLATION AND BACKFILLING THAT CAN BE COMPLETED THE SAME DAY.
- WATER WHICH ACCUMULATES IN THE OPEN TRENCH WILL BE COMPLETELY REMOVED BY PUMPING BEFORE PIPE PLACEMENT AND / OR BACKFILLING BEGINS. WATER REMOVED FROM A TRENCH THROUGH A FILTERATION DEVICE SHALL BE DISCHARGED TO THE SURFACE.
- ON THE DAY FOLLOWING PIPE PLACEMENT AND TRENCH BACKFILLING, THE DISTURBED AREA WILL BE GRADED TO FINAL CONTOURS AND IMMEDIATELY STABILIZED.

Proposed Storm Network Pipe Table					
Pipe I.D.	Description	Length	Invert Up	Invert Dn	Slope
P-2	24"RCP	67'	49.20	48.80	0.62%
P-3	24"RCP	85'	49.85	49.40	0.52%
P-4	24"RCP	87'	50.50	50.05	0.52%
P-5	18"RCP	77'	51.40	51.00	0.52%
P-6	18"RCP	105'	52.15	51.60	0.52%
P-7	18"RCP	33'	52.55	52.35	0.60%
P-8	18"RCP	38'	51.10	50.80	0.79%
P-9	18"RCP	110'	51.85	51.30	0.50%
P-10	18"RCP	59'	52.35	52.05	0.51%
P-11	18"RCP	64'	51.90	51.60	0.47%
P-12	18"RCP	59'	51.60	51.30	0.51%
P-13	18"RCP	25'	50.90	50.05	3.42%
P-14	18"RCP	33'	50.90	50.05	2.60%
P-15	18"RCP	28'	50.10	49.40	2.51%
P-16	18"RCP	31'	50.10	49.40	2.26%
P-17	18"RCP	24'	49.10	48.80	1.23%
P-18	18"RCP	127'	51.25	49.30	1.53%
P-20	18"RCP	15'	48.90	48.80	0.68%
P-21	18"RCP	19'	49.60	49.50	0.50%
P-22	18"RCP	19'	49.20	49.30	0.53%

Proposed Storm Network Pipe Table					
Pipe I.D.	Description	Length	Invert Up	Invert Dn	Slope
P-23	18"RCP	28'	48.95	48.80	0.54%
P-24	18"RCP	16'	49.25	49.15	0.64%
P-25	18"RCP	16'	49.55	49.45	0.61%
P-30	18"RCP	9'	46.40	45.95	5.00%
P-32	18"RCP	9'	46.40	45.95	5.00%
P-34	18"RCP	23'	46.10	45.95	0.65%
P-35	18"RCP	23'	46.45	46.30	0.66%
P-36	18"RCP	118'	47.25	46.65	0.51%
P-37	18"RCP	107'	47.90	47.35	0.51%
P-38	18"RCP	77'	48.50	48.10	0.52%
P-39	18"RCP	15'	48.80	48.90	0.67%
P-40	18"RCP	15'	49.20	49.10	0.68%
P-42	18"RCP	19'	48.50	47.55	0.50%
P-43	18"RCP	59'	49.00	48.70	0.50%
P-45	18"RCP	39'	48.33	47.00	3.41%
P-51	18"RCP	19'	47.80	47.70	0.52%
P-52	18"RCP	127'	50.60	48.00	2.05%
P-102	18"RCP	99'	47.95	47.35	0.60%
P-A1	18"RCP	85'	48.50	48.05	0.54%
P-B1	24"RCP	19'	47.15	47.00	0.81%

Proposed Storm Network Pipe Table					
Pipe I.D.	Description	Length	Invert Up	Invert Dn	Slope
P-BASIN B	18"RCP	15'	48.80	48.51	2.00%
P-R1	18"RCP	23'	48.25	48.10	0.65%
P-R2	18"RCP	258'	50.30	48.45	0.72%
P-R3	18"RCP	42'	48.90	48.66	0.57%
P-R4	18"RCP	114'	49.65	49.05	0.53%
P-R5	18"RCP	17'	49.95	49.85	0.60%
P-R6	18"RCP	19'	50.25	50.15	0.53%

Proposed Storm Network Structure Table						
Structure I.D.	Description	Rim/Grate	Pipes (In)	Inverts (In)	Pipes (Out)	Inverts (Out)
EW-1	60 in. x 18 in. x 60 in. CONC. HW	52.75	18" RCP	48.66		
EW-100	84 in. x 18 in. x 60 in. CONC. HW	50.84	24" RCP	47.00		
R-1	60 in. x 60 in. "C" INLET	52.28	18" RCP	48.45	18" RCP	48.25



Engineering
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Post-Construction Stormwater Management Report

December 3, 2021

401/403 Washington Street Apartments

401 & 433 Washington Street

Conshohocken Borough & Whitemarsh Township

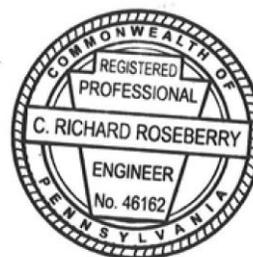
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- Appendix H | Stormsewer Design
- Appendix I | Permanent Erosion and Sediment Pollution Control BMPs
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Executive Summary

This report was prepared to demonstrate the competency of the proposed Post-Construction Stormwater Management (PCSM) design for the 401/403 Washington Street Apartments project located in the Township of Whitemarsh and the Borough of Conshohocken, Montgomery County, Pennsylvania.

As part of the National Pollution Discharge Elimination System (NPDES) permit, the project is required to provide a PCSM plan and report. The Pennsylvania Department of Environmental Protection issued the [Pennsylvania Stormwater Best Management Practices Manual](#) as guidance for the completion of the PCSM design. Through the use of recommended Best Management Practices (BMPs), the environmental effects from this project were reduced. The project PCSM goal is to adequately and safely recreate, as closely as possible, the pre-project conditions in the post-project condition. This PCSM Plan was designed to eliminate (wherever possible) or minimize point source discharge to surface waters, preserve the integrity of stream channels, and protect the physical, biological, and chemical qualities of the receiving surface water.

The calculations presented in this report demonstrate that the designed facilities meet the project PCSM goals and sufficiently address the state's, county's and municipalities' regulatory requirements.

1.0 Introduction

As part of the NPDES permit, the project is required to provide a PCSM Plan and Report. The Pennsylvania Department of Environmental Protection (PADEP) issued the Pennsylvania Stormwater Best Management Practices Manual (BMP Manual) as guidance for the completion of the PCSM design. The proposed plans incorporate guidelines and calculation methodologies from the BMP Manual. The purpose of the BMP Manual is “to ensure effective stormwater management, to minimize the adverse impacts of stormwater on ground water and surface water resources, and to support and sustain the social, economic, and environmental quality of the Commonwealth.” The three primary interests involved include:

- Stream channel erosion and flooding resulting from increases in flow rate and volume;
- Water quality impacts to streams and groundwater aquifers from particulates, floatables, and hydrocarbons; and
- Thermal impact on streams caused by heat transfer from pavement to runoff and loss of riparian buffer vegetation.

Through the use of recommended BMPs, the environmental effects are reduced. The above concerns can be addressed through the implementation of BMPs that decrease runoff volume, promote, extend detention times, and reduce release rates. The project PCSM goal is to adequately and safely recreate, as closely as possible, the pre-project condition in the post-project condition. This PCSM Plan was designed to eliminate (wherever possible) or minimize point source discharges to surface waters, preserve the integrity of stream channels, and protect the physical, biological, and chemical qualities of the receiving surface water.

1.1 Project Information

KRE Acquisition Corp. proposes improvements to the site, including a 598 unit residential apartment complex in four buildings with ground-level parking, subsurface stormwater management facilities, and other typical site appurtenances. Two (2) driveways are proposed along Washington Street and one (1) driveway is proposed along Cherry Street, with additional emergency access from Cherry Street. The entire site is located within the 100-year FEMA delineated floodplain of the Schuylkill River and a portion of the site lies within the delineated floodway.

The past land use includes:

Past 5 Years Land Use

Both tracts are currently vacant. The property contains a building and building remnants as well as parking lots of former industrial uses. The property also contains associated utilities and trees.

Past 50 Years Land Use

The properties functioned as industrial uses since the 1800s. The 401 Washington Street site was formerly owned and occupied by C&D Battery. The building was demolished in the early 2000s. The 433 Washington Street site was former owned and occupied by Hale Pump.

Due to the former industrial uses, the site is part of the PADEP Act 2 program for onsite soil contaminants.

Approximately 10.87± acres will be disturbed as part of the project. The project is located within the Specially Planned Two (SP-2) Zoning District with the Floodplain Conservation District Overlay in the Borough of Conshohocken and the Heavy Industrial District (HVY) with the Riverfront Development District One (RDD-1) Overlay, Riparian Corridor Conservation District (RCCD), Steep Slopes (SS) Overlay District and the Floodplain Conservation Overlay District (FLPL) in Whitemarsh Township. The proposed use is permitted by right in both municipalities, however grading and utility work in the floodway required approval by Conditional Use in Conshohocken Borough and by Special Exception in Whitemarsh Township. The site will be served by public water and sewer.

The site is bound by Washington Street to the north, the Schuylkill River to the south, an industrial property to the east, and Cherry Street to the west, see Appendix A for the project location maps.

1.2 Pre-Project Conditions

This site is located in the Schuylkill River Watershed. The site is generally sloped towards the south, with the majority of stormwater flowing directly to the Schuylkill River. The Pennsylvania Code, Title 25, Chapter 93, Water Quality Standards assigns the Schuylkill River a water quality designation of Warm Water Fishery, Migratory Fishes (WWF, MF).

Pre-project cover areas and drainage boundaries were based on topographical survey, site visits, aerial photographs, and USGS mapping. The site is flat with a portion of the storm runoff being collected by roof drains and storm inlets, which are generally conveyed from north to south. There is a small section of the site that drains to the north towards the railroad tracks and also into the stormsewer system underneath Washington Street. The remainder of the site's runoff is discharged to the Schuylkill River via overland flow.

Due to the past industrial uses, the site in the pre-project condition is considered partially impervious, with the exception of overgrown areas behind the existing buildings and parking area.

This analysis will evaluate the pre-project and post-project flow from the proposed development areas of the site to a study point. Three study points have been established for analysis: the first (O-1) is at a point within the roadside drainage ditch on the north side of Washington Street; the second (O-2) is the municipal stormwater conveyance system within the Cherry Street Right-of-Way; and the third (O-3) is a point within the Schuylkill River where the majority of the site's runoff discharges.

1.3 Post-Project Conditions

The site was analyzed at three (3) study points to examine the effects of development with cover type changes, detention, and low-impact development features. The study points are located at the same locations of the existing study points, as described above.

The proposed construction will be reducing impervious cover to the greatest extent possible through placement of lawn areas. The proposed BMPs include but are not limited to: re-vegetate disturbed areas, underground detention basin, snouts, and a Managed Released Concept (MRC) underground

basin. The basins discharge to the proposed stormsewer which discharges to the Schuylkill River at the currently existing discharge point. Post-project flow paths will follow pre-project flow paths and no additional discharge points will be added as part of this development.

The proposed impervious cover includes the proposed multi-unit residential buildings, sidewalks, and necessary roadway improvements. The post-project pervious cover is assumed in the calculations to be lawn, except in areas where the existing trees are to remain.

2.0 Soils

Soil mapping and properties including depths, slopes, and limitations for the calculations presented in this report, were obtained from the NRCS Web Soil Survey. Project soil locations is shown on the plan drawings, and a summary of the soils as well as a copy of the NRCS Web Soil Survey map are included in Appendix B. The NRCS Web Soil Survey soils found within the site area are listed below in Table 3.1:

Table 3.1 NRCS Web Soil Survey Results		
Soil Code	Soil Description	Hydrologic Soil Group
UgB	Urban land, 0 to 8 percent slopes	B

The site is located within an urban industrial center for over 150 years and as such, the site soils are comprised of mixed fill material with no definite homogenous characteristics. The site is also part of the PADEP Act 2 program for onsite soil contaminants, therefore the installation of a soil (minimum of 1' depth) or impervious cap will be included as part of the site construction.

2.1 Karst Geology

While a specific karst hazard assessment was not developed for this site, the site is not located within an area that is prone to sinkholes. There are no known sinkholes onsite or within 1,500 feet of the site. Copies of the karst features and sinkhole maps are included in Appendix J.

2.2 Infiltration and Geotechnical Testing

Due to various factors including shallow bedrock, Act 2 contamination, existing buildings on the site, and lack of suitable area for infiltration, the use of the Manage Release Concept was selected to mitigate volume increases instead of infiltration. The onsite subsurface findings including various test pits and boring holes are located in Appendix K.

3.0 Regulations

The PCSM plan has been prepared utilizing the following standards:

- Municipal Ordinances – Borough of Conshohocken and Whitemarsh Township, various dates
- PADEP Erosion and Sediment Pollution Control Program Manual, Pennsylvania Department of Environmental Protection, March 2012

- Pennsylvania Stormwater Best Management Practices Manual, Final Draft, Pennsylvania Department of Environmental Protection, December 2006

Several of the above regulations address similar tasks but have different criteria that conflict with one another. In such cases, all of the criteria were evaluated to determine how to achieve the best overall compliance with all of the regulatory documents. The project criteria used included the following:

- Tributary Cover is based on actual field conditions and aerial mapping.
- Land Use Coefficients and Curve Numbers are consistent with Urban Hydrology for Small Watersheds, Technical Release 55 (TR-55), see Appendix C.
- Rainfall Depths and Intensities use National Oceanic and Atmospheric Administration (NOAA) data for the region, see Appendix D.
- Storm Sewer and Inlet Design adhere to criteria found in the applicable municipal codes. The Rational Method was used for the analysis of stormwater systems and stormwater runoff rates. The Rational Method runoff coefficient adhere to the values stated in the municipal ordinances. Pipes were analyzed using the Hydraflow Storm Sewers Extension for AutoCAD Civil 3D computer analysis program, see Appendix H for storm sewer calculations.
- Hydrologic analyses were performed in accordance with the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) methodology, as described in the National Engineering Handbook Part 630 Hydrology. This modeling technique is incorporated in the Pondpack CONNECT Edition software package developed by Bentley Systems, Inc., see Appendices F and G for the release rate calculations.

3.1 Act 167

Montgomery County completed Act 167 Stormwater Management Plans for 10 of its 17 watersheds and is considering completing one county wide plan to complete the remaining watershed plans and update the existing ones. The project is located within the Schuylkill Watershed for which a plan has not been completed; therefore, more stringent management is not required above the Pennsylvania Stormwater Management Act 167 and all post-project design storms were reduced to rates below the pre-project condition.

3.2 Erosion and Sediment Pollution Control

This project will be submitted to the Montgomery County Conservation District (MCCD) for the required Erosion and Sediment Pollution Controls (E&SPC) approval as required by the Pennsylvania Clean Stream Law and regulations from Chapter 102. Applicable E&SPC design calculations for permanent features are included in Appendix I. The E&SPC construction sequence, on the E&SPC plans, includes the construction sequence for PCSM BMP installations for the project.

3.3 Pennsylvania Department of Environmental Protection

PADEP's PCSM plan goal is to control rate, volume, and water quality of runoff from a project by maximizing volume reduction technologies, minimizing point source discharges to surface waters, preserving stream channel integrity, and protecting the physical, biological, and chemical qualities of the receiving surface water. PADEP created several worksheets to help the designer assess the

effectiveness of the design, shown in Appendix E. The PADEP PCSM Worksheets will be discussed in more detail later in this report.

4.0 Proposed PCSM BMPs

The proposed structural BMPs for this project include:

1. Dry-Extended Detention Facility – Underground Detention Basin A was designed for peak rate reduction only. This facility increases the time it takes water to reach the discharge point by slowly releasing the runoff. Sizing of the concrete outlet structure was determined such that township release rate requirements were met. Upstream snouts will function as pre-treatment for this basin. This facility will be constructed of 14 rows each of 24" HDPE perforated pipes at 220 feet in length. The project is located on a site with known contaminated soils, therefore this facility was not designed for infiltration and is wrapped with a 30 mil liner to prevent it from occurring. This permanent BMP enhances not only ground water recharge, but removes large and small particulates, providing excellent water quality (BMP 6.6.3).
2. Managed Release Concept Basin - Underground MRC Basin B was designed to assist in peak rate reduction and volume management through the outlet design with Management Release Concept (MRC) approach. Upstream snouts will function as pre-treatment for this basin. This facility will be constructed with 3'-0" deep StormTrap SingleTrap reinforced concrete structures; 440 units will be required to provide the volume as included in the design calculations. The project is located on a site with known contaminated soils, therefore this facility was not designed for infiltration and is wrapped with a 30 mil liner to prevent it from occurring. This permanent BMP enhances not only ground water recharge, but removes large and small particulates, providing excellent water quality (BMP 6.6.3).

The stormwater runoff conveyed into the subsurface detention facilities will be collected from the proposed building roof drains and various Type 'C' and 'M' inlets within the parking areas. This runoff will receive water quality treatment prior to discharge into the detention facilities and will be considered as clean water.

Manage Release Concept Design Standards:

- Runoff Capture – All runoff entering the underground basins will be pre-treated by water quality snout inlets to remove large and small particulates prior to entering the basins.
- Release Rate for the 1.2-inch/2-hour Storm – The MRC facility will have the release rate of 0.04 cfs for the 1.2-inch/2-hour storm event. Refer to MRC worksheet.
- Internal Water Storage – 12" of IWS has been provided. As stated above, all runoff convey into the underground basins are deemed as clean water from the roof drains.
- Peak Flow Attenuation for the 2-year/24-hour Event – The project drainage area release rate of 2-year/24-hour storm event in post development condition is lower than the project drainage area release of 1-year/24-hour storm event in pre-development condition. Refer to Appendix F – Release Rate Calculations.

- Stormwater BMP Manual – MRC is being incorporated into one of the two subsurface detention facilities.
 - MRC BMP Selection – Non-vegetated MRC (Subsurface Detention Structure) is being proposed for the project.
 - Pre-Development Site Characterization and Assessment of Soil and Geology – As described above, infiltration testing was elected not to be performed due to proximity of underground basins to the buildings and their parking structures. Closed systems are proposed.
 - Separation Distance – A 1 foot separation from seasonal high water table has been provided.
 - Ponding Depth and Drawdown Time – Design criteria has been incorporated. Refer to MRC worksheets.
 - Soil Media – Soil media has not been provided as the proposed MRC is a subsurface detention structure.
 - Underdrain Design – A perforated underdrain is provided at the MRC invert with an upturned elbow to provide 12” of internal water storage.
 - Discharge Flow Path – Runoff discharges from the subsurface detention facility will be conveyed through the proposed storm sewer network prior to discharge into the Schuylkill River.
 - Antidegradation Requirements – Runoff discharges from the subsurface detention facility will be conveyed through the proposed storm sewer network prior to discharge into the Schuylkill River. The underground detention time will allow time for the water to cool prior to discharging to the surface water.
 - The PADEP Managed Release Concept (MRC) Design Summary sheets are included in Appendix E.
3. Mechanical Water Quality Filter – The discharge pipes into the underground detention facilities will drain through snouts to treat the stormwater prior to being discharged into the facilities. This structure is not recognized as a DEP BMP, but it can be used in combination with other facilities.

The aforementioned BMPs were designed in accordance with PADEP policies. Specific BMP locations are on the included plans.

5.0 Peak Rate Analysis

This project was designed to fulfill the PADEP Peak Rate Control Guidelines, which limit the post-project peak flow rates to the pre-project peak flow rates for applicable storm events.

The project site is located within the Schuylkill River Watershed which does not have an approved Act 167 plan, therefore no additional release rate restrictions are required. For all three analysis points, post-project flow rates shall not exceed the pre-project flow rates for 1-, 2-, 5-, 10-, 25-, 50-, and 100-year design frequency storms.

Since the TR-55 methodology is used, the SCS Segmental methodology is used to calculate the time of concentration. A time of concentration was calculated for each subarea. Time of concentration

calculations can be found as part of the release rate calculations completed using PondPack, see Appendix F for the pre-project calculations and Appendix G for the post-project calculations.

As summarized in the PADEP PCSM Spreadsheets in Appendix E, the post-project flow rate is reduced to less than the pre-project flow rate in all design storms.

6.0 Volume Management

This project as a whole was designed to fulfill the PADEP Volume Control Guideline 1, which limits the post-project runoff volume to the pre-project runoff volume for the 2-year, 24-hour storm event. The two ways to mitigate the project runoff volume are through the use of non-structural and structural BMPs. The proposed structural BMPs and their PADEP BMP IDs were listed previously in the Proposed PCSM BMPs section of this report.

6.1 Non-Structural BMP Credits

PADEP PCSM Volume Worksheet calculates the volume credits that can be taken for utilizing non-structural BMPs in the planning process for any project. At this time, credits were not taken for non-structural BMPs. All of the PADEP PCSM Worksheets can be found in Appendix E.

6.2 Required Infiltration Volume

The 'Volume Management' DEP PCSM Spreadsheet calculations were completed to determine the change in runoff volume for the 2-year, 24-hour design storm event from the pre-project condition to the post-project condition.

6.3 Provided Infiltration Volume

The 'Volume Management' DEP PCSM Spreadsheet tabulates the tributary area to the proposed structural BMPs and the storage volume of the proposed BMPs. Since infiltration is not possible, this project includes the use of a managed release concept (MRC) underground detention basin to account for the difference between the 2-year pre-project volume and the 2-year post-project volume. This MRC basin will mitigate for all the additional impervious surfaces while also assisting in rate reduction. The PADEP Managed Release Concept (MRC) Design Summary sheets are included in Appendix E.

7.0 Water Quality Calculations

This project as a whole was designed to adequately address the PADEP Water Quality Control Guideline, which requires a the post-project releases of total suspended solids (TSS) and total phosphorous (TP), and nitrates (NO₃) do not exceed the pre-project releases. Through the use of structural BMPs, the post-project pollutant loading can be reduced. The proposed Structural BMPs were listed previously in the Proposed PCSM BMPs section of this report.

7.1 Required Water Quality Reductions

In order to reduce the pollutant loading in the post-project condition, permanent BMPs were purposefully placed to intercept disturbed runoff. These proposed BMPs were listed previously in the

report. The project was designed to use proposed BMPs in series. As such, the drainage areas to each BMP may overlap, but the actual footprint of the BMPs do not overlap and volumes to each BMP are only counted once.

The PADEP PCSM Quality Worksheet calculates the total pollutants reaching each individual BMP and the total pollutant reductions based on the BMP removal efficiencies. After each BMP is calculated, a sum of the total pollutant reductions achieved by all BMPs was determined. Although there are multiple proposed BMPs, the water quality BMPs used for calculation purposes include: MRC underground basin and underground basin. Snouts are used for pre-treatment of stormwater prior to discharging to the underground detention basins, but the snouts do not provide additional water quality credit.

The proposed project meets all three of the PADEP PCSM Quality Worksheet required pollutant load reductions. The project post development water quality pollutants loads are less than the pre-development water quality pollutants loads for all three required pollutants.

All of the PADEP PCSM Worksheets can be found in Appendix E. Water quality calculations for each water quality BMP are also shown in Appendix E.

8.0 Operations and Maintenance for PCSM BMPs

The operation and maintenance of the permanent PCSM BMPs located onsite will become the responsibility of the owner by way of the recorded plans. The owner must sign an Operation and Maintenance Agreement based on the Operation and Maintenance Plan as described in detail on the PCSM plans.

9.0 Anti-Degradation Analysis

This project included measures to mitigate the thermal impacts to the receiving surface waters, even though the project is not required to provide an analysis. An anti-degradation analysis is only required when the project is within a special protection watershed.

All runoff from the roof areas will be captured and directed to subsurface underdrains. Runoff from paved areas of the project discharge through buried pipe, thereby creating ample opportunity for cooling prior to reaching the surface waters. Most of the site will be directed to underground detention facilities which will provide additional time for water to cool. As such, the project will not have an adverse impact on the natural temperatures of the receiving surface waters.

10.0 PCSM Plan Set

Post-Construction Stormwater Management Plan drawings have been submitted concurrently with this report.

11.0 Conclusion

The project meets PCSM requirements by addressing three key measures used by PADEP to gauge the potential impacts from a proposed project including:

1. Peak Rate Mitigation – Peak Rate Mitigation reduces the post-project release rates to levels less than the pre-project release rates, thus reducing the potential for accelerated erosion to areas located downstream of the project and reducing the potential for downstream flooding.
2. Volume Reduction – Volume Reduction lessens the effects of construction by reducing the post-project runoff volume through the use of an MRC BMP. Since this site located in a known contaminated soils area, infiltration is not proposed on the site.
3. Water Quality Control – Water Quality Controls are used to achieve pollutant loading reductions, in order to protect the existing surface waters and preserve natural habitats.

Through the use of recommended BMPs that improve water quality and reduce release rates, the environmental effects from this project were reduced. This PCSM Plan was designed to eliminate (wherever possible) or minimize point source discharges to surface waters, preserve the integrity of existing stream channels, and protect the physical, biological, and chemical qualities of the receiving surface water. The calculations presented in this report demonstrate that the designed facilities sufficiently balance the multiple regulatory requirements.

References

- Subdivision and Land Development Ordinances (SALDO), Borough of Conshohocken and Whitemarsh Township, various dates.
- Zoning Ordinances, Borough of Conshohocken and Whitemarsh Township, various dates.
- Stormwater Management Ordinances, Borough of Conshohocken and Whitemarsh Township, various dates.
- PADEP Erosion and Sediment Pollution Control Program Manual (E&S Manual), Pennsylvania Department of Environmental Protection, March 2012.
- Pennsylvania Stormwater Best Management Practices Manual, Final Draft, Pennsylvania Department of Environmental Protection, December 2006.
- NRCS Web Soil Survey, United States Department of Agriculture, November 2021.
- PA Code, Title 25, Environmental Protection, Commonwealth of Pennsylvania
- PENNDOT Publication 13M, Design Manual, Part 2, Highway Design (DM-2), Pennsylvania Department of Transportation, August 2009
- PENNDOT Publication 584, PENNDOT Drainage Manual (PDM), Pennsylvania Department of Transportation, December 2010
- PENNDOT Publication 72M, Roadway Construction Standards, Pennsylvania Department of Transportation, June 10, 2013
- Urban Hydrology for Small Watersheds, Technical Release 55 (TR-55), United States Department of Agriculture, June 1986
- PA Code, Title 25, Environmental Protection, Commonwealth of Pennsylvania



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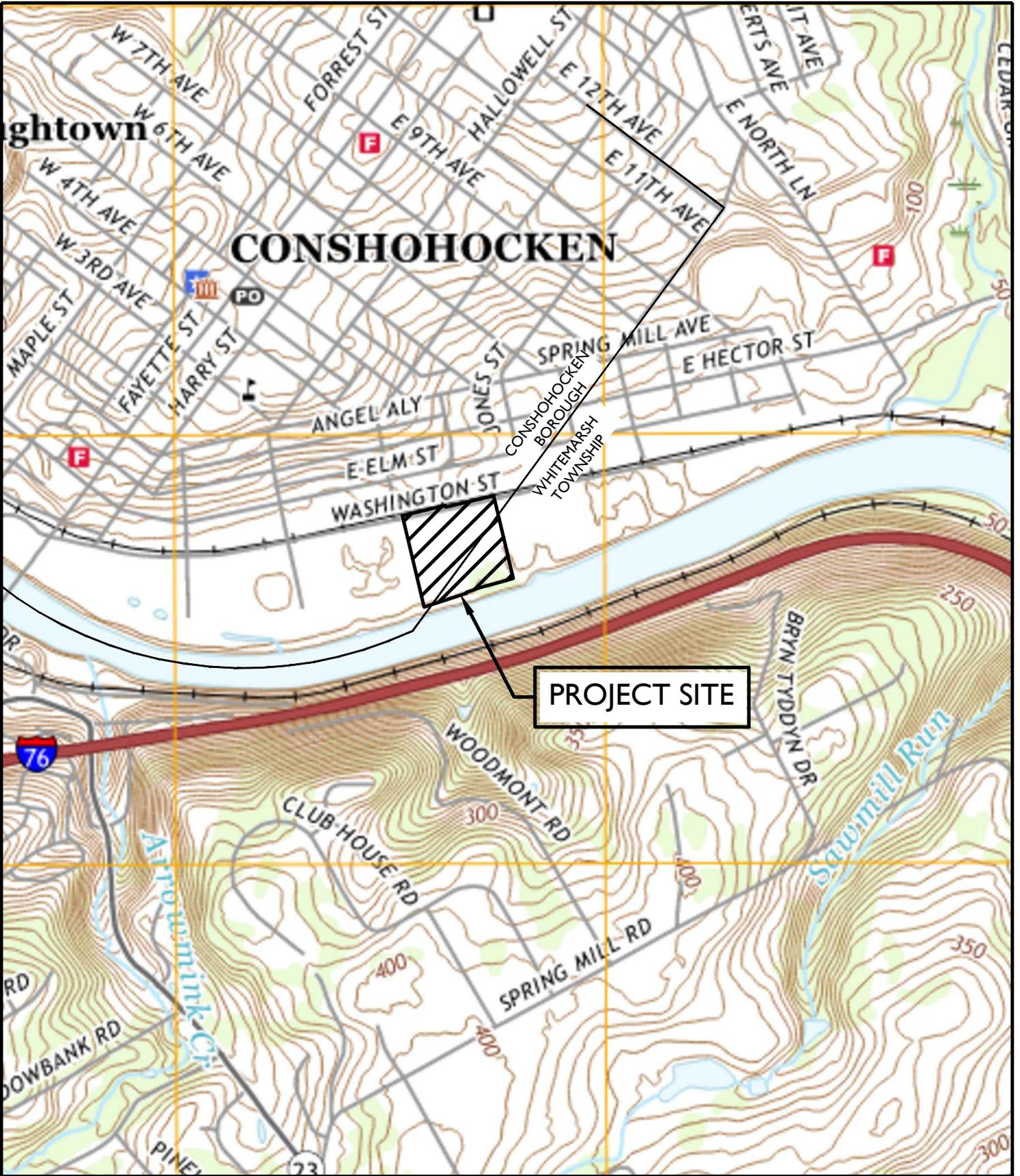
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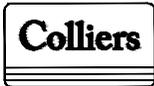


*Civil/Site • Traffic/Transportation • Governmental • Survey/Geospatial
Infrastructure • Geotechnical/Environmental • Telecommunications • Utilities/Energy*

Appendix A | Project Location Maps



2014\14000908C\Engineering\Exhibits\C-EXBT-USGS.dwg,C-XX-EXHIBIT By: MDBESUS



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PROJECT NUMBER: 14000908C	DRAWING NAME: C-EXBT-USGS		
SHEET TITLE: USGS MAP			
SHEET NUMBER: A - 4 of 6 of 1			

AERIAL MAP



3059

E Hector St

E Elm St

Schuylkill River Trail

Washington St

Washington St

Schuylkill River

Schuylkill River

Schuylkill Expy

SITE

800 ft



NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updates or additional flood hazard information.

To obtain more detailed information in areas where Base Flood Elevations (BFEs) and/or Floodways have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations tables in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations tables should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the Floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The projection used in the preparation of this map was Universal Transverse Mercator (UTM), Zone 18. Horizontal datum was NAD 83, GRS80 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of the FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum or 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov> or contact the National Geodetic Survey at the following address:

NGS Information Services
National Geodetic Survey, NOAA
Silver Spring Metro Center 3
1315 East-West Highway
Silver Spring, Maryland 20910
(301) 713-3242

To obtain current elevation, description, and/or location information for bench marks shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit its website at <http://www.ngs.noaa.gov/>.

BASE MAP SOURCE: Road centerlines were obtained in digital spatial data format from the Delaware Valley Regional Planning Commission. County and township boundaries were downloaded from the Pennsylvania Spatial Data Access website. 2002 and 2005 digital orthophotographs were provided by the Delaware Valley Regional Planning Commission. Streamlines were digitized based on the orthophotos. Adjustments were made to specific base map features to align them to 1"-200' scale orthophotos.

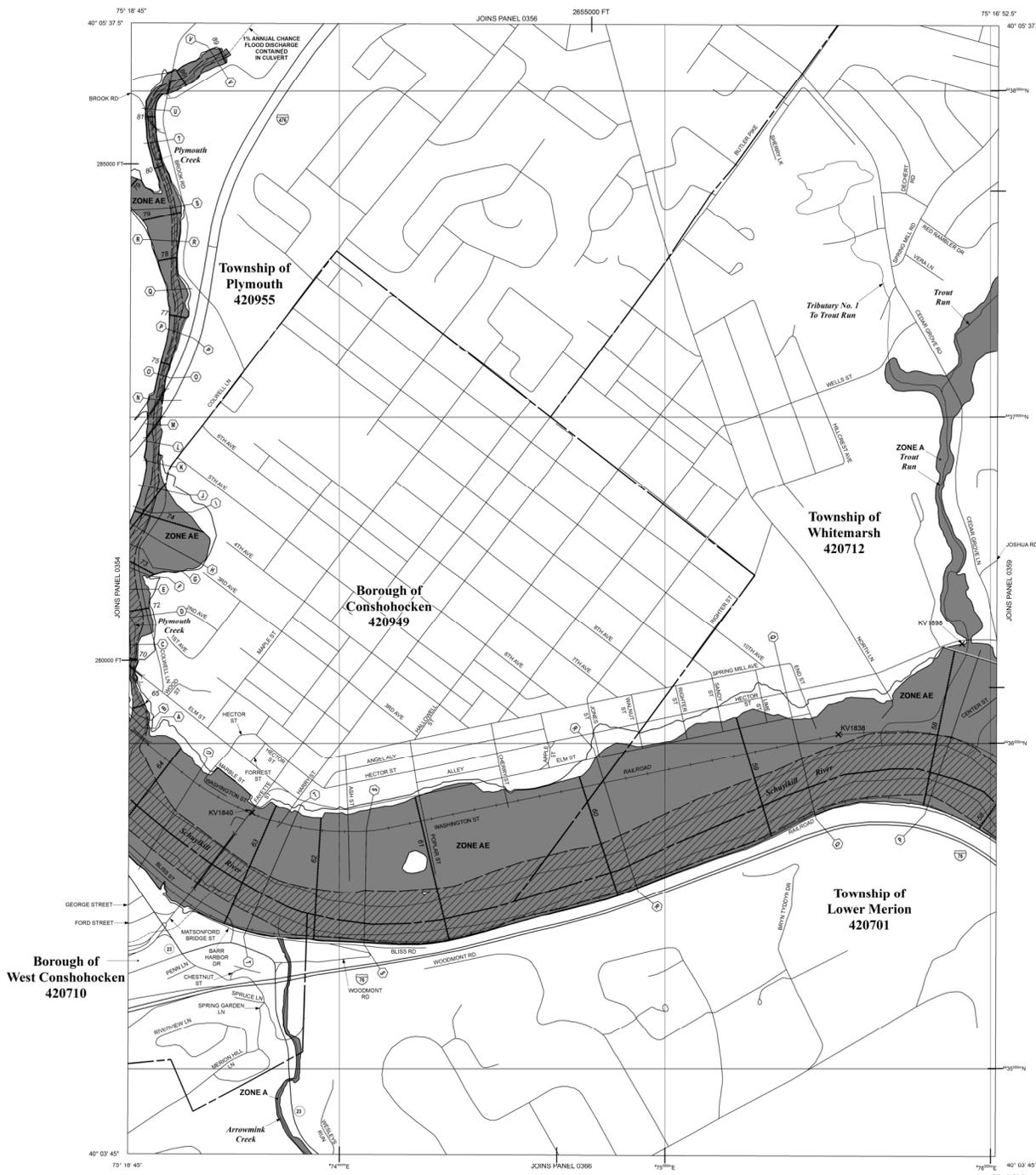
Based on updated topographic information, this map reflects more detailed and up-to-date stream channel configurations and floodplain delineations than those shown on the previous FIRM for this jurisdiction. As a result, the Flood Profiles and Floodway Data tables may reflect stream channel distances that differ from what is shown on the map. Also, the road to floodplain relationships for unweirred streams may differ from what is shown on previous maps.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed Map Index for an overview map of the county showing the layout of map panels, community map repository addresses, and a Listing of Communities table containing National Flood Insurance Program data for each community as well as a listing of the panels on which each community is located.

For information on available products associated with this FIRM visit the Map Service Center (MSC) website at <http://msc.fema.gov>. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the MSC website.

If you have questions about this map, how to order products or the National Flood Insurance Program in general, please call the FEMA Map Information eXchange (FMIX) at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA website at <http://www.fema.gov/business/firm>.



LEGEND

- SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD**
- The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, AV, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.
- ZONE A**
No Base Flood Elevations determined.
- ZONE AE**
Base Flood Elevations determined.
- ZONE AH**
Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevation determined.
- ZONE AO**
Flood depths of 1 to 3 feet (usually sheet flow on impervious surfaces); average depths determined. For areas of alternate fast flooding, velocities also determined.
- ZONE AR**
Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control structure that has since been removed. Zone AE indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- ZONE AV**
Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
- ZONE V**
Coastal Flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- ZONE VE**
Coastal Flood zone with velocity hazard (wave action); Base Flood Elevations determined.

- FLOODWAY AREAS IN ZONE AE**
- The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.
- OTHER FLOOD AREAS**
- ZONE X**
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.
- OTHER AREAS**
- ZONE X**
Areas determined to be outside the 0.2% annual chance floodplain.
- ZONE D**
Areas in which flood hazards are undetermined, but possible.
- COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS**
- OTHERWISE PROTECTED AREAS (OPAs)**

- CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.
- 1% annual chance floodplain boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, Flood depths or flood velocities.
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, Flood depths or flood velocities.
- Base Flood Elevation line and water elevation in feet
- Base Flood Elevation value where uniform within zone; elevation in feet

- * Referenced to the North American Vertical Datum of 1988
- Bridge
- Culvert
- Cross section line
- Transect line
- Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
- 4276 000 M
- 600000 FT
- DXS510 x
- M 1.5

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
DECEMBER 18, 1998

EFFECTIVE DATES OF REVISIONS TO THIS PANEL
MARCH 2, 2016 - to add, change and delete Special Flood Hazard Areas; to reflect updated topographic information; to change, add, and delete Base Flood Elevations; and to incorporate previously issued Letters of Map Revision.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-628-6620.

MAP SCALE 1" = 500'

250 0 250 500 1000 FEET

150 0 150 300 METERS

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0358G

FIRM
FLOOD INSURANCE RATE MAP

MONTGOMERY COUNTY, PENNSYLVANIA (ALL JURISDICTIONS)

PANEL 358 OF 451
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

COMMUNITY	NUMBER	PANEL	SUFFIX
CONSHOHOCKEN, BOR OF	420949	0358	G
LOWER MERION, TWP OF	420701	0358	G
WHITEMARSH, TWP OF	420712	0358	G
WEST CONSHOHOCKEN, BOR OF	420955	0358	G

Notice to User: The Map Number shown below should be used when ordering map copies. The Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER 42091C0358G

MAP REVISED MARCH 2, 2016

Federal Emergency Management Agency

A 5 of 6

Appendix B | Soil Maps and Data



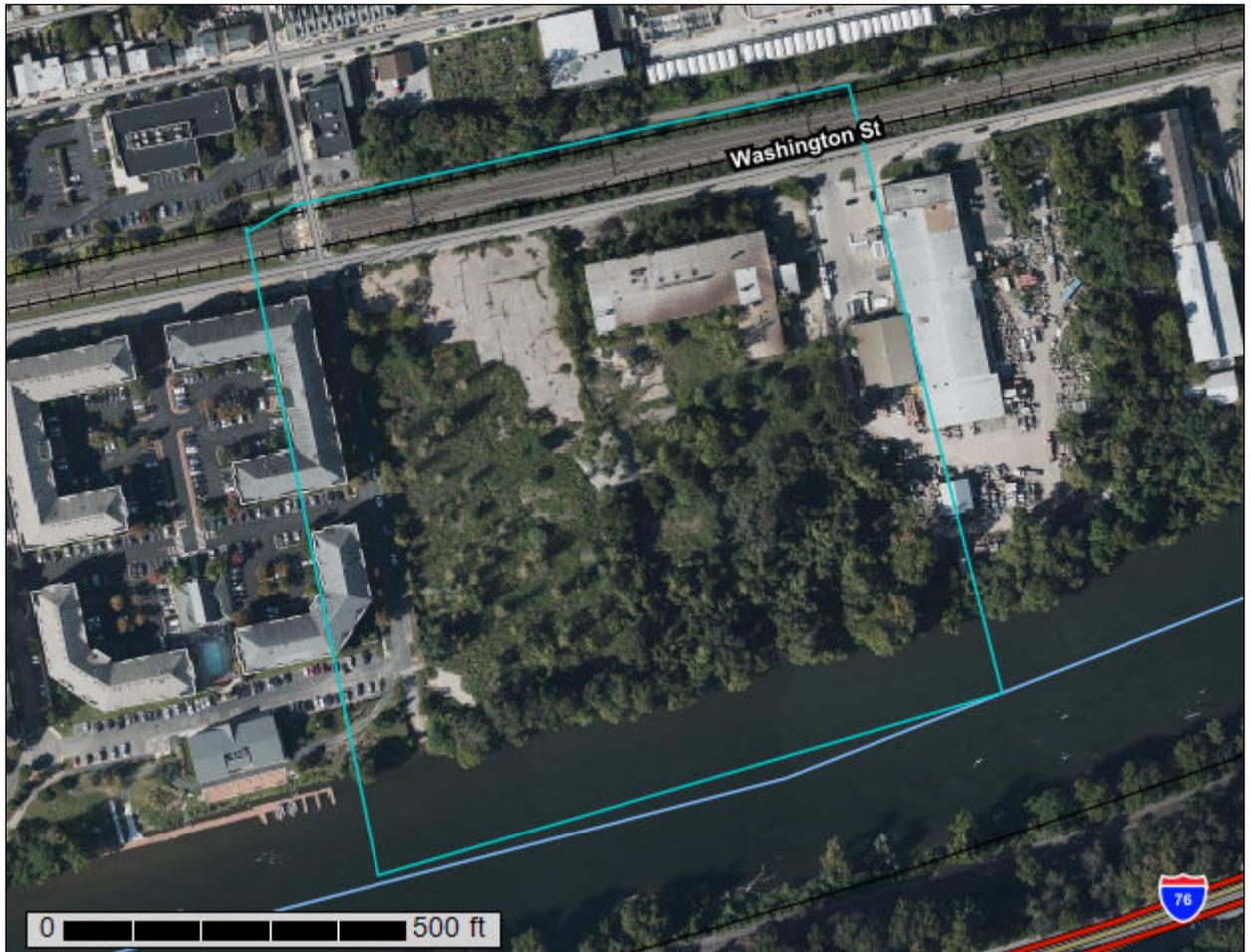
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Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for Montgomery County, Pennsylvania



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

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scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

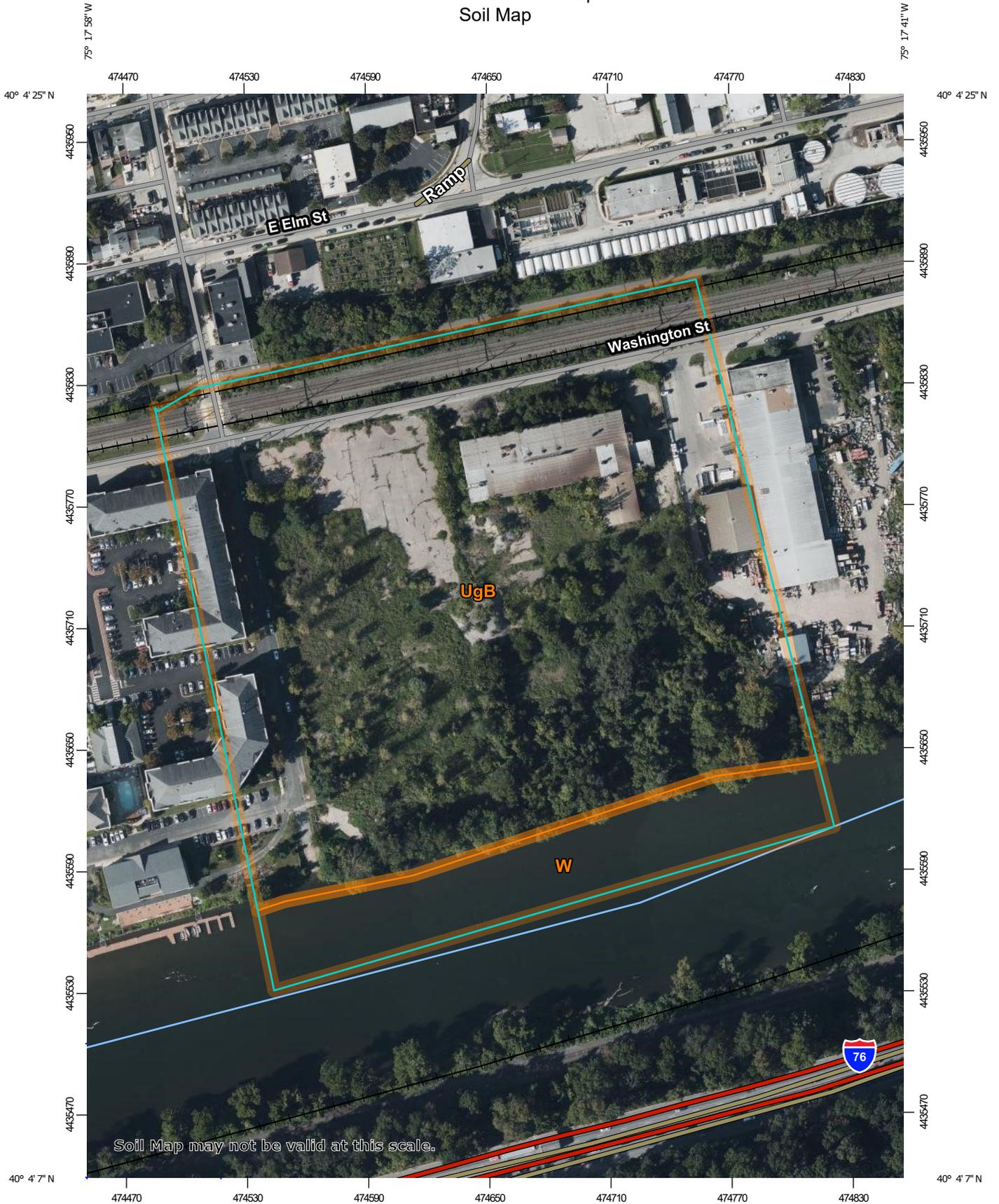
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identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



Map Scale: 1:2,610 if printed on A portrait (8.5" x 11") sheet.

0 35 70 140 210 Meters

0 100 200 400 600 Feet

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features

Water Features

 Streams and Canals

Transportation

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

Background

 Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Montgomery County, Pennsylvania
 Survey Area Data: Version 16, Sep 1, 2021

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

Date(s) aerial images were photographed: Sep 21, 2020—Oct 6, 2020

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

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
UgB	Urban land, 0 to 8 percent slopes	17.4	86.6%
W	Water	2.7	13.4%
Totals for Area of Interest		20.1	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

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onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Montgomery County, Pennsylvania

UgB—Urban land, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2dtyq
Elevation: 800 to 1,500 feet
Mean annual precipitation: 36 to 46 inches
Mean annual air temperature: 41 to 62 degrees F
Frost-free period: 130 to 170 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Setting

Parent material: Pavement, buildings and other artificially covered areas human transported material

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: No

Minor Components

Udorthents, unstable fill

Percent of map unit: 10 percent
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

W—Water

Map Unit Setting

National map unit symbol: 1nnv3
Mean annual precipitation: 36 to 50 inches
Mean annual air temperature: 46 to 59 degrees F
Frost-free period: 120 to 214 days
Farmland classification: Not prime farmland

Map Unit Composition

Water: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Water

Setting

Parent material: Rivers streams ponds

Properties and qualities

Runoff class: Negligible

Frequency of ponding: Frequent

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Appendix C | Runoff Coefficients and Curve Numbers

Runoff Curve Numbers and Percent Imperviousness Values*

Cover Description	Average Percent Impervious Area	Curve Numbers for Hydrologic Soil Group			
Open space (lawns, parks, golf courses, cemeteries, etc.):					
Good condition (grass cover greater than 75%)	39	61	74	80	
Impervious areas:					
Paved parking lots, roofs, driveways, etc. (excluding right-of-way)	98	98	98	98	
Streets and roads: paved, curbs and storm sewers (excluding right-of-way)	98	98	98	98	
Paved, open ditches (including right-of-way)	83	89	92	93	
Urban districts:					
Commercial and business	85	89	92	94	95
Industrial	72	81	88	91	93
Residential district by average lot size:					
1/8 acre or less (townhouses)	65	77	85	90	92
1/4 acre	38	61	75	83	87
1/3 acre	30	57	72	81	86
1/2 acre	25	54	70	80	85
1 acre	20	51	68	79	84
2 acres	12	46	65	77	82
Woods		30	55	70	77
Agriculture		Refer to Table 2-2b in source document (TR55) by crop type and treatment.			

*Source Soil Conservation Service Technical Release No. 55, Second Edition, June 1986.

Table 2-2c Runoff curve numbers for other agricultural lands ^{1/}

Cover description	Hydrologic condition	Curve numbers for hydrologic soil group			
		A	B	C	D
Pasture, grassland, or range—continuous forage for grazing. ^{2/}	Poor	68	79	86	89
	Fair	49	69	79	84
	Good	39	61	74	80
Meadow—continuous grass, protected from grazing and generally mowed for hay.	—	30	58	71	78
Brush—brush-weed-grass mixture with brush the major element. ^{3/}	Poor	48	67	77	83
	Fair	35	56	70	77
	Good	30 ^{4/}	48	65	73
Woods—grass combination (orchard or tree farm). ^{5/}	Poor	57	73	82	86
	Fair	43	65	76	82
	Good	32	58	72	79
Woods. ^{6/}	Poor	45	66	77	83
	Fair	36	60	73	79
	Good	30 ^{4/}	55	70	77
Farmsteads—buildings, lanes, driveways, and surrounding lots.	—	59	74	82	86

¹ Average runoff condition, and $I_a = 0.2S$.

² **Poor:** <50% ground cover or heavily grazed with no mulch.

Fair: 50 to 75% ground cover and not heavily grazed.

Good: > 75% ground cover and lightly or only occasionally grazed.

³ **Poor:** <50% ground cover.

Fair: 50 to 75% ground cover.

Good: >75% ground cover.

⁴ Actual curve number is less than 30; use CN = 30 for runoff computations.

⁵ CN's shown were computed for areas with 50% woods and 50% grass (pasture) cover. Other combinations of conditions may be computed from the CN's for woods and pasture.

⁶ **Poor:** Forest litter, small trees, and brush are destroyed by heavy grazing or regular burning.

Fair: Woods are grazed but not burned, and some forest litter covers the soil.

Good: Woods are protected from grazing, and litter and brush adequately cover the soil.

2. The coefficient of roughness, “n”, shall be as follows unless otherwise approved by the Township Engineer.

Material/Ground Cover	Roughness Coefficient “D”
Concrete pipe	.012
Corrugated steel pipe	see table below
Vitrified clay pipe	.012
Cast iron pipe	.013
Brick sewer	.015
Asphalt pavement	.015
Concrete pavement	.014
Grass swales	.040
Earth	.020
Gravel	.020
Rock	.035
Cultivated areas	.030 to .050
Dense Brush	.070 to .140
Dense woods with little undergrowth	.100 to .150
Streams	
Some grass and weeds, little brush	.030 to .035
Dense growth of weeds	.035 to .050
Some weeds, heavy brush on banks	.050 to .070

**Values of Coefficient of Roughness (n)
for Standard Corrugated Steel Pipe
(Manning’s Formula)**

Corrugations	Helical						
	1 1/2" x 1/4"				2 2/3" x 1 2/3"		
	8"	10"	12"	18"	24"	36"	48"
Unpaved	.012	.014	.011	.014	.016	.019	.020
25% paved					.015	.017	.020
Fully paved					.012	.012	.012

Corrugations	Helical					
	3" x 1"					
	36"	48"	54"	60"	66"	72"
Unpaved	.021	.023	.023	.024	.025	.026
25% paved	.019	.020	.020	.021	.022	.022
Fully paved	.012	.012	.012	.012	.011	.012

Appendix D | Rainfall Depths and Intensities

NOAA Atlas 14, Volume 2, Version 3
Location name: Conshohocken, Pennsylvania,
USA*



Latitude: 40.072°, Longitude: -75.2987°
Elevation: 53.9 ft**



* source: ESRI Maps
 ** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

G.M. Bonnin, D. Martin, B. Lin, T. Parzybok, M. Yekta, and D. Riley

NOAA, National Weather Service, Silver Spring, Maryland

[PF tabular](#) | [PF graphical](#) | [Maps & aerials](#)

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.347 (0.318-0.378)	0.412 (0.379-0.450)	0.485 (0.444-0.528)	0.535 (0.489-0.583)	0.596 (0.542-0.649)	0.637 (0.576-0.695)	0.678 (0.611-0.741)	0.714 (0.639-0.782)	0.755 (0.670-0.831)	0.786 (0.692-0.869)
10-min	0.554 (0.509-0.604)	0.660 (0.606-0.720)	0.776 (0.710-0.845)	0.856 (0.783-0.933)	0.950 (0.864-1.03)	1.01 (0.918-1.11)	1.08 (0.971-1.18)	1.13 (1.01-1.24)	1.19 (1.06-1.31)	1.24 (1.09-1.37)
15-min	0.692 (0.636-0.755)	0.829 (0.762-0.905)	0.982 (0.899-1.07)	1.08 (0.990-1.18)	1.20 (1.10-1.31)	1.29 (1.16-1.40)	1.36 (1.23-1.49)	1.43 (1.28-1.56)	1.50 (1.33-1.65)	1.55 (1.37-1.72)
30-min	0.949 (0.872-1.03)	1.15 (1.05-1.25)	1.40 (1.28-1.52)	1.57 (1.44-1.71)	1.78 (1.62-1.94)	1.94 (1.75-2.11)	2.09 (1.88-2.28)	2.22 (1.99-2.43)	2.39 (2.12-2.63)	2.52 (2.21-2.78)
60-min	1.18 (1.09-1.29)	1.44 (1.32-1.57)	1.79 (1.64-1.95)	2.04 (1.87-2.23)	2.37 (2.16-2.59)	2.62 (2.37-2.86)	2.87 (2.59-3.14)	3.12 (2.79-3.41)	3.43 (3.05-3.78)	3.67 (3.23-4.06)
2-hr	1.42 (1.29-1.55)	1.72 (1.57-1.89)	2.15 (1.96-2.35)	2.48 (2.25-2.71)	2.91 (2.63-3.18)	3.25 (2.92-3.56)	3.60 (3.21-3.94)	3.94 (3.49-4.32)	4.41 (3.86-4.85)	4.76 (4.13-5.26)
3-hr	1.55 (1.42-1.70)	1.88 (1.72-2.07)	2.36 (2.15-2.59)	2.72 (2.47-2.98)	3.21 (2.90-3.52)	3.59 (3.22-3.94)	3.99 (3.55-4.37)	4.39 (3.87-4.82)	4.92 (4.29-5.44)	5.35 (4.61-5.92)
6-hr	1.94 (1.78-2.13)	2.35 (2.15-2.58)	2.93 (2.67-3.22)	3.40 (3.09-3.72)	4.05 (3.66-4.44)	4.59 (4.10-5.03)	5.15 (4.57-5.65)	5.74 (5.03-6.31)	6.57 (5.66-7.26)	7.25 (6.15-8.04)
12-hr	2.36 (2.16-2.61)	2.85 (2.61-3.15)	3.58 (3.27-3.95)	4.18 (3.80-4.61)	5.07 (4.55-5.57)	5.81 (5.17-6.38)	6.62 (5.82-7.28)	7.49 (6.49-8.27)	8.77 (7.44-9.73)	9.84 (8.20-11.0)
24-hr	2.73 (2.51-2.97)	3.28 (3.02-3.59)	4.12 (3.79-4.50)	4.82 (4.42-5.26)	5.83 (5.31-6.34)	6.68 (6.06-7.26)	7.60 (6.85-8.25)	8.60 (7.69-9.32)	10.0 (8.89-10.9)	11.2 (9.85-12.2)
2-day	3.15 (2.88-3.44)	3.80 (3.48-4.15)	4.78 (4.38-5.22)	5.57 (5.09-6.08)	6.71 (6.10-7.30)	7.64 (6.93-8.32)	8.64 (7.78-9.40)	9.71 (8.69-10.6)	11.2 (9.96-12.2)	12.5 (11.0-13.6)
3-day	3.32 (3.05-3.63)	4.00 (3.68-4.37)	5.02 (4.60-5.48)	5.84 (5.35-6.37)	7.01 (6.39-7.63)	7.98 (7.25-8.68)	9.00 (8.13-9.80)	10.1 (9.06-11.0)	11.7 (10.4-12.7)	12.9 (11.4-14.1)
4-day	3.49 (3.22-3.82)	4.21 (3.87-4.60)	5.26 (4.83-5.74)	6.11 (5.61-6.66)	7.31 (6.68-7.96)	8.31 (7.56-9.04)	9.36 (8.48-10.2)	10.5 (9.44-11.4)	12.1 (10.8-13.2)	13.4 (11.8-14.6)
7-day	4.08 (3.79-4.44)	4.90 (4.54-5.33)	6.05 (5.60-6.59)	7.00 (6.47-7.61)	8.36 (7.69-9.08)	9.48 (8.68-10.3)	10.7 (9.71-11.6)	11.9 (10.8-12.9)	13.7 (12.3-14.9)	15.2 (13.5-16.5)
10-day	4.65 (4.33-5.02)	5.55 (5.17-6.00)	6.77 (6.29-7.31)	7.75 (7.19-8.37)	9.11 (8.42-9.83)	10.2 (9.41-11.0)	11.3 (10.4-12.2)	12.5 (11.4-13.5)	14.2 (12.9-15.3)	15.5 (14.0-16.8)
20-day	6.29 (5.90-6.72)	7.46 (7.00-7.97)	8.90 (8.35-9.51)	10.0 (9.40-10.7)	11.6 (10.8-12.3)	12.7 (11.9-13.6)	13.9 (13.0-14.9)	15.2 (14.0-16.2)	16.8 (15.5-18.0)	18.0 (16.5-19.3)
30-day	7.84 (7.41-8.28)	9.23 (8.73-9.76)	10.8 (10.2-11.4)	12.0 (11.3-12.6)	13.5 (12.7-14.3)	14.7 (13.8-15.5)	15.8 (14.9-16.8)	17.0 (15.9-18.0)	18.5 (17.2-19.6)	19.6 (18.2-20.8)
45-day	9.96 (9.47-10.5)	11.7 (11.1-12.3)	13.5 (12.8-14.2)	14.8 (14.0-15.5)	16.4 (15.6-17.3)	17.7 (16.7-18.6)	18.9 (17.8-19.8)	20.0 (18.8-21.0)	21.3 (20.1-22.5)	22.3 (20.9-23.6)
60-day	11.9 (11.4-12.5)	14.0 (13.3-14.7)	16.0 (15.2-16.8)	17.4 (16.6-18.3)	19.3 (18.3-20.2)	20.6 (19.6-21.6)	21.8 (20.7-22.9)	23.0 (21.8-24.2)	24.4 (23.1-25.7)	25.4 (24.0-26.8)

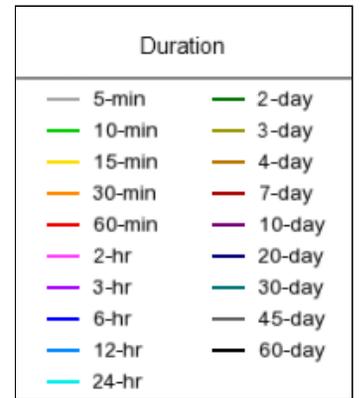
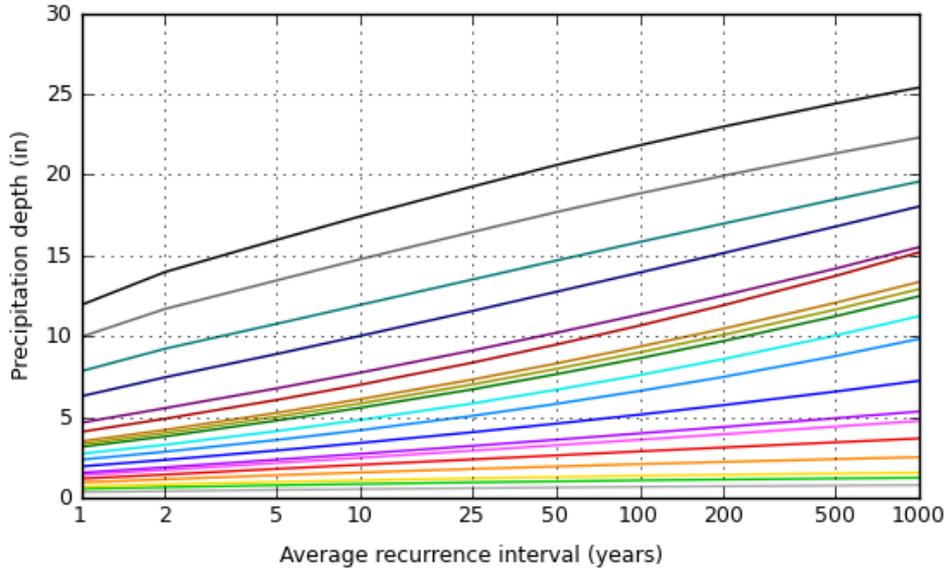
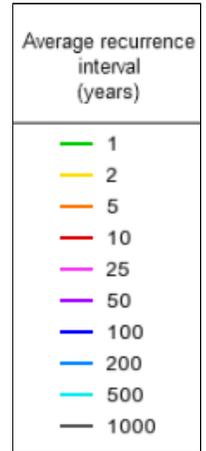
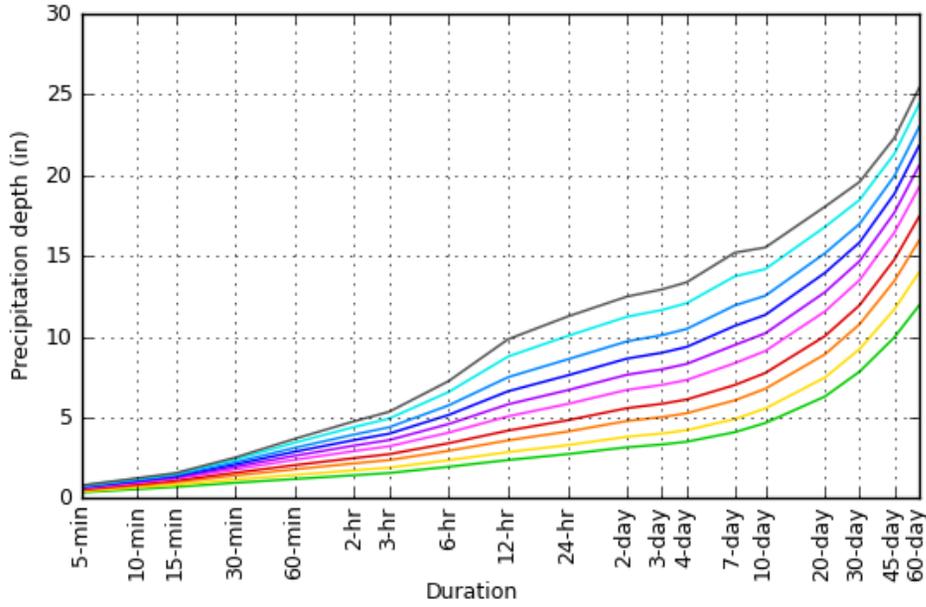
¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.

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PF graphical

PDS-based depth-duration-frequency (DDF) curves

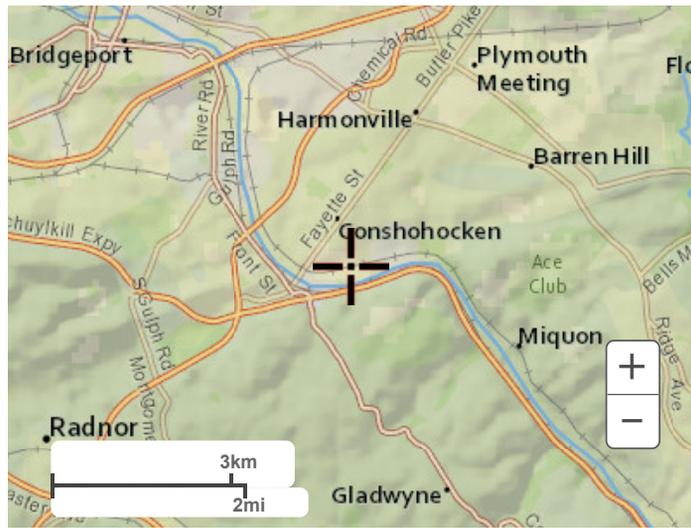
Latitude: 40.0720°, Longitude: -75.2987°



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Maps & aerials

Small scale terrain



Large scale terrain



Large scale map



Large scale aerial



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Rainfall Time-Depth Curves

Subsection: Time-Depth Curve
 Label: NOAA PP, Conshohocken PA
 Scenario: Pre-Development 1

Return Event: 1 years
 Storm Event: 1-YR

Time-Depth Curve: 1-YR

Label	1-YR
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	1 years

CUMULATIVE RAINFALL (in)

Output Time Increment = 0.100 hours

Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.00	0.00	0.01	0.01	0.01
0.500	0.01	0.02	0.02	0.02	0.03
1.000	0.03	0.03	0.04	0.04	0.04
1.500	0.05	0.05	0.05	0.06	0.06
2.000	0.06	0.07	0.07	0.07	0.08
2.500	0.08	0.08	0.09	0.09	0.09
3.000	0.10	0.10	0.10	0.11	0.11
3.500	0.11	0.12	0.12	0.13	0.13
4.000	0.13	0.14	0.14	0.15	0.15
4.500	0.15	0.16	0.16	0.17	0.17
5.000	0.17	0.18	0.18	0.19	0.19
5.500	0.19	0.20	0.20	0.21	0.21
6.000	0.22	0.22	0.23	0.23	0.24
6.500	0.24	0.25	0.25	0.26	0.26
7.000	0.27	0.27	0.28	0.28	0.29
7.500	0.30	0.30	0.31	0.31	0.32
8.000	0.33	0.33	0.34	0.35	0.35
8.500	0.36	0.37	0.38	0.38	0.39
9.000	0.40	0.41	0.42	0.42	0.43
9.500	0.44	0.45	0.46	0.47	0.49
10.000	0.50	0.51	0.52	0.54	0.55
10.500	0.56	0.58	0.59	0.61	0.63
11.000	0.66	0.68	0.71	0.74	0.77
11.500	0.81	0.86	0.92	1.00	1.11
12.000	1.30	1.62	1.73	1.81	1.87
12.500	1.92	1.96	1.99	2.02	2.05
13.000	2.07	2.10	2.12	2.14	2.15
13.500	2.17	2.18	2.19	2.21	2.22
14.000	2.23	2.24	2.26	2.27	2.28
14.500	2.29	2.30	2.31	2.31	2.32
15.000	2.33	2.34	2.35	2.35	2.36
15.500	2.37	2.38	2.38	2.39	2.40
16.000	2.40	2.41	2.42	2.42	2.43
16.500	2.43	2.44	2.45	2.45	2.46
17.000	2.46	2.47	2.47	2.48	2.48
17.500	2.49	2.49	2.50	2.50	2.51
18.000	2.51	2.52	2.52	2.53	2.53
18.500	2.54	2.54	2.54	2.55	2.55
19.000	2.56	2.56	2.56	2.57	2.57
19.500	2.58	2.58	2.58	2.59	2.59

Rainfall Time-Depth Curves

Subsection: Time-Depth Curve
 Label: NOAA PP, Conshohocken PA
 Scenario: Pre-Development 1

Return Event: 1 years
 Storm Event: 1-YR

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
20.000	2.60	2.60	2.60	2.61	2.61
20.500	2.62	2.62	2.62	2.63	2.63
21.000	2.63	2.64	2.64	2.64	2.65
21.500	2.65	2.65	2.66	2.66	2.66
22.000	2.67	2.67	2.67	2.68	2.68
22.500	2.68	2.69	2.69	2.69	2.70
23.000	2.70	2.70	2.71	2.71	2.71
23.500	2.72	2.72	2.72	2.72	2.73
24.000	2.73	(N/A)	(N/A)	(N/A)	(N/A)

Rainfall Time-Depth Curves

Subsection: Time-Depth Curve
 Label: NOAA PP, Conshohocken PA
 Scenario: Pre-Development 2

Return Event: 2 years
 Storm Event: 2-YR

Time-Depth Curve: 2-YR

Label	2-YR
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	2 years

CUMULATIVE RAINFALL (in)

Output Time Increment = 0.100 hours

Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.00	0.00	0.01	0.01	0.01
0.500	0.02	0.02	0.03	0.03	0.03
1.000	0.04	0.04	0.04	0.05	0.05
1.500	0.05	0.06	0.06	0.07	0.07
2.000	0.07	0.08	0.08	0.09	0.09
2.500	0.09	0.10	0.10	0.11	0.11
3.000	0.12	0.12	0.12	0.13	0.13
3.500	0.14	0.14	0.15	0.15	0.16
4.000	0.16	0.17	0.17	0.17	0.18
4.500	0.18	0.19	0.19	0.20	0.20
5.000	0.21	0.21	0.22	0.22	0.23
5.500	0.23	0.24	0.24	0.25	0.25
6.000	0.26	0.27	0.27	0.28	0.28
6.500	0.29	0.29	0.30	0.31	0.31
7.000	0.32	0.33	0.33	0.34	0.35
7.500	0.35	0.36	0.37	0.38	0.39
8.000	0.39	0.40	0.41	0.42	0.43
8.500	0.43	0.44	0.45	0.46	0.47
9.000	0.48	0.49	0.50	0.51	0.52
9.500	0.53	0.54	0.56	0.57	0.58
10.000	0.60	0.61	0.63	0.64	0.66
10.500	0.68	0.69	0.71	0.74	0.76
11.000	0.79	0.82	0.85	0.89	0.93
11.500	0.97	1.04	1.11	1.20	1.33
12.000	1.56	1.95	2.08	2.17	2.24
12.500	2.31	2.35	2.39	2.43	2.46
13.000	2.49	2.52	2.54	2.57	2.59
13.500	2.60	2.62	2.64	2.65	2.67
14.000	2.68	2.70	2.71	2.72	2.74
14.500	2.75	2.76	2.77	2.78	2.79
15.000	2.80	2.81	2.82	2.83	2.84
15.500	2.85	2.85	2.86	2.87	2.88
16.000	2.89	2.89	2.90	2.91	2.92
16.500	2.93	2.93	2.94	2.95	2.95
17.000	2.96	2.97	2.97	2.98	2.99
17.500	2.99	3.00	3.00	3.01	3.01
18.000	3.02	3.03	3.03	3.04	3.04
18.500	3.05	3.05	3.06	3.06	3.07
19.000	3.07	3.08	3.08	3.09	3.09
19.500	3.10	3.10	3.11	3.11	3.11

Rainfall Time-Depth Curves

Subsection: Time-Depth Curve
 Label: NOAA PP, Conshohocken PA
 Scenario: Pre-Development 2

Return Event: 2 years
 Storm Event: 2-YR

CUMULATIVE RAINFALL (in)

Output Time Increment = 0.100 hours

Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
20.000	3.12	3.12	3.13	3.13	3.14
20.500	3.14	3.15	3.15	3.16	3.16
21.000	3.16	3.17	3.17	3.18	3.18
21.500	3.19	3.19	3.19	3.20	3.20
22.000	3.21	3.21	3.21	3.22	3.22
22.500	3.23	3.23	3.23	3.24	3.24
23.000	3.24	3.25	3.25	3.25	3.26
23.500	3.26	3.27	3.27	3.27	3.28
24.000	3.28	(N/A)	(N/A)	(N/A)	(N/A)

Rainfall Time-Depth Curves

Subsection: Time-Depth Curve
 Label: NOAA PP, Conshohocken PA
 Scenario: Pre-Development 5

Return Event: 5 years
 Storm Event: 5-YR

Time-Depth Curve: 5-YR

Label	5-YR
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	5 years

CUMULATIVE RAINFALL (in)

Output Time Increment = 0.100 hours

Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.00	0.01	0.01	0.01	0.02
0.500	0.02	0.03	0.03	0.04	0.04
1.000	0.05	0.05	0.05	0.06	0.06
1.500	0.07	0.07	0.08	0.08	0.09
2.000	0.09	0.10	0.10	0.11	0.11
2.500	0.12	0.12	0.13	0.13	0.14
3.000	0.15	0.15	0.16	0.16	0.17
3.500	0.17	0.18	0.18	0.19	0.20
4.000	0.20	0.21	0.21	0.22	0.23
4.500	0.23	0.24	0.24	0.25	0.26
5.000	0.26	0.27	0.27	0.28	0.29
5.500	0.29	0.30	0.31	0.31	0.32
6.000	0.33	0.33	0.34	0.35	0.35
6.500	0.36	0.37	0.38	0.39	0.39
7.000	0.40	0.41	0.42	0.43	0.44
7.500	0.45	0.46	0.46	0.47	0.48
8.000	0.49	0.50	0.51	0.52	0.54
8.500	0.55	0.56	0.57	0.58	0.59
9.000	0.60	0.61	0.63	0.64	0.65
9.500	0.67	0.68	0.70	0.72	0.73
10.000	0.75	0.77	0.79	0.81	0.83
10.500	0.85	0.87	0.90	0.93	0.96
11.000	0.99	1.03	1.07	1.11	1.16
11.500	1.22	1.30	1.39	1.51	1.68
12.000	1.96	2.45	2.61	2.73	2.82
12.500	2.90	2.96	3.01	3.05	3.10
13.000	3.13	3.17	3.20	3.22	3.25
13.500	3.27	3.29	3.31	3.33	3.35
14.000	3.37	3.39	3.41	3.42	3.44
14.500	3.45	3.47	3.48	3.50	3.51
15.000	3.52	3.53	3.54	3.55	3.57
15.500	3.58	3.59	3.60	3.61	3.62
16.000	3.63	3.64	3.65	3.66	3.67
16.500	3.68	3.69	3.69	3.70	3.71
17.000	3.72	3.73	3.74	3.74	3.75
17.500	3.76	3.77	3.77	3.78	3.79
18.000	3.80	3.80	3.81	3.82	3.82
18.500	3.83	3.83	3.84	3.85	3.85
19.000	3.86	3.87	3.87	3.88	3.88
19.500	3.89	3.90	3.90	3.91	3.91

Rainfall Time-Depth Curves

Subsection: Time-Depth Curve
 Label: NOAA PP, Conshohocken PA
 Scenario: Pre-Development 5

Return Event: 5 years
 Storm Event: 5-YR

CUMULATIVE RAINFALL (in)

Output Time Increment = 0.100 hours

Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
20.000	3.92	3.93	3.93	3.94	3.94
20.500	3.95	3.95	3.96	3.97	3.97
21.000	3.98	3.98	3.99	3.99	4.00
21.500	4.00	4.01	4.01	4.02	4.02
22.000	4.03	4.03	4.04	4.04	4.05
22.500	4.05	4.06	4.06	4.07	4.07
23.000	4.08	4.08	4.09	4.09	4.10
23.500	4.10	4.10	4.11	4.11	4.12
24.000	4.12	(N/A)	(N/A)	(N/A)	(N/A)

Rainfall Time-Depth Curves

Subsection: Time-Depth Curve
 Label: NOAA PP, Conshohocken PA
 Scenario: Pre-Development 10

Return Event: 10 years
 Storm Event: 10-YR

Time-Depth Curve: 10-YR

Label	10-YR
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	10 years

CUMULATIVE RAINFALL (in)

Output Time Increment = 0.100 hours

Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.00	0.01	0.01	0.02	0.02
0.500	0.03	0.03	0.04	0.04	0.05
1.000	0.05	0.06	0.06	0.07	0.07
1.500	0.08	0.09	0.09	0.10	0.10
2.000	0.11	0.11	0.12	0.13	0.13
2.500	0.14	0.15	0.15	0.16	0.16
3.000	0.17	0.18	0.18	0.19	0.20
3.500	0.20	0.21	0.22	0.22	0.23
4.000	0.24	0.24	0.25	0.26	0.26
4.500	0.27	0.28	0.28	0.29	0.30
5.000	0.31	0.31	0.32	0.33	0.34
5.500	0.34	0.35	0.36	0.37	0.37
6.000	0.38	0.39	0.40	0.41	0.41
6.500	0.42	0.43	0.44	0.45	0.46
7.000	0.47	0.48	0.49	0.50	0.51
7.500	0.52	0.53	0.54	0.55	0.57
8.000	0.58	0.59	0.60	0.61	0.63
8.500	0.64	0.65	0.66	0.68	0.69
9.000	0.70	0.72	0.73	0.75	0.77
9.500	0.78	0.80	0.82	0.84	0.86
10.000	0.88	0.90	0.92	0.95	0.97
10.500	0.99	1.02	1.05	1.08	1.12
11.000	1.16	1.20	1.25	1.30	1.36
11.500	1.42	1.52	1.62	1.76	1.96
12.000	2.30	2.86	3.06	3.20	3.30
12.500	3.40	3.46	3.52	3.57	3.62
13.000	3.66	3.70	3.74	3.77	3.80
13.500	3.83	3.85	3.87	3.90	3.92
14.000	3.94	3.96	3.98	4.00	4.02
14.500	4.04	4.05	4.07	4.09	4.10
15.000	4.12	4.13	4.14	4.16	4.17
15.500	4.18	4.19	4.21	4.22	4.23
16.000	4.24	4.25	4.27	4.28	4.29
16.500	4.30	4.31	4.32	4.33	4.34
17.000	4.35	4.36	4.37	4.38	4.39
17.500	4.40	4.41	4.41	4.42	4.43
18.000	4.44	4.45	4.45	4.46	4.47
18.500	4.48	4.48	4.49	4.50	4.51
19.000	4.51	4.52	4.53	4.54	4.54
19.500	4.55	4.56	4.56	4.57	4.58

Rainfall Time-Depth Curves

Subsection: Time-Depth Curve
 Label: NOAA PP, Conshohocken PA
 Scenario: Pre-Development 10

Return Event: 10 years
 Storm Event: 10-YR

CUMULATIVE RAINFALL (in)

Output Time Increment = 0.100 hours

Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
20.000	4.58	4.59	4.60	4.60	4.61
20.500	4.62	4.62	4.63	4.64	4.64
21.000	4.65	4.66	4.66	4.67	4.67
21.500	4.68	4.69	4.69	4.70	4.71
22.000	4.71	4.72	4.72	4.73	4.73
22.500	4.74	4.75	4.75	4.76	4.76
23.000	4.77	4.77	4.78	4.78	4.79
23.500	4.79	4.80	4.80	4.81	4.81
24.000	4.82	(N/A)	(N/A)	(N/A)	(N/A)

Rainfall Time-Depth Curves

Subsection: Time-Depth Curve
 Label: NOAA PP, Conshohocken PA
 Scenario: Pre-Development 25

Return Event: 25 years
 Storm Event: 25-YR

Time-Depth Curve: 25-YR

Label	25-YR
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	25 years

CUMULATIVE RAINFALL (in)

Output Time Increment = 0.100 hours

Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.00	0.01	0.01	0.02	0.03
0.500	0.03	0.04	0.04	0.05	0.06
1.000	0.06	0.07	0.08	0.08	0.09
1.500	0.10	0.10	0.11	0.12	0.12
2.000	0.13	0.14	0.15	0.15	0.16
2.500	0.17	0.18	0.18	0.19	0.20
3.000	0.21	0.21	0.22	0.23	0.24
3.500	0.24	0.25	0.26	0.27	0.28
4.000	0.29	0.29	0.30	0.31	0.32
4.500	0.33	0.34	0.34	0.35	0.36
5.000	0.37	0.38	0.39	0.40	0.41
5.500	0.42	0.42	0.43	0.44	0.45
6.000	0.46	0.47	0.48	0.49	0.50
6.500	0.51	0.52	0.53	0.55	0.56
7.000	0.57	0.58	0.59	0.61	0.62
7.500	0.63	0.64	0.66	0.67	0.68
8.000	0.70	0.71	0.73	0.74	0.76
8.500	0.77	0.79	0.80	0.82	0.84
9.000	0.85	0.87	0.89	0.91	0.93
9.500	0.95	0.97	0.99	1.01	1.04
10.000	1.06	1.09	1.12	1.14	1.17
10.500	1.20	1.23	1.27	1.31	1.35
11.000	1.40	1.45	1.51	1.58	1.65
11.500	1.72	1.84	1.96	2.13	2.37
12.000	2.78	3.46	3.70	3.87	3.99
12.500	4.11	4.18	4.25	4.32	4.38
13.000	4.43	4.48	4.52	4.56	4.60
13.500	4.63	4.66	4.69	4.71	4.74
14.000	4.77	4.79	4.82	4.84	4.86
14.500	4.88	4.90	4.92	4.94	4.96
15.000	4.98	4.99	5.01	5.03	5.04
15.500	5.06	5.07	5.09	5.10	5.12
16.000	5.13	5.15	5.16	5.17	5.19
16.500	5.20	5.21	5.22	5.24	5.25
17.000	5.26	5.27	5.28	5.30	5.31
17.500	5.32	5.33	5.34	5.35	5.36
18.000	5.37	5.38	5.39	5.40	5.41
18.500	5.41	5.42	5.43	5.44	5.45
19.000	5.46	5.47	5.48	5.49	5.49
19.500	5.50	5.51	5.52	5.53	5.54

Rainfall Time-Depth Curves

Subsection: Time-Depth Curve
 Label: NOAA PP, Conshohocken PA
 Scenario: Pre-Development 25

Return Event: 25 years
 Storm Event: 25-YR

CUMULATIVE RAINFALL (in)

Output Time Increment = 0.100 hours

Time on left represents time for first value in each row.

Time (hours)	Depth (in)				
20.000	5.54	5.55	5.56	5.57	5.58
20.500	5.59	5.59	5.60	5.61	5.62
21.000	5.62	5.63	5.64	5.65	5.65
21.500	5.66	5.67	5.68	5.68	5.69
22.000	5.70	5.71	5.71	5.72	5.73
22.500	5.73	5.74	5.75	5.75	5.76
23.000	5.77	5.77	5.78	5.79	5.79
23.500	5.80	5.80	5.81	5.82	5.82
24.000	5.83	(N/A)	(N/A)	(N/A)	(N/A)

Rainfall Time-Depth Curves

Subsection: Time-Depth Curve
 Label: NOAA PP, Conshohocken PA
 Scenario: Pre-Development 50

Return Event: 50 years
 Storm Event: 50-YR

Time-Depth Curve: 50-YR

Label	50-YR
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	50 years

CUMULATIVE RAINFALL (in)

Output Time Increment = 0.100 hours

Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.00	0.01	0.02	0.02	0.03
0.500	0.04	0.04	0.05	0.06	0.07
1.000	0.07	0.08	0.09	0.10	0.10
1.500	0.11	0.12	0.13	0.13	0.14
2.000	0.15	0.16	0.17	0.18	0.18
2.500	0.19	0.20	0.21	0.22	0.23
3.000	0.24	0.24	0.25	0.26	0.27
3.500	0.28	0.29	0.30	0.31	0.32
4.000	0.33	0.34	0.35	0.36	0.37
4.500	0.38	0.38	0.39	0.40	0.41
5.000	0.42	0.44	0.45	0.46	0.47
5.500	0.48	0.49	0.50	0.51	0.52
6.000	0.53	0.54	0.55	0.56	0.58
6.500	0.59	0.60	0.61	0.62	0.64
7.000	0.65	0.67	0.68	0.69	0.71
7.500	0.72	0.74	0.75	0.77	0.78
8.000	0.80	0.82	0.83	0.85	0.87
8.500	0.88	0.90	0.92	0.94	0.96
9.000	0.98	1.00	1.02	1.04	1.06
9.500	1.08	1.11	1.13	1.16	1.19
10.000	1.22	1.25	1.28	1.31	1.34
10.500	1.38	1.41	1.46	1.50	1.55
11.000	1.60	1.66	1.73	1.81	1.89
11.500	1.97	2.11	2.25	2.45	2.72
12.000	3.18	3.96	4.23	4.43	4.57
12.500	4.71	4.79	4.87	4.95	5.02
13.000	5.08	5.13	5.18	5.22	5.27
13.500	5.30	5.34	5.37	5.40	5.43
14.000	5.46	5.49	5.52	5.55	5.57
14.500	5.60	5.62	5.64	5.66	5.68
15.000	5.70	5.72	5.74	5.76	5.78
15.500	5.80	5.81	5.83	5.85	5.86
16.000	5.88	5.90	5.91	5.93	5.94
16.500	5.96	5.97	5.99	6.00	6.01
17.000	6.03	6.04	6.06	6.07	6.08
17.500	6.09	6.10	6.12	6.13	6.14
18.000	6.15	6.16	6.17	6.18	6.19
18.500	6.20	6.21	6.22	6.23	6.24
19.000	6.26	6.27	6.28	6.29	6.30
19.500	6.30	6.31	6.32	6.33	6.34

Rainfall Time-Depth Curves

Subsection: Time-Depth Curve
 Label: NOAA PP, Conshohocken PA
 Scenario: Pre-Development 50

Return Event: 50 years
 Storm Event: 50-YR

CUMULATIVE RAINFALL (in)

Output Time Increment = 0.100 hours

Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
20.000	6.35	6.36	6.37	6.38	6.39
20.500	6.40	6.41	6.42	6.43	6.44
21.000	6.44	6.45	6.46	6.47	6.48
21.500	6.49	6.50	6.50	6.51	6.52
22.000	6.53	6.54	6.55	6.55	6.56
22.500	6.57	6.58	6.58	6.59	6.60
23.000	6.61	6.61	6.62	6.63	6.64
23.500	6.64	6.65	6.66	6.66	6.67
24.000	6.68	(N/A)	(N/A)	(N/A)	(N/A)

Rainfall Time-Depth Curves

Subsection: Time-Depth Curve
 Label: NOAA PP, Conshohocken PA
 Scenario: Pre-Development 100

Return Event: 100 years
 Storm Event: 100-YR

Time-Depth Curve: 100-YR

Label	100-YR
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	100 years

CUMULATIVE RAINFALL (in)

Output Time Increment = 0.100 hours

Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.00	0.01	0.02	0.03	0.03
0.500	0.04	0.05	0.06	0.07	0.07
1.000	0.08	0.09	0.10	0.11	0.12
1.500	0.13	0.14	0.14	0.15	0.16
2.000	0.17	0.18	0.19	0.20	0.21
2.500	0.22	0.23	0.24	0.25	0.26
3.000	0.27	0.28	0.29	0.30	0.31
3.500	0.32	0.33	0.34	0.35	0.36
4.000	0.37	0.38	0.39	0.40	0.42
4.500	0.43	0.44	0.45	0.46	0.47
5.000	0.48	0.49	0.51	0.52	0.53
5.500	0.54	0.55	0.57	0.58	0.59
6.000	0.60	0.61	0.63	0.64	0.65
6.500	0.67	0.68	0.70	0.71	0.73
7.000	0.74	0.76	0.77	0.79	0.81
7.500	0.82	0.84	0.86	0.87	0.89
8.000	0.91	0.93	0.95	0.97	0.99
8.500	1.01	1.03	1.05	1.07	1.09
9.000	1.11	1.13	1.16	1.18	1.21
9.500	1.23	1.26	1.29	1.32	1.35
10.000	1.39	1.42	1.45	1.49	1.53
10.500	1.57	1.61	1.66	1.71	1.76
11.000	1.82	1.89	1.97	2.05	2.15
11.500	2.25	2.40	2.56	2.78	3.09
12.000	3.62	4.51	4.82	5.04	5.20
12.500	5.35	5.45	5.55	5.63	5.71
13.000	5.78	5.84	5.89	5.94	5.99
13.500	6.03	6.07	6.11	6.15	6.18
14.000	6.21	6.25	6.28	6.31	6.34
14.500	6.37	6.39	6.42	6.44	6.47
15.000	6.49	6.51	6.53	6.55	6.57
15.500	6.59	6.61	6.63	6.65	6.67
16.000	6.69	6.71	6.73	6.74	6.76
16.500	6.78	6.79	6.81	6.83	6.84
17.000	6.86	6.87	6.89	6.90	6.92
17.500	6.93	6.95	6.96	6.97	6.99
18.000	7.00	7.01	7.02	7.03	7.05
18.500	7.06	7.07	7.08	7.09	7.11
19.000	7.12	7.13	7.14	7.15	7.16
19.500	7.17	7.18	7.20	7.21	7.22

Rainfall Time-Depth Curves

Subsection: Time-Depth Curve
 Label: NOAA PP, Conshohocken PA
 Scenario: Pre-Development 100

Return Event: 100 years
 Storm Event: 100-YR

CUMULATIVE RAINFALL (in)

Output Time Increment = 0.100 hours

Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
20.000	7.23	7.24	7.25	7.26	7.27
20.500	7.28	7.29	7.30	7.31	7.32
21.000	7.33	7.34	7.35	7.36	7.37
21.500	7.38	7.39	7.40	7.41	7.42
22.000	7.43	7.44	7.45	7.46	7.46
22.500	7.47	7.48	7.49	7.50	7.51
23.000	7.52	7.53	7.53	7.54	7.55
23.500	7.56	7.57	7.57	7.58	7.59
24.000	7.60	(N/A)	(N/A)	(N/A)	(N/A)

Appendix E | PADEP Spreadsheets

General Information

Instructions
General
Volume
Rate
Quality

<p>Project Name: 401-433 Washington Street Apartments</p> <p>County: Montgomery</p> <p>Project Type: Multi-Family Housing</p> <p>Area: 11.08 acres <i>(In Watershed)</i></p> <p>No. of Post-Construction Discharge Points: 1</p>	<p>Application Type: Individual NPDES Application</p> <p>Municipality: Whitemarsh Township</p> <p> <input checked="" type="radio"/> New Project <input type="radio"/> Minor / Major Amendment </p> <p>Total Earth Disturbance: 11.08 acres <i>(In Watershed)</i></p> <p>Start DP Numbering at: 001</p>
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Discharge Point (DP) No.	Drainage Area (DA) (acres)	Earth Disturbance in DA (acres)	Existing Impervious in DA (acres)	Proposed Impervious in DA (acres)	Receiving Waters	Ch. 93 Class	Structural BMP(s)
001	10.57	10.57	2.46	7.62	Schulykill River	WWF, MF	Yes
Undetained Areas	0.51	0.51	0.42	0.41	Discharge to MS4		
Totals:	11.08	11.08	2.880647383	8.026285583			

Volume Management

Project: 401-433 Washington Street Apartments

Instructions General **Volume** Rate Quality

2-Year / 24-Hour Storm Event (NOAA Atlas 14): inches Alternative 2-Year / 24-Hour Storm Event inches
Alternative Source:

Pre-Construction Conditions: No. Rows: Exempt from Meadow in Good Condition Automatically Calculate CN, Ia, Runoff and Volume

Land Cover	Area (acres)	Soil Group	CN	Ia (in)	Q Runoff (in)	Runoff Volume (cf)
Pervious as Meadow	7.63	B	58	1.448	0.37	10,237
Impervious Areas: Paved Parking Lots, Roofs, Driveways, Etc. (Excluding ROW)	2.46	B	98	0.041	3.05	27,173
Impervious Areas: Streets and Roads - Gravel (Including ROW)	0.30	B	85	0.353	1.83	2,020
Impervious as Meadow	0.69	B	58	1.448	0.37	927
TOTAL (ACRES):		11.08			TOTAL (CF):	40,357

Post-Construction Conditions: No. Rows:

Land Cover	Area (acres)	Soil Group	CN	Ia (in)	Q Runoff (in)	Runoff Volume (cf)
Open Space (Lawns, Parks, Golf Courses, Cemeteries, Etc.) - Good Condition (Grass Cover > 75%)	3.05	B	61	1.279	0.48	5,285
Impervious Areas: Paved Parking Lots, Roofs, Driveways, Etc. (Excluding ROW)	8.03	B	98	0.041	3.05	88,781
TOTAL (ACRES):		11.08			TOTAL (CF):	94,066

NET CHANGE IN VOLUME TO MANAGE (CF):

Non-Structural BMP Volume Credits:

Tree Planting Credit

Other (attach calculations):

Structural BMP Volume Credits:

No. Structural BMPs:

Start BMP Numbering at:

DP No.	BMP No.	BMP Name	MRC?	Discharge	Incremental BMP DA (acres)	Volume Routed to BMP (CF)	Infiltration / Vegetated Area (SF)	Infiltration Rate (in/hr)	Infiltration Period (hrs)	Vegetated?	Media Depth (ft)	Storage Volume (CF)	Infiltration Credit (CF)	ET Credit (CF)
001	1	Dry Extended Detention Basin	Y	Off-Site	6.25	65,566	0	0.00		No		36,740		
001	2	Dry Extended Detention Basin	-	Off-Site	1.56	15,904	0	0.00		No		0		

Totals:

INFILTRATION & ET CREDITS (CF):

MANAGED RELEASE CREDIT (CF):

NET CHANGE IN VOLUME TO MANAGE (CF):

TOTAL CREDITS (CF):

VOLUME REQUIREMENT SATISFIED

Rate Control

Project: 401-433 Washington Street Apartments

Instructions

General

Volume

Rate

Quality

Precipitation Amounts:

NOAA 2-Year 24-Hour Storm Event (in):

3.28

Alternative 2-Year 24-Hour Storm Event (in):

NOAA 10-Year 24-Hour Storm Event (in):

4.82

Alternative 10-Year 24-Hour Storm Event (in):

NOAA 50-Year 24-Hour Storm Event (in):

6.68

Alternative 50-Year 24-Hour Storm Event (in):

NOAA 100-Year 24-Hour Storm Event (in):

7.6

Alternative 100-Year 24-Hour Storm Event (in):

Report Summary of Peak Rates Only

Attach model input and output data or other calculations to support the rates reported below.

<i>Peak Discharge Rates (cfs)</i>			
	Pre-Construction	Post-Construction	Net Change
2-Year Storm:	7.80	6.04	-1.76
10-Year Storm:	14.11	12.09	-2.02
50-Year Storm:	24.77	21.44	-3.33
100-Year Storm:	30.55	28.70	-1.85

Rate Control Satisfied

Rate Control Satisfied

Rate Control Satisfied

Rate Control Satisfied

DP No.	BMP No.	BMP Name	MRC?	Inflow to BMP (cfs)				Outflow from BMP (cfs)			
				2-yr	10-yr	50-yr	100-yr	2-yr	10-yr	50-yr	100-yr
001	1	Dry Extended Detention Basin	Y	21.80	32.58	45.70	52.21	1.69	3.84	7.99	10.70

001	2	Dry Extended Detention Basin	-	5.33	8.02	11.30	12.94	2.08	3.11	4.39	6.24
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Water Quality

Project: 401-433 Washington Street Apartments

PRINT

Instructions

General

Volume

Rate

Quality

Pre-Construction Pollutant Loads:

Land Cover (from Volume Worksheet)	Land Cover for Water Quality	Area (acres)	Soil Group	Runoff Volume (cf)	Pollutant Conc. (mg/L)			Pollutant Loads (lbs)		
					TSS	TP	TN	TSS	TP	TN
Pervious as Meadow	Grassland/Herbaceous	7.63	B	10,237	48.8	0.22	2.30	31.19	0.14	1.47
Impervious Areas: Paved Parking Lots, Roofs, Driveways, Etc. (Excluding ROW)	Residential	2.46	B	27,173	65.0	0.29	2.05	110.29	0.49	3.48
Impervious Areas: Streets and Roads - Gravel (Including ROW)	Highway (general)	0.30	B	2,020	141.0	0.43	2.65	17.79	0.05	0.33
Impervious as Meadow	Grassland/Herbaceous	0.69	B	927	48.8	0.22	2.30	2.82	0.01	0.13
TOTAL (ACRES):		11.08			TOTALS:			162.09	0.70	5.42

Post-Construction Pollutant Loads (without BMPs):

Land Cover (from Volume Worksheet)	Land Cover for Water Quality	Area (acres)	Soil Group	Runoff Volume (cf)	Pollutant Conc. (mg/L)			Pollutant Loads (lbs)		
					TSS	TP	TN	TSS	TP	TN
Open Space (Lawns, Parks, Golf Courses, Cemeteries, Etc.) - Good Condition (Grass Cover > 75%)	Open Space	3.05	B	5,285	78.0	0.25	1.25	25.74	0.08	0.41

Impervious Areas: Paved Parking Lots, Roofs, Driveways, Etc. (Excluding ROW)	Residential	8.03	B	88,781	65.0	0.29	2.05	360.34	1.61	11.36
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TOTAL (ACRES): 11.08

TOTALS: 386.08 1.69 11.78

POLLUTANT LOAD REDUCTION REQUIREMENTS (LBS): 223.99 0.99 6.36

Characterize Undetained Areas (for Untreated Stormwater) No. Rows: 2

Land Cover	Area (acres)	Soil Group	CN	Ia (in)	Q Runoff (in)	Runoff Volume (cf)
Open Space (Lawns, Parks, Golf Courses, Cemeteries, Etc.) - Good Condition (Grass Cover > 75%)	0.10	B	61	1.279	0.48	170
Impervious Areas: Paved Parking Lots, Roofs, Driveways, Etc. (Excluding ROW)	0.41	N/A	98	0.041	3.05	4,531

Non-Structural BMP Water Quality Credits:

Pervious Undetained Area Credit

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Other (attach calculations)

Structural BMP Water Quality Credits:

Use default BMP Outflows and Median BMP Outflow Concentrations

DP No.	BMP No.	BMP Name	MRC?	BMP DA (acres)	Vol. Routed to BMP (CF)	Inf. & ET Credits (CF)	Capture & Buffer Credits (CF)	Outflow (CF)	Outflow Conc. (mg/L)			Pollutant Loads (lbs)		
									TSS	TP	TN	TSS	TP	TN
001	1	Dry Extended Detention Basin	Y	6.25	65,566			65,566	-	-	-	-	-	-
001	2	Dry Extended Detention Basin	-	1.56	15,904			15,904	24.30	0.19	1.19	24.13	0.19	1.18

	TSS	TP	TN
POLLUTANT LOADS FROM STRUCTURAL BMP (TREATED) OUTFLOWS (LBS):	24.13	0.19	1.18
POLLUTANT LOADS FROM UNTREATED STORMWATER (LBS):	19.22	0.08	0.59
NON-STRUCTURAL BMP WATER QUALITY CREDITS (LBS):			
NET POLLUTANT LOADS FROM SITE, POST-CONSTRUCTION (LBS):	43.35	0.27	1.78
POLLUTANT LOADS FROM SITE, PRE-CONSTRUCTION (LBS):	162.09	0.70	5.42

WATER QUALITY REQUIREMENT SATISFIED

CERTIFICATION

I certify under penalty of law and subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities) that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I further certify that the structure, function, and calculations contained in this spreadsheet have not been modified in comparison to the spreadsheet DEP has posted to its website or, if modifications were made, an explanation of the modifications made is attached to this spreadsheet.

Spreadsheet User Name

Date

MANAGED RELEASE CONCEPT (MRC) DESIGN SUMMARY

Complete One Design Summary Sheet for Each BMP Designed for MRC

GENERAL INFORMATION

Applicant Name: **KRE Group** Project Name: **401-433 Washington Street Apartments**
 Applicant Address: **520 US HWY 22, PO Box 6872** Municipality: **Whitemarsh Township**
 City, State, Zip: **Bridgewater, NJ 08807** County: **Montgomery County**
 Permit Type: NPDES PAG-02 NPDES IP ESCGP ESP

	Pre-Development	Post-Development	Change
Impervious Area (acres):	2.88	8.03	5.15

MRC BMP INFORMATION

MRC BMP Type: **Underground Storage Chambers** Stormwater BMP Manual Section: _____

Will the BMP Include Vegetation? Yes No

If Yes, Identify Proposed Vegetation: _____

For Non-Vegetated BMPs Will There Be Pre- or Post-Treatment? Yes (Pre-) Yes (Post-) No

If Yes, Identify Proposed Pre- or Post-Treatment: **Water Quality Filter**

Name of Surface Water to Receive MRC BMP Discharges: **Schuylkill River**

Designated Use of Surface Water: **WWF, MF** Existing Use of Surface Water (if different): **Not listed**

Is the Surface Water Impaired? Yes No

If Yes, Identify Cause(s): **Source Unknown - Polychlorinated Biphenyls (PCBS). Agriculture - cause unknown; Urban runoff/storm sewers - cause unknown; Municipal point source discharges - cause unknown.**

Will the BMP have an impermeable liner? Yes No

If Yes, explain why a liner is proposed: **Within Floodway**

BMP Media Description: **Topsoil:compost (2:1 Mixture)**

Are Any Deviations from MRC Design Standards Proposed? Yes No

If Yes, Identify Deviations: _____

MRC BMP DESIGN VALUES AND STANDARDS

Parameter	Design Value	Design Standard
Actual Contributing Impervious Area to BMP (acres)	5.87	
Equivalent Contributing Impervious Area to BMP (acres)	5.79	
Total Drainage Area to BMP (acres)	6.25	
MRC BMP Release Rate (cfs)	0.04	<i>No greater than 0.01 cfs / acre of equivalent contributing impervious</i>
Underdrain Outflow Rate During 1.2-Inch/2-Hour Storm (cfs)	0.04	<i><= MRC BMP Release Rate (cfs)</i>
Maximum Storm Event Routed to MRC BMP	100yr	

MRC BMP Design Summary
Revised, August 25, 2020

Parameter	Design Value	Design Standard
BMP Footprint Area (ft ²)	42,780	
Bottom BMP Elevation (Native Soils) (ft)	48.80	
2-Yr/24-Hr Storm Ponding Depth (ft)	1.68	<i>1 ft (recommended) (2 ft max)</i>
Maximum Ponding Depth (ft)	2.86	<i>4 ft (max)</i>
Overflow Bypass Elevation (ft)	N/A	
Media Depth (ft)	N/A	<i>2 ft (min) – 4 ft (max)</i>
Media Void Space (%)	N/A	
Internal Water Storage (IWS) Depth (ft)	1	<i>1 ft recommended</i>
Top of IWS Elevation (ft)	49.80	
Underdrain Pipe Diameter (in)	4	
Underdrain Orifice Diameter (in)	1	
Underdrain Outlet Elevation (ft)	49.80	
IWS Available for Routing (%)	50	<i>50% max</i>
Separation Distance (Groundwater) (ft)	1	<i>1 ft (min) (2 ft recommended)</i>
Infiltration Rate (in/hr)	N/A	
Volume of Overflow During 1.2-Inch/2-Hour Storm (cf)	0	<i>0 (No overflow allowed)</i>
1-Yr/24-Hr Pre -Development Peak Rate (cfs)	0.98	
2-Yr/24-Hr Post -Development Peak Rate (cfs)	1.69	<i>1-Yr/24-Hr Pre-Development Peak Rate (or per approved Act 167 Plan)</i>
10-Yr/24-Hr Post -Development Peak Rate (cfs)	3.84	<i>10-Yr/24-Hr Pre-Development Peak Rate</i>
50-Yr/24-Hr Post -Development Peak Rate (cfs)	7.99	<i>50-Yr/24-Hr Pre-Development Peak Rate</i>
100-Yr/24-Hr Post -Development Peak Rate (cfs)	10.70	<i>100-Yr/24-Hr Pre-Development Peak Rate</i>
Total 2-Yr/24-Hr Runoff Volume Managed by BMP (cf)	65,566	
Ponding Time @ 2-Yr/24-Hr Storm (hrs)	21.2 hrs	<i>72 hrs (surface), 7 days (underground)</i>
Ponding Time @ 10-Yr/24-Hr Storm (hrs)	22.8 hrs	<i>72 hrs (surface), 7 days (underground)</i>
Ponding Time @ 50-Yr/24-Hr Storm (hrs)	24.0 hrs	<i>72 hrs (surface), 7 days (underground)</i>
Ponding Time @ 100-Yr/24-Hr Storm (hrs)	24.4 hrs	<i>72 hrs (surface), 7 days (underground)</i>

C. Richard Roseberry, P.E.

Licensed P.E. Name

Licensed P.E. Signature

PE046162R

License No.

Date

*Licensed
Professional's
Seal*

Appendix F | Pre-Project Release Rate Calculations



Project: 401/433 WASHINGTON STREET Sheet: of
 Project #: 14000908C Scale:
 Calculated By: SM Date: 11/29/21 Checked By: Dat
 Element: POST-PROJECT RELEASE RATES Date:
 Engineers | Planners | Surveyors | Landscape Architects | Environmental Scientists

STUDY POINT 1

SUB-WATERSHED AREA INFORMATION:

	Pervious Area			Impervious Area		
	CN	AREA (AC)	Tc	CN	AREA (AC)	Tc
PRE-PROJECT AREA SP 1:	58	0.13	17 MIN	98	0.11	3 MIN
TOTAL SUB-WATERSHED AREA:			0.24			
POST-PROJECT AREA SP 1:	61	0.04	2 MIN	98	0.12	2 MIN
TOTAL SUB-WATERSHED AREA:			0.16			

* Tc FROM VTPSUHM OUTPUT, PATH SHOWN ON PLANS

PRE-PROJECT WITHOUT DETENTION FLOW RATE:

DETERMINE THE PRE DEVELOPMENT FLOW RATES. CALCULATE FLOW RATES USING SUB-WATERSHED AREA CN, Tc, AND A IN PONDPACK. RAINFALL DEPTHS ARE FROM NOAA.

	PRE FLOW RATES	ALLOWABLE FLOW
Q ₂ =	0.41 CFS	0.41 CFS
Q ₁₀ =	0.66 CFS	0.66 CFS
Q ₂₅ =	0.84 CFS	0.84 CFS
Q ₅₀ =	0.99 CFS	0.99 CFS
Q ₁₀₀ =	1.16 CFS	1.16 CFS

POST-PROJECT WITHOUT DETENTION FLOW RATE:

DETERMINE THE POST DEVELOPMENT FLOW RATES. CALCULATE FLOW RATES USING SUB-WATERSHED AREA CN, Tc, AND A IN PONDPACK. RAINFALL DEPTHS ARE FROM NOAA.

	POST FLOW RATES	ALLOWABLE FLOW
Q ₂ =	0.48 CFS	0.41 CFS
Q ₁₀ =	0.75 CFS	0.66 CFS
Q ₂₅ =	0.92 CFS	0.84 CFS
Q ₅₀ =	1.08 CFS	0.99 CFS
Q ₁₀₀ =	1.24 CFS	1.16 CFS

CALCULATION NOTES:

- 1) THE STUDY POINT IS THE CHERRY STREET MUNICIPAL STORMWATER CONVEYANCE SYSTEM. THE MINOR INCREASES IN FLOW ARE DE MINIMUS AND WILL NOT EXCEED THE CAPACITY OF THE DOWNSTREAM PIPE
- 2) ALL SOILS ARE 'B' SOILS.



Project: 401/433 WASHINGTON STREET Sheet: of
 Project #: 14000908C Scale:
 Calculated By: SM Date: 11/29/21 Checked By: Date:
 Element: POST-PROJECT RELEASE RATES Date:
 Engineers | Planners | Surveyors | Landscape Architects | Environmental Scientists

STUDY POINT 2

SUB-WATERSHED AREA INFORMATION:

	Pervious Area			Impervious Area		
	CN	AREA (AC)	Tc	CN	AREA (AC)	Tc
PRE-PROJECT AREA SP 1:	58	0.83	18 MIN	98	0.69	3 MIN
TOTAL SUB-WATERSHED AREA:			1.52			
POST-PROJECT AREA SP 1:	61	0.06	3 MIN	98	0.29	3 MIN
TOTAL SUB-WATERSHED AREA:			0.35			

* Tc FROM VTPSUHM OUTPUT, PATH SHOWN ON PLANS

PRE-PROJECT WITHOUT DETENTION FLOW RATE:

DETERMINE THE PRE DEVELOPMENT FLOW RATES. CALCULATE FLOW RATES USING SUB-WATERSHED AREA CN, Tc, AND A IN PONDPACK. RAINFALL DEPTHS ARE FROM NOAA.

	PRE FLOW RATES	ALLOWABLE FLOW
Q ₂ =	2.61 CFS	2.61 CFS
Q ₁₀ =	4.15 CFS	4.15 CFS
Q ₂₅ =	5.23 CFS	5.23 CFS
Q ₅₀ =	6.22 CFS	6.22 CFS
Q ₁₀₀ =	7.29 CFS	7.29 CFS

POST-PROJECT WITHOUT DETENTION FLOW RATE:

DETERMINE THE POST DEVELOPMENT FLOW RATES. CALCULATE FLOW RATES USING SUB-WATERSHED AREA CN, Tc, AND A IN PONDPACK. RAINFALL DEPTHS ARE FROM NOAA.

	POST FLOW RATES	ALLOWABLE FLOW
Q ₂ =	1.12 CFS	2.61 CFS
Q ₁₀ =	1.72 CFS	4.15 CFS
Q ₂₅ =	2.12 CFS	5.23 CFS
Q ₅₀ =	2.46 CFS	6.22 CFS
Q ₁₀₀ =	2.83 CFS	7.29 CFS

CALCULATION NOTES:

- 1) THE STUDY POINT IS THE ROADSIDE DITCH ON THE NORTH SIDE OF WASHINGTON STREET
- 2) ALL SOILS ARE 'B' SOILS.



Project: 401/433 WASHINGTON STREET Sheet: of
 Project #: 14000908C Scale:
 Calculated By: SM Date: 11/29/2021 Checked By: Date:
 Element: PRE-PROJECT FLOW RATES Date:
 Engineers | Planners | Surveyors | Landscape Architects | Environmental Scientists

SUB-WATERSHED AREA INFORMATION:

STUDY POINT 3

	CN	Pervious Area AREA (AC)	Tc	CN	Impervious Area AREA (AC)	Tc
PRE ONSITE AREA SP 3:	58	7.35	24 MIN	96	1.97	12 MIN
PRE OFFSITE AREA SP 3:						
TOTAL SUB-WATERSHED AREA:		7.35			1.97	
TOTAL STUDY AREA (AC):			9.32			

* Tc FROM VTPSUHM OUTPUT, PATH SHOWN ON PLANS

PRE-PROJECT FLOW RATES:

DETERMINE THE PRE-PROJECT ALLOWABLE RELEASE RATES. CALCULATE FLOW RATES USING SUB-WATERSHED AREA CN, TC, AND A IN PONDPACK. ALLOWABLE RELEASE RATES ARE FROM THE BOROUGH OF CONSHOHOCKEN STORMWATER MANAGEMENT ORDINANCE. RAINFALL DEPTHS ARE FROM NOAA.

		ONSITE			OFFSITE		
		PRE FLOW RATE	RELEASE RATE	ALLOWABLE FLOW	PRE FLOW RATE	RELEASE RATE	ALLOWABLE FLOW
Q ₂	=	5.76 CFS	78%	4.49 CFS		100%	0.00 CFS
Q ₁₀	=	11.71 CFS	100%	11.71 CFS		100%	0.00 CFS
Q ₂₅	=	16.48 CFS	100%	16.48 CFS		100%	0.00 CFS
Q ₅₀	=	20.80 CFS	100%	20.80 CFS		100%	0.00 CFS
Q ₁₀₀	=	25.71 CFS	100%	25.71 CFS		100%	0.00 CFS

TOTAL POST ALLOWABLE FLOW RATES:

		ONSITE	+	OFFSITE	=	TOTAL POST	PRE TOTAL*	WEIGHTED % RELEASED
		ALLOWABLE FLOW		ALLOWABLE FLOW		ALLOWABLE FLOW		
Q ₂	=	4.49 CFS		0.00 CFS	=	4.49 CFS	5.76 CFS	77.95%
Q ₁₀	=	11.71 CFS		0.00 CFS	=	11.71 CFS	11.71 CFS	100.00%
Q ₂₅	=	16.48 CFS		0.00 CFS	=	16.48 CFS	16.48 CFS	100.00%
Q ₅₀	=	20.80 CFS		0.00 CFS	=	20.80 CFS	20.80 CFS	100.00%
Q ₁₀₀	=	25.71 CFS		0.00 CFS	=	25.71 CFS	25.71 CFS	100.00%

** POST-PROJECT 2-YR STORM PEAK FLOW SHALL NOT EXCEED THE PRE-PROJECT 1-YR STORM PEAK FLOW.

CALCULATION NOTES:

- 1) THE STUDY POINT IS IN THE SCHUYLKILL RIVER.
- 2) ALL SOILS ARE 'B' SOILS.

PRE-PROJECT ANALYSIS

Pre-development Analysis Results

Project Summary

Title	14000908C
Engineer	SMM
Company	CED
Date	11/29/2021

Notes	401/433 Washington Street Conshohocken Borough/Whitemarsh Township Montgomery County Pennsylvania
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Pre-development Analysis Results

Subsection: User Notifications

User Notifications

Message Id	7
Scenario	Pre-Development 100
Element Type	Catchment
Element Id	48
Label	DA-2-P
Time	(N/A)
Message	The difference between calculated peak flow and interpolated peak flow 1.7 % is greater than 1.5 %. Computed peak flow= 0.33 ft ³ /s Interp. peak flow= 0.33 ft ³ /s. Output increment for this catchment may be too large.
Source	Warning

Pre-development Analysis Results

Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft ³)	Time to Peak (hours)	Peak Flow (ft ³ /s)
DA-1-I	Pre-Development 1	1	6,218.000	12.100	2.14
DA-1-I	Pre-Development 2	2	7,580.000	12.100	2.58
DA-1-I	Pre-Development 5	5	9,669.000	12.100	3.26
DA-1-I	Pre-Development 10	10	11,402.000	12.100	3.81
DA-1-I	Pre-Development 25	25	13,911.000	12.100	4.62
DA-1-I	Pre-Development 50	50	16,023.000	12.100	5.30
DA-1-I	Pre-Development 100	100	18,310.000	12.100	6.03
DA-1-P	Pre-Development 1	1	576.000	12.550	0.05
DA-1-P	Pre-Development 2	2	1,108.000	12.350	0.15
DA-1-P	Pre-Development 5	5	2,163.000	12.300	0.40
DA-1-P	Pre-Development 10	10	3,216.000	12.250	0.67
DA-1-P	Pre-Development 25	25	4,962.000	12.250	1.12
DA-1-P	Pre-Development 50	50	6,594.000	12.250	1.54
DA-1-P	Pre-Development 100	100	8,494.000	12.250	2.02
DA-2-I	Pre-Development 1	1	967.000	12.100	0.34
DA-2-I	Pre-Development 2	2	1,179.000	12.100	0.41
DA-2-I	Pre-Development 5	5	1,504.000	12.100	0.51
DA-2-I	Pre-Development 10	10	1,773.000	12.100	0.60
DA-2-I	Pre-Development 25	25	2,164.000	12.100	0.73
DA-2-I	Pre-Development 50	50	2,492.000	12.100	0.83
DA-2-I	Pre-Development 100	100	2,848.000	12.100	0.95
DA-2-P	Pre-Development 1	1	91.000	12.500	0.01
DA-2-P	Pre-Development 2	2	175.000	12.300	0.02
DA-2-P	Pre-Development 5	5	341.000	12.250	0.07
DA-2-P	Pre-Development 10	10	507.000	12.250	0.11
DA-2-P	Pre-Development 25	25	783.000	12.250	0.18
DA-2-P	Pre-Development 50	50	1,041.000	12.250	0.25
DA-2-P	Pre-Development 100	100	1,340.000	12.250	0.33
DA-3-I	Pre-Development 1	1	16,306.000	12.150	4.46
DA-3-I	Pre-Development 2	2	20,170.000	12.150	5.44
DA-3-I	Pre-Development 5	5	26,114.000	12.150	6.95
DA-3-I	Pre-Development 10	10	31,057.000	12.150	8.18
DA-3-I	Pre-Development 25	25	38,226.000	12.150	9.97
DA-3-I	Pre-Development 50	50	44,268.000	12.150	11.46
DA-3-I	Pre-Development 100	100	50,813.000	12.150	13.08
DA-3-P	Pre-Development 1	1	5,073.000	12.600	0.42
DA-3-P	Pre-Development 2	2	9,760.000	12.400	1.19
DA-3-P	Pre-Development 5	5	19,072.000	12.350	3.15
DA-3-P	Pre-Development 10	10	28,364.000	12.350	5.21
DA-3-P	Pre-Development 25	25	43,780.000	12.300	8.68
DA-3-P	Pre-Development 50	50	58,191.000	12.300	11.94
DA-3-P	Pre-Development 100	100	74,961.000	12.300	15.71

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft ³)	Time to Peak (hours)	Peak Flow (ft ³ /s)
O-1	Pre-Development 1	1	6,794.000	12.100	2.14
O-1	Pre-Development 2	2	8,688.000	12.100	2.61

Pre-development Analysis Results

Subsection: Master Network Summary

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft ³)	Time to Peak (hours)	Peak Flow (ft ³ /s)
O-1	Pre-Development 5	5	11,832.000	12.100	3.42
O-1	Pre-Development 10	10	14,618.000	12.100	4.15
O-1	Pre-Development 25	25	18,873.000	12.100	5.26
O-1	Pre-Development 50	50	22,618.000	12.100	6.22
O-1	Pre-Development 100	100	26,804.000	12.100	7.29
O-2	Pre-Development 1	1	1,058.000	12.100	0.34
O-2	Pre-Development 2	2	1,354.000	12.100	0.41
O-2	Pre-Development 5	5	1,845.000	12.100	0.54
O-2	Pre-Development 10	10	2,281.000	12.100	0.66
O-2	Pre-Development 25	25	2,947.000	12.100	0.84
O-2	Pre-Development 50	50	3,533.000	12.100	0.99
O-2	Pre-Development 100	100	4,188.000	12.100	1.16
O-3	Pre-Development 1	1	21,380.000	12.150	4.49
O-3	Pre-Development 2	2	29,930.000	12.150	5.76
O-3	Pre-Development 5	5	45,186.000	12.200	8.71
O-3	Pre-Development 10	10	59,422.000	12.200	11.71
O-3	Pre-Development 25	25	82,006.000	12.200	16.48
O-3	Pre-Development 50	50	102,459.000	12.200	20.80
O-3	Pre-Development 100	100	125,774.000	12.200	25.71

Pre-development Analysis Results

Subsection: Time of Concentration Calculations

Label: DA-1-I

Scenario: Pre-Development 1

Return Event: 1 years

Storm Event: 1-YR

Time of Concentration Results

Segment #1: TR-55 Sheet Flow

Hydraulic Length	100.00 ft
Manning's n	0.011
Slope	0.004 ft/ft
2 Year 24 Hour Depth	3.28 in
Average Velocity	0.73 ft/s
Segment Time of Concentration	0.038 hours

Segment #2: TR-55 Shallow Concentrated Flow

Hydraulic Length	30.00 ft
Is Paved?	True
Slope	0.020 ft/ft
Average Velocity	2.87 ft/s
Segment Time of Concentration	0.003 hours

Segment #3: TR-55 Shallow Concentrated Flow

Hydraulic Length	52.00 ft
Is Paved?	True
Slope	0.004 ft/ft
Average Velocity	1.29 ft/s
Segment Time of Concentration	0.011 hours

Segment #4: TR-55 Channel Flow

Flow Area	0.6 ft ²
Hydraulic Length	50.00 ft
Manning's n	0.010
Slope	0.036 ft/ft
Wetted Perimeter	2.62 ft
Average Velocity	9.99 ft/s
Segment Time of Concentration	0.001 hours

Time of Concentration (Composite)

Time of Concentration (Composite)	0.053 hours
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Pre-development Analysis Results

Subsection: Time of Concentration Calculations

Label: DA-1-I

Scenario: Pre-Development 1

Return Event: 1 years

Storm Event: 1-YR

==== SCS Channel Flow

$$T_c = \frac{R = Q_a / W_p}{V = (1.49 * (R^{2/3}) * (S_f^{-0.5})) / n}$$

Where: $(L_f / V) / 3600$
R= Hydraulic radius
A_q= Flow area, square feet
W_p= Wetted perimeter, feet
V= Velocity, ft/sec
S_f= Slope, ft/ft
n= Manning's n
T_c= Time of concentration, hours
L_f= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

$$T_c = \frac{\text{Unpaved surface:}}{V = 16.1345 * (S_f^{0.5})}$$

$$\text{Paved Surface:}$$
$$V = 20.3282 * (S_f^{0.5})$$

Where: $(L_f / V) / 3600$
V= Velocity, ft/sec
S_f= Slope, ft/ft
T_c= Time of concentration, hours
L_f= Flow length, feet

==== SCS TR-55 Sheet Flow

$$T_c = \frac{(0.007 * ((n * L_f)^{0.8}))}{((P^{0.5}) * (S_f^{0.4}))}$$

Where: T_c= Time of concentration, hours
n= Manning's n
L_f= Flow length, feet
P= 2yr, 24hr Rain depth, inches
S_f= Slope, %

Pre-development Analysis Results

Subsection: Time of Concentration Calculations
 Label: DA-1-P
 Scenario: Pre-Development 1

Return Event: 1 years
 Storm Event: 1-YR

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.240
Slope	0.017 ft/ft
2 Year 24 Hour Depth	3.28 in
Average Velocity	0.11 ft/s
Segment Time of Concentration	0.251 hours
Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	156.00 ft
Is Paved?	False
Slope	0.008 ft/ft
Average Velocity	1.44 ft/s
Segment Time of Concentration	0.030 hours
Segment #3: TR-55 Shallow Concentrated Flow	
Hydraulic Length	70.00 ft
Is Paved?	True
Slope	0.012 ft/ft
Average Velocity	2.23 ft/s
Segment Time of Concentration	0.009 hours
Segment #4: TR-55 Shallow Concentrated Flow	
Hydraulic Length	52.00 ft
Is Paved?	True
Slope	0.004 ft/ft
Average Velocity	1.29 ft/s
Segment Time of Concentration	0.011 hours
Segment #5: TR-55 Channel Flow	
Flow Area	0.6 ft ²
Hydraulic Length	50.00 ft
Manning's n	0.010
Slope	0.036 ft/ft
Wetted Perimeter	2.62 ft
Average Velocity	9.99 ft/s
Segment Time of Concentration	0.001 hours
Time of Concentration (Composite)	
Time of Concentration (Composite)	0.302 hours

Pre-development Analysis Results

Subsection: Time of Concentration Calculations

Label: DA-1-P

Scenario: Pre-Development 1

Return Event: 1 years

Storm Event: 1-YR

==== SCS Channel Flow

$$T_c = \frac{R = Q_a / W_p}{V = (1.49 * (R^{2/3}) * (S_f^{-0.5})) / n}$$

Where: $(L_f / V) / 3600$
R= Hydraulic radius
A_q= Flow area, square feet
W_p= Wetted perimeter, feet
V= Velocity, ft/sec
S_f= Slope, ft/ft
n= Manning's n
T_c= Time of concentration, hours
L_f= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

$$T_c = \frac{\text{Unpaved surface:}}{V = 16.1345 * (S_f^{0.5})}$$

$$\text{Paved Surface:}$$
$$V = 20.3282 * (S_f^{0.5})$$

Where: $(L_f / V) / 3600$
V= Velocity, ft/sec
S_f= Slope, ft/ft
T_c= Time of concentration, hours
L_f= Flow length, feet

==== SCS TR-55 Sheet Flow

$$T_c = \frac{(0.007 * ((n * L_f)^{0.8}))}{((P^{0.5}) * (S_f^{0.4}))}$$

Where: T_c= Time of concentration, hours
n= Manning's n
L_f= Flow length, feet
P= 2yr, 24hr Rain depth, inches
S_f= Slope, %

Pre-development Analysis Results

Subsection: Time of Concentration Calculations

Label: DA-2-I

Scenario: Pre-Development 1

Return Event: 1 years

Storm Event: 1-YR

Time of Concentration Results

Segment #1: TR-55 Sheet Flow

Hydraulic Length	100.00 ft
Manning's n	0.011
Slope	0.013 ft/ft
2 Year 24 Hour Depth	3.28 in
Average Velocity	1.17 ft/s
Segment Time of Concentration	0.024 hours

Segment #2: TR-55 Shallow Concentrated Flow

Hydraulic Length	182.00 ft
Is Paved?	True
Slope	0.020 ft/ft
Average Velocity	2.87 ft/s
Segment Time of Concentration	0.018 hours

Time of Concentration (Composite)

Time of Concentration (Composite)	0.041 hours
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Pre-development Analysis Results

Subsection: Time of Concentration Calculations

Label: DA-2-I

Scenario: Pre-Development 1

Return Event: 1 years

Storm Event: 1-YR

==== SCS Channel Flow

$$T_c = \frac{R = Q_a / W_p}{V = (1.49 * (R^{2/3}) * (S_f^{-0.5})) / n}$$

Where: $(L_f / V) / 3600$
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

$$T_c = \frac{\text{Unpaved surface:}}{V = 16.1345 * (S_f^{0.5})}$$

$$\text{Paved Surface:}$$
$$V = 20.3282 * (S_f^{0.5})$$

Where: $(L_f / V) / 3600$
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

Pre-development Analysis Results

Subsection: Time of Concentration Calculations

Label: DA-2-P

Scenario: Pre-Development 1

Return Event: 1 years

Storm Event: 1-YR

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.240
Slope	0.015 ft/ft
2 Year 24 Hour Depth	3.28 in
Average Velocity	0.11 ft/s
Segment Time of Concentration	0.264 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	110.00 ft
Is Paved?	False
Slope	0.014 ft/ft
Average Velocity	1.91 ft/s
Segment Time of Concentration	0.016 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.280 hours

Pre-development Analysis Results

Subsection: Time of Concentration Calculations

Label: DA-2-P

Scenario: Pre-Development 1

Return Event: 1 years

Storm Event: 1-YR

==== SCS Channel Flow

$$T_c = \frac{R = Q_a / W_p}{V = (1.49 * (R^{2/3}) * (S_f^{-0.5})) / n}$$

Where: $(L_f / V) / 3600$
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

$$T_c = \frac{\text{Unpaved surface:}}{V = 16.1345 * (S_f^{0.5})}$$

$$\text{Paved Surface:}$$
$$V = 20.3282 * (S_f^{0.5})$$

Where: $(L_f / V) / 3600$
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

Pre-development Analysis Results

Subsection: Time of Concentration Calculations
 Label: DA-3-I
 Scenario: Pre-Development 1

Return Event: 1 years
 Storm Event: 1-YR

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.011
Slope	0.004 ft/ft
2 Year 24 Hour Depth	3.28 in
Average Velocity	0.73 ft/s
Segment Time of Concentration	0.038 hours
Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	146.00 ft
Is Paved?	True
Slope	0.004 ft/ft
Average Velocity	1.29 ft/s
Segment Time of Concentration	0.032 hours
Segment #3: TR-55 Shallow Concentrated Flow	
Hydraulic Length	36.00 ft
Is Paved?	False
Slope	0.003 ft/ft
Average Velocity	0.88 ft/s
Segment Time of Concentration	0.011 hours
Segment #4: TR-55 Shallow Concentrated Flow	
Hydraulic Length	361.00 ft
Is Paved?	False
Slope	0.003 ft/ft
Average Velocity	0.88 ft/s
Segment Time of Concentration	0.113 hours
Time of Concentration (Composite)	
Time of Concentration (Composite)	0.194 hours

Pre-development Analysis Results

Subsection: Time of Concentration Calculations

Label: DA-3-I

Scenario: Pre-Development 1

Return Event: 1 years

Storm Event: 1-YR

==== SCS Channel Flow

$$T_c = \frac{R = Q_a / W_p}{V = (1.49 * (R^{2/3}) * (S_f^{-0.5})) / n}$$

Where: $(L_f / V) / 3600$
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

$$T_c = \frac{\text{Unpaved surface:}}{V = 16.1345 * (S_f^{0.5})}$$

$$\text{Paved Surface:}$$
$$V = 20.3282 * (S_f^{0.5})$$

Where: $(L_f / V) / 3600$
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

Pre-development Analysis Results

Subsection: Time of Concentration Calculations

Label: DA-3-P

Scenario: Pre-Development 2

Return Event: 2 years

Storm Event: 2-YR

Time of Concentration Results

Segment #1: TR-55 Sheet Flow

Hydraulic Length	100.00 ft
Manning's n	0.240
Slope	0.017 ft/ft
2 Year 24 Hour Depth	3.28 in
Average Velocity	0.11 ft/s
Segment Time of Concentration	0.251 hours

Segment #2: TR-55 Shallow Concentrated Flow

Hydraulic Length	192.00 ft
Is Paved?	False
Slope	0.012 ft/ft
Average Velocity	1.77 ft/s
Segment Time of Concentration	0.030 hours

Segment #3: TR-55 Shallow Concentrated Flow

Hydraulic Length	361.00 ft
Is Paved?	False
Slope	0.003 ft/ft
Average Velocity	0.88 ft/s
Segment Time of Concentration	0.113 hours

Time of Concentration (Composite)

Time of Concentration (Composite)	0.394 hours
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Pre-development Analysis Results

Subsection: Time of Concentration Calculations

Label: DA-3-P

Scenario: Pre-Development 2

Return Event: 2 years

Storm Event: 2-YR

==== SCS Channel Flow

$$T_c = \frac{R = Q_a / W_p}{V = (1.49 * (R^{2/3}) * (S_f^{-0.5})) / n}$$

Where: $(L_f / V) / 3600$
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

$$T_c = \frac{\text{Unpaved surface:}}{V = 16.1345 * (S_f^{0.5})}$$

$$\text{Paved Surface:}$$
$$V = 20.3282 * (S_f^{0.5})$$

Where: $(L_f / V) / 3600$
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

Pre-development Analysis Results

Subsection: Unit Hydrograph Equations

Unit Hydrograph Method (Computational Notes)

Definition of Terms

At	Total area (acres): $A_t = A_i + A_p$
Ai	Impervious area (acres)
Ap	Pervious area (acres)
CNi	Runoff curve number for impervious area
CNp	Runoff curve number for pervious area
fLoss	f loss constant infiltration (depth/time)
gKs	Saturated Hydraulic Conductivity (depth/time)
Md	Volumetric Moisture Deficit
Psi	Capillary Suction (length)
hK	Horton Infiltration Decay Rate (time^{-1})
fo	Initial Infiltration Rate (depth/time)
fc	Ultimate(capacity)Infiltration Rate (depth/time)
Ia	Initial Abstraction (length)
dt	Computational increment (duration of unit excess rainfall) Default dt is smallest value of $0.1333T_c$, r_{tm} , and t_h (Smallest dt is then adjusted to match up with T_p)
UDdt	User specified override computational main time increment (only used if UDdt is $\Rightarrow .1333T_c$)
D(t)	Point on distribution curve (fraction of P) for time step t
K	$2 / (1 + (T_r/T_p))$: default $K = 0.75$: (for $T_r/T_p = 1.67$)
Ks	Hydrograph shape factor = Unit Conversions * $K = ((1\text{hr}/3600\text{sec}) * (1\text{ft}/12\text{in}) * ((5280\text{ft})^2/\text{sq.mi})) * K$ Default $K_s = 645.333 * 0.75 = 484$
Lag	Lag time from center of excess runoff (dt) to T_p : $\text{Lag} = 0.6T_c$
P	Total precipitation depth, inches
Pa(t)	Accumulated rainfall at time step t
Pi(t)	Incremental rainfall at time step t
qp	Peak discharge (cfs) for 1in. runoff, for 1hr, for 1 sq.mi. = $(K_s * A * Q) / T_p$ (where $Q = 1\text{in. runoff}$, $A = \text{sq.mi.}$)
Qu(t)	Unit hydrograph ordinate (cfs) at time step t
Q(t)	Final hydrograph ordinate (cfs) at time step t
Rai(t)	Accumulated runoff (inches) at time step t for impervious area
Rap(t)	Accumulated runoff (inches) at time step t for pervious area
Rii(t)	Incremental runoff (inches) at time step t for impervious area
Rip(t)	Incremental runoff (inches) at time step t for pervious area
R(t)	Incremental weighted total runoff (inches)
Rtm	Time increment for rainfall table
Si	S for impervious area: $S_i = (1000/CN_i) - 10$
Sp	S for pervious area: $S_p = (1000/CN_p) - 10$
t	Time step (row) number
Tc	Time of concentration
Tb	Time (hrs) of entire unit hydrograph: $T_b = T_p + T_r$
Tp	Time (hrs) to peak of a unit hydrograph: $T_p = (dt/2) + \text{Lag}$
Tr	Time (hrs) of receding limb of unit hydrograph: $T_r = \text{ratio of } T_p$

Pre-development Analysis Results

Subsection: Unit Hydrograph Equations

Unit Hydrograph Method

Computational Notes

Precipitation

Column (1) Time for time step t
Column (2) $D(t)$ = Point on distribution curve for time step t
Column (3) $P_i(t) = P_a(t) - P_a(t-1)$: Col.(4) - Preceding Col.(4)
Column (4) $P_a(t) = D(t) \times P$: Col.(2) \times P

Pervious Area Runoff (using SCS Runoff CN Method)

Column (5) $R_{ap}(t)$ = Accumulated pervious runoff for time step t
If $(P_a(t) \leq 0.2S_p)$ then use: $R_{ap}(t) = 0.0$
If $(P_a(t) > 0.2S_p)$ then use:
 $R_{ap}(t) = (Col.(4) - 0.2S_p) \times 2 / (Col.(4) + 0.8S_p)$
Column (6) $R_{ip}(t)$ = Incremental pervious runoff for time step t
 $R_{ip}(t) = R_{ap}(t) - R_{ap}(t-1)$
 $R_{ip}(t) = Col.(5)$ for current row - $Col.(5)$ for preceding row.

Impervious Area Runoff

Column (7 & 8)... Did not specify to use impervious areas.

Incremental Weighted Runoff

Column (9) $R(t) = (A_p/A_t) \times R_{ip}(t) + (A_i/A_t) \times R_{ii}(t)$
 $R(t) = (A_p/A_t) \times Col.(6) + (A_i/A_t) \times Col.(8)$

SCS Unit Hydrograph Method

Column (10) $Q(t)$ is computed with the SCS unit hydrograph method using $R(t)$ and $Q_u(t)$.

Pre-development Analysis Results

Subsection: Unit Hydrograph Summary

Label: DA-1-I

Scenario: Pre-Development 1

Return Event: 1 years

Storm Event: 1-YR

Storm Event	1-YR
Return Event	1 years
Duration	24.000 hours
Depth	2.73 in
Time of Concentration (Composite)	0.053 hours
Area (User Defined)	0.686 acres
<hr/>	
Computational Time Increment	0.007 hours
Time to Peak (Computed)	12.097 hours
Flow (Peak, Computed)	2.14 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	2.14 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.686 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.50 in
Runoff Volume (Pervious)	6,221.246 ft ³
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	6,218.000 ft ³
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.053 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	14.52 ft ³ /s
Unit peak time, Tp	0.036 hours
Unit receding limb, Tr	0.143 hours
Total unit time, Tb	0.178 hours

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-1-I

Scenario: Pre-Development 1

Return Event: 1 years

Storm Event: 1-YR

Storm Event	1-YR
Return Event	1 years
Duration	24.000 hours
Depth	2.73 in
Time of Concentration (Composite)	0.053 hours
Area (User Defined)	0.686 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
1.550	0.00	0.00	0.00	0.00	0.00
1.800	0.00	0.00	0.00	0.00	0.00
2.050	0.00	0.00	0.00	0.00	0.01
2.300	0.01	0.01	0.01	0.01	0.01
2.550	0.01	0.01	0.01	0.01	0.01
2.800	0.01	0.01	0.01	0.01	0.01
3.050	0.01	0.01	0.01	0.01	0.01
3.300	0.01	0.01	0.01	0.01	0.01
3.550	0.01	0.01	0.01	0.01	0.01
3.800	0.01	0.01	0.01	0.01	0.01
4.050	0.01	0.01	0.01	0.01	0.02
4.300	0.02	0.02	0.02	0.02	0.02
4.550	0.02	0.02	0.02	0.02	0.02
4.800	0.02	0.02	0.02	0.02	0.02
5.050	0.02	0.02	0.02	0.02	0.02
5.300	0.02	0.02	0.02	0.02	0.02
5.550	0.02	0.02	0.02	0.02	0.02
5.800	0.02	0.02	0.02	0.02	0.02
6.050	0.02	0.02	0.02	0.02	0.02
6.300	0.02	0.02	0.02	0.03	0.03
6.550	0.03	0.03	0.03	0.03	0.03
6.800	0.03	0.03	0.03	0.03	0.03
7.050	0.03	0.03	0.03	0.03	0.03
7.300	0.03	0.03	0.03	0.03	0.03
7.550	0.03	0.03	0.03	0.03	0.04
7.800	0.04	0.04	0.04	0.04	0.04
8.050	0.04	0.04	0.04	0.04	0.04
8.300	0.04	0.04	0.04	0.04	0.04
8.550	0.04	0.04	0.04	0.04	0.04
8.800	0.04	0.04	0.04	0.05	0.05
9.050	0.05	0.05	0.05	0.05	0.05
9.300	0.05	0.06	0.06	0.06	0.06
9.550	0.06	0.06	0.06	0.06	0.07
9.800	0.07	0.07	0.07	0.07	0.07
10.050	0.08	0.08	0.08	0.08	0.08
10.300	0.08	0.08	0.08	0.09	0.09
10.550	0.09	0.10	0.11	0.11	0.12
10.800	0.12	0.13	0.13	0.14	0.14
11.050	0.15	0.16	0.17	0.18	0.19

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 1 years

Label: DA-1-I

Storm Event: 1-YR

Scenario: Pre-Development 1

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.300	0.20	0.21	0.22	0.23	0.24
11.550	0.33	0.36	0.38	0.39	0.49
11.800	0.53	0.68	0.74	1.12	1.28
12.050	1.90	2.14	1.18	0.80	0.61
12.300	0.55	0.44	0.40	0.38	0.38
12.550	0.28	0.25	0.23	0.23	0.21
12.800	0.21	0.19	0.19	0.17	0.17
13.050	0.15	0.15	0.14	0.14	0.13
13.300	0.13	0.12	0.12	0.11	0.11
13.550	0.10	0.10	0.09	0.09	0.09
13.800	0.09	0.09	0.09	0.08	0.08
14.050	0.08	0.08	0.08	0.08	0.08
14.300	0.08	0.07	0.07	0.07	0.07
14.550	0.07	0.07	0.06	0.06	0.06
14.800	0.06	0.06	0.06	0.06	0.06
15.050	0.05	0.05	0.05	0.05	0.05
15.300	0.05	0.05	0.05	0.05	0.05
15.550	0.05	0.05	0.05	0.05	0.05
15.800	0.05	0.05	0.05	0.05	0.05
16.050	0.05	0.05	0.04	0.04	0.04
16.300	0.04	0.04	0.04	0.04	0.04
16.550	0.04	0.04	0.04	0.04	0.04
16.800	0.04	0.04	0.04	0.04	0.04
17.050	0.04	0.04	0.04	0.04	0.04
17.300	0.04	0.04	0.04	0.03	0.03
17.550	0.03	0.03	0.03	0.03	0.03
17.800	0.03	0.03	0.03	0.03	0.03
18.050	0.03	0.03	0.03	0.03	0.03
18.300	0.03	0.03	0.03	0.03	0.03
18.550	0.03	0.03	0.03	0.03	0.03
18.800	0.03	0.03	0.03	0.03	0.03
19.050	0.03	0.03	0.03	0.03	0.03
19.300	0.03	0.03	0.03	0.03	0.03
19.550	0.03	0.03	0.03	0.03	0.03
19.800	0.03	0.03	0.03	0.03	0.03
20.050	0.03	0.03	0.03	0.03	0.03
20.300	0.03	0.03	0.03	0.03	0.03
20.550	0.03	0.03	0.03	0.03	0.03
20.800	0.03	0.03	0.02	0.02	0.02
21.050	0.02	0.02	0.02	0.02	0.02
21.300	0.02	0.02	0.02	0.02	0.02
21.550	0.02	0.02	0.02	0.02	0.02
21.800	0.02	0.02	0.02	0.02	0.02
22.050	0.02	0.02	0.02	0.02	0.02
22.300	0.02	0.02	0.02	0.02	0.02
22.550	0.02	0.02	0.02	0.02	0.02
22.800	0.02	0.02	0.02	0.02	0.02
23.050	0.02	0.02	0.02	0.02	0.02

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-1-I

Scenario: Pre-Development 1

Return Event: 1 years

Storm Event: 1-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
23.300	0.02	0.02	0.02	0.02	0.02
23.550	0.02	0.02	0.02	0.02	0.02
23.800	0.02	0.02	0.02	0.02	0.02

Pre-development Analysis Results

Subsection: Unit Hydrograph Summary

Label: DA-1-I

Scenario: Pre-Development 2

Return Event: 2 years

Storm Event: 2-YR

Storm Event	2-YR
Return Event	2 years
Duration	24.000 hours
Depth	3.28 in
Time of Concentration (Composite)	0.053 hours
Area (User Defined)	0.686 acres
<hr/>	
Computational Time Increment	0.007 hours
Time to Peak (Computed)	12.097 hours
Flow (Peak, Computed)	2.58 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	2.58 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.686 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.05 in
Runoff Volume (Pervious)	7,584.475 ft ³
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	7,580.000 ft ³
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.053 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	14.52 ft ³ /s
Unit peak time, Tp	0.036 hours
Unit receding limb, Tr	0.143 hours
Total unit time, Tb	0.178 hours

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-1-I

Scenario: Pre-Development 2

Return Event: 2 years

Storm Event: 2-YR

Storm Event	2-YR
Return Event	2 years
Duration	24.000 hours
Depth	3.28 in
Time of Concentration (Composite)	0.053 hours
Area (User Defined)	0.686 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
1.250	0.00	0.00	0.00	0.00	0.00
1.500	0.00	0.00	0.00	0.00	0.00
1.750	0.00	0.01	0.01	0.01	0.01
2.000	0.01	0.01	0.01	0.01	0.01
2.250	0.01	0.01	0.01	0.01	0.01
2.500	0.01	0.01	0.01	0.01	0.01
2.750	0.01	0.01	0.01	0.01	0.01
3.000	0.01	0.01	0.01	0.01	0.01
3.250	0.02	0.02	0.02	0.02	0.02
3.500	0.02	0.02	0.02	0.02	0.02
3.750	0.02	0.02	0.02	0.02	0.02
4.000	0.02	0.02	0.02	0.02	0.02
4.250	0.02	0.02	0.02	0.02	0.02
4.500	0.02	0.02	0.02	0.02	0.02
4.750	0.02	0.02	0.02	0.02	0.02
5.000	0.02	0.02	0.02	0.02	0.02
5.250	0.02	0.03	0.03	0.03	0.03
5.500	0.03	0.03	0.03	0.03	0.03
5.750	0.03	0.03	0.03	0.03	0.03
6.000	0.03	0.03	0.03	0.03	0.03
6.250	0.03	0.03	0.03	0.03	0.03
6.500	0.03	0.03	0.03	0.03	0.03
6.750	0.03	0.04	0.04	0.04	0.04
7.000	0.04	0.04	0.04	0.04	0.04
7.250	0.04	0.04	0.04	0.04	0.04
7.500	0.04	0.04	0.04	0.04	0.04
7.750	0.04	0.05	0.05	0.05	0.05
8.000	0.05	0.05	0.05	0.05	0.05
8.250	0.05	0.05	0.05	0.05	0.05
8.500	0.05	0.05	0.05	0.05	0.05
8.750	0.05	0.05	0.06	0.06	0.06
9.000	0.06	0.06	0.06	0.06	0.06
9.250	0.07	0.07	0.07	0.07	0.07
9.500	0.07	0.08	0.08	0.08	0.08
9.750	0.08	0.08	0.09	0.09	0.09
10.000	0.09	0.09	0.09	0.10	0.10
10.250	0.10	0.10	0.10	0.10	0.11
10.500	0.11	0.12	0.12	0.13	0.13
10.750	0.14	0.15	0.15	0.16	0.17

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 2 years

Label: DA-1-I

Storm Event: 2-YR

Scenario: Pre-Development 2

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.000	0.17	0.19	0.19	0.21	0.22
11.250	0.24	0.24	0.26	0.27	0.28
11.500	0.29	0.40	0.44	0.46	0.47
11.750	0.59	0.64	0.82	0.90	1.36
12.000	1.55	2.30	2.58	1.42	0.96
12.250	0.74	0.66	0.53	0.48	0.46
12.500	0.46	0.34	0.30	0.28	0.28
12.750	0.26	0.25	0.23	0.23	0.21
13.000	0.20	0.19	0.18	0.17	0.17
13.250	0.16	0.15	0.14	0.14	0.13
13.500	0.13	0.12	0.11	0.11	0.11
13.750	0.11	0.11	0.10	0.10	0.10
14.000	0.10	0.10	0.10	0.09	0.09
14.250	0.09	0.09	0.09	0.09	0.08
14.500	0.08	0.08	0.08	0.08	0.08
14.750	0.07	0.07	0.07	0.07	0.07
15.000	0.07	0.06	0.06	0.06	0.06
15.250	0.06	0.06	0.06	0.06	0.06
15.500	0.06	0.06	0.06	0.06	0.06
15.750	0.06	0.06	0.06	0.06	0.06
16.000	0.06	0.05	0.05	0.05	0.05
16.250	0.05	0.05	0.05	0.05	0.05
16.500	0.05	0.05	0.05	0.05	0.05
16.750	0.05	0.05	0.05	0.05	0.05
17.000	0.05	0.05	0.05	0.04	0.04
17.250	0.04	0.04	0.04	0.04	0.04
17.500	0.04	0.04	0.04	0.04	0.04
17.750	0.04	0.04	0.04	0.04	0.04
18.000	0.04	0.04	0.04	0.04	0.04
18.250	0.04	0.04	0.04	0.04	0.04
18.500	0.04	0.04	0.04	0.04	0.04
18.750	0.03	0.03	0.03	0.03	0.03
19.000	0.03	0.03	0.03	0.03	0.03
19.250	0.03	0.03	0.03	0.03	0.03
19.500	0.03	0.03	0.03	0.03	0.03
19.750	0.03	0.03	0.03	0.03	0.03
20.000	0.03	0.03	0.03	0.03	0.03
20.250	0.03	0.03	0.03	0.03	0.03
20.500	0.03	0.03	0.03	0.03	0.03
20.750	0.03	0.03	0.03	0.03	0.03
21.000	0.03	0.03	0.03	0.03	0.03
21.250	0.03	0.03	0.03	0.03	0.03
21.500	0.03	0.03	0.03	0.03	0.03
21.750	0.03	0.03	0.03	0.03	0.03
22.000	0.03	0.03	0.03	0.03	0.03
22.250	0.03	0.03	0.03	0.03	0.03
22.500	0.03	0.03	0.03	0.03	0.03
22.750	0.03	0.03	0.03	0.03	0.03

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-1-I

Scenario: Pre-Development 2

Return Event: 2 years

Storm Event: 2-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
23.000	0.03	0.03	0.03	0.02	0.02
23.250	0.02	0.02	0.02	0.02	0.02
23.500	0.02	0.02	0.02	0.02	0.02
23.750	0.02	0.02	0.02	0.02	0.03
24.000	0.03	(N/A)	(N/A)	(N/A)	(N/A)

Pre-development Analysis Results

Subsection: Unit Hydrograph Summary
 Label: DA-1-I
 Scenario: Pre-Development 5

Return Event: 5 years
 Storm Event: 5-YR

Storm Event	5-YR
Return Event	5 years
Duration	24.000 hours
Depth	4.12 in
Time of Concentration (Composite)	0.053 hours
Area (User Defined)	0.686 acres
<hr/>	
Computational Time Increment	0.007 hours
Time to Peak (Computed)	12.097 hours
Flow (Peak, Computed)	3.26 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	3.26 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.686 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.89 in
Runoff Volume (Pervious)	9,674.297 ft ³
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	9,669.000 ft ³
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.053 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	14.52 ft ³ /s
Unit peak time, Tp	0.036 hours
Unit receding limb, Tr	0.143 hours
Total unit time, Tb	0.178 hours

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-1-I

Scenario: Pre-Development 5

Return Event: 5 years

Storm Event: 5-YR

Storm Event	5-YR
Return Event	5 years
Duration	24.000 hours
Depth	4.12 in
Time of Concentration (Composite)	0.053 hours
Area (User Defined)	0.686 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
1.000	0.00	0.00	0.00	0.00	0.00
1.250	0.00	0.00	0.01	0.01	0.01
1.500	0.01	0.01	0.01	0.01	0.01
1.750	0.01	0.01	0.01	0.01	0.01
2.000	0.01	0.01	0.01	0.01	0.01
2.250	0.01	0.02	0.02	0.02	0.02
2.500	0.02	0.02	0.02	0.02	0.02
2.750	0.02	0.02	0.02	0.02	0.02
3.000	0.02	0.02	0.02	0.02	0.02
3.250	0.02	0.02	0.02	0.02	0.02
3.500	0.02	0.02	0.02	0.03	0.03
3.750	0.03	0.03	0.03	0.03	0.03
4.000	0.03	0.03	0.03	0.03	0.03
4.250	0.03	0.03	0.03	0.03	0.03
4.500	0.03	0.03	0.03	0.03	0.03
4.750	0.03	0.03	0.03	0.03	0.03
5.000	0.03	0.03	0.03	0.03	0.03
5.250	0.03	0.03	0.03	0.04	0.04
5.500	0.04	0.04	0.04	0.04	0.04
5.750	0.04	0.04	0.04	0.04	0.04
6.000	0.04	0.04	0.04	0.04	0.04
6.250	0.04	0.04	0.04	0.04	0.04
6.500	0.04	0.04	0.04	0.05	0.05
6.750	0.05	0.05	0.05	0.05	0.05
7.000	0.05	0.05	0.05	0.05	0.05
7.250	0.05	0.05	0.05	0.05	0.06
7.500	0.06	0.06	0.06	0.06	0.06
7.750	0.06	0.06	0.06	0.06	0.06
8.000	0.06	0.06	0.06	0.06	0.06
8.250	0.07	0.07	0.07	0.07	0.07
8.500	0.07	0.07	0.07	0.07	0.07
8.750	0.07	0.07	0.07	0.07	0.07
9.000	0.07	0.08	0.08	0.08	0.08
9.250	0.09	0.09	0.09	0.09	0.09
9.500	0.09	0.10	0.10	0.10	0.10
9.750	0.11	0.11	0.11	0.11	0.12
10.000	0.12	0.12	0.12	0.12	0.13
10.250	0.13	0.13	0.13	0.13	0.14
10.500	0.14	0.15	0.15	0.17	0.17

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 5 years

Label: DA-1-I

Storm Event: 5-YR

Scenario: Pre-Development 5

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.750	0.18	0.19	0.20	0.20	0.21
11.000	0.22	0.24	0.25	0.27	0.28
11.250	0.30	0.31	0.33	0.34	0.36
11.500	0.36	0.50	0.56	0.59	0.60
11.750	0.75	0.81	1.04	1.13	1.72
12.000	1.95	2.90	3.26	1.79	1.21
12.250	0.93	0.84	0.67	0.61	0.58
12.500	0.57	0.43	0.38	0.35	0.35
12.750	0.33	0.32	0.30	0.29	0.26
13.000	0.26	0.23	0.23	0.21	0.21
13.250	0.20	0.19	0.18	0.18	0.16
13.500	0.16	0.15	0.14	0.14	0.14
13.750	0.14	0.14	0.13	0.13	0.13
14.000	0.13	0.12	0.12	0.12	0.12
14.250	0.11	0.11	0.11	0.11	0.11
14.500	0.11	0.10	0.10	0.10	0.10
14.750	0.09	0.09	0.09	0.09	0.09
15.000	0.08	0.08	0.08	0.08	0.08
15.250	0.08	0.08	0.08	0.08	0.08
15.500	0.08	0.07	0.07	0.07	0.07
15.750	0.07	0.07	0.07	0.07	0.07
16.000	0.07	0.07	0.07	0.07	0.07
16.250	0.07	0.07	0.07	0.07	0.06
16.500	0.06	0.06	0.06	0.06	0.06
16.750	0.06	0.06	0.06	0.06	0.06
17.000	0.06	0.06	0.06	0.06	0.06
17.250	0.05	0.05	0.05	0.05	0.05
17.500	0.05	0.05	0.05	0.05	0.05
17.750	0.05	0.05	0.05	0.05	0.05
18.000	0.05	0.05	0.05	0.05	0.05
18.250	0.05	0.05	0.04	0.04	0.04
18.500	0.04	0.04	0.04	0.04	0.04
18.750	0.04	0.04	0.04	0.04	0.04
19.000	0.04	0.04	0.04	0.04	0.04
19.250	0.04	0.04	0.04	0.04	0.04
19.500	0.04	0.04	0.04	0.04	0.04
19.750	0.04	0.04	0.04	0.04	0.04
20.000	0.04	0.04	0.04	0.04	0.04
20.250	0.04	0.04	0.04	0.04	0.04
20.500	0.04	0.04	0.04	0.04	0.04
20.750	0.04	0.04	0.04	0.04	0.04
21.000	0.04	0.04	0.04	0.04	0.04
21.250	0.04	0.04	0.04	0.04	0.04
21.500	0.04	0.04	0.04	0.04	0.04
21.750	0.04	0.04	0.04	0.03	0.03
22.000	0.03	0.03	0.03	0.03	0.03
22.250	0.03	0.03	0.03	0.03	0.03
22.500	0.03	0.03	0.03	0.03	0.03

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-1-I

Scenario: Pre-Development 5

Return Event: 5 years

Storm Event: 5-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
22.750	0.03	0.03	0.03	0.03	0.03
23.000	0.03	0.03	0.03	0.03	0.03
23.250	0.03	0.03	0.03	0.03	0.03
23.500	0.03	0.03	0.03	0.03	0.03
23.750	0.03	0.03	0.03	0.03	0.03
24.000	0.04	(N/A)	(N/A)	(N/A)	(N/A)

Pre-development Analysis Results

Subsection: Unit Hydrograph Summary
 Label: DA-1-I
 Scenario: Pre-Development 10

Return Event: 10 years
 Storm Event: 10-YR

Storm Event	10-YR
Return Event	10 years
Duration	24.000 hours
Depth	4.82 in
Time of Concentration (Composite)	0.053 hours
Area (User Defined)	0.686 acres
<hr/>	
Computational Time Increment	0.007 hours
Time to Peak (Computed)	12.097 hours
Flow (Peak, Computed)	3.82 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	3.81 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.686 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	4.58 in
Runoff Volume (Pervious)	11,408.230 ft ³
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	11,402.000 ft ³
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.053 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	14.52 ft ³ /s
Unit peak time, Tp	0.036 hours
Unit receding limb, Tr	0.143 hours
Total unit time, Tb	0.178 hours

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-1-I

Scenario: Pre-Development 10

Return Event: 10 years

Storm Event: 10-YR

Storm Event	10-YR
Return Event	10 years
Duration	24.000 hours
Depth	4.82 in
Time of Concentration (Composite)	0.053 hours
Area (User Defined)	0.686 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
0.850	0.00	0.00	0.00	0.00	0.00
1.100	0.00	0.01	0.01	0.01	0.01
1.350	0.01	0.01	0.01	0.01	0.01
1.600	0.01	0.01	0.01	0.01	0.01
1.850	0.02	0.02	0.02	0.02	0.02
2.100	0.02	0.02	0.02	0.02	0.02
2.350	0.02	0.02	0.02	0.02	0.02
2.600	0.02	0.02	0.02	0.03	0.03
2.850	0.03	0.03	0.03	0.03	0.03
3.100	0.03	0.03	0.03	0.03	0.03
3.350	0.03	0.03	0.03	0.03	0.03
3.600	0.03	0.03	0.03	0.03	0.03
3.850	0.03	0.03	0.03	0.03	0.03
4.100	0.04	0.04	0.04	0.04	0.04
4.350	0.04	0.04	0.04	0.04	0.04
4.600	0.04	0.04	0.04	0.04	0.04
4.850	0.04	0.04	0.04	0.04	0.04
5.100	0.04	0.04	0.04	0.04	0.04
5.350	0.04	0.04	0.04	0.04	0.04
5.600	0.04	0.04	0.04	0.04	0.05
5.850	0.05	0.05	0.05	0.05	0.05
6.100	0.05	0.05	0.05	0.05	0.05
6.350	0.05	0.05	0.05	0.05	0.05
6.600	0.05	0.06	0.06	0.06	0.06
6.850	0.06	0.06	0.06	0.06	0.06
7.100	0.06	0.06	0.06	0.06	0.06
7.350	0.07	0.07	0.07	0.07	0.07
7.600	0.07	0.07	0.07	0.07	0.07
7.850	0.07	0.07	0.07	0.07	0.07
8.100	0.08	0.08	0.08	0.08	0.08
8.350	0.08	0.08	0.08	0.08	0.08
8.600	0.08	0.08	0.08	0.08	0.09
8.850	0.09	0.09	0.09	0.09	0.09
9.100	0.09	0.10	0.10	0.10	0.10
9.350	0.11	0.11	0.11	0.11	0.12
9.600	0.12	0.12	0.12	0.13	0.13
9.850	0.13	0.13	0.14	0.14	0.14
10.100	0.14	0.15	0.15	0.15	0.15
10.350	0.16	0.16	0.16	0.16	0.18

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-1-I

Scenario: Pre-Development 10

Return Event: 10 years

Storm Event: 10-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.600	0.18	0.20	0.20	0.21	0.22
10.850	0.23	0.24	0.25	0.26	0.28
11.100	0.29	0.32	0.33	0.35	0.36
11.350	0.39	0.40	0.42	0.43	0.59
11.600	0.66	0.69	0.70	0.88	0.95
11.850	1.22	1.33	2.02	2.29	3.40
12.100	3.81	2.10	1.42	1.09	0.98
12.350	0.79	0.71	0.68	0.67	0.51
12.600	0.44	0.41	0.41	0.38	0.37
12.850	0.35	0.34	0.31	0.30	0.27
13.100	0.26	0.25	0.24	0.23	0.23
13.350	0.21	0.21	0.19	0.19	0.17
13.600	0.17	0.16	0.16	0.16	0.16
13.850	0.15	0.15	0.15	0.15	0.14
14.100	0.14	0.14	0.14	0.13	0.13
14.350	0.13	0.13	0.12	0.12	0.12
14.600	0.12	0.11	0.11	0.11	0.11
14.850	0.10	0.10	0.10	0.10	0.09
15.100	0.09	0.09	0.09	0.09	0.09
15.350	0.09	0.09	0.09	0.09	0.09
15.600	0.09	0.09	0.09	0.08	0.08
15.850	0.08	0.08	0.08	0.08	0.08
16.100	0.08	0.08	0.08	0.08	0.08
16.350	0.08	0.08	0.07	0.07	0.07
16.600	0.07	0.07	0.07	0.07	0.07
16.850	0.07	0.07	0.07	0.07	0.07
17.100	0.07	0.07	0.07	0.06	0.06
17.350	0.06	0.06	0.06	0.06	0.06
17.600	0.06	0.06	0.06	0.06	0.06
17.850	0.06	0.06	0.06	0.05	0.05
18.100	0.05	0.05	0.05	0.05	0.05
18.350	0.05	0.05	0.05	0.05	0.05
18.600	0.05	0.05	0.05	0.05	0.05
18.850	0.05	0.05	0.05	0.05	0.05
19.100	0.05	0.05	0.05	0.05	0.05
19.350	0.05	0.05	0.05	0.05	0.05
19.600	0.05	0.05	0.05	0.05	0.05
19.850	0.05	0.05	0.05	0.05	0.05
20.100	0.05	0.05	0.05	0.05	0.05
20.350	0.05	0.05	0.05	0.05	0.05
20.600	0.05	0.05	0.04	0.04	0.04
20.850	0.04	0.04	0.04	0.04	0.04
21.100	0.04	0.04	0.04	0.04	0.04
21.350	0.04	0.04	0.04	0.04	0.04
21.600	0.04	0.04	0.04	0.04	0.04
21.850	0.04	0.04	0.04	0.04	0.04
22.100	0.04	0.04	0.04	0.04	0.04
22.350	0.04	0.04	0.04	0.04	0.04

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-1-I

Scenario: Pre-Development 10

Return Event: 10 years

Storm Event: 10-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
22.600	0.04	0.04	0.04	0.04	0.04
22.850	0.04	0.04	0.04	0.04	0.04
23.100	0.04	0.04	0.04	0.04	0.04
23.350	0.04	0.04	0.04	0.04	0.04
23.600	0.04	0.04	0.04	0.03	0.03
23.850	0.03	0.03	0.04	0.04	(N/A)

Pre-development Analysis Results

Subsection: Unit Hydrograph Summary

Label: DA-1-I

Scenario: Pre-Development 25

Return Event: 25 years

Storm Event: 25-YR

Storm Event	25-YR
Return Event	25 years
Duration	24.000 hours
Depth	5.83 in
Time of Concentration (Composite)	0.053 hours
Area (User Defined)	0.686 acres
<hr/>	
Computational Time Increment	0.007 hours
Time to Peak (Computed)	12.097 hours
Flow (Peak, Computed)	4.62 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	4.62 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.686 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.59 in
Runoff Volume (Pervious)	13,918.614 ft ³
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	13,911.000 ft ³
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.053 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	14.52 ft ³ /s
Unit peak time, Tp	0.036 hours
Unit receding limb, Tr	0.143 hours
Total unit time, Tb	0.178 hours

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-1-I

Scenario: Pre-Development 25

Return Event: 25 years

Storm Event: 25-YR

Storm Event	25-YR
Return Event	25 years
Duration	24.000 hours
Depth	5.83 in
Time of Concentration (Composite)	0.053 hours
Area (User Defined)	0.686 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
0.700	0.00	0.00	0.00	0.00	0.01
0.950	0.01	0.01	0.01	0.01	0.01
1.200	0.01	0.01	0.01	0.01	0.02
1.450	0.02	0.02	0.02	0.02	0.02
1.700	0.02	0.02	0.02	0.02	0.02
1.950	0.02	0.02	0.03	0.03	0.03
2.200	0.03	0.03	0.03	0.03	0.03
2.450	0.03	0.03	0.03	0.03	0.03
2.700	0.03	0.03	0.03	0.04	0.04
2.950	0.04	0.04	0.04	0.04	0.04
3.200	0.04	0.04	0.04	0.04	0.04
3.450	0.04	0.04	0.04	0.04	0.04
3.700	0.04	0.04	0.04	0.04	0.04
3.950	0.04	0.04	0.05	0.05	0.05
4.200	0.05	0.05	0.05	0.05	0.05
4.450	0.05	0.05	0.05	0.05	0.05
4.700	0.05	0.05	0.05	0.05	0.05
4.950	0.05	0.05	0.05	0.05	0.05
5.200	0.05	0.05	0.05	0.05	0.05
5.450	0.05	0.05	0.06	0.06	0.06
5.700	0.06	0.06	0.06	0.06	0.06
5.950	0.06	0.06	0.06	0.06	0.06
6.200	0.06	0.06	0.06	0.06	0.06
6.450	0.07	0.07	0.07	0.07	0.07
6.700	0.07	0.07	0.07	0.07	0.07
6.950	0.07	0.07	0.08	0.08	0.08
7.200	0.08	0.08	0.08	0.08	0.08
7.450	0.08	0.08	0.08	0.08	0.09
7.700	0.09	0.09	0.09	0.09	0.09
7.950	0.09	0.09	0.09	0.09	0.09
8.200	0.09	0.10	0.10	0.10	0.10
8.450	0.10	0.10	0.10	0.10	0.10
8.700	0.10	0.10	0.10	0.11	0.11
8.950	0.11	0.11	0.11	0.11	0.12
9.200	0.12	0.12	0.13	0.13	0.13
9.450	0.14	0.14	0.14	0.14	0.15
9.700	0.15	0.15	0.16	0.16	0.16
9.950	0.17	0.17	0.17	0.17	0.18
10.200	0.18	0.18	0.19	0.19	0.19

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 25 years

Label: DA-1-I

Storm Event: 25-YR

Scenario: Pre-Development 25

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.450	0.20	0.20	0.22	0.22	0.24
10.700	0.24	0.26	0.27	0.28	0.29
10.950	0.31	0.31	0.34	0.36	0.39
11.200	0.40	0.43	0.44	0.47	0.49
11.450	0.51	0.52	0.72	0.80	0.84
11.700	0.85	1.07	1.16	1.48	1.61
11.950	2.45	2.77	4.12	4.62	2.54
12.200	1.72	1.32	1.19	0.95	0.86
12.450	0.83	0.81	0.61	0.53	0.50
12.700	0.49	0.46	0.45	0.42	0.41
12.950	0.38	0.36	0.33	0.32	0.30
13.200	0.30	0.28	0.27	0.26	0.25
13.450	0.23	0.23	0.21	0.20	0.20
13.700	0.20	0.19	0.19	0.19	0.19
13.950	0.18	0.18	0.17	0.17	0.17
14.200	0.17	0.16	0.16	0.16	0.16
14.450	0.15	0.15	0.14	0.14	0.14
14.700	0.14	0.13	0.13	0.13	0.12
14.950	0.12	0.12	0.11	0.11	0.11
15.200	0.11	0.11	0.11	0.11	0.11
15.450	0.11	0.11	0.11	0.11	0.10
15.700	0.10	0.10	0.10	0.10	0.10
15.950	0.10	0.10	0.10	0.10	0.10
16.200	0.10	0.09	0.09	0.09	0.09
16.450	0.09	0.09	0.09	0.09	0.09
16.700	0.09	0.09	0.09	0.08	0.08
16.950	0.08	0.08	0.08	0.08	0.08
17.200	0.08	0.08	0.08	0.08	0.08
17.450	0.07	0.07	0.07	0.07	0.07
17.700	0.07	0.07	0.07	0.07	0.07
17.950	0.07	0.07	0.07	0.06	0.06
18.200	0.06	0.06	0.06	0.06	0.06
18.450	0.06	0.06	0.06	0.06	0.06
18.700	0.06	0.06	0.06	0.06	0.06
18.950	0.06	0.06	0.06	0.06	0.06
19.200	0.06	0.06	0.06	0.06	0.06
19.450	0.06	0.06	0.06	0.06	0.06
19.700	0.06	0.06	0.06	0.06	0.06
19.950	0.06	0.06	0.06	0.06	0.06
20.200	0.06	0.06	0.06	0.06	0.06
20.450	0.06	0.06	0.06	0.06	0.05
20.700	0.05	0.05	0.05	0.05	0.05
20.950	0.05	0.05	0.05	0.05	0.05
21.200	0.05	0.05	0.05	0.05	0.05
21.450	0.05	0.05	0.05	0.05	0.05
21.700	0.05	0.05	0.05	0.05	0.05
21.950	0.05	0.05	0.05	0.05	0.05
22.200	0.05	0.05	0.05	0.05	0.05

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-1-I

Scenario: Pre-Development 25

Return Event: 25 years

Storm Event: 25-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
22.450	0.05	0.05	0.05	0.05	0.05
22.700	0.05	0.05	0.05	0.05	0.05
22.950	0.05	0.05	0.04	0.04	0.04
23.200	0.04	0.04	0.04	0.04	0.04
23.450	0.04	0.04	0.04	0.04	0.04
23.700	0.04	0.04	0.04	0.04	0.04
23.950	0.05	0.05	(N/A)	(N/A)	(N/A)

Pre-development Analysis Results

Subsection: Unit Hydrograph Summary
 Label: DA-1-I
 Scenario: Pre-Development 50

Return Event: 50 years
 Storm Event: 50-YR

Storm Event	50-YR
Return Event	50 years
Duration	24.000 hours
Depth	6.68 in
Time of Concentration (Composite)	0.053 hours
Area (User Defined)	0.686 acres
<hr/>	
Computational Time Increment	0.007 hours
Time to Peak (Computed)	12.097 hours
Flow (Peak, Computed)	5.30 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	5.30 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.686 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.44 in
Runoff Volume (Pervious)	16,032.117 ft ³
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	16,023.000 ft ³
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.053 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	14.52 ft ³ /s
Unit peak time, Tp	0.036 hours
Unit receding limb, Tr	0.143 hours
Total unit time, Tb	0.178 hours

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-1-I

Scenario: Pre-Development 50

Return Event: 50 years

Storm Event: 50-YR

Storm Event	50-YR
Return Event	50 years
Duration	24.000 hours
Depth	6.68 in
Time of Concentration (Composite)	0.053 hours
Area (User Defined)	0.686 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
0.600	0.00	0.00	0.00	0.00	0.01
0.850	0.01	0.01	0.01	0.01	0.01
1.100	0.01	0.02	0.02	0.02	0.02
1.350	0.02	0.02	0.02	0.02	0.02
1.600	0.03	0.03	0.03	0.03	0.03
1.850	0.03	0.03	0.03	0.03	0.03
2.100	0.03	0.03	0.03	0.04	0.04
2.350	0.04	0.04	0.04	0.04	0.04
2.600	0.04	0.04	0.04	0.04	0.04
2.850	0.04	0.04	0.04	0.04	0.04
3.100	0.05	0.05	0.05	0.05	0.05
3.350	0.05	0.05	0.05	0.05	0.05
3.600	0.05	0.05	0.05	0.05	0.05
3.850	0.05	0.05	0.05	0.05	0.05
4.100	0.05	0.05	0.06	0.06	0.06
4.350	0.06	0.06	0.06	0.06	0.06
4.600	0.06	0.06	0.06	0.06	0.06
4.850	0.06	0.06	0.06	0.06	0.06
5.100	0.06	0.06	0.06	0.06	0.06
5.350	0.06	0.06	0.06	0.06	0.07
5.600	0.07	0.07	0.07	0.07	0.07
5.850	0.07	0.07	0.07	0.07	0.07
6.100	0.07	0.07	0.07	0.07	0.07
6.350	0.07	0.08	0.08	0.08	0.08
6.600	0.08	0.08	0.08	0.08	0.08
6.850	0.08	0.08	0.09	0.09	0.09
7.100	0.09	0.09	0.09	0.09	0.09
7.350	0.09	0.09	0.10	0.10	0.10
7.600	0.10	0.10	0.10	0.10	0.10
7.850	0.10	0.10	0.11	0.11	0.11
8.100	0.11	0.11	0.11	0.11	0.11
8.350	0.11	0.11	0.12	0.12	0.12
8.600	0.12	0.12	0.12	0.12	0.12
8.850	0.12	0.12	0.12	0.13	0.13
9.100	0.13	0.14	0.14	0.14	0.15
9.350	0.15	0.15	0.16	0.16	0.16
9.600	0.17	0.17	0.17	0.18	0.18
9.850	0.19	0.19	0.19	0.19	0.20
10.100	0.20	0.21	0.21	0.21	0.21

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-1-I

Scenario: Pre-Development 50

Return Event: 50 years

Storm Event: 50-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.350	0.22	0.22	0.23	0.23	0.25
10.600	0.25	0.27	0.28	0.30	0.31
10.850	0.33	0.33	0.35	0.36	0.40
11.100	0.41	0.44	0.46	0.49	0.51
11.350	0.54	0.56	0.59	0.60	0.83
11.600	0.92	0.96	0.98	1.23	1.33
11.850	1.70	1.85	2.81	3.18	4.72
12.100	5.30	2.92	1.97	1.51	1.36
12.350	1.09	0.99	0.95	0.93	0.70
12.600	0.61	0.58	0.56	0.53	0.52
12.850	0.48	0.47	0.43	0.42	0.38
13.100	0.37	0.35	0.34	0.32	0.31
13.350	0.29	0.29	0.27	0.26	0.24
13.600	0.23	0.23	0.23	0.22	0.22
13.850	0.21	0.21	0.21	0.21	0.20
14.100	0.20	0.19	0.19	0.19	0.18
14.350	0.18	0.18	0.17	0.17	0.17
14.600	0.16	0.16	0.16	0.15	0.15
14.850	0.15	0.14	0.14	0.14	0.13
15.100	0.13	0.13	0.13	0.13	0.13
15.350	0.12	0.12	0.12	0.12	0.12
15.600	0.12	0.12	0.12	0.12	0.12
15.850	0.12	0.11	0.11	0.11	0.11
16.100	0.11	0.11	0.11	0.11	0.11
16.350	0.11	0.11	0.10	0.10	0.10
16.600	0.10	0.10	0.10	0.10	0.10
16.850	0.10	0.10	0.10	0.09	0.09
17.100	0.09	0.09	0.09	0.09	0.09
17.350	0.09	0.09	0.09	0.09	0.08
17.600	0.08	0.08	0.08	0.08	0.08
17.850	0.08	0.08	0.08	0.08	0.07
18.100	0.07	0.07	0.07	0.07	0.07
18.350	0.07	0.07	0.07	0.07	0.07
18.600	0.07	0.07	0.07	0.07	0.07
18.850	0.07	0.07	0.07	0.07	0.07
19.100	0.07	0.07	0.07	0.07	0.07
19.350	0.07	0.07	0.07	0.07	0.07
19.600	0.07	0.07	0.07	0.07	0.07
19.850	0.07	0.07	0.07	0.07	0.07
20.100	0.07	0.06	0.06	0.06	0.06
20.350	0.06	0.06	0.06	0.06	0.06
20.600	0.06	0.06	0.06	0.06	0.06
20.850	0.06	0.06	0.06	0.06	0.06
21.100	0.06	0.06	0.06	0.06	0.06
21.350	0.06	0.06	0.06	0.06	0.06
21.600	0.06	0.06	0.06	0.06	0.06
21.850	0.06	0.06	0.06	0.06	0.06
22.100	0.06	0.06	0.06	0.06	0.05

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-1-I

Scenario: Pre-Development 50

Return Event: 50 years

Storm Event: 50-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
22.350	0.05	0.05	0.05	0.05	0.05
22.600	0.05	0.05	0.05	0.05	0.05
22.850	0.05	0.05	0.05	0.05	0.05
23.100	0.05	0.05	0.05	0.05	0.05
23.350	0.05	0.05	0.05	0.05	0.05
23.600	0.05	0.05	0.05	0.05	0.05
23.850	0.05	0.05	0.06	0.06	(N/A)

Pre-development Analysis Results

Subsection: Unit Hydrograph Summary
 Label: DA-1-I
 Scenario: Pre-Development 100

Return Event: 100 years
 Storm Event: 100-YR

Storm Event	100-YR
Return Event	100 years
Duration	24.000 hours
Depth	7.60 in
Time of Concentration (Composite)	0.053 hours
Area (User Defined)	0.686 acres
<hr/>	
Computational Time Increment	0.007 hours
Time to Peak (Computed)	12.097 hours
Flow (Peak, Computed)	6.04 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	6.03 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.686 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	7.36 in
Runoff Volume (Pervious)	18,320.202 ft ³
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	18,310.000 ft ³
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.053 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	14.52 ft ³ /s
Unit peak time, Tp	0.036 hours
Unit receding limb, Tr	0.143 hours
Total unit time, Tb	0.178 hours

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-1-I

Scenario: Pre-Development 100

Return Event: 100 years

Storm Event: 100-YR

Storm Event	100-YR
Return Event	100 years
Duration	24.000 hours
Depth	7.60 in
Time of Concentration (Composite)	0.053 hours
Area (User Defined)	0.686 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
0.550	0.00	0.00	0.00	0.01	0.01
0.800	0.01	0.01	0.01	0.02	0.02
1.050	0.02	0.02	0.02	0.02	0.02
1.300	0.03	0.03	0.03	0.03	0.03
1.550	0.03	0.03	0.03	0.03	0.04
1.800	0.04	0.04	0.04	0.04	0.04
2.050	0.04	0.04	0.04	0.04	0.04
2.300	0.04	0.05	0.05	0.05	0.05
2.550	0.05	0.05	0.05	0.05	0.05
2.800	0.05	0.05	0.05	0.05	0.05
3.050	0.05	0.05	0.05	0.06	0.06
3.300	0.06	0.06	0.06	0.06	0.06
3.550	0.06	0.06	0.06	0.06	0.06
3.800	0.06	0.06	0.06	0.06	0.06
4.050	0.06	0.06	0.06	0.06	0.07
4.300	0.07	0.07	0.07	0.07	0.07
4.550	0.07	0.07	0.07	0.07	0.07
4.800	0.07	0.07	0.07	0.07	0.07
5.050	0.07	0.07	0.07	0.07	0.07
5.300	0.07	0.07	0.07	0.07	0.07
5.550	0.08	0.08	0.08	0.08	0.08
5.800	0.08	0.08	0.08	0.08	0.08
6.050	0.08	0.08	0.08	0.08	0.08
6.300	0.08	0.09	0.09	0.09	0.09
6.550	0.09	0.09	0.09	0.09	0.09
6.800	0.10	0.10	0.10	0.10	0.10
7.050	0.10	0.10	0.10	0.10	0.11
7.300	0.11	0.11	0.11	0.11	0.11
7.550	0.11	0.11	0.11	0.12	0.12
7.800	0.12	0.12	0.12	0.12	0.12
8.050	0.12	0.12	0.13	0.13	0.13
8.300	0.13	0.13	0.13	0.13	0.13
8.550	0.13	0.13	0.14	0.14	0.14
8.800	0.14	0.14	0.14	0.14	0.14
9.050	0.15	0.15	0.16	0.16	0.16
9.300	0.17	0.17	0.17	0.18	0.18
9.550	0.19	0.19	0.20	0.20	0.20
9.800	0.21	0.21	0.21	0.22	0.22
10.050	0.23	0.23	0.24	0.24	0.24

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-1-I

Scenario: Pre-Development 100

Return Event: 100 years

Storm Event: 100-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.300	0.25	0.25	0.25	0.26	0.26
10.550	0.28	0.29	0.31	0.32	0.34
10.800	0.35	0.37	0.38	0.40	0.41
11.050	0.45	0.47	0.51	0.52	0.56
11.300	0.58	0.62	0.64	0.67	0.68
11.550	0.94	1.04	1.09	1.11	1.40
11.800	1.52	1.94	2.11	3.20	3.63
12.050	5.38	6.03	3.32	2.24	1.72
12.300	1.55	1.24	1.13	1.08	1.06
12.550	0.80	0.70	0.66	0.64	0.60
12.800	0.59	0.55	0.53	0.49	0.47
13.050	0.43	0.42	0.40	0.39	0.36
13.300	0.36	0.33	0.33	0.30	0.30
13.550	0.27	0.27	0.26	0.26	0.25
13.800	0.25	0.24	0.24	0.24	0.23
14.050	0.23	0.23	0.22	0.22	0.21
14.300	0.21	0.20	0.20	0.20	0.19
14.550	0.19	0.19	0.18	0.18	0.17
14.800	0.17	0.17	0.16	0.16	0.16
15.050	0.15	0.15	0.15	0.14	0.14
15.300	0.14	0.14	0.14	0.14	0.14
15.550	0.14	0.14	0.14	0.13	0.13
15.800	0.13	0.13	0.13	0.13	0.13
16.050	0.13	0.13	0.13	0.12	0.12
16.300	0.12	0.12	0.12	0.12	0.12
16.550	0.12	0.12	0.11	0.11	0.11
16.800	0.11	0.11	0.11	0.11	0.11
17.050	0.11	0.11	0.10	0.10	0.10
17.300	0.10	0.10	0.10	0.10	0.10
17.550	0.10	0.10	0.09	0.09	0.09
17.800	0.09	0.09	0.09	0.09	0.09
18.050	0.09	0.08	0.08	0.08	0.08
18.300	0.08	0.08	0.08	0.08	0.08
18.550	0.08	0.08	0.08	0.08	0.08
18.800	0.08	0.08	0.08	0.08	0.08
19.050	0.08	0.08	0.08	0.08	0.08
19.300	0.08	0.08	0.08	0.08	0.08
19.550	0.08	0.08	0.08	0.08	0.08
19.800	0.08	0.08	0.08	0.07	0.07
20.050	0.07	0.07	0.07	0.07	0.07
20.300	0.07	0.07	0.07	0.07	0.07
20.550	0.07	0.07	0.07	0.07	0.07
20.800	0.07	0.07	0.07	0.07	0.07
21.050	0.07	0.07	0.07	0.07	0.07
21.300	0.07	0.07	0.07	0.07	0.07
21.550	0.07	0.07	0.07	0.07	0.07
21.800	0.07	0.06	0.06	0.06	0.06
22.050	0.06	0.06	0.06	0.06	0.06

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-1-I

Scenario: Pre-Development 100

Return Event: 100 years

Storm Event: 100-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
22.300	0.06	0.06	0.06	0.06	0.06
22.550	0.06	0.06	0.06	0.06	0.06
22.800	0.06	0.06	0.06	0.06	0.06
23.050	0.06	0.06	0.06	0.06	0.06
23.300	0.06	0.06	0.06	0.06	0.06
23.550	0.06	0.06	0.06	0.06	0.05
23.800	0.05	0.05	0.05	0.06	0.07

Pre-development Analysis Results

Subsection: Unit Hydrograph Summary

Label: DA-1-P

Scenario: Pre-Development 1

Return Event: 1 years

Storm Event: 1-YR

Storm Event	1-YR
Return Event	1 years
Duration	24.000 hours
Depth	2.73 in
Time of Concentration (Composite)	0.302 hours
Area (User Defined)	0.832 acres
<hr/>	
Computational Time Increment	0.040 hours
Time to Peak (Computed)	12.526 hours
Flow (Peak, Computed)	0.05 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.550 hours
Flow (Peak Interpolated Output)	0.05 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	58.000
Area (User Defined)	0.832 acres
Maximum Retention (Pervious)	7.24 in
Maximum Retention (Pervious, 20 percent)	1.45 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.19 in
Runoff Volume (Pervious)	582.390 ft ³
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	576.000 ft ³
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.302 hours
Computational Time Increment	0.040 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	3.12 ft ³ /s
Unit peak time, Tp	0.201 hours
Unit receding limb, Tr	0.806 hours
Total unit time, Tb	1.007 hours

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-1-P

Scenario: Pre-Development 1

Return Event: 1 years

Storm Event: 1-YR

Storm Event	1-YR
Return Event	1 years
Duration	24.000 hours
Depth	2.73 in
Time of Concentration (Composite)	0.302 hours
Area (User Defined)	0.832 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
12.050	0.00	0.00	0.01	0.02	0.03
12.300	0.04	0.04	0.05	0.05	0.05
12.550	0.05	0.05	0.05	0.04	0.04
12.800	0.04	0.04	0.04	0.04	0.04
13.050	0.03	0.03	0.03	0.03	0.03
13.300	0.03	0.03	0.03	0.03	0.03
13.550	0.02	0.02	0.02	0.02	0.02
13.800	0.02	0.02	0.02	0.02	0.02
14.050	0.02	0.02	0.02	0.02	0.02
14.300	0.02	0.02	0.02	0.02	0.02
14.550	0.02	0.02	0.02	0.02	0.02
14.800	0.02	0.02	0.02	0.02	0.01
15.050	0.01	0.01	0.01	0.01	0.01
15.300	0.01	0.01	0.01	0.01	0.01
15.550	0.01	0.01	0.01	0.01	0.01
15.800	0.01	0.01	0.01	0.01	0.01
16.050	0.01	0.01	0.01	0.01	0.01
16.300	0.01	0.01	0.01	0.01	0.01
16.550	0.01	0.01	0.01	0.01	0.01
16.800	0.01	0.01	0.01	0.01	0.01
17.050	0.01	0.01	0.01	0.01	0.01
17.300	0.01	0.01	0.01	0.01	0.01
17.550	0.01	0.01	0.01	0.01	0.01
17.800	0.01	0.01	0.01	0.01	0.01
18.050	0.01	0.01	0.01	0.01	0.01
18.300	0.01	0.01	0.01	0.01	0.01
18.550	0.01	0.01	0.01	0.01	0.01
18.800	0.01	0.01	0.01	0.01	0.01
19.050	0.01	0.01	0.01	0.01	0.01
19.300	0.01	0.01	0.01	0.01	0.01
19.550	0.01	0.01	0.01	0.01	0.01
19.800	0.01	0.01	0.01	0.01	0.01
20.050	0.01	0.01	0.01	0.01	0.01
20.300	0.01	0.01	0.01	0.01	0.01
20.550	0.01	0.01	0.01	0.01	0.01
20.800	0.01	0.01	0.01	0.01	0.01
21.050	0.01	0.01	0.01	0.01	0.01
21.300	0.01	0.01	0.01	0.01	0.01
21.550	0.01	0.01	0.01	0.01	0.01

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-1-P

Scenario: Pre-Development 1

Return Event: 1 years

Storm Event: 1-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
21.800	0.01	0.01	0.01	0.01	0.01
22.050	0.01	0.01	0.01	0.01	0.01
22.300	0.01	0.01	0.01	0.01	0.01
22.550	0.01	0.01	0.01	0.01	0.01
22.800	0.01	0.01	0.01	0.01	0.01
23.050	0.01	0.01	0.01	0.01	0.01
23.300	0.01	0.01	0.01	0.01	0.01
23.550	0.01	0.01	0.01	0.01	0.01
23.800	0.01	0.01	0.01	0.01	0.01

Pre-development Analysis Results

Subsection: Unit Hydrograph Summary

Label: DA-1-P

Scenario: Pre-Development 2

Return Event: 2 years

Storm Event: 2-YR

Storm Event	2-YR
Return Event	2 years
Duration	24.000 hours
Depth	3.28 in
Time of Concentration (Composite)	0.302 hours
Area (User Defined)	0.832 acres
<hr/>	
Computational Time Increment	0.040 hours
Time to Peak (Computed)	12.325 hours
Flow (Peak, Computed)	0.15 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.350 hours
Flow (Peak Interpolated Output)	0.15 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	58.000
Area (User Defined)	0.832 acres
Maximum Retention (Pervious)	7.24 in
Maximum Retention (Pervious, 20 percent)	1.45 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.37 in
Runoff Volume (Pervious)	1,117.344 ft ³
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,108.000 ft ³
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.302 hours
Computational Time Increment	0.040 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	3.12 ft ³ /s
Unit peak time, Tp	0.201 hours
Unit receding limb, Tr	0.806 hours
Total unit time, Tb	1.007 hours

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-1-P

Scenario: Pre-Development 2

Return Event: 2 years

Storm Event: 2-YR

Storm Event	2-YR
Return Event	2 years
Duration	24.000 hours
Depth	3.28 in
Time of Concentration (Composite)	0.302 hours
Area (User Defined)	0.832 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
12.000	0.00	0.01	0.03	0.06	0.10
12.250	0.13	0.15	0.15	0.14	0.14
12.500	0.13	0.12	0.11	0.11	0.10
12.750	0.09	0.08	0.08	0.08	0.07
13.000	0.07	0.07	0.06	0.06	0.06
13.250	0.06	0.05	0.05	0.05	0.05
13.500	0.05	0.04	0.04	0.04	0.04
13.750	0.04	0.04	0.04	0.04	0.04
14.000	0.03	0.03	0.03	0.03	0.03
14.250	0.03	0.03	0.03	0.03	0.03
14.500	0.03	0.03	0.03	0.03	0.03
14.750	0.03	0.03	0.03	0.03	0.03
15.000	0.03	0.02	0.02	0.02	0.02
15.250	0.02	0.02	0.02	0.02	0.02
15.500	0.02	0.02	0.02	0.02	0.02
15.750	0.02	0.02	0.02	0.02	0.02
16.000	0.02	0.02	0.02	0.02	0.02
16.250	0.02	0.02	0.02	0.02	0.02
16.500	0.02	0.02	0.02	0.02	0.02
16.750	0.02	0.02	0.02	0.02	0.02
17.000	0.02	0.02	0.02	0.02	0.02
17.250	0.02	0.02	0.02	0.02	0.02
17.500	0.02	0.02	0.02	0.02	0.02
17.750	0.02	0.02	0.02	0.02	0.02
18.000	0.02	0.02	0.02	0.01	0.01
18.250	0.01	0.01	0.01	0.01	0.01
18.500	0.01	0.01	0.01	0.01	0.01
18.750	0.01	0.01	0.01	0.01	0.01
19.000	0.01	0.01	0.01	0.01	0.01
19.250	0.01	0.01	0.01	0.01	0.01
19.500	0.01	0.01	0.01	0.01	0.01
19.750	0.01	0.01	0.01	0.01	0.01
20.000	0.01	0.01	0.01	0.01	0.01
20.250	0.01	0.01	0.01	0.01	0.01
20.500	0.01	0.01	0.01	0.01	0.01
20.750	0.01	0.01	0.01	0.01	0.01
21.000	0.01	0.01	0.01	0.01	0.01
21.250	0.01	0.01	0.01	0.01	0.01
21.500	0.01	0.01	0.01	0.01	0.01

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-1-P

Scenario: Pre-Development 2

Return Event: 2 years

Storm Event: 2-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
21.750	0.01	0.01	0.01	0.01	0.01
22.000	0.01	0.01	0.01	0.01	0.01
22.250	0.01	0.01	0.01	0.01	0.01
22.500	0.01	0.01	0.01	0.01	0.01
22.750	0.01	0.01	0.01	0.01	0.01
23.000	0.01	0.01	0.01	0.01	0.01
23.250	0.01	0.01	0.01	0.01	0.01
23.500	0.01	0.01	0.01	0.01	0.01
23.750	0.01	0.01	0.01	0.01	0.01
24.000	0.01	(N/A)	(N/A)	(N/A)	(N/A)

Pre-development Analysis Results

Subsection: Unit Hydrograph Summary
 Label: DA-1-P
 Scenario: Pre-Development 5

Return Event: 5 years
 Storm Event: 5-YR

Storm Event	5-YR
Return Event	5 years
Duration	24.000 hours
Depth	4.12 in
Time of Concentration (Composite)	0.302 hours
Area (User Defined)	0.832 acres
<hr/>	
Computational Time Increment	0.040 hours
Time to Peak (Computed)	12.285 hours
Flow (Peak, Computed)	0.41 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.300 hours
Flow (Peak Interpolated Output)	0.40 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	58.000
Area (User Defined)	0.832 acres
Maximum Retention (Pervious)	7.24 in
Maximum Retention (Pervious, 20 percent)	1.45 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.72 in
Runoff Volume (Pervious)	2,178.505 ft ³
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	2,163.000 ft ³
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.302 hours
Computational Time Increment	0.040 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	3.12 ft ³ /s
Unit peak time, Tp	0.201 hours
Unit receding limb, Tr	0.806 hours
Total unit time, Tb	1.007 hours

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-1-P

Scenario: Pre-Development 5

Return Event: 5 years

Storm Event: 5-YR

Storm Event	5-YR
Return Event	5 years
Duration	24.000 hours
Depth	4.12 in
Time of Concentration (Composite)	0.302 hours
Area (User Defined)	0.832 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.800	0.00	0.00	0.01	0.02	0.04
12.050	0.09	0.16	0.26	0.35	0.40
12.300	0.40	0.38	0.34	0.31	0.28
12.550	0.26	0.23	0.21	0.19	0.18
12.800	0.16	0.15	0.14	0.13	0.13
13.050	0.12	0.12	0.11	0.11	0.10
13.300	0.10	0.09	0.09	0.09	0.08
13.550	0.08	0.08	0.07	0.07	0.07
13.800	0.07	0.06	0.06	0.06	0.06
14.050	0.06	0.06	0.06	0.06	0.06
14.300	0.06	0.06	0.05	0.05	0.05
14.550	0.05	0.05	0.05	0.05	0.05
14.800	0.05	0.05	0.05	0.04	0.04
15.050	0.04	0.04	0.04	0.04	0.04
15.300	0.04	0.04	0.04	0.04	0.04
15.550	0.04	0.04	0.04	0.04	0.04
15.800	0.04	0.04	0.04	0.04	0.04
16.050	0.04	0.03	0.03	0.03	0.03
16.300	0.03	0.03	0.03	0.03	0.03
16.550	0.03	0.03	0.03	0.03	0.03
16.800	0.03	0.03	0.03	0.03	0.03
17.050	0.03	0.03	0.03	0.03	0.03
17.300	0.03	0.03	0.03	0.03	0.03
17.550	0.03	0.03	0.03	0.03	0.03
17.800	0.03	0.03	0.03	0.03	0.03
18.050	0.03	0.02	0.02	0.02	0.02
18.300	0.02	0.02	0.02	0.02	0.02
18.550	0.02	0.02	0.02	0.02	0.02
18.800	0.02	0.02	0.02	0.02	0.02
19.050	0.02	0.02	0.02	0.02	0.02
19.300	0.02	0.02	0.02	0.02	0.02
19.550	0.02	0.02	0.02	0.02	0.02
19.800	0.02	0.02	0.02	0.02	0.02
20.050	0.02	0.02	0.02	0.02	0.02
20.300	0.02	0.02	0.02	0.02	0.02
20.550	0.02	0.02	0.02	0.02	0.02
20.800	0.02	0.02	0.02	0.02	0.02
21.050	0.02	0.02	0.02	0.02	0.02
21.300	0.02	0.02	0.02	0.02	0.02

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-1-P

Scenario: Pre-Development 5

Return Event: 5 years

Storm Event: 5-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
21.550	0.02	0.02	0.02	0.02	0.02
21.800	0.02	0.02	0.02	0.02	0.02
22.050	0.02	0.02	0.02	0.02	0.02
22.300	0.02	0.02	0.02	0.02	0.02
22.550	0.02	0.02	0.02	0.02	0.02
22.800	0.02	0.02	0.02	0.02	0.02
23.050	0.02	0.02	0.02	0.02	0.02
23.300	0.02	0.02	0.02	0.02	0.02
23.550	0.02	0.02	0.02	0.02	0.02
23.800	0.02	0.02	0.02	0.02	0.02

Pre-development Analysis Results

Subsection: Unit Hydrograph Summary
 Label: DA-1-P
 Scenario: Pre-Development 10

Return Event: 10 years
 Storm Event: 10-YR

Storm Event	10-YR
Return Event	10 years
Duration	24.000 hours
Depth	4.82 in
Time of Concentration (Composite)	0.302 hours
Area (User Defined)	0.832 acres
<hr/>	
Computational Time Increment	0.040 hours
Time to Peak (Computed)	12.244 hours
Flow (Peak, Computed)	0.67 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.250 hours
Flow (Peak Interpolated Output)	0.67 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	58.000
Area (User Defined)	0.832 acres
Maximum Retention (Pervious)	7.24 in
Maximum Retention (Pervious, 20 percent)	1.45 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.07 in
Runoff Volume (Pervious)	3,236.565 ft ³
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	3,216.000 ft ³
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.302 hours
Computational Time Increment	0.040 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	3.12 ft ³ /s
Unit peak time, Tp	0.201 hours
Unit receding limb, Tr	0.806 hours
Total unit time, Tb	1.007 hours

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-1-P

Scenario: Pre-Development 10

Return Event: 10 years

Storm Event: 10-YR

Storm Event	10-YR
Return Event	10 years
Duration	24.000 hours
Depth	4.82 in
Time of Concentration (Composite)	0.302 hours
Area (User Defined)	0.832 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.600	0.00	0.00	0.00	0.01	0.02
11.850	0.03	0.05	0.08	0.13	0.21
12.100	0.34	0.49	0.62	0.67	0.66
12.350	0.60	0.54	0.47	0.43	0.38
12.600	0.35	0.31	0.28	0.26	0.23
12.850	0.22	0.20	0.19	0.18	0.17
13.100	0.16	0.16	0.15	0.14	0.14
13.350	0.13	0.13	0.12	0.12	0.11
13.600	0.11	0.10	0.10	0.09	0.09
13.850	0.09	0.09	0.09	0.09	0.08
14.100	0.08	0.08	0.08	0.08	0.08
14.350	0.08	0.08	0.07	0.07	0.07
14.600	0.07	0.07	0.07	0.07	0.07
14.850	0.06	0.06	0.06	0.06	0.06
15.100	0.06	0.06	0.06	0.05	0.05
15.350	0.05	0.05	0.05	0.05	0.05
15.600	0.05	0.05	0.05	0.05	0.05
15.850	0.05	0.05	0.05	0.05	0.05
16.100	0.05	0.05	0.05	0.05	0.05
16.350	0.05	0.05	0.05	0.05	0.04
16.600	0.04	0.04	0.04	0.04	0.04
16.850	0.04	0.04	0.04	0.04	0.04
17.100	0.04	0.04	0.04	0.04	0.04
17.350	0.04	0.04	0.04	0.04	0.04
17.600	0.04	0.04	0.04	0.04	0.04
17.850	0.04	0.04	0.04	0.03	0.03
18.100	0.03	0.03	0.03	0.03	0.03
18.350	0.03	0.03	0.03	0.03	0.03
18.600	0.03	0.03	0.03	0.03	0.03
18.850	0.03	0.03	0.03	0.03	0.03
19.100	0.03	0.03	0.03	0.03	0.03
19.350	0.03	0.03	0.03	0.03	0.03
19.600	0.03	0.03	0.03	0.03	0.03
19.850	0.03	0.03	0.03	0.03	0.03
20.100	0.03	0.03	0.03	0.03	0.03
20.350	0.03	0.03	0.03	0.03	0.03
20.600	0.03	0.03	0.03	0.03	0.03
20.850	0.03	0.03	0.03	0.03	0.03
21.100	0.03	0.03	0.03	0.03	0.03

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-1-P

Scenario: Pre-Development 10

Return Event: 10 years

Storm Event: 10-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
21.350	0.03	0.03	0.03	0.03	0.03
21.600	0.03	0.03	0.03	0.03	0.03
21.850	0.03	0.03	0.03	0.03	0.03
22.100	0.03	0.03	0.03	0.03	0.03
22.350	0.03	0.03	0.03	0.03	0.03
22.600	0.03	0.03	0.03	0.02	0.02
22.850	0.02	0.02	0.02	0.02	0.02
23.100	0.02	0.02	0.02	0.02	0.02
23.350	0.02	0.02	0.02	0.02	0.02
23.600	0.02	0.02	0.02	0.02	0.02
23.850	0.02	0.02	0.02	0.02	(N/A)

Pre-development Analysis Results

Subsection: Unit Hydrograph Summary
 Label: DA-1-P
 Scenario: Pre-Development 25

Return Event: 25 years
 Storm Event: 25-YR

Storm Event	25-YR
Return Event	25 years
Duration	24.000 hours
Depth	5.83 in
Time of Concentration (Composite)	0.302 hours
Area (User Defined)	0.832 acres
<hr/>	
Computational Time Increment	0.040 hours
Time to Peak (Computed)	12.244 hours
Flow (Peak, Computed)	1.12 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.250 hours
Flow (Peak Interpolated Output)	1.12 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	58.000
Area (User Defined)	0.832 acres
Maximum Retention (Pervious)	7.24 in
Maximum Retention (Pervious, 20 percent)	1.45 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.65 in
Runoff Volume (Pervious)	4,991.034 ft ³
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	4,962.000 ft ³
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.302 hours
Computational Time Increment	0.040 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	3.12 ft ³ /s
Unit peak time, Tp	0.201 hours
Unit receding limb, Tr	0.806 hours
Total unit time, Tb	1.007 hours

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-1-P

Scenario: Pre-Development 25

Return Event: 25 years

Storm Event: 25-YR

Storm Event	25-YR
Return Event	25 years
Duration	24.000 hours
Depth	5.83 in
Time of Concentration (Composite)	0.302 hours
Area (User Defined)	0.832 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.200	0.00	0.00	0.00	0.01	0.01
11.450	0.01	0.02	0.02	0.03	0.04
11.700	0.06	0.07	0.10	0.12	0.16
11.950	0.22	0.30	0.44	0.64	0.87
12.200	1.06	1.12	1.08	0.97	0.85
12.450	0.74	0.66	0.59	0.53	0.48
12.700	0.43	0.38	0.35	0.32	0.30
12.950	0.29	0.27	0.25	0.24	0.23
13.200	0.22	0.21	0.20	0.19	0.18
13.450	0.18	0.17	0.16	0.15	0.15
13.700	0.14	0.14	0.13	0.13	0.13
13.950	0.12	0.12	0.12	0.12	0.12
14.200	0.11	0.11	0.11	0.11	0.11
14.450	0.11	0.10	0.10	0.10	0.10
14.700	0.10	0.10	0.09	0.09	0.09
14.950	0.09	0.09	0.08	0.08	0.08
15.200	0.08	0.08	0.08	0.08	0.07
15.450	0.07	0.07	0.07	0.07	0.07
15.700	0.07	0.07	0.07	0.07	0.07
15.950	0.07	0.07	0.07	0.07	0.07
16.200	0.07	0.07	0.07	0.07	0.06
16.450	0.06	0.06	0.06	0.06	0.06
16.700	0.06	0.06	0.06	0.06	0.06
16.950	0.06	0.06	0.06	0.06	0.06
17.200	0.06	0.06	0.06	0.06	0.05
17.450	0.05	0.05	0.05	0.05	0.05
17.700	0.05	0.05	0.05	0.05	0.05
17.950	0.05	0.05	0.05	0.05	0.05
18.200	0.05	0.05	0.05	0.05	0.05
18.450	0.05	0.05	0.05	0.04	0.04
18.700	0.04	0.04	0.04	0.04	0.04
18.950	0.04	0.04	0.04	0.04	0.04
19.200	0.04	0.04	0.04	0.04	0.04
19.450	0.04	0.04	0.04	0.04	0.04
19.700	0.04	0.04	0.04	0.04	0.04
19.950	0.04	0.04	0.04	0.04	0.04
20.200	0.04	0.04	0.04	0.04	0.04
20.450	0.04	0.04	0.04	0.04	0.04
20.700	0.04	0.04	0.04	0.04	0.04

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-1-P

Scenario: Pre-Development 25

Return Event: 25 years

Storm Event: 25-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
20.950	0.04	0.04	0.04	0.04	0.04
21.200	0.04	0.04	0.04	0.04	0.04
21.450	0.04	0.04	0.04	0.04	0.04
21.700	0.04	0.04	0.04	0.04	0.04
21.950	0.04	0.04	0.04	0.04	0.04
22.200	0.04	0.04	0.04	0.04	0.04
22.450	0.04	0.04	0.04	0.03	0.03
22.700	0.03	0.03	0.03	0.03	0.03
22.950	0.03	0.03	0.03	0.03	0.03
23.200	0.03	0.03	0.03	0.03	0.03
23.450	0.03	0.03	0.03	0.03	0.03
23.700	0.03	0.03	0.03	0.03	0.03
23.950	0.03	0.03	(N/A)	(N/A)	(N/A)

Pre-development Analysis Results

Subsection: Unit Hydrograph Summary
 Label: DA-1-P
 Scenario: Pre-Development 50

Return Event: 50 years
 Storm Event: 50-YR

Storm Event	50-YR
Return Event	50 years
Duration	24.000 hours
Depth	6.68 in
Time of Concentration (Composite)	0.302 hours
Area (User Defined)	0.832 acres
<hr/>	
Computational Time Increment	0.040 hours
Time to Peak (Computed)	12.244 hours
Flow (Peak, Computed)	1.54 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.250 hours
Flow (Peak Interpolated Output)	1.54 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	58.000
Area (User Defined)	0.832 acres
Maximum Retention (Pervious)	7.24 in
Maximum Retention (Pervious, 20 percent)	1.45 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.19 in
Runoff Volume (Pervious)	6,630.370 ft ³
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	6,594.000 ft ³
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.302 hours
Computational Time Increment	0.040 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	3.12 ft ³ /s
Unit peak time, Tp	0.201 hours
Unit receding limb, Tr	0.806 hours
Total unit time, Tb	1.007 hours

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-1-P

Scenario: Pre-Development 50

Return Event: 50 years

Storm Event: 50-YR

Storm Event	50-YR
Return Event	50 years
Duration	24.000 hours
Depth	6.68 in
Time of Concentration (Composite)	0.302 hours
Area (User Defined)	0.832 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.850	0.00	0.00	0.00	0.01	0.01
11.100	0.01	0.01	0.02	0.02	0.03
11.350	0.03	0.04	0.05	0.06	0.07
11.600	0.08	0.10	0.12	0.14	0.18
11.850	0.22	0.27	0.35	0.47	0.65
12.100	0.92	1.23	1.47	1.54	1.46
12.350	1.31	1.14	0.99	0.87	0.78
12.600	0.70	0.62	0.56	0.50	0.45
12.850	0.42	0.39	0.37	0.35	0.33
13.100	0.31	0.29	0.28	0.27	0.25
13.350	0.24	0.23	0.22	0.21	0.21
13.600	0.20	0.19	0.18	0.17	0.17
13.850	0.16	0.16	0.16	0.16	0.15
14.100	0.15	0.15	0.15	0.14	0.14
14.350	0.14	0.14	0.13	0.13	0.13
14.600	0.13	0.13	0.12	0.12	0.12
14.850	0.12	0.11	0.11	0.11	0.11
15.100	0.10	0.10	0.10	0.10	0.10
15.350	0.10	0.09	0.09	0.09	0.09
15.600	0.09	0.09	0.09	0.09	0.09
15.850	0.09	0.09	0.09	0.09	0.09
16.100	0.09	0.08	0.08	0.08	0.08
16.350	0.08	0.08	0.08	0.08	0.08
16.600	0.08	0.08	0.08	0.08	0.08
16.850	0.08	0.08	0.07	0.07	0.07
17.100	0.07	0.07	0.07	0.07	0.07
17.350	0.07	0.07	0.07	0.07	0.07
17.600	0.07	0.07	0.07	0.06	0.06
17.850	0.06	0.06	0.06	0.06	0.06
18.100	0.06	0.06	0.06	0.06	0.06
18.350	0.06	0.06	0.06	0.06	0.06
18.600	0.06	0.06	0.06	0.06	0.06
18.850	0.06	0.06	0.06	0.05	0.05
19.100	0.05	0.05	0.05	0.05	0.05
19.350	0.05	0.05	0.05	0.05	0.05
19.600	0.05	0.05	0.05	0.05	0.05
19.850	0.05	0.05	0.05	0.05	0.05
20.100	0.05	0.05	0.05	0.05	0.05
20.350	0.05	0.05	0.05	0.05	0.05

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-1-P

Scenario: Pre-Development 50

Return Event: 50 years

Storm Event: 50-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
20.600	0.05	0.05	0.05	0.05	0.05
20.850	0.05	0.05	0.05	0.05	0.05
21.100	0.05	0.05	0.05	0.05	0.05
21.350	0.05	0.05	0.05	0.05	0.05
21.600	0.05	0.05	0.05	0.05	0.05
21.850	0.05	0.05	0.05	0.05	0.05
22.100	0.05	0.04	0.04	0.04	0.04
22.350	0.04	0.04	0.04	0.04	0.04
22.600	0.04	0.04	0.04	0.04	0.04
22.850	0.04	0.04	0.04	0.04	0.04
23.100	0.04	0.04	0.04	0.04	0.04
23.350	0.04	0.04	0.04	0.04	0.04
23.600	0.04	0.04	0.04	0.04	0.04
23.850	0.04	0.04	0.04	0.04	(N/A)

Pre-development Analysis Results

Subsection: Unit Hydrograph Summary
 Label: DA-1-P
 Scenario: Pre-Development 100

Return Event: 100 years
 Storm Event: 100-YR

Storm Event	100-YR
Return Event	100 years
Duration	24.000 hours
Depth	7.60 in
Time of Concentration (Composite)	0.302 hours
Area (User Defined)	0.832 acres
<hr/>	
Computational Time Increment	0.040 hours
Time to Peak (Computed)	12.244 hours
Flow (Peak, Computed)	2.03 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.250 hours
Flow (Peak Interpolated Output)	2.02 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	58.000
Area (User Defined)	0.832 acres
Maximum Retention (Pervious)	7.24 in
Maximum Retention (Pervious, 20 percent)	1.45 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.83 in
Runoff Volume (Pervious)	8,537.586 ft ³
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	8,494.000 ft ³
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.302 hours
Computational Time Increment	0.040 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	3.12 ft ³ /s
Unit peak time, Tp	0.201 hours
Unit receding limb, Tr	0.806 hours
Total unit time, Tb	1.007 hours

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)
 Label: DA-1-P
 Scenario: Pre-Development 100

Return Event: 100 years
 Storm Event: 100-YR

Storm Event	100-YR
Return Event	100 years
Duration	24.000 hours
Depth	7.60 in
Time of Concentration (Composite)	0.302 hours
Area (User Defined)	0.832 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.350	0.00	0.00	0.00	0.00	0.00
10.600	0.01	0.01	0.01	0.01	0.02
10.850	0.02	0.02	0.02	0.03	0.03
11.100	0.04	0.04	0.05	0.06	0.06
11.350	0.07	0.08	0.09	0.10	0.12
11.600	0.14	0.16	0.19	0.23	0.27
11.850	0.33	0.40	0.51	0.67	0.91
12.100	1.25	1.64	1.94	2.02	1.91
12.350	1.69	1.46	1.27	1.12	0.99
12.600	0.88	0.79	0.70	0.63	0.57
12.850	0.52	0.49	0.46	0.43	0.41
13.100	0.39	0.37	0.35	0.33	0.32
13.350	0.30	0.29	0.28	0.27	0.25
13.600	0.24	0.23	0.22	0.22	0.21
13.850	0.20	0.20	0.20	0.19	0.19
14.100	0.19	0.18	0.18	0.18	0.17
14.350	0.17	0.17	0.17	0.16	0.16
14.600	0.16	0.15	0.15	0.15	0.15
14.850	0.14	0.14	0.14	0.13	0.13
15.100	0.13	0.13	0.12	0.12	0.12
15.350	0.12	0.12	0.12	0.11	0.11
15.600	0.11	0.11	0.11	0.11	0.11
15.850	0.11	0.11	0.11	0.11	0.11
16.100	0.10	0.10	0.10	0.10	0.10
16.350	0.10	0.10	0.10	0.10	0.10
16.600	0.10	0.10	0.10	0.09	0.09
16.850	0.09	0.09	0.09	0.09	0.09
17.100	0.09	0.09	0.09	0.09	0.09
17.350	0.09	0.08	0.08	0.08	0.08
17.600	0.08	0.08	0.08	0.08	0.08
17.850	0.08	0.08	0.08	0.07	0.07
18.100	0.07	0.07	0.07	0.07	0.07
18.350	0.07	0.07	0.07	0.07	0.07
18.600	0.07	0.07	0.07	0.07	0.07
18.850	0.07	0.07	0.07	0.07	0.07
19.100	0.07	0.07	0.07	0.07	0.07
19.350	0.07	0.07	0.07	0.07	0.07
19.600	0.06	0.06	0.06	0.06	0.06
19.850	0.06	0.06	0.06	0.06	0.06

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-1-P

Scenario: Pre-Development 100

Return Event: 100 years

Storm Event: 100-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
20.100	0.06	0.06	0.06	0.06	0.06
20.350	0.06	0.06	0.06	0.06	0.06
20.600	0.06	0.06	0.06	0.06	0.06
20.850	0.06	0.06	0.06	0.06	0.06
21.100	0.06	0.06	0.06	0.06	0.06
21.350	0.06	0.06	0.06	0.06	0.06
21.600	0.06	0.06	0.06	0.06	0.06
21.850	0.06	0.06	0.06	0.06	0.06
22.100	0.05	0.05	0.05	0.05	0.05
22.350	0.05	0.05	0.05	0.05	0.05
22.600	0.05	0.05	0.05	0.05	0.05
22.850	0.05	0.05	0.05	0.05	0.05
23.100	0.05	0.05	0.05	0.05	0.05
23.350	0.05	0.05	0.05	0.05	0.05
23.600	0.05	0.05	0.05	0.05	0.05
23.850	0.05	0.05	0.05	0.05	(N/A)

Pre-development Analysis Results

Subsection: Unit Hydrograph Summary

Label: DA-2-I

Scenario: Pre-Development 1

Return Event: 1 years

Storm Event: 1-YR

Storm Event	1-YR
Return Event	1 years
Duration	24.000 hours
Depth	2.73 in
Time of Concentration (Composite)	0.041 hours
Area (User Defined)	0.107 acres
<hr/>	
Computational Time Increment	0.006 hours
Time to Peak (Computed)	12.099 hours
Flow (Peak, Computed)	0.34 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.34 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.107 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.50 in
Runoff Volume (Pervious)	967.513 ft ³
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	967.000 ft ³
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.041 hours
Computational Time Increment	0.006 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	2.93 ft ³ /s
Unit peak time, Tp	0.028 hours
Unit receding limb, Tr	0.110 hours
Total unit time, Tb	0.138 hours

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-2-I

Scenario: Pre-Development 1

Return Event: 1 years

Storm Event: 1-YR

Storm Event	1-YR
Return Event	1 years
Duration	24.000 hours
Depth	2.73 in
Time of Concentration (Composite)	0.041 hours
Area (User Defined)	0.107 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
2.500	0.00	0.00	0.00	0.00	0.00
2.750	0.00	0.00	0.00	0.00	0.00
3.000	0.00	0.00	0.00	0.00	0.00
3.250	0.00	0.00	0.00	0.00	0.00
3.500	0.00	0.00	0.00	0.00	0.00
3.750	0.00	0.00	0.00	0.00	0.00
4.000	0.00	0.00	0.00	0.00	0.00
4.250	0.00	0.00	0.00	0.00	0.00
4.500	0.00	0.00	0.00	0.00	0.00
4.750	0.00	0.00	0.00	0.00	0.00
5.000	0.00	0.00	0.00	0.00	0.00
5.250	0.00	0.00	0.00	0.00	0.00
5.500	0.00	0.00	0.00	0.00	0.00
5.750	0.00	0.00	0.00	0.00	0.00
6.000	0.00	0.00	0.00	0.00	0.00
6.250	0.00	0.00	0.00	0.00	0.00
6.500	0.00	0.00	0.00	0.00	0.00
6.750	0.00	0.00	0.00	0.00	0.00
7.000	0.00	0.00	0.00	0.00	0.00
7.250	0.00	0.00	0.01	0.01	0.01
7.500	0.01	0.01	0.01	0.01	0.01
7.750	0.01	0.01	0.01	0.01	0.01
8.000	0.01	0.01	0.01	0.01	0.01
8.250	0.01	0.01	0.01	0.01	0.01
8.500	0.01	0.01	0.01	0.01	0.01
8.750	0.01	0.01	0.01	0.01	0.01
9.000	0.01	0.01	0.01	0.01	0.01
9.250	0.01	0.01	0.01	0.01	0.01
9.500	0.01	0.01	0.01	0.01	0.01
9.750	0.01	0.01	0.01	0.01	0.01
10.000	0.01	0.01	0.01	0.01	0.01
10.250	0.01	0.01	0.01	0.01	0.01
10.500	0.01	0.01	0.02	0.02	0.02
10.750	0.02	0.02	0.02	0.02	0.02
11.000	0.02	0.02	0.02	0.03	0.03
11.250	0.03	0.03	0.03	0.03	0.04
11.500	0.04	0.05	0.06	0.06	0.06
11.750	0.08	0.08	0.11	0.12	0.19
12.000	0.20	0.32	0.34	0.15	0.12

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 1 years

Label: DA-2-I

Storm Event: 1-YR

Scenario: Pre-Development 1

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
12.250	0.09	0.08	0.07	0.06	0.06
12.500	0.06	0.04	0.04	0.04	0.04
12.750	0.03	0.03	0.03	0.03	0.03
13.000	0.03	0.02	0.02	0.02	0.02
13.250	0.02	0.02	0.02	0.02	0.02
13.500	0.02	0.01	0.01	0.01	0.01
13.750	0.01	0.01	0.01	0.01	0.01
14.000	0.01	0.01	0.01	0.01	0.01
14.250	0.01	0.01	0.01	0.01	0.01
14.500	0.01	0.01	0.01	0.01	0.01
14.750	0.01	0.01	0.01	0.01	0.01
15.000	0.01	0.01	0.01	0.01	0.01
15.250	0.01	0.01	0.01	0.01	0.01
15.500	0.01	0.01	0.01	0.01	0.01
15.750	0.01	0.01	0.01	0.01	0.01
16.000	0.01	0.01	0.01	0.01	0.01
16.250	0.01	0.01	0.01	0.01	0.01
16.500	0.01	0.01	0.01	0.01	0.01
16.750	0.01	0.01	0.01	0.01	0.01
17.000	0.01	0.01	0.01	0.01	0.01
17.250	0.01	0.01	0.01	0.01	0.01
17.500	0.01	0.01	0.01	0.01	0.01
17.750	0.01	0.01	0.00	0.00	0.00
18.000	0.00	0.00	0.00	0.00	0.00
18.250	0.00	0.00	0.00	0.00	0.00
18.500	0.00	0.00	0.00	0.00	0.00
18.750	0.00	0.00	0.00	0.00	0.00
19.000	0.00	0.00	0.00	0.00	0.00
19.250	0.00	0.00	0.00	0.00	0.00
19.500	0.00	0.00	0.00	0.00	0.00
19.750	0.00	0.00	0.00	0.00	0.00
20.000	0.00	0.00	0.00	0.00	0.00
20.250	0.00	0.00	0.00	0.00	0.00
20.500	0.00	0.00	0.00	0.00	0.00
20.750	0.00	0.00	0.00	0.00	0.00
21.000	0.00	0.00	0.00	0.00	0.00
21.250	0.00	0.00	0.00	0.00	0.00
21.500	0.00	0.00	0.00	0.00	0.00
21.750	0.00	0.00	0.00	0.00	0.00
22.000	0.00	0.00	0.00	0.00	0.00
22.250	0.00	0.00	0.00	0.00	0.00
22.500	0.00	0.00	0.00	0.00	0.00
22.750	0.00	0.00	0.00	0.00	0.00
23.000	0.00	0.00	0.00	0.00	0.00
23.250	0.00	0.00	0.00	0.00	0.00
23.500	0.00	0.00	0.00	0.00	0.00
23.750	0.00	0.00	0.00	0.00	0.00
24.000	0.00	(N/A)	(N/A)	(N/A)	(N/A)

Pre-development Analysis Results

Subsection: Unit Hydrograph Summary

Label: DA-2-I

Scenario: Pre-Development 2

Return Event: 2 years

Storm Event: 2-YR

Storm Event	2-YR
Return Event	2 years
Duration	24.000 hours
Depth	3.28 in
Time of Concentration (Composite)	0.041 hours
Area (User Defined)	0.107 acres
<hr/>	
Computational Time Increment	0.006 hours
Time to Peak (Computed)	12.099 hours
Flow (Peak, Computed)	0.41 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.41 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.107 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.05 in
Runoff Volume (Pervious)	1,179.519 ft ³
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,179.000 ft ³
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.041 hours
Computational Time Increment	0.006 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	2.93 ft ³ /s
Unit peak time, Tp	0.028 hours
Unit receding limb, Tr	0.110 hours
Total unit time, Tb	0.138 hours

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-2-I

Scenario: Pre-Development 2

Return Event: 2 years

Storm Event: 2-YR

Storm Event	2-YR
Return Event	2 years
Duration	24.000 hours
Depth	3.28 in
Time of Concentration (Composite)	0.041 hours
Area (User Defined)	0.107 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
1.950	0.00	0.00	0.00	0.00	0.00
2.200	0.00	0.00	0.00	0.00	0.00
2.450	0.00	0.00	0.00	0.00	0.00
2.700	0.00	0.00	0.00	0.00	0.00
2.950	0.00	0.00	0.00	0.00	0.00
3.200	0.00	0.00	0.00	0.00	0.00
3.450	0.00	0.00	0.00	0.00	0.00
3.700	0.00	0.00	0.00	0.00	0.00
3.950	0.00	0.00	0.00	0.00	0.00
4.200	0.00	0.00	0.00	0.00	0.00
4.450	0.00	0.00	0.00	0.00	0.00
4.700	0.00	0.00	0.00	0.00	0.00
4.950	0.00	0.00	0.00	0.00	0.00
5.200	0.00	0.00	0.00	0.00	0.00
5.450	0.00	0.00	0.00	0.00	0.00
5.700	0.00	0.00	0.00	0.00	0.00
5.950	0.00	0.00	0.00	0.00	0.00
6.200	0.00	0.00	0.00	0.00	0.00
6.450	0.01	0.01	0.01	0.01	0.01
6.700	0.01	0.01	0.01	0.01	0.01
6.950	0.01	0.01	0.01	0.01	0.01
7.200	0.01	0.01	0.01	0.01	0.01
7.450	0.01	0.01	0.01	0.01	0.01
7.700	0.01	0.01	0.01	0.01	0.01
7.950	0.01	0.01	0.01	0.01	0.01
8.200	0.01	0.01	0.01	0.01	0.01
8.450	0.01	0.01	0.01	0.01	0.01
8.700	0.01	0.01	0.01	0.01	0.01
8.950	0.01	0.01	0.01	0.01	0.01
9.200	0.01	0.01	0.01	0.01	0.01
9.450	0.01	0.01	0.01	0.01	0.01
9.700	0.01	0.01	0.01	0.01	0.01
9.950	0.01	0.01	0.01	0.01	0.02
10.200	0.02	0.02	0.02	0.02	0.02
10.450	0.02	0.02	0.02	0.02	0.02
10.700	0.02	0.02	0.02	0.02	0.02
10.950	0.03	0.03	0.03	0.03	0.03
11.200	0.03	0.04	0.04	0.04	0.04
11.450	0.04	0.04	0.07	0.07	0.07

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 2 years

Label: DA-2-I

Storm Event: 2-YR

Scenario: Pre-Development 2

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.700	0.07	0.10	0.10	0.13	0.14
11.950	0.23	0.24	0.38	0.41	0.18
12.200	0.14	0.11	0.10	0.08	0.07
12.450	0.07	0.07	0.05	0.05	0.04
12.700	0.04	0.04	0.04	0.04	0.04
12.950	0.03	0.03	0.03	0.03	0.03
13.200	0.03	0.02	0.02	0.02	0.02
13.450	0.02	0.02	0.02	0.02	0.02
13.700	0.02	0.02	0.02	0.02	0.02
13.950	0.02	0.02	0.02	0.02	0.01
14.200	0.01	0.01	0.01	0.01	0.01
14.450	0.01	0.01	0.01	0.01	0.01
14.700	0.01	0.01	0.01	0.01	0.01
14.950	0.01	0.01	0.01	0.01	0.01
15.200	0.01	0.01	0.01	0.01	0.01
15.450	0.01	0.01	0.01	0.01	0.01
15.700	0.01	0.01	0.01	0.01	0.01
15.950	0.01	0.01	0.01	0.01	0.01
16.200	0.01	0.01	0.01	0.01	0.01
16.450	0.01	0.01	0.01	0.01	0.01
16.700	0.01	0.01	0.01	0.01	0.01
16.950	0.01	0.01	0.01	0.01	0.01
17.200	0.01	0.01	0.01	0.01	0.01
17.450	0.01	0.01	0.01	0.01	0.01
17.700	0.01	0.01	0.01	0.01	0.01
17.950	0.01	0.01	0.01	0.01	0.01
18.200	0.01	0.01	0.01	0.01	0.01
18.450	0.01	0.01	0.01	0.01	0.01
18.700	0.01	0.01	0.01	0.01	0.01
18.950	0.01	0.01	0.01	0.01	0.01
19.200	0.01	0.01	0.01	0.01	0.01
19.450	0.01	0.01	0.01	0.01	0.01
19.700	0.01	0.01	0.01	0.01	0.01
19.950	0.00	0.00	0.00	0.00	0.00
20.200	0.00	0.00	0.00	0.00	0.00
20.450	0.00	0.00	0.00	0.00	0.00
20.700	0.00	0.00	0.00	0.00	0.00
20.950	0.00	0.00	0.00	0.00	0.00
21.200	0.00	0.00	0.00	0.00	0.00
21.450	0.00	0.00	0.00	0.00	0.00
21.700	0.00	0.00	0.00	0.00	0.00
21.950	0.00	0.00	0.00	0.00	0.00
22.200	0.00	0.00	0.00	0.00	0.00
22.450	0.00	0.00	0.00	0.00	0.00
22.700	0.00	0.00	0.00	0.00	0.00
22.950	0.00	0.00	0.00	0.00	0.00
23.200	0.00	0.00	0.00	0.00	0.00
23.450	0.00	0.00	0.00	0.00	0.00

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-2-I

Scenario: Pre-Development 2

Return Event: 2 years

Storm Event: 2-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
23.700	0.00	0.00	0.00	0.00	0.00
23.950	0.00	0.00	(N/A)	(N/A)	(N/A)

Pre-development Analysis Results

Subsection: Unit Hydrograph Summary

Label: DA-2-I

Scenario: Pre-Development 5

Return Event: 5 years

Storm Event: 5-YR

Storm Event	5-YR
Return Event	5 years
Duration	24.000 hours
Depth	4.12 in
Time of Concentration (Composite)	0.041 hours
Area (User Defined)	0.107 acres
<hr/>	
Computational Time Increment	0.006 hours
Time to Peak (Computed)	12.099 hours
Flow (Peak, Computed)	0.51 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.51 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.107 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.89 in
Runoff Volume (Pervious)	1,504.524 ft ³
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,504.000 ft ³
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.041 hours
Computational Time Increment	0.006 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	2.93 ft ³ /s
Unit peak time, Tp	0.028 hours
Unit receding limb, Tr	0.110 hours
Total unit time, Tb	0.138 hours

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-2-I

Scenario: Pre-Development 5

Return Event: 5 years

Storm Event: 5-YR

Storm Event	5-YR
Return Event	5 years
Duration	24.000 hours
Depth	4.12 in
Time of Concentration (Composite)	0.041 hours
Area (User Defined)	0.107 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
1.450	0.00	0.00	0.00	0.00	0.00
1.700	0.00	0.00	0.00	0.00	0.00
1.950	0.00	0.00	0.00	0.00	0.00
2.200	0.00	0.00	0.00	0.00	0.00
2.450	0.00	0.00	0.00	0.00	0.00
2.700	0.00	0.00	0.00	0.00	0.00
2.950	0.00	0.00	0.00	0.00	0.00
3.200	0.00	0.00	0.00	0.00	0.00
3.450	0.00	0.00	0.00	0.00	0.00
3.700	0.00	0.00	0.00	0.00	0.00
3.950	0.00	0.00	0.00	0.00	0.00
4.200	0.00	0.00	0.00	0.00	0.00
4.450	0.00	0.00	0.00	0.00	0.00
4.700	0.00	0.00	0.00	0.01	0.01
4.950	0.01	0.01	0.01	0.01	0.01
5.200	0.01	0.01	0.01	0.01	0.01
5.450	0.01	0.01	0.01	0.01	0.01
5.700	0.01	0.01	0.01	0.01	0.01
5.950	0.01	0.01	0.01	0.01	0.01
6.200	0.01	0.01	0.01	0.01	0.01
6.450	0.01	0.01	0.01	0.01	0.01
6.700	0.01	0.01	0.01	0.01	0.01
6.950	0.01	0.01	0.01	0.01	0.01
7.200	0.01	0.01	0.01	0.01	0.01
7.450	0.01	0.01	0.01	0.01	0.01
7.700	0.01	0.01	0.01	0.01	0.01
7.950	0.01	0.01	0.01	0.01	0.01
8.200	0.01	0.01	0.01	0.01	0.01
8.450	0.01	0.01	0.01	0.01	0.01
8.700	0.01	0.01	0.01	0.01	0.01
8.950	0.01	0.01	0.01	0.01	0.01
9.200	0.01	0.01	0.01	0.01	0.01
9.450	0.01	0.01	0.02	0.02	0.02
9.700	0.02	0.02	0.02	0.02	0.02
9.950	0.02	0.02	0.02	0.02	0.02
10.200	0.02	0.02	0.02	0.02	0.02
10.450	0.02	0.02	0.02	0.02	0.03
10.700	0.03	0.03	0.03	0.03	0.03
10.950	0.03	0.03	0.04	0.04	0.04

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 5 years

Label: DA-2-I

Storm Event: 5-YR

Scenario: Pre-Development 5

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.200	0.04	0.05	0.05	0.05	0.05
11.450	0.06	0.06	0.08	0.09	0.09
11.700	0.09	0.12	0.13	0.17	0.18
11.950	0.29	0.31	0.48	0.51	0.23
12.200	0.18	0.14	0.13	0.10	0.09
12.450	0.09	0.09	0.06	0.06	0.05
12.700	0.05	0.05	0.05	0.05	0.04
12.950	0.04	0.04	0.04	0.04	0.03
13.200	0.03	0.03	0.03	0.03	0.03
13.450	0.03	0.02	0.02	0.02	0.02
13.700	0.02	0.02	0.02	0.02	0.02
13.950	0.02	0.02	0.02	0.02	0.02
14.200	0.02	0.02	0.02	0.02	0.02
14.450	0.02	0.02	0.02	0.02	0.02
14.700	0.02	0.01	0.01	0.01	0.01
14.950	0.01	0.01	0.01	0.01	0.01
15.200	0.01	0.01	0.01	0.01	0.01
15.450	0.01	0.01	0.01	0.01	0.01
15.700	0.01	0.01	0.01	0.01	0.01
15.950	0.01	0.01	0.01	0.01	0.01
16.200	0.01	0.01	0.01	0.01	0.01
16.450	0.01	0.01	0.01	0.01	0.01
16.700	0.01	0.01	0.01	0.01	0.01
16.950	0.01	0.01	0.01	0.01	0.01
17.200	0.01	0.01	0.01	0.01	0.01
17.450	0.01	0.01	0.01	0.01	0.01
17.700	0.01	0.01	0.01	0.01	0.01
17.950	0.01	0.01	0.01	0.01	0.01
18.200	0.01	0.01	0.01	0.01	0.01
18.450	0.01	0.01	0.01	0.01	0.01
18.700	0.01	0.01	0.01	0.01	0.01
18.950	0.01	0.01	0.01	0.01	0.01
19.200	0.01	0.01	0.01	0.01	0.01
19.450	0.01	0.01	0.01	0.01	0.01
19.700	0.01	0.01	0.01	0.01	0.01
19.950	0.01	0.01	0.01	0.01	0.01
20.200	0.01	0.01	0.01	0.01	0.01
20.450	0.01	0.01	0.01	0.01	0.01
20.700	0.01	0.01	0.01	0.01	0.01
20.950	0.01	0.01	0.01	0.01	0.01
21.200	0.01	0.01	0.01	0.01	0.01
21.450	0.01	0.01	0.01	0.01	0.01
21.700	0.01	0.01	0.01	0.01	0.01
21.950	0.01	0.01	0.01	0.01	0.01
22.200	0.01	0.01	0.01	0.01	0.01
22.450	0.01	0.01	0.01	0.01	0.01
22.700	0.01	0.01	0.01	0.01	0.00
22.950	0.00	0.00	0.00	0.00	0.00

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-2-I

Scenario: Pre-Development 5

Return Event: 5 years

Storm Event: 5-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
23.200	0.00	0.00	0.00	0.00	0.00
23.450	0.00	0.00	0.00	0.00	0.00
23.700	0.00	0.00	0.00	0.00	0.00
23.950	0.01	0.01	(N/A)	(N/A)	(N/A)

Pre-development Analysis Results

Subsection: Unit Hydrograph Summary
 Label: DA-2-I
 Scenario: Pre-Development 10

Return Event: 10 years
 Storm Event: 10-YR

Storm Event	10-YR
Return Event	10 years
Duration	24.000 hours
Depth	4.82 in
Time of Concentration (Composite)	0.041 hours
Area (User Defined)	0.107 acres
<hr/>	
Computational Time Increment	0.006 hours
Time to Peak (Computed)	12.099 hours
Flow (Peak, Computed)	0.60 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.60 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.107 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	4.58 in
Runoff Volume (Pervious)	1,774.181 ft ³
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,773.000 ft ³
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.041 hours
Computational Time Increment	0.006 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	2.93 ft ³ /s
Unit peak time, Tp	0.028 hours
Unit receding limb, Tr	0.110 hours
Total unit time, Tb	0.138 hours

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-2-I

Scenario: Pre-Development 10

Return Event: 10 years

Storm Event: 10-YR

Storm Event	10-YR
Return Event	10 years
Duration	24.000 hours
Depth	4.82 in
Time of Concentration (Composite)	0.041 hours
Area (User Defined)	0.107 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
1.200	0.00	0.00	0.00	0.00	0.00
1.450	0.00	0.00	0.00	0.00	0.00
1.700	0.00	0.00	0.00	0.00	0.00
1.950	0.00	0.00	0.00	0.00	0.00
2.200	0.00	0.00	0.00	0.00	0.00
2.450	0.00	0.00	0.00	0.00	0.00
2.700	0.00	0.00	0.00	0.00	0.00
2.950	0.00	0.00	0.00	0.00	0.00
3.200	0.00	0.00	0.00	0.00	0.00
3.450	0.00	0.00	0.00	0.00	0.01
3.700	0.01	0.01	0.01	0.01	0.01
3.950	0.01	0.01	0.01	0.01	0.01
4.200	0.01	0.01	0.01	0.01	0.01
4.450	0.01	0.01	0.01	0.01	0.01
4.700	0.01	0.01	0.01	0.01	0.01
4.950	0.01	0.01	0.01	0.01	0.01
5.200	0.01	0.01	0.01	0.01	0.01
5.450	0.01	0.01	0.01	0.01	0.01
5.700	0.01	0.01	0.01	0.01	0.01
5.950	0.01	0.01	0.01	0.01	0.01
6.200	0.01	0.01	0.01	0.01	0.01
6.450	0.01	0.01	0.01	0.01	0.01
6.700	0.01	0.01	0.01	0.01	0.01
6.950	0.01	0.01	0.01	0.01	0.01
7.200	0.01	0.01	0.01	0.01	0.01
7.450	0.01	0.01	0.01	0.01	0.01
7.700	0.01	0.01	0.01	0.01	0.01
7.950	0.01	0.01	0.01	0.01	0.01
8.200	0.01	0.01	0.01	0.01	0.01
8.450	0.01	0.01	0.01	0.01	0.01
8.700	0.01	0.01	0.01	0.01	0.01
8.950	0.01	0.01	0.01	0.01	0.02
9.200	0.02	0.02	0.02	0.02	0.02
9.450	0.02	0.02	0.02	0.02	0.02
9.700	0.02	0.02	0.02	0.02	0.02
9.950	0.02	0.02	0.02	0.02	0.02
10.200	0.02	0.02	0.02	0.02	0.02
10.450	0.03	0.03	0.03	0.03	0.03
10.700	0.03	0.03	0.03	0.04	0.04

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-2-I

Scenario: Pre-Development 10

Return Event: 10 years

Storm Event: 10-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.950	0.04	0.04	0.04	0.05	0.05
11.200	0.05	0.06	0.06	0.06	0.06
11.450	0.07	0.07	0.10	0.10	0.11
11.700	0.11	0.14	0.15	0.20	0.21
11.950	0.34	0.36	0.57	0.60	0.27
12.200	0.21	0.16	0.15	0.12	0.11
12.450	0.11	0.10	0.07	0.07	0.06
12.700	0.06	0.06	0.06	0.05	0.05
12.950	0.05	0.05	0.04	0.04	0.04
13.200	0.04	0.04	0.04	0.03	0.03
13.450	0.03	0.03	0.03	0.03	0.03
13.700	0.03	0.02	0.02	0.02	0.02
13.950	0.02	0.02	0.02	0.02	0.02
14.200	0.02	0.02	0.02	0.02	0.02
14.450	0.02	0.02	0.02	0.02	0.02
14.700	0.02	0.02	0.02	0.02	0.02
14.950	0.02	0.02	0.01	0.01	0.01
15.200	0.01	0.01	0.01	0.01	0.01
15.450	0.01	0.01	0.01	0.01	0.01
15.700	0.01	0.01	0.01	0.01	0.01
15.950	0.01	0.01	0.01	0.01	0.01
16.200	0.01	0.01	0.01	0.01	0.01
16.450	0.01	0.01	0.01	0.01	0.01
16.700	0.01	0.01	0.01	0.01	0.01
16.950	0.01	0.01	0.01	0.01	0.01
17.200	0.01	0.01	0.01	0.01	0.01
17.450	0.01	0.01	0.01	0.01	0.01
17.700	0.01	0.01	0.01	0.01	0.01
17.950	0.01	0.01	0.01	0.01	0.01
18.200	0.01	0.01	0.01	0.01	0.01
18.450	0.01	0.01	0.01	0.01	0.01
18.700	0.01	0.01	0.01	0.01	0.01
18.950	0.01	0.01	0.01	0.01	0.01
19.200	0.01	0.01	0.01	0.01	0.01
19.450	0.01	0.01	0.01	0.01	0.01
19.700	0.01	0.01	0.01	0.01	0.01
19.950	0.01	0.01	0.01	0.01	0.01
20.200	0.01	0.01	0.01	0.01	0.01
20.450	0.01	0.01	0.01	0.01	0.01
20.700	0.01	0.01	0.01	0.01	0.01
20.950	0.01	0.01	0.01	0.01	0.01
21.200	0.01	0.01	0.01	0.01	0.01
21.450	0.01	0.01	0.01	0.01	0.01
21.700	0.01	0.01	0.01	0.01	0.01
21.950	0.01	0.01	0.01	0.01	0.01
22.200	0.01	0.01	0.01	0.01	0.01
22.450	0.01	0.01	0.01	0.01	0.01
22.700	0.01	0.01	0.01	0.01	0.01

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-2-I

Scenario: Pre-Development 10

Return Event: 10 years

Storm Event: 10-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
22.950	0.01	0.01	0.01	0.01	0.01
23.200	0.01	0.01	0.01	0.01	0.01
23.450	0.01	0.01	0.01	0.01	0.01
23.700	0.01	0.01	0.01	0.01	0.01
23.950	0.01	0.01	(N/A)	(N/A)	(N/A)

Pre-development Analysis Results

Subsection: Unit Hydrograph Summary

Label: DA-2-I

Scenario: Pre-Development 25

Return Event: 25 years

Storm Event: 25-YR

Storm Event	25-YR
Return Event	25 years
Duration	24.000 hours
Depth	5.83 in
Time of Concentration (Composite)	0.041 hours
Area (User Defined)	0.107 acres
<hr/>	
Computational Time Increment	0.006 hours
Time to Peak (Computed)	12.099 hours
Flow (Peak, Computed)	0.73 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.73 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.107 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.59 in
Runoff Volume (Pervious)	2,164.589 ft ³
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	2,164.000 ft ³
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.041 hours
Computational Time Increment	0.006 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	2.93 ft ³ /s
Unit peak time, Tp	0.028 hours
Unit receding limb, Tr	0.110 hours
Total unit time, Tb	0.138 hours

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-2-I

Scenario: Pre-Development 25

Return Event: 25 years

Storm Event: 25-YR

Storm Event	25-YR
Return Event	25 years
Duration	24.000 hours
Depth	5.83 in
Time of Concentration (Composite)	0.041 hours
Area (User Defined)	0.107 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
0.900	0.00	0.00	0.00	0.00	0.00
1.150	0.00	0.00	0.00	0.00	0.00
1.400	0.00	0.00	0.00	0.00	0.00
1.650	0.00	0.00	0.00	0.00	0.00
1.900	0.00	0.00	0.00	0.00	0.00
2.150	0.00	0.00	0.00	0.00	0.00
2.400	0.00	0.00	0.00	0.00	0.01
2.650	0.01	0.01	0.01	0.01	0.01
2.900	0.01	0.01	0.01	0.01	0.01
3.150	0.01	0.01	0.01	0.01	0.01
3.400	0.01	0.01	0.01	0.01	0.01
3.650	0.01	0.01	0.01	0.01	0.01
3.900	0.01	0.01	0.01	0.01	0.01
4.150	0.01	0.01	0.01	0.01	0.01
4.400	0.01	0.01	0.01	0.01	0.01
4.650	0.01	0.01	0.01	0.01	0.01
4.900	0.01	0.01	0.01	0.01	0.01
5.150	0.01	0.01	0.01	0.01	0.01
5.400	0.01	0.01	0.01	0.01	0.01
5.650	0.01	0.01	0.01	0.01	0.01
5.900	0.01	0.01	0.01	0.01	0.01
6.150	0.01	0.01	0.01	0.01	0.01
6.400	0.01	0.01	0.01	0.01	0.01
6.650	0.01	0.01	0.01	0.01	0.01
6.900	0.01	0.01	0.01	0.01	0.01
7.150	0.01	0.01	0.01	0.01	0.01
7.400	0.01	0.01	0.01	0.01	0.01
7.650	0.01	0.01	0.01	0.01	0.01
7.900	0.01	0.01	0.01	0.01	0.01
8.150	0.01	0.01	0.01	0.01	0.02
8.400	0.02	0.02	0.02	0.02	0.02
8.650	0.02	0.02	0.02	0.02	0.02
8.900	0.02	0.02	0.02	0.02	0.02
9.150	0.02	0.02	0.02	0.02	0.02
9.400	0.02	0.02	0.02	0.02	0.02
9.650	0.02	0.02	0.02	0.02	0.03
9.900	0.03	0.03	0.03	0.03	0.03
10.150	0.03	0.03	0.03	0.03	0.03
10.400	0.03	0.03	0.03	0.03	0.03

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-2-I

Scenario: Pre-Development 25

Return Event: 25 years

Storm Event: 25-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.650	0.04	0.04	0.04	0.04	0.04
10.900	0.05	0.05	0.05	0.05	0.06
11.150	0.06	0.06	0.07	0.07	0.07
11.400	0.08	0.08	0.08	0.12	0.13
11.650	0.13	0.13	0.17	0.18	0.24
11.900	0.25	0.41	0.44	0.68	0.73
12.150	0.32	0.26	0.19	0.18	0.14
12.400	0.13	0.13	0.13	0.09	0.08
12.650	0.08	0.08	0.07	0.07	0.06
12.900	0.06	0.06	0.06	0.05	0.05
13.150	0.05	0.05	0.04	0.04	0.04
13.400	0.04	0.04	0.04	0.03	0.03
13.650	0.03	0.03	0.03	0.03	0.03
13.900	0.03	0.03	0.03	0.03	0.03
14.150	0.03	0.03	0.03	0.03	0.02
14.400	0.02	0.02	0.02	0.02	0.02
14.650	0.02	0.02	0.02	0.02	0.02
14.900	0.02	0.02	0.02	0.02	0.02
15.150	0.02	0.02	0.02	0.02	0.02
15.400	0.02	0.02	0.02	0.02	0.02
15.650	0.02	0.02	0.02	0.02	0.02
15.900	0.02	0.02	0.02	0.02	0.02
16.150	0.01	0.01	0.01	0.01	0.01
16.400	0.01	0.01	0.01	0.01	0.01
16.650	0.01	0.01	0.01	0.01	0.01
16.900	0.01	0.01	0.01	0.01	0.01
17.150	0.01	0.01	0.01	0.01	0.01
17.400	0.01	0.01	0.01	0.01	0.01
17.650	0.01	0.01	0.01	0.01	0.01
17.900	0.01	0.01	0.01	0.01	0.01
18.150	0.01	0.01	0.01	0.01	0.01
18.400	0.01	0.01	0.01	0.01	0.01
18.650	0.01	0.01	0.01	0.01	0.01
18.900	0.01	0.01	0.01	0.01	0.01
19.150	0.01	0.01	0.01	0.01	0.01
19.400	0.01	0.01	0.01	0.01	0.01
19.650	0.01	0.01	0.01	0.01	0.01
19.900	0.01	0.01	0.01	0.01	0.01
20.150	0.01	0.01	0.01	0.01	0.01
20.400	0.01	0.01	0.01	0.01	0.01
20.650	0.01	0.01	0.01	0.01	0.01
20.900	0.01	0.01	0.01	0.01	0.01
21.150	0.01	0.01	0.01	0.01	0.01
21.400	0.01	0.01	0.01	0.01	0.01
21.650	0.01	0.01	0.01	0.01	0.01
21.900	0.01	0.01	0.01	0.01	0.01
22.150	0.01	0.01	0.01	0.01	0.01
22.400	0.01	0.01	0.01	0.01	0.01

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-2-I

Scenario: Pre-Development 25

Return Event: 25 years

Storm Event: 25-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
22.650	0.01	0.01	0.01	0.01	0.01
22.900	0.01	0.01	0.01	0.01	0.01
23.150	0.01	0.01	0.01	0.01	0.01
23.400	0.01	0.01	0.01	0.01	0.01
23.650	0.01	0.01	0.01	0.01	0.01
23.900	0.01	0.01	0.01	(N/A)	(N/A)

Pre-development Analysis Results

Subsection: Unit Hydrograph Summary

Label: DA-2-I

Scenario: Pre-Development 50

Return Event: 50 years

Storm Event: 50-YR

Storm Event	50-YR
Return Event	50 years
Duration	24.000 hours
Depth	6.68 in
Time of Concentration (Composite)	0.041 hours
Area (User Defined)	0.107 acres
<hr/>	
Computational Time Increment	0.006 hours
Time to Peak (Computed)	12.099 hours
Flow (Peak, Computed)	0.83 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.83 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.107 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.44 in
Runoff Volume (Pervious)	2,493.277 ft ³
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	2,492.000 ft ³
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.041 hours
Computational Time Increment	0.006 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	2.93 ft ³ /s
Unit peak time, Tp	0.028 hours
Unit receding limb, Tr	0.110 hours
Total unit time, Tb	0.138 hours

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-2-I

Scenario: Pre-Development 50

Return Event: 50 years

Storm Event: 50-YR

Storm Event	50-YR
Return Event	50 years
Duration	24.000 hours
Depth	6.68 in
Time of Concentration (Composite)	0.041 hours
Area (User Defined)	0.107 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
0.800	0.00	0.00	0.00	0.00	0.00
1.050	0.00	0.00	0.00	0.00	0.00
1.300	0.00	0.00	0.00	0.00	0.00
1.550	0.00	0.00	0.00	0.00	0.00
1.800	0.00	0.00	0.00	0.00	0.00
2.050	0.01	0.01	0.01	0.01	0.01
2.300	0.01	0.01	0.01	0.01	0.01
2.550	0.01	0.01	0.01	0.01	0.01
2.800	0.01	0.01	0.01	0.01	0.01
3.050	0.01	0.01	0.01	0.01	0.01
3.300	0.01	0.01	0.01	0.01	0.01
3.550	0.01	0.01	0.01	0.01	0.01
3.800	0.01	0.01	0.01	0.01	0.01
4.050	0.01	0.01	0.01	0.01	0.01
4.300	0.01	0.01	0.01	0.01	0.01
4.550	0.01	0.01	0.01	0.01	0.01
4.800	0.01	0.01	0.01	0.01	0.01
5.050	0.01	0.01	0.01	0.01	0.01
5.300	0.01	0.01	0.01	0.01	0.01
5.550	0.01	0.01	0.01	0.01	0.01
5.800	0.01	0.01	0.01	0.01	0.01
6.050	0.01	0.01	0.01	0.01	0.01
6.300	0.01	0.01	0.01	0.01	0.01
6.550	0.01	0.01	0.01	0.01	0.01
6.800	0.01	0.01	0.01	0.01	0.01
7.050	0.01	0.01	0.01	0.01	0.01
7.300	0.01	0.01	0.01	0.01	0.02
7.550	0.02	0.02	0.02	0.02	0.02
7.800	0.02	0.02	0.02	0.02	0.02
8.050	0.02	0.02	0.02	0.02	0.02
8.300	0.02	0.02	0.02	0.02	0.02
8.550	0.02	0.02	0.02	0.02	0.02
8.800	0.02	0.02	0.02	0.02	0.02
9.050	0.02	0.02	0.02	0.02	0.02
9.300	0.02	0.02	0.02	0.02	0.02
9.550	0.03	0.03	0.03	0.03	0.03
9.800	0.03	0.03	0.03	0.03	0.03
10.050	0.03	0.03	0.03	0.03	0.03
10.300	0.03	0.03	0.03	0.04	0.04

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-2-I

Scenario: Pre-Development 50

Return Event: 50 years

Storm Event: 50-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.550	0.04	0.04	0.04	0.04	0.05
10.800	0.05	0.05	0.05	0.06	0.06
11.050	0.06	0.06	0.07	0.07	0.08
11.300	0.08	0.09	0.09	0.09	0.09
11.550	0.14	0.14	0.15	0.15	0.20
11.800	0.21	0.28	0.29	0.47	0.50
12.050	0.79	0.83	0.37	0.29	0.22
12.300	0.21	0.16	0.15	0.15	0.14
12.550	0.10	0.09	0.09	0.09	0.08
12.800	0.08	0.07	0.07	0.07	0.06
13.050	0.06	0.06	0.05	0.05	0.05
13.300	0.05	0.05	0.04	0.04	0.04
13.550	0.04	0.04	0.04	0.04	0.03
13.800	0.03	0.03	0.03	0.03	0.03
14.050	0.03	0.03	0.03	0.03	0.03
14.300	0.03	0.03	0.03	0.03	0.03
14.550	0.03	0.03	0.02	0.02	0.02
14.800	0.02	0.02	0.02	0.02	0.02
15.050	0.02	0.02	0.02	0.02	0.02
15.300	0.02	0.02	0.02	0.02	0.02
15.550	0.02	0.02	0.02	0.02	0.02
15.800	0.02	0.02	0.02	0.02	0.02
16.050	0.02	0.02	0.02	0.02	0.02
16.300	0.02	0.02	0.02	0.02	0.02
16.550	0.02	0.02	0.02	0.02	0.02
16.800	0.02	0.02	0.01	0.01	0.01
17.050	0.01	0.01	0.01	0.01	0.01
17.300	0.01	0.01	0.01	0.01	0.01
17.550	0.01	0.01	0.01	0.01	0.01
17.800	0.01	0.01	0.01	0.01	0.01
18.050	0.01	0.01	0.01	0.01	0.01
18.300	0.01	0.01	0.01	0.01	0.01
18.550	0.01	0.01	0.01	0.01	0.01
18.800	0.01	0.01	0.01	0.01	0.01
19.050	0.01	0.01	0.01	0.01	0.01
19.300	0.01	0.01	0.01	0.01	0.01
19.550	0.01	0.01	0.01	0.01	0.01
19.800	0.01	0.01	0.01	0.01	0.01
20.050	0.01	0.01	0.01	0.01	0.01
20.300	0.01	0.01	0.01	0.01	0.01
20.550	0.01	0.01	0.01	0.01	0.01
20.800	0.01	0.01	0.01	0.01	0.01
21.050	0.01	0.01	0.01	0.01	0.01
21.300	0.01	0.01	0.01	0.01	0.01
21.550	0.01	0.01	0.01	0.01	0.01
21.800	0.01	0.01	0.01	0.01	0.01
22.050	0.01	0.01	0.01	0.01	0.01
22.300	0.01	0.01	0.01	0.01	0.01

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-2-I

Scenario: Pre-Development 50

Return Event: 50 years

Storm Event: 50-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
22.550	0.01	0.01	0.01	0.01	0.01
22.800	0.01	0.01	0.01	0.01	0.01
23.050	0.01	0.01	0.01	0.01	0.01
23.300	0.01	0.01	0.01	0.01	0.01
23.550	0.01	0.01	0.01	0.01	0.01
23.800	0.01	0.01	0.01	0.01	0.01

Pre-development Analysis Results

Subsection: Unit Hydrograph Summary
 Label: DA-2-I
 Scenario: Pre-Development 100

Return Event: 100 years
 Storm Event: 100-YR

Storm Event	100-YR
Return Event	100 years
Duration	24.000 hours
Depth	7.60 in
Time of Concentration (Composite)	0.041 hours
Area (User Defined)	0.107 acres
<hr/>	
Computational Time Increment	0.006 hours
Time to Peak (Computed)	12.099 hours
Flow (Peak, Computed)	0.95 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.95 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.107 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	7.36 in
Runoff Volume (Pervious)	2,849.114 ft ³
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	2,848.000 ft ³
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.041 hours
Computational Time Increment	0.006 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	2.93 ft ³ /s
Unit peak time, Tp	0.028 hours
Unit receding limb, Tr	0.110 hours
Total unit time, Tb	0.138 hours

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)
 Label: DA-2-I
 Scenario: Pre-Development 100

Return Event: 100 years
 Storm Event: 100-YR

Storm Event	100-YR
Return Event	100 years
Duration	24.000 hours
Depth	7.60 in
Time of Concentration (Composite)	0.041 hours
Area (User Defined)	0.107 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
0.650	0.00	0.00	0.00	0.00	0.00
0.900	0.00	0.00	0.00	0.00	0.00
1.150	0.00	0.00	0.00	0.00	0.00
1.400	0.00	0.00	0.00	0.00	0.01
1.650	0.01	0.01	0.01	0.01	0.01
1.900	0.01	0.01	0.01	0.01	0.01
2.150	0.01	0.01	0.01	0.01	0.01
2.400	0.01	0.01	0.01	0.01	0.01
2.650	0.01	0.01	0.01	0.01	0.01
2.900	0.01	0.01	0.01	0.01	0.01
3.150	0.01	0.01	0.01	0.01	0.01
3.400	0.01	0.01	0.01	0.01	0.01
3.650	0.01	0.01	0.01	0.01	0.01
3.900	0.01	0.01	0.01	0.01	0.01
4.150	0.01	0.01	0.01	0.01	0.01
4.400	0.01	0.01	0.01	0.01	0.01
4.650	0.01	0.01	0.01	0.01	0.01
4.900	0.01	0.01	0.01	0.01	0.01
5.150	0.01	0.01	0.01	0.01	0.01
5.400	0.01	0.01	0.01	0.01	0.01
5.650	0.01	0.01	0.01	0.01	0.01
5.900	0.01	0.01	0.01	0.01	0.01
6.150	0.01	0.01	0.01	0.01	0.01
6.400	0.01	0.01	0.01	0.01	0.01
6.650	0.01	0.01	0.01	0.01	0.02
6.900	0.02	0.02	0.02	0.02	0.02
7.150	0.02	0.02	0.02	0.02	0.02
7.400	0.02	0.02	0.02	0.02	0.02
7.650	0.02	0.02	0.02	0.02	0.02
7.900	0.02	0.02	0.02	0.02	0.02
8.150	0.02	0.02	0.02	0.02	0.02
8.400	0.02	0.02	0.02	0.02	0.02
8.650	0.02	0.02	0.02	0.02	0.02
8.900	0.02	0.02	0.02	0.02	0.02
9.150	0.02	0.02	0.03	0.03	0.03
9.400	0.03	0.03	0.03	0.03	0.03
9.650	0.03	0.03	0.03	0.03	0.03
9.900	0.03	0.03	0.03	0.04	0.04
10.150	0.04	0.04	0.04	0.04	0.04

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-2-I

Scenario: Pre-Development 100

Return Event: 100 years

Storm Event: 100-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.400	0.04	0.04	0.04	0.04	0.05
10.650	0.05	0.05	0.05	0.05	0.06
10.900	0.06	0.06	0.06	0.07	0.07
11.150	0.08	0.08	0.09	0.09	0.10
11.400	0.10	0.10	0.11	0.16	0.16
11.650	0.17	0.17	0.23	0.24	0.32
11.900	0.33	0.53	0.57	0.89	0.95
12.150	0.42	0.33	0.25	0.24	0.18
12.400	0.17	0.17	0.16	0.12	0.11
12.650	0.10	0.10	0.09	0.09	0.08
12.900	0.08	0.07	0.07	0.07	0.06
13.150	0.06	0.06	0.06	0.06	0.05
13.400	0.05	0.05	0.05	0.04	0.04
13.650	0.04	0.04	0.04	0.04	0.04
13.900	0.04	0.04	0.04	0.04	0.04
14.150	0.03	0.03	0.03	0.03	0.03
14.400	0.03	0.03	0.03	0.03	0.03
14.650	0.03	0.03	0.03	0.03	0.03
14.900	0.03	0.02	0.02	0.02	0.02
15.150	0.02	0.02	0.02	0.02	0.02
15.400	0.02	0.02	0.02	0.02	0.02
15.650	0.02	0.02	0.02	0.02	0.02
15.900	0.02	0.02	0.02	0.02	0.02
16.150	0.02	0.02	0.02	0.02	0.02
16.400	0.02	0.02	0.02	0.02	0.02
16.650	0.02	0.02	0.02	0.02	0.02
16.900	0.02	0.02	0.02	0.02	0.02
17.150	0.02	0.02	0.02	0.02	0.02
17.400	0.02	0.02	0.02	0.01	0.01
17.650	0.01	0.01	0.01	0.01	0.01
17.900	0.01	0.01	0.01	0.01	0.01
18.150	0.01	0.01	0.01	0.01	0.01
18.400	0.01	0.01	0.01	0.01	0.01
18.650	0.01	0.01	0.01	0.01	0.01
18.900	0.01	0.01	0.01	0.01	0.01
19.150	0.01	0.01	0.01	0.01	0.01
19.400	0.01	0.01	0.01	0.01	0.01
19.650	0.01	0.01	0.01	0.01	0.01
19.900	0.01	0.01	0.01	0.01	0.01
20.150	0.01	0.01	0.01	0.01	0.01
20.400	0.01	0.01	0.01	0.01	0.01
20.650	0.01	0.01	0.01	0.01	0.01
20.900	0.01	0.01	0.01	0.01	0.01
21.150	0.01	0.01	0.01	0.01	0.01
21.400	0.01	0.01	0.01	0.01	0.01
21.650	0.01	0.01	0.01	0.01	0.01
21.900	0.01	0.01	0.01	0.01	0.01
22.150	0.01	0.01	0.01	0.01	0.01

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-2-I

Scenario: Pre-Development 100

Return Event: 100 years

Storm Event: 100-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
22.400	0.01	0.01	0.01	0.01	0.01
22.650	0.01	0.01	0.01	0.01	0.01
22.900	0.01	0.01	0.01	0.01	0.01
23.150	0.01	0.01	0.01	0.01	0.01
23.400	0.01	0.01	0.01	0.01	0.01
23.650	0.01	0.01	0.01	0.01	0.01
23.900	0.01	0.01	0.01	(N/A)	(N/A)

Pre-development Analysis Results

Subsection: Unit Hydrograph Summary
 Label: DA-2-P
 Scenario: Pre-Development 1

Return Event: 1 years
 Storm Event: 1-YR

Storm Event	1-YR
Return Event	1 years
Duration	24.000 hours
Depth	2.73 in
Time of Concentration (Composite)	0.280 hours
Area (User Defined)	0.131 acres
<hr/>	
Computational Time Increment	0.037 hours
Time to Peak (Computed)	12.525 hours
Flow (Peak, Computed)	0.01 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.500 hours
Flow (Peak Interpolated Output)	0.01 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	58.000
Area (User Defined)	0.131 acres
Maximum Retention (Pervious)	7.24 in
Maximum Retention (Pervious, 20 percent)	1.45 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.19 in
Runoff Volume (Pervious)	91.861 ft ³
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	91.000 ft ³
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.280 hours
Computational Time Increment	0.037 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	0.53 ft ³ /s
Unit peak time, Tp	0.186 hours
Unit receding limb, Tr	0.746 hours
Total unit time, Tb	0.932 hours

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-2-P

Scenario: Pre-Development 1

Return Event: 1 years

Storm Event: 1-YR

Storm Event	1-YR
Return Event	1 years
Duration	24.000 hours
Depth	2.73 in
Time of Concentration (Composite)	0.280 hours
Area (User Defined)	0.131 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
12.100	0.00	0.00	0.00	0.00	0.01
12.350	0.01	0.01	0.01	0.01	0.01
12.600	0.01	0.01	0.01	0.01	0.01
12.850	0.01	0.01	0.01	0.01	0.01
13.100	0.01	0.00	0.00	0.00	0.00
13.350	0.00	0.00	0.00	0.00	0.00
13.600	0.00	0.00	0.00	0.00	0.00
13.850	0.00	0.00	0.00	0.00	0.00
14.100	0.00	0.00	0.00	0.00	0.00
14.350	0.00	0.00	0.00	0.00	0.00
14.600	0.00	0.00	0.00	0.00	0.00
14.850	0.00	0.00	0.00	0.00	0.00
15.100	0.00	0.00	0.00	0.00	0.00
15.350	0.00	0.00	0.00	0.00	0.00
15.600	0.00	0.00	0.00	0.00	0.00
15.850	0.00	0.00	0.00	0.00	0.00
16.100	0.00	0.00	0.00	0.00	0.00
16.350	0.00	0.00	0.00	0.00	0.00
16.600	0.00	0.00	0.00	0.00	0.00
16.850	0.00	0.00	0.00	0.00	0.00
17.100	0.00	0.00	0.00	0.00	0.00
17.350	0.00	0.00	0.00	0.00	0.00
17.600	0.00	0.00	0.00	0.00	0.00
17.850	0.00	0.00	0.00	0.00	0.00
18.100	0.00	0.00	0.00	0.00	0.00
18.350	0.00	0.00	0.00	0.00	0.00
18.600	0.00	0.00	0.00	0.00	0.00
18.850	0.00	0.00	0.00	0.00	0.00
19.100	0.00	0.00	0.00	0.00	0.00
19.350	0.00	0.00	0.00	0.00	0.00
19.600	0.00	0.00	0.00	0.00	0.00
19.850	0.00	0.00	0.00	0.00	0.00
20.100	0.00	0.00	0.00	0.00	0.00
20.350	0.00	0.00	0.00	0.00	0.00
20.600	0.00	0.00	0.00	0.00	0.00
20.850	0.00	0.00	0.00	0.00	0.00
21.100	0.00	0.00	0.00	0.00	0.00
21.350	0.00	0.00	0.00	0.00	0.00
21.600	0.00	0.00	0.00	0.00	0.00

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-2-P

Scenario: Pre-Development 1

Return Event: 1 years

Storm Event: 1-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
21.850	0.00	0.00	0.00	0.00	0.00
22.100	0.00	0.00	0.00	0.00	0.00
22.350	0.00	0.00	0.00	0.00	0.00
22.600	0.00	0.00	0.00	0.00	0.00
22.850	0.00	0.00	0.00	0.00	0.00
23.100	0.00	0.00	0.00	0.00	0.00
23.350	0.00	0.00	0.00	0.00	0.00
23.600	0.00	0.00	0.00	0.00	0.00
23.850	0.00	0.00	0.00	0.00	(N/A)

Pre-development Analysis Results

Subsection: Unit Hydrograph Summary

Label: DA-2-P

Scenario: Pre-Development 2

Return Event: 2 years

Storm Event: 2-YR

Storm Event	2-YR
Return Event	2 years
Duration	24.000 hours
Depth	3.28 in
Time of Concentration (Composite)	0.280 hours
Area (User Defined)	0.131 acres
<hr/>	
Computational Time Increment	0.037 hours
Time to Peak (Computed)	12.301 hours
Flow (Peak, Computed)	0.02 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.300 hours
Flow (Peak Interpolated Output)	0.02 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	58.000
Area (User Defined)	0.131 acres
Maximum Retention (Pervious)	7.24 in
Maximum Retention (Pervious, 20 percent)	1.45 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.37 in
Runoff Volume (Pervious)	176.239 ft ³
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	175.000 ft ³
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.280 hours
Computational Time Increment	0.037 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	0.53 ft ³ /s
Unit peak time, Tp	0.186 hours
Unit receding limb, Tr	0.746 hours
Total unit time, Tb	0.932 hours

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-2-P

Scenario: Pre-Development 2

Return Event: 2 years

Storm Event: 2-YR

Storm Event	2-YR
Return Event	2 years
Duration	24.000 hours
Depth	3.28 in
Time of Concentration (Composite)	0.280 hours
Area (User Defined)	0.131 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
12.000	0.00	0.00	0.00	0.01	0.02
12.250	0.02	0.02	0.02	0.02	0.02
12.500	0.02	0.02	0.02	0.02	0.01
12.750	0.01	0.01	0.01	0.01	0.01
13.000	0.01	0.01	0.01	0.01	0.01
13.250	0.01	0.01	0.01	0.01	0.01
13.500	0.01	0.01	0.01	0.01	0.01
13.750	0.01	0.01	0.01	0.01	0.01
14.000	0.01	0.01	0.01	0.01	0.01
14.250	0.01	0.01	0.00	0.00	0.00
14.500	0.00	0.00	0.00	0.00	0.00
14.750	0.00	0.00	0.00	0.00	0.00
15.000	0.00	0.00	0.00	0.00	0.00
15.250	0.00	0.00	0.00	0.00	0.00
15.500	0.00	0.00	0.00	0.00	0.00
15.750	0.00	0.00	0.00	0.00	0.00
16.000	0.00	0.00	0.00	0.00	0.00
16.250	0.00	0.00	0.00	0.00	0.00
16.500	0.00	0.00	0.00	0.00	0.00
16.750	0.00	0.00	0.00	0.00	0.00
17.000	0.00	0.00	0.00	0.00	0.00
17.250	0.00	0.00	0.00	0.00	0.00
17.500	0.00	0.00	0.00	0.00	0.00
17.750	0.00	0.00	0.00	0.00	0.00
18.000	0.00	0.00	0.00	0.00	0.00
18.250	0.00	0.00	0.00	0.00	0.00
18.500	0.00	0.00	0.00	0.00	0.00
18.750	0.00	0.00	0.00	0.00	0.00
19.000	0.00	0.00	0.00	0.00	0.00
19.250	0.00	0.00	0.00	0.00	0.00
19.500	0.00	0.00	0.00	0.00	0.00
19.750	0.00	0.00	0.00	0.00	0.00
20.000	0.00	0.00	0.00	0.00	0.00
20.250	0.00	0.00	0.00	0.00	0.00
20.500	0.00	0.00	0.00	0.00	0.00
20.750	0.00	0.00	0.00	0.00	0.00
21.000	0.00	0.00	0.00	0.00	0.00
21.250	0.00	0.00	0.00	0.00	0.00
21.500	0.00	0.00	0.00	0.00	0.00

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-2-P

Scenario: Pre-Development 2

Return Event: 2 years

Storm Event: 2-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
21.750	0.00	0.00	0.00	0.00	0.00
22.000	0.00	0.00	0.00	0.00	0.00
22.250	0.00	0.00	0.00	0.00	0.00
22.500	0.00	0.00	0.00	0.00	0.00
22.750	0.00	0.00	0.00	0.00	0.00
23.000	0.00	0.00	0.00	0.00	0.00
23.250	0.00	0.00	0.00	0.00	0.00
23.500	0.00	0.00	0.00	0.00	0.00
23.750	0.00	0.00	0.00	0.00	0.00
24.000	0.00	(N/A)	(N/A)	(N/A)	(N/A)

Pre-development Analysis Results

Subsection: Unit Hydrograph Summary

Label: DA-2-P

Scenario: Pre-Development 5

Return Event: 5 years

Storm Event: 5-YR

Storm Event	5-YR
Return Event	5 years
Duration	24.000 hours
Depth	4.12 in
Time of Concentration (Composite)	0.280 hours
Area (User Defined)	0.131 acres
<hr/>	
Computational Time Increment	0.037 hours
Time to Peak (Computed)	12.264 hours
Flow (Peak, Computed)	0.07 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.250 hours
Flow (Peak Interpolated Output)	0.07 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	58.000
Area (User Defined)	0.131 acres
Maximum Retention (Pervious)	7.24 in
Maximum Retention (Pervious, 20 percent)	1.45 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.72 in
Runoff Volume (Pervious)	343.617 ft ³
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	341.000 ft ³
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.280 hours
Computational Time Increment	0.037 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	0.53 ft ³ /s
Unit peak time, Tp	0.186 hours
Unit receding limb, Tr	0.746 hours
Total unit time, Tb	0.932 hours

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-2-P

Scenario: Pre-Development 5

Return Event: 5 years

Storm Event: 5-YR

Storm Event	5-YR
Return Event	5 years
Duration	24.000 hours
Depth	4.12 in
Time of Concentration (Composite)	0.280 hours
Area (User Defined)	0.131 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.850	0.00	0.00	0.00	0.01	0.02
12.100	0.03	0.05	0.06	0.07	0.06
12.350	0.06	0.05	0.05	0.04	0.04
12.600	0.04	0.03	0.03	0.03	0.02
12.850	0.02	0.02	0.02	0.02	0.02
13.100	0.02	0.02	0.02	0.02	0.01
13.350	0.01	0.01	0.01	0.01	0.01
13.600	0.01	0.01	0.01	0.01	0.01
13.850	0.01	0.01	0.01	0.01	0.01
14.100	0.01	0.01	0.01	0.01	0.01
14.350	0.01	0.01	0.01	0.01	0.01
14.600	0.01	0.01	0.01	0.01	0.01
14.850	0.01	0.01	0.01	0.01	0.01
15.100	0.01	0.01	0.01	0.01	0.01
15.350	0.01	0.01	0.01	0.01	0.01
15.600	0.01	0.01	0.01	0.01	0.01
15.850	0.01	0.01	0.01	0.01	0.01
16.100	0.01	0.01	0.01	0.01	0.01
16.350	0.01	0.01	0.01	0.01	0.01
16.600	0.01	0.01	0.01	0.01	0.00
16.850	0.00	0.00	0.00	0.00	0.00
17.100	0.00	0.00	0.00	0.00	0.00
17.350	0.00	0.00	0.00	0.00	0.00
17.600	0.00	0.00	0.00	0.00	0.00
17.850	0.00	0.00	0.00	0.00	0.00
18.100	0.00	0.00	0.00	0.00	0.00
18.350	0.00	0.00	0.00	0.00	0.00
18.600	0.00	0.00	0.00	0.00	0.00
18.850	0.00	0.00	0.00	0.00	0.00
19.100	0.00	0.00	0.00	0.00	0.00
19.350	0.00	0.00	0.00	0.00	0.00
19.600	0.00	0.00	0.00	0.00	0.00
19.850	0.00	0.00	0.00	0.00	0.00
20.100	0.00	0.00	0.00	0.00	0.00
20.350	0.00	0.00	0.00	0.00	0.00
20.600	0.00	0.00	0.00	0.00	0.00
20.850	0.00	0.00	0.00	0.00	0.00
21.100	0.00	0.00	0.00	0.00	0.00
21.350	0.00	0.00	0.00	0.00	0.00

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-2-P

Scenario: Pre-Development 5

Return Event: 5 years

Storm Event: 5-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
21.600	0.00	0.00	0.00	0.00	0.00
21.850	0.00	0.00	0.00	0.00	0.00
22.100	0.00	0.00	0.00	0.00	0.00
22.350	0.00	0.00	0.00	0.00	0.00
22.600	0.00	0.00	0.00	0.00	0.00
22.850	0.00	0.00	0.00	0.00	0.00
23.100	0.00	0.00	0.00	0.00	0.00
23.350	0.00	0.00	0.00	0.00	0.00
23.600	0.00	0.00	0.00	0.00	0.00
23.850	0.00	0.00	0.00	0.00	(N/A)

Pre-development Analysis Results

Subsection: Unit Hydrograph Summary
 Label: DA-2-P
 Scenario: Pre-Development 10

Return Event: 10 years
 Storm Event: 10-YR

Storm Event	10-YR
Return Event	10 years
Duration	24.000 hours
Depth	4.82 in
Time of Concentration (Composite)	0.280 hours
Area (User Defined)	0.131 acres
<hr/>	
Computational Time Increment	0.037 hours
Time to Peak (Computed)	12.264 hours
Flow (Peak, Computed)	0.11 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.250 hours
Flow (Peak Interpolated Output)	0.11 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	58.000
Area (User Defined)	0.131 acres
Maximum Retention (Pervious)	7.24 in
Maximum Retention (Pervious, 20 percent)	1.45 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.07 in
Runoff Volume (Pervious)	510.506 ft ³
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	507.000 ft ³
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.280 hours
Computational Time Increment	0.037 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	0.53 ft ³ /s
Unit peak time, Tp	0.186 hours
Unit receding limb, Tr	0.746 hours
Total unit time, Tb	0.932 hours

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-2-P

Scenario: Pre-Development 10

Return Event: 10 years

Storm Event: 10-YR

Storm Event	10-YR
Return Event	10 years
Duration	24.000 hours
Depth	4.82 in
Time of Concentration (Composite)	0.280 hours
Area (User Defined)	0.131 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.700	0.00	0.00	0.00	0.01	0.01
11.950	0.01	0.02	0.04	0.06	0.09
12.200	0.10	0.11	0.10	0.09	0.08
12.450	0.07	0.06	0.06	0.05	0.05
12.700	0.04	0.04	0.04	0.03	0.03
12.950	0.03	0.03	0.03	0.03	0.02
13.200	0.02	0.02	0.02	0.02	0.02
13.450	0.02	0.02	0.02	0.02	0.02
13.700	0.02	0.01	0.01	0.01	0.01
13.950	0.01	0.01	0.01	0.01	0.01
14.200	0.01	0.01	0.01	0.01	0.01
14.450	0.01	0.01	0.01	0.01	0.01
14.700	0.01	0.01	0.01	0.01	0.01
14.950	0.01	0.01	0.01	0.01	0.01
15.200	0.01	0.01	0.01	0.01	0.01
15.450	0.01	0.01	0.01	0.01	0.01
15.700	0.01	0.01	0.01	0.01	0.01
15.950	0.01	0.01	0.01	0.01	0.01
16.200	0.01	0.01	0.01	0.01	0.01
16.450	0.01	0.01	0.01	0.01	0.01
16.700	0.01	0.01	0.01	0.01	0.01
16.950	0.01	0.01	0.01	0.01	0.01
17.200	0.01	0.01	0.01	0.01	0.01
17.450	0.01	0.01	0.01	0.01	0.01
17.700	0.01	0.01	0.01	0.01	0.01
17.950	0.01	0.01	0.01	0.01	0.01
18.200	0.01	0.01	0.01	0.01	0.01
18.450	0.01	0.01	0.01	0.01	0.01
18.700	0.01	0.01	0.01	0.00	0.00
18.950	0.00	0.00	0.00	0.00	0.00
19.200	0.00	0.00	0.00	0.00	0.00
19.450	0.00	0.00	0.00	0.00	0.00
19.700	0.00	0.00	0.00	0.00	0.00
19.950	0.00	0.00	0.00	0.00	0.00
20.200	0.00	0.00	0.00	0.00	0.00
20.450	0.00	0.00	0.00	0.00	0.00
20.700	0.00	0.00	0.00	0.00	0.00
20.950	0.00	0.00	0.00	0.00	0.00
21.200	0.00	0.00	0.00	0.00	0.00

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-2-P

Scenario: Pre-Development 10

Return Event: 10 years

Storm Event: 10-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
21.450	0.00	0.00	0.00	0.00	0.00
21.700	0.00	0.00	0.00	0.00	0.00
21.950	0.00	0.00	0.00	0.00	0.00
22.200	0.00	0.00	0.00	0.00	0.00
22.450	0.00	0.00	0.00	0.00	0.00
22.700	0.00	0.00	0.00	0.00	0.00
22.950	0.00	0.00	0.00	0.00	0.00
23.200	0.00	0.00	0.00	0.00	0.00
23.450	0.00	0.00	0.00	0.00	0.00
23.700	0.00	0.00	0.00	0.00	0.00
23.950	0.00	0.00	(N/A)	(N/A)	(N/A)

Pre-development Analysis Results

Subsection: Unit Hydrograph Summary
 Label: DA-2-P
 Scenario: Pre-Development 25

Return Event: 25 years
 Storm Event: 25-YR

Storm Event	25-YR
Return Event	25 years
Duration	24.000 hours
Depth	5.83 in
Time of Concentration (Composite)	0.280 hours
Area (User Defined)	0.131 acres
<hr/>	
Computational Time Increment	0.037 hours
Time to Peak (Computed)	12.227 hours
Flow (Peak, Computed)	0.18 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.250 hours
Flow (Peak Interpolated Output)	0.18 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	58.000
Area (User Defined)	0.131 acres
Maximum Retention (Pervious)	7.24 in
Maximum Retention (Pervious, 20 percent)	1.45 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.65 in
Runoff Volume (Pervious)	787.239 ft ³
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	783.000 ft ³
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.280 hours
Computational Time Increment	0.037 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	0.53 ft ³ /s
Unit peak time, Tp	0.186 hours
Unit receding limb, Tr	0.746 hours
Total unit time, Tb	0.932 hours

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-2-P

Scenario: Pre-Development 25

Return Event: 25 years

Storm Event: 25-YR

Storm Event	25-YR
Return Event	25 years
Duration	24.000 hours
Depth	5.83 in
Time of Concentration (Composite)	0.280 hours
Area (User Defined)	0.131 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.350	0.00	0.00	0.00	0.00	0.00
11.600	0.01	0.01	0.01	0.01	0.02
11.850	0.02	0.03	0.04	0.05	0.08
12.100	0.11	0.15	0.18	0.18	0.17
12.350	0.15	0.13	0.11	0.10	0.09
12.600	0.08	0.07	0.06	0.06	0.05
12.850	0.05	0.05	0.04	0.04	0.04
13.100	0.04	0.04	0.03	0.03	0.03
13.350	0.03	0.03	0.03	0.03	0.03
13.600	0.02	0.02	0.02	0.02	0.02
13.850	0.02	0.02	0.02	0.02	0.02
14.100	0.02	0.02	0.02	0.02	0.02
14.350	0.02	0.02	0.02	0.02	0.02
14.600	0.02	0.02	0.02	0.01	0.01
14.850	0.01	0.01	0.01	0.01	0.01
15.100	0.01	0.01	0.01	0.01	0.01
15.350	0.01	0.01	0.01	0.01	0.01
15.600	0.01	0.01	0.01	0.01	0.01
15.850	0.01	0.01	0.01	0.01	0.01
16.100	0.01	0.01	0.01	0.01	0.01
16.350	0.01	0.01	0.01	0.01	0.01
16.600	0.01	0.01	0.01	0.01	0.01
16.850	0.01	0.01	0.01	0.01	0.01
17.100	0.01	0.01	0.01	0.01	0.01
17.350	0.01	0.01	0.01	0.01	0.01
17.600	0.01	0.01	0.01	0.01	0.01
17.850	0.01	0.01	0.01	0.01	0.01
18.100	0.01	0.01	0.01	0.01	0.01
18.350	0.01	0.01	0.01	0.01	0.01
18.600	0.01	0.01	0.01	0.01	0.01
18.850	0.01	0.01	0.01	0.01	0.01
19.100	0.01	0.01	0.01	0.01	0.01
19.350	0.01	0.01	0.01	0.01	0.01
19.600	0.01	0.01	0.01	0.01	0.01
19.850	0.01	0.01	0.01	0.01	0.01
20.100	0.01	0.01	0.01	0.01	0.01
20.350	0.01	0.01	0.01	0.01	0.01
20.600	0.01	0.01	0.01	0.01	0.01
20.850	0.01	0.01	0.01	0.01	0.01

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-2-P

Scenario: Pre-Development 25

Return Event: 25 years

Storm Event: 25-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
21.100	0.01	0.01	0.01	0.01	0.01
21.350	0.01	0.01	0.01	0.01	0.01
21.600	0.01	0.01	0.01	0.01	0.01
21.850	0.01	0.01	0.01	0.01	0.01
22.100	0.01	0.01	0.01	0.01	0.01
22.350	0.01	0.01	0.01	0.01	0.01
22.600	0.01	0.01	0.01	0.01	0.01
22.850	0.01	0.01	0.01	0.01	0.01
23.100	0.01	0.01	0.01	0.01	0.01
23.350	0.01	0.01	0.01	0.01	0.01
23.600	0.01	0.01	0.01	0.01	0.00
23.850	0.00	0.00	0.00	0.01	(N/A)

Pre-development Analysis Results

Subsection: Unit Hydrograph Summary
 Label: DA-2-P
 Scenario: Pre-Development 50

Return Event: 50 years
 Storm Event: 50-YR

Storm Event	50-YR
Return Event	50 years
Duration	24.000 hours
Depth	6.68 in
Time of Concentration (Composite)	0.280 hours
Area (User Defined)	0.131 acres
<hr/>	
Computational Time Increment	0.037 hours
Time to Peak (Computed)	12.227 hours
Flow (Peak, Computed)	0.25 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.250 hours
Flow (Peak Interpolated Output)	0.25 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	58.000
Area (User Defined)	0.131 acres
Maximum Retention (Pervious)	7.24 in
Maximum Retention (Pervious, 20 percent)	1.45 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.19 in
Runoff Volume (Pervious)	1,045.813 ft ³
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,041.000 ft ³
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.280 hours
Computational Time Increment	0.037 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	0.53 ft ³ /s
Unit peak time, Tp	0.186 hours
Unit receding limb, Tr	0.746 hours
Total unit time, Tb	0.932 hours

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-2-P

Scenario: Pre-Development 50

Return Event: 50 years

Storm Event: 50-YR

Storm Event	50-YR
Return Event	50 years
Duration	24.000 hours
Depth	6.68 in
Time of Concentration (Composite)	0.280 hours
Area (User Defined)	0.131 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.000	0.00	0.00	0.00	0.00	0.00
11.250	0.00	0.00	0.01	0.01	0.01
11.500	0.01	0.01	0.01	0.02	0.02
11.750	0.02	0.03	0.04	0.05	0.06
12.000	0.08	0.11	0.16	0.21	0.24
12.250	0.25	0.23	0.20	0.17	0.15
12.500	0.13	0.12	0.11	0.09	0.08
12.750	0.07	0.07	0.06	0.06	0.06
13.000	0.05	0.05	0.05	0.05	0.04
13.250	0.04	0.04	0.04	0.04	0.03
13.500	0.03	0.03	0.03	0.03	0.03
13.750	0.03	0.03	0.03	0.03	0.02
14.000	0.02	0.02	0.02	0.02	0.02
14.250	0.02	0.02	0.02	0.02	0.02
14.500	0.02	0.02	0.02	0.02	0.02
14.750	0.02	0.02	0.02	0.02	0.02
15.000	0.02	0.02	0.02	0.02	0.02
15.250	0.02	0.02	0.01	0.01	0.01
15.500	0.01	0.01	0.01	0.01	0.01
15.750	0.01	0.01	0.01	0.01	0.01
16.000	0.01	0.01	0.01	0.01	0.01
16.250	0.01	0.01	0.01	0.01	0.01
16.500	0.01	0.01	0.01	0.01	0.01
16.750	0.01	0.01	0.01	0.01	0.01
17.000	0.01	0.01	0.01	0.01	0.01
17.250	0.01	0.01	0.01	0.01	0.01
17.500	0.01	0.01	0.01	0.01	0.01
17.750	0.01	0.01	0.01	0.01	0.01
18.000	0.01	0.01	0.01	0.01	0.01
18.250	0.01	0.01	0.01	0.01	0.01
18.500	0.01	0.01	0.01	0.01	0.01
18.750	0.01	0.01	0.01	0.01	0.01
19.000	0.01	0.01	0.01	0.01	0.01
19.250	0.01	0.01	0.01	0.01	0.01
19.500	0.01	0.01	0.01	0.01	0.01
19.750	0.01	0.01	0.01	0.01	0.01
20.000	0.01	0.01	0.01	0.01	0.01
20.250	0.01	0.01	0.01	0.01	0.01
20.500	0.01	0.01	0.01	0.01	0.01

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-2-P

Scenario: Pre-Development 50

Return Event: 50 years

Storm Event: 50-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
20.750	0.01	0.01	0.01	0.01	0.01
21.000	0.01	0.01	0.01	0.01	0.01
21.250	0.01	0.01	0.01	0.01	0.01
21.500	0.01	0.01	0.01	0.01	0.01
21.750	0.01	0.01	0.01	0.01	0.01
22.000	0.01	0.01	0.01	0.01	0.01
22.250	0.01	0.01	0.01	0.01	0.01
22.500	0.01	0.01	0.01	0.01	0.01
22.750	0.01	0.01	0.01	0.01	0.01
23.000	0.01	0.01	0.01	0.01	0.01
23.250	0.01	0.01	0.01	0.01	0.01
23.500	0.01	0.01	0.01	0.01	0.01
23.750	0.01	0.01	0.01	0.01	0.01
24.000	0.01	(N/A)	(N/A)	(N/A)	(N/A)

Pre-development Analysis Results

Subsection: Unit Hydrograph Summary
 Label: DA-2-P
 Scenario: Pre-Development 100

Return Event: 100 years
 Storm Event: 100-YR

Storm Event	100-YR
Return Event	100 years
Duration	24.000 hours
Depth	7.60 in
Time of Concentration (Composite)	0.280 hours
Area (User Defined)	0.131 acres
<hr/>	
Computational Time Increment	0.037 hours
Time to Peak (Computed)	12.227 hours
Flow (Peak, Computed)	0.33 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.250 hours
Flow (Peak Interpolated Output)	0.33 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	58.000
Area (User Defined)	0.131 acres
Maximum Retention (Pervious)	7.24 in
Maximum Retention (Pervious, 20 percent)	1.45 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.83 in
Runoff Volume (Pervious)	1,346.639 ft ³
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,340.000 ft ³
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.280 hours
Computational Time Increment	0.037 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	0.53 ft ³ /s
Unit peak time, Tp	0.186 hours
Unit receding limb, Tr	0.746 hours
Total unit time, Tb	0.932 hours

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-2-P

Scenario: Pre-Development 100

Return Event: 100 years

Storm Event: 100-YR

Storm Event	100-YR
Return Event	100 years
Duration	24.000 hours
Depth	7.60 in
Time of Concentration (Composite)	0.280 hours
Area (User Defined)	0.131 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.550	0.00	0.00	0.00	0.00	0.00
10.800	0.00	0.00	0.00	0.00	0.00
11.050	0.01	0.01	0.01	0.01	0.01
11.300	0.01	0.01	0.01	0.02	0.02
11.550	0.02	0.02	0.03	0.03	0.04
11.800	0.05	0.05	0.07	0.09	0.11
12.050	0.15	0.21	0.28	0.32	0.33
12.300	0.30	0.26	0.22	0.19	0.17
12.550	0.15	0.13	0.12	0.11	0.09
12.800	0.09	0.08	0.07	0.07	0.07
13.050	0.06	0.06	0.06	0.05	0.05
13.300	0.05	0.05	0.04	0.04	0.04
13.550	0.04	0.04	0.04	0.03	0.03
13.800	0.03	0.03	0.03	0.03	0.03
14.050	0.03	0.03	0.03	0.03	0.03
14.300	0.03	0.03	0.03	0.03	0.03
14.550	0.03	0.02	0.02	0.02	0.02
14.800	0.02	0.02	0.02	0.02	0.02
15.050	0.02	0.02	0.02	0.02	0.02
15.300	0.02	0.02	0.02	0.02	0.02
15.550	0.02	0.02	0.02	0.02	0.02
15.800	0.02	0.02	0.02	0.02	0.02
16.050	0.02	0.02	0.02	0.02	0.02
16.300	0.02	0.02	0.02	0.02	0.02
16.550	0.02	0.02	0.02	0.02	0.01
16.800	0.01	0.01	0.01	0.01	0.01
17.050	0.01	0.01	0.01	0.01	0.01
17.300	0.01	0.01	0.01	0.01	0.01
17.550	0.01	0.01	0.01	0.01	0.01
17.800	0.01	0.01	0.01	0.01	0.01
18.050	0.01	0.01	0.01	0.01	0.01
18.300	0.01	0.01	0.01	0.01	0.01
18.550	0.01	0.01	0.01	0.01	0.01
18.800	0.01	0.01	0.01	0.01	0.01
19.050	0.01	0.01	0.01	0.01	0.01
19.300	0.01	0.01	0.01	0.01	0.01
19.550	0.01	0.01	0.01	0.01	0.01
19.800	0.01	0.01	0.01	0.01	0.01
20.050	0.01	0.01	0.01	0.01	0.01

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-2-P

Scenario: Pre-Development 100

Return Event: 100 years

Storm Event: 100-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
20.300	0.01	0.01	0.01	0.01	0.01
20.550	0.01	0.01	0.01	0.01	0.01
20.800	0.01	0.01	0.01	0.01	0.01
21.050	0.01	0.01	0.01	0.01	0.01
21.300	0.01	0.01	0.01	0.01	0.01
21.550	0.01	0.01	0.01	0.01	0.01
21.800	0.01	0.01	0.01	0.01	0.01
22.050	0.01	0.01	0.01	0.01	0.01
22.300	0.01	0.01	0.01	0.01	0.01
22.550	0.01	0.01	0.01	0.01	0.01
22.800	0.01	0.01	0.01	0.01	0.01
23.050	0.01	0.01	0.01	0.01	0.01
23.300	0.01	0.01	0.01	0.01	0.01
23.550	0.01	0.01	0.01	0.01	0.01
23.800	0.01	0.01	0.01	0.01	0.01

Pre-development Analysis Results

Subsection: Unit Hydrograph Summary

Label: DA-3-I

Scenario: Pre-Development 1

Return Event: 1 years

Storm Event: 1-YR

Storm Event	1-YR
Return Event	1 years
Duration	24.000 hours
Depth	2.73 in
Time of Concentration (Composite)	0.194 hours
Area (User Defined)	1.969 acres
<hr/>	
Computational Time Increment	0.026 hours
Time to Peak (Computed)	12.150 hours
Flow (Peak, Computed)	4.46 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	4.46 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	95.988
Area (User Defined)	1.969 acres
Maximum Retention (Pervious)	0.42 in
Maximum Retention (Pervious, 20 percent)	0.08 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.29 in
Runoff Volume (Pervious)	16,335.167 ft ³
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	16,306.000 ft ³
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.194 hours
Computational Time Increment	0.026 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	11.48 ft ³ /s
Unit peak time, Tp	0.130 hours
Unit receding limb, Tr	0.518 hours
Total unit time, Tb	0.648 hours

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-3-I

Scenario: Pre-Development 1

Return Event: 1 years

Storm Event: 1-YR

Storm Event	1-YR
Return Event	1 years
Duration	24.000 hours
Depth	2.73 in
Time of Concentration (Composite)	0.194 hours
Area (User Defined)	1.969 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
2.850	0.00	0.00	0.00	0.00	0.00
3.100	0.00	0.00	0.00	0.01	0.01
3.350	0.01	0.01	0.01	0.01	0.01
3.600	0.01	0.01	0.01	0.01	0.01
3.850	0.01	0.01	0.01	0.01	0.01
4.100	0.01	0.02	0.02	0.02	0.02
4.350	0.02	0.02	0.02	0.02	0.02
4.600	0.02	0.02	0.02	0.02	0.02
4.850	0.02	0.02	0.02	0.02	0.03
5.100	0.03	0.03	0.03	0.03	0.03
5.350	0.03	0.03	0.03	0.03	0.03
5.600	0.03	0.03	0.03	0.03	0.03
5.850	0.03	0.03	0.03	0.04	0.04
6.100	0.04	0.04	0.04	0.04	0.04
6.350	0.04	0.04	0.04	0.04	0.04
6.600	0.05	0.05	0.05	0.05	0.05
6.850	0.05	0.05	0.05	0.05	0.05
7.100	0.06	0.06	0.06	0.06	0.06
7.350	0.06	0.06	0.06	0.06	0.07
7.600	0.07	0.07	0.07	0.07	0.07
7.850	0.07	0.07	0.07	0.08	0.08
8.100	0.08	0.08	0.08	0.08	0.08
8.350	0.08	0.08	0.09	0.09	0.09
8.600	0.09	0.09	0.09	0.09	0.09
8.850	0.10	0.10	0.10	0.10	0.10
9.100	0.10	0.11	0.11	0.11	0.12
9.350	0.12	0.12	0.13	0.13	0.13
9.600	0.14	0.14	0.14	0.15	0.15
9.850	0.15	0.16	0.16	0.17	0.17
10.100	0.17	0.18	0.18	0.19	0.19
10.350	0.19	0.20	0.20	0.21	0.21
10.600	0.22	0.23	0.24	0.25	0.27
10.850	0.28	0.29	0.31	0.32	0.34
11.100	0.36	0.38	0.40	0.43	0.45
11.350	0.48	0.51	0.53	0.56	0.60
11.600	0.69	0.80	0.89	0.97	1.09
11.850	1.26	1.48	1.79	2.26	2.91
12.100	3.80	4.46	4.21	3.41	2.65
12.350	2.13	1.75	1.47	1.29	1.16

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 1 years

Label: DA-3-I

Storm Event: 1-YR

Scenario: Pre-Development 1

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
12.600	1.02	0.88	0.77	0.71	0.66
12.850	0.63	0.59	0.56	0.53	0.50
13.100	0.48	0.45	0.43	0.41	0.39
13.350	0.37	0.36	0.34	0.33	0.31
13.600	0.30	0.28	0.27	0.27	0.26
13.850	0.26	0.25	0.25	0.24	0.24
14.100	0.24	0.23	0.23	0.22	0.22
14.350	0.22	0.21	0.21	0.20	0.20
14.600	0.20	0.19	0.19	0.18	0.18
14.850	0.18	0.17	0.17	0.16	0.16
15.100	0.16	0.15	0.15	0.15	0.15
15.350	0.15	0.14	0.14	0.14	0.14
15.600	0.14	0.14	0.14	0.14	0.14
15.850	0.13	0.13	0.13	0.13	0.13
16.100	0.13	0.13	0.13	0.13	0.13
16.350	0.12	0.12	0.12	0.12	0.12
16.600	0.12	0.12	0.12	0.12	0.11
16.850	0.11	0.11	0.11	0.11	0.11
17.100	0.11	0.11	0.11	0.11	0.10
17.350	0.10	0.10	0.10	0.10	0.10
17.600	0.10	0.10	0.10	0.10	0.09
17.850	0.09	0.09	0.09	0.09	0.09
18.100	0.09	0.09	0.09	0.09	0.09
18.350	0.08	0.08	0.08	0.08	0.08
18.600	0.08	0.08	0.08	0.08	0.08
18.850	0.08	0.08	0.08	0.08	0.08
19.100	0.08	0.08	0.08	0.08	0.08
19.350	0.08	0.08	0.08	0.08	0.08
19.600	0.08	0.08	0.08	0.08	0.08
19.850	0.08	0.08	0.08	0.08	0.08
20.100	0.08	0.08	0.07	0.07	0.07
20.350	0.07	0.07	0.07	0.07	0.07
20.600	0.07	0.07	0.07	0.07	0.07
20.850	0.07	0.07	0.07	0.07	0.07
21.100	0.07	0.07	0.07	0.07	0.07
21.350	0.07	0.07	0.07	0.07	0.07
21.600	0.07	0.07	0.07	0.07	0.07
21.850	0.07	0.07	0.07	0.07	0.07
22.100	0.06	0.06	0.06	0.06	0.06
22.350	0.06	0.06	0.06	0.06	0.06
22.600	0.06	0.06	0.06	0.06	0.06
22.850	0.06	0.06	0.06	0.06	0.06
23.100	0.06	0.06	0.06	0.06	0.06
23.350	0.06	0.06	0.06	0.06	0.06
23.600	0.06	0.06	0.06	0.06	0.06
23.850	0.06	0.06	0.06	0.06	(N/A)

Pre-development Analysis Results

Subsection: Unit Hydrograph Summary
 Label: DA-3-I
 Scenario: Pre-Development 2

Return Event: 2 years
 Storm Event: 2-YR

Storm Event	2-YR
Return Event	2 years
Duration	24.000 hours
Depth	3.28 in
Time of Concentration (Composite)	0.194 hours
Area (User Defined)	1.969 acres
<hr/>	
Computational Time Increment	0.026 hours
Time to Peak (Computed)	12.150 hours
Flow (Peak, Computed)	5.45 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	5.44 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	95.988
Area (User Defined)	1.969 acres
Maximum Retention (Pervious)	0.42 in
Maximum Retention (Pervious, 20 percent)	0.08 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.83 in
Runoff Volume (Pervious)	20,204.322 ft ³
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	20,170.000 ft ³
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.194 hours
Computational Time Increment	0.026 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	11.48 ft ³ /s
Unit peak time, Tp	0.130 hours
Unit receding limb, Tr	0.518 hours
Total unit time, Tb	0.648 hours

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-3-I

Scenario: Pre-Development 2

Return Event: 2 years

Storm Event: 2-YR

Storm Event	2-YR
Return Event	2 years
Duration	24.000 hours
Depth	3.28 in
Time of Concentration (Composite)	0.194 hours
Area (User Defined)	1.969 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
2.400	0.00	0.00	0.00	0.00	0.00
2.650	0.00	0.00	0.01	0.01	0.01
2.900	0.01	0.01	0.01	0.01	0.01
3.150	0.01	0.01	0.01	0.01	0.01
3.400	0.02	0.02	0.02	0.02	0.02
3.650	0.02	0.02	0.02	0.02	0.02
3.900	0.02	0.02	0.02	0.02	0.03
4.150	0.03	0.03	0.03	0.03	0.03
4.400	0.03	0.03	0.03	0.03	0.03
4.650	0.03	0.03	0.03	0.04	0.04
4.900	0.04	0.04	0.04	0.04	0.04
5.150	0.04	0.04	0.04	0.04	0.04
5.400	0.04	0.04	0.04	0.05	0.05
5.650	0.05	0.05	0.05	0.05	0.05
5.900	0.05	0.05	0.05	0.05	0.05
6.150	0.05	0.05	0.06	0.06	0.06
6.400	0.06	0.06	0.06	0.06	0.06
6.650	0.07	0.07	0.07	0.07	0.07
6.900	0.07	0.07	0.07	0.08	0.08
7.150	0.08	0.08	0.08	0.08	0.08
7.400	0.08	0.09	0.09	0.09	0.09
7.650	0.09	0.09	0.09	0.10	0.10
7.900	0.10	0.10	0.10	0.10	0.10
8.150	0.11	0.11	0.11	0.11	0.11
8.400	0.11	0.11	0.12	0.12	0.12
8.650	0.12	0.12	0.12	0.12	0.13
8.900	0.13	0.13	0.13	0.13	0.14
9.150	0.14	0.14	0.15	0.15	0.15
9.400	0.16	0.16	0.17	0.17	0.18
9.650	0.18	0.19	0.19	0.19	0.20
9.900	0.20	0.21	0.21	0.22	0.22
10.150	0.23	0.23	0.24	0.24	0.25
10.400	0.25	0.26	0.26	0.27	0.28
10.650	0.29	0.31	0.32	0.34	0.35
10.900	0.37	0.39	0.41	0.43	0.45
11.150	0.48	0.51	0.54	0.57	0.60
11.400	0.64	0.67	0.70	0.75	0.86
11.650	0.99	1.10	1.21	1.36	1.56
11.900	1.83	2.20	2.78	3.57	4.65

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 2 years

Label: DA-3-I

Storm Event: 2-YR

Scenario: Pre-Development 2

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
12.150	5.44	5.13	4.16	3.23	2.59
12.400	2.12	1.79	1.56	1.40	1.23
12.650	1.07	0.94	0.86	0.80	0.76
12.900	0.72	0.68	0.65	0.61	0.58
13.150	0.54	0.52	0.49	0.47	0.45
13.400	0.43	0.42	0.40	0.38	0.36
13.650	0.34	0.33	0.32	0.32	0.31
13.900	0.30	0.30	0.29	0.29	0.28
14.150	0.28	0.28	0.27	0.27	0.26
14.400	0.26	0.25	0.25	0.24	0.24
14.650	0.23	0.23	0.22	0.22	0.21
14.900	0.21	0.20	0.20	0.19	0.19
15.150	0.19	0.18	0.18	0.18	0.18
15.400	0.17	0.17	0.17	0.17	0.17
15.650	0.17	0.17	0.17	0.16	0.16
15.900	0.16	0.16	0.16	0.16	0.16
16.150	0.16	0.15	0.15	0.15	0.15
16.400	0.15	0.15	0.15	0.15	0.14
16.650	0.14	0.14	0.14	0.14	0.14
16.900	0.14	0.14	0.13	0.13	0.13
17.150	0.13	0.13	0.13	0.13	0.12
17.400	0.12	0.12	0.12	0.12	0.12
17.650	0.12	0.12	0.11	0.11	0.11
17.900	0.11	0.11	0.11	0.11	0.11
18.150	0.10	0.10	0.10	0.10	0.10
18.400	0.10	0.10	0.10	0.10	0.10
18.650	0.10	0.10	0.10	0.10	0.10
18.900	0.10	0.10	0.10	0.10	0.10
19.150	0.10	0.10	0.10	0.10	0.10
19.400	0.10	0.10	0.09	0.09	0.09
19.650	0.09	0.09	0.09	0.09	0.09
19.900	0.09	0.09	0.09	0.09	0.09
20.150	0.09	0.09	0.09	0.09	0.09
20.400	0.09	0.09	0.09	0.09	0.09
20.650	0.09	0.09	0.09	0.09	0.09
20.900	0.09	0.09	0.09	0.09	0.08
21.150	0.08	0.08	0.08	0.08	0.08
21.400	0.08	0.08	0.08	0.08	0.08
21.650	0.08	0.08	0.08	0.08	0.08
21.900	0.08	0.08	0.08	0.08	0.08
22.150	0.08	0.08	0.08	0.08	0.08
22.400	0.08	0.08	0.08	0.08	0.08
22.650	0.08	0.07	0.07	0.07	0.07
22.900	0.07	0.07	0.07	0.07	0.07
23.150	0.07	0.07	0.07	0.07	0.07
23.400	0.07	0.07	0.07	0.07	0.07
23.650	0.07	0.07	0.07	0.07	0.07
23.900	0.07	0.07	0.07	(N/A)	(N/A)

Pre-development Analysis Results

Subsection: Unit Hydrograph Summary
 Label: DA-3-I
 Scenario: Pre-Development 5

Return Event: 5 years
 Storm Event: 5-YR

Storm Event	5-YR
Return Event	5 years
Duration	24.000 hours
Depth	4.12 in
Time of Concentration (Composite)	0.194 hours
Area (User Defined)	1.969 acres
<hr/>	
Computational Time Increment	0.026 hours
Time to Peak (Computed)	12.150 hours
Flow (Peak, Computed)	6.95 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	6.95 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	95.988
Area (User Defined)	1.969 acres
Maximum Retention (Pervious)	0.42 in
Maximum Retention (Pervious, 20 percent)	0.08 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.66 in
Runoff Volume (Pervious)	26,157.300 ft ³
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	26,114.000 ft ³
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.194 hours
Computational Time Increment	0.026 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	11.48 ft ³ /s
Unit peak time, Tp	0.130 hours
Unit receding limb, Tr	0.518 hours
Total unit time, Tb	0.648 hours

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-3-I

Scenario: Pre-Development 5

Return Event: 5 years

Storm Event: 5-YR

Storm Event	5-YR
Return Event	5 years
Duration	24.000 hours
Depth	4.12 in
Time of Concentration (Composite)	0.194 hours
Area (User Defined)	1.969 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
1.950	0.00	0.00	0.00	0.00	0.00
2.200	0.01	0.01	0.01	0.01	0.01
2.450	0.01	0.01	0.01	0.01	0.02
2.700	0.02	0.02	0.02	0.02	0.02
2.950	0.02	0.02	0.02	0.02	0.03
3.200	0.03	0.03	0.03	0.03	0.03
3.450	0.03	0.03	0.03	0.03	0.04
3.700	0.04	0.04	0.04	0.04	0.04
3.950	0.04	0.04	0.04	0.04	0.05
4.200	0.05	0.05	0.05	0.05	0.05
4.450	0.05	0.05	0.05	0.05	0.05
4.700	0.06	0.06	0.06	0.06	0.06
4.950	0.06	0.06	0.06	0.06	0.06
5.200	0.06	0.06	0.07	0.07	0.07
5.450	0.07	0.07	0.07	0.07	0.07
5.700	0.07	0.07	0.07	0.07	0.08
5.950	0.08	0.08	0.08	0.08	0.08
6.200	0.08	0.08	0.08	0.09	0.09
6.450	0.09	0.09	0.09	0.09	0.10
6.700	0.10	0.10	0.10	0.10	0.10
6.950	0.11	0.11	0.11	0.11	0.11
7.200	0.11	0.12	0.12	0.12	0.12
7.450	0.12	0.12	0.13	0.13	0.13
7.700	0.13	0.13	0.14	0.14	0.14
7.950	0.14	0.14	0.14	0.15	0.15
8.200	0.15	0.15	0.15	0.16	0.16
8.450	0.16	0.16	0.16	0.16	0.17
8.700	0.17	0.17	0.17	0.17	0.18
8.950	0.18	0.18	0.18	0.19	0.19
9.200	0.19	0.20	0.21	0.21	0.22
9.450	0.22	0.23	0.23	0.24	0.25
9.700	0.25	0.26	0.26	0.27	0.27
9.950	0.28	0.29	0.29	0.30	0.30
10.200	0.31	0.32	0.32	0.33	0.34
10.450	0.34	0.35	0.36	0.37	0.39
10.700	0.41	0.43	0.45	0.47	0.49
10.950	0.51	0.54	0.56	0.59	0.63
11.200	0.67	0.71	0.75	0.79	0.83
11.450	0.87	0.91	0.98	1.12	1.29

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 5 years

Label: DA-3-I

Storm Event: 5-YR

Scenario: Pre-Development 5

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.700	1.43	1.56	1.75	2.01	2.35
11.950	2.83	3.57	4.57	5.94	6.95
12.200	6.54	5.29	4.11	3.30	2.70
12.450	2.27	1.98	1.78	1.57	1.35
12.700	1.19	1.09	1.02	0.96	0.91
12.950	0.86	0.82	0.77	0.73	0.69
13.200	0.65	0.63	0.60	0.57	0.55
13.450	0.53	0.50	0.48	0.46	0.44
13.700	0.42	0.41	0.40	0.39	0.39
13.950	0.38	0.37	0.37	0.36	0.35
14.200	0.35	0.34	0.34	0.33	0.32
14.450	0.32	0.31	0.31	0.30	0.29
14.700	0.29	0.28	0.28	0.27	0.26
14.950	0.26	0.25	0.25	0.24	0.23
15.200	0.23	0.23	0.22	0.22	0.22
15.450	0.22	0.22	0.22	0.21	0.21
15.700	0.21	0.21	0.21	0.21	0.20
15.950	0.20	0.20	0.20	0.20	0.20
16.200	0.20	0.19	0.19	0.19	0.19
16.450	0.19	0.19	0.18	0.18	0.18
16.700	0.18	0.18	0.18	0.17	0.17
16.950	0.17	0.17	0.17	0.17	0.16
17.200	0.16	0.16	0.16	0.16	0.16
17.450	0.15	0.15	0.15	0.15	0.15
17.700	0.15	0.15	0.14	0.14	0.14
17.950	0.14	0.14	0.14	0.13	0.13
18.200	0.13	0.13	0.13	0.13	0.13
18.450	0.13	0.13	0.13	0.13	0.13
18.700	0.13	0.13	0.13	0.13	0.12
18.950	0.12	0.12	0.12	0.12	0.12
19.200	0.12	0.12	0.12	0.12	0.12
19.450	0.12	0.12	0.12	0.12	0.12
19.700	0.12	0.12	0.12	0.12	0.12
19.950	0.12	0.12	0.12	0.12	0.11
20.200	0.11	0.11	0.11	0.11	0.11
20.450	0.11	0.11	0.11	0.11	0.11
20.700	0.11	0.11	0.11	0.11	0.11
20.950	0.11	0.11	0.11	0.11	0.11
21.200	0.11	0.11	0.11	0.11	0.11
21.450	0.10	0.10	0.10	0.10	0.10
21.700	0.10	0.10	0.10	0.10	0.10
21.950	0.10	0.10	0.10	0.10	0.10
22.200	0.10	0.10	0.10	0.10	0.10
22.450	0.10	0.10	0.10	0.10	0.09
22.700	0.09	0.09	0.09	0.09	0.09
22.950	0.09	0.09	0.09	0.09	0.09
23.200	0.09	0.09	0.09	0.09	0.09
23.450	0.09	0.09	0.09	0.09	0.09

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-3-I

Scenario: Pre-Development 5

Return Event: 5 years

Storm Event: 5-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
23.700	0.09	0.09	0.09	0.09	0.08
23.950	0.09	0.09	(N/A)	(N/A)	(N/A)

Pre-development Analysis Results

Subsection: Unit Hydrograph Summary
 Label: DA-3-I
 Scenario: Pre-Development 10

Return Event: 10 years
 Storm Event: 10-YR

Storm Event	10-YR
Return Event	10 years
Duration	24.000 hours
Depth	4.82 in
Time of Concentration (Composite)	0.194 hours
Area (User Defined)	1.969 acres
<hr/>	
Computational Time Increment	0.026 hours
Time to Peak (Computed)	12.150 hours
Flow (Peak, Computed)	8.19 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	8.18 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	95.988
Area (User Defined)	1.969 acres
Maximum Retention (Pervious)	0.42 in
Maximum Retention (Pervious, 20 percent)	0.08 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	4.35 in
Runoff Volume (Pervious)	31,108.364 ft ³
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	31,057.000 ft ³
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.194 hours
Computational Time Increment	0.026 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	11.48 ft ³ /s
Unit peak time, Tp	0.130 hours
Unit receding limb, Tr	0.518 hours
Total unit time, Tb	0.648 hours

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-3-I

Scenario: Pre-Development 10

Return Event: 10 years

Storm Event: 10-YR

Storm Event	10-YR
Return Event	10 years
Duration	24.000 hours
Depth	4.82 in
Time of Concentration (Composite)	0.194 hours
Area (User Defined)	1.969 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
1.700	0.00	0.00	0.00	0.00	0.01
1.950	0.01	0.01	0.01	0.01	0.01
2.200	0.01	0.02	0.02	0.02	0.02
2.450	0.02	0.02	0.02	0.03	0.03
2.700	0.03	0.03	0.03	0.03	0.03
2.950	0.03	0.04	0.04	0.04	0.04
3.200	0.04	0.04	0.04	0.04	0.05
3.450	0.05	0.05	0.05	0.05	0.05
3.700	0.05	0.05	0.05	0.06	0.06
3.950	0.06	0.06	0.06	0.06	0.06
4.200	0.06	0.06	0.07	0.07	0.07
4.450	0.07	0.07	0.07	0.07	0.07
4.700	0.07	0.08	0.08	0.08	0.08
4.950	0.08	0.08	0.08	0.08	0.08
5.200	0.08	0.09	0.09	0.09	0.09
5.450	0.09	0.09	0.09	0.09	0.09
5.700	0.09	0.09	0.10	0.10	0.10
5.950	0.10	0.10	0.10	0.10	0.10
6.200	0.10	0.11	0.11	0.11	0.11
6.450	0.11	0.12	0.12	0.12	0.12
6.700	0.12	0.13	0.13	0.13	0.13
6.950	0.13	0.14	0.14	0.14	0.14
7.200	0.14	0.15	0.15	0.15	0.15
7.450	0.15	0.16	0.16	0.16	0.16
7.700	0.16	0.17	0.17	0.17	0.17
7.950	0.17	0.18	0.18	0.18	0.18
8.200	0.19	0.19	0.19	0.19	0.19
8.450	0.20	0.20	0.20	0.20	0.20
8.700	0.21	0.21	0.21	0.21	0.22
8.950	0.22	0.22	0.22	0.23	0.23
9.200	0.24	0.24	0.25	0.26	0.26
9.450	0.27	0.28	0.28	0.29	0.30
9.700	0.31	0.31	0.32	0.33	0.33
9.950	0.34	0.35	0.35	0.36	0.37
10.200	0.38	0.38	0.39	0.40	0.40
10.450	0.41	0.42	0.43	0.44	0.46
10.700	0.49	0.51	0.54	0.56	0.59
10.950	0.62	0.64	0.67	0.71	0.75
11.200	0.80	0.84	0.89	0.94	0.99

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 10 years

Label: DA-3-I

Storm Event: 10-YR

Scenario: Pre-Development 10

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.450	1.04	1.09	1.16	1.33	1.53
11.700	1.70	1.86	2.08	2.38	2.79
11.950	3.35	4.22	5.40	7.01	8.18
12.200	7.70	6.23	4.83	3.88	3.17
12.450	2.66	2.33	2.09	1.84	1.59
12.700	1.40	1.28	1.20	1.13	1.07
12.950	1.01	0.96	0.91	0.86	0.81
13.200	0.77	0.73	0.70	0.67	0.65
13.450	0.62	0.59	0.56	0.54	0.51
13.700	0.49	0.48	0.47	0.46	0.45
13.950	0.44	0.44	0.43	0.42	0.42
14.200	0.41	0.40	0.39	0.39	0.38
14.450	0.37	0.37	0.36	0.35	0.34
14.700	0.34	0.33	0.32	0.32	0.31
14.950	0.30	0.29	0.29	0.28	0.27
15.200	0.27	0.27	0.26	0.26	0.26
15.450	0.26	0.25	0.25	0.25	0.25
15.700	0.25	0.25	0.24	0.24	0.24
15.950	0.24	0.24	0.23	0.23	0.23
16.200	0.23	0.23	0.22	0.22	0.22
16.450	0.22	0.22	0.22	0.21	0.21
16.700	0.21	0.21	0.21	0.20	0.20
16.950	0.20	0.20	0.20	0.19	0.19
17.200	0.19	0.19	0.19	0.18	0.18
17.450	0.18	0.18	0.18	0.18	0.17
17.700	0.17	0.17	0.17	0.17	0.16
17.950	0.16	0.16	0.16	0.16	0.16
18.200	0.15	0.15	0.15	0.15	0.15
18.450	0.15	0.15	0.15	0.15	0.15
18.700	0.15	0.15	0.15	0.15	0.15
18.950	0.15	0.15	0.14	0.14	0.14
19.200	0.14	0.14	0.14	0.14	0.14
19.450	0.14	0.14	0.14	0.14	0.14
19.700	0.14	0.14	0.14	0.14	0.14
19.950	0.14	0.14	0.14	0.13	0.13
20.200	0.13	0.13	0.13	0.13	0.13
20.450	0.13	0.13	0.13	0.13	0.13
20.700	0.13	0.13	0.13	0.13	0.13
20.950	0.13	0.13	0.13	0.13	0.13
21.200	0.12	0.12	0.12	0.12	0.12
21.450	0.12	0.12	0.12	0.12	0.12
21.700	0.12	0.12	0.12	0.12	0.12
21.950	0.12	0.12	0.12	0.12	0.12
22.200	0.12	0.12	0.11	0.11	0.11
22.450	0.11	0.11	0.11	0.11	0.11
22.700	0.11	0.11	0.11	0.11	0.11
22.950	0.11	0.11	0.11	0.11	0.11
23.200	0.11	0.11	0.10	0.10	0.10

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-3-I

Scenario: Pre-Development 10

Return Event: 10 years

Storm Event: 10-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
23.450	0.10	0.10	0.10	0.10	0.10
23.700	0.10	0.10	0.10	0.10	0.10
23.950	0.10	0.10	(N/A)	(N/A)	(N/A)

Pre-development Analysis Results

Subsection: Unit Hydrograph Summary

Label: DA-3-I

Scenario: Pre-Development 25

Return Event: 25 years

Storm Event: 25-YR

Storm Event	25-YR
Return Event	25 years
Duration	24.000 hours
Depth	5.83 in
Time of Concentration (Composite)	0.194 hours
Area (User Defined)	1.969 acres
<hr/>	
Computational Time Increment	0.026 hours
Time to Peak (Computed)	12.150 hours
Flow (Peak, Computed)	9.97 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	9.97 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	95.988
Area (User Defined)	1.969 acres
Maximum Retention (Pervious)	0.42 in
Maximum Retention (Pervious, 20 percent)	0.08 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.36 in
Runoff Volume (Pervious)	38,287.724 ft ³
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	38,226.000 ft ³
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.194 hours
Computational Time Increment	0.026 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	11.48 ft ³ /s
Unit peak time, Tp	0.130 hours
Unit receding limb, Tr	0.518 hours
Total unit time, Tb	0.648 hours

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-3-I

Scenario: Pre-Development 25

Return Event: 25 years

Storm Event: 25-YR

Storm Event	25-YR
Return Event	25 years
Duration	24.000 hours
Depth	5.83 in
Time of Concentration (Composite)	0.194 hours
Area (User Defined)	1.969 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
1.400	0.00	0.00	0.00	0.00	0.01
1.650	0.01	0.01	0.01	0.01	0.02
1.900	0.02	0.02	0.02	0.02	0.03
2.150	0.03	0.03	0.03	0.03	0.03
2.400	0.04	0.04	0.04	0.04	0.04
2.650	0.04	0.05	0.05	0.05	0.05
2.900	0.05	0.05	0.06	0.06	0.06
3.150	0.06	0.06	0.06	0.07	0.07
3.400	0.07	0.07	0.07	0.07	0.07
3.650	0.08	0.08	0.08	0.08	0.08
3.900	0.08	0.08	0.09	0.09	0.09
4.150	0.09	0.09	0.09	0.09	0.09
4.400	0.10	0.10	0.10	0.10	0.10
4.650	0.10	0.10	0.10	0.11	0.11
4.900	0.11	0.11	0.11	0.11	0.11
5.150	0.11	0.11	0.12	0.12	0.12
5.400	0.12	0.12	0.12	0.12	0.12
5.650	0.12	0.13	0.13	0.13	0.13
5.900	0.13	0.13	0.13	0.13	0.14
6.150	0.14	0.14	0.14	0.14	0.15
6.400	0.15	0.15	0.15	0.16	0.16
6.650	0.16	0.16	0.16	0.17	0.17
6.900	0.17	0.17	0.18	0.18	0.18
7.150	0.18	0.19	0.19	0.19	0.19
7.400	0.20	0.20	0.20	0.20	0.21
7.650	0.21	0.21	0.21	0.22	0.22
7.900	0.22	0.22	0.23	0.23	0.23
8.150	0.23	0.24	0.24	0.24	0.24
8.400	0.25	0.25	0.25	0.26	0.26
8.650	0.26	0.26	0.27	0.27	0.27
8.900	0.27	0.28	0.28	0.28	0.29
9.150	0.29	0.30	0.31	0.32	0.32
9.400	0.33	0.34	0.35	0.36	0.37
9.650	0.37	0.38	0.39	0.40	0.41
9.900	0.42	0.43	0.43	0.44	0.45
10.150	0.46	0.47	0.48	0.49	0.50
10.400	0.50	0.51	0.52	0.53	0.55
10.650	0.58	0.61	0.64	0.67	0.70
10.900	0.73	0.76	0.80	0.83	0.88

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-3-I

Scenario: Pre-Development 25

Return Event: 25 years

Storm Event: 25-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.150	0.93	0.98	1.04	1.10	1.16
11.400	1.22	1.28	1.34	1.43	1.64
11.650	1.89	2.09	2.28	2.55	2.92
11.900	3.41	4.10	5.15	6.59	8.54
12.150	9.97	9.37	7.58	5.88	4.71
12.400	3.85	3.24	2.83	2.54	2.23
12.650	1.93	1.70	1.55	1.45	1.37
12.900	1.30	1.23	1.16	1.10	1.04
13.150	0.98	0.93	0.89	0.85	0.82
13.400	0.78	0.75	0.72	0.68	0.65
13.650	0.62	0.60	0.58	0.57	0.56
13.900	0.55	0.54	0.53	0.52	0.51
14.150	0.50	0.50	0.49	0.48	0.47
14.400	0.46	0.45	0.44	0.44	0.43
14.650	0.42	0.41	0.40	0.39	0.38
14.900	0.38	0.37	0.36	0.35	0.34
15.150	0.33	0.33	0.32	0.32	0.32
15.400	0.31	0.31	0.31	0.31	0.30
15.650	0.30	0.30	0.30	0.29	0.29
15.900	0.29	0.29	0.29	0.28	0.28
16.150	0.28	0.28	0.28	0.27	0.27
16.400	0.27	0.27	0.26	0.26	0.26
16.650	0.26	0.25	0.25	0.25	0.25
16.900	0.24	0.24	0.24	0.24	0.24
17.150	0.23	0.23	0.23	0.23	0.22
17.400	0.22	0.22	0.22	0.22	0.21
17.650	0.21	0.21	0.21	0.20	0.20
17.900	0.20	0.20	0.19	0.19	0.19
18.150	0.19	0.19	0.19	0.18	0.18
18.400	0.18	0.18	0.18	0.18	0.18
18.650	0.18	0.18	0.18	0.18	0.18
18.900	0.18	0.18	0.18	0.18	0.18
19.150	0.17	0.17	0.17	0.17	0.17
19.400	0.17	0.17	0.17	0.17	0.17
19.650	0.17	0.17	0.17	0.17	0.17
19.900	0.17	0.17	0.16	0.16	0.16
20.150	0.16	0.16	0.16	0.16	0.16
20.400	0.16	0.16	0.16	0.16	0.16
20.650	0.16	0.16	0.16	0.16	0.16
20.900	0.15	0.15	0.15	0.15	0.15
21.150	0.15	0.15	0.15	0.15	0.15
21.400	0.15	0.15	0.15	0.15	0.15
21.650	0.15	0.15	0.14	0.14	0.14
21.900	0.14	0.14	0.14	0.14	0.14
22.150	0.14	0.14	0.14	0.14	0.14
22.400	0.14	0.14	0.14	0.14	0.14
22.650	0.13	0.13	0.13	0.13	0.13
22.900	0.13	0.13	0.13	0.13	0.13

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-3-I

Scenario: Pre-Development 25

Return Event: 25 years

Storm Event: 25-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
23.150	0.13	0.13	0.13	0.13	0.13
23.400	0.13	0.13	0.13	0.12	0.12
23.650	0.12	0.12	0.12	0.12	0.12
23.900	0.12	0.12	0.13	(N/A)	(N/A)

Pre-development Analysis Results

Subsection: Unit Hydrograph Summary
 Label: DA-3-I
 Scenario: Pre-Development 50

Return Event: 50 years
 Storm Event: 50-YR

Storm Event	50-YR
Return Event	50 years
Duration	24.000 hours
Depth	6.68 in
Time of Concentration (Composite)	0.194 hours
Area (User Defined)	1.969 acres
<hr/>	
Computational Time Increment	0.026 hours
Time to Peak (Computed)	12.150 hours
Flow (Peak, Computed)	11.47 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	11.46 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	95.988
Area (User Defined)	1.969 acres
Maximum Retention (Pervious)	0.42 in
Maximum Retention (Pervious, 20 percent)	0.08 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.20 in
Runoff Volume (Pervious)	44,338.620 ft ³
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	44,268.000 ft ³
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.194 hours
Computational Time Increment	0.026 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	11.48 ft ³ /s
Unit peak time, Tp	0.130 hours
Unit receding limb, Tr	0.518 hours
Total unit time, Tb	0.648 hours

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-3-I

Scenario: Pre-Development 50

Return Event: 50 years

Storm Event: 50-YR

Storm Event	50-YR
Return Event	50 years
Duration	24.000 hours
Depth	6.68 in
Time of Concentration (Composite)	0.194 hours
Area (User Defined)	1.969 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
1.250	0.00	0.00	0.00	0.01	0.01
1.500	0.01	0.01	0.02	0.02	0.02
1.750	0.02	0.03	0.03	0.03	0.03
2.000	0.03	0.04	0.04	0.04	0.04
2.250	0.05	0.05	0.05	0.05	0.05
2.500	0.06	0.06	0.06	0.06	0.06
2.750	0.07	0.07	0.07	0.07	0.07
3.000	0.08	0.08	0.08	0.08	0.08
3.250	0.08	0.09	0.09	0.09	0.09
3.500	0.09	0.09	0.10	0.10	0.10
3.750	0.10	0.10	0.10	0.11	0.11
4.000	0.11	0.11	0.11	0.11	0.11
4.250	0.12	0.12	0.12	0.12	0.12
4.500	0.12	0.12	0.13	0.13	0.13
4.750	0.13	0.13	0.13	0.13	0.13
5.000	0.14	0.14	0.14	0.14	0.14
5.250	0.14	0.14	0.14	0.15	0.15
5.500	0.15	0.15	0.15	0.15	0.15
5.750	0.15	0.16	0.16	0.16	0.16
6.000	0.16	0.16	0.16	0.17	0.17
6.250	0.17	0.17	0.18	0.18	0.18
6.500	0.18	0.19	0.19	0.19	0.20
6.750	0.20	0.20	0.20	0.21	0.21
7.000	0.21	0.21	0.22	0.22	0.22
7.250	0.23	0.23	0.23	0.23	0.24
7.500	0.24	0.24	0.25	0.25	0.25
7.750	0.25	0.26	0.26	0.26	0.27
8.000	0.27	0.27	0.28	0.28	0.28
8.250	0.28	0.29	0.29	0.29	0.29
8.500	0.30	0.30	0.30	0.31	0.31
8.750	0.31	0.32	0.32	0.32	0.32
9.000	0.33	0.33	0.34	0.34	0.35
9.250	0.36	0.37	0.38	0.39	0.40
9.500	0.41	0.42	0.43	0.44	0.45
9.750	0.46	0.47	0.48	0.49	0.50
10.000	0.51	0.52	0.53	0.54	0.55
10.250	0.56	0.57	0.58	0.59	0.60
10.500	0.61	0.62	0.64	0.67	0.70
10.750	0.74	0.78	0.81	0.85	0.89

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 50 years

Label: DA-3-I

Storm Event: 50-YR

Scenario: Pre-Development 50

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.000	0.92	0.96	1.02	1.08	1.14
11.250	1.21	1.28	1.34	1.42	1.48
11.500	1.55	1.66	1.89	2.18	2.42
11.750	2.63	2.94	3.37	3.94	4.72
12.000	5.94	7.58	9.83	11.46	10.77
12.250	8.71	6.75	5.42	4.42	3.72
12.500	3.25	2.92	2.56	2.21	1.95
12.750	1.78	1.67	1.57	1.49	1.41
13.000	1.34	1.26	1.19	1.13	1.07
13.250	1.02	0.98	0.94	0.90	0.86
13.500	0.82	0.78	0.75	0.71	0.69
13.750	0.67	0.65	0.64	0.63	0.62
14.000	0.61	0.60	0.59	0.58	0.57
14.250	0.56	0.55	0.54	0.53	0.52
14.500	0.51	0.50	0.49	0.48	0.47
14.750	0.46	0.45	0.44	0.43	0.42
15.000	0.41	0.40	0.39	0.38	0.38
15.250	0.37	0.37	0.36	0.36	0.36
15.500	0.35	0.35	0.35	0.35	0.34
15.750	0.34	0.34	0.34	0.33	0.33
16.000	0.33	0.33	0.32	0.32	0.32
16.250	0.32	0.31	0.31	0.31	0.30
16.500	0.30	0.30	0.30	0.29	0.29
16.750	0.29	0.29	0.28	0.28	0.28
17.000	0.28	0.27	0.27	0.27	0.27
17.250	0.26	0.26	0.26	0.25	0.25
17.500	0.25	0.25	0.24	0.24	0.24
17.750	0.24	0.23	0.23	0.23	0.23
18.000	0.22	0.22	0.22	0.22	0.21
18.250	0.21	0.21	0.21	0.21	0.21
18.500	0.21	0.21	0.21	0.21	0.21
18.750	0.21	0.20	0.20	0.20	0.20
19.000	0.20	0.20	0.20	0.20	0.20
19.250	0.20	0.20	0.20	0.20	0.20
19.500	0.20	0.19	0.19	0.19	0.19
19.750	0.19	0.19	0.19	0.19	0.19
20.000	0.19	0.19	0.19	0.19	0.19
20.250	0.19	0.19	0.18	0.18	0.18
20.500	0.18	0.18	0.18	0.18	0.18
20.750	0.18	0.18	0.18	0.18	0.18
21.000	0.18	0.18	0.17	0.17	0.17
21.250	0.17	0.17	0.17	0.17	0.17
21.500	0.17	0.17	0.17	0.17	0.17
21.750	0.17	0.17	0.17	0.16	0.16
22.000	0.16	0.16	0.16	0.16	0.16
22.250	0.16	0.16	0.16	0.16	0.16
22.500	0.16	0.16	0.16	0.15	0.15
22.750	0.15	0.15	0.15	0.15	0.15

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-3-I

Scenario: Pre-Development 50

Return Event: 50 years

Storm Event: 50-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
23.000	0.15	0.15	0.15	0.15	0.15
23.250	0.15	0.15	0.14	0.14	0.14
23.500	0.14	0.14	0.14	0.14	0.14
23.750	0.14	0.14	0.14	0.14	0.14
24.000	0.15	(N/A)	(N/A)	(N/A)	(N/A)

Pre-development Analysis Results

Subsection: Unit Hydrograph Summary
 Label: DA-3-I
 Scenario: Pre-Development 100

Return Event: 100 years
 Storm Event: 100-YR

Storm Event	100-YR
Return Event	100 years
Duration	24.000 hours
Depth	7.60 in
Time of Concentration (Composite)	0.194 hours
Area (User Defined)	1.969 acres
<hr/>	
Computational Time Increment	0.026 hours
Time to Peak (Computed)	12.150 hours
Flow (Peak, Computed)	13.09 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	13.08 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	95.988
Area (User Defined)	1.969 acres
Maximum Retention (Pervious)	0.42 in
Maximum Retention (Pervious, 20 percent)	0.08 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	7.12 in
Runoff Volume (Pervious)	50,893.749 ft ³
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	50,813.000 ft ³
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.194 hours
Computational Time Increment	0.026 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	11.48 ft ³ /s
Unit peak time, Tp	0.130 hours
Unit receding limb, Tr	0.518 hours
Total unit time, Tb	0.648 hours

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-3-I

Scenario: Pre-Development 100

Return Event: 100 years

Storm Event: 100-YR

Storm Event	100-YR
Return Event	100 years
Duration	24.000 hours
Depth	7.60 in
Time of Concentration (Composite)	0.194 hours
Area (User Defined)	1.969 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
1.100	0.00	0.00	0.00	0.01	0.01
1.350	0.01	0.02	0.02	0.02	0.03
1.600	0.03	0.03	0.03	0.04	0.04
1.850	0.04	0.05	0.05	0.05	0.05
2.100	0.06	0.06	0.06	0.06	0.07
2.350	0.07	0.07	0.07	0.08	0.08
2.600	0.08	0.08	0.08	0.09	0.09
2.850	0.09	0.09	0.09	0.10	0.10
3.100	0.10	0.10	0.10	0.11	0.11
3.350	0.11	0.11	0.11	0.12	0.12
3.600	0.12	0.12	0.12	0.13	0.13
3.850	0.13	0.13	0.13	0.13	0.14
4.100	0.14	0.14	0.14	0.14	0.14
4.350	0.15	0.15	0.15	0.15	0.15
4.600	0.15	0.15	0.16	0.16	0.16
4.850	0.16	0.16	0.16	0.16	0.17
5.100	0.17	0.17	0.17	0.17	0.17
5.350	0.17	0.18	0.18	0.18	0.18
5.600	0.18	0.18	0.18	0.18	0.19
5.850	0.19	0.19	0.19	0.19	0.19
6.100	0.19	0.20	0.20	0.20	0.21
6.350	0.21	0.21	0.22	0.22	0.22
6.600	0.22	0.23	0.23	0.23	0.24
6.850	0.24	0.24	0.25	0.25	0.25
7.100	0.26	0.26	0.26	0.27	0.27
7.350	0.27	0.28	0.28	0.28	0.29
7.600	0.29	0.29	0.29	0.30	0.30
7.850	0.30	0.31	0.31	0.31	0.32
8.100	0.32	0.32	0.33	0.33	0.33
8.350	0.34	0.34	0.34	0.35	0.35
8.600	0.35	0.36	0.36	0.36	0.37
8.850	0.37	0.37	0.38	0.38	0.38
9.100	0.39	0.40	0.41	0.42	0.43
9.350	0.44	0.45	0.46	0.47	0.49
9.600	0.50	0.51	0.52	0.53	0.54
9.850	0.55	0.56	0.58	0.59	0.60
10.100	0.61	0.62	0.63	0.64	0.66
10.350	0.67	0.68	0.69	0.70	0.72
10.600	0.74	0.77	0.81	0.85	0.89

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-3-I

Scenario: Pre-Development 100

Return Event: 100 years

Storm Event: 100-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.850	0.93	0.98	1.02	1.06	1.11
11.100	1.17	1.23	1.31	1.39	1.46
11.350	1.54	1.62	1.70	1.78	1.90
11.600	2.17	2.50	2.77	3.01	3.37
11.850	3.85	4.50	5.40	6.78	8.66
12.100	11.21	13.08	12.29	9.93	7.70
12.350	6.17	5.04	4.24	3.71	3.33
12.600	2.92	2.52	2.22	2.03	1.90
12.850	1.79	1.69	1.61	1.52	1.44
13.100	1.36	1.28	1.22	1.16	1.11
13.350	1.07	1.02	0.98	0.94	0.89
13.600	0.85	0.81	0.78	0.76	0.74
13.850	0.73	0.72	0.70	0.69	0.68
14.100	0.67	0.66	0.65	0.64	0.63
14.350	0.61	0.60	0.59	0.58	0.57
14.600	0.56	0.55	0.53	0.52	0.51
14.850	0.50	0.49	0.48	0.47	0.46
15.100	0.44	0.44	0.43	0.42	0.42
15.350	0.41	0.41	0.41	0.40	0.40
15.600	0.40	0.40	0.39	0.39	0.39
15.850	0.38	0.38	0.38	0.37	0.37
16.100	0.37	0.37	0.36	0.36	0.36
16.350	0.35	0.35	0.35	0.34	0.34
16.600	0.34	0.34	0.33	0.33	0.33
16.850	0.32	0.32	0.32	0.31	0.31
17.100	0.31	0.31	0.30	0.30	0.30
17.350	0.29	0.29	0.29	0.28	0.28
17.600	0.28	0.28	0.27	0.27	0.27
17.850	0.26	0.26	0.26	0.25	0.25
18.100	0.25	0.25	0.24	0.24	0.24
18.350	0.24	0.24	0.24	0.24	0.24
18.600	0.24	0.24	0.23	0.23	0.23
18.850	0.23	0.23	0.23	0.23	0.23
19.100	0.23	0.23	0.23	0.23	0.23
19.350	0.22	0.22	0.22	0.22	0.22
19.600	0.22	0.22	0.22	0.22	0.22
19.850	0.22	0.22	0.22	0.22	0.21
20.100	0.21	0.21	0.21	0.21	0.21
20.350	0.21	0.21	0.21	0.21	0.21
20.600	0.21	0.21	0.21	0.20	0.20
20.850	0.20	0.20	0.20	0.20	0.20
21.100	0.20	0.20	0.20	0.20	0.20
21.350	0.20	0.19	0.19	0.19	0.19
21.600	0.19	0.19	0.19	0.19	0.19
21.850	0.19	0.19	0.19	0.19	0.18
22.100	0.18	0.18	0.18	0.18	0.18
22.350	0.18	0.18	0.18	0.18	0.18
22.600	0.18	0.18	0.18	0.17	0.17

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-3-I

Scenario: Pre-Development 100

Return Event: 100 years

Storm Event: 100-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
22.850	0.17	0.17	0.17	0.17	0.17
23.100	0.17	0.17	0.17	0.17	0.17
23.350	0.16	0.16	0.16	0.16	0.16
23.600	0.16	0.16	0.16	0.16	0.16
23.850	0.16	0.16	0.16	0.17	(N/A)

Pre-development Analysis Results

Subsection: Unit Hydrograph Summary

Label: DA-3-P

Scenario: Pre-Development 1

Return Event: 1 years

Storm Event: 1-YR

Storm Event	1-YR
Return Event	1 years
Duration	24.000 hours
Depth	2.73 in
Time of Concentration (Composite)	0.394 hours
Area (User Defined)	7.353 acres
<hr/>	
Computational Time Increment	0.053 hours
Time to Peak (Computed)	12.619 hours
Flow (Peak, Computed)	0.42 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.600 hours
Flow (Peak Interpolated Output)	0.42 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	58.000
Area (User Defined)	7.353 acres
Maximum Retention (Pervious)	7.24 in
Maximum Retention (Pervious, 20 percent)	1.45 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.19 in
Runoff Volume (Pervious)	5,144.574 ft ³
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	5,073.000 ft ³
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.394 hours
Computational Time Increment	0.053 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	21.13 ft ³ /s
Unit peak time, Tp	0.263 hours
Unit receding limb, Tr	1.052 hours
Total unit time, Tb	1.314 hours

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-3-P

Scenario: Pre-Development 1

Return Event: 1 years

Storm Event: 1-YR

Storm Event	1-YR
Return Event	1 years
Duration	24.000 hours
Depth	2.73 in
Time of Concentration (Composite)	0.394 hours
Area (User Defined)	7.353 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
12.000	0.00	0.00	0.01	0.03	0.08
12.250	0.14	0.21	0.28	0.33	0.37
12.500	0.40	0.41	0.42	0.41	0.40
12.750	0.39	0.38	0.36	0.35	0.34
13.000	0.33	0.32	0.31	0.30	0.29
13.250	0.28	0.27	0.26	0.25	0.24
13.500	0.23	0.23	0.22	0.21	0.20
13.750	0.20	0.19	0.19	0.18	0.18
14.000	0.18	0.18	0.17	0.17	0.17
14.250	0.17	0.17	0.16	0.16	0.16
14.500	0.16	0.16	0.15	0.15	0.15
14.750	0.15	0.14	0.14	0.14	0.14
15.000	0.14	0.13	0.13	0.13	0.13
15.250	0.12	0.12	0.12	0.12	0.12
15.500	0.12	0.12	0.12	0.11	0.11
15.750	0.11	0.11	0.11	0.11	0.11
16.000	0.11	0.11	0.11	0.11	0.11
16.250	0.11	0.11	0.11	0.11	0.11
16.500	0.11	0.10	0.10	0.10	0.10
16.750	0.10	0.10	0.10	0.10	0.10
17.000	0.10	0.10	0.10	0.10	0.10
17.250	0.10	0.09	0.09	0.09	0.09
17.500	0.09	0.09	0.09	0.09	0.09
17.750	0.09	0.09	0.09	0.09	0.09
18.000	0.08	0.08	0.08	0.08	0.08
18.250	0.08	0.08	0.08	0.08	0.08
18.500	0.08	0.08	0.08	0.08	0.08
18.750	0.08	0.08	0.08	0.08	0.08
19.000	0.08	0.08	0.08	0.08	0.08
19.250	0.08	0.08	0.08	0.08	0.08
19.500	0.08	0.08	0.08	0.08	0.07
19.750	0.07	0.07	0.07	0.07	0.07
20.000	0.07	0.07	0.07	0.07	0.07
20.250	0.07	0.07	0.07	0.07	0.07
20.500	0.07	0.07	0.07	0.07	0.07
20.750	0.07	0.07	0.07	0.07	0.07
21.000	0.07	0.07	0.07	0.07	0.07
21.250	0.07	0.07	0.07	0.07	0.07
21.500	0.07	0.07	0.07	0.07	0.07

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-3-P

Scenario: Pre-Development 1

Return Event: 1 years

Storm Event: 1-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
21.750	0.07	0.07	0.07	0.07	0.07
22.000	0.07	0.07	0.07	0.07	0.07
22.250	0.07	0.07	0.07	0.07	0.07
22.500	0.07	0.06	0.06	0.06	0.06
22.750	0.06	0.06	0.06	0.06	0.06
23.000	0.06	0.06	0.06	0.06	0.06
23.250	0.06	0.06	0.06	0.06	0.06
23.500	0.06	0.06	0.06	0.06	0.06
23.750	0.06	0.06	0.06	0.06	0.06
24.000	0.06	(N/A)	(N/A)	(N/A)	(N/A)

Pre-development Analysis Results

Subsection: Unit Hydrograph Summary
 Label: DA-3-P
 Scenario: Pre-Development 2

Return Event: 2 years
 Storm Event: 2-YR

Storm Event	2-YR
Return Event	2 years
Duration	24.000 hours
Depth	3.28 in
Time of Concentration (Composite)	0.394 hours
Area (User Defined)	7.353 acres
<hr/>	
Computational Time Increment	0.053 hours
Time to Peak (Computed)	12.409 hours
Flow (Peak, Computed)	1.19 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.400 hours
Flow (Peak Interpolated Output)	1.19 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	58.000
Area (User Defined)	7.353 acres
Maximum Retention (Pervious)	7.24 in
Maximum Retention (Pervious, 20 percent)	1.45 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.37 in
Runoff Volume (Pervious)	9,870.118 ft ³
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	9,760.000 ft ³
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.394 hours
Computational Time Increment	0.053 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	21.13 ft ³ /s
Unit peak time, Tp	0.263 hours
Unit receding limb, Tr	1.052 hours
Total unit time, Tb	1.314 hours

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-3-P

Scenario: Pre-Development 2

Return Event: 2 years

Storm Event: 2-YR

Storm Event	2-YR
Return Event	2 years
Duration	24.000 hours
Depth	3.28 in
Time of Concentration (Composite)	0.394 hours
Area (User Defined)	7.353 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.950	0.00	0.01	0.04	0.14	0.31
12.200	0.56	0.81	1.01	1.13	1.19
12.450	1.18	1.14	1.10	1.05	0.99
12.700	0.93	0.87	0.82	0.77	0.72
12.950	0.69	0.66	0.63	0.60	0.57
13.200	0.55	0.52	0.50	0.48	0.46
13.450	0.45	0.43	0.41	0.40	0.38
13.700	0.37	0.36	0.34	0.34	0.33
13.950	0.32	0.32	0.31	0.31	0.30
14.200	0.30	0.29	0.29	0.28	0.28
14.450	0.28	0.27	0.27	0.27	0.26
14.700	0.26	0.25	0.25	0.24	0.24
14.950	0.24	0.23	0.23	0.22	0.22
15.200	0.21	0.21	0.21	0.20	0.20
15.450	0.20	0.20	0.20	0.19	0.19
15.700	0.19	0.19	0.19	0.19	0.19
15.950	0.19	0.19	0.18	0.18	0.18
16.200	0.18	0.18	0.18	0.18	0.18
16.450	0.18	0.18	0.17	0.17	0.17
16.700	0.17	0.17	0.17	0.17	0.17
16.950	0.16	0.16	0.16	0.16	0.16
17.200	0.16	0.16	0.16	0.15	0.15
17.450	0.15	0.15	0.15	0.15	0.15
17.700	0.15	0.14	0.14	0.14	0.14
17.950	0.14	0.14	0.14	0.13	0.13
18.200	0.13	0.13	0.13	0.13	0.13
18.450	0.13	0.13	0.13	0.13	0.13
18.700	0.13	0.13	0.13	0.13	0.12
18.950	0.12	0.12	0.12	0.12	0.12
19.200	0.12	0.12	0.12	0.12	0.12
19.450	0.12	0.12	0.12	0.12	0.12
19.700	0.12	0.12	0.12	0.12	0.12
19.950	0.12	0.12	0.12	0.12	0.12
20.200	0.12	0.12	0.12	0.12	0.12
20.450	0.12	0.12	0.12	0.12	0.12
20.700	0.11	0.11	0.11	0.11	0.11
20.950	0.11	0.11	0.11	0.11	0.11
21.200	0.11	0.11	0.11	0.11	0.11
21.450	0.11	0.11	0.11	0.11	0.11

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-3-P

Scenario: Pre-Development 2

Return Event: 2 years

Storm Event: 2-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
21.700	0.11	0.11	0.11	0.11	0.11
21.950	0.11	0.11	0.11	0.11	0.11
22.200	0.11	0.10	0.10	0.10	0.10
22.450	0.10	0.10	0.10	0.10	0.10
22.700	0.10	0.10	0.10	0.10	0.10
22.950	0.10	0.10	0.10	0.10	0.10
23.200	0.10	0.10	0.10	0.10	0.10
23.450	0.10	0.10	0.10	0.10	0.09
23.700	0.09	0.09	0.09	0.09	0.09
23.950	0.09	0.09	(N/A)	(N/A)	(N/A)

Pre-development Analysis Results

Subsection: Unit Hydrograph Summary
 Label: DA-3-P
 Scenario: Pre-Development 5

Return Event: 5 years
 Storm Event: 5-YR

Storm Event	5-YR
Return Event	5 years
Duration	24.000 hours
Depth	4.12 in
Time of Concentration (Composite)	0.394 hours
Area (User Defined)	7.353 acres
<hr/>	
Computational Time Increment	0.053 hours
Time to Peak (Computed)	12.356 hours
Flow (Peak, Computed)	3.16 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.350 hours
Flow (Peak Interpolated Output)	3.15 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	58.000
Area (User Defined)	7.353 acres
Maximum Retention (Pervious)	7.24 in
Maximum Retention (Pervious, 20 percent)	1.45 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.72 in
Runoff Volume (Pervious)	19,243.941 ft ³
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	19,072.000 ft ³
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.394 hours
Computational Time Increment	0.053 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	21.13 ft ³ /s
Unit peak time, Tp	0.263 hours
Unit receding limb, Tr	1.052 hours
Total unit time, Tb	1.314 hours

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-3-P

Scenario: Pre-Development 5

Return Event: 5 years

Storm Event: 5-YR

Storm Event	5-YR
Return Event	5 years
Duration	24.000 hours
Depth	4.12 in
Time of Concentration (Composite)	0.394 hours
Area (User Defined)	7.353 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.750	0.00	0.00	0.01	0.04	0.10
12.000	0.23	0.48	0.91	1.50	2.17
12.250	2.72	3.04	3.15	3.08	2.89
12.500	2.68	2.48	2.30	2.12	1.94
12.750	1.79	1.64	1.52	1.41	1.33
13.000	1.25	1.19	1.13	1.07	1.02
13.250	0.97	0.92	0.88	0.84	0.81
13.500	0.78	0.75	0.72	0.69	0.66
13.750	0.63	0.61	0.60	0.58	0.57
14.000	0.56	0.55	0.54	0.53	0.52
14.250	0.51	0.51	0.50	0.49	0.48
14.500	0.48	0.47	0.46	0.45	0.45
14.750	0.44	0.43	0.42	0.41	0.41
15.000	0.40	0.39	0.38	0.37	0.37
15.250	0.36	0.35	0.35	0.34	0.34
15.500	0.34	0.34	0.33	0.33	0.33
15.750	0.33	0.32	0.32	0.32	0.32
16.000	0.32	0.31	0.31	0.31	0.31
16.250	0.31	0.30	0.30	0.30	0.30
16.500	0.30	0.29	0.29	0.29	0.29
16.750	0.29	0.28	0.28	0.28	0.28
17.000	0.27	0.27	0.27	0.27	0.27
17.250	0.26	0.26	0.26	0.26	0.25
17.500	0.25	0.25	0.25	0.25	0.24
17.750	0.24	0.24	0.24	0.23	0.23
18.000	0.23	0.23	0.22	0.22	0.22
18.250	0.22	0.22	0.21	0.21	0.21
18.500	0.21	0.21	0.21	0.21	0.21
18.750	0.21	0.21	0.21	0.21	0.21
19.000	0.21	0.21	0.20	0.20	0.20
19.250	0.20	0.20	0.20	0.20	0.20
19.500	0.20	0.20	0.20	0.20	0.20
19.750	0.20	0.20	0.20	0.20	0.20
20.000	0.20	0.20	0.19	0.19	0.19
20.250	0.19	0.19	0.19	0.19	0.19
20.500	0.19	0.19	0.19	0.19	0.19
20.750	0.19	0.19	0.19	0.19	0.19
21.000	0.18	0.18	0.18	0.18	0.18
21.250	0.18	0.18	0.18	0.18	0.18

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-3-P

Scenario: Pre-Development 5

Return Event: 5 years

Storm Event: 5-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
21.500	0.18	0.18	0.18	0.18	0.18
21.750	0.18	0.18	0.18	0.17	0.17
22.000	0.17	0.17	0.17	0.17	0.17
22.250	0.17	0.17	0.17	0.17	0.17
22.500	0.17	0.17	0.17	0.17	0.17
22.750	0.16	0.16	0.16	0.16	0.16
23.000	0.16	0.16	0.16	0.16	0.16
23.250	0.16	0.16	0.16	0.16	0.16
23.500	0.16	0.15	0.15	0.15	0.15
23.750	0.15	0.15	0.15	0.15	0.15
24.000	0.15	(N/A)	(N/A)	(N/A)	(N/A)

Pre-development Analysis Results

Subsection: Unit Hydrograph Summary
 Label: DA-3-P
 Scenario: Pre-Development 10

Return Event: 10 years
 Storm Event: 10-YR

Storm Event	10-YR
Return Event	10 years
Duration	24.000 hours
Depth	4.82 in
Time of Concentration (Composite)	0.394 hours
Area (User Defined)	7.353 acres
<hr/>	
Computational Time Increment	0.053 hours
Time to Peak (Computed)	12.356 hours
Flow (Peak, Computed)	5.21 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.350 hours
Flow (Peak Interpolated Output)	5.21 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	58.000
Area (User Defined)	7.353 acres
Maximum Retention (Pervious)	7.24 in
Maximum Retention (Pervious, 20 percent)	1.45 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.07 in
Runoff Volume (Pervious)	28,590.368 ft ³
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	28,364.000 ft ³
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.394 hours
Computational Time Increment	0.053 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	21.13 ft ³ /s
Unit peak time, Tp	0.263 hours
Unit receding limb, Tr	1.052 hours
Total unit time, Tb	1.314 hours

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)
 Label: DA-3-P
 Scenario: Pre-Development 10

Return Event: 10 years
 Storm Event: 10-YR

Storm Event	10-YR
Return Event	10 years
Duration	24.000 hours
Depth	4.82 in
Time of Concentration (Composite)	0.394 hours
Area (User Defined)	7.353 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.550	0.00	0.00	0.01	0.03	0.06
11.800	0.11	0.19	0.32	0.51	0.82
12.050	1.31	2.04	2.99	4.01	4.78
12.300	5.17	5.21	4.98	4.60	4.20
12.550	3.83	3.50	3.20	2.91	2.65
12.800	2.42	2.23	2.06	1.93	1.81
13.050	1.71	1.62	1.53	1.45	1.37
13.300	1.31	1.25	1.19	1.14	1.10
13.550	1.05	1.01	0.97	0.93	0.89
13.800	0.86	0.83	0.81	0.79	0.78
14.050	0.76	0.75	0.74	0.73	0.71
14.300	0.70	0.69	0.68	0.67	0.66
14.550	0.65	0.64	0.63	0.62	0.61
14.800	0.60	0.58	0.57	0.56	0.55
15.050	0.54	0.53	0.52	0.51	0.50
15.300	0.49	0.48	0.47	0.47	0.47
15.550	0.46	0.46	0.45	0.45	0.45
15.800	0.44	0.44	0.44	0.44	0.43
16.050	0.43	0.43	0.42	0.42	0.42
16.300	0.42	0.41	0.41	0.41	0.40
16.550	0.40	0.40	0.40	0.39	0.39
16.800	0.39	0.38	0.38	0.38	0.37
17.050	0.37	0.37	0.37	0.36	0.36
17.300	0.36	0.35	0.35	0.35	0.34
17.550	0.34	0.34	0.33	0.33	0.33
17.800	0.32	0.32	0.32	0.31	0.31
18.050	0.31	0.30	0.30	0.30	0.30
18.300	0.29	0.29	0.29	0.29	0.29
18.550	0.29	0.28	0.28	0.28	0.28
18.800	0.28	0.28	0.28	0.28	0.28
19.050	0.28	0.28	0.28	0.28	0.28
19.300	0.27	0.27	0.27	0.27	0.27
19.550	0.27	0.27	0.27	0.27	0.27
19.800	0.27	0.27	0.27	0.27	0.26
20.050	0.26	0.26	0.26	0.26	0.26
20.300	0.26	0.26	0.26	0.26	0.26
20.550	0.26	0.26	0.25	0.25	0.25
20.800	0.25	0.25	0.25	0.25	0.25
21.050	0.25	0.25	0.25	0.25	0.25

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-3-P

Scenario: Pre-Development 10

Return Event: 10 years

Storm Event: 10-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
21.300	0.24	0.24	0.24	0.24	0.24
21.550	0.24	0.24	0.24	0.24	0.24
21.800	0.24	0.24	0.24	0.23	0.23
22.050	0.23	0.23	0.23	0.23	0.23
22.300	0.23	0.23	0.23	0.23	0.23
22.550	0.22	0.22	0.22	0.22	0.22
22.800	0.22	0.22	0.22	0.22	0.22
23.050	0.22	0.22	0.21	0.21	0.21
23.300	0.21	0.21	0.21	0.21	0.21
23.550	0.21	0.21	0.21	0.21	0.20
23.800	0.20	0.20	0.20	0.20	0.20

Pre-development Analysis Results

Subsection: Unit Hydrograph Summary
 Label: DA-3-P
 Scenario: Pre-Development 25

Return Event: 25 years
 Storm Event: 25-YR

Storm Event	25-YR
Return Event	25 years
Duration	24.000 hours
Depth	5.83 in
Time of Concentration (Composite)	0.394 hours
Area (User Defined)	7.353 acres
<hr/>	
Computational Time Increment	0.053 hours
Time to Peak (Computed)	12.304 hours
Flow (Peak, Computed)	8.71 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.300 hours
Flow (Peak Interpolated Output)	8.68 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	58.000
Area (User Defined)	7.353 acres
Maximum Retention (Pervious)	7.24 in
Maximum Retention (Pervious, 20 percent)	1.45 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.65 in
Runoff Volume (Pervious)	44,088.571 ft ³
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	43,780.000 ft ³
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.394 hours
Computational Time Increment	0.053 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	21.13 ft ³ /s
Unit peak time, Tp	0.263 hours
Unit receding limb, Tr	1.052 hours
Total unit time, Tb	1.314 hours

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-3-P

Scenario: Pre-Development 25

Return Event: 25 years

Storm Event: 25-YR

Storm Event	25-YR
Return Event	25 years
Duration	24.000 hours
Depth	5.83 in
Time of Concentration (Composite)	0.394 hours
Area (User Defined)	7.353 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.150	0.00	0.00	0.01	0.01	0.03
11.400	0.05	0.08	0.11	0.16	0.21
11.650	0.29	0.38	0.50	0.65	0.85
11.900	1.11	1.48	2.02	2.85	4.06
12.150	5.56	7.11	8.22	8.68	8.59
12.400	8.10	7.38	6.65	6.01	5.45
12.650	4.93	4.46	4.03	3.67	3.35
12.900	3.09	2.87	2.69	2.53	2.38
13.150	2.25	2.13	2.01	1.91	1.82
13.400	1.74	1.66	1.59	1.52	1.46
13.650	1.40	1.34	1.29	1.24	1.20
13.900	1.17	1.14	1.12	1.10	1.08
14.150	1.06	1.04	1.03	1.01	0.99
14.400	0.98	0.96	0.95	0.93	0.91
14.650	0.90	0.88	0.87	0.85	0.83
14.900	0.82	0.80	0.79	0.77	0.75
15.150	0.74	0.72	0.71	0.69	0.68
15.400	0.68	0.67	0.66	0.66	0.65
15.650	0.64	0.64	0.64	0.63	0.63
15.900	0.62	0.62	0.61	0.61	0.61
16.150	0.60	0.60	0.59	0.59	0.58
16.400	0.58	0.58	0.57	0.57	0.56
16.650	0.56	0.55	0.55	0.55	0.54
16.900	0.54	0.53	0.53	0.52	0.52
17.150	0.52	0.51	0.51	0.50	0.50
17.400	0.49	0.49	0.48	0.48	0.47
17.650	0.47	0.47	0.46	0.46	0.45
17.900	0.45	0.44	0.44	0.43	0.43
18.150	0.42	0.42	0.42	0.41	0.41
18.400	0.41	0.40	0.40	0.40	0.40
18.650	0.40	0.40	0.40	0.39	0.39
18.900	0.39	0.39	0.39	0.39	0.39
19.150	0.39	0.39	0.38	0.38	0.38
19.400	0.38	0.38	0.38	0.38	0.38
19.650	0.38	0.38	0.37	0.37	0.37
19.900	0.37	0.37	0.37	0.37	0.37
20.150	0.37	0.36	0.36	0.36	0.36
20.400	0.36	0.36	0.36	0.36	0.36
20.650	0.36	0.35	0.35	0.35	0.35

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-3-P

Scenario: Pre-Development 25

Return Event: 25 years

Storm Event: 25-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
20.900	0.35	0.35	0.35	0.35	0.34
21.150	0.34	0.34	0.34	0.34	0.34
21.400	0.34	0.34	0.34	0.34	0.33
21.650	0.33	0.33	0.33	0.33	0.33
21.900	0.33	0.33	0.32	0.32	0.32
22.150	0.32	0.32	0.32	0.32	0.32
22.400	0.32	0.31	0.31	0.31	0.31
22.650	0.31	0.31	0.31	0.31	0.30
22.900	0.30	0.30	0.30	0.30	0.30
23.150	0.30	0.30	0.30	0.29	0.29
23.400	0.29	0.29	0.29	0.29	0.29
23.650	0.29	0.28	0.28	0.28	0.28
23.900	0.28	0.28	0.28	(N/A)	(N/A)

Pre-development Analysis Results

Subsection: Unit Hydrograph Summary
 Label: DA-3-P
 Scenario: Pre-Development 50

Return Event: 50 years
 Storm Event: 50-YR

Storm Event	50-YR
Return Event	50 years
Duration	24.000 hours
Depth	6.68 in
Time of Concentration (Composite)	0.394 hours
Area (User Defined)	7.353 acres
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Computational Time Increment	0.053 hours
Time to Peak (Computed)	12.304 hours
Flow (Peak, Computed)	11.98 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.300 hours
Flow (Peak Interpolated Output)	11.94 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	58.000
Area (User Defined)	7.353 acres
Maximum Retention (Pervious)	7.24 in
Maximum Retention (Pervious, 20 percent)	1.45 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.19 in
Runoff Volume (Pervious)	58,569.729 ft ³
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	58,191.000 ft ³
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.394 hours
Computational Time Increment	0.053 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	21.13 ft ³ /s
Unit peak time, Tp	0.263 hours
Unit receding limb, Tr	1.052 hours
Total unit time, Tb	1.314 hours

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-3-P

Scenario: Pre-Development 50

Return Event: 50 years

Storm Event: 50-YR

Storm Event	50-YR
Return Event	50 years
Duration	24.000 hours
Depth	6.68 in
Time of Concentration (Composite)	0.394 hours
Area (User Defined)	7.353 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.750	0.00	0.00	0.00	0.01	0.02
11.000	0.03	0.05	0.07	0.09	0.12
11.250	0.16	0.19	0.24	0.29	0.35
11.500	0.41	0.48	0.58	0.70	0.85
11.750	1.03	1.26	1.54	1.92	2.45
12.000	3.21	4.36	5.99	8.00	10.03
12.250	11.43	11.94	11.72	10.96	9.92
12.500	8.89	7.99	7.21	6.50	5.85
12.750	5.28	4.78	4.36	4.01	3.72
13.000	3.48	3.26	3.07	2.89	2.73
13.250	2.58	2.45	2.33	2.22	2.12
13.500	2.03	1.95	1.86	1.78	1.71
13.750	1.64	1.58	1.53	1.49	1.45
14.000	1.42	1.39	1.37	1.34	1.32
14.250	1.30	1.28	1.26	1.24	1.22
14.500	1.20	1.18	1.16	1.14	1.12
14.750	1.10	1.07	1.05	1.03	1.01
15.000	0.99	0.97	0.95	0.93	0.91
15.250	0.89	0.88	0.86	0.85	0.84
15.500	0.83	0.83	0.82	0.81	0.81
15.750	0.80	0.79	0.79	0.78	0.78
16.000	0.77	0.77	0.76	0.76	0.75
16.250	0.75	0.74	0.74	0.73	0.72
16.500	0.72	0.71	0.71	0.70	0.70
16.750	0.69	0.69	0.68	0.67	0.67
17.000	0.66	0.66	0.65	0.65	0.64
17.250	0.63	0.63	0.62	0.62	0.61
17.500	0.61	0.60	0.59	0.59	0.58
17.750	0.58	0.57	0.57	0.56	0.55
18.000	0.55	0.54	0.54	0.53	0.52
18.250	0.52	0.52	0.51	0.51	0.51
18.500	0.50	0.50	0.50	0.50	0.50
18.750	0.49	0.49	0.49	0.49	0.49
19.000	0.49	0.49	0.49	0.48	0.48
19.250	0.48	0.48	0.48	0.48	0.48
19.500	0.47	0.47	0.47	0.47	0.47
19.750	0.47	0.47	0.46	0.46	0.46
20.000	0.46	0.46	0.46	0.46	0.46
20.250	0.45	0.45	0.45	0.45	0.45

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-3-P

Scenario: Pre-Development 50

Return Event: 50 years

Storm Event: 50-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
20.500	0.45	0.45	0.44	0.44	0.44
20.750	0.44	0.44	0.44	0.44	0.43
21.000	0.43	0.43	0.43	0.43	0.43
21.250	0.43	0.42	0.42	0.42	0.42
21.500	0.42	0.42	0.42	0.41	0.41
21.750	0.41	0.41	0.41	0.41	0.41
22.000	0.40	0.40	0.40	0.40	0.40
22.250	0.40	0.40	0.39	0.39	0.39
22.500	0.39	0.39	0.39	0.38	0.38
22.750	0.38	0.38	0.38	0.38	0.38
23.000	0.37	0.37	0.37	0.37	0.37
23.250	0.37	0.37	0.36	0.36	0.36
23.500	0.36	0.36	0.36	0.35	0.35
23.750	0.35	0.35	0.35	0.35	0.35
24.000	0.35	(N/A)	(N/A)	(N/A)	(N/A)

Pre-development Analysis Results

Subsection: Unit Hydrograph Summary
 Label: DA-3-P
 Scenario: Pre-Development 100

Return Event: 100 years
 Storm Event: 100-YR

Storm Event	100-YR
Return Event	100 years
Duration	24.000 hours
Depth	7.60 in
Time of Concentration (Composite)	0.394 hours
Area (User Defined)	7.353 acres
<hr/>	
Computational Time Increment	0.053 hours
Time to Peak (Computed)	12.304 hours
Flow (Peak, Computed)	15.75 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.300 hours
Flow (Peak Interpolated Output)	15.71 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	58.000
Area (User Defined)	7.353 acres
Maximum Retention (Pervious)	7.24 in
Maximum Retention (Pervious, 20 percent)	1.45 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.83 in
Runoff Volume (Pervious)	75,417.225 ft ³
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	74,961.000 ft ³
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.394 hours
Computational Time Increment	0.053 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	21.13 ft ³ /s
Unit peak time, Tp	0.263 hours
Unit receding limb, Tr	1.052 hours
Total unit time, Tb	1.314 hours

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-3-P

Scenario: Pre-Development 100

Return Event: 100 years

Storm Event: 100-YR

Storm Event	100-YR
Return Event	100 years
Duration	24.000 hours
Depth	7.60 in
Time of Concentration (Composite)	0.394 hours
Area (User Defined)	7.353 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.300	0.00	0.00	0.01	0.01	0.02
10.550	0.03	0.04	0.05	0.07	0.09
10.800	0.11	0.13	0.15	0.18	0.21
11.050	0.24	0.28	0.32	0.37	0.42
11.300	0.48	0.55	0.63	0.71	0.80
11.550	0.90	1.04	1.21	1.42	1.68
11.800	2.00	2.39	2.91	3.62	4.63
12.050	6.15	8.27	10.85	13.42	15.16
12.300	15.71	15.32	14.26	12.84	11.46
12.550	10.26	9.22	8.28	7.44	6.69
12.800	6.05	5.50	5.05	4.68	4.36
13.050	4.09	3.84	3.62	3.41	3.22
13.300	3.05	2.89	2.76	2.64	2.52
13.550	2.42	2.31	2.21	2.12	2.03
13.800	1.96	1.90	1.84	1.80	1.76
14.050	1.73	1.69	1.66	1.63	1.61
14.300	1.58	1.55	1.53	1.50	1.48
14.550	1.45	1.43	1.40	1.38	1.35
14.800	1.33	1.30	1.27	1.25	1.22
15.050	1.20	1.17	1.14	1.12	1.10
15.300	1.08	1.06	1.05	1.04	1.02
15.550	1.02	1.01	1.00	0.99	0.98
15.800	0.98	0.97	0.96	0.96	0.95
16.050	0.94	0.94	0.93	0.92	0.92
16.300	0.91	0.90	0.90	0.89	0.88
16.550	0.87	0.87	0.86	0.85	0.85
16.800	0.84	0.83	0.83	0.82	0.81
17.050	0.81	0.80	0.79	0.78	0.78
17.300	0.77	0.76	0.76	0.75	0.74
17.550	0.73	0.73	0.72	0.71	0.71
17.800	0.70	0.69	0.68	0.68	0.67
18.050	0.66	0.66	0.65	0.64	0.64
18.300	0.63	0.63	0.62	0.62	0.62
18.550	0.61	0.61	0.61	0.61	0.60
18.800	0.60	0.60	0.60	0.60	0.60
19.050	0.59	0.59	0.59	0.59	0.59
19.300	0.59	0.58	0.58	0.58	0.58
19.550	0.58	0.58	0.57	0.57	0.57
19.800	0.57	0.57	0.57	0.56	0.56

Pre-development Analysis Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-3-P

Scenario: Pre-Development 100

Return Event: 100 years

Storm Event: 100-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
20.050	0.56	0.56	0.56	0.56	0.55
20.300	0.55	0.55	0.55	0.55	0.54
20.550	0.54	0.54	0.54	0.54	0.54
20.800	0.53	0.53	0.53	0.53	0.53
21.050	0.53	0.52	0.52	0.52	0.52
21.300	0.52	0.51	0.51	0.51	0.51
21.550	0.51	0.51	0.50	0.50	0.50
21.800	0.50	0.50	0.50	0.49	0.49
22.050	0.49	0.49	0.49	0.48	0.48
22.300	0.48	0.48	0.48	0.48	0.47
22.550	0.47	0.47	0.47	0.47	0.46
22.800	0.46	0.46	0.46	0.46	0.45
23.050	0.45	0.45	0.45	0.45	0.45
23.300	0.44	0.44	0.44	0.44	0.44
23.550	0.43	0.43	0.43	0.43	0.43
23.800	0.43	0.42	0.42	0.42	0.42

Pre-development Analysis Results

Subsection: Addition Summary

Label: O-1

Scenario: Pre-Development 1

Return Event: 1 years

Storm Event: 1-YR

Summary for Hydrograph Addition at 'O-1'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	DA-1-I
<Catchment to Outflow Node>	DA-1-P

Node Inflows

Inflow Type	Element	Volume (ft ³)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	DA-1-I	6,217.541	12.100	2.14
Flow (From)	DA-1-P	576.174	12.550	0.05
Flow (In)	O-1	6,793.716	12.100	2.14

Pre-development Analysis Results

Subsection: Addition Summary

Label: O-1

Scenario: Pre-Development 2

Return Event: 2 years

Storm Event: 2-YR

Summary for Hydrograph Addition at 'O-1'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	DA-1-I
<Catchment to Outflow Node>	DA-1-P

Node Inflows

Inflow Type	Element	Volume (ft ³)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	DA-1-I	7,580.069	12.100	2.58
Flow (From)	DA-1-P	1,107.669	12.350	0.15
Flow (In)	O-1	8,687.738	12.100	2.61

Pre-development Analysis Results

Subsection: Addition Summary

Label: O-1

Scenario: Pre-Development 5

Return Event: 5 years

Storm Event: 5-YR

Summary for Hydrograph Addition at 'O-1'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	DA-1-I
<Catchment to Outflow Node>	DA-1-P

Node Inflows

Inflow Type	Element	Volume (ft ³)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	DA-1-I	9,668.816	12.100	3.26
Flow (From)	DA-1-P	2,162.885	12.300	0.40
Flow (In)	O-1	11,831.701	12.100	3.42

Pre-development Analysis Results

Subsection: Addition Summary

Label: O-1

Scenario: Pre-Development 10

Return Event: 10 years

Storm Event: 10-YR

Summary for Hydrograph Addition at 'O-1'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	DA-1-I
<Catchment to Outflow Node>	DA-1-P

Node Inflows

Inflow Type	Element	Volume (ft ³)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	DA-1-I	11,401.855	12.100	3.81
Flow (From)	DA-1-P	3,215.651	12.250	0.67
Flow (In)	O-1	14,617.507	12.100	4.15

Pre-development Analysis Results

Subsection: Addition Summary

Label: O-1

Scenario: Pre-Development 25

Return Event: 25 years

Storm Event: 25-YR

Summary for Hydrograph Addition at 'O-1'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	DA-1-I
<Catchment to Outflow Node>	DA-1-P

Node Inflows

Inflow Type	Element	Volume (ft ³)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	DA-1-I	13,910.945	12.100	4.62
Flow (From)	DA-1-P	4,962.083	12.250	1.12
Flow (In)	O-1	18,873.029	12.100	5.26

Pre-development Analysis Results

Subsection: Addition Summary

Label: O-1

Scenario: Pre-Development 50

Return Event: 50 years

Storm Event: 50-YR

Summary for Hydrograph Addition at 'O-1'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	DA-1-I
<Catchment to Outflow Node>	DA-1-P

Node Inflows

Inflow Type	Element	Volume (ft ³)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	DA-1-I	16,023.353	12.100	5.30
Flow (From)	DA-1-P	6,594.435	12.250	1.54
Flow (In)	O-1	22,617.788	12.100	6.22

Pre-development Analysis Results

Subsection: Addition Summary
Label: O-1
Scenario: Pre-Development 100

Return Event: 100 years
Storm Event: 100-YR

Summary for Hydrograph Addition at 'O-1'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	DA-1-I
<Catchment to Outflow Node>	DA-1-P

Node Inflows

Inflow Type	Element	Volume (ft ³)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	DA-1-I	18,310.256	12.100	6.03
Flow (From)	DA-1-P	8,493.952	12.250	2.02
Flow (In)	O-1	26,804.207	12.100	7.29

Pre-development Analysis Results

Subsection: Addition Summary

Label: O-2

Scenario: Pre-Development 1

Return Event: 1 years

Storm Event: 1-YR

Summary for Hydrograph Addition at 'O-2'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	DA-2-I
<Catchment to Outflow Node>	DA-2-P

Node Inflows

Inflow Type	Element	Volume (ft ³)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	DA-2-I	967.090	12.100	0.34
Flow (From)	DA-2-P	90.945	12.500	0.01
Flow (In)	O-2	1,058.036	12.100	0.34

Pre-development Analysis Results

Subsection: Addition Summary

Label: O-2

Scenario: Pre-Development 2

Return Event: 2 years

Storm Event: 2-YR

Summary for Hydrograph Addition at 'O-2'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	DA-2-I
<Catchment to Outflow Node>	DA-2-P

Node Inflows

Inflow Type	Element	Volume (ft ³)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	DA-2-I	1,179.010	12.100	0.41
Flow (From)	DA-2-P	174.813	12.300	0.02
Flow (In)	O-2	1,353.823	12.100	0.41

Pre-development Analysis Results

Subsection: Addition Summary

Label: O-2

Scenario: Pre-Development 5

Return Event: 5 years

Storm Event: 5-YR

Summary for Hydrograph Addition at 'O-2'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	DA-2-I
<Catchment to Outflow Node>	DA-2-P

Node Inflows

Inflow Type	Element	Volume (ft ³)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	DA-2-I	1,503.883	12.100	0.51
Flow (From)	DA-2-P	341.320	12.250	0.07
Flow (In)	O-2	1,845.203	12.100	0.54

Pre-development Analysis Results

Subsection: Addition Summary
Label: O-2
Scenario: Pre-Development 10

Return Event: 10 years
Storm Event: 10-YR

Summary for Hydrograph Addition at 'O-2'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	DA-2-I
<Catchment to Outflow Node>	DA-2-P

Node Inflows

Inflow Type	Element	Volume (ft ³)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	DA-2-I	1,773.431	12.100	0.60
Flow (From)	DA-2-P	507.435	12.250	0.11
Flow (In)	O-2	2,280.866	12.100	0.66

Pre-development Analysis Results

Subsection: Addition Summary

Label: O-2

Scenario: Pre-Development 25

Return Event: 25 years

Storm Event: 25-YR

Summary for Hydrograph Addition at 'O-2'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	DA-2-I
<Catchment to Outflow Node>	DA-2-P

Node Inflows

Inflow Type	Element	Volume (ft ³)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	DA-2-I	2,163.682	12.100	0.73
Flow (From)	DA-2-P	782.995	12.250	0.18
Flow (In)	O-2	2,946.677	12.100	0.84

Pre-development Analysis Results

Subsection: Addition Summary

Label: O-2

Scenario: Pre-Development 50

Return Event: 50 years

Storm Event: 50-YR

Summary for Hydrograph Addition at 'O-2'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	DA-2-I
<Catchment to Outflow Node>	DA-2-P

Node Inflows

Inflow Type	Element	Volume (ft ³)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	DA-2-I	2,492.236	12.100	0.83
Flow (From)	DA-2-P	1,040.548	12.250	0.25
Flow (In)	O-2	3,532.785	12.100	0.99

Pre-development Analysis Results

Subsection: Addition Summary
Label: O-2
Scenario: Pre-Development 100

Return Event: 100 years
Storm Event: 100-YR

Summary for Hydrograph Addition at 'O-2'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	DA-2-I
<Catchment to Outflow Node>	DA-2-P

Node Inflows

Inflow Type	Element	Volume (ft ³)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	DA-2-I	2,847.930	12.100	0.95
Flow (From)	DA-2-P	1,340.251	12.250	0.33
Flow (In)	O-2	4,188.182	12.100	1.16

Pre-development Analysis Results

Subsection: Addition Summary

Label: O-3

Scenario: Pre-Development 1

Return Event: 1 years

Storm Event: 1-YR

Summary for Hydrograph Addition at 'O-3'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	DA-3-I
<Catchment to Outflow Node>	DA-3-P

Node Inflows

Inflow Type	Element	Volume (ft ³)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	DA-3-I	16,306.429	12.150	4.46
Flow (From)	DA-3-P	5,073.251	12.600	0.42
Flow (In)	O-3	21,379.680	12.150	4.49

Pre-development Analysis Results

Subsection: Addition Summary

Label: O-3

Scenario: Pre-Development 2

Return Event: 2 years

Storm Event: 2-YR

Summary for Hydrograph Addition at 'O-3'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	DA-3-I
<Catchment to Outflow Node>	DA-3-P

Node Inflows

Inflow Type	Element	Volume (ft ³)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	DA-3-I	20,169.680	12.150	5.44
Flow (From)	DA-3-P	9,760.057	12.400	1.19
Flow (In)	O-3	29,929.737	12.150	5.76

Pre-development Analysis Results

Subsection: Addition Summary

Label: O-3

Scenario: Pre-Development 5

Return Event: 5 years

Storm Event: 5-YR

Summary for Hydrograph Addition at 'O-3'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	DA-3-I
<Catchment to Outflow Node>	DA-3-P

Node Inflows

Inflow Type	Element	Volume (ft ³)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	DA-3-I	26,113.643	12.150	6.95
Flow (From)	DA-3-P	19,071.962	12.350	3.15
Flow (In)	O-3	45,185.605	12.200	8.71

Pre-development Analysis Results

Subsection: Addition Summary

Label: O-3

Scenario: Pre-Development 10

Return Event: 10 years

Storm Event: 10-YR

Summary for Hydrograph Addition at 'O-3'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	DA-3-I
<Catchment to Outflow Node>	DA-3-P

Node Inflows

Inflow Type	Element	Volume (ft ³)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	DA-3-I	31,057.246	12.150	8.18
Flow (From)	DA-3-P	28,364.346	12.350	5.21
Flow (In)	O-3	59,421.591	12.200	11.71

Pre-development Analysis Results

Subsection: Addition Summary

Label: O-3

Scenario: Pre-Development 25

Return Event: 25 years

Storm Event: 25-YR

Summary for Hydrograph Addition at 'O-3'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	DA-3-I
<Catchment to Outflow Node>	DA-3-P

Node Inflows

Inflow Type	Element	Volume (ft ³)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	DA-3-I	38,225.816	12.150	9.97
Flow (From)	DA-3-P	43,780.466	12.300	8.68
Flow (In)	O-3	82,006.282	12.200	16.48

Pre-development Analysis Results

Subsection: Addition Summary

Label: O-3

Scenario: Pre-Development 50

Return Event: 50 years

Storm Event: 50-YR

Summary for Hydrograph Addition at 'O-3'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	DA-3-I
<Catchment to Outflow Node>	DA-3-P

Node Inflows

Inflow Type	Element	Volume (ft ³)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	DA-3-I	44,267.646	12.150	11.46
Flow (From)	DA-3-P	58,191.068	12.300	11.94
Flow (In)	O-3	102,458.715	12.200	20.80

Pre-development Analysis Results

Subsection: Addition Summary
Label: O-3
Scenario: Pre-Development 100

Return Event: 100 years
Storm Event: 100-YR

Summary for Hydrograph Addition at 'O-3'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	DA-3-I
<Catchment to Outflow Node>	DA-3-P

Node Inflows

Inflow Type	Element	Volume (ft ³)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	DA-3-I	50,812.973	12.150	13.08
Flow (From)	DA-3-P	74,961.423	12.300	15.71
Flow (In)	O-3	125,774.395	12.200	25.71

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Appendix G | Post-Project Release Rate Calculations



Project: 401/433 WASHINGTON STREET Sheet: of
 Project #: 14000908C Scale:
 Calculated By: SM Date: 11/29/21 Checked By: Dat
 Element: POST-PROJECT RELEASE RATES Date:
 Engineers | Planners | Surveyors | Landscape Architects | Environmental Scientists

STUDY POINT 1

SUB-WATERSHED AREA INFORMATION:

	Pervious Area			Impervious Area		
	CN	AREA (AC)	Tc	CN	AREA (AC)	Tc
PRE-PROJECT AREA SP 1:	58	0.83	18 MIN	98	0.69	3 MIN
TOTAL SUB-WATERSHED AREA:			1.52			
POST-PROJECT AREA SP 1:	61	0.06	3 MIN	98	0.29	3 MIN
TOTAL SUB-WATERSHED AREA:			0.35			

* Tc FROM VTPSUHM OUTPUT, PATH SHOWN ON PLANS

PRE-PROJECT WITHOUT DETENTION FLOW RATE:

DETERMINE THE PRE DEVELOPMENT FLOW RATES. CALCULATE FLOW RATES USING SUB-WATERSHED AREA CN, Tc, AND A IN PONDPACK. RAINFALL DEPTHS ARE FROM NOAA.

	PRE FLOW RATES	ALLOWABLE FLOW
Q ₂	= 2.61 CFS	2.61 CFS
Q ₁₀	= 4.15 CFS	4.15 CFS
Q ₂₅	= 5.23 CFS	5.23 CFS
Q ₅₀	= 6.22 CFS	6.22 CFS
Q ₁₀₀	= 7.29 CFS	7.29 CFS

POST-PROJECT WITHOUT DETENTION FLOW RATE:

DETERMINE THE POST DEVELOPMENT FLOW RATES. CALCULATE FLOW RATES USING SUB-WATERSHED AREA CN, Tc, AND A IN PONDPACK. RAINFALL DEPTHS ARE FROM NOAA.

	POST FLOW RATES	ALLOWABLE FLOW
Q ₂	= 1.12 CFS	2.61 CFS
Q ₁₀	= 1.72 CFS	4.15 CFS
Q ₂₅	= 2.12 CFS	5.23 CFS
Q ₅₀	= 2.46 CFS	6.22 CFS
Q ₁₀₀	= 2.83 CFS	7.29 CFS

CALCULATION NOTES:

- 1) THE STUDY POINT IS THE ROADSIDE DITCH ON THE NORTH SIDE OF WASHINGTON STREET
- 2) ALL SOILS ARE 'B' SOILS.



Project: 401/433 WASHINGTON STREET Sheet: of
 Project #: 14000908C Scale:
 Calculated By: SM Date: 11/29/21 Checked By: Dat
 Element: POST-PROJECT RELEASE RATES Date:
 Engineers | Planners | Surveyors | Landscape Architects | Environmental Scientists

STUDY POINT 2

SUB-WATERSHED AREA INFORMATION:

	Pervious Area			Impervious Area		
	CN	AREA (AC)	Tc	CN	AREA (AC)	Tc
PRE-PROJECT AREA SP 1:	58	0.13	17 MIN	98	0.11	3 MIN
TOTAL SUB-WATERSHED AREA:			0.24			
POST-PROJECT AREA SP 1:	61	0.04	2 MIN	98	0.12	2 MIN
TOTAL SUB-WATERSHED AREA:			0.16			

* Tc FROM VTPSUHM OUTPUT, PATH SHOWN ON PLANS

PRE-PROJECT WITHOUT DETENTION FLOW RATE:

DETERMINE THE PRE DEVELOPMENT FLOW RATES. CALCULATE FLOW RATES USING SUB-WATERSHED AREA CN, Tc, AND A IN PONDPACK. RAINFALL DEPTHS ARE FROM NOAA.

	PRE FLOW RATES	ALLOWABLE FLOW
Q ₂ =	0.41 CFS	0.41 CFS
Q ₁₀ =	0.66 CFS	0.66 CFS
Q ₂₅ =	0.84 CFS	0.84 CFS
Q ₅₀ =	0.99 CFS	0.99 CFS
Q ₁₀₀ =	1.16 CFS	1.16 CFS

POST-PROJECT WITHOUT DETENTION FLOW RATE:

DETERMINE THE POST DEVELOPMENT FLOW RATES. CALCULATE FLOW RATES USING SUB-WATERSHED AREA CN, Tc, AND A IN PONDPACK. RAINFALL DEPTHS ARE FROM NOAA.

	POST FLOW RATES	ALLOWABLE FLOW
Q ₂ =	0.48 CFS	0.41 CFS
Q ₁₀ =	0.75 CFS	0.66 CFS
Q ₂₅ =	0.92 CFS	0.84 CFS
Q ₅₀ =	1.08 CFS	0.99 CFS
Q ₁₀₀ =	1.24 CFS	1.16 CFS

CALCULATION NOTES:

- 1) THE STUDY POINT IS THE CHERRY STREET MUNICIPAL STORMWATER CONVEYANCE SYSTEM. THE MINOR INCREASES IN FLOW ARE DE MINIMUS AND WILL NOT EXCEED THE CAPACITY OF THE DOWNSTREAM PIPE
- 2) ALL SOILS ARE 'B' SOILS.



Project: 401/433 WASHINGTON STREET Sheet: of
 Project #: 14000908C Scale:
 Calculated By: SM Date: 11/29/21 Checked By: Date:
 Element: POST PROJECT RELEASE RATES Date:
 Engineers | Planners | Surveyors | Landscape Architects | Environmental Scientists

SUB-WATERSHED AREA INFORMATION:

	Pervious Area			Impervious Area		
	CN	AREA (AC)	Tc	CN	AREA (AC)	Tc
POST TO BASIN A (MRC) AREA:	61	0.38	4 MIN	98	5.87	4 MIN
POST TO BASIN B (PO-2) AREA:	61	0.14	4 MIN	98	1.42	4 MIN
BASIN BYPASS AREA:	61	2.43	13 MIN	98	0.33	2 MIN
TOTAL SUB-WATERSHED AREA:		2.95			7.62	
TOTAL STUDY AREA (AC):			10.57			

* Tc FROM VTPSUHM OUTPUT, PATH SHOWN ON PLANS

POST-PROJECT WITHOUT DETENTION FLOW RATE:

DETERMINE THE POST DEVELOPMENT FLOW RATES WITHOUT DETENTION. CALCULATE FLOW RATES USING SUB-WATERSHED AREA CN, Tc, AND A IN PONDPACK. RAINFALL DEPTHS ARE FROM NOAA.

	POST TO BASIN A POST FLOW RATES	POST TO BASIN B POST FLOW RATES	BASIN BYPASS POST FLOW RATES
Q ₂ =	21.80 CFS	5.33 CFS	1.63 CFS
Q ₁₀ =	32.58 CFS	8.02 CFS	3.78 CFS
Q ₂₅ =	39.70 CFS	9.80 CFS	5.44 CFS
Q ₅₀ =	45.70 CFS	11.30 CFS	6.94 CFS
Q ₁₀₀ =	52.21 CFS	12.94 CFS	8.65 CFS

POST-PROJECT WITH DETENTION FLOW RATE:

DETERMINE THE POST-PROJECT FLOW RATES WITH DETENTION. CALCULATE FLOW RATES USING SUB-WATERSHED AREA CN, Tc, AND A IN HYDROCAD. RAINFALL DEPTHS ARE FROM PENNDOT PUB 584, CHAPTER 7, APPENDIX A.

	BASIN A OUTFLOW	BASIN B OUTFLOW	BASIN BYPASS POST FLOW RATES	TOTAL RELEASED	TOTAL POST ALLOWABLE
Q ₂ =	1.69 CFS	2.08 CFS	1.63 CFS	4.34 CFS	4.49 CFS
Q ₁₀ =	3.84 CFS	3.11 CFS	3.78 CFS	9.48 CFS	11.71 CFS
Q ₂₅ =	5.65 CFS	3.80 CFS	5.44 CFS	13.80 CFS	16.48 CFS
Q ₅₀ =	7.99 CFS	4.39 CFS	6.94 CFS	17.74 CFS	20.80 CFS
Q ₁₀₀ =	10.70 CFS	6.24 CFS	8.65 CFS	24.46 CFS	25.71 CFS

THE TOTAL RELEASED IS BASED ON THE ADDITION OF BASIN OUTFLOW & BASIN BYPASS FLOW HYDROGRAPHS AND NOT AN ADDITION OF THE PEAK FLOW RATES. THE TOTAL RELEASED FOR THE 2-YEAR THROUGH 100-YEAR STORMS IS LESS THAN THE TOTAL POST ALLOWABLE. THE POST-PROJECT 2-YEAR FLOW IS LESS THAN THE PRE-PROJECT 1-YEAR FLOW.

CALCULATION NOTES:

- 1) THE STUDY POINT IS IN THE SCHUYLKILL RIVER.
- 2) ALL SOILS ARE 'B' SOILS.

1.2” STORM EVENT ANALYSIS

1.2"/24hr Storm Event Results

Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft ³ /s)
DA-1-I	1.2"/2-HR	1	0.024	1.950	0.17
DA-1-P	1.2"/2-HR	1	0.001	2.000	0.01
DA-2-I	1.2"/2-HR	1	0.010	1.950	0.07
DA-2-P	1.2"/2-HR	1	0.000	0.000	0.00
DA-3-I	1.2"/2-HR	1	0.027	1.950	0.19
DA-3-P	1.2"/2-HR	1	0.000	0.000	0.00
MRC-I	1.2"/2-HR	1	0.482	1.950	3.47
MRC-P	1.2"/2-HR	1	0.000	0.000	0.00
PO-2-I	1.2"/2-HR	1	0.116	1.950	0.84
PO-2-P	1.2"/2-HR	1	0.000	0.000	0.00

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft ³ /s)
O-1	1.2"/2-HR	1	0.025	1.950	0.18
O-2	1.2"/2-HR	1	0.010	1.950	0.07
O-3	1.2"/2-HR	1	0.161	2.000	1.00

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft ³ /s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ac-ft)
MRC (IN)	1.2"/2-HR	1	0.482	1.950	3.47	(N/A)	(N/A)
MRC (OUT)	1.2"/2-HR	1	0.018	2.150	0.04	49.87	0.903
PO-2 (IN)	1.2"/2-HR	1	0.116	1.950	0.84	(N/A)	(N/A)
PO-2 (OUT)	1.2"/2-HR	1	0.116	2.000	0.80	47.85	0.026

1.2"/24hr Storm Event Results

Subsection: Time-Depth Curve

Label: 1.2"/2-HR

Scenario: 1.2"/2-HR

Return Event: 1 years

Storm Event: 1.2"/2-HR

Time-Depth Curve: 1.2"/2-HR

Label	1.2"/2-HR
Start Time	0.000 hours
Increment	1.000 hours
End Time	2.000 hours
Return Event	1 years

CUMULATIVE RAINFALL (in)

Output Time Increment = 1.000 hours

Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.00	0.60	1.20	(N/A)	(N/A)

1.2"/24hr Storm Event Results

Subsection: Time of Concentration Calculations

Label: MRC-I

Scenario: 1.2"/2-HR

Return Event: 1 years

Storm Event: 1.2"/2-HR

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.011
Slope	0.010 ft/ft
2 Year 24 Hour Depth	3.28 in
Average Velocity	1.06 ft/s
Segment Time of Concentration	0.026 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	90.00 ft
Is Paved?	True
Slope	0.010 ft/ft
Average Velocity	2.03 ft/s
Segment Time of Concentration	0.012 hours

Segment #3: TR-55 Channel Flow	
Flow Area	1.8 ft ²
Hydraulic Length	460.00 ft
Manning's n	0.013
Slope	0.005 ft/ft
Wetted Perimeter	4.71 ft
Average Velocity	4.22 ft/s
Segment Time of Concentration	0.030 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.069 hours

1.2"/24hr Storm Event Results

Subsection: Time of Concentration Calculations

Label: MRC-I

Scenario: 1.2"/2-HR

Return Event: 1 years

Storm Event: 1.2"/2-HR

==== SCS Channel Flow

$$T_c = \frac{R = Q_a / W_p}{V = (1.49 * (R^{2/3}) * (S_f^{-0.5})) / n}$$

Where: $(L_f / V) / 3600$
R= Hydraulic radius
A_q= Flow area, square feet
W_p= Wetted perimeter, feet
V= Velocity, ft/sec
S_f= Slope, ft/ft
n= Manning's n
T_c= Time of concentration, hours
L_f= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

$$T_c = \frac{\text{Unpaved surface:}}{V = 16.1345 * (S_f^{0.5})}$$

$$\text{Paved Surface:}$$
$$V = 20.3282 * (S_f^{0.5})$$

Where: $(L_f / V) / 3600$
V= Velocity, ft/sec
S_f= Slope, ft/ft
T_c= Time of concentration, hours
L_f= Flow length, feet

==== SCS TR-55 Sheet Flow

$$T_c = \frac{(0.007 * ((n * L_f)^{0.8}))}{((P^{0.5}) * (S_f^{0.4}))}$$

Where: T_c= Time of concentration, hours
n= Manning's n
L_f= Flow length, feet
P= 2yr, 24hr Rain depth, inches
S_f= Slope, %

1.2"/24hr Storm Event Results

Subsection: Time of Concentration Calculations

Label: MRC-P

Scenario: 1.2"/2-HR

Return Event: 1 years

Storm Event: 1.2"/2-HR

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.011
Slope	0.010 ft/ft
2 Year 24 Hour Depth	3.28 in
Average Velocity	1.06 ft/s
Segment Time of Concentration	0.026 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	90.00 ft
Is Paved?	True
Slope	0.010 ft/ft
Average Velocity	2.03 ft/s
Segment Time of Concentration	0.012 hours

Segment #3: TR-55 Channel Flow	
Flow Area	1.8 ft ²
Hydraulic Length	460.00 ft
Manning's n	0.013
Slope	0.005 ft/ft
Wetted Perimeter	4.71 ft
Average Velocity	4.22 ft/s
Segment Time of Concentration	0.030 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.069 hours

1.2"/24hr Storm Event Results

Subsection: Time of Concentration Calculations

Label: MRC-P

Scenario: 1.2"/2-HR

Return Event: 1 years

Storm Event: 1.2"/2-HR

==== SCS Channel Flow

$$T_c = \frac{R = Q_a / W_p}{V = (1.49 * (R^{2/3}) * (S_f^{-0.5})) / n}$$

Where: $(L_f / V) / 3600$
R= Hydraulic radius
A_q= Flow area, square feet
W_p= Wetted perimeter, feet
V= Velocity, ft/sec
S_f= Slope, ft/ft
n= Manning's n
T_c= Time of concentration, hours
L_f= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

$$T_c = \frac{\text{Unpaved surface:}}{V = 16.1345 * (S_f^{0.5})}$$

$$\text{Paved Surface:}$$
$$V = 20.3282 * (S_f^{0.5})$$

Where: $(L_f / V) / 3600$
V= Velocity, ft/sec
S_f= Slope, ft/ft
T_c= Time of concentration, hours
L_f= Flow length, feet

==== SCS TR-55 Sheet Flow

$$T_c = \frac{(0.007 * ((n * L_f)^{0.8}))}{((P^{0.5}) * (S_f^{0.4}))}$$

Where: T_c= Time of concentration, hours
n= Manning's n
L_f= Flow length, feet
P= 2yr, 24hr Rain depth, inches
S_f= Slope, %

1.2"/24hr Storm Event Results

Subsection: Unit Hydrograph Equations

Unit Hydrograph Method (Computational Notes)

Definition of Terms

At	Total area (acres): $A_t = A_i + A_p$
Ai	Impervious area (acres)
Ap	Pervious area (acres)
CNi	Runoff curve number for impervious area
CNp	Runoff curve number for pervious area
fLoss	f loss constant infiltration (depth/time)
gKs	Saturated Hydraulic Conductivity (depth/time)
Md	Volumetric Moisture Deficit
Psi	Capillary Suction (length)
hK	Horton Infiltration Decay Rate (time ⁻¹)
fo	Initial Infiltration Rate (depth/time)
fc	Ultimate(capacity)Infiltration Rate (depth/time)
Ia	Initial Abstraction (length)
dt	Computational increment (duration of unit excess rainfall) Default dt is smallest value of $0.1333T_c$, r_{tm} , and t_h (Smallest dt is then adjusted to match up with T_p)
UDdt	User specified override computational main time increment (only used if UDdt is $\Rightarrow .1333T_c$)
D(t)	Point on distribution curve (fraction of P) for time step t
K	$2 / (1 + (T_r/T_p))$: default K = 0.75: (for $T_r/T_p = 1.67$)
Ks	Hydrograph shape factor = Unit Conversions * K: = $((1\text{hr}/3600\text{sec}) * (1\text{ft}/12\text{in}) * ((5280\text{ft})^2/\text{sq.mi})) * K$ Default $K_s = 645.333 * 0.75 = 484$
Lag	Lag time from center of excess runoff (dt) to T_p : $\text{Lag} = 0.6T_c$
P	Total precipitation depth, inches
Pa(t)	Accumulated rainfall at time step t
Pi(t)	Incremental rainfall at time step t
qp	Peak discharge (cfs) for 1in. runoff, for 1hr, for 1 sq.mi. = $(K_s * A * Q) / T_p$ (where Q = 1in. runoff, A=sq.mi.)
Qu(t)	Unit hydrograph ordinate (cfs) at time step t
Q(t)	Final hydrograph ordinate (cfs) at time step t
Rai(t)	Accumulated runoff (inches) at time step t for impervious area
Rap(t)	Accumulated runoff (inches) at time step t for pervious area
Rii(t)	Incremental runoff (inches) at time step t for impervious area
Rip(t)	Incremental runoff (inches) at time step t for pervious area
R(t)	Incremental weighted total runoff (inches)
Rtm	Time increment for rainfall table
Si	S for impervious area: $S_i = (1000/CN_i) - 10$
Sp	S for pervious area: $S_p = (1000/CN_p) - 10$
t	Time step (row) number
Tc	Time of concentration
Tb	Time (hrs) of entire unit hydrograph: $T_b = T_p + T_r$
Tp	Time (hrs) to peak of a unit hydrograph: $T_p = (dt/2) + \text{Lag}$
Tr	Time (hrs) of receding limb of unit hydrograph: $T_r = \text{ratio of } T_p$

1.2"/24hr Storm Event Results

Subsection: Unit Hydrograph Equations

Unit Hydrograph Method

Computational Notes

Precipitation

Column (1) Time for time step t
Column (2) $D(t)$ = Point on distribution curve for time step t
Column (3) $P_i(t) = P_a(t) - P_a(t-1)$: Col.(4) - Preceding Col.(4)
Column (4) $P_a(t) = D(t) \times P$: Col.(2) x P

Pervious Area Runoff (using SCS Runoff CN Method)

Column (5) $R_{ap}(t)$ = Accumulated pervious runoff for time step t
If $(P_a(t) \leq 0.2S_p)$ then use: $R_{ap}(t) = 0.0$
If $(P_a(t) > 0.2S_p)$ then use:
$$R_{ap}(t) = (Col.(4) - 0.2S_p) * 2 / (Col.(4) + 0.8S_p)$$

Column (6) $R_{ip}(t)$ = Incremental pervious runoff for time step t
$$R_{ip}(t) = R_{ap}(t) - R_{ap}(t-1)$$

 $R_{ip}(t) = Col.(5)$ for current row - $Col.(5)$ for preceding row.

Impervious Area Runoff

Column (7 & 8)... Did not specify to use impervious areas.

Incremental Weighted Runoff

Column (9) $R(t) = (A_p/A_t) \times R_{ip}(t) + (A_i/A_t) \times R_{ii}(t)$
 $R(t) = (A_p/A_t) \times Col.(6) + (A_i/A_t) \times Col.(8)$

SCS Unit Hydrograph Method

Column (10) $Q(t)$ is computed with the SCS unit hydrograph method using $R(t)$ and $Q_u(t)$.

1.2"/24hr Storm Event Results

Subsection: Unit Hydrograph Summary

Label: MRC-I

Scenario: 1.2"/2-HR

Return Event: 1 years

Storm Event: 1.2"/2-HR

Storm Event	1.2"/2-HR
Return Event	1 years
Duration	24.000 hours
Depth	1.20 in
Time of Concentration (Composite)	0.069 hours
Area (User Defined)	255,806.000 ft ²

Computational Time Increment	0.009 hours
Time to Peak (Computed)	1.993 hours
Flow (Peak, Computed)	3.47 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.950 hours
Flow (Peak Interpolated Output)	3.47 ft ³ /s

Drainage Area

SCS CN (Composite)	98.000
Area (User Defined)	255,806.000 ft ²
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff

Cumulative Runoff Depth (Pervious)	0.99 in
Runoff Volume (Pervious)	0.482 ac-ft

Hydrograph Volume (Area under Hydrograph curve)

Volume	0.482 ac-ft
--------	-------------

SCS Unit Hydrograph Parameters

Time of Concentration (Composite)	0.069 hours
Computational Time Increment	0.009 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	96.58 ft ³ /s
Unit peak time, Tp	0.046 hours
Unit receding limb, Tr	0.184 hours
Total unit time, Tb	0.230 hours

1.2"/24hr Storm Event Results

Subsection: Unit Hydrograph Summary

Label: MRC-I

Scenario: 1.2"/2-HR

Return Event: 1 years

Storm Event: 1.2"/2-HR

SCS Unit Hydrograph Parameters

1.2"/24hr Storm Event Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: MRC-I

Scenario: 1.2"/2-HR

Return Event: 1 years

Storm Event: 1.2"/2-HR

Storm Event	1.2"/2-HR
Return Event	1 years
Duration	24.000 hours
Depth	1.20 in
Time of Concentration (Composite)	0.069 hours
Area (User Defined)	255,806.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
0.050	0.00	0.05	0.55	1.16	1.64
0.300	2.00	2.26	2.47	2.62	2.75
0.550	2.85	2.93	3.00	3.06	3.11
0.800	3.15	3.19	3.22	3.25	3.27
1.050	3.30	3.32	3.33	3.35	3.36
1.300	3.37	3.39	3.40	3.40	3.41
1.550	3.42	3.43	3.43	3.44	3.45
1.800	3.45	3.46	3.46	3.47	3.46
2.050	1.70	0.29	0.05	0.00	0.00

1.2"/24hr Storm Event Results

Subsection: Unit Hydrograph Summary

Label: MRC-P

Scenario: 1.2"/2-HR

Return Event: 1 years

Storm Event: 1.2"/2-HR

Storm Event	1.2"/2-HR
Return Event	1 years
Duration	24.000 hours
Depth	1.20 in
Time of Concentration (Composite)	0.069 hours
Area (User Defined)	16,545.000 ft ²

Computational Time Increment	0.009 hours
Time to Peak (Computed)	0.000 hours
Flow (Peak, Computed)	0.00 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	0.000 hours
Flow (Peak Interpolated Output)	0.00 ft ³ /s

Drainage Area

SCS CN (Composite)	61.000
Area (User Defined)	16,545.000 ft ²
Maximum Retention (Pervious)	6.39 in
Maximum Retention (Pervious, 20 percent)	1.28 in

Cumulative Runoff

Cumulative Runoff Depth (Pervious)	0.00 in
Runoff Volume (Pervious)	0.000 ac-ft

Hydrograph Volume (Area under Hydrograph curve)

Volume	0.000 ac-ft
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SCS Unit Hydrograph Parameters

Time of Concentration (Composite)	0.069 hours
Computational Time Increment	0.009 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	6.25 ft ³ /s
Unit peak time, Tp	0.046 hours
Unit receding limb, Tr	0.184 hours
Total unit time, Tb	0.230 hours

1.2"/24hr Storm Event Results

Subsection: Unit Hydrograph Summary

Label: MRC-P

Scenario: 1.2"/2-HR

Return Event: 1 years

Storm Event: 1.2"/2-HR

SCS Unit Hydrograph Parameters

1.2"/24hr Storm Event Results

Subsection: Unit Hydrograph (Hydrograph Table)

Label: MRC-P

Scenario: 1.2"/2-HR

Return Event: 1 years

Storm Event: 1.2"/2-HR

Storm Event	1.2"/2-HR
Return Event	1 years
Duration	24.000 hours
Depth	1.20 in
Time of Concentration (Composite)	0.069 hours
Area (User Defined)	16,545.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
0.000	0.00	0.00	(N/A)	(N/A)	(N/A)

1.2"/24hr Storm Event Results

Subsection: Addition Summary

Label: O-3

Scenario: 1.2"/2-HR

Return Event: 1 years

Storm Event: 1.2"/2-HR

Summary for Hydrograph Addition at 'O-3'

Upstream Link	Upstream Node
Outlet-MRC	MRC
<Catchment to Outflow Node>	DA-3-I
<Catchment to Outflow Node>	DA-3-P
Outlet-2	PO-2

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	Outlet-MRC	0.018	2.150	0.04
Flow (From)	DA-3-I	0.027	1.950	0.19
Flow (From)	DA-3-P	0.000	0.000	0.00
Flow (From)	Outlet-2	0.116	2.000	0.80
Flow (In)	O-3	0.161	2.000	1.00

1.2"/24hr Storm Event Results

Subsection: Elevation vs. Volume Curve

Label: MRC

Scenario: 1.2"/2-HR

Return Event: 1 years

Storm Event: 1.2"/2-HR

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ac-ft)
48.80	0.000
48.90	0.084
49.00	0.169
49.10	0.253
49.20	0.337
49.30	0.422
49.40	0.506
49.50	0.590
49.60	0.675
49.70	0.759
49.80	0.843
49.90	0.928
50.00	1.012
50.10	1.096
50.20	1.181
50.30	1.265
50.40	1.349
50.50	1.434
50.60	1.518
50.70	1.603
50.80	1.687
50.90	1.771
51.00	1.856
51.10	1.940
51.20	2.024
51.30	2.109
51.40	2.193
51.50	2.277
51.60	2.362
51.70	2.446
51.80	2.530

1.2"/24hr Storm Event Results

Subsection: Outlet Input Data

Label: MRC

Scenario: 1.2"/2-HR

Return Event: 1 years

Storm Event: 1.2"/2-HR

Requested Pond Water Surface Elevations	
Minimum (Headwater)	48.80 ft
Increment (Headwater)	0.50 ft
Maximum (Headwater)	51.80 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Orifice-Circular	Orifice - 1	Forward	TW	49.85	51.80
Vnotch Weir	Weir - 1	Forward	TW	50.50	51.80
Tailwater Settings	Tailwater			(N/A)	(N/A)

1.2"/24hr Storm Event Results

Subsection: Outlet Input Data

Label: MRC

Scenario: 1.2"/2-HR

Return Event: 1 years

Storm Event: 1.2"/2-HR

Structure ID: Orifice - 1	
Structure Type: Orifice-Circular	
Number of Openings	2
Elevation	49.85 ft
Orifice Diameter	8.0 in
Orifice Coefficient	0.600

Structure ID: Weir - 1	
Structure Type: Vnotch Weir	
Number of Openings	1
Elevation	50.50 ft
V-Notch Angle	120.00 degrees
Coefficient of Discharge	0.576

Structure ID: TW	
Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall

Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft ³ /s
Flow Tolerance (Maximum)	10.000 ft ³ /s

1.2"/24hr Storm Event Results

Subsection: Composite Rating Curve

Label: MRC

Scenario: 1.2"/2-HR

Return Event: 1 years

Storm Event: 1.2"/2-HR

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft ³ /s)	Tailwater Elevation (ft)	Convergence Error (ft)
48.80	0.00	(N/A)	0.00
49.30	0.00	(N/A)	0.00
49.80	0.00	(N/A)	0.00
49.85	0.00	(N/A)	0.00
50.30	0.95	(N/A)	0.00
50.50	1.80	(N/A)	0.00
50.80	2.85	(N/A)	0.00
51.30	5.99	(N/A)	0.00
51.80	12.50	(N/A)	0.00

Contributing Structures

None Contributing
None Contributing
None Contributing
None Contributing
Orifice - 1
Orifice - 1 + Weir - 1
Orifice - 1 + Weir - 1
Orifice - 1 + Weir - 1
Orifice - 1 + Weir - 1

1.2"/24hr Storm Event Results

Subsection: Elevation-Volume-Flow Table (Pond)
 Label: MRC
 Scenario: 1.2"/2-HR

Return Event: 1 years
 Storm Event: 1.2"/2-HR

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	49.30 ft
Volume (Initial)	0.422 ac-ft
Flow (Initial Outlet)	0.00 ft ³ /s
Flow (Initial Infiltration)	0.00 ft ³ /s
Flow (Initial, Total)	0.00 ft ³ /s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft ³ /s)	Storage (ac-ft)	Area (ft ²)	Infiltration (ft ³ /s)	Flow (Total) (ft ³ /s)	2S/t + O (ft ³ /s)
48.80	0.00	0.000	0.000	0.00	0.00	0.00
49.30	0.00	0.422	0.000	0.00	0.00	204.11
49.80	0.00	0.843	0.000	0.00	0.00	408.22
49.85	0.00	0.886	0.000	0.00	0.00	428.63
50.30	0.95	1.265	0.000	0.00	0.95	613.29
50.50	1.80	1.434	0.000	0.00	1.80	695.77
50.80	2.85	1.687	0.000	0.00	2.85	819.29
51.30	5.99	2.109	0.000	0.00	5.99	1,026.55
51.80	12.50	2.530	0.000	0.00	12.50	1,237.16

1.2"/24hr Storm Event Results

Subsection: Level Pool Pond Routing Summary

Label: MRC (IN)

Scenario: 1.2"/2-HR

Return Event: 1 years

Storm Event: 1.2"/2-HR

Infiltration			
Infiltration Method (Computed)	No Infiltration		
Initial Conditions			
Elevation (Water Surface, Initial)	49.30 ft		
Volume (Initial)	0.422 ac-ft		
Flow (Initial Outlet)	0.00 ft ³ /s		
Flow (Initial Infiltration)	0.00 ft ³ /s		
Flow (Initial, Total)	0.00 ft ³ /s		
Time Increment	0.050 hours		
Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	3.47 ft ³ /s	Time to Peak (Flow, In)	1.950 hours
Flow (Peak Outlet)	0.04 ft ³ /s	Time to Peak (Flow, Outlet)	2.150 hours
Peak Conditions			
Elevation (Water Surface, Peak)	49.87 ft		
Volume (Peak)	0.903 ac-ft		
Mass Balance (ac-ft)			
Volume (Initial)	0.422 ac-ft		
Volume (Total Inflow)	0.482 ac-ft		
Volume (Total Infiltration)	0.000 ac-ft		
Volume (Total Outlet Outflow)	0.018 ac-ft		
Volume (Retained)	0.886 ac-ft		
Volume (Unrouted)	0.000 ac-ft		
Error (Mass Balance)	0.0 %		

1.2"/24hr Storm Event Results

Subsection: Pond Routed Hydrograph (total out)
 Label: MRC (OUT)
 Scenario: 1.2"/2-HR

Return Event: 1 years
 Storm Event: 1.2"/2-HR

Peak Discharge	0.04 ft ³ /s
Time to Peak	2.150 hours
Hydrograph Volume	0.018 ac-ft

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
1.950	0.00	0.01	0.03	0.04	0.04
2.200	0.04	0.04	0.04	0.04	0.04
2.450	0.04	0.04	0.04	0.04	0.04
2.700	0.04	0.04	0.04	0.04	0.04
2.950	0.04	0.04	0.04	0.04	0.04
3.200	0.04	0.04	0.04	0.04	0.03
3.450	0.03	0.03	0.03	0.03	0.03
3.700	0.03	0.03	0.03	0.03	0.03
3.950	0.03	0.03	0.03	0.03	0.03
4.200	0.03	0.03	0.03	0.03	0.03
4.450	0.03	0.03	0.03	0.03	0.03
4.700	0.03	0.03	0.03	0.03	0.03
4.950	0.03	0.02	0.02	0.02	0.02
5.200	0.02	0.02	0.02	0.02	0.02
5.450	0.02	0.02	0.02	0.02	0.02
5.700	0.02	0.02	0.02	0.02	0.02
5.950	0.02	0.02	0.02	0.02	0.02
6.200	0.02	0.02	0.02	0.02	0.02
6.450	0.02	0.02	0.02	0.02	0.02
6.700	0.02	0.02	0.02	0.02	0.02
6.950	0.02	0.02	0.02	0.02	0.02
7.200	0.02	0.02	0.02	0.02	0.02
7.450	0.01	0.01	0.01	0.01	0.01
7.700	0.01	0.01	0.01	0.01	0.01
7.950	0.01	0.01	0.01	0.01	0.01
8.200	0.01	0.01	0.01	0.01	0.01
8.450	0.01	0.01	0.01	0.01	0.01
8.700	0.01	0.01	0.01	0.01	0.01
8.950	0.01	0.01	0.01	0.01	0.01
9.200	0.01	0.01	0.01	0.01	0.01
9.450	0.01	0.01	0.01	0.01	0.01
9.700	0.01	0.01	0.01	0.01	0.01
9.950	0.01	0.01	0.01	0.01	0.01
10.200	0.01	0.01	0.01	0.01	0.01
10.450	0.01	0.01	0.01	0.01	0.01
10.700	0.01	0.01	0.01	0.01	0.01
10.950	0.01	0.01	0.01	0.01	0.01
11.200	0.01	0.01	0.01	0.01	0.01
11.450	0.01	0.01	0.01	0.01	0.01
11.700	0.01	0.01	0.01	0.01	0.01
11.950	0.01	0.01	0.01	0.01	0.01

1.2"/24hr Storm Event Results

Subsection: Pond Routed Hydrograph (total out)
 Label: MRC (OUT)
 Scenario: 1.2"/2-HR

Return Event: 1 years
 Storm Event: 1.2"/2-HR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
12.200	0.01	0.01	0.01	0.01	0.01
12.450	0.01	0.01	0.01	0.01	0.01
12.700	0.01	0.00	0.00	0.00	0.00
12.950	0.00	0.00	0.00	0.00	0.00
13.200	0.00	0.00	0.00	0.00	0.00
13.450	0.00	0.00	0.00	0.00	0.00
13.700	0.00	0.00	0.00	0.00	0.00
13.950	0.00	0.00	0.00	0.00	0.00
14.200	0.00	0.00	0.00	0.00	0.00
14.450	0.00	0.00	0.00	0.00	0.00
14.700	0.00	0.00	0.00	0.00	0.00
14.950	0.00	0.00	0.00	0.00	0.00
15.200	0.00	0.00	0.00	0.00	0.00
15.450	0.00	0.00	0.00	0.00	0.00
15.700	0.00	0.00	0.00	0.00	0.00
15.950	0.00	0.00	0.00	0.00	0.00
16.200	0.00	0.00	0.00	0.00	0.00
16.450	0.00	0.00	0.00	0.00	0.00
16.700	0.00	0.00	0.00	0.00	0.00
16.950	0.00	0.00	0.00	0.00	0.00
17.200	0.00	0.00	0.00	0.00	0.00
17.450	0.00	0.00	0.00	0.00	0.00
17.700	0.00	0.00	0.00	0.00	0.00
17.950	0.00	0.00	0.00	0.00	0.00
18.200	0.00	0.00	0.00	0.00	0.00
18.450	0.00	0.00	0.00	0.00	0.00
18.700	0.00	0.00	0.00	0.00	0.00
18.950	0.00	0.00	0.00	0.00	0.00
19.200	0.00	0.00	0.00	0.00	0.00
19.450	0.00	0.00	0.00	0.00	0.00
19.700	0.00	0.00	0.00	0.00	0.00
19.950	0.00	0.00	0.00	0.00	0.00
20.200	0.00	0.00	(N/A)	(N/A)	(N/A)

1.2"/24hr Storm Event Results

Subsection: Pond Inflow Summary

Label: MRC (IN)

Scenario: 1.2"/2-HR

Return Event: 1 years

Storm Event: 1.2"/2-HR

Summary for Hydrograph Addition at 'MRC'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	MRC-I
<Catchment to Outflow Node>	MRC-P

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	MRC-I	0.482	1.950	3.47
Flow (From)	MRC-P	0.000	0.000	0.00
Flow (In)	MRC	0.482	1.950	3.47

1.2"/24hr Storm Event Results

Subsection: Diverted Hydrograph
 Label: Outlet-MRC
 Scenario: 1.2"/2-HR

Return Event: 1 years
 Storm Event: 1.2"/2-HR

Peak Discharge	0.04 ft ³ /s
Time to Peak	2.150 hours
Hydrograph Volume	0.018 ac-ft

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
1.950	0.00	0.01	0.03	0.04	0.04
2.200	0.04	0.04	0.04	0.04	0.04
2.450	0.04	0.04	0.04	0.04	0.04
2.700	0.04	0.04	0.04	0.04	0.04
2.950	0.04	0.04	0.04	0.04	0.04
3.200	0.04	0.04	0.04	0.04	0.03
3.450	0.03	0.03	0.03	0.03	0.03
3.700	0.03	0.03	0.03	0.03	0.03
3.950	0.03	0.03	0.03	0.03	0.03
4.200	0.03	0.03	0.03	0.03	0.03
4.450	0.03	0.03	0.03	0.03	0.03
4.700	0.03	0.03	0.03	0.03	0.03
4.950	0.03	0.02	0.02	0.02	0.02
5.200	0.02	0.02	0.02	0.02	0.02
5.450	0.02	0.02	0.02	0.02	0.02
5.700	0.02	0.02	0.02	0.02	0.02
5.950	0.02	0.02	0.02	0.02	0.02
6.200	0.02	0.02	0.02	0.02	0.02
6.450	0.02	0.02	0.02	0.02	0.02
6.700	0.02	0.02	0.02	0.02	0.02
6.950	0.02	0.02	0.02	0.02	0.02
7.200	0.02	0.02	0.02	0.02	0.02
7.450	0.01	0.01	0.01	0.01	0.01
7.700	0.01	0.01	0.01	0.01	0.01
7.950	0.01	0.01	0.01	0.01	0.01
8.200	0.01	0.01	0.01	0.01	0.01
8.450	0.01	0.01	0.01	0.01	0.01
8.700	0.01	0.01	0.01	0.01	0.01
8.950	0.01	0.01	0.01	0.01	0.01
9.200	0.01	0.01	0.01	0.01	0.01
9.450	0.01	0.01	0.01	0.01	0.01
9.700	0.01	0.01	0.01	0.01	0.01
9.950	0.01	0.01	0.01	0.01	0.01
10.200	0.01	0.01	0.01	0.01	0.01
10.450	0.01	0.01	0.01	0.01	0.01
10.700	0.01	0.01	0.01	0.01	0.01
10.950	0.01	0.01	0.01	0.01	0.01
11.200	0.01	0.01	0.01	0.01	0.01
11.450	0.01	0.01	0.01	0.01	0.01
11.700	0.01	0.01	0.01	0.01	0.01
11.950	0.01	0.01	0.01	0.01	0.01

1.2"/24hr Storm Event Results

Subsection: Diverted Hydrograph
 Label: Outlet-MRC
 Scenario: 1.2"/2-HR

Return Event: 1 years
 Storm Event: 1.2"/2-HR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
12.200	0.01	0.01	0.01	0.01	0.01
12.450	0.01	0.01	0.01	0.01	0.01
12.700	0.01	0.00	0.00	0.00	0.00
12.950	0.00	0.00	0.00	0.00	0.00
13.200	0.00	0.00	0.00	0.00	0.00
13.450	0.00	0.00	0.00	0.00	0.00
13.700	0.00	0.00	0.00	0.00	0.00
13.950	0.00	0.00	0.00	0.00	0.00
14.200	0.00	0.00	0.00	0.00	0.00
14.450	0.00	0.00	0.00	0.00	0.00
14.700	0.00	0.00	0.00	0.00	0.00
14.950	0.00	0.00	0.00	0.00	0.00
15.200	0.00	0.00	0.00	0.00	0.00
15.450	0.00	0.00	0.00	0.00	0.00
15.700	0.00	0.00	0.00	0.00	0.00
15.950	0.00	0.00	0.00	0.00	0.00
16.200	0.00	0.00	0.00	0.00	0.00
16.450	0.00	0.00	0.00	0.00	0.00
16.700	0.00	0.00	0.00	0.00	0.00
16.950	0.00	0.00	0.00	0.00	0.00
17.200	0.00	0.00	0.00	0.00	0.00
17.450	0.00	0.00	0.00	0.00	0.00
17.700	0.00	0.00	0.00	0.00	0.00
17.950	0.00	0.00	0.00	0.00	0.00
18.200	0.00	0.00	0.00	0.00	0.00
18.450	0.00	0.00	0.00	0.00	0.00
18.700	0.00	0.00	0.00	0.00	0.00
18.950	0.00	0.00	0.00	0.00	0.00
19.200	0.00	0.00	0.00	0.00	0.00
19.450	0.00	0.00	0.00	0.00	0.00
19.700	0.00	0.00	0.00	0.00	0.00
19.950	0.00	0.00	0.00	0.00	0.00
20.200	0.00	0.00	(N/A)	(N/A)	(N/A)

POST-PROJECT ANALYSIS

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Post-Development Analysis Results (with BMPs)

Subsection: User Notifications

User Notifications

Message Id	7
Scenario	Post-Development 1
Element Type	Catchment
Element Id	48
Label	DA-2-P
Time	(N/A)
Message	The difference between calculated peak flow and interpolated peak flow 3.5 % is greater than 1.5 %. Computed peak flow= 0.01 ft ³ /s Interp. peak flow= 0.01 ft ³ /s. Output increment for this catchment may be too large.
Source	Warning
Message Id	7
Scenario	Post-Development 1
Element Type	Catchment
Element Id	79
Label	MRC-P
Time	(N/A)
Message	The difference between calculated peak flow and interpolated peak flow 13.9 % is greater than 1.5 %. Computed peak flow= 0.08 ft ³ /s Interp. peak flow= 0.07 ft ³ /s. Output increment for this catchment may be too large.
Source	Warning
Message Id	7
Scenario	Post-Development 1
Element Type	Catchment
Element Id	77
Label	PO-2-P
Time	(N/A)
Message	The difference between calculated peak flow and interpolated peak flow 16.7 % is greater than 1.5 %. Computed peak flow= 0.03 ft ³ /s Interp. peak flow= 0.02 ft ³ /s. Output increment for this catchment may be too large.
Source	Warning
Message Id	67
Scenario	Post-Development 1
Element Type	Composite Outlet Structure
Element Id	70
Label	PO-2
Time	(N/A)
Message	Flow direction set to reverse for one ore more structures in composite outlet structure PO-2. To eliminate this warning, edit outlet data and select forward only. If reverse flow analysis is required, then the tailwater conditions must be set to interconnected pond.
Source	Warning
Message Id	67
Scenario	Post-Development 2
Element Type	Composite Outlet Structure
Element Id	70
Label	PO-2
Time	(N/A)
Message	Flow direction set to reverse for one ore more structures in composite outlet structure PO-2. To eliminate this warning, edit outlet data and select forward only. If reverse flow analysis is required, then the tailwater conditions must be set to interconnected pond.
Source	Warning

Post-Development Analysis Results (with BMPs)

Subsection: User Notifications

User Notifications

Message Id	67
Scenario	Post-Development 5
Element Type	Composite Outlet Structure
Element Id	70
Label	PO-2
Time	(N/A)
Message	Flow direction set to reverse for one ore more structures in composite outlet structure PO-2. To eliminate this warning, edit outlet data and select forward only. If reverse flow analysis is required, then the tailwater conditions must be set to interconnected pond.
Source	Warning

Message Id	67
Scenario	Post-Development 10
Element Type	Composite Outlet Structure
Element Id	70
Label	PO-2
Time	(N/A)
Message	Flow direction set to reverse for one ore more structures in composite outlet structure PO-2. To eliminate this warning, edit outlet data and select forward only. If reverse flow analysis is required, then the tailwater conditions must be set to interconnected pond.
Source	Warning

Message Id	67
Scenario	Post-Development 25
Element Type	Composite Outlet Structure
Element Id	70
Label	PO-2
Time	(N/A)
Message	Flow direction set to reverse for one ore more structures in composite outlet structure PO-2. To eliminate this warning, edit outlet data and select forward only. If reverse flow analysis is required, then the tailwater conditions must be set to interconnected pond.
Source	Warning

Message Id	67
Scenario	Post-Development 50
Element Type	Composite Outlet Structure
Element Id	70
Label	PO-2
Time	(N/A)
Message	Flow direction set to reverse for one ore more structures in composite outlet structure PO-2. To eliminate this warning, edit outlet data and select forward only. If reverse flow analysis is required, then the tailwater conditions must be set to interconnected pond.
Source	Warning

Message Id	67
Scenario	Post-Development 100
Element Type	Composite Outlet Structure
Element Id	70
Label	PO-2
Time	(N/A)
Message	Flow direction set to reverse for one ore more structures in composite outlet structure PO-2. To eliminate this warning, edit outlet data and select forward only. If reverse flow analysis is required, then the tailwater conditions must be set to interconnected pond.
Source	Warning

Post-Development Analysis Results (with BMPs)

Subsection: User Notifications

User Notifications

Message Id	67
Scenario	1.2"/2-HR
Element Type	Composite Outlet Structure
Element Id	70
Label	PO-2
Time	(N/A)
Message	Flow direction set to reverse for one ore more structures in composite outlet structure PO-2. To eliminate this warning, edit outlet data and select forward only. If reverse flow analysis is required, then the tailwater conditions must be set to interconnected pond.
Source	Warning
Message Id	7
Scenario	Post-Development 2
Element Type	Catchment
Element Id	50
Label	DA-3-P
Time	(N/A)
Message	The difference between calculated peak flow and interpolated peak flow 1.9 % is greater than 1.5 %. Computed peak flow= 0.81 ft ³ /s Interp. peak flow= 0.79 ft ³ /s. Output increment for this catchment may be too large.
Source	Warning
Message Id	7
Scenario	Post-Development 2
Element Type	Catchment
Element Id	79
Label	MRC-P
Time	(N/A)
Message	The difference between calculated peak flow and interpolated peak flow 7.5 % is greater than 1.5 %. Computed peak flow= 0.20 ft ³ /s Interp. peak flow= 0.19 ft ³ /s. Output increment for this catchment may be too large.
Source	Warning
Message Id	7
Scenario	Post-Development 2
Element Type	Catchment
Element Id	77
Label	PO-2-P
Time	(N/A)
Message	The difference between calculated peak flow and interpolated peak flow 6.0 % is greater than 1.5 %. Computed peak flow= 0.08 ft ³ /s Interp. peak flow= 0.07 ft ³ /s. Output increment for this catchment may be too large.
Source	Warning
Message Id	7
Scenario	Post-Development 5
Element Type	Catchment
Element Id	79
Label	MRC-P
Time	(N/A)
Message	The difference between calculated peak flow and interpolated peak flow 3.9 % is greater than 1.5 %. Computed peak flow= 0.43 ft ³ /s Interp. peak flow= 0.42 ft ³ /s. Output increment for this catchment may be too large.
Source	Warning

Post-Development Analysis Results (with BMPs)

Subsection: User Notifications

User Notifications

Message Id	7
Scenario	Post-Development 5
Element Type	Catchment
Element Id	77
Label	PO-2-P
Time	(N/A)
Message	The difference between calculated peak flow and interpolated peak flow 3.1 % is greater than 1.5 %. Computed peak flow= 0.16 ft ³ /s Interp. peak flow= 0.16 ft ³ /s. Output increment for this catchment may be too large.
Source	Warning

Message Id	7
Scenario	Post-Development 10
Element Type	Catchment
Element Id	79
Label	MRC-P
Time	(N/A)
Message	The difference between calculated peak flow and interpolated peak flow 2.7 % is greater than 1.5 %. Computed peak flow= 0.65 ft ³ /s Interp. peak flow= 0.64 ft ³ /s. Output increment for this catchment may be too large.
Source	Warning

Message Id	7
Scenario	Post-Development 10
Element Type	Catchment
Element Id	77
Label	PO-2-P
Time	(N/A)
Message	The difference between calculated peak flow and interpolated peak flow 2.1 % is greater than 1.5 %. Computed peak flow= 0.25 ft ³ /s Interp. peak flow= 0.24 ft ³ /s. Output increment for this catchment may be too large.
Source	Warning

Message Id	7
Scenario	Post-Development 25
Element Type	Catchment
Element Id	79
Label	MRC-P
Time	(N/A)
Message	The difference between calculated peak flow and interpolated peak flow 1.7 % is greater than 1.5 %. Computed peak flow= 1.01 ft ³ /s Interp. peak flow= 0.99 ft ³ /s. Output increment for this catchment may be too large.
Source	Warning

Post-Development Analysis Results (with BMPs)

Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft ³ /s)
DA-1-I	Post-Development 1	1	0.060	12.100	0.90
DA-1-I	Post-Development 2	2	0.073	12.100	1.09
DA-1-I	Post-Development 5	5	0.094	12.100	1.37
DA-1-I	Post-Development 10	10	0.111	12.100	1.61
DA-1-I	Post-Development 25	25	0.135	12.100	1.95
DA-1-I	Post-Development 50	50	0.155	12.100	2.24
DA-1-I	Post-Development 100	100	0.177	12.100	2.55
DA-1-P	Post-Development 1	1	0.005	12.100	0.10
DA-1-P	Post-Development 2	2	0.008	12.100	0.13
DA-1-P	Post-Development 5	5	0.011	12.100	0.19
DA-1-P	Post-Development 10	10	0.014	12.100	0.25
DA-1-P	Post-Development 25	25	0.019	12.100	0.32
DA-1-P	Post-Development 50	50	0.023	12.100	0.39
DA-1-P	Post-Development 100	100	0.027	12.100	0.46
DA-2-I	Post-Development 1	1	0.025	12.100	0.38
DA-2-I	Post-Development 2	2	0.031	12.100	0.46
DA-2-I	Post-Development 5	5	0.039	12.100	0.58
DA-2-I	Post-Development 10	10	0.046	12.100	0.68
DA-2-I	Post-Development 25	25	0.056	12.100	0.82
DA-2-I	Post-Development 50	50	0.065	12.100	0.94
DA-2-I	Post-Development 100	100	0.074	12.100	1.07
DA-2-P	Post-Development 1	1	0.001	12.100	0.01
DA-2-P	Post-Development 2	2	0.001	12.100	0.02
DA-2-P	Post-Development 5	5	0.003	12.100	0.05
DA-2-P	Post-Development 10	10	0.004	12.100	0.07
DA-2-P	Post-Development 25	25	0.006	12.100	0.10
DA-2-P	Post-Development 50	50	0.007	12.100	0.14
DA-2-P	Post-Development 100	100	0.009	12.100	0.17
DA-3-I	Post-Development 1	1	0.068	12.100	1.04
DA-3-I	Post-Development 2	2	0.083	12.100	1.25
DA-3-I	Post-Development 5	5	0.106	12.100	1.58
DA-3-I	Post-Development 10	10	0.125	12.100	1.84
DA-3-I	Post-Development 25	25	0.153	12.100	2.23
DA-3-I	Post-Development 50	50	0.176	12.100	2.56
DA-3-I	Post-Development 100	100	0.201	12.100	2.92
DA-3-P	Post-Development 1	1	0.054	12.250	0.31
DA-3-P	Post-Development 2	2	0.096	12.250	0.79
DA-3-P	Post-Development 5	5	0.177	12.200	1.83
DA-3-P	Post-Development 10	10	0.255	12.200	2.83
DA-3-P	Post-Development 25	25	0.382	12.200	4.45
DA-3-P	Post-Development 50	50	0.499	12.200	5.91
DA-3-P	Post-Development 100	100	0.635	12.200	7.59
MRC-I	Post-Development 1	1	1.222	12.100	17.90
MRC-I	Post-Development 2	2	1.490	12.100	21.61

Post-Development Analysis Results (with BMPs)

Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft ³ /s)
MRC-I	Post-Development 5	5	1.901	12.100	27.27
MRC-I	Post-Development 10	10	2.241	12.100	31.95
MRC-I	Post-Development 25	25	2.735	12.100	38.71
MRC-I	Post-Development 50	50	3.150	12.100	44.39
MRC-I	Post-Development 100	100	3.599	12.100	50.54
PO-2-P	Post-Development 1	1	0.003	12.100	0.02
PO-2-P	Post-Development 2	2	0.006	12.100	0.07
PO-2-P	Post-Development 5	5	0.010	12.100	0.16
PO-2-P	Post-Development 10	10	0.015	12.100	0.24
PO-2-P	Post-Development 25	25	0.022	12.100	0.38
PO-2-P	Post-Development 50	50	0.029	12.100	0.50
PO-2-P	Post-Development 100	100	0.037	12.100	0.64
PO-2-I	Post-Development 1	1	0.295	12.100	4.36
PO-2-I	Post-Development 2	2	0.359	12.100	5.26
PO-2-I	Post-Development 5	5	0.458	12.100	6.64
PO-2-I	Post-Development 10	10	0.541	12.100	7.78
PO-2-I	Post-Development 25	25	0.660	12.100	9.42
PO-2-I	Post-Development 50	50	0.760	12.100	10.81
PO-2-I	Post-Development 100	100	0.868	12.100	12.30
MRC-P	Post-Development 1	1	0.008	12.150	0.07
MRC-P	Post-Development 2	2	0.015	12.100	0.19
MRC-P	Post-Development 5	5	0.028	12.100	0.42
MRC-P	Post-Development 10	10	0.040	12.100	0.64
MRC-P	Post-Development 25	25	0.060	12.100	0.99
MRC-P	Post-Development 50	50	0.078	12.100	1.31
MRC-P	Post-Development 100	100	0.099	12.100	1.68

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft ³ /s)
O-1	Post-Development 1	1	0.066	12.100	1.00
O-1	Post-Development 2	2	0.081	12.100	1.22
O-1	Post-Development 5	5	0.105	12.100	1.57
O-1	Post-Development 10	10	0.125	12.100	1.86
O-1	Post-Development 25	25	0.154	12.100	2.27
O-1	Post-Development 50	50	0.178	12.100	2.62
O-1	Post-Development 100	100	0.205	12.100	3.00
O-2	Post-Development 1	1	0.026	12.100	0.39
O-2	Post-Development 2	2	0.032	12.100	0.48
O-2	Post-Development 5	5	0.042	12.100	0.62
O-2	Post-Development 10	10	0.050	12.100	0.75
O-2	Post-Development 25	25	0.062	12.100	0.92
O-2	Post-Development 50	50	0.072	12.100	1.08

Post-Development Analysis Results (with BMPs)

Subsection: Master Network Summary

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft ³ /s)
O-2	Post-Development 100	100	0.083	12.100	1.24
O-3	Post-Development 1	1	1.054	12.200	2.95
O-3	Post-Development 2	2	1.423	12.250	4.34
O-3	Post-Development 5	5	2.015	12.200	7.13
O-3	Post-Development 10	10	2.524	12.200	9.48
O-3	Post-Development 25	25	3.284	12.200	13.80
O-3	Post-Development 50	50	3.940	12.200	17.74
O-3	Post-Development 100	100	4.662	12.200	24.46

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft ³ /s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ac-ft)
PO-2 (IN)	Post-Development 1	1	0.298	12.100	4.38	(N/A)	(N/A)
PO-2 (OUT)	Post-Development 1	1	0.296	12.200	1.73	48.18	0.067
PO-2 (IN)	Post-Development 2	2	0.365	12.100	5.33	(N/A)	(N/A)
PO-2 (OUT)	Post-Development 2	2	0.363	12.200	2.08	48.29	0.082
PO-2 (IN)	Post-Development 5	5	0.469	12.100	6.80	(N/A)	(N/A)
PO-2 (OUT)	Post-Development 5	5	0.466	12.200	2.63	48.47	0.106
PO-2 (IN)	Post-Development 10	10	0.556	12.100	8.02	(N/A)	(N/A)
PO-2 (OUT)	Post-Development 10	10	0.553	12.200	3.11	48.61	0.127
PO-2 (IN)	Post-Development 25	25	0.682	12.100	9.80	(N/A)	(N/A)
PO-2 (OUT)	Post-Development 25	25	0.678	12.200	3.80	48.82	0.156
PO-2 (IN)	Post-Development 50	50	0.789	12.100	11.30	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Master Network Summary

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft ³ /s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ac-ft)
PO-2 (OUT)	Post-Development 50	50	0.785	12.200	4.39	49.00	0.179
PO-2 (IN)	Post-Development 100	100	0.905	12.100	12.94	(N/A)	(N/A)
PO-2 (OUT)	Post-Development 100	100	0.900	12.200	6.24	49.22	0.203
MRC (IN)	Post-Development 1	1	1.231	12.100	17.97	(N/A)	(N/A)
MRC (OUT)	Post-Development 1	1	0.635	13.450	0.98	50.31	1.270
MRC (IN)	Post-Development 2	2	1.505	12.100	21.80	(N/A)	(N/A)
MRC (OUT)	Post-Development 2	2	0.881	13.050	1.69	50.48	1.413
MRC (IN)	Post-Development 5	5	1.928	12.100	27.68	(N/A)	(N/A)
MRC (OUT)	Post-Development 5	5	1.266	12.850	2.66	50.75	1.642
MRC (IN)	Post-Development 10	10	2.281	12.100	32.58	(N/A)	(N/A)
MRC (OUT)	Post-Development 10	10	1.592	12.650	3.84	50.96	1.819
MRC (IN)	Post-Development 25	25	2.794	12.100	39.70	(N/A)	(N/A)
MRC (OUT)	Post-Development 25	25	2.071	12.550	5.65	51.25	2.062
MRC (IN)	Post-Development 50	50	3.228	12.100	45.70	(N/A)	(N/A)
MRC (OUT)	Post-Development 50	50	2.480	12.500	7.99	51.45	2.238
MRC (IN)	Post-Development 100	100	3.699	12.100	52.21	(N/A)	(N/A)
MRC (OUT)	Post-Development 100	100	2.926	12.400	10.70	51.66	2.414

Post-Development Analysis Results (with BMPs)

Subsection: Time of Concentration Calculations

Label: DA-1-I

Scenario: Post-Development 1

Return Event: 1 years

Storm Event: 1-YR

Time of Concentration Results

Segment #1: TR-55 Sheet Flow

Hydraulic Length	100.00 ft
Manning's n	0.011
Slope	0.005 ft/ft
2 Year 24 Hour Depth	3.28 in
Average Velocity	0.80 ft/s
Segment Time of Concentration	0.035 hours

Segment #2: TR-55 Shallow Concentrated Flow

Hydraulic Length	85.00 ft
Is Paved?	True
Slope	0.005 ft/ft
Average Velocity	1.44 ft/s
Segment Time of Concentration	0.016 hours

Segment #3: TR-55 Channel Flow

Flow Area	1.8 ft ²
Hydraulic Length	50.00 ft
Manning's n	0.013
Slope	0.005 ft/ft
Wetted Perimeter	4.71 ft
Average Velocity	4.22 ft/s
Segment Time of Concentration	0.003 hours

Time of Concentration (Composite)

Time of Concentration (Composite)	0.054 hours
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Post-Development Analysis Results (with BMPs)

Subsection: Time of Concentration Calculations

Label: DA-1-I

Scenario: Post-Development 1

Return Event: 1 years

Storm Event: 1-YR

==== SCS Channel Flow

$$T_c = \frac{R = Q_a / W_p}{V = (1.49 * (R^{2/3}) * (S_f^{-0.5})) / n}$$

Where: $(L_f / V) / 3600$
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

$$T_c = \frac{\text{Unpaved surface:}}{V = 16.1345 * (S_f^{0.5})}$$

$$\text{Paved Surface:}$$
$$V = 20.3282 * (S_f^{0.5})$$

Where: $(L_f / V) / 3600$
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Sheet Flow

$$T_c = \frac{(0.007 * ((n * L_f)^{0.8}))}{((P^{0.5}) * (S_f^{0.4}))}$$

Where: Tc= Time of concentration, hours
n= Manning's n
Lf= Flow length, feet
P= 2yr, 24hr Rain depth, inches
Sf= Slope, %

Post-Development Analysis Results (with BMPs)

Subsection: Time of Concentration Calculations

Label: DA-1-P

Scenario: Post-Development 1

Return Event: 1 years

Storm Event: 1-YR

Time of Concentration Results

Segment #1: TR-55 Sheet Flow

Hydraulic Length	100.00 ft
Manning's n	0.011
Slope	0.005 ft/ft
2 Year 24 Hour Depth	3.28 in
Average Velocity	0.80 ft/s
Segment Time of Concentration	0.035 hours

Segment #2: TR-55 Shallow Concentrated Flow

Hydraulic Length	85.00 ft
Is Paved?	True
Slope	0.005 ft/ft
Average Velocity	1.44 ft/s
Segment Time of Concentration	0.016 hours

Segment #3: TR-55 Channel Flow

Flow Area	1.8 ft ²
Hydraulic Length	50.00 ft
Manning's n	0.013
Slope	0.005 ft/ft
Wetted Perimeter	4.71 ft
Average Velocity	4.22 ft/s
Segment Time of Concentration	0.003 hours

Time of Concentration (Composite)

Time of Concentration (Composite)	0.054 hours
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Post-Development Analysis Results (with BMPs)

Subsection: Time of Concentration Calculations

Label: DA-1-P

Scenario: Post-Development 1

Return Event: 1 years

Storm Event: 1-YR

==== SCS Channel Flow

$$T_c = \frac{R = Q_a / W_p}{V = (1.49 * (R^{2/3}) * (S_f^{-0.5})) / n}$$

Where: $(L_f / V) / 3600$
R= Hydraulic radius
A_q= Flow area, square feet
W_p= Wetted perimeter, feet
V= Velocity, ft/sec
S_f= Slope, ft/ft
n= Manning's n
T_c= Time of concentration, hours
L_f= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

$$T_c = \frac{\text{Unpaved surface:}}{V = 16.1345 * (S_f^{0.5})}$$

$$\text{Paved Surface:}$$
$$V = 20.3282 * (S_f^{0.5})$$

Where: $(L_f / V) / 3600$
V= Velocity, ft/sec
S_f= Slope, ft/ft
T_c= Time of concentration, hours
L_f= Flow length, feet

==== SCS TR-55 Sheet Flow

$$T_c = \frac{(0.007 * ((n * L_f)^{0.8}))}{((P^{0.5}) * (S_f^{0.4}))}$$

Where: T_c= Time of concentration, hours
n= Manning's n
L_f= Flow length, feet
P= 2yr, 24hr Rain depth, inches
S_f= Slope, %

Post-Development Analysis Results (with BMPs)

Subsection: Time of Concentration Calculations

Label: DA-2-I

Scenario: Post-Development 1

Return Event: 1 years

Storm Event: 1-YR

Time of Concentration Results

Segment #1: TR-55 Sheet Flow

Hydraulic Length	100.00 ft
Manning's n	0.011
Slope	0.017 ft/ft
2 Year 24 Hour Depth	3.28 in
Average Velocity	1.30 ft/s
Segment Time of Concentration	0.021 hours

Segment #2: TR-55 Channel Flow

Flow Area	1.8 ft ²
Hydraulic Length	135.00 ft
Manning's n	0.013
Slope	0.005 ft/ft
Wetted Perimeter	4.71 ft
Average Velocity	4.22 ft/s
Segment Time of Concentration	0.009 hours

Time of Concentration (Composite)

Time of Concentration (Composite)	0.030 hours
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Post-Development Analysis Results (with BMPs)

Subsection: Time of Concentration Calculations

Label: DA-2-I

Scenario: Post-Development 1

Return Event: 1 years

Storm Event: 1-YR

==== SCS Channel Flow

$$T_c = \frac{R = Q_a / W_p}{V = (1.49 * (R^{2/3}) * (S_f^{-0.5})) / n}$$

Where:

- (L_f / V) / 3600
- R= Hydraulic radius
- A_q= Flow area, square feet
- W_p= Wetted perimeter, feet
- V= Velocity, ft/sec
- S_f= Slope, ft/ft
- n= Manning's n
- T_c= Time of concentration, hours
- L_f= Flow length, feet

==== SCS TR-55 Sheet Flow

$$T_c = \frac{(0.007 * ((n * L_f)^{0.8}) / ((P^{0.5}) * (S_f^{0.4}))}{}$$

Where:

- T_c= Time of concentration, hours
- n= Manning's n
- L_f= Flow length, feet
- P= 2yr, 24hr Rain depth, inches
- S_f= Slope, %

Post-Development Analysis Results (with BMPs)

Subsection: Time of Concentration Calculations

Label: DA-2-P

Scenario: Post-Development 1

Return Event: 1 years

Storm Event: 1-YR

Time of Concentration Results

Segment #1: TR-55 Sheet Flow

Hydraulic Length	100.00 ft
Manning's n	0.011
Slope	0.017 ft/ft
2 Year 24 Hour Depth	3.28 in
Average Velocity	1.30 ft/s
Segment Time of Concentration	0.021 hours

Segment #2: TR-55 Channel Flow

Flow Area	1.8 ft ²
Hydraulic Length	135.00 ft
Manning's n	0.013
Slope	0.005 ft/ft
Wetted Perimeter	4.71 ft
Average Velocity	4.22 ft/s
Segment Time of Concentration	0.009 hours

Time of Concentration (Composite)

Time of Concentration (Composite)	0.030 hours
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Post-Development Analysis Results (with BMPs)

Subsection: Time of Concentration Calculations

Label: DA-2-P

Scenario: Post-Development 1

Return Event: 1 years

Storm Event: 1-YR

==== SCS Channel Flow

$$T_c = \frac{R = Q_a / W_p}{V = (1.49 * (R^{2/3}) * (S_f^{-0.5})) / n}$$

Where:

$(L_f / V) / 3600$

R= Hydraulic radius
A_q= Flow area, square feet
W_p= Wetted perimeter, feet
V= Velocity, ft/sec
S_f= Slope, ft/ft
n= Manning's n
T_c= Time of concentration, hours
L_f= Flow length, feet

==== SCS TR-55 Sheet Flow

$$T_c = \frac{(0.007 * ((n * L_f)^{0.8})}{((P^{0.5}) * (S_f^{0.4}))}$$

Where:

T_c= Time of concentration, hours
n= Manning's n
L_f= Flow length, feet
P= 2yr, 24hr Rain depth, inches
S_f= Slope, %

Post-Development Analysis Results (with BMPs)

Subsection: Time of Concentration Calculations

Label: DA-3-I

Scenario: Post-Development 1

Return Event: 1 years

Storm Event: 1-YR

Time of Concentration Results

Segment #1: TR-55 Sheet Flow

Hydraulic Length	100.00 ft
Manning's n	0.011
Slope	0.020 ft/ft
2 Year 24 Hour Depth	3.28 in
Average Velocity	1.39 ft/s
Segment Time of Concentration	0.020 hours

Segment #2: TR-55 Shallow Concentrated Flow

Hydraulic Length	50.00 ft
Is Paved?	True
Slope	0.020 ft/ft
Average Velocity	2.87 ft/s
Segment Time of Concentration	0.005 hours

Time of Concentration (Composite)

Time of Concentration (Composite)	0.025 hours
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Post-Development Analysis Results (with BMPs)

Subsection: Time of Concentration Calculations

Label: DA-3-I

Scenario: Post-Development 1

Return Event: 1 years

Storm Event: 1-YR

==== SCS Channel Flow

$$T_c = \frac{R = Q_a / W_p}{V = (1.49 * (R^{2/3}) * (S_f^{-0.5})) / n}$$

Where: $(L_f / V) / 3600$
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

$$T_c = \frac{\text{Unpaved surface:}}{V = 16.1345 * (S_f^{0.5})}$$

$$\text{Paved Surface:}$$
$$V = 20.3282 * (S_f^{0.5})$$

Where: $(L_f / V) / 3600$
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

Post-Development Analysis Results (with BMPs)

Subsection: Time of Concentration Calculations

Label: DA-3-P

Scenario: Post-Development 1

Return Event: 1 years

Storm Event: 1-YR

Time of Concentration Results

Segment #1: TR-55 Sheet Flow

Hydraulic Length	25.00 ft
Manning's n	0.240
Slope	0.100 ft/ft
2 Year 24 Hour Depth	3.28 in
Average Velocity	0.17 ft/s
Segment Time of Concentration	0.041 hours

Segment #2: TR-55 Sheet Flow

Hydraulic Length	59.00 ft
Manning's n	0.240
Slope	0.020 ft/ft
2 Year 24 Hour Depth	3.28 in
Average Velocity	0.11 ft/s
Segment Time of Concentration	0.154 hours

Segment #3: TR-55 Shallow Concentrated Flow

Hydraulic Length	200.00 ft
Is Paved?	False
Slope	0.020 ft/ft
Average Velocity	2.28 ft/s
Segment Time of Concentration	0.024 hours

Time of Concentration (Composite)

Time of Concentration (Composite)	0.219 hours
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Post-Development Analysis Results (with BMPs)

Subsection: Time of Concentration Calculations

Label: DA-3-P

Scenario: Post-Development 1

Return Event: 1 years

Storm Event: 1-YR

==== SCS Channel Flow

$$T_c = \frac{R = Q_a / W_p}{V = (1.49 * (R^{2/3}) * (S_f^{-0.5})) / n}$$

Where: $(L_f / V) / 3600$
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

$$T_c = \frac{\text{Unpaved surface:}}{V = 16.1345 * (S_f^{0.5})}$$

$$\text{Paved Surface:}$$
$$V = 20.3282 * (S_f^{0.5})$$

Where: $(L_f / V) / 3600$
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

Post-Development Analysis Results (with BMPs)

Subsection: Time of Concentration Calculations

Label: MRC-I

Scenario: Post-Development 1

Return Event: 1 years

Storm Event: 1-YR

Time of Concentration Results

Segment #1: TR-55 Sheet Flow

Hydraulic Length	100.00 ft
Manning's n	0.011
Slope	0.010 ft/ft
2 Year 24 Hour Depth	3.28 in
Average Velocity	1.06 ft/s
Segment Time of Concentration	0.026 hours

Segment #2: TR-55 Shallow Concentrated Flow

Hydraulic Length	90.00 ft
Is Paved?	True
Slope	0.010 ft/ft
Average Velocity	2.03 ft/s
Segment Time of Concentration	0.012 hours

Segment #3: TR-55 Channel Flow

Flow Area	1.8 ft ²
Hydraulic Length	460.00 ft
Manning's n	0.013
Slope	0.005 ft/ft
Wetted Perimeter	4.71 ft
Average Velocity	4.22 ft/s
Segment Time of Concentration	0.030 hours

Time of Concentration (Composite)

Time of Concentration (Composite)	0.069 hours
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Post-Development Analysis Results (with BMPs)

Subsection: Time of Concentration Calculations

Label: MRC-I

Scenario: Post-Development 1

Return Event: 1 years

Storm Event: 1-YR

==== SCS Channel Flow

$$T_c = \frac{R = Q_a / W_p}{V = (1.49 * (R^{2/3}) * (S_f^{-0.5})) / n}$$

Where: $(L_f / V) / 3600$
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

$$T_c = \frac{\text{Unpaved surface:}}{V = 16.1345 * (S_f^{0.5})}$$

$$\text{Paved Surface:}$$
$$V = 20.3282 * (S_f^{0.5})$$

Where: $(L_f / V) / 3600$
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Sheet Flow

$$T_c = \frac{(0.007 * ((n * L_f)^{0.8}))}{((P^{0.5}) * (S_f^{0.4}))}$$

Where: Tc= Time of concentration, hours
n= Manning's n
Lf= Flow length, feet
P= 2yr, 24hr Rain depth, inches
Sf= Slope, %

Post-Development Analysis Results (with BMPs)

Subsection: Time of Concentration Calculations

Label: MRC-P

Scenario: Post-Development 1

Return Event: 1 years

Storm Event: 1-YR

Time of Concentration Results

Segment #1: TR-55 Sheet Flow

Hydraulic Length	100.00 ft
Manning's n	0.011
Slope	0.010 ft/ft
2 Year 24 Hour Depth	3.28 in
Average Velocity	1.06 ft/s
Segment Time of Concentration	0.026 hours

Segment #2: TR-55 Shallow Concentrated Flow

Hydraulic Length	90.00 ft
Is Paved?	True
Slope	0.010 ft/ft
Average Velocity	2.03 ft/s
Segment Time of Concentration	0.012 hours

Segment #3: TR-55 Channel Flow

Flow Area	1.8 ft ²
Hydraulic Length	460.00 ft
Manning's n	0.013
Slope	0.005 ft/ft
Wetted Perimeter	4.71 ft
Average Velocity	4.22 ft/s
Segment Time of Concentration	0.030 hours

Time of Concentration (Composite)

Time of Concentration (Composite)	0.069 hours
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Post-Development Analysis Results (with BMPs)

Subsection: Time of Concentration Calculations

Label: MRC-P

Scenario: Post-Development 1

Return Event: 1 years

Storm Event: 1-YR

==== SCS Channel Flow

$$T_c = \frac{R = Q_a / W_p}{V = (1.49 * (R^{2/3}) * (S_f^{-0.5})) / n}$$

Where: $(L_f / V) / 3600$
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

$$T_c = \frac{\text{Unpaved surface:}}{V = 16.1345 * (S_f^{0.5})}$$

$$\text{Paved Surface:}$$
$$V = 20.3282 * (S_f^{0.5})$$

Where: $(L_f / V) / 3600$
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Sheet Flow

$$T_c = \frac{(0.007 * ((n * L_f)^{0.8}))}{((P^{0.5}) * (S_f^{0.4}))}$$

Where: Tc= Time of concentration, hours
n= Manning's n
Lf= Flow length, feet
P= 2yr, 24hr Rain depth, inches
Sf= Slope, %

Post-Development Analysis Results (with BMPs)

Subsection: Time of Concentration Calculations

Label: PO-2-I

Scenario: Post-Development 1

Return Event: 1 years

Storm Event: 1-YR

Time of Concentration Results

Segment #1: TR-55 Sheet Flow

Hydraulic Length	100.00 ft
Manning's n	0.011
Slope	0.010 ft/ft
2 Year 24 Hour Depth	3.28 in
Average Velocity	1.06 ft/s
Segment Time of Concentration	0.026 hours

Segment #2: TR-55 Channel Flow

Flow Area	1.8 ft ²
Hydraulic Length	560.00 ft
Manning's n	0.013
Slope	0.005 ft/ft
Wetted Perimeter	4.71 ft
Average Velocity	4.22 ft/s
Segment Time of Concentration	0.037 hours

Time of Concentration (Composite)

Time of Concentration (Composite)	0.063 hours
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Post-Development Analysis Results (with BMPs)

Subsection: Time of Concentration Calculations

Label: PO-2-I

Scenario: Post-Development 1

Return Event: 1 years

Storm Event: 1-YR

==== SCS Channel Flow

$$T_c = \frac{R = Q_a / W_p}{V = (1.49 * (R^{2/3}) * (S_f^{-0.5})) / n}$$

Where:

- (L_f / V) / 3600
- R= Hydraulic radius
- A_q= Flow area, square feet
- W_p= Wetted perimeter, feet
- V= Velocity, ft/sec
- S_f= Slope, ft/ft
- n= Manning's n
- T_c= Time of concentration, hours
- L_f= Flow length, feet

==== SCS TR-55 Sheet Flow

$$T_c = \frac{(0.007 * ((n * L_f)^{0.8}) / ((P^{0.5}) * (S_f^{0.4}))}$$

Where:

- T_c= Time of concentration, hours
- n= Manning's n
- L_f= Flow length, feet
- P= 2yr, 24hr Rain depth, inches
- S_f= Slope, %

Post-Development Analysis Results (with BMPs)

Subsection: Time of Concentration Calculations

Label: PO-2-P

Scenario: Post-Development 1

Return Event: 1 years

Storm Event: 1-YR

Time of Concentration Results

Segment #1: TR-55 Sheet Flow

Hydraulic Length	100.00 ft
Manning's n	0.011
Slope	0.010 ft/ft
2 Year 24 Hour Depth	3.28 in
Average Velocity	1.06 ft/s
Segment Time of Concentration	0.026 hours

Segment #2: TR-55 Channel Flow

Flow Area	1.8 ft ²
Hydraulic Length	560.00 ft
Manning's n	0.013
Slope	0.005 ft/ft
Wetted Perimeter	4.71 ft
Average Velocity	4.22 ft/s
Segment Time of Concentration	0.037 hours

Time of Concentration (Composite)

Time of Concentration (Composite)	0.063 hours
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Post-Development Analysis Results (with BMPs)

Subsection: Time of Concentration Calculations

Label: PO-2-P

Scenario: Post-Development 1

Return Event: 1 years

Storm Event: 1-YR

==== SCS Channel Flow

$$T_c = \frac{R = Q_a / W_p}{V = (1.49 * (R^{2/3}) * (S_f^{-0.5})) / n}$$

Where: $(L_f / V) / 3600$
R= Hydraulic radius
A_q= Flow area, square feet
W_p= Wetted perimeter, feet
V= Velocity, ft/sec
S_f= Slope, ft/ft
n= Manning's n
T_c= Time of concentration, hours
L_f= Flow length, feet

==== SCS TR-55 Sheet Flow

$$T_c = \frac{(0.007 * ((n * L_f)^{0.8}) / ((P^{0.5}) * (S_f^{0.4}))}$$

Where: T_c= Time of concentration, hours
n= Manning's n
L_f= Flow length, feet
P= 2yr, 24hr Rain depth, inches
S_f= Slope, %

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Equations

Unit Hydrograph Method (Computational Notes)

Definition of Terms

At	Total area (acres): $A_t = A_i + A_p$
Ai	Impervious area (acres)
Ap	Pervious area (acres)
CNi	Runoff curve number for impervious area
CNp	Runoff curve number for pervious area
fLoss	f loss constant infiltration (depth/time)
gKs	Saturated Hydraulic Conductivity (depth/time)
Md	Volumetric Moisture Deficit
Psi	Capillary Suction (length)
hK	Horton Infiltration Decay Rate (time^{-1})
fo	Initial Infiltration Rate (depth/time)
fc	Ultimate(capacity)Infiltration Rate (depth/time)
Ia	Initial Abstraction (length)
dt	Computational increment (duration of unit excess rainfall) Default dt is smallest value of $0.1333T_c$, r_{tm} , and t_h (Smallest dt is then adjusted to match up with T_p)
UDdt	User specified override computational main time increment (only used if UDdt is $\Rightarrow .1333T_c$)
D(t)	Point on distribution curve (fraction of P) for time step t
K	$2 / (1 + (T_r/T_p))$: default K = 0.75: (for $T_r/T_p = 1.67$)
Ks	Hydrograph shape factor = Unit Conversions * K: = $((1\text{hr}/3600\text{sec}) * (1\text{ft}/12\text{in}) * ((5280\text{ft})^2/\text{sq.mi})) * K$ Default Ks = $645.333 * 0.75 = 484$
Lag	Lag time from center of excess runoff (dt) to T_p : $\text{Lag} = 0.6T_c$
P	Total precipitation depth, inches
Pa(t)	Accumulated rainfall at time step t
Pi(t)	Incremental rainfall at time step t
qp	Peak discharge (cfs) for 1in. runoff, for 1hr, for 1 sq.mi. = $(K_s * A * Q) / T_p$ (where Q = 1in. runoff, A=sq.mi.)
Qu(t)	Unit hydrograph ordinate (cfs) at time step t
Q(t)	Final hydrograph ordinate (cfs) at time step t
Rai(t)	Accumulated runoff (inches) at time step t for impervious area
Rap(t)	Accumulated runoff (inches) at time step t for pervious area
Rii(t)	Incremental runoff (inches) at time step t for impervious area
Rip(t)	Incremental runoff (inches) at time step t for pervious area
R(t)	Incremental weighted total runoff (inches)
Rtm	Time increment for rainfall table
Si	S for impervious area: $S_i = (1000/CN_i) - 10$
Sp	S for pervious area: $S_p = (1000/CN_p) - 10$
t	Time step (row) number
Tc	Time of concentration
Tb	Time (hrs) of entire unit hydrograph: $T_b = T_p + T_r$
Tp	Time (hrs) to peak of a unit hydrograph: $T_p = (dt/2) + \text{Lag}$
Tr	Time (hrs) of receding limb of unit hydrograph: $T_r = \text{ratio of } T_p$

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Equations

Unit Hydrograph Method

Computational Notes

Precipitation

Column (1)	Time for time step t
Column (2)	$D(t)$ = Point on distribution curve for time step t
Column (3)	$P_i(t) = P_a(t) - P_a(t-1)$: Col.(4) - Preceding Col.(4)
Column (4)	$P_a(t) = D(t) \times P$: Col.(2) x P

Pervious Area Runoff (using SCS Runoff CN Method)

Column (5)	$Rap(t)$ = Accumulated pervious runoff for time step t If $(P_a(t) \leq 0.2Sp)$ then use: $Rap(t) = 0.0$ If $(P_a(t) > 0.2Sp)$ then use: $Rap(t) = (Col.(4) - 0.2Sp) * 2 / (Col.(4) + 0.8Sp)$
Column (6)	$Rip(t)$ = Incremental pervious runoff for time step t $Rip(t) = Rap(t) - Rap(t-1)$ $Rip(t) = Col.(5)$ for current row - $Col.(5)$ for preceding row.

Impervious Area Runoff

Column (7 & 8)...	Did not specify to use impervious areas.
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Incremental Weighted Runoff

Column (9)	$R(t) = (A_p/At) \times Rip(t) + (A_i/At) \times Rii(t)$ $R(t) = (A_p/At) \times Col.(6) + (A_i/At) \times Col.(8)$
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SCS Unit Hydrograph Method

Column (10)	$Q(t)$ is computed with the SCS unit hydrograph method using $R(t)$ and $Qu(t)$.
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Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 1 years

Label: DA-1-I

Storm Event: 1-YR

Scenario: Post-Development 1

Storm Event	1-YR
Return Event	1 years
Duration	24.000 hours
Depth	2.73 in
Time of Concentration (Composite)	0.054 hours
Area (User Defined)	12,609.000 ft ²
<hr/>	
Computational Time Increment	0.007 hours
Time to Peak (Computed)	12.101 hours
Flow (Peak, Computed)	0.90 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.90 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	12,609.000 ft ²
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.50 in
Runoff Volume (Pervious)	0.060 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.060 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.054 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	6.02 ft ³ /s
Unit peak time, Tp	0.036 hours
Unit receding limb, Tr	0.145 hours
Total unit time, Tb	0.181 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 1 years

Label: DA-1-I

Storm Event: 1-YR

Scenario: Post-Development 1

Storm Event	1-YR
Return Event	1 years
Duration	24.000 hours
Depth	2.73 in
Time of Concentration (Composite)	0.054 hours
Area (User Defined)	12,609.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
1.750	0.00	0.00	0.00	0.00	0.00
2.000	0.00	0.00	0.00	0.00	0.00
2.250	0.00	0.00	0.00	0.00	0.00
2.500	0.00	0.00	0.00	0.00	0.00
2.750	0.00	0.00	0.00	0.00	0.00
3.000	0.00	0.00	0.00	0.00	0.00
3.250	0.00	0.00	0.00	0.00	0.00
3.500	0.00	0.01	0.01	0.01	0.01
3.750	0.01	0.01	0.01	0.01	0.01
4.000	0.01	0.01	0.01	0.01	0.01
4.250	0.01	0.01	0.01	0.01	0.01
4.500	0.01	0.01	0.01	0.01	0.01
4.750	0.01	0.01	0.01	0.01	0.01
5.000	0.01	0.01	0.01	0.01	0.01
5.250	0.01	0.01	0.01	0.01	0.01
5.500	0.01	0.01	0.01	0.01	0.01
5.750	0.01	0.01	0.01	0.01	0.01
6.000	0.01	0.01	0.01	0.01	0.01
6.250	0.01	0.01	0.01	0.01	0.01
6.500	0.01	0.01	0.01	0.01	0.01
6.750	0.01	0.01	0.01	0.01	0.01
7.000	0.01	0.01	0.01	0.01	0.01
7.250	0.01	0.01	0.01	0.01	0.01
7.500	0.01	0.01	0.01	0.01	0.01
7.750	0.01	0.02	0.02	0.02	0.02
8.000	0.02	0.02	0.02	0.02	0.02
8.250	0.02	0.02	0.02	0.02	0.02
8.500	0.02	0.02	0.02	0.02	0.02
8.750	0.02	0.02	0.02	0.02	0.02
9.000	0.02	0.02	0.02	0.02	0.02
9.250	0.02	0.02	0.02	0.02	0.02
9.500	0.03	0.03	0.03	0.03	0.03
9.750	0.03	0.03	0.03	0.03	0.03
10.000	0.03	0.03	0.03	0.03	0.03
10.250	0.03	0.03	0.04	0.04	0.04
10.500	0.04	0.04	0.04	0.04	0.05
10.750	0.05	0.05	0.05	0.05	0.06
11.000	0.06	0.06	0.07	0.07	0.08
11.250	0.08	0.08	0.09	0.09	0.10

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 1 years

Label: DA-1-I

Storm Event: 1-YR

Scenario: Post-Development 1

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.500	0.10	0.14	0.15	0.16	0.16
11.750	0.21	0.22	0.29	0.31	0.47
12.000	0.54	0.80	0.90	0.50	0.34
12.250	0.26	0.23	0.19	0.17	0.16
12.500	0.16	0.12	0.10	0.10	0.10
12.750	0.09	0.09	0.08	0.08	0.07
13.000	0.07	0.07	0.06	0.06	0.06
13.250	0.06	0.05	0.05	0.05	0.05
13.500	0.04	0.04	0.04	0.04	0.04
13.750	0.04	0.04	0.04	0.04	0.04
14.000	0.04	0.03	0.03	0.03	0.03
14.250	0.03	0.03	0.03	0.03	0.03
14.500	0.03	0.03	0.03	0.03	0.03
14.750	0.03	0.03	0.02	0.02	0.02
15.000	0.02	0.02	0.02	0.02	0.02
15.250	0.02	0.02	0.02	0.02	0.02
15.500	0.02	0.02	0.02	0.02	0.02
15.750	0.02	0.02	0.02	0.02	0.02
16.000	0.02	0.02	0.02	0.02	0.02
16.250	0.02	0.02	0.02	0.02	0.02
16.500	0.02	0.02	0.02	0.02	0.02
16.750	0.02	0.02	0.02	0.02	0.02
17.000	0.02	0.02	0.02	0.02	0.02
17.250	0.02	0.02	0.02	0.01	0.01
17.500	0.01	0.01	0.01	0.01	0.01
17.750	0.01	0.01	0.01	0.01	0.01
18.000	0.01	0.01	0.01	0.01	0.01
18.250	0.01	0.01	0.01	0.01	0.01
18.500	0.01	0.01	0.01	0.01	0.01
18.750	0.01	0.01	0.01	0.01	0.01
19.000	0.01	0.01	0.01	0.01	0.01
19.250	0.01	0.01	0.01	0.01	0.01
19.500	0.01	0.01	0.01	0.01	0.01
19.750	0.01	0.01	0.01	0.01	0.01
20.000	0.01	0.01	0.01	0.01	0.01
20.250	0.01	0.01	0.01	0.01	0.01
20.500	0.01	0.01	0.01	0.01	0.01
20.750	0.01	0.01	0.01	0.01	0.01
21.000	0.01	0.01	0.01	0.01	0.01
21.250	0.01	0.01	0.01	0.01	0.01
21.500	0.01	0.01	0.01	0.01	0.01
21.750	0.01	0.01	0.01	0.01	0.01
22.000	0.01	0.01	0.01	0.01	0.01
22.250	0.01	0.01	0.01	0.01	0.01
22.500	0.01	0.01	0.01	0.01	0.01
22.750	0.01	0.01	0.01	0.01	0.01
23.000	0.01	0.01	0.01	0.01	0.01
23.250	0.01	0.01	0.01	0.01	0.01

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-1-I

Scenario: Post-Development 1

Return Event: 1 years

Storm Event: 1-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
23.500	0.01	0.01	0.01	0.01	0.01
23.750	0.01	0.01	0.01	0.01	0.01
24.000	0.01	(N/A)	(N/A)	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Label: DA-1-I

Scenario: Post-Development 2

Return Event: 2 years

Storm Event: 2-YR

Storm Event	2-YR
Return Event	2 years
Duration	24.000 hours
Depth	3.28 in
Time of Concentration (Composite)	0.054 hours
Area (User Defined)	12,609.000 ft ²
<hr/>	
Computational Time Increment	0.007 hours
Time to Peak (Computed)	12.101 hours
Flow (Peak, Computed)	1.09 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	1.09 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	12,609.000 ft ²
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.05 in
Runoff Volume (Pervious)	0.074 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.073 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.054 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	6.02 ft ³ /s
Unit peak time, Tp	0.036 hours
Unit receding limb, Tr	0.145 hours
Total unit time, Tb	0.181 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 2 years

Label: DA-1-I

Storm Event: 2-YR

Scenario: Post-Development 2

Storm Event	2-YR
Return Event	2 years
Duration	24.000 hours
Depth	3.28 in
Time of Concentration (Composite)	0.054 hours
Area (User Defined)	12,609.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
1.450	0.00	0.00	0.00	0.00	0.00
1.700	0.00	0.00	0.00	0.00	0.00
1.950	0.00	0.00	0.00	0.00	0.00
2.200	0.00	0.00	0.00	0.00	0.00
2.450	0.00	0.00	0.00	0.00	0.00
2.700	0.00	0.01	0.01	0.01	0.01
2.950	0.01	0.01	0.01	0.01	0.01
3.200	0.01	0.01	0.01	0.01	0.01
3.450	0.01	0.01	0.01	0.01	0.01
3.700	0.01	0.01	0.01	0.01	0.01
3.950	0.01	0.01	0.01	0.01	0.01
4.200	0.01	0.01	0.01	0.01	0.01
4.450	0.01	0.01	0.01	0.01	0.01
4.700	0.01	0.01	0.01	0.01	0.01
4.950	0.01	0.01	0.01	0.01	0.01
5.200	0.01	0.01	0.01	0.01	0.01
5.450	0.01	0.01	0.01	0.01	0.01
5.700	0.01	0.01	0.01	0.01	0.01
5.950	0.01	0.01	0.01	0.01	0.01
6.200	0.01	0.01	0.01	0.01	0.01
6.450	0.01	0.01	0.01	0.01	0.01
6.700	0.01	0.01	0.01	0.02	0.02
6.950	0.02	0.02	0.02	0.02	0.02
7.200	0.02	0.02	0.02	0.02	0.02
7.450	0.02	0.02	0.02	0.02	0.02
7.700	0.02	0.02	0.02	0.02	0.02
7.950	0.02	0.02	0.02	0.02	0.02
8.200	0.02	0.02	0.02	0.02	0.02
8.450	0.02	0.02	0.02	0.02	0.02
8.700	0.02	0.02	0.02	0.02	0.02
8.950	0.02	0.02	0.03	0.03	0.03
9.200	0.03	0.03	0.03	0.03	0.03
9.450	0.03	0.03	0.03	0.03	0.03
9.700	0.03	0.03	0.04	0.04	0.04
9.950	0.04	0.04	0.04	0.04	0.04
10.200	0.04	0.04	0.04	0.04	0.04
10.450	0.05	0.05	0.05	0.05	0.05
10.700	0.06	0.06	0.06	0.07	0.07
10.950	0.07	0.07	0.08	0.08	0.09

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 2 years

Label: DA-1-I

Storm Event: 2-YR

Scenario: Post-Development 2

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.200	0.09	0.10	0.10	0.11	0.11
11.450	0.12	0.12	0.17	0.19	0.19
11.700	0.20	0.25	0.27	0.35	0.38
11.950	0.57	0.65	0.97	1.09	0.61
12.200	0.41	0.31	0.28	0.23	0.20
12.450	0.20	0.19	0.15	0.13	0.12
12.700	0.12	0.11	0.11	0.10	0.10
12.950	0.09	0.09	0.08	0.08	0.07
13.200	0.07	0.07	0.06	0.06	0.06
13.450	0.06	0.05	0.05	0.05	0.05
13.700	0.05	0.05	0.05	0.04	0.04
13.950	0.04	0.04	0.04	0.04	0.04
14.200	0.04	0.04	0.04	0.04	0.04
14.450	0.04	0.04	0.03	0.03	0.03
14.700	0.03	0.03	0.03	0.03	0.03
14.950	0.03	0.03	0.03	0.03	0.03
15.200	0.03	0.03	0.03	0.03	0.03
15.450	0.03	0.03	0.02	0.02	0.02
15.700	0.02	0.02	0.02	0.02	0.02
15.950	0.02	0.02	0.02	0.02	0.02
16.200	0.02	0.02	0.02	0.02	0.02
16.450	0.02	0.02	0.02	0.02	0.02
16.700	0.02	0.02	0.02	0.02	0.02
16.950	0.02	0.02	0.02	0.02	0.02
17.200	0.02	0.02	0.02	0.02	0.02
17.450	0.02	0.02	0.02	0.02	0.02
17.700	0.02	0.02	0.02	0.02	0.02
17.950	0.02	0.02	0.02	0.02	0.02
18.200	0.02	0.02	0.02	0.02	0.02
18.450	0.01	0.01	0.01	0.01	0.01
18.700	0.01	0.01	0.01	0.01	0.01
18.950	0.01	0.01	0.01	0.01	0.01
19.200	0.01	0.01	0.01	0.01	0.01
19.450	0.01	0.01	0.01	0.01	0.01
19.700	0.01	0.01	0.01	0.01	0.01
19.950	0.01	0.01	0.01	0.01	0.01
20.200	0.01	0.01	0.01	0.01	0.01
20.450	0.01	0.01	0.01	0.01	0.01
20.700	0.01	0.01	0.01	0.01	0.01
20.950	0.01	0.01	0.01	0.01	0.01
21.200	0.01	0.01	0.01	0.01	0.01
21.450	0.01	0.01	0.01	0.01	0.01
21.700	0.01	0.01	0.01	0.01	0.01
21.950	0.01	0.01	0.01	0.01	0.01
22.200	0.01	0.01	0.01	0.01	0.01
22.450	0.01	0.01	0.01	0.01	0.01
22.700	0.01	0.01	0.01	0.01	0.01
22.950	0.01	0.01	0.01	0.01	0.01

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-1-I

Scenario: Post-Development 2

Return Event: 2 years

Storm Event: 2-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
23.200	0.01	0.01	0.01	0.01	0.01
23.450	0.01	0.01	0.01	0.01	0.01
23.700	0.01	0.01	0.01	0.01	0.01
23.950	0.01	0.01	(N/A)	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Label: DA-1-I

Scenario: Post-Development 5

Return Event: 5 years

Storm Event: 5-YR

Storm Event	5-YR
Return Event	5 years
Duration	24.000 hours
Depth	4.12 in
Time of Concentration (Composite)	0.054 hours
Area (User Defined)	12,609.000 ft ²
<hr/>	
Computational Time Increment	0.007 hours
Time to Peak (Computed)	12.101 hours
Flow (Peak, Computed)	1.38 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	1.37 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	12,609.000 ft ²
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.89 in
Runoff Volume (Pervious)	0.094 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.094 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.054 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	6.02 ft ³ /s
Unit peak time, Tp	0.036 hours
Unit receding limb, Tr	0.145 hours
Total unit time, Tb	0.181 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 5 years

Label: DA-1-I

Storm Event: 5-YR

Scenario: Post-Development 5

Storm Event	5-YR
Return Event	5 years
Duration	24.000 hours
Depth	4.12 in
Time of Concentration (Composite)	0.054 hours
Area (User Defined)	12,609.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
1.100	0.00	0.00	0.00	0.00	0.00
1.350	0.00	0.00	0.00	0.00	0.00
1.600	0.00	0.00	0.00	0.00	0.00
1.850	0.00	0.00	0.00	0.01	0.01
2.100	0.01	0.01	0.01	0.01	0.01
2.350	0.01	0.01	0.01	0.01	0.01
2.600	0.01	0.01	0.01	0.01	0.01
2.850	0.01	0.01	0.01	0.01	0.01
3.100	0.01	0.01	0.01	0.01	0.01
3.350	0.01	0.01	0.01	0.01	0.01
3.600	0.01	0.01	0.01	0.01	0.01
3.850	0.01	0.01	0.01	0.01	0.01
4.100	0.01	0.01	0.01	0.01	0.01
4.350	0.01	0.01	0.01	0.01	0.01
4.600	0.01	0.01	0.01	0.01	0.01
4.850	0.01	0.01	0.01	0.01	0.01
5.100	0.01	0.01	0.01	0.01	0.01
5.350	0.01	0.01	0.01	0.01	0.02
5.600	0.02	0.02	0.02	0.02	0.02
5.850	0.02	0.02	0.02	0.02	0.02
6.100	0.02	0.02	0.02	0.02	0.02
6.350	0.02	0.02	0.02	0.02	0.02
6.600	0.02	0.02	0.02	0.02	0.02
6.850	0.02	0.02	0.02	0.02	0.02
7.100	0.02	0.02	0.02	0.02	0.02
7.350	0.02	0.02	0.02	0.02	0.02
7.600	0.02	0.02	0.02	0.02	0.03
7.850	0.03	0.03	0.03	0.03	0.03
8.100	0.03	0.03	0.03	0.03	0.03
8.350	0.03	0.03	0.03	0.03	0.03
8.600	0.03	0.03	0.03	0.03	0.03
8.850	0.03	0.03	0.03	0.03	0.03
9.100	0.03	0.03	0.03	0.04	0.04
9.350	0.04	0.04	0.04	0.04	0.04
9.600	0.04	0.04	0.04	0.04	0.05
9.850	0.05	0.05	0.05	0.05	0.05
10.100	0.05	0.05	0.05	0.05	0.05
10.350	0.06	0.06	0.06	0.06	0.06
10.600	0.06	0.07	0.07	0.08	0.08

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 5 years

Label: DA-1-I

Storm Event: 5-YR

Scenario: Post-Development 5

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.850	0.08	0.09	0.09	0.09	0.10
11.100	0.10	0.11	0.12	0.13	0.13
11.350	0.14	0.14	0.15	0.15	0.21
11.600	0.24	0.25	0.25	0.32	0.34
11.850	0.44	0.48	0.72	0.82	1.22
12.100	1.37	0.77	0.51	0.39	0.35
12.350	0.28	0.26	0.25	0.24	0.18
12.600	0.16	0.15	0.15	0.14	0.13
12.850	0.12	0.12	0.11	0.11	0.10
13.100	0.10	0.09	0.09	0.08	0.08
13.350	0.08	0.07	0.07	0.07	0.06
13.600	0.06	0.06	0.06	0.06	0.06
13.850	0.06	0.06	0.05	0.05	0.05
14.100	0.05	0.05	0.05	0.05	0.05
14.350	0.05	0.05	0.05	0.04	0.04
14.600	0.04	0.04	0.04	0.04	0.04
14.850	0.04	0.04	0.04	0.04	0.03
15.100	0.03	0.03	0.03	0.03	0.03
15.350	0.03	0.03	0.03	0.03	0.03
15.600	0.03	0.03	0.03	0.03	0.03
15.850	0.03	0.03	0.03	0.03	0.03
16.100	0.03	0.03	0.03	0.03	0.03
16.350	0.03	0.03	0.03	0.03	0.03
16.600	0.03	0.03	0.03	0.03	0.03
16.850	0.03	0.03	0.02	0.02	0.02
17.100	0.02	0.02	0.02	0.02	0.02
17.350	0.02	0.02	0.02	0.02	0.02
17.600	0.02	0.02	0.02	0.02	0.02
17.850	0.02	0.02	0.02	0.02	0.02
18.100	0.02	0.02	0.02	0.02	0.02
18.350	0.02	0.02	0.02	0.02	0.02
18.600	0.02	0.02	0.02	0.02	0.02
18.850	0.02	0.02	0.02	0.02	0.02
19.100	0.02	0.02	0.02	0.02	0.02
19.350	0.02	0.02	0.02	0.02	0.02
19.600	0.02	0.02	0.02	0.02	0.02
19.850	0.02	0.02	0.02	0.02	0.02
20.100	0.02	0.02	0.02	0.02	0.02
20.350	0.02	0.02	0.02	0.02	0.02
20.600	0.02	0.02	0.02	0.02	0.02
20.850	0.02	0.02	0.02	0.02	0.02
21.100	0.02	0.02	0.02	0.02	0.02
21.350	0.02	0.02	0.02	0.02	0.02
21.600	0.02	0.02	0.02	0.02	0.02
21.850	0.01	0.01	0.01	0.01	0.01
22.100	0.01	0.01	0.01	0.01	0.01
22.350	0.01	0.01	0.01	0.01	0.01
22.600	0.01	0.01	0.01	0.01	0.01

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-1-I

Scenario: Post-Development 5

Return Event: 5 years

Storm Event: 5-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
22.850	0.01	0.01	0.01	0.01	0.01
23.100	0.01	0.01	0.01	0.01	0.01
23.350	0.01	0.01	0.01	0.01	0.01
23.600	0.01	0.01	0.01	0.01	0.01
23.850	0.01	0.01	0.01	0.02	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 10 years

Label: DA-1-I

Storm Event: 10-YR

Scenario: Post-Development 10

Storm Event	10-YR
Return Event	10 years
Duration	24.000 hours
Depth	4.82 in
Time of Concentration (Composite)	0.054 hours
Area (User Defined)	12,609.000 ft ²
<hr/>	
Computational Time Increment	0.007 hours
Time to Peak (Computed)	12.101 hours
Flow (Peak, Computed)	1.61 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	1.61 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	12,609.000 ft ²
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	4.58 in
Runoff Volume (Pervious)	0.111 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.111 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.054 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	6.02 ft ³ /s
Unit peak time, Tp	0.036 hours
Unit receding limb, Tr	0.145 hours
Total unit time, Tb	0.181 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 10 years

Label: DA-1-I

Storm Event: 10-YR

Scenario: Post-Development 10

Storm Event	10-YR
Return Event	10 years
Duration	24.000 hours
Depth	4.82 in
Time of Concentration (Composite)	0.054 hours
Area (User Defined)	12,609.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
0.950	0.00	0.00	0.00	0.00	0.00
1.200	0.00	0.00	0.00	0.00	0.00
1.450	0.00	0.00	0.00	0.01	0.01
1.700	0.01	0.01	0.01	0.01	0.01
1.950	0.01	0.01	0.01	0.01	0.01
2.200	0.01	0.01	0.01	0.01	0.01
2.450	0.01	0.01	0.01	0.01	0.01
2.700	0.01	0.01	0.01	0.01	0.01
2.950	0.01	0.01	0.01	0.01	0.01
3.200	0.01	0.01	0.01	0.01	0.01
3.450	0.01	0.01	0.01	0.01	0.01
3.700	0.01	0.01	0.01	0.01	0.01
3.950	0.01	0.01	0.01	0.01	0.02
4.200	0.02	0.02	0.02	0.02	0.02
4.450	0.02	0.02	0.02	0.02	0.02
4.700	0.02	0.02	0.02	0.02	0.02
4.950	0.02	0.02	0.02	0.02	0.02
5.200	0.02	0.02	0.02	0.02	0.02
5.450	0.02	0.02	0.02	0.02	0.02
5.700	0.02	0.02	0.02	0.02	0.02
5.950	0.02	0.02	0.02	0.02	0.02
6.200	0.02	0.02	0.02	0.02	0.02
6.450	0.02	0.02	0.02	0.02	0.02
6.700	0.02	0.02	0.02	0.02	0.02
6.950	0.03	0.03	0.03	0.03	0.03
7.200	0.03	0.03	0.03	0.03	0.03
7.450	0.03	0.03	0.03	0.03	0.03
7.700	0.03	0.03	0.03	0.03	0.03
7.950	0.03	0.03	0.03	0.03	0.03
8.200	0.03	0.03	0.03	0.03	0.03
8.450	0.03	0.03	0.03	0.03	0.04
8.700	0.04	0.04	0.04	0.04	0.04
8.950	0.04	0.04	0.04	0.04	0.04
9.200	0.04	0.04	0.04	0.04	0.05
9.450	0.05	0.05	0.05	0.05	0.05
9.700	0.05	0.05	0.05	0.06	0.06
9.950	0.06	0.06	0.06	0.06	0.06
10.200	0.06	0.06	0.06	0.07	0.07
10.450	0.07	0.07	0.07	0.08	0.08

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 10 years

Label: DA-1-I

Storm Event: 10-YR

Scenario: Post-Development 10

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.700	0.08	0.09	0.09	0.10	0.10
10.950	0.11	0.11	0.12	0.12	0.13
11.200	0.14	0.15	0.15	0.16	0.17
11.450	0.18	0.18	0.25	0.28	0.29
11.700	0.30	0.37	0.40	0.51	0.56
11.950	0.85	0.96	1.43	1.61	0.90
12.200	0.60	0.46	0.41	0.33	0.30
12.450	0.29	0.28	0.21	0.19	0.18
12.700	0.17	0.16	0.16	0.15	0.14
12.950	0.13	0.13	0.12	0.11	0.11
13.200	0.10	0.10	0.10	0.09	0.09
13.450	0.08	0.08	0.07	0.07	0.07
13.700	0.07	0.07	0.07	0.07	0.06
13.950	0.06	0.06	0.06	0.06	0.06
14.200	0.06	0.06	0.06	0.05	0.05
14.450	0.05	0.05	0.05	0.05	0.05
14.700	0.05	0.05	0.05	0.04	0.04
14.950	0.04	0.04	0.04	0.04	0.04
15.200	0.04	0.04	0.04	0.04	0.04
15.450	0.04	0.04	0.04	0.04	0.04
15.700	0.04	0.04	0.04	0.04	0.03
15.950	0.03	0.03	0.03	0.03	0.03
16.200	0.03	0.03	0.03	0.03	0.03
16.450	0.03	0.03	0.03	0.03	0.03
16.700	0.03	0.03	0.03	0.03	0.03
16.950	0.03	0.03	0.03	0.03	0.03
17.200	0.03	0.03	0.03	0.03	0.03
17.450	0.03	0.03	0.03	0.03	0.03
17.700	0.02	0.02	0.02	0.02	0.02
17.950	0.02	0.02	0.02	0.02	0.02
18.200	0.02	0.02	0.02	0.02	0.02
18.450	0.02	0.02	0.02	0.02	0.02
18.700	0.02	0.02	0.02	0.02	0.02
18.950	0.02	0.02	0.02	0.02	0.02
19.200	0.02	0.02	0.02	0.02	0.02
19.450	0.02	0.02	0.02	0.02	0.02
19.700	0.02	0.02	0.02	0.02	0.02
19.950	0.02	0.02	0.02	0.02	0.02
20.200	0.02	0.02	0.02	0.02	0.02
20.450	0.02	0.02	0.02	0.02	0.02
20.700	0.02	0.02	0.02	0.02	0.02
20.950	0.02	0.02	0.02	0.02	0.02
21.200	0.02	0.02	0.02	0.02	0.02
21.450	0.02	0.02	0.02	0.02	0.02
21.700	0.02	0.02	0.02	0.02	0.02
21.950	0.02	0.02	0.02	0.02	0.02
22.200	0.02	0.02	0.02	0.02	0.02
22.450	0.02	0.02	0.02	0.02	0.02

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-1-I

Scenario: Post-Development 10

Return Event: 10 years

Storm Event: 10-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
22.700	0.02	0.02	0.02	0.02	0.02
22.950	0.02	0.02	0.02	0.02	0.02
23.200	0.02	0.02	0.02	0.02	0.02
23.450	0.02	0.02	0.01	0.01	0.01
23.700	0.01	0.01	0.01	0.01	0.01
23.950	0.02	0.02	(N/A)	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 25 years

Label: DA-1-I

Storm Event: 25-YR

Scenario: Post-Development 25

Storm Event	25-YR
Return Event	25 years
Duration	24.000 hours
Depth	5.83 in
Time of Concentration (Composite)	0.054 hours
Area (User Defined)	12,609.000 ft ²
<hr/>	
Computational Time Increment	0.007 hours
Time to Peak (Computed)	12.101 hours
Flow (Peak, Computed)	1.95 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	1.95 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	12,609.000 ft ²
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.59 in
Runoff Volume (Pervious)	0.135 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.135 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.054 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	6.02 ft ³ /s
Unit peak time, Tp	0.036 hours
Unit receding limb, Tr	0.145 hours
Total unit time, Tb	0.181 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 25 years

Label: DA-1-I

Storm Event: 25-YR

Scenario: Post-Development 25

Storm Event	25-YR
Return Event	25 years
Duration	24.000 hours
Depth	5.83 in
Time of Concentration (Composite)	0.054 hours
Area (User Defined)	12,609.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
0.750	0.00	0.00	0.00	0.00	0.00
1.000	0.00	0.00	0.00	0.00	0.01
1.250	0.01	0.01	0.01	0.01	0.01
1.500	0.01	0.01	0.01	0.01	0.01
1.750	0.01	0.01	0.01	0.01	0.01
2.000	0.01	0.01	0.01	0.01	0.01
2.250	0.01	0.01	0.01	0.01	0.01
2.500	0.01	0.01	0.01	0.01	0.01
2.750	0.01	0.01	0.01	0.01	0.02
3.000	0.02	0.02	0.02	0.02	0.02
3.250	0.02	0.02	0.02	0.02	0.02
3.500	0.02	0.02	0.02	0.02	0.02
3.750	0.02	0.02	0.02	0.02	0.02
4.000	0.02	0.02	0.02	0.02	0.02
4.250	0.02	0.02	0.02	0.02	0.02
4.500	0.02	0.02	0.02	0.02	0.02
4.750	0.02	0.02	0.02	0.02	0.02
5.000	0.02	0.02	0.02	0.02	0.02
5.250	0.02	0.02	0.02	0.02	0.02
5.500	0.02	0.02	0.02	0.02	0.02
5.750	0.02	0.02	0.02	0.02	0.02
6.000	0.02	0.02	0.03	0.03	0.03
6.250	0.03	0.03	0.03	0.03	0.03
6.500	0.03	0.03	0.03	0.03	0.03
6.750	0.03	0.03	0.03	0.03	0.03
7.000	0.03	0.03	0.03	0.03	0.03
7.250	0.03	0.03	0.03	0.03	0.03
7.500	0.04	0.04	0.04	0.04	0.04
7.750	0.04	0.04	0.04	0.04	0.04
8.000	0.04	0.04	0.04	0.04	0.04
8.250	0.04	0.04	0.04	0.04	0.04
8.500	0.04	0.04	0.04	0.04	0.04
8.750	0.04	0.04	0.04	0.04	0.05
9.000	0.05	0.05	0.05	0.05	0.05
9.250	0.05	0.05	0.06	0.06	0.06
9.500	0.06	0.06	0.06	0.06	0.06
9.750	0.07	0.07	0.07	0.07	0.07
10.000	0.07	0.07	0.07	0.08	0.08
10.250	0.08	0.08	0.08	0.08	0.08

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 25 years

Label: DA-1-I

Storm Event: 25-YR

Scenario: Post-Development 25

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.500	0.08	0.09	0.09	0.10	0.10
10.750	0.11	0.11	0.12	0.12	0.13
11.000	0.13	0.14	0.15	0.16	0.17
11.250	0.18	0.19	0.20	0.20	0.21
11.500	0.22	0.30	0.34	0.35	0.36
11.750	0.45	0.49	0.62	0.68	1.03
12.000	1.17	1.73	1.95	1.09	0.73
12.250	0.56	0.50	0.40	0.37	0.35
12.500	0.34	0.26	0.23	0.21	0.21
12.750	0.20	0.19	0.18	0.17	0.16
13.000	0.15	0.14	0.14	0.13	0.13
13.250	0.12	0.12	0.11	0.11	0.10
13.500	0.10	0.09	0.09	0.08	0.08
13.750	0.08	0.08	0.08	0.08	0.08
14.000	0.08	0.07	0.07	0.07	0.07
14.250	0.07	0.07	0.07	0.07	0.06
14.500	0.06	0.06	0.06	0.06	0.06
14.750	0.06	0.06	0.05	0.05	0.05
15.000	0.05	0.05	0.05	0.05	0.05
15.250	0.05	0.05	0.05	0.05	0.05
15.500	0.04	0.04	0.04	0.04	0.04
15.750	0.04	0.04	0.04	0.04	0.04
16.000	0.04	0.04	0.04	0.04	0.04
16.250	0.04	0.04	0.04	0.04	0.04
16.500	0.04	0.04	0.04	0.04	0.04
16.750	0.04	0.04	0.04	0.04	0.04
17.000	0.03	0.03	0.03	0.03	0.03
17.250	0.03	0.03	0.03	0.03	0.03
17.500	0.03	0.03	0.03	0.03	0.03
17.750	0.03	0.03	0.03	0.03	0.03
18.000	0.03	0.03	0.03	0.03	0.03
18.250	0.03	0.03	0.03	0.03	0.03
18.500	0.03	0.03	0.03	0.03	0.03
18.750	0.03	0.03	0.03	0.03	0.03
19.000	0.03	0.03	0.03	0.03	0.03
19.250	0.03	0.03	0.03	0.03	0.03
19.500	0.02	0.02	0.02	0.02	0.02
19.750	0.02	0.02	0.02	0.02	0.02
20.000	0.02	0.02	0.02	0.02	0.02
20.250	0.02	0.02	0.02	0.02	0.02
20.500	0.02	0.02	0.02	0.02	0.02
20.750	0.02	0.02	0.02	0.02	0.02
21.000	0.02	0.02	0.02	0.02	0.02
21.250	0.02	0.02	0.02	0.02	0.02
21.500	0.02	0.02	0.02	0.02	0.02
21.750	0.02	0.02	0.02	0.02	0.02
22.000	0.02	0.02	0.02	0.02	0.02
22.250	0.02	0.02	0.02	0.02	0.02

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-1-I

Scenario: Post-Development 25

Return Event: 25 years

Storm Event: 25-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
22.500	0.02	0.02	0.02	0.02	0.02
22.750	0.02	0.02	0.02	0.02	0.02
23.000	0.02	0.02	0.02	0.02	0.02
23.250	0.02	0.02	0.02	0.02	0.02
23.500	0.02	0.02	0.02	0.02	0.02
23.750	0.02	0.02	0.02	0.02	0.02
24.000	0.02	(N/A)	(N/A)	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 50 years

Label: DA-1-I

Storm Event: 50-YR

Scenario: Post-Development 50

Storm Event	50-YR
Return Event	50 years
Duration	24.000 hours
Depth	6.68 in
Time of Concentration (Composite)	0.054 hours
Area (User Defined)	12,609.000 ft ²
<hr/>	
Computational Time Increment	0.007 hours
Time to Peak (Computed)	12.101 hours
Flow (Peak, Computed)	2.24 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	2.24 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	12,609.000 ft ²
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.44 in
Runoff Volume (Pervious)	0.155 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.155 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.054 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	6.02 ft ³ /s
Unit peak time, Tp	0.036 hours
Unit receding limb, Tr	0.145 hours
Total unit time, Tb	0.181 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 50 years

Label: DA-1-I

Storm Event: 50-YR

Scenario: Post-Development 50

Storm Event	50-YR
Return Event	50 years
Duration	24.000 hours
Depth	6.68 in
Time of Concentration (Composite)	0.054 hours
Area (User Defined)	12,609.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
0.650	0.00	0.00	0.00	0.00	0.00
0.900	0.00	0.00	0.01	0.01	0.01
1.150	0.01	0.01	0.01	0.01	0.01
1.400	0.01	0.01	0.01	0.01	0.01
1.650	0.01	0.01	0.01	0.01	0.01
1.900	0.01	0.01	0.01	0.01	0.01
2.150	0.01	0.01	0.02	0.02	0.02
2.400	0.02	0.02	0.02	0.02	0.02
2.650	0.02	0.02	0.02	0.02	0.02
2.900	0.02	0.02	0.02	0.02	0.02
3.150	0.02	0.02	0.02	0.02	0.02
3.400	0.02	0.02	0.02	0.02	0.02
3.650	0.02	0.02	0.02	0.02	0.02
3.900	0.02	0.02	0.02	0.02	0.02
4.150	0.02	0.02	0.02	0.02	0.02
4.400	0.02	0.02	0.02	0.02	0.02
4.650	0.02	0.02	0.03	0.03	0.03
4.900	0.03	0.03	0.03	0.03	0.03
5.150	0.03	0.03	0.03	0.03	0.03
5.400	0.03	0.03	0.03	0.03	0.03
5.650	0.03	0.03	0.03	0.03	0.03
5.900	0.03	0.03	0.03	0.03	0.03
6.150	0.03	0.03	0.03	0.03	0.03
6.400	0.03	0.03	0.03	0.03	0.03
6.650	0.03	0.03	0.03	0.03	0.04
6.900	0.04	0.04	0.04	0.04	0.04
7.150	0.04	0.04	0.04	0.04	0.04
7.400	0.04	0.04	0.04	0.04	0.04
7.650	0.04	0.04	0.04	0.04	0.04
7.900	0.04	0.04	0.04	0.05	0.05
8.150	0.05	0.05	0.05	0.05	0.05
8.400	0.05	0.05	0.05	0.05	0.05
8.650	0.05	0.05	0.05	0.05	0.05
8.900	0.05	0.05	0.05	0.05	0.06
9.150	0.06	0.06	0.06	0.06	0.06
9.400	0.06	0.07	0.07	0.07	0.07
9.650	0.07	0.07	0.08	0.08	0.08
9.900	0.08	0.08	0.08	0.08	0.08
10.150	0.09	0.09	0.09	0.09	0.09

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 50 years

Label: DA-1-I

Storm Event: 50-YR

Scenario: Post-Development 50

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.400	0.09	0.10	0.10	0.10	0.11
10.650	0.12	0.12	0.13	0.13	0.14
10.900	0.14	0.15	0.15	0.17	0.17
11.150	0.19	0.19	0.21	0.21	0.23
11.400	0.24	0.25	0.25	0.35	0.39
11.650	0.40	0.41	0.52	0.56	0.72
11.900	0.78	1.18	1.34	1.99	2.24
12.150	1.25	0.83	0.64	0.57	0.46
12.400	0.42	0.40	0.39	0.30	0.26
12.650	0.24	0.24	0.22	0.22	0.20
12.900	0.20	0.18	0.18	0.16	0.15
13.150	0.15	0.14	0.14	0.13	0.12
13.400	0.12	0.11	0.11	0.10	0.10
13.650	0.10	0.10	0.09	0.09	0.09
13.900	0.09	0.09	0.09	0.08	0.08
14.150	0.08	0.08	0.08	0.08	0.08
14.400	0.08	0.07	0.07	0.07	0.07
14.650	0.07	0.07	0.06	0.06	0.06
14.900	0.06	0.06	0.06	0.06	0.05
15.150	0.05	0.05	0.05	0.05	0.05
15.400	0.05	0.05	0.05	0.05	0.05
15.650	0.05	0.05	0.05	0.05	0.05
15.900	0.05	0.05	0.05	0.05	0.05
16.150	0.05	0.05	0.05	0.05	0.04
16.400	0.04	0.04	0.04	0.04	0.04
16.650	0.04	0.04	0.04	0.04	0.04
16.900	0.04	0.04	0.04	0.04	0.04
17.150	0.04	0.04	0.04	0.04	0.04
17.400	0.04	0.04	0.04	0.04	0.04
17.650	0.03	0.03	0.03	0.03	0.03
17.900	0.03	0.03	0.03	0.03	0.03
18.150	0.03	0.03	0.03	0.03	0.03
18.400	0.03	0.03	0.03	0.03	0.03
18.650	0.03	0.03	0.03	0.03	0.03
18.900	0.03	0.03	0.03	0.03	0.03
19.150	0.03	0.03	0.03	0.03	0.03
19.400	0.03	0.03	0.03	0.03	0.03
19.650	0.03	0.03	0.03	0.03	0.03
19.900	0.03	0.03	0.03	0.03	0.03
20.150	0.03	0.03	0.03	0.03	0.03
20.400	0.03	0.03	0.03	0.03	0.03
20.650	0.03	0.03	0.03	0.03	0.03
20.900	0.03	0.03	0.03	0.03	0.03
21.150	0.03	0.03	0.03	0.03	0.03
21.400	0.02	0.02	0.02	0.02	0.02
21.650	0.02	0.02	0.02	0.02	0.02
21.900	0.02	0.02	0.02	0.02	0.02
22.150	0.02	0.02	0.02	0.02	0.02

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-1-I

Scenario: Post-Development 50

Return Event: 50 years

Storm Event: 50-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
22.400	0.02	0.02	0.02	0.02	0.02
22.650	0.02	0.02	0.02	0.02	0.02
22.900	0.02	0.02	0.02	0.02	0.02
23.150	0.02	0.02	0.02	0.02	0.02
23.400	0.02	0.02	0.02	0.02	0.02
23.650	0.02	0.02	0.02	0.02	0.02
23.900	0.02	0.02	0.02	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 100 years

Label: DA-1-I

Storm Event: 100-YR

Scenario: Post-Development 100

Storm Event	100-YR
Return Event	100 years
Duration	24.000 hours
Depth	7.60 in
Time of Concentration (Composite)	0.054 hours
Area (User Defined)	12,609.000 ft ²
<hr/>	
Computational Time Increment	0.007 hours
Time to Peak (Computed)	12.101 hours
Flow (Peak, Computed)	2.55 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	2.55 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	12,609.000 ft ²
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	7.36 in
Runoff Volume (Pervious)	0.178 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.177 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.054 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	6.02 ft ³ /s
Unit peak time, Tp	0.036 hours
Unit receding limb, Tr	0.145 hours
Total unit time, Tb	0.181 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 100 years

Label: DA-1-I

Storm Event: 100-YR

Scenario: Post-Development 100

Storm Event	100-YR
Return Event	100 years
Duration	24.000 hours
Depth	7.60 in
Time of Concentration (Composite)	0.054 hours
Area (User Defined)	12,609.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
0.550	0.00	0.00	0.00	0.00	0.00
0.800	0.00	0.01	0.01	0.01	0.01
1.050	0.01	0.01	0.01	0.01	0.01
1.300	0.01	0.01	0.01	0.01	0.01
1.550	0.01	0.01	0.01	0.01	0.01
1.800	0.02	0.02	0.02	0.02	0.02
2.050	0.02	0.02	0.02	0.02	0.02
2.300	0.02	0.02	0.02	0.02	0.02
2.550	0.02	0.02	0.02	0.02	0.02
2.800	0.02	0.02	0.02	0.02	0.02
3.050	0.02	0.02	0.02	0.02	0.02
3.300	0.02	0.02	0.02	0.02	0.02
3.550	0.02	0.03	0.03	0.03	0.03
3.800	0.03	0.03	0.03	0.03	0.03
4.050	0.03	0.03	0.03	0.03	0.03
4.300	0.03	0.03	0.03	0.03	0.03
4.550	0.03	0.03	0.03	0.03	0.03
4.800	0.03	0.03	0.03	0.03	0.03
5.050	0.03	0.03	0.03	0.03	0.03
5.300	0.03	0.03	0.03	0.03	0.03
5.550	0.03	0.03	0.03	0.03	0.03
5.800	0.03	0.03	0.03	0.03	0.03
6.050	0.03	0.03	0.03	0.03	0.04
6.300	0.04	0.04	0.04	0.04	0.04
6.550	0.04	0.04	0.04	0.04	0.04
6.800	0.04	0.04	0.04	0.04	0.04
7.050	0.04	0.04	0.04	0.04	0.04
7.300	0.04	0.05	0.05	0.05	0.05
7.550	0.05	0.05	0.05	0.05	0.05
7.800	0.05	0.05	0.05	0.05	0.05
8.050	0.05	0.05	0.05	0.05	0.05
8.300	0.05	0.05	0.05	0.06	0.06
8.550	0.06	0.06	0.06	0.06	0.06
8.800	0.06	0.06	0.06	0.06	0.06
9.050	0.06	0.06	0.07	0.07	0.07
9.300	0.07	0.07	0.07	0.08	0.08
9.550	0.08	0.08	0.08	0.08	0.09
9.800	0.09	0.09	0.09	0.09	0.09
10.050	0.10	0.10	0.10	0.10	0.10

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 100 years

Label: DA-1-I

Storm Event: 100-YR

Scenario: Post-Development 100

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.300	0.10	0.11	0.11	0.11	0.11
10.550	0.12	0.12	0.13	0.14	0.14
10.800	0.15	0.16	0.16	0.17	0.17
11.050	0.19	0.20	0.21	0.22	0.24
11.300	0.24	0.26	0.27	0.28	0.29
11.550	0.40	0.44	0.46	0.47	0.59
11.800	0.64	0.82	0.89	1.34	1.53
12.050	2.26	2.55	1.42	0.95	0.73
12.300	0.65	0.53	0.48	0.46	0.45
12.550	0.34	0.29	0.28	0.27	0.25
12.800	0.25	0.23	0.22	0.21	0.20
13.050	0.18	0.18	0.17	0.16	0.15
13.300	0.15	0.14	0.14	0.13	0.13
13.550	0.12	0.11	0.11	0.11	0.11
13.800	0.11	0.10	0.10	0.10	0.10
14.050	0.10	0.10	0.09	0.09	0.09
14.300	0.09	0.09	0.09	0.08	0.08
14.550	0.08	0.08	0.08	0.08	0.07
14.800	0.07	0.07	0.07	0.07	0.07
15.050	0.06	0.06	0.06	0.06	0.06
15.300	0.06	0.06	0.06	0.06	0.06
15.550	0.06	0.06	0.06	0.06	0.06
15.800	0.06	0.06	0.06	0.05	0.05
16.050	0.05	0.05	0.05	0.05	0.05
16.300	0.05	0.05	0.05	0.05	0.05
16.550	0.05	0.05	0.05	0.05	0.05
16.800	0.05	0.05	0.05	0.05	0.05
17.050	0.04	0.04	0.04	0.04	0.04
17.300	0.04	0.04	0.04	0.04	0.04
17.550	0.04	0.04	0.04	0.04	0.04
17.800	0.04	0.04	0.04	0.04	0.04
18.050	0.04	0.04	0.04	0.04	0.04
18.300	0.04	0.04	0.04	0.03	0.03
18.550	0.03	0.03	0.03	0.03	0.03
18.800	0.03	0.03	0.03	0.03	0.03
19.050	0.03	0.03	0.03	0.03	0.03
19.300	0.03	0.03	0.03	0.03	0.03
19.550	0.03	0.03	0.03	0.03	0.03
19.800	0.03	0.03	0.03	0.03	0.03
20.050	0.03	0.03	0.03	0.03	0.03
20.300	0.03	0.03	0.03	0.03	0.03
20.550	0.03	0.03	0.03	0.03	0.03
20.800	0.03	0.03	0.03	0.03	0.03
21.050	0.03	0.03	0.03	0.03	0.03
21.300	0.03	0.03	0.03	0.03	0.03
21.550	0.03	0.03	0.03	0.03	0.03
21.800	0.03	0.03	0.03	0.03	0.03
22.050	0.03	0.03	0.03	0.03	0.03

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-1-I

Scenario: Post-Development 100

Return Event: 100 years

Storm Event: 100-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
22.300	0.03	0.03	0.03	0.03	0.03
22.550	0.03	0.03	0.03	0.03	0.03
22.800	0.03	0.03	0.03	0.03	0.03
23.050	0.02	0.02	0.02	0.02	0.02
23.300	0.02	0.02	0.02	0.02	0.02
23.550	0.02	0.02	0.02	0.02	0.02
23.800	0.02	0.02	0.02	0.03	0.03

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Label: DA-1-P

Scenario: Post-Development 1

Return Event: 1 years

Storm Event: 1-YR

Storm Event	1-YR
Return Event	1 years
Duration	24.000 hours
Depth	2.73 in
Time of Concentration (Composite)	0.054 hours
Area (User Defined)	2,707.000 ft ²
<hr/>	
Computational Time Increment	0.007 hours
Time to Peak (Computed)	12.109 hours
Flow (Peak, Computed)	0.10 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.10 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	80.000
Area (User Defined)	2,707.000 ft ²
Maximum Retention (Pervious)	2.50 in
Maximum Retention (Pervious, 20 percent)	0.50 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.05 in
Runoff Volume (Pervious)	0.005 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.005 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.054 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	1.29 ft ³ /s
Unit peak time, Tp	0.036 hours
Unit receding limb, Tr	0.145 hours
Total unit time, Tb	0.181 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 1 years

Label: DA-1-P

Storm Event: 1-YR

Scenario: Post-Development 1

Storm Event	1-YR
Return Event	1 years
Duration	24.000 hours
Depth	2.73 in
Time of Concentration (Composite)	0.054 hours
Area (User Defined)	2,707.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.800	0.00	0.00	0.00	0.00	0.00
11.050	0.00	0.00	0.00	0.00	0.00
11.300	0.00	0.00	0.00	0.00	0.00
11.550	0.01	0.01	0.01	0.01	0.01
11.800	0.01	0.02	0.02	0.04	0.05
12.050	0.08	0.10	0.06	0.04	0.03
12.300	0.03	0.02	0.02	0.02	0.02
12.550	0.02	0.01	0.01	0.01	0.01
12.800	0.01	0.01	0.01	0.01	0.01
13.050	0.01	0.01	0.01	0.01	0.01
13.300	0.01	0.01	0.01	0.01	0.01
13.550	0.01	0.01	0.01	0.01	0.01
13.800	0.01	0.01	0.01	0.00	0.00
14.050	0.00	0.00	0.00	0.00	0.00
14.300	0.00	0.00	0.00	0.00	0.00
14.550	0.00	0.00	0.00	0.00	0.00
14.800	0.00	0.00	0.00	0.00	0.00
15.050	0.00	0.00	0.00	0.00	0.00
15.300	0.00	0.00	0.00	0.00	0.00
15.550	0.00	0.00	0.00	0.00	0.00
15.800	0.00	0.00	0.00	0.00	0.00
16.050	0.00	0.00	0.00	0.00	0.00
16.300	0.00	0.00	0.00	0.00	0.00
16.550	0.00	0.00	0.00	0.00	0.00
16.800	0.00	0.00	0.00	0.00	0.00
17.050	0.00	0.00	0.00	0.00	0.00
17.300	0.00	0.00	0.00	0.00	0.00
17.550	0.00	0.00	0.00	0.00	0.00
17.800	0.00	0.00	0.00	0.00	0.00
18.050	0.00	0.00	0.00	0.00	0.00
18.300	0.00	0.00	0.00	0.00	0.00
18.550	0.00	0.00	0.00	0.00	0.00
18.800	0.00	0.00	0.00	0.00	0.00
19.050	0.00	0.00	0.00	0.00	0.00
19.300	0.00	0.00	0.00	0.00	0.00
19.550	0.00	0.00	0.00	0.00	0.00
19.800	0.00	0.00	0.00	0.00	0.00
20.050	0.00	0.00	0.00	0.00	0.00
20.300	0.00	0.00	0.00	0.00	0.00

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-1-P

Scenario: Post-Development 1

Return Event: 1 years

Storm Event: 1-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
20.550	0.00	0.00	0.00	0.00	0.00
20.800	0.00	0.00	0.00	0.00	0.00
21.050	0.00	0.00	0.00	0.00	0.00
21.300	0.00	0.00	0.00	0.00	0.00
21.550	0.00	0.00	0.00	0.00	0.00
21.800	0.00	0.00	0.00	0.00	0.00
22.050	0.00	0.00	0.00	0.00	0.00
22.300	0.00	0.00	0.00	0.00	0.00
22.550	0.00	0.00	0.00	0.00	0.00
22.800	0.00	0.00	0.00	0.00	0.00
23.050	0.00	0.00	0.00	0.00	0.00
23.300	0.00	0.00	0.00	0.00	0.00
23.550	0.00	0.00	0.00	0.00	0.00
23.800	0.00	0.00	0.00	0.00	0.00

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Label: DA-1-P

Scenario: Post-Development 2

Return Event: 2 years

Storm Event: 2-YR

Storm Event	2-YR
Return Event	2 years
Duration	24.000 hours
Depth	3.28 in
Time of Concentration (Composite)	0.054 hours
Area (User Defined)	2,707.000 ft ²
<hr/>	
Computational Time Increment	0.007 hours
Time to Peak (Computed)	12.101 hours
Flow (Peak, Computed)	0.13 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.13 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	80.000
Area (User Defined)	2,707.000 ft ²
Maximum Retention (Pervious)	2.50 in
Maximum Retention (Pervious, 20 percent)	0.50 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.46 in
Runoff Volume (Pervious)	0.008 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.008 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.054 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	1.29 ft ³ /s
Unit peak time, Tp	0.036 hours
Unit receding limb, Tr	0.145 hours
Total unit time, Tb	0.181 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-1-P

Scenario: Post-Development 2

Return Event: 2 years

Storm Event: 2-YR

Storm Event	2-YR
Return Event	2 years
Duration	24.000 hours
Depth	3.28 in
Time of Concentration (Composite)	0.054 hours
Area (User Defined)	2,707.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.300	0.00	0.00	0.00	0.00	0.00
10.550	0.00	0.00	0.00	0.00	0.00
10.800	0.00	0.00	0.00	0.00	0.00
11.050	0.00	0.00	0.00	0.00	0.01
11.300	0.01	0.01	0.01	0.01	0.01
11.550	0.01	0.01	0.01	0.01	0.02
11.800	0.02	0.03	0.03	0.06	0.07
12.050	0.11	0.13	0.08	0.05	0.04
12.300	0.04	0.03	0.03	0.03	0.03
12.550	0.02	0.02	0.02	0.02	0.02
12.800	0.02	0.01	0.01	0.01	0.01
13.050	0.01	0.01	0.01	0.01	0.01
13.300	0.01	0.01	0.01	0.01	0.01
13.550	0.01	0.01	0.01	0.01	0.01
13.800	0.01	0.01	0.01	0.01	0.01
14.050	0.01	0.01	0.01	0.01	0.01
14.300	0.01	0.01	0.01	0.01	0.01
14.550	0.01	0.01	0.01	0.01	0.00
14.800	0.00	0.00	0.00	0.00	0.00
15.050	0.00	0.00	0.00	0.00	0.00
15.300	0.00	0.00	0.00	0.00	0.00
15.550	0.00	0.00	0.00	0.00	0.00
15.800	0.00	0.00	0.00	0.00	0.00
16.050	0.00	0.00	0.00	0.00	0.00
16.300	0.00	0.00	0.00	0.00	0.00
16.550	0.00	0.00	0.00	0.00	0.00
16.800	0.00	0.00	0.00	0.00	0.00
17.050	0.00	0.00	0.00	0.00	0.00
17.300	0.00	0.00	0.00	0.00	0.00
17.550	0.00	0.00	0.00	0.00	0.00
17.800	0.00	0.00	0.00	0.00	0.00
18.050	0.00	0.00	0.00	0.00	0.00
18.300	0.00	0.00	0.00	0.00	0.00
18.550	0.00	0.00	0.00	0.00	0.00
18.800	0.00	0.00	0.00	0.00	0.00
19.050	0.00	0.00	0.00	0.00	0.00
19.300	0.00	0.00	0.00	0.00	0.00
19.550	0.00	0.00	0.00	0.00	0.00
19.800	0.00	0.00	0.00	0.00	0.00

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-1-P

Scenario: Post-Development 2

Return Event: 2 years

Storm Event: 2-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
20.050	0.00	0.00	0.00	0.00	0.00
20.300	0.00	0.00	0.00	0.00	0.00
20.550	0.00	0.00	0.00	0.00	0.00
20.800	0.00	0.00	0.00	0.00	0.00
21.050	0.00	0.00	0.00	0.00	0.00
21.300	0.00	0.00	0.00	0.00	0.00
21.550	0.00	0.00	0.00	0.00	0.00
21.800	0.00	0.00	0.00	0.00	0.00
22.050	0.00	0.00	0.00	0.00	0.00
22.300	0.00	0.00	0.00	0.00	0.00
22.550	0.00	0.00	0.00	0.00	0.00
22.800	0.00	0.00	0.00	0.00	0.00
23.050	0.00	0.00	0.00	0.00	0.00
23.300	0.00	0.00	0.00	0.00	0.00
23.550	0.00	0.00	0.00	0.00	0.00
23.800	0.00	0.00	0.00	0.00	0.00

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 5 years

Label: DA-1-P

Storm Event: 5-YR

Scenario: Post-Development 5

Storm Event	5-YR
Return Event	5 years
Duration	24.000 hours
Depth	4.12 in
Time of Concentration (Composite)	0.054 hours
Area (User Defined)	2,707.000 ft ²
<hr/>	
Computational Time Increment	0.007 hours
Time to Peak (Computed)	12.101 hours
Flow (Peak, Computed)	0.19 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.19 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	80.000
Area (User Defined)	2,707.000 ft ²
Maximum Retention (Pervious)	2.50 in
Maximum Retention (Pervious, 20 percent)	0.50 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.14 in
Runoff Volume (Pervious)	0.011 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.011 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.054 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	1.29 ft ³ /s
Unit peak time, Tp	0.036 hours
Unit receding limb, Tr	0.145 hours
Total unit time, Tb	0.181 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 5 years

Label: DA-1-P

Storm Event: 5-YR

Scenario: Post-Development 5

Storm Event	5-YR
Return Event	5 years
Duration	24.000 hours
Depth	4.12 in
Time of Concentration (Composite)	0.054 hours
Area (User Defined)	2,707.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
9.450	0.00	0.00	0.00	0.00	0.00
9.700	0.00	0.00	0.00	0.00	0.00
9.950	0.00	0.00	0.00	0.00	0.00
10.200	0.00	0.00	0.00	0.00	0.00
10.450	0.00	0.00	0.00	0.00	0.00
10.700	0.00	0.00	0.00	0.01	0.01
10.950	0.01	0.01	0.01	0.01	0.01
11.200	0.01	0.01	0.01	0.01	0.01
11.450	0.01	0.01	0.02	0.02	0.02
11.700	0.02	0.03	0.04	0.05	0.05
11.950	0.09	0.10	0.16	0.19	0.11
12.200	0.08	0.06	0.05	0.04	0.04
12.450	0.04	0.04	0.03	0.03	0.02
12.700	0.02	0.02	0.02	0.02	0.02
12.950	0.02	0.02	0.02	0.02	0.01
13.200	0.01	0.01	0.01	0.01	0.01
13.450	0.01	0.01	0.01	0.01	0.01
13.700	0.01	0.01	0.01	0.01	0.01
13.950	0.01	0.01	0.01	0.01	0.01
14.200	0.01	0.01	0.01	0.01	0.01
14.450	0.01	0.01	0.01	0.01	0.01
14.700	0.01	0.01	0.01	0.01	0.01
14.950	0.01	0.01	0.01	0.01	0.01
15.200	0.01	0.01	0.01	0.01	0.01
15.450	0.01	0.01	0.01	0.01	0.01
15.700	0.01	0.01	0.01	0.01	0.01
15.950	0.01	0.01	0.01	0.01	0.00
16.200	0.00	0.00	0.00	0.00	0.00
16.450	0.00	0.00	0.00	0.00	0.00
16.700	0.00	0.00	0.00	0.00	0.00
16.950	0.00	0.00	0.00	0.00	0.00
17.200	0.00	0.00	0.00	0.00	0.00
17.450	0.00	0.00	0.00	0.00	0.00
17.700	0.00	0.00	0.00	0.00	0.00
17.950	0.00	0.00	0.00	0.00	0.00
18.200	0.00	0.00	0.00	0.00	0.00
18.450	0.00	0.00	0.00	0.00	0.00
18.700	0.00	0.00	0.00	0.00	0.00
18.950	0.00	0.00	0.00	0.00	0.00

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 5 years

Label: DA-1-P

Storm Event: 5-YR

Scenario: Post-Development 5

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
19.200	0.00	0.00	0.00	0.00	0.00
19.450	0.00	0.00	0.00	0.00	0.00
19.700	0.00	0.00	0.00	0.00	0.00
19.950	0.00	0.00	0.00	0.00	0.00
20.200	0.00	0.00	0.00	0.00	0.00
20.450	0.00	0.00	0.00	0.00	0.00
20.700	0.00	0.00	0.00	0.00	0.00
20.950	0.00	0.00	0.00	0.00	0.00
21.200	0.00	0.00	0.00	0.00	0.00
21.450	0.00	0.00	0.00	0.00	0.00
21.700	0.00	0.00	0.00	0.00	0.00
21.950	0.00	0.00	0.00	0.00	0.00
22.200	0.00	0.00	0.00	0.00	0.00
22.450	0.00	0.00	0.00	0.00	0.00
22.700	0.00	0.00	0.00	0.00	0.00
22.950	0.00	0.00	0.00	0.00	0.00
23.200	0.00	0.00	0.00	0.00	0.00
23.450	0.00	0.00	0.00	0.00	0.00
23.700	0.00	0.00	0.00	0.00	0.00
23.950	0.00	0.00	(N/A)	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 10 years

Label: DA-1-P

Storm Event: 10-YR

Scenario: Post-Development 10

Storm Event	10-YR
Return Event	10 years
Duration	24.000 hours
Depth	4.82 in
Time of Concentration (Composite)	0.054 hours
Area (User Defined)	2,707.000 ft ²
<hr/>	
Computational Time Increment	0.007 hours
Time to Peak (Computed)	12.101 hours
Flow (Peak, Computed)	0.25 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.25 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	80.000
Area (User Defined)	2,707.000 ft ²
Maximum Retention (Pervious)	2.50 in
Maximum Retention (Pervious, 20 percent)	0.50 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.74 in
Runoff Volume (Pervious)	0.014 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.014 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.054 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	1.29 ft ³ /s
Unit peak time, Tp	0.036 hours
Unit receding limb, Tr	0.145 hours
Total unit time, Tb	0.181 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 10 years

Label: DA-1-P

Storm Event: 10-YR

Scenario: Post-Development 10

Storm Event	10-YR
Return Event	10 years
Duration	24.000 hours
Depth	4.82 in
Time of Concentration (Composite)	0.054 hours
Area (User Defined)	2,707.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
8.800	0.00	0.00	0.00	0.00	0.00
9.050	0.00	0.00	0.00	0.00	0.00
9.300	0.00	0.00	0.00	0.00	0.00
9.550	0.00	0.00	0.00	0.00	0.00
9.800	0.00	0.00	0.00	0.00	0.00
10.050	0.00	0.00	0.00	0.00	0.00
10.300	0.00	0.00	0.00	0.00	0.00
10.550	0.00	0.01	0.01	0.01	0.01
10.800	0.01	0.01	0.01	0.01	0.01
11.050	0.01	0.01	0.01	0.01	0.01
11.300	0.01	0.02	0.02	0.02	0.02
11.550	0.03	0.03	0.03	0.03	0.04
11.800	0.05	0.06	0.07	0.11	0.13
12.050	0.21	0.25	0.14	0.10	0.08
12.300	0.07	0.06	0.05	0.05	0.05
12.550	0.04	0.03	0.03	0.03	0.03
12.800	0.03	0.03	0.02	0.02	0.02
13.050	0.02	0.02	0.02	0.02	0.02
13.300	0.02	0.02	0.02	0.01	0.01
13.550	0.01	0.01	0.01	0.01	0.01
13.800	0.01	0.01	0.01	0.01	0.01
14.050	0.01	0.01	0.01	0.01	0.01
14.300	0.01	0.01	0.01	0.01	0.01
14.550	0.01	0.01	0.01	0.01	0.01
14.800	0.01	0.01	0.01	0.01	0.01
15.050	0.01	0.01	0.01	0.01	0.01
15.300	0.01	0.01	0.01	0.01	0.01
15.550	0.01	0.01	0.01	0.01	0.01
15.800	0.01	0.01	0.01	0.01	0.01
16.050	0.01	0.01	0.01	0.01	0.01
16.300	0.01	0.01	0.01	0.01	0.01
16.550	0.01	0.01	0.01	0.01	0.01
16.800	0.01	0.01	0.01	0.01	0.01
17.050	0.01	0.01	0.01	0.01	0.00
17.300	0.00	0.00	0.00	0.00	0.00
17.550	0.00	0.00	0.00	0.00	0.00
17.800	0.00	0.00	0.00	0.00	0.00
18.050	0.00	0.00	0.00	0.00	0.00
18.300	0.00	0.00	0.00	0.00	0.00

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-1-P

Scenario: Post-Development 10

Return Event: 10 years

Storm Event: 10-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
18.550	0.00	0.00	0.00	0.00	0.00
18.800	0.00	0.00	0.00	0.00	0.00
19.050	0.00	0.00	0.00	0.00	0.00
19.300	0.00	0.00	0.00	0.00	0.00
19.550	0.00	0.00	0.00	0.00	0.00
19.800	0.00	0.00	0.00	0.00	0.00
20.050	0.00	0.00	0.00	0.00	0.00
20.300	0.00	0.00	0.00	0.00	0.00
20.550	0.00	0.00	0.00	0.00	0.00
20.800	0.00	0.00	0.00	0.00	0.00
21.050	0.00	0.00	0.00	0.00	0.00
21.300	0.00	0.00	0.00	0.00	0.00
21.550	0.00	0.00	0.00	0.00	0.00
21.800	0.00	0.00	0.00	0.00	0.00
22.050	0.00	0.00	0.00	0.00	0.00
22.300	0.00	0.00	0.00	0.00	0.00
22.550	0.00	0.00	0.00	0.00	0.00
22.800	0.00	0.00	0.00	0.00	0.00
23.050	0.00	0.00	0.00	0.00	0.00
23.300	0.00	0.00	0.00	0.00	0.00
23.550	0.00	0.00	0.00	0.00	0.00
23.800	0.00	0.00	0.00	0.00	0.00

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 25 years

Label: DA-1-P

Storm Event: 25-YR

Scenario: Post-Development 25

Storm Event	25-YR
Return Event	25 years
Duration	24.000 hours
Depth	5.83 in
Time of Concentration (Composite)	0.054 hours
Area (User Defined)	2,707.000 ft ²
Computational Time Increment	0.007 hours
Time to Peak (Computed)	12.101 hours
Flow (Peak, Computed)	0.32 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.32 ft ³ /s
Drainage Area	
SCS CN (Composite)	80.000
Area (User Defined)	2,707.000 ft ²
Maximum Retention (Pervious)	2.50 in
Maximum Retention (Pervious, 20 percent)	0.50 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.63 in
Runoff Volume (Pervious)	0.019 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.019 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.054 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	1.29 ft ³ /s
Unit peak time, Tp	0.036 hours
Unit receding limb, Tr	0.145 hours
Total unit time, Tb	0.181 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 25 years

Label: DA-1-P

Storm Event: 25-YR

Scenario: Post-Development 25

Storm Event	25-YR
Return Event	25 years
Duration	24.000 hours
Depth	5.83 in
Time of Concentration (Composite)	0.054 hours
Area (User Defined)	2,707.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
7.800	0.00	0.00	0.00	0.00	0.00
8.050	0.00	0.00	0.00	0.00	0.00
8.300	0.00	0.00	0.00	0.00	0.00
8.550	0.00	0.00	0.00	0.00	0.00
8.800	0.00	0.00	0.00	0.00	0.00
9.050	0.00	0.00	0.00	0.00	0.00
9.300	0.00	0.00	0.00	0.00	0.00
9.550	0.00	0.00	0.00	0.00	0.00
9.800	0.00	0.00	0.00	0.01	0.01
10.050	0.01	0.01	0.01	0.01	0.01
10.300	0.01	0.01	0.01	0.01	0.01
10.550	0.01	0.01	0.01	0.01	0.01
10.800	0.01	0.01	0.01	0.01	0.01
11.050	0.01	0.02	0.02	0.02	0.02
11.300	0.02	0.02	0.02	0.02	0.03
11.550	0.04	0.04	0.04	0.05	0.06
11.800	0.07	0.09	0.10	0.15	0.18
12.050	0.27	0.32	0.18	0.13	0.10
12.300	0.09	0.07	0.06	0.06	0.06
12.550	0.05	0.04	0.04	0.04	0.04
12.800	0.03	0.03	0.03	0.03	0.03
13.050	0.03	0.02	0.02	0.02	0.02
13.300	0.02	0.02	0.02	0.02	0.02
13.550	0.02	0.02	0.02	0.02	0.02
13.800	0.01	0.01	0.01	0.01	0.01
14.050	0.01	0.01	0.01	0.01	0.01
14.300	0.01	0.01	0.01	0.01	0.01
14.550	0.01	0.01	0.01	0.01	0.01
14.800	0.01	0.01	0.01	0.01	0.01
15.050	0.01	0.01	0.01	0.01	0.01
15.300	0.01	0.01	0.01	0.01	0.01
15.550	0.01	0.01	0.01	0.01	0.01
15.800	0.01	0.01	0.01	0.01	0.01
16.050	0.01	0.01	0.01	0.01	0.01
16.300	0.01	0.01	0.01	0.01	0.01
16.550	0.01	0.01	0.01	0.01	0.01
16.800	0.01	0.01	0.01	0.01	0.01
17.050	0.01	0.01	0.01	0.01	0.01
17.300	0.01	0.01	0.01	0.01	0.01

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 25 years

Label: DA-1-P

Storm Event: 25-YR

Scenario: Post-Development 25

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
17.550	0.01	0.01	0.01	0.01	0.01
17.800	0.01	0.01	0.01	0.01	0.01
18.050	0.01	0.01	0.01	0.01	0.01
18.300	0.01	0.01	0.01	0.01	0.01
18.550	0.01	0.01	0.01	0.01	0.00
18.800	0.00	0.00	0.00	0.00	0.00
19.050	0.00	0.00	0.00	0.00	0.00
19.300	0.00	0.00	0.00	0.00	0.00
19.550	0.00	0.00	0.00	0.00	0.00
19.800	0.00	0.00	0.00	0.00	0.00
20.050	0.00	0.00	0.00	0.00	0.00
20.300	0.00	0.00	0.00	0.00	0.00
20.550	0.00	0.00	0.00	0.00	0.00
20.800	0.00	0.00	0.00	0.00	0.00
21.050	0.00	0.00	0.00	0.00	0.00
21.300	0.00	0.00	0.00	0.00	0.00
21.550	0.00	0.00	0.00	0.00	0.00
21.800	0.00	0.00	0.00	0.00	0.00
22.050	0.00	0.00	0.00	0.00	0.00
22.300	0.00	0.00	0.00	0.00	0.00
22.550	0.00	0.00	0.00	0.00	0.00
22.800	0.00	0.00	0.00	0.00	0.00
23.050	0.00	0.00	0.00	0.00	0.00
23.300	0.00	0.00	0.00	0.00	0.00
23.550	0.00	0.00	0.00	0.00	0.00
23.800	0.00	0.00	0.00	0.00	0.00

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 50 years

Label: DA-1-P

Storm Event: 50-YR

Scenario: Post-Development 50

Storm Event	50-YR
Return Event	50 years
Duration	24.000 hours
Depth	6.68 in
Time of Concentration (Composite)	0.054 hours
Area (User Defined)	2,707.000 ft ²
<hr/>	
Computational Time Increment	0.007 hours
Time to Peak (Computed)	12.101 hours
Flow (Peak, Computed)	0.39 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.39 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	80.000
Area (User Defined)	2,707.000 ft ²
Maximum Retention (Pervious)	2.50 in
Maximum Retention (Pervious, 20 percent)	0.50 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	4.40 in
Runoff Volume (Pervious)	0.023 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.023 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.054 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	1.29 ft ³ /s
Unit peak time, Tp	0.036 hours
Unit receding limb, Tr	0.145 hours
Total unit time, Tb	0.181 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 50 years

Label: DA-1-P

Storm Event: 50-YR

Scenario: Post-Development 50

Storm Event	50-YR
Return Event	50 years
Duration	24.000 hours
Depth	6.68 in
Time of Concentration (Composite)	0.054 hours
Area (User Defined)	2,707.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
7.100	0.00	0.00	0.00	0.00	0.00
7.350	0.00	0.00	0.00	0.00	0.00
7.600	0.00	0.00	0.00	0.00	0.00
7.850	0.00	0.00	0.00	0.00	0.00
8.100	0.00	0.00	0.00	0.00	0.00
8.350	0.00	0.00	0.00	0.00	0.00
8.600	0.00	0.00	0.00	0.00	0.00
8.850	0.00	0.00	0.00	0.00	0.00
9.100	0.00	0.00	0.00	0.00	0.00
9.350	0.00	0.00	0.00	0.01	0.01
9.600	0.01	0.01	0.01	0.01	0.01
9.850	0.01	0.01	0.01	0.01	0.01
10.100	0.01	0.01	0.01	0.01	0.01
10.350	0.01	0.01	0.01	0.01	0.01
10.600	0.01	0.01	0.01	0.01	0.01
10.850	0.01	0.02	0.02	0.02	0.02
11.100	0.02	0.02	0.02	0.03	0.03
11.350	0.03	0.03	0.03	0.03	0.05
11.600	0.05	0.06	0.06	0.07	0.08
11.850	0.11	0.12	0.18	0.22	0.33
12.100	0.39	0.22	0.15	0.12	0.10
12.350	0.08	0.08	0.07	0.07	0.06
12.600	0.05	0.05	0.04	0.04	0.04
12.850	0.04	0.04	0.03	0.03	0.03
13.100	0.03	0.03	0.03	0.03	0.03
13.350	0.02	0.02	0.02	0.02	0.02
13.600	0.02	0.02	0.02	0.02	0.02
13.850	0.02	0.02	0.02	0.02	0.02
14.100	0.02	0.02	0.02	0.02	0.01
14.350	0.01	0.01	0.01	0.01	0.01
14.600	0.01	0.01	0.01	0.01	0.01
14.850	0.01	0.01	0.01	0.01	0.01
15.100	0.01	0.01	0.01	0.01	0.01
15.350	0.01	0.01	0.01	0.01	0.01
15.600	0.01	0.01	0.01	0.01	0.01
15.850	0.01	0.01	0.01	0.01	0.01
16.100	0.01	0.01	0.01	0.01	0.01
16.350	0.01	0.01	0.01	0.01	0.01
16.600	0.01	0.01	0.01	0.01	0.01

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 50 years

Label: DA-1-P

Storm Event: 50-YR

Scenario: Post-Development 50

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
16.850	0.01	0.01	0.01	0.01	0.01
17.100	0.01	0.01	0.01	0.01	0.01
17.350	0.01	0.01	0.01	0.01	0.01
17.600	0.01	0.01	0.01	0.01	0.01
17.850	0.01	0.01	0.01	0.01	0.01
18.100	0.01	0.01	0.01	0.01	0.01
18.350	0.01	0.01	0.01	0.01	0.01
18.600	0.01	0.01	0.01	0.01	0.01
18.850	0.01	0.01	0.01	0.01	0.01
19.100	0.01	0.01	0.01	0.01	0.01
19.350	0.01	0.01	0.01	0.01	0.01
19.600	0.01	0.01	0.01	0.01	0.01
19.850	0.01	0.01	0.01	0.01	0.01
20.100	0.01	0.01	0.01	0.01	0.01
20.350	0.01	0.01	0.01	0.01	0.01
20.600	0.01	0.01	0.01	0.01	0.01
20.850	0.01	0.01	0.01	0.01	0.01
21.100	0.01	0.00	0.00	0.00	0.00
21.350	0.00	0.00	0.00	0.00	0.00
21.600	0.00	0.00	0.00	0.00	0.00
21.850	0.00	0.00	0.00	0.00	0.00
22.100	0.00	0.00	0.00	0.00	0.00
22.350	0.00	0.00	0.00	0.00	0.00
22.600	0.00	0.00	0.00	0.00	0.00
22.850	0.00	0.00	0.00	0.00	0.00
23.100	0.00	0.00	0.00	0.00	0.00
23.350	0.00	0.00	0.00	0.00	0.00
23.600	0.00	0.00	0.00	0.00	0.00
23.850	0.00	0.00	0.00	0.00	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 100 years

Label: DA-1-P

Storm Event: 100-YR

Scenario: Post-Development 100

Storm Event	100-YR
Return Event	100 years
Duration	24.000 hours
Depth	7.60 in
Time of Concentration (Composite)	0.054 hours
Area (User Defined)	2,707.000 ft ²
Computational Time Increment	0.007 hours
Time to Peak (Computed)	12.101 hours
Flow (Peak, Computed)	0.46 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.46 ft ³ /s
Drainage Area	
SCS CN (Composite)	80.000
Area (User Defined)	2,707.000 ft ²
Maximum Retention (Pervious)	2.50 in
Maximum Retention (Pervious, 20 percent)	0.50 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.25 in
Runoff Volume (Pervious)	0.027 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.027 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.054 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	1.29 ft ³ /s
Unit peak time, Tp	0.036 hours
Unit receding limb, Tr	0.145 hours
Total unit time, Tb	0.181 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 100 years

Label: DA-1-P

Storm Event: 100-YR

Scenario: Post-Development 100

Storm Event	100-YR
Return Event	100 years
Duration	24.000 hours
Depth	7.60 in
Time of Concentration (Composite)	0.054 hours
Area (User Defined)	2,707.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
6.500	0.00	0.00	0.00	0.00	0.00
6.750	0.00	0.00	0.00	0.00	0.00
7.000	0.00	0.00	0.00	0.00	0.00
7.250	0.00	0.00	0.00	0.00	0.00
7.500	0.00	0.00	0.00	0.00	0.00
7.750	0.00	0.00	0.00	0.00	0.00
8.000	0.00	0.00	0.00	0.00	0.00
8.250	0.00	0.00	0.00	0.00	0.00
8.500	0.00	0.00	0.00	0.00	0.00
8.750	0.00	0.00	0.00	0.00	0.00
9.000	0.00	0.00	0.01	0.01	0.01
9.250	0.01	0.01	0.01	0.01	0.01
9.500	0.01	0.01	0.01	0.01	0.01
9.750	0.01	0.01	0.01	0.01	0.01
10.000	0.01	0.01	0.01	0.01	0.01
10.250	0.01	0.01	0.01	0.01	0.01
10.500	0.01	0.01	0.01	0.01	0.02
10.750	0.02	0.02	0.02	0.02	0.02
11.000	0.02	0.02	0.02	0.03	0.03
11.250	0.03	0.03	0.04	0.04	0.04
11.500	0.04	0.06	0.06	0.07	0.07
11.750	0.09	0.10	0.13	0.14	0.22
12.000	0.26	0.39	0.46	0.26	0.18
12.250	0.14	0.12	0.10	0.09	0.09
12.500	0.09	0.06	0.06	0.05	0.05
12.750	0.05	0.05	0.04	0.04	0.04
13.000	0.04	0.04	0.03	0.03	0.03
13.250	0.03	0.03	0.03	0.03	0.02
13.500	0.02	0.02	0.02	0.02	0.02
13.750	0.02	0.02	0.02	0.02	0.02
14.000	0.02	0.02	0.02	0.02	0.02
14.250	0.02	0.02	0.02	0.02	0.02
14.500	0.02	0.02	0.02	0.01	0.01
14.750	0.01	0.01	0.01	0.01	0.01
15.000	0.01	0.01	0.01	0.01	0.01
15.250	0.01	0.01	0.01	0.01	0.01
15.500	0.01	0.01	0.01	0.01	0.01
15.750	0.01	0.01	0.01	0.01	0.01
16.000	0.01	0.01	0.01	0.01	0.01

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 100 years

Label: DA-1-P

Storm Event: 100-YR

Scenario: Post-Development 100

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
16.250	0.01	0.01	0.01	0.01	0.01
16.500	0.01	0.01	0.01	0.01	0.01
16.750	0.01	0.01	0.01	0.01	0.01
17.000	0.01	0.01	0.01	0.01	0.01
17.250	0.01	0.01	0.01	0.01	0.01
17.500	0.01	0.01	0.01	0.01	0.01
17.750	0.01	0.01	0.01	0.01	0.01
18.000	0.01	0.01	0.01	0.01	0.01
18.250	0.01	0.01	0.01	0.01	0.01
18.500	0.01	0.01	0.01	0.01	0.01
18.750	0.01	0.01	0.01	0.01	0.01
19.000	0.01	0.01	0.01	0.01	0.01
19.250	0.01	0.01	0.01	0.01	0.01
19.500	0.01	0.01	0.01	0.01	0.01
19.750	0.01	0.01	0.01	0.01	0.01
20.000	0.01	0.01	0.01	0.01	0.01
20.250	0.01	0.01	0.01	0.01	0.01
20.500	0.01	0.01	0.01	0.01	0.01
20.750	0.01	0.01	0.01	0.01	0.01
21.000	0.01	0.01	0.01	0.01	0.01
21.250	0.01	0.01	0.01	0.01	0.01
21.500	0.01	0.01	0.01	0.01	0.01
21.750	0.01	0.01	0.01	0.01	0.01
22.000	0.01	0.01	0.01	0.01	0.01
22.250	0.01	0.01	0.01	0.01	0.01
22.500	0.01	0.01	0.01	0.01	0.01
22.750	0.01	0.01	0.01	0.01	0.01
23.000	0.01	0.00	0.00	0.00	0.00
23.250	0.00	0.00	0.00	0.00	0.00
23.500	0.00	0.00	0.00	0.00	0.00
23.750	0.00	0.00	0.00	0.00	0.01
24.000	0.01	(N/A)	(N/A)	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 1 years

Label: DA-2-I

Storm Event: 1-YR

Scenario: Post-Development 1

Storm Event	1-YR
Return Event	1 years
Duration	24.000 hours
Depth	2.73 in
Time of Concentration (Composite)	0.030 hours
Area (User Defined)	5,236.000 ft ²
<hr/>	
Computational Time Increment	0.004 hours
Time to Peak (Computed)	12.097 hours
Flow (Peak, Computed)	0.38 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.38 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	5,236.000 ft ²
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.50 in
Runoff Volume (Pervious)	0.025 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.025 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.030 hours
Computational Time Increment	0.004 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	4.51 ft ³ /s
Unit peak time, Tp	0.020 hours
Unit receding limb, Tr	0.080 hours
Total unit time, Tb	0.101 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 1 years

Label: DA-2-I

Storm Event: 1-YR

Scenario: Post-Development 1

Storm Event	1-YR
Return Event	1 years
Duration	24.000 hours
Depth	2.73 in
Time of Concentration (Composite)	0.030 hours
Area (User Defined)	5,236.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
2.350	0.00	0.00	0.00	0.00	0.00
2.600	0.00	0.00	0.00	0.00	0.00
2.850	0.00	0.00	0.00	0.00	0.00
3.100	0.00	0.00	0.00	0.00	0.00
3.350	0.00	0.00	0.00	0.00	0.00
3.600	0.00	0.00	0.00	0.00	0.00
3.850	0.00	0.00	0.00	0.00	0.00
4.100	0.00	0.00	0.00	0.00	0.00
4.350	0.00	0.00	0.00	0.00	0.00
4.600	0.00	0.00	0.00	0.00	0.00
4.850	0.00	0.00	0.00	0.00	0.00
5.100	0.00	0.00	0.00	0.00	0.00
5.350	0.00	0.00	0.00	0.00	0.00
5.600	0.00	0.00	0.00	0.00	0.00
5.850	0.00	0.00	0.00	0.00	0.00
6.100	0.00	0.00	0.00	0.00	0.00
6.350	0.00	0.00	0.00	0.00	0.00
6.600	0.00	0.00	0.00	0.00	0.00
6.850	0.00	0.00	0.01	0.01	0.01
7.100	0.01	0.01	0.01	0.01	0.01
7.350	0.01	0.01	0.01	0.01	0.01
7.600	0.01	0.01	0.01	0.01	0.01
7.850	0.01	0.01	0.01	0.01	0.01
8.100	0.01	0.01	0.01	0.01	0.01
8.350	0.01	0.01	0.01	0.01	0.01
8.600	0.01	0.01	0.01	0.01	0.01
8.850	0.01	0.01	0.01	0.01	0.01
9.100	0.01	0.01	0.01	0.01	0.01
9.350	0.01	0.01	0.01	0.01	0.01
9.600	0.01	0.01	0.01	0.01	0.01
9.850	0.01	0.01	0.01	0.01	0.01
10.100	0.01	0.01	0.01	0.01	0.01
10.350	0.01	0.01	0.02	0.02	0.02
10.600	0.02	0.02	0.02	0.02	0.02
10.850	0.02	0.02	0.02	0.02	0.03
11.100	0.03	0.03	0.03	0.03	0.03
11.350	0.04	0.04	0.04	0.04	0.06
11.600	0.06	0.07	0.07	0.09	0.09
11.850	0.13	0.13	0.22	0.23	0.37

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 1 years

Label: DA-2-I

Storm Event: 1-YR

Scenario: Post-Development 1

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
12.100	0.38	0.14	0.13	0.10	0.10
12.350	0.07	0.07	0.07	0.07	0.04
12.600	0.04	0.04	0.04	0.04	0.04
12.850	0.03	0.03	0.03	0.03	0.03
13.100	0.03	0.02	0.02	0.02	0.02
13.350	0.02	0.02	0.02	0.02	0.02
13.600	0.02	0.02	0.02	0.02	0.02
13.850	0.02	0.02	0.01	0.01	0.01
14.100	0.01	0.01	0.01	0.01	0.01
14.350	0.01	0.01	0.01	0.01	0.01
14.600	0.01	0.01	0.01	0.01	0.01
14.850	0.01	0.01	0.01	0.01	0.01
15.100	0.01	0.01	0.01	0.01	0.01
15.350	0.01	0.01	0.01	0.01	0.01
15.600	0.01	0.01	0.01	0.01	0.01
15.850	0.01	0.01	0.01	0.01	0.01
16.100	0.01	0.01	0.01	0.01	0.01
16.350	0.01	0.01	0.01	0.01	0.01
16.600	0.01	0.01	0.01	0.01	0.01
16.850	0.01	0.01	0.01	0.01	0.01
17.100	0.01	0.01	0.01	0.01	0.01
17.350	0.01	0.01	0.01	0.01	0.01
17.600	0.01	0.01	0.01	0.01	0.01
17.850	0.01	0.01	0.01	0.01	0.01
18.100	0.01	0.01	0.01	0.01	0.01
18.350	0.01	0.01	0.01	0.01	0.01
18.600	0.01	0.01	0.01	0.01	0.01
18.850	0.01	0.01	0.01	0.01	0.00
19.100	0.00	0.00	0.00	0.00	0.00
19.350	0.00	0.00	0.00	0.00	0.00
19.600	0.00	0.00	0.00	0.00	0.00
19.850	0.00	0.00	0.00	0.00	0.00
20.100	0.00	0.00	0.00	0.00	0.00
20.350	0.00	0.00	0.00	0.00	0.00
20.600	0.00	0.00	0.00	0.00	0.00
20.850	0.00	0.00	0.00	0.00	0.00
21.100	0.00	0.00	0.00	0.00	0.00
21.350	0.00	0.00	0.00	0.00	0.00
21.600	0.00	0.00	0.00	0.00	0.00
21.850	0.00	0.00	0.00	0.00	0.00
22.100	0.00	0.00	0.00	0.00	0.00
22.350	0.00	0.00	0.00	0.00	0.00
22.600	0.00	0.00	0.00	0.00	0.00
22.850	0.00	0.00	0.00	0.00	0.00
23.100	0.00	0.00	0.00	0.00	0.00
23.350	0.00	0.00	0.00	0.00	0.00
23.600	0.00	0.00	0.00	0.00	0.00
23.850	0.00	0.00	0.00	0.00	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Label: DA-2-I

Scenario: Post-Development 2

Return Event: 2 years

Storm Event: 2-YR

Storm Event	2-YR
Return Event	2 years
Duration	24.000 hours
Depth	3.28 in
Time of Concentration (Composite)	0.030 hours
Area (User Defined)	5,236.000 ft ²
<hr/>	
Computational Time Increment	0.004 hours
Time to Peak (Computed)	12.097 hours
Flow (Peak, Computed)	0.46 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.46 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	5,236.000 ft ²
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.05 in
Runoff Volume (Pervious)	0.031 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.031 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.030 hours
Computational Time Increment	0.004 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	4.51 ft ³ /s
Unit peak time, Tp	0.020 hours
Unit receding limb, Tr	0.080 hours
Total unit time, Tb	0.101 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 2 years

Label: DA-2-I

Storm Event: 2-YR

Scenario: Post-Development 2

Storm Event	2-YR
Return Event	2 years
Duration	24.000 hours
Depth	3.28 in
Time of Concentration (Composite)	0.030 hours
Area (User Defined)	5,236.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
1.850	0.00	0.00	0.00	0.00	0.00
2.100	0.00	0.00	0.00	0.00	0.00
2.350	0.00	0.00	0.00	0.00	0.00
2.600	0.00	0.00	0.00	0.00	0.00
2.850	0.00	0.00	0.00	0.00	0.00
3.100	0.00	0.00	0.00	0.00	0.00
3.350	0.00	0.00	0.00	0.00	0.00
3.600	0.00	0.00	0.00	0.00	0.00
3.850	0.00	0.00	0.00	0.00	0.00
4.100	0.00	0.00	0.00	0.00	0.00
4.350	0.00	0.00	0.00	0.00	0.00
4.600	0.00	0.00	0.00	0.00	0.00
4.850	0.00	0.00	0.00	0.00	0.00
5.100	0.00	0.00	0.00	0.00	0.00
5.350	0.00	0.00	0.00	0.00	0.00
5.600	0.00	0.00	0.00	0.00	0.00
5.850	0.00	0.00	0.00	0.00	0.01
6.100	0.01	0.01	0.01	0.01	0.01
6.350	0.01	0.01	0.01	0.01	0.01
6.600	0.01	0.01	0.01	0.01	0.01
6.850	0.01	0.01	0.01	0.01	0.01
7.100	0.01	0.01	0.01	0.01	0.01
7.350	0.01	0.01	0.01	0.01	0.01
7.600	0.01	0.01	0.01	0.01	0.01
7.850	0.01	0.01	0.01	0.01	0.01
8.100	0.01	0.01	0.01	0.01	0.01
8.350	0.01	0.01	0.01	0.01	0.01
8.600	0.01	0.01	0.01	0.01	0.01
8.850	0.01	0.01	0.01	0.01	0.01
9.100	0.01	0.01	0.01	0.01	0.01
9.350	0.01	0.01	0.01	0.01	0.01
9.600	0.01	0.01	0.01	0.01	0.01
9.850	0.02	0.02	0.02	0.02	0.02
10.100	0.02	0.02	0.02	0.02	0.02
10.350	0.02	0.02	0.02	0.02	0.02
10.600	0.02	0.02	0.02	0.03	0.03
10.850	0.03	0.03	0.03	0.03	0.03
11.100	0.03	0.04	0.04	0.04	0.04
11.350	0.05	0.05	0.05	0.05	0.08

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 2 years

Label: DA-2-I

Storm Event: 2-YR

Scenario: Post-Development 2

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.600	0.08	0.08	0.08	0.11	0.11
11.850	0.16	0.16	0.27	0.27	0.45
12.100	0.46	0.17	0.16	0.12	0.11
12.350	0.09	0.08	0.08	0.08	0.05
12.600	0.05	0.05	0.05	0.04	0.04
12.850	0.04	0.04	0.04	0.04	0.03
13.100	0.03	0.03	0.03	0.03	0.03
13.350	0.02	0.02	0.02	0.02	0.02
13.600	0.02	0.02	0.02	0.02	0.02
13.850	0.02	0.02	0.02	0.02	0.02
14.100	0.02	0.02	0.02	0.02	0.02
14.350	0.02	0.02	0.01	0.01	0.01
14.600	0.01	0.01	0.01	0.01	0.01
14.850	0.01	0.01	0.01	0.01	0.01
15.100	0.01	0.01	0.01	0.01	0.01
15.350	0.01	0.01	0.01	0.01	0.01
15.600	0.01	0.01	0.01	0.01	0.01
15.850	0.01	0.01	0.01	0.01	0.01
16.100	0.01	0.01	0.01	0.01	0.01
16.350	0.01	0.01	0.01	0.01	0.01
16.600	0.01	0.01	0.01	0.01	0.01
16.850	0.01	0.01	0.01	0.01	0.01
17.100	0.01	0.01	0.01	0.01	0.01
17.350	0.01	0.01	0.01	0.01	0.01
17.600	0.01	0.01	0.01	0.01	0.01
17.850	0.01	0.01	0.01	0.01	0.01
18.100	0.01	0.01	0.01	0.01	0.01
18.350	0.01	0.01	0.01	0.01	0.01
18.600	0.01	0.01	0.01	0.01	0.01
18.850	0.01	0.01	0.01	0.01	0.01
19.100	0.01	0.01	0.01	0.01	0.01
19.350	0.01	0.01	0.01	0.01	0.01
19.600	0.01	0.01	0.01	0.01	0.01
19.850	0.01	0.01	0.01	0.01	0.01
20.100	0.01	0.01	0.01	0.01	0.01
20.350	0.01	0.01	0.01	0.01	0.01
20.600	0.01	0.01	0.01	0.01	0.01
20.850	0.01	0.01	0.01	0.01	0.01
21.100	0.01	0.01	0.01	0.01	0.01
21.350	0.01	0.01	0.01	0.01	0.00
21.600	0.00	0.00	0.00	0.00	0.00
21.850	0.00	0.00	0.00	0.00	0.00
22.100	0.00	0.00	0.00	0.00	0.00
22.350	0.00	0.00	0.00	0.00	0.00
22.600	0.00	0.00	0.00	0.00	0.00
22.850	0.00	0.00	0.00	0.00	0.00
23.100	0.00	0.00	0.00	0.00	0.00
23.350	0.00	0.00	0.00	0.00	0.00

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-2-I

Scenario: Post-Development 2

Return Event: 2 years

Storm Event: 2-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
23.600	0.00	0.00	0.00	0.00	0.00
23.850	0.00	0.00	0.01	0.01	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 5 years

Label: DA-2-I

Storm Event: 5-YR

Scenario: Post-Development 5

Storm Event	5-YR
Return Event	5 years
Duration	24.000 hours
Depth	4.12 in
Time of Concentration (Composite)	0.030 hours
Area (User Defined)	5,236.000 ft ²
<hr/>	
Computational Time Increment	0.004 hours
Time to Peak (Computed)	12.097 hours
Flow (Peak, Computed)	0.58 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.58 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	5,236.000 ft ²
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.89 in
Runoff Volume (Pervious)	0.039 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.039 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.030 hours
Computational Time Increment	0.004 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	4.51 ft ³ /s
Unit peak time, Tp	0.020 hours
Unit receding limb, Tr	0.080 hours
Total unit time, Tb	0.101 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 5 years

Label: DA-2-I

Storm Event: 5-YR

Scenario: Post-Development 5

Storm Event	5-YR
Return Event	5 years
Duration	24.000 hours
Depth	4.12 in
Time of Concentration (Composite)	0.030 hours
Area (User Defined)	5,236.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
1.350	0.00	0.00	0.00	0.00	0.00
1.600	0.00	0.00	0.00	0.00	0.00
1.850	0.00	0.00	0.00	0.00	0.00
2.100	0.00	0.00	0.00	0.00	0.00
2.350	0.00	0.00	0.00	0.00	0.00
2.600	0.00	0.00	0.00	0.00	0.00
2.850	0.00	0.00	0.00	0.00	0.00
3.100	0.00	0.00	0.00	0.00	0.00
3.350	0.00	0.00	0.00	0.00	0.00
3.600	0.00	0.00	0.00	0.00	0.00
3.850	0.00	0.00	0.00	0.00	0.00
4.100	0.00	0.00	0.01	0.01	0.01
4.350	0.01	0.01	0.01	0.01	0.01
4.600	0.01	0.01	0.01	0.01	0.01
4.850	0.01	0.01	0.01	0.01	0.01
5.100	0.01	0.01	0.01	0.01	0.01
5.350	0.01	0.01	0.01	0.01	0.01
5.600	0.01	0.01	0.01	0.01	0.01
5.850	0.01	0.01	0.01	0.01	0.01
6.100	0.01	0.01	0.01	0.01	0.01
6.350	0.01	0.01	0.01	0.01	0.01
6.600	0.01	0.01	0.01	0.01	0.01
6.850	0.01	0.01	0.01	0.01	0.01
7.100	0.01	0.01	0.01	0.01	0.01
7.350	0.01	0.01	0.01	0.01	0.01
7.600	0.01	0.01	0.01	0.01	0.01
7.850	0.01	0.01	0.01	0.01	0.01
8.100	0.01	0.01	0.01	0.01	0.01
8.350	0.01	0.01	0.01	0.01	0.01
8.600	0.01	0.01	0.01	0.01	0.01
8.850	0.01	0.01	0.01	0.01	0.01
9.100	0.01	0.01	0.01	0.02	0.02
9.350	0.02	0.02	0.02	0.02	0.02
9.600	0.02	0.02	0.02	0.02	0.02
9.850	0.02	0.02	0.02	0.02	0.02
10.100	0.02	0.02	0.02	0.02	0.02
10.350	0.02	0.02	0.02	0.02	0.03
10.600	0.03	0.03	0.03	0.03	0.03
10.850	0.04	0.04	0.04	0.04	0.04

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 5 years

Label: DA-2-I

Storm Event: 5-YR

Scenario: Post-Development 5

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.100	0.04	0.05	0.05	0.05	0.05
11.350	0.06	0.06	0.06	0.06	0.10
11.600	0.10	0.10	0.10	0.14	0.14
11.850	0.20	0.20	0.34	0.35	0.57
12.100	0.58	0.22	0.20	0.15	0.14
12.350	0.11	0.11	0.10	0.10	0.07
12.600	0.06	0.06	0.06	0.06	0.06
12.850	0.05	0.05	0.05	0.04	0.04
13.100	0.04	0.04	0.04	0.03	0.03
13.350	0.03	0.03	0.03	0.03	0.03
13.600	0.03	0.02	0.02	0.02	0.02
13.850	0.02	0.02	0.02	0.02	0.02
14.100	0.02	0.02	0.02	0.02	0.02
14.350	0.02	0.02	0.02	0.02	0.02
14.600	0.02	0.02	0.02	0.02	0.02
14.850	0.02	0.02	0.01	0.01	0.01
15.100	0.01	0.01	0.01	0.01	0.01
15.350	0.01	0.01	0.01	0.01	0.01
15.600	0.01	0.01	0.01	0.01	0.01
15.850	0.01	0.01	0.01	0.01	0.01
16.100	0.01	0.01	0.01	0.01	0.01
16.350	0.01	0.01	0.01	0.01	0.01
16.600	0.01	0.01	0.01	0.01	0.01
16.850	0.01	0.01	0.01	0.01	0.01
17.100	0.01	0.01	0.01	0.01	0.01
17.350	0.01	0.01	0.01	0.01	0.01
17.600	0.01	0.01	0.01	0.01	0.01
17.850	0.01	0.01	0.01	0.01	0.01
18.100	0.01	0.01	0.01	0.01	0.01
18.350	0.01	0.01	0.01	0.01	0.01
18.600	0.01	0.01	0.01	0.01	0.01
18.850	0.01	0.01	0.01	0.01	0.01
19.100	0.01	0.01	0.01	0.01	0.01
19.350	0.01	0.01	0.01	0.01	0.01
19.600	0.01	0.01	0.01	0.01	0.01
19.850	0.01	0.01	0.01	0.01	0.01
20.100	0.01	0.01	0.01	0.01	0.01
20.350	0.01	0.01	0.01	0.01	0.01
20.600	0.01	0.01	0.01	0.01	0.01
20.850	0.01	0.01	0.01	0.01	0.01
21.100	0.01	0.01	0.01	0.01	0.01
21.350	0.01	0.01	0.01	0.01	0.01
21.600	0.01	0.01	0.01	0.01	0.01
21.850	0.01	0.01	0.01	0.01	0.01
22.100	0.01	0.01	0.01	0.01	0.01
22.350	0.01	0.01	0.01	0.01	0.01
22.600	0.01	0.01	0.01	0.01	0.01
22.850	0.01	0.01	0.01	0.01	0.01

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-2-I

Scenario: Post-Development 5

Return Event: 5 years

Storm Event: 5-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
23.100	0.01	0.01	0.01	0.01	0.01
23.350	0.01	0.01	0.01	0.01	0.01
23.600	0.01	0.01	0.01	0.01	0.01
23.850	0.01	0.01	0.01	0.01	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 10 years

Label: DA-2-I

Storm Event: 10-YR

Scenario: Post-Development 10

Storm Event	10-YR
Return Event	10 years
Duration	24.000 hours
Depth	4.82 in
Time of Concentration (Composite)	0.030 hours
Area (User Defined)	5,236.000 ft ²
<hr/>	
Computational Time Increment	0.004 hours
Time to Peak (Computed)	12.097 hours
Flow (Peak, Computed)	0.68 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.68 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	5,236.000 ft ²
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	4.58 in
Runoff Volume (Pervious)	0.046 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.046 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.030 hours
Computational Time Increment	0.004 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	4.51 ft ³ /s
Unit peak time, Tp	0.020 hours
Unit receding limb, Tr	0.080 hours
Total unit time, Tb	0.101 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 10 years

Label: DA-2-I

Storm Event: 10-YR

Scenario: Post-Development 10

Storm Event	10-YR
Return Event	10 years
Duration	24.000 hours
Depth	4.82 in
Time of Concentration (Composite)	0.030 hours
Area (User Defined)	5,236.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
1.100	0.00	0.00	0.00	0.00	0.00
1.350	0.00	0.00	0.00	0.00	0.00
1.600	0.00	0.00	0.00	0.00	0.00
1.850	0.00	0.00	0.00	0.00	0.00
2.100	0.00	0.00	0.00	0.00	0.00
2.350	0.00	0.00	0.00	0.00	0.00
2.600	0.00	0.00	0.00	0.00	0.00
2.850	0.00	0.00	0.00	0.00	0.00
3.100	0.00	0.00	0.01	0.01	0.01
3.350	0.01	0.01	0.01	0.01	0.01
3.600	0.01	0.01	0.01	0.01	0.01
3.850	0.01	0.01	0.01	0.01	0.01
4.100	0.01	0.01	0.01	0.01	0.01
4.350	0.01	0.01	0.01	0.01	0.01
4.600	0.01	0.01	0.01	0.01	0.01
4.850	0.01	0.01	0.01	0.01	0.01
5.100	0.01	0.01	0.01	0.01	0.01
5.350	0.01	0.01	0.01	0.01	0.01
5.600	0.01	0.01	0.01	0.01	0.01
5.850	0.01	0.01	0.01	0.01	0.01
6.100	0.01	0.01	0.01	0.01	0.01
6.350	0.01	0.01	0.01	0.01	0.01
6.600	0.01	0.01	0.01	0.01	0.01
6.850	0.01	0.01	0.01	0.01	0.01
7.100	0.01	0.01	0.01	0.01	0.01
7.350	0.01	0.01	0.01	0.01	0.01
7.600	0.01	0.01	0.01	0.01	0.01
7.850	0.01	0.01	0.01	0.01	0.01
8.100	0.01	0.01	0.01	0.01	0.01
8.350	0.01	0.01	0.01	0.01	0.01
8.600	0.01	0.01	0.01	0.01	0.01
8.850	0.02	0.02	0.02	0.02	0.02
9.100	0.02	0.02	0.02	0.02	0.02
9.350	0.02	0.02	0.02	0.02	0.02
9.600	0.02	0.02	0.02	0.02	0.02
9.850	0.02	0.02	0.02	0.02	0.02
10.100	0.03	0.03	0.03	0.03	0.03
10.350	0.03	0.03	0.03	0.03	0.03
10.600	0.03	0.03	0.04	0.04	0.04

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 10 years

Label: DA-2-I

Storm Event: 10-YR

Scenario: Post-Development 10

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.850	0.04	0.04	0.05	0.05	0.05
11.100	0.05	0.06	0.06	0.06	0.06
11.350	0.07	0.07	0.07	0.08	0.11
11.600	0.12	0.12	0.12	0.17	0.17
11.850	0.23	0.23	0.40	0.41	0.66
12.100	0.68	0.26	0.24	0.17	0.17
12.350	0.13	0.12	0.12	0.12	0.08
12.600	0.08	0.07	0.07	0.07	0.06
12.850	0.06	0.06	0.05	0.05	0.05
13.100	0.05	0.04	0.04	0.04	0.04
13.350	0.04	0.04	0.03	0.03	0.03
13.600	0.03	0.03	0.03	0.03	0.03
13.850	0.03	0.03	0.03	0.03	0.03
14.100	0.03	0.02	0.02	0.02	0.02
14.350	0.02	0.02	0.02	0.02	0.02
14.600	0.02	0.02	0.02	0.02	0.02
14.850	0.02	0.02	0.02	0.02	0.02
15.100	0.02	0.02	0.02	0.02	0.02
15.350	0.02	0.02	0.02	0.02	0.02
15.600	0.02	0.01	0.01	0.01	0.01
15.850	0.01	0.01	0.01	0.01	0.01
16.100	0.01	0.01	0.01	0.01	0.01
16.350	0.01	0.01	0.01	0.01	0.01
16.600	0.01	0.01	0.01	0.01	0.01
16.850	0.01	0.01	0.01	0.01	0.01
17.100	0.01	0.01	0.01	0.01	0.01
17.350	0.01	0.01	0.01	0.01	0.01
17.600	0.01	0.01	0.01	0.01	0.01
17.850	0.01	0.01	0.01	0.01	0.01
18.100	0.01	0.01	0.01	0.01	0.01
18.350	0.01	0.01	0.01	0.01	0.01
18.600	0.01	0.01	0.01	0.01	0.01
18.850	0.01	0.01	0.01	0.01	0.01
19.100	0.01	0.01	0.01	0.01	0.01
19.350	0.01	0.01	0.01	0.01	0.01
19.600	0.01	0.01	0.01	0.01	0.01
19.850	0.01	0.01	0.01	0.01	0.01
20.100	0.01	0.01	0.01	0.01	0.01
20.350	0.01	0.01	0.01	0.01	0.01
20.600	0.01	0.01	0.01	0.01	0.01
20.850	0.01	0.01	0.01	0.01	0.01
21.100	0.01	0.01	0.01	0.01	0.01
21.350	0.01	0.01	0.01	0.01	0.01
21.600	0.01	0.01	0.01	0.01	0.01
21.850	0.01	0.01	0.01	0.01	0.01
22.100	0.01	0.01	0.01	0.01	0.01
22.350	0.01	0.01	0.01	0.01	0.01
22.600	0.01	0.01	0.01	0.01	0.01

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-2-I

Scenario: Post-Development 10

Return Event: 10 years

Storm Event: 10-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
22.850	0.01	0.01	0.01	0.01	0.01
23.100	0.01	0.01	0.01	0.01	0.01
23.350	0.01	0.01	0.01	0.01	0.01
23.600	0.01	0.01	0.01	0.01	0.01
23.850	0.01	0.01	0.01	0.01	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 25 years

Label: DA-2-I

Storm Event: 25-YR

Scenario: Post-Development 25

Storm Event	25-YR
Return Event	25 years
Duration	24.000 hours
Depth	5.83 in
Time of Concentration (Composite)	0.030 hours
Area (User Defined)	5,236.000 ft ²
<hr/>	
Computational Time Increment	0.004 hours
Time to Peak (Computed)	12.097 hours
Flow (Peak, Computed)	0.82 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.82 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	5,236.000 ft ²
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.59 in
Runoff Volume (Pervious)	0.056 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.056 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.030 hours
Computational Time Increment	0.004 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	4.51 ft ³ /s
Unit peak time, Tp	0.020 hours
Unit receding limb, Tr	0.080 hours
Total unit time, Tb	0.101 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 25 years

Label: DA-2-I

Storm Event: 25-YR

Scenario: Post-Development 25

Storm Event	25-YR
Return Event	25 years
Duration	24.000 hours
Depth	5.83 in
Time of Concentration (Composite)	0.030 hours
Area (User Defined)	5,236.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
0.900	0.00	0.00	0.00	0.00	0.00
1.150	0.00	0.00	0.00	0.00	0.00
1.400	0.00	0.00	0.00	0.00	0.00
1.650	0.00	0.00	0.00	0.00	0.00
1.900	0.00	0.00	0.00	0.00	0.00
2.150	0.00	0.00	0.01	0.01	0.01
2.400	0.01	0.01	0.01	0.01	0.01
2.650	0.01	0.01	0.01	0.01	0.01
2.900	0.01	0.01	0.01	0.01	0.01
3.150	0.01	0.01	0.01	0.01	0.01
3.400	0.01	0.01	0.01	0.01	0.01
3.650	0.01	0.01	0.01	0.01	0.01
3.900	0.01	0.01	0.01	0.01	0.01
4.150	0.01	0.01	0.01	0.01	0.01
4.400	0.01	0.01	0.01	0.01	0.01
4.650	0.01	0.01	0.01	0.01	0.01
4.900	0.01	0.01	0.01	0.01	0.01
5.150	0.01	0.01	0.01	0.01	0.01
5.400	0.01	0.01	0.01	0.01	0.01
5.650	0.01	0.01	0.01	0.01	0.01
5.900	0.01	0.01	0.01	0.01	0.01
6.150	0.01	0.01	0.01	0.01	0.01
6.400	0.01	0.01	0.01	0.01	0.01
6.650	0.01	0.01	0.01	0.01	0.01
6.900	0.01	0.01	0.01	0.01	0.01
7.150	0.01	0.01	0.01	0.01	0.01
7.400	0.01	0.01	0.01	0.01	0.01
7.650	0.02	0.02	0.02	0.02	0.02
7.900	0.02	0.02	0.02	0.02	0.02
8.150	0.02	0.02	0.02	0.02	0.02
8.400	0.02	0.02	0.02	0.02	0.02
8.650	0.02	0.02	0.02	0.02	0.02
8.900	0.02	0.02	0.02	0.02	0.02
9.150	0.02	0.02	0.02	0.02	0.02
9.400	0.02	0.02	0.02	0.03	0.03
9.650	0.03	0.03	0.03	0.03	0.03
9.900	0.03	0.03	0.03	0.03	0.03
10.150	0.03	0.03	0.03	0.03	0.03
10.400	0.03	0.03	0.03	0.04	0.04

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 25 years

Label: DA-2-I

Storm Event: 25-YR

Scenario: Post-Development 25

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.650	0.04	0.04	0.05	0.05	0.05
10.900	0.05	0.05	0.06	0.06	0.06
11.150	0.07	0.07	0.08	0.08	0.08
11.400	0.09	0.09	0.09	0.14	0.14
11.650	0.15	0.15	0.20	0.20	0.28
11.900	0.28	0.48	0.49	0.80	0.82
12.150	0.31	0.29	0.21	0.21	0.15
12.400	0.15	0.14	0.14	0.09	0.09
12.650	0.09	0.09	0.08	0.08	0.07
12.900	0.07	0.06	0.06	0.06	0.06
13.150	0.05	0.05	0.05	0.05	0.04
13.400	0.04	0.04	0.04	0.04	0.04
13.650	0.03	0.03	0.03	0.03	0.03
13.900	0.03	0.03	0.03	0.03	0.03
14.150	0.03	0.03	0.03	0.03	0.03
14.400	0.03	0.03	0.03	0.03	0.03
14.650	0.02	0.02	0.02	0.02	0.02
14.900	0.02	0.02	0.02	0.02	0.02
15.150	0.02	0.02	0.02	0.02	0.02
15.400	0.02	0.02	0.02	0.02	0.02
15.650	0.02	0.02	0.02	0.02	0.02
15.900	0.02	0.02	0.02	0.02	0.02
16.150	0.02	0.02	0.02	0.02	0.02
16.400	0.02	0.02	0.02	0.02	0.02
16.650	0.02	0.02	0.01	0.01	0.01
16.900	0.01	0.01	0.01	0.01	0.01
17.150	0.01	0.01	0.01	0.01	0.01
17.400	0.01	0.01	0.01	0.01	0.01
17.650	0.01	0.01	0.01	0.01	0.01
17.900	0.01	0.01	0.01	0.01	0.01
18.150	0.01	0.01	0.01	0.01	0.01
18.400	0.01	0.01	0.01	0.01	0.01
18.650	0.01	0.01	0.01	0.01	0.01
18.900	0.01	0.01	0.01	0.01	0.01
19.150	0.01	0.01	0.01	0.01	0.01
19.400	0.01	0.01	0.01	0.01	0.01
19.650	0.01	0.01	0.01	0.01	0.01
19.900	0.01	0.01	0.01	0.01	0.01
20.150	0.01	0.01	0.01	0.01	0.01
20.400	0.01	0.01	0.01	0.01	0.01
20.650	0.01	0.01	0.01	0.01	0.01
20.900	0.01	0.01	0.01	0.01	0.01
21.150	0.01	0.01	0.01	0.01	0.01
21.400	0.01	0.01	0.01	0.01	0.01
21.650	0.01	0.01	0.01	0.01	0.01
21.900	0.01	0.01	0.01	0.01	0.01
22.150	0.01	0.01	0.01	0.01	0.01
22.400	0.01	0.01	0.01	0.01	0.01

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-2-I

Scenario: Post-Development 25

Return Event: 25 years

Storm Event: 25-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
22.650	0.01	0.01	0.01	0.01	0.01
22.900	0.01	0.01	0.01	0.01	0.01
23.150	0.01	0.01	0.01	0.01	0.01
23.400	0.01	0.01	0.01	0.01	0.01
23.650	0.01	0.01	0.01	0.01	0.01
23.900	0.01	0.01	0.01	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 50 years

Label: DA-2-I

Storm Event: 50-YR

Scenario: Post-Development 50

Storm Event	50-YR
Return Event	50 years
Duration	24.000 hours
Depth	6.68 in
Time of Concentration (Composite)	0.030 hours
Area (User Defined)	5,236.000 ft ²
<hr/>	
Computational Time Increment	0.004 hours
Time to Peak (Computed)	12.097 hours
Flow (Peak, Computed)	0.94 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.94 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	5,236.000 ft ²
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.44 in
Runoff Volume (Pervious)	0.065 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.065 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.030 hours
Computational Time Increment	0.004 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	4.51 ft ³ /s
Unit peak time, Tp	0.020 hours
Unit receding limb, Tr	0.080 hours
Total unit time, Tb	0.101 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 50 years

Label: DA-2-I

Storm Event: 50-YR

Scenario: Post-Development 50

Storm Event	50-YR
Return Event	50 years
Duration	24.000 hours
Depth	6.68 in
Time of Concentration (Composite)	0.030 hours
Area (User Defined)	5,236.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
0.750	0.00	0.00	0.00	0.00	0.00
1.000	0.00	0.00	0.00	0.00	0.00
1.250	0.00	0.00	0.00	0.00	0.00
1.500	0.00	0.00	0.00	0.00	0.00
1.750	0.00	0.01	0.01	0.01	0.01
2.000	0.01	0.01	0.01	0.01	0.01
2.250	0.01	0.01	0.01	0.01	0.01
2.500	0.01	0.01	0.01	0.01	0.01
2.750	0.01	0.01	0.01	0.01	0.01
3.000	0.01	0.01	0.01	0.01	0.01
3.250	0.01	0.01	0.01	0.01	0.01
3.500	0.01	0.01	0.01	0.01	0.01
3.750	0.01	0.01	0.01	0.01	0.01
4.000	0.01	0.01	0.01	0.01	0.01
4.250	0.01	0.01	0.01	0.01	0.01
4.500	0.01	0.01	0.01	0.01	0.01
4.750	0.01	0.01	0.01	0.01	0.01
5.000	0.01	0.01	0.01	0.01	0.01
5.250	0.01	0.01	0.01	0.01	0.01
5.500	0.01	0.01	0.01	0.01	0.01
5.750	0.01	0.01	0.01	0.01	0.01
6.000	0.01	0.01	0.01	0.01	0.01
6.250	0.01	0.01	0.01	0.01	0.01
6.500	0.01	0.01	0.01	0.01	0.01
6.750	0.01	0.01	0.01	0.01	0.02
7.000	0.02	0.02	0.02	0.02	0.02
7.250	0.02	0.02	0.02	0.02	0.02
7.500	0.02	0.02	0.02	0.02	0.02
7.750	0.02	0.02	0.02	0.02	0.02
8.000	0.02	0.02	0.02	0.02	0.02
8.250	0.02	0.02	0.02	0.02	0.02
8.500	0.02	0.02	0.02	0.02	0.02
8.750	0.02	0.02	0.02	0.02	0.02
9.000	0.02	0.02	0.02	0.02	0.02
9.250	0.03	0.03	0.03	0.03	0.03
9.500	0.03	0.03	0.03	0.03	0.03
9.750	0.03	0.03	0.03	0.03	0.03
10.000	0.03	0.04	0.04	0.04	0.04
10.250	0.04	0.04	0.04	0.04	0.04

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 50 years

Label: DA-2-I

Storm Event: 50-YR

Scenario: Post-Development 50

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.500	0.04	0.04	0.04	0.05	0.05
10.750	0.05	0.05	0.06	0.06	0.06
11.000	0.06	0.07	0.07	0.08	0.08
11.250	0.09	0.09	0.10	0.10	0.10
11.500	0.10	0.16	0.16	0.17	0.17
11.750	0.23	0.24	0.32	0.33	0.55
12.000	0.56	0.92	0.94	0.36	0.33
12.250	0.24	0.24	0.18	0.17	0.16
12.500	0.16	0.11	0.11	0.10	0.10
12.750	0.09	0.09	0.08	0.08	0.07
13.000	0.07	0.06	0.06	0.06	0.06
13.250	0.06	0.05	0.05	0.05	0.05
13.500	0.05	0.04	0.04	0.04	0.04
13.750	0.04	0.04	0.04	0.04	0.04
14.000	0.04	0.03	0.03	0.03	0.03
14.250	0.03	0.03	0.03	0.03	0.03
14.500	0.03	0.03	0.03	0.03	0.03
14.750	0.03	0.03	0.03	0.03	0.02
15.000	0.02	0.02	0.02	0.02	0.02
15.250	0.02	0.02	0.02	0.02	0.02
15.500	0.02	0.02	0.02	0.02	0.02
15.750	0.02	0.02	0.02	0.02	0.02
16.000	0.02	0.02	0.02	0.02	0.02
16.250	0.02	0.02	0.02	0.02	0.02
16.500	0.02	0.02	0.02	0.02	0.02
16.750	0.02	0.02	0.02	0.02	0.02
17.000	0.02	0.02	0.02	0.02	0.02
17.250	0.02	0.02	0.02	0.02	0.01
17.500	0.01	0.01	0.01	0.01	0.01
17.750	0.01	0.01	0.01	0.01	0.01
18.000	0.01	0.01	0.01	0.01	0.01
18.250	0.01	0.01	0.01	0.01	0.01
18.500	0.01	0.01	0.01	0.01	0.01
18.750	0.01	0.01	0.01	0.01	0.01
19.000	0.01	0.01	0.01	0.01	0.01
19.250	0.01	0.01	0.01	0.01	0.01
19.500	0.01	0.01	0.01	0.01	0.01
19.750	0.01	0.01	0.01	0.01	0.01
20.000	0.01	0.01	0.01	0.01	0.01
20.250	0.01	0.01	0.01	0.01	0.01
20.500	0.01	0.01	0.01	0.01	0.01
20.750	0.01	0.01	0.01	0.01	0.01
21.000	0.01	0.01	0.01	0.01	0.01
21.250	0.01	0.01	0.01	0.01	0.01
21.500	0.01	0.01	0.01	0.01	0.01
21.750	0.01	0.01	0.01	0.01	0.01
22.000	0.01	0.01	0.01	0.01	0.01
22.250	0.01	0.01	0.01	0.01	0.01

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-2-I

Scenario: Post-Development 50

Return Event: 50 years

Storm Event: 50-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
22.500	0.01	0.01	0.01	0.01	0.01
22.750	0.01	0.01	0.01	0.01	0.01
23.000	0.01	0.01	0.01	0.01	0.01
23.250	0.01	0.01	0.01	0.01	0.01
23.500	0.01	0.01	0.01	0.01	0.01
23.750	0.01	0.01	0.01	0.01	0.01
24.000	0.01	(N/A)	(N/A)	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 100 years

Label: DA-2-I

Storm Event: 100-YR

Scenario: Post-Development 100

Storm Event	100-YR
Return Event	100 years
Duration	24.000 hours
Depth	7.60 in
Time of Concentration (Composite)	0.030 hours
Area (User Defined)	5,236.000 ft ²
<hr/>	
Computational Time Increment	0.004 hours
Time to Peak (Computed)	12.097 hours
Flow (Peak, Computed)	1.07 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	1.07 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	5,236.000 ft ²
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	7.36 in
Runoff Volume (Pervious)	0.074 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.074 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.030 hours
Computational Time Increment	0.004 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	4.51 ft ³ /s
Unit peak time, Tp	0.020 hours
Unit receding limb, Tr	0.080 hours
Total unit time, Tb	0.101 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 100 years

Label: DA-2-I

Storm Event: 100-YR

Scenario: Post-Development 100

Storm Event	100-YR
Return Event	100 years
Duration	24.000 hours
Depth	7.60 in
Time of Concentration (Composite)	0.030 hours
Area (User Defined)	5,236.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
0.650	0.00	0.00	0.00	0.00	0.00
0.900	0.00	0.00	0.00	0.00	0.00
1.150	0.00	0.00	0.00	0.00	0.00
1.400	0.00	0.01	0.01	0.01	0.01
1.650	0.01	0.01	0.01	0.01	0.01
1.900	0.01	0.01	0.01	0.01	0.01
2.150	0.01	0.01	0.01	0.01	0.01
2.400	0.01	0.01	0.01	0.01	0.01
2.650	0.01	0.01	0.01	0.01	0.01
2.900	0.01	0.01	0.01	0.01	0.01
3.150	0.01	0.01	0.01	0.01	0.01
3.400	0.01	0.01	0.01	0.01	0.01
3.650	0.01	0.01	0.01	0.01	0.01
3.900	0.01	0.01	0.01	0.01	0.01
4.150	0.01	0.01	0.01	0.01	0.01
4.400	0.01	0.01	0.01	0.01	0.01
4.650	0.01	0.01	0.01	0.01	0.01
4.900	0.01	0.01	0.01	0.01	0.01
5.150	0.01	0.01	0.01	0.01	0.01
5.400	0.01	0.01	0.01	0.01	0.01
5.650	0.01	0.01	0.01	0.01	0.01
5.900	0.01	0.01	0.01	0.01	0.01
6.150	0.01	0.01	0.01	0.01	0.02
6.400	0.02	0.02	0.02	0.02	0.02
6.650	0.02	0.02	0.02	0.02	0.02
6.900	0.02	0.02	0.02	0.02	0.02
7.150	0.02	0.02	0.02	0.02	0.02
7.400	0.02	0.02	0.02	0.02	0.02
7.650	0.02	0.02	0.02	0.02	0.02
7.900	0.02	0.02	0.02	0.02	0.02
8.150	0.02	0.02	0.02	0.02	0.02
8.400	0.02	0.02	0.02	0.02	0.02
8.650	0.02	0.02	0.02	0.02	0.02
8.900	0.02	0.03	0.03	0.03	0.03
9.150	0.03	0.03	0.03	0.03	0.03
9.400	0.03	0.03	0.03	0.03	0.03
9.650	0.03	0.03	0.04	0.04	0.04
9.900	0.04	0.04	0.04	0.04	0.04
10.150	0.04	0.04	0.04	0.04	0.04

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 100 years

Label: DA-2-I

Storm Event: 100-YR

Scenario: Post-Development 100

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.400	0.04	0.05	0.05	0.05	0.05
10.650	0.06	0.06	0.06	0.06	0.07
10.900	0.07	0.07	0.07	0.08	0.08
11.150	0.09	0.09	0.10	0.10	0.11
11.400	0.11	0.12	0.12	0.18	0.19
11.650	0.19	0.20	0.26	0.27	0.37
11.900	0.37	0.63	0.64	1.05	1.07
12.150	0.41	0.37	0.27	0.27	0.20
12.400	0.20	0.19	0.19	0.12	0.12
12.650	0.11	0.11	0.10	0.10	0.09
12.900	0.09	0.08	0.08	0.07	0.07
13.150	0.07	0.07	0.06	0.06	0.06
13.400	0.06	0.05	0.05	0.05	0.05
13.650	0.05	0.05	0.04	0.04	0.04
13.900	0.04	0.04	0.04	0.04	0.04
14.150	0.04	0.04	0.04	0.04	0.04
14.400	0.04	0.03	0.03	0.03	0.03
14.650	0.03	0.03	0.03	0.03	0.03
14.900	0.03	0.03	0.03	0.03	0.03
15.150	0.03	0.03	0.03	0.03	0.02
15.400	0.02	0.02	0.02	0.02	0.02
15.650	0.02	0.02	0.02	0.02	0.02
15.900	0.02	0.02	0.02	0.02	0.02
16.150	0.02	0.02	0.02	0.02	0.02
16.400	0.02	0.02	0.02	0.02	0.02
16.650	0.02	0.02	0.02	0.02	0.02
16.900	0.02	0.02	0.02	0.02	0.02
17.150	0.02	0.02	0.02	0.02	0.02
17.400	0.02	0.02	0.02	0.02	0.02
17.650	0.02	0.02	0.02	0.02	0.02
17.900	0.02	0.02	0.02	0.01	0.01
18.150	0.01	0.01	0.01	0.01	0.01
18.400	0.01	0.01	0.01	0.01	0.01
18.650	0.01	0.01	0.01	0.01	0.01
18.900	0.01	0.01	0.01	0.01	0.01
19.150	0.01	0.01	0.01	0.01	0.01
19.400	0.01	0.01	0.01	0.01	0.01
19.650	0.01	0.01	0.01	0.01	0.01
19.900	0.01	0.01	0.01	0.01	0.01
20.150	0.01	0.01	0.01	0.01	0.01
20.400	0.01	0.01	0.01	0.01	0.01
20.650	0.01	0.01	0.01	0.01	0.01
20.900	0.01	0.01	0.01	0.01	0.01
21.150	0.01	0.01	0.01	0.01	0.01
21.400	0.01	0.01	0.01	0.01	0.01
21.650	0.01	0.01	0.01	0.01	0.01
21.900	0.01	0.01	0.01	0.01	0.01
22.150	0.01	0.01	0.01	0.01	0.01

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-2-I

Scenario: Post-Development 100

Return Event: 100 years

Storm Event: 100-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
22.400	0.01	0.01	0.01	0.01	0.01
22.650	0.01	0.01	0.01	0.01	0.01
22.900	0.01	0.01	0.01	0.01	0.01
23.150	0.01	0.01	0.01	0.01	0.01
23.400	0.01	0.01	0.01	0.01	0.01
23.650	0.01	0.01	0.01	0.01	0.01
23.900	0.01	0.01	0.01	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 1 years

Label: DA-2-P

Storm Event: 1-YR

Scenario: Post-Development 1

Storm Event	1-YR
Return Event	1 years
Duration	24.000 hours
Depth	2.73 in
Time of Concentration (Composite)	0.030 hours
Area (User Defined)	1,564.000 ft ²
<hr/>	
Computational Time Increment	0.004 hours
Time to Peak (Computed)	12.105 hours
Flow (Peak, Computed)	0.01 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.01 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	61.000
Area (User Defined)	1,564.000 ft ²
Maximum Retention (Pervious)	6.39 in
Maximum Retention (Pervious, 20 percent)	1.28 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.27 in
Runoff Volume (Pervious)	0.001 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.001 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.030 hours
Computational Time Increment	0.004 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	1.35 ft ³ /s
Unit peak time, Tp	0.020 hours
Unit receding limb, Tr	0.080 hours
Total unit time, Tb	0.101 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-2-P

Scenario: Post-Development 1

Return Event: 1 years

Storm Event: 1-YR

Storm Event	1-YR
Return Event	1 years
Duration	24.000 hours
Depth	2.73 in
Time of Concentration (Composite)	0.030 hours
Area (User Defined)	1,564.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
12.000	0.00	0.00	0.01	0.00	0.00
12.250	0.00	0.00	0.00	0.00	0.00
12.500	0.00	0.00	0.00	0.00	0.00
12.750	0.00	0.00	0.00	0.00	0.00
13.000	0.00	0.00	0.00	0.00	0.00
13.250	0.00	0.00	0.00	0.00	0.00
13.500	0.00	0.00	0.00	0.00	0.00
13.750	0.00	0.00	0.00	0.00	0.00
14.000	0.00	0.00	(N/A)	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Label: DA-2-P

Scenario: Post-Development 2

Return Event: 2 years

Storm Event: 2-YR

Storm Event	2-YR
Return Event	2 years
Duration	24.000 hours
Depth	3.28 in
Time of Concentration (Composite)	0.030 hours
Area (User Defined)	1,564.000 ft ²
<hr/>	
Computational Time Increment	0.004 hours
Time to Peak (Computed)	12.105 hours
Flow (Peak, Computed)	0.02 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.02 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	61.000
Area (User Defined)	1,564.000 ft ²
Maximum Retention (Pervious)	6.39 in
Maximum Retention (Pervious, 20 percent)	1.28 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.48 in
Runoff Volume (Pervious)	0.001 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.001 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.030 hours
Computational Time Increment	0.004 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	1.35 ft ³ /s
Unit peak time, Tp	0.020 hours
Unit receding limb, Tr	0.080 hours
Total unit time, Tb	0.101 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-2-P

Scenario: Post-Development 2

Return Event: 2 years

Storm Event: 2-YR

Storm Event	2-YR
Return Event	2 years
Duration	24.000 hours
Depth	3.28 in
Time of Concentration (Composite)	0.030 hours
Area (User Defined)	1,564.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.900	0.00	0.00	0.01	0.02	0.02
12.150	0.01	0.01	0.01	0.01	0.01
12.400	0.01	0.01	0.01	0.00	0.00
12.650	0.00	0.00	0.00	0.00	0.00
12.900	0.00	0.00	0.00	0.00	0.00
13.150	0.00	0.00	0.00	0.00	0.00
13.400	0.00	0.00	0.00	0.00	0.00
13.650	0.00	0.00	0.00	0.00	0.00
13.900	0.00	0.00	0.00	0.00	0.00
14.150	0.00	0.00	0.00	0.00	0.00
14.400	0.00	0.00	0.00	0.00	0.00
14.650	0.00	0.00	0.00	0.00	0.00
14.900	0.00	0.00	0.00	0.00	0.00
15.150	0.00	0.00	0.00	0.00	0.00
15.400	0.00	0.00	0.00	0.00	0.00
15.650	0.00	0.00	0.00	0.00	0.00
15.900	0.00	0.00	(N/A)	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Label: DA-2-P

Scenario: Post-Development 5

Return Event: 5 years

Storm Event: 5-YR

Storm Event	5-YR
Return Event	5 years
Duration	24.000 hours
Depth	4.12 in
Time of Concentration (Composite)	0.030 hours
Area (User Defined)	1,564.000 ft ²
<hr/>	
Computational Time Increment	0.004 hours
Time to Peak (Computed)	12.101 hours
Flow (Peak, Computed)	0.05 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.05 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	61.000
Area (User Defined)	1,564.000 ft ²
Maximum Retention (Pervious)	6.39 in
Maximum Retention (Pervious, 20 percent)	1.28 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.88 in
Runoff Volume (Pervious)	0.003 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.003 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.030 hours
Computational Time Increment	0.004 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	1.35 ft ³ /s
Unit peak time, Tp	0.020 hours
Unit receding limb, Tr	0.080 hours
Total unit time, Tb	0.101 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-2-P

Scenario: Post-Development 5

Return Event: 5 years

Storm Event: 5-YR

Storm Event	5-YR
Return Event	5 years
Duration	24.000 hours
Depth	4.12 in
Time of Concentration (Composite)	0.030 hours
Area (User Defined)	1,564.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.700	0.00	0.00	0.00	0.00	0.01
11.950	0.01	0.02	0.04	0.05	0.02
12.200	0.02	0.01	0.01	0.01	0.01
12.450	0.01	0.01	0.01	0.01	0.01
12.700	0.01	0.01	0.01	0.01	0.01
12.950	0.01	0.01	0.00	0.00	0.00
13.200	0.00	0.00	0.00	0.00	0.00
13.450	0.00	0.00	0.00	0.00	0.00
13.700	0.00	0.00	0.00	0.00	0.00
13.950	0.00	0.00	0.00	0.00	0.00
14.200	0.00	0.00	0.00	0.00	0.00
14.450	0.00	0.00	0.00	0.00	0.00
14.700	0.00	0.00	0.00	0.00	0.00
14.950	0.00	0.00	0.00	0.00	0.00
15.200	0.00	0.00	0.00	0.00	0.00
15.450	0.00	0.00	0.00	0.00	0.00
15.700	0.00	0.00	0.00	0.00	0.00
15.950	0.00	0.00	0.00	0.00	0.00
16.200	0.00	0.00	0.00	0.00	0.00
16.450	0.00	0.00	0.00	0.00	0.00
16.700	0.00	0.00	0.00	0.00	0.00
16.950	0.00	0.00	0.00	0.00	0.00
17.200	0.00	0.00	0.00	0.00	0.00
17.450	0.00	0.00	0.00	0.00	0.00
17.700	0.00	0.00	0.00	0.00	0.00
17.950	0.00	0.00	0.00	0.00	0.00
18.200	0.00	0.00	0.00	0.00	0.00
18.450	0.00	0.00	0.00	0.00	0.00
18.700	0.00	0.00	0.00	0.00	0.00
18.950	0.00	0.00	0.00	0.00	0.00
19.200	0.00	0.00	0.00	0.00	0.00
19.450	0.00	0.00	0.00	0.00	0.00
19.700	0.00	0.00	0.00	0.00	0.00
19.950	0.00	0.00	0.00	0.00	0.00

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 10 years

Label: DA-2-P

Storm Event: 10-YR

Scenario: Post-Development 10

Storm Event	10-YR
Return Event	10 years
Duration	24.000 hours
Depth	4.82 in
Time of Concentration (Composite)	0.030 hours
Area (User Defined)	1,564.000 ft ²
<hr/>	
Computational Time Increment	0.004 hours
Time to Peak (Computed)	12.101 hours
Flow (Peak, Computed)	0.07 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.07 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	61.000
Area (User Defined)	1,564.000 ft ²
Maximum Retention (Pervious)	6.39 in
Maximum Retention (Pervious, 20 percent)	1.28 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.26 in
Runoff Volume (Pervious)	0.004 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.004 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.030 hours
Computational Time Increment	0.004 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	1.35 ft ³ /s
Unit peak time, Tp	0.020 hours
Unit receding limb, Tr	0.080 hours
Total unit time, Tb	0.101 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-2-P

Scenario: Post-Development 10

Return Event: 10 years

Storm Event: 10-YR

Storm Event	10-YR
Return Event	10 years
Duration	24.000 hours
Depth	4.82 in
Time of Concentration (Composite)	0.030 hours
Area (User Defined)	1,564.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.500	0.00	0.00	0.00	0.00	0.00
11.750	0.01	0.01	0.01	0.01	0.02
12.000	0.03	0.06	0.07	0.03	0.03
12.250	0.02	0.02	0.02	0.02	0.02
12.500	0.02	0.01	0.01	0.01	0.01
12.750	0.01	0.01	0.01	0.01	0.01
13.000	0.01	0.01	0.01	0.01	0.01
13.250	0.01	0.01	0.01	0.01	0.00
13.500	0.00	0.00	0.00	0.00	0.00
13.750	0.00	0.00	0.00	0.00	0.00
14.000	0.00	0.00	0.00	0.00	0.00
14.250	0.00	0.00	0.00	0.00	0.00
14.500	0.00	0.00	0.00	0.00	0.00
14.750	0.00	0.00	0.00	0.00	0.00
15.000	0.00	0.00	0.00	0.00	0.00
15.250	0.00	0.00	0.00	0.00	0.00
15.500	0.00	0.00	0.00	0.00	0.00
15.750	0.00	0.00	0.00	0.00	0.00
16.000	0.00	0.00	0.00	0.00	0.00
16.250	0.00	0.00	0.00	0.00	0.00
16.500	0.00	0.00	0.00	0.00	0.00
16.750	0.00	0.00	0.00	0.00	0.00
17.000	0.00	0.00	0.00	0.00	0.00
17.250	0.00	0.00	0.00	0.00	0.00
17.500	0.00	0.00	0.00	0.00	0.00
17.750	0.00	0.00	0.00	0.00	0.00
18.000	0.00	0.00	0.00	0.00	0.00
18.250	0.00	0.00	0.00	0.00	0.00
18.500	0.00	0.00	0.00	0.00	0.00
18.750	0.00	0.00	0.00	0.00	0.00
19.000	0.00	0.00	0.00	0.00	0.00
19.250	0.00	0.00	0.00	0.00	0.00
19.500	0.00	0.00	0.00	0.00	0.00
19.750	0.00	0.00	0.00	0.00	0.00
20.000	0.00	0.00	0.00	0.00	0.00
20.250	0.00	0.00	0.00	0.00	0.00
20.500	0.00	0.00	0.00	0.00	0.00
20.750	0.00	0.00	0.00	0.00	0.00
21.000	0.00	0.00	0.00	0.00	0.00

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-2-P

Scenario: Post-Development 10

Return Event: 10 years

Storm Event: 10-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
21.250	0.00	0.00	0.00	0.00	0.00
21.500	0.00	0.00	0.00	0.00	0.00
21.750	0.00	0.00	0.00	0.00	0.00
22.000	0.00	0.00	0.00	0.00	0.00
22.250	0.00	0.00	0.00	0.00	0.00
22.500	0.00	0.00	0.00	0.00	0.00
22.750	0.00	0.00	0.00	0.00	0.00
23.000	0.00	0.00	0.00	0.00	0.00
23.250	0.00	0.00	0.00	0.00	0.00
23.500	0.00	0.00	0.00	0.00	0.00
23.750	0.00	0.00	0.00	0.00	0.00
24.000	0.00	(N/A)	(N/A)	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 25 years

Label: DA-2-P

Storm Event: 25-YR

Scenario: Post-Development 25

Storm Event	25-YR
Return Event	25 years
Duration	24.000 hours
Depth	5.83 in
Time of Concentration (Composite)	0.030 hours
Area (User Defined)	1,564.000 ft ²
<hr/>	
Computational Time Increment	0.004 hours
Time to Peak (Computed)	12.101 hours
Flow (Peak, Computed)	0.10 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.10 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	61.000
Area (User Defined)	1,564.000 ft ²
Maximum Retention (Pervious)	6.39 in
Maximum Retention (Pervious, 20 percent)	1.28 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.89 in
Runoff Volume (Pervious)	0.006 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.006 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.030 hours
Computational Time Increment	0.004 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	1.35 ft ³ /s
Unit peak time, Tp	0.020 hours
Unit receding limb, Tr	0.080 hours
Total unit time, Tb	0.101 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 25 years

Label: DA-2-P

Storm Event: 25-YR

Scenario: Post-Development 25

Storm Event	25-YR
Return Event	25 years
Duration	24.000 hours
Depth	5.83 in
Time of Concentration (Composite)	0.030 hours
Area (User Defined)	1,564.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.100	0.00	0.00	0.00	0.00	0.00
11.350	0.00	0.00	0.00	0.00	0.01
11.600	0.01	0.01	0.01	0.01	0.01
11.850	0.02	0.02	0.04	0.05	0.09
12.100	0.10	0.04	0.04	0.03	0.03
12.350	0.02	0.02	0.02	0.02	0.01
12.600	0.01	0.01	0.01	0.01	0.01
12.850	0.01	0.01	0.01	0.01	0.01
13.100	0.01	0.01	0.01	0.01	0.01
13.350	0.01	0.01	0.01	0.01	0.01
13.600	0.01	0.01	0.01	0.01	0.01
13.850	0.01	0.01	0.01	0.01	0.01
14.100	0.01	0.01	0.01	0.00	0.00
14.350	0.00	0.00	0.00	0.00	0.00
14.600	0.00	0.00	0.00	0.00	0.00
14.850	0.00	0.00	0.00	0.00	0.00
15.100	0.00	0.00	0.00	0.00	0.00
15.350	0.00	0.00	0.00	0.00	0.00
15.600	0.00	0.00	0.00	0.00	0.00
15.850	0.00	0.00	0.00	0.00	0.00
16.100	0.00	0.00	0.00	0.00	0.00
16.350	0.00	0.00	0.00	0.00	0.00
16.600	0.00	0.00	0.00	0.00	0.00
16.850	0.00	0.00	0.00	0.00	0.00
17.100	0.00	0.00	0.00	0.00	0.00
17.350	0.00	0.00	0.00	0.00	0.00
17.600	0.00	0.00	0.00	0.00	0.00
17.850	0.00	0.00	0.00	0.00	0.00
18.100	0.00	0.00	0.00	0.00	0.00
18.350	0.00	0.00	0.00	0.00	0.00
18.600	0.00	0.00	0.00	0.00	0.00
18.850	0.00	0.00	0.00	0.00	0.00
19.100	0.00	0.00	0.00	0.00	0.00
19.350	0.00	0.00	0.00	0.00	0.00
19.600	0.00	0.00	0.00	0.00	0.00
19.850	0.00	0.00	0.00	0.00	0.00
20.100	0.00	0.00	0.00	0.00	0.00
20.350	0.00	0.00	0.00	0.00	0.00
20.600	0.00	0.00	0.00	0.00	0.00

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-2-P

Scenario: Post-Development 25

Return Event: 25 years

Storm Event: 25-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
20.850	0.00	0.00	0.00	0.00	0.00
21.100	0.00	0.00	0.00	0.00	0.00
21.350	0.00	0.00	0.00	0.00	0.00
21.600	0.00	0.00	0.00	0.00	0.00
21.850	0.00	0.00	0.00	0.00	0.00
22.100	0.00	0.00	0.00	0.00	0.00
22.350	0.00	0.00	0.00	0.00	0.00
22.600	0.00	0.00	0.00	0.00	0.00
22.850	0.00	0.00	0.00	0.00	0.00
23.100	0.00	0.00	0.00	0.00	0.00
23.350	0.00	0.00	0.00	0.00	0.00
23.600	0.00	0.00	0.00	0.00	0.00
23.850	0.00	0.00	0.00	0.00	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 50 years

Label: DA-2-P

Storm Event: 50-YR

Scenario: Post-Development 50

Storm Event	50-YR
Return Event	50 years
Duration	24.000 hours
Depth	6.68 in
Time of Concentration (Composite)	0.030 hours
Area (User Defined)	1,564.000 ft ²
<hr/>	
Computational Time Increment	0.004 hours
Time to Peak (Computed)	12.101 hours
Flow (Peak, Computed)	0.14 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.14 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	61.000
Area (User Defined)	1,564.000 ft ²
Maximum Retention (Pervious)	6.39 in
Maximum Retention (Pervious, 20 percent)	1.28 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.47 in
Runoff Volume (Pervious)	0.007 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.007 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.030 hours
Computational Time Increment	0.004 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	1.35 ft ³ /s
Unit peak time, Tp	0.020 hours
Unit receding limb, Tr	0.080 hours
Total unit time, Tb	0.101 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 50 years

Label: DA-2-P

Storm Event: 50-YR

Scenario: Post-Development 50

Storm Event	50-YR
Return Event	50 years
Duration	24.000 hours
Depth	6.68 in
Time of Concentration (Composite)	0.030 hours
Area (User Defined)	1,564.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.800	0.00	0.00	0.00	0.00	0.00
11.050	0.00	0.00	0.00	0.00	0.00
11.300	0.00	0.00	0.00	0.01	0.01
11.550	0.01	0.01	0.01	0.01	0.02
11.800	0.02	0.03	0.03	0.06	0.07
12.050	0.12	0.14	0.05	0.05	0.04
12.300	0.04	0.03	0.03	0.03	0.03
12.550	0.02	0.02	0.02	0.02	0.02
12.800	0.02	0.01	0.01	0.01	0.01
13.050	0.01	0.01	0.01	0.01	0.01
13.300	0.01	0.01	0.01	0.01	0.01
13.550	0.01	0.01	0.01	0.01	0.01
13.800	0.01	0.01	0.01	0.01	0.01
14.050	0.01	0.01	0.01	0.01	0.01
14.300	0.01	0.01	0.01	0.01	0.01
14.550	0.01	0.01	0.01	0.01	0.01
14.800	0.01	0.00	0.00	0.00	0.00
15.050	0.00	0.00	0.00	0.00	0.00
15.300	0.00	0.00	0.00	0.00	0.00
15.550	0.00	0.00	0.00	0.00	0.00
15.800	0.00	0.00	0.00	0.00	0.00
16.050	0.00	0.00	0.00	0.00	0.00
16.300	0.00	0.00	0.00	0.00	0.00
16.550	0.00	0.00	0.00	0.00	0.00
16.800	0.00	0.00	0.00	0.00	0.00
17.050	0.00	0.00	0.00	0.00	0.00
17.300	0.00	0.00	0.00	0.00	0.00
17.550	0.00	0.00	0.00	0.00	0.00
17.800	0.00	0.00	0.00	0.00	0.00
18.050	0.00	0.00	0.00	0.00	0.00
18.300	0.00	0.00	0.00	0.00	0.00
18.550	0.00	0.00	0.00	0.00	0.00
18.800	0.00	0.00	0.00	0.00	0.00
19.050	0.00	0.00	0.00	0.00	0.00
19.300	0.00	0.00	0.00	0.00	0.00
19.550	0.00	0.00	0.00	0.00	0.00
19.800	0.00	0.00	0.00	0.00	0.00
20.050	0.00	0.00	0.00	0.00	0.00
20.300	0.00	0.00	0.00	0.00	0.00

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-2-P

Scenario: Post-Development 50

Return Event: 50 years

Storm Event: 50-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
20.550	0.00	0.00	0.00	0.00	0.00
20.800	0.00	0.00	0.00	0.00	0.00
21.050	0.00	0.00	0.00	0.00	0.00
21.300	0.00	0.00	0.00	0.00	0.00
21.550	0.00	0.00	0.00	0.00	0.00
21.800	0.00	0.00	0.00	0.00	0.00
22.050	0.00	0.00	0.00	0.00	0.00
22.300	0.00	0.00	0.00	0.00	0.00
22.550	0.00	0.00	0.00	0.00	0.00
22.800	0.00	0.00	0.00	0.00	0.00
23.050	0.00	0.00	0.00	0.00	0.00
23.300	0.00	0.00	0.00	0.00	0.00
23.550	0.00	0.00	0.00	0.00	0.00
23.800	0.00	0.00	0.00	0.00	0.00

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 100 years

Label: DA-2-P

Storm Event: 100-YR

Scenario: Post-Development 100

Storm Event	100-YR
Return Event	100 years
Duration	24.000 hours
Depth	7.60 in
Time of Concentration (Composite)	0.030 hours
Area (User Defined)	1,564.000 ft ²
<hr/>	
Computational Time Increment	0.004 hours
Time to Peak (Computed)	12.101 hours
Flow (Peak, Computed)	0.17 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.17 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	61.000
Area (User Defined)	1,564.000 ft ²
Maximum Retention (Pervious)	6.39 in
Maximum Retention (Pervious, 20 percent)	1.28 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.14 in
Runoff Volume (Pervious)	0.009 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.009 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.030 hours
Computational Time Increment	0.004 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	1.35 ft ³ /s
Unit peak time, Tp	0.020 hours
Unit receding limb, Tr	0.080 hours
Total unit time, Tb	0.101 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-2-P

Scenario: Post-Development 100

Return Event: 100 years

Storm Event: 100-YR

Storm Event	100-YR
Return Event	100 years
Duration	24.000 hours
Depth	7.60 in
Time of Concentration (Composite)	0.030 hours
Area (User Defined)	1,564.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.400	0.00	0.00	0.00	0.00	0.00
10.650	0.00	0.00	0.00	0.00	0.00
10.900	0.00	0.00	0.00	0.00	0.00
11.150	0.00	0.01	0.01	0.01	0.01
11.400	0.01	0.01	0.01	0.01	0.01
11.650	0.02	0.02	0.03	0.03	0.04
11.900	0.04	0.08	0.09	0.15	0.17
12.150	0.07	0.06	0.05	0.05	0.04
12.400	0.04	0.03	0.03	0.02	0.02
12.650	0.02	0.02	0.02	0.02	0.02
12.900	0.02	0.02	0.02	0.01	0.01
13.150	0.01	0.01	0.01	0.01	0.01
13.400	0.01	0.01	0.01	0.01	0.01
13.650	0.01	0.01	0.01	0.01	0.01
13.900	0.01	0.01	0.01	0.01	0.01
14.150	0.01	0.01	0.01	0.01	0.01
14.400	0.01	0.01	0.01	0.01	0.01
14.650	0.01	0.01	0.01	0.01	0.01
14.900	0.01	0.01	0.01	0.01	0.01
15.150	0.01	0.01	0.01	0.01	0.01
15.400	0.01	0.01	0.01	0.01	0.01
15.650	0.00	0.00	0.00	0.00	0.00
15.900	0.00	0.00	0.00	0.00	0.00
16.150	0.00	0.00	0.00	0.00	0.00
16.400	0.00	0.00	0.00	0.00	0.00
16.650	0.00	0.00	0.00	0.00	0.00
16.900	0.00	0.00	0.00	0.00	0.00
17.150	0.00	0.00	0.00	0.00	0.00
17.400	0.00	0.00	0.00	0.00	0.00
17.650	0.00	0.00	0.00	0.00	0.00
17.900	0.00	0.00	0.00	0.00	0.00
18.150	0.00	0.00	0.00	0.00	0.00
18.400	0.00	0.00	0.00	0.00	0.00
18.650	0.00	0.00	0.00	0.00	0.00
18.900	0.00	0.00	0.00	0.00	0.00
19.150	0.00	0.00	0.00	0.00	0.00
19.400	0.00	0.00	0.00	0.00	0.00
19.650	0.00	0.00	0.00	0.00	0.00
19.900	0.00	0.00	0.00	0.00	0.00

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 100 years

Label: DA-2-P

Storm Event: 100-YR

Scenario: Post-Development 100

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
20.150	0.00	0.00	0.00	0.00	0.00
20.400	0.00	0.00	0.00	0.00	0.00
20.650	0.00	0.00	0.00	0.00	0.00
20.900	0.00	0.00	0.00	0.00	0.00
21.150	0.00	0.00	0.00	0.00	0.00
21.400	0.00	0.00	0.00	0.00	0.00
21.650	0.00	0.00	0.00	0.00	0.00
21.900	0.00	0.00	0.00	0.00	0.00
22.150	0.00	0.00	0.00	0.00	0.00
22.400	0.00	0.00	0.00	0.00	0.00
22.650	0.00	0.00	0.00	0.00	0.00
22.900	0.00	0.00	0.00	0.00	0.00
23.150	0.00	0.00	0.00	0.00	0.00
23.400	0.00	0.00	0.00	0.00	0.00
23.650	0.00	0.00	0.00	0.00	0.00
23.900	0.00	0.00	0.00	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Label: DA-3-I

Scenario: Post-Development 1

Return Event: 1 years

Storm Event: 1-YR

Storm Event	1-YR
Return Event	1 years
Duration	24.000 hours
Depth	2.73 in
Time of Concentration (Composite)	0.025 hours
Area (User Defined)	14,272.000 ft ²
<hr/>	
Computational Time Increment	0.003 hours
Time to Peak (Computed)	12.098 hours
Flow (Peak, Computed)	1.04 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	1.04 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	14,272.000 ft ²
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.50 in
Runoff Volume (Pervious)	0.068 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.068 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.025 hours
Computational Time Increment	0.003 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	14.98 ft ³ /s
Unit peak time, Tp	0.017 hours
Unit receding limb, Tr	0.066 hours
Total unit time, Tb	0.083 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 1 years

Label: DA-3-I

Storm Event: 1-YR

Scenario: Post-Development 1

Storm Event	1-YR
Return Event	1 years
Duration	24.000 hours
Depth	2.73 in
Time of Concentration (Composite)	0.025 hours
Area (User Defined)	14,272.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
1.700	0.00	0.00	0.00	0.00	0.00
1.950	0.00	0.00	0.00	0.00	0.00
2.200	0.00	0.00	0.00	0.00	0.00
2.450	0.00	0.00	0.00	0.00	0.00
2.700	0.00	0.00	0.00	0.00	0.00
2.950	0.00	0.00	0.00	0.00	0.00
3.200	0.00	0.01	0.01	0.01	0.01
3.450	0.01	0.01	0.01	0.01	0.01
3.700	0.01	0.01	0.01	0.01	0.01
3.950	0.01	0.01	0.01	0.01	0.01
4.200	0.01	0.01	0.01	0.01	0.01
4.450	0.01	0.01	0.01	0.01	0.01
4.700	0.01	0.01	0.01	0.01	0.01
4.950	0.01	0.01	0.01	0.01	0.01
5.200	0.01	0.01	0.01	0.01	0.01
5.450	0.01	0.01	0.01	0.01	0.01
5.700	0.01	0.01	0.01	0.01	0.01
5.950	0.01	0.01	0.01	0.01	0.01
6.200	0.01	0.01	0.01	0.01	0.01
6.450	0.01	0.01	0.01	0.01	0.01
6.700	0.01	0.01	0.01	0.01	0.01
6.950	0.01	0.01	0.01	0.01	0.01
7.200	0.01	0.02	0.02	0.02	0.02
7.450	0.02	0.02	0.02	0.02	0.02
7.700	0.02	0.02	0.02	0.02	0.02
7.950	0.02	0.02	0.02	0.02	0.02
8.200	0.02	0.02	0.02	0.02	0.02
8.450	0.02	0.02	0.02	0.02	0.02
8.700	0.02	0.02	0.02	0.02	0.02
8.950	0.02	0.02	0.02	0.02	0.02
9.200	0.02	0.03	0.03	0.03	0.03
9.450	0.03	0.03	0.03	0.03	0.03
9.700	0.03	0.03	0.03	0.03	0.03
9.950	0.03	0.04	0.04	0.04	0.04
10.200	0.04	0.04	0.04	0.04	0.04
10.450	0.04	0.04	0.05	0.05	0.05
10.700	0.05	0.06	0.06	0.06	0.06
10.950	0.07	0.07	0.08	0.08	0.09
11.200	0.09	0.09	0.10	0.10	0.10

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 1 years

Label: DA-3-I

Storm Event: 1-YR

Scenario: Post-Development 1

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.450	0.11	0.11	0.17	0.18	0.18
11.700	0.19	0.25	0.26	0.35	0.36
11.950	0.61	0.62	1.03	1.04	0.37
12.200	0.36	0.26	0.26	0.19	0.19
12.450	0.18	0.18	0.12	0.12	0.11
12.700	0.11	0.10	0.10	0.09	0.09
12.950	0.08	0.08	0.07	0.07	0.07
13.200	0.07	0.06	0.06	0.06	0.06
13.450	0.05	0.05	0.05	0.05	0.04
13.700	0.04	0.04	0.04	0.04	0.04
13.950	0.04	0.04	0.04	0.04	0.04
14.200	0.04	0.04	0.04	0.03	0.03
14.450	0.03	0.03	0.03	0.03	0.03
14.700	0.03	0.03	0.03	0.03	0.03
14.950	0.03	0.03	0.03	0.03	0.02
15.200	0.02	0.02	0.02	0.02	0.02
15.450	0.02	0.02	0.02	0.02	0.02
15.700	0.02	0.02	0.02	0.02	0.02
15.950	0.02	0.02	0.02	0.02	0.02
16.200	0.02	0.02	0.02	0.02	0.02
16.450	0.02	0.02	0.02	0.02	0.02
16.700	0.02	0.02	0.02	0.02	0.02
16.950	0.02	0.02	0.02	0.02	0.02
17.200	0.02	0.02	0.02	0.02	0.02
17.450	0.02	0.02	0.02	0.02	0.02
17.700	0.02	0.02	0.02	0.02	0.02
17.950	0.01	0.01	0.01	0.01	0.01
18.200	0.01	0.01	0.01	0.01	0.01
18.450	0.01	0.01	0.01	0.01	0.01
18.700	0.01	0.01	0.01	0.01	0.01
18.950	0.01	0.01	0.01	0.01	0.01
19.200	0.01	0.01	0.01	0.01	0.01
19.450	0.01	0.01	0.01	0.01	0.01
19.700	0.01	0.01	0.01	0.01	0.01
19.950	0.01	0.01	0.01	0.01	0.01
20.200	0.01	0.01	0.01	0.01	0.01
20.450	0.01	0.01	0.01	0.01	0.01
20.700	0.01	0.01	0.01	0.01	0.01
20.950	0.01	0.01	0.01	0.01	0.01
21.200	0.01	0.01	0.01	0.01	0.01
21.450	0.01	0.01	0.01	0.01	0.01
21.700	0.01	0.01	0.01	0.01	0.01
21.950	0.01	0.01	0.01	0.01	0.01
22.200	0.01	0.01	0.01	0.01	0.01
22.450	0.01	0.01	0.01	0.01	0.01
22.700	0.01	0.01	0.01	0.01	0.01
22.950	0.01	0.01	0.01	0.01	0.01
23.200	0.01	0.01	0.01	0.01	0.01

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-3-I

Scenario: Post-Development 1

Return Event: 1 years

Storm Event: 1-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
23.450	0.01	0.01	0.01	0.01	0.01
23.700	0.01	0.01	0.01	0.01	0.01
23.950	0.01	0.01	(N/A)	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Label: DA-3-I

Scenario: Post-Development 2

Return Event: 2 years

Storm Event: 2-YR

Storm Event	2-YR
Return Event	2 years
Duration	24.000 hours
Depth	3.28 in
Time of Concentration (Composite)	0.025 hours
Area (User Defined)	14,272.000 ft ²
<hr/>	
Computational Time Increment	0.003 hours
Time to Peak (Computed)	12.098 hours
Flow (Peak, Computed)	1.25 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	1.25 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	14,272.000 ft ²
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.05 in
Runoff Volume (Pervious)	0.083 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.083 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.025 hours
Computational Time Increment	0.003 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	14.98 ft ³ /s
Unit peak time, Tp	0.017 hours
Unit receding limb, Tr	0.066 hours
Total unit time, Tb	0.083 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 2 years

Label: DA-3-I

Storm Event: 2-YR

Scenario: Post-Development 2

Storm Event	2-YR
Return Event	2 years
Duration	24.000 hours
Depth	3.28 in
Time of Concentration (Composite)	0.025 hours
Area (User Defined)	14,272.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
1.350	0.00	0.00	0.00	0.00	0.00
1.600	0.00	0.00	0.00	0.00	0.00
1.850	0.00	0.00	0.00	0.00	0.00
2.100	0.00	0.00	0.00	0.00	0.00
2.350	0.00	0.00	0.00	0.01	0.01
2.600	0.01	0.01	0.01	0.01	0.01
2.850	0.01	0.01	0.01	0.01	0.01
3.100	0.01	0.01	0.01	0.01	0.01
3.350	0.01	0.01	0.01	0.01	0.01
3.600	0.01	0.01	0.01	0.01	0.01
3.850	0.01	0.01	0.01	0.01	0.01
4.100	0.01	0.01	0.01	0.01	0.01
4.350	0.01	0.01	0.01	0.01	0.01
4.600	0.01	0.01	0.01	0.01	0.01
4.850	0.01	0.01	0.01	0.01	0.01
5.100	0.01	0.01	0.01	0.01	0.01
5.350	0.01	0.01	0.01	0.01	0.01
5.600	0.01	0.01	0.01	0.01	0.01
5.850	0.01	0.01	0.01	0.01	0.01
6.100	0.01	0.01	0.01	0.01	0.01
6.350	0.02	0.02	0.02	0.02	0.02
6.600	0.02	0.02	0.02	0.02	0.02
6.850	0.02	0.02	0.02	0.02	0.02
7.100	0.02	0.02	0.02	0.02	0.02
7.350	0.02	0.02	0.02	0.02	0.02
7.600	0.02	0.02	0.02	0.02	0.02
7.850	0.02	0.02	0.02	0.02	0.02
8.100	0.02	0.02	0.02	0.02	0.02
8.350	0.02	0.02	0.02	0.02	0.03
8.600	0.03	0.03	0.03	0.03	0.03
8.850	0.03	0.03	0.03	0.03	0.03
9.100	0.03	0.03	0.03	0.03	0.03
9.350	0.03	0.03	0.04	0.04	0.04
9.600	0.04	0.04	0.04	0.04	0.04
9.850	0.04	0.04	0.04	0.04	0.04
10.100	0.04	0.05	0.05	0.05	0.05
10.350	0.05	0.05	0.05	0.05	0.06
10.600	0.06	0.06	0.06	0.07	0.07
10.850	0.08	0.08	0.08	0.08	0.09

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 2 years

Label: DA-3-I

Storm Event: 2-YR

Scenario: Post-Development 2

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.100	0.09	0.10	0.10	0.12	0.12
11.350	0.13	0.13	0.14	0.14	0.21
11.600	0.21	0.22	0.22	0.31	0.31
11.850	0.43	0.43	0.74	0.75	1.24
12.100	1.25	0.45	0.44	0.32	0.31
12.350	0.23	0.23	0.22	0.22	0.14
12.600	0.14	0.13	0.13	0.12	0.12
12.850	0.11	0.11	0.10	0.10	0.09
13.100	0.09	0.08	0.08	0.07	0.07
13.350	0.07	0.07	0.06	0.06	0.05
13.600	0.05	0.05	0.05	0.05	0.05
13.850	0.05	0.05	0.05	0.05	0.05
14.100	0.05	0.04	0.04	0.04	0.04
14.350	0.04	0.04	0.04	0.04	0.04
14.600	0.04	0.04	0.04	0.04	0.04
14.850	0.03	0.03	0.03	0.03	0.03
15.100	0.03	0.03	0.03	0.03	0.03
15.350	0.03	0.03	0.03	0.03	0.03
15.600	0.03	0.03	0.03	0.03	0.03
15.850	0.03	0.03	0.03	0.03	0.03
16.100	0.03	0.03	0.03	0.03	0.03
16.350	0.02	0.02	0.02	0.02	0.02
16.600	0.02	0.02	0.02	0.02	0.02
16.850	0.02	0.02	0.02	0.02	0.02
17.100	0.02	0.02	0.02	0.02	0.02
17.350	0.02	0.02	0.02	0.02	0.02
17.600	0.02	0.02	0.02	0.02	0.02
17.850	0.02	0.02	0.02	0.02	0.02
18.100	0.02	0.02	0.02	0.02	0.02
18.350	0.02	0.02	0.02	0.02	0.02
18.600	0.02	0.02	0.02	0.02	0.02
18.850	0.02	0.02	0.02	0.02	0.02
19.100	0.02	0.02	0.02	0.02	0.02
19.350	0.02	0.02	0.02	0.02	0.02
19.600	0.02	0.02	0.02	0.02	0.02
19.850	0.02	0.02	0.02	0.02	0.02
20.100	0.02	0.02	0.02	0.02	0.02
20.350	0.01	0.01	0.01	0.01	0.01
20.600	0.01	0.01	0.01	0.01	0.01
20.850	0.01	0.01	0.01	0.01	0.01
21.100	0.01	0.01	0.01	0.01	0.01
21.350	0.01	0.01	0.01	0.01	0.01
21.600	0.01	0.01	0.01	0.01	0.01
21.850	0.01	0.01	0.01	0.01	0.01
22.100	0.01	0.01	0.01	0.01	0.01
22.350	0.01	0.01	0.01	0.01	0.01
22.600	0.01	0.01	0.01	0.01	0.01
22.850	0.01	0.01	0.01	0.01	0.01

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-3-I

Scenario: Post-Development 2

Return Event: 2 years

Storm Event: 2-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
23.100	0.01	0.01	0.01	0.01	0.01
23.350	0.01	0.01	0.01	0.01	0.01
23.600	0.01	0.01	0.01	0.01	0.01
23.850	0.01	0.01	0.01	0.01	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Label: DA-3-I

Scenario: Post-Development 5

Return Event: 5 years

Storm Event: 5-YR

Storm Event	5-YR
Return Event	5 years
Duration	24.000 hours
Depth	4.12 in
Time of Concentration (Composite)	0.025 hours
Area (User Defined)	14,272.000 ft ²
<hr/>	
Computational Time Increment	0.003 hours
Time to Peak (Computed)	12.098 hours
Flow (Peak, Computed)	1.58 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	1.58 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	14,272.000 ft ²
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.89 in
Runoff Volume (Pervious)	0.106 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.106 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.025 hours
Computational Time Increment	0.003 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	14.98 ft ³ /s
Unit peak time, Tp	0.017 hours
Unit receding limb, Tr	0.066 hours
Total unit time, Tb	0.083 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 5 years

Label: DA-3-I

Storm Event: 5-YR

Scenario: Post-Development 5

Storm Event	5-YR
Return Event	5 years
Duration	24.000 hours
Depth	4.12 in
Time of Concentration (Composite)	0.025 hours
Area (User Defined)	14,272.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
1.050	0.00	0.00	0.00	0.00	0.00
1.300	0.00	0.00	0.00	0.00	0.00
1.550	0.00	0.00	0.00	0.00	0.00
1.800	0.01	0.01	0.01	0.01	0.01
2.050	0.01	0.01	0.01	0.01	0.01
2.300	0.01	0.01	0.01	0.01	0.01
2.550	0.01	0.01	0.01	0.01	0.01
2.800	0.01	0.01	0.01	0.01	0.01
3.050	0.01	0.01	0.01	0.01	0.01
3.300	0.01	0.01	0.01	0.01	0.01
3.550	0.01	0.01	0.01	0.01	0.01
3.800	0.01	0.01	0.01	0.01	0.01
4.050	0.01	0.01	0.01	0.01	0.01
4.300	0.01	0.01	0.01	0.01	0.01
4.550	0.01	0.01	0.01	0.02	0.02
4.800	0.02	0.02	0.02	0.02	0.02
5.050	0.02	0.02	0.02	0.02	0.02
5.300	0.02	0.02	0.02	0.02	0.02
5.550	0.02	0.02	0.02	0.02	0.02
5.800	0.02	0.02	0.02	0.02	0.02
6.050	0.02	0.02	0.02	0.02	0.02
6.300	0.02	0.02	0.02	0.02	0.02
6.550	0.02	0.02	0.02	0.02	0.02
6.800	0.02	0.02	0.02	0.02	0.02
7.050	0.02	0.02	0.02	0.02	0.03
7.300	0.03	0.03	0.03	0.03	0.03
7.550	0.03	0.03	0.03	0.03	0.03
7.800	0.03	0.03	0.03	0.03	0.03
8.050	0.03	0.03	0.03	0.03	0.03
8.300	0.03	0.03	0.03	0.03	0.03
8.550	0.03	0.03	0.03	0.03	0.03
8.800	0.03	0.03	0.03	0.04	0.04
9.050	0.04	0.04	0.04	0.04	0.04
9.300	0.04	0.04	0.04	0.05	0.05
9.550	0.05	0.05	0.05	0.05	0.05
9.800	0.05	0.05	0.05	0.06	0.06
10.050	0.06	0.06	0.06	0.06	0.06
10.300	0.06	0.06	0.06	0.07	0.07
10.550	0.07	0.07	0.08	0.08	0.09

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 5 years

Label: DA-3-I

Storm Event: 5-YR

Scenario: Post-Development 5

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.800	0.09	0.10	0.10	0.10	0.10
11.050	0.12	0.12	0.13	0.13	0.15
11.300	0.15	0.16	0.16	0.17	0.17
11.550	0.27	0.27	0.28	0.29	0.39
11.800	0.39	0.54	0.54	0.93	0.94
12.050	1.56	1.58	0.57	0.55	0.40
12.300	0.40	0.29	0.29	0.27	0.27
12.550	0.18	0.18	0.17	0.17	0.15
12.800	0.15	0.14	0.14	0.12	0.12
13.050	0.11	0.11	0.10	0.10	0.09
13.300	0.09	0.08	0.08	0.08	0.08
13.550	0.07	0.07	0.07	0.07	0.06
13.800	0.06	0.06	0.06	0.06	0.06
14.050	0.06	0.06	0.06	0.06	0.05
14.300	0.05	0.05	0.05	0.05	0.05
14.550	0.05	0.05	0.05	0.05	0.04
14.800	0.04	0.04	0.04	0.04	0.04
15.050	0.04	0.04	0.04	0.04	0.04
15.300	0.04	0.04	0.04	0.04	0.04
15.550	0.04	0.04	0.03	0.03	0.03
15.800	0.03	0.03	0.03	0.03	0.03
16.050	0.03	0.03	0.03	0.03	0.03
16.300	0.03	0.03	0.03	0.03	0.03
16.550	0.03	0.03	0.03	0.03	0.03
16.800	0.03	0.03	0.03	0.03	0.03
17.050	0.03	0.03	0.03	0.03	0.03
17.300	0.03	0.03	0.03	0.03	0.03
17.550	0.02	0.02	0.02	0.02	0.02
17.800	0.02	0.02	0.02	0.02	0.02
18.050	0.02	0.02	0.02	0.02	0.02
18.300	0.02	0.02	0.02	0.02	0.02
18.550	0.02	0.02	0.02	0.02	0.02
18.800	0.02	0.02	0.02	0.02	0.02
19.050	0.02	0.02	0.02	0.02	0.02
19.300	0.02	0.02	0.02	0.02	0.02
19.550	0.02	0.02	0.02	0.02	0.02
19.800	0.02	0.02	0.02	0.02	0.02
20.050	0.02	0.02	0.02	0.02	0.02
20.300	0.02	0.02	0.02	0.02	0.02
20.550	0.02	0.02	0.02	0.02	0.02
20.800	0.02	0.02	0.02	0.02	0.02
21.050	0.02	0.02	0.02	0.02	0.02
21.300	0.02	0.02	0.02	0.02	0.02
21.550	0.02	0.02	0.02	0.02	0.02
21.800	0.02	0.02	0.02	0.02	0.02
22.050	0.02	0.02	0.02	0.02	0.02
22.300	0.02	0.02	0.02	0.02	0.02
22.550	0.02	0.02	0.02	0.02	0.02

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-3-I

Scenario: Post-Development 5

Return Event: 5 years

Storm Event: 5-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
22.800	0.02	0.02	0.02	0.02	0.02
23.050	0.02	0.02	0.01	0.01	0.01
23.300	0.01	0.01	0.01	0.01	0.01
23.550	0.01	0.01	0.01	0.01	0.01
23.800	0.01	0.01	0.01	0.02	0.02

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 10 years

Label: DA-3-I

Storm Event: 10-YR

Scenario: Post-Development 10

Storm Event	10-YR
Return Event	10 years
Duration	24.000 hours
Depth	4.82 in
Time of Concentration (Composite)	0.025 hours
Area (User Defined)	14,272.000 ft ²
<hr/>	
Computational Time Increment	0.003 hours
Time to Peak (Computed)	12.098 hours
Flow (Peak, Computed)	1.85 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	1.84 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	14,272.000 ft ²
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	4.58 in
Runoff Volume (Pervious)	0.125 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.125 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.025 hours
Computational Time Increment	0.003 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	14.98 ft ³ /s
Unit peak time, Tp	0.017 hours
Unit receding limb, Tr	0.066 hours
Total unit time, Tb	0.083 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 10 years

Label: DA-3-I

Storm Event: 10-YR

Scenario: Post-Development 10

Storm Event	10-YR
Return Event	10 years
Duration	24.000 hours
Depth	4.82 in
Time of Concentration (Composite)	0.025 hours
Area (User Defined)	14,272.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
0.900	0.00	0.00	0.00	0.00	0.00
1.150	0.00	0.00	0.00	0.00	0.00
1.400	0.00	0.01	0.01	0.01	0.01
1.650	0.01	0.01	0.01	0.01	0.01
1.900	0.01	0.01	0.01	0.01	0.01
2.150	0.01	0.01	0.01	0.01	0.01
2.400	0.01	0.01	0.01	0.01	0.01
2.650	0.01	0.01	0.01	0.01	0.01
2.900	0.01	0.01	0.01	0.01	0.01
3.150	0.01	0.01	0.01	0.01	0.01
3.400	0.01	0.01	0.01	0.02	0.02
3.650	0.02	0.02	0.02	0.02	0.02
3.900	0.02	0.02	0.02	0.02	0.02
4.150	0.02	0.02	0.02	0.02	0.02
4.400	0.02	0.02	0.02	0.02	0.02
4.650	0.02	0.02	0.02	0.02	0.02
4.900	0.02	0.02	0.02	0.02	0.02
5.150	0.02	0.02	0.02	0.02	0.02
5.400	0.02	0.02	0.02	0.02	0.02
5.650	0.02	0.02	0.02	0.02	0.02
5.900	0.02	0.02	0.02	0.02	0.02
6.150	0.02	0.02	0.02	0.02	0.02
6.400	0.02	0.03	0.03	0.03	0.03
6.650	0.03	0.03	0.03	0.03	0.03
6.900	0.03	0.03	0.03	0.03	0.03
7.150	0.03	0.03	0.03	0.03	0.03
7.400	0.03	0.03	0.03	0.03	0.03
7.650	0.03	0.03	0.03	0.03	0.03
7.900	0.03	0.04	0.04	0.04	0.04
8.150	0.04	0.04	0.04	0.04	0.04
8.400	0.04	0.04	0.04	0.04	0.04
8.650	0.04	0.04	0.04	0.04	0.04
8.900	0.04	0.04	0.04	0.04	0.04
9.150	0.05	0.05	0.05	0.05	0.05
9.400	0.05	0.05	0.05	0.06	0.06
9.650	0.06	0.06	0.06	0.06	0.06
9.900	0.06	0.07	0.07	0.07	0.07
10.150	0.07	0.07	0.07	0.07	0.08
10.400	0.08	0.08	0.08	0.09	0.09

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 10 years

Label: DA-3-I

Storm Event: 10-YR

Scenario: Post-Development 10

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.650	0.10	0.10	0.10	0.11	0.11
10.900	0.11	0.12	0.12	0.14	0.14
11.150	0.16	0.16	0.17	0.17	0.19
11.400	0.19	0.20	0.20	0.31	0.32
11.650	0.33	0.33	0.46	0.46	0.63
11.900	0.64	1.09	1.11	1.83	1.84
12.150	0.67	0.64	0.47	0.46	0.34
12.400	0.34	0.32	0.32	0.21	0.21
12.650	0.19	0.19	0.18	0.18	0.16
12.900	0.16	0.14	0.14	0.13	0.13
13.150	0.12	0.12	0.11	0.11	0.10
13.400	0.10	0.09	0.09	0.08	0.08
13.650	0.08	0.08	0.08	0.08	0.07
13.900	0.07	0.07	0.07	0.07	0.07
14.150	0.07	0.07	0.06	0.06	0.06
14.400	0.06	0.06	0.06	0.06	0.06
14.650	0.05	0.05	0.05	0.05	0.05
14.900	0.05	0.05	0.05	0.04	0.04
15.150	0.04	0.04	0.04	0.04	0.04
15.400	0.04	0.04	0.04	0.04	0.04
15.650	0.04	0.04	0.04	0.04	0.04
15.900	0.04	0.04	0.04	0.04	0.04
16.150	0.04	0.04	0.04	0.04	0.04
16.400	0.04	0.04	0.04	0.04	0.04
16.650	0.03	0.03	0.03	0.03	0.03
16.900	0.03	0.03	0.03	0.03	0.03
17.150	0.03	0.03	0.03	0.03	0.03
17.400	0.03	0.03	0.03	0.03	0.03
17.650	0.03	0.03	0.03	0.03	0.03
17.900	0.03	0.03	0.03	0.03	0.03
18.150	0.03	0.03	0.03	0.03	0.03
18.400	0.03	0.02	0.02	0.02	0.02
18.650	0.02	0.02	0.02	0.02	0.02
18.900	0.02	0.02	0.02	0.02	0.02
19.150	0.02	0.02	0.02	0.02	0.02
19.400	0.02	0.02	0.02	0.02	0.02
19.650	0.02	0.02	0.02	0.02	0.02
19.900	0.02	0.02	0.02	0.02	0.02
20.150	0.02	0.02	0.02	0.02	0.02
20.400	0.02	0.02	0.02	0.02	0.02
20.650	0.02	0.02	0.02	0.02	0.02
20.900	0.02	0.02	0.02	0.02	0.02
21.150	0.02	0.02	0.02	0.02	0.02
21.400	0.02	0.02	0.02	0.02	0.02
21.650	0.02	0.02	0.02	0.02	0.02
21.900	0.02	0.02	0.02	0.02	0.02
22.150	0.02	0.02	0.02	0.02	0.02
22.400	0.02	0.02	0.02	0.02	0.02

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-3-I

Scenario: Post-Development 10

Return Event: 10 years

Storm Event: 10-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
22.650	0.02	0.02	0.02	0.02	0.02
22.900	0.02	0.02	0.02	0.02	0.02
23.150	0.02	0.02	0.02	0.02	0.02
23.400	0.02	0.02	0.02	0.02	0.02
23.650	0.02	0.02	0.02	0.02	0.02
23.900	0.02	0.02	0.02	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 25 years

Label: DA-3-I

Storm Event: 25-YR

Scenario: Post-Development 25

Storm Event	25-YR
Return Event	25 years
Duration	24.000 hours
Depth	5.83 in
Time of Concentration (Composite)	0.025 hours
Area (User Defined)	14,272.000 ft ²
<hr/>	
Computational Time Increment	0.003 hours
Time to Peak (Computed)	12.098 hours
Flow (Peak, Computed)	2.24 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	2.23 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	14,272.000 ft ²
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.59 in
Runoff Volume (Pervious)	0.153 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.153 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.025 hours
Computational Time Increment	0.003 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	14.98 ft ³ /s
Unit peak time, Tp	0.017 hours
Unit receding limb, Tr	0.066 hours
Total unit time, Tb	0.083 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-3-I

Scenario: Post-Development 25

Return Event: 25 years

Storm Event: 25-YR

Storm Event	25-YR
Return Event	25 years
Duration	24.000 hours
Depth	5.83 in
Time of Concentration (Composite)	0.025 hours
Area (User Defined)	14,272.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
0.700	0.00	0.00	0.00	0.00	0.00
0.950	0.00	0.00	0.00	0.00	0.01
1.200	0.01	0.01	0.01	0.01	0.01
1.450	0.01	0.01	0.01	0.01	0.01
1.700	0.01	0.01	0.01	0.01	0.01
1.950	0.01	0.01	0.01	0.01	0.01
2.200	0.01	0.01	0.01	0.01	0.01
2.450	0.01	0.01	0.02	0.02	0.02
2.700	0.02	0.02	0.02	0.02	0.02
2.950	0.02	0.02	0.02	0.02	0.02
3.200	0.02	0.02	0.02	0.02	0.02
3.450	0.02	0.02	0.02	0.02	0.02
3.700	0.02	0.02	0.02	0.02	0.02
3.950	0.02	0.02	0.02	0.02	0.02
4.200	0.02	0.02	0.02	0.02	0.02
4.450	0.02	0.02	0.02	0.02	0.02
4.700	0.02	0.02	0.02	0.02	0.02
4.950	0.02	0.02	0.03	0.03	0.03
5.200	0.03	0.03	0.03	0.03	0.03
5.450	0.03	0.03	0.03	0.03	0.03
5.700	0.03	0.03	0.03	0.03	0.03
5.950	0.03	0.03	0.03	0.03	0.03
6.200	0.03	0.03	0.03	0.03	0.03
6.450	0.03	0.03	0.03	0.03	0.03
6.700	0.03	0.03	0.03	0.03	0.03
6.950	0.04	0.04	0.04	0.04	0.04
7.200	0.04	0.04	0.04	0.04	0.04
7.450	0.04	0.04	0.04	0.04	0.04
7.700	0.04	0.04	0.04	0.04	0.04
7.950	0.04	0.04	0.04	0.04	0.05
8.200	0.05	0.05	0.05	0.05	0.05
8.450	0.05	0.05	0.05	0.05	0.05
8.700	0.05	0.05	0.05	0.05	0.05
8.950	0.05	0.05	0.05	0.05	0.06
9.200	0.06	0.06	0.06	0.06	0.06
9.450	0.07	0.07	0.07	0.07	0.07
9.700	0.07	0.07	0.07	0.08	0.08
9.950	0.08	0.08	0.08	0.08	0.09
10.200	0.09	0.09	0.09	0.09	0.09

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 25 years

Label: DA-3-I

Storm Event: 25-YR

Scenario: Post-Development 25

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.450	0.10	0.10	0.11	0.11	0.12
10.700	0.12	0.13	0.13	0.14	0.14
10.950	0.15	0.15	0.17	0.17	0.19
11.200	0.19	0.21	0.21	0.23	0.23
11.450	0.25	0.25	0.38	0.39	0.41
11.700	0.41	0.55	0.56	0.77	0.78
11.950	1.33	1.34	2.22	2.23	0.81
12.200	0.78	0.56	0.56	0.41	0.41
12.450	0.39	0.39	0.25	0.25	0.24
12.700	0.23	0.21	0.21	0.19	0.19
12.950	0.17	0.17	0.15	0.15	0.14
13.200	0.14	0.13	0.13	0.12	0.12
13.450	0.11	0.11	0.10	0.10	0.09
13.700	0.09	0.09	0.09	0.09	0.09
13.950	0.09	0.09	0.08	0.08	0.08
14.200	0.08	0.08	0.08	0.07	0.07
14.450	0.07	0.07	0.07	0.07	0.07
14.700	0.07	0.06	0.06	0.06	0.06
14.950	0.06	0.06	0.05	0.05	0.05
15.200	0.05	0.05	0.05	0.05	0.05
15.450	0.05	0.05	0.05	0.05	0.05
15.700	0.05	0.05	0.05	0.05	0.05
15.950	0.05	0.05	0.05	0.05	0.05
16.200	0.05	0.04	0.04	0.04	0.04
16.450	0.04	0.04	0.04	0.04	0.04
16.700	0.04	0.04	0.04	0.04	0.04
16.950	0.04	0.04	0.04	0.04	0.04
17.200	0.04	0.04	0.04	0.04	0.04
17.450	0.04	0.04	0.03	0.03	0.03
17.700	0.03	0.03	0.03	0.03	0.03
17.950	0.03	0.03	0.03	0.03	0.03
18.200	0.03	0.03	0.03	0.03	0.03
18.450	0.03	0.03	0.03	0.03	0.03
18.700	0.03	0.03	0.03	0.03	0.03
18.950	0.03	0.03	0.03	0.03	0.03
19.200	0.03	0.03	0.03	0.03	0.03
19.450	0.03	0.03	0.03	0.03	0.03
19.700	0.03	0.03	0.03	0.03	0.03
19.950	0.03	0.03	0.03	0.03	0.03
20.200	0.03	0.03	0.03	0.03	0.03
20.450	0.03	0.03	0.03	0.03	0.03
20.700	0.03	0.03	0.03	0.03	0.03
20.950	0.03	0.03	0.03	0.03	0.03
21.200	0.03	0.03	0.03	0.02	0.02
21.450	0.02	0.02	0.02	0.02	0.02
21.700	0.02	0.02	0.02	0.02	0.02
21.950	0.02	0.02	0.02	0.02	0.02
22.200	0.02	0.02	0.02	0.02	0.02

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-3-I

Scenario: Post-Development 25

Return Event: 25 years

Storm Event: 25-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
22.450	0.02	0.02	0.02	0.02	0.02
22.700	0.02	0.02	0.02	0.02	0.02
22.950	0.02	0.02	0.02	0.02	0.02
23.200	0.02	0.02	0.02	0.02	0.02
23.450	0.02	0.02	0.02	0.02	0.02
23.700	0.02	0.02	0.02	0.02	0.02
23.950	0.02	0.02	(N/A)	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 50 years

Label: DA-3-I

Storm Event: 50-YR

Scenario: Post-Development 50

Storm Event	50-YR
Return Event	50 years
Duration	24.000 hours
Depth	6.68 in
Time of Concentration (Composite)	0.025 hours
Area (User Defined)	14,272.000 ft ²
<hr/>	
Computational Time Increment	0.003 hours
Time to Peak (Computed)	12.098 hours
Flow (Peak, Computed)	2.57 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	2.56 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	14,272.000 ft ²
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.44 in
Runoff Volume (Pervious)	0.176 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.176 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.025 hours
Computational Time Increment	0.003 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	14.98 ft ³ /s
Unit peak time, Tp	0.017 hours
Unit receding limb, Tr	0.066 hours
Total unit time, Tb	0.083 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 50 years

Label: DA-3-I

Storm Event: 50-YR

Scenario: Post-Development 50

Storm Event	50-YR
Return Event	50 years
Duration	24.000 hours
Depth	6.68 in
Time of Concentration (Composite)	0.025 hours
Area (User Defined)	14,272.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
0.600	0.00	0.00	0.00	0.00	0.00
0.850	0.00	0.00	0.01	0.01	0.01
1.100	0.01	0.01	0.01	0.01	0.01
1.350	0.01	0.01	0.01	0.01	0.01
1.600	0.01	0.01	0.01	0.01	0.01
1.850	0.01	0.01	0.02	0.02	0.02
2.100	0.02	0.02	0.02	0.02	0.02
2.350	0.02	0.02	0.02	0.02	0.02
2.600	0.02	0.02	0.02	0.02	0.02
2.850	0.02	0.02	0.02	0.02	0.02
3.100	0.02	0.02	0.02	0.02	0.02
3.350	0.02	0.02	0.02	0.02	0.02
3.600	0.02	0.02	0.02	0.02	0.02
3.850	0.03	0.03	0.03	0.03	0.03
4.100	0.03	0.03	0.03	0.03	0.03
4.350	0.03	0.03	0.03	0.03	0.03
4.600	0.03	0.03	0.03	0.03	0.03
4.850	0.03	0.03	0.03	0.03	0.03
5.100	0.03	0.03	0.03	0.03	0.03
5.350	0.03	0.03	0.03	0.03	0.03
5.600	0.03	0.03	0.03	0.03	0.03
5.850	0.03	0.03	0.03	0.03	0.03
6.100	0.03	0.03	0.03	0.04	0.04
6.350	0.04	0.04	0.04	0.04	0.04
6.600	0.04	0.04	0.04	0.04	0.04
6.850	0.04	0.04	0.04	0.04	0.04
7.100	0.04	0.04	0.04	0.04	0.04
7.350	0.05	0.05	0.05	0.05	0.05
7.600	0.05	0.05	0.05	0.05	0.05
7.850	0.05	0.05	0.05	0.05	0.05
8.100	0.05	0.05	0.05	0.05	0.05
8.350	0.05	0.05	0.06	0.06	0.06
8.600	0.06	0.06	0.06	0.06	0.06
8.850	0.06	0.06	0.06	0.06	0.06
9.100	0.06	0.07	0.07	0.07	0.07
9.350	0.07	0.07	0.08	0.08	0.08
9.600	0.08	0.08	0.08	0.09	0.09
9.850	0.09	0.09	0.09	0.09	0.10
10.100	0.10	0.10	0.10	0.10	0.10

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 50 years

Label: DA-3-I

Storm Event: 50-YR

Scenario: Post-Development 50

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.350	0.11	0.11	0.11	0.11	0.12
10.600	0.12	0.13	0.13	0.15	0.15
10.850	0.16	0.16	0.17	0.17	0.20
11.100	0.20	0.22	0.22	0.24	0.24
11.350	0.27	0.27	0.28	0.29	0.44
11.600	0.44	0.47	0.47	0.64	0.64
11.850	0.88	0.89	1.52	1.54	2.55
12.100	2.56	0.93	0.89	0.65	0.64
12.350	0.47	0.47	0.45	0.44	0.29
12.600	0.29	0.27	0.27	0.25	0.25
12.850	0.22	0.22	0.20	0.20	0.18
13.100	0.17	0.16	0.16	0.15	0.15
13.350	0.14	0.14	0.12	0.12	0.11
13.600	0.11	0.11	0.11	0.10	0.10
13.850	0.10	0.10	0.10	0.10	0.09
14.100	0.09	0.09	0.09	0.09	0.09
14.350	0.08	0.08	0.08	0.08	0.08
14.600	0.08	0.08	0.07	0.07	0.07
14.850	0.07	0.07	0.07	0.07	0.06
15.100	0.06	0.06	0.06	0.06	0.06
15.350	0.06	0.06	0.06	0.06	0.06
15.600	0.06	0.06	0.06	0.06	0.06
15.850	0.05	0.05	0.05	0.05	0.05
16.100	0.05	0.05	0.05	0.05	0.05
16.350	0.05	0.05	0.05	0.05	0.05
16.600	0.05	0.05	0.05	0.05	0.05
16.850	0.05	0.05	0.05	0.05	0.04
17.100	0.04	0.04	0.04	0.04	0.04
17.350	0.04	0.04	0.04	0.04	0.04
17.600	0.04	0.04	0.04	0.04	0.04
17.850	0.04	0.04	0.04	0.04	0.04
18.100	0.04	0.04	0.04	0.04	0.04
18.350	0.03	0.03	0.03	0.03	0.03
18.600	0.03	0.03	0.03	0.03	0.03
18.850	0.03	0.03	0.03	0.03	0.03
19.100	0.03	0.03	0.03	0.03	0.03
19.350	0.03	0.03	0.03	0.03	0.03
19.600	0.03	0.03	0.03	0.03	0.03
19.850	0.03	0.03	0.03	0.03	0.03
20.100	0.03	0.03	0.03	0.03	0.03
20.350	0.03	0.03	0.03	0.03	0.03
20.600	0.03	0.03	0.03	0.03	0.03
20.850	0.03	0.03	0.03	0.03	0.03
21.100	0.03	0.03	0.03	0.03	0.03
21.350	0.03	0.03	0.03	0.03	0.03
21.600	0.03	0.03	0.03	0.03	0.03
21.850	0.03	0.03	0.03	0.03	0.03
22.100	0.03	0.03	0.03	0.03	0.03

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-3-I

Scenario: Post-Development 50

Return Event: 50 years

Storm Event: 50-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
22.350	0.03	0.03	0.03	0.03	0.03
22.600	0.03	0.03	0.03	0.03	0.03
22.850	0.02	0.02	0.02	0.02	0.02
23.100	0.02	0.02	0.02	0.02	0.02
23.350	0.02	0.02	0.02	0.02	0.02
23.600	0.02	0.02	0.02	0.02	0.02
23.850	0.02	0.02	0.03	0.03	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 100 years

Label: DA-3-I

Storm Event: 100-YR

Scenario: Post-Development 100

Storm Event	100-YR
Return Event	100 years
Duration	24.000 hours
Depth	7.60 in
Time of Concentration (Composite)	0.025 hours
Area (User Defined)	14,272.000 ft ²
Computational Time Increment	0.003 hours
Time to Peak (Computed)	12.098 hours
Flow (Peak, Computed)	2.92 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	2.92 ft ³ /s
Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	14,272.000 ft ²
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	7.36 in
Runoff Volume (Pervious)	0.201 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.201 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.025 hours
Computational Time Increment	0.003 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	14.98 ft ³ /s
Unit peak time, Tp	0.017 hours
Unit receding limb, Tr	0.066 hours
Total unit time, Tb	0.083 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-3-I

Scenario: Post-Development 100

Return Event: 100 years

Storm Event: 100-YR

Storm Event	100-YR
Return Event	100 years
Duration	24.000 hours
Depth	7.60 in
Time of Concentration (Composite)	0.025 hours
Area (User Defined)	14,272.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
0.550	0.00	0.00	0.00	0.00	0.00
0.800	0.01	0.01	0.01	0.01	0.01
1.050	0.01	0.01	0.01	0.01	0.01
1.300	0.01	0.01	0.01	0.01	0.01
1.550	0.02	0.02	0.02	0.02	0.02
1.800	0.02	0.02	0.02	0.02	0.02
2.050	0.02	0.02	0.02	0.02	0.02
2.300	0.02	0.02	0.02	0.02	0.02
2.550	0.02	0.02	0.02	0.02	0.02
2.800	0.02	0.02	0.02	0.03	0.03
3.050	0.03	0.03	0.03	0.03	0.03
3.300	0.03	0.03	0.03	0.03	0.03
3.550	0.03	0.03	0.03	0.03	0.03
3.800	0.03	0.03	0.03	0.03	0.03
4.050	0.03	0.03	0.03	0.03	0.03
4.300	0.03	0.03	0.03	0.03	0.03
4.550	0.03	0.03	0.03	0.03	0.03
4.800	0.03	0.03	0.03	0.03	0.03
5.050	0.03	0.03	0.03	0.03	0.04
5.300	0.04	0.04	0.04	0.04	0.04
5.550	0.04	0.04	0.04	0.04	0.04
5.800	0.04	0.04	0.04	0.04	0.04
6.050	0.04	0.04	0.04	0.04	0.04
6.300	0.04	0.04	0.04	0.04	0.04
6.550	0.04	0.04	0.04	0.04	0.05
6.800	0.05	0.05	0.05	0.05	0.05
7.050	0.05	0.05	0.05	0.05	0.05
7.300	0.05	0.05	0.05	0.05	0.05
7.550	0.05	0.05	0.06	0.06	0.06
7.800	0.06	0.06	0.06	0.06	0.06
8.050	0.06	0.06	0.06	0.06	0.06
8.300	0.06	0.06	0.06	0.06	0.06
8.550	0.06	0.06	0.07	0.07	0.07
8.800	0.07	0.07	0.07	0.07	0.07
9.050	0.07	0.07	0.08	0.08	0.08
9.300	0.08	0.08	0.08	0.09	0.09
9.550	0.09	0.09	0.09	0.09	0.10
9.800	0.10	0.10	0.10	0.11	0.11
10.050	0.11	0.11	0.11	0.11	0.12

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 100 years

Label: DA-3-I

Storm Event: 100-YR

Scenario: Post-Development 100

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.300	0.12	0.12	0.12	0.13	0.13
10.550	0.14	0.14	0.15	0.15	0.17
10.800	0.17	0.18	0.18	0.20	0.20
11.050	0.22	0.22	0.25	0.25	0.28
11.300	0.28	0.30	0.30	0.32	0.33
11.550	0.50	0.50	0.53	0.53	0.72
11.800	0.73	1.01	1.01	1.73	1.75
12.050	2.90	2.92	1.05	1.01	0.74
12.300	0.73	0.54	0.53	0.51	0.51
12.550	0.33	0.33	0.31	0.31	0.28
12.800	0.28	0.25	0.25	0.23	0.23
13.050	0.20	0.20	0.18	0.18	0.17
13.300	0.17	0.16	0.16	0.14	0.14
13.550	0.13	0.13	0.12	0.12	0.12
13.800	0.12	0.12	0.12	0.11	0.11
14.050	0.11	0.11	0.10	0.10	0.10
14.300	0.10	0.10	0.10	0.09	0.09
14.550	0.09	0.09	0.09	0.09	0.08
14.800	0.08	0.08	0.08	0.07	0.07
15.050	0.07	0.07	0.07	0.07	0.07
15.300	0.07	0.07	0.07	0.07	0.07
15.550	0.07	0.07	0.06	0.06	0.06
15.800	0.06	0.06	0.06	0.06	0.06
16.050	0.06	0.06	0.06	0.06	0.06
16.300	0.06	0.06	0.06	0.06	0.06
16.550	0.06	0.06	0.05	0.05	0.05
16.800	0.05	0.05	0.05	0.05	0.05
17.050	0.05	0.05	0.05	0.05	0.05
17.300	0.05	0.05	0.05	0.05	0.05
17.550	0.05	0.05	0.04	0.04	0.04
17.800	0.04	0.04	0.04	0.04	0.04
18.050	0.04	0.04	0.04	0.04	0.04
18.300	0.04	0.04	0.04	0.04	0.04
18.550	0.04	0.04	0.04	0.04	0.04
18.800	0.04	0.04	0.04	0.04	0.04
19.050	0.04	0.04	0.04	0.04	0.04
19.300	0.04	0.04	0.04	0.04	0.04
19.550	0.04	0.04	0.04	0.04	0.04
19.800	0.04	0.04	0.04	0.04	0.04
20.050	0.04	0.04	0.04	0.04	0.03
20.300	0.03	0.03	0.03	0.03	0.03
20.550	0.03	0.03	0.03	0.03	0.03
20.800	0.03	0.03	0.03	0.03	0.03
21.050	0.03	0.03	0.03	0.03	0.03
21.300	0.03	0.03	0.03	0.03	0.03
21.550	0.03	0.03	0.03	0.03	0.03
21.800	0.03	0.03	0.03	0.03	0.03
22.050	0.03	0.03	0.03	0.03	0.03

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-3-I

Scenario: Post-Development 100

Return Event: 100 years

Storm Event: 100-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
22.300	0.03	0.03	0.03	0.03	0.03
22.550	0.03	0.03	0.03	0.03	0.03
22.800	0.03	0.03	0.03	0.03	0.03
23.050	0.03	0.03	0.03	0.03	0.03
23.300	0.03	0.03	0.03	0.03	0.03
23.550	0.03	0.03	0.03	0.03	0.03
23.800	0.03	0.03	0.03	0.03	0.03

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Label: DA-3-P

Scenario: Post-Development 1

Return Event: 1 years

Storm Event: 1-YR

Storm Event	1-YR
Return Event	1 years
Duration	24.000 hours
Depth	2.73 in
Time of Concentration (Composite)	0.219 hours
Area (User Defined)	105,947.000 ft ²
<hr/>	
Computational Time Increment	0.029 hours
Time to Peak (Computed)	12.269 hours
Flow (Peak, Computed)	0.31 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.250 hours
Flow (Peak Interpolated Output)	0.31 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	61.000
Area (User Defined)	105,947.000 ft ²
Maximum Retention (Pervious)	6.39 in
Maximum Retention (Pervious, 20 percent)	1.28 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.27 in
Runoff Volume (Pervious)	0.054 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.054 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.219 hours
Computational Time Increment	0.029 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	12.58 ft ³ /s
Unit peak time, Tp	0.146 hours
Unit receding limb, Tr	0.584 hours
Total unit time, Tb	0.730 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 1 years

Label: DA-3-P

Storm Event: 1-YR

Scenario: Post-Development 1

Storm Event	1-YR
Return Event	1 years
Duration	24.000 hours
Depth	2.73 in
Time of Concentration (Composite)	0.219 hours
Area (User Defined)	105,947.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
12.000	0.00	0.01	0.07	0.17	0.27
12.250	0.31	0.31	0.29	0.27	0.26
12.500	0.24	0.23	0.22	0.20	0.18
12.750	0.17	0.16	0.15	0.15	0.14
13.000	0.14	0.13	0.13	0.12	0.12
13.250	0.11	0.11	0.11	0.10	0.10
13.500	0.09	0.09	0.09	0.08	0.08
13.750	0.08	0.08	0.08	0.08	0.07
14.000	0.07	0.07	0.07	0.07	0.07
14.250	0.07	0.07	0.07	0.07	0.07
14.500	0.07	0.06	0.06	0.06	0.06
14.750	0.06	0.06	0.06	0.06	0.06
15.000	0.05	0.05	0.05	0.05	0.05
15.250	0.05	0.05	0.05	0.05	0.05
15.500	0.05	0.05	0.05	0.05	0.05
15.750	0.05	0.05	0.05	0.05	0.05
16.000	0.05	0.05	0.05	0.05	0.04
16.250	0.04	0.04	0.04	0.04	0.04
16.500	0.04	0.04	0.04	0.04	0.04
16.750	0.04	0.04	0.04	0.04	0.04
17.000	0.04	0.04	0.04	0.04	0.04
17.250	0.04	0.04	0.04	0.04	0.04
17.500	0.04	0.04	0.04	0.04	0.04
17.750	0.04	0.04	0.03	0.03	0.03
18.000	0.03	0.03	0.03	0.03	0.03
18.250	0.03	0.03	0.03	0.03	0.03
18.500	0.03	0.03	0.03	0.03	0.03
18.750	0.03	0.03	0.03	0.03	0.03
19.000	0.03	0.03	0.03	0.03	0.03
19.250	0.03	0.03	0.03	0.03	0.03
19.500	0.03	0.03	0.03	0.03	0.03
19.750	0.03	0.03	0.03	0.03	0.03
20.000	0.03	0.03	0.03	0.03	0.03
20.250	0.03	0.03	0.03	0.03	0.03
20.500	0.03	0.03	0.03	0.03	0.03
20.750	0.03	0.03	0.03	0.03	0.03
21.000	0.03	0.03	0.03	0.03	0.03
21.250	0.03	0.03	0.03	0.03	0.03
21.500	0.03	0.03	0.03	0.03	0.03

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-3-P

Scenario: Post-Development 1

Return Event: 1 years

Storm Event: 1-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
21.750	0.03	0.03	0.03	0.03	0.03
22.000	0.03	0.03	0.03	0.03	0.03
22.250	0.03	0.03	0.03	0.03	0.03
22.500	0.03	0.03	0.03	0.03	0.03
22.750	0.03	0.03	0.03	0.03	0.03
23.000	0.03	0.03	0.02	0.02	0.02
23.250	0.02	0.02	0.02	0.02	0.02
23.500	0.02	0.02	0.02	0.02	0.02
23.750	0.02	0.02	0.02	0.02	0.02
24.000	0.02	(N/A)	(N/A)	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Label: DA-3-P

Scenario: Post-Development 2

Return Event: 2 years

Storm Event: 2-YR

Storm Event	2-YR
Return Event	2 years
Duration	24.000 hours
Depth	3.28 in
Time of Concentration (Composite)	0.219 hours
Area (User Defined)	105,947.000 ft ²
<hr/>	
Computational Time Increment	0.029 hours
Time to Peak (Computed)	12.210 hours
Flow (Peak, Computed)	0.81 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.250 hours
Flow (Peak Interpolated Output)	0.79 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	61.000
Area (User Defined)	105,947.000 ft ²
Maximum Retention (Pervious)	6.39 in
Maximum Retention (Pervious, 20 percent)	1.28 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.48 in
Runoff Volume (Pervious)	0.097 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.096 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.219 hours
Computational Time Increment	0.029 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	12.58 ft ³ /s
Unit peak time, Tp	0.146 hours
Unit receding limb, Tr	0.584 hours
Total unit time, Tb	0.730 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-3-P

Scenario: Post-Development 2

Return Event: 2 years

Storm Event: 2-YR

Storm Event	2-YR
Return Event	2 years
Duration	24.000 hours
Depth	3.28 in
Time of Concentration (Composite)	0.219 hours
Area (User Defined)	105,947.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.850	0.00	0.00	0.01	0.06	0.17
12.100	0.38	0.64	0.79	0.79	0.72
12.350	0.64	0.57	0.51	0.47	0.44
12.600	0.40	0.36	0.32	0.30	0.28
12.850	0.27	0.26	0.25	0.24	0.23
13.100	0.22	0.21	0.20	0.19	0.18
13.350	0.18	0.17	0.16	0.16	0.15
13.600	0.14	0.14	0.13	0.13	0.13
13.850	0.13	0.12	0.12	0.12	0.12
14.100	0.12	0.12	0.11	0.11	0.11
14.350	0.11	0.11	0.11	0.10	0.10
14.600	0.10	0.10	0.10	0.10	0.09
14.850	0.09	0.09	0.09	0.09	0.09
15.100	0.08	0.08	0.08	0.08	0.08
15.350	0.08	0.08	0.08	0.08	0.08
15.600	0.08	0.08	0.07	0.07	0.07
15.850	0.07	0.07	0.07	0.07	0.07
16.100	0.07	0.07	0.07	0.07	0.07
16.350	0.07	0.07	0.07	0.07	0.07
16.600	0.07	0.07	0.07	0.07	0.06
16.850	0.06	0.06	0.06	0.06	0.06
17.100	0.06	0.06	0.06	0.06	0.06
17.350	0.06	0.06	0.06	0.06	0.06
17.600	0.06	0.06	0.06	0.05	0.05
17.850	0.05	0.05	0.05	0.05	0.05
18.100	0.05	0.05	0.05	0.05	0.05
18.350	0.05	0.05	0.05	0.05	0.05
18.600	0.05	0.05	0.05	0.05	0.05
18.850	0.05	0.05	0.05	0.05	0.05
19.100	0.05	0.05	0.05	0.05	0.05
19.350	0.05	0.05	0.05	0.05	0.05
19.600	0.05	0.05	0.05	0.05	0.05
19.850	0.05	0.05	0.05	0.05	0.05
20.100	0.05	0.05	0.05	0.05	0.04
20.350	0.04	0.04	0.04	0.04	0.04
20.600	0.04	0.04	0.04	0.04	0.04
20.850	0.04	0.04	0.04	0.04	0.04
21.100	0.04	0.04	0.04	0.04	0.04
21.350	0.04	0.04	0.04	0.04	0.04

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-3-P

Scenario: Post-Development 2

Return Event: 2 years

Storm Event: 2-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
21.600	0.04	0.04	0.04	0.04	0.04
21.850	0.04	0.04	0.04	0.04	0.04
22.100	0.04	0.04	0.04	0.04	0.04
22.350	0.04	0.04	0.04	0.04	0.04
22.600	0.04	0.04	0.04	0.04	0.04
22.850	0.04	0.04	0.04	0.04	0.04
23.100	0.04	0.04	0.04	0.04	0.04
23.350	0.04	0.04	0.04	0.04	0.04
23.600	0.04	0.04	0.04	0.04	0.04
23.850	0.04	0.04	0.04	0.04	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Label: DA-3-P

Scenario: Post-Development 5

Return Event: 5 years

Storm Event: 5-YR

Storm Event	5-YR
Return Event	5 years
Duration	24.000 hours
Depth	4.12 in
Time of Concentration (Composite)	0.219 hours
Area (User Defined)	105,947.000 ft ²
<hr/>	
Computational Time Increment	0.029 hours
Time to Peak (Computed)	12.210 hours
Flow (Peak, Computed)	1.84 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.200 hours
Flow (Peak Interpolated Output)	1.83 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	61.000
Area (User Defined)	105,947.000 ft ²
Maximum Retention (Pervious)	6.39 in
Maximum Retention (Pervious, 20 percent)	1.28 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.88 in
Runoff Volume (Pervious)	0.177 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.177 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.219 hours
Computational Time Increment	0.029 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	12.58 ft ³ /s
Unit peak time, Tp	0.146 hours
Unit receding limb, Tr	0.584 hours
Total unit time, Tb	0.730 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 5 years

Label: DA-3-P

Storm Event: 5-YR

Scenario: Post-Development 5

Storm Event	5-YR
Return Event	5 years
Duration	24.000 hours
Depth	4.12 in
Time of Concentration (Composite)	0.219 hours
Area (User Defined)	105,947.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.600	0.00	0.00	0.01	0.02	0.05
11.850	0.09	0.16	0.26	0.43	0.71
12.100	1.16	1.64	1.83	1.73	1.49
12.350	1.27	1.10	0.97	0.87	0.80
12.600	0.72	0.64	0.57	0.53	0.49
12.850	0.47	0.45	0.43	0.41	0.39
13.100	0.37	0.35	0.33	0.32	0.31
13.350	0.30	0.29	0.28	0.26	0.25
13.600	0.24	0.23	0.22	0.22	0.21
13.850	0.21	0.21	0.20	0.20	0.20
14.100	0.20	0.19	0.19	0.19	0.18
14.350	0.18	0.18	0.18	0.17	0.17
14.600	0.17	0.16	0.16	0.16	0.15
14.850	0.15	0.15	0.15	0.14	0.14
15.100	0.14	0.13	0.13	0.13	0.13
15.350	0.13	0.13	0.13	0.12	0.12
15.600	0.12	0.12	0.12	0.12	0.12
15.850	0.12	0.12	0.12	0.12	0.12
16.100	0.12	0.11	0.11	0.11	0.11
16.350	0.11	0.11	0.11	0.11	0.11
16.600	0.11	0.11	0.11	0.10	0.10
16.850	0.10	0.10	0.10	0.10	0.10
17.100	0.10	0.10	0.10	0.10	0.10
17.350	0.09	0.09	0.09	0.09	0.09
17.600	0.09	0.09	0.09	0.09	0.09
17.850	0.09	0.08	0.08	0.08	0.08
18.100	0.08	0.08	0.08	0.08	0.08
18.350	0.08	0.08	0.08	0.08	0.08
18.600	0.08	0.08	0.08	0.08	0.08
18.850	0.08	0.08	0.08	0.08	0.08
19.100	0.08	0.08	0.08	0.08	0.07
19.350	0.07	0.07	0.07	0.07	0.07
19.600	0.07	0.07	0.07	0.07	0.07
19.850	0.07	0.07	0.07	0.07	0.07
20.100	0.07	0.07	0.07	0.07	0.07
20.350	0.07	0.07	0.07	0.07	0.07
20.600	0.07	0.07	0.07	0.07	0.07
20.850	0.07	0.07	0.07	0.07	0.07
21.100	0.07	0.07	0.07	0.07	0.07

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-3-P

Scenario: Post-Development 5

Return Event: 5 years

Storm Event: 5-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
21.350	0.07	0.07	0.07	0.07	0.07
21.600	0.07	0.07	0.06	0.06	0.06
21.850	0.06	0.06	0.06	0.06	0.06
22.100	0.06	0.06	0.06	0.06	0.06
22.350	0.06	0.06	0.06	0.06	0.06
22.600	0.06	0.06	0.06	0.06	0.06
22.850	0.06	0.06	0.06	0.06	0.06
23.100	0.06	0.06	0.06	0.06	0.06
23.350	0.06	0.06	0.06	0.06	0.06
23.600	0.06	0.06	0.06	0.06	0.06
23.850	0.06	0.05	0.06	0.06	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 10 years

Label: DA-3-P

Storm Event: 10-YR

Scenario: Post-Development 10

Storm Event	10-YR
Return Event	10 years
Duration	24.000 hours
Depth	4.82 in
Time of Concentration (Composite)	0.219 hours
Area (User Defined)	105,947.000 ft ²
<hr/>	
Computational Time Increment	0.029 hours
Time to Peak (Computed)	12.210 hours
Flow (Peak, Computed)	2.84 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.200 hours
Flow (Peak Interpolated Output)	2.83 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	61.000
Area (User Defined)	105,947.000 ft ²
Maximum Retention (Pervious)	6.39 in
Maximum Retention (Pervious, 20 percent)	1.28 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.26 in
Runoff Volume (Pervious)	0.256 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.255 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.219 hours
Computational Time Increment	0.029 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	12.58 ft ³ /s
Unit peak time, Tp	0.146 hours
Unit receding limb, Tr	0.584 hours
Total unit time, Tb	0.730 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 10 years

Label: DA-3-P

Storm Event: 10-YR

Scenario: Post-Development 10

Storm Event	10-YR
Return Event	10 years
Duration	24.000 hours
Depth	4.82 in
Time of Concentration (Composite)	0.219 hours
Area (User Defined)	105,947.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.300	0.00	0.00	0.01	0.01	0.02
11.550	0.04	0.06	0.09	0.12	0.17
11.800	0.22	0.30	0.41	0.58	0.85
12.050	1.28	1.93	2.61	2.83	2.61
12.300	2.22	1.88	1.61	1.39	1.24
12.550	1.14	1.02	0.90	0.80	0.73
12.800	0.69	0.65	0.62	0.59	0.56
13.050	0.54	0.51	0.48	0.46	0.44
13.300	0.42	0.41	0.39	0.38	0.36
13.550	0.35	0.33	0.32	0.31	0.30
13.800	0.29	0.29	0.28	0.28	0.27
14.050	0.27	0.27	0.26	0.26	0.25
14.300	0.25	0.25	0.24	0.24	0.23
14.550	0.23	0.23	0.22	0.22	0.21
14.800	0.21	0.20	0.20	0.20	0.19
15.050	0.19	0.18	0.18	0.18	0.17
15.300	0.17	0.17	0.17	0.17	0.17
15.550	0.17	0.17	0.16	0.16	0.16
15.800	0.16	0.16	0.16	0.16	0.16
16.050	0.16	0.15	0.15	0.15	0.15
16.300	0.15	0.15	0.15	0.15	0.15
16.550	0.14	0.14	0.14	0.14	0.14
16.800	0.14	0.14	0.14	0.14	0.13
17.050	0.13	0.13	0.13	0.13	0.13
17.300	0.13	0.13	0.12	0.12	0.12
17.550	0.12	0.12	0.12	0.12	0.12
17.800	0.12	0.11	0.11	0.11	0.11
18.050	0.11	0.11	0.11	0.11	0.11
18.300	0.11	0.10	0.10	0.10	0.10
18.550	0.10	0.10	0.10	0.10	0.10
18.800	0.10	0.10	0.10	0.10	0.10
19.050	0.10	0.10	0.10	0.10	0.10
19.300	0.10	0.10	0.10	0.10	0.10
19.550	0.10	0.10	0.10	0.10	0.10
19.800	0.10	0.10	0.10	0.10	0.10
20.050	0.10	0.10	0.09	0.09	0.09
20.300	0.09	0.09	0.09	0.09	0.09
20.550	0.09	0.09	0.09	0.09	0.09
20.800	0.09	0.09	0.09	0.09	0.09

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-3-P

Scenario: Post-Development 10

Return Event: 10 years

Storm Event: 10-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
21.050	0.09	0.09	0.09	0.09	0.09
21.300	0.09	0.09	0.09	0.09	0.09
21.550	0.09	0.09	0.09	0.09	0.09
21.800	0.09	0.09	0.08	0.08	0.08
22.050	0.08	0.08	0.08	0.08	0.08
22.300	0.08	0.08	0.08	0.08	0.08
22.550	0.08	0.08	0.08	0.08	0.08
22.800	0.08	0.08	0.08	0.08	0.08
23.050	0.08	0.08	0.08	0.08	0.08
23.300	0.08	0.08	0.08	0.08	0.07
23.550	0.07	0.07	0.07	0.07	0.07
23.800	0.07	0.07	0.07	0.07	0.08

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 25 years

Label: DA-3-P

Storm Event: 25-YR

Scenario: Post-Development 25

Storm Event	25-YR
Return Event	25 years
Duration	24.000 hours
Depth	5.83 in
Time of Concentration (Composite)	0.219 hours
Area (User Defined)	105,947.000 ft ²
<hr/>	
Computational Time Increment	0.029 hours
Time to Peak (Computed)	12.181 hours
Flow (Peak, Computed)	4.47 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.200 hours
Flow (Peak Interpolated Output)	4.45 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	61.000
Area (User Defined)	105,947.000 ft ²
Maximum Retention (Pervious)	6.39 in
Maximum Retention (Pervious, 20 percent)	1.28 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.89 in
Runoff Volume (Pervious)	0.384 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.382 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.219 hours
Computational Time Increment	0.029 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	12.58 ft ³ /s
Unit peak time, Tp	0.146 hours
Unit receding limb, Tr	0.584 hours
Total unit time, Tb	0.730 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 25 years

Label: DA-3-P

Storm Event: 25-YR

Scenario: Post-Development 25

Storm Event	25-YR
Return Event	25 years
Duration	24.000 hours
Depth	5.83 in
Time of Concentration (Composite)	0.219 hours
Area (User Defined)	105,947.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.800	0.00	0.00	0.01	0.01	0.02
11.050	0.02	0.03	0.04	0.05	0.07
11.300	0.08	0.10	0.12	0.14	0.16
11.550	0.19	0.23	0.30	0.36	0.44
11.800	0.53	0.66	0.85	1.12	1.56
12.050	2.23	3.20	4.19	4.45	4.04
12.300	3.38	2.83	2.40	2.06	1.83
12.550	1.66	1.49	1.31	1.16	1.06
12.800	0.99	0.93	0.89	0.84	0.80
13.050	0.76	0.73	0.69	0.65	0.63
13.300	0.60	0.58	0.56	0.53	0.51
13.550	0.49	0.47	0.45	0.43	0.42
13.800	0.41	0.40	0.40	0.39	0.38
14.050	0.38	0.37	0.37	0.36	0.36
14.300	0.35	0.34	0.34	0.33	0.33
14.550	0.32	0.32	0.31	0.30	0.30
14.800	0.29	0.29	0.28	0.27	0.27
15.050	0.26	0.26	0.25	0.25	0.24
15.300	0.24	0.24	0.24	0.23	0.23
15.550	0.23	0.23	0.23	0.23	0.22
15.800	0.22	0.22	0.22	0.22	0.22
16.050	0.22	0.21	0.21	0.21	0.21
16.300	0.21	0.21	0.20	0.20	0.20
16.550	0.20	0.20	0.20	0.20	0.19
16.800	0.19	0.19	0.19	0.19	0.19
17.050	0.18	0.18	0.18	0.18	0.18
17.300	0.18	0.17	0.17	0.17	0.17
17.550	0.17	0.17	0.16	0.16	0.16
17.800	0.16	0.16	0.16	0.15	0.15
18.050	0.15	0.15	0.15	0.15	0.15
18.300	0.14	0.14	0.14	0.14	0.14
18.550	0.14	0.14	0.14	0.14	0.14
18.800	0.14	0.14	0.14	0.14	0.14
19.050	0.14	0.14	0.14	0.14	0.14
19.300	0.14	0.14	0.14	0.14	0.13
19.550	0.13	0.13	0.13	0.13	0.13
19.800	0.13	0.13	0.13	0.13	0.13
20.050	0.13	0.13	0.13	0.13	0.13
20.300	0.13	0.13	0.13	0.13	0.13

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-3-P

Scenario: Post-Development 25

Return Event: 25 years

Storm Event: 25-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
20.550	0.13	0.13	0.13	0.13	0.13
20.800	0.12	0.12	0.12	0.12	0.12
21.050	0.12	0.12	0.12	0.12	0.12
21.300	0.12	0.12	0.12	0.12	0.12
21.550	0.12	0.12	0.12	0.12	0.12
21.800	0.12	0.12	0.12	0.12	0.11
22.050	0.11	0.11	0.11	0.11	0.11
22.300	0.11	0.11	0.11	0.11	0.11
22.550	0.11	0.11	0.11	0.11	0.11
22.800	0.11	0.11	0.11	0.11	0.11
23.050	0.11	0.11	0.10	0.10	0.10
23.300	0.10	0.10	0.10	0.10	0.10
23.550	0.10	0.10	0.10	0.10	0.10
23.800	0.10	0.10	0.10	0.10	0.10

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 50 years

Label: DA-3-P

Storm Event: 50-YR

Scenario: Post-Development 50

Storm Event	50-YR
Return Event	50 years
Duration	24.000 hours
Depth	6.68 in
Time of Concentration (Composite)	0.219 hours
Area (User Defined)	105,947.000 ft ²
<hr/>	
Computational Time Increment	0.029 hours
Time to Peak (Computed)	12.181 hours
Flow (Peak, Computed)	5.97 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.200 hours
Flow (Peak Interpolated Output)	5.91 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	61.000
Area (User Defined)	105,947.000 ft ²
Maximum Retention (Pervious)	6.39 in
Maximum Retention (Pervious, 20 percent)	1.28 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.47 in
Runoff Volume (Pervious)	0.501 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.499 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.219 hours
Computational Time Increment	0.029 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	12.58 ft ³ /s
Unit peak time, Tp	0.146 hours
Unit receding limb, Tr	0.584 hours
Total unit time, Tb	0.730 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 50 years

Label: DA-3-P

Storm Event: 50-YR

Scenario: Post-Development 50

Storm Event	50-YR
Return Event	50 years
Duration	24.000 hours
Depth	6.68 in
Time of Concentration (Composite)	0.219 hours
Area (User Defined)	105,947.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.300	0.00	0.00	0.00	0.01	0.01
10.550	0.01	0.02	0.02	0.03	0.04
10.800	0.05	0.05	0.06	0.07	0.08
11.050	0.10	0.11	0.13	0.15	0.17
11.300	0.19	0.21	0.24	0.27	0.30
11.550	0.34	0.41	0.50	0.60	0.70
11.800	0.83	1.02	1.27	1.64	2.23
12.050	3.11	4.38	5.63	5.91	5.33
12.300	4.42	3.68	3.11	2.66	2.35
12.550	2.13	1.90	1.67	1.48	1.34
12.800	1.25	1.18	1.12	1.07	1.02
13.050	0.97	0.91	0.87	0.82	0.79
13.300	0.76	0.73	0.70	0.67	0.64
13.550	0.61	0.59	0.56	0.54	0.52
13.800	0.51	0.50	0.50	0.49	0.48
14.050	0.47	0.47	0.46	0.45	0.44
14.300	0.44	0.43	0.42	0.42	0.41
14.550	0.40	0.39	0.39	0.38	0.37
14.800	0.36	0.36	0.35	0.34	0.33
15.050	0.33	0.32	0.31	0.31	0.30
15.300	0.30	0.30	0.29	0.29	0.29
15.550	0.29	0.29	0.28	0.28	0.28
15.800	0.28	0.28	0.27	0.27	0.27
16.050	0.27	0.27	0.26	0.26	0.26
16.300	0.26	0.26	0.25	0.25	0.25
16.550	0.25	0.25	0.24	0.24	0.24
16.800	0.24	0.24	0.23	0.23	0.23
17.050	0.23	0.23	0.22	0.22	0.22
17.300	0.22	0.22	0.21	0.21	0.21
17.550	0.21	0.21	0.20	0.20	0.20
17.800	0.20	0.19	0.19	0.19	0.19
18.050	0.19	0.18	0.18	0.18	0.18
18.300	0.18	0.18	0.18	0.18	0.18
18.550	0.18	0.18	0.17	0.17	0.17
18.800	0.17	0.17	0.17	0.17	0.17
19.050	0.17	0.17	0.17	0.17	0.17
19.300	0.17	0.17	0.17	0.17	0.17
19.550	0.17	0.17	0.17	0.16	0.16
19.800	0.16	0.16	0.16	0.16	0.16

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-3-P

Scenario: Post-Development 50

Return Event: 50 years

Storm Event: 50-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
20.050	0.16	0.16	0.16	0.16	0.16
20.300	0.16	0.16	0.16	0.16	0.16
20.550	0.16	0.16	0.16	0.15	0.15
20.800	0.15	0.15	0.15	0.15	0.15
21.050	0.15	0.15	0.15	0.15	0.15
21.300	0.15	0.15	0.15	0.15	0.15
21.550	0.15	0.15	0.14	0.14	0.14
21.800	0.14	0.14	0.14	0.14	0.14
22.050	0.14	0.14	0.14	0.14	0.14
22.300	0.14	0.14	0.14	0.14	0.14
22.550	0.14	0.13	0.13	0.13	0.13
22.800	0.13	0.13	0.13	0.13	0.13
23.050	0.13	0.13	0.13	0.13	0.13
23.300	0.13	0.13	0.13	0.13	0.13
23.550	0.12	0.12	0.12	0.12	0.12
23.800	0.12	0.12	0.12	0.12	0.13

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 100 years

Label: DA-3-P

Storm Event: 100-YR

Scenario: Post-Development 100

Storm Event	100-YR
Return Event	100 years
Duration	24.000 hours
Depth	7.60 in
Time of Concentration (Composite)	0.219 hours
Area (User Defined)	105,947.000 ft ²
Computational Time Increment	0.029 hours
Time to Peak (Computed)	12.181 hours
Flow (Peak, Computed)	7.69 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.200 hours
Flow (Peak Interpolated Output)	7.59 ft ³ /s
Drainage Area	
SCS CN (Composite)	61.000
Area (User Defined)	105,947.000 ft ²
Maximum Retention (Pervious)	6.39 in
Maximum Retention (Pervious, 20 percent)	1.28 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.14 in
Runoff Volume (Pervious)	0.637 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.635 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.219 hours
Computational Time Increment	0.029 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	12.58 ft ³ /s
Unit peak time, Tp	0.146 hours
Unit receding limb, Tr	0.584 hours
Total unit time, Tb	0.730 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-3-P

Scenario: Post-Development 100

Return Event: 100 years

Storm Event: 100-YR

Storm Event	100-YR
Return Event	100 years
Duration	24.000 hours
Depth	7.60 in
Time of Concentration (Composite)	0.219 hours
Area (User Defined)	105,947.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
9.750	0.00	0.00	0.00	0.01	0.01
10.000	0.01	0.02	0.02	0.02	0.03
10.250	0.03	0.04	0.04	0.05	0.05
10.500	0.06	0.07	0.07	0.08	0.09
10.750	0.10	0.11	0.13	0.14	0.16
11.000	0.17	0.19	0.21	0.23	0.26
11.250	0.29	0.32	0.35	0.39	0.43
11.500	0.47	0.53	0.62	0.75	0.88
11.750	1.01	1.19	1.43	1.77	2.25
12.000	3.00	4.13	5.73	7.28	7.59
12.250	6.79	5.61	4.65	3.91	3.33
12.500	2.93	2.65	2.36	2.07	1.83
12.750	1.66	1.55	1.46	1.38	1.32
13.000	1.25	1.19	1.13	1.07	1.01
13.250	0.97	0.93	0.89	0.86	0.82
13.500	0.79	0.75	0.72	0.69	0.66
13.750	0.64	0.63	0.62	0.61	0.60
14.000	0.59	0.58	0.57	0.56	0.55
14.250	0.54	0.53	0.52	0.52	0.51
14.500	0.50	0.49	0.48	0.47	0.46
14.750	0.45	0.44	0.43	0.43	0.42
15.000	0.41	0.40	0.39	0.38	0.37
15.250	0.37	0.36	0.36	0.36	0.35
15.500	0.35	0.35	0.35	0.34	0.34
15.750	0.34	0.34	0.33	0.33	0.33
16.000	0.33	0.33	0.32	0.32	0.32
16.250	0.32	0.31	0.31	0.31	0.31
16.500	0.30	0.30	0.30	0.30	0.29
16.750	0.29	0.29	0.29	0.28	0.28
17.000	0.28	0.28	0.27	0.27	0.27
17.250	0.27	0.26	0.26	0.26	0.26
17.500	0.25	0.25	0.25	0.25	0.24
17.750	0.24	0.24	0.24	0.23	0.23
18.000	0.23	0.23	0.22	0.22	0.22
18.250	0.22	0.22	0.22	0.21	0.21
18.500	0.21	0.21	0.21	0.21	0.21
18.750	0.21	0.21	0.21	0.21	0.21
19.000	0.21	0.21	0.21	0.21	0.20
19.250	0.20	0.20	0.20	0.20	0.20

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: DA-3-P

Scenario: Post-Development 100

Return Event: 100 years

Storm Event: 100-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
19.500	0.20	0.20	0.20	0.20	0.20
19.750	0.20	0.20	0.20	0.20	0.20
20.000	0.20	0.19	0.19	0.19	0.19
20.250	0.19	0.19	0.19	0.19	0.19
20.500	0.19	0.19	0.19	0.19	0.19
20.750	0.19	0.19	0.18	0.18	0.18
21.000	0.18	0.18	0.18	0.18	0.18
21.250	0.18	0.18	0.18	0.18	0.18
21.500	0.18	0.18	0.18	0.17	0.17
21.750	0.17	0.17	0.17	0.17	0.17
22.000	0.17	0.17	0.17	0.17	0.17
22.250	0.17	0.17	0.17	0.16	0.16
22.500	0.16	0.16	0.16	0.16	0.16
22.750	0.16	0.16	0.16	0.16	0.16
23.000	0.16	0.16	0.16	0.16	0.15
23.250	0.15	0.15	0.15	0.15	0.15
23.500	0.15	0.15	0.15	0.15	0.15
23.750	0.15	0.15	0.15	0.15	0.15
24.000	0.15	(N/A)	(N/A)	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 1 years

Label: MRC-I

Storm Event: 1-YR

Scenario: Post-Development 1

Storm Event	1-YR
Return Event	1 years
Duration	24.000 hours
Depth	2.73 in
Time of Concentration (Composite)	0.069 hours
Area (User Defined)	255,806.000 ft ²
<hr/>	
Computational Time Increment	0.009 hours
Time to Peak (Computed)	12.107 hours
Flow (Peak, Computed)	17.95 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	17.90 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	255,806.000 ft ²
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.50 in
Runoff Volume (Pervious)	1.223 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	1.222 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.069 hours
Computational Time Increment	0.009 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	96.58 ft ³ /s
Unit peak time, Tp	0.046 hours
Unit receding limb, Tr	0.184 hours
Total unit time, Tb	0.230 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 1 years

Label: MRC-I

Storm Event: 1-YR

Scenario: Post-Development 1

Storm Event	1-YR
Return Event	1 years
Duration	24.000 hours
Depth	2.73 in
Time of Concentration (Composite)	0.069 hours
Area (User Defined)	255,806.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
1.400	0.00	0.00	0.01	0.01	0.01
1.650	0.01	0.02	0.02	0.02	0.02
1.900	0.03	0.03	0.03	0.03	0.04
2.150	0.04	0.04	0.04	0.05	0.05
2.400	0.05	0.05	0.06	0.06	0.06
2.650	0.06	0.07	0.07	0.07	0.07
2.900	0.07	0.08	0.08	0.08	0.08
3.150	0.09	0.09	0.09	0.09	0.09
3.400	0.10	0.10	0.10	0.10	0.10
3.650	0.11	0.11	0.11	0.11	0.11
3.900	0.11	0.12	0.12	0.12	0.12
4.150	0.12	0.13	0.13	0.13	0.13
4.400	0.13	0.13	0.14	0.14	0.14
4.650	0.14	0.14	0.15	0.15	0.15
4.900	0.15	0.15	0.15	0.15	0.16
5.150	0.16	0.16	0.16	0.16	0.16
5.400	0.17	0.17	0.17	0.17	0.17
5.650	0.17	0.18	0.18	0.18	0.18
5.900	0.18	0.18	0.18	0.19	0.19
6.150	0.19	0.20	0.20	0.20	0.21
6.400	0.21	0.21	0.22	0.22	0.22
6.650	0.23	0.23	0.23	0.24	0.24
6.900	0.24	0.25	0.25	0.25	0.26
7.150	0.26	0.26	0.27	0.27	0.27
7.400	0.28	0.28	0.29	0.29	0.29
7.650	0.30	0.30	0.30	0.31	0.31
7.900	0.31	0.32	0.32	0.32	0.33
8.150	0.33	0.33	0.34	0.34	0.34
8.400	0.35	0.35	0.36	0.36	0.36
8.650	0.37	0.37	0.37	0.38	0.38
8.900	0.38	0.39	0.39	0.40	0.41
9.150	0.43	0.44	0.45	0.46	0.47
9.400	0.48	0.50	0.51	0.52	0.53
9.650	0.54	0.55	0.57	0.58	0.59
9.900	0.60	0.62	0.63	0.64	0.65
10.150	0.66	0.68	0.69	0.70	0.71
10.400	0.72	0.74	0.75	0.80	0.83
10.650	0.88	0.92	0.97	1.01	1.06
10.900	1.10	1.15	1.19	1.28	1.35

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 1 years

Label: MRC-I

Storm Event: 1-YR

Scenario: Post-Development 1

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.150	1.45	1.52	1.62	1.69	1.79
11.400	1.87	1.94	2.00	2.58	3.04
11.650	3.21	3.30	3.95	4.46	5.46
11.900	6.23	8.73	10.68	14.82	17.90
12.150	12.30	7.46	5.71	4.83	4.04
12.400	3.51	3.33	3.25	2.65	2.18
12.650	2.04	1.97	1.87	1.80	1.70
12.900	1.63	1.53	1.46	1.36	1.29
13.150	1.23	1.19	1.13	1.09	1.04
13.400	1.00	0.95	0.91	0.86	0.82
13.650	0.80	0.79	0.77	0.76	0.75
13.900	0.74	0.73	0.72	0.70	0.69
14.150	0.68	0.67	0.65	0.64	0.63
14.400	0.62	0.61	0.60	0.58	0.57
14.650	0.56	0.55	0.53	0.53	0.51
14.900	0.50	0.49	0.48	0.46	0.45
15.150	0.45	0.44	0.44	0.44	0.43
15.400	0.43	0.43	0.42	0.42	0.42
15.650	0.42	0.41	0.41	0.41	0.40
15.900	0.40	0.40	0.39	0.39	0.39
16.150	0.38	0.38	0.38	0.37	0.37
16.400	0.37	0.36	0.36	0.36	0.36
16.650	0.35	0.35	0.34	0.34	0.34
16.900	0.34	0.33	0.33	0.33	0.32
17.150	0.32	0.32	0.31	0.31	0.31
17.400	0.30	0.30	0.30	0.29	0.29
17.650	0.29	0.28	0.28	0.28	0.27
17.900	0.27	0.27	0.27	0.26	0.26
18.150	0.26	0.26	0.26	0.26	0.25
18.400	0.25	0.25	0.25	0.25	0.25
18.650	0.25	0.25	0.25	0.25	0.25
18.900	0.25	0.25	0.24	0.24	0.24
19.150	0.24	0.24	0.24	0.24	0.24
19.400	0.24	0.24	0.24	0.24	0.23
19.650	0.23	0.23	0.23	0.23	0.23
19.900	0.23	0.23	0.23	0.23	0.23
20.150	0.23	0.23	0.22	0.22	0.22
20.400	0.22	0.22	0.22	0.22	0.22
20.650	0.22	0.22	0.22	0.22	0.21
20.900	0.21	0.21	0.21	0.21	0.21
21.150	0.21	0.21	0.21	0.21	0.21
21.400	0.21	0.21	0.20	0.20	0.20
21.650	0.20	0.20	0.20	0.20	0.20
21.900	0.20	0.20	0.20	0.20	0.19
22.150	0.19	0.19	0.19	0.19	0.19
22.400	0.19	0.19	0.19	0.19	0.19
22.650	0.19	0.19	0.18	0.18	0.18
22.900	0.18	0.18	0.18	0.18	0.18

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: MRC-I

Scenario: Post-Development 1

Return Event: 1 years

Storm Event: 1-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
23.150	0.18	0.18	0.18	0.18	0.18
23.400	0.18	0.17	0.17	0.17	0.17
23.650	0.17	0.17	0.17	0.17	0.17
23.900	0.17	0.19	0.20	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 2 years

Label: MRC-I

Storm Event: 2-YR

Scenario: Post-Development 2

Storm Event	2-YR
Return Event	2 years
Duration	24.000 hours
Depth	3.28 in
Time of Concentration (Composite)	0.069 hours
Area (User Defined)	255,806.000 ft ²
<hr/>	
Computational Time Increment	0.009 hours
Time to Peak (Computed)	12.107 hours
Flow (Peak, Computed)	21.67 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	21.61 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	255,806.000 ft ²
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.05 in
Runoff Volume (Pervious)	1.491 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	1.490 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.069 hours
Computational Time Increment	0.009 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	96.58 ft ³ /s
Unit peak time, Tp	0.046 hours
Unit receding limb, Tr	0.184 hours
Total unit time, Tb	0.230 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 2 years

Label: MRC-I

Storm Event: 2-YR

Scenario: Post-Development 2

Storm Event	2-YR
Return Event	2 years
Duration	24.000 hours
Depth	3.28 in
Time of Concentration (Composite)	0.069 hours
Area (User Defined)	255,806.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
1.150	0.00	0.00	0.00	0.01	0.01
1.400	0.02	0.02	0.02	0.03	0.03
1.650	0.03	0.04	0.04	0.04	0.05
1.900	0.05	0.06	0.06	0.06	0.06
2.150	0.07	0.07	0.07	0.08	0.08
2.400	0.08	0.09	0.09	0.09	0.09
2.650	0.10	0.10	0.10	0.11	0.11
2.900	0.11	0.11	0.12	0.12	0.12
3.150	0.12	0.13	0.13	0.13	0.13
3.400	0.14	0.14	0.14	0.14	0.15
3.650	0.15	0.15	0.15	0.15	0.16
3.900	0.16	0.16	0.16	0.17	0.17
4.150	0.17	0.17	0.17	0.18	0.18
4.400	0.18	0.18	0.18	0.19	0.19
4.650	0.19	0.19	0.19	0.20	0.20
4.900	0.20	0.20	0.20	0.21	0.21
5.150	0.21	0.21	0.21	0.21	0.22
5.400	0.22	0.22	0.22	0.22	0.23
5.650	0.23	0.23	0.23	0.23	0.23
5.900	0.24	0.24	0.24	0.24	0.25
6.150	0.25	0.25	0.26	0.26	0.27
6.400	0.27	0.27	0.28	0.28	0.29
6.650	0.29	0.29	0.30	0.30	0.31
6.900	0.31	0.32	0.32	0.32	0.33
7.150	0.33	0.34	0.34	0.34	0.35
7.400	0.35	0.36	0.36	0.36	0.37
7.650	0.37	0.38	0.38	0.38	0.39
7.900	0.39	0.40	0.40	0.41	0.41
8.150	0.42	0.42	0.42	0.43	0.43
8.400	0.44	0.44	0.45	0.45	0.45
8.650	0.46	0.46	0.47	0.47	0.48
8.900	0.48	0.48	0.49	0.50	0.51
9.150	0.53	0.54	0.56	0.57	0.59
9.400	0.60	0.61	0.63	0.64	0.66
9.650	0.67	0.68	0.70	0.71	0.73
9.900	0.74	0.76	0.77	0.79	0.80
10.150	0.82	0.83	0.85	0.86	0.88
10.400	0.89	0.91	0.92	0.98	1.02
10.650	1.08	1.13	1.19	1.24	1.30

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 2 years

Label: MRC-I

Storm Event: 2-YR

Scenario: Post-Development 2

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.900	1.35	1.41	1.46	1.57	1.65
11.150	1.77	1.86	1.98	2.06	2.18
11.400	2.27	2.37	2.44	3.14	3.70
11.650	3.90	4.01	4.79	5.41	6.62
11.900	7.55	10.56	12.92	17.90	21.61
12.150	14.84	9.00	6.88	5.82	4.87
12.400	4.23	4.02	3.91	3.20	2.63
12.650	2.46	2.37	2.26	2.17	2.05
12.900	1.96	1.84	1.75	1.63	1.55
13.150	1.48	1.43	1.36	1.32	1.25
13.400	1.21	1.14	1.10	1.03	0.99
13.650	0.96	0.95	0.93	0.92	0.90
13.900	0.89	0.88	0.86	0.85	0.83
14.150	0.82	0.81	0.79	0.78	0.76
14.400	0.75	0.73	0.72	0.70	0.69
14.650	0.67	0.66	0.64	0.63	0.61
14.900	0.60	0.58	0.57	0.56	0.55
15.150	0.54	0.53	0.53	0.53	0.52
15.400	0.52	0.52	0.51	0.51	0.51
15.650	0.50	0.50	0.49	0.49	0.48
15.900	0.48	0.48	0.47	0.47	0.47
16.150	0.46	0.46	0.45	0.45	0.45
16.400	0.44	0.44	0.43	0.43	0.43
16.650	0.42	0.42	0.41	0.41	0.41
16.900	0.40	0.40	0.40	0.39	0.39
17.150	0.38	0.38	0.38	0.37	0.37
17.400	0.37	0.36	0.36	0.35	0.35
17.650	0.35	0.34	0.34	0.34	0.33
17.900	0.33	0.32	0.32	0.32	0.31
18.150	0.31	0.31	0.31	0.31	0.31
18.400	0.31	0.30	0.30	0.30	0.30
18.650	0.30	0.30	0.30	0.30	0.30
18.900	0.30	0.30	0.29	0.29	0.29
19.150	0.29	0.29	0.29	0.29	0.29
19.400	0.29	0.29	0.28	0.28	0.28
19.650	0.28	0.28	0.28	0.28	0.28
19.900	0.28	0.28	0.27	0.27	0.27
20.150	0.27	0.27	0.27	0.27	0.27
20.400	0.27	0.27	0.27	0.27	0.27
20.650	0.26	0.26	0.26	0.26	0.26
20.900	0.26	0.26	0.26	0.25	0.25
21.150	0.25	0.25	0.25	0.25	0.25
21.400	0.25	0.25	0.25	0.24	0.24
21.650	0.24	0.24	0.24	0.24	0.24
21.900	0.24	0.24	0.24	0.24	0.23
22.150	0.23	0.23	0.23	0.23	0.23
22.400	0.23	0.23	0.23	0.23	0.23
22.650	0.22	0.22	0.22	0.22	0.22

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: MRC-I

Scenario: Post-Development 2

Return Event: 2 years

Storm Event: 2-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
22.900	0.22	0.22	0.22	0.22	0.22
23.150	0.21	0.21	0.21	0.21	0.21
23.400	0.21	0.21	0.21	0.21	0.21
23.650	0.21	0.21	0.20	0.20	0.20
23.900	0.20	0.22	0.24	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Label: MRC-I

Scenario: Post-Development 5

Return Event: 5 years

Storm Event: 5-YR

Storm Event	5-YR
Return Event	5 years
Duration	24.000 hours
Depth	4.12 in
Time of Concentration (Composite)	0.069 hours
Area (User Defined)	255,806.000 ft ²
Computational Time Increment	0.009 hours
Time to Peak (Computed)	12.107 hours
Flow (Peak, Computed)	27.34 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	27.27 ft ³ /s
Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	255,806.000 ft ²
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.89 in
Runoff Volume (Pervious)	1.902 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	1.901 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.069 hours
Computational Time Increment	0.009 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	96.58 ft ³ /s
Unit peak time, Tp	0.046 hours
Unit receding limb, Tr	0.184 hours
Total unit time, Tb	0.230 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 5 years

Label: MRC-I

Storm Event: 5-YR

Scenario: Post-Development 5

Storm Event	5-YR
Return Event	5 years
Duration	24.000 hours
Depth	4.12 in
Time of Concentration (Composite)	0.069 hours
Area (User Defined)	255,806.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
0.950	0.00	0.00	0.01	0.02	0.02
1.200	0.03	0.03	0.04	0.04	0.05
1.450	0.05	0.06	0.06	0.07	0.07
1.700	0.08	0.08	0.09	0.09	0.10
1.950	0.10	0.10	0.11	0.11	0.12
2.200	0.12	0.12	0.13	0.13	0.14
2.450	0.14	0.14	0.15	0.15	0.15
2.700	0.16	0.16	0.17	0.17	0.17
2.950	0.17	0.18	0.18	0.18	0.19
3.200	0.19	0.19	0.20	0.20	0.20
3.450	0.21	0.21	0.21	0.21	0.22
3.700	0.22	0.22	0.22	0.23	0.23
3.950	0.23	0.23	0.24	0.24	0.24
4.200	0.24	0.25	0.25	0.25	0.25
4.450	0.26	0.26	0.26	0.26	0.27
4.700	0.27	0.27	0.27	0.28	0.28
4.950	0.28	0.28	0.28	0.29	0.29
5.200	0.29	0.29	0.30	0.30	0.30
5.450	0.30	0.30	0.31	0.31	0.31
5.700	0.31	0.31	0.32	0.32	0.32
5.950	0.32	0.32	0.33	0.33	0.34
6.200	0.34	0.35	0.35	0.36	0.36
6.450	0.37	0.37	0.38	0.38	0.39
6.700	0.39	0.40	0.40	0.41	0.41
6.950	0.42	0.42	0.43	0.44	0.44
7.200	0.45	0.45	0.45	0.46	0.47
7.450	0.47	0.48	0.48	0.49	0.49
7.700	0.50	0.50	0.51	0.51	0.52
7.950	0.53	0.53	0.53	0.54	0.55
8.200	0.55	0.56	0.56	0.57	0.57
8.450	0.58	0.58	0.59	0.59	0.60
8.700	0.60	0.61	0.61	0.62	0.62
8.950	0.63	0.64	0.65	0.67	0.69
9.200	0.70	0.72	0.74	0.76	0.77
9.450	0.80	0.81	0.83	0.85	0.87
9.700	0.88	0.90	0.92	0.94	0.96
9.950	0.98	0.99	1.01	1.03	1.05
10.200	1.07	1.09	1.10	1.13	1.14
10.450	1.16	1.18	1.25	1.31	1.39

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 5 years

Label: MRC-I

Storm Event: 5-YR

Scenario: Post-Development 5

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.700	1.45	1.53	1.58	1.66	1.72
10.950	1.80	1.86	2.00	2.11	2.26
11.200	2.37	2.52	2.63	2.78	2.89
11.450	3.01	3.10	3.99	4.69	4.95
11.700	5.08	6.07	6.86	8.38	9.55
11.950	13.36	16.33	22.60	27.27	18.71
12.200	11.34	8.67	7.33	6.14	5.33
12.450	5.06	4.93	4.03	3.32	3.09
12.700	2.99	2.84	2.73	2.58	2.47
12.950	2.32	2.21	2.06	1.95	1.86
13.200	1.80	1.72	1.66	1.58	1.52
13.450	1.44	1.38	1.30	1.24	1.21
13.700	1.20	1.17	1.16	1.14	1.12
13.950	1.10	1.09	1.06	1.05	1.03
14.200	1.01	0.99	0.98	0.96	0.94
14.450	0.92	0.91	0.88	0.87	0.85
14.700	0.83	0.81	0.80	0.77	0.76
14.950	0.74	0.72	0.70	0.69	0.68
15.200	0.67	0.67	0.66	0.66	0.66
15.450	0.65	0.64	0.64	0.64	0.63
15.700	0.62	0.62	0.61	0.61	0.61
15.950	0.60	0.59	0.59	0.59	0.58
16.200	0.58	0.57	0.57	0.56	0.56
16.450	0.55	0.55	0.54	0.54	0.53
16.700	0.53	0.52	0.52	0.51	0.51
16.950	0.50	0.50	0.49	0.49	0.48
17.200	0.48	0.47	0.47	0.46	0.46
17.450	0.46	0.45	0.45	0.44	0.44
17.700	0.43	0.43	0.42	0.42	0.41
17.950	0.41	0.40	0.40	0.39	0.39
18.200	0.39	0.39	0.39	0.39	0.38
18.450	0.38	0.38	0.38	0.38	0.38
18.700	0.38	0.38	0.38	0.37	0.37
18.950	0.37	0.37	0.37	0.37	0.37
19.200	0.37	0.36	0.36	0.36	0.36
19.450	0.36	0.36	0.36	0.36	0.35
19.700	0.35	0.35	0.35	0.35	0.35
19.950	0.35	0.35	0.34	0.34	0.34
20.200	0.34	0.34	0.34	0.34	0.34
20.450	0.33	0.33	0.33	0.33	0.33
20.700	0.33	0.33	0.33	0.33	0.32
20.950	0.32	0.32	0.32	0.32	0.32
21.200	0.32	0.32	0.32	0.31	0.31
21.450	0.31	0.31	0.31	0.31	0.31
21.700	0.30	0.30	0.30	0.30	0.30
21.950	0.30	0.30	0.30	0.29	0.29
22.200	0.29	0.29	0.29	0.29	0.29
22.450	0.29	0.29	0.28	0.28	0.28

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: MRC-I

Scenario: Post-Development 5

Return Event: 5 years

Storm Event: 5-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
22.700	0.28	0.28	0.28	0.28	0.28
22.950	0.28	0.28	0.27	0.27	0.27
23.200	0.27	0.27	0.27	0.27	0.27
23.450	0.26	0.26	0.26	0.26	0.26
23.700	0.26	0.26	0.25	0.25	0.25
23.950	0.28	0.31	(N/A)	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 10 years

Label: MRC-I

Storm Event: 10-YR

Scenario: Post-Development 10

Storm Event	10-YR
Return Event	10 years
Duration	24.000 hours
Depth	4.82 in
Time of Concentration (Composite)	0.069 hours
Area (User Defined)	255,806.000 ft ²
<hr/>	
Computational Time Increment	0.009 hours
Time to Peak (Computed)	12.107 hours
Flow (Peak, Computed)	32.03 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	31.95 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	255,806.000 ft ²
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	4.58 in
Runoff Volume (Pervious)	2.243 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	2.241 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.069 hours
Computational Time Increment	0.009 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	96.58 ft ³ /s
Unit peak time, Tp	0.046 hours
Unit receding limb, Tr	0.184 hours
Total unit time, Tb	0.230 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 10 years

Label: MRC-I

Storm Event: 10-YR

Scenario: Post-Development 10

Storm Event	10-YR
Return Event	10 years
Duration	24.000 hours
Depth	4.82 in
Time of Concentration (Composite)	0.069 hours
Area (User Defined)	255,806.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
0.800	0.00	0.00	0.01	0.02	0.03
1.050	0.03	0.04	0.05	0.05	0.06
1.300	0.07	0.07	0.08	0.09	0.09
1.550	0.10	0.10	0.11	0.12	0.12
1.800	0.13	0.13	0.14	0.14	0.15
2.050	0.15	0.16	0.16	0.17	0.17
2.300	0.18	0.18	0.18	0.19	0.19
2.550	0.20	0.20	0.20	0.21	0.21
2.800	0.22	0.22	0.22	0.23	0.23
3.050	0.23	0.24	0.24	0.24	0.25
3.300	0.25	0.26	0.26	0.26	0.27
3.550	0.27	0.27	0.27	0.28	0.28
3.800	0.28	0.29	0.29	0.29	0.30
4.050	0.30	0.30	0.30	0.31	0.31
4.300	0.31	0.32	0.32	0.32	0.32
4.550	0.33	0.33	0.33	0.33	0.34
4.800	0.34	0.34	0.34	0.35	0.35
5.050	0.35	0.35	0.36	0.36	0.36
5.300	0.36	0.36	0.37	0.37	0.37
5.550	0.37	0.38	0.38	0.38	0.38
5.800	0.39	0.39	0.39	0.39	0.39
6.050	0.40	0.41	0.41	0.42	0.42
6.300	0.43	0.44	0.44	0.45	0.45
6.550	0.46	0.46	0.47	0.48	0.48
6.800	0.49	0.49	0.50	0.51	0.51
7.050	0.52	0.52	0.53	0.54	0.54
7.300	0.55	0.55	0.56	0.57	0.57
7.550	0.58	0.58	0.59	0.60	0.60
7.800	0.61	0.62	0.62	0.63	0.63
8.050	0.64	0.64	0.65	0.66	0.66
8.300	0.67	0.67	0.68	0.69	0.69
8.550	0.70	0.70	0.71	0.72	0.72
8.800	0.73	0.74	0.74	0.75	0.76
9.050	0.78	0.79	0.82	0.83	0.86
9.300	0.88	0.90	0.92	0.94	0.96
9.550	0.99	1.01	1.03	1.05	1.07
9.800	1.09	1.12	1.14	1.16	1.18
10.050	1.20	1.22	1.25	1.26	1.29
10.300	1.31	1.33	1.35	1.38	1.39

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 10 years

Label: MRC-I

Storm Event: 10-YR

Scenario: Post-Development 10

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.550	1.48	1.55	1.64	1.71	1.80
10.800	1.87	1.96	2.03	2.12	2.19
11.050	2.36	2.49	2.66	2.79	2.97
11.300	3.09	3.27	3.40	3.54	3.64
11.550	4.69	5.52	5.81	5.97	7.13
11.800	8.05	9.84	11.21	15.67	19.14
12.050	26.49	31.95	21.92	13.28	10.15
12.300	8.58	7.19	6.24	5.93	5.77
12.550	4.71	3.88	3.62	3.50	3.33
12.800	3.20	3.02	2.89	2.72	2.59
13.050	2.41	2.28	2.18	2.11	2.01
13.300	1.94	1.85	1.78	1.68	1.62
13.550	1.52	1.45	1.42	1.40	1.37
13.800	1.36	1.33	1.32	1.29	1.27
14.050	1.25	1.23	1.20	1.19	1.16
14.300	1.14	1.12	1.10	1.08	1.06
14.550	1.03	1.01	0.99	0.97	0.95
14.800	0.93	0.91	0.89	0.86	0.84
15.050	0.82	0.80	0.79	0.79	0.78
15.300	0.78	0.77	0.77	0.76	0.75
15.550	0.75	0.74	0.74	0.73	0.72
15.800	0.72	0.71	0.71	0.70	0.70
16.050	0.69	0.69	0.68	0.68	0.67
16.300	0.66	0.66	0.65	0.65	0.64
16.550	0.63	0.63	0.62	0.62	0.61
16.800	0.60	0.60	0.60	0.59	0.58
17.050	0.58	0.57	0.57	0.56	0.55
17.300	0.55	0.54	0.54	0.53	0.53
17.550	0.52	0.52	0.51	0.51	0.50
17.800	0.49	0.49	0.48	0.48	0.47
18.050	0.46	0.46	0.46	0.46	0.45
18.300	0.45	0.45	0.45	0.45	0.45
18.550	0.45	0.44	0.44	0.44	0.44
18.800	0.44	0.44	0.44	0.43	0.43
19.050	0.43	0.43	0.43	0.43	0.43
19.300	0.42	0.42	0.42	0.42	0.42
19.550	0.42	0.42	0.41	0.41	0.41
19.800	0.41	0.41	0.41	0.41	0.40
20.050	0.40	0.40	0.40	0.40	0.40
20.300	0.40	0.39	0.39	0.39	0.39
20.550	0.39	0.39	0.39	0.39	0.38
20.800	0.38	0.38	0.38	0.38	0.38
21.050	0.37	0.37	0.37	0.37	0.37
21.300	0.37	0.37	0.37	0.36	0.36
21.550	0.36	0.36	0.36	0.36	0.36
21.800	0.36	0.35	0.35	0.35	0.35
22.050	0.35	0.34	0.34	0.34	0.34
22.300	0.34	0.34	0.34	0.33	0.33

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: MRC-I

Scenario: Post-Development 10

Return Event: 10 years

Storm Event: 10-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
22.550	0.33	0.33	0.33	0.33	0.33
22.800	0.33	0.32	0.32	0.32	0.32
23.050	0.32	0.32	0.31	0.31	0.31
23.300	0.31	0.31	0.31	0.31	0.31
23.550	0.30	0.30	0.30	0.30	0.30
23.800	0.30	0.29	0.29	0.33	0.36

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 25 years

Label: MRC-I

Storm Event: 25-YR

Scenario: Post-Development 25

Storm Event	25-YR
Return Event	25 years
Duration	24.000 hours
Depth	5.83 in
Time of Concentration (Composite)	0.069 hours
Area (User Defined)	255,806.000 ft ²
<hr/>	
Computational Time Increment	0.009 hours
Time to Peak (Computed)	12.107 hours
Flow (Peak, Computed)	38.80 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	38.71 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	255,806.000 ft ²
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.59 in
Runoff Volume (Pervious)	2.737 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	2.735 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.069 hours
Computational Time Increment	0.009 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	96.58 ft ³ /s
Unit peak time, Tp	0.046 hours
Unit receding limb, Tr	0.184 hours
Total unit time, Tb	0.230 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 25 years

Label: MRC-I

Storm Event: 25-YR

Scenario: Post-Development 25

Storm Event	25-YR
Return Event	25 years
Duration	24.000 hours
Depth	5.83 in
Time of Concentration (Composite)	0.069 hours
Area (User Defined)	255,806.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
0.650	0.00	0.00	0.01	0.02	0.03
0.900	0.04	0.05	0.06	0.07	0.08
1.150	0.09	0.10	0.11	0.12	0.12
1.400	0.13	0.14	0.15	0.16	0.16
1.650	0.17	0.17	0.18	0.19	0.20
1.900	0.20	0.21	0.21	0.22	0.22
2.150	0.23	0.23	0.24	0.25	0.25
2.400	0.26	0.26	0.27	0.27	0.28
2.650	0.28	0.28	0.29	0.30	0.30
2.900	0.30	0.31	0.31	0.31	0.32
3.150	0.32	0.33	0.33	0.33	0.34
3.400	0.34	0.35	0.35	0.35	0.36
3.650	0.36	0.36	0.37	0.37	0.37
3.900	0.38	0.38	0.38	0.39	0.39
4.150	0.39	0.40	0.40	0.41	0.41
4.400	0.41	0.41	0.41	0.42	0.42
4.650	0.42	0.43	0.43	0.43	0.44
4.900	0.44	0.44	0.44	0.45	0.45
5.150	0.45	0.45	0.46	0.46	0.46
5.400	0.47	0.47	0.47	0.47	0.48
5.650	0.48	0.48	0.48	0.49	0.49
5.900	0.49	0.49	0.50	0.50	0.51
6.150	0.52	0.52	0.53	0.54	0.55
6.400	0.55	0.56	0.57	0.57	0.58
6.650	0.59	0.59	0.60	0.61	0.62
6.900	0.62	0.63	0.64	0.65	0.65
7.150	0.66	0.67	0.67	0.68	0.69
7.400	0.70	0.70	0.71	0.72	0.72
7.650	0.73	0.74	0.75	0.75	0.76
7.900	0.77	0.78	0.78	0.79	0.80
8.150	0.80	0.81	0.82	0.82	0.83
8.400	0.84	0.85	0.86	0.86	0.87
8.650	0.88	0.89	0.89	0.90	0.91
8.900	0.91	0.92	0.93	0.95	0.97
9.150	1.00	1.02	1.06	1.08	1.11
9.400	1.13	1.16	1.18	1.21	1.23
9.650	1.26	1.28	1.31	1.33	1.37
9.900	1.39	1.42	1.44	1.47	1.49
10.150	1.52	1.55	1.57	1.60	1.62

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 25 years

Label: MRC-I

Storm Event: 25-YR

Scenario: Post-Development 25

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.400	1.65	1.68	1.70	1.81	1.89
10.650	2.00	2.08	2.19	2.28	2.39
10.900	2.47	2.59	2.67	2.87	3.03
11.150	3.24	3.40	3.61	3.76	3.98
11.400	4.14	4.31	4.43	5.70	6.70
11.650	7.06	7.25	8.65	9.78	11.94
11.900	13.59	19.00	23.21	32.10	38.71
12.150	26.55	16.09	12.30	10.39	8.71
12.400	7.55	7.18	6.99	5.71	4.70
12.650	4.38	4.24	4.03	3.87	3.66
12.900	3.50	3.29	3.13	2.92	2.76
13.150	2.63	2.55	2.43	2.35	2.24
13.400	2.15	2.04	1.96	1.84	1.76
13.650	1.72	1.69	1.66	1.64	1.61
13.900	1.59	1.56	1.54	1.51	1.49
14.150	1.46	1.44	1.41	1.38	1.35
14.400	1.33	1.30	1.28	1.25	1.23
14.650	1.20	1.18	1.15	1.13	1.10
14.900	1.07	1.04	1.02	0.99	0.97
15.150	0.96	0.95	0.94	0.94	0.93
15.400	0.93	0.92	0.91	0.90	0.90
15.650	0.89	0.88	0.88	0.87	0.86
15.900	0.86	0.85	0.84	0.84	0.83
16.150	0.82	0.82	0.81	0.80	0.79
16.400	0.79	0.78	0.77	0.77	0.76
16.650	0.75	0.75	0.74	0.73	0.73
16.900	0.72	0.71	0.71	0.70	0.69
17.150	0.69	0.68	0.67	0.66	0.66
17.400	0.65	0.64	0.64	0.63	0.63
17.650	0.62	0.61	0.60	0.60	0.59
17.900	0.58	0.58	0.57	0.56	0.56
18.150	0.55	0.55	0.55	0.55	0.55
18.400	0.54	0.54	0.54	0.54	0.54
18.650	0.54	0.53	0.53	0.53	0.53
18.900	0.53	0.53	0.52	0.52	0.52
19.150	0.52	0.52	0.52	0.51	0.51
19.400	0.51	0.51	0.51	0.51	0.50
19.650	0.50	0.50	0.50	0.50	0.50
19.900	0.49	0.49	0.49	0.49	0.49
20.150	0.48	0.48	0.48	0.48	0.48
20.400	0.48	0.47	0.47	0.47	0.47
20.650	0.47	0.47	0.46	0.46	0.46
20.900	0.46	0.46	0.46	0.45	0.45
21.150	0.45	0.45	0.45	0.45	0.44
21.400	0.44	0.44	0.44	0.44	0.43
21.650	0.43	0.43	0.43	0.43	0.43
21.900	0.42	0.42	0.42	0.42	0.42
22.150	0.42	0.42	0.41	0.41	0.41

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: MRC-I

Scenario: Post-Development 25

Return Event: 25 years

Storm Event: 25-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
22.400	0.41	0.41	0.40	0.40	0.40
22.650	0.40	0.40	0.39	0.39	0.39
22.900	0.39	0.39	0.39	0.39	0.38
23.150	0.38	0.38	0.38	0.38	0.38
23.400	0.38	0.37	0.37	0.37	0.37
23.650	0.37	0.37	0.36	0.36	0.36
23.900	0.36	0.40	0.43	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 50 years

Label: MRC-I

Storm Event: 50-YR

Scenario: Post-Development 50

Storm Event	50-YR
Return Event	50 years
Duration	24.000 hours
Depth	6.68 in
Time of Concentration (Composite)	0.069 hours
Area (User Defined)	255,806.000 ft ²
<hr/>	
Computational Time Increment	0.009 hours
Time to Peak (Computed)	12.107 hours
Flow (Peak, Computed)	44.50 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	44.39 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	255,806.000 ft ²
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.44 in
Runoff Volume (Pervious)	3.152 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	3.150 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.069 hours
Computational Time Increment	0.009 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	96.58 ft ³ /s
Unit peak time, Tp	0.046 hours
Unit receding limb, Tr	0.184 hours
Total unit time, Tb	0.230 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 50 years

Label: MRC-I

Storm Event: 50-YR

Scenario: Post-Development 50

Storm Event	50-YR
Return Event	50 years
Duration	24.000 hours
Depth	6.68 in
Time of Concentration (Composite)	0.069 hours
Area (User Defined)	255,806.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
0.550	0.00	0.00	0.01	0.02	0.04
0.800	0.05	0.06	0.08	0.09	0.10
1.050	0.11	0.12	0.13	0.14	0.15
1.300	0.16	0.17	0.18	0.19	0.20
1.550	0.21	0.21	0.22	0.23	0.24
1.800	0.24	0.25	0.26	0.27	0.27
2.050	0.28	0.28	0.29	0.30	0.30
2.300	0.31	0.31	0.32	0.32	0.33
2.550	0.34	0.34	0.35	0.35	0.36
2.800	0.36	0.37	0.37	0.37	0.38
3.050	0.38	0.39	0.39	0.40	0.40
3.300	0.41	0.41	0.41	0.42	0.42
3.550	0.43	0.43	0.43	0.44	0.44
3.800	0.44	0.45	0.45	0.46	0.46
4.050	0.46	0.47	0.47	0.47	0.48
4.300	0.48	0.48	0.49	0.49	0.49
4.550	0.50	0.50	0.50	0.51	0.51
4.800	0.51	0.51	0.52	0.52	0.52
5.050	0.53	0.53	0.53	0.54	0.54
5.300	0.54	0.54	0.55	0.55	0.55
5.550	0.56	0.56	0.56	0.56	0.57
5.800	0.57	0.57	0.57	0.58	0.58
6.050	0.59	0.60	0.60	0.61	0.62
6.300	0.63	0.64	0.64	0.65	0.66
6.550	0.67	0.68	0.69	0.69	0.70
6.800	0.71	0.72	0.73	0.74	0.74
7.050	0.75	0.76	0.77	0.78	0.78
7.300	0.79	0.80	0.81	0.82	0.83
7.550	0.83	0.84	0.85	0.86	0.87
7.800	0.87	0.88	0.89	0.90	0.91
8.050	0.92	0.92	0.93	0.94	0.95
8.300	0.95	0.96	0.97	0.98	0.99
8.550	1.00	1.00	1.02	1.02	1.03
8.800	1.04	1.05	1.05	1.06	1.07
9.050	1.10	1.13	1.16	1.18	1.22
9.300	1.25	1.28	1.30	1.34	1.36
9.550	1.40	1.42	1.46	1.48	1.51
9.800	1.54	1.58	1.60	1.63	1.66
10.050	1.69	1.72	1.75	1.78	1.81

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 50 years

Label: MRC-I

Storm Event: 50-YR

Scenario: Post-Development 50

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.300	1.84	1.87	1.90	1.93	1.96
10.550	2.08	2.17	2.30	2.39	2.53
10.800	2.62	2.75	2.85	2.98	3.08
11.050	3.31	3.48	3.73	3.90	4.15
11.300	4.33	4.57	4.75	4.95	5.09
11.550	6.55	7.70	8.11	8.32	9.94
11.800	11.22	13.71	15.60	21.80	26.63
12.050	36.82	44.39	30.44	18.45	14.10
12.300	11.92	9.98	8.66	8.23	8.01
12.550	6.54	5.39	5.02	4.86	4.62
12.800	4.44	4.19	4.02	3.77	3.59
13.050	3.34	3.17	3.02	2.92	2.79
13.300	2.70	2.56	2.47	2.34	2.24
13.550	2.11	2.02	1.97	1.94	1.91
13.800	1.88	1.85	1.83	1.79	1.76
14.050	1.73	1.70	1.67	1.65	1.61
14.300	1.59	1.55	1.53	1.49	1.47
14.550	1.43	1.41	1.37	1.35	1.32
14.800	1.29	1.26	1.23	1.20	1.17
15.050	1.14	1.11	1.10	1.09	1.08
15.300	1.08	1.07	1.06	1.05	1.04
15.550	1.04	1.03	1.02	1.01	1.00
15.800	1.00	0.99	0.98	0.97	0.97
16.050	0.96	0.95	0.94	0.94	0.93
16.300	0.92	0.91	0.91	0.89	0.89
16.550	0.88	0.87	0.87	0.86	0.85
16.800	0.84	0.83	0.83	0.82	0.81
17.050	0.80	0.80	0.79	0.78	0.77
17.300	0.76	0.75	0.75	0.74	0.73
17.550	0.72	0.72	0.71	0.70	0.69
17.800	0.68	0.68	0.67	0.66	0.65
18.050	0.64	0.64	0.63	0.63	0.63
18.300	0.63	0.63	0.62	0.62	0.62
18.550	0.62	0.62	0.61	0.61	0.61
18.800	0.61	0.61	0.60	0.60	0.60
19.050	0.60	0.60	0.59	0.59	0.59
19.300	0.59	0.59	0.59	0.58	0.58
19.550	0.58	0.58	0.57	0.57	0.57
19.800	0.57	0.57	0.57	0.56	0.56
20.050	0.56	0.56	0.56	0.55	0.55
20.300	0.55	0.55	0.55	0.54	0.54
20.550	0.54	0.54	0.54	0.53	0.53
20.800	0.53	0.53	0.53	0.52	0.52
21.050	0.52	0.52	0.52	0.51	0.51
21.300	0.51	0.51	0.51	0.50	0.50
21.550	0.50	0.50	0.50	0.49	0.49
21.800	0.49	0.49	0.49	0.48	0.48
22.050	0.48	0.48	0.48	0.48	0.47

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: MRC-I

Scenario: Post-Development 50

Return Event: 50 years

Storm Event: 50-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
22.300	0.47	0.47	0.47	0.46	0.46
22.550	0.46	0.46	0.46	0.46	0.45
22.800	0.45	0.45	0.45	0.45	0.45
23.050	0.44	0.44	0.44	0.44	0.43
23.300	0.43	0.43	0.43	0.43	0.42
23.550	0.42	0.42	0.42	0.42	0.41
23.800	0.41	0.41	0.41	0.46	0.50

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 100 years

Label: MRC-I

Storm Event: 100-YR

Scenario: Post-Development 100

Storm Event	100-YR
Return Event	100 years
Duration	24.000 hours
Depth	7.60 in
Time of Concentration (Composite)	0.069 hours
Area (User Defined)	255,806.000 ft ²
<hr/>	
Computational Time Increment	0.009 hours
Time to Peak (Computed)	12.107 hours
Flow (Peak, Computed)	50.66 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	50.54 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	255,806.000 ft ²
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	7.36 in
Runoff Volume (Pervious)	3.602 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	3.599 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.069 hours
Computational Time Increment	0.009 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	96.58 ft ³ /s
Unit peak time, Tp	0.046 hours
Unit receding limb, Tr	0.184 hours
Total unit time, Tb	0.230 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 100 years

Label: MRC-I

Storm Event: 100-YR

Scenario: Post-Development 100

Storm Event	100-YR
Return Event	100 years
Duration	24.000 hours
Depth	7.60 in
Time of Concentration (Composite)	0.069 hours
Area (User Defined)	255,806.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
0.500	0.00	0.01	0.02	0.04	0.06
0.750	0.07	0.09	0.10	0.12	0.13
1.000	0.14	0.16	0.17	0.18	0.19
1.250	0.20	0.21	0.22	0.23	0.25
1.500	0.26	0.26	0.27	0.28	0.29
1.750	0.30	0.31	0.32	0.32	0.33
2.000	0.34	0.34	0.35	0.36	0.36
2.250	0.37	0.38	0.38	0.39	0.40
2.500	0.40	0.41	0.41	0.42	0.42
2.750	0.43	0.44	0.44	0.44	0.45
3.000	0.45	0.46	0.46	0.47	0.47
3.250	0.48	0.48	0.49	0.49	0.50
3.500	0.50	0.51	0.51	0.51	0.52
3.750	0.52	0.52	0.53	0.53	0.54
4.000	0.54	0.54	0.55	0.55	0.55
4.250	0.56	0.57	0.57	0.57	0.57
4.500	0.58	0.58	0.58	0.59	0.59
4.750	0.59	0.60	0.60	0.60	0.61
5.000	0.61	0.61	0.62	0.62	0.62
5.250	0.63	0.63	0.63	0.64	0.64
5.500	0.64	0.65	0.65	0.65	0.65
5.750	0.66	0.66	0.66	0.67	0.67
6.000	0.67	0.68	0.69	0.70	0.71
6.250	0.72	0.73	0.74	0.74	0.76
6.500	0.76	0.77	0.78	0.79	0.80
6.750	0.81	0.82	0.83	0.84	0.85
7.000	0.86	0.87	0.87	0.89	0.89
7.250	0.90	0.91	0.92	0.93	0.94
7.500	0.95	0.96	0.96	0.98	0.99
7.750	1.00	1.00	1.01	1.02	1.04
8.000	1.04	1.05	1.06	1.07	1.08
8.250	1.09	1.10	1.11	1.11	1.13
8.500	1.14	1.15	1.15	1.16	1.17
8.750	1.18	1.19	1.20	1.21	1.22
9.000	1.23	1.26	1.29	1.33	1.36
9.250	1.40	1.43	1.46	1.49	1.53
9.500	1.56	1.60	1.63	1.67	1.69
9.750	1.73	1.76	1.80	1.83	1.87
10.000	1.90	1.93	1.96	2.00	2.04

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 100 years

Label: MRC-I

Storm Event: 100-YR

Scenario: Post-Development 100

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.250	2.07	2.10	2.14	2.17	2.21
10.500	2.24	2.37	2.48	2.63	2.73
10.750	2.88	2.99	3.14	3.25	3.40
11.000	3.51	3.77	3.97	4.25	4.45
11.250	4.73	4.93	5.22	5.42	5.64
11.500	5.80	7.46	8.78	9.24	9.49
11.750	11.32	12.79	15.62	17.77	24.83
12.000	30.32	41.93	50.54	34.66	21.00
12.250	16.05	13.56	11.36	9.86	9.37
12.500	9.12	7.45	6.13	5.72	5.53
12.750	5.25	5.05	4.77	4.57	4.29
13.000	4.09	3.81	3.60	3.44	3.33
13.250	3.18	3.07	2.92	2.81	2.66
13.500	2.55	2.40	2.30	2.24	2.21
13.750	2.17	2.14	2.10	2.08	2.04
14.000	2.01	1.97	1.94	1.90	1.88
14.250	1.83	1.80	1.76	1.74	1.70
14.500	1.67	1.63	1.60	1.56	1.53
14.750	1.50	1.47	1.43	1.40	1.36
15.000	1.33	1.30	1.27	1.25	1.24
15.250	1.23	1.22	1.22	1.21	1.20
15.500	1.19	1.18	1.17	1.16	1.15
15.750	1.14	1.13	1.13	1.12	1.11
16.000	1.10	1.09	1.08	1.07	1.07
16.250	1.05	1.05	1.04	1.03	1.02
16.500	1.01	1.00	0.99	0.98	0.98
16.750	0.96	0.96	0.95	0.94	0.93
17.000	0.92	0.91	0.91	0.89	0.89
17.250	0.87	0.87	0.86	0.85	0.84
17.500	0.83	0.82	0.82	0.80	0.80
17.750	0.79	0.78	0.77	0.76	0.75
18.000	0.74	0.73	0.73	0.72	0.72
18.250	0.72	0.72	0.71	0.71	0.71
18.500	0.71	0.70	0.70	0.70	0.70
18.750	0.69	0.69	0.69	0.69	0.69
19.000	0.68	0.68	0.68	0.68	0.67
19.250	0.67	0.67	0.67	0.67	0.66
19.500	0.66	0.66	0.66	0.65	0.65
19.750	0.65	0.65	0.65	0.64	0.64
20.000	0.64	0.64	0.63	0.63	0.63
20.250	0.63	0.63	0.62	0.62	0.62
20.500	0.62	0.62	0.62	0.61	0.61
20.750	0.60	0.60	0.60	0.60	0.60
21.000	0.59	0.59	0.59	0.59	0.58
21.250	0.58	0.58	0.58	0.58	0.57
21.500	0.57	0.57	0.57	0.56	0.56
21.750	0.56	0.56	0.56	0.55	0.55
22.000	0.55	0.55	0.54	0.54	0.54

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: MRC-I

Scenario: Post-Development 100

Return Event: 100 years

Storm Event: 100-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
22.250	0.54	0.54	0.53	0.53	0.53
22.500	0.53	0.53	0.53	0.52	0.52
22.750	0.51	0.51	0.51	0.51	0.51
23.000	0.51	0.50	0.50	0.50	0.50
23.250	0.49	0.49	0.49	0.49	0.49
23.500	0.48	0.48	0.48	0.48	0.48
23.750	0.47	0.47	0.47	0.46	0.52
24.000	0.56	(N/A)	(N/A)	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 1 years

Label: MRC-P

Storm Event: 1-YR

Scenario: Post-Development 1

Storm Event	1-YR
Return Event	1 years
Duration	24.000 hours
Depth	2.73 in
Time of Concentration (Composite)	0.069 hours
Area (User Defined)	16,545.000 ft ²
<hr/>	
Computational Time Increment	0.009 hours
Time to Peak (Computed)	12.125 hours
Flow (Peak, Computed)	0.08 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	0.07 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	61.000
Area (User Defined)	16,545.000 ft ²
Maximum Retention (Pervious)	6.39 in
Maximum Retention (Pervious, 20 percent)	1.28 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.27 in
Runoff Volume (Pervious)	0.008 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.008 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.069 hours
Computational Time Increment	0.009 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	6.25 ft ³ /s
Unit peak time, Tp	0.046 hours
Unit receding limb, Tr	0.184 hours
Total unit time, Tb	0.230 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 1 years

Label: MRC-P

Storm Event: 1-YR

Scenario: Post-Development 1

Storm Event	1-YR
Return Event	1 years
Duration	24.000 hours
Depth	2.73 in
Time of Concentration (Composite)	0.069 hours
Area (User Defined)	16,545.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
12.000	0.00	0.02	0.06	0.07	0.05
12.250	0.05	0.04	0.04	0.04	0.04
12.500	0.04	0.03	0.03	0.02	0.02
12.750	0.02	0.02	0.02	0.02	0.02
13.000	0.02	0.02	0.02	0.02	0.02
13.250	0.02	0.02	0.02	0.01	0.01
13.500	0.01	0.01	0.01	0.01	0.01
13.750	0.01	0.01	0.01	0.01	0.01
14.000	0.01	0.01	0.01	0.01	0.01
14.250	0.01	0.01	0.01	0.01	0.01
14.500	0.01	0.01	0.01	0.01	0.01
14.750	0.01	0.01	0.01	0.01	0.01
15.000	0.01	0.01	0.01	0.01	0.01
15.250	0.01	0.01	0.01	0.01	0.01
15.500	0.01	0.01	0.01	0.01	0.01
15.750	0.01	0.01	0.01	0.01	0.01
16.000	0.01	0.01	0.01	0.01	0.01
16.250	0.01	0.01	0.01	0.01	0.01
16.500	0.01	0.01	0.01	0.01	0.01
16.750	0.01	0.01	0.01	0.01	0.01
17.000	0.01	0.01	0.01	0.01	0.01
17.250	0.01	0.01	0.01	0.01	0.01
17.500	0.01	0.01	0.01	0.01	0.01
17.750	0.01	0.01	0.01	0.01	0.01
18.000	0.01	0.01	0.01	0.01	0.01
18.250	0.00	0.00	0.00	0.00	0.00
18.500	0.00	0.00	0.00	0.00	0.00
18.750	0.00	0.00	0.00	0.00	0.00
19.000	0.00	0.00	0.00	0.00	0.00
19.250	0.00	0.00	0.00	0.00	0.00
19.500	0.00	0.00	0.00	0.00	0.00
19.750	0.00	0.00	0.00	0.00	0.00
20.000	0.00	0.00	0.00	0.00	0.00
20.250	0.00	0.00	0.00	0.00	0.00
20.500	0.00	0.00	0.00	0.00	0.00
20.750	0.00	0.00	0.00	0.00	0.00
21.000	0.00	0.00	0.00	0.00	0.00
21.250	0.00	0.00	0.00	0.00	0.00
21.500	0.00	0.00	0.00	0.00	0.00

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: MRC-P

Scenario: Post-Development 1

Return Event: 1 years

Storm Event: 1-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
21.750	0.00	0.00	0.00	0.00	0.00
22.000	0.00	0.00	0.00	0.00	0.00
22.250	0.00	0.00	0.00	0.00	0.00
22.500	0.00	0.00	0.00	0.00	0.00
22.750	0.00	0.00	0.00	0.00	0.00
23.000	0.00	0.00	0.00	0.00	0.00
23.250	0.00	0.00	0.00	0.00	0.00
23.500	0.00	0.00	0.00	0.00	0.00
23.750	0.00	0.00	0.00	0.00	0.00
24.000	0.00	(N/A)	(N/A)	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 2 years

Label: MRC-P

Storm Event: 2-YR

Scenario: Post-Development 2

Storm Event	2-YR
Return Event	2 years
Duration	24.000 hours
Depth	3.28 in
Time of Concentration (Composite)	0.069 hours
Area (User Defined)	16,545.000 ft ²
Computational Time Increment	0.009 hours
Time to Peak (Computed)	12.116 hours
Flow (Peak, Computed)	0.20 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.19 ft ³ /s
Drainage Area	
SCS CN (Composite)	61.000
Area (User Defined)	16,545.000 ft ²
Maximum Retention (Pervious)	6.39 in
Maximum Retention (Pervious, 20 percent)	1.28 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.48 in
Runoff Volume (Pervious)	0.015 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.015 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.069 hours
Computational Time Increment	0.009 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	6.25 ft ³ /s
Unit peak time, Tp	0.046 hours
Unit receding limb, Tr	0.184 hours
Total unit time, Tb	0.230 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 2 years

Label: MRC-P

Storm Event: 2-YR

Scenario: Post-Development 2

Storm Event	2-YR
Return Event	2 years
Duration	24.000 hours
Depth	3.28 in
Time of Concentration (Composite)	0.069 hours
Area (User Defined)	16,545.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.850	0.00	0.00	0.02	0.04	0.10
12.100	0.19	0.16	0.11	0.09	0.08
12.350	0.07	0.07	0.06	0.06	0.05
12.600	0.04	0.04	0.04	0.04	0.04
12.850	0.04	0.04	0.03	0.03	0.03
13.100	0.03	0.03	0.03	0.03	0.03
13.350	0.03	0.02	0.02	0.02	0.02
13.600	0.02	0.02	0.02	0.02	0.02
13.850	0.02	0.02	0.02	0.02	0.02
14.100	0.02	0.02	0.02	0.02	0.02
14.350	0.02	0.02	0.02	0.02	0.02
14.600	0.02	0.01	0.01	0.01	0.01
14.850	0.01	0.01	0.01	0.01	0.01
15.100	0.01	0.01	0.01	0.01	0.01
15.350	0.01	0.01	0.01	0.01	0.01
15.600	0.01	0.01	0.01	0.01	0.01
15.850	0.01	0.01	0.01	0.01	0.01
16.100	0.01	0.01	0.01	0.01	0.01
16.350	0.01	0.01	0.01	0.01	0.01
16.600	0.01	0.01	0.01	0.01	0.01
16.850	0.01	0.01	0.01	0.01	0.01
17.100	0.01	0.01	0.01	0.01	0.01
17.350	0.01	0.01	0.01	0.01	0.01
17.600	0.01	0.01	0.01	0.01	0.01
17.850	0.01	0.01	0.01	0.01	0.01
18.100	0.01	0.01	0.01	0.01	0.01
18.350	0.01	0.01	0.01	0.01	0.01
18.600	0.01	0.01	0.01	0.01	0.01
18.850	0.01	0.01	0.01	0.01	0.01
19.100	0.01	0.01	0.01	0.01	0.01
19.350	0.01	0.01	0.01	0.01	0.01
19.600	0.01	0.01	0.01	0.01	0.01
19.850	0.01	0.01	0.01	0.01	0.01
20.100	0.01	0.01	0.01	0.01	0.01
20.350	0.01	0.01	0.01	0.01	0.01
20.600	0.01	0.01	0.01	0.01	0.01
20.850	0.01	0.01	0.01	0.01	0.01
21.100	0.01	0.01	0.01	0.01	0.01
21.350	0.01	0.01	0.01	0.01	0.01

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: MRC-P

Scenario: Post-Development 2

Return Event: 2 years

Storm Event: 2-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
21.600	0.01	0.01	0.01	0.01	0.01
21.850	0.01	0.01	0.01	0.01	0.01
22.100	0.01	0.01	0.01	0.01	0.01
22.350	0.01	0.01	0.01	0.01	0.01
22.600	0.01	0.01	0.01	0.01	0.01
22.850	0.01	0.01	0.01	0.01	0.01
23.100	0.01	0.01	0.01	0.01	0.01
23.350	0.01	0.01	0.01	0.01	0.01
23.600	0.01	0.01	0.01	0.01	0.01
23.850	0.01	0.01	0.01	0.01	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Label: MRC-P

Scenario: Post-Development 5

Return Event: 5 years

Storm Event: 5-YR

Storm Event	5-YR
Return Event	5 years
Duration	24.000 hours
Depth	4.12 in
Time of Concentration (Composite)	0.069 hours
Area (User Defined)	16,545.000 ft ²
Computational Time Increment	0.009 hours
Time to Peak (Computed)	12.116 hours
Flow (Peak, Computed)	0.43 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.42 ft ³ /s
Drainage Area	
SCS CN (Composite)	61.000
Area (User Defined)	16,545.000 ft ²
Maximum Retention (Pervious)	6.39 in
Maximum Retention (Pervious, 20 percent)	1.28 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.88 in
Runoff Volume (Pervious)	0.028 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.028 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.069 hours
Computational Time Increment	0.009 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	6.25 ft ³ /s
Unit peak time, Tp	0.046 hours
Unit receding limb, Tr	0.184 hours
Total unit time, Tb	0.230 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 5 years

Label: MRC-P

Storm Event: 5-YR

Scenario: Post-Development 5

Storm Event	5-YR
Return Event	5 years
Duration	24.000 hours
Depth	4.12 in
Time of Concentration (Composite)	0.069 hours
Area (User Defined)	16,545.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.600	0.00	0.00	0.01	0.01	0.02
11.850	0.04	0.06	0.10	0.16	0.28
12.100	0.42	0.33	0.22	0.18	0.15
12.350	0.13	0.12	0.12	0.11	0.09
12.600	0.08	0.07	0.07	0.07	0.07
12.850	0.06	0.06	0.06	0.06	0.05
13.100	0.05	0.05	0.05	0.05	0.04
13.350	0.04	0.04	0.04	0.04	0.04
13.600	0.03	0.03	0.03	0.03	0.03
13.850	0.03	0.03	0.03	0.03	0.03
14.100	0.03	0.03	0.03	0.03	0.03
14.350	0.03	0.03	0.03	0.03	0.03
14.600	0.02	0.02	0.02	0.02	0.02
14.850	0.02	0.02	0.02	0.02	0.02
15.100	0.02	0.02	0.02	0.02	0.02
15.350	0.02	0.02	0.02	0.02	0.02
15.600	0.02	0.02	0.02	0.02	0.02
15.850	0.02	0.02	0.02	0.02	0.02
16.100	0.02	0.02	0.02	0.02	0.02
16.350	0.02	0.02	0.02	0.02	0.02
16.600	0.02	0.02	0.02	0.02	0.02
16.850	0.02	0.02	0.02	0.02	0.02
17.100	0.02	0.01	0.01	0.01	0.01
17.350	0.01	0.01	0.01	0.01	0.01
17.600	0.01	0.01	0.01	0.01	0.01
17.850	0.01	0.01	0.01	0.01	0.01
18.100	0.01	0.01	0.01	0.01	0.01
18.350	0.01	0.01	0.01	0.01	0.01
18.600	0.01	0.01	0.01	0.01	0.01
18.850	0.01	0.01	0.01	0.01	0.01
19.100	0.01	0.01	0.01	0.01	0.01
19.350	0.01	0.01	0.01	0.01	0.01
19.600	0.01	0.01	0.01	0.01	0.01
19.850	0.01	0.01	0.01	0.01	0.01
20.100	0.01	0.01	0.01	0.01	0.01
20.350	0.01	0.01	0.01	0.01	0.01
20.600	0.01	0.01	0.01	0.01	0.01
20.850	0.01	0.01	0.01	0.01	0.01
21.100	0.01	0.01	0.01	0.01	0.01

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: MRC-P

Scenario: Post-Development 5

Return Event: 5 years

Storm Event: 5-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
21.350	0.01	0.01	0.01	0.01	0.01
21.600	0.01	0.01	0.01	0.01	0.01
21.850	0.01	0.01	0.01	0.01	0.01
22.100	0.01	0.01	0.01	0.01	0.01
22.350	0.01	0.01	0.01	0.01	0.01
22.600	0.01	0.01	0.01	0.01	0.01
22.850	0.01	0.01	0.01	0.01	0.01
23.100	0.01	0.01	0.01	0.01	0.01
23.350	0.01	0.01	0.01	0.01	0.01
23.600	0.01	0.01	0.01	0.01	0.01
23.850	0.01	0.01	0.01	0.01	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 10 years

Label: MRC-P

Storm Event: 10-YR

Scenario: Post-Development 10

Storm Event	10-YR
Return Event	10 years
Duration	24.000 hours
Depth	4.82 in
Time of Concentration (Composite)	0.069 hours
Area (User Defined)	16,545.000 ft ²
<hr/>	
Computational Time Increment	0.009 hours
Time to Peak (Computed)	12.116 hours
Flow (Peak, Computed)	0.65 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.64 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	61.000
Area (User Defined)	16,545.000 ft ²
Maximum Retention (Pervious)	6.39 in
Maximum Retention (Pervious, 20 percent)	1.28 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.26 in
Runoff Volume (Pervious)	0.040 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.040 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.069 hours
Computational Time Increment	0.009 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	6.25 ft ³ /s
Unit peak time, Tp	0.046 hours
Unit receding limb, Tr	0.184 hours
Total unit time, Tb	0.230 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 10 years

Label: MRC-P

Storm Event: 10-YR

Scenario: Post-Development 10

Storm Event	10-YR
Return Event	10 years
Duration	24.000 hours
Depth	4.82 in
Time of Concentration (Composite)	0.069 hours
Area (User Defined)	16,545.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.300	0.00	0.00	0.00	0.01	0.01
11.550	0.01	0.02	0.03	0.03	0.05
11.800	0.06	0.09	0.12	0.19	0.27
12.050	0.45	0.64	0.48	0.31	0.25
12.300	0.22	0.19	0.17	0.16	0.16
12.550	0.13	0.11	0.10	0.10	0.10
12.800	0.09	0.09	0.09	0.08	0.08
13.050	0.07	0.07	0.07	0.07	0.06
13.300	0.06	0.06	0.06	0.05	0.05
13.550	0.05	0.05	0.05	0.04	0.04
13.800	0.04	0.04	0.04	0.04	0.04
14.050	0.04	0.04	0.04	0.04	0.04
14.300	0.04	0.04	0.04	0.04	0.04
14.550	0.03	0.03	0.03	0.03	0.03
14.800	0.03	0.03	0.03	0.03	0.03
15.050	0.03	0.03	0.03	0.03	0.03
15.300	0.03	0.03	0.03	0.03	0.03
15.550	0.03	0.03	0.03	0.03	0.02
15.800	0.02	0.02	0.02	0.02	0.02
16.050	0.02	0.02	0.02	0.02	0.02
16.300	0.02	0.02	0.02	0.02	0.02
16.550	0.02	0.02	0.02	0.02	0.02
16.800	0.02	0.02	0.02	0.02	0.02
17.050	0.02	0.02	0.02	0.02	0.02
17.300	0.02	0.02	0.02	0.02	0.02
17.550	0.02	0.02	0.02	0.02	0.02
17.800	0.02	0.02	0.02	0.02	0.02
18.050	0.02	0.02	0.02	0.02	0.02
18.300	0.02	0.02	0.02	0.02	0.02
18.550	0.02	0.02	0.02	0.02	0.02
18.800	0.02	0.02	0.02	0.02	0.02
19.050	0.02	0.02	0.02	0.02	0.02
19.300	0.02	0.02	0.02	0.02	0.02
19.550	0.02	0.02	0.02	0.02	0.02
19.800	0.02	0.01	0.01	0.01	0.01
20.050	0.01	0.01	0.01	0.01	0.01
20.300	0.01	0.01	0.01	0.01	0.01
20.550	0.01	0.01	0.01	0.01	0.01
20.800	0.01	0.01	0.01	0.01	0.01

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: MRC-P

Scenario: Post-Development 10

Return Event: 10 years

Storm Event: 10-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
21.050	0.01	0.01	0.01	0.01	0.01
21.300	0.01	0.01	0.01	0.01	0.01
21.550	0.01	0.01	0.01	0.01	0.01
21.800	0.01	0.01	0.01	0.01	0.01
22.050	0.01	0.01	0.01	0.01	0.01
22.300	0.01	0.01	0.01	0.01	0.01
22.550	0.01	0.01	0.01	0.01	0.01
22.800	0.01	0.01	0.01	0.01	0.01
23.050	0.01	0.01	0.01	0.01	0.01
23.300	0.01	0.01	0.01	0.01	0.01
23.550	0.01	0.01	0.01	0.01	0.01
23.800	0.01	0.01	0.01	0.01	0.01

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 25 years

Label: MRC-P

Storm Event: 25-YR

Scenario: Post-Development 25

Storm Event	25-YR
Return Event	25 years
Duration	24.000 hours
Depth	5.83 in
Time of Concentration (Composite)	0.069 hours
Area (User Defined)	16,545.000 ft ²
<hr/>	
Computational Time Increment	0.009 hours
Time to Peak (Computed)	12.107 hours
Flow (Peak, Computed)	1.01 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.99 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	61.000
Area (User Defined)	16,545.000 ft ²
Maximum Retention (Pervious)	6.39 in
Maximum Retention (Pervious, 20 percent)	1.28 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.89 in
Runoff Volume (Pervious)	0.060 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.060 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.069 hours
Computational Time Increment	0.009 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	6.25 ft ³ /s
Unit peak time, Tp	0.046 hours
Unit receding limb, Tr	0.184 hours
Total unit time, Tb	0.230 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: MRC-P

Scenario: Post-Development 25

Return Event: 25 years

Storm Event: 25-YR

Storm Event	25-YR
Return Event	25 years
Duration	24.000 hours
Depth	5.83 in
Time of Concentration (Composite)	0.069 hours
Area (User Defined)	16,545.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.800	0.00	0.00	0.00	0.00	0.01
11.050	0.01	0.01	0.01	0.01	0.02
11.300	0.02	0.02	0.03	0.03	0.03
11.550	0.05	0.06	0.07	0.08	0.10
11.800	0.13	0.17	0.22	0.34	0.46
12.050	0.73	0.99	0.74	0.47	0.37
12.300	0.32	0.28	0.24	0.24	0.23
12.550	0.19	0.16	0.15	0.15	0.14
12.800	0.13	0.13	0.12	0.12	0.11
13.050	0.10	0.10	0.09	0.09	0.09
13.300	0.09	0.08	0.08	0.07	0.07
13.550	0.07	0.07	0.06	0.06	0.06
13.800	0.06	0.06	0.06	0.06	0.06
14.050	0.06	0.06	0.06	0.05	0.05
14.300	0.05	0.05	0.05	0.05	0.05
14.550	0.05	0.05	0.05	0.05	0.04
14.800	0.04	0.04	0.04	0.04	0.04
15.050	0.04	0.04	0.04	0.04	0.04
15.300	0.04	0.04	0.04	0.04	0.04
15.550	0.04	0.04	0.03	0.03	0.03
15.800	0.03	0.03	0.03	0.03	0.03
16.050	0.03	0.03	0.03	0.03	0.03
16.300	0.03	0.03	0.03	0.03	0.03
16.550	0.03	0.03	0.03	0.03	0.03
16.800	0.03	0.03	0.03	0.03	0.03
17.050	0.03	0.03	0.03	0.03	0.03
17.300	0.03	0.03	0.03	0.03	0.03
17.550	0.03	0.03	0.02	0.02	0.02
17.800	0.02	0.02	0.02	0.02	0.02
18.050	0.02	0.02	0.02	0.02	0.02
18.300	0.02	0.02	0.02	0.02	0.02
18.550	0.02	0.02	0.02	0.02	0.02
18.800	0.02	0.02	0.02	0.02	0.02
19.050	0.02	0.02	0.02	0.02	0.02
19.300	0.02	0.02	0.02	0.02	0.02
19.550	0.02	0.02	0.02	0.02	0.02
19.800	0.02	0.02	0.02	0.02	0.02
20.050	0.02	0.02	0.02	0.02	0.02
20.300	0.02	0.02	0.02	0.02	0.02

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: MRC-P

Scenario: Post-Development 25

Return Event: 25 years

Storm Event: 25-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
20.550	0.02	0.02	0.02	0.02	0.02
20.800	0.02	0.02	0.02	0.02	0.02
21.050	0.02	0.02	0.02	0.02	0.02
21.300	0.02	0.02	0.02	0.02	0.02
21.550	0.02	0.02	0.02	0.02	0.02
21.800	0.02	0.02	0.02	0.02	0.02
22.050	0.02	0.02	0.02	0.02	0.02
22.300	0.02	0.02	0.02	0.02	0.02
22.550	0.02	0.02	0.02	0.02	0.02
22.800	0.02	0.02	0.02	0.02	0.02
23.050	0.02	0.02	0.02	0.02	0.02
23.300	0.02	0.02	0.02	0.02	0.02
23.550	0.02	0.02	0.02	0.02	0.02
23.800	0.02	0.02	0.02	0.02	0.02

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 50 years

Label: MRC-P

Storm Event: 50-YR

Scenario: Post-Development 50

Storm Event	50-YR
Return Event	50 years
Duration	24.000 hours
Depth	6.68 in
Time of Concentration (Composite)	0.069 hours
Area (User Defined)	16,545.000 ft ²
<hr/>	
Computational Time Increment	0.009 hours
Time to Peak (Computed)	12.107 hours
Flow (Peak, Computed)	1.33 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	1.31 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	61.000
Area (User Defined)	16,545.000 ft ²
Maximum Retention (Pervious)	6.39 in
Maximum Retention (Pervious, 20 percent)	1.28 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.47 in
Runoff Volume (Pervious)	0.078 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.078 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.069 hours
Computational Time Increment	0.009 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	6.25 ft ³ /s
Unit peak time, Tp	0.046 hours
Unit receding limb, Tr	0.184 hours
Total unit time, Tb	0.230 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 50 years

Label: MRC-P

Storm Event: 50-YR

Scenario: Post-Development 50

Storm Event	50-YR
Return Event	50 years
Duration	24.000 hours
Depth	6.68 in
Time of Concentration (Composite)	0.069 hours
Area (User Defined)	16,545.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.300	0.00	0.00	0.00	0.00	0.00
10.550	0.00	0.01	0.01	0.01	0.01
10.800	0.01	0.01	0.01	0.02	0.02
11.050	0.02	0.02	0.03	0.03	0.03
11.300	0.04	0.04	0.05	0.05	0.06
11.550	0.08	0.10	0.11	0.13	0.16
11.800	0.19	0.26	0.31	0.48	0.64
12.050	0.98	1.31	0.96	0.61	0.48
12.300	0.42	0.36	0.31	0.30	0.30
12.550	0.24	0.20	0.19	0.18	0.18
12.800	0.17	0.16	0.16	0.15	0.14
13.050	0.13	0.12	0.12	0.12	0.11
13.300	0.11	0.10	0.10	0.09	0.09
13.550	0.09	0.08	0.08	0.08	0.08
13.800	0.08	0.08	0.07	0.07	0.07
14.050	0.07	0.07	0.07	0.07	0.07
14.300	0.07	0.06	0.06	0.06	0.06
14.550	0.06	0.06	0.06	0.06	0.06
14.800	0.05	0.05	0.05	0.05	0.05
15.050	0.05	0.05	0.05	0.05	0.05
15.300	0.05	0.05	0.05	0.04	0.04
15.550	0.04	0.04	0.04	0.04	0.04
15.800	0.04	0.04	0.04	0.04	0.04
16.050	0.04	0.04	0.04	0.04	0.04
16.300	0.04	0.04	0.04	0.04	0.04
16.550	0.04	0.04	0.04	0.04	0.04
16.800	0.04	0.04	0.04	0.04	0.04
17.050	0.03	0.03	0.03	0.03	0.03
17.300	0.03	0.03	0.03	0.03	0.03
17.550	0.03	0.03	0.03	0.03	0.03
17.800	0.03	0.03	0.03	0.03	0.03
18.050	0.03	0.03	0.03	0.03	0.03
18.300	0.03	0.03	0.03	0.03	0.03
18.550	0.03	0.03	0.03	0.03	0.03
18.800	0.03	0.03	0.03	0.03	0.03
19.050	0.03	0.03	0.03	0.03	0.03
19.300	0.03	0.03	0.03	0.03	0.03
19.550	0.03	0.03	0.03	0.03	0.03
19.800	0.03	0.03	0.03	0.03	0.03

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: MRC-P

Scenario: Post-Development 50

Return Event: 50 years

Storm Event: 50-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
20.050	0.02	0.02	0.02	0.02	0.02
20.300	0.02	0.02	0.02	0.02	0.02
20.550	0.02	0.02	0.02	0.02	0.02
20.800	0.02	0.02	0.02	0.02	0.02
21.050	0.02	0.02	0.02	0.02	0.02
21.300	0.02	0.02	0.02	0.02	0.02
21.550	0.02	0.02	0.02	0.02	0.02
21.800	0.02	0.02	0.02	0.02	0.02
22.050	0.02	0.02	0.02	0.02	0.02
22.300	0.02	0.02	0.02	0.02	0.02
22.550	0.02	0.02	0.02	0.02	0.02
22.800	0.02	0.02	0.02	0.02	0.02
23.050	0.02	0.02	0.02	0.02	0.02
23.300	0.02	0.02	0.02	0.02	0.02
23.550	0.02	0.02	0.02	0.02	0.02
23.800	0.02	0.02	0.02	0.02	0.02

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 100 years

Label: MRC-P

Storm Event: 100-YR

Scenario: Post-Development 100

Storm Event	100-YR
Return Event	100 years
Duration	24.000 hours
Depth	7.60 in
Time of Concentration (Composite)	0.069 hours
Area (User Defined)	16,545.000 ft ²
Computational Time Increment	0.009 hours
Time to Peak (Computed)	12.107 hours
Flow (Peak, Computed)	1.70 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	1.68 ft ³ /s
Drainage Area	
SCS CN (Composite)	61.000
Area (User Defined)	16,545.000 ft ²
Maximum Retention (Pervious)	6.39 in
Maximum Retention (Pervious, 20 percent)	1.28 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.14 in
Runoff Volume (Pervious)	0.099 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.099 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.069 hours
Computational Time Increment	0.009 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	6.25 ft ³ /s
Unit peak time, Tp	0.046 hours
Unit receding limb, Tr	0.184 hours
Total unit time, Tb	0.230 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 100 years

Label: MRC-P

Storm Event: 100-YR

Scenario: Post-Development 100

Storm Event	100-YR
Return Event	100 years
Duration	24.000 hours
Depth	7.60 in
Time of Concentration (Composite)	0.069 hours
Area (User Defined)	16,545.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
9.800	0.00	0.00	0.00	0.00	0.00
10.050	0.00	0.00	0.01	0.01	0.01
10.300	0.01	0.01	0.01	0.01	0.01
10.550	0.01	0.01	0.02	0.02	0.02
10.800	0.02	0.02	0.03	0.03	0.03
11.050	0.04	0.04	0.05	0.05	0.06
11.300	0.06	0.07	0.08	0.08	0.09
11.550	0.12	0.15	0.17	0.18	0.23
11.800	0.27	0.35	0.43	0.64	0.84
12.050	1.28	1.68	1.22	0.77	0.60
12.300	0.52	0.44	0.39	0.37	0.37
12.550	0.30	0.25	0.23	0.23	0.22
12.800	0.21	0.20	0.19	0.18	0.17
13.050	0.16	0.15	0.15	0.14	0.14
13.300	0.13	0.13	0.12	0.12	0.11
13.550	0.10	0.10	0.10	0.10	0.09
13.800	0.09	0.09	0.09	0.09	0.09
14.050	0.09	0.09	0.08	0.08	0.08
14.300	0.08	0.08	0.08	0.08	0.07
14.550	0.07	0.07	0.07	0.07	0.07
14.800	0.07	0.06	0.06	0.06	0.06
15.050	0.06	0.06	0.06	0.06	0.06
15.300	0.06	0.06	0.05	0.05	0.05
15.550	0.05	0.05	0.05	0.05	0.05
15.800	0.05	0.05	0.05	0.05	0.05
16.050	0.05	0.05	0.05	0.05	0.05
16.300	0.05	0.05	0.05	0.05	0.05
16.550	0.05	0.05	0.05	0.05	0.04
16.800	0.04	0.04	0.04	0.04	0.04
17.050	0.04	0.04	0.04	0.04	0.04
17.300	0.04	0.04	0.04	0.04	0.04
17.550	0.04	0.04	0.04	0.04	0.04
17.800	0.04	0.04	0.04	0.04	0.03
18.050	0.03	0.03	0.03	0.03	0.03
18.300	0.03	0.03	0.03	0.03	0.03
18.550	0.03	0.03	0.03	0.03	0.03
18.800	0.03	0.03	0.03	0.03	0.03
19.050	0.03	0.03	0.03	0.03	0.03
19.300	0.03	0.03	0.03	0.03	0.03

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: MRC-P

Scenario: Post-Development 100

Return Event: 100 years

Storm Event: 100-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
19.550	0.03	0.03	0.03	0.03	0.03
19.800	0.03	0.03	0.03	0.03	0.03
20.050	0.03	0.03	0.03	0.03	0.03
20.300	0.03	0.03	0.03	0.03	0.03
20.550	0.03	0.03	0.03	0.03	0.03
20.800	0.03	0.03	0.03	0.03	0.03
21.050	0.03	0.03	0.03	0.03	0.03
21.300	0.03	0.03	0.03	0.03	0.03
21.550	0.03	0.03	0.03	0.03	0.03
21.800	0.03	0.03	0.03	0.03	0.03
22.050	0.03	0.03	0.03	0.03	0.03
22.300	0.03	0.03	0.03	0.03	0.03
22.550	0.03	0.03	0.03	0.02	0.02
22.800	0.02	0.02	0.02	0.02	0.02
23.050	0.02	0.02	0.02	0.02	0.02
23.300	0.02	0.02	0.02	0.02	0.02
23.550	0.02	0.02	0.02	0.02	0.02
23.800	0.02	0.02	0.02	0.03	0.03

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 1 years

Label: PO-2-I

Storm Event: 1-YR

Scenario: Post-Development 1

Storm Event	1-YR
Return Event	1 years
Duration	24.000 hours
Depth	2.73 in
Time of Concentration (Composite)	0.063 hours
Area (User Defined)	61,702.000 ft ²
<hr/>	
Computational Time Increment	0.008 hours
Time to Peak (Computed)	12.105 hours
Flow (Peak, Computed)	4.37 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	4.36 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	61,702.000 ft ²
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.50 in
Runoff Volume (Pervious)	0.295 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.295 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.063 hours
Computational Time Increment	0.008 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	25.40 ft ³ /s
Unit peak time, Tp	0.042 hours
Unit receding limb, Tr	0.168 hours
Total unit time, Tb	0.211 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 1 years

Label: PO-2-I

Storm Event: 1-YR

Scenario: Post-Development 1

Storm Event	1-YR
Return Event	1 years
Duration	24.000 hours
Depth	2.73 in
Time of Concentration (Composite)	0.063 hours
Area (User Defined)	61,702.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
1.450	0.00	0.00	0.00	0.00	0.00
1.700	0.00	0.00	0.01	0.01	0.01
1.950	0.01	0.01	0.01	0.01	0.01
2.200	0.01	0.01	0.01	0.01	0.01
2.450	0.01	0.01	0.01	0.01	0.02
2.700	0.02	0.02	0.02	0.02	0.02
2.950	0.02	0.02	0.02	0.02	0.02
3.200	0.02	0.02	0.02	0.02	0.02
3.450	0.02	0.02	0.02	0.02	0.03
3.700	0.03	0.03	0.03	0.03	0.03
3.950	0.03	0.03	0.03	0.03	0.03
4.200	0.03	0.03	0.03	0.03	0.03
4.450	0.03	0.03	0.03	0.03	0.03
4.700	0.03	0.04	0.04	0.04	0.04
4.950	0.04	0.04	0.04	0.04	0.04
5.200	0.04	0.04	0.04	0.04	0.04
5.450	0.04	0.04	0.04	0.04	0.04
5.700	0.04	0.04	0.04	0.04	0.04
5.950	0.04	0.04	0.05	0.05	0.05
6.200	0.05	0.05	0.05	0.05	0.05
6.450	0.05	0.05	0.05	0.05	0.05
6.700	0.06	0.06	0.06	0.06	0.06
6.950	0.06	0.06	0.06	0.06	0.06
7.200	0.06	0.06	0.07	0.07	0.07
7.450	0.07	0.07	0.07	0.07	0.07
7.700	0.07	0.07	0.07	0.07	0.08
7.950	0.08	0.08	0.08	0.08	0.08
8.200	0.08	0.08	0.08	0.08	0.08
8.450	0.09	0.09	0.09	0.09	0.09
8.700	0.09	0.09	0.09	0.09	0.09
8.950	0.09	0.09	0.10	0.10	0.10
9.200	0.11	0.11	0.11	0.11	0.12
9.450	0.12	0.12	0.13	0.13	0.13
9.700	0.13	0.14	0.14	0.14	0.15
9.950	0.15	0.15	0.15	0.16	0.16
10.200	0.16	0.17	0.17	0.17	0.17
10.450	0.18	0.18	0.19	0.20	0.21
10.700	0.22	0.24	0.24	0.26	0.27
10.950	0.28	0.29	0.31	0.33	0.35

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 1 years

Label: PO-2-I

Storm Event: 1-YR

Scenario: Post-Development 1

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.200	0.37	0.39	0.41	0.44	0.45
11.450	0.47	0.48	0.64	0.74	0.78
11.700	0.80	0.97	1.08	1.35	1.51
11.950	2.18	2.60	3.70	4.36	2.79
12.200	1.73	1.33	1.15	0.95	0.84
12.450	0.80	0.78	0.62	0.52	0.49
12.700	0.47	0.45	0.43	0.41	0.39
12.950	0.37	0.35	0.32	0.31	0.29
13.200	0.29	0.27	0.26	0.25	0.24
13.450	0.23	0.22	0.21	0.20	0.19
13.700	0.19	0.19	0.18	0.18	0.18
13.950	0.17	0.17	0.17	0.17	0.16
14.200	0.16	0.16	0.16	0.15	0.15
14.450	0.15	0.14	0.14	0.14	0.13
14.700	0.13	0.13	0.13	0.12	0.12
14.950	0.12	0.11	0.11	0.11	0.11
15.200	0.11	0.11	0.11	0.10	0.10
15.450	0.10	0.10	0.10	0.10	0.10
15.700	0.10	0.10	0.10	0.10	0.10
15.950	0.10	0.09	0.09	0.09	0.09
16.200	0.09	0.09	0.09	0.09	0.09
16.450	0.09	0.09	0.09	0.09	0.08
16.700	0.08	0.08	0.08	0.08	0.08
16.950	0.08	0.08	0.08	0.08	0.08
17.200	0.08	0.08	0.07	0.07	0.07
17.450	0.07	0.07	0.07	0.07	0.07
17.700	0.07	0.07	0.07	0.07	0.07
17.950	0.06	0.06	0.06	0.06	0.06
18.200	0.06	0.06	0.06	0.06	0.06
18.450	0.06	0.06	0.06	0.06	0.06
18.700	0.06	0.06	0.06	0.06	0.06
18.950	0.06	0.06	0.06	0.06	0.06
19.200	0.06	0.06	0.06	0.06	0.06
19.450	0.06	0.06	0.06	0.06	0.06
19.700	0.06	0.06	0.06	0.06	0.06
19.950	0.06	0.06	0.05	0.05	0.05
20.200	0.05	0.05	0.05	0.05	0.05
20.450	0.05	0.05	0.05	0.05	0.05
20.700	0.05	0.05	0.05	0.05	0.05
20.950	0.05	0.05	0.05	0.05	0.05
21.200	0.05	0.05	0.05	0.05	0.05
21.450	0.05	0.05	0.05	0.05	0.05
21.700	0.05	0.05	0.05	0.05	0.05
21.950	0.05	0.05	0.05	0.05	0.05
22.200	0.05	0.05	0.05	0.05	0.05
22.450	0.05	0.05	0.05	0.05	0.04
22.700	0.04	0.04	0.04	0.04	0.04
22.950	0.04	0.04	0.04	0.04	0.04

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: PO-2-I

Scenario: Post-Development 1

Return Event: 1 years

Storm Event: 1-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
23.200	0.04	0.04	0.04	0.04	0.04
23.450	0.04	0.04	0.04	0.04	0.04
23.700	0.04	0.04	0.04	0.04	0.04
23.950	0.05	0.05	(N/A)	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Label: PO-2-I

Scenario: Post-Development 2

Return Event: 2 years

Storm Event: 2-YR

Storm Event	2-YR
Return Event	2 years
Duration	24.000 hours
Depth	3.28 in
Time of Concentration (Composite)	0.063 hours
Area (User Defined)	61,702.000 ft ²
<hr/>	
Computational Time Increment	0.008 hours
Time to Peak (Computed)	12.105 hours
Flow (Peak, Computed)	5.27 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	5.26 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	61,702.000 ft ²
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.05 in
Runoff Volume (Pervious)	0.360 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.359 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.063 hours
Computational Time Increment	0.008 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	25.40 ft ³ /s
Unit peak time, Tp	0.042 hours
Unit receding limb, Tr	0.168 hours
Total unit time, Tb	0.211 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 2 years

Label: PO-2-I

Storm Event: 2-YR

Scenario: Post-Development 2

Storm Event	2-YR
Return Event	2 years
Duration	24.000 hours
Depth	3.28 in
Time of Concentration (Composite)	0.063 hours
Area (User Defined)	61,702.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
1.200	0.00	0.00	0.00	0.00	0.00
1.450	0.00	0.01	0.01	0.01	0.01
1.700	0.01	0.01	0.01	0.01	0.01
1.950	0.01	0.01	0.01	0.02	0.02
2.200	0.02	0.02	0.02	0.02	0.02
2.450	0.02	0.02	0.02	0.02	0.02
2.700	0.02	0.02	0.03	0.03	0.03
2.950	0.03	0.03	0.03	0.03	0.03
3.200	0.03	0.03	0.03	0.03	0.03
3.450	0.03	0.03	0.03	0.04	0.04
3.700	0.04	0.04	0.04	0.04	0.04
3.950	0.04	0.04	0.04	0.04	0.04
4.200	0.04	0.04	0.04	0.04	0.04
4.450	0.04	0.04	0.04	0.05	0.05
4.700	0.05	0.05	0.05	0.05	0.05
4.950	0.05	0.05	0.05	0.05	0.05
5.200	0.05	0.05	0.05	0.05	0.05
5.450	0.05	0.05	0.05	0.05	0.05
5.700	0.06	0.06	0.06	0.06	0.06
5.950	0.06	0.06	0.06	0.06	0.06
6.200	0.06	0.06	0.06	0.06	0.07
6.450	0.07	0.07	0.07	0.07	0.07
6.700	0.07	0.07	0.07	0.07	0.08
6.950	0.08	0.08	0.08	0.08	0.08
7.200	0.08	0.08	0.08	0.08	0.09
7.450	0.09	0.09	0.09	0.09	0.09
7.700	0.09	0.09	0.09	0.09	0.10
7.950	0.10	0.10	0.10	0.10	0.10
8.200	0.10	0.10	0.10	0.10	0.11
8.450	0.11	0.11	0.11	0.11	0.11
8.700	0.11	0.11	0.11	0.11	0.12
8.950	0.12	0.12	0.12	0.12	0.13
9.200	0.13	0.14	0.14	0.14	0.14
9.450	0.15	0.15	0.16	0.16	0.16
9.700	0.17	0.17	0.17	0.18	0.18
9.950	0.18	0.19	0.19	0.19	0.20
10.200	0.20	0.21	0.21	0.21	0.21
10.450	0.22	0.22	0.24	0.25	0.26
10.700	0.27	0.29	0.30	0.32	0.33

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 2 years

Label: PO-2-I

Storm Event: 2-YR

Scenario: Post-Development 2

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.950	0.34	0.35	0.38	0.40	0.43
11.200	0.45	0.48	0.50	0.53	0.55
11.450	0.57	0.59	0.78	0.90	0.95
11.700	0.97	1.18	1.31	1.63	1.83
11.950	2.64	3.15	4.46	5.26	3.36
12.200	2.09	1.61	1.39	1.15	1.01
12.450	0.96	0.94	0.75	0.63	0.59
12.700	0.57	0.54	0.52	0.49	0.47
12.950	0.44	0.42	0.39	0.37	0.35
13.200	0.34	0.33	0.32	0.30	0.29
13.450	0.27	0.26	0.25	0.24	0.23
13.700	0.23	0.22	0.22	0.22	0.22
13.950	0.21	0.21	0.20	0.20	0.20
14.200	0.19	0.19	0.19	0.18	0.18
14.450	0.18	0.17	0.17	0.17	0.16
14.700	0.16	0.15	0.15	0.15	0.14
14.950	0.14	0.14	0.13	0.13	0.13
15.200	0.13	0.13	0.13	0.13	0.13
15.450	0.12	0.12	0.12	0.12	0.12
15.700	0.12	0.12	0.12	0.12	0.12
15.950	0.11	0.11	0.11	0.11	0.11
16.200	0.11	0.11	0.11	0.11	0.11
16.450	0.11	0.10	0.10	0.10	0.10
16.700	0.10	0.10	0.10	0.10	0.10
16.950	0.10	0.10	0.09	0.09	0.09
17.200	0.09	0.09	0.09	0.09	0.09
17.450	0.09	0.09	0.09	0.08	0.08
17.700	0.08	0.08	0.08	0.08	0.08
17.950	0.08	0.08	0.08	0.08	0.07
18.200	0.07	0.07	0.07	0.07	0.07
18.450	0.07	0.07	0.07	0.07	0.07
18.700	0.07	0.07	0.07	0.07	0.07
18.950	0.07	0.07	0.07	0.07	0.07
19.200	0.07	0.07	0.07	0.07	0.07
19.450	0.07	0.07	0.07	0.07	0.07
19.700	0.07	0.07	0.07	0.07	0.07
19.950	0.07	0.07	0.07	0.07	0.07
20.200	0.07	0.07	0.06	0.06	0.06
20.450	0.06	0.06	0.06	0.06	0.06
20.700	0.06	0.06	0.06	0.06	0.06
20.950	0.06	0.06	0.06	0.06	0.06
21.200	0.06	0.06	0.06	0.06	0.06
21.450	0.06	0.06	0.06	0.06	0.06
21.700	0.06	0.06	0.06	0.06	0.06
21.950	0.06	0.06	0.06	0.06	0.06
22.200	0.06	0.06	0.06	0.06	0.06
22.450	0.05	0.05	0.05	0.05	0.05
22.700	0.05	0.05	0.05	0.05	0.05

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: PO-2-I

Scenario: Post-Development 2

Return Event: 2 years

Storm Event: 2-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
22.950	0.05	0.05	0.05	0.05	0.05
23.200	0.05	0.05	0.05	0.05	0.05
23.450	0.05	0.05	0.05	0.05	0.05
23.700	0.05	0.05	0.05	0.05	0.05
23.950	0.05	0.06	(N/A)	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Label: PO-2-I

Scenario: Post-Development 5

Return Event: 5 years

Storm Event: 5-YR

Storm Event	5-YR
Return Event	5 years
Duration	24.000 hours
Depth	4.12 in
Time of Concentration (Composite)	0.063 hours
Area (User Defined)	61,702.000 ft ²
<hr/>	
Computational Time Increment	0.008 hours
Time to Peak (Computed)	12.105 hours
Flow (Peak, Computed)	6.65 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	6.64 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	61,702.000 ft ²
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.89 in
Runoff Volume (Pervious)	0.459 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.458 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.063 hours
Computational Time Increment	0.008 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	25.40 ft ³ /s
Unit peak time, Tp	0.042 hours
Unit receding limb, Tr	0.168 hours
Total unit time, Tb	0.211 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: PO-2-I

Scenario: Post-Development 5

Return Event: 5 years

Storm Event: 5-YR

Storm Event	5-YR
Return Event	5 years
Duration	24.000 hours
Depth	4.12 in
Time of Concentration (Composite)	0.063 hours
Area (User Defined)	61,702.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
0.950	0.00	0.00	0.00	0.00	0.01
1.200	0.01	0.01	0.01	0.01	0.01
1.450	0.01	0.01	0.02	0.02	0.02
1.700	0.02	0.02	0.02	0.02	0.02
1.950	0.02	0.03	0.03	0.03	0.03
2.200	0.03	0.03	0.03	0.03	0.03
2.450	0.03	0.03	0.04	0.04	0.04
2.700	0.04	0.04	0.04	0.04	0.04
2.950	0.04	0.04	0.04	0.04	0.05
3.200	0.05	0.05	0.05	0.05	0.05
3.450	0.05	0.05	0.05	0.05	0.05
3.700	0.05	0.05	0.05	0.05	0.06
3.950	0.06	0.06	0.06	0.06	0.06
4.200	0.06	0.06	0.06	0.06	0.06
4.450	0.06	0.06	0.06	0.06	0.06
4.700	0.06	0.07	0.07	0.07	0.07
4.950	0.07	0.07	0.07	0.07	0.07
5.200	0.07	0.07	0.07	0.07	0.07
5.450	0.07	0.07	0.07	0.07	0.07
5.700	0.08	0.08	0.08	0.08	0.08
5.950	0.08	0.08	0.08	0.08	0.08
6.200	0.08	0.08	0.09	0.09	0.09
6.450	0.09	0.09	0.09	0.09	0.09
6.700	0.10	0.10	0.10	0.10	0.10
6.950	0.10	0.10	0.10	0.11	0.11
7.200	0.11	0.11	0.11	0.11	0.11
7.450	0.11	0.12	0.12	0.12	0.12
7.700	0.12	0.12	0.12	0.12	0.13
7.950	0.13	0.13	0.13	0.13	0.13
8.200	0.13	0.13	0.14	0.14	0.14
8.450	0.14	0.14	0.14	0.14	0.14
8.700	0.15	0.15	0.15	0.15	0.15
8.950	0.15	0.15	0.16	0.16	0.17
9.200	0.17	0.18	0.18	0.18	0.19
9.450	0.19	0.20	0.20	0.21	0.21
9.700	0.21	0.22	0.22	0.23	0.23
9.950	0.24	0.24	0.25	0.25	0.25
10.200	0.26	0.26	0.27	0.27	0.28
10.450	0.28	0.29	0.30	0.32	0.34

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 5 years

Label: PO-2-I

Storm Event: 5-YR

Scenario: Post-Development 5

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.700	0.35	0.37	0.38	0.40	0.42
10.950	0.44	0.45	0.49	0.51	0.55
11.200	0.57	0.61	0.64	0.67	0.70
11.450	0.73	0.75	0.99	1.14	1.20
11.700	1.23	1.50	1.66	2.07	2.32
11.950	3.34	3.98	5.64	6.64	4.24
12.200	2.64	2.02	1.75	1.45	1.27
12.450	1.21	1.19	0.94	0.79	0.74
12.700	0.72	0.68	0.66	0.62	0.59
12.950	0.56	0.53	0.49	0.47	0.45
13.200	0.43	0.41	0.40	0.38	0.37
13.450	0.34	0.33	0.31	0.30	0.29
13.700	0.29	0.28	0.28	0.27	0.27
13.950	0.27	0.26	0.26	0.25	0.25
14.200	0.24	0.24	0.24	0.23	0.23
14.450	0.22	0.22	0.21	0.21	0.20
14.700	0.20	0.19	0.19	0.19	0.18
14.950	0.18	0.17	0.17	0.17	0.16
15.200	0.16	0.16	0.16	0.16	0.16
15.450	0.16	0.16	0.15	0.15	0.15
15.700	0.15	0.15	0.15	0.15	0.15
15.950	0.14	0.14	0.14	0.14	0.14
16.200	0.14	0.14	0.14	0.14	0.13
16.450	0.13	0.13	0.13	0.13	0.13
16.700	0.13	0.13	0.12	0.12	0.12
16.950	0.12	0.12	0.12	0.12	0.12
17.200	0.12	0.11	0.11	0.11	0.11
17.450	0.11	0.11	0.11	0.11	0.10
17.700	0.10	0.10	0.10	0.10	0.10
17.950	0.10	0.10	0.10	0.09	0.09
18.200	0.09	0.09	0.09	0.09	0.09
18.450	0.09	0.09	0.09	0.09	0.09
18.700	0.09	0.09	0.09	0.09	0.09
18.950	0.09	0.09	0.09	0.09	0.09
19.200	0.09	0.09	0.09	0.09	0.09
19.450	0.09	0.09	0.09	0.09	0.09
19.700	0.09	0.09	0.09	0.08	0.08
19.950	0.08	0.08	0.08	0.08	0.08
20.200	0.08	0.08	0.08	0.08	0.08
20.450	0.08	0.08	0.08	0.08	0.08
20.700	0.08	0.08	0.08	0.08	0.08
20.950	0.08	0.08	0.08	0.08	0.08
21.200	0.08	0.08	0.08	0.08	0.08
21.450	0.07	0.07	0.07	0.07	0.07
21.700	0.07	0.07	0.07	0.07	0.07
21.950	0.07	0.07	0.07	0.07	0.07
22.200	0.07	0.07	0.07	0.07	0.07
22.450	0.07	0.07	0.07	0.07	0.07

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: PO-2-I

Scenario: Post-Development 5

Return Event: 5 years

Storm Event: 5-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
22.700	0.07	0.07	0.07	0.07	0.07
22.950	0.07	0.07	0.07	0.07	0.06
23.200	0.06	0.06	0.06	0.06	0.06
23.450	0.06	0.06	0.06	0.06	0.06
23.700	0.06	0.06	0.06	0.06	0.06
23.950	0.07	0.07	(N/A)	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 10 years

Label: PO-2-I

Storm Event: 10-YR

Scenario: Post-Development 10

Storm Event	10-YR
Return Event	10 years
Duration	24.000 hours
Depth	4.82 in
Time of Concentration (Composite)	0.063 hours
Area (User Defined)	61,702.000 ft ²
<hr/>	
Computational Time Increment	0.008 hours
Time to Peak (Computed)	12.105 hours
Flow (Peak, Computed)	7.79 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	7.78 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	61,702.000 ft ²
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	4.58 in
Runoff Volume (Pervious)	0.541 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.541 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.063 hours
Computational Time Increment	0.008 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	25.40 ft ³ /s
Unit peak time, Tp	0.042 hours
Unit receding limb, Tr	0.168 hours
Total unit time, Tb	0.211 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 10 years

Label: PO-2-I

Storm Event: 10-YR

Scenario: Post-Development 10

Storm Event	10-YR
Return Event	10 years
Duration	24.000 hours
Depth	4.82 in
Time of Concentration (Composite)	0.063 hours
Area (User Defined)	61,702.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
0.850	0.00	0.00	0.00	0.01	0.01
1.100	0.01	0.01	0.01	0.01	0.02
1.350	0.02	0.02	0.02	0.02	0.02
1.600	0.03	0.03	0.03	0.03	0.03
1.850	0.03	0.03	0.03	0.04	0.04
2.100	0.04	0.04	0.04	0.04	0.04
2.350	0.04	0.04	0.05	0.05	0.05
2.600	0.05	0.05	0.05	0.05	0.05
2.850	0.05	0.05	0.05	0.06	0.06
3.100	0.06	0.06	0.06	0.06	0.06
3.350	0.06	0.06	0.06	0.06	0.06
3.600	0.07	0.07	0.07	0.07	0.07
3.850	0.07	0.07	0.07	0.07	0.07
4.100	0.07	0.07	0.07	0.07	0.08
4.350	0.08	0.08	0.08	0.08	0.08
4.600	0.08	0.08	0.08	0.08	0.08
4.850	0.08	0.08	0.08	0.08	0.08
5.100	0.09	0.09	0.09	0.09	0.09
5.350	0.09	0.09	0.09	0.09	0.09
5.600	0.09	0.09	0.09	0.09	0.09
5.850	0.09	0.09	0.09	0.10	0.10
6.100	0.10	0.10	0.10	0.10	0.10
6.350	0.11	0.11	0.11	0.11	0.11
6.600	0.11	0.11	0.11	0.12	0.12
6.850	0.12	0.12	0.12	0.12	0.13
7.100	0.13	0.13	0.13	0.13	0.13
7.350	0.13	0.14	0.14	0.14	0.14
7.600	0.14	0.14	0.14	0.15	0.15
7.850	0.15	0.15	0.15	0.15	0.15
8.100	0.16	0.16	0.16	0.16	0.16
8.350	0.16	0.16	0.17	0.17	0.17
8.600	0.17	0.17	0.17	0.18	0.18
8.850	0.18	0.18	0.18	0.18	0.19
9.100	0.19	0.20	0.20	0.21	0.21
9.350	0.22	0.22	0.23	0.23	0.24
9.600	0.24	0.25	0.25	0.26	0.26
9.850	0.27	0.27	0.28	0.28	0.29
10.100	0.29	0.30	0.31	0.31	0.32
10.350	0.32	0.33	0.33	0.34	0.36

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 10 years

Label: PO-2-I

Storm Event: 10-YR

Scenario: Post-Development 10

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.600	0.37	0.40	0.41	0.44	0.45
10.850	0.48	0.49	0.52	0.53	0.57
11.100	0.60	0.65	0.67	0.72	0.75
11.350	0.79	0.82	0.86	0.88	1.16
11.600	1.34	1.41	1.44	1.76	1.95
11.850	2.43	2.72	3.91	4.67	6.61
12.100	7.78	4.97	3.09	2.37	2.05
12.350	1.69	1.49	1.42	1.39	1.10
12.600	0.92	0.87	0.84	0.80	0.77
12.850	0.72	0.70	0.65	0.62	0.58
13.100	0.55	0.52	0.51	0.48	0.47
13.350	0.44	0.43	0.40	0.39	0.36
13.600	0.35	0.34	0.34	0.33	0.33
13.850	0.32	0.32	0.31	0.31	0.30
14.100	0.30	0.29	0.29	0.28	0.28
14.350	0.27	0.26	0.26	0.26	0.25
14.600	0.24	0.24	0.23	0.23	0.22
14.850	0.22	0.21	0.21	0.20	0.20
15.100	0.19	0.19	0.19	0.19	0.19
15.350	0.19	0.18	0.18	0.18	0.18
15.600	0.18	0.18	0.18	0.17	0.17
15.850	0.17	0.17	0.17	0.17	0.17
16.100	0.17	0.16	0.16	0.16	0.16
16.350	0.16	0.16	0.16	0.15	0.15
16.600	0.15	0.15	0.15	0.15	0.15
16.850	0.14	0.14	0.14	0.14	0.14
17.100	0.14	0.14	0.14	0.13	0.13
17.350	0.13	0.13	0.13	0.13	0.13
17.600	0.12	0.12	0.12	0.12	0.12
17.850	0.12	0.12	0.11	0.11	0.11
18.100	0.11	0.11	0.11	0.11	0.11
18.350	0.11	0.11	0.11	0.11	0.11
18.600	0.11	0.11	0.11	0.11	0.11
18.850	0.11	0.11	0.10	0.10	0.10
19.100	0.10	0.10	0.10	0.10	0.10
19.350	0.10	0.10	0.10	0.10	0.10
19.600	0.10	0.10	0.10	0.10	0.10
19.850	0.10	0.10	0.10	0.10	0.10
20.100	0.10	0.10	0.10	0.10	0.10
20.350	0.10	0.09	0.09	0.09	0.09
20.600	0.09	0.09	0.09	0.09	0.09
20.850	0.09	0.09	0.09	0.09	0.09
21.100	0.09	0.09	0.09	0.09	0.09
21.350	0.09	0.09	0.09	0.09	0.09
21.600	0.09	0.09	0.09	0.09	0.09
21.850	0.09	0.08	0.08	0.08	0.08
22.100	0.08	0.08	0.08	0.08	0.08
22.350	0.08	0.08	0.08	0.08	0.08

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: PO-2-I

Scenario: Post-Development 10

Return Event: 10 years

Storm Event: 10-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
22.600	0.08	0.08	0.08	0.08	0.08
22.850	0.08	0.08	0.08	0.08	0.08
23.100	0.08	0.08	0.08	0.08	0.07
23.350	0.07	0.07	0.07	0.07	0.07
23.600	0.07	0.07	0.07	0.07	0.07
23.850	0.07	0.07	0.08	0.09	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 25 years

Label: PO-2-I

Storm Event: 25-YR

Scenario: Post-Development 25

Storm Event	25-YR
Return Event	25 years
Duration	24.000 hours
Depth	5.83 in
Time of Concentration (Composite)	0.063 hours
Area (User Defined)	61,702.000 ft ²
<hr/>	
Computational Time Increment	0.008 hours
Time to Peak (Computed)	12.105 hours
Flow (Peak, Computed)	9.44 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	9.42 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	61,702.000 ft ²
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.59 in
Runoff Volume (Pervious)	0.660 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.660 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.063 hours
Computational Time Increment	0.008 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	25.40 ft ³ /s
Unit peak time, Tp	0.042 hours
Unit receding limb, Tr	0.168 hours
Total unit time, Tb	0.211 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 25 years

Label: PO-2-I

Storm Event: 25-YR

Scenario: Post-Development 25

Storm Event	25-YR
Return Event	25 years
Duration	24.000 hours
Depth	5.83 in
Time of Concentration (Composite)	0.063 hours
Area (User Defined)	61,702.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
0.700	0.00	0.00	0.01	0.01	0.01
0.950	0.01	0.02	0.02	0.02	0.02
1.200	0.02	0.03	0.03	0.03	0.03
1.450	0.03	0.04	0.04	0.04	0.04
1.700	0.04	0.04	0.05	0.05	0.05
1.950	0.05	0.05	0.05	0.05	0.06
2.200	0.06	0.06	0.06	0.06	0.06
2.450	0.06	0.06	0.07	0.07	0.07
2.700	0.07	0.07	0.07	0.07	0.07
2.950	0.07	0.07	0.08	0.08	0.08
3.200	0.08	0.08	0.08	0.08	0.08
3.450	0.08	0.08	0.09	0.09	0.09
3.700	0.09	0.09	0.09	0.09	0.09
3.950	0.09	0.09	0.09	0.09	0.10
4.200	0.10	0.10	0.10	0.10	0.10
4.450	0.10	0.10	0.10	0.10	0.10
4.700	0.10	0.10	0.10	0.11	0.11
4.950	0.11	0.11	0.11	0.11	0.11
5.200	0.11	0.11	0.11	0.11	0.11
5.450	0.11	0.11	0.11	0.11	0.12
5.700	0.12	0.12	0.12	0.12	0.12
5.950	0.12	0.12	0.12	0.12	0.12
6.200	0.13	0.13	0.13	0.13	0.13
6.450	0.14	0.14	0.14	0.14	0.14
6.700	0.14	0.15	0.15	0.15	0.15
6.950	0.15	0.15	0.16	0.16	0.16
7.200	0.16	0.16	0.16	0.17	0.17
7.450	0.17	0.17	0.17	0.17	0.18
7.700	0.18	0.18	0.18	0.18	0.19
7.950	0.19	0.19	0.19	0.19	0.19
8.200	0.20	0.20	0.20	0.20	0.20
8.450	0.20	0.21	0.21	0.21	0.21
8.700	0.21	0.22	0.22	0.22	0.22
8.950	0.22	0.22	0.23	0.24	0.24
9.200	0.25	0.26	0.26	0.27	0.27
9.450	0.28	0.28	0.29	0.30	0.31
9.700	0.31	0.32	0.32	0.33	0.34
9.950	0.34	0.35	0.36	0.36	0.37
10.200	0.37	0.38	0.39	0.39	0.40

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 25 years

Label: PO-2-I

Storm Event: 25-YR

Scenario: Post-Development 25

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.450	0.41	0.41	0.44	0.46	0.49
10.700	0.50	0.53	0.55	0.58	0.60
10.950	0.63	0.65	0.70	0.73	0.79
11.200	0.82	0.88	0.91	0.97	1.00
11.450	1.04	1.07	1.41	1.63	1.71
11.700	1.75	2.13	2.37	2.95	3.30
11.950	4.75	5.66	8.01	9.42	6.02
12.200	3.74	2.87	2.48	2.05	1.81
12.450	1.72	1.68	1.34	1.12	1.05
12.700	1.02	0.97	0.93	0.88	0.84
12.950	0.79	0.75	0.70	0.66	0.63
13.200	0.61	0.58	0.57	0.54	0.52
13.450	0.49	0.47	0.44	0.42	0.41
13.700	0.41	0.40	0.40	0.39	0.38
13.950	0.38	0.37	0.36	0.36	0.35
14.200	0.35	0.34	0.33	0.33	0.32
14.450	0.31	0.31	0.30	0.30	0.29
14.700	0.28	0.28	0.27	0.26	0.26
14.950	0.25	0.25	0.24	0.23	0.23
15.200	0.23	0.23	0.23	0.22	0.22
15.450	0.22	0.22	0.22	0.22	0.21
15.700	0.21	0.21	0.21	0.21	0.21
15.950	0.20	0.20	0.20	0.20	0.20
16.200	0.20	0.19	0.19	0.19	0.19
16.450	0.19	0.19	0.18	0.18	0.18
16.700	0.18	0.18	0.18	0.17	0.17
16.950	0.17	0.17	0.17	0.17	0.17
17.200	0.16	0.16	0.16	0.16	0.16
17.450	0.16	0.15	0.15	0.15	0.15
17.700	0.15	0.15	0.14	0.14	0.14
17.950	0.14	0.14	0.14	0.13	0.13
18.200	0.13	0.13	0.13	0.13	0.13
18.450	0.13	0.13	0.13	0.13	0.13
18.700	0.13	0.13	0.13	0.13	0.13
18.950	0.13	0.13	0.13	0.13	0.13
19.200	0.12	0.12	0.12	0.12	0.12
19.450	0.12	0.12	0.12	0.12	0.12
19.700	0.12	0.12	0.12	0.12	0.12
19.950	0.12	0.12	0.12	0.12	0.12
20.200	0.12	0.12	0.12	0.12	0.11
20.450	0.11	0.11	0.11	0.11	0.11
20.700	0.11	0.11	0.11	0.11	0.11
20.950	0.11	0.11	0.11	0.11	0.11
21.200	0.11	0.11	0.11	0.11	0.11
21.450	0.11	0.11	0.11	0.10	0.10
21.700	0.10	0.10	0.10	0.10	0.10
21.950	0.10	0.10	0.10	0.10	0.10
22.200	0.10	0.10	0.10	0.10	0.10

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: PO-2-I

Scenario: Post-Development 25

Return Event: 25 years

Storm Event: 25-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
22.450	0.10	0.10	0.10	0.10	0.10
22.700	0.10	0.10	0.09	0.09	0.09
22.950	0.09	0.09	0.09	0.09	0.09
23.200	0.09	0.09	0.09	0.09	0.09
23.450	0.09	0.09	0.09	0.09	0.09
23.700	0.09	0.09	0.09	0.09	0.09
23.950	0.10	0.11	(N/A)	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 50 years

Label: PO-2-I

Storm Event: 50-YR

Scenario: Post-Development 50

Storm Event	50-YR
Return Event	50 years
Duration	24.000 hours
Depth	6.68 in
Time of Concentration (Composite)	0.063 hours
Area (User Defined)	61,702.000 ft ²
<hr/>	
Computational Time Increment	0.008 hours
Time to Peak (Computed)	12.105 hours
Flow (Peak, Computed)	10.82 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	10.81 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	61,702.000 ft ²
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.44 in
Runoff Volume (Pervious)	0.760 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.760 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.063 hours
Computational Time Increment	0.008 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	25.40 ft ³ /s
Unit peak time, Tp	0.042 hours
Unit receding limb, Tr	0.168 hours
Total unit time, Tb	0.211 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 50 years

Label: PO-2-I

Storm Event: 50-YR

Scenario: Post-Development 50

Storm Event	50-YR
Return Event	50 years
Duration	24.000 hours
Depth	6.68 in
Time of Concentration (Composite)	0.063 hours
Area (User Defined)	61,702.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
0.600	0.00	0.00	0.01	0.01	0.01
0.850	0.02	0.02	0.02	0.02	0.03
1.100	0.03	0.03	0.03	0.04	0.04
1.350	0.04	0.04	0.05	0.05	0.05
1.600	0.05	0.05	0.06	0.06	0.06
1.850	0.06	0.06	0.06	0.07	0.07
2.100	0.07	0.07	0.07	0.07	0.07
2.350	0.08	0.08	0.08	0.08	0.08
2.600	0.08	0.08	0.08	0.09	0.09
2.850	0.09	0.09	0.09	0.09	0.09
3.100	0.09	0.09	0.10	0.10	0.10
3.350	0.10	0.10	0.10	0.10	0.10
3.600	0.10	0.10	0.11	0.11	0.11
3.850	0.11	0.11	0.11	0.11	0.11
4.100	0.11	0.11	0.11	0.12	0.12
4.350	0.12	0.12	0.12	0.12	0.12
4.600	0.12	0.12	0.12	0.12	0.12
4.850	0.12	0.12	0.13	0.13	0.13
5.100	0.13	0.13	0.13	0.13	0.13
5.350	0.13	0.13	0.13	0.13	0.13
5.600	0.13	0.14	0.14	0.14	0.14
5.850	0.14	0.14	0.14	0.14	0.14
6.100	0.14	0.15	0.15	0.15	0.15
6.350	0.15	0.16	0.16	0.16	0.16
6.600	0.16	0.17	0.17	0.17	0.17
6.850	0.17	0.18	0.18	0.18	0.18
7.100	0.18	0.19	0.19	0.19	0.19
7.350	0.19	0.20	0.20	0.20	0.20
7.600	0.20	0.21	0.21	0.21	0.21
7.850	0.21	0.22	0.22	0.22	0.22
8.100	0.22	0.23	0.23	0.23	0.23
8.350	0.23	0.23	0.24	0.24	0.24
8.600	0.24	0.25	0.25	0.25	0.25
8.850	0.25	0.25	0.26	0.26	0.27
9.100	0.27	0.28	0.29	0.30	0.30
9.350	0.31	0.31	0.32	0.33	0.34
9.600	0.34	0.35	0.36	0.37	0.37
9.850	0.38	0.39	0.40	0.40	0.41
10.100	0.41	0.42	0.43	0.44	0.44

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 50 years

Label: PO-2-I

Storm Event: 50-YR

Scenario: Post-Development 50

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.350	0.45	0.46	0.47	0.47	0.50
10.600	0.52	0.56	0.58	0.61	0.63
10.850	0.67	0.69	0.72	0.74	0.80
11.100	0.84	0.91	0.94	1.01	1.05
11.350	1.11	1.15	1.20	1.23	1.62
11.600	1.87	1.97	2.01	2.45	2.72
11.850	3.38	3.79	5.45	6.49	9.18
12.100	10.81	6.90	4.29	3.29	2.84
12.350	2.35	2.07	1.97	1.93	1.53
12.600	1.28	1.20	1.17	1.11	1.07
12.850	1.00	0.97	0.90	0.86	0.80
13.100	0.76	0.72	0.70	0.67	0.65
13.350	0.61	0.59	0.56	0.54	0.51
13.600	0.49	0.47	0.47	0.46	0.45
13.850	0.44	0.44	0.43	0.42	0.42
14.100	0.41	0.40	0.40	0.39	0.38
14.350	0.37	0.37	0.36	0.35	0.34
14.600	0.34	0.33	0.32	0.32	0.31
14.850	0.30	0.30	0.29	0.28	0.27
15.100	0.27	0.27	0.26	0.26	0.26
15.350	0.26	0.26	0.25	0.25	0.25
15.600	0.25	0.25	0.24	0.24	0.24
15.850	0.24	0.24	0.23	0.23	0.23
16.100	0.23	0.23	0.23	0.22	0.22
16.350	0.22	0.22	0.22	0.21	0.21
16.600	0.21	0.21	0.21	0.20	0.20
16.850	0.20	0.20	0.20	0.20	0.19
17.100	0.19	0.19	0.19	0.19	0.18
17.350	0.18	0.18	0.18	0.18	0.17
17.600	0.17	0.17	0.17	0.17	0.17
17.850	0.16	0.16	0.16	0.16	0.16
18.100	0.15	0.15	0.15	0.15	0.15
18.350	0.15	0.15	0.15	0.15	0.15
18.600	0.15	0.15	0.15	0.15	0.15
18.850	0.15	0.15	0.15	0.14	0.14
19.100	0.14	0.14	0.14	0.14	0.14
19.350	0.14	0.14	0.14	0.14	0.14
19.600	0.14	0.14	0.14	0.14	0.14
19.850	0.14	0.14	0.14	0.14	0.13
20.100	0.13	0.13	0.13	0.13	0.13
20.350	0.13	0.13	0.13	0.13	0.13
20.600	0.13	0.13	0.13	0.13	0.13
20.850	0.13	0.13	0.13	0.13	0.13
21.100	0.12	0.12	0.12	0.12	0.12
21.350	0.12	0.12	0.12	0.12	0.12
21.600	0.12	0.12	0.12	0.12	0.12
21.850	0.12	0.12	0.12	0.12	0.12
22.100	0.12	0.12	0.12	0.11	0.11

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: PO-2-I

Scenario: Post-Development 50

Return Event: 50 years

Storm Event: 50-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
22.350	0.11	0.11	0.11	0.11	0.11
22.600	0.11	0.11	0.11	0.11	0.11
22.850	0.11	0.11	0.11	0.11	0.11
23.100	0.11	0.11	0.10	0.10	0.10
23.350	0.10	0.10	0.10	0.10	0.10
23.600	0.10	0.10	0.10	0.10	0.10
23.850	0.10	0.10	0.11	0.12	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 100 years

Label: PO-2-I

Storm Event: 100-YR

Scenario: Post-Development 100

Storm Event	100-YR
Return Event	100 years
Duration	24.000 hours
Depth	7.60 in
Time of Concentration (Composite)	0.063 hours
Area (User Defined)	61,702.000 ft ²
<hr/>	
Computational Time Increment	0.008 hours
Time to Peak (Computed)	12.105 hours
Flow (Peak, Computed)	12.32 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	12.30 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	61,702.000 ft ²
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	7.36 in
Runoff Volume (Pervious)	0.869 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.868 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.063 hours
Computational Time Increment	0.008 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	25.40 ft ³ /s
Unit peak time, Tp	0.042 hours
Unit receding limb, Tr	0.168 hours
Total unit time, Tb	0.211 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 100 years

Label: PO-2-I

Storm Event: 100-YR

Scenario: Post-Development 100

Storm Event	100-YR
Return Event	100 years
Duration	24.000 hours
Depth	7.60 in
Time of Concentration (Composite)	0.063 hours
Area (User Defined)	61,702.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
0.500	0.00	0.00	0.01	0.01	0.01
0.750	0.02	0.02	0.02	0.03	0.03
1.000	0.03	0.04	0.04	0.04	0.05
1.250	0.05	0.05	0.05	0.06	0.06
1.500	0.06	0.06	0.07	0.07	0.07
1.750	0.07	0.07	0.08	0.08	0.08
2.000	0.08	0.08	0.08	0.09	0.09
2.250	0.09	0.09	0.09	0.09	0.10
2.500	0.10	0.10	0.10	0.10	0.10
2.750	0.10	0.11	0.11	0.11	0.11
3.000	0.11	0.11	0.11	0.11	0.11
3.250	0.12	0.12	0.12	0.12	0.12
3.500	0.12	0.12	0.12	0.12	0.12
3.750	0.13	0.13	0.13	0.13	0.13
4.000	0.13	0.13	0.13	0.13	0.13
4.250	0.14	0.14	0.14	0.14	0.14
4.500	0.14	0.14	0.14	0.14	0.14
4.750	0.14	0.14	0.14	0.15	0.15
5.000	0.15	0.15	0.15	0.15	0.15
5.250	0.15	0.15	0.15	0.15	0.15
5.500	0.15	0.16	0.16	0.16	0.16
5.750	0.16	0.16	0.16	0.16	0.16
6.000	0.16	0.16	0.17	0.17	0.17
6.250	0.17	0.18	0.18	0.18	0.18
6.500	0.18	0.19	0.19	0.19	0.19
6.750	0.20	0.20	0.20	0.20	0.20
7.000	0.21	0.21	0.21	0.21	0.22
7.250	0.22	0.22	0.22	0.22	0.23
7.500	0.23	0.23	0.23	0.24	0.24
7.750	0.24	0.24	0.25	0.25	0.25
8.000	0.25	0.25	0.26	0.26	0.26
8.250	0.26	0.26	0.27	0.27	0.27
8.500	0.27	0.28	0.28	0.28	0.28
8.750	0.29	0.29	0.29	0.29	0.29
9.000	0.30	0.31	0.31	0.32	0.33
9.250	0.34	0.34	0.35	0.36	0.37
9.500	0.38	0.39	0.39	0.40	0.41
9.750	0.42	0.42	0.44	0.44	0.45
10.000	0.46	0.47	0.47	0.48	0.49

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 100 years

Label: PO-2-I

Storm Event: 100-YR

Scenario: Post-Development 100

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.250	0.50	0.51	0.52	0.52	0.53
10.500	0.54	0.58	0.60	0.64	0.66
10.750	0.70	0.72	0.76	0.79	0.82
11.000	0.85	0.92	0.96	1.03	1.08
11.250	1.15	1.19	1.27	1.31	1.37
11.500	1.40	1.85	2.13	2.24	2.29
11.750	2.79	3.10	3.85	4.31	6.20
12.000	7.39	10.46	12.30	7.85	4.88
12.250	3.75	3.23	2.68	2.36	2.25
12.500	2.20	1.74	1.46	1.37	1.33
12.750	1.26	1.22	1.14	1.10	1.03
13.000	0.98	0.91	0.87	0.82	0.80
13.250	0.76	0.74	0.70	0.68	0.64
13.500	0.61	0.58	0.55	0.54	0.53
13.750	0.52	0.52	0.51	0.50	0.49
14.000	0.48	0.47	0.47	0.46	0.45
14.250	0.44	0.43	0.42	0.42	0.41
14.500	0.40	0.39	0.39	0.38	0.37
14.750	0.36	0.35	0.34	0.34	0.33
15.000	0.32	0.31	0.31	0.30	0.30
15.250	0.30	0.30	0.29	0.29	0.29
15.500	0.29	0.28	0.28	0.28	0.28
15.750	0.28	0.27	0.27	0.27	0.27
16.000	0.26	0.26	0.26	0.26	0.26
16.250	0.25	0.25	0.25	0.25	0.25
16.500	0.24	0.24	0.24	0.24	0.24
16.750	0.23	0.23	0.23	0.23	0.22
17.000	0.22	0.22	0.22	0.22	0.21
17.250	0.21	0.21	0.21	0.21	0.20
17.500	0.20	0.20	0.20	0.19	0.19
17.750	0.19	0.19	0.19	0.18	0.18
18.000	0.18	0.18	0.17	0.17	0.17
18.250	0.17	0.17	0.17	0.17	0.17
18.500	0.17	0.17	0.17	0.17	0.17
18.750	0.17	0.17	0.17	0.17	0.17
19.000	0.16	0.16	0.16	0.16	0.16
19.250	0.16	0.16	0.16	0.16	0.16
19.500	0.16	0.16	0.16	0.16	0.16
19.750	0.16	0.16	0.16	0.16	0.15
20.000	0.15	0.15	0.15	0.15	0.15
20.250	0.15	0.15	0.15	0.15	0.15
20.500	0.15	0.15	0.15	0.15	0.15
20.750	0.15	0.15	0.14	0.14	0.14
21.000	0.14	0.14	0.14	0.14	0.14
21.250	0.14	0.14	0.14	0.14	0.14
21.500	0.14	0.14	0.14	0.14	0.14
21.750	0.14	0.14	0.13	0.13	0.13
22.000	0.13	0.13	0.13	0.13	0.13

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: PO-2-I

Scenario: Post-Development 100

Return Event: 100 years

Storm Event: 100-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
22.250	0.13	0.13	0.13	0.13	0.13
22.500	0.13	0.13	0.13	0.13	0.12
22.750	0.12	0.12	0.12	0.12	0.12
23.000	0.12	0.12	0.12	0.12	0.12
23.250	0.12	0.12	0.12	0.12	0.12
23.500	0.12	0.12	0.12	0.11	0.11
23.750	0.11	0.11	0.11	0.11	0.13
24.000	0.14	(N/A)	(N/A)	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Label: PO-2-P

Scenario: Post-Development 1

Return Event: 1 years

Storm Event: 1-YR

Storm Event	1-YR
Return Event	1 years
Duration	24.000 hours
Depth	2.73 in
Time of Concentration (Composite)	0.063 hours
Area (User Defined)	6,160.000 ft ²
<hr/>	
Computational Time Increment	0.008 hours
Time to Peak (Computed)	12.121 hours
Flow (Peak, Computed)	0.03 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.02 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	61.000
Area (User Defined)	6,160.000 ft ²
Maximum Retention (Pervious)	6.39 in
Maximum Retention (Pervious, 20 percent)	1.28 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.27 in
Runoff Volume (Pervious)	0.003 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.003 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.063 hours
Computational Time Increment	0.008 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	2.54 ft ³ /s
Unit peak time, Tp	0.042 hours
Unit receding limb, Tr	0.168 hours
Total unit time, Tb	0.211 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 1 years

Label: PO-2-P

Storm Event: 1-YR

Scenario: Post-Development 1

Storm Event	1-YR
Return Event	1 years
Duration	24.000 hours
Depth	2.73 in
Time of Concentration (Composite)	0.063 hours
Area (User Defined)	6,160.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
12.000	0.00	0.01	0.02	0.02	0.02
12.250	0.02	0.02	0.01	0.01	0.01
12.500	0.01	0.01	0.01	0.01	0.01
12.750	0.01	0.01	0.01	0.01	0.01
13.000	0.01	0.01	0.01	0.01	0.01
13.250	0.01	0.01	0.01	0.01	0.01
13.500	0.01	0.00	0.00	0.00	0.00
13.750	0.00	0.00	0.00	0.00	0.00
14.000	0.00	0.00	0.00	0.00	0.00
14.250	0.00	0.00	0.00	0.00	0.00
14.500	0.00	0.00	0.00	0.00	0.00
14.750	0.00	0.00	0.00	0.00	0.00
15.000	0.00	0.00	0.00	0.00	0.00
15.250	0.00	0.00	0.00	0.00	0.00
15.500	0.00	0.00	0.00	0.00	0.00
15.750	0.00	0.00	0.00	0.00	0.00
16.000	0.00	0.00	0.00	0.00	0.00
16.250	0.00	0.00	0.00	0.00	0.00
16.500	0.00	0.00	0.00	0.00	0.00
16.750	0.00	0.00	0.00	0.00	0.00
17.000	0.00	0.00	0.00	0.00	0.00
17.250	0.00	0.00	0.00	0.00	0.00
17.500	0.00	0.00	0.00	0.00	0.00
17.750	0.00	0.00	0.00	0.00	0.00
18.000	0.00	0.00	0.00	0.00	0.00
18.250	0.00	0.00	0.00	0.00	0.00
18.500	0.00	0.00	0.00	0.00	0.00
18.750	0.00	0.00	0.00	0.00	0.00
19.000	0.00	0.00	0.00	0.00	0.00
19.250	0.00	0.00	0.00	0.00	0.00
19.500	0.00	0.00	0.00	0.00	0.00
19.750	0.00	0.00	0.00	0.00	0.00
20.000	0.00	0.00	0.00	0.00	0.00
20.250	0.00	0.00	0.00	0.00	0.00
20.500	0.00	0.00	0.00	0.00	0.00
20.750	0.00	0.00	0.00	0.00	0.00
21.000	0.00	0.00	0.00	0.00	0.00
21.250	0.00	0.00	0.00	0.00	0.00
21.500	0.00	0.00	0.00	0.00	0.00

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: PO-2-P

Scenario: Post-Development 1

Return Event: 1 years

Storm Event: 1-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
21.750	0.00	0.00	0.00	0.00	0.00
22.000	0.00	0.00	0.00	0.00	0.00
22.250	0.00	0.00	0.00	0.00	0.00
22.500	0.00	0.00	0.00	0.00	0.00
22.750	0.00	0.00	0.00	0.00	0.00
23.000	0.00	0.00	0.00	0.00	0.00
23.250	0.00	0.00	0.00	0.00	0.00
23.500	0.00	0.00	0.00	0.00	0.00
23.750	0.00	0.00	0.00	0.00	0.00
24.000	0.00	(N/A)	(N/A)	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Label: PO-2-P

Scenario: Post-Development 2

Return Event: 2 years

Storm Event: 2-YR

Storm Event	2-YR
Return Event	2 years
Duration	24.000 hours
Depth	3.28 in
Time of Concentration (Composite)	0.063 hours
Area (User Defined)	6,160.000 ft ²
<hr/>	
Computational Time Increment	0.008 hours
Time to Peak (Computed)	12.113 hours
Flow (Peak, Computed)	0.08 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.07 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	61.000
Area (User Defined)	6,160.000 ft ²
Maximum Retention (Pervious)	6.39 in
Maximum Retention (Pervious, 20 percent)	1.28 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.48 in
Runoff Volume (Pervious)	0.006 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.006 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.063 hours
Computational Time Increment	0.008 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	2.54 ft ³ /s
Unit peak time, Tp	0.042 hours
Unit receding limb, Tr	0.168 hours
Total unit time, Tb	0.211 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 2 years

Label: PO-2-P

Storm Event: 2-YR

Scenario: Post-Development 2

Storm Event	2-YR
Return Event	2 years
Duration	24.000 hours
Depth	3.28 in
Time of Concentration (Composite)	0.063 hours
Area (User Defined)	6,160.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.900	0.00	0.01	0.02	0.04	0.07
12.150	0.06	0.04	0.03	0.03	0.03
12.400	0.02	0.02	0.02	0.02	0.02
12.650	0.02	0.02	0.01	0.01	0.01
12.900	0.01	0.01	0.01	0.01	0.01
13.150	0.01	0.01	0.01	0.01	0.01
13.400	0.01	0.01	0.01	0.01	0.01
13.650	0.01	0.01	0.01	0.01	0.01
13.900	0.01	0.01	0.01	0.01	0.01
14.150	0.01	0.01	0.01	0.01	0.01
14.400	0.01	0.01	0.01	0.01	0.01
14.650	0.01	0.01	0.01	0.01	0.01
14.900	0.01	0.00	0.00	0.00	0.00
15.150	0.00	0.00	0.00	0.00	0.00
15.400	0.00	0.00	0.00	0.00	0.00
15.650	0.00	0.00	0.00	0.00	0.00
15.900	0.00	0.00	0.00	0.00	0.00
16.150	0.00	0.00	0.00	0.00	0.00
16.400	0.00	0.00	0.00	0.00	0.00
16.650	0.00	0.00	0.00	0.00	0.00
16.900	0.00	0.00	0.00	0.00	0.00
17.150	0.00	0.00	0.00	0.00	0.00
17.400	0.00	0.00	0.00	0.00	0.00
17.650	0.00	0.00	0.00	0.00	0.00
17.900	0.00	0.00	0.00	0.00	0.00
18.150	0.00	0.00	0.00	0.00	0.00
18.400	0.00	0.00	0.00	0.00	0.00
18.650	0.00	0.00	0.00	0.00	0.00
18.900	0.00	0.00	0.00	0.00	0.00
19.150	0.00	0.00	0.00	0.00	0.00
19.400	0.00	0.00	0.00	0.00	0.00
19.650	0.00	0.00	0.00	0.00	0.00
19.900	0.00	0.00	0.00	0.00	0.00
20.150	0.00	0.00	0.00	0.00	0.00
20.400	0.00	0.00	0.00	0.00	0.00
20.650	0.00	0.00	0.00	0.00	0.00
20.900	0.00	0.00	0.00	0.00	0.00
21.150	0.00	0.00	0.00	0.00	0.00
21.400	0.00	0.00	0.00	0.00	0.00

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: PO-2-P

Scenario: Post-Development 2

Return Event: 2 years

Storm Event: 2-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
21.650	0.00	0.00	0.00	0.00	0.00
21.900	0.00	0.00	0.00	0.00	0.00
22.150	0.00	0.00	0.00	0.00	0.00
22.400	0.00	0.00	0.00	0.00	0.00
22.650	0.00	0.00	0.00	0.00	0.00
22.900	0.00	0.00	0.00	0.00	0.00
23.150	0.00	0.00	0.00	0.00	0.00
23.400	0.00	0.00	0.00	0.00	0.00
23.650	0.00	0.00	0.00	0.00	0.00
23.900	0.00	0.00	0.00	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 5 years

Label: PO-2-P

Storm Event: 5-YR

Scenario: Post-Development 5

Storm Event	5-YR
Return Event	5 years
Duration	24.000 hours
Depth	4.12 in
Time of Concentration (Composite)	0.063 hours
Area (User Defined)	6,160.000 ft ²
<hr/>	
Computational Time Increment	0.008 hours
Time to Peak (Computed)	12.113 hours
Flow (Peak, Computed)	0.16 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.16 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	61.000
Area (User Defined)	6,160.000 ft ²
Maximum Retention (Pervious)	6.39 in
Maximum Retention (Pervious, 20 percent)	1.28 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.88 in
Runoff Volume (Pervious)	0.010 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.010 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.063 hours
Computational Time Increment	0.008 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	2.54 ft ³ /s
Unit peak time, Tp	0.042 hours
Unit receding limb, Tr	0.168 hours
Total unit time, Tb	0.211 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 5 years

Label: PO-2-P

Storm Event: 5-YR

Scenario: Post-Development 5

Storm Event	5-YR
Return Event	5 years
Duration	24.000 hours
Depth	4.12 in
Time of Concentration (Composite)	0.063 hours
Area (User Defined)	6,160.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.650	0.00	0.00	0.01	0.01	0.01
11.900	0.02	0.04	0.06	0.11	0.16
12.150	0.12	0.08	0.06	0.06	0.05
12.400	0.04	0.04	0.04	0.03	0.03
12.650	0.03	0.03	0.03	0.03	0.02
12.900	0.02	0.02	0.02	0.02	0.02
13.150	0.02	0.02	0.02	0.02	0.02
13.400	0.02	0.01	0.01	0.01	0.01
13.650	0.01	0.01	0.01	0.01	0.01
13.900	0.01	0.01	0.01	0.01	0.01
14.150	0.01	0.01	0.01	0.01	0.01
14.400	0.01	0.01	0.01	0.01	0.01
14.650	0.01	0.01	0.01	0.01	0.01
14.900	0.01	0.01	0.01	0.01	0.01
15.150	0.01	0.01	0.01	0.01	0.01
15.400	0.01	0.01	0.01	0.01	0.01
15.650	0.01	0.01	0.01	0.01	0.01
15.900	0.01	0.01	0.01	0.01	0.01
16.150	0.01	0.01	0.01	0.01	0.01
16.400	0.01	0.01	0.01	0.01	0.01
16.650	0.01	0.01	0.01	0.01	0.01
16.900	0.01	0.01	0.01	0.01	0.01
17.150	0.01	0.01	0.01	0.01	0.01
17.400	0.01	0.01	0.01	0.01	0.01
17.650	0.01	0.01	0.00	0.00	0.00
17.900	0.00	0.00	0.00	0.00	0.00
18.150	0.00	0.00	0.00	0.00	0.00
18.400	0.00	0.00	0.00	0.00	0.00
18.650	0.00	0.00	0.00	0.00	0.00
18.900	0.00	0.00	0.00	0.00	0.00
19.150	0.00	0.00	0.00	0.00	0.00
19.400	0.00	0.00	0.00	0.00	0.00
19.650	0.00	0.00	0.00	0.00	0.00
19.900	0.00	0.00	0.00	0.00	0.00
20.150	0.00	0.00	0.00	0.00	0.00
20.400	0.00	0.00	0.00	0.00	0.00
20.650	0.00	0.00	0.00	0.00	0.00
20.900	0.00	0.00	0.00	0.00	0.00
21.150	0.00	0.00	0.00	0.00	0.00

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: PO-2-P

Scenario: Post-Development 5

Return Event: 5 years

Storm Event: 5-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
21.400	0.00	0.00	0.00	0.00	0.00
21.650	0.00	0.00	0.00	0.00	0.00
21.900	0.00	0.00	0.00	0.00	0.00
22.150	0.00	0.00	0.00	0.00	0.00
22.400	0.00	0.00	0.00	0.00	0.00
22.650	0.00	0.00	0.00	0.00	0.00
22.900	0.00	0.00	0.00	0.00	0.00
23.150	0.00	0.00	0.00	0.00	0.00
23.400	0.00	0.00	0.00	0.00	0.00
23.650	0.00	0.00	0.00	0.00	0.00
23.900	0.00	0.00	0.00	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 10 years

Label: PO-2-P

Storm Event: 10-YR

Scenario: Post-Development 10

Storm Event	10-YR
Return Event	10 years
Duration	24.000 hours
Depth	4.82 in
Time of Concentration (Composite)	0.063 hours
Area (User Defined)	6,160.000 ft ²
<hr/>	
Computational Time Increment	0.008 hours
Time to Peak (Computed)	12.113 hours
Flow (Peak, Computed)	0.25 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.24 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	61.000
Area (User Defined)	6,160.000 ft ²
Maximum Retention (Pervious)	6.39 in
Maximum Retention (Pervious, 20 percent)	1.28 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.26 in
Runoff Volume (Pervious)	0.015 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.015 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.063 hours
Computational Time Increment	0.008 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	2.54 ft ³ /s
Unit peak time, Tp	0.042 hours
Unit receding limb, Tr	0.168 hours
Total unit time, Tb	0.211 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 10 years

Label: PO-2-P

Storm Event: 10-YR

Scenario: Post-Development 10

Storm Event	10-YR
Return Event	10 years
Duration	24.000 hours
Depth	4.82 in
Time of Concentration (Composite)	0.063 hours
Area (User Defined)	6,160.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.350	0.00	0.00	0.00	0.00	0.01
11.600	0.01	0.01	0.01	0.02	0.02
11.850	0.03	0.04	0.07	0.10	0.18
12.100	0.24	0.17	0.11	0.09	0.08
12.350	0.07	0.06	0.06	0.06	0.05
12.600	0.04	0.04	0.04	0.04	0.04
12.850	0.03	0.03	0.03	0.03	0.03
13.100	0.03	0.02	0.02	0.02	0.02
13.350	0.02	0.02	0.02	0.02	0.02
13.600	0.02	0.02	0.02	0.02	0.02
13.850	0.02	0.02	0.02	0.02	0.02
14.100	0.01	0.01	0.01	0.01	0.01
14.350	0.01	0.01	0.01	0.01	0.01
14.600	0.01	0.01	0.01	0.01	0.01
14.850	0.01	0.01	0.01	0.01	0.01
15.100	0.01	0.01	0.01	0.01	0.01
15.350	0.01	0.01	0.01	0.01	0.01
15.600	0.01	0.01	0.01	0.01	0.01
15.850	0.01	0.01	0.01	0.01	0.01
16.100	0.01	0.01	0.01	0.01	0.01
16.350	0.01	0.01	0.01	0.01	0.01
16.600	0.01	0.01	0.01	0.01	0.01
16.850	0.01	0.01	0.01	0.01	0.01
17.100	0.01	0.01	0.01	0.01	0.01
17.350	0.01	0.01	0.01	0.01	0.01
17.600	0.01	0.01	0.01	0.01	0.01
17.850	0.01	0.01	0.01	0.01	0.01
18.100	0.01	0.01	0.01	0.01	0.01
18.350	0.01	0.01	0.01	0.01	0.01
18.600	0.01	0.01	0.01	0.01	0.01
18.850	0.01	0.01	0.01	0.01	0.01
19.100	0.01	0.01	0.01	0.01	0.01
19.350	0.01	0.01	0.01	0.01	0.01
19.600	0.01	0.01	0.01	0.01	0.01
19.850	0.01	0.01	0.01	0.01	0.01
20.100	0.01	0.01	0.01	0.01	0.01
20.350	0.01	0.01	0.01	0.01	0.01
20.600	0.01	0.01	0.01	0.01	0.01
20.850	0.01	0.01	0.01	0.01	0.01

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: PO-2-P

Scenario: Post-Development 10

Return Event: 10 years

Storm Event: 10-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
21.100	0.01	0.01	0.01	0.01	0.01
21.350	0.01	0.01	0.01	0.01	0.00
21.600	0.00	0.00	0.00	0.00	0.00
21.850	0.00	0.00	0.00	0.00	0.00
22.100	0.00	0.00	0.00	0.00	0.00
22.350	0.00	0.00	0.00	0.00	0.00
22.600	0.00	0.00	0.00	0.00	0.00
22.850	0.00	0.00	0.00	0.00	0.00
23.100	0.00	0.00	0.00	0.00	0.00
23.350	0.00	0.00	0.00	0.00	0.00
23.600	0.00	0.00	0.00	0.00	0.00
23.850	0.00	0.00	0.00	0.01	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 25 years

Label: PO-2-P

Storm Event: 25-YR

Scenario: Post-Development 25

Storm Event	25-YR
Return Event	25 years
Duration	24.000 hours
Depth	5.83 in
Time of Concentration (Composite)	0.063 hours
Area (User Defined)	6,160.000 ft ²
<hr/>	
Computational Time Increment	0.008 hours
Time to Peak (Computed)	12.113 hours
Flow (Peak, Computed)	0.38 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.38 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	61.000
Area (User Defined)	6,160.000 ft ²
Maximum Retention (Pervious)	6.39 in
Maximum Retention (Pervious, 20 percent)	1.28 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.89 in
Runoff Volume (Pervious)	0.022 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.022 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.063 hours
Computational Time Increment	0.008 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	2.54 ft ³ /s
Unit peak time, Tp	0.042 hours
Unit receding limb, Tr	0.168 hours
Total unit time, Tb	0.211 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: PO-2-P

Scenario: Post-Development 25

Return Event: 25 years

Storm Event: 25-YR

Storm Event	25-YR
Return Event	25 years
Duration	24.000 hours
Depth	5.83 in
Time of Concentration (Composite)	0.063 hours
Area (User Defined)	6,160.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.900	0.00	0.00	0.00	0.00	0.00
11.150	0.00	0.01	0.01	0.01	0.01
11.400	0.01	0.01	0.01	0.02	0.02
11.650	0.03	0.03	0.04	0.05	0.07
11.900	0.08	0.13	0.18	0.28	0.38
12.150	0.26	0.17	0.14	0.12	0.10
12.400	0.09	0.09	0.09	0.07	0.06
12.650	0.06	0.05	0.05	0.05	0.05
12.900	0.05	0.04	0.04	0.04	0.04
13.150	0.04	0.03	0.03	0.03	0.03
13.400	0.03	0.03	0.03	0.03	0.02
13.650	0.02	0.02	0.02	0.02	0.02
13.900	0.02	0.02	0.02	0.02	0.02
14.150	0.02	0.02	0.02	0.02	0.02
14.400	0.02	0.02	0.02	0.02	0.02
14.650	0.02	0.02	0.02	0.02	0.02
14.900	0.02	0.01	0.01	0.01	0.01
15.150	0.01	0.01	0.01	0.01	0.01
15.400	0.01	0.01	0.01	0.01	0.01
15.650	0.01	0.01	0.01	0.01	0.01
15.900	0.01	0.01	0.01	0.01	0.01
16.150	0.01	0.01	0.01	0.01	0.01
16.400	0.01	0.01	0.01	0.01	0.01
16.650	0.01	0.01	0.01	0.01	0.01
16.900	0.01	0.01	0.01	0.01	0.01
17.150	0.01	0.01	0.01	0.01	0.01
17.400	0.01	0.01	0.01	0.01	0.01
17.650	0.01	0.01	0.01	0.01	0.01
17.900	0.01	0.01	0.01	0.01	0.01
18.150	0.01	0.01	0.01	0.01	0.01
18.400	0.01	0.01	0.01	0.01	0.01
18.650	0.01	0.01	0.01	0.01	0.01
18.900	0.01	0.01	0.01	0.01	0.01
19.150	0.01	0.01	0.01	0.01	0.01
19.400	0.01	0.01	0.01	0.01	0.01
19.650	0.01	0.01	0.01	0.01	0.01
19.900	0.01	0.01	0.01	0.01	0.01
20.150	0.01	0.01	0.01	0.01	0.01
20.400	0.01	0.01	0.01	0.01	0.01

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: PO-2-P

Scenario: Post-Development 25

Return Event: 25 years

Storm Event: 25-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
20.650	0.01	0.01	0.01	0.01	0.01
20.900	0.01	0.01	0.01	0.01	0.01
21.150	0.01	0.01	0.01	0.01	0.01
21.400	0.01	0.01	0.01	0.01	0.01
21.650	0.01	0.01	0.01	0.01	0.01
21.900	0.01	0.01	0.01	0.01	0.01
22.150	0.01	0.01	0.01	0.01	0.01
22.400	0.01	0.01	0.01	0.01	0.01
22.650	0.01	0.01	0.01	0.01	0.01
22.900	0.01	0.01	0.01	0.01	0.01
23.150	0.01	0.01	0.01	0.01	0.01
23.400	0.01	0.01	0.01	0.01	0.01
23.650	0.01	0.01	0.01	0.01	0.01
23.900	0.01	0.01	0.01	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 50 years

Label: PO-2-P

Storm Event: 50-YR

Scenario: Post-Development 50

Storm Event	50-YR
Return Event	50 years
Duration	24.000 hours
Depth	6.68 in
Time of Concentration (Composite)	0.063 hours
Area (User Defined)	6,160.000 ft ²
<hr/>	
Computational Time Increment	0.008 hours
Time to Peak (Computed)	12.105 hours
Flow (Peak, Computed)	0.50 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.50 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	61.000
Area (User Defined)	6,160.000 ft ²
Maximum Retention (Pervious)	6.39 in
Maximum Retention (Pervious, 20 percent)	1.28 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.47 in
Runoff Volume (Pervious)	0.029 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.029 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.063 hours
Computational Time Increment	0.008 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	2.54 ft ³ /s
Unit peak time, Tp	0.042 hours
Unit receding limb, Tr	0.168 hours
Total unit time, Tb	0.211 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 50 years

Label: PO-2-P

Storm Event: 50-YR

Scenario: Post-Development 50

Storm Event	50-YR
Return Event	50 years
Duration	24.000 hours
Depth	6.68 in
Time of Concentration (Composite)	0.063 hours
Area (User Defined)	6,160.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.450	0.00	0.00	0.00	0.00	0.00
10.700	0.00	0.00	0.00	0.00	0.01
10.950	0.01	0.01	0.01	0.01	0.01
11.200	0.01	0.01	0.01	0.02	0.02
11.450	0.02	0.02	0.03	0.04	0.04
11.700	0.05	0.06	0.07	0.10	0.12
11.950	0.19	0.24	0.38	0.50	0.34
12.200	0.22	0.17	0.15	0.13	0.12
12.450	0.11	0.11	0.09	0.07	0.07
12.700	0.07	0.07	0.06	0.06	0.06
12.950	0.05	0.05	0.05	0.05	0.04
13.200	0.04	0.04	0.04	0.04	0.04
13.450	0.03	0.03	0.03	0.03	0.03
13.700	0.03	0.03	0.03	0.03	0.03
13.950	0.03	0.03	0.03	0.03	0.03
14.200	0.03	0.02	0.02	0.02	0.02
14.450	0.02	0.02	0.02	0.02	0.02
14.700	0.02	0.02	0.02	0.02	0.02
14.950	0.02	0.02	0.02	0.02	0.02
15.200	0.02	0.02	0.02	0.02	0.02
15.450	0.02	0.02	0.02	0.02	0.02
15.700	0.02	0.02	0.02	0.02	0.02
15.950	0.02	0.02	0.02	0.02	0.02
16.200	0.01	0.01	0.01	0.01	0.01
16.450	0.01	0.01	0.01	0.01	0.01
16.700	0.01	0.01	0.01	0.01	0.01
16.950	0.01	0.01	0.01	0.01	0.01
17.200	0.01	0.01	0.01	0.01	0.01
17.450	0.01	0.01	0.01	0.01	0.01
17.700	0.01	0.01	0.01	0.01	0.01
17.950	0.01	0.01	0.01	0.01	0.01
18.200	0.01	0.01	0.01	0.01	0.01
18.450	0.01	0.01	0.01	0.01	0.01
18.700	0.01	0.01	0.01	0.01	0.01
18.950	0.01	0.01	0.01	0.01	0.01
19.200	0.01	0.01	0.01	0.01	0.01
19.450	0.01	0.01	0.01	0.01	0.01
19.700	0.01	0.01	0.01	0.01	0.01
19.950	0.01	0.01	0.01	0.01	0.01

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: PO-2-P

Scenario: Post-Development 50

Return Event: 50 years

Storm Event: 50-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
20.200	0.01	0.01	0.01	0.01	0.01
20.450	0.01	0.01	0.01	0.01	0.01
20.700	0.01	0.01	0.01	0.01	0.01
20.950	0.01	0.01	0.01	0.01	0.01
21.200	0.01	0.01	0.01	0.01	0.01
21.450	0.01	0.01	0.01	0.01	0.01
21.700	0.01	0.01	0.01	0.01	0.01
21.950	0.01	0.01	0.01	0.01	0.01
22.200	0.01	0.01	0.01	0.01	0.01
22.450	0.01	0.01	0.01	0.01	0.01
22.700	0.01	0.01	0.01	0.01	0.01
22.950	0.01	0.01	0.01	0.01	0.01
23.200	0.01	0.01	0.01	0.01	0.01
23.450	0.01	0.01	0.01	0.01	0.01
23.700	0.01	0.01	0.01	0.01	0.01
23.950	0.01	0.01	(N/A)	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph Summary

Return Event: 100 years

Label: PO-2-P

Storm Event: 100-YR

Scenario: Post-Development 100

Storm Event	100-YR
Return Event	100 years
Duration	24.000 hours
Depth	7.60 in
Time of Concentration (Composite)	0.063 hours
Area (User Defined)	6,160.000 ft ²
Computational Time Increment	0.008 hours
Time to Peak (Computed)	12.105 hours
Flow (Peak, Computed)	0.64 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.64 ft ³ /s
Drainage Area	
SCS CN (Composite)	61.000
Area (User Defined)	6,160.000 ft ²
Maximum Retention (Pervious)	6.39 in
Maximum Retention (Pervious, 20 percent)	1.28 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.14 in
Runoff Volume (Pervious)	0.037 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.037 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.063 hours
Computational Time Increment	0.008 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	2.54 ft ³ /s
Unit peak time, Tp	0.042 hours
Unit receding limb, Tr	0.168 hours
Total unit time, Tb	0.211 hours

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: PO-2-P

Scenario: Post-Development 100

Return Event: 100 years

Storm Event: 100-YR

Storm Event	100-YR
Return Event	100 years
Duration	24.000 hours
Depth	7.60 in
Time of Concentration (Composite)	0.063 hours
Area (User Defined)	6,160.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
9.900	0.00	0.00	0.00	0.00	0.00
10.150	0.00	0.00	0.00	0.00	0.00
10.400	0.00	0.00	0.00	0.00	0.01
10.650	0.01	0.01	0.01	0.01	0.01
10.900	0.01	0.01	0.01	0.01	0.02
11.150	0.02	0.02	0.02	0.02	0.03
11.400	0.03	0.03	0.03	0.05	0.06
11.650	0.06	0.07	0.09	0.10	0.13
11.900	0.16	0.25	0.32	0.50	0.64
12.150	0.43	0.28	0.22	0.19	0.16
12.400	0.14	0.14	0.14	0.11	0.09
12.650	0.09	0.08	0.08	0.08	0.07
12.900	0.07	0.07	0.06	0.06	0.06
13.150	0.05	0.05	0.05	0.05	0.05
13.400	0.05	0.04	0.04	0.04	0.04
13.650	0.04	0.04	0.04	0.03	0.03
13.900	0.03	0.03	0.03	0.03	0.03
14.150	0.03	0.03	0.03	0.03	0.03
14.400	0.03	0.03	0.03	0.03	0.03
14.650	0.03	0.03	0.02	0.02	0.02
14.900	0.02	0.02	0.02	0.02	0.02
15.150	0.02	0.02	0.02	0.02	0.02
15.400	0.02	0.02	0.02	0.02	0.02
15.650	0.02	0.02	0.02	0.02	0.02
15.900	0.02	0.02	0.02	0.02	0.02
16.150	0.02	0.02	0.02	0.02	0.02
16.400	0.02	0.02	0.02	0.02	0.02
16.650	0.02	0.02	0.02	0.02	0.02
16.900	0.02	0.02	0.02	0.02	0.02
17.150	0.02	0.02	0.02	0.01	0.01
17.400	0.01	0.01	0.01	0.01	0.01
17.650	0.01	0.01	0.01	0.01	0.01
17.900	0.01	0.01	0.01	0.01	0.01
18.150	0.01	0.01	0.01	0.01	0.01
18.400	0.01	0.01	0.01	0.01	0.01
18.650	0.01	0.01	0.01	0.01	0.01
18.900	0.01	0.01	0.01	0.01	0.01
19.150	0.01	0.01	0.01	0.01	0.01
19.400	0.01	0.01	0.01	0.01	0.01

Post-Development Analysis Results (with BMPs)

Subsection: Unit Hydrograph (Hydrograph Table)

Label: PO-2-P

Scenario: Post-Development 100

Return Event: 100 years

Storm Event: 100-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
19.650	0.01	0.01	0.01	0.01	0.01
19.900	0.01	0.01	0.01	0.01	0.01
20.150	0.01	0.01	0.01	0.01	0.01
20.400	0.01	0.01	0.01	0.01	0.01
20.650	0.01	0.01	0.01	0.01	0.01
20.900	0.01	0.01	0.01	0.01	0.01
21.150	0.01	0.01	0.01	0.01	0.01
21.400	0.01	0.01	0.01	0.01	0.01
21.650	0.01	0.01	0.01	0.01	0.01
21.900	0.01	0.01	0.01	0.01	0.01
22.150	0.01	0.01	0.01	0.01	0.01
22.400	0.01	0.01	0.01	0.01	0.01
22.650	0.01	0.01	0.01	0.01	0.01
22.900	0.01	0.01	0.01	0.01	0.01
23.150	0.01	0.01	0.01	0.01	0.01
23.400	0.01	0.01	0.01	0.01	0.01
23.650	0.01	0.01	0.01	0.01	0.01
23.900	0.01	0.01	0.01	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Addition Summary

Label: O-1

Scenario: Post-Development 1

Return Event: 1 years

Storm Event: 1-YR

Summary for Hydrograph Addition at 'O-1'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	DA-1-I
<Catchment to Outflow Node>	DA-1-P

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	DA-1-I	0.060	12.100	0.90
Flow (From)	DA-1-P	0.005	12.100	0.10
Flow (In)	O-1	0.066	12.100	1.00

Post-Development Analysis Results (with BMPs)

Subsection: Addition Summary

Label: O-1

Scenario: Post-Development 2

Return Event: 2 years

Storm Event: 2-YR

Summary for Hydrograph Addition at 'O-1'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	DA-1-I
<Catchment to Outflow Node>	DA-1-P

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	DA-1-I	0.073	12.100	1.09
Flow (From)	DA-1-P	0.008	12.100	0.13
Flow (In)	O-1	0.081	12.100	1.22

Post-Development Analysis Results (with BMPs)

Subsection: Addition Summary

Label: O-1

Scenario: Post-Development 5

Return Event: 5 years

Storm Event: 5-YR

Summary for Hydrograph Addition at 'O-1'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	DA-1-I
<Catchment to Outflow Node>	DA-1-P

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	DA-1-I	0.094	12.100	1.37
Flow (From)	DA-1-P	0.011	12.100	0.19
Flow (In)	O-1	0.105	12.100	1.57

Post-Development Analysis Results (with BMPs)

Subsection: Addition Summary

Label: O-1

Scenario: Post-Development 10

Return Event: 10 years

Storm Event: 10-YR

Summary for Hydrograph Addition at 'O-1'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	DA-1-I
<Catchment to Outflow Node>	DA-1-P

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	DA-1-I	0.111	12.100	1.61
Flow (From)	DA-1-P	0.014	12.100	0.25
Flow (In)	O-1	0.125	12.100	1.86

Post-Development Analysis Results (with BMPs)

Subsection: Addition Summary

Label: O-1

Scenario: Post-Development 25

Return Event: 25 years

Storm Event: 25-YR

Summary for Hydrograph Addition at 'O-1'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	DA-1-I
<Catchment to Outflow Node>	DA-1-P

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	DA-1-I	0.135	12.100	1.95
Flow (From)	DA-1-P	0.019	12.100	0.32
Flow (In)	O-1	0.154	12.100	2.27

Post-Development Analysis Results (with BMPs)

Subsection: Addition Summary

Label: O-1

Scenario: Post-Development 50

Return Event: 50 years

Storm Event: 50-YR

Summary for Hydrograph Addition at 'O-1'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	DA-1-I
<Catchment to Outflow Node>	DA-1-P

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	DA-1-I	0.155	12.100	2.24
Flow (From)	DA-1-P	0.023	12.100	0.39
Flow (In)	O-1	0.178	12.100	2.62

Post-Development Analysis Results (with BMPs)

Subsection: Addition Summary

Label: O-1

Scenario: Post-Development 100

Return Event: 100 years

Storm Event: 100-YR

Summary for Hydrograph Addition at 'O-1'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	DA-1-I
<Catchment to Outflow Node>	DA-1-P

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	DA-1-I	0.177	12.100	2.55
Flow (From)	DA-1-P	0.027	12.100	0.46
Flow (In)	O-1	0.205	12.100	3.00

Post-Development Analysis Results (with BMPs)

Subsection: Addition Summary

Label: O-2

Scenario: Post-Development 1

Return Event: 1 years

Storm Event: 1-YR

Summary for Hydrograph Addition at 'O-2'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	DA-2-P
<Catchment to Outflow Node>	DA-2-I

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	DA-2-P	0.001	12.100	0.01
Flow (From)	DA-2-I	0.025	12.100	0.38
Flow (In)	O-2	0.026	12.100	0.39

Post-Development Analysis Results (with BMPs)

Subsection: Addition Summary

Label: O-2

Scenario: Post-Development 2

Return Event: 2 years

Storm Event: 2-YR

Summary for Hydrograph Addition at 'O-2'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	DA-2-P
<Catchment to Outflow Node>	DA-2-I

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	DA-2-P	0.001	12.100	0.02
Flow (From)	DA-2-I	0.031	12.100	0.46
Flow (In)	O-2	0.032	12.100	0.48

Post-Development Analysis Results (with BMPs)

Subsection: Addition Summary

Label: O-2

Scenario: Post-Development 5

Return Event: 5 years

Storm Event: 5-YR

Summary for Hydrograph Addition at 'O-2'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	DA-2-P
<Catchment to Outflow Node>	DA-2-I

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	DA-2-P	0.003	12.100	0.05
Flow (From)	DA-2-I	0.039	12.100	0.58
Flow (In)	O-2	0.042	12.100	0.62

Post-Development Analysis Results (with BMPs)

Subsection: Addition Summary

Label: O-2

Scenario: Post-Development 10

Return Event: 10 years

Storm Event: 10-YR

Summary for Hydrograph Addition at 'O-2'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	DA-2-P
<Catchment to Outflow Node>	DA-2-I

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	DA-2-P	0.004	12.100	0.07
Flow (From)	DA-2-I	0.046	12.100	0.68
Flow (In)	O-2	0.050	12.100	0.75

Post-Development Analysis Results (with BMPs)

Subsection: Addition Summary

Label: O-2

Scenario: Post-Development 25

Return Event: 25 years

Storm Event: 25-YR

Summary for Hydrograph Addition at 'O-2'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	DA-2-P
<Catchment to Outflow Node>	DA-2-I

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	DA-2-P	0.006	12.100	0.10
Flow (From)	DA-2-I	0.056	12.100	0.82
Flow (In)	O-2	0.062	12.100	0.92

Post-Development Analysis Results (with BMPs)

Subsection: Addition Summary

Label: O-2

Scenario: Post-Development 50

Return Event: 50 years

Storm Event: 50-YR

Summary for Hydrograph Addition at 'O-2'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	DA-2-P
<Catchment to Outflow Node>	DA-2-I

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	DA-2-P	0.007	12.100	0.14
Flow (From)	DA-2-I	0.064	12.100	0.94
Flow (In)	O-2	0.072	12.100	1.08

Post-Development Analysis Results (with BMPs)

Subsection: Addition Summary

Label: O-2

Scenario: Post-Development 100

Return Event: 100 years

Storm Event: 100-YR

Summary for Hydrograph Addition at 'O-2'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	DA-2-P
<Catchment to Outflow Node>	DA-2-I

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	DA-2-P	0.009	12.100	0.17
Flow (From)	DA-2-I	0.074	12.100	1.07
Flow (In)	O-2	0.083	12.100	1.24

Post-Development Analysis Results (with BMPs)

Subsection: Addition Summary

Label: O-3

Scenario: Post-Development 1

Return Event: 1 years

Storm Event: 1-YR

Summary for Hydrograph Addition at 'O-3'

Upstream Link	Upstream Node
Outlet-MRC	MRC
<Catchment to Outflow Node>	DA-3-I
<Catchment to Outflow Node>	DA-3-P
Outlet-2	PO-2

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	Outlet-MRC	0.635	13.450	0.98
Flow (From)	DA-3-I	0.068	12.100	1.04
Flow (From)	DA-3-P	0.054	12.250	0.31
Flow (From)	Outlet-2	0.296	12.200	1.73
Flow (In)	O-3	1.054	12.200	2.95

Post-Development Analysis Results (with BMPs)

Subsection: Addition Summary

Label: O-3

Scenario: Post-Development 2

Return Event: 2 years

Storm Event: 2-YR

Summary for Hydrograph Addition at 'O-3'

Upstream Link	Upstream Node
Outlet-MRC	MRC
<Catchment to Outflow Node>	DA-3-I
<Catchment to Outflow Node>	DA-3-P
Outlet-2	PO-2

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	Outlet-MRC	0.881	13.050	1.69
Flow (From)	DA-3-I	0.083	12.100	1.25
Flow (From)	DA-3-P	0.096	12.250	0.79
Flow (From)	Outlet-2	0.363	12.200	2.08
Flow (In)	O-3	1.423	12.250	4.34

Post-Development Analysis Results (with BMPs)

Subsection: Addition Summary

Label: O-3

Scenario: Post-Development 5

Return Event: 5 years

Storm Event: 5-YR

Summary for Hydrograph Addition at 'O-3'

Upstream Link	Upstream Node
Outlet-MRC	MRC
<Catchment to Outflow Node>	DA-3-I
<Catchment to Outflow Node>	DA-3-P
Outlet-2	PO-2

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	Outlet-MRC	1.266	12.850	2.66
Flow (From)	DA-3-I	0.106	12.100	1.58
Flow (From)	DA-3-P	0.177	12.200	1.83
Flow (From)	Outlet-2	0.466	12.200	2.63
Flow (In)	O-3	2.015	12.200	7.13

Post-Development Analysis Results (with BMPs)

Subsection: Addition Summary

Label: O-3

Scenario: Post-Development 10

Return Event: 10 years

Storm Event: 10-YR

Summary for Hydrograph Addition at 'O-3'

Upstream Link	Upstream Node
Outlet-MRC	MRC
<Catchment to Outflow Node>	DA-3-I
<Catchment to Outflow Node>	DA-3-P
Outlet-2	PO-2

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	Outlet-MRC	1.592	12.650	3.84
Flow (From)	DA-3-I	0.125	12.100	1.84
Flow (From)	DA-3-P	0.255	12.200	2.83
Flow (From)	Outlet-2	0.553	12.200	3.11
Flow (In)	O-3	2.524	12.200	9.48

Post-Development Analysis Results (with BMPs)

Subsection: Addition Summary

Label: O-3

Scenario: Post-Development 25

Return Event: 25 years

Storm Event: 25-YR

Summary for Hydrograph Addition at 'O-3'

Upstream Link	Upstream Node
Outlet-MRC	MRC
<Catchment to Outflow Node>	DA-3-I
<Catchment to Outflow Node>	DA-3-P
Outlet-2	PO-2

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	Outlet-MRC	2.071	12.550	5.65
Flow (From)	DA-3-I	0.153	12.100	2.23
Flow (From)	DA-3-P	0.382	12.200	4.45
Flow (From)	Outlet-2	0.678	12.200	3.80
Flow (In)	O-3	3.284	12.200	13.80

Post-Development Analysis Results (with BMPs)

Subsection: Addition Summary

Label: O-3

Scenario: Post-Development 50

Return Event: 50 years

Storm Event: 50-YR

Summary for Hydrograph Addition at 'O-3'

Upstream Link	Upstream Node
Outlet-MRC	MRC
<Catchment to Outflow Node>	DA-3-I
<Catchment to Outflow Node>	DA-3-P
Outlet-2	PO-2

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	Outlet-MRC	2.480	12.500	7.99
Flow (From)	DA-3-I	0.176	12.100	2.56
Flow (From)	DA-3-P	0.499	12.200	5.91
Flow (From)	Outlet-2	0.785	12.200	4.39
Flow (In)	O-3	3.940	12.200	17.74

Post-Development Analysis Results (with BMPs)

Subsection: Addition Summary

Label: O-3

Scenario: Post-Development 100

Return Event: 100 years

Storm Event: 100-YR

Summary for Hydrograph Addition at 'O-3'

Upstream Link	Upstream Node
Outlet-MRC	MRC
<Catchment to Outflow Node>	DA-3-I
<Catchment to Outflow Node>	DA-3-P
Outlet-2	PO-2

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	Outlet-MRC	2.926	12.400	10.70
Flow (From)	DA-3-I	0.201	12.100	2.92
Flow (From)	DA-3-P	0.635	12.200	7.59
Flow (From)	Outlet-2	0.900	12.200	6.24
Flow (In)	O-3	4.662	12.200	24.46

Post-Development Analysis Results (with BMPs)

Subsection: Time vs. Volume
 Label: MRC
 Scenario: Post-Development 1

Return Event: 1 years
 Storm Event: 1-YR

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)				
0.000	0.422	0.422	0.422	0.422	0.422
0.250	0.422	0.422	0.422	0.422	0.422
0.500	0.422	0.422	0.422	0.422	0.422
0.750	0.422	0.422	0.422	0.422	0.422
1.000	0.422	0.422	0.422	0.422	0.422
1.250	0.422	0.422	0.422	0.422	0.422
1.500	0.422	0.422	0.422	0.422	0.422
1.750	0.422	0.422	0.422	0.422	0.422
2.000	0.423	0.423	0.423	0.423	0.423
2.250	0.423	0.424	0.424	0.424	0.424
2.500	0.424	0.425	0.425	0.425	0.425
2.750	0.426	0.426	0.426	0.427	0.427
3.000	0.427	0.428	0.428	0.428	0.429
3.250	0.429	0.429	0.430	0.430	0.430
3.500	0.431	0.431	0.432	0.432	0.433
3.750	0.433	0.433	0.434	0.434	0.435
4.000	0.435	0.436	0.436	0.437	0.437
4.250	0.438	0.438	0.439	0.440	0.440
4.500	0.441	0.441	0.442	0.442	0.443
4.750	0.444	0.444	0.445	0.445	0.446
5.000	0.447	0.447	0.448	0.449	0.449
5.250	0.450	0.451	0.451	0.452	0.453
5.500	0.453	0.454	0.455	0.455	0.456
5.750	0.457	0.458	0.458	0.459	0.460
6.000	0.461	0.461	0.462	0.463	0.464
6.250	0.465	0.465	0.466	0.467	0.468
6.500	0.469	0.470	0.471	0.472	0.473
6.750	0.474	0.474	0.475	0.476	0.477
7.000	0.479	0.480	0.481	0.482	0.483
7.250	0.484	0.485	0.486	0.487	0.488
7.500	0.490	0.491	0.492	0.493	0.494
7.750	0.496	0.497	0.498	0.499	0.501
8.000	0.502	0.503	0.505	0.506	0.507
8.250	0.509	0.510	0.512	0.513	0.515
8.500	0.516	0.518	0.519	0.521	0.522
8.750	0.524	0.525	0.527	0.528	0.530
9.000	0.531	0.533	0.535	0.537	0.538
9.250	0.540	0.542	0.544	0.546	0.548
9.500	0.550	0.552	0.554	0.557	0.559
9.750	0.561	0.564	0.566	0.568	0.571
10.000	0.573	0.576	0.579	0.581	0.584
10.250	0.587	0.590	0.593	0.596	0.599
10.500	0.602	0.605	0.608	0.612	0.616
10.750	0.620	0.624	0.628	0.633	0.637
11.000	0.642	0.647	0.653	0.658	0.665
11.250	0.671	0.678	0.685	0.693	0.701
11.500	0.709	0.718	0.730	0.743	0.756

Post-Development Analysis Results (with BMPs)

Subsection: Time vs. Volume

Return Event: 1 years

Label: MRC

Storm Event: 1-YR

Scenario: Post-Development 1

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)				
11.750	0.771	0.788	0.809	0.833	0.864
12.000	0.904	0.956	1.023	1.084	1.123
12.250	1.148	1.167	1.182	1.195	1.206
12.500	1.216	1.225	1.232	1.237	1.241
12.750	1.246	1.250	1.253	1.256	1.259
13.000	1.261	1.263	1.265	1.266	1.267
13.250	1.268	1.269	1.269	1.270	1.270
13.500	1.270	1.269	1.269	1.268	1.267
13.750	1.267	1.266	1.265	1.264	1.264
14.000	1.263	1.262	1.261	1.260	1.259
14.250	1.258	1.256	1.255	1.254	1.253
14.500	1.251	1.250	1.249	1.247	1.246
14.750	1.245	1.243	1.242	1.240	1.238
15.000	1.237	1.235	1.233	1.232	1.230
15.250	1.228	1.226	1.225	1.223	1.221
15.500	1.220	1.218	1.216	1.215	1.213
15.750	1.211	1.210	1.208	1.206	1.205
16.000	1.203	1.201	1.200	1.198	1.196
16.250	1.195	1.193	1.192	1.190	1.188
16.500	1.187	1.185	1.184	1.182	1.180
16.750	1.179	1.177	1.176	1.174	1.172
17.000	1.171	1.169	1.168	1.166	1.165
17.250	1.163	1.161	1.160	1.158	1.157
17.500	1.155	1.154	1.152	1.151	1.149
17.750	1.147	1.146	1.144	1.143	1.141
18.000	1.140	1.138	1.137	1.135	1.134
18.250	1.132	1.131	1.129	1.128	1.126
18.500	1.125	1.124	1.122	1.121	1.119
18.750	1.118	1.117	1.115	1.114	1.113
19.000	1.111	1.110	1.109	1.107	1.106
19.250	1.105	1.104	1.102	1.101	1.100
19.500	1.099	1.097	1.096	1.095	1.094
19.750	1.093	1.091	1.090	1.089	1.088
20.000	1.087	1.086	1.085	1.084	1.082
20.250	1.081	1.080	1.079	1.078	1.077
20.500	1.076	1.075	1.074	1.073	1.072
20.750	1.071	1.070	1.069	1.068	1.067
21.000	1.066	1.065	1.064	1.063	1.062
21.250	1.061	1.060	1.059	1.058	1.057
21.500	1.056	1.056	1.055	1.054	1.053
21.750	1.052	1.051	1.050	1.049	1.048
22.000	1.048	1.047	1.046	1.045	1.044
22.250	1.043	1.043	1.042	1.041	1.040
22.500	1.039	1.039	1.038	1.037	1.036
22.750	1.035	1.035	1.034	1.033	1.032
23.000	1.032	1.031	1.030	1.029	1.029
23.250	1.028	1.027	1.026	1.026	1.025

Post-Development Analysis Results (with BMPs)

Subsection: Time vs. Volume

Label: MRC

Scenario: Post-Development 1

Return Event: 1 years

Storm Event: 1-YR

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)				
23.500	1.024	1.024	1.023	1.022	1.021
23.750	1.021	1.020	1.019	1.019	1.018
24.000	1.017	(N/A)	(N/A)	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Time vs. Volume
 Label: MRC
 Scenario: Post-Development 2

Return Event: 2 years
 Storm Event: 2-YR

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)				
0.000	0.422	0.422	0.422	0.422	0.422
0.250	0.422	0.422	0.422	0.422	0.422
0.500	0.422	0.422	0.422	0.422	0.422
0.750	0.422	0.422	0.422	0.422	0.422
1.000	0.422	0.422	0.422	0.422	0.422
1.250	0.422	0.422	0.422	0.422	0.422
1.500	0.422	0.422	0.422	0.422	0.423
1.750	0.423	0.423	0.423	0.423	0.424
2.000	0.424	0.424	0.424	0.425	0.425
2.250	0.425	0.425	0.426	0.426	0.426
2.500	0.427	0.427	0.428	0.428	0.428
2.750	0.429	0.429	0.430	0.430	0.431
3.000	0.431	0.432	0.432	0.433	0.433
3.250	0.434	0.434	0.435	0.435	0.436
3.500	0.436	0.437	0.438	0.438	0.439
3.750	0.439	0.440	0.441	0.441	0.442
4.000	0.443	0.443	0.444	0.445	0.445
4.250	0.446	0.447	0.448	0.448	0.449
4.500	0.450	0.451	0.451	0.452	0.453
4.750	0.454	0.455	0.455	0.456	0.457
5.000	0.458	0.459	0.460	0.460	0.461
5.250	0.462	0.463	0.464	0.465	0.466
5.500	0.467	0.468	0.468	0.469	0.470
5.750	0.471	0.472	0.473	0.474	0.475
6.000	0.476	0.477	0.478	0.479	0.480
6.250	0.481	0.482	0.483	0.485	0.486
6.500	0.487	0.488	0.489	0.490	0.492
6.750	0.493	0.494	0.495	0.497	0.498
7.000	0.499	0.501	0.502	0.503	0.505
7.250	0.506	0.507	0.509	0.510	0.512
7.500	0.513	0.515	0.516	0.518	0.519
7.750	0.521	0.522	0.524	0.526	0.527
8.000	0.529	0.531	0.532	0.534	0.536
8.250	0.538	0.539	0.541	0.543	0.545
8.500	0.547	0.548	0.550	0.552	0.554
8.750	0.556	0.558	0.560	0.562	0.564
9.000	0.566	0.568	0.570	0.572	0.574
9.250	0.577	0.579	0.581	0.584	0.586
9.500	0.589	0.592	0.594	0.597	0.600
9.750	0.603	0.606	0.609	0.612	0.615
10.000	0.618	0.621	0.624	0.628	0.631
10.250	0.635	0.638	0.642	0.645	0.649
10.500	0.653	0.657	0.661	0.665	0.670
10.750	0.675	0.680	0.685	0.690	0.696
11.000	0.702	0.708	0.715	0.722	0.729
11.250	0.737	0.746	0.755	0.764	0.773
11.500	0.783	0.795	0.809	0.825	0.841

Post-Development Analysis Results (with BMPs)

Subsection: Time vs. Volume

Return Event: 2 years

Label: MRC

Storm Event: 2-YR

Scenario: Post-Development 2

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)				
11.750	0.859	0.880	0.905	0.934	0.971
12.000	1.018	1.080	1.160	1.233	1.279
12.250	1.308	1.329	1.346	1.359	1.371
12.500	1.381	1.390	1.395	1.399	1.403
12.750	1.406	1.408	1.410	1.412	1.413
13.000	1.413	1.413	1.413	1.412	1.412
13.250	1.410	1.409	1.408	1.406	1.404
13.500	1.402	1.400	1.397	1.395	1.392
13.750	1.390	1.387	1.385	1.382	1.379
14.000	1.377	1.374	1.372	1.369	1.366
14.250	1.364	1.361	1.358	1.356	1.353
14.500	1.350	1.348	1.345	1.342	1.340
14.750	1.337	1.334	1.331	1.329	1.326
15.000	1.323	1.321	1.318	1.315	1.312
15.250	1.310	1.307	1.305	1.302	1.300
15.500	1.297	1.295	1.292	1.290	1.288
15.750	1.285	1.283	1.281	1.279	1.276
16.000	1.274	1.272	1.270	1.268	1.266
16.250	1.264	1.262	1.260	1.258	1.256
16.500	1.254	1.252	1.250	1.248	1.246
16.750	1.244	1.242	1.240	1.238	1.236
17.000	1.234	1.232	1.230	1.228	1.227
17.250	1.225	1.223	1.221	1.219	1.217
17.500	1.215	1.213	1.211	1.209	1.207
17.750	1.206	1.204	1.202	1.200	1.198
18.000	1.196	1.194	1.192	1.190	1.189
18.250	1.187	1.185	1.183	1.181	1.180
18.500	1.178	1.176	1.174	1.173	1.171
18.750	1.169	1.168	1.166	1.164	1.163
19.000	1.161	1.159	1.158	1.156	1.155
19.250	1.153	1.152	1.150	1.149	1.147
19.500	1.146	1.144	1.143	1.141	1.140
19.750	1.138	1.137	1.135	1.134	1.133
20.000	1.131	1.130	1.128	1.127	1.126
20.250	1.124	1.123	1.122	1.120	1.119
20.500	1.118	1.116	1.115	1.114	1.113
20.750	1.111	1.110	1.109	1.108	1.107
21.000	1.105	1.104	1.103	1.102	1.101
21.250	1.099	1.098	1.097	1.096	1.095
21.500	1.094	1.093	1.092	1.090	1.089
21.750	1.088	1.087	1.086	1.085	1.084
22.000	1.083	1.082	1.081	1.080	1.079
22.250	1.078	1.077	1.076	1.075	1.074
22.500	1.073	1.072	1.071	1.070	1.069
22.750	1.068	1.067	1.066	1.065	1.064
23.000	1.063	1.062	1.061	1.060	1.060
23.250	1.059	1.058	1.057	1.056	1.055

Post-Development Analysis Results (with BMPs)

Subsection: Time vs. Volume

Label: MRC

Scenario: Post-Development 2

Return Event: 2 years

Storm Event: 2-YR

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)				
23.500	1.054	1.053	1.053	1.052	1.051
23.750	1.050	1.049	1.048	1.047	1.047
24.000	1.046	(N/A)	(N/A)	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Time vs. Volume

Return Event: 5 years

Label: MRC

Storm Event: 5-YR

Scenario: Post-Development 5

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)				
0.000	0.422	0.422	0.422	0.422	0.422
0.250	0.422	0.422	0.422	0.422	0.422
0.500	0.422	0.422	0.422	0.422	0.422
0.750	0.422	0.422	0.422	0.422	0.422
1.000	0.422	0.422	0.422	0.422	0.422
1.250	0.422	0.422	0.422	0.423	0.423
1.500	0.423	0.423	0.424	0.424	0.424
1.750	0.425	0.425	0.425	0.426	0.426
2.000	0.426	0.427	0.427	0.428	0.428
2.250	0.429	0.429	0.430	0.430	0.431
2.500	0.432	0.432	0.433	0.433	0.434
2.750	0.435	0.435	0.436	0.437	0.438
3.000	0.438	0.439	0.440	0.441	0.441
3.250	0.442	0.443	0.444	0.445	0.445
3.500	0.446	0.447	0.448	0.449	0.450
3.750	0.451	0.452	0.453	0.453	0.454
4.000	0.455	0.456	0.457	0.458	0.459
4.250	0.460	0.461	0.462	0.463	0.465
4.500	0.466	0.467	0.468	0.469	0.470
4.750	0.471	0.472	0.473	0.474	0.476
5.000	0.477	0.478	0.479	0.480	0.482
5.250	0.483	0.484	0.485	0.486	0.488
5.500	0.489	0.490	0.491	0.493	0.494
5.750	0.495	0.497	0.498	0.499	0.501
6.000	0.502	0.503	0.505	0.506	0.507
6.250	0.509	0.510	0.512	0.513	0.515
6.500	0.516	0.518	0.519	0.521	0.523
6.750	0.524	0.526	0.528	0.529	0.531
7.000	0.533	0.535	0.536	0.538	0.540
7.250	0.542	0.544	0.546	0.547	0.549
7.500	0.551	0.553	0.555	0.557	0.559
7.750	0.562	0.564	0.566	0.568	0.570
8.000	0.572	0.574	0.577	0.579	0.581
8.250	0.583	0.586	0.588	0.590	0.593
8.500	0.595	0.598	0.600	0.602	0.605
8.750	0.607	0.610	0.612	0.615	0.618
9.000	0.620	0.623	0.626	0.628	0.631
9.250	0.634	0.637	0.640	0.644	0.647
9.500	0.650	0.654	0.657	0.661	0.664
9.750	0.668	0.672	0.675	0.679	0.683
10.000	0.687	0.692	0.696	0.700	0.705
10.250	0.709	0.714	0.718	0.723	0.728
10.500	0.732	0.737	0.743	0.748	0.754
10.750	0.760	0.767	0.773	0.780	0.788
11.000	0.795	0.803	0.812	0.821	0.830
11.250	0.840	0.851	0.862	0.874	0.886
11.500	0.899	0.913	0.931	0.950	0.970

Post-Development Analysis Results (with BMPs)

Subsection: Time vs. Volume

Return Event: 5 years

Label: MRC

Storm Event: 5-YR

Scenario: Post-Development 5

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)				
11.750	0.992	1.018	1.048	1.083	1.129
12.000	1.188	1.265	1.365	1.454	1.509
12.250	1.543	1.567	1.585	1.599	1.611
12.500	1.622	1.630	1.635	1.637	1.639
12.750	1.640	1.641	1.642	1.641	1.640
13.000	1.639	1.637	1.635	1.632	1.629
13.250	1.626	1.622	1.618	1.614	1.610
13.500	1.606	1.601	1.596	1.591	1.586
13.750	1.581	1.576	1.571	1.566	1.562
14.000	1.557	1.552	1.547	1.542	1.537
14.250	1.532	1.527	1.522	1.517	1.513
14.500	1.508	1.503	1.498	1.493	1.488
14.750	1.484	1.479	1.474	1.469	1.464
15.000	1.459	1.455	1.450	1.445	1.440
15.250	1.436	1.431	1.427	1.422	1.418
15.500	1.414	1.409	1.405	1.401	1.397
15.750	1.393	1.389	1.385	1.381	1.378
16.000	1.374	1.370	1.367	1.363	1.360
16.250	1.356	1.353	1.350	1.347	1.343
16.500	1.340	1.337	1.334	1.331	1.328
16.750	1.325	1.322	1.319	1.316	1.313
17.000	1.311	1.308	1.305	1.302	1.300
17.250	1.297	1.295	1.292	1.290	1.287
17.500	1.285	1.282	1.280	1.278	1.275
17.750	1.273	1.271	1.268	1.266	1.264
18.000	1.262	1.260	1.257	1.255	1.253
18.250	1.251	1.249	1.247	1.245	1.242
18.500	1.240	1.238	1.236	1.234	1.232
18.750	1.230	1.228	1.226	1.224	1.222
19.000	1.221	1.219	1.217	1.215	1.213
19.250	1.211	1.209	1.208	1.206	1.204
19.500	1.202	1.200	1.199	1.197	1.195
19.750	1.194	1.192	1.190	1.189	1.187
20.000	1.185	1.184	1.182	1.180	1.179
20.250	1.177	1.176	1.174	1.173	1.171
20.500	1.169	1.168	1.166	1.165	1.163
20.750	1.162	1.160	1.159	1.158	1.156
21.000	1.155	1.153	1.152	1.150	1.149
21.250	1.148	1.146	1.145	1.144	1.142
21.500	1.141	1.140	1.138	1.137	1.136
21.750	1.134	1.133	1.132	1.131	1.129
22.000	1.128	1.127	1.126	1.124	1.123
22.250	1.122	1.121	1.119	1.118	1.117
22.500	1.116	1.115	1.114	1.112	1.111
22.750	1.110	1.109	1.108	1.107	1.106
23.000	1.105	1.103	1.102	1.101	1.100
23.250	1.099	1.098	1.097	1.096	1.095

Post-Development Analysis Results (with BMPs)

Subsection: Time vs. Volume

Label: MRC

Scenario: Post-Development 5

Return Event: 5 years

Storm Event: 5-YR

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)				
23.500	1.094	1.093	1.092	1.091	1.090
23.750	1.089	1.088	1.087	1.086	1.085
24.000	1.084	(N/A)	(N/A)	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Time vs. Volume

Return Event: 10 years

Label: MRC

Storm Event: 10-YR

Scenario: Post-Development 10

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)				
0.000	0.422	0.422	0.422	0.422	0.422
0.250	0.422	0.422	0.422	0.422	0.422
0.500	0.422	0.422	0.422	0.422	0.422
0.750	0.422	0.422	0.422	0.422	0.422
1.000	0.422	0.422	0.422	0.422	0.423
1.250	0.423	0.423	0.423	0.424	0.424
1.500	0.424	0.425	0.425	0.426	0.426
1.750	0.427	0.427	0.428	0.428	0.429
2.000	0.429	0.430	0.431	0.431	0.432
2.250	0.433	0.433	0.434	0.435	0.436
2.500	0.436	0.437	0.438	0.439	0.440
2.750	0.441	0.441	0.442	0.443	0.444
3.000	0.445	0.446	0.447	0.448	0.449
3.250	0.450	0.451	0.452	0.453	0.454
3.500	0.455	0.457	0.458	0.459	0.460
3.750	0.461	0.462	0.463	0.465	0.466
4.000	0.467	0.468	0.469	0.471	0.472
4.250	0.473	0.475	0.476	0.477	0.479
4.500	0.480	0.481	0.483	0.484	0.485
4.750	0.487	0.488	0.489	0.491	0.492
5.000	0.494	0.495	0.497	0.498	0.500
5.250	0.501	0.503	0.504	0.506	0.507
5.500	0.509	0.510	0.512	0.513	0.515
5.750	0.516	0.518	0.520	0.521	0.523
6.000	0.524	0.526	0.528	0.529	0.531
6.250	0.533	0.535	0.536	0.538	0.540
6.500	0.542	0.544	0.546	0.548	0.550
6.750	0.552	0.554	0.556	0.558	0.560
7.000	0.562	0.564	0.566	0.568	0.570
7.250	0.573	0.575	0.577	0.580	0.582
7.500	0.584	0.587	0.589	0.591	0.594
7.750	0.596	0.599	0.601	0.604	0.607
8.000	0.609	0.612	0.614	0.617	0.620
8.250	0.623	0.625	0.628	0.631	0.634
8.500	0.637	0.639	0.642	0.645	0.648
8.750	0.651	0.654	0.657	0.660	0.663
9.000	0.666	0.670	0.673	0.676	0.680
9.250	0.683	0.687	0.690	0.694	0.698
9.500	0.702	0.706	0.710	0.714	0.719
9.750	0.723	0.727	0.732	0.737	0.741
10.000	0.746	0.751	0.756	0.761	0.766
10.250	0.772	0.777	0.782	0.788	0.794
10.500	0.799	0.805	0.812	0.818	0.825
10.750	0.832	0.840	0.848	0.856	0.865
11.000	0.874	0.883	0.893	0.903	0.914
11.250	0.926	0.938	0.951	0.964	0.977
11.500	0.991	1.007	1.027	1.049	1.071

Post-Development Analysis Results (with BMPs)

Subsection: Time vs. Volume

Return Event: 10 years

Label: MRC

Storm Event: 10-YR

Scenario: Post-Development 10

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)				
11.750	1.096	1.126	1.160	1.201	1.254
12.000	1.322	1.412	1.527	1.631	1.694
12.250	1.731	1.757	1.776	1.790	1.800
12.500	1.810	1.817	1.819	1.819	1.818
12.750	1.817	1.815	1.813	1.810	1.806
13.000	1.802	1.797	1.792	1.787	1.781
13.250	1.775	1.769	1.763	1.757	1.751
13.500	1.744	1.737	1.730	1.723	1.717
13.750	1.710	1.703	1.697	1.691	1.684
14.000	1.678	1.672	1.666	1.660	1.653
14.250	1.647	1.641	1.635	1.629	1.623
14.500	1.617	1.611	1.605	1.599	1.593
14.750	1.587	1.581	1.575	1.569	1.563
15.000	1.557	1.551	1.545	1.539	1.533
15.250	1.528	1.522	1.516	1.511	1.505
15.500	1.500	1.495	1.489	1.484	1.479
15.750	1.474	1.469	1.464	1.459	1.455
16.000	1.450	1.445	1.440	1.436	1.431
16.250	1.427	1.423	1.418	1.414	1.410
16.500	1.406	1.402	1.398	1.394	1.390
16.750	1.386	1.382	1.378	1.375	1.371
17.000	1.367	1.364	1.360	1.357	1.354
17.250	1.350	1.347	1.344	1.340	1.337
17.500	1.334	1.331	1.328	1.325	1.322
17.750	1.319	1.316	1.313	1.310	1.308
18.000	1.305	1.302	1.299	1.297	1.294
18.250	1.292	1.289	1.287	1.284	1.282
18.500	1.279	1.277	1.275	1.273	1.271
18.750	1.268	1.266	1.264	1.262	1.260
19.000	1.258	1.256	1.254	1.252	1.250
19.250	1.248	1.246	1.244	1.242	1.240
19.500	1.239	1.237	1.235	1.233	1.231
19.750	1.229	1.228	1.226	1.224	1.222
20.000	1.221	1.219	1.217	1.215	1.214
20.250	1.212	1.210	1.209	1.207	1.205
20.500	1.204	1.202	1.200	1.199	1.197
20.750	1.196	1.194	1.192	1.191	1.189
21.000	1.188	1.186	1.185	1.183	1.182
21.250	1.180	1.179	1.177	1.176	1.174
21.500	1.173	1.172	1.170	1.169	1.167
21.750	1.166	1.165	1.163	1.162	1.160
22.000	1.159	1.158	1.156	1.155	1.154
22.250	1.152	1.151	1.150	1.149	1.147
22.500	1.146	1.145	1.143	1.142	1.141
22.750	1.140	1.138	1.137	1.136	1.135
23.000	1.134	1.132	1.131	1.130	1.129
23.250	1.128	1.126	1.125	1.124	1.123

Post-Development Analysis Results (with BMPs)

Subsection: Time vs. Volume

Label: MRC

Scenario: Post-Development 10

Return Event: 10 years

Storm Event: 10-YR

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)				
23.500	1.122	1.121	1.120	1.118	1.117
23.750	1.116	1.115	1.114	1.113	1.112
24.000	1.111	(N/A)	(N/A)	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Time vs. Volume

Return Event: 25 years

Label: MRC

Storm Event: 25-YR

Scenario: Post-Development 25

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)				
0.000	0.422	0.422	0.422	0.422	0.422
0.250	0.422	0.422	0.422	0.422	0.422
0.500	0.422	0.422	0.422	0.422	0.422
0.750	0.422	0.422	0.422	0.422	0.422
1.000	0.423	0.423	0.423	0.424	0.424
1.250	0.424	0.425	0.425	0.426	0.426
1.500	0.427	0.428	0.428	0.429	0.430
1.750	0.430	0.431	0.432	0.433	0.434
2.000	0.434	0.435	0.436	0.437	0.438
2.250	0.439	0.440	0.441	0.442	0.443
2.500	0.444	0.446	0.447	0.448	0.449
2.750	0.450	0.451	0.453	0.454	0.455
3.000	0.456	0.458	0.459	0.460	0.462
3.250	0.463	0.464	0.466	0.467	0.469
3.500	0.470	0.471	0.473	0.474	0.476
3.750	0.477	0.479	0.481	0.482	0.484
4.000	0.485	0.487	0.488	0.490	0.492
4.250	0.493	0.495	0.497	0.498	0.500
4.500	0.502	0.503	0.505	0.507	0.509
4.750	0.510	0.512	0.514	0.516	0.518
5.000	0.519	0.521	0.523	0.525	0.527
5.250	0.529	0.531	0.533	0.535	0.536
5.500	0.538	0.540	0.542	0.544	0.546
5.750	0.548	0.550	0.552	0.554	0.556
6.000	0.558	0.560	0.562	0.565	0.567
6.250	0.569	0.571	0.573	0.576	0.578
6.500	0.580	0.583	0.585	0.587	0.590
6.750	0.592	0.595	0.597	0.600	0.603
7.000	0.605	0.608	0.610	0.613	0.616
7.250	0.619	0.621	0.624	0.627	0.630
7.500	0.633	0.636	0.639	0.642	0.645
7.750	0.648	0.651	0.654	0.657	0.661
8.000	0.664	0.667	0.670	0.674	0.677
8.250	0.680	0.684	0.687	0.691	0.694
8.500	0.698	0.701	0.705	0.708	0.712
8.750	0.716	0.719	0.723	0.727	0.731
9.000	0.734	0.738	0.742	0.746	0.751
9.250	0.755	0.759	0.764	0.768	0.773
9.500	0.778	0.783	0.788	0.793	0.798
9.750	0.804	0.809	0.815	0.821	0.826
10.000	0.832	0.838	0.844	0.851	0.857
10.250	0.863	0.870	0.877	0.883	0.890
10.500	0.897	0.904	0.912	0.919	0.927
10.750	0.936	0.944	0.953	0.963	0.972
11.000	0.982	0.993	1.004	1.015	1.028
11.250	1.041	1.054	1.069	1.083	1.099
11.500	1.115	1.133	1.157	1.182	1.209

Post-Development Analysis Results (with BMPs)

Subsection: Time vs. Volume

Return Event: 25 years

Label: MRC

Storm Event: 25-YR

Scenario: Post-Development 25

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)				
11.750	1.239	1.273	1.314	1.362	1.424
12.000	1.505	1.612	1.750	1.873	1.945
12.250	1.985	2.012	2.031	2.043	2.051
12.500	2.058	2.062	2.061	2.057	2.053
12.750	2.047	2.041	2.035	2.028	2.020
13.000	2.012	2.003	1.994	1.985	1.975
13.250	1.965	1.955	1.945	1.935	1.925
13.500	1.914	1.904	1.893	1.883	1.872
13.750	1.862	1.852	1.842	1.833	1.824
14.000	1.814	1.805	1.796	1.788	1.779
14.250	1.771	1.763	1.754	1.746	1.739
14.500	1.731	1.723	1.716	1.709	1.701
14.750	1.694	1.687	1.680	1.673	1.666
15.000	1.659	1.652	1.646	1.639	1.632
15.250	1.625	1.619	1.612	1.606	1.599
15.500	1.593	1.587	1.581	1.575	1.569
15.750	1.563	1.557	1.551	1.545	1.540
16.000	1.534	1.529	1.523	1.518	1.513
16.250	1.507	1.502	1.497	1.492	1.487
16.500	1.482	1.477	1.472	1.468	1.463
16.750	1.458	1.454	1.449	1.444	1.440
17.000	1.436	1.431	1.427	1.423	1.418
17.250	1.414	1.410	1.406	1.402	1.398
17.500	1.394	1.390	1.387	1.383	1.379
17.750	1.376	1.372	1.368	1.365	1.361
18.000	1.358	1.355	1.351	1.348	1.345
18.250	1.341	1.338	1.335	1.332	1.329
18.500	1.326	1.324	1.321	1.318	1.315
18.750	1.313	1.310	1.307	1.305	1.302
19.000	1.300	1.298	1.295	1.293	1.291
19.250	1.288	1.286	1.284	1.282	1.280
19.500	1.278	1.276	1.274	1.272	1.270
19.750	1.268	1.266	1.265	1.263	1.261
20.000	1.259	1.257	1.256	1.254	1.252
20.250	1.250	1.249	1.247	1.245	1.244
20.500	1.242	1.240	1.239	1.237	1.235
20.750	1.234	1.232	1.231	1.229	1.227
21.000	1.226	1.224	1.223	1.221	1.220
21.250	1.218	1.216	1.215	1.213	1.212
21.500	1.210	1.209	1.207	1.206	1.205
21.750	1.203	1.202	1.200	1.199	1.197
22.000	1.196	1.195	1.193	1.192	1.190
22.250	1.189	1.188	1.186	1.185	1.184
22.500	1.182	1.181	1.180	1.178	1.177
22.750	1.176	1.174	1.173	1.172	1.170
23.000	1.169	1.168	1.167	1.165	1.164
23.250	1.163	1.162	1.160	1.159	1.158

Post-Development Analysis Results (with BMPs)

Subsection: Time vs. Volume

Label: MRC

Scenario: Post-Development 25

Return Event: 25 years

Storm Event: 25-YR

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)				
23.500	1.157	1.155	1.154	1.153	1.152
23.750	1.151	1.149	1.148	1.147	1.146
24.000	1.145	(N/A)	(N/A)	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Time vs. Volume

Return Event: 50 years

Label: MRC

Storm Event: 50-YR

Scenario: Post-Development 50

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)				
0.000	0.422	0.422	0.422	0.422	0.422
0.250	0.422	0.422	0.422	0.422	0.422
0.500	0.422	0.422	0.422	0.422	0.422
0.750	0.422	0.422	0.422	0.423	0.423
1.000	0.423	0.424	0.424	0.425	0.425
1.250	0.426	0.427	0.427	0.428	0.429
1.500	0.430	0.430	0.431	0.432	0.433
1.750	0.434	0.435	0.436	0.437	0.438
2.000	0.439	0.441	0.442	0.443	0.444
2.250	0.445	0.447	0.448	0.449	0.451
2.500	0.452	0.453	0.455	0.456	0.458
2.750	0.459	0.460	0.462	0.463	0.465
3.000	0.467	0.468	0.470	0.471	0.473
3.250	0.475	0.476	0.478	0.480	0.481
3.500	0.483	0.485	0.487	0.488	0.490
3.750	0.492	0.494	0.496	0.498	0.499
4.000	0.501	0.503	0.505	0.507	0.509
4.250	0.511	0.513	0.515	0.517	0.519
4.500	0.521	0.523	0.525	0.527	0.529
4.750	0.531	0.534	0.536	0.538	0.540
5.000	0.542	0.544	0.546	0.549	0.551
5.250	0.553	0.555	0.558	0.560	0.562
5.500	0.564	0.567	0.569	0.571	0.574
5.750	0.576	0.578	0.581	0.583	0.585
6.000	0.588	0.590	0.593	0.595	0.598
6.250	0.600	0.603	0.605	0.608	0.611
6.500	0.613	0.616	0.619	0.622	0.625
6.750	0.627	0.630	0.633	0.636	0.639
7.000	0.642	0.645	0.649	0.652	0.655
7.250	0.658	0.661	0.665	0.668	0.671
7.500	0.675	0.678	0.682	0.685	0.689
7.750	0.692	0.696	0.699	0.703	0.707
8.000	0.711	0.714	0.718	0.722	0.726
8.250	0.730	0.734	0.738	0.742	0.746
8.500	0.750	0.754	0.758	0.762	0.766
8.750	0.771	0.775	0.779	0.784	0.788
9.000	0.792	0.797	0.801	0.806	0.811
9.250	0.816	0.821	0.826	0.832	0.837
9.500	0.843	0.848	0.854	0.860	0.866
9.750	0.872	0.879	0.885	0.892	0.898
10.000	0.905	0.912	0.918	0.925	0.932
10.250	0.939	0.946	0.953	0.960	0.967
10.500	0.974	0.982	0.989	0.998	1.006
10.750	1.015	1.024	1.034	1.044	1.054
11.000	1.065	1.076	1.088	1.101	1.115
11.250	1.129	1.144	1.160	1.177	1.194
11.500	1.211	1.232	1.258	1.287	1.317

Post-Development Analysis Results (with BMPs)

Subsection: Time vs. Volume

Return Event: 50 years

Label: MRC

Storm Event: 50-YR

Scenario: Post-Development 50

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)				
11.750	1.350	1.388	1.434	1.488	1.558
12.000	1.650	1.771	1.927	2.065	2.144
12.250	2.185	2.210	2.226	2.233	2.236
12.500	2.238	2.236	2.229	2.219	2.209
12.750	2.199	2.188	2.177	2.166	2.154
13.000	2.143	2.131	2.119	2.108	2.096
13.250	2.084	2.072	2.060	2.047	2.035
13.500	2.023	2.010	1.997	1.985	1.972
13.750	1.960	1.948	1.937	1.925	1.914
14.000	1.903	1.892	1.882	1.872	1.861
14.250	1.851	1.842	1.832	1.822	1.813
14.500	1.804	1.795	1.786	1.777	1.769
14.750	1.760	1.752	1.744	1.736	1.728
15.000	1.720	1.712	1.705	1.697	1.690
15.250	1.683	1.676	1.669	1.662	1.656
15.500	1.649	1.642	1.636	1.629	1.623
15.750	1.617	1.611	1.604	1.598	1.592
16.000	1.587	1.581	1.575	1.569	1.564
16.250	1.558	1.552	1.547	1.542	1.536
16.500	1.531	1.526	1.520	1.515	1.510
16.750	1.505	1.500	1.495	1.491	1.486
17.000	1.481	1.476	1.472	1.467	1.462
17.250	1.458	1.453	1.449	1.444	1.440
17.500	1.436	1.432	1.427	1.423	1.419
17.750	1.415	1.411	1.407	1.403	1.399
18.000	1.395	1.392	1.388	1.384	1.380
18.250	1.377	1.373	1.370	1.367	1.363
18.500	1.360	1.357	1.354	1.351	1.348
18.750	1.345	1.342	1.339	1.336	1.333
19.000	1.330	1.328	1.325	1.323	1.320
19.250	1.318	1.315	1.313	1.310	1.308
19.500	1.306	1.303	1.301	1.299	1.297
19.750	1.295	1.293	1.291	1.289	1.287
20.000	1.285	1.283	1.281	1.279	1.277
20.250	1.276	1.274	1.272	1.270	1.269
20.500	1.267	1.265	1.264	1.262	1.261
20.750	1.259	1.257	1.256	1.254	1.253
21.000	1.251	1.250	1.248	1.247	1.245
21.250	1.244	1.242	1.241	1.239	1.238
21.500	1.236	1.235	1.233	1.232	1.230
21.750	1.229	1.227	1.226	1.225	1.223
22.000	1.222	1.220	1.219	1.217	1.216
22.250	1.215	1.213	1.212	1.211	1.209
22.500	1.208	1.207	1.205	1.204	1.203
22.750	1.201	1.200	1.199	1.197	1.196
23.000	1.195	1.193	1.192	1.191	1.190
23.250	1.188	1.187	1.186	1.184	1.183

Post-Development Analysis Results (with BMPs)

Subsection: Time vs. Volume

Label: MRC

Scenario: Post-Development 50

Return Event: 50 years

Storm Event: 50-YR

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)				
23.500	1.182	1.181	1.179	1.178	1.177
23.750	1.176	1.175	1.173	1.172	1.171
24.000	1.170	(N/A)	(N/A)	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Time vs. Volume
 Label: MRC
 Scenario: Post-Development 100

Return Event: 100 years
 Storm Event: 100-YR

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)				
0.000	0.422	0.422	0.422	0.422	0.422
0.250	0.422	0.422	0.422	0.422	0.422
0.500	0.422	0.422	0.422	0.422	0.422
0.750	0.422	0.423	0.423	0.424	0.424
1.000	0.425	0.425	0.426	0.427	0.427
1.250	0.428	0.429	0.430	0.431	0.432
1.500	0.433	0.434	0.435	0.436	0.437
1.750	0.439	0.440	0.441	0.443	0.444
2.000	0.445	0.447	0.448	0.450	0.451
2.250	0.453	0.454	0.456	0.457	0.459
2.500	0.461	0.462	0.464	0.466	0.467
2.750	0.469	0.471	0.473	0.475	0.476
3.000	0.478	0.480	0.482	0.484	0.486
3.250	0.488	0.490	0.492	0.494	0.496
3.500	0.498	0.500	0.502	0.504	0.506
3.750	0.509	0.511	0.513	0.515	0.517
4.000	0.520	0.522	0.524	0.526	0.529
4.250	0.531	0.533	0.536	0.538	0.540
4.500	0.543	0.545	0.547	0.550	0.552
4.750	0.555	0.557	0.560	0.562	0.565
5.000	0.567	0.570	0.572	0.575	0.577
5.250	0.580	0.583	0.585	0.588	0.590
5.500	0.593	0.596	0.598	0.601	0.604
5.750	0.606	0.609	0.612	0.615	0.617
6.000	0.620	0.623	0.626	0.629	0.632
6.250	0.635	0.638	0.641	0.644	0.647
6.500	0.650	0.653	0.656	0.660	0.663
6.750	0.666	0.669	0.673	0.676	0.680
7.000	0.683	0.687	0.690	0.694	0.698
7.250	0.701	0.705	0.709	0.713	0.717
7.500	0.721	0.725	0.729	0.733	0.737
7.750	0.741	0.745	0.749	0.753	0.757
8.000	0.762	0.766	0.770	0.775	0.779
8.250	0.784	0.788	0.793	0.797	0.802
8.500	0.807	0.811	0.816	0.821	0.826
8.750	0.831	0.836	0.840	0.845	0.850
9.000	0.856	0.861	0.866	0.871	0.877
9.250	0.883	0.888	0.894	0.900	0.906
9.500	0.912	0.919	0.925	0.931	0.938
9.750	0.944	0.951	0.958	0.964	0.971
10.000	0.978	0.985	0.992	0.999	1.006
10.250	1.013	1.021	1.028	1.035	1.043
10.500	1.050	1.058	1.066	1.075	1.084
10.750	1.094	1.104	1.114	1.125	1.137
11.000	1.148	1.161	1.174	1.188	1.203
11.250	1.219	1.235	1.253	1.271	1.290
11.500	1.310	1.332	1.361	1.392	1.425

Post-Development Analysis Results (with BMPs)

Subsection: Time vs. Volume

Return Event: 100 years

Label: MRC

Storm Event: 100-YR

Scenario: Post-Development 100

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)				
11.750	1.461	1.504	1.555	1.615	1.694
12.000	1.798	1.934	2.109	2.261	2.343
12.250	2.382	2.402	2.412	2.414	2.411
12.500	2.407	2.399	2.385	2.369	2.352
12.750	2.336	2.319	2.302	2.286	2.270
13.000	2.253	2.237	2.220	2.204	2.188
13.250	2.173	2.158	2.143	2.129	2.115
13.500	2.102	2.088	2.074	2.061	2.047
13.750	2.034	2.021	2.008	1.996	1.983
14.000	1.971	1.960	1.948	1.937	1.926
14.250	1.915	1.904	1.893	1.883	1.873
14.500	1.863	1.853	1.843	1.833	1.824
14.750	1.815	1.805	1.796	1.787	1.779
15.000	1.770	1.761	1.753	1.745	1.737
15.250	1.729	1.721	1.714	1.707	1.699
15.500	1.693	1.686	1.679	1.673	1.666
15.750	1.660	1.654	1.647	1.641	1.635
16.000	1.629	1.623	1.617	1.611	1.605
16.250	1.600	1.594	1.588	1.583	1.577
16.500	1.572	1.566	1.561	1.556	1.550
16.750	1.545	1.540	1.535	1.530	1.525
17.000	1.520	1.515	1.510	1.506	1.501
17.250	1.496	1.491	1.487	1.482	1.478
17.500	1.473	1.469	1.464	1.460	1.455
17.750	1.451	1.447	1.442	1.438	1.434
18.000	1.430	1.426	1.422	1.418	1.414
18.250	1.410	1.406	1.402	1.399	1.395
18.500	1.392	1.388	1.385	1.381	1.378
18.750	1.375	1.372	1.369	1.366	1.363
19.000	1.360	1.357	1.354	1.351	1.348
19.250	1.346	1.343	1.340	1.338	1.335
19.500	1.333	1.330	1.328	1.325	1.323
19.750	1.321	1.319	1.316	1.314	1.312
20.000	1.310	1.308	1.306	1.304	1.302
20.250	1.300	1.298	1.296	1.294	1.292
20.500	1.290	1.289	1.287	1.285	1.283
20.750	1.282	1.280	1.278	1.277	1.275
21.000	1.274	1.272	1.271	1.269	1.268
21.250	1.266	1.265	1.263	1.262	1.261
21.500	1.259	1.258	1.256	1.255	1.254
21.750	1.252	1.251	1.249	1.248	1.247
22.000	1.245	1.244	1.243	1.241	1.240
22.250	1.239	1.237	1.236	1.235	1.233
22.500	1.232	1.231	1.229	1.228	1.227
22.750	1.225	1.224	1.223	1.222	1.220
23.000	1.219	1.218	1.216	1.215	1.214
23.250	1.213	1.211	1.210	1.209	1.208

Post-Development Analysis Results (with BMPs)

Subsection: Time vs. Volume

Label: MRC

Scenario: Post-Development 100

Return Event: 100 years

Storm Event: 100-YR

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)				
23.500	1.206	1.205	1.204	1.203	1.201
23.750	1.200	1.199	1.198	1.197	1.195
24.000	1.195	(N/A)	(N/A)	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Time vs. Volume

Return Event: 1 years

Label: PO-2

Storm Event: 1-YR

Scenario: Post-Development 1

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)				
0.000	0.000	0.000	0.000	0.000	0.000
0.250	0.000	0.000	0.000	0.000	0.000
0.500	0.000	0.000	0.000	0.000	0.000
0.750	0.000	0.000	0.000	0.000	0.000
1.000	0.000	0.000	0.000	0.000	0.000
1.250	0.000	0.000	0.000	0.000	0.000
1.500	0.000	0.000	0.000	0.000	0.000
1.750	0.000	0.000	0.000	0.000	0.000
2.000	0.000	0.000	0.000	0.000	0.000
2.250	0.000	0.000	0.000	0.000	0.000
2.500	0.000	0.000	0.000	0.000	0.000
2.750	0.000	0.000	0.000	0.000	0.000
3.000	0.000	0.000	0.000	0.000	0.000
3.250	0.000	0.000	0.000	0.000	0.000
3.500	0.000	0.000	0.000	0.000	0.000
3.750	0.000	0.000	0.000	0.000	0.000
4.000	0.000	0.000	0.000	0.000	0.000
4.250	0.000	0.000	0.001	0.001	0.001
4.500	0.001	0.001	0.001	0.001	0.001
4.750	0.001	0.001	0.001	0.001	0.001
5.000	0.001	0.001	0.001	0.001	0.001
5.250	0.001	0.001	0.001	0.001	0.001
5.500	0.001	0.001	0.001	0.001	0.001
5.750	0.001	0.001	0.001	0.001	0.001
6.000	0.001	0.001	0.001	0.001	0.001
6.250	0.001	0.001	0.001	0.001	0.001
6.500	0.001	0.001	0.001	0.001	0.001
6.750	0.001	0.001	0.001	0.001	0.001
7.000	0.001	0.001	0.001	0.001	0.001
7.250	0.001	0.001	0.001	0.001	0.001
7.500	0.001	0.001	0.001	0.001	0.001
7.750	0.001	0.001	0.001	0.001	0.001
8.000	0.001	0.001	0.001	0.001	0.001
8.250	0.001	0.001	0.001	0.001	0.001
8.500	0.001	0.001	0.001	0.001	0.001
8.750	0.001	0.001	0.002	0.002	0.002
9.000	0.002	0.002	0.002	0.002	0.002
9.250	0.002	0.002	0.002	0.002	0.002
9.500	0.002	0.002	0.002	0.002	0.002
9.750	0.002	0.002	0.002	0.002	0.002
10.000	0.002	0.002	0.002	0.002	0.002
10.250	0.003	0.003	0.003	0.003	0.003
10.500	0.003	0.003	0.003	0.003	0.003
10.750	0.003	0.003	0.003	0.004	0.004
11.000	0.004	0.004	0.004	0.005	0.005
11.250	0.005	0.006	0.006	0.007	0.007
11.500	0.008	0.009	0.010	0.011	0.012

Post-Development Analysis Results (with BMPs)

Subsection: Time vs. Volume
 Label: PO-2
 Scenario: Post-Development 1

Return Event: 1 years
 Storm Event: 1-YR

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)				
11.750	0.014	0.016	0.019	0.022	0.028
12.000	0.036	0.046	0.056	0.065	0.067
12.250	0.066	0.064	0.062	0.059	0.057
12.500	0.054	0.051	0.049	0.046	0.043
12.750	0.039	0.036	0.033	0.030	0.028
13.000	0.026	0.023	0.021	0.020	0.018
13.250	0.017	0.015	0.014	0.013	0.012
13.500	0.011	0.010	0.010	0.009	0.008
13.750	0.008	0.007	0.007	0.006	0.006
14.000	0.006	0.005	0.005	0.005	0.004
14.250	0.004	0.004	0.004	0.004	0.004
14.500	0.004	0.003	0.003	0.003	0.003
14.750	0.003	0.003	0.003	0.003	0.003
15.000	0.003	0.003	0.003	0.003	0.002
15.250	0.002	0.002	0.002	0.002	0.002
15.500	0.002	0.002	0.002	0.002	0.002
15.750	0.002	0.002	0.002	0.002	0.002
16.000	0.002	0.002	0.002	0.002	0.002
16.250	0.002	0.002	0.002	0.002	0.002
16.500	0.002	0.002	0.002	0.002	0.002
16.750	0.002	0.002	0.002	0.002	0.002
17.000	0.002	0.002	0.002	0.002	0.002
17.250	0.002	0.002	0.002	0.001	0.001
17.500	0.001	0.001	0.001	0.001	0.001
17.750	0.001	0.001	0.001	0.001	0.001
18.000	0.001	0.001	0.001	0.001	0.001
18.250	0.001	0.001	0.001	0.001	0.001
18.500	0.001	0.001	0.001	0.001	0.001
18.750	0.001	0.001	0.001	0.001	0.001
19.000	0.001	0.001	0.001	0.001	0.001
19.250	0.001	0.001	0.001	0.001	0.001
19.500	0.001	0.001	0.001	0.001	0.001
19.750	0.001	0.001	0.001	0.001	0.001
20.000	0.001	0.001	0.001	0.001	0.001
20.250	0.001	0.001	0.001	0.001	0.001
20.500	0.001	0.001	0.001	0.001	0.001
20.750	0.001	0.001	0.001	0.001	0.001
21.000	0.001	0.001	0.001	0.001	0.001
21.250	0.001	0.001	0.001	0.001	0.001
21.500	0.001	0.001	0.001	0.001	0.001
21.750	0.001	0.001	0.001	0.001	0.001
22.000	0.001	0.001	0.001	0.001	0.001
22.250	0.001	0.001	0.001	0.001	0.001
22.500	0.001	0.001	0.001	0.001	0.001
22.750	0.001	0.001	0.001	0.001	0.001
23.000	0.001	0.001	0.001	0.001	0.001
23.250	0.001	0.001	0.001	0.001	0.001

Post-Development Analysis Results (with BMPs)

Subsection: Time vs. Volume

Label: PO-2

Scenario: Post-Development 1

Return Event: 1 years

Storm Event: 1-YR

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)				
23.500	0.001	0.001	0.001	0.001	0.001
23.750	0.001	0.001	0.001	0.001	0.001
24.000	0.001	(N/A)	(N/A)	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Time vs. Volume

Return Event: 2 years

Label: PO-2

Storm Event: 2-YR

Scenario: Post-Development 2

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)				
0.000	0.000	0.000	0.000	0.000	0.000
0.250	0.000	0.000	0.000	0.000	0.000
0.500	0.000	0.000	0.000	0.000	0.000
0.750	0.000	0.000	0.000	0.000	0.000
1.000	0.000	0.000	0.000	0.000	0.000
1.250	0.000	0.000	0.000	0.000	0.000
1.500	0.000	0.000	0.000	0.000	0.000
1.750	0.000	0.000	0.000	0.000	0.000
2.000	0.000	0.000	0.000	0.000	0.000
2.250	0.000	0.000	0.000	0.000	0.000
2.500	0.000	0.000	0.000	0.000	0.000
2.750	0.000	0.000	0.000	0.000	0.000
3.000	0.000	0.000	0.000	0.000	0.000
3.250	0.000	0.000	0.000	0.000	0.001
3.500	0.001	0.001	0.001	0.001	0.001
3.750	0.001	0.001	0.001	0.001	0.001
4.000	0.001	0.001	0.001	0.001	0.001
4.250	0.001	0.001	0.001	0.001	0.001
4.500	0.001	0.001	0.001	0.001	0.001
4.750	0.001	0.001	0.001	0.001	0.001
5.000	0.001	0.001	0.001	0.001	0.001
5.250	0.001	0.001	0.001	0.001	0.001
5.500	0.001	0.001	0.001	0.001	0.001
5.750	0.001	0.001	0.001	0.001	0.001
6.000	0.001	0.001	0.001	0.001	0.001
6.250	0.001	0.001	0.001	0.001	0.001
6.500	0.001	0.001	0.001	0.001	0.001
6.750	0.001	0.001	0.001	0.001	0.001
7.000	0.001	0.001	0.001	0.001	0.001
7.250	0.001	0.001	0.001	0.001	0.001
7.500	0.001	0.001	0.001	0.001	0.001
7.750	0.001	0.002	0.002	0.002	0.002
8.000	0.002	0.002	0.002	0.002	0.002
8.250	0.002	0.002	0.002	0.002	0.002
8.500	0.002	0.002	0.002	0.002	0.002
8.750	0.002	0.002	0.002	0.002	0.002
9.000	0.002	0.002	0.002	0.002	0.002
9.250	0.002	0.002	0.002	0.002	0.002
9.500	0.002	0.002	0.002	0.002	0.003
9.750	0.003	0.003	0.003	0.003	0.003
10.000	0.003	0.003	0.003	0.003	0.003
10.250	0.003	0.003	0.003	0.003	0.003
10.500	0.003	0.004	0.004	0.004	0.004
10.750	0.004	0.004	0.004	0.005	0.005
11.000	0.005	0.006	0.006	0.006	0.007
11.250	0.007	0.008	0.008	0.009	0.010
11.500	0.010	0.011	0.013	0.014	0.016

Post-Development Analysis Results (with BMPs)

Subsection: Time vs. Volume
 Label: PO-2
 Scenario: Post-Development 2

Return Event: 2 years
 Storm Event: 2-YR

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)				
11.750	0.018	0.021	0.025	0.029	0.036
12.000	0.046	0.055	0.069	0.079	0.082
12.250	0.081	0.079	0.076	0.073	0.069
12.500	0.066	0.063	0.059	0.056	0.053
12.750	0.050	0.047	0.044	0.041	0.038
13.000	0.034	0.031	0.029	0.027	0.024
13.250	0.022	0.021	0.019	0.018	0.016
13.500	0.015	0.014	0.013	0.012	0.011
13.750	0.010	0.010	0.009	0.008	0.008
14.000	0.008	0.007	0.007	0.006	0.006
14.250	0.006	0.005	0.005	0.005	0.005
14.500	0.004	0.004	0.004	0.004	0.004
14.750	0.004	0.004	0.004	0.004	0.003
15.000	0.003	0.003	0.003	0.003	0.003
15.250	0.003	0.003	0.003	0.003	0.003
15.500	0.003	0.003	0.003	0.003	0.003
15.750	0.003	0.002	0.002	0.002	0.002
16.000	0.002	0.002	0.002	0.002	0.002
16.250	0.002	0.002	0.002	0.002	0.002
16.500	0.002	0.002	0.002	0.002	0.002
16.750	0.002	0.002	0.002	0.002	0.002
17.000	0.002	0.002	0.002	0.002	0.002
17.250	0.002	0.002	0.002	0.002	0.002
17.500	0.002	0.002	0.002	0.002	0.002
17.750	0.002	0.002	0.002	0.002	0.002
18.000	0.002	0.002	0.002	0.002	0.002
18.250	0.002	0.002	0.001	0.001	0.001
18.500	0.001	0.001	0.001	0.001	0.001
18.750	0.001	0.001	0.001	0.001	0.001
19.000	0.001	0.001	0.001	0.001	0.001
19.250	0.001	0.001	0.001	0.001	0.001
19.500	0.001	0.001	0.001	0.001	0.001
19.750	0.001	0.001	0.001	0.001	0.001
20.000	0.001	0.001	0.001	0.001	0.001
20.250	0.001	0.001	0.001	0.001	0.001
20.500	0.001	0.001	0.001	0.001	0.001
20.750	0.001	0.001	0.001	0.001	0.001
21.000	0.001	0.001	0.001	0.001	0.001
21.250	0.001	0.001	0.001	0.001	0.001
21.500	0.001	0.001	0.001	0.001	0.001
21.750	0.001	0.001	0.001	0.001	0.001
22.000	0.001	0.001	0.001	0.001	0.001
22.250	0.001	0.001	0.001	0.001	0.001
22.500	0.001	0.001	0.001	0.001	0.001
22.750	0.001	0.001	0.001	0.001	0.001
23.000	0.001	0.001	0.001	0.001	0.001
23.250	0.001	0.001	0.001	0.001	0.001

Post-Development Analysis Results (with BMPs)

Subsection: Time vs. Volume

Label: PO-2

Scenario: Post-Development 2

Return Event: 2 years

Storm Event: 2-YR

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)				
23.500	0.001	0.001	0.001	0.001	0.001
23.750	0.001	0.001	0.001	0.001	0.001
24.000	0.001	(N/A)	(N/A)	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Time vs. Volume

Return Event: 5 years

Label: PO-2

Storm Event: 5-YR

Scenario: Post-Development 5

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)
0.000	0.000	0.000	0.000	0.000	0.000
0.250	0.000	0.000	0.000	0.000	0.000
0.500	0.000	0.000	0.000	0.000	0.000
0.750	0.000	0.000	0.000	0.000	0.000
1.000	0.000	0.000	0.000	0.000	0.000
1.250	0.000	0.000	0.000	0.000	0.000
1.500	0.000	0.000	0.000	0.000	0.000
1.750	0.000	0.000	0.000	0.000	0.000
2.000	0.000	0.000	0.000	0.000	0.000
2.250	0.000	0.000	0.000	0.000	0.000
2.500	0.000	0.000	0.001	0.001	0.001
2.750	0.001	0.001	0.001	0.001	0.001
3.000	0.001	0.001	0.001	0.001	0.001
3.250	0.001	0.001	0.001	0.001	0.001
3.500	0.001	0.001	0.001	0.001	0.001
3.750	0.001	0.001	0.001	0.001	0.001
4.000	0.001	0.001	0.001	0.001	0.001
4.250	0.001	0.001	0.001	0.001	0.001
4.500	0.001	0.001	0.001	0.001	0.001
4.750	0.001	0.001	0.001	0.001	0.001
5.000	0.001	0.001	0.001	0.001	0.001
5.250	0.001	0.001	0.001	0.001	0.001
5.500	0.001	0.001	0.001	0.001	0.001
5.750	0.001	0.001	0.001	0.001	0.001
6.000	0.001	0.001	0.001	0.001	0.001
6.250	0.001	0.001	0.001	0.001	0.001
6.500	0.001	0.001	0.001	0.002	0.002
6.750	0.002	0.002	0.002	0.002	0.002
7.000	0.002	0.002	0.002	0.002	0.002
7.250	0.002	0.002	0.002	0.002	0.002
7.500	0.002	0.002	0.002	0.002	0.002
7.750	0.002	0.002	0.002	0.002	0.002
8.000	0.002	0.002	0.002	0.002	0.002
8.250	0.002	0.002	0.002	0.002	0.002
8.500	0.002	0.002	0.002	0.002	0.002
8.750	0.002	0.002	0.002	0.003	0.003
9.000	0.003	0.003	0.003	0.003	0.003
9.250	0.003	0.003	0.003	0.003	0.003
9.500	0.003	0.003	0.003	0.003	0.003
9.750	0.003	0.003	0.003	0.004	0.004
10.000	0.004	0.004	0.004	0.004	0.004
10.250	0.004	0.004	0.004	0.004	0.004
10.500	0.005	0.005	0.005	0.005	0.006
10.750	0.006	0.006	0.006	0.007	0.007
11.000	0.008	0.008	0.009	0.009	0.010
11.250	0.010	0.011	0.012	0.013	0.014
11.500	0.015	0.016	0.018	0.020	0.023

Post-Development Analysis Results (with BMPs)

Subsection: Time vs. Volume
 Label: PO-2
 Scenario: Post-Development 5

Return Event: 5 years
 Storm Event: 5-YR

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)				
11.750	0.026	0.030	0.035	0.041	0.048
12.000	0.057	0.071	0.088	0.102	0.106
12.250	0.105	0.103	0.099	0.094	0.090
12.500	0.086	0.082	0.077	0.072	0.068
12.750	0.064	0.060	0.057	0.054	0.051
13.000	0.048	0.045	0.042	0.039	0.035
13.250	0.032	0.030	0.028	0.025	0.023
13.500	0.021	0.020	0.018	0.017	0.016
13.750	0.015	0.014	0.013	0.012	0.011
14.000	0.011	0.010	0.010	0.009	0.009
14.250	0.008	0.008	0.008	0.007	0.007
14.500	0.007	0.006	0.006	0.006	0.006
14.750	0.005	0.005	0.005	0.005	0.005
15.000	0.004	0.004	0.004	0.004	0.004
15.250	0.004	0.004	0.004	0.004	0.003
15.500	0.003	0.003	0.003	0.003	0.003
15.750	0.003	0.003	0.003	0.003	0.003
16.000	0.003	0.003	0.003	0.003	0.003
16.250	0.003	0.003	0.003	0.003	0.003
16.500	0.003	0.003	0.003	0.003	0.003
16.750	0.003	0.003	0.003	0.003	0.003
17.000	0.002	0.002	0.002	0.002	0.002
17.250	0.002	0.002	0.002	0.002	0.002
17.500	0.002	0.002	0.002	0.002	0.002
17.750	0.002	0.002	0.002	0.002	0.002
18.000	0.002	0.002	0.002	0.002	0.002
18.250	0.002	0.002	0.002	0.002	0.002
18.500	0.002	0.002	0.002	0.002	0.002
18.750	0.002	0.002	0.002	0.002	0.002
19.000	0.002	0.002	0.002	0.002	0.002
19.250	0.002	0.002	0.002	0.002	0.002
19.500	0.002	0.002	0.002	0.002	0.002
19.750	0.002	0.002	0.002	0.002	0.002
20.000	0.002	0.002	0.002	0.002	0.002
20.250	0.002	0.002	0.002	0.002	0.002
20.500	0.002	0.002	0.002	0.002	0.002
20.750	0.002	0.002	0.002	0.002	0.002
21.000	0.002	0.002	0.002	0.001	0.001
21.250	0.001	0.001	0.001	0.001	0.001
21.500	0.001	0.001	0.001	0.001	0.001
21.750	0.001	0.001	0.001	0.001	0.001
22.000	0.001	0.001	0.001	0.001	0.001
22.250	0.001	0.001	0.001	0.001	0.001
22.500	0.001	0.001	0.001	0.001	0.001
22.750	0.001	0.001	0.001	0.001	0.001
23.000	0.001	0.001	0.001	0.001	0.001
23.250	0.001	0.001	0.001	0.001	0.001

Post-Development Analysis Results (with BMPs)

Subsection: Time vs. Volume

Label: PO-2

Scenario: Post-Development 5

Return Event: 5 years

Storm Event: 5-YR

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)				
23.500	0.001	0.001	0.001	0.001	0.001
23.750	0.001	0.001	0.001	0.001	0.001
24.000	0.001	(N/A)	(N/A)	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Time vs. Volume

Return Event: 10 years

Label: PO-2

Storm Event: 10-YR

Scenario: Post-Development 10

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)				
0.000	0.000	0.000	0.000	0.000	0.000
0.250	0.000	0.000	0.000	0.000	0.000
0.500	0.000	0.000	0.000	0.000	0.000
0.750	0.000	0.000	0.000	0.000	0.000
1.000	0.000	0.000	0.000	0.000	0.000
1.250	0.000	0.000	0.000	0.000	0.000
1.500	0.000	0.000	0.000	0.000	0.000
1.750	0.000	0.000	0.000	0.000	0.000
2.000	0.000	0.000	0.000	0.001	0.001
2.250	0.001	0.001	0.001	0.001	0.001
2.500	0.001	0.001	0.001	0.001	0.001
2.750	0.001	0.001	0.001	0.001	0.001
3.000	0.001	0.001	0.001	0.001	0.001
3.250	0.001	0.001	0.001	0.001	0.001
3.500	0.001	0.001	0.001	0.001	0.001
3.750	0.001	0.001	0.001	0.001	0.001
4.000	0.001	0.001	0.001	0.001	0.001
4.250	0.001	0.001	0.001	0.001	0.001
4.500	0.001	0.001	0.001	0.001	0.001
4.750	0.001	0.001	0.001	0.001	0.001
5.000	0.001	0.001	0.001	0.001	0.001
5.250	0.001	0.001	0.001	0.001	0.002
5.500	0.002	0.002	0.002	0.002	0.002
5.750	0.002	0.002	0.002	0.002	0.002
6.000	0.002	0.002	0.002	0.002	0.002
6.250	0.002	0.002	0.002	0.002	0.002
6.500	0.002	0.002	0.002	0.002	0.002
6.750	0.002	0.002	0.002	0.002	0.002
7.000	0.002	0.002	0.002	0.002	0.002
7.250	0.002	0.002	0.002	0.002	0.002
7.500	0.002	0.002	0.002	0.002	0.002
7.750	0.002	0.002	0.002	0.002	0.003
8.000	0.003	0.003	0.003	0.003	0.003
8.250	0.003	0.003	0.003	0.003	0.003
8.500	0.003	0.003	0.003	0.003	0.003
8.750	0.003	0.003	0.003	0.003	0.003
9.000	0.003	0.003	0.003	0.003	0.003
9.250	0.003	0.003	0.003	0.003	0.003
9.500	0.004	0.004	0.004	0.004	0.004
9.750	0.004	0.004	0.004	0.004	0.004
10.000	0.004	0.005	0.005	0.005	0.005
10.250	0.005	0.005	0.006	0.006	0.006
10.500	0.006	0.006	0.007	0.007	0.007
10.750	0.007	0.008	0.008	0.009	0.009
11.000	0.010	0.010	0.011	0.011	0.012
11.250	0.013	0.014	0.015	0.016	0.017
11.500	0.018	0.020	0.023	0.026	0.029

Post-Development Analysis Results (with BMPs)

Subsection: Time vs. Volume

Return Event: 10 years

Label: PO-2

Storm Event: 10-YR

Scenario: Post-Development 10

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)				
11.750	0.033	0.038	0.044	0.049	0.057
12.000	0.068	0.084	0.106	0.122	0.127
12.250	0.126	0.122	0.118	0.113	0.108
12.500	0.103	0.098	0.092	0.086	0.081
12.750	0.076	0.072	0.068	0.064	0.060
13.000	0.057	0.053	0.050	0.048	0.045
13.250	0.042	0.039	0.036	0.033	0.030
13.500	0.028	0.026	0.024	0.022	0.020
13.750	0.019	0.018	0.016	0.015	0.014
14.000	0.014	0.013	0.012	0.011	0.011
14.250	0.010	0.010	0.010	0.009	0.009
14.500	0.008	0.008	0.008	0.007	0.007
14.750	0.007	0.007	0.006	0.006	0.006
15.000	0.006	0.005	0.005	0.005	0.005
15.250	0.005	0.004	0.004	0.004	0.004
15.500	0.004	0.004	0.004	0.004	0.004
15.750	0.004	0.004	0.004	0.004	0.004
16.000	0.004	0.004	0.003	0.003	0.003
16.250	0.003	0.003	0.003	0.003	0.003
16.500	0.003	0.003	0.003	0.003	0.003
16.750	0.003	0.003	0.003	0.003	0.003
17.000	0.003	0.003	0.003	0.003	0.003
17.250	0.003	0.003	0.003	0.003	0.003
17.500	0.003	0.003	0.003	0.003	0.003
17.750	0.003	0.003	0.002	0.002	0.002
18.000	0.002	0.002	0.002	0.002	0.002
18.250	0.002	0.002	0.002	0.002	0.002
18.500	0.002	0.002	0.002	0.002	0.002
18.750	0.002	0.002	0.002	0.002	0.002
19.000	0.002	0.002	0.002	0.002	0.002
19.250	0.002	0.002	0.002	0.002	0.002
19.500	0.002	0.002	0.002	0.002	0.002
19.750	0.002	0.002	0.002	0.002	0.002
20.000	0.002	0.002	0.002	0.002	0.002
20.250	0.002	0.002	0.002	0.002	0.002
20.500	0.002	0.002	0.002	0.002	0.002
20.750	0.002	0.002	0.002	0.002	0.002
21.000	0.002	0.002	0.002	0.002	0.002
21.250	0.002	0.002	0.002	0.002	0.002
21.500	0.002	0.002	0.002	0.002	0.002
21.750	0.002	0.002	0.002	0.002	0.002
22.000	0.002	0.002	0.002	0.002	0.002
22.250	0.002	0.002	0.002	0.002	0.002
22.500	0.002	0.002	0.002	0.002	0.002
22.750	0.002	0.002	0.002	0.002	0.002
23.000	0.002	0.002	0.002	0.002	0.002
23.250	0.001	0.001	0.001	0.001	0.001

Post-Development Analysis Results (with BMPs)

Subsection: Time vs. Volume

Label: PO-2

Scenario: Post-Development 10

Return Event: 10 years

Storm Event: 10-YR

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)				
23.500	0.001	0.001	0.001	0.001	0.001
23.750	0.001	0.001	0.001	0.001	0.001
24.000	0.001	(N/A)	(N/A)	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Time vs. Volume

Return Event: 25 years

Label: PO-2

Storm Event: 25-YR

Scenario: Post-Development 25

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)				
0.000	0.000	0.000	0.000	0.000	0.000
0.250	0.000	0.000	0.000	0.000	0.000
0.500	0.000	0.000	0.000	0.000	0.000
0.750	0.000	0.000	0.000	0.000	0.000
1.000	0.000	0.000	0.000	0.000	0.000
1.250	0.000	0.000	0.000	0.000	0.000
1.500	0.000	0.000	0.000	0.000	0.000
1.750	0.001	0.001	0.001	0.001	0.001
2.000	0.001	0.001	0.001	0.001	0.001
2.250	0.001	0.001	0.001	0.001	0.001
2.500	0.001	0.001	0.001	0.001	0.001
2.750	0.001	0.001	0.001	0.001	0.001
3.000	0.001	0.001	0.001	0.001	0.001
3.250	0.001	0.001	0.001	0.001	0.001
3.500	0.001	0.001	0.001	0.001	0.001
3.750	0.001	0.001	0.001	0.001	0.002
4.000	0.002	0.002	0.002	0.002	0.002
4.250	0.002	0.002	0.002	0.002	0.002
4.500	0.002	0.002	0.002	0.002	0.002
4.750	0.002	0.002	0.002	0.002	0.002
5.000	0.002	0.002	0.002	0.002	0.002
5.250	0.002	0.002	0.002	0.002	0.002
5.500	0.002	0.002	0.002	0.002	0.002
5.750	0.002	0.002	0.002	0.002	0.002
6.000	0.002	0.002	0.002	0.002	0.002
6.250	0.002	0.002	0.002	0.002	0.002
6.500	0.002	0.002	0.002	0.002	0.002
6.750	0.002	0.002	0.002	0.002	0.002
7.000	0.003	0.003	0.003	0.003	0.003
7.250	0.003	0.003	0.003	0.003	0.003
7.500	0.003	0.003	0.003	0.003	0.003
7.750	0.003	0.003	0.003	0.003	0.003
8.000	0.003	0.003	0.003	0.003	0.003
8.250	0.003	0.003	0.003	0.003	0.003
8.500	0.003	0.003	0.003	0.004	0.004
8.750	0.004	0.004	0.004	0.004	0.004
9.000	0.004	0.004	0.004	0.004	0.004
9.250	0.004	0.004	0.004	0.004	0.004
9.500	0.005	0.005	0.005	0.005	0.005
9.750	0.005	0.006	0.006	0.006	0.006
10.000	0.006	0.006	0.007	0.007	0.007
10.250	0.007	0.007	0.008	0.008	0.008
10.500	0.008	0.008	0.009	0.009	0.009
10.750	0.010	0.010	0.011	0.011	0.012
11.000	0.013	0.013	0.014	0.015	0.016
11.250	0.018	0.019	0.020	0.021	0.023
11.500	0.025	0.027	0.031	0.035	0.039

Post-Development Analysis Results (with BMPs)

Subsection: Time vs. Volume

Return Event: 25 years

Label: PO-2

Storm Event: 25-YR

Scenario: Post-Development 25

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)				
11.750	0.044	0.048	0.053	0.060	0.070
12.000	0.084	0.104	0.131	0.150	0.156
12.250	0.154	0.151	0.145	0.139	0.133
12.500	0.127	0.121	0.114	0.107	0.101
12.750	0.095	0.089	0.084	0.079	0.074
13.000	0.070	0.066	0.062	0.059	0.055
13.250	0.052	0.049	0.047	0.044	0.041
13.500	0.038	0.035	0.032	0.030	0.028
13.750	0.026	0.024	0.022	0.021	0.019
14.000	0.018	0.017	0.016	0.016	0.015
14.250	0.014	0.013	0.013	0.012	0.012
14.500	0.011	0.011	0.010	0.010	0.010
14.750	0.009	0.009	0.009	0.008	0.008
15.000	0.008	0.007	0.007	0.007	0.007
15.250	0.006	0.006	0.006	0.006	0.006
15.500	0.006	0.005	0.005	0.005	0.005
15.750	0.005	0.005	0.005	0.005	0.005
16.000	0.004	0.004	0.004	0.004	0.004
16.250	0.004	0.004	0.004	0.004	0.004
16.500	0.004	0.004	0.004	0.004	0.004
16.750	0.004	0.004	0.004	0.004	0.004
17.000	0.004	0.004	0.003	0.003	0.003
17.250	0.003	0.003	0.003	0.003	0.003
17.500	0.003	0.003	0.003	0.003	0.003
17.750	0.003	0.003	0.003	0.003	0.003
18.000	0.003	0.003	0.003	0.003	0.003
18.250	0.003	0.003	0.003	0.003	0.003
18.500	0.003	0.003	0.003	0.003	0.003
18.750	0.003	0.003	0.003	0.003	0.003
19.000	0.003	0.003	0.003	0.003	0.002
19.250	0.002	0.002	0.002	0.002	0.002
19.500	0.002	0.002	0.002	0.002	0.002
19.750	0.002	0.002	0.002	0.002	0.002
20.000	0.002	0.002	0.002	0.002	0.002
20.250	0.002	0.002	0.002	0.002	0.002
20.500	0.002	0.002	0.002	0.002	0.002
20.750	0.002	0.002	0.002	0.002	0.002
21.000	0.002	0.002	0.002	0.002	0.002
21.250	0.002	0.002	0.002	0.002	0.002
21.500	0.002	0.002	0.002	0.002	0.002
21.750	0.002	0.002	0.002	0.002	0.002
22.000	0.002	0.002	0.002	0.002	0.002
22.250	0.002	0.002	0.002	0.002	0.002
22.500	0.002	0.002	0.002	0.002	0.002
22.750	0.002	0.002	0.002	0.002	0.002
23.000	0.002	0.002	0.002	0.002	0.002
23.250	0.002	0.002	0.002	0.002	0.002

Post-Development Analysis Results (with BMPs)

Subsection: Time vs. Volume

Label: PO-2

Scenario: Post-Development 25

Return Event: 25 years

Storm Event: 25-YR

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)				
23.500	0.002	0.002	0.002	0.002	0.002
23.750	0.002	0.002	0.002	0.002	0.002
24.000	0.002	(N/A)	(N/A)	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Time vs. Volume

Return Event: 50 years

Label: PO-2

Storm Event: 50-YR

Scenario: Post-Development 50

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)				
0.000	0.000	0.000	0.000	0.000	0.000
0.250	0.000	0.000	0.000	0.000	0.000
0.500	0.000	0.000	0.000	0.000	0.000
0.750	0.000	0.000	0.000	0.000	0.000
1.000	0.000	0.000	0.000	0.000	0.000
1.250	0.000	0.000	0.000	0.000	0.000
1.500	0.001	0.001	0.001	0.001	0.001
1.750	0.001	0.001	0.001	0.001	0.001
2.000	0.001	0.001	0.001	0.001	0.001
2.250	0.001	0.001	0.001	0.001	0.001
2.500	0.001	0.001	0.001	0.001	0.001
2.750	0.001	0.001	0.001	0.001	0.001
3.000	0.001	0.001	0.001	0.002	0.002
3.250	0.002	0.002	0.002	0.002	0.002
3.500	0.002	0.002	0.002	0.002	0.002
3.750	0.002	0.002	0.002	0.002	0.002
4.000	0.002	0.002	0.002	0.002	0.002
4.250	0.002	0.002	0.002	0.002	0.002
4.500	0.002	0.002	0.002	0.002	0.002
4.750	0.002	0.002	0.002	0.002	0.002
5.000	0.002	0.002	0.002	0.002	0.002
5.250	0.002	0.002	0.002	0.002	0.002
5.500	0.002	0.002	0.002	0.002	0.002
5.750	0.002	0.002	0.002	0.002	0.002
6.000	0.002	0.002	0.002	0.002	0.002
6.250	0.003	0.003	0.003	0.003	0.003
6.500	0.003	0.003	0.003	0.003	0.003
6.750	0.003	0.003	0.003	0.003	0.003
7.000	0.003	0.003	0.003	0.003	0.003
7.250	0.003	0.003	0.003	0.003	0.003
7.500	0.003	0.003	0.003	0.003	0.003
7.750	0.003	0.003	0.004	0.004	0.004
8.000	0.004	0.004	0.004	0.004	0.004
8.250	0.004	0.004	0.004	0.004	0.004
8.500	0.004	0.004	0.004	0.004	0.004
8.750	0.004	0.004	0.004	0.004	0.004
9.000	0.004	0.005	0.005	0.005	0.005
9.250	0.005	0.005	0.005	0.005	0.006
9.500	0.006	0.006	0.006	0.006	0.006
9.750	0.007	0.007	0.007	0.007	0.008
10.000	0.008	0.008	0.008	0.008	0.009
10.250	0.009	0.009	0.009	0.009	0.010
10.500	0.010	0.010	0.011	0.011	0.011
10.750	0.012	0.013	0.013	0.014	0.015
11.000	0.016	0.017	0.018	0.019	0.020
11.250	0.021	0.023	0.025	0.027	0.028
11.500	0.030	0.033	0.038	0.042	0.046

Post-Development Analysis Results (with BMPs)

Subsection: Time vs. Volume

Return Event: 50 years

Label: PO-2

Storm Event: 50-YR

Scenario: Post-Development 50

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)				
11.750	0.050	0.055	0.061	0.069	0.081
12.000	0.098	0.121	0.152	0.173	0.179
12.250	0.177	0.173	0.168	0.161	0.154
12.500	0.147	0.140	0.132	0.125	0.117
12.750	0.110	0.104	0.098	0.092	0.087
13.000	0.082	0.077	0.072	0.068	0.064
13.250	0.061	0.057	0.054	0.051	0.049
13.500	0.046	0.044	0.040	0.037	0.034
13.750	0.032	0.030	0.028	0.026	0.024
14.000	0.023	0.021	0.020	0.019	0.018
14.250	0.017	0.017	0.016	0.015	0.014
14.500	0.014	0.013	0.013	0.012	0.012
14.750	0.011	0.011	0.010	0.010	0.010
15.000	0.009	0.009	0.009	0.008	0.008
15.250	0.008	0.008	0.007	0.007	0.007
15.500	0.007	0.007	0.007	0.006	0.006
15.750	0.006	0.006	0.006	0.006	0.006
16.000	0.006	0.006	0.005	0.005	0.005
16.250	0.005	0.005	0.005	0.005	0.005
16.500	0.005	0.005	0.005	0.005	0.004
16.750	0.004	0.004	0.004	0.004	0.004
17.000	0.004	0.004	0.004	0.004	0.004
17.250	0.004	0.004	0.004	0.004	0.004
17.500	0.004	0.004	0.004	0.004	0.004
17.750	0.004	0.004	0.003	0.003	0.003
18.000	0.003	0.003	0.003	0.003	0.003
18.250	0.003	0.003	0.003	0.003	0.003
18.500	0.003	0.003	0.003	0.003	0.003
18.750	0.003	0.003	0.003	0.003	0.003
19.000	0.003	0.003	0.003	0.003	0.003
19.250	0.003	0.003	0.003	0.003	0.003
19.500	0.003	0.003	0.003	0.003	0.003
19.750	0.003	0.003	0.003	0.003	0.003
20.000	0.003	0.003	0.003	0.003	0.003
20.250	0.003	0.003	0.003	0.003	0.003
20.500	0.003	0.003	0.003	0.003	0.003
20.750	0.003	0.003	0.003	0.003	0.003
21.000	0.003	0.003	0.003	0.002	0.002
21.250	0.002	0.002	0.002	0.002	0.002
21.500	0.002	0.002	0.002	0.002	0.002
21.750	0.002	0.002	0.002	0.002	0.002
22.000	0.002	0.002	0.002	0.002	0.002
22.250	0.002	0.002	0.002	0.002	0.002
22.500	0.002	0.002	0.002	0.002	0.002
22.750	0.002	0.002	0.002	0.002	0.002
23.000	0.002	0.002	0.002	0.002	0.002
23.250	0.002	0.002	0.002	0.002	0.002

Post-Development Analysis Results (with BMPs)

Subsection: Time vs. Volume

Label: PO-2

Scenario: Post-Development 50

Return Event: 50 years

Storm Event: 50-YR

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)				
23.500	0.002	0.002	0.002	0.002	0.002
23.750	0.002	0.002	0.002	0.002	0.002
24.000	0.002	(N/A)	(N/A)	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Time vs. Volume

Return Event: 100 years

Label: PO-2

Storm Event: 100-YR

Scenario: Post-Development 100

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)				
0.000	0.000	0.000	0.000	0.000	0.000
0.250	0.000	0.000	0.000	0.000	0.000
0.500	0.000	0.000	0.000	0.000	0.000
0.750	0.000	0.000	0.000	0.000	0.000
1.000	0.000	0.000	0.000	0.000	0.000
1.250	0.000	0.001	0.001	0.001	0.001
1.500	0.001	0.001	0.001	0.001	0.001
1.750	0.001	0.001	0.001	0.001	0.001
2.000	0.001	0.001	0.001	0.001	0.001
2.250	0.001	0.001	0.001	0.001	0.001
2.500	0.001	0.001	0.002	0.002	0.002
2.750	0.002	0.002	0.002	0.002	0.002
3.000	0.002	0.002	0.002	0.002	0.002
3.250	0.002	0.002	0.002	0.002	0.002
3.500	0.002	0.002	0.002	0.002	0.002
3.750	0.002	0.002	0.002	0.002	0.002
4.000	0.002	0.002	0.002	0.002	0.002
4.250	0.002	0.002	0.002	0.002	0.002
4.500	0.002	0.002	0.002	0.002	0.002
4.750	0.002	0.002	0.002	0.002	0.003
5.000	0.003	0.003	0.003	0.003	0.003
5.250	0.003	0.003	0.003	0.003	0.003
5.500	0.003	0.003	0.003	0.003	0.003
5.750	0.003	0.003	0.003	0.003	0.003
6.000	0.003	0.003	0.003	0.003	0.003
6.250	0.003	0.003	0.003	0.003	0.003
6.500	0.003	0.003	0.003	0.003	0.003
6.750	0.003	0.003	0.003	0.003	0.003
7.000	0.003	0.003	0.003	0.003	0.004
7.250	0.004	0.004	0.004	0.004	0.004
7.500	0.004	0.004	0.004	0.004	0.004
7.750	0.004	0.004	0.004	0.004	0.004
8.000	0.004	0.004	0.004	0.004	0.004
8.250	0.005	0.005	0.005	0.005	0.005
8.500	0.005	0.005	0.005	0.005	0.005
8.750	0.005	0.005	0.005	0.005	0.006
9.000	0.006	0.006	0.006	0.006	0.006
9.250	0.006	0.006	0.007	0.007	0.007
9.500	0.007	0.007	0.007	0.008	0.008
9.750	0.008	0.008	0.009	0.009	0.009
10.000	0.009	0.010	0.010	0.010	0.010
10.250	0.011	0.011	0.011	0.011	0.012
10.500	0.012	0.012	0.013	0.013	0.014
10.750	0.015	0.015	0.016	0.017	0.018
11.000	0.019	0.020	0.021	0.023	0.024
11.250	0.026	0.028	0.030	0.032	0.035
11.500	0.037	0.040	0.045	0.049	0.053

Post-Development Analysis Results (with BMPs)

Subsection: Time vs. Volume

Return Event: 100 years

Label: PO-2

Storm Event: 100-YR

Scenario: Post-Development 100

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)				
11.750	0.057	0.063	0.071	0.080	0.094
12.000	0.114	0.140	0.173	0.200	0.203
12.250	0.196	0.188	0.179	0.172	0.166
12.500	0.159	0.152	0.144	0.136	0.129
12.750	0.121	0.115	0.108	0.102	0.096
13.000	0.091	0.086	0.081	0.076	0.072
13.250	0.068	0.064	0.061	0.057	0.054
13.500	0.052	0.049	0.046	0.044	0.041
13.750	0.038	0.036	0.033	0.031	0.029
14.000	0.027	0.026	0.024	0.023	0.022
14.250	0.021	0.020	0.019	0.018	0.017
14.500	0.017	0.016	0.015	0.015	0.014
14.750	0.014	0.013	0.013	0.012	0.012
15.000	0.011	0.011	0.010	0.010	0.010
15.250	0.009	0.009	0.009	0.009	0.009
15.500	0.008	0.008	0.008	0.008	0.008
15.750	0.008	0.007	0.007	0.007	0.007
16.000	0.007	0.007	0.007	0.007	0.006
16.250	0.006	0.006	0.006	0.006	0.006
16.500	0.006	0.006	0.006	0.006	0.006
16.750	0.006	0.005	0.005	0.005	0.005
17.000	0.005	0.005	0.005	0.005	0.005
17.250	0.005	0.005	0.005	0.004	0.004
17.500	0.004	0.004	0.004	0.004	0.004
17.750	0.004	0.004	0.004	0.004	0.004
18.000	0.004	0.004	0.004	0.004	0.004
18.250	0.004	0.004	0.004	0.004	0.004
18.500	0.004	0.003	0.003	0.003	0.003
18.750	0.003	0.003	0.003	0.003	0.003
19.000	0.003	0.003	0.003	0.003	0.003
19.250	0.003	0.003	0.003	0.003	0.003
19.500	0.003	0.003	0.003	0.003	0.003
19.750	0.003	0.003	0.003	0.003	0.003
20.000	0.003	0.003	0.003	0.003	0.003
20.250	0.003	0.003	0.003	0.003	0.003
20.500	0.003	0.003	0.003	0.003	0.003
20.750	0.003	0.003	0.003	0.003	0.003
21.000	0.003	0.003	0.003	0.003	0.003
21.250	0.003	0.003	0.003	0.003	0.003
21.500	0.003	0.003	0.003	0.003	0.003
21.750	0.003	0.003	0.003	0.003	0.003
22.000	0.003	0.003	0.003	0.003	0.003
22.250	0.003	0.003	0.003	0.003	0.003
22.500	0.003	0.003	0.003	0.003	0.003
22.750	0.003	0.003	0.002	0.002	0.002
23.000	0.002	0.002	0.002	0.002	0.002
23.250	0.002	0.002	0.002	0.002	0.002

Post-Development Analysis Results (with BMPs)

Subsection: Time vs. Volume

Label: PO-2

Scenario: Post-Development 100

Return Event: 100 years

Storm Event: 100-YR

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)				
23.500	0.002	0.002	0.002	0.002	0.002
23.750	0.002	0.002	0.002	0.002	0.002
24.000	0.002	(N/A)	(N/A)	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Elevation vs. Volume Curve

Label: MRC

Scenario: Post-Development 1

Return Event: 1 years

Storm Event: 1-YR

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ac-ft)
48.80	0.000
48.90	0.084
49.00	0.169
49.10	0.253
49.20	0.337
49.30	0.422
49.40	0.506
49.50	0.590
49.60	0.675
49.70	0.759
49.80	0.843
49.90	0.928
50.00	1.012
50.10	1.096
50.20	1.181
50.30	1.265
50.40	1.349
50.50	1.434
50.60	1.518
50.70	1.603
50.80	1.687
50.90	1.771
51.00	1.856
51.10	1.940
51.20	2.024
51.30	2.109
51.40	2.193
51.50	2.277
51.60	2.362
51.70	2.446
51.80	2.530

Post-Development Analysis Results (with BMPs)

Subsection: Pipe Volume
 Label: PO-2
 Scenario: Post-Development 1

Return Event: 1 years
 Storm Event: 1-YR

Volume Results (Pipe)

Pipe Storage Upstream Invert	47.50 ft
Pipe Storage Downstream Invert	47.50 ft
Pipe Storage Length	220.00 ft
Pipe Storage Diameter	24.0 in
Pipe Storage Number of Barrels	14
Pipe Storage Slice Width	0.10 ft
Pipe Storage Vertical Increment	0.10 ft

Elevation (ft)	Perpendicular Downstream Depth (ft)	Perpendicular Downstream Area (ft ²)	Wetted Length (ft)	Filled Length (ft)	Perpendicular Upstream Depth (ft)	Perpendicular Upstream Area (ft ²)	Total Volume (ac-ft)
47.50	0.00	0.0	220.00	0.00	0.00	0.0	0.000
47.60	0.10	0.1	220.00	0.00	0.10	0.1	0.004
47.70	0.20	0.2	220.00	0.00	0.20	0.2	0.012
47.80	0.30	0.3	220.00	0.00	0.30	0.3	0.021
47.90	0.40	0.4	220.00	0.00	0.40	0.4	0.032
48.00	0.50	0.6	220.00	0.00	0.50	0.6	0.043
48.10	0.60	0.8	220.00	0.00	0.60	0.8	0.056
48.20	0.70	1.0	220.00	0.00	0.70	1.0	0.069
48.30	0.80	1.2	220.00	0.00	0.80	1.2	0.083
48.40	0.90	1.4	220.00	0.00	0.90	1.4	0.097
48.50	1.00	1.6	220.00	0.00	1.00	1.6	0.111
48.60	1.10	1.8	220.00	0.00	1.10	1.8	0.125
48.70	1.20	2.0	220.00	0.00	1.20	2.0	0.139
48.80	1.30	2.2	220.00	0.00	1.30	2.2	0.153
48.90	1.40	2.3	220.00	0.00	1.40	2.3	0.166
49.00	1.50	2.5	220.00	0.00	1.50	2.5	0.179
49.10	1.60	2.7	220.00	0.00	1.60	2.7	0.190
49.20	1.70	2.8	220.00	0.00	1.70	2.8	0.201
49.30	1.80	3.0	220.00	0.00	1.80	3.0	0.211
49.40	1.90	3.1	220.00	0.00	1.90	3.1	0.218
49.50	2.00	3.1	220.00	220.00	2.00	3.1	0.222

Post-Development Analysis Results (with BMPs)

Subsection: Outlet Input Data
 Label: MRC
 Scenario: Post-Development 1

Return Event: 1 years
 Storm Event: 1-YR

Requested Pond Water Surface Elevations

Minimum (Headwater)	48.80 ft
Increment (Headwater)	0.50 ft
Maximum (Headwater)	51.80 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Orifice-Circular	Orifice - 1	Forward	TW	49.85	51.80
Vnotch Weir	Weir - 1	Forward	TW	50.50	51.80
Tailwater Settings	Tailwater			(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Outlet Input Data
 Label: MRC
 Scenario: Post-Development 1

Return Event: 1 years
 Storm Event: 1-YR

Structure ID: Orifice - 1	
Structure Type: Orifice-Circular	
Number of Openings	2
Elevation	49.85 ft
Orifice Diameter	8.0 in
Orifice Coefficient	0.600

Structure ID: Weir - 1	
Structure Type: Vnotch Weir	
Number of Openings	1
Elevation	50.50 ft
V-Notch Angle	120.00 degrees
Coefficient of Discharge	0.576

Structure ID: TW	
Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall

Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft ³ /s
Flow Tolerance (Maximum)	10.000 ft ³ /s

Post-Development Analysis Results (with BMPs)

Subsection: Individual Outlet Curves
 Label: MRC
 Scenario: Post-Development 1

Return Event: 1 years
 Storm Event: 1-YR

RATING TABLE FOR ONE OUTLET TYPE
 Structure ID = Orifice - 1 (Orifice-Circular)

 Upstream ID = (Pond Water Surface)
 Downstream ID = Tailwater (Pond Outfall)

Water Surface Elevation (ft)	Flow (ft ³ /s)	Tailwater Elevation (ft)	Convergence Error (ft)	Computation Messages
48.80	0.00	(N/A)	0.00	HW & TW below invert
49.30	0.00	(N/A)	0.00	HW & TW below invert
49.80	0.00	(N/A)	0.00	HW & TW below invert
49.85	0.00	(N/A)	0.00	Upstream HW & DNstream TW < Inv.El
50.30	0.95	(N/A)	0.00	CRIT.DEPTH CONTROL Vh= .126ft Dcr= .323ft CRIT.DEPTH Hev= .00ft
50.50	1.80	(N/A)	0.00	CRIT.DEPTH CONTROL Vh= .200ft Dcr= .449ft CRIT.DEPTH Hev= .00ft
50.80	2.64	(N/A)	0.00	H = .62
51.30	3.55	(N/A)	0.00	H = 1.12
51.80	4.27	(N/A)	0.00	H = 1.62

Post-Development Analysis Results (with BMPs)

Subsection: Individual Outlet Curves
 Label: MRC
 Scenario: Post-Development 1

Return Event: 1 years
 Storm Event: 1-YR

RATING TABLE FOR ONE OUTLET TYPE
 Structure ID = Weir - 1 (Vnotch Weir)

Upstream ID = (Pond Water Surface)
 Downstream ID = Tailwater (Pond Outfall)

Water Surface Elevation (ft)	Flow (ft ³ /s)	Tailwater Elevation (ft)	Convergence Error (ft)	Computation Messages
48.80	0.00	(N/A)	0.00	HW & TW below Inv.El.=50.500
49.30	0.00	(N/A)	0.00	HW & TW below Inv.El.=50.500
49.80	0.00	(N/A)	0.00	HW & TW below Inv.El.=50.500
49.85	0.00	(N/A)	0.00	HW & TW below Inv.El.=50.500
50.30	0.00	(N/A)	0.00	HW & TW below Inv.El.=50.500
50.50	0.00	(N/A)	0.00	H=.00; Htw=.00; Qfree=.00;
50.80	0.21	(N/A)	0.00	H=.30; Htw=.00; Qfree=.21;
51.30	2.44	(N/A)	0.00	H=.80; Htw=.00; Qfree=2.44;
51.80	8.22	(N/A)	0.00	H=1.30; Htw=.00; Qfree=8.22;

Post-Development Analysis Results (with BMPs)

Subsection: Composite Rating Curve

Return Event: 1 years

Label: MRC

Storm Event: 1-YR

Scenario: Post-Development 1

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft ³ /s)	Tailwater Elevation (ft)	Convergence Error (ft)	Contributing Structures
48.80	0.00	(N/A)	0.00	None Contributing
49.30	0.00	(N/A)	0.00	None Contributing
49.80	0.00	(N/A)	0.00	None Contributing
49.85	0.00	(N/A)	0.00	None Contributing
50.30	0.95	(N/A)	0.00	Orifice - 1
50.50	1.80	(N/A)	0.00	Orifice - 1 + Weir - 1
50.80	2.85	(N/A)	0.00	Orifice - 1 + Weir - 1
51.30	5.99	(N/A)	0.00	Orifice - 1 + Weir - 1
51.80	12.50	(N/A)	0.00	Orifice - 1 + Weir - 1

Post-Development Analysis Results (with BMPs)

Subsection: Outlet Input Data
 Label: PO-2
 Scenario: Post-Development 1

Return Event: 1 years
 Storm Event: 1-YR

Requested Pond Water Surface Elevations

Minimum (Headwater)	47.50 ft
Increment (Headwater)	0.50 ft
Maximum (Headwater)	49.50 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Orifice-Circular	Orifice - 1	Forward	TW	47.50	49.50
Vnotch Weir	Weir - 1	Forward	TW	48.50	49.50
Tailwater Settings	Tailwater			(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Outlet Input Data

Label: PO-2

Scenario: Post-Development 1

Return Event: 1 years

Storm Event: 1-YR

Structure ID: Orifice - 1	
Structure Type: Orifice-Circular	
Number of Openings	2
Elevation	47.50 ft
Orifice Diameter	8.0 in
Orifice Coefficient	0.600

Structure ID: Weir - 1	
Structure Type: Vnotch Weir	
Number of Openings	1
Elevation	48.50 ft
V-Notch Angle	120.00 degrees
Coefficient of Discharge	0.576

Structure ID: TW	
Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall

Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft ³ /s
Flow Tolerance (Maximum)	10.000 ft ³ /s

Post-Development Analysis Results (with BMPs)

Subsection: Individual Outlet Curves
 Label: PO-2
 Scenario: Post-Development 1

Return Event: 1 years
 Storm Event: 1-YR

RATING TABLE FOR ONE OUTLET TYPE
 Structure ID = Orifice - 1 (Orifice-Circular)

 Upstream ID = (Pond Water Surface)
 Downstream ID = Tailwater (Pond Outfall)

Water Surface Elevation (ft)	Flow (ft ³ /s)	Tailwater Elevation (ft)	Convergence Error (ft)	Computation Messages
47.50	0.00	(N/A)	0.00	Upstream HW & DNstream TW < Inv.El
48.00	1.15	(N/A)	0.00	CRIT.DEPTH CONTROL Vh= .143ft Dcr= .357ft CRIT.DEPTH Hev= .00ft
48.50	2.74	(N/A)	0.00	H =.67
49.00	3.63	(N/A)	0.00	H =1.17
49.50	4.34	(N/A)	0.00	H =1.67

Post-Development Analysis Results (with BMPs)

Subsection: Individual Outlet Curves
 Label: PO-2
 Scenario: Post-Development 1

Return Event: 1 years
 Storm Event: 1-YR

RATING TABLE FOR ONE OUTLET TYPE
 Structure ID = Weir - 1 (Vnotch Weir)

Upstream ID = (Pond Water Surface)
 Downstream ID = Tailwater (Pond Outfall)

Water Surface Elevation (ft)	Flow (ft ³ /s)	Tailwater Elevation (ft)	Convergence Error (ft)	Computation Messages
47.50	0.00	(N/A)	0.00	HW & TW below Inv.El.=48.500
48.00	0.00	(N/A)	0.00	HW & TW below Inv.El.=48.500
48.50	0.00	(N/A)	0.00	H=.00; Htw=.00; Qfree=.00;
49.00	0.75	(N/A)	0.00	H=.50; Htw=.00; Qfree=.75;
49.50	4.27	(N/A)	0.00	H=1.00; Htw=.00; Qfree=4.27;

Post-Development Analysis Results (with BMPs)

Subsection: Composite Rating Curve

Return Event: 1 years

Label: PO-2

Storm Event: 1-YR

Scenario: Post-Development 1

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft ³ /s)	Tailwater Elevation (ft)	Convergence Error (ft)	Contributing Structures
47.50	0.00	(N/A)	0.00	None Contributing
48.00	1.15	(N/A)	0.00	Orifice - 1
48.50	2.74	(N/A)	0.00	Orifice - 1 + Weir - 1
49.00	4.38	(N/A)	0.00	Orifice - 1 + Weir - 1
49.50	8.61	(N/A)	0.00	Orifice - 1 + Weir - 1

Post-Development Analysis Results (with BMPs)

Subsection: Elevation-Volume-Flow Table (Pond)

Label: MRC

Scenario: Post-Development 1

Return Event: 1 years

Storm Event: 1-YR

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	49.30 ft
Volume (Initial)	0.422 ac-ft
Flow (Initial Outlet)	0.00 ft ³ /s
Flow (Initial Infiltration)	0.00 ft ³ /s
Flow (Initial, Total)	0.00 ft ³ /s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft ³ /s)	Storage (ac-ft)	Area (ft ²)	Infiltration (ft ³ /s)	Flow (Total) (ft ³ /s)	2S/t + O (ft ³ /s)
48.80	0.00	0.000	0.000	0.00	0.00	0.00
49.30	0.00	0.422	0.000	0.00	0.00	204.11
49.80	0.00	0.843	0.000	0.00	0.00	408.22
49.85	0.00	0.886	0.000	0.00	0.00	428.63
50.30	0.95	1.265	0.000	0.00	0.95	613.29
50.50	1.80	1.434	0.000	0.00	1.80	695.77
50.80	2.85	1.687	0.000	0.00	2.85	819.29
51.30	5.99	2.109	0.000	0.00	5.99	1,026.55
51.80	12.50	2.530	0.000	0.00	12.50	1,237.16

Post-Development Analysis Results (with BMPs)

Subsection: Pond Routed Hydrograph (total out)

Return Event: 1 years

Label: MRC (OUT)

Storm Event: 1-YR

Scenario: Post-Development 1

Peak Discharge	0.98 ft ³ /s
Time to Peak	13.450 hours
Hydrograph Volume	0.635 ac-ft

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.950	0.00	0.05	0.18	0.35	0.50
12.200	0.60	0.66	0.71	0.75	0.78
12.450	0.81	0.83	0.85	0.87	0.88
12.700	0.90	0.91	0.92	0.92	0.93
12.950	0.94	0.95	0.95	0.95	0.96
13.200	0.97	0.97	0.97	0.98	0.98
13.450	0.98	0.98	0.97	0.97	0.97
13.700	0.97	0.96	0.96	0.95	0.95
13.950	0.95	0.95	0.95	0.94	0.94
14.200	0.94	0.94	0.93	0.93	0.93
14.450	0.92	0.92	0.92	0.91	0.91
14.700	0.91	0.90	0.90	0.90	0.89
14.950	0.89	0.88	0.88	0.87	0.87
15.200	0.87	0.86	0.86	0.85	0.85
15.450	0.84	0.84	0.84	0.83	0.83
15.700	0.82	0.82	0.82	0.81	0.81
15.950	0.80	0.80	0.79	0.79	0.79
16.200	0.78	0.78	0.77	0.77	0.77
16.450	0.76	0.76	0.75	0.75	0.75
16.700	0.74	0.74	0.73	0.73	0.73
16.950	0.72	0.72	0.71	0.71	0.71
17.200	0.70	0.70	0.69	0.69	0.69
17.450	0.68	0.68	0.67	0.67	0.67
17.700	0.66	0.66	0.65	0.65	0.65
17.950	0.64	0.64	0.64	0.63	0.63
18.200	0.62	0.62	0.62	0.61	0.61
18.450	0.61	0.60	0.60	0.60	0.59
18.700	0.59	0.58	0.58	0.58	0.57
18.950	0.57	0.57	0.56	0.56	0.56
19.200	0.55	0.55	0.55	0.55	0.54
19.450	0.54	0.54	0.53	0.53	0.53
19.700	0.52	0.52	0.52	0.52	0.51
19.950	0.51	0.51	0.50	0.50	0.50
20.200	0.50	0.49	0.49	0.49	0.48
20.450	0.48	0.48	0.48	0.47	0.47
20.700	0.47	0.47	0.46	0.46	0.46
20.950	0.46	0.45	0.45	0.45	0.45
21.200	0.44	0.44	0.44	0.44	0.43
21.450	0.43	0.43	0.43	0.43	0.42
21.700	0.42	0.42	0.42	0.41	0.41
21.950	0.41	0.41	0.41	0.40	0.40
22.200	0.40	0.40	0.39	0.39	0.39
22.450	0.39	0.39	0.38	0.38	0.38

Post-Development Analysis Results (with BMPs)

Subsection: Pond Routed Hydrograph (total out)

Label: MRC (OUT)

Scenario: Post-Development 1

Return Event: 1 years

Storm Event: 1-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
22.700	0.38	0.38	0.37	0.37	0.37
22.950	0.37	0.37	0.37	0.36	0.36
23.200	0.36	0.36	0.36	0.35	0.35
23.450	0.35	0.35	0.35	0.35	0.34
23.700	0.34	0.34	0.34	0.34	0.33
23.950	0.33	0.33	(N/A)	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Pond Routed Hydrograph (total out)

Return Event: 2 years

Label: MRC (OUT)

Storm Event: 2-YR

Scenario: Post-Development 2

Peak Discharge	1.69 ft ³ /s
Time to Peak	13.050 hours
Hydrograph Volume	0.881 ac-ft

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.800	0.00	0.05	0.12	0.21	0.33
12.050	0.49	0.69	0.87	1.02	1.17
12.300	1.27	1.36	1.42	1.48	1.53
12.550	1.58	1.60	1.62	1.64	1.66
12.800	1.67	1.68	1.68	1.69	1.69
13.050	1.69	1.69	1.69	1.68	1.68
13.300	1.67	1.67	1.66	1.65	1.64
13.550	1.63	1.61	1.60	1.59	1.58
13.800	1.56	1.55	1.54	1.52	1.51
14.050	1.50	1.49	1.47	1.46	1.45
14.300	1.43	1.42	1.41	1.39	1.38
14.550	1.37	1.35	1.34	1.33	1.31
14.800	1.30	1.29	1.27	1.26	1.24
15.050	1.23	1.22	1.20	1.19	1.18
15.300	1.16	1.15	1.14	1.13	1.11
15.550	1.10	1.09	1.08	1.07	1.06
15.800	1.04	1.03	1.02	1.01	1.00
16.050	0.99	0.98	0.97	0.96	0.95
16.300	0.95	0.94	0.94	0.93	0.93
16.550	0.92	0.92	0.91	0.91	0.90
16.800	0.90	0.89	0.89	0.88	0.88
17.050	0.87	0.87	0.86	0.86	0.85
17.300	0.85	0.84	0.84	0.83	0.83
17.550	0.82	0.82	0.81	0.81	0.80
17.800	0.80	0.80	0.79	0.79	0.78
18.050	0.78	0.77	0.77	0.76	0.76
18.300	0.75	0.75	0.74	0.74	0.74
18.550	0.73	0.73	0.72	0.72	0.71
18.800	0.71	0.71	0.70	0.70	0.69
19.050	0.69	0.68	0.68	0.68	0.67
19.300	0.67	0.67	0.66	0.66	0.65
19.550	0.65	0.65	0.64	0.64	0.64
19.800	0.63	0.63	0.62	0.62	0.62
20.050	0.61	0.61	0.61	0.60	0.60
20.300	0.60	0.59	0.59	0.59	0.58
20.550	0.58	0.58	0.57	0.57	0.57
20.800	0.56	0.56	0.56	0.56	0.55
21.050	0.55	0.55	0.54	0.54	0.54
21.300	0.53	0.53	0.53	0.53	0.52
21.550	0.52	0.52	0.52	0.51	0.51
21.800	0.51	0.50	0.50	0.50	0.50
22.050	0.49	0.49	0.49	0.49	0.48
22.300	0.48	0.48	0.48	0.47	0.47

Post-Development Analysis Results (with BMPs)

Subsection: Pond Routed Hydrograph (total out)

Label: MRC (OUT)

Scenario: Post-Development 2

Return Event: 2 years

Storm Event: 2-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
22.550	0.47	0.47	0.46	0.46	0.46
22.800	0.46	0.45	0.45	0.45	0.45
23.050	0.44	0.44	0.44	0.44	0.44
23.300	0.43	0.43	0.43	0.43	0.42
23.550	0.42	0.42	0.42	0.42	0.41
23.800	0.41	0.41	0.41	0.41	0.40

Post-Development Analysis Results (with BMPs)

Subsection: Pond Routed Hydrograph (total out)
 Label: MRC (OUT)
 Scenario: Post-Development 5

Return Event: 5 years
 Storm Event: 5-YR

Peak Discharge	2.66 ft ³ /s
Time to Peak	12.850 hours
Hydrograph Volume	1.266 ac-ft

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.400	0.00	0.00	0.03	0.07	0.11
11.650	0.16	0.21	0.27	0.33	0.41
11.900	0.50	0.61	0.76	0.96	1.45
12.150	1.88	2.11	2.25	2.35	2.43
12.400	2.49	2.53	2.58	2.61	2.63
12.650	2.64	2.65	2.66	2.66	2.66
12.900	2.66	2.66	2.65	2.64	2.63
13.150	2.62	2.61	2.59	2.58	2.56
13.400	2.55	2.53	2.51	2.49	2.47
13.650	2.45	2.43	2.41	2.39	2.37
13.900	2.35	2.33	2.31	2.29	2.27
14.150	2.25	2.23	2.20	2.18	2.16
14.400	2.14	2.12	2.10	2.08	2.06
14.650	2.04	2.02	2.00	1.98	1.96
14.900	1.94	1.92	1.90	1.88	1.86
15.150	1.84	1.82	1.80	1.78	1.76
15.400	1.74	1.72	1.70	1.67	1.65
15.650	1.63	1.61	1.59	1.57	1.55
15.900	1.54	1.52	1.50	1.48	1.46
16.150	1.44	1.43	1.41	1.39	1.38
16.400	1.36	1.34	1.33	1.31	1.30
16.650	1.28	1.27	1.25	1.24	1.22
16.900	1.21	1.20	1.18	1.17	1.15
17.150	1.14	1.13	1.11	1.10	1.09
17.400	1.08	1.06	1.05	1.04	1.03
17.650	1.02	1.01	0.99	0.98	0.97
17.900	0.96	0.95	0.95	0.94	0.94
18.150	0.93	0.92	0.92	0.91	0.91
18.400	0.90	0.90	0.89	0.89	0.88
18.650	0.88	0.87	0.87	0.86	0.86
18.900	0.85	0.85	0.84	0.84	0.83
19.150	0.83	0.82	0.82	0.81	0.81
19.400	0.81	0.80	0.80	0.79	0.79
19.650	0.78	0.78	0.77	0.77	0.77
19.900	0.76	0.76	0.75	0.75	0.75
20.150	0.74	0.74	0.73	0.73	0.73
20.400	0.72	0.72	0.71	0.71	0.71
20.650	0.70	0.70	0.70	0.69	0.69
20.900	0.68	0.68	0.68	0.67	0.67
21.150	0.67	0.66	0.66	0.66	0.65
21.400	0.65	0.65	0.64	0.64	0.64
21.650	0.63	0.63	0.63	0.62	0.62
21.900	0.62	0.61	0.61	0.61	0.60

Post-Development Analysis Results (with BMPs)

Subsection: Pond Routed Hydrograph (total out)
 Label: MRC (OUT)
 Scenario: Post-Development 5

Return Event: 5 years
 Storm Event: 5-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
22.150	0.60	0.60	0.59	0.59	0.59
22.400	0.59	0.58	0.58	0.58	0.57
22.650	0.57	0.57	0.56	0.56	0.56
22.900	0.56	0.55	0.55	0.55	0.55
23.150	0.54	0.54	0.54	0.53	0.53
23.400	0.53	0.53	0.52	0.52	0.52
23.650	0.52	0.51	0.51	0.51	0.51
23.900	0.50	0.50	0.50	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Pond Routed Hydrograph (total out)
 Label: MRC (OUT)
 Scenario: Post-Development 10

Return Event: 10 years
 Storm Event: 10-YR

Peak Discharge	3.84 ft ³ /s
Time to Peak	12.650 hours
Hydrograph Volume	1.592 ac-ft

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.050	0.00	0.02	0.04	0.07	0.10
11.300	0.13	0.16	0.20	0.23	0.26
11.550	0.31	0.36	0.41	0.47	0.53
11.800	0.60	0.69	0.79	0.93	1.24
12.050	1.69	2.18	2.62	2.90	3.18
12.300	3.37	3.51	3.62	3.70	3.77
12.550	3.82	3.83	3.84	3.83	3.82
12.800	3.81	3.79	3.77	3.74	3.71
13.050	3.67	3.64	3.59	3.55	3.51
13.300	3.46	3.42	3.37	3.32	3.27
13.550	3.22	3.17	3.12	3.07	3.02
13.800	2.97	2.92	2.88	2.84	2.81
14.050	2.79	2.76	2.74	2.71	2.68
14.300	2.66	2.63	2.61	2.58	2.56
14.550	2.53	2.51	2.48	2.46	2.43
14.800	2.41	2.38	2.36	2.33	2.31
15.050	2.28	2.26	2.23	2.21	2.19
15.300	2.16	2.14	2.12	2.09	2.07
15.550	2.05	2.03	2.01	1.98	1.96
15.800	1.94	1.92	1.90	1.88	1.86
16.050	1.84	1.82	1.80	1.78	1.76
16.300	1.74	1.72	1.70	1.68	1.66
16.550	1.64	1.62	1.60	1.58	1.56
16.800	1.54	1.52	1.50	1.48	1.46
17.050	1.45	1.43	1.41	1.40	1.38
17.300	1.36	1.35	1.33	1.31	1.30
17.550	1.28	1.27	1.25	1.24	1.22
17.800	1.21	1.20	1.18	1.17	1.15
18.050	1.14	1.13	1.11	1.10	1.09
18.300	1.07	1.06	1.05	1.04	1.03
18.550	1.01	1.00	0.99	0.98	0.97
18.800	0.96	0.95	0.95	0.94	0.94
19.050	0.93	0.93	0.92	0.92	0.91
19.300	0.91	0.90	0.90	0.89	0.89
19.550	0.88	0.88	0.87	0.87	0.86
19.800	0.86	0.86	0.85	0.85	0.84
20.050	0.84	0.83	0.83	0.83	0.82
20.300	0.82	0.81	0.81	0.80	0.80
20.550	0.80	0.79	0.79	0.78	0.78
20.800	0.78	0.77	0.77	0.76	0.76
21.050	0.76	0.75	0.75	0.75	0.74
21.300	0.74	0.73	0.73	0.73	0.72
21.550	0.72	0.72	0.71	0.71	0.71

Post-Development Analysis Results (with BMPs)

Subsection: Pond Routed Hydrograph (total out)
 Label: MRC (OUT)
 Scenario: Post-Development 10

Return Event: 10 years
 Storm Event: 10-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
21.800	0.70	0.70	0.69	0.69	0.69
22.050	0.68	0.68	0.68	0.67	0.67
22.300	0.67	0.66	0.66	0.66	0.66
22.550	0.65	0.65	0.65	0.64	0.64
22.800	0.64	0.63	0.63	0.63	0.62
23.050	0.62	0.62	0.61	0.61	0.61
23.300	0.61	0.60	0.60	0.60	0.59
23.550	0.59	0.59	0.59	0.58	0.58
23.800	0.58	0.57	0.57	0.57	0.57

Post-Development Analysis Results (with BMPs)

Subsection: Pond Routed Hydrograph (total out)
 Label: MRC (OUT)
 Scenario: Post-Development 25

Return Event: 25 years
 Storm Event: 25-YR

Peak Discharge	5.65 ft ³ /s
Time to Peak	12.550 hours
Hydrograph Volume	2.071 ac-ft

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.400	0.00	0.01	0.03	0.05	0.07
10.650	0.08	0.10	0.13	0.15	0.17
10.900	0.19	0.22	0.24	0.27	0.30
11.150	0.33	0.36	0.39	0.42	0.46
11.400	0.50	0.54	0.58	0.62	0.68
11.650	0.75	0.81	0.89	1.00	1.20
11.900	1.44	1.75	2.09	2.54	3.32
12.150	4.24	4.77	5.07	5.27	5.41
12.400	5.50	5.57	5.62	5.65	5.64
12.650	5.61	5.58	5.54	5.49	5.44
12.900	5.39	5.33	5.27	5.21	5.14
13.150	5.07	5.00	4.92	4.85	4.77
13.400	4.70	4.62	4.54	4.47	4.39
13.650	4.31	4.23	4.16	4.08	4.01
13.900	3.94	3.87	3.80	3.73	3.67
14.150	3.60	3.54	3.47	3.41	3.35
14.400	3.29	3.23	3.18	3.12	3.07
14.650	3.01	2.96	2.90	2.85	2.82
14.900	2.79	2.76	2.73	2.71	2.68
15.150	2.65	2.62	2.59	2.57	2.54
15.400	2.51	2.48	2.46	2.43	2.41
15.650	2.38	2.36	2.33	2.31	2.28
15.900	2.26	2.24	2.21	2.19	2.17
16.150	2.15	2.12	2.10	2.08	2.06
16.400	2.04	2.02	2.00	1.98	1.96
16.650	1.94	1.92	1.90	1.88	1.86
16.900	1.84	1.82	1.80	1.78	1.76
17.150	1.74	1.72	1.70	1.68	1.66
17.400	1.64	1.62	1.60	1.58	1.56
17.650	1.54	1.52	1.51	1.49	1.47
17.900	1.45	1.43	1.42	1.40	1.38
18.150	1.37	1.35	1.34	1.32	1.30
18.400	1.29	1.27	1.26	1.25	1.23
18.650	1.22	1.20	1.19	1.18	1.17
18.900	1.15	1.14	1.13	1.12	1.11
19.150	1.09	1.08	1.07	1.06	1.05
19.400	1.04	1.03	1.02	1.01	1.00
19.650	0.99	0.98	0.97	0.96	0.95
19.900	0.95	0.94	0.94	0.94	0.93
20.150	0.93	0.92	0.92	0.91	0.91
20.400	0.90	0.90	0.90	0.89	0.89
20.650	0.88	0.88	0.88	0.87	0.87
20.900	0.86	0.86	0.86	0.85	0.85

Post-Development Analysis Results (with BMPs)

Subsection: Pond Routed Hydrograph (total out)

Label: MRC (OUT)

Scenario: Post-Development 25

Return Event: 25 years

Storm Event: 25-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
21.150	0.84	0.84	0.84	0.83	0.83
21.400	0.82	0.82	0.82	0.81	0.81
21.650	0.81	0.80	0.80	0.80	0.79
21.900	0.79	0.78	0.78	0.78	0.77
22.150	0.77	0.77	0.76	0.76	0.76
22.400	0.75	0.75	0.75	0.74	0.74
22.650	0.74	0.73	0.73	0.73	0.72
22.900	0.72	0.72	0.71	0.71	0.71
23.150	0.70	0.70	0.70	0.69	0.69
23.400	0.69	0.68	0.68	0.68	0.68
23.650	0.67	0.67	0.67	0.66	0.66
23.900	0.66	0.65	0.65	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Pond Routed Hydrograph (total out)
 Label: MRC (OUT)
 Scenario: Post-Development 50

Return Event: 50 years
 Storm Event: 50-YR

Peak Discharge	7.99 ft ³ /s
Time to Peak	12.500 hours
Hydrograph Volume	2.480 ac-ft

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
9.850	0.00	0.02	0.03	0.05	0.07
10.100	0.08	0.10	0.12	0.13	0.15
10.350	0.17	0.19	0.20	0.22	0.24
10.600	0.26	0.28	0.30	0.33	0.35
10.850	0.37	0.40	0.42	0.45	0.48
11.100	0.51	0.54	0.58	0.61	0.65
11.350	0.69	0.73	0.78	0.82	0.87
11.600	0.94	1.06	1.21	1.38	1.57
11.850	1.80	2.02	2.31	2.69	3.48
12.100	4.64	5.67	6.54	7.18	7.56
12.350	7.80	7.91	7.96	7.99	7.96
12.600	7.85	7.70	7.54	7.38	7.22
12.850	7.05	6.88	6.70	6.52	6.34
13.100	6.16	5.99	5.90	5.81	5.72
13.350	5.63	5.54	5.45	5.35	5.26
13.600	5.16	5.07	4.98	4.89	4.80
13.850	4.71	4.63	4.54	4.46	4.38
14.100	4.30	4.23	4.15	4.08	4.00
14.350	3.93	3.86	3.79	3.72	3.66
14.600	3.59	3.52	3.46	3.40	3.34
14.850	3.27	3.21	3.16	3.10	3.04
15.100	2.98	2.93	2.87	2.83	2.80
15.350	2.78	2.75	2.72	2.69	2.66
15.600	2.64	2.61	2.58	2.56	2.53
15.850	2.51	2.48	2.46	2.43	2.41
16.100	2.38	2.36	2.34	2.31	2.29
16.350	2.27	2.24	2.22	2.20	2.18
16.600	2.16	2.14	2.11	2.09	2.07
16.850	2.05	2.03	2.01	1.99	1.97
17.100	1.95	1.93	1.91	1.90	1.88
17.350	1.86	1.84	1.82	1.80	1.78
17.600	1.76	1.74	1.72	1.70	1.68
17.850	1.66	1.64	1.62	1.60	1.58
18.100	1.57	1.55	1.53	1.51	1.49
18.350	1.48	1.46	1.44	1.43	1.41
18.600	1.40	1.38	1.37	1.35	1.34
18.850	1.32	1.31	1.29	1.28	1.27
19.100	1.25	1.24	1.23	1.22	1.20
19.350	1.19	1.18	1.17	1.16	1.15
19.600	1.13	1.12	1.11	1.10	1.09
19.850	1.08	1.07	1.06	1.05	1.04
20.100	1.03	1.02	1.02	1.01	1.00
20.350	0.99	0.98	0.97	0.96	0.96

Post-Development Analysis Results (with BMPs)

Subsection: Pond Routed Hydrograph (total out)

Label: MRC (OUT)

Scenario: Post-Development 50

Return Event: 50 years

Storm Event: 50-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
20.600	0.95	0.95	0.94	0.94	0.94
20.850	0.93	0.93	0.92	0.92	0.92
21.100	0.91	0.91	0.90	0.90	0.90
21.350	0.89	0.89	0.89	0.88	0.88
21.600	0.87	0.87	0.87	0.86	0.86
21.850	0.86	0.85	0.85	0.85	0.84
22.100	0.84	0.83	0.83	0.83	0.82
22.350	0.82	0.82	0.81	0.81	0.81
22.600	0.80	0.80	0.80	0.79	0.79
22.850	0.79	0.78	0.78	0.78	0.77
23.100	0.77	0.77	0.76	0.76	0.76
23.350	0.76	0.75	0.75	0.75	0.74
23.600	0.74	0.74	0.73	0.73	0.73
23.850	0.72	0.72	0.72	0.72	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Pond Routed Hydrograph (total out)
 Label: MRC (OUT)
 Scenario: Post-Development 100

Return Event: 100 years
 Storm Event: 100-YR

Peak Discharge	10.70 ft ³ /s
Time to Peak	12.400 hours
Hydrograph Volume	2.926 ac-ft

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
9.250	0.00	0.01	0.02	0.04	0.05
9.500	0.07	0.08	0.10	0.12	0.13
9.750	0.15	0.16	0.18	0.20	0.21
10.000	0.23	0.25	0.27	0.29	0.30
10.250	0.32	0.34	0.36	0.38	0.40
10.500	0.41	0.43	0.46	0.48	0.50
10.750	0.52	0.55	0.58	0.60	0.63
11.000	0.66	0.69	0.73	0.76	0.80
11.250	0.84	0.88	0.92	0.99	1.08
11.500	1.18	1.29	1.43	1.59	1.75
11.750	1.91	2.09	2.30	2.55	2.90
12.000	3.67	4.69	6.00	8.35	9.61
12.250	10.21	10.53	10.67	10.70	10.65
12.500	10.59	10.47	10.26	10.00	9.75
12.750	9.49	9.24	8.98	8.73	8.48
13.000	8.22	7.97	7.71	7.46	7.22
13.250	6.98	6.75	6.53	6.31	6.10
13.500	5.94	5.84	5.74	5.64	5.53
13.750	5.44	5.34	5.24	5.15	5.06
14.000	4.97	4.88	4.80	4.71	4.63
14.250	4.55	4.47	4.39	4.31	4.23
14.500	4.16	4.09	4.01	3.94	3.87
14.750	3.80	3.73	3.67	3.60	3.53
15.000	3.47	3.41	3.34	3.28	3.22
15.250	3.16	3.11	3.05	3.00	2.94
15.500	2.89	2.84	2.82	2.79	2.76
15.750	2.74	2.71	2.68	2.66	2.63
16.000	2.61	2.58	2.56	2.53	2.51
16.250	2.49	2.46	2.44	2.42	2.39
16.500	2.37	2.35	2.33	2.30	2.28
16.750	2.26	2.24	2.22	2.20	2.18
17.000	2.15	2.13	2.11	2.09	2.07
17.250	2.05	2.04	2.02	2.00	1.98
17.500	1.96	1.94	1.92	1.90	1.89
17.750	1.87	1.85	1.83	1.81	1.80
18.000	1.78	1.76	1.74	1.72	1.70
18.250	1.68	1.66	1.64	1.62	1.60
18.500	1.59	1.57	1.55	1.53	1.52
18.750	1.50	1.49	1.47	1.46	1.44
19.000	1.43	1.41	1.40	1.38	1.37
19.250	1.36	1.34	1.33	1.32	1.30
19.500	1.29	1.28	1.27	1.26	1.24
19.750	1.23	1.22	1.21	1.20	1.19

Post-Development Analysis Results (with BMPs)

Subsection: Pond Routed Hydrograph (total out)
 Label: MRC (OUT)
 Scenario: Post-Development 100

Return Event: 100 years
 Storm Event: 100-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
20.000	1.18	1.17	1.16	1.15	1.14
20.250	1.13	1.12	1.11	1.10	1.09
20.500	1.08	1.07	1.06	1.05	1.05
20.750	1.04	1.03	1.02	1.01	1.01
21.000	1.00	0.99	0.98	0.97	0.97
21.250	0.96	0.95	0.95	0.95	0.94
21.500	0.94	0.94	0.93	0.93	0.93
21.750	0.92	0.92	0.92	0.91	0.91
22.000	0.90	0.90	0.90	0.89	0.89
22.250	0.89	0.88	0.88	0.88	0.87
22.500	0.87	0.87	0.86	0.86	0.86
22.750	0.85	0.85	0.85	0.85	0.84
23.000	0.84	0.84	0.83	0.83	0.83
23.250	0.82	0.82	0.82	0.81	0.81
23.500	0.81	0.80	0.80	0.80	0.79
23.750	0.79	0.79	0.79	0.78	0.78
24.000	0.78	(N/A)	(N/A)	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Pond Inflow Summary

Label: MRC (IN)

Scenario: Post-Development 1

Return Event: 1 years

Storm Event: 1-YR

Summary for Hydrograph Addition at 'MRC'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	MRC-I
<Catchment to Outflow Node>	MRC-P

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	MRC-I	1.222	12.100	17.90
Flow (From)	MRC-P	0.008	12.150	0.07
Flow (In)	MRC	1.231	12.100	17.97

Post-Development Analysis Results (with BMPs)

Subsection: Pond Inflow Summary

Label: MRC (IN)

Scenario: Post-Development 2

Return Event: 2 years

Storm Event: 2-YR

Summary for Hydrograph Addition at 'MRC'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	MRC-I
<Catchment to Outflow Node>	MRC-P

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	MRC-I	1.490	12.100	21.61
Flow (From)	MRC-P	0.015	12.100	0.19
Flow (In)	MRC	1.505	12.100	21.80

Post-Development Analysis Results (with BMPs)

Subsection: Pond Inflow Summary

Label: MRC (IN)

Scenario: Post-Development 5

Return Event: 5 years

Storm Event: 5-YR

Summary for Hydrograph Addition at 'MRC'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	MRC-I
<Catchment to Outflow Node>	MRC-P

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	MRC-I	1.901	12.100	27.27
Flow (From)	MRC-P	0.028	12.100	0.42
Flow (In)	MRC	1.928	12.100	27.68

Post-Development Analysis Results (with BMPs)

Subsection: Pond Inflow Summary

Label: MRC (IN)

Scenario: Post-Development 10

Return Event: 10 years

Storm Event: 10-YR

Summary for Hydrograph Addition at 'MRC'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	MRC-I
<Catchment to Outflow Node>	MRC-P

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	MRC-I	2.241	12.100	31.95
Flow (From)	MRC-P	0.040	12.100	0.64
Flow (In)	MRC	2.281	12.100	32.58

Post-Development Analysis Results (with BMPs)

Subsection: Pond Inflow Summary

Label: MRC (IN)

Scenario: Post-Development 25

Return Event: 25 years

Storm Event: 25-YR

Summary for Hydrograph Addition at 'MRC'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	MRC-I
<Catchment to Outflow Node>	MRC-P

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	MRC-I	2.735	12.100	38.71
Flow (From)	MRC-P	0.060	12.100	0.99
Flow (In)	MRC	2.794	12.100	39.70

Post-Development Analysis Results (with BMPs)

Subsection: Pond Inflow Summary

Label: MRC (IN)

Scenario: Post-Development 50

Return Event: 50 years

Storm Event: 50-YR

Summary for Hydrograph Addition at 'MRC'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	MRC-I
<Catchment to Outflow Node>	MRC-P

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	MRC-I	3.150	12.100	44.39
Flow (From)	MRC-P	0.078	12.100	1.31
Flow (In)	MRC	3.228	12.100	45.70

Post-Development Analysis Results (with BMPs)

Subsection: Pond Inflow Summary

Label: MRC (IN)

Scenario: Post-Development 100

Return Event: 100 years

Storm Event: 100-YR

Summary for Hydrograph Addition at 'MRC'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	MRC-I
<Catchment to Outflow Node>	MRC-P

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	MRC-I	3.599	12.100	50.54
Flow (From)	MRC-P	0.099	12.100	1.68
Flow (In)	MRC	3.699	12.100	52.21

Post-Development Analysis Results (with BMPs)

Subsection: Diverted Hydrograph
 Label: Outlet-2
 Scenario: Post-Development 1

Return Event: 1 years
 Storm Event: 1-YR

Peak Discharge	1.73 ft ³ /s
Time to Peak	12.200 hours
Hydrograph Volume	0.296 ac-ft

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
1.650	0.00	0.00	0.00	0.00	0.00
1.900	0.00	0.00	0.00	0.00	0.00
2.150	0.00	0.01	0.01	0.01	0.01
2.400	0.01	0.01	0.01	0.01	0.01
2.650	0.01	0.01	0.01	0.01	0.01
2.900	0.01	0.01	0.01	0.01	0.02
3.150	0.02	0.02	0.02	0.02	0.02
3.400	0.02	0.02	0.02	0.02	0.02
3.650	0.02	0.02	0.02	0.02	0.02
3.900	0.02	0.02	0.02	0.02	0.03
4.150	0.03	0.03	0.03	0.03	0.03
4.400	0.03	0.03	0.03	0.03	0.03
4.650	0.03	0.03	0.03	0.03	0.03
4.900	0.03	0.03	0.03	0.03	0.03
5.150	0.03	0.03	0.04	0.04	0.04
5.400	0.04	0.04	0.04	0.04	0.04
5.650	0.04	0.04	0.04	0.04	0.04
5.900	0.04	0.04	0.04	0.04	0.04
6.150	0.04	0.04	0.04	0.04	0.04
6.400	0.05	0.05	0.05	0.05	0.05
6.650	0.05	0.05	0.05	0.05	0.05
6.900	0.05	0.05	0.05	0.05	0.06
7.150	0.06	0.06	0.06	0.06	0.06
7.400	0.06	0.06	0.06	0.06	0.06
7.650	0.06	0.06	0.07	0.07	0.07
7.900	0.07	0.07	0.07	0.07	0.07
8.150	0.07	0.07	0.07	0.07	0.08
8.400	0.08	0.08	0.08	0.08	0.08
8.650	0.08	0.08	0.08	0.08	0.08
8.900	0.09	0.09	0.09	0.09	0.09
9.150	0.09	0.09	0.09	0.10	0.10
9.400	0.10	0.10	0.10	0.11	0.11
9.650	0.11	0.11	0.11	0.12	0.12
9.900	0.12	0.12	0.13	0.13	0.13
10.150	0.14	0.14	0.14	0.14	0.15
10.400	0.15	0.15	0.16	0.16	0.16
10.650	0.17	0.17	0.18	0.18	0.19
10.900	0.20	0.21	0.21	0.22	0.23
11.150	0.24	0.26	0.27	0.28	0.30
11.400	0.31	0.33	0.34	0.37	0.40
11.650	0.44	0.47	0.52	0.57	0.64
11.900	0.72	0.84	1.00	1.21	1.48
12.150	1.67	1.73	1.71	1.67	1.62

Post-Development Analysis Results (with BMPs)

Subsection: Diverted Hydrograph

Return Event: 1 years

Label: Outlet-2

Storm Event: 1-YR

Scenario: Post-Development 1

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
12.400	1.55	1.48	1.42	1.35	1.28
12.650	1.21	1.14	1.07	1.01	0.95
12.900	0.89	0.84	0.79	0.74	0.70
13.150	0.66	0.62	0.59	0.55	0.52
13.400	0.50	0.47	0.44	0.42	0.40
13.650	0.38	0.36	0.34	0.33	0.31
13.900	0.30	0.29	0.27	0.26	0.25
14.150	0.25	0.24	0.23	0.22	0.22
14.400	0.21	0.20	0.20	0.19	0.19
14.650	0.18	0.18	0.17	0.17	0.16
14.900	0.16	0.16	0.15	0.15	0.14
15.150	0.14	0.14	0.14	0.13	0.13
15.400	0.13	0.13	0.12	0.12	0.12
15.650	0.12	0.12	0.11	0.11	0.11
15.900	0.11	0.11	0.11	0.11	0.11
16.150	0.10	0.10	0.10	0.10	0.10
16.400	0.10	0.10	0.10	0.10	0.10
16.650	0.10	0.09	0.09	0.09	0.09
16.900	0.09	0.09	0.09	0.09	0.09
17.150	0.09	0.09	0.09	0.08	0.08
17.400	0.08	0.08	0.08	0.08	0.08
17.650	0.08	0.08	0.08	0.08	0.08
17.900	0.07	0.07	0.07	0.07	0.07
18.150	0.07	0.07	0.07	0.07	0.07
18.400	0.07	0.07	0.07	0.07	0.07
18.650	0.07	0.07	0.06	0.06	0.06
18.900	0.06	0.06	0.06	0.06	0.06
19.150	0.06	0.06	0.06	0.06	0.06
19.400	0.06	0.06	0.06	0.06	0.06
19.650	0.06	0.06	0.06	0.06	0.06
19.900	0.06	0.06	0.06	0.06	0.06
20.150	0.06	0.06	0.06	0.06	0.06
20.400	0.06	0.06	0.06	0.06	0.06
20.650	0.06	0.06	0.06	0.06	0.06
20.900	0.06	0.05	0.05	0.05	0.05
21.150	0.05	0.05	0.05	0.05	0.05
21.400	0.05	0.05	0.05	0.05	0.05
21.650	0.05	0.05	0.05	0.05	0.05
21.900	0.05	0.05	0.05	0.05	0.05
22.150	0.05	0.05	0.05	0.05	0.05
22.400	0.05	0.05	0.05	0.05	0.05
22.650	0.05	0.05	0.05	0.05	0.05
22.900	0.05	0.05	0.05	0.05	0.05
23.150	0.05	0.05	0.05	0.05	0.05
23.400	0.05	0.05	0.04	0.04	0.04
23.650	0.04	0.04	0.04	0.04	0.04
23.900	0.04	0.04	0.04	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Diverted Hydrograph
 Label: Outlet-2
 Scenario: Post-Development 2

Return Event: 2 years
 Storm Event: 2-YR

Peak Discharge	2.08 ft ³ /s
Time to Peak	12.200 hours
Hydrograph Volume	0.363 ac-ft

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
1.400	0.00	0.00	0.00	0.00	0.00
1.650	0.00	0.00	0.00	0.01	0.01
1.900	0.01	0.01	0.01	0.01	0.01
2.150	0.01	0.01	0.01	0.01	0.01
2.400	0.01	0.01	0.01	0.02	0.02
2.650	0.02	0.02	0.02	0.02	0.02
2.900	0.02	0.02	0.02	0.02	0.02
3.150	0.02	0.02	0.03	0.03	0.03
3.400	0.03	0.03	0.03	0.03	0.03
3.650	0.03	0.03	0.03	0.03	0.03
3.900	0.03	0.03	0.03	0.03	0.04
4.150	0.04	0.04	0.04	0.04	0.04
4.400	0.04	0.04	0.04	0.04	0.04
4.650	0.04	0.04	0.04	0.04	0.04
4.900	0.04	0.04	0.04	0.05	0.05
5.150	0.05	0.05	0.05	0.05	0.05
5.400	0.05	0.05	0.05	0.05	0.05
5.650	0.05	0.05	0.05	0.05	0.05
5.900	0.05	0.05	0.05	0.05	0.05
6.150	0.06	0.06	0.06	0.06	0.06
6.400	0.06	0.06	0.06	0.06	0.06
6.650	0.06	0.06	0.06	0.07	0.07
6.900	0.07	0.07	0.07	0.07	0.07
7.150	0.07	0.07	0.07	0.07	0.08
7.400	0.08	0.08	0.08	0.08	0.08
7.650	0.08	0.08	0.08	0.08	0.09
7.900	0.09	0.09	0.09	0.09	0.09
8.150	0.09	0.09	0.09	0.09	0.10
8.400	0.10	0.10	0.10	0.10	0.10
8.650	0.10	0.10	0.10	0.10	0.11
8.900	0.11	0.11	0.11	0.11	0.11
9.150	0.11	0.11	0.12	0.12	0.12
9.400	0.12	0.13	0.13	0.13	0.13
9.650	0.14	0.14	0.14	0.15	0.15
9.900	0.15	0.15	0.16	0.16	0.16
10.150	0.17	0.17	0.17	0.18	0.18
10.400	0.18	0.19	0.19	0.20	0.20
10.650	0.21	0.21	0.22	0.23	0.24
10.900	0.24	0.25	0.26	0.27	0.29
11.150	0.30	0.31	0.33	0.35	0.36
11.400	0.38	0.40	0.42	0.45	0.49
11.650	0.53	0.58	0.63	0.69	0.77
11.900	0.87	1.02	1.21	1.45	1.77

Post-Development Analysis Results (with BMPs)

Subsection: Diverted Hydrograph
 Label: Outlet-2
 Scenario: Post-Development 2

Return Event: 2 years
 Storm Event: 2-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
12.150	2.01	2.08	2.07	2.02	1.95
12.400	1.87	1.79	1.72	1.64	1.55
12.650	1.46	1.38	1.31	1.24	1.17
12.900	1.10	1.04	0.98	0.92	0.86
13.150	0.81	0.77	0.72	0.68	0.64
13.400	0.61	0.58	0.54	0.52	0.49
13.650	0.46	0.44	0.42	0.40	0.38
13.900	0.36	0.35	0.34	0.32	0.31
14.150	0.30	0.29	0.28	0.27	0.26
14.400	0.25	0.25	0.24	0.23	0.23
14.650	0.22	0.22	0.21	0.20	0.20
14.900	0.19	0.19	0.19	0.18	0.18
15.150	0.17	0.17	0.16	0.16	0.16
15.400	0.15	0.15	0.15	0.15	0.15
15.650	0.14	0.14	0.14	0.14	0.14
15.900	0.13	0.13	0.13	0.13	0.13
16.150	0.13	0.13	0.12	0.12	0.12
16.400	0.12	0.12	0.12	0.12	0.12
16.650	0.12	0.11	0.11	0.11	0.11
16.900	0.11	0.11	0.11	0.11	0.11
17.150	0.11	0.10	0.10	0.10	0.10
17.400	0.10	0.10	0.10	0.10	0.10
17.650	0.10	0.09	0.09	0.09	0.09
17.900	0.09	0.09	0.09	0.09	0.09
18.150	0.09	0.09	0.08	0.08	0.08
18.400	0.08	0.08	0.08	0.08	0.08
18.650	0.08	0.08	0.08	0.08	0.08
18.900	0.08	0.08	0.08	0.08	0.08
19.150	0.08	0.08	0.08	0.07	0.07
19.400	0.07	0.07	0.07	0.07	0.07
19.650	0.07	0.07	0.07	0.07	0.07
19.900	0.07	0.07	0.07	0.07	0.07
20.150	0.07	0.07	0.07	0.07	0.07
20.400	0.07	0.07	0.07	0.07	0.07
20.650	0.07	0.07	0.07	0.07	0.07
20.900	0.07	0.07	0.07	0.07	0.07
21.150	0.07	0.07	0.07	0.06	0.06
21.400	0.06	0.06	0.06	0.06	0.06
21.650	0.06	0.06	0.06	0.06	0.06
21.900	0.06	0.06	0.06	0.06	0.06
22.150	0.06	0.06	0.06	0.06	0.06
22.400	0.06	0.06	0.06	0.06	0.06
22.650	0.06	0.06	0.06	0.06	0.06
22.900	0.06	0.06	0.06	0.06	0.06
23.150	0.06	0.06	0.06	0.06	0.06
23.400	0.05	0.05	0.05	0.05	0.05
23.650	0.05	0.05	0.05	0.05	0.05
23.900	0.05	0.05	0.05	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Diverted Hydrograph
 Label: Outlet-2
 Scenario: Post-Development 5

Return Event: 5 years
 Storm Event: 5-YR

Peak Discharge	2.63 ft ³ /s
Time to Peak	12.200 hours
Hydrograph Volume	0.466 ac-ft

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
1.150	0.00	0.00	0.00	0.00	0.00
1.400	0.00	0.01	0.01	0.01	0.01
1.650	0.01	0.01	0.01	0.01	0.01
1.900	0.01	0.01	0.01	0.02	0.02
2.150	0.02	0.02	0.02	0.02	0.02
2.400	0.02	0.02	0.03	0.03	0.03
2.650	0.03	0.03	0.03	0.03	0.03
2.900	0.03	0.03	0.04	0.04	0.04
3.150	0.04	0.04	0.04	0.04	0.04
3.400	0.04	0.04	0.04	0.04	0.04
3.650	0.05	0.05	0.05	0.05	0.05
3.900	0.05	0.05	0.05	0.05	0.05
4.150	0.05	0.05	0.05	0.05	0.06
4.400	0.06	0.06	0.06	0.06	0.06
4.650	0.06	0.06	0.06	0.06	0.06
4.900	0.06	0.06	0.06	0.06	0.06
5.150	0.06	0.07	0.07	0.07	0.07
5.400	0.07	0.07	0.07	0.07	0.07
5.650	0.07	0.07	0.07	0.07	0.07
5.900	0.07	0.07	0.07	0.07	0.07
6.150	0.08	0.08	0.08	0.08	0.08
6.400	0.08	0.08	0.08	0.08	0.08
6.650	0.08	0.09	0.09	0.09	0.09
6.900	0.09	0.09	0.09	0.09	0.09
7.150	0.10	0.10	0.10	0.10	0.10
7.400	0.10	0.10	0.10	0.11	0.11
7.650	0.11	0.11	0.11	0.11	0.11
7.900	0.11	0.12	0.12	0.12	0.12
8.150	0.12	0.12	0.12	0.12	0.13
8.400	0.13	0.13	0.13	0.13	0.13
8.650	0.13	0.13	0.14	0.14	0.14
8.900	0.14	0.14	0.14	0.14	0.14
9.150	0.15	0.15	0.15	0.15	0.16
9.400	0.16	0.16	0.17	0.17	0.17
9.650	0.18	0.18	0.18	0.19	0.19
9.900	0.20	0.20	0.20	0.21	0.21
10.150	0.22	0.22	0.22	0.23	0.23
10.400	0.24	0.24	0.25	0.25	0.26
10.650	0.26	0.27	0.28	0.29	0.30
10.900	0.31	0.32	0.34	0.35	0.37
11.150	0.38	0.40	0.42	0.44	0.46
11.400	0.49	0.51	0.54	0.57	0.62
11.650	0.68	0.73	0.80	0.88	0.99

Post-Development Analysis Results (with BMPs)

Subsection: Diverted Hydrograph

Return Event: 5 years

Label: Outlet-2

Storm Event: 5-YR

Scenario: Post-Development 5

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.900	1.11	1.28	1.50	1.82	2.23
12.150	2.54	2.63	2.61	2.55	2.47
12.400	2.37	2.27	2.17	2.07	1.97
12.650	1.86	1.75	1.66	1.57	1.49
12.900	1.41	1.33	1.26	1.19	1.13
13.150	1.06	1.00	0.94	0.88	0.83
13.400	0.79	0.74	0.70	0.67	0.63
13.650	0.60	0.57	0.54	0.51	0.49
13.900	0.47	0.45	0.43	0.41	0.40
14.150	0.38	0.37	0.36	0.35	0.34
14.400	0.33	0.32	0.31	0.30	0.29
14.650	0.28	0.28	0.27	0.26	0.25
14.900	0.25	0.24	0.24	0.23	0.22
15.150	0.22	0.21	0.21	0.20	0.20
15.400	0.20	0.19	0.19	0.19	0.18
15.650	0.18	0.18	0.18	0.17	0.17
15.900	0.17	0.17	0.17	0.17	0.16
16.150	0.16	0.16	0.16	0.16	0.16
16.400	0.15	0.15	0.15	0.15	0.15
16.650	0.15	0.15	0.14	0.14	0.14
16.900	0.14	0.14	0.14	0.14	0.14
17.150	0.13	0.13	0.13	0.13	0.13
17.400	0.13	0.13	0.13	0.12	0.12
17.650	0.12	0.12	0.12	0.12	0.12
17.900	0.12	0.11	0.11	0.11	0.11
18.150	0.11	0.11	0.11	0.11	0.11
18.400	0.10	0.10	0.10	0.10	0.10
18.650	0.10	0.10	0.10	0.10	0.10
18.900	0.10	0.10	0.10	0.10	0.10
19.150	0.10	0.10	0.10	0.10	0.09
19.400	0.09	0.09	0.09	0.09	0.09
19.650	0.09	0.09	0.09	0.09	0.09
19.900	0.09	0.09	0.09	0.09	0.09
20.150	0.09	0.09	0.09	0.09	0.09
20.400	0.09	0.09	0.09	0.09	0.09
20.650	0.09	0.09	0.09	0.09	0.09
20.900	0.08	0.08	0.08	0.08	0.08
21.150	0.08	0.08	0.08	0.08	0.08
21.400	0.08	0.08	0.08	0.08	0.08
21.650	0.08	0.08	0.08	0.08	0.08
21.900	0.08	0.08	0.08	0.08	0.08
22.150	0.08	0.08	0.08	0.08	0.08
22.400	0.08	0.08	0.08	0.07	0.07
22.650	0.07	0.07	0.07	0.07	0.07
22.900	0.07	0.07	0.07	0.07	0.07
23.150	0.07	0.07	0.07	0.07	0.07
23.400	0.07	0.07	0.07	0.07	0.07
23.650	0.07	0.07	0.07	0.07	0.07

Post-Development Analysis Results (with BMPs)

Subsection: Diverted Hydrograph

Label: Outlet-2

Scenario: Post-Development 5

Return Event: 5 years

Storm Event: 5-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
23.900	0.07	0.07	0.07	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Diverted Hydrograph
 Label: Outlet-2
 Scenario: Post-Development 10

Return Event: 10 years
 Storm Event: 10-YR

Peak Discharge	3.11 ft ³ /s
Time to Peak	12.200 hours
Hydrograph Volume	0.553 ac-ft

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
0.950	0.00	0.00	0.00	0.00	0.00
1.200	0.00	0.01	0.01	0.01	0.01
1.450	0.01	0.01	0.01	0.01	0.01
1.700	0.02	0.02	0.02	0.02	0.02
1.950	0.02	0.02	0.03	0.03	0.03
2.200	0.03	0.03	0.03	0.03	0.03
2.450	0.03	0.04	0.04	0.04	0.04
2.700	0.04	0.04	0.04	0.04	0.04
2.950	0.05	0.05	0.05	0.05	0.05
3.200	0.05	0.05	0.05	0.05	0.05
3.450	0.06	0.06	0.06	0.06	0.06
3.700	0.06	0.06	0.06	0.06	0.06
3.950	0.06	0.06	0.06	0.07	0.07
4.200	0.07	0.07	0.07	0.07	0.07
4.450	0.07	0.07	0.07	0.07	0.07
4.700	0.07	0.08	0.08	0.08	0.08
4.950	0.08	0.08	0.08	0.08	0.08
5.200	0.08	0.08	0.08	0.08	0.08
5.450	0.08	0.08	0.08	0.09	0.09
5.700	0.09	0.09	0.09	0.09	0.09
5.950	0.09	0.09	0.09	0.09	0.09
6.200	0.09	0.09	0.09	0.10	0.10
6.450	0.10	0.10	0.10	0.10	0.10
6.700	0.10	0.10	0.11	0.11	0.11
6.950	0.11	0.11	0.11	0.11	0.12
7.200	0.12	0.12	0.12	0.12	0.12
7.450	0.12	0.13	0.13	0.13	0.13
7.700	0.13	0.13	0.13	0.14	0.14
7.950	0.14	0.14	0.14	0.14	0.14
8.200	0.15	0.15	0.15	0.15	0.15
8.450	0.15	0.15	0.16	0.16	0.16
8.700	0.16	0.16	0.16	0.16	0.17
8.950	0.17	0.17	0.17	0.17	0.17
9.200	0.18	0.18	0.18	0.19	0.19
9.450	0.19	0.20	0.20	0.21	0.21
9.700	0.21	0.22	0.22	0.23	0.23
9.950	0.24	0.24	0.25	0.25	0.26
10.200	0.26	0.27	0.27	0.28	0.28
10.450	0.29	0.29	0.30	0.30	0.31
10.700	0.32	0.33	0.34	0.36	0.37
10.950	0.38	0.40	0.41	0.43	0.45
11.200	0.47	0.50	0.52	0.55	0.57
11.450	0.60	0.63	0.67	0.73	0.80

Post-Development Analysis Results (with BMPs)

Subsection: Diverted Hydrograph

Return Event: 10 years

Label: Outlet-2

Storm Event: 10-YR

Scenario: Post-Development 10

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.700	0.87	0.94	1.04	1.16	1.30
11.950	1.49	1.76	2.13	2.62	2.99
12.200	3.11	3.08	3.00	2.90	2.78
12.450	2.67	2.55	2.44	2.31	2.18
12.700	2.06	1.95	1.85	1.75	1.65
12.950	1.57	1.48	1.40	1.33	1.26
13.200	1.19	1.12	1.06	1.00	0.94
13.450	0.89	0.84	0.79	0.75	0.71
13.700	0.67	0.64	0.61	0.58	0.56
13.950	0.53	0.51	0.49	0.47	0.46
14.200	0.44	0.42	0.41	0.40	0.39
14.450	0.37	0.36	0.35	0.34	0.33
14.700	0.33	0.32	0.31	0.30	0.29
14.950	0.29	0.28	0.27	0.26	0.26
15.200	0.25	0.25	0.24	0.24	0.23
15.450	0.23	0.22	0.22	0.22	0.21
15.700	0.21	0.21	0.21	0.20	0.20
15.950	0.20	0.20	0.19	0.19	0.19
16.200	0.19	0.19	0.18	0.18	0.18
16.450	0.18	0.18	0.18	0.17	0.17
16.700	0.17	0.17	0.17	0.17	0.17
16.950	0.16	0.16	0.16	0.16	0.16
17.200	0.16	0.15	0.15	0.15	0.15
17.450	0.15	0.15	0.15	0.14	0.14
17.700	0.14	0.14	0.14	0.14	0.14
17.950	0.13	0.13	0.13	0.13	0.13
18.200	0.13	0.13	0.12	0.12	0.12
18.450	0.12	0.12	0.12	0.12	0.12
18.700	0.12	0.12	0.12	0.12	0.12
18.950	0.12	0.11	0.11	0.11	0.11
19.200	0.11	0.11	0.11	0.11	0.11
19.450	0.11	0.11	0.11	0.11	0.11
19.700	0.11	0.11	0.11	0.11	0.11
19.950	0.11	0.11	0.11	0.11	0.11
20.200	0.11	0.10	0.10	0.10	0.10
20.450	0.10	0.10	0.10	0.10	0.10
20.700	0.10	0.10	0.10	0.10	0.10
20.950	0.10	0.10	0.10	0.10	0.10
21.200	0.10	0.10	0.10	0.10	0.10
21.450	0.10	0.10	0.10	0.09	0.09
21.700	0.09	0.09	0.09	0.09	0.09
21.950	0.09	0.09	0.09	0.09	0.09
22.200	0.09	0.09	0.09	0.09	0.09
22.450	0.09	0.09	0.09	0.09	0.09
22.700	0.09	0.09	0.09	0.09	0.09
22.950	0.09	0.08	0.08	0.08	0.08
23.200	0.08	0.08	0.08	0.08	0.08
23.450	0.08	0.08	0.08	0.08	0.08

Post-Development Analysis Results (with BMPs)

Subsection: Diverted Hydrograph

Label: Outlet-2

Scenario: Post-Development 10

Return Event: 10 years

Storm Event: 10-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
23.700	0.08	0.08	0.08	0.08	0.08
23.950	0.08	0.08	(N/A)	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Diverted Hydrograph
 Label: Outlet-2
 Scenario: Post-Development 25

Return Event: 25 years
 Storm Event: 25-YR

Peak Discharge	3.80 ft ³ /s
Time to Peak	12.200 hours
Hydrograph Volume	0.678 ac-ft

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
0.800	0.00	0.00	0.00	0.00	0.00
1.050	0.01	0.01	0.01	0.01	0.01
1.300	0.01	0.01	0.02	0.02	0.02
1.550	0.02	0.02	0.03	0.03	0.03
1.800	0.03	0.03	0.03	0.04	0.04
2.050	0.04	0.04	0.04	0.04	0.04
2.300	0.05	0.05	0.05	0.05	0.05
2.550	0.05	0.05	0.06	0.06	0.06
2.800	0.06	0.06	0.06	0.06	0.06
3.050	0.07	0.07	0.07	0.07	0.07
3.300	0.07	0.07	0.07	0.07	0.08
3.550	0.08	0.08	0.08	0.08	0.08
3.800	0.08	0.08	0.08	0.08	0.08
4.050	0.09	0.09	0.09	0.09	0.09
4.300	0.09	0.09	0.09	0.09	0.09
4.550	0.09	0.09	0.10	0.10	0.10
4.800	0.10	0.10	0.10	0.10	0.10
5.050	0.10	0.10	0.10	0.10	0.10
5.300	0.10	0.11	0.11	0.11	0.11
5.550	0.11	0.11	0.11	0.11	0.11
5.800	0.11	0.11	0.11	0.11	0.11
6.050	0.11	0.12	0.12	0.12	0.12
6.300	0.12	0.12	0.12	0.12	0.12
6.550	0.13	0.13	0.13	0.13	0.13
6.800	0.13	0.13	0.14	0.14	0.14
7.050	0.14	0.14	0.14	0.15	0.15
7.300	0.15	0.15	0.15	0.15	0.16
7.550	0.16	0.16	0.16	0.16	0.16
7.800	0.17	0.17	0.17	0.17	0.17
8.050	0.17	0.18	0.18	0.18	0.18
8.300	0.18	0.19	0.19	0.19	0.19
8.550	0.19	0.19	0.20	0.20	0.20
8.800	0.20	0.20	0.20	0.21	0.21
9.050	0.21	0.21	0.22	0.22	0.22
9.300	0.23	0.23	0.23	0.24	0.24
9.550	0.25	0.25	0.26	0.26	0.27
9.800	0.27	0.28	0.28	0.29	0.30
10.050	0.30	0.31	0.31	0.32	0.33
10.300	0.33	0.34	0.34	0.35	0.36
10.550	0.36	0.37	0.38	0.39	0.41
10.800	0.42	0.44	0.45	0.47	0.49
11.050	0.51	0.53	0.55	0.58	0.61
11.300	0.64	0.67	0.70	0.74	0.77

Post-Development Analysis Results (with BMPs)

Subsection: Diverted Hydrograph
 Label: Outlet-2
 Scenario: Post-Development 25

Return Event: 25 years
 Storm Event: 25-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.550	0.82	0.90	0.98	1.06	1.16
11.800	1.26	1.40	1.56	1.80	2.13
12.050	2.59	3.20	3.66	3.80	3.77
12.300	3.67	3.55	3.40	3.26	3.12
12.550	2.97	2.81	2.65	2.51	2.37
12.800	2.25	2.13	2.01	1.91	1.80
13.050	1.71	1.62	1.53	1.45	1.37
13.300	1.30	1.24	1.17	1.11	1.05
13.550	0.99	0.93	0.88	0.83	0.79
13.800	0.75	0.72	0.69	0.66	0.63
14.050	0.60	0.58	0.56	0.54	0.52
14.300	0.50	0.49	0.47	0.46	0.45
14.550	0.43	0.42	0.41	0.40	0.39
14.800	0.38	0.37	0.36	0.35	0.34
15.050	0.33	0.32	0.32	0.31	0.30
15.300	0.29	0.29	0.28	0.28	0.27
15.550	0.27	0.27	0.26	0.26	0.25
15.800	0.25	0.25	0.25	0.24	0.24
16.050	0.24	0.23	0.23	0.23	0.23
16.300	0.23	0.22	0.22	0.22	0.22
16.550	0.21	0.21	0.21	0.21	0.21
16.800	0.21	0.20	0.20	0.20	0.20
17.050	0.20	0.19	0.19	0.19	0.19
17.300	0.19	0.18	0.18	0.18	0.18
17.550	0.18	0.18	0.17	0.17	0.17
17.800	0.17	0.17	0.17	0.16	0.16
18.050	0.16	0.16	0.16	0.16	0.15
18.300	0.15	0.15	0.15	0.15	0.15
18.550	0.15	0.15	0.15	0.14	0.14
18.800	0.14	0.14	0.14	0.14	0.14
19.050	0.14	0.14	0.14	0.14	0.14
19.300	0.14	0.14	0.14	0.14	0.13
19.550	0.13	0.13	0.13	0.13	0.13
19.800	0.13	0.13	0.13	0.13	0.13
20.050	0.13	0.13	0.13	0.13	0.13
20.300	0.13	0.13	0.13	0.13	0.13
20.550	0.12	0.12	0.12	0.12	0.12
20.800	0.12	0.12	0.12	0.12	0.12
21.050	0.12	0.12	0.12	0.12	0.12
21.300	0.12	0.12	0.12	0.12	0.12
21.550	0.12	0.12	0.12	0.11	0.11
21.800	0.11	0.11	0.11	0.11	0.11
22.050	0.11	0.11	0.11	0.11	0.11
22.300	0.11	0.11	0.11	0.11	0.11
22.550	0.11	0.11	0.11	0.11	0.11
22.800	0.11	0.10	0.10	0.10	0.10
23.050	0.10	0.10	0.10	0.10	0.10
23.300	0.10	0.10	0.10	0.10	0.10

Post-Development Analysis Results (with BMPs)

Subsection: Diverted Hydrograph

Label: Outlet-2

Scenario: Post-Development 25

Return Event: 25 years

Storm Event: 25-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
23.550	0.10	0.10	0.10	0.10	0.10
23.800	0.10	0.10	0.10	0.10	0.10

Post-Development Analysis Results (with BMPs)

Subsection: Diverted Hydrograph
 Label: Outlet-2
 Scenario: Post-Development 50

Return Event: 50 years
 Storm Event: 50-YR

Peak Discharge	4.39 ft ³ /s
Time to Peak	12.200 hours
Hydrograph Volume	0.785 ac-ft

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
0.700	0.00	0.00	0.00	0.00	0.01
0.950	0.01	0.01	0.01	0.01	0.01
1.200	0.02	0.02	0.02	0.02	0.02
1.450	0.03	0.03	0.03	0.03	0.03
1.700	0.04	0.04	0.04	0.04	0.04
1.950	0.05	0.05	0.05	0.05	0.05
2.200	0.06	0.06	0.06	0.06	0.06
2.450	0.06	0.07	0.07	0.07	0.07
2.700	0.07	0.07	0.07	0.08	0.08
2.950	0.08	0.08	0.08	0.08	0.08
3.200	0.08	0.09	0.09	0.09	0.09
3.450	0.09	0.09	0.09	0.09	0.10
3.700	0.10	0.10	0.10	0.10	0.10
3.950	0.10	0.10	0.10	0.10	0.10
4.200	0.11	0.11	0.11	0.11	0.11
4.450	0.11	0.11	0.11	0.11	0.11
4.700	0.11	0.12	0.12	0.12	0.12
4.950	0.12	0.12	0.12	0.12	0.12
5.200	0.12	0.12	0.12	0.12	0.13
5.450	0.13	0.13	0.13	0.13	0.13
5.700	0.13	0.13	0.13	0.13	0.13
5.950	0.13	0.13	0.13	0.14	0.14
6.200	0.14	0.14	0.14	0.14	0.14
6.450	0.14	0.15	0.15	0.15	0.15
6.700	0.15	0.15	0.16	0.16	0.16
6.950	0.16	0.16	0.16	0.17	0.17
7.200	0.17	0.17	0.17	0.18	0.18
7.450	0.18	0.18	0.18	0.19	0.19
7.700	0.19	0.19	0.19	0.20	0.20
7.950	0.20	0.20	0.20	0.21	0.21
8.200	0.21	0.21	0.21	0.21	0.22
8.450	0.22	0.22	0.22	0.22	0.23
8.700	0.23	0.23	0.23	0.23	0.24
8.950	0.24	0.24	0.24	0.25	0.25
9.200	0.25	0.26	0.26	0.27	0.27
9.450	0.28	0.28	0.29	0.29	0.30
9.700	0.30	0.31	0.32	0.32	0.33
9.950	0.33	0.34	0.35	0.35	0.36
10.200	0.37	0.38	0.38	0.39	0.40
10.450	0.40	0.41	0.42	0.43	0.44
10.700	0.45	0.47	0.49	0.50	0.52
10.950	0.54	0.56	0.58	0.61	0.64
11.200	0.67	0.70	0.74	0.77	0.81

Post-Development Analysis Results (with BMPs)

Subsection: Diverted Hydrograph
 Label: Outlet-2
 Scenario: Post-Development 50

Return Event: 50 years
 Storm Event: 50-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.450	0.85	0.89	0.95	1.04	1.13
11.700	1.22	1.32	1.44	1.60	1.79
11.950	2.07	2.45	2.99	3.70	4.23
12.200	4.39	4.35	4.24	4.10	3.93
12.450	3.76	3.60	3.43	3.24	3.06
12.700	2.89	2.73	2.58	2.44	2.31
12.950	2.19	2.07	1.96	1.86	1.76
13.200	1.67	1.58	1.50	1.42	1.35
13.450	1.28	1.22	1.15	1.09	1.03
13.700	0.97	0.92	0.88	0.84	0.80
13.950	0.76	0.73	0.70	0.67	0.65
14.200	0.63	0.60	0.58	0.57	0.55
14.450	0.53	0.52	0.50	0.49	0.47
14.700	0.46	0.45	0.44	0.42	0.41
14.950	0.40	0.39	0.38	0.37	0.36
15.200	0.35	0.35	0.34	0.33	0.33
15.450	0.32	0.32	0.31	0.31	0.30
15.700	0.30	0.29	0.29	0.29	0.28
15.950	0.28	0.28	0.27	0.27	0.27
16.200	0.26	0.26	0.26	0.26	0.25
16.450	0.25	0.25	0.25	0.25	0.24
16.700	0.24	0.24	0.24	0.23	0.23
16.950	0.23	0.23	0.23	0.22	0.22
17.200	0.22	0.22	0.22	0.21	0.21
17.450	0.21	0.21	0.20	0.20	0.20
17.700	0.20	0.20	0.19	0.19	0.19
17.950	0.19	0.19	0.18	0.18	0.18
18.200	0.18	0.18	0.18	0.17	0.17
18.450	0.17	0.17	0.17	0.17	0.17
18.700	0.17	0.17	0.16	0.16	0.16
18.950	0.16	0.16	0.16	0.16	0.16
19.200	0.16	0.16	0.16	0.16	0.16
19.450	0.16	0.15	0.15	0.15	0.15
19.700	0.15	0.15	0.15	0.15	0.15
19.950	0.15	0.15	0.15	0.15	0.15
20.200	0.15	0.15	0.15	0.15	0.15
20.450	0.14	0.14	0.14	0.14	0.14
20.700	0.14	0.14	0.14	0.14	0.14
20.950	0.14	0.14	0.14	0.14	0.14
21.200	0.14	0.14	0.14	0.14	0.14
21.450	0.13	0.13	0.13	0.13	0.13
21.700	0.13	0.13	0.13	0.13	0.13
21.950	0.13	0.13	0.13	0.13	0.13
22.200	0.13	0.13	0.13	0.13	0.13
22.450	0.12	0.12	0.12	0.12	0.12
22.700	0.12	0.12	0.12	0.12	0.12
22.950	0.12	0.12	0.12	0.12	0.12
23.200	0.12	0.12	0.12	0.12	0.12

Post-Development Analysis Results (with BMPs)

Subsection: Diverted Hydrograph

Label: Outlet-2

Scenario: Post-Development 50

Return Event: 50 years

Storm Event: 50-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
23.450	0.11	0.11	0.11	0.11	0.11
23.700	0.11	0.11	0.11	0.11	0.11
23.950	0.11	0.11	(N/A)	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Diverted Hydrograph
 Label: Outlet-2
 Scenario: Post-Development 100

Return Event: 100 years
 Storm Event: 100-YR

Peak Discharge	6.24 ft ³ /s
Time to Peak	12.200 hours
Hydrograph Volume	0.900 ac-ft

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
0.600	0.00	0.00	0.00	0.00	0.01
0.850	0.01	0.01	0.01	0.01	0.02
1.100	0.02	0.02	0.02	0.03	0.03
1.350	0.03	0.03	0.04	0.04	0.04
1.600	0.04	0.05	0.05	0.05	0.05
1.850	0.06	0.06	0.06	0.06	0.06
2.100	0.07	0.07	0.07	0.07	0.07
2.350	0.08	0.08	0.08	0.08	0.08
2.600	0.08	0.09	0.09	0.09	0.09
2.850	0.09	0.09	0.10	0.10	0.10
3.100	0.10	0.10	0.10	0.10	0.10
3.350	0.11	0.11	0.11	0.11	0.11
3.600	0.11	0.11	0.11	0.12	0.12
3.850	0.12	0.12	0.12	0.12	0.12
4.100	0.12	0.12	0.12	0.13	0.13
4.350	0.13	0.13	0.13	0.13	0.13
4.600	0.13	0.13	0.13	0.14	0.14
4.850	0.14	0.14	0.14	0.14	0.14
5.100	0.14	0.14	0.14	0.14	0.14
5.350	0.15	0.15	0.15	0.15	0.15
5.600	0.15	0.15	0.15	0.15	0.15
5.850	0.15	0.15	0.15	0.16	0.16
6.100	0.16	0.16	0.16	0.16	0.16
6.350	0.16	0.17	0.17	0.17	0.17
6.600	0.17	0.17	0.18	0.18	0.18
6.850	0.18	0.18	0.19	0.19	0.19
7.100	0.19	0.19	0.20	0.20	0.20
7.350	0.20	0.20	0.21	0.21	0.21
7.600	0.21	0.22	0.22	0.22	0.22
7.850	0.22	0.23	0.23	0.23	0.23
8.100	0.24	0.24	0.24	0.24	0.24
8.350	0.25	0.25	0.25	0.25	0.26
8.600	0.26	0.26	0.26	0.26	0.27
8.850	0.27	0.27	0.27	0.28	0.28
9.100	0.28	0.29	0.29	0.29	0.30
9.350	0.30	0.31	0.32	0.32	0.33
9.600	0.33	0.34	0.35	0.35	0.36
9.850	0.37	0.38	0.38	0.39	0.40
10.100	0.41	0.41	0.42	0.43	0.44
10.350	0.45	0.45	0.46	0.47	0.48
10.600	0.49	0.51	0.52	0.54	0.56
10.850	0.58	0.60	0.62	0.64	0.67
11.100	0.70	0.73	0.77	0.81	0.85

Post-Development Analysis Results (with BMPs)

Subsection: Diverted Hydrograph
 Label: Outlet-2
 Scenario: Post-Development 100

Return Event: 100 years
 Storm Event: 100-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.350	0.89	0.93	0.98	1.02	1.09
11.600	1.19	1.28	1.38	1.50	1.64
11.850	1.82	2.04	2.36	2.80	3.42
12.100	4.24	6.00	6.24	5.68	5.02
12.350	4.39	4.22	4.05	3.89	3.72
12.600	3.53	3.33	3.15	2.98	2.82
12.850	2.68	2.54	2.41	2.28	2.17
13.100	2.05	1.95	1.85	1.75	1.66
13.350	1.58	1.50	1.43	1.36	1.29
13.600	1.23	1.17	1.11	1.05	1.00
13.850	0.95	0.91	0.87	0.83	0.80
14.100	0.77	0.74	0.71	0.69	0.67
14.350	0.64	0.62	0.61	0.59	0.57
14.600	0.55	0.54	0.52	0.51	0.50
14.850	0.48	0.47	0.46	0.45	0.44
15.100	0.43	0.42	0.41	0.40	0.39
15.350	0.38	0.37	0.37	0.36	0.36
15.600	0.35	0.34	0.34	0.34	0.33
15.850	0.33	0.32	0.32	0.32	0.31
16.100	0.31	0.31	0.30	0.30	0.30
16.350	0.29	0.29	0.29	0.29	0.28
16.600	0.28	0.28	0.28	0.27	0.27
16.850	0.27	0.26	0.26	0.26	0.26
17.100	0.26	0.25	0.25	0.25	0.25
17.350	0.24	0.24	0.24	0.24	0.23
17.600	0.23	0.23	0.23	0.22	0.22
17.850	0.22	0.22	0.22	0.21	0.21
18.100	0.21	0.21	0.20	0.20	0.20
18.350	0.20	0.20	0.20	0.19	0.19
18.600	0.19	0.19	0.19	0.19	0.19
18.850	0.19	0.19	0.19	0.18	0.18
19.100	0.18	0.18	0.18	0.18	0.18
19.350	0.18	0.18	0.18	0.18	0.18
19.600	0.18	0.18	0.17	0.17	0.17
19.850	0.17	0.17	0.17	0.17	0.17
20.100	0.17	0.17	0.17	0.17	0.17
20.350	0.17	0.17	0.17	0.16	0.16
20.600	0.16	0.16	0.16	0.16	0.16
20.850	0.16	0.16	0.16	0.16	0.16
21.100	0.16	0.16	0.16	0.16	0.16
21.350	0.16	0.15	0.15	0.15	0.15
21.600	0.15	0.15	0.15	0.15	0.15
21.850	0.15	0.15	0.15	0.15	0.15
22.100	0.15	0.15	0.15	0.14	0.14
22.350	0.14	0.14	0.14	0.14	0.14
22.600	0.14	0.14	0.14	0.14	0.14
22.850	0.14	0.14	0.14	0.14	0.14
23.100	0.13	0.13	0.13	0.13	0.13

Post-Development Analysis Results (with BMPs)

Subsection: Diverted Hydrograph

Label: Outlet-2

Scenario: Post-Development 100

Return Event: 100 years

Storm Event: 100-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
23.350	0.13	0.13	0.13	0.13	0.13
23.600	0.13	0.13	0.13	0.13	0.13
23.850	0.13	0.13	0.13	0.13	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Diverted Hydrograph
 Label: Outlet-MRC
 Scenario: Post-Development 1

Return Event: 1 years
 Storm Event: 1-YR

Peak Discharge	0.98 ft ³ /s
Time to Peak	13.450 hours
Hydrograph Volume	0.635 ac-ft

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.950	0.00	0.05	0.18	0.35	0.50
12.200	0.60	0.66	0.71	0.75	0.78
12.450	0.81	0.83	0.85	0.87	0.88
12.700	0.90	0.91	0.92	0.92	0.93
12.950	0.94	0.95	0.95	0.95	0.96
13.200	0.97	0.97	0.97	0.98	0.98
13.450	0.98	0.98	0.97	0.97	0.97
13.700	0.97	0.96	0.96	0.95	0.95
13.950	0.95	0.95	0.95	0.94	0.94
14.200	0.94	0.94	0.93	0.93	0.93
14.450	0.92	0.92	0.92	0.91	0.91
14.700	0.91	0.90	0.90	0.90	0.89
14.950	0.89	0.88	0.88	0.87	0.87
15.200	0.87	0.86	0.86	0.85	0.85
15.450	0.84	0.84	0.84	0.83	0.83
15.700	0.82	0.82	0.82	0.81	0.81
15.950	0.80	0.80	0.79	0.79	0.79
16.200	0.78	0.78	0.77	0.77	0.77
16.450	0.76	0.76	0.75	0.75	0.75
16.700	0.74	0.74	0.73	0.73	0.73
16.950	0.72	0.72	0.71	0.71	0.71
17.200	0.70	0.70	0.69	0.69	0.69
17.450	0.68	0.68	0.67	0.67	0.67
17.700	0.66	0.66	0.65	0.65	0.65
17.950	0.64	0.64	0.64	0.63	0.63
18.200	0.62	0.62	0.62	0.61	0.61
18.450	0.61	0.60	0.60	0.60	0.59
18.700	0.59	0.58	0.58	0.58	0.57
18.950	0.57	0.57	0.56	0.56	0.56
19.200	0.55	0.55	0.55	0.55	0.54
19.450	0.54	0.54	0.53	0.53	0.53
19.700	0.52	0.52	0.52	0.52	0.51
19.950	0.51	0.51	0.50	0.50	0.50
20.200	0.50	0.49	0.49	0.49	0.48
20.450	0.48	0.48	0.48	0.47	0.47
20.700	0.47	0.47	0.46	0.46	0.46
20.950	0.46	0.45	0.45	0.45	0.45
21.200	0.44	0.44	0.44	0.44	0.43
21.450	0.43	0.43	0.43	0.43	0.42
21.700	0.42	0.42	0.42	0.41	0.41
21.950	0.41	0.41	0.41	0.40	0.40
22.200	0.40	0.40	0.39	0.39	0.39
22.450	0.39	0.39	0.38	0.38	0.38

Post-Development Analysis Results (with BMPs)

Subsection: Diverted Hydrograph

Label: Outlet-MRC

Scenario: Post-Development 1

Return Event: 1 years

Storm Event: 1-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
22.700	0.38	0.38	0.37	0.37	0.37
22.950	0.37	0.37	0.37	0.36	0.36
23.200	0.36	0.36	0.36	0.35	0.35
23.450	0.35	0.35	0.35	0.35	0.34
23.700	0.34	0.34	0.34	0.34	0.33
23.950	0.33	0.33	(N/A)	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Diverted Hydrograph
 Label: Outlet-MRC
 Scenario: Post-Development 2

Return Event: 2 years
 Storm Event: 2-YR

Peak Discharge	1.69 ft ³ /s
Time to Peak	13.050 hours
Hydrograph Volume	0.881 ac-ft

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.800	0.00	0.05	0.12	0.21	0.33
12.050	0.49	0.69	0.87	1.02	1.17
12.300	1.27	1.36	1.42	1.48	1.53
12.550	1.58	1.60	1.62	1.64	1.66
12.800	1.67	1.68	1.68	1.69	1.69
13.050	1.69	1.69	1.69	1.68	1.68
13.300	1.67	1.67	1.66	1.65	1.64
13.550	1.63	1.61	1.60	1.59	1.58
13.800	1.56	1.55	1.54	1.52	1.51
14.050	1.50	1.49	1.47	1.46	1.45
14.300	1.43	1.42	1.41	1.39	1.38
14.550	1.37	1.35	1.34	1.33	1.31
14.800	1.30	1.29	1.27	1.26	1.24
15.050	1.23	1.22	1.20	1.19	1.18
15.300	1.16	1.15	1.14	1.13	1.11
15.550	1.10	1.09	1.08	1.07	1.06
15.800	1.04	1.03	1.02	1.01	1.00
16.050	0.99	0.98	0.97	0.96	0.95
16.300	0.95	0.94	0.94	0.93	0.93
16.550	0.92	0.92	0.91	0.91	0.90
16.800	0.90	0.89	0.89	0.88	0.88
17.050	0.87	0.87	0.86	0.86	0.85
17.300	0.85	0.84	0.84	0.83	0.83
17.550	0.82	0.82	0.81	0.81	0.80
17.800	0.80	0.80	0.79	0.79	0.78
18.050	0.78	0.77	0.77	0.76	0.76
18.300	0.75	0.75	0.74	0.74	0.74
18.550	0.73	0.73	0.72	0.72	0.71
18.800	0.71	0.71	0.70	0.70	0.69
19.050	0.69	0.68	0.68	0.68	0.67
19.300	0.67	0.67	0.66	0.66	0.65
19.550	0.65	0.65	0.64	0.64	0.64
19.800	0.63	0.63	0.62	0.62	0.62
20.050	0.61	0.61	0.61	0.60	0.60
20.300	0.60	0.59	0.59	0.59	0.58
20.550	0.58	0.58	0.57	0.57	0.57
20.800	0.56	0.56	0.56	0.56	0.55
21.050	0.55	0.55	0.54	0.54	0.54
21.300	0.53	0.53	0.53	0.53	0.52
21.550	0.52	0.52	0.52	0.51	0.51
21.800	0.51	0.50	0.50	0.50	0.50
22.050	0.49	0.49	0.49	0.49	0.48
22.300	0.48	0.48	0.48	0.47	0.47

Post-Development Analysis Results (with BMPs)

Subsection: Diverted Hydrograph

Label: Outlet-MRC

Scenario: Post-Development 2

Return Event: 2 years

Storm Event: 2-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
22.550	0.47	0.47	0.46	0.46	0.46
22.800	0.46	0.45	0.45	0.45	0.45
23.050	0.44	0.44	0.44	0.44	0.44
23.300	0.43	0.43	0.43	0.43	0.42
23.550	0.42	0.42	0.42	0.42	0.41
23.800	0.41	0.41	0.41	0.41	0.40

Post-Development Analysis Results (with BMPs)

Subsection: Diverted Hydrograph
 Label: Outlet-MRC
 Scenario: Post-Development 5

Return Event: 5 years
 Storm Event: 5-YR

Peak Discharge	2.66 ft ³ /s
Time to Peak	12.850 hours
Hydrograph Volume	1.266 ac-ft

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.400	0.00	0.00	0.03	0.07	0.11
11.650	0.16	0.21	0.27	0.33	0.41
11.900	0.50	0.61	0.76	0.96	1.45
12.150	1.88	2.11	2.25	2.35	2.43
12.400	2.49	2.53	2.58	2.61	2.63
12.650	2.64	2.65	2.66	2.66	2.66
12.900	2.66	2.66	2.65	2.64	2.63
13.150	2.62	2.61	2.59	2.58	2.56
13.400	2.55	2.53	2.51	2.49	2.47
13.650	2.45	2.43	2.41	2.39	2.37
13.900	2.35	2.33	2.31	2.29	2.27
14.150	2.25	2.23	2.20	2.18	2.16
14.400	2.14	2.12	2.10	2.08	2.06
14.650	2.04	2.02	2.00	1.98	1.96
14.900	1.94	1.92	1.90	1.88	1.86
15.150	1.84	1.82	1.80	1.78	1.76
15.400	1.74	1.72	1.70	1.67	1.65
15.650	1.63	1.61	1.59	1.57	1.55
15.900	1.54	1.52	1.50	1.48	1.46
16.150	1.44	1.43	1.41	1.39	1.38
16.400	1.36	1.34	1.33	1.31	1.30
16.650	1.28	1.27	1.25	1.24	1.22
16.900	1.21	1.20	1.18	1.17	1.15
17.150	1.14	1.13	1.11	1.10	1.09
17.400	1.08	1.06	1.05	1.04	1.03
17.650	1.02	1.01	0.99	0.98	0.97
17.900	0.96	0.95	0.95	0.94	0.94
18.150	0.93	0.92	0.92	0.91	0.91
18.400	0.90	0.90	0.89	0.89	0.88
18.650	0.88	0.87	0.87	0.86	0.86
18.900	0.85	0.85	0.84	0.84	0.83
19.150	0.83	0.82	0.82	0.81	0.81
19.400	0.81	0.80	0.80	0.79	0.79
19.650	0.78	0.78	0.77	0.77	0.77
19.900	0.76	0.76	0.75	0.75	0.75
20.150	0.74	0.74	0.73	0.73	0.73
20.400	0.72	0.72	0.71	0.71	0.71
20.650	0.70	0.70	0.70	0.69	0.69
20.900	0.68	0.68	0.68	0.67	0.67
21.150	0.67	0.66	0.66	0.66	0.65
21.400	0.65	0.65	0.64	0.64	0.64
21.650	0.63	0.63	0.63	0.62	0.62
21.900	0.62	0.61	0.61	0.61	0.60

Post-Development Analysis Results (with BMPs)

Subsection: Diverted Hydrograph

Label: Outlet-MRC

Scenario: Post-Development 5

Return Event: 5 years

Storm Event: 5-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
22.150	0.60	0.60	0.59	0.59	0.59
22.400	0.59	0.58	0.58	0.58	0.57
22.650	0.57	0.57	0.56	0.56	0.56
22.900	0.56	0.55	0.55	0.55	0.55
23.150	0.54	0.54	0.54	0.53	0.53
23.400	0.53	0.53	0.52	0.52	0.52
23.650	0.52	0.51	0.51	0.51	0.51
23.900	0.50	0.50	0.50	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Diverted Hydrograph
 Label: Outlet-MRC
 Scenario: Post-Development 10

Return Event: 10 years
 Storm Event: 10-YR

Peak Discharge	3.84 ft ³ /s
Time to Peak	12.650 hours
Hydrograph Volume	1.592 ac-ft

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.050	0.00	0.02	0.04	0.07	0.10
11.300	0.13	0.16	0.20	0.23	0.26
11.550	0.31	0.36	0.41	0.47	0.53
11.800	0.60	0.69	0.79	0.93	1.24
12.050	1.69	2.18	2.62	2.90	3.18
12.300	3.37	3.51	3.62	3.70	3.77
12.550	3.82	3.83	3.84	3.83	3.82
12.800	3.81	3.79	3.77	3.74	3.71
13.050	3.67	3.64	3.59	3.55	3.51
13.300	3.46	3.42	3.37	3.32	3.27
13.550	3.22	3.17	3.12	3.07	3.02
13.800	2.97	2.92	2.88	2.84	2.81
14.050	2.79	2.76	2.74	2.71	2.68
14.300	2.66	2.63	2.61	2.58	2.56
14.550	2.53	2.51	2.48	2.46	2.43
14.800	2.41	2.38	2.36	2.33	2.31
15.050	2.28	2.26	2.23	2.21	2.19
15.300	2.16	2.14	2.12	2.09	2.07
15.550	2.05	2.03	2.01	1.98	1.96
15.800	1.94	1.92	1.90	1.88	1.86
16.050	1.84	1.82	1.80	1.78	1.76
16.300	1.74	1.72	1.70	1.68	1.66
16.550	1.64	1.62	1.60	1.58	1.56
16.800	1.54	1.52	1.50	1.48	1.46
17.050	1.45	1.43	1.41	1.40	1.38
17.300	1.36	1.35	1.33	1.31	1.30
17.550	1.28	1.27	1.25	1.24	1.22
17.800	1.21	1.20	1.18	1.17	1.15
18.050	1.14	1.13	1.11	1.10	1.09
18.300	1.07	1.06	1.05	1.04	1.03
18.550	1.01	1.00	0.99	0.98	0.97
18.800	0.96	0.95	0.95	0.94	0.94
19.050	0.93	0.93	0.92	0.92	0.91
19.300	0.91	0.90	0.90	0.89	0.89
19.550	0.88	0.88	0.87	0.87	0.86
19.800	0.86	0.86	0.85	0.85	0.84
20.050	0.84	0.83	0.83	0.83	0.82
20.300	0.82	0.81	0.81	0.80	0.80
20.550	0.80	0.79	0.79	0.78	0.78
20.800	0.78	0.77	0.77	0.76	0.76
21.050	0.76	0.75	0.75	0.75	0.74
21.300	0.74	0.73	0.73	0.73	0.72
21.550	0.72	0.72	0.71	0.71	0.71

Post-Development Analysis Results (with BMPs)

Subsection: Diverted Hydrograph

Label: Outlet-MRC

Scenario: Post-Development 10

Return Event: 10 years

Storm Event: 10-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
21.800	0.70	0.70	0.69	0.69	0.69
22.050	0.68	0.68	0.68	0.67	0.67
22.300	0.67	0.66	0.66	0.66	0.66
22.550	0.65	0.65	0.65	0.64	0.64
22.800	0.64	0.63	0.63	0.63	0.62
23.050	0.62	0.62	0.61	0.61	0.61
23.300	0.61	0.60	0.60	0.60	0.59
23.550	0.59	0.59	0.59	0.58	0.58
23.800	0.58	0.57	0.57	0.57	0.57

Post-Development Analysis Results (with BMPs)

Subsection: Diverted Hydrograph
 Label: Outlet-MRC
 Scenario: Post-Development 25

Return Event: 25 years
 Storm Event: 25-YR

Peak Discharge	5.65 ft ³ /s
Time to Peak	12.550 hours
Hydrograph Volume	2.071 ac-ft

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.400	0.00	0.01	0.03	0.05	0.07
10.650	0.08	0.10	0.13	0.15	0.17
10.900	0.19	0.22	0.24	0.27	0.30
11.150	0.33	0.36	0.39	0.42	0.46
11.400	0.50	0.54	0.58	0.62	0.68
11.650	0.75	0.81	0.89	1.00	1.20
11.900	1.44	1.75	2.09	2.54	3.32
12.150	4.24	4.77	5.07	5.27	5.41
12.400	5.50	5.57	5.62	5.65	5.64
12.650	5.61	5.58	5.54	5.49	5.44
12.900	5.39	5.33	5.27	5.21	5.14
13.150	5.07	5.00	4.92	4.85	4.77
13.400	4.70	4.62	4.54	4.47	4.39
13.650	4.31	4.23	4.16	4.08	4.01
13.900	3.94	3.87	3.80	3.73	3.67
14.150	3.60	3.54	3.47	3.41	3.35
14.400	3.29	3.23	3.18	3.12	3.07
14.650	3.01	2.96	2.90	2.85	2.82
14.900	2.79	2.76	2.73	2.71	2.68
15.150	2.65	2.62	2.59	2.57	2.54
15.400	2.51	2.48	2.46	2.43	2.41
15.650	2.38	2.36	2.33	2.31	2.28
15.900	2.26	2.24	2.21	2.19	2.17
16.150	2.15	2.12	2.10	2.08	2.06
16.400	2.04	2.02	2.00	1.98	1.96
16.650	1.94	1.92	1.90	1.88	1.86
16.900	1.84	1.82	1.80	1.78	1.76
17.150	1.74	1.72	1.70	1.68	1.66
17.400	1.64	1.62	1.60	1.58	1.56
17.650	1.54	1.52	1.51	1.49	1.47
17.900	1.45	1.43	1.42	1.40	1.38
18.150	1.37	1.35	1.34	1.32	1.30
18.400	1.29	1.27	1.26	1.25	1.23
18.650	1.22	1.20	1.19	1.18	1.17
18.900	1.15	1.14	1.13	1.12	1.11
19.150	1.09	1.08	1.07	1.06	1.05
19.400	1.04	1.03	1.02	1.01	1.00
19.650	0.99	0.98	0.97	0.96	0.95
19.900	0.95	0.94	0.94	0.94	0.93
20.150	0.93	0.92	0.92	0.91	0.91
20.400	0.90	0.90	0.90	0.89	0.89
20.650	0.88	0.88	0.88	0.87	0.87
20.900	0.86	0.86	0.86	0.85	0.85

Post-Development Analysis Results (with BMPs)

Subsection: Diverted Hydrograph
 Label: Outlet-MRC
 Scenario: Post-Development 25

Return Event: 25 years
 Storm Event: 25-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
21.150	0.84	0.84	0.84	0.83	0.83
21.400	0.82	0.82	0.82	0.81	0.81
21.650	0.81	0.80	0.80	0.80	0.79
21.900	0.79	0.78	0.78	0.78	0.77
22.150	0.77	0.77	0.76	0.76	0.76
22.400	0.75	0.75	0.75	0.74	0.74
22.650	0.74	0.73	0.73	0.73	0.72
22.900	0.72	0.72	0.71	0.71	0.71
23.150	0.70	0.70	0.70	0.69	0.69
23.400	0.69	0.68	0.68	0.68	0.68
23.650	0.67	0.67	0.67	0.66	0.66
23.900	0.66	0.65	0.65	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Diverted Hydrograph
 Label: Outlet-MRC
 Scenario: Post-Development 50

Return Event: 50 years
 Storm Event: 50-YR

Peak Discharge	7.99 ft ³ /s
Time to Peak	12.500 hours
Hydrograph Volume	2.480 ac-ft

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
9.850	0.00	0.02	0.03	0.05	0.07
10.100	0.08	0.10	0.12	0.13	0.15
10.350	0.17	0.19	0.20	0.22	0.24
10.600	0.26	0.28	0.30	0.33	0.35
10.850	0.37	0.40	0.42	0.45	0.48
11.100	0.51	0.54	0.58	0.61	0.65
11.350	0.69	0.73	0.78	0.82	0.87
11.600	0.94	1.06	1.21	1.38	1.57
11.850	1.80	2.02	2.31	2.69	3.48
12.100	4.64	5.67	6.54	7.18	7.56
12.350	7.80	7.91	7.96	7.99	7.96
12.600	7.85	7.70	7.54	7.38	7.22
12.850	7.05	6.88	6.70	6.52	6.34
13.100	6.16	5.99	5.90	5.81	5.72
13.350	5.63	5.54	5.45	5.35	5.26
13.600	5.16	5.07	4.98	4.89	4.80
13.850	4.71	4.63	4.54	4.46	4.38
14.100	4.30	4.23	4.15	4.08	4.00
14.350	3.93	3.86	3.79	3.72	3.66
14.600	3.59	3.52	3.46	3.40	3.34
14.850	3.27	3.21	3.16	3.10	3.04
15.100	2.98	2.93	2.87	2.83	2.80
15.350	2.78	2.75	2.72	2.69	2.66
15.600	2.64	2.61	2.58	2.56	2.53
15.850	2.51	2.48	2.46	2.43	2.41
16.100	2.38	2.36	2.34	2.31	2.29
16.350	2.27	2.24	2.22	2.20	2.18
16.600	2.16	2.14	2.11	2.09	2.07
16.850	2.05	2.03	2.01	1.99	1.97
17.100	1.95	1.93	1.91	1.90	1.88
17.350	1.86	1.84	1.82	1.80	1.78
17.600	1.76	1.74	1.72	1.70	1.68
17.850	1.66	1.64	1.62	1.60	1.58
18.100	1.57	1.55	1.53	1.51	1.49
18.350	1.48	1.46	1.44	1.43	1.41
18.600	1.40	1.38	1.37	1.35	1.34
18.850	1.32	1.31	1.29	1.28	1.27
19.100	1.25	1.24	1.23	1.22	1.20
19.350	1.19	1.18	1.17	1.16	1.15
19.600	1.13	1.12	1.11	1.10	1.09
19.850	1.08	1.07	1.06	1.05	1.04
20.100	1.03	1.02	1.02	1.01	1.00
20.350	0.99	0.98	0.97	0.96	0.96

Post-Development Analysis Results (with BMPs)

Subsection: Diverted Hydrograph
 Label: Outlet-MRC
 Scenario: Post-Development 50

Return Event: 50 years
 Storm Event: 50-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
20.600	0.95	0.95	0.94	0.94	0.94
20.850	0.93	0.93	0.92	0.92	0.92
21.100	0.91	0.91	0.90	0.90	0.90
21.350	0.89	0.89	0.89	0.88	0.88
21.600	0.87	0.87	0.87	0.86	0.86
21.850	0.86	0.85	0.85	0.85	0.84
22.100	0.84	0.83	0.83	0.83	0.82
22.350	0.82	0.82	0.81	0.81	0.81
22.600	0.80	0.80	0.80	0.79	0.79
22.850	0.79	0.78	0.78	0.78	0.77
23.100	0.77	0.77	0.76	0.76	0.76
23.350	0.76	0.75	0.75	0.75	0.74
23.600	0.74	0.74	0.73	0.73	0.73
23.850	0.72	0.72	0.72	0.72	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Diverted Hydrograph
 Label: Outlet-MRC
 Scenario: Post-Development 100

Return Event: 100 years
 Storm Event: 100-YR

Peak Discharge	10.70 ft ³ /s
Time to Peak	12.400 hours
Hydrograph Volume	2.926 ac-ft

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
9.250	0.00	0.01	0.02	0.04	0.05
9.500	0.07	0.08	0.10	0.12	0.13
9.750	0.15	0.16	0.18	0.20	0.21
10.000	0.23	0.25	0.27	0.29	0.30
10.250	0.32	0.34	0.36	0.38	0.40
10.500	0.41	0.43	0.46	0.48	0.50
10.750	0.52	0.55	0.58	0.60	0.63
11.000	0.66	0.69	0.73	0.76	0.80
11.250	0.84	0.88	0.92	0.99	1.08
11.500	1.18	1.29	1.43	1.59	1.75
11.750	1.91	2.09	2.30	2.55	2.90
12.000	3.67	4.69	6.00	8.35	9.61
12.250	10.21	10.53	10.67	10.70	10.65
12.500	10.59	10.47	10.26	10.00	9.75
12.750	9.49	9.24	8.98	8.73	8.48
13.000	8.22	7.97	7.71	7.46	7.22
13.250	6.98	6.75	6.53	6.31	6.10
13.500	5.94	5.84	5.74	5.64	5.53
13.750	5.44	5.34	5.24	5.15	5.06
14.000	4.97	4.88	4.80	4.71	4.63
14.250	4.55	4.47	4.39	4.31	4.23
14.500	4.16	4.09	4.01	3.94	3.87
14.750	3.80	3.73	3.67	3.60	3.53
15.000	3.47	3.41	3.34	3.28	3.22
15.250	3.16	3.11	3.05	3.00	2.94
15.500	2.89	2.84	2.82	2.79	2.76
15.750	2.74	2.71	2.68	2.66	2.63
16.000	2.61	2.58	2.56	2.53	2.51
16.250	2.49	2.46	2.44	2.42	2.39
16.500	2.37	2.35	2.33	2.30	2.28
16.750	2.26	2.24	2.22	2.20	2.18
17.000	2.15	2.13	2.11	2.09	2.07
17.250	2.05	2.04	2.02	2.00	1.98
17.500	1.96	1.94	1.92	1.90	1.89
17.750	1.87	1.85	1.83	1.81	1.80
18.000	1.78	1.76	1.74	1.72	1.70
18.250	1.68	1.66	1.64	1.62	1.60
18.500	1.59	1.57	1.55	1.53	1.52
18.750	1.50	1.49	1.47	1.46	1.44
19.000	1.43	1.41	1.40	1.38	1.37
19.250	1.36	1.34	1.33	1.32	1.30
19.500	1.29	1.28	1.27	1.26	1.24
19.750	1.23	1.22	1.21	1.20	1.19

Post-Development Analysis Results (with BMPs)

Subsection: Diverted Hydrograph
 Label: Outlet-MRC
 Scenario: Post-Development 100

Return Event: 100 years
 Storm Event: 100-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
20.000	1.18	1.17	1.16	1.15	1.14
20.250	1.13	1.12	1.11	1.10	1.09
20.500	1.08	1.07	1.06	1.05	1.05
20.750	1.04	1.03	1.02	1.01	1.01
21.000	1.00	0.99	0.98	0.97	0.97
21.250	0.96	0.95	0.95	0.95	0.94
21.500	0.94	0.94	0.93	0.93	0.93
21.750	0.92	0.92	0.92	0.91	0.91
22.000	0.90	0.90	0.90	0.89	0.89
22.250	0.89	0.88	0.88	0.88	0.87
22.500	0.87	0.87	0.86	0.86	0.86
22.750	0.85	0.85	0.85	0.85	0.84
23.000	0.84	0.84	0.83	0.83	0.83
23.250	0.82	0.82	0.82	0.81	0.81
23.500	0.81	0.80	0.80	0.80	0.79
23.750	0.79	0.79	0.79	0.78	0.78
24.000	0.78	(N/A)	(N/A)	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Elevation-Volume-Flow Table (Pond)
 Label: PO-2
 Scenario: Post-Development 1

Return Event: 1 years
 Storm Event: 1-YR

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	47.50 ft
Volume (Initial)	0.000 ac-ft
Flow (Initial Outlet)	0.00 ft ³ /s
Flow (Initial Infiltration)	0.00 ft ³ /s
Flow (Initial, Total)	0.00 ft ³ /s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft ³ /s)	Storage (ac-ft)	Area (ft ²)	Infiltration (ft ³ /s)	Flow (Total) (ft ³ /s)	2S/t + O (ft ³ /s)
47.50	0.00	0.000	0.000	0.00	0.00	0.00
48.00	1.15	0.043	0.000	0.00	1.15	22.17
48.50	2.74	0.111	0.000	0.00	2.74	56.50
49.00	4.38	0.179	0.000	0.00	4.38	90.88
49.50	8.61	0.222	0.000	0.00	8.61	116.12

Post-Development Analysis Results (with BMPs)

Subsection: Pond Routed Hydrograph (total out)

Return Event: 1 years

Label: PO-2 (OUT)

Storm Event: 1-YR

Scenario: Post-Development 1

Peak Discharge	1.73 ft ³ /s
Time to Peak	12.200 hours
Hydrograph Volume	0.296 ac-ft

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
1.650	0.00	0.00	0.00	0.00	0.00
1.900	0.00	0.00	0.00	0.00	0.00
2.150	0.00	0.01	0.01	0.01	0.01
2.400	0.01	0.01	0.01	0.01	0.01
2.650	0.01	0.01	0.01	0.01	0.01
2.900	0.01	0.01	0.01	0.01	0.02
3.150	0.02	0.02	0.02	0.02	0.02
3.400	0.02	0.02	0.02	0.02	0.02
3.650	0.02	0.02	0.02	0.02	0.02
3.900	0.02	0.02	0.02	0.02	0.03
4.150	0.03	0.03	0.03	0.03	0.03
4.400	0.03	0.03	0.03	0.03	0.03
4.650	0.03	0.03	0.03	0.03	0.03
4.900	0.03	0.03	0.03	0.03	0.03
5.150	0.03	0.03	0.04	0.04	0.04
5.400	0.04	0.04	0.04	0.04	0.04
5.650	0.04	0.04	0.04	0.04	0.04
5.900	0.04	0.04	0.04	0.04	0.04
6.150	0.04	0.04	0.04	0.04	0.04
6.400	0.05	0.05	0.05	0.05	0.05
6.650	0.05	0.05	0.05	0.05	0.05
6.900	0.05	0.05	0.05	0.05	0.06
7.150	0.06	0.06	0.06	0.06	0.06
7.400	0.06	0.06	0.06	0.06	0.06
7.650	0.06	0.06	0.07	0.07	0.07
7.900	0.07	0.07	0.07	0.07	0.07
8.150	0.07	0.07	0.07	0.07	0.08
8.400	0.08	0.08	0.08	0.08	0.08
8.650	0.08	0.08	0.08	0.08	0.08
8.900	0.09	0.09	0.09	0.09	0.09
9.150	0.09	0.09	0.09	0.10	0.10
9.400	0.10	0.10	0.10	0.11	0.11
9.650	0.11	0.11	0.11	0.12	0.12
9.900	0.12	0.12	0.13	0.13	0.13
10.150	0.14	0.14	0.14	0.14	0.15
10.400	0.15	0.15	0.16	0.16	0.16
10.650	0.17	0.17	0.18	0.18	0.19
10.900	0.20	0.21	0.21	0.22	0.23
11.150	0.24	0.26	0.27	0.28	0.30
11.400	0.31	0.33	0.34	0.37	0.40
11.650	0.44	0.47	0.52	0.57	0.64
11.900	0.72	0.84	1.00	1.21	1.48
12.150	1.67	1.73	1.71	1.67	1.62

Post-Development Analysis Results (with BMPs)

Subsection: Pond Routed Hydrograph (total out)

Return Event: 1 years

Label: PO-2 (OUT)

Storm Event: 1-YR

Scenario: Post-Development 1

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
12.400	1.55	1.48	1.42	1.35	1.28
12.650	1.21	1.14	1.07	1.01	0.95
12.900	0.89	0.84	0.79	0.74	0.70
13.150	0.66	0.62	0.59	0.55	0.52
13.400	0.50	0.47	0.44	0.42	0.40
13.650	0.38	0.36	0.34	0.33	0.31
13.900	0.30	0.29	0.27	0.26	0.25
14.150	0.25	0.24	0.23	0.22	0.22
14.400	0.21	0.20	0.20	0.19	0.19
14.650	0.18	0.18	0.17	0.17	0.16
14.900	0.16	0.16	0.15	0.15	0.14
15.150	0.14	0.14	0.14	0.13	0.13
15.400	0.13	0.13	0.12	0.12	0.12
15.650	0.12	0.12	0.11	0.11	0.11
15.900	0.11	0.11	0.11	0.11	0.11
16.150	0.10	0.10	0.10	0.10	0.10
16.400	0.10	0.10	0.10	0.10	0.10
16.650	0.10	0.09	0.09	0.09	0.09
16.900	0.09	0.09	0.09	0.09	0.09
17.150	0.09	0.09	0.09	0.08	0.08
17.400	0.08	0.08	0.08	0.08	0.08
17.650	0.08	0.08	0.08	0.08	0.08
17.900	0.07	0.07	0.07	0.07	0.07
18.150	0.07	0.07	0.07	0.07	0.07
18.400	0.07	0.07	0.07	0.07	0.07
18.650	0.07	0.07	0.06	0.06	0.06
18.900	0.06	0.06	0.06	0.06	0.06
19.150	0.06	0.06	0.06	0.06	0.06
19.400	0.06	0.06	0.06	0.06	0.06
19.650	0.06	0.06	0.06	0.06	0.06
19.900	0.06	0.06	0.06	0.06	0.06
20.150	0.06	0.06	0.06	0.06	0.06
20.400	0.06	0.06	0.06	0.06	0.06
20.650	0.06	0.06	0.06	0.06	0.06
20.900	0.06	0.05	0.05	0.05	0.05
21.150	0.05	0.05	0.05	0.05	0.05
21.400	0.05	0.05	0.05	0.05	0.05
21.650	0.05	0.05	0.05	0.05	0.05
21.900	0.05	0.05	0.05	0.05	0.05
22.150	0.05	0.05	0.05	0.05	0.05
22.400	0.05	0.05	0.05	0.05	0.05
22.650	0.05	0.05	0.05	0.05	0.05
22.900	0.05	0.05	0.05	0.05	0.05
23.150	0.05	0.05	0.05	0.05	0.05
23.400	0.05	0.05	0.04	0.04	0.04
23.650	0.04	0.04	0.04	0.04	0.04
23.900	0.04	0.04	0.04	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Pond Routed Hydrograph (total out)

Return Event: 2 years

Label: PO-2 (OUT)

Storm Event: 2-YR

Scenario: Post-Development 2

Peak Discharge	2.08 ft ³ /s
Time to Peak	12.200 hours
Hydrograph Volume	0.363 ac-ft

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
1.400	0.00	0.00	0.00	0.00	0.00
1.650	0.00	0.00	0.00	0.01	0.01
1.900	0.01	0.01	0.01	0.01	0.01
2.150	0.01	0.01	0.01	0.01	0.01
2.400	0.01	0.01	0.01	0.02	0.02
2.650	0.02	0.02	0.02	0.02	0.02
2.900	0.02	0.02	0.02	0.02	0.02
3.150	0.02	0.02	0.03	0.03	0.03
3.400	0.03	0.03	0.03	0.03	0.03
3.650	0.03	0.03	0.03	0.03	0.03
3.900	0.03	0.03	0.03	0.03	0.04
4.150	0.04	0.04	0.04	0.04	0.04
4.400	0.04	0.04	0.04	0.04	0.04
4.650	0.04	0.04	0.04	0.04	0.04
4.900	0.04	0.04	0.04	0.05	0.05
5.150	0.05	0.05	0.05	0.05	0.05
5.400	0.05	0.05	0.05	0.05	0.05
5.650	0.05	0.05	0.05	0.05	0.05
5.900	0.05	0.05	0.05	0.05	0.05
6.150	0.06	0.06	0.06	0.06	0.06
6.400	0.06	0.06	0.06	0.06	0.06
6.650	0.06	0.06	0.06	0.07	0.07
6.900	0.07	0.07	0.07	0.07	0.07
7.150	0.07	0.07	0.07	0.07	0.08
7.400	0.08	0.08	0.08	0.08	0.08
7.650	0.08	0.08	0.08	0.08	0.09
7.900	0.09	0.09	0.09	0.09	0.09
8.150	0.09	0.09	0.09	0.09	0.10
8.400	0.10	0.10	0.10	0.10	0.10
8.650	0.10	0.10	0.10	0.10	0.11
8.900	0.11	0.11	0.11	0.11	0.11
9.150	0.11	0.11	0.12	0.12	0.12
9.400	0.12	0.13	0.13	0.13	0.13
9.650	0.14	0.14	0.14	0.15	0.15
9.900	0.15	0.15	0.16	0.16	0.16
10.150	0.17	0.17	0.17	0.18	0.18
10.400	0.18	0.19	0.19	0.20	0.20
10.650	0.21	0.21	0.22	0.23	0.24
10.900	0.24	0.25	0.26	0.27	0.29
11.150	0.30	0.31	0.33	0.35	0.36
11.400	0.38	0.40	0.42	0.45	0.49
11.650	0.53	0.58	0.63	0.69	0.77
11.900	0.87	1.02	1.21	1.45	1.77

Post-Development Analysis Results (with BMPs)

Subsection: Pond Routed Hydrograph (total out)

Return Event: 2 years

Label: PO-2 (OUT)

Storm Event: 2-YR

Scenario: Post-Development 2

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
12.150	2.01	2.08	2.07	2.02	1.95
12.400	1.87	1.79	1.72	1.64	1.55
12.650	1.46	1.38	1.31	1.24	1.17
12.900	1.10	1.04	0.98	0.92	0.86
13.150	0.81	0.77	0.72	0.68	0.64
13.400	0.61	0.58	0.54	0.52	0.49
13.650	0.46	0.44	0.42	0.40	0.38
13.900	0.36	0.35	0.34	0.32	0.31
14.150	0.30	0.29	0.28	0.27	0.26
14.400	0.25	0.25	0.24	0.23	0.23
14.650	0.22	0.22	0.21	0.20	0.20
14.900	0.19	0.19	0.19	0.18	0.18
15.150	0.17	0.17	0.16	0.16	0.16
15.400	0.15	0.15	0.15	0.15	0.15
15.650	0.14	0.14	0.14	0.14	0.14
15.900	0.13	0.13	0.13	0.13	0.13
16.150	0.13	0.13	0.12	0.12	0.12
16.400	0.12	0.12	0.12	0.12	0.12
16.650	0.12	0.11	0.11	0.11	0.11
16.900	0.11	0.11	0.11	0.11	0.11
17.150	0.11	0.10	0.10	0.10	0.10
17.400	0.10	0.10	0.10	0.10	0.10
17.650	0.10	0.09	0.09	0.09	0.09
17.900	0.09	0.09	0.09	0.09	0.09
18.150	0.09	0.09	0.08	0.08	0.08
18.400	0.08	0.08	0.08	0.08	0.08
18.650	0.08	0.08	0.08	0.08	0.08
18.900	0.08	0.08	0.08	0.08	0.08
19.150	0.08	0.08	0.08	0.07	0.07
19.400	0.07	0.07	0.07	0.07	0.07
19.650	0.07	0.07	0.07	0.07	0.07
19.900	0.07	0.07	0.07	0.07	0.07
20.150	0.07	0.07	0.07	0.07	0.07
20.400	0.07	0.07	0.07	0.07	0.07
20.650	0.07	0.07	0.07	0.07	0.07
20.900	0.07	0.07	0.07	0.07	0.07
21.150	0.07	0.07	0.07	0.06	0.06
21.400	0.06	0.06	0.06	0.06	0.06
21.650	0.06	0.06	0.06	0.06	0.06
21.900	0.06	0.06	0.06	0.06	0.06
22.150	0.06	0.06	0.06	0.06	0.06
22.400	0.06	0.06	0.06	0.06	0.06
22.650	0.06	0.06	0.06	0.06	0.06
22.900	0.06	0.06	0.06	0.06	0.06
23.150	0.06	0.06	0.06	0.06	0.06
23.400	0.05	0.05	0.05	0.05	0.05
23.650	0.05	0.05	0.05	0.05	0.05
23.900	0.05	0.05	0.05	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Pond Routed Hydrograph (total out)
 Label: PO-2 (OUT)
 Scenario: Post-Development 5

Return Event: 5 years
 Storm Event: 5-YR

Peak Discharge	2.63 ft ³ /s
Time to Peak	12.200 hours
Hydrograph Volume	0.466 ac-ft

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
1.150	0.00	0.00	0.00	0.00	0.00
1.400	0.00	0.01	0.01	0.01	0.01
1.650	0.01	0.01	0.01	0.01	0.01
1.900	0.01	0.01	0.01	0.02	0.02
2.150	0.02	0.02	0.02	0.02	0.02
2.400	0.02	0.02	0.03	0.03	0.03
2.650	0.03	0.03	0.03	0.03	0.03
2.900	0.03	0.03	0.04	0.04	0.04
3.150	0.04	0.04	0.04	0.04	0.04
3.400	0.04	0.04	0.04	0.04	0.04
3.650	0.05	0.05	0.05	0.05	0.05
3.900	0.05	0.05	0.05	0.05	0.05
4.150	0.05	0.05	0.05	0.05	0.06
4.400	0.06	0.06	0.06	0.06	0.06
4.650	0.06	0.06	0.06	0.06	0.06
4.900	0.06	0.06	0.06	0.06	0.06
5.150	0.06	0.07	0.07	0.07	0.07
5.400	0.07	0.07	0.07	0.07	0.07
5.650	0.07	0.07	0.07	0.07	0.07
5.900	0.07	0.07	0.07	0.07	0.07
6.150	0.08	0.08	0.08	0.08	0.08
6.400	0.08	0.08	0.08	0.08	0.08
6.650	0.08	0.09	0.09	0.09	0.09
6.900	0.09	0.09	0.09	0.09	0.09
7.150	0.10	0.10	0.10	0.10	0.10
7.400	0.10	0.10	0.10	0.11	0.11
7.650	0.11	0.11	0.11	0.11	0.11
7.900	0.11	0.12	0.12	0.12	0.12
8.150	0.12	0.12	0.12	0.12	0.13
8.400	0.13	0.13	0.13	0.13	0.13
8.650	0.13	0.13	0.14	0.14	0.14
8.900	0.14	0.14	0.14	0.14	0.14
9.150	0.15	0.15	0.15	0.15	0.16
9.400	0.16	0.16	0.17	0.17	0.17
9.650	0.18	0.18	0.18	0.19	0.19
9.900	0.20	0.20	0.20	0.21	0.21
10.150	0.22	0.22	0.22	0.23	0.23
10.400	0.24	0.24	0.25	0.25	0.26
10.650	0.26	0.27	0.28	0.29	0.30
10.900	0.31	0.32	0.34	0.35	0.37
11.150	0.38	0.40	0.42	0.44	0.46
11.400	0.49	0.51	0.54	0.57	0.62
11.650	0.68	0.73	0.80	0.88	0.99

Post-Development Analysis Results (with BMPs)

Subsection: Pond Routed Hydrograph (total out)

Return Event: 5 years

Label: PO-2 (OUT)

Storm Event: 5-YR

Scenario: Post-Development 5

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.900	1.11	1.28	1.50	1.82	2.23
12.150	2.54	2.63	2.61	2.55	2.47
12.400	2.37	2.27	2.17	2.07	1.97
12.650	1.86	1.75	1.66	1.57	1.49
12.900	1.41	1.33	1.26	1.19	1.13
13.150	1.06	1.00	0.94	0.88	0.83
13.400	0.79	0.74	0.70	0.67	0.63
13.650	0.60	0.57	0.54	0.51	0.49
13.900	0.47	0.45	0.43	0.41	0.40
14.150	0.38	0.37	0.36	0.35	0.34
14.400	0.33	0.32	0.31	0.30	0.29
14.650	0.28	0.28	0.27	0.26	0.25
14.900	0.25	0.24	0.24	0.23	0.22
15.150	0.22	0.21	0.21	0.20	0.20
15.400	0.20	0.19	0.19	0.19	0.18
15.650	0.18	0.18	0.18	0.17	0.17
15.900	0.17	0.17	0.17	0.17	0.16
16.150	0.16	0.16	0.16	0.16	0.16
16.400	0.15	0.15	0.15	0.15	0.15
16.650	0.15	0.15	0.14	0.14	0.14
16.900	0.14	0.14	0.14	0.14	0.14
17.150	0.13	0.13	0.13	0.13	0.13
17.400	0.13	0.13	0.13	0.12	0.12
17.650	0.12	0.12	0.12	0.12	0.12
17.900	0.12	0.11	0.11	0.11	0.11
18.150	0.11	0.11	0.11	0.11	0.11
18.400	0.10	0.10	0.10	0.10	0.10
18.650	0.10	0.10	0.10	0.10	0.10
18.900	0.10	0.10	0.10	0.10	0.10
19.150	0.10	0.10	0.10	0.10	0.09
19.400	0.09	0.09	0.09	0.09	0.09
19.650	0.09	0.09	0.09	0.09	0.09
19.900	0.09	0.09	0.09	0.09	0.09
20.150	0.09	0.09	0.09	0.09	0.09
20.400	0.09	0.09	0.09	0.09	0.09
20.650	0.09	0.09	0.09	0.09	0.09
20.900	0.08	0.08	0.08	0.08	0.08
21.150	0.08	0.08	0.08	0.08	0.08
21.400	0.08	0.08	0.08	0.08	0.08
21.650	0.08	0.08	0.08	0.08	0.08
21.900	0.08	0.08	0.08	0.08	0.08
22.150	0.08	0.08	0.08	0.08	0.08
22.400	0.08	0.08	0.08	0.07	0.07
22.650	0.07	0.07	0.07	0.07	0.07
22.900	0.07	0.07	0.07	0.07	0.07
23.150	0.07	0.07	0.07	0.07	0.07
23.400	0.07	0.07	0.07	0.07	0.07
23.650	0.07	0.07	0.07	0.07	0.07

Post-Development Analysis Results (with BMPs)

Subsection: Pond Routed Hydrograph (total out)

Label: PO-2 (OUT)

Scenario: Post-Development 5

Return Event: 5 years

Storm Event: 5-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
23.900	0.07	0.07	0.07	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Pond Routed Hydrograph (total out)
 Label: PO-2 (OUT)
 Scenario: Post-Development 10

Return Event: 10 years
 Storm Event: 10-YR

Peak Discharge	3.11 ft ³ /s
Time to Peak	12.200 hours
Hydrograph Volume	0.553 ac-ft

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
0.950	0.00	0.00	0.00	0.00	0.00
1.200	0.00	0.01	0.01	0.01	0.01
1.450	0.01	0.01	0.01	0.01	0.01
1.700	0.02	0.02	0.02	0.02	0.02
1.950	0.02	0.02	0.03	0.03	0.03
2.200	0.03	0.03	0.03	0.03	0.03
2.450	0.03	0.04	0.04	0.04	0.04
2.700	0.04	0.04	0.04	0.04	0.04
2.950	0.05	0.05	0.05	0.05	0.05
3.200	0.05	0.05	0.05	0.05	0.05
3.450	0.06	0.06	0.06	0.06	0.06
3.700	0.06	0.06	0.06	0.06	0.06
3.950	0.06	0.06	0.06	0.07	0.07
4.200	0.07	0.07	0.07	0.07	0.07
4.450	0.07	0.07	0.07	0.07	0.07
4.700	0.07	0.08	0.08	0.08	0.08
4.950	0.08	0.08	0.08	0.08	0.08
5.200	0.08	0.08	0.08	0.08	0.08
5.450	0.08	0.08	0.08	0.09	0.09
5.700	0.09	0.09	0.09	0.09	0.09
5.950	0.09	0.09	0.09	0.09	0.09
6.200	0.09	0.09	0.09	0.10	0.10
6.450	0.10	0.10	0.10	0.10	0.10
6.700	0.10	0.10	0.11	0.11	0.11
6.950	0.11	0.11	0.11	0.11	0.12
7.200	0.12	0.12	0.12	0.12	0.12
7.450	0.12	0.13	0.13	0.13	0.13
7.700	0.13	0.13	0.13	0.14	0.14
7.950	0.14	0.14	0.14	0.14	0.14
8.200	0.15	0.15	0.15	0.15	0.15
8.450	0.15	0.15	0.16	0.16	0.16
8.700	0.16	0.16	0.16	0.16	0.17
8.950	0.17	0.17	0.17	0.17	0.17
9.200	0.18	0.18	0.18	0.19	0.19
9.450	0.19	0.20	0.20	0.21	0.21
9.700	0.21	0.22	0.22	0.23	0.23
9.950	0.24	0.24	0.25	0.25	0.26
10.200	0.26	0.27	0.27	0.28	0.28
10.450	0.29	0.29	0.30	0.30	0.31
10.700	0.32	0.33	0.34	0.36	0.37
10.950	0.38	0.40	0.41	0.43	0.45
11.200	0.47	0.50	0.52	0.55	0.57
11.450	0.60	0.63	0.67	0.73	0.80

Post-Development Analysis Results (with BMPs)

Subsection: Pond Routed Hydrograph (total out)

Return Event: 10 years

Label: PO-2 (OUT)

Storm Event: 10-YR

Scenario: Post-Development 10

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.700	0.87	0.94	1.04	1.16	1.30
11.950	1.49	1.76	2.13	2.62	2.99
12.200	3.11	3.08	3.00	2.90	2.78
12.450	2.67	2.55	2.44	2.31	2.18
12.700	2.06	1.95	1.85	1.75	1.65
12.950	1.57	1.48	1.40	1.33	1.26
13.200	1.19	1.12	1.06	1.00	0.94
13.450	0.89	0.84	0.79	0.75	0.71
13.700	0.67	0.64	0.61	0.58	0.56
13.950	0.53	0.51	0.49	0.47	0.46
14.200	0.44	0.42	0.41	0.40	0.39
14.450	0.37	0.36	0.35	0.34	0.33
14.700	0.33	0.32	0.31	0.30	0.29
14.950	0.29	0.28	0.27	0.26	0.26
15.200	0.25	0.25	0.24	0.24	0.23
15.450	0.23	0.22	0.22	0.22	0.21
15.700	0.21	0.21	0.21	0.20	0.20
15.950	0.20	0.20	0.19	0.19	0.19
16.200	0.19	0.19	0.18	0.18	0.18
16.450	0.18	0.18	0.18	0.17	0.17
16.700	0.17	0.17	0.17	0.17	0.17
16.950	0.16	0.16	0.16	0.16	0.16
17.200	0.16	0.15	0.15	0.15	0.15
17.450	0.15	0.15	0.15	0.14	0.14
17.700	0.14	0.14	0.14	0.14	0.14
17.950	0.13	0.13	0.13	0.13	0.13
18.200	0.13	0.13	0.12	0.12	0.12
18.450	0.12	0.12	0.12	0.12	0.12
18.700	0.12	0.12	0.12	0.12	0.12
18.950	0.12	0.11	0.11	0.11	0.11
19.200	0.11	0.11	0.11	0.11	0.11
19.450	0.11	0.11	0.11	0.11	0.11
19.700	0.11	0.11	0.11	0.11	0.11
19.950	0.11	0.11	0.11	0.11	0.11
20.200	0.11	0.10	0.10	0.10	0.10
20.450	0.10	0.10	0.10	0.10	0.10
20.700	0.10	0.10	0.10	0.10	0.10
20.950	0.10	0.10	0.10	0.10	0.10
21.200	0.10	0.10	0.10	0.10	0.10
21.450	0.10	0.10	0.10	0.09	0.09
21.700	0.09	0.09	0.09	0.09	0.09
21.950	0.09	0.09	0.09	0.09	0.09
22.200	0.09	0.09	0.09	0.09	0.09
22.450	0.09	0.09	0.09	0.09	0.09
22.700	0.09	0.09	0.09	0.09	0.09
22.950	0.09	0.08	0.08	0.08	0.08
23.200	0.08	0.08	0.08	0.08	0.08
23.450	0.08	0.08	0.08	0.08	0.08

Post-Development Analysis Results (with BMPs)

Subsection: Pond Routed Hydrograph (total out)

Label: PO-2 (OUT)

Scenario: Post-Development 10

Return Event: 10 years

Storm Event: 10-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
23.700	0.08	0.08	0.08	0.08	0.08
23.950	0.08	0.08	(N/A)	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Pond Routed Hydrograph (total out)
 Label: PO-2 (OUT)
 Scenario: Post-Development 25

Return Event: 25 years
 Storm Event: 25-YR

Peak Discharge	3.80 ft ³ /s
Time to Peak	12.200 hours
Hydrograph Volume	0.678 ac-ft

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
0.800	0.00	0.00	0.00	0.00	0.00
1.050	0.01	0.01	0.01	0.01	0.01
1.300	0.01	0.01	0.02	0.02	0.02
1.550	0.02	0.02	0.03	0.03	0.03
1.800	0.03	0.03	0.03	0.04	0.04
2.050	0.04	0.04	0.04	0.04	0.04
2.300	0.05	0.05	0.05	0.05	0.05
2.550	0.05	0.05	0.06	0.06	0.06
2.800	0.06	0.06	0.06	0.06	0.06
3.050	0.07	0.07	0.07	0.07	0.07
3.300	0.07	0.07	0.07	0.07	0.08
3.550	0.08	0.08	0.08	0.08	0.08
3.800	0.08	0.08	0.08	0.08	0.08
4.050	0.09	0.09	0.09	0.09	0.09
4.300	0.09	0.09	0.09	0.09	0.09
4.550	0.09	0.09	0.10	0.10	0.10
4.800	0.10	0.10	0.10	0.10	0.10
5.050	0.10	0.10	0.10	0.10	0.10
5.300	0.10	0.11	0.11	0.11	0.11
5.550	0.11	0.11	0.11	0.11	0.11
5.800	0.11	0.11	0.11	0.11	0.11
6.050	0.11	0.12	0.12	0.12	0.12
6.300	0.12	0.12	0.12	0.12	0.12
6.550	0.13	0.13	0.13	0.13	0.13
6.800	0.13	0.13	0.14	0.14	0.14
7.050	0.14	0.14	0.14	0.15	0.15
7.300	0.15	0.15	0.15	0.15	0.16
7.550	0.16	0.16	0.16	0.16	0.16
7.800	0.17	0.17	0.17	0.17	0.17
8.050	0.17	0.18	0.18	0.18	0.18
8.300	0.18	0.19	0.19	0.19	0.19
8.550	0.19	0.19	0.20	0.20	0.20
8.800	0.20	0.20	0.20	0.21	0.21
9.050	0.21	0.21	0.22	0.22	0.22
9.300	0.23	0.23	0.23	0.24	0.24
9.550	0.25	0.25	0.26	0.26	0.27
9.800	0.27	0.28	0.28	0.29	0.30
10.050	0.30	0.31	0.31	0.32	0.33
10.300	0.33	0.34	0.34	0.35	0.36
10.550	0.36	0.37	0.38	0.39	0.41
10.800	0.42	0.44	0.45	0.47	0.49
11.050	0.51	0.53	0.55	0.58	0.61
11.300	0.64	0.67	0.70	0.74	0.77

Post-Development Analysis Results (with BMPs)

Subsection: Pond Routed Hydrograph (total out)

Return Event: 25 years

Label: PO-2 (OUT)

Storm Event: 25-YR

Scenario: Post-Development 25

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.550	0.82	0.90	0.98	1.06	1.16
11.800	1.26	1.40	1.56	1.80	2.13
12.050	2.59	3.20	3.66	3.80	3.77
12.300	3.67	3.55	3.40	3.26	3.12
12.550	2.97	2.81	2.65	2.51	2.37
12.800	2.25	2.13	2.01	1.91	1.80
13.050	1.71	1.62	1.53	1.45	1.37
13.300	1.30	1.24	1.17	1.11	1.05
13.550	0.99	0.93	0.88	0.83	0.79
13.800	0.75	0.72	0.69	0.66	0.63
14.050	0.60	0.58	0.56	0.54	0.52
14.300	0.50	0.49	0.47	0.46	0.45
14.550	0.43	0.42	0.41	0.40	0.39
14.800	0.38	0.37	0.36	0.35	0.34
15.050	0.33	0.32	0.32	0.31	0.30
15.300	0.29	0.29	0.28	0.28	0.27
15.550	0.27	0.27	0.26	0.26	0.25
15.800	0.25	0.25	0.25	0.24	0.24
16.050	0.24	0.23	0.23	0.23	0.23
16.300	0.23	0.22	0.22	0.22	0.22
16.550	0.21	0.21	0.21	0.21	0.21
16.800	0.21	0.20	0.20	0.20	0.20
17.050	0.20	0.19	0.19	0.19	0.19
17.300	0.19	0.18	0.18	0.18	0.18
17.550	0.18	0.18	0.17	0.17	0.17
17.800	0.17	0.17	0.17	0.16	0.16
18.050	0.16	0.16	0.16	0.16	0.15
18.300	0.15	0.15	0.15	0.15	0.15
18.550	0.15	0.15	0.15	0.14	0.14
18.800	0.14	0.14	0.14	0.14	0.14
19.050	0.14	0.14	0.14	0.14	0.14
19.300	0.14	0.14	0.14	0.14	0.13
19.550	0.13	0.13	0.13	0.13	0.13
19.800	0.13	0.13	0.13	0.13	0.13
20.050	0.13	0.13	0.13	0.13	0.13
20.300	0.13	0.13	0.13	0.13	0.13
20.550	0.12	0.12	0.12	0.12	0.12
20.800	0.12	0.12	0.12	0.12	0.12
21.050	0.12	0.12	0.12	0.12	0.12
21.300	0.12	0.12	0.12	0.12	0.12
21.550	0.12	0.12	0.12	0.11	0.11
21.800	0.11	0.11	0.11	0.11	0.11
22.050	0.11	0.11	0.11	0.11	0.11
22.300	0.11	0.11	0.11	0.11	0.11
22.550	0.11	0.11	0.11	0.11	0.11
22.800	0.11	0.10	0.10	0.10	0.10
23.050	0.10	0.10	0.10	0.10	0.10
23.300	0.10	0.10	0.10	0.10	0.10

Post-Development Analysis Results (with BMPs)

Subsection: Pond Routed Hydrograph (total out)

Label: PO-2 (OUT)

Scenario: Post-Development 25

Return Event: 25 years

Storm Event: 25-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
23.550	0.10	0.10	0.10	0.10	0.10
23.800	0.10	0.10	0.10	0.10	0.10

Post-Development Analysis Results (with BMPs)

Subsection: Pond Routed Hydrograph (total out)
 Label: PO-2 (OUT)
 Scenario: Post-Development 50

Return Event: 50 years
 Storm Event: 50-YR

Peak Discharge	4.39 ft ³ /s
Time to Peak	12.200 hours
Hydrograph Volume	0.785 ac-ft

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
0.700	0.00	0.00	0.00	0.00	0.01
0.950	0.01	0.01	0.01	0.01	0.01
1.200	0.02	0.02	0.02	0.02	0.02
1.450	0.03	0.03	0.03	0.03	0.03
1.700	0.04	0.04	0.04	0.04	0.04
1.950	0.05	0.05	0.05	0.05	0.05
2.200	0.06	0.06	0.06	0.06	0.06
2.450	0.06	0.07	0.07	0.07	0.07
2.700	0.07	0.07	0.07	0.08	0.08
2.950	0.08	0.08	0.08	0.08	0.08
3.200	0.08	0.09	0.09	0.09	0.09
3.450	0.09	0.09	0.09	0.09	0.10
3.700	0.10	0.10	0.10	0.10	0.10
3.950	0.10	0.10	0.10	0.10	0.10
4.200	0.11	0.11	0.11	0.11	0.11
4.450	0.11	0.11	0.11	0.11	0.11
4.700	0.11	0.12	0.12	0.12	0.12
4.950	0.12	0.12	0.12	0.12	0.12
5.200	0.12	0.12	0.12	0.12	0.13
5.450	0.13	0.13	0.13	0.13	0.13
5.700	0.13	0.13	0.13	0.13	0.13
5.950	0.13	0.13	0.13	0.14	0.14
6.200	0.14	0.14	0.14	0.14	0.14
6.450	0.14	0.15	0.15	0.15	0.15
6.700	0.15	0.15	0.16	0.16	0.16
6.950	0.16	0.16	0.16	0.17	0.17
7.200	0.17	0.17	0.17	0.18	0.18
7.450	0.18	0.18	0.18	0.19	0.19
7.700	0.19	0.19	0.19	0.20	0.20
7.950	0.20	0.20	0.20	0.21	0.21
8.200	0.21	0.21	0.21	0.21	0.22
8.450	0.22	0.22	0.22	0.22	0.23
8.700	0.23	0.23	0.23	0.23	0.24
8.950	0.24	0.24	0.24	0.25	0.25
9.200	0.25	0.26	0.26	0.27	0.27
9.450	0.28	0.28	0.29	0.29	0.30
9.700	0.30	0.31	0.32	0.32	0.33
9.950	0.33	0.34	0.35	0.35	0.36
10.200	0.37	0.38	0.38	0.39	0.40
10.450	0.40	0.41	0.42	0.43	0.44
10.700	0.45	0.47	0.49	0.50	0.52
10.950	0.54	0.56	0.58	0.61	0.64
11.200	0.67	0.70	0.74	0.77	0.81

Post-Development Analysis Results (with BMPs)

Subsection: Pond Routed Hydrograph (total out)

Return Event: 50 years

Label: PO-2 (OUT)

Storm Event: 50-YR

Scenario: Post-Development 50

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.450	0.85	0.89	0.95	1.04	1.13
11.700	1.22	1.32	1.44	1.60	1.79
11.950	2.07	2.45	2.99	3.70	4.23
12.200	4.39	4.35	4.24	4.10	3.93
12.450	3.76	3.60	3.43	3.24	3.06
12.700	2.89	2.73	2.58	2.44	2.31
12.950	2.19	2.07	1.96	1.86	1.76
13.200	1.67	1.58	1.50	1.42	1.35
13.450	1.28	1.22	1.15	1.09	1.03
13.700	0.97	0.92	0.88	0.84	0.80
13.950	0.76	0.73	0.70	0.67	0.65
14.200	0.63	0.60	0.58	0.57	0.55
14.450	0.53	0.52	0.50	0.49	0.47
14.700	0.46	0.45	0.44	0.42	0.41
14.950	0.40	0.39	0.38	0.37	0.36
15.200	0.35	0.35	0.34	0.33	0.33
15.450	0.32	0.32	0.31	0.31	0.30
15.700	0.30	0.29	0.29	0.29	0.28
15.950	0.28	0.28	0.27	0.27	0.27
16.200	0.26	0.26	0.26	0.26	0.25
16.450	0.25	0.25	0.25	0.25	0.24
16.700	0.24	0.24	0.24	0.23	0.23
16.950	0.23	0.23	0.23	0.22	0.22
17.200	0.22	0.22	0.22	0.21	0.21
17.450	0.21	0.21	0.20	0.20	0.20
17.700	0.20	0.20	0.19	0.19	0.19
17.950	0.19	0.19	0.18	0.18	0.18
18.200	0.18	0.18	0.18	0.17	0.17
18.450	0.17	0.17	0.17	0.17	0.17
18.700	0.17	0.17	0.16	0.16	0.16
18.950	0.16	0.16	0.16	0.16	0.16
19.200	0.16	0.16	0.16	0.16	0.16
19.450	0.16	0.15	0.15	0.15	0.15
19.700	0.15	0.15	0.15	0.15	0.15
19.950	0.15	0.15	0.15	0.15	0.15
20.200	0.15	0.15	0.15	0.15	0.15
20.450	0.14	0.14	0.14	0.14	0.14
20.700	0.14	0.14	0.14	0.14	0.14
20.950	0.14	0.14	0.14	0.14	0.14
21.200	0.14	0.14	0.14	0.14	0.14
21.450	0.13	0.13	0.13	0.13	0.13
21.700	0.13	0.13	0.13	0.13	0.13
21.950	0.13	0.13	0.13	0.13	0.13
22.200	0.13	0.13	0.13	0.13	0.13
22.450	0.12	0.12	0.12	0.12	0.12
22.700	0.12	0.12	0.12	0.12	0.12
22.950	0.12	0.12	0.12	0.12	0.12
23.200	0.12	0.12	0.12	0.12	0.12

Post-Development Analysis Results (with BMPs)

Subsection: Pond Routed Hydrograph (total out)

Label: PO-2 (OUT)

Scenario: Post-Development 50

Return Event: 50 years

Storm Event: 50-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
23.450	0.11	0.11	0.11	0.11	0.11
23.700	0.11	0.11	0.11	0.11	0.11
23.950	0.11	0.11	(N/A)	(N/A)	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Pond Routed Hydrograph (total out)
 Label: PO-2 (OUT)
 Scenario: Post-Development 100

Return Event: 100 years
 Storm Event: 100-YR

Peak Discharge	6.24 ft ³ /s
Time to Peak	12.200 hours
Hydrograph Volume	0.900 ac-ft

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
0.600	0.00	0.00	0.00	0.00	0.01
0.850	0.01	0.01	0.01	0.01	0.02
1.100	0.02	0.02	0.02	0.03	0.03
1.350	0.03	0.03	0.04	0.04	0.04
1.600	0.04	0.05	0.05	0.05	0.05
1.850	0.06	0.06	0.06	0.06	0.06
2.100	0.07	0.07	0.07	0.07	0.07
2.350	0.08	0.08	0.08	0.08	0.08
2.600	0.08	0.09	0.09	0.09	0.09
2.850	0.09	0.09	0.10	0.10	0.10
3.100	0.10	0.10	0.10	0.10	0.10
3.350	0.11	0.11	0.11	0.11	0.11
3.600	0.11	0.11	0.11	0.12	0.12
3.850	0.12	0.12	0.12	0.12	0.12
4.100	0.12	0.12	0.12	0.13	0.13
4.350	0.13	0.13	0.13	0.13	0.13
4.600	0.13	0.13	0.13	0.14	0.14
4.850	0.14	0.14	0.14	0.14	0.14
5.100	0.14	0.14	0.14	0.14	0.14
5.350	0.15	0.15	0.15	0.15	0.15
5.600	0.15	0.15	0.15	0.15	0.15
5.850	0.15	0.15	0.15	0.16	0.16
6.100	0.16	0.16	0.16	0.16	0.16
6.350	0.16	0.17	0.17	0.17	0.17
6.600	0.17	0.17	0.18	0.18	0.18
6.850	0.18	0.18	0.19	0.19	0.19
7.100	0.19	0.19	0.20	0.20	0.20
7.350	0.20	0.20	0.21	0.21	0.21
7.600	0.21	0.22	0.22	0.22	0.22
7.850	0.22	0.23	0.23	0.23	0.23
8.100	0.24	0.24	0.24	0.24	0.24
8.350	0.25	0.25	0.25	0.25	0.26
8.600	0.26	0.26	0.26	0.26	0.27
8.850	0.27	0.27	0.27	0.28	0.28
9.100	0.28	0.29	0.29	0.29	0.30
9.350	0.30	0.31	0.32	0.32	0.33
9.600	0.33	0.34	0.35	0.35	0.36
9.850	0.37	0.38	0.38	0.39	0.40
10.100	0.41	0.41	0.42	0.43	0.44
10.350	0.45	0.45	0.46	0.47	0.48
10.600	0.49	0.51	0.52	0.54	0.56
10.850	0.58	0.60	0.62	0.64	0.67
11.100	0.70	0.73	0.77	0.81	0.85

Post-Development Analysis Results (with BMPs)

Subsection: Pond Routed Hydrograph (total out)

Return Event: 100 years

Label: PO-2 (OUT)

Storm Event: 100-YR

Scenario: Post-Development 100

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
11.350	0.89	0.93	0.98	1.02	1.09
11.600	1.19	1.28	1.38	1.50	1.64
11.850	1.82	2.04	2.36	2.80	3.42
12.100	4.24	6.00	6.24	5.68	5.02
12.350	4.39	4.22	4.05	3.89	3.72
12.600	3.53	3.33	3.15	2.98	2.82
12.850	2.68	2.54	2.41	2.28	2.17
13.100	2.05	1.95	1.85	1.75	1.66
13.350	1.58	1.50	1.43	1.36	1.29
13.600	1.23	1.17	1.11	1.05	1.00
13.850	0.95	0.91	0.87	0.83	0.80
14.100	0.77	0.74	0.71	0.69	0.67
14.350	0.64	0.62	0.61	0.59	0.57
14.600	0.55	0.54	0.52	0.51	0.50
14.850	0.48	0.47	0.46	0.45	0.44
15.100	0.43	0.42	0.41	0.40	0.39
15.350	0.38	0.37	0.37	0.36	0.36
15.600	0.35	0.34	0.34	0.34	0.33
15.850	0.33	0.32	0.32	0.32	0.31
16.100	0.31	0.31	0.30	0.30	0.30
16.350	0.29	0.29	0.29	0.29	0.28
16.600	0.28	0.28	0.28	0.27	0.27
16.850	0.27	0.26	0.26	0.26	0.26
17.100	0.26	0.25	0.25	0.25	0.25
17.350	0.24	0.24	0.24	0.24	0.23
17.600	0.23	0.23	0.23	0.22	0.22
17.850	0.22	0.22	0.22	0.21	0.21
18.100	0.21	0.21	0.20	0.20	0.20
18.350	0.20	0.20	0.20	0.19	0.19
18.600	0.19	0.19	0.19	0.19	0.19
18.850	0.19	0.19	0.19	0.18	0.18
19.100	0.18	0.18	0.18	0.18	0.18
19.350	0.18	0.18	0.18	0.18	0.18
19.600	0.18	0.18	0.17	0.17	0.17
19.850	0.17	0.17	0.17	0.17	0.17
20.100	0.17	0.17	0.17	0.17	0.17
20.350	0.17	0.17	0.17	0.16	0.16
20.600	0.16	0.16	0.16	0.16	0.16
20.850	0.16	0.16	0.16	0.16	0.16
21.100	0.16	0.16	0.16	0.16	0.16
21.350	0.16	0.15	0.15	0.15	0.15
21.600	0.15	0.15	0.15	0.15	0.15
21.850	0.15	0.15	0.15	0.15	0.15
22.100	0.15	0.15	0.15	0.14	0.14
22.350	0.14	0.14	0.14	0.14	0.14
22.600	0.14	0.14	0.14	0.14	0.14
22.850	0.14	0.14	0.14	0.14	0.14
23.100	0.13	0.13	0.13	0.13	0.13

Post-Development Analysis Results (with BMPs)

Subsection: Pond Routed Hydrograph (total out)

Label: PO-2 (OUT)

Scenario: Post-Development 100

Return Event: 100 years

Storm Event: 100-YR

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
23.350	0.13	0.13	0.13	0.13	0.13
23.600	0.13	0.13	0.13	0.13	0.13
23.850	0.13	0.13	0.13	0.13	(N/A)

Post-Development Analysis Results (with BMPs)

Subsection: Pond Inflow Summary

Label: PO-2 (IN)

Scenario: Post-Development 1

Return Event: 1 years

Storm Event: 1-YR

Summary for Hydrograph Addition at 'PO-2'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PO-2-I
<Catchment to Outflow Node>	PO-2-P

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	PO-2-I	0.295	12.100	4.36
Flow (From)	PO-2-P	0.003	12.100	0.02
Flow (In)	PO-2	0.298	12.100	4.38

Post-Development Analysis Results (with BMPs)

Subsection: Pond Inflow Summary

Label: PO-2 (IN)

Scenario: Post-Development 2

Return Event: 2 years

Storm Event: 2-YR

Summary for Hydrograph Addition at 'PO-2'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PO-2-I
<Catchment to Outflow Node>	PO-2-P

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	PO-2-I	0.359	12.100	5.26
Flow (From)	PO-2-P	0.006	12.100	0.07
Flow (In)	PO-2	0.365	12.100	5.33

Post-Development Analysis Results (with BMPs)

Subsection: Pond Inflow Summary

Label: PO-2 (IN)

Scenario: Post-Development 5

Return Event: 5 years

Storm Event: 5-YR

Summary for Hydrograph Addition at 'PO-2'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PO-2-I
<Catchment to Outflow Node>	PO-2-P

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	PO-2-I	0.458	12.100	6.64
Flow (From)	PO-2-P	0.010	12.100	0.16
Flow (In)	PO-2	0.469	12.100	6.80

Post-Development Analysis Results (with BMPs)

Subsection: Pond Inflow Summary

Label: PO-2 (IN)

Scenario: Post-Development 10

Return Event: 10 years

Storm Event: 10-YR

Summary for Hydrograph Addition at 'PO-2'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PO-2-I
<Catchment to Outflow Node>	PO-2-P

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	PO-2-I	0.541	12.100	7.78
Flow (From)	PO-2-P	0.015	12.100	0.24
Flow (In)	PO-2	0.556	12.100	8.02

Post-Development Analysis Results (with BMPs)

Subsection: Pond Inflow Summary

Label: PO-2 (IN)

Scenario: Post-Development 25

Return Event: 25 years

Storm Event: 25-YR

Summary for Hydrograph Addition at 'PO-2'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PO-2-I
<Catchment to Outflow Node>	PO-2-P

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	PO-2-I	0.660	12.100	9.42
Flow (From)	PO-2-P	0.022	12.100	0.38
Flow (In)	PO-2	0.682	12.100	9.80

Post-Development Analysis Results (with BMPs)

Subsection: Pond Inflow Summary

Label: PO-2 (IN)

Scenario: Post-Development 50

Return Event: 50 years

Storm Event: 50-YR

Summary for Hydrograph Addition at 'PO-2'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PO-2-I
<Catchment to Outflow Node>	PO-2-P

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	PO-2-I	0.760	12.100	10.81
Flow (From)	PO-2-P	0.029	12.100	0.50
Flow (In)	PO-2	0.789	12.100	11.30

Post-Development Analysis Results (with BMPs)

Subsection: Pond Inflow Summary

Label: PO-2 (IN)

Scenario: Post-Development 100

Return Event: 100 years

Storm Event: 100-YR

Summary for Hydrograph Addition at 'PO-2'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PO-2-I
<Catchment to Outflow Node>	PO-2-P

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	PO-2-I	0.868	12.100	12.30
Flow (From)	PO-2-P	0.037	12.100	0.64
Flow (In)	PO-2	0.905	12.100	12.94

Appendix H | Stormsewer Design



Project Name: 401/433 WASHINGTON STREET APARTMENTS	
Project No.: 14000908C	Date: 11/29/2021
Prepared By: JJW	Checked By: MD

STORMWATER MANAGEMENT CALCULATIONS

Proposed Inlets - Post-Project

S-5

SOIL SLOPE	AREA	C (<=10)	c (25+)	C x A (<= 10YR)	C x A (25 YR+)
IMPERVIOUS					
B 0-2%	= 0.00 x 0.85	0.95	=	0.00	0.00
B 2-6%	= 0.15 x 0.86	0.96	=	0.13	0.14
B +6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN					
B 0-2%	= 0.00 x 0.15	0.19	=	0.00	0.00
B 2-6%	= 0.09 x 0.20	0.25	=	0.02	0.02
B +6%	= 0.00 x 0.24	0.30	=	0.00	0.00
TOTAL	= 0.24			0.15	0.17
CW	=	0.61		0.69	

S-6

SOIL SLOPE	AREA	C (<=10)	c (25+)	C x A (<= 10YR)	C x A (25 YR+)
IMPERVIOUS					
B 0-2%	= 0.00 x 0.85	0.95	=	0.00	0.00
B 2-6%	= 0.09 x 0.86	0.96	=	0.08	0.09
B +6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN					
B 0-2%	= 0.00 x 0.15	0.19	=	0.00	0.00
B 2-6%	= 0.02 x 0.20	0.25	=	0.00	0.00
B +6%	= 0.00 x 0.24	0.30	=	0.00	0.00
TOTAL	= 0.11			0.08	0.09
CW	=	0.76		0.85	

S-7

SOIL SLOPE	AREA	C (<=10)	c (25+)	C x A (<= 10YR)	C x A (25 YR+)
IMPERVIOUS					
B 0-2%	= 0.00 x 0.85	0.95	=	0.00	0.00
B 2-6%	= 0.08 x 0.86	0.96	=	0.07	0.08
B +6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN					
B 0-2%	= 0.00 x 0.15	0.19	=	0.00	0.00
B 2-6%	= 0.00 x 0.20	0.25	=	0.00	0.00
B +6%	= 0.00 x 0.24	0.30	=	0.00	0.00
TOTAL	= 0.08			0.07	0.08
CW	=	0.86		0.96	

S-8

SOIL SLOPE	AREA	C (<=10)	c (25+)	C x A (<= 10YR)	C x A (25 YR+)
IMPERVIOUS					
B 0-2%	= 0.00 x 0.85	0.95	=	0.00	0.00
B 2-6%	= 0.11 x 0.86	0.96	=	0.09	0.11
B +6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN					
B 0-2%	= 0.00 x 0.15	0.19	=	0.00	0.00
B 2-6%	= 0.00 x 0.20	0.25	=	0.00	0.00
B +6%	= 0.00 x 0.24	0.30	=	0.00	0.00
TOTAL	= 0.11			0.09	0.11
CW	=	0.86		0.96	

S-9

SOIL SLOPE	AREA	C (<=10)	c (25+)	C x A (<= 10YR)	C x A (25 YR+)
IMPERVIOUS					
B 0-2%	= 0.00 x 0.85	0.95	=	0.00	0.00
B 2-6%	= 0.07 x 0.86	0.96	=	0.06	0.07
B +6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN					
B 0-2%	= 0.00 x 0.15	0.19	=	0.00	0.00
B 2-6%	= 0.00 x 0.20	0.25	=	0.00	0.00
B +6%	= 0.00 x 0.24	0.30	=	0.00	0.00
TOTAL	= 0.07			0.06	0.07
CW	=	0.86		0.96	

S-10

SOIL SLOPE	AREA	C (<=10)	c (25+)	C x A (<= 10YR)	C x A (25 YR+)
IMPERVIOUS					
B 0-2%	= 0.00 x 0.85	0.95	=	0.00	0.00
B 2-6%	= 0.18 x 0.86	0.96	=	0.15	0.17
B +6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN					
B 0-2%	= 0.00 x 0.15	0.19	=	0.00	0.00
B 2-6%	= 0.00 x 0.20	0.25	=	0.00	0.00
B +6%	= 0.00 x 0.24	0.30	=	0.00	0.00
TOTAL	= 0.18			0.15	0.17
CW	=	0.86		0.96	

S-11

SOIL SLOPE	AREA	C (<=10)	c (25+)	C x A (<= 10YR)	C x A (25 YR+)
IMPERVIOUS					
B 0-2%	= 0.00 x 0.85	0.95	=	0.00	0.00
B 2-6%	= 0.09 x 0.86	0.96	=	0.08	0.08
B +6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN					
B 0-2%	= 0.00 x 0.15	0.19	=	0.00	0.00
B 2-6%	= 0.12 x 0.20	0.25	=	0.02	0.03
B +6%	= 0.00 x 0.24	0.30	=	0.00	0.00
TOTAL	= 0.21			0.10	0.11
CW	=	0.48		0.55	

Roof DA NW-2 (to S-12)

SOIL SLOPE	AREA	C (<=10)	c (25+)	C x A (<= 10YR)	C x A (25 YR+)
IMPERVIOUS					
B 0-2%	= 0.00 x 0.85	0.95	=	0.00	0.00
B 2-6%	= 0.46 x 0.86	0.96	=	0.40	0.44
B +6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN					
B 0-2%	= 0.00 x 0.15	0.19	=	0.00	0.00
B 2-6%	= 0.00 x 0.20	0.25	=	0.00	0.00
B +6%	= 0.00 x 0.24	0.30	=	0.00	0.00
TOTAL	= 0.46			0.40	0.44
CW	=	0.86		0.96	

S-12

SOIL	SLOPE	AREA	C (<=10)	c (25+)	C x A	C x A
					(<= 10YR)	(25 YR+)
IMPERVIOUS						
B	0-2%	= 0.00 x 0.85	0.95	=	0.00	0.00
B	2-6%	= 0.10 x 0.86	0.96	=	0.09	0.10
B	+6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN						
B	0-2%	= 0.00 x 0.15	0.19	=	0.00	0.00
B	2-6%	= 0.00 x 0.20	0.25	=	0.00	0.00
B	+6%	= 0.00 x 0.24	0.30	=	0.00	0.00
TOTAL		=	0.10		0.09	0.10
CW		=			0.86	0.96

S-14

SOIL	SLOPE	AREA	C (<=10)	c (25+)	C x A	C x A
					(<= 10YR)	(25 YR+)
IMPERVIOUS						
B	0-2%	= 0.00 x 0.85	0.95	=	0.00	0.00
B	2-6%	= 0.11 x 0.86	0.96	=	0.09	0.11
B	+6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN						
B	0-2%	= 0.00 x 0.15	0.19	=	0.00	0.00
B	2-6%	= 0.01 x 0.20	0.25	=	0.00	0.00
B	+6%	= 0.00 x 0.24	0.30	=	0.00	0.00
TOTAL		=	0.12		0.10	0.11
CW		=			0.81	0.90

S-16

SOIL	SLOPE	AREA	C (<=10)	c (25+)	C x A	C x A
					(<= 10YR)	(25 YR+)
IMPERVIOUS						
B	0-2%	= 0.00 x 0.85	0.95	=	0.00	0.00
B	2-6%	= 0.08 x 0.86	0.96	=	0.07	0.08
B	+6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN						
B	0-2%	= 0.00 x 0.15	0.19	=	0.00	0.00
B	2-6%	= 0.03 x 0.20	0.25	=	0.01	0.01
B	+6%	= 0.00 x 0.24	0.30	=	0.00	0.00
TOTAL		=	0.11		0.07	0.08
CW		=			0.68	0.77

S-18

SOIL	SLOPE	AREA	C (<=10)	c (25+)	C x A	C x A
					(<= 10YR)	(25 YR+)
IMPERVIOUS						
B	0-2%	= 0.00 x 0.85	0.95	=	0.00	0.00
B	2-6%	= 0.06 x 0.86	0.96	=	0.05	0.06
B	+6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN						
B	0-2%	= 0.00 x 0.15	0.19	=	0.00	0.00
B	2-6%	= 0.01 x 0.20	0.25	=	0.00	0.00
B	+6%	= 0.00 x 0.24	0.30	=	0.00	0.00
TOTAL		=	0.07		0.05	0.06
CW		=			0.77	0.86

S-21

SOIL	SLOPE	AREA	C (<=10)	c (25+)	C x A	C x A
					(<= 10YR)	(25 YR+)
IMPERVIOUS						
B	0-2%	= 0.00 x 0.85	0.95	=	0.00	0.00
B	2-6%	= 0.71 x 0.86	0.96	=	0.61	0.68
B	+6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN						
B	0-2%	= 0.00 x 0.15	0.19	=	0.00	0.00
B	2-6%	= 0.00 x 0.20	0.25	=	0.00	0.00
B	+6%	= 0.00 x 0.24	0.30	=	0.00	0.00
TOTAL		=	0.71		0.61	0.68
CW		=			0.86	0.96

S-13

SOIL	SLOPE	AREA	C (<=10)	c (25+)	C x A	C x A
					(<= 10YR)	(25 YR+)
IMPERVIOUS						
B	0-2%	= 0.00 x 0.85	0.95	=	0.00	0.00
B	2-6%	= 0.13 x 0.86	0.96	=	0.11	0.12
B	+6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN						
B	0-2%	= 0.00 x 0.15	0.19	=	0.00	0.00
B	2-6%	= 0.01 x 0.20	0.25	=	0.00	0.00
B	+6%	= 0.00 x 0.24	0.30	=	0.00	0.00
TOTAL		=	0.14		0.11	0.13
CW		=			0.80	0.89

S-15

SOIL	SLOPE	AREA	C (<=10)	c (25+)	C x A	C x A
					(<= 10YR)	(25 YR+)
IMPERVIOUS						
B	0-2%	= 0.00 x 0.85	0.95	=	0.00	0.00
B	2-6%	= 0.09 x 0.86	0.96	=	0.08	0.09
B	+6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN						
B	0-2%	= 0.00 x 0.15	0.19	=	0.00	0.00
B	2-6%	= 0.03 x 0.20	0.25	=	0.01	0.01
B	+6%	= 0.00 x 0.24	0.30	=	0.00	0.00
TOTAL		=	0.12		0.08	0.09
CW		=			0.70	0.78

S-17

SOIL	SLOPE	AREA	C (<=10)	c (25+)	C x A	C x A
					(<= 10YR)	(25 YR+)
IMPERVIOUS						
B	0-2%	= 0.00 x 0.85	0.95	=	0.00	0.00
B	2-6%	= 0.07 x 0.86	0.96	=	0.06	0.07
B	+6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN						
B	0-2%	= 0.00 x 0.15	0.19	=	0.00	0.00
B	2-6%	= 0.02 x 0.20	0.25	=	0.00	0.01
B	+6%	= 0.00 x 0.24	0.30	=	0.00	0.00
TOTAL		=	0.09		0.06	0.07
CW		=			0.71	0.80

Roof DA NW-1 (to S-18)

SOIL	SLOPE	AREA	C (<=10)	c (25+)	C x A	C x A
					(<= 10YR)	(25 YR+)
IMPERVIOUS						
B	0-2%	= 0.00 x 0.85	0.95	=	0.00	0.00
B	2-6%	= 0.46 x 0.86	0.96	=	0.40	0.44
B	+6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN						
B	0-2%	= 0.00 x 0.15	0.19	=	0.00	0.00
B	2-6%	= 0.00 x 0.20	0.25	=	0.00	0.00
B	+6%	= 0.00 x 0.24	0.30	=	0.00	0.00
TOTAL		=	0.46		0.40	0.44
CW		=			0.86	0.96

S-22

SOIL	SLOPE	AREA	C (<=10)	c (25+)	C x A	C x A
					(<= 10YR)	(25 YR+)
IMPERVIOUS						
B	0-2%	= 0.00 x 0.85	0.95	=	0.00	0.00
B	2-6%	= 0.43 x 0.86	0.96	=	0.37	0.41
B	+6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN						
B	0-2%	= 0.00 x 0.15	0.19	=	0.00	0.00
B	2-6%	= 0.00 x 0.20	0.25	=	0.00	0.00
B	+6%	= 0.00 x 0.24	0.30	=	0.00	0.00
TOTAL		=	0.43		0.37	0.41
CW		=			0.86	0.96

Roof DA SW-1 (to BASIN)

SOIL SLOPE	AREA	C (<=10)	c (25+)	C x A (<= 10YR)	C x A (25 YR+)
IMPERVIOUS					
B 0-2%	= 0.00 x 0.85	0.95	=	0.00	0.00
B 2-6%	= 0.49 x 0.86	0.96	=	0.42	0.47
B +6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN					
B 0-2%	= 0.00 x 0.15	0.19	=	0.00	0.00
B 2-6%	= 0.00 x 0.20	0.25	=	0.00	0.00
B +6%	= 0.00 x 0.24	0.30	=	0.00	0.00
TOTAL	= 0.49			0.42	0.47
CW	=	0.86	0.96		

Roof DA SW-2 (Basin B)

SOIL SLOPE	AREA	C (<=10)	c (25+)	C x A (<= 10YR)	C x A (25 YR+)
IMPERVIOUS					
B 0-2%	= 0.00 x 0.85	0.95	=	0.00	0.00
B 2-6%	= 0.49 x 0.86	0.96	=	0.42	0.47
B +6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN					
B 0-2%	= 0.00 x 0.15	0.19	=	0.00	0.00
B 2-6%	= 0.00 x 0.20	0.25	=	0.00	0.00
B +6%	= 0.00 x 0.24	0.30	=	0.00	0.00
TOTAL	= 0.49			0.42	0.47
CW	=	0.86	0.96		

Roof DA SE-1 (to BASIN B)

SOIL SLOPE	AREA	C (<=10)	c (25+)	C x A (<= 10YR)	C x A (25 YR+)
IMPERVIOUS					
B 0-2%	= 0.00 x 0.85	0.95	=	0.00	0.00
B 2-6%	= 0.36 x 0.86	0.96	=	0.31	0.35
B +6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN					
B 0-2%	= 0.00 x 0.15	0.19	=	0.00	0.00
B 2-6%	= 0.00 x 0.20	0.25	=	0.00	0.00
B +6%	= 0.00 x 0.24	0.30	=	0.00	0.00
TOTAL	= 0.36			0.31	0.35
CW	=	0.86	0.96		

Roof DA SE-2 (to S-25)

SOIL SLOPE	AREA	C (<=10)	c (25+)	C x A (<= 10YR)	C x A (25 YR+)
IMPERVIOUS					
B 0-2%	= 0.00 x 0.85	0.95	=	0.00	0.00
B 2-6%	= 0.36 x 0.86	0.96	=	0.31	0.35
B +6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN					
B 0-2%	= 0.00 x 0.15	0.19	=	0.00	0.00
B 2-6%	= 0.00 x 0.20	0.25	=	0.00	0.00
B +6%	= 0.00 x 0.24	0.30	=	0.00	0.00
TOTAL	= 0.36			0.31	0.35
CW	=	0.86	0.96		

Roof DA NE-1 (to S-11)

SOIL SLOPE	AREA	C (<=10)	c (25+)	C x A (<= 10YR)	C x A (25 YR+)
IMPERVIOUS					
B 0-2%	= 0.00 x 0.85	0.95	=	0.00	0.00
B 2-6%	= 0.46 x 0.86	0.96	=	0.40	0.44
B +6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN					
B 0-2%	= 0.00 x 0.15	0.19	=	0.00	0.00
B 2-6%	= 0.00 x 0.20	0.25	=	0.00	0.00
B +6%	= 0.00 x 0.24	0.30	=	0.00	0.00
TOTAL	= 0.46			0.40	0.44
CW	=	0.86	0.96		

Roof DA NE-2 (to S-25)

SOIL SLOPE	AREA	C (<=10)	c (25+)	C x A (<= 10YR)	C x A (25 YR+)
IMPERVIOUS					
B 0-2%	= 0.00 x 0.85	0.95	=	0.00	0.00
B 2-6%	= 0.46 x 0.86	0.96	=	0.40	0.44
B +6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN					
B 0-2%	= 0.00 x 0.15	0.19	=	0.00	0.00
B 2-6%	= 0.00 x 0.20	0.25	=	0.00	0.00
B +6%	= 0.00 x 0.24	0.30	=	0.00	0.00
TOTAL	= 0.46			0.40	0.44
CW	=	0.86	0.96		

S-23

SOIL SLOPE	AREA	C (<=10)	c (25+)	C x A (<= 10YR)	C x A (25 YR+)
IMPERVIOUS					
B 0-2%	= 0.00 x 0.85	0.95	=	0.00	0.00
B 2-6%	= 0.39 x 0.86	0.96	=	0.34	0.37
B +6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN					
B 0-2%	= 0.00 x 0.15	0.19	=	0.00	0.00
B 2-6%	= 0.00 x 0.20	0.25	=	0.00	0.00
B +6%	= 0.00 x 0.24	0.30	=	0.00	0.00
TOTAL	= 0.39			0.34	0.37
CW	=	0.86	0.96		

S-25

SOIL SLOPE	AREA	C (<=10)	c (25+)	C x A (<= 10YR)	C x A (25 YR+)
IMPERVIOUS					
B 0-2%	= 0.00 x 0.85	0.95	=	0.00	0.00
B 2-6%	= 0.71 x 0.86	0.96	=	0.61	0.68
B +6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN					
B 0-2%	= 0.00 x 0.15	0.19	=	0.00	0.00
B 2-6%	= 0.00 x 0.20	0.25	=	0.00	0.00
B +6%	= 0.00 x 0.24	0.30	=	0.00	0.00
TOTAL	= 0.71			0.61	0.68
CW	=	0.86	0.96		

S-30

SOIL SLOPE	AREA	C (<=10)	c (25+)	C x A (<= 10YR)	C x A (25 YR+)
IMPERVIOUS					
B 0-2%	= 0.00 x 0.85	0.95	=	0.00	0.00
B 2-6%	= 0.20 x 0.86	0.96	=	0.17	0.19
B +6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN					
B 0-2%	= 0.00 x 0.15	0.19	=	0.00	0.00
B 2-6%	= 0.03 x 0.20	0.25	=	0.01	0.01
B +6%	= 0.00 x 0.24	0.30	=	0.00	0.00
TOTAL	= 0.23			0.18	0.20
CW	=	0.77	0.87		

S-32

SOIL SLOPE	AREA	C (<=10)	c (25+)	C x A (<= 10YR)	C x A (25 YR+)
IMPERVIOUS					
B 0-2%	= 0.00 x 0.85	0.95	=	0.00	0.00
B 2-6%	= 0.18 x 0.86	0.96	=	0.15	0.17
B +6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN					
B 0-2%	= 0.00 x 0.15	0.19	=	0.00	0.00
B 2-6%	= 0.00 x 0.20	0.25	=	0.00	0.00
B +6%	= 0.00 x 0.24	0.30	=	0.00	0.00
TOTAL	= 0.18			0.15	0.17
CW	=	0.86	0.96		

S-35

SOIL SLOPE	AREA	C (<=10)	c (25+)	C x A (<= 10YR)	C x A (25 YR+)
IMPERVIOUS					
B 0-2%	= 0.00 x 0.85	0.95	=	0.00	0.00
B 2-6%	= 0.19 x 0.86	0.96	=	0.16	0.18
B +6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN					
B 0-2%	= 0.00 x 0.15	0.19	=	0.00	0.00
B 2-6%	= 0.01 x 0.20	0.25	=	0.00	0.00
B +6%	= 0.00 x 0.24	0.30	=	0.00	0.00
TOTAL	= 0.20			0.17	0.18
CW	=	0.83	0.92		

S-37

SOIL SLOPE	AREA	C (<=10)	c (25+)	C x A (<= 10YR)	C x A (25 YR+)
IMPERVIOUS					
B 0-2%	= 0.00 x 0.85	0.95	=	0.00	0.00
B 2-6%	= 0.14 x 0.86	0.96	=	0.12	0.13
B +6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN					
B 0-2%	= 0.00 x 0.15	0.19	=	0.00	0.00
B 2-6%	= 0.01 x 0.20	0.25	=	0.00	0.00
B +6%	= 0.00 x 0.24	0.30	=	0.00	0.00
TOTAL	= 0.15			0.12	0.14
CW	=	0.82	0.91		

S-40

SOIL SLOPE	AREA	C (<=10)	c (25+)	C x A (<= 10YR)	C x A (25 YR+)
IMPERVIOUS					
B 0-2%	= 0.00 x 0.85	0.95	=	0.00	0.00
B 2-6%	= 0.56 x 0.86	0.96	=	0.48	0.54
B +6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN					
B 0-2%	= 0.00 x 0.15	0.19	=	0.00	0.00
B 2-6%	= 0.00 x 0.20	0.25	=	0.00	0.00
B +6%	= 0.00 x 0.24	0.30	=	0.00	0.00
TOTAL	= 0.56			0.48	0.54
CW	=	0.86	0.96		

S-42

SOIL SLOPE	AREA	C (<=10)	c (25+)	C x A (<= 10YR)	C x A (25 YR+)
IMPERVIOUS					
B 0-2%	= 0.00 x 0.85	0.95	=	0.00	0.00
B 2-6%	= 0.08 x 0.86	0.96	=	0.07	0.08
B +6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN					
B 0-2%	= 0.00 x 0.15	0.19	=	0.00	0.00
B 2-6%	= 0.00 x 0.20	0.25	=	0.00	0.00
B +6%	= 0.00 x 0.24	0.30	=	0.00	0.00
TOTAL	= 0.08			0.07	0.08
CW	=	0.86	0.96		

S-36

SOIL SLOPE	AREA	C (<=10)	c (25+)	C x A (<= 10YR)	C x A (25 YR+)
IMPERVIOUS					
B 0-2%	= 0.00 x 0.85	0.95	=	0.00	0.00
B 2-6%	= 0.05 x 0.86	0.96	=	0.04	0.05
B +6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN					
B 0-2%	= 0.00 x 0.15	0.19	=	0.00	0.00
B 2-6%	= 0.00 x 0.20	0.25	=	0.00	0.00
B +6%	= 0.00 x 0.24	0.30	=	0.00	0.00
TOTAL	= 0.05			0.04	0.05
CW	=	0.86	0.96		

S-39

SOIL SLOPE	AREA	C (<=10)	c (25+)	C x A (<= 10YR)	C x A (25 YR+)
IMPERVIOUS					
B 0-2%	= 0.00 x 0.85	0.95	=	0.00	0.00
B 2-6%	= 0.54 x 0.86	0.96	=	0.46	0.52
B +6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN					
B 0-2%	= 0.00 x 0.15	0.19	=	0.00	0.00
B 2-6%	= 0.00 x 0.20	0.25	=	0.00	0.00
B +6%	= 0.00 x 0.24	0.30	=	0.00	0.00
TOTAL	= 0.54			0.46	0.52
CW	=	0.86	0.96		

S-41

SOIL SLOPE	AREA	C (<=10)	c (25+)	C x A (<= 10YR)	C x A (25 YR+)
IMPERVIOUS					
B 0-2%	= 0.00 x 0.85	0.95	=	0.00	0.00
B 2-6%	= 0.17 x 0.86	0.96	=	0.15	0.16
B +6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN					
B 0-2%	= 0.00 x 0.15	0.19	=	0.00	0.00
B 2-6%	= 0.01 x 0.20	0.25	=	0.00	0.00
B +6%	= 0.00 x 0.24	0.30	=	0.00	0.00
TOTAL	= 0.18			0.15	0.17
CW	=	0.82	0.92		

S-43

SOIL SLOPE	AREA	C (<=10)	c (25+)	C x A (<= 10YR)	C x A (25 YR+)
IMPERVIOUS					
B 0-2%	= 0.00 x 0.85	0.95	=	0.00	0.00
B 2-6%	= 0.07 x 0.86	0.96	=	0.06	0.07
B +6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN					
B 0-2%	= 0.00 x 0.15	0.19	=	0.00	0.00
B 2-6%	= 0.01 x 0.20	0.25	=	0.00	0.00
B +6%	= 0.00 x 0.24	0.30	=	0.00	0.00
TOTAL	= 0.08			0.06	0.07
CW	=	0.78	0.87		

S-45

SOIL SLOPE	AREA	C (<=10)	c (25+)	C x A (<= 10YR)	C x A (25 YR+)
IMPERVIOUS					
B 0-2%	= 0.00 x 0.85	0.95	=	0.00	0.00
B 2-6%	= 0.16 x 0.86	0.96	=	0.14	0.15
B +6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN					
B 0-2%	= 0.00 x 0.15	0.19	=	0.00	0.00
B 2-6%	= 0.01 x 0.20	0.25	=	0.00	0.00
B +6%	= 0.00 x 0.24	0.30	=	0.00	0.00
TOTAL	= 0.17			0.14	0.16
CW = 0.82 0.92					

R-2

SOIL SLOPE	AREA	C (<=10)	c (25+)	C x A (<= 10YR)	C x A (25 YR+)
IMPERVIOUS					
B 0-2%	= 0.00 x 0.85	0.95	=	0.00	0.00
B 2-6%	= 0.09 x 0.86	0.96	=	0.08	0.09
B +6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN					
B 0-2%	= 0.00 x 0.15	0.19	=	0.00	0.00
B 2-6%	= 0.01 x 0.20	0.25	=	0.00	0.00
B +6%	= 0.00 x 0.24	0.30	=	0.00	0.00
TOTAL	= 0.10			0.08	0.09
CW = 0.79 0.89					

R-4

SOIL SLOPE	AREA	C (<=10)	c (25+)	C x A (<= 10YR)	C x A (25 YR+)
IMPERVIOUS					
B 0-2%	= 0.00 x 0.85	0.95	=	0.00	0.00
B 2-6%	= 0.88 x 0.86	0.96	=	0.76	0.84
B +6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN					
B 0-2%	= 0.00 x 0.15	0.19	=	0.00	0.00
B 2-6%	= 0.00 x 0.20	0.25	=	0.00	0.00
B +6%	= 0.00 x 0.24	0.30	=	0.00	0.00
TOTAL	= 0.88			0.76	0.84
CW = 0.86 0.96					

S-51

SOIL SLOPE	AREA	C (<=10)	c (25+)	C x A (<= 10YR)	C x A (25 YR+)
IMPERVIOUS					
B 0-2%	= 0.00 x 0.85	0.95	=	0.00	0.00
B 2-6%	= 0.08 x 0.86	0.96	=	0.07	0.08
B +6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN					
B 0-2%	= 0.00 x 0.15	0.19	=	0.00	0.00
B 2-6%	= 0.02 x 0.20	0.25	=	0.00	0.01
B +6%	= 0.00 x 0.24	0.30	=	0.00	0.00
TOTAL	= 0.10			0.07	0.08
CW = 0.73 0.82					

R-1

SOIL SLOPE	AREA	C (<=10)	c (25+)	C x A (<= 10YR)	C x A (25 YR+)
IMPERVIOUS					
B 0-2%	= 0.00 x 0.85	0.95	=	0.00	0.00
B 2-6%	= 0.22 x 0.86	0.96	=	0.19	0.21
B +6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN					
B 0-2%	= 0.00 x 0.15	0.19	=	0.00	0.00
B 2-6%	= 0.04 x 0.20	0.25	=	0.01	0.01
B +6%	= 0.00 x 0.24	0.30	=	0.00	0.00
TOTAL	= 0.26			0.20	0.22
CW = 0.75 0.84					

R-3

SOIL SLOPE	AREA	C (<=10)	c (25+)	C x A (<= 10YR)	C x A (25 YR+)
IMPERVIOUS					
B 0-2%	= 0.00 x 0.85	0.95	=	0.00	0.00
B 2-6%	= 0.34 x 0.86	0.96	=	0.29	0.33
B +6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN					
B 0-2%	= 0.00 x 0.15	0.19	=	0.00	0.00
B 2-6%	= 0.02 x 0.20	0.25	=	0.00	0.01
B +6%	= 0.00 x 0.24	0.30	=	0.00	0.00
TOTAL	= 0.36			0.30	0.33
CW = 0.82 0.92					

R-6

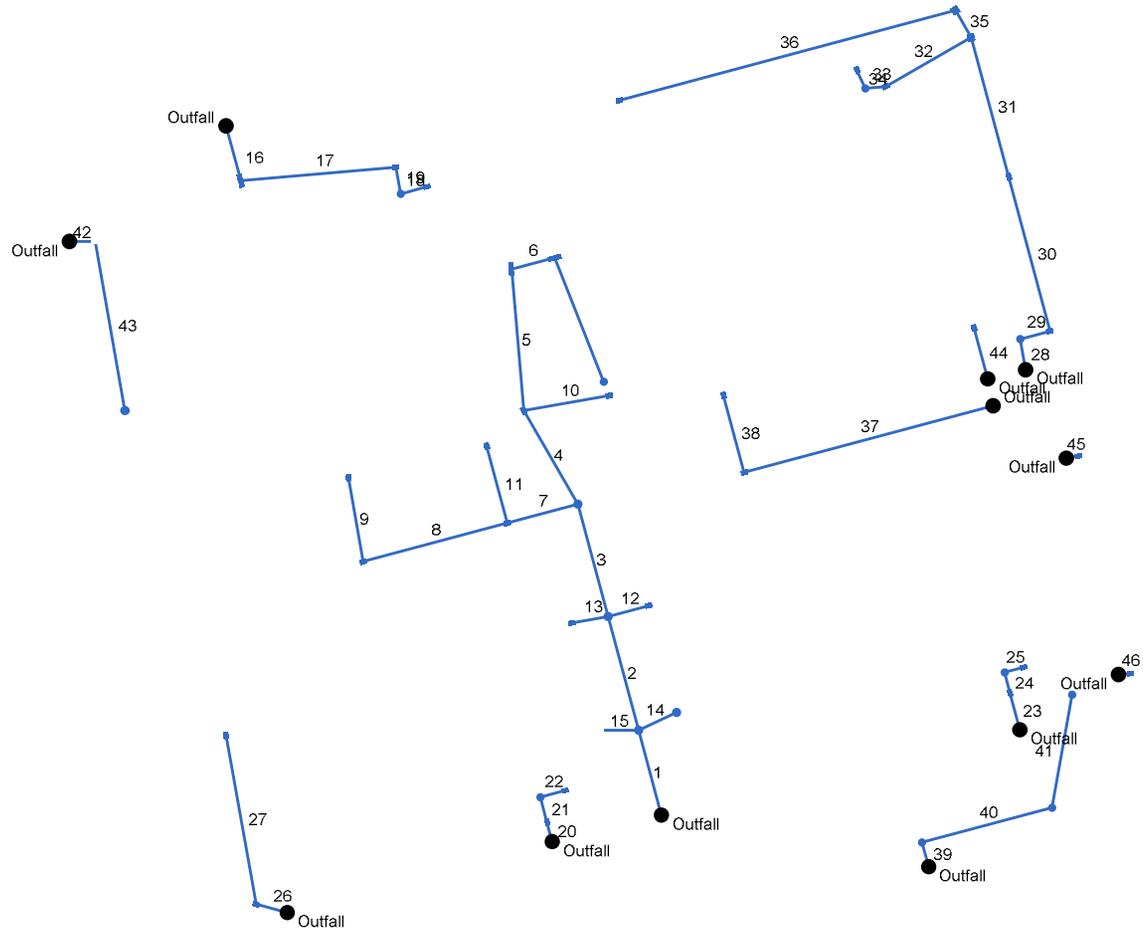
SOIL SLOPE	AREA	C (<=10)	c (25+)	C x A (<= 10YR)	C x A (25 YR+)
IMPERVIOUS					
B 0-2%	= 0.00 x 0.85	0.95	=	0.00	0.00
B 2-6%	= 0.21 x 0.86	0.96	=	0.18	0.20
B +6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN					
B 0-2%	= 0.00 x 0.15	0.19	=	0.00	0.00
B 2-6%	= 0.00 x 0.20	0.25	=	0.00	0.00
B +6%	= 0.00 x 0.24	0.30	=	0.00	0.00
TOTAL	= 0.21			0.18	0.20
CW = 0.86 0.96					

S-52

SOIL SLOPE	AREA	C (<=10)	c (25+)	C x A (<= 10YR)	C x A (25 YR+)
IMPERVIOUS					
B 0-2%	= 0.00 x 0.85	0.95	=	0.00	0.00
B 2-6%	= 0.06 x 0.86	0.96	=	0.05	0.06
B +6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN					
B 0-2%	= 0.00 x 0.15	0.19	=	0.00	0.00
B 2-6%	= 0.01 x 0.20	0.25	=	0.00	0.00
B +6%	= 0.00 x 0.24	0.30	=	0.00	0.00
TOTAL	= 0.07			0.05	0.06
CW = 0.77 0.86					

**10-YEAR CALCULATIONS
PROPOSED NETWORK**

Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan



Storm Sewer Inventory Report

Line No.	Alignment				Flow Data				Physical Data								Line ID
	Dnstr Line No.	Line Length (ft)	Defl angle (deg)	Junc Type	Known Q (cfs)	Drng Area (ac)	Runoff Coeff (C)	Inlet Time (min)	Invert El Dn (ft)	Line Slope (%)	Invert El Up (ft)	Line Size (in)	Line Shape	N Value (n)	J-Loss Coeff (K)	Inlet/ Rim El (ft)	
1	End	65.00	-105.00	MH	0.00	0.00	0.00	5.0	48.80	0.62	49.20	24	Cir	0.012	0.99	53.24	P-2
2	1	87.00	0.03	MH	0.00	0.00	0.00	5.0	49.40	0.52	49.85	24	Cir	0.012	1.00	54.13	P-3
3	2	86.00	0.00	MH	0.00	0.00	0.00	5.0	50.05	0.52	50.50	24	Cir	0.012	1.00	54.59	P-4
4	3	80.00	-15.00	Comb	0.00	0.24	0.61	5.0	51.00	0.50	51.40	18	Cir	0.012	1.50	54.17	P-5
5	4	105.00	25.00	Comb	0.00	0.11	0.76	5.0	51.60	0.52	52.15	18	Cir	0.012	1.48	55.79	P-6
6	5	33.00	80.00	Comb	0.00	0.08	0.86	5.0	52.35	0.61	52.55	18	Cir	0.012	1.00	55.84	P-7
7	3	54.00	-90.00	Comb	0.00	0.11	0.86	5.0	50.80	0.56	51.10	18	Cir	0.012	1.50	54.72	P-8
8	7	110.00	0.00	Comb	0.00	0.07	0.86	5.0	51.30	0.50	51.85	18	Cir	0.012	1.50	56.04	P-9
9	8	63.00	95.00	Comb	0.00	0.18	0.86	5.0	52.05	0.48	52.35	18	Cir	0.012	1.00	55.46	P-10
10	4	64.00	110.00	Comb	0.00	0.21	0.48	5.0	51.60	0.47	51.90	18	Cir	0.012	1.00	54.09	P-11
11	7	59.00	90.00	Comb	0.00	0.10	0.86	5.0	51.30	0.51	51.60	18	Cir	0.012	1.00	54.81	P-12
12	2	31.00	90.00	Comb	0.00	0.12	0.81	5.0	50.05	2.74	50.90	18	Cir	0.012	1.00	54.09	P-14
13	2	27.00	-85.00	Comb	0.00	0.14	0.80	5.0	50.05	3.15	50.90	18	Cir	0.012	1.00	54.58	P-13
14	1	31.00	80.00	Comb	0.00	0.11	0.68	5.0	49.40	2.26	50.10	18	Cir	0.012	1.00	53.30	P-16
15	1	28.00	-75.00	Comb	0.00	0.12	0.70	5.0	49.40	2.50	50.10	18	Cir	0.012	1.00	53.30	P-15
16	End	42.00	75.00	Comb	0.00	0.36	0.82	5.0	48.66	0.57	48.90	18	Cir	0.012	1.48	52.99	P-R3
17	16	115.00	-80.00	Grate	0.01	0.00	0.00	5.0	49.05	0.52	49.65	18	Cir	0.012	1.50	53.88	P-R4
18	17	20.00	85.00	MH	0.00	0.00	0.00	5.0	49.85	0.50	49.95	18	Cir	0.012	1.00	53.00	P-R5
19	18	20.00	-95.00	Grate	0.01	0.00	0.00	5.0	50.15	0.50	50.25	18	Cir	0.012	1.00	53.64	P-R6
20	End	15.00	-105.00	Grate	0.00	0.00	0.00	5.0	48.80	0.67	48.90	18	Cir	0.012	0.50	53.15	P-20
21	20	19.00	0.00	MH	0.01	0.00	0.00	5.0	49.20	0.53	49.30	18	Cir	0.012	1.00	53.43	P-22
22	21	19.00	90.00	Grate	0.01	0.00	0.00	5.0	49.50	0.53	49.60	18	Cir	0.012	1.00	53.29	P-21
23	End	28.00	-105.00	Grate	0.01	0.00	0.00	5.0	48.80	0.54	48.95	18	Cir	0.012	0.50	52.45	P-23

Project File: 10 Yr.stm	Number of lines: 46	Date: 12/2/2021
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Storm Sewer Inventory Report

Line No.	Alignment				Flow Data				Physical Data								Line ID
	Dnstr Line No.	Line Length (ft)	Defl angle (deg)	Junc Type	Known Q (cfs)	Drng Area (ac)	Runoff Coeff (C)	Inlet Time (min)	Invert El Dn (ft)	Line Slope (%)	Invert El Up (ft)	Line Size (in)	Line Shape	N Value (n)	J-Loss Coeff (K)	Inlet/ Rim El (ft)	
24	23	16.00	0.00	MH	0.00	0.00	0.00	5.0	49.15	0.62	49.25	18	Cir	0.012	1.00	52.61	P-24
25	24	15.00	90.00	Grate	0.01	0.00	0.00	5.0	49.45	0.67	49.55	18	Cir	0.012	1.00	52.39	P-25
26	End	24.00	-165.00	Comb	0.00	0.09	0.71	5.0	48.80	1.25	49.10	18	Cir	0.012	1.38	54.44	P-17
27	26	127.00	65.00	Comb	0.00	0.07	0.77	5.0	49.30	1.54	51.25	18	Cir	0.012	1.00	56.53	P-18
28	End	23.00	-100.00	MH	0.00	0.00	0.00	5.0	45.95	0.65	46.10	18	Cir	0.012	1.00	51.88	P-34
29	28	23.00	85.00	Comb	0.00	0.20	0.83	5.0	46.30	0.65	46.45	18	Cir	0.012	1.50	51.23	P-35
30	29	118.00	-90.00	Comb	0.00	0.05	0.86	5.0	46.65	0.51	47.25	18	Cir	0.012	0.50	51.86	P-36
31	30	107.00	0.00	Comb	0.00	0.15	0.82	5.0	47.35	0.51	47.90	18	Cir	0.012	1.55	51.78	P-37
32	31	73.00	-105.00	Comb	0.00	0.00	0.00	5.0	48.10	0.55	48.50	18	Cir	0.012	0.72	52.00	P-38
33	32	15.00	25.00	MH	0.01	0.00	0.00	5.0	48.80	0.67	48.90	18	Cir	0.012	0.95	52.31	P-39
34	33	15.00	70.00	DrGrt	0.01	0.00	0.00	5.0	49.10	0.67	49.20	18	Cir	0.012	1.00	52.00	P-40
35	31	23.00	-15.00	Comb	0.00	0.26	0.75	5.0	48.10	0.65	48.25	18	Cir	0.012	1.46	52.25	P-R1
36	35	257.00	-75.00	Comb	0.00	0.10	0.79	5.0	48.45	0.72	50.30	18	Cir	0.012	1.00	54.55	P-R2
37	End	190.00	165.00	Comb	0.00	0.08	0.86	5.0	47.55	0.50	48.50	18	Cir	0.012	1.50	54.31	P-42
38	37	59.00	90.00	Comb	0.00	0.08	0.79	5.0	48.70	0.51	49.00	18	Cir	0.012	1.00	53.10	P-43
39	End	18.61	-105.00	MH	10.70	0.00	0.00	5.0	47.00	0.81	47.15	24	Cir	0.012	1.00	51.49	P-B1
40	39	99.32	90.00	MH	0.00	0.00	0.00	5.0	47.35	0.60	47.95	18	Cir	0.012	0.92	51.77	P-102
41	40	84.84	-65.00	MH	6.45	0.00	0.00	5.0	48.05	0.54	48.51	18	Cir	0.012	1.00	51.46	P-A1
42	End	19.00	0.00	Comb	0.00	0.10	0.73	5.0	47.70	0.53	47.80	18	Cir	0.012	1.48	51.91	P-51
43	42	127.00	80.00	Comb	0.00	0.07	0.77	5.0	48.00	2.05	50.60	18	Cir	0.012	1.00	54.77	P-52
44	End	39.00	-105.00	Comb	0.00	0.17	0.92	5.0	47.00	3.41	48.33	18	Cir	0.012	1.00	52.15	P-45
45	End	9.00	-10.00	Comb	0.00	0.18	0.96	5.0	45.95	5.00	46.40	18	Cir	0.012	1.00	51.80	P-32
46	End	9.00	-5.00	Comb	0.00	0.23	0.87	5.0	45.95	5.00	46.40	18	Cir	0.012	1.00	50.86	P-30

Project File: 10 Yr.stm

Number of lines: 46

Date: 12/2/2021

Structure Report

Struct No.	Structure ID	Junction Type	Rim Elev (ft)	Structure			Line Out			Line In		
				Shape	Length (ft)	Width (ft)	Size (in)	Shape	Invert (ft)	Size (in)	Shape	Invert (ft)
1	S-2	Manhole	53.24	Cir	4.77	4.77	24	Cir	49.20	24 18 18	Cir Cir Cir	49.40 49.40 49.40
2	S-3	Manhole	54.13	Cir	4.77	4.77	24	Cir	49.85	24 18 18	Cir Cir Cir	50.05 50.05 50.05
3	S-4	Manhole	54.59	Cir	4.77	4.77	24	Cir	50.50	18 18	Cir Cir	51.00 50.80
4	S-5	Combination	54.17	Rect	4.77	3.27	18	Cir	51.40	18 18	Cir Cir	51.60 51.60
5	S-6	Combination	55.79	Rect	9.54	3.27	18	Cir	52.15	18	Cir	52.35
6	S-7	Combination	55.84	Rect	9.54	3.27	18	Cir	52.55			
7	S-8	Combination	54.72	Rect	4.77	3.27	18	Cir	51.10	18 18	Cir Cir	51.30 51.30
8	S-9	Combination	56.04	Rect	4.77	3.27	18	Cir	51.85	18	Cir	52.05
9	S-10	Combination	55.46	Rect	4.77	3.27	18	Cir	52.35			
10	S-11	Combination	54.09	Rect	4.77	3.27	18	Cir	51.90			
11	S-12	Combination	54.81	Rect	4.77	3.27	18	Cir	51.60			
12	S-14	Combination	54.09	Rect	4.77	3.27	18	Cir	50.90			
13	S-13	Combination	54.58	Rect	4.77	3.27	18	Cir	50.90			
14	S-16	Combination	53.30	Cir	4.77	4.77	18	Cir	50.10			
15	S-15	Combination	53.30	Rect	4.77	3.27	18	Cir	50.10			
16	R-3	Combination	52.99	Rect	9.54	3.27	18	Cir	48.90	18	Cir	49.05
17	R-4	Grate	53.88	Rect	4.77	3.27	18	Cir	49.65	18	Cir	49.85
18	R-5	Manhole	53.00	Cir	4.00	4.00	18	Cir	49.95	18	Cir	50.15
19	R-6	Grate	53.64	Rect	4.77	3.00	18	Cir	50.25			

Structure Report

Struct No.	Structure ID	Junction Type	Rim Elev (ft)	Structure			Line Out			Line In		
				Shape	Length (ft)	Width (ft)	Size (in)	Shape	Invert (ft)	Size (in)	Shape	Invert (ft)
20	S-22	Grate	53.15	Rect	4.77	3.00	18	Cir	48.90	18	Cir	49.20
21	S-20	Manhole	53.43	Cir	4.00	4.00	18	Cir	49.30	18	Cir	49.50
22	S-21	Grate	53.29	Rect	4.77	3.00	18	Cir	49.60			
23	S-23	Grate	52.45	Rect	4.77	3.00	18	Cir	48.95	18	Cir	49.15
24	S-24	Manhole	52.61	Cir	4.00	4.00	18	Cir	49.25	18	Cir	49.45
25	S-25	Grate	52.39	Rect	4.77	3.00	18	Cir	49.55			
26	S-17	Combination	54.44	Rect	4.77	3.27	18	Cir	49.10	18	Cir	49.30
27	S-18	Combination	56.53	Rect	4.77	3.27	18	Cir	51.25			
28	S-34	Manhole	51.88	Cir	4.00	4.00	18	Cir	46.10	18	Cir	46.30
29	S-35	Combination	51.23	Rect	4.77	3.27	18	Cir	46.45	18	Cir	46.65
30	S-36	Combination	51.86	Rect	4.77	3.27	18	Cir	47.25	18	Cir	47.35
31	S-37	Combination	51.78	Rect	5.00	5.00	18	Cir	47.90	18	Cir	48.10
32	S-39	Combination	52.00	Rect	4.77	3.27	18	Cir	48.50	18	Cir	48.80
33	S-38	Manhole	52.31	Cir	4.00	4.00	18	Cir	48.90	18	Cir	49.10
34	S-40	DropGrate	52.00	Rect	4.77	3.00	18	Cir	49.20			
35	R-1	Combination	52.25	Rect	5.00	5.00	18	Cir	48.25	18	Cir	48.45
36	R-2	Combination	54.55	Rect	4.77	3.27	18	Cir	50.30			
37	S-42	Combination	54.31	Rect	4.77	3.27	18	Cir	48.50	18	Cir	48.70
38	S-43	Combination	53.10	Rect	4.77	3.27	18	Cir	49.00			
39	S-B1	Manhole	51.49	Cir	4.00	4.00	24	Cir	47.15	18	Cir	47.35
40	S-102	Manhole	51.77	Cir	4.00	4.00	18	Cir	47.95	18	Cir	48.05
41	S-A1	Manhole	51.46	Cir	4.00	4.00	18	Cir	48.51			

Project File: 10 Yr.stm	Number of Structures: 46	Run Date: 12/2/2021
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Structure Report

Struct No.	Structure ID	Junction Type	Rim Elev (ft)	Structure			Line Out			Line In		
				Shape	Length (ft)	Width (ft)	Size (in)	Shape	Invert (ft)	Size (in)	Shape	Invert (ft)
42	S-51	Combination	51.91	Rect	4.77	3.27	18	Cir	47.80	18	Cir	48.00
43	S-52	Combination	54.77	Cir	4.77	4.77	18	Cir	50.60			
44	S-45	Combination	52.15	Rect	4.77	3.27	18	Cir	48.33			
45	S-32	Combination	51.80	Rect	4.77	3.27	18	Cir	46.40			
46	S-30	Combination	50.86	Rect	4.77	3.27	18	Cir	46.40			

Project File: 10 Yr.stm	Number of Structures: 46	Run Date: 12/2/2021
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Storm Sewer Summary Report

Line No.	Line ID	Flow rate (cfs)	Line Size (in)	Line shape	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line Slope (%)	HGL Down (ft)	HGL Up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns Line No.	Junction Type
1	P-2	6.58	24	Cir	65.00	48.80	49.20	0.615	50.80	50.83	0.09	50.92	End	Manhole
2	P-3	5.80	24	Cir	87.00	49.40	49.85	0.517	50.92	50.70	0.32	50.70	1	Manhole
3	P-4	4.71	24	Cir	86.00	50.05	50.50	0.523	50.75	51.26	n/a	51.26	2	Manhole
4	P-5	2.43	18	Cir	80.00	51.00	51.40	0.500	51.57	51.99	0.33	51.99	3	Combination
5	P-6	1.02	18	Cir	105.00	51.60	52.15	0.524	51.99	52.53	n/a	52.53 j	4	Combination
6	P-7	0.50	18	Cir	33.00	52.35	52.55	0.606	52.59	52.81	0.09	52.81	5	Combination
7	P-8	2.49	18	Cir	54.00	50.80	51.10	0.556	51.36	51.70	n/a	51.70	3	Combination
8	P-9	1.46	18	Cir	110.00	51.30	51.85	0.500	51.73	52.30	0.25	52.30	7	Combination
9	P-10	1.12	18	Cir	63.00	52.05	52.35	0.476	52.43	52.75	0.14	52.75	8	Combination
10	P-11	0.73	18	Cir	64.00	51.60	51.90	0.469	51.99	52.22	n/a	52.22 j	4	Combination
11	P-12	0.62	18	Cir	59.00	51.30	51.60	0.508	51.70	51.89	n/a	51.89 j	7	Combination
12	P-14	0.70	18	Cir	31.00	50.05	50.90	2.742	50.70	51.21	n/a	51.21 j	2	Combination
13	P-13	0.81	18	Cir	27.00	50.05	50.90	3.148	50.70	51.23	n/a	51.23 j	2	Combination
14	P-16	0.54	18	Cir	31.00	49.40	50.10	2.258	50.92	50.91	0.00	50.92	1	Combination
15	P-15	0.61	18	Cir	28.00	49.40	50.10	2.500	50.92	50.91	0.01	50.92	1	Combination
16	P-R3	0.25	18	Cir	42.00	48.66	48.90	0.571	51.17*	51.17*	0.00	51.17	End	Combination
17	P-R4	0.02	18	Cir	115.00	49.05	49.65	0.522	51.17*	51.17*	0.00	51.17	16	Grate
18	P-R5	0.01	18	Cir	20.00	49.85	49.95	0.500	51.17	51.17	0.00	51.17	17	Manhole
19	P-R6	0.01	18	Cir	20.00	50.15	50.25	0.500	51.17	51.17	0.00	51.17	18	Grate
20	P-20	0.02	18	Cir	15.00	48.80	48.90	0.667	49.39	49.39	0.00	49.39	End	Grate
21	P-22	0.02	18	Cir	19.00	49.20	49.30	0.526	49.39	49.39	0.00	49.40	20	Manhole
22	P-21	0.01	18	Cir	19.00	49.50	49.60	0.526	49.54	49.64	0.01	49.65	21	Grate
23	P-23	0.02	18	Cir	28.00	48.80	48.95	0.536	49.92	49.92	0.00	49.92	End	Grate
24	P-24	0.01	18	Cir	16.00	49.15	49.25	0.625	49.92	49.92	0.00	49.92	23	Manhole

Project File: 10 Yr.stm

Number of lines: 46

Run Date: 12/2/2021

NOTES: Return period = 10 Yrs. ; *Surcharged (HGL above crown). ; j - Line contains hyd. jump.

Storm Sewer Summary Report

Line No.	Line ID	Flow rate (cfs)	Line Size (in)	Line shape	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line Slope (%)	HGL Down (ft)	HGL Up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns Line No.	Junction Type
25	P-25	0.01	18	Cir	15.00	49.45	49.55	0.667	49.92	49.92	0.00	49.92	24	Grate
26	P-17	0.62	18	Cir	24.00	48.80	49.10	1.250	50.30	50.30	0.00	50.30	End	Combination
27	P-18	0.39	18	Cir	127.00	49.30	51.25	1.535	50.30	51.48	n/a	51.48 j	26	Combination
28	P-34	0.69	18	Cir	23.00	45.95	46.10	0.652	47.45	47.45	0.00	47.45	End	Manhole
29	P-35	0.69	18	Cir	23.00	46.30	46.45	0.652	47.45	46.76	n/a	46.76	28	Combination
30	P-36	0.51	18	Cir	118.00	46.65	47.25	0.508	46.91	47.51	0.05	47.51	29	Combination
31	P-37	0.47	18	Cir	107.00	47.35	47.90	0.514	47.59	48.15	n/a	48.15	30	Combination
32	P-38	0.02	18	Cir	73.00	48.10	48.50	0.548	48.15	48.55	0.01	48.57	31	Combination
33	P-39	0.02	18	Cir	15.00	48.80	48.90	0.667	48.85	48.95	0.02	48.97	32	Manhole
34	P-40	0.01	18	Cir	15.00	49.10	49.20	0.667	49.14	49.24	0.01	49.25	33	DropGrate
35	P-R1	1.31	18	Cir	23.00	48.10	48.25	0.652	48.48	48.68	n/a	48.68	31	Combination
36	P-R2	0.57	18	Cir	257.00	48.45	50.30	0.720	48.70	50.58	n/a	50.58	35	Combination
37	P-42	0.83	18	Cir	190.00	47.55	48.50	0.500	48.61	48.84	n/a	48.84	End	Combination
38	P-43	0.46	18	Cir	59.00	48.70	49.00	0.508	48.94	49.25	0.09	49.25	37	Combination
39	P-B1	17.15	24	Cir	18.61	47.00	47.15	0.806	48.33	48.64	0.72	48.64	End	Manhole
40	P-102	6.45	18	Cir	99.32	47.35	47.95	0.604	48.64	48.93	n/a	48.93	39	Manhole
41	P-A1	6.45	18	Cir	84.84	48.05	48.51	0.542	49.04	49.50	0.42	49.92	40	Manhole
42	P-51	0.67	18	Cir	19.00	47.70	47.80	0.526	49.20	49.20	0.00	49.20	End	Combination
43	P-52	0.39	18	Cir	127.00	48.00	50.60	2.047	49.20	50.83	n/a	50.83 j	42	Combination
44	P-45	1.13	18	Cir	39.00	47.00	48.33	3.410	47.27	48.73	0.14	48.73	End	Combination
45	P-32	1.25	18	Cir	9.00	45.95	46.40	5.000	48.50*	48.50*	0.01	48.51	End	Combination
46	P-30	1.45	18	Cir	9.00	45.95	46.40	5.000	47.45	47.44	0.02	47.46	End	Combination

Project File: 10 Yr.stm

Number of lines: 46

Run Date: 12/2/2021

NOTES: Return period = 10 Yrs. ; *Surcharged (HGL above crown). ; j - Line contains hyd. jump.

Storm Sewer Tabulation

Station		Len (ft)	Drng Area		Rnoff coeff (C)	Area x C		Tc		Rain (l) (in/hr)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	End	65.00	0.00	1.59	0.00	0.00	1.16	5.0	12.1	5.7	6.58	19.22	2.25	24	0.62	48.80	49.20	50.80	50.83	52.83	53.24	P-2
2	1	87.00	0.00	1.36	0.00	0.00	1.00	5.0	11.4	5.8	5.80	17.62	3.41	24	0.52	49.40	49.85	50.92	50.70	53.24	54.13	P-3
3	2	86.00	0.00	1.10	0.00	0.00	0.80	5.0	10.6	5.9	4.71	17.72	4.52	24	0.52	50.05	50.50	50.75	51.26	54.13	54.59	P-4
4	3	80.00	0.24	0.64	0.61	0.15	0.40	5.0	9.8	6.1	2.43	8.04	3.88	18	0.50	51.00	51.40	51.57	51.99	54.59	54.17	P-5
5	4	105.00	0.11	0.19	0.76	0.08	0.15	5.0	7.0	6.7	1.02	8.23	2.87	18	0.52	51.60	52.15	51.99	52.53	54.17	55.79	P-6
6	5	33.00	0.08	0.08	0.86	0.07	0.07	5.0	5.0	7.2	0.50	8.86	2.56	18	0.61	52.35	52.55	52.59	52.81	55.79	55.84	P-7
7	3	54.00	0.11	0.46	0.86	0.09	0.40	5.0	8.8	6.3	2.49	8.48	3.98	18	0.56	50.80	51.10	51.36	51.70	54.59	54.72	P-8
8	7	110.00	0.07	0.25	0.86	0.06	0.22	5.0	6.7	6.8	1.46	8.04	3.35	18	0.50	51.30	51.85	51.73	52.30	54.72	56.04	P-9
9	8	63.00	0.18	0.18	0.86	0.15	0.15	5.0	5.0	7.2	1.12	7.85	3.08	18	0.48	52.05	52.35	52.43	52.75	56.04	55.46	P-10
10	4	64.00	0.21	0.21	0.48	0.10	0.10	5.0	5.0	7.2	0.73	7.79	2.34	18	0.47	51.60	51.90	51.99	52.22	54.17	54.09	P-11
11	7	59.00	0.10	0.10	0.86	0.09	0.09	5.0	5.0	7.2	0.62	8.11	2.11	18	0.51	51.30	51.60	51.70	51.89	54.72	54.81	P-12
12	2	31.00	0.12	0.12	0.81	0.10	0.10	5.0	5.0	7.2	0.70	18.84	1.81	18	2.74	50.05	50.90	50.70	51.21	54.13	54.09	P-14
13	2	27.00	0.14	0.14	0.80	0.11	0.11	5.0	5.0	7.2	0.81	20.18	1.93	18	3.15	50.05	50.90	50.70	51.23	54.13	54.58	P-13
14	1	31.00	0.11	0.11	0.68	0.07	0.07	5.0	5.0	7.2	0.54	17.09	0.43	18	2.26	49.40	50.10	50.92	50.91	53.24	53.30	P-16
15	1	28.00	0.12	0.12	0.70	0.08	0.08	5.0	5.0	7.2	0.61	17.99	0.48	18	2.50	49.40	50.10	50.92	50.91	53.24	53.30	P-15
16	End	42.00	0.36	0.36	0.82	0.30	0.30	5.0	292.2	0.8	0.25	8.60	0.14	18	0.57	48.66	48.90	51.17	51.17	50.37	52.99	P-R3
17	16	115.00	0.00	0.00	0.00	0.00	0.00	5.0	122.8	0.0	0.02	8.22	0.01	18	0.52	49.05	49.65	51.17	51.17	52.99	53.88	P-R4
18	17	20.00	0.00	0.00	0.00	0.00	0.00	5.0	63.9	0.0	0.01	8.04	0.01	18	0.50	49.85	49.95	51.17	51.17	53.88	53.00	P-R5
19	18	20.00	0.00	0.00	0.00	0.00	0.00	5.0	5.0	0.0	0.01	8.04	0.01	18	0.50	50.15	50.25	51.17	51.17	53.00	53.64	P-R6
20	End	15.00	0.00	0.00	0.00	0.00	0.00	5.0	88.9	0.0	0.02	9.29	0.04	18	0.67	48.80	48.90	49.39	49.39	52.98	53.15	P-20
21	20	19.00	0.00	0.00	0.00	0.00	0.00	5.0	61.0	0.0	0.02	8.25	0.30	18	0.53	49.20	49.30	49.39	49.39	53.15	53.43	P-22
22	21	19.00	0.00	0.00	0.00	0.00	0.00	5.0	5.0	0.0	0.01	8.25	0.78	18	0.53	49.50	49.60	49.54	49.64	53.43	53.29	P-21

Project File: 10 Yr.stm

Number of lines: 46

Run Date: 12/2/2021

NOTES: Intensity = 88.24 / (Inlet time + 15.50) ^ 0.83; Return period = Yrs. 10 ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station		Len (ft)	Drng Area		Rnoff coeff (C)	Area x C		Tc		Rain (l) (in/hr)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
23	End	28.00	0.00	0.00	0.00	0.00	0.00	5.0	96.3	0.0	0.02	8.33	0.02	18	0.54	48.80	48.95	49.92	49.92	52.82	52.45	P-23
24	23	16.00	0.00	0.00	0.00	0.00	0.00	5.0	49.2	0.0	0.01	8.99	0.01	18	0.62	49.15	49.25	49.92	49.92	52.45	52.61	P-24
25	24	15.00	0.00	0.00	0.00	0.00	0.00	5.0	5.0	0.0	0.01	9.29	0.03	18	0.67	49.45	49.55	49.92	49.92	52.61	52.39	P-25
26	End	24.00	0.09	0.16	0.71	0.06	0.12	5.0	14.6	5.3	0.62	12.72	0.38	18	1.25	48.80	49.10	50.30	50.30	54.03	54.44	P-17
27	26	127.00	0.07	0.07	0.77	0.05	0.05	5.0	5.0	7.2	0.39	14.10	1.29	18	1.54	49.30	51.25	50.30	51.48	54.44	56.53	P-18
28	End	23.00	0.00	0.76	0.00	0.00	0.61	5.0	181.3	1.1	0.69	9.19	0.40	18	0.65	45.95	46.10	47.45	47.45	52.00	51.88	P-34
29	28	23.00	0.20	0.76	0.83	0.17	0.61	5.0	181.1	1.1	0.69	9.19	1.56	18	0.65	46.30	46.45	47.45	46.76	51.88	51.23	P-35
30	29	118.00	0.05	0.56	0.86	0.04	0.44	5.0	179.9	1.1	0.51	8.11	2.50	18	0.51	46.65	47.25	46.91	47.51	51.23	51.86	P-36
31	30	107.00	0.15	0.51	0.82	0.12	0.40	5.0	178.8	1.1	0.47	8.16	2.44	18	0.51	47.35	47.90	47.59	48.15	51.86	51.78	P-37
32	31	73.00	0.00	0.00	0.00	0.00	0.00	5.0	71.3	0.0	0.02	8.42	0.98	18	0.55	48.10	48.50	48.15	48.55	51.78	52.00	P-38
33	32	15.00	0.00	0.00	0.00	0.00	0.00	5.0	49.2	0.0	0.02	9.29	1.03	18	0.67	48.80	48.90	48.85	48.95	52.00	52.31	P-39
34	33	15.00	0.00	0.00	0.00	0.00	0.00	5.0	5.0	0.0	0.01	9.29	0.85	18	0.67	49.10	49.20	49.14	49.24	52.31	52.00	P-40
35	31	23.00	0.26	0.36	0.75	0.20	0.27	5.0	18.2	4.8	1.31	9.19	3.42	18	0.65	48.10	48.25	48.48	48.68	51.78	52.25	P-R1
36	35	257.00	0.10	0.10	0.79	0.08	0.08	5.0	5.0	7.2	0.57	9.65	2.75	18	0.72	48.45	50.30	48.70	50.58	52.25	54.55	P-R2
37	End	190.00	0.08	0.16	0.86	0.07	0.13	5.0	8.8	6.3	0.83	8.04	1.70	18	0.50	47.55	48.50	48.61	48.84	52.12	54.31	P-42
38	37	59.00	0.08	0.08	0.79	0.06	0.06	5.0	5.0	7.2	0.46	8.11	2.42	18	0.51	48.70	49.00	48.94	49.25	54.31	53.10	P-43
39	End	18.61	0.00	0.00	0.00	0.00	0.00	5.0	5.8	0.0	17.15	22.00	7.28	24	0.81	47.00	47.15	48.33	48.64	49.25	51.49	P-B1
40	39	99.32	0.00	0.00	0.00	0.00	0.00	5.0	5.4	0.0	6.45	8.84	4.63	18	0.60	47.35	47.95	48.64	48.93	51.49	51.77	P-102
41	40	84.84	0.00	0.00	0.00	0.00	0.00	5.0	5.0	0.0	6.45	8.38	5.22	18	0.54	48.05	48.51	49.04	49.50	51.77	51.46	P-A1
42	End	19.00	0.10	0.17	0.73	0.07	0.13	5.0	14.6	5.3	0.67	8.25	0.38	18	0.53	47.70	47.80	49.20	49.20	52.70	51.91	P-51
43	42	127.00	0.07	0.07	0.77	0.05	0.05	5.0	5.0	7.2	0.39	16.28	1.26	18	2.05	48.00	50.60	49.20	50.83	51.91	54.77	P-52
44	End	39.00	0.17	0.17	0.92	0.16	0.16	5.0	5.0	7.2	1.13	21.01	4.13	18	3.41	47.00	48.33	47.27	48.73	52.24	52.15	P-45

Project File: 10 Yr.stm

Number of lines: 46

Run Date: 12/2/2021

NOTES: Intensity = $88.24 / (\text{Inlet time} + 15.50)^{0.83}$; Return period = Yrs. 10 ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station		Len (ft)	Drng Area		Rnoff coeff (C)	Area x C		Tc		Rain (l) (in/hr)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
45	End	9.00	0.18	0.18	0.96	0.17	0.17	5.0	5.0	7.2	1.25	25.44	0.71	18	5.00	45.95	46.40	48.50	48.50	51.88	51.80	P-32
46	End	9.00	0.23	0.23	0.87	0.20	0.20	5.0	5.0	7.2	1.45	25.44	0.96	18	5.00	45.95	46.40	47.45	47.44	50.97	50.86	P-30

Project File: 10 Yr.stm

Number of lines: 46

Run Date: 12/2/2021

NOTES: Intensity = $88.24 / (\text{Inlet time} + 15.50)^{0.83}$; Return period = Yrs. 10 ; c = cir e = ellip b = box

Inlet Report

Line No	Inlet ID	Q = CIA (cfs)	Q carry (cfs)	Q capt (cfs)	Q Byp (cfs)	Junc Type	Curb Inlet		Grate Inlet			Gutter						Inlet			By Line No	
							Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)		Depr (in)
1	S-2	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.012	0.00	0.00	0.00	0.00	0.0	Off
2	S-3	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
3	S-4	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
4	S-5	1.06	0.07	1.13	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.036	0.036	0.012	0.14	3.97	0.14	3.97	0.0	Off
5	S-6	0.61	0.00	0.54	0.07	Comb	6.0	7.04	0.00	8.04	2.25	0.006	1.00	0.015	0.015	0.012	0.11	7.07	0.05	3.08	0.0	4
6	S-7	0.50	0.00	0.45	0.04	Comb	6.0	7.04	0.00	8.04	2.25	0.005	1.00	0.015	0.015	0.012	0.10	6.79	0.04	2.75	0.0	10
7	S-8	0.68	0.00	0.68	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.015	0.015	0.000	0.10	6.47	0.10	6.47	0.0	Off
8	S-9	0.44	0.00	0.44	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.012	0.07	7.13	0.07	7.13	0.0	Off
9	S-10	1.12	0.00	1.12	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.012	0.13	12.94	0.13	12.94	0.0	Off
10	S-11	0.73	0.04	0.77	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.050	0.050	0.012	0.12	2.44	0.12	2.44	0.0	Off
11	S-12	0.62	0.00	0.62	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.020	0.020	0.012	0.09	4.71	0.09	4.71	0.0	Off
12	S-14	0.70	0.00	0.70	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.012	0.10	9.62	0.10	9.62	0.0	Off
13	S-13	0.81	0.00	0.81	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.012	0.11	10.52	0.11	10.52	0.0	Off
14	S-16	0.54	0.00	0.54	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.012	0.08	8.16	0.08	8.16	0.0	Off
15	S-15	0.61	0.00	0.61	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.012	0.09	8.78	0.09	8.78	0.0	Off
16	R-3	2.14	0.00	2.14	0.00	Comb	6.0	8.04	9.54	8.04	2.25	Sag	1.00	0.015	0.015	0.012	0.16	10.35	0.16	10.35	0.0	Off
17	R-4	0.01*	0.00	0.01	0.00	Grate	0.0	0.00	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.000	0.01	1.07	0.01	1.07	0.0	Off
18	R-5	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
19	R-6	0.01*	0.00	0.01	0.00	Grate	0.0	0.00	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.000	0.01	1.07	0.01	1.07	0.0	Off
20	S-22	0.00	0.00	0.00	0.00	Grate	0.0	0.00	9.05	4.02	2.25	Sag	1.00	0.050	0.020	0.000	0.00	0.00	0.00	0.00	0.0	Off
21	S-20	0.01*	0.00	0.00	0.01	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.012	0.00	0.00	0.00	0.00	0.0	Off
22	S-21	0.01*	0.00	0.01	0.00	Grate	0.0	0.00	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.000	0.01	1.07	0.01	1.07	0.0	Off
23	S-23	0.01*	0.00	0.01	0.00	Grate	0.0	0.00	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.012	0.01	1.07	0.01	1.07	0.0	Off

Project File: 10 Yr.stm

Number of lines: 46

Run Date: 12/2/2021

NOTES: Inlet N-Values = 0.016; Intensity = 88.24 / (Inlet time + 15.50) ^ 0.83; Return period = 10 Yrs. ; * Indicates Known Q added. All curb inlets are Horiz throat.

Inlet Report

Line No	Inlet ID	Q = CIA (cfs)	Q carry (cfs)	Q capt (cfs)	Q Byp (cfs)	Junc Type	Curb Inlet		Grate Inlet			Gutter						Inlet			By Line No	
							Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)		Depr (in)
24	S-24	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.012	0.00	0.00	0.00	0.00	0.0	Off
25	S-25	0.01*	0.00	0.01	0.00	Grate	0.0	0.00	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.012	0.01	1.07	0.01	1.07	0.0	Off
26	S-17	0.46	0.00	0.46	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.033	0.033	0.012	0.09	2.59	0.09	2.59	0.0	Off
27	S-18	0.39	0.00	0.39	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.012	0.07	6.66	0.07	6.66	0.0	Off
28	S-34	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
29	S-35	1.20	0.00	1.20	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.034	0.034	0.012	0.15	4.33	0.15	4.33	0.0	Off
30	S-36	0.31	0.00	0.31	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.012	0.06	5.80	0.06	5.80	0.0	Off
31	S-37	0.89	0.00	0.89	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.012	0.11	11.17	0.11	11.17	0.0	Off
32	S-39	0.00	0.00	0.00	0.00	Comb	6.0	4.02	9.05	4.02	2.25	Sag	1.00	0.050	0.020	0.000	0.00	0.00	0.00	0.00	0.0	Off
33	S-38	0.01*	0.00	0.00	0.01	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
34	S-40	0.01*	0.00	0.01	0.00	DrGrt	0.0	0.00	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.000	0.00	3.07	0.00	3.07	0.0	Off
35	R-1	1.41	0.00	1.24	0.17	Comb	6.0	2.69	0.00	4.02	2.25	0.026	1.00	0.100	0.100	0.012	0.23	2.25	0.10	1.02	0.0	Off
36	R-2	0.57	0.00	0.45	0.12	Comb	6.0	2.69	0.00	4.02	2.25	0.005	1.00	0.027	0.027	0.012	0.13	4.96	0.07	2.74	0.0	Off
37	S-42	0.50	0.00	0.50	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.012	0.08	7.75	0.08	7.75	0.0	Off
38	S-43	0.46	0.00	0.46	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.012	0.07	7.35	0.07	7.35	0.0	Off
39	S-B1	10.70*	0.00	0.00	10.70	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
40	S-102	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
41	S-A1	6.45*	0.00	0.00	6.45	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
42	S-51	0.53	0.00	0.53	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.015	0.015	0.012	0.08	5.53	0.08	5.53	0.0	Off
43	S-52	0.39	0.00	0.39	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.019	0.190	0.012	0.07	1.27	0.07	1.27	0.0	Off
44	S-45	1.13	0.00	1.13	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.009	0.009	0.000	0.13	14.41	0.13	14.41	0.0	Off
45	S-32	1.25	0.00	1.25	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.014	0.014	0.000	0.14	10.06	0.14	10.06	0.0	Off
46	S-30	1.45	0.00	1.45	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.011	0.011	0.000	0.15	13.92	0.15	13.92	0.0	Off

Project File: 10 Yr.stm

Number of lines: 46

Run Date: 12/2/2021

NOTES: Inlet N-Values = 0.016; Intensity = 88.24 / (Inlet time + 15.50) ^ 0.83; Return period = 10 Yrs. ; * Indicates Known Q added. All curb inlets are Horiz throat.

Hydraulic Grade Line Computations

Line	Size (in)	Q (cfs)	Downstream								Len (ft)	Upstream								Check		JL coeff (K)	Minor loss (ft)
			Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)		Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)	Ave Sf (%)	Enrgy loss (ft)		
1	24	6.58	48.80	50.80	2.00	3.14	2.09	0.07	50.87	0.072	65.00	49.20	50.83	1.63	2.74	2.40	0.09	50.92	0.073	0.073	0.047	0.99	0.09
2	24	5.80	49.40	50.92	1.52	1.27	2.27	0.32	51.24	0.000	87.00	49.85	50.70	0.85**	1.27	4.56	0.32	51.02	0.000	0.000	n/a	1.00	0.32
3	24	4.71	50.05	50.75	0.70*	0.99	4.77	0.28	51.04	0.000	86.00	50.50	51.26	0.76**	1.10	4.28	0.28	51.55	0.000	0.000	n/a	1.00	n/a
4	18	2.43	51.00	51.57	0.57*	0.61	3.98	0.22	51.79	0.000	80.00	51.40	51.99	0.59**	0.65	3.77	0.22	52.21	0.000	0.000	n/a	1.50	0.33
5	18	1.02	51.60	51.99	0.39	0.35	2.80	0.13	52.12	0.000	105.00	52.15	52.53 j	0.38**	0.35	2.94	0.13	52.66	0.000	0.000	n/a	1.48	n/a
6	18	0.50	52.35	52.59	0.24*	0.18	2.70	0.09	52.68	0.000	33.00	52.55	52.81	0.26**	0.21	2.42	0.09	52.90	0.000	0.000	n/a	1.00	0.09
7	18	2.49	50.80	51.36	0.56*	0.60	4.17	0.22	51.58	0.000	54.00	51.10	51.70	0.60**	0.66	3.80	0.22	51.92	0.000	0.000	n/a	1.50	n/a
8	18	1.46	51.30	51.73	0.43*	0.42	3.46	0.16	51.90	0.000	110.00	51.85	52.30	0.45**	0.45	3.25	0.16	52.47	0.000	0.000	n/a	1.50	0.25
9	18	1.12	52.05	52.43	0.38*	0.36	3.15	0.14	52.57	0.000	63.00	52.35	52.75	0.40**	0.37	3.01	0.14	52.89	0.000	0.000	n/a	1.00	0.14
10	18	0.73	51.60	51.99	0.39	0.27	2.00	0.11	52.10	0.000	64.00	51.90	52.22 j	0.32**	0.27	2.68	0.11	52.33	0.000	0.000	n/a	1.00	n/a
11	18	0.62	51.30	51.70	0.40	0.24	1.66	0.10	51.80	0.000	59.00	51.60	51.89 j	0.29**	0.24	2.57	0.10	51.99	0.000	0.000	n/a	1.00	0.10
12	18	0.70	50.05	50.70	0.65	0.27	0.96	0.11	50.81	0.000	31.00	50.90	51.21 j	0.31**	0.27	2.65	0.11	51.32	0.000	0.000	n/a	1.00	n/a
13	18	0.81	50.05	50.70	0.65	0.29	1.10	0.12	50.82	0.000	27.00	50.90	51.23 j	0.33**	0.29	2.76	0.12	51.35	0.000	0.000	n/a	1.00	0.12
14	18	0.54	49.40	50.92	1.50	1.77	0.31	0.00	50.92	0.002	31.00	50.10	50.91	0.81	0.98	0.55	0.00	50.92	0.007	0.005	0.001	1.00	0.00
15	18	0.61	49.40	50.92	1.50	1.77	0.34	0.00	50.92	0.003	28.00	50.10	50.91	0.81	0.98	0.62	0.01	50.92	0.009	0.006	0.002	1.00	0.01
16	18	0.25	48.66	51.17	1.50	1.77	0.14	0.00	51.17	0.000	42.00	48.90	51.17	1.50	1.77	0.14	0.00	51.17	0.000	0.000	0.000	1.48	0.00
17	18	0.02	49.05	51.17	1.50	1.77	0.01	0.00	51.17	0.000	115.00	49.65	51.17	1.50	1.77	0.01	0.00	51.17	0.000	0.000	0.000	1.50	0.00
18	18	0.01	49.85	51.17	1.32	1.65	0.01	0.00	51.17	0.000	20.00	49.95	51.17	1.22	1.54	0.01	0.00	51.17	0.000	0.000	0.000	1.00	0.00
19	18	0.01	50.15	51.17	1.02	1.28	0.01	0.00	51.17	0.000	20.00	50.25	51.17	0.92	1.13	0.01	0.00	51.17	0.000	0.000	0.000	1.00	0.00
20	18	0.02	48.80	49.39	0.59	0.65	0.03	0.00	49.39	0.000	15.00	48.90	49.39	0.49	0.50	0.04	0.00	49.39	0.000	0.000	0.000	0.50	0.00
21	18	0.02	49.20	49.39	0.19	0.13	0.15	0.00	49.39	0.003	19.00	49.30	49.39	0.09	0.05	0.44	0.00	49.40	0.054	0.028	0.005	1.00	0.00
22	18	0.01	49.50	49.54	0.04*	0.01	0.79	0.01	49.55	0.524	19.00	49.60	49.64	0.04**	0.01	0.77	0.01	49.65	0.498	0.511	0.097	1.00	0.01

Project File: 10 Yr.stm

Number of lines: 46

Run Date: 12/2/2021

Notes: * Normal depth assumed; ** Critical depth.; j-Line contains hyd. jump ; c = cir e = ellip b = box

Hydraulic Grade Line Computations

Line	Size (in)	Q (cfs)	Downstream								Len (ft)	Upstream								Check		JL coeff (K)	Minor loss (ft)
			Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)		Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)	Ave Sf (%)	Enrgy loss (ft)		
23	18	0.02	48.80	49.92	1.12	1.42	0.01	0.00	49.92	0.000	28.00	48.95	49.92	0.97	1.21	0.02	0.00	49.92	0.000	0.000	0.000	0.50	0.00
24	18	0.01	49.15	49.92	0.77	0.91	0.01	0.00	49.92	0.000	16.00	49.25	49.92	0.67	0.76	0.01	0.00	49.92	0.000	0.000	0.000	1.00	0.00
25	18	0.01	49.45	49.92	0.47	0.47	0.02	0.00	49.92	0.000	15.00	49.55	49.92	0.37	0.34	0.03	0.00	49.92	0.000	0.000	0.000	1.00	0.00
26	18	0.62	48.80	50.30	1.50*	1.77	0.35	0.00	50.30	0.003	24.00	49.10	50.30	1.20	1.52	0.41	0.00	50.30	0.003	0.003	0.001	1.38	0.00
27	18	0.39	49.30	50.30	1.00	0.17	0.31	0.08	50.38	0.000	127.00	51.25	51.48 j	0.23**	0.17	2.27	0.08	51.56	0.000	0.000	n/a	1.00	n/a
28	18	0.69	45.95	47.45	1.50*	1.77	0.39	0.00	47.45	0.004	23.00	46.10	47.45	1.35	1.67	0.41	0.00	47.45	0.003	0.004	0.001	1.00	0.00
29	18	0.69	46.30	47.45	1.15	0.26	0.48	0.11	47.56	0.000	23.00	46.45	46.76	0.31**	0.26	2.64	0.11	46.87	0.000	0.000	n/a	1.50	n/a
30	18	0.51	46.65	46.91	0.26*	0.20	2.56	0.09	47.00	0.000	118.00	47.25	47.51	0.26**	0.21	2.43	0.09	47.61	0.000	0.000	n/a	0.50	0.05
31	18	0.47	47.35	47.59	0.24*	0.19	2.50	0.09	47.68	0.000	107.00	47.90	48.15	0.25**	0.20	2.38	0.09	48.24	0.000	0.000	n/a	1.55	n/a
32	18	0.02	48.10	48.15	0.05*	0.02	0.99	0.02	48.17	0.545	73.00	48.50	48.55	0.05**	0.02	0.98	0.01	48.57	0.533	0.539	0.394	0.72	0.01
33	18	0.02	48.80	48.85	0.05*	0.02	1.05	0.02	48.87	0.660	15.00	48.90	48.95	0.05**	0.02	1.02	0.02	48.97	0.596	0.628	0.094	0.95	0.02
34	18	0.01	49.10	49.14	0.04*	0.01	0.85	0.01	49.15	0.666	15.00	49.20	49.24	0.04**	0.01	0.85	0.01	49.25	0.648	0.657	0.099	1.00	0.01
35	18	1.31	48.10	48.48	0.38*	0.36	3.68	0.15	48.64	0.000	23.00	48.25	48.68	0.43**	0.42	3.15	0.15	48.83	0.000	0.000	n/a	1.46	n/a
36	18	0.57	48.45	48.70	0.25*	0.19	2.99	0.10	48.80	0.000	257.00	50.30	50.58	0.28**	0.23	2.51	0.10	50.68	0.000	0.000	n/a	1.00	n/a
37	18	0.83	47.55	48.61	1.06	0.30	0.62	0.12	48.73	0.000	190.00	48.50	48.84	0.34**	0.30	2.77	0.12	48.96	0.000	0.000	n/a	1.50	n/a
38	18	0.46	48.70	48.94	0.24*	0.18	2.48	0.09	49.03	0.000	59.00	49.00	49.25	0.25**	0.19	2.36	0.09	49.34	0.000	0.000	n/a	1.00	0.09
39	24	17.15	47.00	48.33	1.33	2.22	7.73	0.72	49.05	0.000	18.61	47.15	48.64	1.49**	2.51	6.83	0.72	49.37	0.000	0.000	n/a	1.00	0.72
40	18	6.45	47.35	48.64	1.29	1.23	3.99	0.43	49.07	0.000	99.32	47.95	48.93	0.98**	1.23	5.26	0.43	49.36	0.000	0.000	n/a	0.92	n/a
41	18	6.45	48.05	49.04	0.99*	1.23	5.23	0.42	49.46	0.542	84.84	48.51	49.50	0.99**	1.24	5.22	0.42	49.92	0.540	0.541	0.459	1.00	0.42
42	18	0.67	47.70	49.20	1.50*	1.77	0.38	0.00	49.20	0.003	19.00	47.80	49.20	1.40	1.72	0.39	0.00	49.20	0.003	0.003	0.001	1.48	0.00
43	18	0.39	48.00	49.20	1.20	0.17	0.26	0.08	49.28	0.000	127.00	50.60	50.83 j	0.23**	0.17	2.27	0.08	50.91	0.000	0.000	n/a	1.00	n/a
44	18	1.13	47.00	47.27	0.27	0.22	5.23	0.14	47.41	0.000	39.00	48.33	48.73	0.40**	0.37	3.02	0.14	48.87	0.000	0.000	n/a	1.00	0.14

Project File: 10 Yr.stm

Number of lines: 46

Run Date: 12/2/2021

Notes: * Normal depth assumed; ** Critical depth.; j-Line contains hyd. jump ; c = cir e = ellip b = box

Hydraulic Grade Line Computations

Line	Size (in)	Q (cfs)	Downstream								Len (ft)	Upstream								Check		JL coeff (K)	Minor loss (ft)
			Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)		Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)	Ave Sf (%)	Enrgy loss (ft)		
45	18	1.25	45.95	48.50	1.50	1.77	0.71	0.01	48.51	0.012	9.00	46.40	48.50	1.50	1.77	0.71	0.01	48.51	0.012	0.012	0.001	1.00	0.01
46	18	1.45	45.95	47.45	1.50*	1.77	0.82	0.01	47.46	0.016	9.00	46.40	47.44	1.04	1.31	1.11	0.02	47.46	0.024	0.020	0.002	1.00	0.02

Project File: 10 Yr.stm

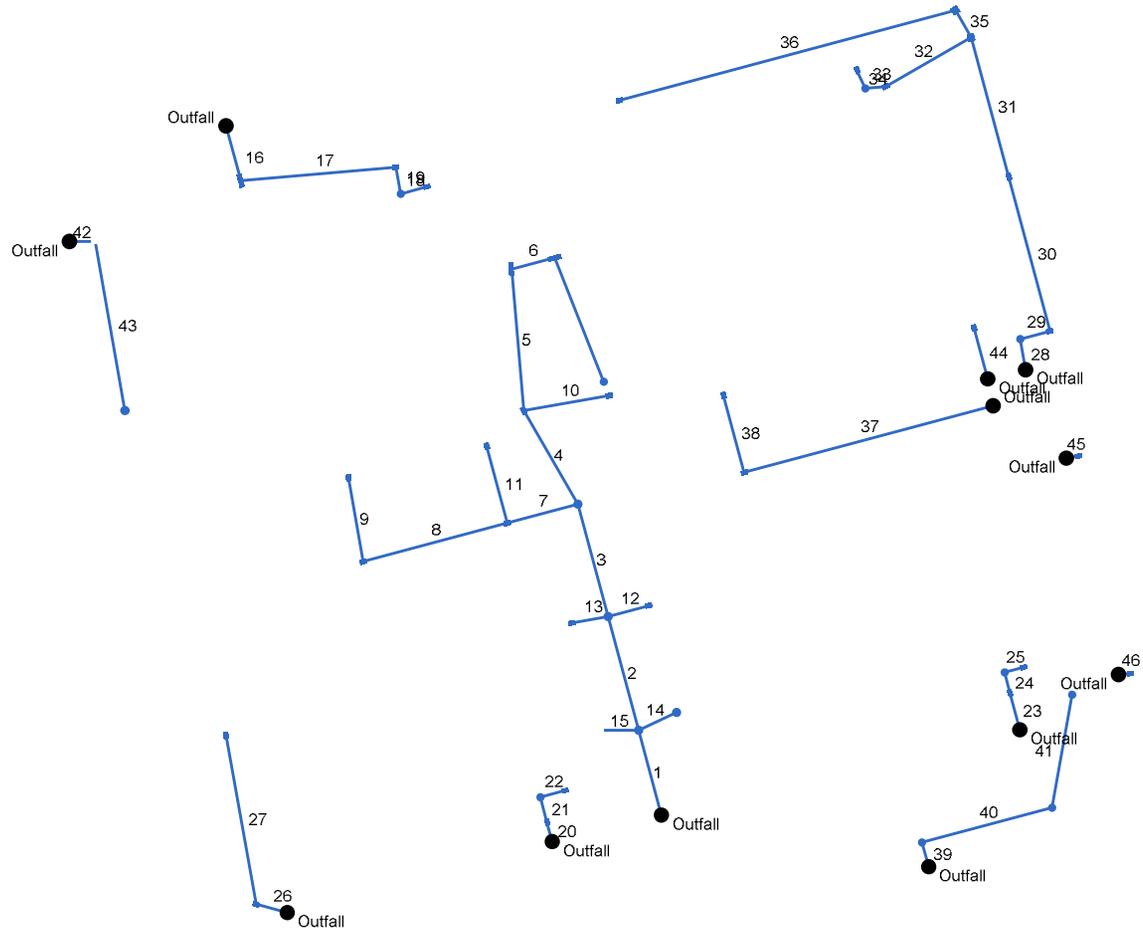
Number of lines: 46

Run Date: 12/2/2021

Notes: * Normal depth assumed; ** Critical depth.; j-Line contains hyd. jump ; c = cir e = ellip b = box

**25 - YEAR CALCULATIONS
PROPOSED NETWORK**

Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan



Storm Sewer Inventory Report

Line No.	Alignment				Flow Data				Physical Data								Line ID
	Dnstr Line No.	Line Length (ft)	Defl angle (deg)	Junc Type	Known Q (cfs)	Drng Area (ac)	Runoff Coeff (C)	Inlet Time (min)	Invert El Dn (ft)	Line Slope (%)	Invert El Up (ft)	Line Size (in)	Line Shape	N Value (n)	J-Loss Coeff (K)	Inlet/ Rim El (ft)	
1	End	65.00	-105.00	MH	0.00	0.00	0.00	5.0	48.80	0.62	49.20	24	Cir	0.012	0.99	53.24	P-2
2	1	87.00	0.03	MH	0.00	0.00	0.00	5.0	49.40	0.52	49.85	24	Cir	0.012	1.00	54.13	P-3
3	2	86.00	0.00	MH	0.00	0.00	0.00	5.0	50.05	0.52	50.50	24	Cir	0.012	1.00	54.59	P-4
4	3	80.00	-15.00	Comb	0.00	0.24	0.69	5.0	51.00	0.50	51.40	18	Cir	0.012	1.50	54.17	P-5
5	4	105.00	25.00	Comb	0.00	0.11	0.85	5.0	51.60	0.52	52.15	18	Cir	0.012	1.48	55.79	P-6
6	5	33.00	80.00	Comb	0.00	0.08	0.96	5.0	52.35	0.61	52.55	18	Cir	0.012	1.00	55.84	P-7
7	3	54.00	-90.00	Comb	0.00	0.11	0.96	5.0	50.80	0.56	51.10	18	Cir	0.012	1.50	54.72	P-8
8	7	110.00	0.00	Comb	0.00	0.07	0.96	5.0	51.30	0.50	51.85	18	Cir	0.012	1.50	56.04	P-9
9	8	63.00	95.00	Comb	0.00	0.18	0.96	5.0	52.05	0.48	52.35	18	Cir	0.012	1.00	55.46	P-10
10	4	64.00	110.00	Comb	0.00	0.21	0.55	5.0	51.60	0.47	51.90	18	Cir	0.012	1.00	54.09	P-11
11	7	59.00	90.00	Comb	0.00	0.56	0.96	5.0	51.30	0.51	51.60	18	Cir	0.012	1.00	54.81	P-12
12	2	31.00	90.00	Comb	0.00	0.12	0.90	5.0	50.05	2.74	50.90	18	Cir	0.012	1.00	54.09	P-14
13	2	27.00	-85.00	Comb	0.00	0.14	0.89	5.0	50.05	3.15	50.90	18	Cir	0.012	1.00	54.58	P-13
14	1	31.00	80.00	Comb	0.00	0.11	0.77	5.0	49.40	2.26	50.10	18	Cir	0.012	1.00	53.30	P-16
15	1	28.00	-75.00	Comb	0.00	0.12	0.78	5.0	49.40	2.50	50.10	18	Cir	0.012	1.00	53.30	P-15
16	End	42.00	75.00	Comb	0.00	0.36	0.92	5.0	48.66	0.57	48.90	18	Cir	0.012	1.48	52.99	P-R3
17	16	115.00	-80.00	Grate	0.01	0.00	0.00	5.0	49.05	0.52	49.65	18	Cir	0.012	1.50	53.88	P-R4
18	17	20.00	85.00	MH	0.00	0.00	0.00	5.0	49.85	0.50	49.95	18	Cir	0.012	1.00	53.00	P-R5
19	18	20.00	-95.00	Grate	0.01	0.00	0.00	5.0	50.15	0.50	50.25	18	Cir	0.012	1.00	53.64	P-R6
20	End	15.00	-105.00	Grate	0.00	0.00	0.00	5.0	48.80	0.67	48.90	18	Cir	0.012	0.50	53.15	P-20
21	20	19.00	0.00	MH	0.01	0.00	0.00	5.0	49.20	0.53	49.30	18	Cir	0.012	1.00	53.43	P-22
22	21	19.00	90.00	Grate	0.01	0.00	0.00	5.0	49.50	0.53	49.60	18	Cir	0.012	1.00	53.29	P-21
23	End	28.00	-105.00	Grate	0.01	0.00	0.00	5.0	48.80	0.54	48.95	18	Cir	0.012	0.50	52.45	P-23

Storm Sewer Inventory Report

Line No.	Alignment				Flow Data				Physical Data								Line ID
	Dnstr Line No.	Line Length (ft)	Defl angle (deg)	Junc Type	Known Q (cfs)	Drng Area (ac)	Runoff Coeff (C)	Inlet Time (min)	Invert El Dn (ft)	Line Slope (%)	Invert El Up (ft)	Line Size (in)	Line Shape	N Value (n)	J-Loss Coeff (K)	Inlet/ Rim El (ft)	
24	23	16.00	0.00	MH	0.00	0.00	0.00	5.0	49.15	0.62	49.25	18	Cir	0.012	1.00	52.61	P-24
25	24	15.00	90.00	Grate	0.00	0.82	0.96	5.0	49.45	0.67	49.55	18	Cir	0.012	1.00	52.39	P-25
26	End	24.00	-165.00	Comb	0.00	0.09	0.80	5.0	48.80	1.25	49.10	18	Cir	0.012	1.38	54.44	P-17
27	26	127.00	65.00	Comb	0.00	0.53	0.95	5.0	49.30	1.54	51.25	18	Cir	0.012	1.00	56.53	P-18
28	End	23.00	-100.00	MH	0.00	0.00	0.00	5.0	45.95	0.65	46.10	18	Cir	0.012	1.00	51.88	P-34
29	28	23.00	85.00	Comb	0.00	0.20	0.92	5.0	46.30	0.65	46.45	18	Cir	0.012	1.50	51.23	P-35
30	29	118.00	-90.00	Comb	0.00	0.05	0.96	5.0	46.65	0.51	47.25	18	Cir	0.012	0.50	51.86	P-36
31	30	107.00	0.00	Comb	0.00	0.15	0.91	5.0	47.35	0.51	47.90	18	Cir	0.012	1.55	51.78	P-37
32	31	73.00	-105.00	Comb	0.00	0.00	0.00	5.0	48.10	0.55	48.50	18	Cir	0.012	0.72	52.00	P-38
33	32	15.00	25.00	MH	0.01	0.00	0.00	5.0	48.80	0.67	48.90	18	Cir	0.012	0.95	52.31	P-39
34	33	15.00	70.00	Grate	0.01	0.00	0.00	5.0	49.10	0.67	49.20	18	Cir	0.012	1.00	52.00	P-40
35	31	23.00	-15.00	Comb	0.00	0.26	0.84	5.0	48.10	0.65	48.25	18	Cir	0.012	1.46	52.25	P-R1
36	35	257.00	-75.00	Comb	0.00	0.10	0.89	5.0	48.45	0.72	50.30	18	Cir	0.012	1.00	54.55	P-R2
37	End	190.00	165.00	Comb	0.00	0.08	0.96	5.0	47.55	0.50	48.50	18	Cir	0.012	1.50	54.31	P-42
38	37	59.00	90.00	Comb	0.00	0.08	0.96	5.0	48.70	0.51	49.00	18	Cir	0.012	1.00	53.10	P-43
39	End	18.61	-105.00	MH	10.70	0.00	0.00	5.0	47.00	0.81	47.15	24	Cir	0.012	1.00	51.49	P-B1
40	39	99.32	90.00	MH	0.00	0.00	0.00	5.0	47.35	0.60	47.95	18	Cir	0.012	0.92	51.77	P-102
41	40	84.84	-65.00	MH	6.45	0.00	0.00	5.0	48.05	0.54	48.51	18	Cir	0.012	1.00	51.46	P-A1
42	End	19.00	0.00	Comb	0.00	0.10	0.82	5.0	47.70	0.53	47.80	18	Cir	0.012	1.48	51.91	P-51
43	42	127.00	80.00	Comb	0.00	0.07	0.86	5.0	48.00	2.05	50.60	18	Cir	0.012	1.00	54.77	P-52
44	End	39.00	-105.00	Comb	0.00	0.17	0.92	5.0	47.00	3.41	48.33	18	Cir	0.012	1.00	52.15	P-45
45	End	9.00	-10.00	Comb	0.00	0.18	0.96	5.0	45.95	5.00	46.40	18	Cir	0.012	1.00	51.80	P-32
46	End	9.00	-5.00	Comb	0.00	0.23	0.87	5.0	45.95	5.00	46.40	18	Cir	0.012	1.00	50.86	P-30

Project File: 25 Yr.stm

Number of lines: 46

Date: 12/2/2021

Structure Report

Struct No.	Structure ID	Junction Type	Rim Elev (ft)	Structure			Line Out			Line In		
				Shape	Length (ft)	Width (ft)	Size (in)	Shape	Invert (ft)	Size (in)	Shape	Invert (ft)
1	S-2	Manhole	53.24	Cir	4.77	4.77	24	Cir	49.20	24 18 18	Cir Cir Cir	49.40 49.40 49.40
2	S-3	Manhole	54.13	Cir	4.77	4.77	24	Cir	49.85	24 18 18	Cir Cir Cir	50.05 50.05 50.05
3	S-4	Manhole	54.59	Cir	4.77	4.77	24	Cir	50.50	18 18	Cir Cir	51.00 50.80
4	S-5	Combination	54.17	Rect	4.77	3.27	18	Cir	51.40	18 18	Cir Cir	51.60 51.60
5	S-6	Combination	55.79	Rect	9.54	3.27	18	Cir	52.15	18	Cir	52.35
6	S-7	Combination	55.84	Rect	9.54	3.27	18	Cir	52.55			
7	S-8	Combination	54.72	Rect	4.77	3.27	18	Cir	51.10	18 18	Cir Cir	51.30 51.30
8	S-9	Combination	56.04	Rect	4.77	3.27	18	Cir	51.85	18	Cir	52.05
9	S-10	Combination	55.46	Rect	4.77	3.27	18	Cir	52.35			
10	S-11	Combination	54.09	Rect	4.77	3.27	18	Cir	51.90			
11	S-12	Combination	54.81	Rect	4.77	3.27	18	Cir	51.60			
12	S-14	Combination	54.09	Rect	4.77	3.27	18	Cir	50.90			
13	S-13	Combination	54.58	Rect	4.77	3.27	18	Cir	50.90			
14	S-16	Combination	53.30	Cir	4.77	4.77	18	Cir	50.10			
15	S-15	Combination	53.30	Rect	4.77	3.27	18	Cir	50.10			
16	R-3	Combination	52.99	Rect	9.54	3.27	18	Cir	48.90	18	Cir	49.05
17	R-4	Grate	53.88	Rect	4.77	3.27	18	Cir	49.65	18	Cir	49.85
18	R-5	Manhole	53.00	Cir	4.00	4.00	18	Cir	49.95	18	Cir	50.15
19	R-6	Grate	53.64	Rect	4.77	3.00	18	Cir	50.25			

Structure Report

Struct No.	Structure ID	Junction Type	Rim Elev (ft)	Structure			Line Out			Line In		
				Shape	Length (ft)	Width (ft)	Size (in)	Shape	Invert (ft)	Size (in)	Shape	Invert (ft)
20	S-22	Grate	53.15	Rect	4.77	3.00	18	Cir	48.90	18	Cir	49.20
21	S-20	Manhole	53.43	Cir	4.00	4.00	18	Cir	49.30	18	Cir	49.50
22	S-21	Grate	53.29	Rect	4.77	3.00	18	Cir	49.60			
23	S-23	Grate	52.45	Rect	4.77	3.00	18	Cir	48.95	18	Cir	49.15
24	S-24	Manhole	52.61	Cir	4.00	4.00	18	Cir	49.25	18	Cir	49.45
25	S-25	Grate	52.39	Rect	4.77	3.00	18	Cir	49.55			
26	S-17	Combination	54.44	Rect	4.77	3.27	18	Cir	49.10	18	Cir	49.30
27	S-18	Combination	56.53	Rect	4.77	3.27	18	Cir	51.25			
28	S-34	Manhole	51.88	Cir	4.00	4.00	18	Cir	46.10	18	Cir	46.30
29	S-35	Combination	51.23	Rect	4.77	3.27	18	Cir	46.45	18	Cir	46.65
30	S-36	Combination	51.86	Rect	4.77	3.27	18	Cir	47.25	18	Cir	47.35
31	S-37	Combination	51.78	Rect	5.00	5.00	18	Cir	47.90	18	Cir	48.10
										18	Cir	48.10
32	S-39	Combination	52.00	Rect	4.77	3.27	18	Cir	48.50	18	Cir	48.80
33	S-38	Manhole	52.31	Cir	4.00	4.00	18	Cir	48.90	18	Cir	49.10
34	S-40	Grate	52.00	Rect	4.77	3.00	18	Cir	49.20			
35	R-1	Combination	52.25	Rect	5.00	5.00	18	Cir	48.25	18	Cir	48.45
36	R-2	Combination	54.55	Rect	4.77	3.27	18	Cir	50.30			
37	S-42	Combination	54.31	Rect	4.77	3.27	18	Cir	48.50	18	Cir	48.70
38	S-43	Combination	53.10	Rect	4.77	3.27	18	Cir	49.00			
39	S-B1	Manhole	51.49	Cir	4.00	4.00	24	Cir	47.15	18	Cir	47.35
40	S-102	Manhole	51.77	Cir	4.00	4.00	18	Cir	47.95	18	Cir	48.05
41	S-A1	Manhole	51.46	Cir	4.00	4.00	18	Cir	48.51			

Structure Report

Struct No.	Structure ID	Junction Type	Rim Elev (ft)	Structure			Line Out			Line In		
				Shape	Length (ft)	Width (ft)	Size (in)	Shape	Invert (ft)	Size (in)	Shape	Invert (ft)
42	S-51	Combination	51.91	Rect	4.77	3.27	18	Cir	47.80	18	Cir	48.00
43	S-52	Combination	54.77	Cir	4.77	4.77	18	Cir	50.60			
44	S-45	Combination	52.15	Rect	4.77	3.27	18	Cir	48.33			
45	S-32	Combination	51.80	Rect	4.77	3.27	18	Cir	46.40			
46	S-30	Combination	50.86	Rect	4.77	3.27	18	Cir	46.40			

Project File: 25 Yr.stm	Number of Structures: 46	Run Date: 12/2/2021
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Storm Sewer Summary Report

Line No.	Line ID	Flow rate (cfs)	Line Size (in)	Line shape	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line Slope (%)	HGL Down (ft)	HGL Up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns Line No.	Junction Type
1	P-2	12.05	24	Cir	65.00	48.80	49.20	0.615	50.80	50.90	0.28	51.18	End	Manhole
2	P-3	10.94	24	Cir	87.00	49.40	49.85	0.517	51.18	51.04	n/a	51.04	1	Manhole
3	P-4	9.44	24	Cir	86.00	50.05	50.50	0.523	51.09	51.60	n/a	51.60	2	Manhole
4	P-5	3.26	18	Cir	80.00	51.00	51.40	0.500	51.67	52.09	0.40	52.09	3	Combination
5	P-6	1.33	18	Cir	105.00	51.60	52.15	0.524	52.09	52.58	n/a	52.58 j	4	Combination
6	P-7	0.63	18	Cir	33.00	52.35	52.55	0.606	52.62	52.85	0.10	52.85	5	Combination
7	P-8	6.55	18	Cir	54.00	50.80	51.10	0.556	51.79	52.09	0.65	52.74	3	Combination
8	P-9	1.89	18	Cir	110.00	51.30	51.85	0.500	52.74	52.37	n/a	52.37	7	Combination
9	P-10	1.43	18	Cir	63.00	52.05	52.35	0.476	52.48	52.80	0.16	52.80	8	Combination
10	P-11	0.95	18	Cir	64.00	51.60	51.90	0.469	52.09	52.26	n/a	52.26 j	4	Combination
11	P-12	4.43	18	Cir	59.00	51.30	51.60	0.508	52.74	52.41	n/a	52.41	7	Combination
12	P-14	0.89	18	Cir	31.00	50.05	50.90	2.742	51.04	51.25	n/a	51.25 j	2	Combination
13	P-13	1.03	18	Cir	27.00	50.05	50.90	3.148	51.04	51.28	n/a	51.28 j	2	Combination
14	P-16	0.70	18	Cir	31.00	49.40	50.10	2.258	51.18	51.18	0.00	51.18	1	Combination
15	P-15	0.77	18	Cir	28.00	49.40	50.10	2.500	51.18	51.18	0.01	51.18	1	Combination
16	P-R3	0.33	18	Cir	42.00	48.66	48.90	0.571	51.17*	51.17*	0.00	51.17	End	Combination
17	P-R4	0.02	18	Cir	115.00	49.05	49.65	0.522	51.17*	51.17*	0.00	51.17	16	Grate
18	P-R5	0.01	18	Cir	20.00	49.85	49.95	0.500	51.17	51.17	0.00	51.17	17	Manhole
19	P-R6	0.01	18	Cir	20.00	50.15	50.25	0.500	51.17	51.17	0.00	51.17	18	Grate
20	P-20	0.02	18	Cir	15.00	48.80	48.90	0.667	49.39	49.39	0.00	49.39	End	Grate
21	P-22	0.02	18	Cir	19.00	49.20	49.30	0.526	49.39	49.39	0.00	49.40	20	Manhole
22	P-21	0.01	18	Cir	19.00	49.50	49.60	0.526	49.54	49.64	0.01	49.65	21	Grate
23	P-23	6.47	18	Cir	28.00	48.80	48.95	0.536	49.92	49.98	0.19	50.17	End	Grate
24	P-24	6.48	18	Cir	16.00	49.15	49.25	0.625	50.17	50.23	0.43	50.23	23	Manhole

Project File: 25 Yr.stm

Number of lines: 46

Run Date: 12/2/2021

NOTES: Return period = 25 Yrs. ; *Surcharged (HGL above crown). ; j - Line contains hyd. jump.

Storm Sewer Summary Report

Line No.	Line ID	Flow rate (cfs)	Line Size (in)	Line shape	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line Slope (%)	HGL Down (ft)	HGL Up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns Line No.	Junction Type
25	P-25	6.49	18	Cir	15.00	49.45	49.55	0.667	50.37	50.53	n/a	50.53	24	Grate
26	P-17	4.59	18	Cir	24.00	48.80	49.10	1.250	50.30	50.30	0.20	50.50	End	Combination
27	P-18	4.15	18	Cir	127.00	49.30	51.25	1.535	50.50	52.03	n/a	52.03 j	26	Combination
28	P-34	0.92	18	Cir	23.00	45.95	46.10	0.652	47.45	47.45	0.00	47.46	End	Manhole
29	P-35	0.92	18	Cir	23.00	46.30	46.45	0.652	47.46	46.81	0.19	46.81	28	Combination
30	P-36	0.68	18	Cir	118.00	46.65	47.25	0.508	46.94	47.56	0.05	47.56	29	Combination
31	P-37	0.62	18	Cir	107.00	47.35	47.90	0.514	47.63	48.19	n/a	48.19	30	Combination
32	P-38	0.02	18	Cir	73.00	48.10	48.50	0.548	48.19	48.55	0.01	48.55	31	Combination
33	P-39	0.02	18	Cir	15.00	48.80	48.90	0.667	48.85	48.95	0.02	48.97	32	Manhole
34	P-40	0.01	18	Cir	15.00	49.10	49.20	0.667	49.14	49.24	0.01	49.25	33	Grate
35	P-R1	1.84	18	Cir	23.00	48.10	48.25	0.652	48.55	48.76	n/a	48.76	31	Combination
36	P-R2	0.73	18	Cir	257.00	48.45	50.30	0.720	48.76	50.62	n/a	50.62	35	Combination
37	P-42	1.15	18	Cir	190.00	47.55	48.50	0.500	48.61	48.90	n/a	48.90 j	End	Combination
38	P-43	0.63	18	Cir	59.00	48.70	49.00	0.508	48.98	49.30	0.10	49.30	37	Combination
39	P-B1	17.15	24	Cir	18.61	47.00	47.15	0.806	48.33	48.64	0.72	48.64	End	Manhole
40	P-102	6.45	18	Cir	99.32	47.35	47.95	0.604	48.64	48.93	n/a	48.93	39	Manhole
41	P-A1	6.45	18	Cir	84.84	48.05	48.51	0.542	49.04	49.50	0.42	49.92	40	Manhole
42	P-51	0.92	18	Cir	19.00	47.70	47.80	0.526	49.20	49.20	0.01	49.21	End	Combination
43	P-52	0.50	18	Cir	127.00	48.00	50.60	2.047	49.21	50.86	n/a	50.86 j	42	Combination
44	P-45	1.29	18	Cir	39.00	47.00	48.33	3.410	47.27	48.75	0.15	48.75	End	Combination
45	P-32	1.43	18	Cir	9.00	45.95	46.40	5.000	48.50*	48.50*	0.01	48.51	End	Combination
46	P-30	1.65	18	Cir	9.00	45.95	46.40	5.000	47.45	47.44	0.02	47.47	End	Combination

Project File: 25 Yr.stm

Number of lines: 46

Run Date: 12/2/2021

NOTES: Return period = 25 Yrs. ; *Surcharged (HGL above crown). ; j - Line contains hyd. jump.

Storm Sewer Tabulation

Station		Len (ft)	Drng Area		Rnoff coeff (C)	Area x C		Tc		Rain (l) (in/hr)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	End	65.00	0.00	2.05	0.00	0.00	1.75	5.0	10.2	6.9	12.05	19.22	4.03	24	0.62	48.80	49.20	50.80	50.90	52.83	53.24	P-2
2	1	87.00	0.00	1.82	0.00	0.00	1.57	5.0	9.8	7.0	10.94	17.62	4.68	24	0.52	49.40	49.85	51.18	51.04	53.24	54.13	P-3
3	2	86.00	0.00	1.56	0.00	0.00	1.33	5.0	9.4	7.1	9.44	17.72	5.54	24	0.52	50.05	50.50	51.09	51.60	54.13	54.59	P-4
4	3	80.00	0.24	0.64	0.69	0.17	0.45	5.0	8.8	7.2	3.26	8.04	4.22	18	0.50	51.00	51.40	51.67	52.09	54.59	54.17	P-5
5	4	105.00	0.11	0.19	0.85	0.09	0.17	5.0	6.5	7.8	1.33	8.23	2.91	18	0.52	51.60	52.15	52.09	52.58	54.17	55.79	P-6
6	5	33.00	0.08	0.08	0.96	0.08	0.08	5.0	5.0	8.2	0.63	8.86	2.74	18	0.61	52.35	52.55	52.62	52.85	55.79	55.84	P-7
7	3	54.00	0.11	0.92	0.96	0.11	0.88	5.0	8.0	7.4	6.55	8.48	5.29	18	0.56	50.80	51.10	51.79	52.09	54.59	54.72	P-8
8	7	110.00	0.07	0.25	0.96	0.07	0.24	5.0	6.3	7.9	1.89	8.04	2.29	18	0.50	51.30	51.85	52.74	52.37	54.72	56.04	P-9
9	8	63.00	0.18	0.18	0.96	0.17	0.17	5.0	5.0	8.2	1.43	7.85	3.30	18	0.48	52.05	52.35	52.48	52.80	56.04	55.46	P-10
10	4	64.00	0.21	0.21	0.55	0.12	0.12	5.0	5.0	8.2	0.95	7.79	2.40	18	0.47	51.60	51.90	52.09	52.26	54.17	54.09	P-11
11	7	59.00	0.56	0.56	0.96	0.54	0.54	5.0	5.0	8.2	4.43	8.11	3.56	18	0.51	51.30	51.60	52.74	52.41	54.72	54.81	P-12
12	2	31.00	0.12	0.12	0.90	0.11	0.11	5.0	5.0	8.2	0.89	18.84	1.78	18	2.74	50.05	50.90	51.04	51.25	54.13	54.09	P-14
13	2	27.00	0.14	0.14	0.89	0.12	0.12	5.0	5.0	8.2	1.03	20.18	1.89	18	3.15	50.05	50.90	51.04	51.28	54.13	54.58	P-13
14	1	31.00	0.11	0.11	0.77	0.08	0.08	5.0	5.0	8.2	0.70	17.09	0.45	18	2.26	49.40	50.10	51.18	51.18	53.24	53.30	P-16
15	1	28.00	0.12	0.12	0.78	0.09	0.09	5.0	5.0	8.2	0.77	17.99	0.50	18	2.50	49.40	50.10	51.18	51.18	53.24	53.30	P-15
16	End	42.00	0.36	0.36	0.92	0.33	0.33	5.0	292.2	0.9	0.33	8.60	0.18	18	0.57	48.66	48.90	51.17	51.17	50.37	52.99	P-R3
17	16	115.00	0.00	0.00	0.00	0.00	0.00	5.0	122.8	0.0	0.02	8.22	0.01	18	0.52	49.05	49.65	51.17	51.17	52.99	53.88	P-R4
18	17	20.00	0.00	0.00	0.00	0.00	0.00	5.0	63.9	0.0	0.01	8.04	0.01	18	0.50	49.85	49.95	51.17	51.17	53.88	53.00	P-R5
19	18	20.00	0.00	0.00	0.00	0.00	0.00	5.0	5.0	0.0	0.01	8.04	0.01	18	0.50	50.15	50.25	51.17	51.17	53.00	53.64	P-R6
20	End	15.00	0.00	0.00	0.00	0.00	0.00	5.0	88.9	0.0	0.02	9.29	0.04	18	0.67	48.80	48.90	49.39	49.39	52.98	53.15	P-20
21	20	19.00	0.00	0.00	0.00	0.00	0.00	5.0	61.0	0.0	0.02	8.25	0.30	18	0.53	49.20	49.30	49.39	49.39	53.15	53.43	P-22
22	21	19.00	0.00	0.00	0.00	0.00	0.00	5.0	5.0	0.0	0.01	8.25	0.78	18	0.53	49.50	49.60	49.54	49.64	53.43	53.29	P-21

Project File: 25 Yr.stm

Number of lines: 46

Run Date: 12/2/2021

NOTES: Intensity = 102.61 / (Inlet time + 16.50) ^ 0.82; Return period = Yrs. 25 ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station		Len (ft)	Drng Area		Rnoff coeff (C)	Area x C		Tc		Rain (l) (in/hr)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
23	End	28.00	0.00	0.82	0.00	0.00	0.79	5.0	5.1	8.2	6.47	8.33	4.79	18	0.54	48.80	48.95	49.92	49.98	52.82	52.45	P-23
24	23	16.00	0.00	0.82	0.00	0.00	0.79	5.0	5.1	8.2	6.48	8.99	5.16	18	0.62	49.15	49.25	50.17	50.23	52.45	52.61	P-24
25	24	15.00	0.82	0.82	0.96	0.79	0.79	5.0	5.0	8.2	6.49	9.29	5.48	18	0.67	49.45	49.55	50.37	50.53	52.61	52.39	P-25
26	End	24.00	0.09	0.62	0.80	0.07	0.58	5.0	5.9	8.0	4.59	12.72	2.81	18	1.25	48.80	49.10	50.30	50.30	54.03	54.44	P-17
27	26	127.00	0.53	0.53	0.95	0.50	0.50	5.0	5.0	8.2	4.15	14.10	3.61	18	1.54	49.30	51.25	50.50	52.03	54.44	56.53	P-18
28	End	23.00	0.00	0.76	0.00	0.00	0.68	5.0	180.7	1.3	0.92	9.19	0.54	18	0.65	45.95	46.10	47.45	47.45	52.00	51.88	P-34
29	28	23.00	0.20	0.76	0.92	0.18	0.68	5.0	180.6	1.3	0.92	9.19	1.74	18	0.65	46.30	46.45	47.46	46.81	51.88	51.23	P-35
30	29	118.00	0.05	0.56	0.96	0.05	0.49	5.0	179.7	1.3	0.68	8.11	2.71	18	0.51	46.65	47.25	46.94	47.56	51.23	51.86	P-36
31	30	107.00	0.15	0.51	0.91	0.14	0.44	5.0	178.8	1.3	0.62	8.16	2.64	18	0.51	47.35	47.90	47.63	48.19	51.86	51.78	P-37
32	31	73.00	0.00	0.00	0.00	0.00	0.00	5.0	71.3	0.0	0.02	8.42	0.75	18	0.55	48.10	48.50	48.19	48.55	51.78	52.00	P-38
33	32	15.00	0.00	0.00	0.00	0.00	0.00	5.0	49.2	0.0	0.02	9.29	1.03	18	0.67	48.80	48.90	48.85	48.95	52.00	52.31	P-39
34	33	15.00	0.00	0.00	0.00	0.00	0.00	5.0	5.0	0.0	0.01	9.29	0.85	18	0.67	49.10	49.20	49.14	49.24	52.31	52.00	P-40
35	31	23.00	0.26	0.36	0.84	0.22	0.31	5.0	15.3	6.0	1.84	9.19	3.76	18	0.65	48.10	48.25	48.55	48.76	51.78	52.25	P-R1
36	35	257.00	0.10	0.10	0.89	0.09	0.09	5.0	5.0	8.2	0.73	9.65	2.73	18	0.72	48.45	50.30	48.76	50.62	52.25	54.55	P-R2
37	End	190.00	0.08	0.16	0.96	0.08	0.15	5.0	7.7	7.5	1.15	8.04	1.95	18	0.50	47.55	48.50	48.61	48.90	52.12	54.31	P-42
38	37	59.00	0.08	0.08	0.96	0.08	0.08	5.0	5.0	8.2	0.63	8.11	2.65	18	0.51	48.70	49.00	48.98	49.30	54.31	53.10	P-43
39	End	18.61	0.00	0.00	0.00	0.00	0.00	5.0	5.8	0.0	17.15	22.00	7.28	24	0.81	47.00	47.15	48.33	48.64	49.25	51.49	P-B1
40	39	99.32	0.00	0.00	0.00	0.00	0.00	5.0	5.4	0.0	6.45	8.84	4.63	18	0.60	47.35	47.95	48.64	48.93	51.49	51.77	P-102
41	40	84.84	0.00	0.00	0.00	0.00	0.00	5.0	5.0	0.0	6.45	8.38	5.22	18	0.54	48.05	48.51	49.04	49.50	51.77	51.46	P-A1
42	End	19.00	0.10	0.17	0.82	0.08	0.14	5.0	12.5	6.4	0.92	8.25	0.53	18	0.53	47.70	47.80	49.20	49.20	52.70	51.91	P-51
43	42	127.00	0.07	0.07	0.86	0.06	0.06	5.0	5.0	8.2	0.50	16.28	1.37	18	2.05	48.00	50.60	49.21	50.86	51.91	54.77	P-52
44	End	39.00	0.17	0.17	0.92	0.16	0.16	5.0	5.0	8.2	1.29	21.01	4.55	18	3.41	47.00	48.33	47.27	48.75	52.24	52.15	P-45

Project File: 25 Yr.stm

Number of lines: 46

Run Date: 12/2/2021

NOTES: Intensity = 102.61 / (Inlet time + 16.50) ^ 0.82; Return period = Yrs. 25 ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station		Len (ft)	Drng Area		Rnoff coeff (C)	Area x C		Tc		Rain (l) (in/hr)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
45	End	9.00	0.18	0.18	0.96	0.17	0.17	5.0	5.0	8.2	1.43	25.44	0.81	18	5.00	45.95	46.40	48.50	48.50	51.88	51.80	P-32
46	End	9.00	0.23	0.23	0.87	0.20	0.20	5.0	5.0	8.2	1.65	25.44	1.10	18	5.00	45.95	46.40	47.45	47.44	50.97	50.86	P-30

Project File: 25 Yr.stm

Number of lines: 46

Run Date: 12/2/2021

NOTES: Intensity = 102.61 / (Inlet time + 16.50) ^ 0.82; Return period = Yrs. 25 ; c = cir e = ellip b = box

Inlet Report

Line No	Inlet ID	Q = CIA (cfs)	Q carry (cfs)	Q capt (cfs)	Q Byp (cfs)	Junc Type	Curb Inlet		Grate Inlet			Gutter						Inlet			By Line No	
							Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)		Depr (in)
1	S-2	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
2	S-3	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
3	S-4	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
4	S-5	1.37	0.12	1.49	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.036	0.036	0.000	0.17	4.68	0.17	4.68	0.0	Off
5	S-6	0.77	0.00	0.65	0.12	Comb	6.0	7.04	0.00	8.04	2.25	0.006	1.00	0.010	0.010	0.012	0.10	9.97	0.05	5.04	0.0	4
6	S-7	0.63	0.00	0.55	0.09	Comb	6.0	7.04	0.00	8.04	2.25	0.005	1.00	0.010	0.010	0.012	0.10	9.58	0.05	4.53	0.0	10
7	S-8	0.87	0.00	0.87	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.015	0.015	0.000	0.11	7.51	0.11	7.51	0.0	Off
8	S-9	0.55	0.00	0.55	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.000	0.08	8.28	0.08	8.28	0.0	Off
9	S-10	1.43	0.00	1.43	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.000	0.15	15.10	0.15	15.10	0.0	Off
10	S-11	0.95	0.09	1.04	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.050	0.050	0.000	0.14	2.86	0.14	2.86	0.0	Off
11	S-12	4.43	0.00	4.43	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.015	0.015	0.000	0.32	21.24	0.32	21.24	0.0	Off
12	S-14	0.89	0.00	0.89	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.000	0.11	11.17	0.11	11.17	0.0	Off
13	S-13	1.03	0.00	1.03	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.000	0.12	12.24	0.12	12.24	0.0	Off
14	S-16	0.70	0.00	0.70	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.000	0.10	9.58	0.10	9.58	0.0	Off
15	S-15	0.77	0.00	0.77	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.000	0.10	10.20	0.10	10.20	0.0	Off
16	R-3	2.73	0.00	2.73	0.00	Comb	6.0	8.04	9.54	8.04	2.25	Sag	1.00	0.015	0.015	0.000	0.18	12.11	0.18	12.11	0.0	Off
17	R-4	0.01*	0.00	0.01	0.00	Grate	0.0	0.00	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.000	0.01	1.07	0.01	1.07	0.0	Off
18	R-5	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
19	R-6	0.01*	0.00	0.01	0.00	Grate	0.0	0.00	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.000	0.01	1.07	0.01	1.07	0.0	Off
20	S-22	0.00	0.00	0.00	0.00	Grate	0.0	0.00	9.05	4.02	2.25	Sag	1.00	0.050	0.020	0.000	0.00	0.00	0.00	0.00	0.0	Off
21	S-20	0.01*	0.00	0.00	0.01	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
22	S-21	0.01*	0.00	0.01	0.00	Grate	0.0	0.00	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.000	0.01	1.07	0.01	1.07	0.0	Off
23	S-23	0.01*	0.00	0.01	0.00	Grate	0.0	0.00	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.000	0.01	1.07	0.01	1.07	0.0	Off

Project File: 25 Yr.stm

Number of lines: 46

Run Date: 12/2/2021

NOTES: Inlet N-Values = 0.016; Intensity = 102.61 / (Inlet time + 16.50) ^ 0.82; Return period = 25 Yrs. ; * Indicates Known Q added. All curb inlets are Horiz throat.

Inlet Report

Line No	Inlet ID	Q = CIA (cfs)	Q carry (cfs)	Q capt (cfs)	Q Byp (cfs)	Junc Type	Curb Inlet		Grate Inlet			Gutter						Inlet			By Line No	
							Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)		Depr (in)
24	S-24	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
25	S-25	6.49	0.00	6.49	0.00	Grate	0.0	0.00	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.000	0.41	41.21	0.41	41.21	0.0	Off
26	S-17	0.59	0.00	0.59	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.033	0.033	0.000	0.10	2.97	0.10	2.97	0.0	Off
27	S-18	4.15	0.00	4.15	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.000	0.30	30.28	0.30	30.28	0.0	Off
28	S-34	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
29	S-35	1.52	0.00	1.52	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.034	0.034	0.000	0.17	4.98	0.17	4.98	0.0	Off
30	S-36	0.40	0.00	0.40	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.000	0.07	6.72	0.07	6.72	0.0	Off
31	S-37	1.13	0.00	1.13	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.000	0.13	12.98	0.13	12.98	0.0	Off
32	S-39	0.00	0.00	0.00	0.00	Comb	6.0	4.02	9.05	4.02	2.25	Sag	1.00	0.050	0.020	0.000	0.00	0.00	0.00	0.00	0.0	Off
33	S-38	0.01*	0.00	0.00	0.01	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
34	S-40	0.01*	0.00	0.01	0.00	Grate	0.0	0.00	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.000	0.01	1.07	0.01	1.07	0.0	Off
35	R-1	1.80	0.00	1.53	0.27	Comb	6.0	2.69	0.00	4.02	2.25	0.026	1.00	0.100	0.100	0.012	0.25	2.47	0.12	1.21	0.0	Off
36	R-2	0.73	0.00	0.56	0.17	Comb	6.0	2.69	0.00	4.02	2.25	0.005	1.00	0.027	0.027	0.012	0.15	5.44	0.09	3.16	0.0	Off
37	S-42	0.63	0.00	0.63	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.000	0.09	9.00	0.09	9.00	0.0	Off
38	S-43	0.63	0.00	0.63	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.000	0.09	9.00	0.09	9.00	0.0	Off
39	S-B1	10.70*	0.00	0.00	10.70	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
40	S-102	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
41	S-A1	6.45*	0.00	0.00	6.45	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
42	S-51	0.68	0.00	0.68	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.015	0.015	0.000	0.10	6.42	0.10	6.42	0.0	Off
43	S-52	0.50	0.00	0.50	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.019	0.190	0.000	0.08	1.33	0.08	1.33	0.0	Off
44	S-45	1.29	0.00	1.29	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.009	0.009	0.000	0.14	15.68	0.14	15.68	0.0	Off
45	S-32	1.43	0.00	1.43	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.014	0.014	0.000	0.15	10.93	0.15	10.93	0.0	Off
46	S-30	1.65	0.00	1.65	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.011	0.011	0.000	0.17	15.14	0.17	15.14	0.0	Off

Project File: 25 Yr.stm

Number of lines: 46

Run Date: 12/2/2021

NOTES: Inlet N-Values = 0.016; Intensity = 102.61 / (Inlet time + 16.50) ^ 0.82; Return period = 25 Yrs. ; * Indicates Known Q added. All curb inlets are Horiz throat.

Hydraulic Grade Line Computations

Line	Size (in)	Q (cfs)	Downstream								Len (ft)	Upstream								Check		JL coeff (K)	Minor loss (ft)
			Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)		Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)	Ave Sf (%)	Enrgy loss (ft)		
1	24	12.05	48.80	50.80	2.00	3.14	3.83	0.23	51.03	0.242	65.00	49.20	50.90	1.70	2.85	4.23	0.28	51.18	0.227	0.234	0.152	0.99	0.28
2	24	10.94	49.40	51.18	1.78	1.94	3.71	0.50	51.67	0.000	87.00	49.85	51.04	1.19**	1.94	5.64	0.50	51.53	0.000	0.000	n/a	1.00	n/a
3	24	9.44	50.05	51.09	1.04*	1.65	5.73	0.45	51.53	0.000	86.00	50.50	51.60	1.10**	1.76	5.35	0.45	52.04	0.000	0.000	n/a	1.00	n/a
4	18	3.26	51.00	51.67	0.67*	0.76	4.31	0.27	51.93	0.000	80.00	51.40	52.09	0.69**	0.79	4.13	0.27	52.35	0.000	0.000	n/a	1.50	0.40
5	18	1.33	51.60	52.09	0.49	0.42	2.67	0.16	52.24	0.000	105.00	52.15	52.58 j	0.43**	0.42	3.16	0.16	52.74	0.000	0.000	n/a	1.48	0.23
6	18	0.63	52.35	52.62	0.27*	0.22	2.90	0.10	52.73	0.000	33.00	52.55	52.85	0.30**	0.25	2.58	0.10	52.95	0.000	0.000	n/a	1.00	0.10
7	18	6.55	50.80	51.79	0.99*	1.24	5.30	0.44	52.23	0.555	54.00	51.10	52.09	0.99**	1.24	5.28	0.43	52.53	0.551	0.553	0.299	1.50	0.65
8	18	1.89	51.30	52.74	1.44	0.54	1.08	0.19	52.93	0.000	110.00	51.85	52.37	0.52**	0.54	3.50	0.19	52.56	0.000	0.000	n/a	1.50	n/a
9	18	1.43	52.05	52.48	0.43*	0.42	3.37	0.16	52.64	0.000	63.00	52.35	52.80	0.45**	0.44	3.23	0.16	52.96	0.000	0.000	n/a	1.00	0.16
10	18	0.95	51.60	52.09	0.49	0.33	1.91	0.13	52.22	0.000	64.00	51.90	52.26 j	0.36**	0.33	2.88	0.13	52.39	0.000	0.000	n/a	1.00	0.13
11	18	4.43	51.30	52.74	1.44	0.97	2.54	0.33	53.07	0.000	59.00	51.60	52.41	0.81**	0.97	4.58	0.33	52.73	0.000	0.000	n/a	1.00	n/a
12	18	0.89	50.05	51.04	0.99	0.31	0.72	0.12	51.16	0.000	31.00	50.90	51.25 j	0.35**	0.31	2.83	0.12	51.38	0.000	0.000	n/a	1.00	0.12
13	18	1.03	50.05	51.04	0.99	0.35	0.84	0.13	51.17	0.000	27.00	50.90	51.28 j	0.38**	0.35	2.94	0.13	51.41	0.000	0.000	n/a	1.00	0.13
14	18	0.70	49.40	51.18	1.50	1.77	0.40	0.00	51.18	0.004	31.00	50.10	51.18	1.08	1.36	0.51	0.00	51.18	0.005	0.004	0.001	1.00	0.00
15	18	0.77	49.40	51.18	1.50	1.77	0.44	0.00	51.18	0.005	28.00	50.10	51.18	1.08	1.36	0.57	0.01	51.18	0.006	0.005	0.002	1.00	0.01
16	18	0.33	48.66	51.17	1.50	1.77	0.18	0.00	51.17	0.001	42.00	48.90	51.17	1.50	1.77	0.18	0.00	51.17	0.001	0.001	0.000	1.48	0.00
17	18	0.02	49.05	51.17	1.50	1.77	0.01	0.00	51.17	0.000	115.00	49.65	51.17	1.50	1.77	0.01	0.00	51.17	0.000	0.000	0.000	1.50	0.00
18	18	0.01	49.85	51.17	1.32	1.65	0.01	0.00	51.17	0.000	20.00	49.95	51.17	1.22	1.54	0.01	0.00	51.17	0.000	0.000	0.000	1.00	0.00
19	18	0.01	50.15	51.17	1.02	1.28	0.01	0.00	51.17	0.000	20.00	50.25	51.17	0.92	1.13	0.01	0.00	51.17	0.000	0.000	0.000	1.00	0.00
20	18	0.02	48.80	49.39	0.59	0.65	0.03	0.00	49.39	0.000	15.00	48.90	49.39	0.49	0.50	0.04	0.00	49.39	0.000	0.000	0.000	0.50	0.00
21	18	0.02	49.20	49.39	0.19	0.13	0.15	0.00	49.39	0.003	19.00	49.30	49.39	0.09	0.05	0.44	0.00	49.40	0.054	0.028	0.005	1.00	0.00
22	18	0.01	49.50	49.54	0.04*	0.01	0.79	0.01	49.55	0.524	19.00	49.60	49.64	0.04**	0.01	0.77	0.01	49.65	0.498	0.511	0.097	1.00	0.01

Project File: 25 Yr.stm

Number of lines: 46

Run Date: 12/2/2021

Notes: * Normal depth assumed; ** Critical depth.; j-Line contains hyd. jump ; c = cir e = ellip b = box

Hydraulic Grade Line Computations

Line	Size (in)	Q (cfs)	Downstream								Len (ft)	Upstream								Check		JL coeff (K)	Minor loss (ft)
			Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)		Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)	Ave Sf (%)	Enrgy loss (ft)		
23	18	6.47	48.80	49.92	1.12	1.42	4.57	0.32	50.24	0.393	28.00	48.95	49.98	1.03	1.29	5.01	0.39	50.37	0.487	0.440	0.123	0.50	0.19
24	18	6.48	49.15	50.17	1.02	1.23	5.04	0.43	50.61	0.000	16.00	49.25	50.23	0.98**	1.23	5.27	0.43	50.67	0.000	0.000	n/a	1.00	0.43
25	18	6.49	49.45	50.37	0.92*	1.14	5.68	0.43	50.81	0.000	15.00	49.55	50.53	0.98**	1.23	5.28	0.43	50.97	0.000	0.000	n/a	1.00	n/a
26	18	4.59	48.80	50.30	1.50*	1.77	2.60	0.10	50.40	0.163	24.00	49.10	50.30	1.20	1.52	3.02	0.14	50.45	0.169	0.166	0.040	1.38	0.20
27	18	4.15	49.30	50.50	1.20	0.93	2.74	0.31	50.81	0.000	127.00	51.25	52.03 j	0.78**	0.93	4.47	0.31	52.34	0.000	0.000	n/a	1.00	0.31
28	18	0.92	45.95	47.45	1.50*	1.77	0.52	0.00	47.45	0.007	23.00	46.10	47.45	1.35	1.68	0.55	0.00	47.46	0.006	0.006	0.001	1.00	0.00
29	18	0.92	46.30	47.46	1.16	0.32	0.63	0.13	47.58	0.000	23.00	46.45	46.81	0.36**	0.32	2.86	0.13	46.93	0.000	0.000	n/a	1.50	0.19
30	18	0.68	46.65	46.94	0.29*	0.24	2.79	0.11	47.05	0.000	118.00	47.25	47.56	0.31**	0.26	2.63	0.11	47.66	0.000	0.000	n/a	0.50	0.05
31	18	0.62	47.35	47.63	0.28*	0.23	2.72	0.10	47.73	0.000	107.00	47.90	48.19	0.29**	0.24	2.56	0.10	48.29	0.000	0.000	n/a	1.55	n/a
32	18	0.02	48.10	48.19	0.09	0.02	0.45	0.00	48.19	0.058	73.00	48.50	48.55	0.05**	0.02	1.06	0.02	48.57	0.667	0.363	n/a	0.72	0.01
33	18	0.02	48.80	48.85	0.05*	0.02	1.05	0.02	48.87	0.660	15.00	48.90	48.95	0.05**	0.02	1.02	0.02	48.97	0.596	0.628	0.094	0.95	0.02
34	18	0.01	49.10	49.14	0.04*	0.01	0.85	0.01	49.15	0.666	15.00	49.20	49.24	0.04**	0.01	0.85	0.01	49.25	0.648	0.657	0.099	1.00	0.01
35	18	1.84	48.10	48.55	0.45*	0.45	4.06	0.19	48.74	0.000	23.00	48.25	48.76	0.51**	0.53	3.47	0.19	48.95	0.000	0.000	n/a	1.46	n/a
36	18	0.73	48.45	48.76	0.31	0.26	2.78	0.11	48.87	0.000	257.00	50.30	50.62	0.32**	0.27	2.68	0.11	50.73	0.000	0.000	n/a	1.00	n/a
37	18	1.15	47.55	48.61	1.06	0.38	0.86	0.14	48.75	0.000	190.00	48.50	48.90 j	0.40**	0.38	3.03	0.14	49.04	0.000	0.000	n/a	1.50	n/a
38	18	0.63	48.70	48.98	0.28*	0.23	2.73	0.10	49.09	0.000	59.00	49.00	49.30	0.30**	0.25	2.58	0.10	49.40	0.000	0.000	n/a	1.00	0.10
39	24	17.15	47.00	48.33	1.33	2.22	7.73	0.72	49.05	0.000	18.61	47.15	48.64	1.49**	2.51	6.83	0.72	49.37	0.000	0.000	n/a	1.00	0.72
40	18	6.45	47.35	48.64	1.29	1.23	3.99	0.43	49.07	0.000	99.32	47.95	48.93	0.98**	1.23	5.26	0.43	49.36	0.000	0.000	n/a	0.92	n/a
41	18	6.45	48.05	49.04	0.99*	1.23	5.23	0.42	49.46	0.542	84.84	48.51	49.50	0.99**	1.24	5.22	0.42	49.92	0.540	0.541	0.459	1.00	0.42
42	18	0.92	47.70	49.20	1.50*	1.77	0.52	0.00	49.20	0.006	19.00	47.80	49.20	1.40	1.72	0.53	0.00	49.21	0.006	0.006	0.001	1.48	0.01
43	18	0.50	48.00	49.21	1.21	0.21	0.33	0.09	49.30	0.000	127.00	50.60	50.86 j	0.26**	0.21	2.41	0.09	50.95	0.000	0.000	n/a	1.00	n/a
44	18	1.29	47.00	47.27	0.27	0.22	5.96	0.15	47.42	0.000	39.00	48.33	48.75	0.42**	0.41	3.13	0.15	48.91	0.000	0.000	n/a	1.00	0.15

Project File: 25 Yr.stm

Number of lines: 46

Run Date: 12/2/2021

Notes: * Normal depth assumed; ** Critical depth.; j-Line contains hyd. jump ; c = cir e = ellip b = box

Hydraulic Grade Line Computations

Line	Size (in)	Q (cfs)	Downstream								Len (ft)	Upstream								Check		JL coeff (K)	Minor loss (ft)
			Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)		Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)	Ave Sf (%)	Enrgy loss (ft)		
45	18	1.43	45.95	48.50	1.50	1.77	0.81	0.01	48.51	0.016	9.00	46.40	48.50	1.50	1.77	0.81	0.01	48.51	0.016	0.016	0.001	1.00	0.01
46	18	1.65	45.95	47.45	1.50*	1.77	0.93	0.01	47.46	0.021	9.00	46.40	47.44	1.04	1.31	1.26	0.02	47.47	0.031	0.026	0.002	1.00	0.02

Project File: 25 Yr.stm

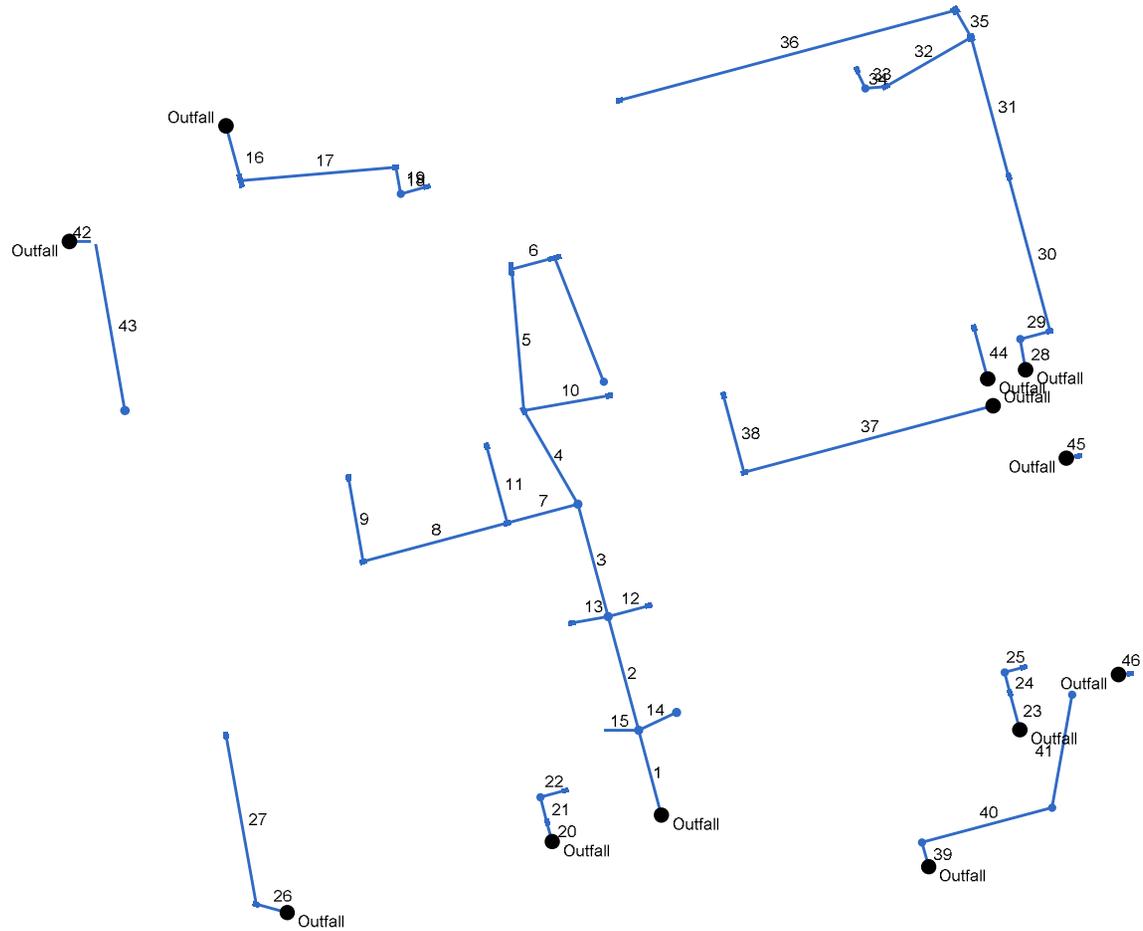
Number of lines: 46

Run Date: 12/2/2021

Notes: * Normal depth assumed; ** Critical depth.; j-Line contains hyd. jump ; c = cir e = ellip b = box

**100-YEAR CALCULATIONS
PROPOSED NETWORK**

Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan



Storm Sewer Inventory Report

Line No.	Alignment				Flow Data				Physical Data								Line ID
	Dnstr Line No.	Line Length (ft)	Defl angle (deg)	Junc Type	Known Q (cfs)	Drng Area (ac)	Runoff Coeff (C)	Inlet Time (min)	Invert El Dn (ft)	Line Slope (%)	Invert El Up (ft)	Line Size (in)	Line Shape	N Value (n)	J-Loss Coeff (K)	Inlet/ Rim El (ft)	
1	End	65.00	-105.00	MH	0.00	0.00	0.00	5.0	48.80	0.62	49.20	24	Cir	0.012	0.99	53.24	P-2
2	1	87.00	0.03	MH	0.00	0.00	0.00	5.0	49.40	0.52	49.85	24	Cir	0.012	1.00	54.13	P-3
3	2	86.00	0.00	MH	0.00	0.00	0.00	5.0	50.05	0.52	50.50	24	Cir	0.012	1.00	54.59	P-4
4	3	80.00	-15.00	Comb	0.00	0.24	0.69	5.0	51.00	0.50	51.40	18	Cir	0.012	1.50	54.17	P-5
5	4	105.00	25.00	Comb	0.00	0.11	0.85	5.0	51.60	0.52	52.15	18	Cir	0.012	1.48	55.79	P-6
6	5	33.00	80.00	Comb	0.00	0.08	0.96	5.0	52.35	0.61	52.55	18	Cir	0.012	1.00	55.84	P-7
7	3	54.00	-90.00	Comb	0.00	0.11	0.96	5.0	50.80	0.56	51.10	18	Cir	0.012	1.50	54.72	P-8
8	7	110.00	0.00	Comb	0.00	0.07	0.96	5.0	51.30	0.50	51.85	18	Cir	0.012	1.50	56.04	P-9
9	8	63.00	95.00	Comb	0.00	0.18	0.96	5.0	52.05	0.48	52.35	18	Cir	0.012	1.00	55.46	P-10
10	4	64.00	110.00	Comb	0.00	0.21	0.55	5.0	51.60	0.47	51.90	18	Cir	0.012	1.00	54.09	P-11
11	7	59.00	90.00	Comb	0.00	0.56	0.96	5.0	51.30	0.51	51.60	18	Cir	0.012	1.00	54.81	P-12
12	2	31.00	90.00	Comb	0.00	0.12	0.90	5.0	50.05	2.74	50.90	18	Cir	0.012	1.00	54.09	P-14
13	2	27.00	-85.00	Comb	0.00	0.14	0.89	5.0	50.05	3.15	50.90	18	Cir	0.012	1.00	54.58	P-13
14	1	31.00	80.00	Comb	0.00	0.11	0.77	5.0	49.40	2.26	50.10	18	Cir	0.012	1.00	53.30	P-16
15	1	28.00	-75.00	Comb	0.00	0.12	0.78	5.0	49.40	2.50	50.10	18	Cir	0.012	1.00	53.30	P-15
16	End	42.00	75.00	Comb	0.00	0.36	0.92	5.0	48.66	0.57	48.90	18	Cir	0.012	1.48	52.99	P-R3
17	16	115.00	-80.00	Grate	0.01	0.00	0.00	5.0	49.05	0.52	49.65	18	Cir	0.012	1.50	53.88	P-R4
18	17	20.00	85.00	MH	0.00	0.00	0.00	5.0	49.85	0.50	49.95	18	Cir	0.012	1.00	53.00	P-R5
19	18	20.00	-95.00	Grate	0.01	0.00	0.00	5.0	50.15	0.50	50.25	18	Cir	0.012	1.00	53.64	P-R6
20	End	15.00	-105.00	Grate	0.00	0.00	0.00	5.0	48.80	0.67	48.90	18	Cir	0.012	0.50	53.15	P-20
21	20	19.00	0.00	MH	0.01	0.00	0.00	5.0	49.20	0.53	49.30	18	Cir	0.012	1.00	53.43	P-22
22	21	19.00	90.00	Grate	0.01	0.00	0.00	5.0	49.50	0.53	49.60	18	Cir	0.012	1.00	53.29	P-21
23	End	28.00	-105.00	Grate	0.01	0.00	0.00	5.0	48.80	0.54	48.95	18	Cir	0.012	0.50	52.45	P-23

Storm Sewer Inventory Report

Line No.	Alignment				Flow Data				Physical Data								Line ID
	Dnstr Line No.	Line Length (ft)	Defl angle (deg)	Junc Type	Known Q (cfs)	Drng Area (ac)	Runoff Coeff (C)	Inlet Time (min)	Invert El Dn (ft)	Line Slope (%)	Invert El Up (ft)	Line Size (in)	Line Shape	N Value (n)	J-Loss Coeff (K)	Inlet/ Rim El (ft)	
24	23	16.00	0.00	MH	0.00	0.00	0.00	5.0	49.15	0.62	49.25	18	Cir	0.012	1.00	52.61	P-24
25	24	15.00	90.00	Grate	0.00	0.82	0.96	5.0	49.45	0.67	49.55	18	Cir	0.012	1.00	52.39	P-25
26	End	24.00	-165.00	Comb	0.00	0.09	0.80	5.0	48.80	1.25	49.10	18	Cir	0.012	1.38	54.44	P-17
27	26	127.00	65.00	Comb	0.00	0.53	0.95	5.0	49.30	1.54	51.25	18	Cir	0.012	1.00	56.53	P-18
28	End	23.00	-100.00	MH	0.00	0.00	0.00	5.0	45.95	0.65	46.10	18	Cir	0.012	1.00	51.88	P-34
29	28	23.00	85.00	Comb	0.00	0.20	0.92	5.0	46.30	0.65	46.45	18	Cir	0.012	1.50	51.23	P-35
30	29	118.00	-90.00	Comb	0.00	0.05	0.96	5.0	46.65	0.51	47.25	18	Cir	0.012	0.50	51.86	P-36
31	30	107.00	0.00	Comb	0.00	0.15	0.91	5.0	47.35	0.51	47.90	18	Cir	0.012	1.55	51.78	P-37
32	31	73.00	-105.00	Comb	0.00	0.00	0.00	5.0	48.10	0.55	48.50	18	Cir	0.012	0.72	52.00	P-38
33	32	15.00	25.00	MH	0.01	0.00	0.00	5.0	48.80	0.67	48.90	18	Cir	0.012	0.95	52.31	P-39
34	33	15.00	70.00	Grate	0.01	0.00	0.00	5.0	49.10	0.67	49.20	18	Cir	0.012	1.00	52.00	P-40
35	31	23.00	-15.00	Comb	0.00	0.26	0.84	5.0	48.10	0.65	48.25	18	Cir	0.012	1.46	52.25	P-R1
36	35	257.00	-75.00	Comb	0.00	0.10	0.89	5.0	48.45	0.72	50.30	18	Cir	0.012	1.00	54.55	P-R2
37	End	190.00	165.00	Comb	0.00	0.08	0.96	5.0	47.55	0.50	48.50	18	Cir	0.012	1.50	54.31	P-42
38	37	59.00	90.00	Comb	0.00	0.08	0.96	5.0	48.70	0.51	49.00	18	Cir	0.012	1.00	53.10	P-43
39	End	18.61	-105.00	MH	10.70	0.00	0.00	5.0	47.00	0.81	47.15	24	Cir	0.012	1.00	51.49	P-B1
40	39	99.32	90.00	MH	0.00	0.00	0.00	5.0	47.35	0.60	47.95	18	Cir	0.012	0.92	51.77	P-102
41	40	84.84	-65.00	MH	6.45	0.00	0.00	5.0	48.05	0.54	48.51	18	Cir	0.012	1.00	51.46	P-A1
42	End	19.00	0.00	Comb	0.00	0.10	0.82	5.0	47.70	0.53	47.80	18	Cir	0.012	1.48	51.91	P-51
43	42	127.00	80.00	Comb	0.00	0.07	0.86	5.0	48.00	2.05	50.60	18	Cir	0.012	1.00	54.77	P-52
44	End	39.00	-105.00	Comb	0.00	0.17	0.92	5.0	47.00	3.41	48.33	18	Cir	0.012	1.00	52.15	P-45
45	End	9.00	-10.00	Comb	0.00	0.18	0.96	5.0	45.95	5.00	46.40	18	Cir	0.012	1.00	51.80	P-32
46	End	9.00	-5.00	Comb	0.00	0.23	0.87	5.0	45.95	5.00	46.40	18	Cir	0.012	1.00	50.86	P-30

Project File: 100 Yr.stm	Number of lines: 46	Date: 12/2/2021
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Structure Report

Struct No.	Structure ID	Junction Type	Rim Elev (ft)	Structure			Line Out			Line In		
				Shape	Length (ft)	Width (ft)	Size (in)	Shape	Invert (ft)	Size (in)	Shape	Invert (ft)
1	S-2	Manhole	53.24	Cir	4.77	4.77	24	Cir	49.20	24 18 18	Cir Cir Cir	49.40 49.40 49.40
2	S-3	Manhole	54.13	Cir	4.77	4.77	24	Cir	49.85	24 18 18	Cir Cir Cir	50.05 50.05 50.05
3	S-4	Manhole	54.59	Cir	4.77	4.77	24	Cir	50.50	18 18	Cir Cir	51.00 50.80
4	S-5	Combination	54.17	Rect	4.77	3.27	18	Cir	51.40	18 18	Cir Cir	51.60 51.60
5	S-6	Combination	55.79	Rect	9.54	3.27	18	Cir	52.15	18	Cir	52.35
6	S-7	Combination	55.84	Rect	9.54	3.27	18	Cir	52.55			
7	S-8	Combination	54.72	Rect	4.77	3.27	18	Cir	51.10	18 18	Cir Cir	51.30 51.30
8	S-9	Combination	56.04	Rect	4.77	3.27	18	Cir	51.85	18	Cir	52.05
9	S-10	Combination	55.46	Rect	4.77	3.27	18	Cir	52.35			
10	S-11	Combination	54.09	Rect	4.77	3.27	18	Cir	51.90			
11	S-12	Combination	54.81	Rect	4.77	3.27	18	Cir	51.60			
12	S-14	Combination	54.09	Rect	4.77	3.27	18	Cir	50.90			
13	S-13	Combination	54.58	Rect	4.77	3.27	18	Cir	50.90			
14	S-16	Combination	53.30	Cir	4.77	4.77	18	Cir	50.10			
15	S-15	Combination	53.30	Rect	4.77	3.27	18	Cir	50.10			
16	R-3	Combination	52.99	Rect	9.54	3.27	18	Cir	48.90	18	Cir	49.05
17	R-4	Grate	53.88	Rect	4.77	3.27	18	Cir	49.65	18	Cir	49.85
18	R-5	Manhole	53.00	Cir	4.00	4.00	18	Cir	49.95	18	Cir	50.15
19	R-6	Grate	53.64	Rect	4.77	3.00	18	Cir	50.25			

Structure Report

Struct No.	Structure ID	Junction Type	Rim Elev (ft)	Structure			Line Out			Line In		
				Shape	Length (ft)	Width (ft)	Size (in)	Shape	Invert (ft)	Size (in)	Shape	Invert (ft)
20	S-22	Grate	53.15	Rect	4.77	3.00	18	Cir	48.90	18	Cir	49.20
21	S-20	Manhole	53.43	Cir	4.00	4.00	18	Cir	49.30	18	Cir	49.50
22	S-21	Grate	53.29	Rect	4.77	3.00	18	Cir	49.60			
23	S-23	Grate	52.45	Rect	4.77	3.00	18	Cir	48.95	18	Cir	49.15
24	S-24	Manhole	52.61	Cir	4.00	4.00	18	Cir	49.25	18	Cir	49.45
25	S-25	Grate	52.39	Rect	4.77	3.00	18	Cir	49.55			
26	S-17	Combination	54.44	Rect	4.77	3.27	18	Cir	49.10	18	Cir	49.30
27	S-18	Combination	56.53	Rect	4.77	3.27	18	Cir	51.25			
28	S-34	Manhole	51.88	Cir	4.00	4.00	18	Cir	46.10	18	Cir	46.30
29	S-35	Combination	51.23	Rect	4.77	3.27	18	Cir	46.45	18	Cir	46.65
30	S-36	Combination	51.86	Rect	4.77	3.27	18	Cir	47.25	18	Cir	47.35
31	S-37	Combination	51.78	Rect	5.00	5.00	18	Cir	47.90	18	Cir	48.10
32	S-39	Combination	52.00	Rect	4.77	3.27	18	Cir	48.50	18	Cir	48.80
33	S-38	Manhole	52.31	Cir	4.00	4.00	18	Cir	48.90	18	Cir	49.10
34	S-40	Grate	52.00	Rect	4.77	3.00	18	Cir	49.20			
35	R-1	Combination	52.25	Rect	5.00	5.00	18	Cir	48.25	18	Cir	48.45
36	R-2	Combination	54.55	Rect	4.77	3.27	18	Cir	50.30			
37	S-42	Combination	54.31	Rect	4.77	3.27	18	Cir	48.50	18	Cir	48.70
38	S-43	Combination	53.10	Rect	4.77	3.27	18	Cir	49.00			
39	S-B1	Manhole	51.49	Cir	4.00	4.00	24	Cir	47.15	18	Cir	47.35
40	S-102	Manhole	51.77	Cir	4.00	4.00	18	Cir	47.95	18	Cir	48.05
41	S-A1	Manhole	51.46	Cir	4.00	4.00	18	Cir	48.51			

Structure Report

Struct No.	Structure ID	Junction Type	Rim Elev (ft)	Structure			Line Out			Line In		
				Shape	Length (ft)	Width (ft)	Size (in)	Shape	Invert (ft)	Size (in)	Shape	Invert (ft)
42	S-51	Combination	51.91	Rect	4.77	3.27	18	Cir	47.80	18	Cir	48.00
43	S-52	Combination	54.77	Cir	4.77	4.77	18	Cir	50.60			
44	S-45	Combination	52.15	Rect	4.77	3.27	18	Cir	48.33			
45	S-32	Combination	51.80	Rect	4.77	3.27	18	Cir	46.40			
46	S-30	Combination	50.86	Rect	4.77	3.27	18	Cir	46.40			

Storm Sewer Summary Report

Line No.	Line ID	Flow rate (cfs)	Line Size (in)	Line shape	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line Slope (%)	HGL Down (ft)	HGL Up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns Line No.	Junction Type
1	P-2	14.87	24	Cir	65.00	48.80	49.20	0.615	50.80	50.98	0.39	51.37	End	Manhole
2	P-3	13.48	24	Cir	87.00	49.40	49.85	0.517	51.37	51.17	n/a	51.17	1	Manhole
3	P-4	11.61	24	Cir	86.00	50.05	50.50	0.523	51.23	51.72	0.52	51.72	2	Manhole
4	P-5	3.99	18	Cir	80.00	51.00	51.40	0.500	51.75	52.16	n/a	52.16	3	Combination
5	P-6	1.60	18	Cir	105.00	51.60	52.15	0.524	52.16	52.62	n/a	52.62 j	4	Combination
6	P-7	0.76	18	Cir	33.00	52.35	52.55	0.606	52.65	52.87	n/a	52.87	5	Combination
7	P-8	7.98	18	Cir	54.00	50.80	51.10	0.556	51.96	52.26	0.69	52.95	3	Combination
8	P-9	2.27	18	Cir	110.00	51.30	51.85	0.500	52.95	52.99	0.06	53.04	7	Combination
9	P-10	1.70	18	Cir	63.00	52.05	52.35	0.476	53.04	52.84	n/a	52.84	8	Combination
10	P-11	1.14	18	Cir	64.00	51.60	51.90	0.469	52.16	52.30	n/a	52.30 j	4	Combination
11	P-12	5.29	18	Cir	59.00	51.30	51.60	0.508	52.95	53.07	0.14	53.21	7	Combination
12	P-14	1.06	18	Cir	31.00	50.05	50.90	2.742	51.17	51.28	n/a	51.28 j	2	Combination
13	P-13	1.23	18	Cir	27.00	50.05	50.90	3.148	51.17	51.31	n/a	51.31 j	2	Combination
14	P-16	0.83	18	Cir	31.00	49.40	50.10	2.258	51.37	51.37	0.00	51.37	1	Combination
15	P-15	0.92	18	Cir	28.00	49.40	50.10	2.500	51.37	51.37	0.01	51.38	1	Combination
16	P-R3	0.40	18	Cir	42.00	48.66	48.90	0.571	51.17*	51.17*	0.00	51.17	End	Combination
17	P-R4	0.02	18	Cir	115.00	49.05	49.65	0.522	51.17*	51.17*	0.00	51.17	16	Grate
18	P-R5	0.01	18	Cir	20.00	49.85	49.95	0.500	51.17	51.17	0.00	51.17	17	Manhole
19	P-R6	0.01	18	Cir	20.00	50.15	50.25	0.500	51.17	51.17	0.00	51.17	18	Grate
20	P-20	0.02	18	Cir	15.00	48.80	48.90	0.667	49.39	49.39	0.00	49.39	End	Grate
21	P-22	0.02	18	Cir	19.00	49.20	49.30	0.526	49.39	49.39	0.00	49.40	20	Manhole
22	P-21	0.01	18	Cir	19.00	49.50	49.60	0.526	49.54	49.64	0.01	49.65	21	Grate
23	P-23	7.72	18	Cir	28.00	48.80	48.95	0.536	49.92	50.09	0.22	50.31	End	Grate
24	P-24	7.72	18	Cir	16.00	49.15	49.25	0.625	50.31	50.33	0.50	50.33	23	Manhole

Project File: 100 Yr.stm

Number of lines: 46

Run Date: 12/2/2021

NOTES: Return period = 100 Yrs. ; *Surcharged (HGL above crown). ; j - Line contains hyd. jump.

Storm Sewer Summary Report

Line No.	Line ID	Flow rate (cfs)	Line Size (in)	Line shape	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line Slope (%)	HGL Down (ft)	HGL Up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns Line No.	Junction Type
25	P-25	7.74	18	Cir	15.00	49.45	49.55	0.667	50.50	50.63	0.51	50.63	24	Grate
26	P-17	5.51	18	Cir	24.00	48.80	49.10	1.250	50.30	50.31	0.28	50.59	End	Combination
27	P-18	4.95	18	Cir	127.00	49.30	51.25	1.535	50.59	52.11	n/a	52.11 j	26	Combination
28	P-34	1.15	18	Cir	23.00	45.95	46.10	0.652	47.45	47.45	0.01	47.46	End	Manhole
29	P-35	1.15	18	Cir	23.00	46.30	46.45	0.652	47.46	46.85	n/a	46.85	28	Combination
30	P-36	0.85	18	Cir	118.00	46.65	47.25	0.508	46.98	47.59	n/a	47.59	29	Combination
31	P-37	0.77	18	Cir	107.00	47.35	47.90	0.514	47.66	48.23	n/a	48.23	30	Combination
32	P-38	0.02	18	Cir	73.00	48.10	48.50	0.548	48.23	48.55	0.01	48.55	31	Combination
33	P-39	0.02	18	Cir	15.00	48.80	48.90	0.667	48.85	48.95	0.02	48.97	32	Manhole
34	P-40	0.01	18	Cir	15.00	49.10	49.20	0.667	49.14	49.24	0.01	49.25	33	Grate
35	P-R1	2.32	18	Cir	23.00	48.10	48.25	0.652	48.61	48.83	0.31	48.83	31	Combination
36	P-R2	0.88	18	Cir	257.00	48.45	50.30	0.720	48.83	50.65	n/a	50.65 j	35	Combination
37	P-42	1.40	18	Cir	190.00	47.55	48.50	0.500	48.61	48.94	n/a	48.94 j	End	Combination
38	P-43	0.76	18	Cir	59.00	48.70	49.00	0.508	49.01	49.32	n/a	49.32	37	Combination
39	P-B1	17.15	24	Cir	18.61	47.00	47.15	0.806	48.33	48.64	0.72	48.64	End	Manhole
40	P-102	6.45	18	Cir	99.32	47.35	47.95	0.604	48.64	48.93	n/a	48.93	39	Manhole
41	P-A1	6.45	18	Cir	84.84	48.05	48.51	0.542	49.04	49.50	0.42	49.92	40	Manhole
42	P-51	1.14	18	Cir	19.00	47.70	47.80	0.526	49.20	49.20	0.01	49.21	End	Combination
43	P-52	0.59	18	Cir	127.00	48.00	50.60	2.047	49.21	50.88	n/a	50.88 j	42	Combination
44	P-45	1.54	18	Cir	39.00	47.00	48.33	3.410	47.27	48.80	0.17	48.80	End	Combination
45	P-32	1.70	18	Cir	9.00	45.95	46.40	5.000	48.50*	48.50*	0.01	48.52	End	Combination
46	P-30	1.97	18	Cir	9.00	45.95	46.40	5.000	47.45	47.44	0.04	47.47	End	Combination

Project File: 100 Yr.stm

Number of lines: 46

Run Date: 12/2/2021

NOTES: Return period = 100 Yrs. ; *Surcharged (HGL above crown). ; j - Line contains hyd. jump.

Storm Sewer Tabulation

Station		Len (ft)	Drng Area		Rnoff coeff (C)	Area x C		Tc		Rain (l) (in/hr)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	End	65.00	0.00	2.05	0.00	0.00	1.75	5.0	9.4	8.5	14.87	19.22	4.88	24	0.62	48.80	49.20	50.80	50.98	52.83	53.24	P-2
2	1	87.00	0.00	1.82	0.00	0.00	1.57	5.0	9.1	8.6	13.48	17.62	5.21	24	0.52	49.40	49.85	51.37	51.17	53.24	54.13	P-3
3	2	86.00	0.00	1.56	0.00	0.00	1.33	5.0	8.7	8.7	11.61	17.72	5.89	24	0.52	50.05	50.50	51.23	51.72	54.13	54.59	P-4
4	3	80.00	0.24	0.64	0.69	0.17	0.45	5.0	8.1	8.8	3.99	8.04	4.48	18	0.50	51.00	51.40	51.75	52.16	54.59	54.17	P-5
5	4	105.00	0.11	0.19	0.85	0.09	0.17	5.0	6.3	9.4	1.60	8.23	2.98	18	0.52	51.60	52.15	52.16	52.62	54.17	55.79	P-6
6	5	33.00	0.08	0.08	0.96	0.08	0.08	5.0	5.0	9.8	0.76	8.86	2.88	18	0.61	52.35	52.55	52.65	52.87	55.79	55.84	P-7
7	3	54.00	0.11	0.92	0.96	0.11	0.88	5.0	7.5	9.0	7.98	8.48	5.45	18	0.56	50.80	51.10	51.96	52.26	54.59	54.72	P-8
8	7	110.00	0.07	0.25	0.96	0.07	0.24	5.0	6.1	9.5	2.27	8.04	1.43	18	0.50	51.30	51.85	52.95	52.99	54.72	56.04	P-9
9	8	63.00	0.18	0.18	0.96	0.17	0.17	5.0	5.0	9.8	1.70	7.85	2.38	18	0.48	52.05	52.35	53.04	52.84	56.04	55.46	P-10
10	4	64.00	0.21	0.21	0.55	0.12	0.12	5.0	5.0	9.8	1.14	7.79	2.45	18	0.47	51.60	51.90	52.16	52.30	54.17	54.09	P-11
11	7	59.00	0.56	0.56	0.96	0.54	0.54	5.0	5.0	9.8	5.29	8.11	3.00	18	0.51	51.30	51.60	52.95	53.07	54.72	54.81	P-12
12	2	31.00	0.12	0.12	0.90	0.11	0.11	5.0	5.0	9.8	1.06	18.84	1.86	18	2.74	50.05	50.90	51.17	51.28	54.13	54.09	P-14
13	2	27.00	0.14	0.14	0.89	0.12	0.12	5.0	5.0	9.8	1.23	20.18	1.98	18	3.15	50.05	50.90	51.17	51.31	54.13	54.58	P-13
14	1	31.00	0.11	0.11	0.77	0.08	0.08	5.0	5.0	9.8	0.83	17.09	0.50	18	2.26	49.40	50.10	51.37	51.37	53.24	53.30	P-16
15	1	28.00	0.12	0.12	0.78	0.09	0.09	5.0	5.0	9.8	0.92	17.99	0.55	18	2.50	49.40	50.10	51.37	51.37	53.24	53.30	P-15
16	End	42.00	0.36	0.36	0.92	0.33	0.33	5.0	292.2	1.2	0.40	8.60	0.23	18	0.57	48.66	48.90	51.17	51.17	50.37	52.99	P-R3
17	16	115.00	0.00	0.00	0.00	0.00	0.00	5.0	122.8	0.0	0.02	8.22	0.01	18	0.52	49.05	49.65	51.17	51.17	52.99	53.88	P-R4
18	17	20.00	0.00	0.00	0.00	0.00	0.00	5.0	63.9	0.0	0.01	8.04	0.01	18	0.50	49.85	49.95	51.17	51.17	53.88	53.00	P-R5
19	18	20.00	0.00	0.00	0.00	0.00	0.00	5.0	5.0	0.0	0.01	8.04	0.01	18	0.50	50.15	50.25	51.17	51.17	53.00	53.64	P-R6
20	End	15.00	0.00	0.00	0.00	0.00	0.00	5.0	88.9	0.0	0.02	9.29	0.04	18	0.67	48.80	48.90	49.39	49.39	52.98	53.15	P-20
21	20	19.00	0.00	0.00	0.00	0.00	0.00	5.0	61.0	0.0	0.02	8.25	0.30	18	0.53	49.20	49.30	49.39	49.39	53.15	53.43	P-22
22	21	19.00	0.00	0.00	0.00	0.00	0.00	5.0	5.0	0.0	0.01	8.25	0.78	18	0.53	49.50	49.60	49.54	49.64	53.43	53.29	P-21

Project File: 100 Yr.stm

Number of lines: 46

Run Date: 12/2/2021

NOTES: Intensity = 127.16 / (Inlet time + 17.80) ^ 0.82; Return period = Yrs. 100 ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station		Len (ft)	Drng Area		Rnoff coeff (C)	Area x C		Tc		Rain (l) (in/hr)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
23	End	28.00	0.00	0.82	0.00	0.00	0.79	5.0	5.1	9.8	7.72	8.33	5.40	18	0.54	48.80	48.95	49.92	50.09	52.82	52.45	P-23
24	23	16.00	0.00	0.82	0.00	0.00	0.79	5.0	5.1	9.8	7.72	8.99	5.47	18	0.62	49.15	49.25	50.31	50.33	52.45	52.61	P-24
25	24	15.00	0.82	0.82	0.96	0.79	0.79	5.0	5.0	9.8	7.74	9.29	5.79	18	0.67	49.45	49.55	50.50	50.63	52.61	52.39	P-25
26	End	24.00	0.09	0.62	0.80	0.07	0.58	5.0	5.8	9.6	5.51	12.72	3.37	18	1.25	48.80	49.10	50.30	50.31	54.03	54.44	P-17
27	26	127.00	0.53	0.53	0.95	0.50	0.50	5.0	5.0	9.8	4.95	14.10	3.91	18	1.54	49.30	51.25	50.59	52.11	54.44	56.53	P-18
28	End	23.00	0.00	0.76	0.00	0.00	0.68	5.0	180.4	1.7	1.15	9.19	0.67	18	0.65	45.95	46.10	47.45	47.45	52.00	51.88	P-34
29	28	23.00	0.20	0.76	0.92	0.18	0.68	5.0	180.3	1.7	1.15	9.19	1.91	18	0.65	46.30	46.45	47.46	46.85	51.88	51.23	P-35
30	29	118.00	0.05	0.56	0.96	0.05	0.49	5.0	179.5	1.7	0.85	8.11	2.88	18	0.51	46.65	47.25	46.98	47.59	51.23	51.86	P-36
31	30	107.00	0.15	0.51	0.91	0.14	0.44	5.0	178.8	1.7	0.77	8.16	2.81	18	0.51	47.35	47.90	47.66	48.23	51.86	51.78	P-37
32	31	73.00	0.00	0.00	0.00	0.00	0.00	5.0	71.3	0.0	0.02	8.42	0.67	18	0.55	48.10	48.50	48.23	48.55	51.78	52.00	P-38
33	32	15.00	0.00	0.00	0.00	0.00	0.00	5.0	49.2	0.0	0.02	9.29	1.03	18	0.67	48.80	48.90	48.85	48.95	52.00	52.31	P-39
34	33	15.00	0.00	0.00	0.00	0.00	0.00	5.0	5.0	0.0	0.01	9.29	0.85	18	0.67	49.10	49.20	49.14	49.24	52.31	52.00	P-40
35	31	23.00	0.26	0.36	0.84	0.22	0.31	5.0	13.6	7.6	2.32	9.19	4.02	18	0.65	48.10	48.25	48.61	48.83	51.78	52.25	P-R1
36	35	257.00	0.10	0.10	0.89	0.09	0.09	5.0	5.0	9.8	0.88	9.65	2.67	18	0.72	48.45	50.30	48.83	50.65	52.25	54.55	P-R2
37	End	190.00	0.08	0.16	0.96	0.08	0.15	5.0	7.3	9.1	1.40	8.04	2.12	18	0.50	47.55	48.50	48.61	48.94	52.12	54.31	P-42
38	37	59.00	0.08	0.08	0.96	0.08	0.08	5.0	5.0	9.8	0.76	8.11	2.79	18	0.51	48.70	49.00	49.01	49.32	54.31	53.10	P-43
39	End	18.61	0.00	0.00	0.00	0.00	0.00	5.0	5.8	0.0	17.15	22.00	7.28	24	0.81	47.00	47.15	48.33	48.64	49.25	51.49	P-B1
40	39	99.32	0.00	0.00	0.00	0.00	0.00	5.0	5.4	0.0	6.45	8.84	4.63	18	0.60	47.35	47.95	48.64	48.93	51.49	51.77	P-102
41	40	84.84	0.00	0.00	0.00	0.00	0.00	5.0	5.0	0.0	6.45	8.38	5.22	18	0.54	48.05	48.51	49.04	49.50	51.77	51.46	P-A1
42	End	19.00	0.10	0.17	0.82	0.08	0.14	5.0	11.3	8.0	1.14	8.25	0.66	18	0.53	47.70	47.80	49.20	49.20	52.70	51.91	P-51
43	42	127.00	0.07	0.07	0.86	0.06	0.06	5.0	5.0	9.8	0.59	16.28	1.46	18	2.05	48.00	50.60	49.21	50.88	51.91	54.77	P-52
44	End	39.00	0.17	0.17	0.92	0.16	0.16	5.0	5.0	9.8	1.54	21.01	5.11	18	3.41	47.00	48.33	47.27	48.80	52.24	52.15	P-45

Project File: 100 Yr.stm

Number of lines: 46

Run Date: 12/2/2021

NOTES: Intensity = 127.16 / (Inlet time + 17.80) ^ 0.82; Return period = Yrs. 100 ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station		Len (ft)	Drng Area		Rnoff coeff (C)	Area x C		Tc		Rain (l) (in/hr)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
45	End	9.00	0.18	0.18	0.96	0.17	0.17	5.0	5.0	9.8	1.70	25.44	0.96	18	5.00	45.95	46.40	48.50	48.50	51.88	51.80	P-32
46	End	9.00	0.23	0.23	0.87	0.20	0.20	5.0	5.0	9.8	1.97	25.44	1.31	18	5.00	45.95	46.40	47.45	47.44	50.97	50.86	P-30

Project File: 100 Yr.stm

Number of lines: 46

Run Date: 12/2/2021

NOTES: Intensity = 127.16 / (Inlet time + 17.80) ^ 0.82; Return period = Yrs. 100 ; c = cir e = ellip b = box

Inlet Report

Line No	Inlet ID	Q = CIA (cfs)	Q carry (cfs)	Q capt (cfs)	Q Byp (cfs)	Junc Type	Curb Inlet		Grate Inlet			Gutter						Inlet			By Line No	
							Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)		Depr (in)
1	S-2	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
2	S-3	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
3	S-4	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
4	S-5	1.63	0.16	1.79	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.036	0.036	0.000	0.19	5.22	0.19	5.22	0.0	Off
5	S-6	0.92	0.00	0.76	0.16	Comb	6.0	7.04	0.00	8.04	2.25	0.006	1.00	0.010	0.010	0.012	0.11	10.65	0.06	5.55	0.0	4
6	S-7	0.76	0.00	0.64	0.11	Comb	6.0	7.04	0.00	8.04	2.25	0.005	1.00	0.010	0.010	0.012	0.10	10.23	0.05	4.99	0.0	10
7	S-8	1.04	0.00	1.04	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.015	0.015	0.000	0.13	8.38	0.13	8.38	0.0	Off
8	S-9	0.66	0.00	0.66	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.000	0.09	9.25	0.09	9.25	0.0	Off
9	S-10	1.70	0.00	1.70	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.000	0.17	16.91	0.17	16.91	0.0	Off
10	S-11	1.14	0.11	1.25	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.050	0.050	0.000	0.16	3.17	0.16	3.17	0.0	Off
11	S-12	5.29	0.00	5.29	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.015	0.015	0.000	0.36	23.82	0.36	23.82	0.0	Off
12	S-14	1.06	0.00	1.06	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.000	0.13	12.50	0.13	12.50	0.0	Off
13	S-13	1.23	0.00	1.23	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.000	0.14	13.70	0.14	13.70	0.0	Off
14	S-16	0.83	0.00	0.83	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.000	0.11	10.71	0.11	10.71	0.0	Off
15	S-15	0.92	0.00	0.92	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.000	0.11	11.41	0.11	11.41	0.0	Off
16	R-3	3.26	0.00	3.26	0.00	Comb	6.0	8.04	9.54	8.04	2.25	Sag	1.00	0.015	0.015	0.000	0.20	13.55	0.20	13.55	0.0	Off
17	R-4	0.01*	0.00	0.01	0.00	Grate	0.0	0.00	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.000	0.01	1.07	0.01	1.07	0.0	Off
18	R-5	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
19	R-6	0.01*	0.00	0.01	0.00	Grate	0.0	0.00	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.000	0.01	1.07	0.01	1.07	0.0	Off
20	S-22	0.00	0.00	0.00	0.00	Grate	0.0	0.00	9.05	4.02	2.25	Sag	1.00	0.050	0.020	0.000	0.00	0.00	0.00	0.00	0.0	Off
21	S-20	0.01*	0.00	0.00	0.01	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
22	S-21	0.01*	0.00	0.01	0.00	Grate	0.0	0.00	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.000	0.01	1.07	0.01	1.07	0.0	Off
23	S-23	0.01*	0.00	0.01	0.00	Grate	0.0	0.00	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.000	0.01	1.07	0.01	1.07	0.0	Off

Project File: 100 Yr.stm

Number of lines: 46

Run Date: 12/2/2021

NOTES: Inlet N-Values = 0.016; Intensity = 127.16 / (Inlet time + 17.80) ^ 0.82; Return period = 100 Yrs. ; * Indicates Known Q added. All curb inlets are Horiz throat.

Inlet Report

Line No	Inlet ID	Q = CIA (cfs)	Q carry (cfs)	Q capt (cfs)	Q Byp (cfs)	Junc Type	Curb Inlet		Grate Inlet			Gutter						Inlet			By Line No	
							Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)		Depr (in)
24	S-24	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
25	S-25	7.74	0.00	7.74	0.00	Grate	0.0	0.00	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.000	0.46	46.20	0.46	46.20	0.0	Off
26	S-17	0.71	0.00	0.71	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.033	0.033	0.000	0.11	3.28	0.11	3.28	0.0	Off
27	S-18	4.95	0.00	4.95	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.000	0.34	33.98	0.34	33.98	0.0	Off
28	S-34	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
29	S-35	1.81	0.00	1.81	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.034	0.034	0.000	0.19	5.54	0.19	5.54	0.0	Off
30	S-36	0.47	0.00	0.47	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.000	0.07	7.49	0.07	7.49	0.0	Off
31	S-37	1.34	0.00	1.34	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.000	0.15	14.53	0.15	14.53	0.0	Off
32	S-39	0.00	0.00	0.00	0.00	Comb	6.0	4.02	9.05	4.02	2.25	Sag	1.00	0.050	0.020	0.000	0.00	0.00	0.00	0.00	0.0	Off
33	S-38	0.01*	0.00	0.00	0.01	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
34	S-40	0.01*	0.00	0.01	0.00	Grate	0.0	0.00	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.000	0.01	1.07	0.01	1.07	0.0	Off
35	R-1	2.15	0.00	1.78	0.37	Comb	6.0	2.69	0.00	4.02	2.25	0.026	1.00	0.100	0.100	0.012	0.26	2.64	0.14	1.37	0.0	Off
36	R-2	0.88	0.00	0.65	0.22	Comb	6.0	2.69	0.00	4.02	2.25	0.005	1.00	0.027	0.027	0.012	0.16	5.81	0.09	3.49	0.0	Off
37	S-42	0.76	0.00	0.76	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.000	0.10	10.06	0.10	10.06	0.0	Off
38	S-43	0.76	0.00	0.76	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.010	0.010	0.000	0.10	10.06	0.10	10.06	0.0	Off
39	S-B1	10.70*	0.00	0.00	10.70	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
40	S-102	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
41	S-A1	6.45*	0.00	0.00	6.45	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
42	S-51	0.81	0.00	0.81	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.015	0.015	0.000	0.11	7.16	0.11	7.16	0.0	Off
43	S-52	0.59	0.00	0.59	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.019	0.190	0.000	0.09	1.38	0.09	1.38	0.0	Off
44	S-45	1.54	0.00	1.54	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.009	0.009	0.000	0.16	17.57	0.16	17.57	0.0	Off
45	S-32	1.70	0.00	1.70	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.014	0.014	0.000	0.17	12.22	0.17	12.22	0.0	Off
46	S-30	1.97	0.00	1.97	0.00	Comb	6.0	4.02	7.54	4.02	2.25	Sag	1.00	0.011	0.011	0.000	0.19	16.95	0.19	16.95	0.0	Off

Project File: 100 Yr.stm

Number of lines: 46

Run Date: 12/2/2021

NOTES: Inlet N-Values = 0.016; Intensity = 127.16 / (Inlet time + 17.80) ^ 0.82; Return period = 100 Yrs. ; * Indicates Known Q added. All curb inlets are Horiz throat.

Hydraulic Grade Line Computations

Line	Size (in)	Q (cfs)	Downstream								Len (ft)	Upstream								Check		JL coeff (K)	Minor loss (ft)
			Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)		Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)	Ave Sf (%)	Enrgy loss (ft)		
1	24	14.87	48.80	50.80	2.00	3.14	4.73	0.35	51.15	0.368	65.00	49.20	50.98	1.78	2.95	5.04	0.39	51.37	0.328	0.348	0.226	0.99	0.39
2	24	13.48	49.40	51.37	1.97	2.20	4.30	0.58	51.95	0.000	87.00	49.85	51.17	1.32**	2.20	6.13	0.58	51.75	0.000	0.000	n/a	1.00	n/a
3	24	11.61	50.05	51.23	1.18*	1.93	6.02	0.52	51.75	0.000	86.00	50.50	51.72	1.22**	2.01	5.77	0.52	52.24	0.000	0.000	n/a	1.00	0.52
4	18	3.99	51.00	51.75	0.75*	0.88	4.54	0.30	52.05	0.000	80.00	51.40	52.16	0.76**	0.90	4.41	0.30	52.47	0.000	0.000	n/a	1.50	n/a
5	18	1.60	51.60	52.16	0.56	0.48	2.64	0.17	52.34	0.000	105.00	52.15	52.62 j	0.47**	0.48	3.33	0.17	52.80	0.000	0.000	n/a	1.48	n/a
6	18	0.76	52.35	52.65	0.30*	0.25	3.06	0.11	52.76	0.000	33.00	52.55	52.87	0.32**	0.28	2.71	0.11	52.99	0.000	0.000	n/a	1.00	n/a
7	18	7.98	50.80	51.96	1.16*	1.46	5.46	0.46	52.42	0.555	54.00	51.10	52.26	1.16	1.46	5.45	0.46	52.72	0.554	0.555	0.300	1.50	0.69
8	18	2.27	51.30	52.95	1.50	1.77	1.29	0.03	52.98	0.040	110.00	51.85	52.99	1.14	1.44	1.58	0.04	53.03	0.047	0.043	0.048	1.50	0.06
9	18	1.70	52.05	53.04	0.99	0.50	1.37	0.18	53.22	0.000	63.00	52.35	52.84	0.49**	0.50	3.39	0.18	53.02	0.000	0.000	n/a	1.00	n/a
10	18	1.14	51.60	52.16	0.56	0.38	1.87	0.14	52.31	0.000	64.00	51.90	52.30 j	0.40**	0.38	3.02	0.14	52.44	0.000	0.000	n/a	1.00	n/a
11	18	5.29	51.30	52.95	1.50	1.77	2.99	0.14	53.09	0.216	59.00	51.60	53.07	1.47	1.76	3.01	0.14	53.21	0.194	0.205	0.121	1.00	0.14
12	18	1.06	50.05	51.17	1.12	0.36	0.75	0.14	51.31	0.000	31.00	50.90	51.28 j	0.38**	0.36	2.97	0.14	51.42	0.000	0.000	n/a	1.00	0.14
13	18	1.23	50.05	51.17	1.12	0.40	0.87	0.15	51.32	0.000	27.00	50.90	51.31 j	0.41**	0.40	3.09	0.15	51.46	0.000	0.000	n/a	1.00	n/a
14	18	0.83	49.40	51.37	1.50	1.77	0.47	0.00	51.37	0.005	31.00	50.10	51.37	1.27	1.60	0.52	0.00	51.37	0.005	0.005	0.002	1.00	0.00
15	18	0.92	49.40	51.37	1.50	1.77	0.52	0.00	51.37	0.007	28.00	50.10	51.37	1.27	1.60	0.58	0.01	51.38	0.006	0.006	0.002	1.00	0.01
16	18	0.40	48.66	51.17	1.50	1.77	0.23	0.00	51.17	0.001	42.00	48.90	51.17	1.50	1.77	0.23	0.00	51.17	0.001	0.001	0.001	1.48	0.00
17	18	0.02	49.05	51.17	1.50	1.77	0.01	0.00	51.17	0.000	115.00	49.65	51.17	1.50	1.77	0.01	0.00	51.17	0.000	0.000	0.000	1.50	0.00
18	18	0.01	49.85	51.17	1.32	1.65	0.01	0.00	51.17	0.000	20.00	49.95	51.17	1.22	1.54	0.01	0.00	51.17	0.000	0.000	0.000	1.00	0.00
19	18	0.01	50.15	51.17	1.02	1.28	0.01	0.00	51.17	0.000	20.00	50.25	51.17	0.92	1.14	0.01	0.00	51.17	0.000	0.000	0.000	1.00	0.00
20	18	0.02	48.80	49.39	0.59	0.65	0.03	0.00	49.39	0.000	15.00	48.90	49.39	0.49	0.50	0.04	0.00	49.39	0.000	0.000	0.000	0.50	0.00
21	18	0.02	49.20	49.39	0.19	0.13	0.15	0.00	49.39	0.003	19.00	49.30	49.39	0.09	0.05	0.44	0.00	49.40	0.054	0.028	0.005	1.00	0.00
22	18	0.01	49.50	49.54	0.04*	0.01	0.79	0.01	49.55	0.524	19.00	49.60	49.64	0.04**	0.01	0.77	0.01	49.65	0.498	0.511	0.097	1.00	0.01

Project File: 100 Yr.stm

Number of lines: 46

Run Date: 12/2/2021

Notes: * Normal depth assumed; ** Critical depth.; j-Line contains hyd. jump ; c = cir e = ellip b = box

Hydraulic Grade Line Computations

Line	Size (in)	Q (cfs)	Downstream								Len (ft)	Upstream								Check		JL coeff (K)	Minor loss (ft)
			Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)		Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)	Ave Sf (%)	Enrgy loss (ft)		
23	18	7.72	48.80	49.92	1.12	1.42	5.45	0.46	50.38	0.559	28.00	48.95	50.09	1.14	1.44	5.35	0.45	50.54	0.536	0.547	0.153	0.50	0.22
24	18	7.72	49.15	50.31	1.16	1.36	5.25	0.50	50.82	0.000	16.00	49.25	50.33	1.08**	1.36	5.70	0.50	50.83	0.000	0.000	n/a	1.00	0.50
25	18	7.74	49.45	50.50	1.05*	1.32	5.88	0.51	51.00	0.000	15.00	49.55	50.63	1.08**	1.36	5.70	0.51	51.13	0.000	0.000	n/a	1.00	0.51
26	18	5.51	48.80	50.30	1.50*	1.77	3.12	0.15	50.45	0.235	24.00	49.10	50.31	1.21	1.52	3.62	0.20	50.51	0.243	0.239	0.057	1.38	0.28
27	18	4.95	49.30	50.59	1.29	1.04	3.07	0.35	50.94	0.000	127.00	51.25	52.11 j	0.86**	1.04	4.76	0.35	52.46	0.000	0.000	n/a	1.00	0.35
28	18	1.15	45.95	47.45	1.50*	1.77	0.65	0.01	47.46	0.010	23.00	46.10	47.45	1.35	1.68	0.69	0.01	47.46	0.009	0.010	0.002	1.00	0.01
29	18	1.15	46.30	47.46	1.16	0.38	0.79	0.14	47.60	0.000	23.00	46.45	46.85	0.40**	0.38	3.04	0.14	46.99	0.000	0.000	n/a	1.50	n/a
30	18	0.85	46.65	46.98	0.33*	0.29	2.97	0.12	47.10	0.000	118.00	47.25	47.59	0.34**	0.30	2.79	0.12	47.71	0.000	0.000	n/a	0.50	n/a
31	18	0.77	47.35	47.66	0.31*	0.27	2.90	0.11	47.78	0.000	107.00	47.90	48.23	0.33**	0.28	2.72	0.11	48.34	0.000	0.000	n/a	1.55	n/a
32	18	0.02	48.10	48.23	0.13	0.02	0.28	0.00	48.23	0.015	73.00	48.50	48.55	0.05**	0.02	1.06	0.02	48.57	0.667	0.341	n/a	0.72	0.01
33	18	0.02	48.80	48.85	0.05*	0.02	1.05	0.02	48.87	0.660	15.00	48.90	48.95	0.05**	0.02	1.02	0.02	48.97	0.596	0.628	0.094	0.95	0.02
34	18	0.01	49.10	49.14	0.04*	0.01	0.85	0.01	49.15	0.666	15.00	49.20	49.24	0.04**	0.01	0.85	0.01	49.25	0.648	0.657	0.099	1.00	0.01
35	18	2.32	48.10	48.61	0.51*	0.54	4.33	0.21	48.83	0.000	23.00	48.25	48.83	0.58**	0.62	3.72	0.21	49.04	0.000	0.000	n/a	1.46	0.31
36	18	0.88	48.45	48.83	0.38	0.31	2.52	0.12	48.95	0.000	257.00	50.30	50.65 j	0.35**	0.31	2.82	0.12	50.77	0.000	0.000	n/a	1.00	0.12
37	18	1.40	47.55	48.61	1.06	0.44	1.05	0.16	48.77	0.000	190.00	48.50	48.94 j	0.44**	0.44	3.20	0.16	49.10	0.000	0.000	n/a	1.50	n/a
38	18	0.76	48.70	49.01	0.31*	0.26	2.87	0.11	49.12	0.000	59.00	49.00	49.32	0.32**	0.28	2.71	0.11	49.44	0.000	0.000	n/a	1.00	n/a
39	24	17.15	47.00	48.33	1.33	2.22	7.73	0.72	49.05	0.000	18.61	47.15	48.64	1.49**	2.51	6.83	0.72	49.37	0.000	0.000	n/a	1.00	0.72
40	18	6.45	47.35	48.64	1.29	1.23	3.99	0.43	49.07	0.000	99.32	47.95	48.93	0.98**	1.23	5.26	0.43	49.36	0.000	0.000	n/a	0.92	n/a
41	18	6.45	48.05	49.04	0.99*	1.23	5.23	0.42	49.46	0.542	84.84	48.51	49.50	0.99**	1.24	5.22	0.42	49.92	0.540	0.541	0.459	1.00	0.42
42	18	1.14	47.70	49.20	1.50*	1.77	0.65	0.01	49.21	0.010	19.00	47.80	49.20	1.40	1.72	0.67	0.01	49.21	0.009	0.009	0.002	1.48	0.01
43	18	0.59	48.00	49.21	1.21	0.23	0.39	0.10	49.31	0.000	127.00	50.60	50.88 j	0.28**	0.23	2.53	0.10	50.98	0.000	0.000	n/a	1.00	0.10
44	18	1.54	47.00	47.27	0.27*	0.22	6.93	0.17	47.44	0.000	39.00	48.33	48.80	0.47**	0.47	3.30	0.17	48.96	0.000	0.000	n/a	1.00	0.17

Project File: 100 Yr.stm

Number of lines: 46

Run Date: 12/2/2021

Notes: * Normal depth assumed; ** Critical depth.; j-Line contains hyd. jump ; c = cir e = ellip b = box

Hydraulic Grade Line Computations

Line	Size (in)	Q (cfs)	Downstream								Len (ft)	Upstream								Check		JL coeff (K)	Minor loss (ft)
			Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)		Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)	Ave Sf (%)	Enrgy loss (ft)		
45	18	1.70	45.95	48.50	1.50	1.77	0.96	0.01	48.51	0.022	9.00	46.40	48.50	1.50	1.77	0.96	0.01	48.52	0.022	0.022	0.002	1.00	0.01
46	18	1.97	45.95	47.45	1.50*	1.77	1.11	0.02	47.47	0.030	9.00	46.40	47.44	1.04	1.31	1.51	0.04	47.47	0.044	0.037	0.003	1.00	0.04

Project File: 100 Yr.stm

Number of lines: 46

Run Date: 12/2/2021

Notes: * Normal depth assumed; ** Critical depth.; j-Line contains hyd. jump ; c = cir e = ellip b = box

Appendix I | Permanent Erosion and Sediment Control BMPs

STANDARD E&S WORKSHEET #21
Temporary and Permanent Vegetative Stabilization Specifications

PROJECT NAME: 401/433 WASHINGTON STREET APARTMENTS
 LOCATION: MONTGOMERY COUNTY, PA
 PREPARED BY: MD DATE: 3/8/2021
 CHECKED BY: _____ DATE: _____

SPECIFICATIONS: The Department recommends the use of the Penn State publication, "Erosion Control and Conservation Plantings on Noncropland," as the standard to use for the selection of species, seed specifications, mixtures, liming and fertilizing, time of seeding, and seeding methods. Specifications for these items may also be obtained from PennDOT's Publication # 408, Section 804 or by contacting the applicable county conservation district. Upon selection of a reference, that reference should be used to provide all specifications for seeding, mulching, and soil amendments. The following specification will be used for this project:

(TEMPORARY) *SPECIES: PENNDOT FORMULA E
 % PURE LIVE SEED: 95 %
 APPLICATION RATE: 10 LB./1000 SQ. YD
 FERTILIZER TYPE: N/A (10-10-10)
 FERTILIZER APPL. RATE: N/A LB./ACRE
 LIMING RATE: N/A T./ACRE
 MULCH TYPE: HAY
 MULCHING RATE: 3 T./ACRE
 SEEDING SEASON DATES: MARCH 15 - OCTOBER 15

(PERMANENT) TOPSOIL PLACEMENT DEPTH: 4 IN.
 *SPECIES: PENNDOT FORMULA B
 % PURE LIVE SEED: 97 %
 APPLICATION RATE: 44 LB./1000 SQ. YD
 FERTILIZER TYPE: COMMERCIAL (10-20-20)
 FERTILIZER APPL. RATE: 678 LB./ACRE
 LIMING RATE: 2 T./ACRE
 MULCH TYPE: STRAW
 MULCHING RATE: 3 T./ACRE
 ANCHOR MATERIAL: WOOD FIBER
 ANCHORING METHOD: MULCH BINDER
 RATE OF ANCHOR MATERIAL APPL.: 775 LB./ACRE
 SEEDING SEASON DATES: MARCH 15 - JUNE 1 & AUGUST 1 - OCTOBER 15

(PERMANENT-STEEP SLOPES) TOPSOIL PLACEMENT DEPTH: 4 IN.
 *SPECIES: PENNDOT FORMULA L
 % PURE LIVE SEED: 97 %
 APPLICATION RATE: 48 LB./1000 SQ. YD
 FERTILIZER TYPE: COMMERCIAL (10-20-20)
 FERTILIZER APPL. RATE: 678 LB./ACRE
 LIMING RATE: 2 T./ACRE
 MULCH TYPE: STRAW
 MULCHING RATE: 3 T./ACRE
 ANCHOR MATERIAL: WOOD FIBER
 ANCHORING METHOD: MULCH BINDER
 RATE OF ANCHOR MATERIAL APPL.: 775 LB./ACRE
 SEEDING SEASON DATES: MARCH 15 - JUNE 1 & AUGUST 1 - OCTOBER 15

***If more than one species is used, indicate application rate for each species.**
Note: This worksheet should be added to the plan drawings.

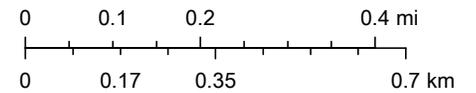
Appendix J | Karst Features & Sinkhole Maps

Karst Map



11/30/2021

1:18,056



National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA,

Appendix K | Geotechnical Report

TEST BORING LOG B-4/IT-4



Engineers
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Project Information
Project Name: 401-403 Wahsington Avenue
Project Location: Conshohocken, PA
Project Number: 14000908A

Depth (ft)	Sample Number	Standard Penetration Test Results				"N" Value (bpf)	Visual Description / Comments	Elev. (ft)
		0-6"	6-12"	12-18"	18-24"			
0	S - 1	1	2	3	2	5	5 ft Topsoil	51.5
	0' - 2'	Sample Recovery =				8		
	S - 2	2	3	2	2	5	3.5 ft Loose dark brown silty fine to coarse SAND, little gravel, trace clay.	
	2' - 4'	Sample Recovery =				16		
	S - 3	6	4	2	2	6	(Urban Fill)	
	4' - 6'	Sample Recovery =				20	6.5 ft Loose brown and black fine to medium sandy SILT, trace(+) clay with root material.	
	S - 4	2	2	3	5	5	(Organic Silt)	
	6' - 8'	Sample Recovery =				18	8 ft Medium brown SILT and CLAY, little fine to medium sand, trace fine to medium gravel with root/plant material	
10							(Organic Silt)	41.5
							End of boring at 8 feet.	
20								31.5
30								21.5
40								11.5

Location Information	Elevation (ft):	51.5
	Latitude:	
	Longitude:	
	Comments:	
Groundwater Data (ft)	Encountered (ft):	6.33
	Elevation (ft):	45.17
	At Completion (ft):	
	Time = 2 hrs (ft):	
	ESHWT (ft):	

General Information	Maser Representative:	GJL
	Project Manager:	P. Gauffreau
	Contractor:	F. M. & W. Drilling
	Driller:	Kevin Ryan
	Drilling Equipment:	Truck Mounted Drill Rig
	Drilling Method:	Hollow Stem Auger
	Sampling Method:	2-inch O.D. Split Spoon
	Date Started:	May 23, 2014
	Date Completed:	May 23, 2014

Comments:

TEST BORING LOG B-5/IT-5



Engineers
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Project Information
Project Name: 401-403 Wahsington Avenue
Project Location: Conshohocken, PA
Project Number: 14000908A

Depth (ft)	Sample Number	Standard Penetration Test Results				"N" Value (bpf)	Visual Description / Comments	Elev. (ft)
		0-6"	6-12"	12-18"	18-24"			
0	S - 1	4	4	7	8	11	2 ft Topsoil	51.5
	0' - 2'	Sample Recovery =				10		
	S - 2	7	9	6	5	15	4 ft Medium compact dark brown/black fine to coarse sandy GRAVEL, trace to little silt. Slag/Brick debris. (Urban Fill)	
	2' - 4'	Sample Recovery =				8		
	S - 3	3	2	2	3	4	* auger grinding 1.5 - 3.5 ft	
	4' - 6'	Sample Recovery =				12		
	S - 4	1	1	3	7	4	6 ft Loose dark brown moist to wet silty fine to coarse SAND, trace to little gravel, trace to little clay with plant/root material. (Burried Topsoil)	
	6' - 8'	Sample Recovery =				18		
	S - 5	16	5	5	5	10	7.5 ft Soft moist brown silty CLAY, trace fine sand, trace fine to medium gravel. (Alluvial Soil)	
10	8' - 10'	Sample Recovery =				24		
	S - 6	5	22	50/2		72/8	10.5 ft Loose moist to wet brown fine to coarse sandy GRAVEL, trace to little silt. (Alluvial Soil)	41.5
	10' - 12'	Sample Recovery =				24		
							11.2 ft Very compact wet brown fine to coarse sandy GRAVEL, trace to little silt. (Alluvial Soil)	
							End of boring at 11.2 feet.	
20								31.5
30								21.5
40								11.5

Location Information	Elevation (ft):	51.5	General Information	Maser Representative:	GJL
	Latitude:			Project Manager:	P. Gauffreau
	Longitude:			Contractor:	F. M. & W. Drilling
	Comments:			Driller:	Kevin Ryan
Groundwater Data (ft)	Encountered (ft):	4.75		Drilling Equipment:	Truck Mounted Drill Rig
	Elevation (ft):	46.75		Drilling Method:	Hollow Stem Auger
	At Completion (ft):			Sampling Method:	2-inch O.D. Split Spoon
	Time = 2 hrs (ft):			Date Started:	May 23, 2014
	ESHWT (ft):			Date Completed:	May 23, 2014

Comments:

TEST BORING LOG B-6/IT-6



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Project Information
Project Name: 401-403 Wahsington Avenue
Project Location: Conshohocken, PA
Project Number: 14000908A

Depth (ft)	Sample Number	Standard Penetration Test Results				"N" Value (bpf)	Visual Description / Comments	Elev. (ft)
		0-6"	6-12"	12-18"	18-24"			
0	S - 1	3	5	7	7	12	.25 ft Topsoil	51.5
	0' - 2'	Sample Recovery =				10		
	S - 2	3	3	2	3	5	Loose to medium compact moist dark brown/black gravelly fine to coarse SAND, little silt. Brick, concrete and coal/slag debris.	
	2' - 4'	Sample Recovery =				6		
	S - 3	1	1	1	2	2	Occasional Layers of sandy silt. (Urban Fill)	
	4' - 6'	Sample Recovery =				4		
	S - 4	1	1	2	2	3	Loose moist black and brown silty fine to coarse SAND, trace to little fine gravel, trace clay with plant material. (Fill/Organics)	
	6' - 8'	Sample Recovery =				22		
	S - 5	2	3	20	30	23	Soft moist silty CLAY, trace fine sand. (Alluvial Soil)	
10	8' - 10'	Sample Recovery =				24	10 ft Compact moist brown gravelly fine to coarse SAND, trace to little silt (Alluvial Soil)	41.5
							End of boring at 10 feet.	
20								31.5
30								21.5
40								11.5

Location Information	Elevation (ft):	51.5
	Latitude:	
	Longitude:	
	Comments:	
Groundwater Data (ft)	Encountered (ft):	4.5
	Elevation (ft):	46.9
	At Completion (ft):	
	Time = 2 hrs (ft):	
	ESHWT (ft):	

General Information	Maser Representative:	GJL
	Project Manager:	P. Gauffreau
	Contractor:	F. M. & W. Drilling
	Driller:	Kevin Ryan
	Drilling Equipment:	Truck Mounted Drill Rig
	Drilling Method:	Hollow Stem Auger
	Sampling Method:	2-inch O.D. Split Spoon
	Date Started:	May 23, 2014
	Date Completed:	May 23, 2014

Comments:

TEST BORING LOG B-7/IT-7



Engineers
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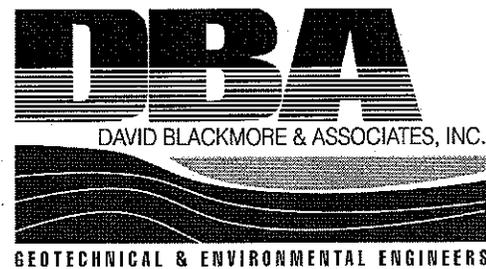
Project Information
Project Name: 401-403 Wahsington Avenue
Project Location: Conshohocken, PA
Project Number: 14000908A

Depth (ft)	Sample Number	Standard Penetration Test Results				"N" Value (bpf)	Visual Description / Comments	Elev. (ft)
		0-6"	6-12"	12-18"	18-24"			
0	S - 1	1	2	3	3	5	Topsoil	53.5
	0' - 2'	Sample Recovery =				12		
	S - 2	11	10	7	5	17	Loose to Medium compact moist black silty fine to medium SAND, trace to little gravel.	
	2' - 4'	Sample Recovery =				20		
	S - 3	3	3	2	1	5		
	4' - 6'	Sample Recovery =				20	Loose moist black fine to medium sandy SILT, little clay. (Alluvial Soil)	
	S - 4	1	1	1	2	2		
	6' - 8'	Sample Recovery =				24		
	S - 5	1	1	2	5	3	Soft moist to wet brown fine to medium SAND and CLAY, little silt, trace gravel.	
	8' - 10'	Sample Recovery =				24		
10	S - 6	2	3	2	2	5	Loose wet brown silty fine to coarse(-) SAND, little to trace clay, trace gravel. (Alluvial Soil)	43.5
	10' - 12'	Sample Recovery =				24		
	S - 7	4	9	16	18	25	Medium compact wet brown fine to coarse sandy GRAVEL, trace silt. (Alluvial Soil)	
	12' - 14'	Sample Recovery =				18		
							End of boring at 14 feet.	
20								33.5
30								23.5
40								13.5

Location Information	Elevation (ft):	53.5	General Information	Maser Representative:	GJL
	Latitude:			Project Manager:	P. Gauffreau
	Longitude:			Contractor:	F. M. & W. Drilling
	Comments:			Driller:	Kevin Ryan
Groundwater Data (ft)	Encountered (ft):	6		Drilling Equipment:	Truck Mounted Drill Rig
	Elevation (ft):	47.5		Drilling Method:	Hollow Stem Auger
	At Completion (ft):			Sampling Method:	2-inch O.D. Split Spoon
	Time = 2 hrs (ft):			Date Started:	May 22, 2014
	ESHWT (ft):			Date Completed:	May 22, 2014

Comments:

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REPORT OF
GEOTECHNICAL EXPLORATION

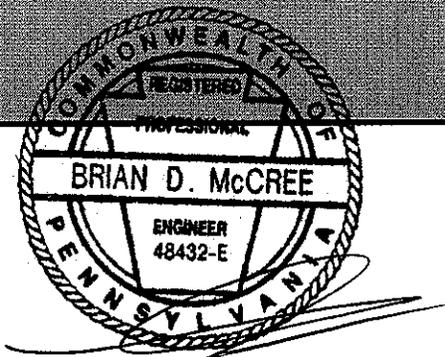
PROPOSED RESIDENCE STRUCTURES
401 AND 433 WASHINGTON STREET PARCELS
CONSHOHOCKEN BOROUGH, MONTGOMERY COUNTY, PA

PREPARED FOR

O'NEILL PROPERTIES GROUP
2701 RENAISSANCE BOULDEVARD
4TH FLOOR
KING OF PRUSSIA, PA 19406

PROJECT 4287G1R1
MAY 28, 2013

DAVID BLACKMORE AND ASSOCIATES, INC.
3535 WEST RIDGE PIKE
POTTSTOWN, PENNSYLVANIA 19464
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APPENDIX

GENERAL CONSTRUCTION GUIDELINES FOR CARBONATE GEOLOGY

SOIL PARTICLE SIZE ANALYSIS RESULTS

SOIL PLASTIC AND LIQUID LIMIT TEST RESULTS

TEST BORING LOGS

BORING LOCATION PLAN

EXECUTIVE SUMMARY

Purpose

This exploration was completed to evaluate the subsurface conditions and their effect upon the proposed site development. This exploration focused on the proposed multi-unit residential structures and related paved parking and driveway facilities located on the southeastern corner of Washington and Cherry Streets in Conshohocken Borough, Montgomery County, PA.

Scope

A total of forty-six (46) borings were completed at the subject site. The test borings were drilled to depths of up to approximately 48 feet or to auger refusal on schist and/or limestone bedrock within the proposed footprints of the four (4) proposed structures. The test locations were determined and field located using a parking plan prepared by Niles Bolton Associates numbered A2.01, dated September 16, 2008. Site design was underway during the implementation of our exploration. Therefore, final site design may vary from the preliminary design used to complete this exploration. A copy of the plan used for our exploration which has been annotated with our test boring locations is included in the appendix of this report.

Findings

The pertinent findings of the exploration of the subject site include the following:

- Existing miscellaneous fill
- Enhanced subsurface weathering
- Evidence of potential sinkhole activity
- Compressible soil strata (organic silts)
- Shallow depths to groundwater

Existing miscellaneous fill consisting of a loose mixture of brown, orange brown and black fine sand and cinders with rock fragments and miscellaneous construction debris including brick, cinders/slag, boulders, and occasional concrete fragments (Stratum IMF) was encountered across the site. These materials extend to depths ranging from 3.3 feet to 12.3 feet below existing grade with an average depth of approximately 7.5 feet. The lowest elevation to which this fill stratum was encountered was 42.4 feet in boring B36, located at the northwest corner of Building 400. At the base of the fill stratum, an intermittent 0.75 to 3.50 foot-thick layer of black and gray **organic silt** was encountered. The existing fill is underlain by a soft to very soft layer of sandy clay. This stratum transitions to a dense sand and gravel layer (Stratum III). This stratum is underlain by either weathered limestone (Stratum IVA) or weathered schist (Stratum IVB). Loose to very loose conditions were encountered intermittently at the base of Stratum III, predominately in areas where it is underlain by weathered limestone. Additionally, the presence of enhanced weathering, evidenced by loose to voided zones, was encountered in portions of Stratum IVA. Both **limestone and schist bedrock** were encountered across the site. The contact between the two geologic formations is mapped as occurring at the south end of the subject site. The depth at which bedrock encountered ranges from 20.7 feet to over 48.0 feet below existing grade. The highest elevation at which bedrock was encountered was 31.6 feet at boring B3

located at the northeast corner of Building 100. **Groundwater** was encountered across the site at relatively shallow depths from existing grade. The groundwater table elevation is estimated to range from 45.9 feet to 48.9 feet. Based on regional topography and the direction of river flow the groundwater flow direction is likely in a southeasterly direction.

In addition the Geotechnical difficulties encountered during our investigation, the surface fill soils and native soils encountered at the groundwater interface (vadose zone) are suspected to have been environmentally impacted during the site's industrial use history. The determination of contamination level, extent, and impact to the proposed development is beyond the scope of our investigation. However, limiting the creation of spoils has factored into the determination of the most suitable foundation alternative for the subject property.

Recommendations

In order to overcome the site conditions encountered, several foundation support alternatives have been evaluated including deep dynamic compaction (DDC), auger cast-in-place piles, driven steel piles, drilled piers, and shallow foundation supported via improved subgrade. Considering the relatively lightly loaded structures proposed and the highly variable depths to suitable deep foundation bearing strata, the use of a shallow foundation supported on an improved subgrade is in DBA's opinion the most suitable alternative. For additional information, see Section 7.2 – Foundations.

As discussed above, zones of enhanced weathering characterized by loose and/or voided conditions were encountered intermittently within lower portions Stratum III (fine to medium sands with gravel) and upper portions of Stratum IVA (weathered limestone). In order to use one of these shallow foundation alternatives discussed above, the implementation of a compaction grouting program will be required in order to improve the strength within these portions of the subsurface profile. In order to better define the areas requiring compaction grout treatment DBA recommends implementing a geophysical survey consisting of Multiple Analysis of Surface Waves (MASW) across the proposed building footprint areas. This survey shall be targeted to defining areas of reduced soil stiffness at depths consistent with Strata III and IV. The results of this survey will assist in the development of a compaction grouting program including grouting depths, locations, cutoff pressure and grout mix requirements. This survey could also potentially be used to obtain site specific shear velocity data for verifying seismic site class.

Additionally, it shall be noted that the subject site is underlain by a carbonate geologic formation which is subject to dissolution activity and the subsequent development of karst features, subsoil erosion, and the formation of sinkholes. Disturbance and/or alteration of the existing site drainage patterns may result in an increase in subsoil erosion and sinkhole formation. This risk is considered to be limited due to the presence of a relatively shallow groundwater table which limits the downward movement of stormwater runoff and subsequent sinkhole development. However, DBA has included guidelines for minimizing the risk of

sinkhole development during construction in the appendix of this report. These guidelines are entitled "Construction Guidelines for Carbonate Geology."

1. INTRODUCTION

David Blackmore and Associates, Inc. (DBA) has completed the geotechnical exploration of the subject site in accordance with our Proposal 4287G1P1, dated June 19, 2012. This exploration was completed to evaluate the existing subsurface conditions and their effect upon the proposed site development. Specifically, DBA has provided recommendations regarding the following:

- Foundation support of the structure and slabs, including soil bearing pressures, bearing elevations, foundation design recommendations and anticipated settlement for shallow foundations,
- Subgrade improvement alternatives for the implementation of a shallow foundation system,
- Depth to and management of groundwater for design of structures and pavements, if encountered
- Relative elevations of surface and subsurface features,
- Fill and compaction criteria,
- Pavements and floor slabs,
- Lateral earth pressures for retaining walls, and
- General Geotechnical related construction procedures.

The following section (2. PROPOSED CONSTRUCTION) summarizes the information available to DBA regarding the proposed site development. This report has been prepared based on the proposed construction. Changes to the proposed construction may require alterations to this report or additional investigative work. DBA should be notified of significant changes to the proposed construction.

2. PROPOSED CONSTRUCTION

The proposed construction consists of four (4) residential structures to be used for a combination of townhomes, condominiums and apartments. Buildings 100 and 300 are located at the north end of the site and are to consist of five (5) stories. The footprint area of each of these buildings is approximately 38,000 SF. Buildings 200 and 400 are located at the south half of the site and are to consist of four (4) stories. The footprint area of each of these buildings is approximately 43,700 SF. The

buildings are to consist of wood frame supported on an elevated deck, with on-grade parking beneath the deck. The parking elevation of Buildings 100, 200, and 300 is proposed to be 55.0 feet; the parking elevation of Building 400 is proposed to be 54.5 feet. Anticipated maximum column loads are not available at this time. However, based on the proposed construction the maximum anticipated column loads are estimated to be in the range of 250 kips. This loading has been used to develop the recommendations included herein. DBA shall be notified of any significant increase to column loads.

3. GEOTECHNICAL EXPLORATION

A total of forty-six (46) borings were completed at the subject site. The test borings were drilled to depths of up to approximately 48 feet or to auger refusal on schist or limestone bedrock within the proposed footprints of the four (4) proposed structures.

The test locations were located in the field by DBA personnel using a Parking Plan prepared by Niles Bolton Associates numbered A2.01, dated September 16, 2008. The test borings were drilled by our subcontractor, **The Corcoran Drilling Company**, under the direction of DBA personnel.

All test boring logs and a test boring location plan are included in the appendix of this report.

4. GEOTECHNICAL BACKGROUND

4.1 SITE DESCRIPTION

The subject site is located on the southeast corner of the intersection of Washington and Cherry Streets in Conshohocken Borough and Whitemarsh Township, Montgomery County, Pennsylvania. The parcel is bounded to the south by the Schuylkill River, to the West by the Millennium Residential development, and to the east by existing industrialized development.

An abandoned industrial warehouse building takes up a majority of the northeastern quadrant of the parcel. The building is a single story steel framed structure that is scheduled for demolition. The bulk of the western half of the parcel formerly contained an industrial building that was demolished within the past 10 years as development of the neighboring properties was completed. Two (2) large stock piles of crushed concrete material, presumably from the demolition of this structure, are stored at the center of the subject site. The asphalt of the paved parking area of the former structure remains in place, covering a majority of the northwestern quadrant of the site. The southernmost portion of the site is covered with stone, scattered brush, and woodland. The property has a history of industrial use which in turn has left the surface of the development area covered with miscellaneous construction/demolition related debris fill.

A photocopy of the USGS Topographical Map, Norristown Quadrangle, indicating the site is included as Figure I.

4.2 GEOLOGY

Available geological sources indicate the site is underlain by the oligoclase-mica schist of the Wissahickon Formation and the impure limestone and dolomite of the Conestoga Formation. These formations can be described as follows:

Conestoga Formation (OCc): This formation consists of a medium gray, impure limestone having black, graphitic shale partings. This formation includes micaceous limestone, phyllite and alternating limestone and dolomite. The total thickness is unknown but is at least 300 feet thick. This formation is variably weathered (impure layers weather to a higher relief) resulting in large irregularly shaped limestone fragments and extensive variation in rock surface. The interface between soil and bedrock is characterized by pinnacles in most places.

Wissahickon Formation, oligoclase-mica schist (Xw): This formation consists mainly of quartz feldspar and muscovite and is excessively

micaceous. It is moderately resistant to weathering and is often highly weathered to moderate depths.

The contact between these formations is mapped in a southwest – northeast direction crossing the southern end of the site. Test drilling confirms the presence of both formations beneath the site with extensive intermingling being discovered.

A photocopy of the USGS Geological Map of the Norristown Quadrangle indicating the site is included as Figure II.

4.3 SOILS

Soil records indicate the site soils are of the Madeland Series, schist and gneiss materials. The specific on-site variation is described below:

Madeland, Schist and Gneiss Materials (MdB): This land type is the result of altering and mixing soils formed in material weathered from schist and gneiss. Earthmoving during development has removed or altered the characteristics of the original soils to the extent that classification and description of soil properties is not practical.

A photocopy of the soil mapping created using the National Cooperative Soil Survey website developed by the USDA's Natural Resources Conservation Service indicating the site is included as Figure III.

5. LABORATORY TESTING

Representative soil samples taken during the field exploration were tested in DBA's laboratory for basic engineering properties. The laboratory testing consisted of classification of soil samples for engineering purposes. The laboratory testing included Particle Size Analysis (ASTM D442), Plastic and Liquid Limits (ASTM D4318), and Natural Moisture Content (ASTM D2216). The Unified Soil Classification System (USCS) was used to assign group symbols and group names to the soils tested.

A summary of the test results is provided in Table I. A photocopy of the particle size analysis results and the plastic and liquid limit analysis results are included in the appendix of this report.

6. SUBSURFACE CONDITIONS

The results of the drilling program, with the exception of the variable depth to bedrock, revealed a fairly consistent subsurface profile. The following strata, beneath 8 to 10 inches of asphalt and/or modified stone or 2 to 6 inches of topsoil, can describe a typical soil profile.

- Stratum IMF:** 1.0' to 10.0' thick; MISCELLANEOUS FILL consisting of a mixture of brown, orange brown and black fine sand and cinders with rock fragments and miscellaneous debris including brick, cinders/slag, boulders, and occasional concrete fragments. This stratum is considered to be variable in density with SPR¹ values ranging from 1 B/F to 16 B/F. This stratum was encountered in each boring completed.
- Organic Silt:** 0.75' to 3.50' thick; Black and gray organic silt. This stratum was encountered at the base of the fill stratum in borings B15, B25, B26, B27 through B30, B32 through B36, B38, B39, and B43. Laboratory testing of representative samples of this organic silt resulted in organic contents ranging from 1.40 to 23.43 percent.
- Stratum II:** 0.5' to 7.75' thick; Brown, orange brown, and reddish brown sandy lean clay with some rock fragments. This stratum is considered to be very soft to stiff with SPR values ranging from 1 B/F to 41 B/F. The average SPR value is 8.4 B/F. This stratum was encountered in borings B2 through B10, B13 through B19, B21 through B25, B27 through B35, B37, B39 through B43, B45 and B46.
- Stratum III:** 0.6' to 38.8' thick; Brown and orange brown fine to medium sand with rock fragments, pebbles and occasional boulders. Localized deposits of increased silt content were encountered at the base of this stratum. This stratum is considered to be generally very dense with localized loose zones encountered within the lower portion of this stratum, particularly where it is underlain by weathered limestone (Stratum IVA). SPR values of this Stratum range from 1 B/F to 50 blows per 1" of penetration. The average SPR value for this stratum is 36.3 B/F. This stratum was encountered in each of the test borings completed.

¹ SPR = is the Standard Penetration Resistance or number of blows required of a 140 pound hammer dropping 30", to drive a 2" OD split spoon sampler one foot.

Stratum IVA: 0.58' to 25.0' thick; Variegated weathered and decomposed limestone consisting of tan and brown fine sand and silt with limestone fragments. This stratum is generally dense to very dense; however, soft/loose zones were encountered within the upper portion of this stratum which is indicative of enhanced weathering and/or dissolution activity. SPR values of this Stratum range from 1 blow per 24 inches of penetration to 50 blows with no penetration. The enhanced weathered zones were noted in borings B11, B21, B22, B23, B25, and B26. The average SPR value for this stratum is 43.2 B/F. This stratum was encountered in 20 of the 46 borings completed. Refer to the test boring location plan for the delineation of area in which this stratum was encountered.

Stratum IVB: 0.25' to 19.5' thick; Orange brown, brown, and gray weathered schist. This stratum is considered to be moderately dense to very dense with SPR values ranging from 13 B/F to 50 blows per inch of penetration. This stratum was encountered in 21 of the 46 borings completed. Refer to the test boring location plan for delineation of the area in which this stratum was encountered.

Bedrock: Both schist and limestone bedrock were encountered with the proposed development area. The depth to bedrock is highly variable with depths to bedrock ranging from 20.7 feet to over 48.8 feet below existing grade. Note: historical test drilling in this vicinity has indicated bedrock depths of over 100 feet are possible. For additional information regarding depths at which bedrock was encountered and relative elevations, see Table IIA -Approximate Rock and Fill Elevations.

Groundwater²: Groundwater was encountered in each boring completed across the site at depths ranging from 4.2' to 9.3' below existing grade. The groundwater table elevation is estimated to range from 45.9 feet to 48.9 feet. Based on regional topography and the direction of river flow the groundwater flow direction is anticipated to be in a southeasterly direction.

7. GEOTECHNICAL ANALYSIS AND RECOMMENDATIONS

The results of our exploration indicate the presence of the following subsurface conditions:

- Existing miscellaneous fill
- Enhanced subsurface weathering
- Evidence of potential sinkhole activity
- Compressible soil strata (organic silt)
- Shallow depths to groundwater

² The groundwater information provided is based on conditions encountered during the drilling program. Seasonal fluctuations in the groundwater table are to be expected.

Existing miscellaneous fill consisting of a loose mixture of brown, orange brown and black fine sand and cinders with rock fragments and miscellaneous debris including brick, cinders/slag, boulders, and occasional concrete fragments (Stratum IMF) was encountered across the site. These materials extend to depths ranging from 3.3 feet to 12.3 feet below existing grade with an average depth of approximately 7.5 feet. The lowest elevation to which this fill stratum was encountered was 42.4 feet in boring B36, located at the northwest corner of Building 400. At the base of the fill stratum an intermittent 0.75 to 3.50 foot-thick layer of black and gray **organic silt** was encountered. Laboratory testing of representative samples of this organic silt resulted in organic contents ranging from 1.40 to 23.43 percent. This material is underlain by a layer of soft to very soft sandy clay (Stratum II). This stratum transitions to a dense sand and gravel layer (Stratum III). This stratum is underlain by either weathered limestone (Stratum IVA) or weathered schist (Stratum IVB). Loose to very loose conditions were encountered intermittently at the base of Stratum III, predominately in areas where it is underlain by weathered limestone. Additionally, the presence of enhanced weathering, evidenced by loose to voided zones, was encountered in portions of Stratum IVA. See Table III for the location and depths at which this soft condition was encountered. It appears that these conditions were encountered most notably at the contact between the two geologic formations underlying the site.

Both **limestone and schist bedrock** were encountered across the site. The contact between the two geologic formations is generally at the south end of the subject site. The depth at which bedrock was encountered ranges from 20.7 feet to over 48.0 feet below existing grade. The highest elevation at which bedrock was encountered was 31.6 feet at boring B3, located at the northeast corner of Building 100. **Groundwater** was encountered across the site at depths ranging from 45.9 feet to 48.9 feet.

The existing fill soils and organic silt (Stratum IMF) and portions of the clayey silt (Stratum II) are considered to be inadequate for foundation and/or slab support. In order to overcome the site conditions encountered, several foundation support alternatives have been evaluated, including deep dynamic compaction (DDC), deep foundation alternatives, and shallow foundations supported on an improved subgrade via soil replacement operation or the use of rammed aggregate piers. Considering the relatively lightly loaded structures proposed, the highly variable depths to suitable deep foundation bearing strata, and the presence of high groundwater, the use of a shallow foundation supported on an improved subgrade is in DBA's opinion the most suitable alternative. See Section 7.2 – Foundations for additional information.

As discussed above, zones of enhanced weathering characterized by loose and/or voided conditions were encountered intermittently within the lower portion of Stratum III and upper portion of Stratum IV. In order to use a shallow foundation system on an improved subgrade via soil replacement or the use of rammed aggregate piers, the implementation of a compaction grouting program will be required in order to improve the strength within these portions of the soil profile. Ten (10) of the forty-six (46) borings completed encountered zones of enhanced subsurface weathering. These locations roughly coincide with the contacts between the weathered limestone stratum and the weathered schist stratum. In order to better define the areas requiring compaction grout treatment DBA recommends implementing a geophysical survey consisting of Multiple Analysis of Surface Waves (MASW) across the proposed building footprint areas. This survey shall be targeted to defining areas of reduced soil stiffness at depths consistent with Strata III and IV. The results of this survey will assist in the development of a compaction grouting program including grouting depths, locations, cutoff pressure, and grout

mix requirements. This survey could also potentially be used to obtain site specific shear velocity data for verifying seismic site class (see Section 7.2.3).

In addition to the geotechnical difficulties encountered during our investigation, the surface fill soils and native soils encountered at the groundwater interface (vadose zone) are suspected to have been environmentally impacted during the site's industrial use history. The determination of contamination level, extent, and impact to the proposed development is beyond the scope of our investigation. However, limitation of the creation of spoils has factored into the determination of the most suitable foundation alternative for the subject property.

It shall be noted that the subject site is underlain by a carbonate geologic formation which is subject to dissolution activity and the subsequent development of karst features, subsoil erosion, and the formation of sinkholes. Disturbance and/or alteration of the existing site drainage patterns may result in an increase in subsoil erosion and sinkhole formation. This risk is considered to be limited due to the presence of a relatively shallow groundwater table which limits the downward movement of surface infiltration and subsequent sinkhole development. However, DBA has included guidelines entitled "Construction Guidelines for Carbonate Geology" for minimizing the risk of sinkhole development during construction in the appendix of this report.

7.1 SITE PREPARATION

All deleterious materials including topsoil, root mass, trees and vegetation, asphalt and other materials determined in the field by the Geotechnical Engineer to be unsuitable shall be removed from all structural areas (buildings, pavements, and walkways) prior to placement of *structural fill*.

Recycling of the asphalt of the former paved parking areas and underlying stone can be accomplished on site if the asphalt is milled to a maximum 1 inch particle size and the material is used in the upper fill zones of pavement areas

only. This fill is not suitable for other structural areas. Recycling of concrete foundations and slabs of the existing warehouse structure can also be accomplished on-site if the concrete is adequately crushed. Note: although not encountered in test drilling, it is unknown whether the foundations of the demolished building on the west portion of the site were removed during the demolition process. Therefore, these obstructions may be encountered during construction, and shall be removed from beneath the proposed building footprints. On-site crushing shall be completed until the nominal maximum size of 1 inch is achieved. Such material may be used as *structural fill* provided it meets the criteria set forth in Section 7.6 - Fill and Compaction Criteria. It is essential that only concrete material be used as structural fill as mixture with other demolition debris such as clay brick and wood will render the crushed concrete unsuitable for use as structural fill.

7.1.1 COMPACTION GROUTING

In order to use one of the shallow foundation alternatives provided below (soil replacement or rammed aggregate piers), compaction grouting will be required in order to improve the strength of portions in the lower zones of Stratum III (fine to medium sands with gravel) and portions of the upper zone of Stratum IVA (weathered limestone). As discussed above, zones of enhanced weathering characterized by loose and/or voided conditions were encountered within borings B5, B6, B11, B13, B16, B27, B20, B25, B26, B40, and B41. See Table III for information to the depths and elevations at which these conditions were encountered at each boring location. These locations roughly coincide with the contacts between the weathered limestone stratum and the weathered schist stratum. In order to better define the areas requiring compaction grout treatment DBA recommends implementing a geophysical survey consisting of Multiple Analysis of Surface Waves (MASW)

across the proposed building footprint areas. This survey shall be targeted to defining areas of reduced soil stiffness at depths consistent with Strata III and IV. The results of this survey will assist in the development of a compaction grouting program including grouting depths, locations, cutoff pressure, and grout mix requirements.

7.2 FOUNDATIONS

Once the compaction grouting program described in Section 7.1.1 is complete, a shallow foundation system can be used for support of the proposed structures, provided that the existing miscellaneous fill and organic soils beneath the foundation are improved or replaced. The replacement alternative involves excavating and replacing Stratum IMF and soft portions of Stratum II. This alternate can be completed by any experienced excavator using standard equipment. The improvement alternative involves the use of a series of Rammed Aggregate Piers. Rammed Aggregate Piers are 30 to 36 inch diameter compacted stone piers that are backfilled with stone compacted in lifts using the ramming action of a modified hydraulic hammer installed on a standard trackhoe. Due to the reduced volume of generated spoils, Rammed Aggregate piers may be a cost effective alternate to soil replacement. Specific recommendations for both alternatives are provided in the following sections.

7.2.1 SHALLOW FOUNDATIONS VIA SOIL REPLACEMENT

All existing fill soils of Stratum IF and Stratum IMF, organic silts encountered below the existing fill, and any loose/soft soils of Stratum II are to be removed from beneath the proposed foundation areas and replaced with *structural fill* meeting the criteria provided in Section 7.6 – Fill and Compaction Criteria and/or flowable fill with a compressive strength between 50 and 250 psi. This replacement is to extend up to 2 times the width of the proposed foundation. Due to the shallow depth to groundwater,

portions of these excavations (particularly along the south end of the property) will likely extend below the groundwater surface. Therefore, these excavations must be completed in uniform sections not exceeding 10' in any direction. As each section is excavated, the exposed subgrade shall immediately be covered with a minimum of 18 inches of open graded 4" ballast (AASHTO #1) prior to beginning the subsequent section. Considering that these excavations are not anticipated to extend more than 1 to 2 feet below the groundwater table and provided these excavations are limited in size and that stone is placed immediately upon excavation the need for dewatering is expected to be limited. However, due to the relatively permeable condition of the underlying sand and gravel layer, Stratum III, dewatering of deeper excavations may be required. It is anticipated that such dewatering could be accomplished through the excavating and pumping from sump pits adjacent to the work area.

Once the foundation replacement procedure is completed, the building subgrade area is to be proofrolled using a heavy (minimum 15-ton) vibratory smooth drum roller to delineate soft areas which may require stabilization for slab support via removal and replacement.

The shallow foundation system shall be designed for a maximum soil bearing capacity of 4.0 KSF on *structural fill* and/or low strength flowable fill (maximum 250 psi compressive strength). All foundation bearing surfaces are to be evaluated by the Geotechnical Engineer and all loose and/or soft conditions are to be repaired to the satisfaction of the Geotechnical Engineer. Due to the presence of underlying carbonate geology across a majority of the site which is susceptible to sinkhole activity, it is recommended that the exterior perimeter foundations be designed as a soil supported grade beam

capable of temporarily spanning up to 15 feet of unsupported length to allow for the repair of potential bearing loss due to sinkhole formation.

If the column loads are to be revised during a re-design of the structure than the bearing capacity may have to be subsequently modified. DBA shall be notified of any signification changes in this regard.

Exterior foundation or foundations in unheated areas shall be provided a minimum of 36" compacted soil cover above the footing bottom for frost protection.

7.2.2 SHALLOW FOUNDATIONS VIA RAMMED AGGREGATE PIERS

Due to the nature of the existing miscellaneous fill material, it may be environmentally impacted.³ Therefore, alternatives to soil removal and replacement targeted to limiting the amount of spoils generated may be considered. The recommended alternative is the use of rammed aggregate piers to increase the strength of the existing fill material and underlying soft/organic silts and clays. The rammed aggregate pier subgrade improvement technique involves drilling 30 to 36 inch diameter holes through Stratum IF beneath the proposed shallow foundation system areas. At the base of these holes open graded clean stone (AASHTO #57) is placed and compacted in lifts not exceeding 12 inches (loose thickness) to stabilize the bottom and to create the bottom bulb. Subsequent stone lifts are to consist of modified stone (PADOT 2A) placed and compacted in lifts not exceeding 12 inches (loose thickness). Specific densification procedures and open graded stone base thickness, required to achieve bottom stabilization, are site specific and shall be determined through test installation and verified through modulus load testing. During production installation,

³ The determination of the environmental condition of this fill, extent, and the associated impact to the proposed development is beyond the scope of our exploration.

elements are to be installed using the procedure verified by modulus load testing to be adequate. In addition, bottom stabilization tests and dynamic cone penetrometer testing of stone shaft of selected Rammed Aggregate Piers is to be completed at the direction of the Geotechnical Engineer.

Considering that the proposed rammed aggregate pier bottom elevation may be at or below the groundwater surface at some locations, drilling shall not extend to full depth until stone is available for immediate placement into the pier hole. Open graded stone is to be used until the pier extends above the water table by at least 1 foot. If necessary, dewatering through pumping from adjacent sump pits may be required to install Geopier elements.

The existing fill material is generally in a loose condition and is subject to side collapse during drilling and stone compaction. Minor side collapse and associated stone contamination may be handled through removal and replacement at the direction of the Geotechnical Engineer. However, in the event of significant and continued side collapse the use of steel casing may be required. It is anticipated that such conditions can be evaluated during the test installation program so that the contractor can be prepared for conditions during production installation. As an alternative to the use of steel casing, a displacement technique (such as Impact Piers⁴) can be used to install the rammed aggregate piers. This alternative stone pier installation method would also further reduce the volume of generated spoils.

The individual Rammed Aggregate Pier elements as described above are expected to support 10 kips each⁵. The shallow foundation system shall be designed for a maximum allowable composite bearing pressure of 6.0 KSF on

⁴ Impact Piers are a proprietary method of stone pier installation developed by GeoStructures, Inc.

⁵ Actual support capacities as dictated by predicted settlement falling within acceptable range are to be determined during modulus load testing

Geopiers and improved matrix soils between Rammed Aggregate Pier provided the composite area consists of not less than 55% pier elements. All foundation bearing surfaces are to be evaluated by the Geotechnical Engineer and all loose and/or soft conditions are to be repaired to the satisfaction of the Geotechnical Engineer.

7.2.3 SEISMIC SITE COEFFICIENT

The site classification procedure for seismic design set forth in Chapter 20 of ASCE 7 was used in accordance with Section 1613.3.2 of the International Building Code (IBC 2012 edition) to determine the seismic class of the subject site. The existing soil profile and test drilling data indicates a classification of Site Class D, which shall be used in the design of the proposed structure for seismic load resistance.

An MASW survey, as described above in Section 7.1.1, could also potentially be used to obtain site specific shear velocity data for verifying seismic site class (see Section 7.2.3).

7.3 SLAB ON-GRADE

The on-grade parking elevations for Buildings 100, 200, and 300 are proposed to be 55.0 feet; the parking elevation for Building 400 is proposed to be 54.5 feet. Therefore, the placement of up to 4.5 feet of fill and cuts of up to 1.1 feet will be required to achieve parking grade elevation.

The existing fill material of Stratum IF and IMF material is anticipated to be suitable for slab support, provided it is densified through proofrolling via a heavy (minimum 15-ton static weight) smooth drum roller operation. Prior to the placement of any fill, the exposed slab subgrade areas shall be proofrolled to detect the presence of loose or soft zones. This proofrolling operation shall be performed under the supervision of the Geotechnical Engineer. Proofrolling of

the subgrade shall also be performed in any cut areas when the required grades have been achieved and immediately prior to pouring floor slabs. Loose or soft zones detected during the proofrolling operation shall be repaired to the satisfaction of the Geotechnical Engineer.

Based on the soil type encountered, standard penetration testing of the existing slab subgrade, and provided that all structural fill will be placed in accordance with the fill and compaction criteria set forth in Section 7.6, an estimated modulus of subgrade reaction of 150 psi/inch may be used for the design of slab sections. Should an increased modulus of subgrade reaction be required for the proposed design it is recommended that field or laboratory testing be completed to establish specific modulus values.

All slab subgrade areas shall be evaluated by the Geotechnical Engineer prior to pouring the slab so that repair can be completed. It is recommended that the slab be poured under roof during periods of harsh weather.

A smooth drum roller shall be made available to seal the subgrade in the event of predicted precipitation.

7.4 BACKFILL OF FOUNDATION AND UTILITY TRENCHES

All foundation and utility trenches shall be backfilled with *structural fill*, under the supervision of a Geotechnical Engineer (Refer to Section 7.6, Fill and Compaction Criteria). Utility trenches less than 10 feet deep will likely be within existing miscellaneous fill material which contains various obstructions including construction related debris associated with the historic industrial use of the property. Utilities installed at depths over 6 feet below existing grades will likely encounter groundwater. Due to these conditions, utility trench subgrade areas may require stabilization to provide necessary support for utility lines. It is recommended that utility trenches be evaluated by a Geotechnical Engineer prior to installing and backfilling utilities.

7.5 PAVEMENTS AND WALKWAYS

Pavement and sidewalk areas shall be prepared in a manner similar to the slab on-grade areas. A minimum of 8 inches of crushed aggregate base shall be used beneath exterior pavements due to the frost heave potential of the subgrade soils. The pavement subgrade shall be graded to drain water from beneath the pavement system to prevent ponding and subsequent pumping of silty subgrade soils.

For pavement design a preliminary estimated California Bearing Ratio (CBR) Value of 5.0 may be used for stabilized subgrade areas consisting of the existing fill soils of Strata IF and IMF or Structural fill selected and placed in accordance with the Section 7.6 of this report. Should anticipated heavy duty pavement requirements or other project conditions require final site specific CBR values DBA can complete field and/or laboratory CBR testing of proposed subgrade soils at the client's request.

7.6 FILL AND COMPACTION CRITERIA

Fill supporting slabs, pavements, and foundations is considered herein to be *structural fill*. *Structural fill* shall be placed on an approved, proofrolled, nonyielding, level subgrade, in lifts not exceeding 8 inches (loose thickness), unless otherwise directed by the Geotechnical Engineer. *Structural fill* shall be maintained nominally at *Optimum Moisture Content* (ASTM D-698) and uniformly compacted to the percentages of *Maximum Dry Density* (ASTM D-698) provided in Table III - Compaction Criteria.

Suitable *structural fill* shall consist of clean soils without deleterious inclusions. On-site soils identified as Stratum IMF (miscellaneous fill), including the organic material encountered at the base of the fill stratum, are not acceptable for use as structural fill, due to the miscellaneous content, potential contamination, and/or the saturated condition. The sands and gravels

of Stratum III, drier portions of Stratum II, and the weathered/decomposed rock of Stratum IVA and IVB would be suitable for use as *structural fill* if given the opportunity to dry. However, considering that these soils are below the groundwater table and are in a saturated condition, extensive aeration and drying would be required which is best accomplished in the summer months.

Borrow fill shall be clean well-graded soils with good strength characteristics with a maximum particle size of 3 inches and containing not more than 20% silt/clay (by weight). Samples of on-site or borrow sources of fill shall be submitted to the Geotechnical Engineer for testing at least 1 week before use on site. A minimum of 65 lbs. or two (2) five-gallon buckets is required for testing.

7.7 LATERAL EARTH PRESSURES - RETAINING WALLS

The retaining/loading dock walls of the structure, if proposed, should be designed for an at rest condition (K_0). The foundations and walls must be fully drained to relieve potential hydrostatic pressure. A foundation/wall drainage system is recommended. Soil backfill around the basement walls shall be well compacted and should consist of granular soils to prevent the trapping of water.

Retaining walls outside the structure which are free to rotate should be similarly designed except with an active earth pressure as opposed to K_0 condition. Soil parameters used to establish the effective fluid pressures (excluding hydrostatic loads) and some addition parameters which may be used in the design of a retaining wall system are summarized in the following table:

SOIL PROPERTIES FOR DETERMINATION OF LATERAL LOADS

Parameter	Stratum II	Stratum III
Angle of Internal Friction, ϕ	28 degrees	34 degrees
Moist unit weight, γ_m	120 pcf	128 pcf
Active Earth Pressure Coefficient, K_a	0.36	0.28
Passive Earth Pressure Coefficient, K_p	2.77	3.57
At Rest Earth Pressure Coefficient, K_o	0.53	0.43
Soil/Mass concrete interface friction Angle, δ	22 degrees	24 degrees

8. QUALITY CONTROL

This report was prepared to provide design criteria for the design team. DBA assumes that Geotechnical and Construction Quality Control Services will be provided in order to implement the recommendations provided herein and to identify unanticipated or changed conditions. The Geotechnical Engineer's representative should review the consistency and texture of the exposed soils with the conditions encountered by this exploration as described herein. Since localized loose and yielding subgrade conditions may be encountered between test locations, provisions for the undercutting and subsequent replacement of these materials should be anticipated in the construction documents. The environmental quality of the subgrade soils was not reviewed as part of this evaluation. All materials generated by grading and excavation shall be managed in accordance with regulatory requirements.

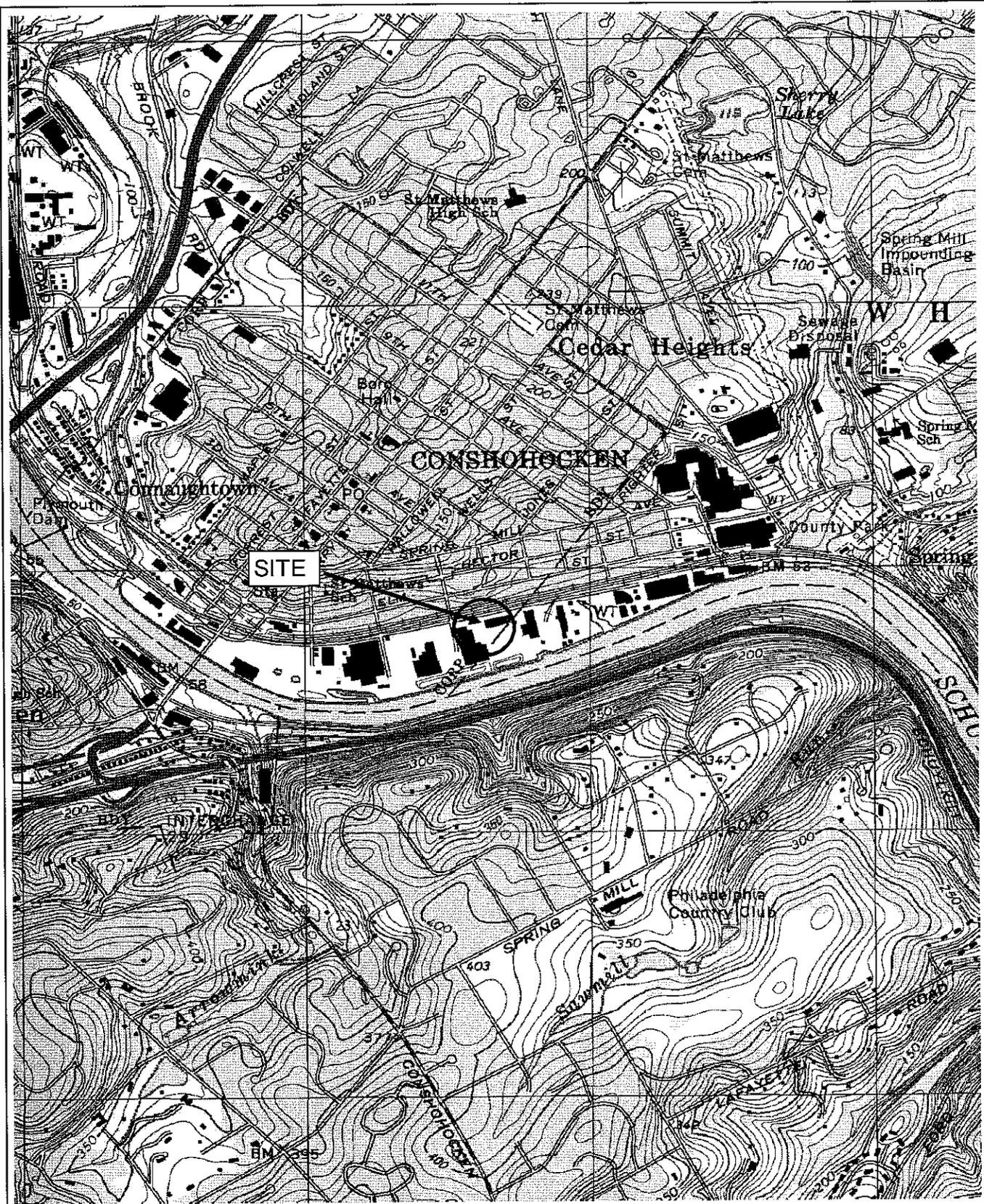
DBA can provide a contract for Geotechnical and Construction Quality Control Services (Special Inspections), as required. A pre-work meeting with the design professionals, contractors, and the Geotechnical Engineer is strongly recommended.

9. LIMITATIONS

Services performed by DBA, including the Geotechnical Exploration, report, and any subsequent construction monitoring have been or will be conducted in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions. No other warranty or guarantee is indicated or intended in this report or any opinion, document or otherwise stated.

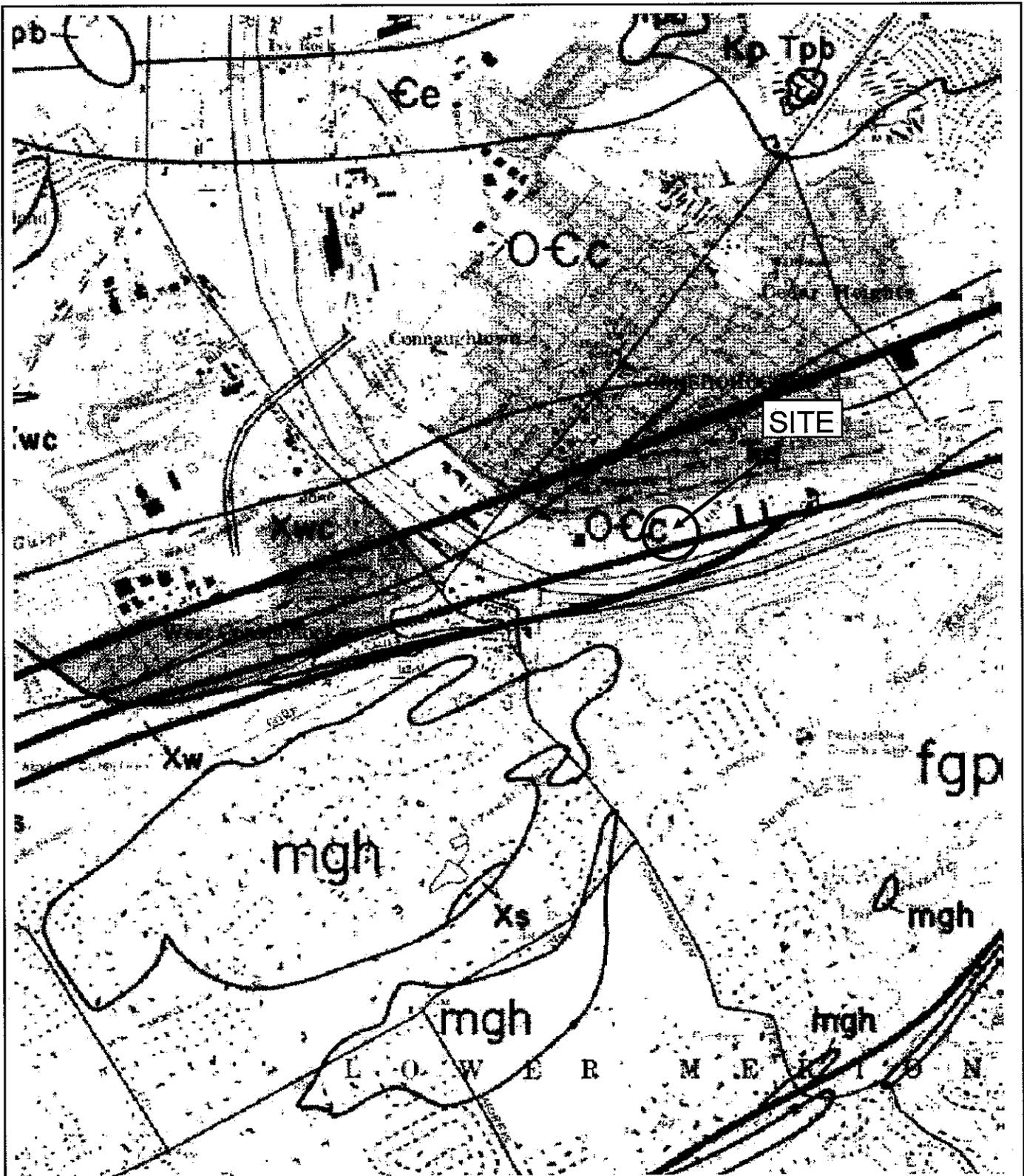
The recommendations included herein are based on the conditions encountered by the test borings performed at the subject site. It is noted that, although soil quality has been inferred from the interpolation of the site sampling data, subsurface conditions beyond the test borings are in fact, unknown. As a result, these recommendations may require modifications based on the conditions encountered and exposed during construction excavation. Should any conditions encountered during construction differ from those described in the report, this office should be notified immediately in order to review and possibly modify the recommendations included in this report.

FIGURES AND TABLES



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Project 4287G1
 Figure I
SITE LOCATION & TOPOGRAPHY
 U.S.G.S. 7.5 Minute Topographic Quadrangle
 Norristown Quadrangle



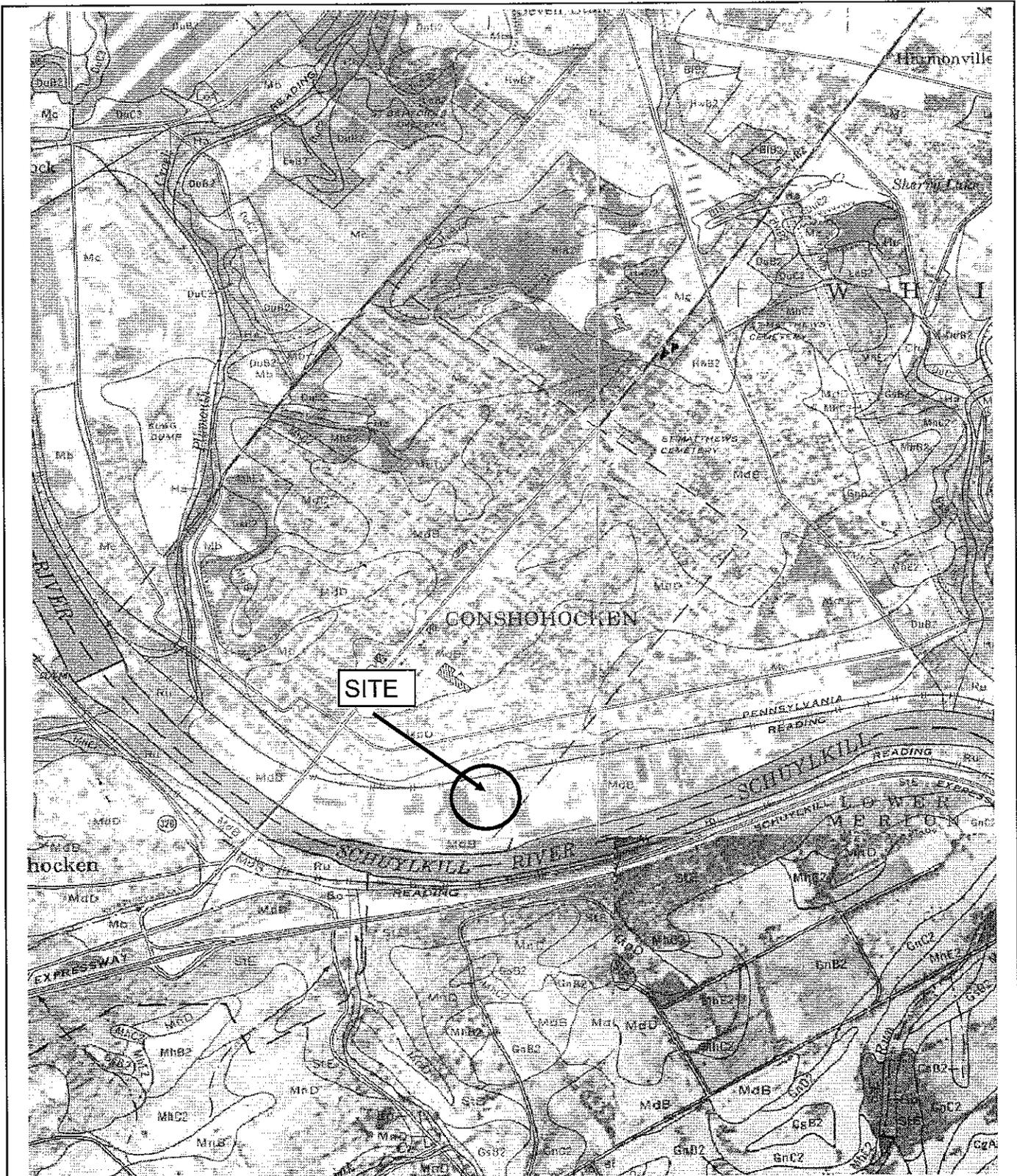
KEY

Xw - Wissahickon Formation, oligoclase-mica schist

Occ - Conestoga formation, impure limestone

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Project 4287G1
Figure II
SITE GEOLOGY
 USGS Geologic Quadrangle Maps of PA
 Norristown Quadrangle



KEY

MdB - Madeland Schist and Gneiss Materials

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Project 4287G1

**Figure III
 Soils**

Soil Survey for Montgomery County, PA
 Portions of Sheets 56, 60 and 61

**TABLE I
LABORATORY TEST RESULTS**

BORING #	B2	B6	B14	B15	B21	B21
SAMPLE #	S-4	S-8 S-9	S-4 S-5	S-5	S-2	S-11 S-12
DEPTH	8'-10'	20'-22' 22'-24'	8'-10' 10'-12'	10'-12'	4'-6'	34'-36' 36'-38'
STRATUM	II	III	III	II	II	IVA
NMC* (%)	12.8	16.7 7.9	19.6 11.4	21.2	17.1	21.9 23.0

* NMC = Natural Moisture Content

SOIL PARTICLE SIZE DISTRIBUTION

<u>SIEVE #</u>	<u>PERCENT PASSING BY WEIGHT</u>					
1 ½"	100.0	100.0	100.0	100.0	100.0	100.0
¾"	100.0	91.6	88.4	100.0	100.0	100.0
⅜"	86.6	74.4	83.7	100.0	100.0	100.0
4	77.1	59.5	80.6	100.0	99.5	94.9
10	64.5	45.5	76.8	99.1	97.7	86.1
40	50.0	19.0	70.6	94.4	89.2	71.0
100	41.5	8.1	36.5	71.9	51.1	53.8
200	36.1	5.7	27.1	60.1	40.5	38.6

ATTERBERG LIMIT ANALYSIS

LL*	29	N/A	N/A	35	25	N/A
PL*	19	N/A	N/A	18	16	N/A
PI*	10	N/A	N/A	17	9	N/A

* LL = Liquid Limit; PL = Plastic Limit; PI = Plasticity Index

USCS CLASSIFICATION

Eng. Class.	SC	SP-SM	SM	CL	SC	SM
Descr.	Orange brown clayey sand with gravel	Orange brown poorly graded sand w/ silt and gravel	Orange brown silty sand with gravel	Orange brown sandy lean clay	Reddish brown clayey sand	Brown silty sand

**TABLE I (CONT'D)
LABORATORY TEST RESULTS**

BORING #	B24	B25	B29	B35
SAMPLE #	S-9 S-10	S-6 S-7	S-9	S-4 S-5
DEPTH	25'-32'	12'-13'4" 15-15'11"	25'-27'	8'-10' 10'-12'
STRATUM	III	III	IVB	II
NMC* (%)	26.4 19.2	7.9 13.0	12.0	19.5 20.9

* NMC = Natural Moisture Content

SOIL PARTICLE SIZE DISTRIBUTION

<u>SIEVE #</u>	<u>PERCENT PASSING BY WEIGHT</u>			
1 1/2"	100.0	100.0	100.0	100.0
3/4"	100.0	100.0	100.0	100.0
3/8"	100.0	73.3	91.1	100.0
4	97.8	56.7	81.6	99.1
10	92.5	44.1	61.4	98.4
40	76.4	23.4	41.8	96.3
100	59.5	13.1	32.1	82.2
200	46.4	10.8	26.0	72.2

ATTERBERG LIMIT ANALYSIS

LL*	N/A	N/A	N/A	28
PL*	N/A	N/A	N/A	17
PI*	N/A	N/A	N/A	11

* LL = Liquid Limit; PL = Plastic Limit; PI = Plasticity Index

USCS CLASSIFICATION

Eng. Class.	SM	SP-SM	SM	CL
Descr.	Yellow brown silty sand	Reddish brown poorly graded sand w/ silt and gravel	Pale brown silty sand with gravel	Reddish brown lean clay with sand

**TABLE I (CONT'D)
LABORATORY TEST RESULTS**

BORING #	B15	B26	B33	B34	B38	B43
SAMPLE #	S-4	S-3	S-4	S-4	S-3	S-5
DEPTH	10'-11'9"	40'-42'	42'-44'	44'-46'	48'-50'	8'-10'
STRATUM	Organic Silt	Organic Silt	Organic Silt	Organic Silt	Organic Silt	Organic Silt
NMC* (%)	20.01	42.82	28.54	38.94	68.35	22.75
ORG** (%)	1.40	5.37	2.67	9.75	23.43	3.06

* NMC = Natural Moisture Content

** ORG = Organic Silt Content

**TABLE IIA
APPROXIMATE ROCK and FILL ELEVATIONS**

Boring Number	Surface Elevation	Depth to Bottom of Existing Fill	Bottom of Fill Elevation	Depth to Dense Weathered Rock ¹	Dense Weathered Rock Elevation	Depth to Bedrock ²	Bedrock Elevation
B1	53.8 feet	8.3 feet	45.5 feet	>38.0 feet	<15.8 feet	>38.0 feet	<15.8 feet
B2	53.0 feet	8.5 feet	44.5 feet	20.8 feet	32.3 feet	23.9 feet	29.1 feet
B3	53.9 feet	6.0 feet	47.9 feet	19.9 feet	34.0 feet	22.3 feet	31.6 feet
B4	53.7 feet	5.8 feet	47.9 feet	35.8 feet	17.8 feet	>35.8 feet	<17.8 feet
B5	54.7 feet	6.3 feet	48.4 feet	28.5 feet	26.2 feet	31.6 feet	23.2 feet
B6	55.6 feet	7.6 feet	48.0 feet	>37.0 feet	<18.6 feet	>37.0 feet	<18.6 feet
B7	54.0 feet	6.0 feet	48.0 feet	>37.0 feet	<17.0 feet	>37.0 feet	<17.0 feet
B8	54.7 feet	6.7 feet	48.0 feet	>37.0 feet	<17.7 feet	>37.0 feet	<17.7 feet
B9	54.8 feet	7.2 feet	47.6 feet	36.8 feet	18.0 feet	>36.8 feet	<18.0 feet
B10	55.8 feet	8.2 feet	47.6 feet	>37.0 feet	<18.8 feet	>37.0 feet	<18.8 feet
B11	55.7 feet	7.7 feet	48.0 feet	31.0 feet	24.7 feet	31.6 feet	24.1 feet
B12	53.3 feet	7.5 feet	48.2 feet	>37.0 feet	<18.7 feet	>37.0 feet	<18.7 feet
B13	53.5 feet	3.5 feet	50.0 feet	19.5 feet	34.0 feet	22.3 feet	31.1 feet
B14	53.1 feet	6.5 feet	46.6 feet	19.0 feet	31.7 feet	21.8 feet	31.7 feet
B15	52.4 feet	8.0 feet	44.4 feet	23.0 feet	29.4 feet	27.8 feet	24.6 feet
B16	52.6 feet	3.3 feet	49.3 feet	24.3 feet	28.3 feet	31.7 feet	20.9 feet
B17	52.2 feet	5.3 feet	46.9 feet	29.0 feet	23.2 feet	34.4 feet	17.8 feet
B18	53.0 feet	5.8 feet	47.2 feet	>37.0 feet	<16.0 feet	>37.0 feet	<16.0 feet
B19	51.8 feet	5.3 feet	46.5 feet	>37.0 feet	<14.8 feet	>37.0 feet	<14.8 feet
B20	51.7 feet	6.3 feet	45.4 feet	>37.0 feet	<14.7 feet	>37.0 feet	<14.7 feet
B21	50.6 feet	3.5 feet	47.1 feet	>44.0 feet	<6.6 feet	>44.0 feet	<6.6 feet
B22	52.4 feet	4.3 feet	48.1 feet	>36.0 feet	<16.4 feet	>36.0 feet	<16.4 feet
B23	52.0 feet	4.5 feet	47.5 feet	>36.0 feet	<16.0 feet	>36.0 feet	<16.0 feet
B24	56.3 feet	9.5 feet	46.8 feet	36.4 feet	19.9 feet	>36.4 feet	<19.9 feet
B25	55.3 feet	9.2 feet	46.1 feet	39.9 feet	15.4 feet	>39.9 feet	<15.4 feet
B26	53.0 feet	8.3 feet	44.7 feet	>45.0 feet	<8.0 feet	>45.0 feet	<8.0 feet
B27	55.8 feet	9.8 feet	46.0 feet	33.5 feet	22.3 feet	>35.1 feet	<20.7 feet

¹ As determined by drilling difficulty and Standard Penetration Resistance data.

² As determined by auger refusal.

**TABLE IIA (cont'd)
APPROXIMATE ROCK and FILL ELEVATIONS**

Boring Number	Surface Elevation	Depth to Bottom of Existing Fill	Bottom of Fill Elevation	Depth to Dense Weathered Rock ³	Dense Weathered Rock Elevation	Depth to Bedrock ⁴	Bedrock Elevation
B28	56.1 feet	12.3 feet	43.8 feet	25.5 feet	30.6 feet	32.7 feet	23.5 feet
B29	55.8 feet	10.6 feet	45.2 feet	31.0 feet	24.8 feet	>36.8 feet	<19.0 feet
B30	53.9 feet	9.4 feet	44.5 feet	18.0 feet	35.9 feet	>35.2 feet	<18.8 feet
B31	55.2 feet	10.0 feet	45.2 feet	29.5 feet	25.7 feet	31.4 feet	23.8 feet
B32	56.1 feet	12.3 feet	43.8 feet	20.3 feet	35.8 feet	26.5 feet	29.6 feet
B33	55.9 feet	7.0 feet	48.9 feet	21.5 feet	34.4 feet	>34.1 feet	<21.8 feet
B34	54.0 feet	9.5 feet	44.5 feet	22.0 feet	32.0 feet	>34.2 feet	<19.8 feet
B35	53.3 feet	8.5 feet	44.8 feet	22.5 feet	32.8 feet	>35.2 feet	<18.1 feet
B36	50.9 feet	8.2 feet	42.4 feet	27.0 feet	23.9 feet	29.2 feet	21.7 feet
B37	51.3 feet	4.0 feet	47.3 feet	19.3 feet	32.0 feet	20.7 feet	30.6 feet
B38	53.3 feet	8.3 feet	45.0 feet	31.5 feet	21.8 feet	33.7 feet	19.6 feet
B39	54.6 feet	7.3 feet	47.3 feet	>37.0 feet	<17.6 feet	>37.0 feet	<17.6 feet
B40	53.0 feet	6.3 feet	46.7 feet	48.8 feet	4.2 feet	>48.8 feet	<4.2 feet
B41	53.0 feet	9.5 feet	43.5 feet	>45.0 feet	<8.0 feet	>45.0 feet	<8.0 feet
B42	55.4 feet	10.3 feet	45.1 feet	23.0 feet	32.4 feet	28.2 feet	27.2 feet
B43	52.0 feet	7.8 feet	44.2 feet	19.5 feet	32.5 feet	23.2 feet	28.8 feet
B44	50.8 feet	7.3 feet	43.5 feet	17.0 feet	33.8 feet	27.8 feet	23.0 feet
B45	51.9 feet	5.3 feet	46.6 feet	18.5 feet	33.4 feet	32.8 feet	19.1 feet
B46	54.4 feet	8.3 feet	46.1 feet	22.5 feet	31.9 feet	>35.2 feet	<19.2 feet

NOTES:

Surface elevations at each boring location were determined in the field using an elevation of 58.06 feet for the storm manhole located in Washington Street provided on a parking plan prepared by Niles Bolton Associates numbered A2.01, dated September 16, 2008.

³ As determined by drilling difficulty and Standard Penetration Resistance data.

⁴ As determined by auger refusal.

**TABLE IIB
APPROXIMATE GROUNDWATER ELEVATIONS**

Boring Number	Surface Elevation	Depth to Groundwater	Groundwater Elevation ⁵
B1	53.8 feet	7.2 feet	46.6 feet
B2	53.0 feet	7.1 feet	45.9 feet
B3	53.9 feet	7.3 feet	46.6 feet
B4	53.7 feet	7.4 feet	46.3 feet
B5	54.7 feet	6.7 feet	48.0 feet
B6	55.6 feet	9.3 feet	46.3 feet
B7	54.0 feet	7.3 feet	46.7 feet
B8	54.7 feet	7.5 feet	47.2 feet
B9	54.8 feet	8.4 feet	46.4 feet
B10	55.8 feet	8.8 feet	47.0 feet
B11	55.7 feet	7.7 feet	48.0 feet
B12	53.3 feet	7.4 feet	45.9 feet
B13	53.5 feet	6.1 feet	47.4 feet
B14	53.1 feet	5.6 feet	47.5 feet
B15	52.4 feet	5.5 feet	46.9 feet
B16	52.6 feet	4.6 feet	48.0 feet
B17	52.2 feet	4.8 feet	47.4 feet
B18	53.0 feet	6.5 feet	46.5 feet
B19	51.8 feet	5.3 feet	46.5 feet
B20	51.7 feet	5.4 feet	46.3 feet
B21	50.6 feet	4.2 feet	46.4 feet
B22	52.4 feet	4.8 feet	47.6 feet
B23	52.0 feet	4.8 feet	47.2 feet
B24	56.3 feet	8.8 feet	47.5 feet
B25	55.3 feet	7.8 feet	47.5 feet
B26	53.0 feet	6.2 feet	46.8 feet
B27	55.8 feet	9.7 feet	46.1 feet
B28	56.1 feet	7.2 feet	48.9 feet

⁵ Groundwater information is based on conditions encountered during the field exploration. Seasonal fluctuation in groundwater elevation shall be expected.

**TABLE IIB (cont'd)
APPROXIMATE GROUNDWATER ELEVATIONS**

Boring Number	Surface Elevation	Depth to Groundwater	Groundwater Elevation ⁶
B29	55.8 feet	7.3 feet	48.5 feet
B30	53.9 feet	7.3 feet	46.7 feet
B31	55.2 feet	6.4 feet	48.8 feet
B32	56.1 feet	9.2 feet	46.9 feet
B33	55.9 feet	8.9 feet	47.0 feet
B34	54.0 feet	5.8 feet	48.2 feet
B35	53.3 feet	6.1 feet	47.2 feet
B36	51.0 feet	4.2 feet	46.8 feet
B37	51.3 feet	4.4 feet	46.9 feet
B38	53.3 feet	6.2 feet	47.1 feet
B39	54.6 feet	7.3 feet	47.3 feet
B40	53.0 feet	4.8 feet	48.2 feet
B41	53.0 feet	7.3 feet	45.7 feet
B42	55.4 feet	9.3 feet	46.1 feet
B43	52.0 feet	4.5 feet	47.5 feet
B44	50.8 feet	4.3 feet	46.5 feet
B45	52.0 feet	5.5 feet	46.5 feet
B46	54.4 feet	7.8 feet	46.6 feet

⁶ Groundwater information is based on conditions encountered during the field exploration. Seasonal fluctuation in groundwater elevation shall be expected.

TABLE III
APPROXIMATE DEPTHS TO ENHANCED WEATHERED ZONES OF
STRATUM III AND/OR IV

Boring Number	Surface Elevation	Depth to Soft Condition	Soft Condition Elevation
B5	54.7 feet	25.0 feet	29.7 feet
B6	55.6 feet	20.0 feet	35.6 feet
B11	55.7 feet	25.0 feet	30.7 feet
B13	53.5 feet	10.0 feet	43.5feet
B16	52.6 feet	19.0 feet	33.6 feet
B17	52.2 feet	15.0 feet	37.2 feet
B25	55.3 feet	35.0 feet	20.3 feet
B26	53.0 feet	15.0 feet 33.0 feet	38.0 feet 20.0 feet
B40	53.0 feet	30.0 feet	23.0 feet
B41	53.0 feet	29.0 feet	24.0 feet

**TABLE IV
COMPACTION CRITERIA**

LOCATION	PERCENT COMPACTION (ASTM-D698)
Foundations	98%
Floor Slabs	98%
Pavements	95%
Berms(non structural)	93%

APPENDIX

**GENERAL CONSTRUCTION GUIDELINES
FOR
CARBONATE GEOLOGY**

Areas underlain by carbonate geologic formations are subject to dissolution activity and the subsequent development of karst features, subsoil erosion, and sinkhole formations. Any disturbance of the natural conditions at a site tends to alter the existing surface drainage patterns which can result in an increase in subsoil erosion and sinkhole activity. The following construction practices will provide general guidelines for minimizing impact to the underlying carbonate formation.

1. Care must be taken to prevent collection and drainage of surface water into excavated or low-lying areas of the site during the construction of roadways, ramps, or structures. This may be accomplished by constructing earthen berms, dikes, or diversion ditches around open excavations or otherwise preventing the collection and ponding of surface water in low-lying areas.

Typically, excavations should not be made during periods of predicted precipitation. Excavations should be backfilled as soon as is practical, especially considering weekends or extended periods of inactivity.

2. The soil layer above a zone of dissolution activity is usually soft and wet and it is important to locate these areas whenever possible. If embankment fill is to be placed in suspected areas of sinkhole activity, the subgrade shall be proof-rolled and all "soft" areas suitably replaced and compacted prior to the construction of the embankment. If the area is to be excavated, proof-rolling shall be done using a roller of suitable weight (generally in excess of 15 tons).

3. Soft areas must be removed and replaced with clean soil, compacted in layers not to exceed 8 inches in thickness. All compacted soil must be placed to a density as determined by the Standard Proctor Test Method (ASTM-698).

4. The bottom of all excavations in carbonate areas should be inspected for soft or unusually moist conditions. A visual inspection of the excavated bearing surface, together with soundings or probes of the soil at regular intervals, is recommended. Any soft or unusually moist soil should be further excavated and a determination made of the extent of the problem. Remedial measures should then be adopted as necessary.

5. The low points of swales, basins or drainage ditches are particularly vulnerable to subsoil erosion during periods of heavy rainfall and runoff. The same is true of outlet locations for drainage pipes. Consideration should be given to lining such areas with impermeable liners, instead of stone rip-rap, in order to prevent infiltration.

6. The placement of fill material in carbonate areas will reduce the overall potential for subsoil erosion and sink hole development. Excavation should be kept to a practical minimum in carbonate areas.

7. Blasting for the excavation and removal of rock in cut areas should be undertaken with extreme caution and only when absolutely necessary. Where blasting is required,

it should be done so as to minimize the disturbance to the underlying rock and/or soil strata.

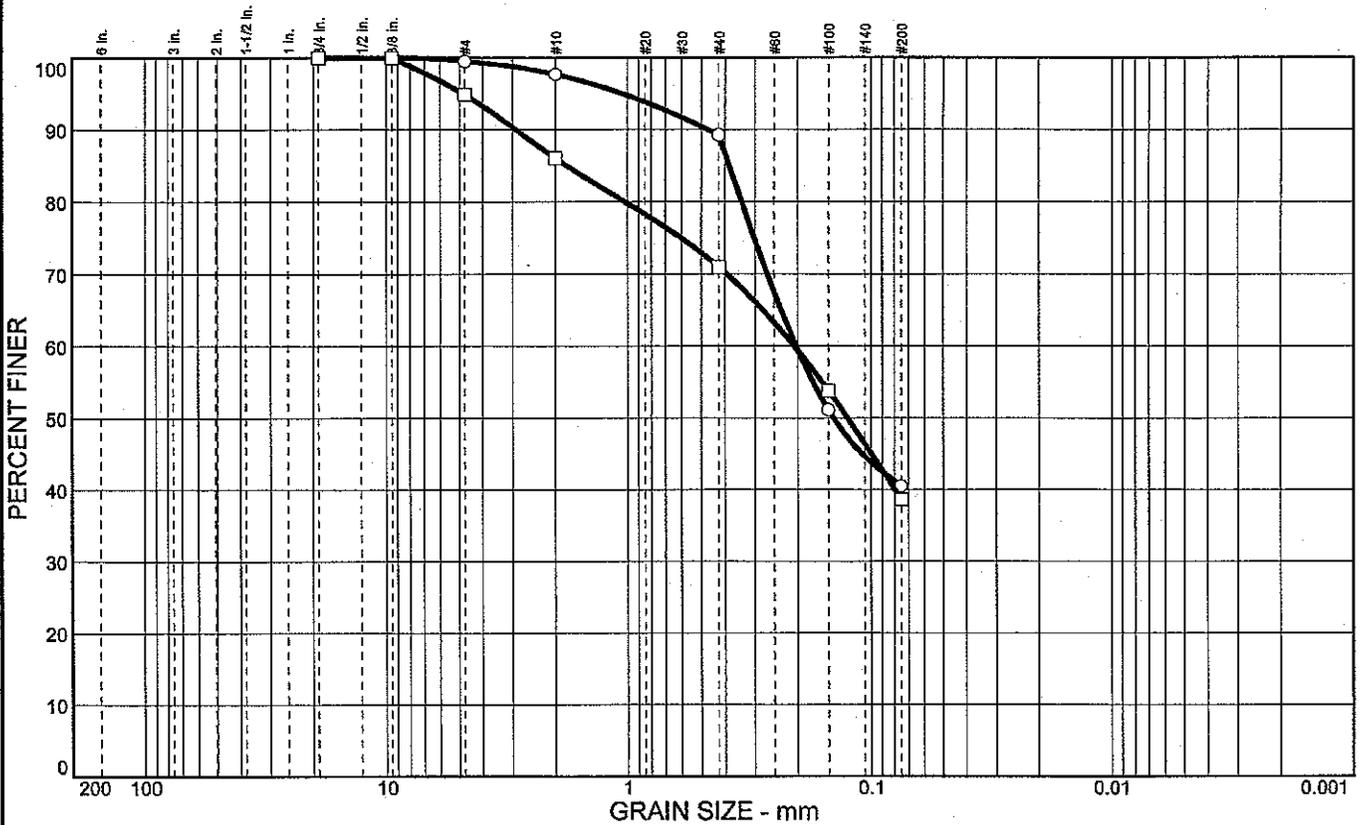
8. Water from roof drains or other drainage systems should be collected and conveyed away from structures to prevent infiltration near foundations. This is extremely important and an often overlooked detail which results in the formation of numerous sinkholes at or below the building foundation.

9. Subsoil erosion or sinkhole development that occurs during the construction of a project should be corrected as quickly as possible under the supervision of a qualified geotechnical engineer.

Please note that the above guidelines are general procedures and do not represent construction specifications for any particular site. Every situation regarding carbonate geology must be evaluated individually including footing excavations, rock blasting, soft spot evaluation, and/or sinkhole repair. Construction/remediation recommendations for sites located in carbonate geology should be made by a qualified geotechnical engineer with follow-up quality control services.

SOIL PARTICLE SIZE ANALYSIS RESULTS

PARTICLE SIZE DISTRIBUTION TEST REPORT



	% + 3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		0.5	59.0	40.5		SC	A-4(0)	16	25
□		5.1	56.3	38.6		SM	A-4(0)		

SIEVE inches size	PERCENT FINER	
	○	□
.75	100.0	100.0
.375	100.0	100.0
GRAIN SIZE		
D60	0.204	0.208
D30		
D10		
COEFFICIENTS		
C _c		
C _u		

SIEVE number size	PERCENT FINER	
	○	□
#4	99.5	94.9
#10	97.7	86.1
#40	89.2	71.0
#100	51.1	53.8
#200	40.5	38.6

SOIL DESCRIPTION

○ Reddish brown Clayey sand

□ Brown Silty sand

REMARKS:

○ NMC B21/S2-17.1%.

□ NMC B21/S11-21.9%, B21/S12-23.0%. N/P

○ Source: B21
□ Source: B21

Sample No.: S2
Sample No.: S11&S12

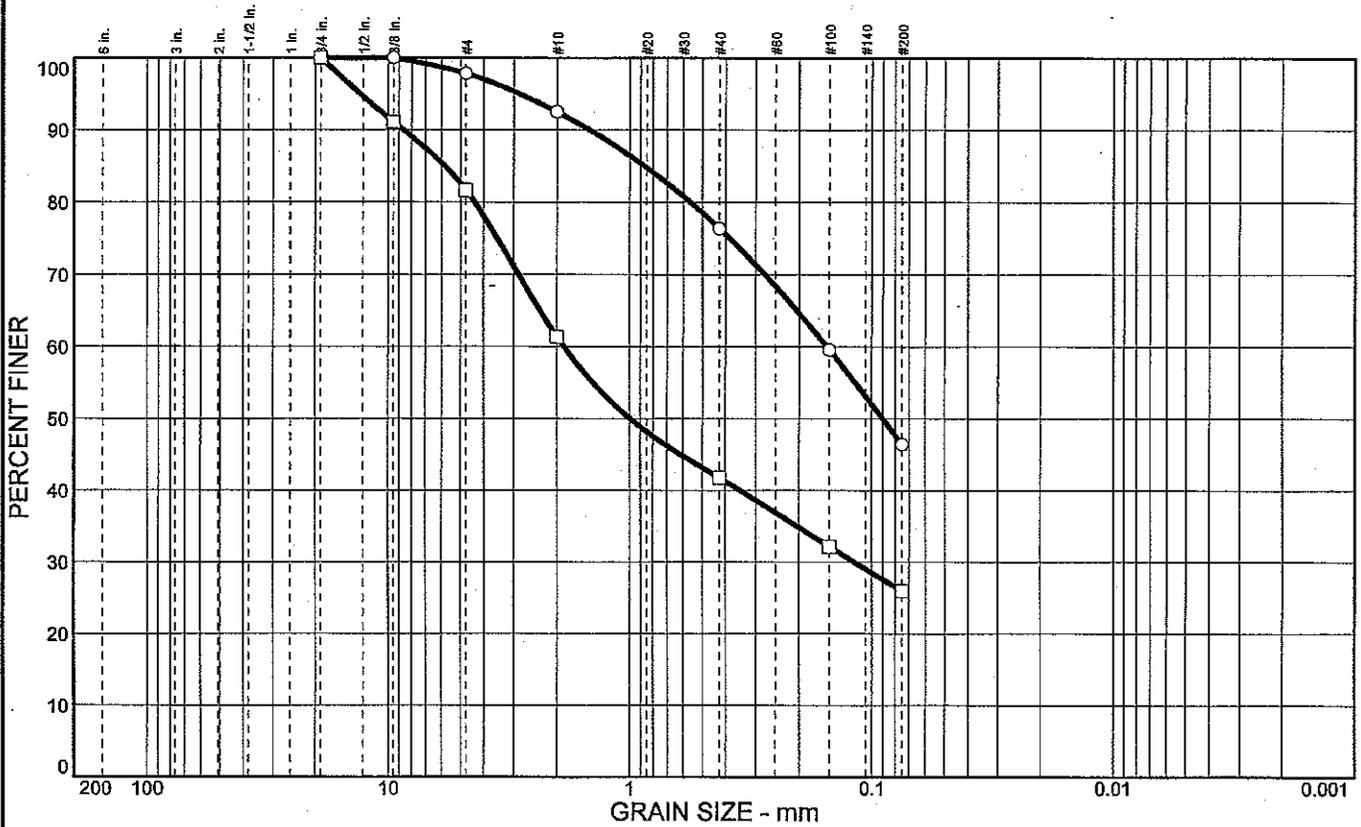
Elev./Depth: 4'-6'
Elev./Depth: 34'-38'



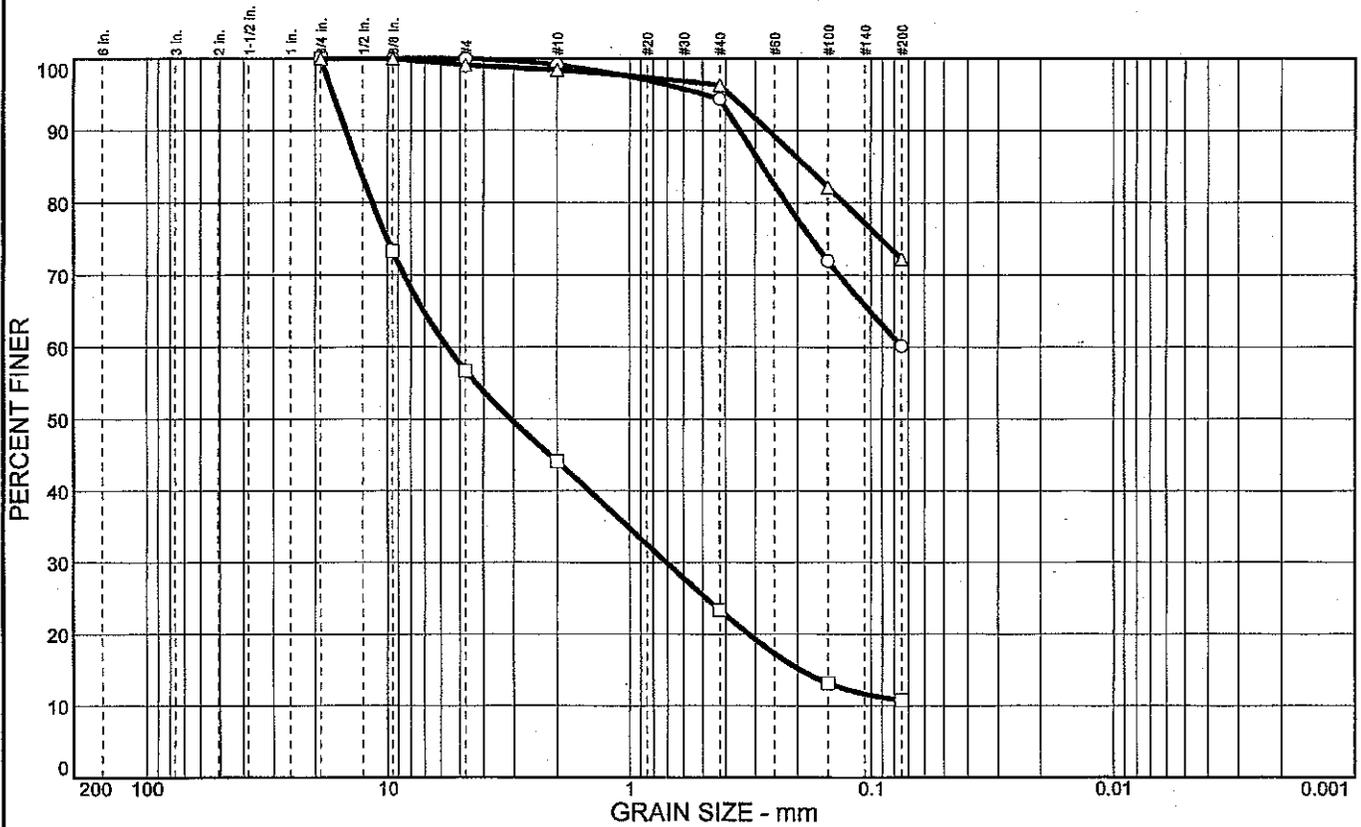
Client: O'Neill Properties
Project: 401 & 433 Washington Street
Project No.: 4287G1

Plate

PARTICLE SIZE DISTRIBUTION TEST REPORT



PARTICLE SIZE DISTRIBUTION TEST REPORT



	% + 3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○			39.9	60.1		CL	A-4(0)	18	35
□		43.3	45.9	10.8		SP-SM	A-1-a		
△		0.9	26.9	72.2		CL	A-4(0)	17	28

SIEVE Inches size	PERCENT FINER		
	○	□	△
.75	100.0	100.0	100.0
.375	100.0	73.3	100.0
GRAIN SIZE			
D60	5.65		
D30	0.708		
D10			
COEFFICIENTS			
Cc			
Cu			

SIEVE number size	PERCENT FINER		
	○	□	△
#4	100.0	56.7	99.1
#10	99.1	44.1	98.4
#40	94.4	23.4	96.3
#100	71.9	13.1	82.2
#200	60.1	10.8	72.2

SOIL DESCRIPTION	
○	Orange-brown Sandy lean clay
□	Reddish brown Poorly graded sand with silt and gravel
△	Reddish brown Lean clay with sand

REMARKS:	
○	NMC B15/S5-21.2%.
□	NMC B25/S6-7.9%, B25/S7-13.0%. N/P
△	NMC B35/S4-19.5%, B35/S5-20.9%.

- Source: B15
- Source: B25
- △ Source: B35

Sample No.: S5
 Sample No.: S6&S7
 Sample No.: S4&S5

Elev./Depth: 10'-12'
 Elev./Depth: 12'-15'11"
 Elev./Depth: 8'-12'



DAVID BLACKMORE &
ASSOCIATES, INC.

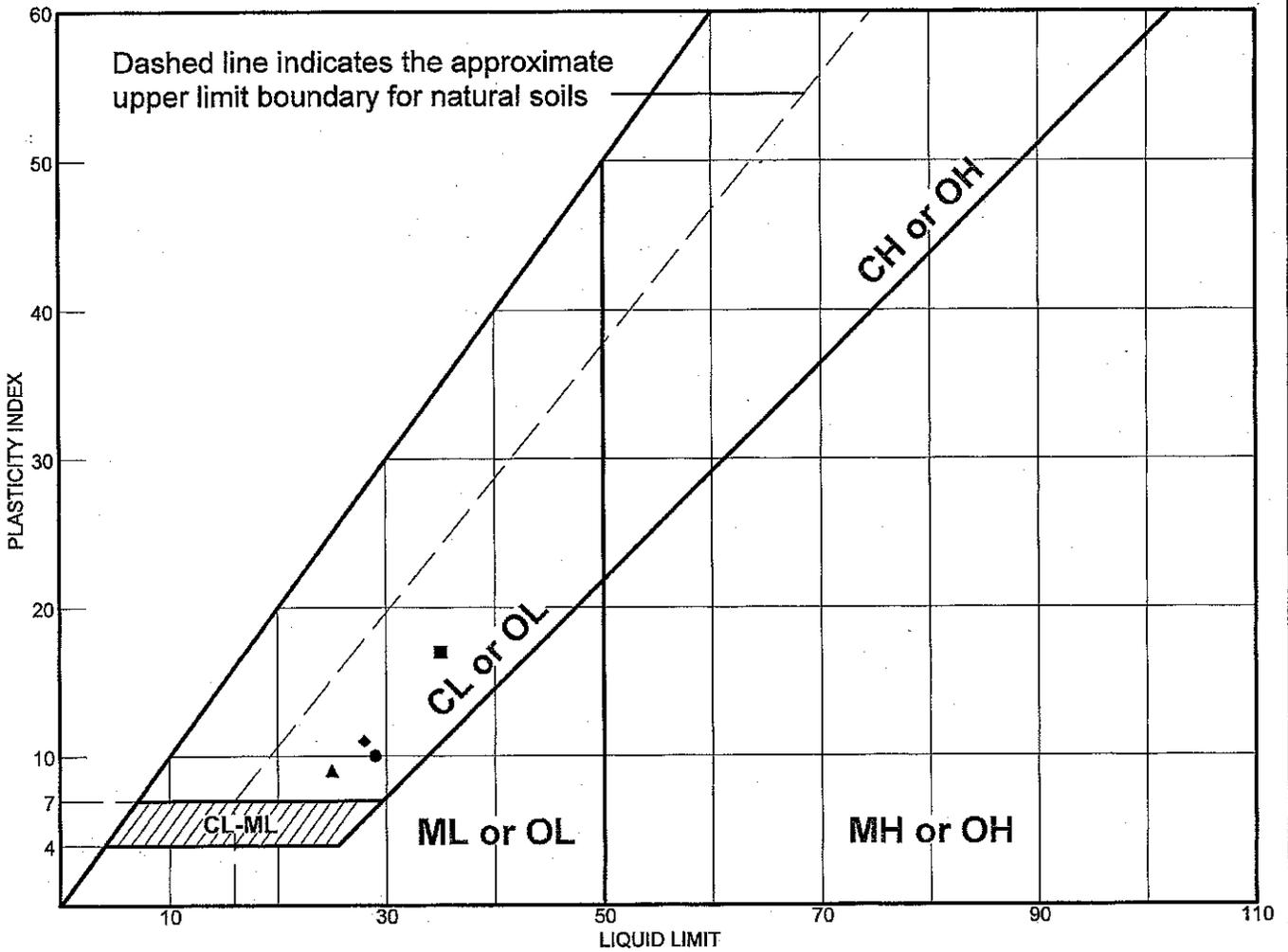
Client: O'Neill Properties
 Project: 401 & 433 Washington Street

Project No.: 4287G1

Plate

SOIL PLASTIC AND LIQUID LIMIT TEST RESULTS

LIQUID AND PLASTIC LIMITS TEST REPORT



	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	Orange-brown Clayey sand with gravel	29	19	10	50.0	36.1	SC
■	Orange-brown Sandy lean clay	35	18	17	94.4	60.1	CL
▲	Reddish brown Clayey sand	25	16	9	89.2	40.5	SC
◆	Reddish brown Lean clay with sand	28	17	11	96.3	72.2	CL

Project No. 4287G1 **Client:** O'Neill Properties

Project: 401 & 433 Washington Street

● Source: B2	■ Sample No.: S4	Elev./Depth: 8'-10'
■ Source: B15	▲ Sample No.: S5	Elev./Depth: 10'-12'
▲ Source: B21	◆ Sample No.: S2	Elev./Depth: 4'-6'
◆ Source: B35	◆ Sample No.: S4&S5	Elev./Depth: 8'-12'

Remarks:

- NMC B2/S4-12.8%
- NMC B15/S5-21.2%
- ▲ NMC B21/S2-17.1%
- ◆ NMC B35/S4-19.5%, B35/S5-20.9%



Plate

TEST BORING LOGS



Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 34'
 Drilling Method #2: 2" OD Split Spoon Sampler from 34' to 38'

Project Number : 4287G1
 Date Drilled : 12/12/12
 Inspected by : MTU
 Boring Depth: 38.0'
 Ground Surface Elevation (ft msl) : 53.83'
 Water Level - Immediate (ft bgs) : 7.75'
 Water Level -Static (ft bgs): 7.17' (6 hours)

DEPTH BELOW WATER LEVEL	LITHOLOGIC SYMBOL	LITHOLOGY			SAMPLING DATA			
		GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value
1.0	▲▲▲▲	Asphalt (4")	1.75	52.08				
2.0	■	Modified Stone (4")						
3.0	○	Stratum IMF			S-1*		2-2-1-3	3
4.0	○	FILL consisting of orange brown fine sand and silt with rock fragments			S-2*		3-4-2-1	6
5.0	○	FILL consisting of black and orange brown fine sand, trace of silt, coal, some slag			S-3*		2-1-1-2	2
6.0	○		8.25	45.58	S-4**		12-10-16-15	26
7.0	○	Stratum III	9.17	44.66	S-5**		10-12-15-15	27
8.0	○	Orange brown fine sand, occasional pebbles						
9.0	○	Orange brown fine to medium sand with rock fragments, pebbles, occasional boulders			S-6**		8-12-14-21	26
10.0	○							
11.0	○				S-7**		8-17-20-21	37
12.0	○							
13.0	○							
14.0	○							
15.0	○							
16.0	○							
17.0	○							
18.0	○							
19.0	○							
20.0	○							
21.0	○							
22.0	○							
23.0	○		23.50	30.33				
24.0	○	Orange brown fine sand, some silt with occasional limestone fragments			S-8**		6-5-4-3	9
25.0	○				S-9**		5-6-5-5	11
26.0	○				S-10**		6-8-10-10	18
27.0	○							
28.0	○							
29.0	○							
30.0	○							
31.0	○	Notes: * very moist ** wet						
32.0	○							
33.0	○							
34.0	○	Very hard, choppy augering from 22.50' to 23.50'.			S-11**		4-5-6-8	11
35.0	○							
36.0	○							
37.0	○				S-12**		9-11-13-13	24
38.0	○		38.00	15.83				
		Boring Terminated						

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample (2" O.D.), C = Rock Coring Run.



Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 23'11"
 Drilling Method #2:

Project Number : 4287G1
 Date Drilled : 12/19/12
 Inspected by : MTU
 Boring Depth: 23.92'
 Ground Surface Elevation (ft msl) : 53.01'
 Water Level - Immediate (ft bgs) : 7.08'
 Water Level -Static (ft bgs):

DEPTH BELOW	WATER LEVEL	LITHOLOGY				SAMPLING DATA				
		LITHOLOGIC SYMBOL	GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)
0.0 - 1.0		[Symbol]	Asphalt (4")							
1.0 - 2.0		[Symbol]	Modified Stone (6")							
2.0 - 4.25		[Symbol]	Stratum IMF FILL consisting of black fine sand, coal, some slag	4.25	48.76	S-1*		1-2-2-2	4	[Graph Point]
4.25 - 8.50		[Symbol]	FILL consisting of orange brown fine sand and silt with some rock fragments			S-2*		2-2-3-3	5	[Graph Point]
8.50 - 10.33		[Symbol]	Stratum II Brown and orange brown mottled fine sand and silt with occasional rock fragments	10.33	42.68	S-4*		3-6-10-11	16	[Graph Point]
10.33 - 12.0		[Symbol]	Stratum III Reddish brown fine to medium sand with rock fragments, pebbles, occasional boulders			S-5**		9-9-9-12	18	[Graph Point]
12.0 - 17.0		[Symbol]				S-6**		5-8-9-8	17	[Graph Point]
17.0 - 20.42		[Symbol]		20.42	32.59	S-7**		36-50/3"	100	[Graph Point]
20.42 - 23.92		[Symbol]	Stratum IVA Gray, brown and tan weathered limestone							
23.92 - 25.0		[Symbol]	Auger Refusal on Limestone Bedrock							
25.0 - 28.0			Notes: * very moist ** wet Very hard augering from 20.75'.							

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample (2" O.D.), C = Rock Coring Run.



Project : Proposed Residential Structures
 Location : 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 22'4"
 Drilling Method #2:

Project Number : 4287G1
 Date Drilled : 12/12/12
 Inspected by : MTU
 Boring Depth: 22.33'
 Ground Surface Elevation (ft msl) : 53.88'
 Water Level - Immediate (ft bgs) : 7.42'
 Water Level - Static (ft bgs): 7.33' (3 hrs.)

DEPTH BELOW WATER LEVEL	LITHOLOGIC SYMBOL	LITHOLOGY			SAMPLING DATA				
		GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)
0.0 - 1.0	[Asphalt symbol]	Asphalt (4")							
1.0 - 2.0	[Modified Stone symbol]	Modified Stone (3")							
2.0 - 6.0	[Fill symbol]	Stratum IMF FILL consisting of black fine sand, coal, brick, some slag							
3.0 - 4.0					S-1*		3-3-5-4	8	
4.0 - 5.0					S-2*		4-7-7-5	14	
5.0 - 6.0			5.50	48.38					
6.0 - 7.0	[Fill symbol]	FILL consisting of orange brown fine sand and silt with rock fragments	6.00	47.88					
7.0 - 8.0		Stratum II			S-3*		2-2-2-2	4	
8.0 - 9.0		Reddish brown fine sand and silt	7.67	46.21					
9.0 - 11.0		Stratum III			S-4**		3-3-3-3	6	
10.0 - 11.0		Reddish brown fine sand, trace of silt with occasional pebbles	11.33	42.55					
11.0 - 12.0					S-5**		2-2-5-7	7	
12.0 - 13.0		Orange brown fine to medium sand with rock fragments and pebbles							
13.0 - 14.0					S-6**		5-4-3-8	7	
14.0 - 15.0									
15.0 - 16.0					S-7**		22-33-34-37	67	
16.0 - 17.0			17.00	36.88					
17.0 - 18.0		Stratum IVA							
18.0 - 19.0		Gray and brown weathered limestone							
19.0 - 20.0					S-8**		41-50/4"	100	
20.0 - 21.0		<i>Notes:</i> * very moist **wet							
21.0 - 22.0		Very hard, smooth augering from 19.92'							
22.0 - 23.0		Auger Refusal on Limestone Bedrock	22.33	31.55					

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample (2" O.D.), C = Rock Coring Run.



Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 35'
 Drilling Method #2: 2" OD Split spoon sampler from 35' to 35'10"

Project Number : 4287G1
 Date Drilled : 12/17/2012
 Inspected by : MTU
 Boring Depth: 35.83'
 Ground Surface Elevation (ft msl) : 53.67'
 Water Level - Immediate (ft bgs) : 7.42'
 Water Level -Static (ft bgs):

DEPTH BELOW	WATER LEVEL	LITHOLOGY				SAMPLING DATA				
		LITHOLOGIC SYMBOL	GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)
1.0			Asphalt (4")							
2.0			Modified Stone (5")							
3.0			Stratum IMF							
4.0			FILL consisting of black fine sand, coal, some slag							
5.0				5.75	47.92	S-2*		1-1-2-2	3	
6.0			Stratum II	6.58	47.09	S-3*		2-2-1-2	3	
7.0			Orange brown and grey discolored fine sand and silt			S-3*		2-2-1-2	3	
8.0			Reddish brown fine sand and silt			S-4**		3-4-22-24	26	
9.0			Stratum III			S-5*		19-23-26-31	49	
10.0			Reddish brown fine to medium sand with rock fragments and pebbles			S-5*		19-23-26-31	49	
11.0						S-6*		5-16-15-18	31	
12.0						S-6*		5-16-15-18	31	
13.0						S-6*		5-16-15-18	31	
14.0						S-6*		5-16-15-18	31	
15.0						S-6*		5-16-15-18	31	
16.0						S-6*		5-16-15-18	31	
17.0						S-6*		5-16-15-18	31	
18.0						S-6*		5-16-15-18	31	
19.0						S-6*		5-16-15-18	31	
20.0						S-6*		5-16-15-18	31	
21.0				21.50	32.17	S-7*		12-8-5-7	13	
22.0			Orange brown fine sand and silt			S-7*		12-8-5-7	13	
23.0				24.00	29.67	S-7*		12-8-5-7	13	
24.0			Stratum IVA			S-8**		11-12-15-28	27	
25.0			Orange brown, tan, and gray weathered phyllitic limestone			S-8**		11-12-15-28	27	
26.0						S-8**		11-12-15-28	27	
27.0						S-8**		11-12-15-28	27	
28.0						S-8**		11-12-15-28	27	
29.0						S-8**		11-12-15-28	27	
30.0						S-8**		11-12-15-28	27	
31.0						S-9		13-16-18-20	34	
32.0						S-9		13-16-18-20	34	
33.0						S-9		13-16-18-20	34	
34.0						S-9		13-16-18-20	34	
35.0						S-9		13-16-18-20	34	
36.0				35.83	17.84	S-10		44-50/4"	100	
37.0			Spoon Refusal on Dense Weathered Limestone			S-10		44-50/4"	100	

Notes:
 * wet
 **moist
 Samples S-2 and S-3 had fuel odor.

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample(2" O.D.), C=Rock Coring Run.



Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 31'7"
 Drilling Method #2:

Project Number : 4287G1
 Date Drilled : 12/11/2012
 Inspected by : MTU
 Boring Depth: 31.58'
 Ground Surface Elevation (ft msl) : 54.74'
 Water Level - Immediate (ft bgs) : 7.50'
 Water Level - Static (ft bgs): 6.67' (24 hrs.)

DEPTH BELOW	WATER LEVEL	LITHOLOGY				SAMPLING DATA				
		LITHOLOGIC SYMBOL	GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)
1.0			Asphalt (4")							
2.0			Modified Stone (4")							
3.0			Stratum IMF							
4.0			FILL consisting of black fine sand, some silt with some slag, coal			S-1*		6-2-2-10	4	
5.0						S-2*		11-6-9-8	15	
6.0				6.25	48.49					
7.0			Stratum II			S-3**		3-2-1-2	3	
8.0			Reddish brown fine sand and silt							
9.0				8.75	45.99					
10.0			Stratum III			S-4*		2-7-22-24	29	
11.0			Reddish brown fine sand, some silt and medium sand with rock fragments and pebbles			S-5***		22-23-24-28	47	
12.0										
13.0			Reddish brown fine to medium sand with rock fragments and pebbles							
14.0						S-6***		10-10-11-21	21	
15.0										
16.0						S-7***		5-6-7-9	13	
17.0										
18.0										
19.0										
20.0										
21.0						S-8***		2-1-1-3	2	
22.0										
23.0						S-9***		5-22-50/5"	100	
24.0										
25.0										
26.0										
27.0										
28.0				27.75	26.99					
29.0			Stratum IVA							
30.0			Orange brown, brown and gray weathered limestone			S-10		50/1" NR	100	
31.0										
32.0				31.58	23.16					
33.0			Auger Refusal on limestone bedrock							

Notes:
 * moist
 ** very moist
 *** wet

First attempt, augers bending at 23'.
 Second attempt, 10 feet towards B9,
 augered to 25' and resumed
 sampling.
 Hard augering from 28.5'.

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample (2" O.D.), C = Rock Coring Run.



Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 35'
 Drilling Method #2: 2" OD Split spoon sampler from 35' to 37'

Project Number : 4287G1
 Date Drilled : 12/18/2012
 Inspected by : MTU
 Boring Depth: 37.0'
 Ground Surface Elevation (ft msl) : 55.58'
 Water Level - Immediate (ft bgs) : 9.25'
 Water Level -Static (ft bgs):

DEPTH BELOW	WATER LEVEL	LITHOLOGY				SAMPLING DATA				
		LITHOLOGIC SYMBOL	GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)
1.0			Topsoil (3")							
2.0			Stratum IMF							
3.0			FILL consisting of black fine sand, some slag, coal							
4.0					S-1*		2-3-3-3	6		
5.0					S-2*		3-5-4-4	9		
6.0					S-3*		3-4-5-2	9		
7.0				7.58	48.00					
8.0			Stratum II							
9.0			Reddish brown fine sand and silt				2-3-3-3	6		
10.0					S-4**					
11.0					S-5**		2-2-4-16	6		
12.0				11.75	43.83					
13.0			Stratum III							
14.0			Reddish brown fine to medium sand with rock fragments and pebbles				29-34-33-30	67		
15.0					S-6***					
16.0					S-7***		16-18-21-23	39		
17.0										
18.0										
19.0										
20.0										
21.0							1/12"-1/12"	1		
22.0					S-8***					
23.0					S-9***		4-9-10-10	19		
24.0										
25.0										
26.0					S-10***		11-12-13-17	25		
27.0										
28.0				28.00	27.58					
29.0			Stratum IVB							
30.0			Orange brown, tan and gray weathered quartz schist				8-14-15-15	29		
31.0					S-11					
32.0										
33.0										
34.0										
35.0										
36.0					S-12		13-11-14-17	25		
37.0			Boring Terminated							

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample(2" O.D.), C=Rock Coring Run.



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Boring Number : B7

Sheet 1 of 1

Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 35'
 Drilling Method #2: 2" OD Split spoon sampler from 35' to 37'

Project Number : 4287G1
 Date Drilled : 12/11/2012
 Inspected by : MTU
 Boring Depth: 37.0'
 Ground Surface Elevation (ft msl) : 54.02'
 Water Level - Immediate (ft bgs) : 7.50'
 Water Level -Static (ft bgs): 7.25' (8 hrs)

DEPTH BELOW WATER LEVEL	LITHOLOGIC SYMBOL	LITHOLOGY			SAMPLING DATA				
		GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 5 10 20 30 40 50	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)
1.0		Asphalt (4")							
2.0		Modified Stone (4")							
3.0		Stratum IMF			S-1*		5-7-3-4	10	
4.0		FILL consisting of black and orange brown fine sand, some silt, clay, and coal	6.00	48.02	S-2*		5-5-6-5	11	
5.0									
6.0		Stratum II			S-3**		3-2-2-2	4	
7.0		Orange brown and reddish brown fine sand and silt							
8.0									
9.0			9.67	44.35	S-4***		1-1-3-19	4	
10.0		Stratum III			S-5***		18-23-20-22	43	
11.0		Orange brown fine to medium sand with rock fragments and pebbles							
12.0									
13.0					S-6***		13-25-34-36	59	
14.0									
15.0									
16.0									
17.0									
18.0			19.00	35.02					
19.0		Orange brown, gray and tan fine sand and silt with limestone fragments			S-7*		13-12-14-16	26	
20.0									
21.0									
22.0									
23.0									
24.0					S-8*		7-8-14-16	22	
25.0									
26.0									
27.0									
28.0									
29.0									
30.0									
31.0					S-9**		3-4-5-7	9	
32.0									
33.0					S-10**		6-6-8-9	14	
34.0									
35.0									
36.0			37.00	17.02	S-11**		5-13-26-30	39	
37.0		Boring Terminated							

Notes:

- * moist
- ** very moist
- *** wet

Fairly hard, choppy augering from 14.0' to 18.50'.

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample (2" O.D.), C = Rock Coring Run.



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Boring Number : B8

Sheet 1 of 1

Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 35'
 Drilling Method #2: 2" OD Split spoon sampler from 35' to 37'

Project Number : 4287G1
 Date Drilled : 12/18/2012
 Inspected by : MTU
 Boring Depth: 37.0'
 Ground Surface Elevation (ft msl) : 54.68'
 Water Level - Immediate (ft bgs) : 7.50'
 Water Level -Static (ft bgs):

DEPTH BELOW	WATER LEVEL	LITHOLOGY				SAMPLING DATA				
		LITHOLOGIC SYMBOL	GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)
1.0			Topsoil (4")							
2.0			Stratum IMF							
3.0			FILL consisting of black and orange brown fine sand, some slag, coal, and brick			S-1*		2-3-4-4	7	
4.0						S-2*		5-7-5-4	12	
5.0						S-3**		3-2-1-2	3	
6.0			Stratum II	6.67	48.01					
7.0			Reddish brown fine sand and silt, trace of clay			S-4***		2-2-2-3	4	
8.0			Stratum III							
9.0			Reddish brown fine sand, some silt	9.00	45.68	S-5***		1-1-4-6	5	
10.0						S-6***		26-31-35-38	66	
11.0			Reddish brown fine to medium sand with rock fragments, pebbles	12.00	42.68	S-7***		50/4"	100	
12.0										
13.0										
14.0										
15.0										
16.0										
17.0										
18.0										
19.0										
20.0										
21.0						S-8***		26-27-29-29	56	
22.0										
23.0				23.00	31.68					
24.0			Orange brown and tan fine sand and silt, some gray and white residual weathered limestone			S-9**		11-15-16-29	31	
25.0										
26.0										
27.0										
28.0										
29.0										
30.0										
31.0						S-10**		10-12-13-19	25	
32.0										
33.0										
34.0										
35.0										
36.0						S-11**		11-11-16-18	27	
37.0				37.00	17.68					
			Boring Terminated							

Notes:
 * moist
 ** very moist
 *** wet

Very hard, choppy augering through boulders from 14.5' to 17.5'.

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample(2" O.D.), C=Rock Coring Run.



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Boring Number : B10

Sheet 1 of 1

Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 35'
 Drilling Method #2: 2" OD Split spoon sampler from 35' to 37'

Project Number : 4287G1
 Date Drilled : 12/18/2012
 Inspected by : MTU
 Boring Depth: 37.00'
 Ground Surface Elevation (ft msl) : 55.79'
 Water Level - Immediate (ft bgs) : 8.75'
 Water Level -Static (ft bgs):

DEPTH BELOW WATER LEVEL	LITHOLOGIC SYMBOL	LITHOLOGY				SAMPLING DATA			
		GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)
1.0		Topsoil (4")							
2.0		Stratum IMF							
3.0		FILL consisting of black and orange brown fine sand, some slag and coal			S-1*		3-2-2-2	4	
4.0					S-2*		2-2-3-4	5	
5.0						S-3*		2-2-2-2	4
6.0			8.17	47.62					
7.0		Stratum II			S-4**		2-2-1-1	3	
8.0		Reddish brown fine sand and silt			S-5**		2-7-7-5	14	
9.0						S-6**		8-8-14-29	22
10.0		Stratum III							
11.0		Reddish brown fine to medium sand with rock fragments and pebbles							
12.0						S-7**		10-10-13-13	23
13.0									
14.0			19.00	36.79					
15.0		Orange brown fine sand and silt with occasional rock fragments							
16.0						S-8**		11-12-18-21	30
17.0		Orange brown fine sand, some silt with occasional rock fragments							
18.0									
19.0						S-9**		13-14-16-21	30
20.0									
21.0			21.25	34.54					
22.0									
23.0									
24.0									
25.0									
26.0					S-10**		6-6-11-14	17	
27.0									
28.0									
29.0									
30.0									
31.0									
32.0									
33.0									
34.0									
35.0									
36.0					S-11**		10-12-14-16	26	
37.0			37.00	18.79					
38.0		Boring Terminated							

Notes:
 * very moist
 ** wet

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample(2" O.D.), C=Rock Coring Run.



Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 31'7"
 Drilling Method #2:

Project Number : 4287G1
 Date Drilled : 12/17/2012
 Inspected by : MTU
 Boring Depth: 31.58'
 Ground Surface Elevation (ft msl) : 55.67'
 Water Level - Immediate (ft bgs) : 7.67'
 Water Level -Static (ft bgs):

DEPTH BELOW WATER LEVEL	LITHOLOGIC SYMBOL	LITHOLOGY			SAMPLING DATA				
		GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)
1.0	[Symbol: Brown fine sand and silt with rock fragments]	Stratum IMF FILL consisting of brown fine sand and silt with rock fragments	2.00	53.67					
2.0									
3.0					S-1*		1-2-3-3	5	
4.0	[Symbol: Black fine sand, some slag, and coal]	FILL consisting of black fine sand, some slag, and coal							
5.0									
6.0					S-2*		5-4-5-5	9	
7.0	[Symbol: Reddish brown fine sand, some silt]		7.67	48.00					
8.0									
9.0					S-3*		8-9-5-2	14	
10.0	[Symbol: Reddish brown and orange brown fine to medium sand with rock fragments, pebbles]	Stratum III Reddish brown fine sand, some silt							
11.0									
12.0					S-4*		2-1-2-2	3	
13.0	[Symbol: Reddish brown and orange brown fine to medium sand with rock fragments, pebbles]		11.25	44.42					
14.0									
15.0					S-5*		3-4-11-28	15	
16.0	[Symbol: Reddish brown and orange brown fine to medium sand with rock fragments, pebbles]								
17.0									
18.0					S-6*		13-14-12-13	26	
19.0	[Symbol: Reddish brown and orange brown fine to medium sand with rock fragments, pebbles]	<u>Notes:</u> * wet							
20.0		Hard augering from 31.0'							
21.0					S-7*		15-17-15-8	32	
22.0	[Symbol: Orange brown, brown, and gray weathered limestone]		23.00	32.67					
23.0									
24.0					S-8*		1-1-1/12"	1	
25.0	[Symbol: Orange brown, brown, and gray weathered limestone]								
26.0									
27.0					S-9*		1/24"	1	
28.0	[Symbol: Orange brown, brown, and gray weathered limestone]								
29.0									
30.0					S-10*		1/12"-8-50/5"	100	
31.0	[Symbol: Auger Refusal on limestone bedrock]		31.58	24.09					
32.0									
33.0									

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample (2" O.D.), C = Rock Coring Run.



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Boring Number : B12

Sheet 1 of 1

Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 37'
 Drilling Method #2:

Project Number : 4287G1
 Date Drilled : 12/12/2012
 Inspected by : MTU
 Boring Depth: 37.0'
 Ground Surface Elevation (ft msl) : 53.33'
 Water Level - Immediate (ft bgs) : 7.50'
 Water Level -Static (ft bgs): 7.42' (15 min.)

DEPTH BELOW	WATER LEVEL	LITHOLOGY				SAMPLING DATA				
		LITHOLOGIC SYMBOL	GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 5 10 20 30 40 50	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)
1.0			Blacktop (4")							
2.0			Modified Stone (4")							
3.0			Stratum IMF					2-2-2-2	4	
4.0			FILL consisting of black fine sand with some slag, coal, brick, some silt					4-6-4-3	10	
5.0				S-2*						
6.0				S-3*	7.50	48.17			1-1-8-5	9
7.0			Stratum III							
8.0			Orange brown fine sand					3-4-8-15	12	
9.0				S-4*	9.00	46.67				
10.0				S-5*					7-16-21-23	37
11.0			Orange brown fine to medium sand with rock fragments, pebbles							
12.0										
13.0			Grey and brown weathered limestone							
14.0					14.75	40.92				
15.0				S-6*					50/5"	100
16.0										
17.0										
18.0										
19.0										
20.0										
21.0				S-7*					50/2" N.R.	100
22.0			Orange brown, brown, and gray fine sand and silt							
23.0					23.00	32.67				
24.0										
25.0			Orange brown and brown micaceous fine sand and silt							
26.0										
27.0				S-8*					9-11-27-18	38
28.0										
29.0					29.00	26.67				
30.0										
31.0			Notes: * moist ** wet							
32.0										
33.0										
34.0			Very hard augering from 14' to 14'9".							
35.0										
36.0			Hard augering from 14'9" to 23'							
37.0										
38.0			Boring Terminated							

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample(2" O.D.), C = Rock Coring Run.



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Boring Number : B13

Sheet 1 of 1

Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 22'4"
 Drilling Method #2:

Project Number : 4287G1
 Date Drilled : 12/28/2012
 Inspected by : MTU
 Boring Depth: 22.33'
 Ground Surface Elevation (ft msl) : 53.47'
 Water Level - Immediate (ft bgs) : 6.08'
 Water Level -Static (ft bgs):

DEPTH BELOW WATER LEVEL	LITHOLOGIC SYMBOL	LITHOLOGY			SAMPLING DATA			
		GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value
0.0		Blacktop (4")	0.83	52.64				
0.0		Modified Stone (6")						
0.0		Stratum IMF FILL consisting of dark brown fine sand and silt with some rock fragments	3.50	49.97	S-1*		2-3-3-3	6
0.0		Stratum II Reddish brown fine sand and silt			S-2*		2-2-2-2	4
0.0			7.83	45.64	S-3		2-4-5-9	9
0.0		Stratum III Reddish brown fine sand with occasional rock fragments	8.67	44.80	S-4		10-16-16-12	32
0.0		Reddish brown fine sand, some medium sand with some rock fragments, pebbles	10.00	43.47	S-5		1-1-2-2	3
0.0		Orange brown fine sand, some silt	12.25	41.22	S-6		15-17-19-36	36
0.0		Reddish brown fine to medium sand with rock fragments, pebbles			S-7		13-15-18-23	33
0.0		<i>Notes:</i> * very moist Very hard augering from 19.50'.						
0.0			19.50	33.97				
0.0		Stratum IVA Gray and brown weathered limestone			S-8		50/1" NR	100
0.0			22.33	31.14				
0.0		Auger Refusal on limestone bedrock						

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample(2" O.D.), C=Rock Coring Run.



Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 21'9"
 Drilling Method #2:

Project Number : 4287G1
 Date Drilled : 12/28/2012
 Inspected by : MTU
 Boring Depth: 21.75'
 Ground Surface Elevation (ft msl) : 53.14'
 Water Level - Immediate (ft bgs) : 5.58'
 Water Level -Static (ft bgs):

DEPTH BELOW WATER LEVEL	LITHOLOGIC SYMBOL	LITHOLOGY			SAMPLING DATA			
		GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value
0.0		Topsoil (6")						
1.0		Stratum IMF						
2.0		Brown and dark brown fine sand and silt with some rock fragments, occasional boulders						
3.0						3-2-2-4	4	
4.0								
5.0						5-4-2-2	6	
6.0			6.50	46.97				
7.0		Stratum II						
8.0		Reddish brown fine sand and silt	7.75	45.72		2-4-4-5	8	
9.0		Stratum III						
10.0		Reddish brown fine sand				2-3-2-2	5	
11.0								
12.0			11.75	41.72		3-4-5-13	9	
13.0		Reddish brown fine sand, some medium sand with rock fragments and pebbles						
14.0			14.50	38.97		12-14-15-13	29	
15.0								
16.0		Orange brown fine to medium sand with rock fragments, pebbles						
17.0						10-9-10-12	19	
18.0								
19.0			19.00	34.47				
20.0		Stratum IVA						
21.0		Gray and brown weathered limestone				50/0" NR	100	
22.0			21.75	31.72				
23.0		Auger Refusal on limestone bedrock						
24.0		Notes: * moist **wet						
25.0		Very hard augering from 19.0'.						

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample (2" O.D.), C = Rock Coring Run.



Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 27.75'
 Drilling Method #2:

Project Number : 4287G1
 Date Drilled : 12/30/2012
 Inspected by : MTU
 Boring Depth: 27.75'
 Ground Surface Elevation (ft msl) : 52.36'
 Water Level - Immediate (ft bgs) : 5.50'
 Water Level -Static (ft bgs):

DEPTH BELOW WATER LEVEL	LITHOLOGIC SYMBOL	LITHOLOGY		DEPTH (FT)	ELEVATION	NUMBER	SAMPLING DATA		SPT GRAPH (Blows Per Foot)
		GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	Water Content 510 20 30 40 50				SPT DATA	SPT Value	
1.0		Asphalt (4")							
2.0		Modified Stone (5")							
3.0		Stratum IMF				S-1*		2-2-2-2	4
4.0		FILL consisting of brown, dark brown, orange brown and grey fine sand and silt with loose fine sand, some organic silt, trace of coal				S-2*		2-3-2-2	5
5.0				6.17	46.19				
6.0		Reddish brown slightly organic silt				S-3*		2-3-2-3	5
7.0		Stratum II Orange brown and grey mottled fine sand and silt, trace of clay				S-4*		3-5-6-9	11
8.0				8.00	44.36				
9.0		Grey, orange brown and reddish brown mottled fine sand and silty clay				S-5*		6-7-5-6	12
10.0									
11.0				13.50	38.86				
12.0		Stratum III Reddish brown and brown fine to medium sand with rock fragments, pebbles				S-6		4-5-4-3 N.R.	9
13.0									
14.0		Stratum IVA Grey and brown weathered limestone				S-7**		1-2-13-19	15
15.0									
16.0						S-8**		24-28-33-36	61
17.0		Auger Refusal							
18.0						S-9**		51-50/4"	100
19.0									
20.0									
21.0									
22.0									
23.0									
24.0									
25.0									
26.0									
27.0									
28.0									
29.0									
30.0									
31.0									
32.0									

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample (2" O.D.), C = Rock Coring Run.



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Boring Number : B16

Sheet 1 of 1

Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 31'8"
 Drilling Method #2:

Project Number : 4287G1
 Date Drilled : 12/28/2012
 Inspected by : MTU
 Boring Depth: 31.67'
 Ground Surface Elevation (ft msl) : 52.59'
 Water Level - Immediate (ft bgs) : 4.58'
 Water Level -Static (ft bgs):

DEPTH BELOW WATER LEVEL	LITHOLOGIC SYMBOL	LITHOLOGY				SAMPLING DATA			
		GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)
1.0	[Symbol]	Asphalt (4")							
2.0	[Symbol]	Modified Stone (5")							
3.0	[Symbol]	Stratum IMF	3.25	49.34	S-1*		2-2-3-2	5	
4.0	[Symbol]	FILL consisting of brown fine sand and silt with some rock fragments			S-2*		2-3-3-5	6	
6.0	[Symbol]	Stratum II			S-3**		4-5-6-12	11	
7.0	[Symbol]	Reddish brown fine sand and silt, occasional rock fragments, some clay	7.17	45.42	S-4**		9-8-5-3	13	
9.0	[Symbol]	Stratum III			S-5**		4-6-8-13	14	
10.0	[Symbol]	Reddish brown fine to medium sand with rock fragments, pebbles			S-6**		10-15-16-15	31	
12.0	[Symbol]				S-7**		6-5-4-4	9	
14.0	[Symbol]				S-8**		3-3-3-3	6	
16.0	[Symbol]				S-9**		4-2-2-2	4	
18.0	[Symbol]	Notes: * very moist ** wet			S-10**		2-2-3-5	5	
20.0	[Symbol]	Very hard augering from 24.25'.			S-11**		21-39-50/3"	100	
23.0	[Symbol]		23.33	29.26	S-12		50/1" NR	100	
24.0	[Symbol]	Stratum IVA							
25.0	[Symbol]	Gray and brown weathered limestone							
27.0	[Symbol]								
29.0	[Symbol]								
31.0	[Symbol]		31.67	20.92					
32.0	[Symbol]	Auger Refusal on limestone bedrock							
33.0	[Symbol]								

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample(2" O.D.), C=Rock Coring Run.



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Boring Number : B17

Sheet 1 of 2

Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 34'
 Drilling Method #2: 2" OD Split spoon sampler from 34' to 34'5"

Project Number : 4287G1
 Date Drilled : 12/30/2012
 Inspected by : MTU
 Boring Depth: 34.42'
 Ground Surface Elevation (ft msl) : 52.20'
 Water Level - Immediate (ft bgs) : 4.83'
 Water Level -Static (ft bgs):

DEPTH BELOW	WATER LEVEL	LITHOLOGY				SAMPLING DATA				
		LITHOLOGIC SYMBOL	GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)
0.0			Asphalt (4")	0.83	61.31					
0.0			Modified Stone (6")							
2.0			Stratum IMF FILL consisting of brown and orange brown fine sand and silt with rock fragments	3.25	58.89	S-1*		3-2-2-2	4	
4.0			Dark gray discolored fine sand and silt with some coal							
5.0			Stratum II Reddish brown fine sand and silt	5.25	56.89	S-2*		2-2-2-2	4	
7.0			Stratum III Reddish brown fine sand with some rock fragments, pebbles	7.83	54.31	S-3**		12-13-14-13	27	
9.0			Reddish brown fine to medium sand with rock fragments and pebbles			S-4**		11-12-12-11	24	
11.0						S-5**		8-7-5-6	12	
16.0						S-6**		3-3-2-4	5	
18.0						S-7**		3-3-1/12"	3	

Notes:

* very moist

**wet

Samples S-1 and S-2 had fuel odor.

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample (2" O.D.), C = Rock Coring Run.



Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 34'
 Drilling Method #2: 2" OD Split spoon sampler from 34' to 34'5"

Project Number : 4287G1
 Date Drilled : 12/30/2012
 Inspected by : MTU
 Boring Depth: 34.42'
 Ground Surface Elevation (ft msl) : 52.20'
 Water Level - Immediate (ft bgs) : 4.83'
 Water Level -Static (ft bgs):

DEPTH BELOW WATER LEVEL	LITHOLOGIC SYMBOL	LITHOLOGY				SAMPLING DATA			
		GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)
20.0	[Symbol]	Orange brown fine sand with some rock fragments, some silt	20.00	42.14	S-8**		2-10-19-27	29	[Graph]
23.0	[Symbol]	Stratum IVA Gray and brown weathered limestone	23.00	39.14					
25.0	[Symbol]				S-9**		17-18-21-26	39	[Graph]
29.0	[Symbol]				S-10**		50/4"	100	[Graph]
34.0	[Symbol]		34.42	27.72	S-11**		50/5"	100	[Graph]
35.0	[Symbol]	Auger Refusal on limestone bedrock							

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample(2" O.D.), C=Rock Coring Run.



Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 35'
 Drilling Method #2: 2" OD Split spoon sampler from 35' to 37'

Project Number : 4287G1
 Date Drilled : 12/24/2012
 Inspected by : MTU
 Boring Depth: 37.0'
 Ground Surface Elevation (ft msl) : 52.99'
 Water Level - Immediate (ft bgs) : 6.50'
 Water Level - Static (ft bgs):

DEPTH BELOW	WATER LEVEL	LITHOLOGY				SAMPLING DATA				
		LITHOLOGIC SYMBOL	GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)
0.0			Asphalt (2")	0.75	52.24					
0.0			Modified Stone (7")							
2.0			Stratum IMF							
3.0			FILL consisting of orange brown slightly micaceous fine sand and silt with rock fragments	3.50	49.49	S-1*		3-2-2-2	4	
4.0			FILL consisting of dark brown and orange brown fine sand and silt, some organics	4.83	48.16	S-2*		2-2-3-2	5	
5.0			FILL consisting of orange brown fine sand and silt with some rock fragments	5.75	47.24					
6.0			Stratum II							
7.0			Reddish brown fine sand and silt			S-3**		2-2-2-2	4	
8.0				8.67	44.32					
9.0			Stratum III							
10.0			Reddish brown fine to medium sand with rock fragments, pebbles			S-4**		2-10-21-31	31	
11.0						S-5**		23-25-27-28	52	
12.0										
13.0				13.50	39.49					
14.0			Orange brown and brown fine to medium sand with rock fragments, pebbles							
15.0										
16.0			Notes: * very moist ** wet			S-6**		10-12-26-30	38	
17.0			Fairly hard, choppy augering from 16' to 19'							
18.0			B18 offset 12 feet towards B7 due to existing building							
19.0										
20.0										

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample (2" O.D.), C = Rock Coring Run.



Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 35'
 Drilling Method #2: 2" OD Split spoon sampler from 35' to 37'

Project Number : 4287G1
 Date Drilled : 12/24/2012
 Inspected by : MTU
 Boring Depth: 37.0'
 Ground Surface Elevation (ft msl) : 52.99'
 Water Level - Immediate (ft bgs) : 6.50'
 Water Level - Static (ft bgs):

DEPTH BELOW	WATER LEVEL	LITHOLOGY				SAMPLING DATA				
		LITHOLOGIC SYMBOL	GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)
21.0										
22.0										
23.0				23.00	29.99	S-7**		12-12-10-9	22	
24.0			Stratum IVB Multi-colored weathered quartz schist							
25.0										
26.0						S-8**		14-21-31-35	52	
27.0										
28.0										
29.0										
30.0										
31.0						S-9		8-9-10-10	19	
32.0										
33.0										
34.0										
35.0										
36.0						S-10		8-8-12-11	20	
37.0				37.00	15.99					
38.0			Boring Terminated							
39.0										
40.0										

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Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 35'
 Drilling Method #2: 2" OD Split spoon sampler from 35' to 37'

Project Number : 4287G1
 Date Drilled : 1/2/2013
 Inspected by : MTU
 Boring Depth: 37.0'
 Ground Surface Elevation (ft msl) : 51.82'
 Water Level - Immediate (ft bgs) : 5.33'
 Water Level - Static (ft bgs):

DEPTH BELOW WATER LEVEL	LITHOLOGIC SYMBOL	LITHOLOGY			SAMPLING DATA			
		GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value
0.0 - 0.83	Asphalt (4")	0.83	50.99					
0.83 - 1.0	Modified Stone (6")							
1.0 - 3.17	Stratum IMF FILL consisting of orange brown and brown fine sand and silt with rock fragments	3.17	48.65	S-1*		1-2-2-2	4	
3.17 - 5.33	FILL consisting of black organic silt with some coal	5.33	46.49	S-2*		2-2-3-2	5	
5.33 - 8.17	Stratum II Reddish brown fine sand and silt	8.17	43.65	S-3*		2-2-3-6	5	
8.17 - 9.0	Stratum III Reddish brown fine to medium sand with rock fragments, pebbles			S-4*		12-13-21-31	34	
9.0 - 11.0				S-5**		17-10-12-20	22	
11.0 - 16.0				S-6**		19-20-21-23	41	
16.0 - 20.50	Stratum IVA Orange brown, brown and grey weathered phyllitic limestone	20.50	31.32	S-7***		11-13-15-16	28	
20.50 - 23.0								

Notes:
 * very moist
 ** wet
 *** moist

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample(2" O.D.), C = Rock Coring Run.



Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 35'
 Drilling Method #2: 2" OD Split spoon sampler from 35' to 37'

Project Number : 4287G1
 Date Drilled : 1/2/2013
 Inspected by : MTU
 Boring Depth: 37.0'
 Ground Surface Elevation (ft msl) : 51.82'
 Water Level - Immediate (ft bgs) : 5.33'
 Water Level -Static (ft bgs):

DEPTH BELOW	WATER LEVEL	LITHOLOGY				SAMPLING DATA							
		LITHOLOGIC SYMBOL	GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)			
							510 20 30 40 50						
24.0		[Patterned Lithology]								[SPT Graph]			
25.0													
26.0											S-8***	10-12-21-22	33
27.0													
28.0													
29.0													
30.0													
31.0											S-9***	9-10-11-13	21
32.0													
33.0													
34.0													
35.0													
36.0		S-10***	14-18-21-32	39									
37.0		Boring Terminated		37.00	14.82								
38.0													
39.0													
40.0													
41.0													
42.0													
43.0													
44.0													
45.0													
46.0													

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S=Split Spoon sample(2" O.D.), C=Rock Coring Run.



Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 35'
 Drilling Method #2: 2" OD Split spoon sampler from 35' to 37'

Project Number : 4287G1
 Date Drilled : 12/21/2012
 Inspected by : MTU
 Boring Depth: 37.0'
 Ground Surface Elevation (ft msl) : 51.20'
 Water Level - Immediate (ft bgs) : 5.42'
 Water Level - Static (ft bgs):

DEPTH BELOW WATER LEVEL	LITHOLOGIC SYMBOL	LITHOLOGY				SAMPLING DATA						
		GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)			
										1	100	
1.0		Concrete rubble (4")										
2.0		Modified Stone (8")										
3.0		Stratum IMF	3.42	47.78	S-1*		4-2-3-3	5				
4.0		FILL consisting of orange brown and brown fine sand, some silt with rock fragments			S-2*		4-3-3-3	6				
5.0		FILL consisting of black fine sand, some slag, coal	6.33	44.87	S-3*		2-1-2-2	3				
6.0		Stratum III										
7.0		Reddish brown fine sand, occasional pebbles	9.25	41.95	S-4*		3-5-14-23	19				
8.0		Reddish brown fine to medium sand with rock fragments, pebbles			S-5*		19-20-21-23	41				
9.0												
10.0												
11.0												
12.0												
13.0												
14.0												
15.0												
16.0					S-6*		18-30-26-29	56				
17.0			17.50	33.70								
18.0		Stratum IVB										
19.0		Multi-colored weathered quartz schist										
20.0												
21.0					S-7**		11-14-15-17	29				
22.0												
23.0												
24.0												
25.0												
26.0					S-8**		6-14-17-26	31				
27.0												
28.0												
29.0												
30.0												
31.0					S-9**		8-10-11-11	21				
32.0												
33.0												
34.0												
35.0												
36.0					S-10**		9-12-12-16	24				
37.0			37.00	14.20								
		Boring Terminated										

Notes:

* wet

** very moist

Fairly hard, choppy augering from
15'6" to 17'6"

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample (2" O.D.), C = Rock Coring Run.



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Boring Number : B21

Sheet 1 of 2

Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 30'
 Drilling Method #2: 2" OD Split spoon sampler from 30' to 44'

Project Number : 4287G1
 Date Drilled : 1/3/2013
 Inspected by : MTU
 Boring Depth: 44.00'
 Ground Surface Elevation (ft msl) : 50.64'
 Water Level - Immediate (ft bgs) : 4.17'
 Water Level -Static (ft bgs):

DEPTH BELOW WATER LEVEL	LITHOLOGIC SYMBOL	LITHOLOGY			SAMPLING DATA							
		GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content				SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)
						510	20	30	40			
1.0	▲▲▲▲	Stratum IMF FILL consisting of brown fine sand and silt with rock fragments	2.50	48.14								
3.0	▲▲▲▲	FILL consisting of black fine sand and silt	3.50	47.14	S-1*					2-2-1-2	3	
5.0	●●●●	Stratum II Reddish brown fine sand and silt	6.25	44.39	S-2*					2-3-4-4	7	
7.0	●●●●	Stratum III Reddish brown fine sand	8.67	41.97	S-3*					4-4-6-6	10	
9.0	●●●●	Brown and black fine to medium sand with rock fragments, pebbles	11.00	39.64	S-4**					7-16-27-31	43	
11.0	S-5**								31-32-35-36	67		
16.0	●●●●	Notes: * very moist ** wet Hard, choppy augering from 19' to 22'			S-6**					9-16-27-28	43	
20.0	S-7								50/3" N.R.	100		
22.0												
23.0	●●●●	Orange brown fine sand and silt with occasional limestone fragments	25.67	24.97	S-8**					7-33-35-21	68	
26.0	■ ■ ■ ■	Stratum IVA Orange brown, brown, and grey weathered limestone										

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample(2" O.D.), C=Rock Coring Run.



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Boring Number : B21

Sheet 2 of 2

Project : Proposed Residential Structures
 Location : 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 30'
 Drilling Method #2: 2" OD Split spoon sampler from 30' to 44'

Project Number : 4287G1
 Date Drilled : 1/3/2013
 Inspected by : MTU
 Boring Depth: 44.00'
 Ground Surface Elevation (ft msl) : 50.64'
 Water Level - Immediate (ft bgs) : 4.17'
 Water Level -Static (ft bgs):

DEPTH BELOW	WATER LEVEL	LITHOLOGY				SAMPLING DATA				
		LITHOLOGIC SYMBOL	GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 5 10 20 30 40 50	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)
30.0		[Patterned]								
31.0	S-9**					10-13-9-6	22			
32.0										
33.0	S-10					4-3-2-3 N.R.	5			
34.0										
35.0	S-11**					3-5-5-9	10			
36.0										
37.0	S-12**					5-10-11-6	21			
38.0										
39.0	S-13**					5-12-7-7	19			
40.0										
41.0	S-14**					5-4-2-6	6			
42.0										
43.0	S-15**					4-14-31-38	45			
44.0							44.00	6.64		
45.0		Boring Terminated								
46.0										
47.0										
48.0										
49.0										
50.0										
51.0										
52.0										
53.0										
54.0										
55.0										
56.0										
57.0										
58.0										

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample (2" O.D.), C = Rock Coring Run.



Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 30'
 Drilling Method #2: 2" OD Split spoon sampler from 30' to 36'

Project Number : 4287G1
 Date Drilled : 1/2/2013
 Inspected by : MTU
 Boring Depth: 36.00'
 Ground Surface Elevation (ft msl) : 52.39'
 Water Level - Immediate (ft bgs) : 4.75'
 Water Level -Static (ft bgs):

DEPTH BELOW WATER LEVEL	LITHOLOGIC SYMBOL	LITHOLOGY				SAMPLING DATA			
		GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)
1.0	▲▲▲▲	Topsoil with rock fragments (4")							
2.0	▲▲▲▲	Stratum IMF FILL consisting of brown fine sand and silt with rock fragments	2.50	49.89	S-1*		1-2-1-1	3	
3.0	▲▲▲▲	FILL consisting of black fine sand, some organic silt	4.25	48.14	S-1*				
4.0	▲▲▲▲	Stratum II Reddish brown fine sand and silt	6.50	45.89	S-2**		1-1-1-2	2	
5.0	▲▲▲▲	Stratum III Reddish brown fine sand, some silt			S-3**		1-2-3-3	5	
6.0	▲▲▲▲				S-3**				
7.0	▲▲▲▲				S-4**		4-5-7-17	12	
8.0	▲▲▲▲				S-4**				
9.0	▲▲▲▲	Brown fine to medium sand with rock fragments, pebbles	9.33	43.06	S-5**		20-21-24-32	45	
10.0	▲▲▲▲				S-5**				
11.0	▲▲▲▲				S-5**				
12.0	▲▲▲▲				S-5**				
13.0	▲▲▲▲		13.50	38.89	S-5**				
14.0	▲▲▲▲	Orange brown fine to medium sand with rock fragments, pebbles			S-6**		20-27-30-31	57	
15.0	▲▲▲▲				S-6**				
16.0	▲▲▲▲				S-6**				
17.0	▲▲▲▲	Notes: * very moist ** wet			S-6**				
18.0	▲▲▲▲	Fairly hard to hard, choppy augering from 21'3" to 23'			S-6**				
19.0	▲▲▲▲				S-6**				
20.0	▲▲▲▲				S-7**		28-42-50/3"	100	
21.0	▲▲▲▲				S-7**				
22.0	▲▲▲▲				S-7**				

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample(2" O.D.), C=Rock Coring Run.



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Boring Number : B22

Sheet 2 of 2

Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 30'
 Drilling Method #2: 2" OD Split spoon sampler from 30' to 36'

Project Number : 4287G1
 Date Drilled : 1/2/2013
 Inspected by : MTU
 Boring Depth: 36.00'
 Ground Surface Elevation (ft msl) : 52.39'
 Water Level - Immediate (ft bgs) : 4.75'
 Water Level -Static (ft bgs):

DEPTH BELOW	WATER LEVEL	LITHOLOGY				SAMPLING DATA					
		LITHOLOGIC SYMBOL	GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)	
23.0		[Symbol: Orange brown fine sand and silt with limestone fragments]	Orange brown fine sand and silt with limestone fragments	23.00	29.39						
24.0											
25.0											
26.0						S-8**		10-11-11-10	22		
27.0											
28.0		[Symbol: Stratum IVA Orange brown, brown, and grey weathered limestone]	Stratum IVA Orange brown, brown, and grey weathered limestone	28.00	24.39						
29.0											
30.0											
31.0								S-9*		3-3-4-3	7
32.0											
33.0						S-10*		8-7-6-6	13		
34.0											
35.0						S-11*		9-10-13-16	23		
36.0				36.00	16.39						
37.0			Boring Terminated								
38.0											
39.0											
40.0											
41.0											
42.0											
43.0											
44.0											
45.0											

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample (2" O.D.), C = Rock Coring Run.



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Boring Number : B23

Sheet 1 of 2

Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 30'
 Drilling Method #2: 2" OD Split spoon sampler from 30' to 36'

Project Number : 4287G1
 Date Drilled : 1/2/2013
 Inspected by : MTU
 Boring Depth: 36.00'
 Ground Surface Elevation (ft msl) : 51.97'
 Water Level - Immediate (ft bgs) : 4.83'
 Water Level - Static (ft bgs):

DEPTH BELOW WATER LEVEL	LITHOLOGIC SYMBOL	LITHOLOGY				SAMPLING DATA			
		GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)
1.0	▲▲▲▲▲	Stratum IMF FILL consisting of brown fine sand and silt with rock fragments							
2.0	▲▲▲▲▲								
3.0	▲▲▲▲▲		3.00	48.97	S-1*		2-2-2-2	4	
4.0	○●○●○●	FILL consisting of black organic silt, some coal	4.50	47.47					
5.0	▲▲▲▲▲	Stratum II Reddish brown fine sand and silt	5.25	46.72	S-2*		2-3-3-5	6	
6.0	▲▲▲▲▲								
7.0	▲▲▲▲▲	Stratum III Reddish brown fine sand, some silt			S-3*		5-6-5-5	11	
8.0	▲▲▲▲▲		8.17	43.80					
9.0	●●●●●	Reddish brown fine sand, occasional rock fragments	9.25	42.72	S-4*		15-16-28-36	44	
10.0	●●●●●	Reddish brown fine sand, some medium sand with rock fragments, pebbles			S-5**		29-34-50/4"	100	
11.0	●●●●●		11.50	40.47					
12.0	●●●●●	Orange brown fine to medium sand with rock fragments, pebbles, occasional boulders							
13.0	●●●●●								
14.0	●●●●●								
15.0	●●●●●				S-6**		50/5"	100	
16.0	●●●●●								
17.0	●●●●●								
18.0	●●●●●								
19.0	●●●●●								
20.0	●●●●●	Notes: * very moist ** wet							
21.0	●●●●●				S-7**		21-28-30-34	58	
22.0	●●●●●	Hard augering from 11'6" to 13'6"							
23.0	●●●●●	Fairly hard augering from 15'6" to 22'6"							
24.0	●●●●●								

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample(2" O.D.), C=Rock Coring Run.



Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 30'
 Drilling Method #2: 2" OD Split spoon sampler from 30' to 36'

Project Number : 4287G1
 Date Drilled : 1/2/2013
 Inspected by : MTU
 Boring Depth: 36.00'
 Ground Surface Elevation (ft msl) : 51.97'
 Water Level - Immediate (ft bgs) : 4.83'
 Water Level -Static (ft bgs):

DEPTH BELOW	WATER LEVEL	LITHOLOGY				SAMPLING DATA				
		LITHOLOGIC SYMBOL	GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)
25.0		[Symbol]		28.00	23.97	S-8**		14-19-20-19	39	[Graph]
26.0										
27.0		[Symbol]	Stratum IVA Orange brown, tan, and grey weathered phyllitic limestone			S-9*		2-3-3-4	6	[Graph]
28.0										
29.0										
30.0										
31.0		[Symbol]				S-10*		4-5-6-8	11	[Graph]
32.0										
33.0										
34.0		[Symbol]				S-11*		12-13-14-23	27	[Graph]
35.0										
36.0			Boring Terminated							
37.0										
38.0										
39.0										
40.0										
41.0										
42.0										
43.0										
44.0										
45.0										
46.0										
47.0										
48.0										

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample (2" O.D.), C = Rock Coring Run.



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Boring Number : B24

Sheet 1 of 2

Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 35'
 Drilling Method #2: 2" OD Split spoon sampler from 35' to 36.42'

Project Number : 4287G1
 Date Drilled : 12/27/2012
 Inspected by : MTU
 Boring Depth: 36.42'
 Ground Surface Elevation (ft msl) : 56.29'
 Water Level - Immediate (ft bgs) : 8.83'
 Water Level -Static (ft bgs):

DEPTH BELOW WATER LEVEL	LITHOLOGIC SYMBOL	LITHOLOGY				SAMPLING DATA			
		GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)
1.0	▼▼▼▼	Stratum IMF FILL consisting of brown fine sand with rock fragments, boulders							
2.0	▼▼▼▼								
3.0	○●○●	FILL consisting of black fine sand, some slag, coal, some brick	3.00	53.29	S-1*		2-1-1-2	2	●
4.0	○●○●								
5.0	○●○●				S-2*		1-1-1-2	2	●
6.0	○●○●								
7.0	○●○●				S-3*		2-2-2-1	4	●
8.0	○●○●								
9.0	○●○●		9.50	46.79	S-4*		2-2-3-3	5	●
10.0	○●○●	Stratum II Reddish brown fine sand and silt							
11.0	○●○●		11.58	44.71	S-5*		3-3-5-12	8	●
12.0	○●○●	Stratum III Reddish brown fine sand, some medium sand with rock fragments, pebbles			S-6**		38-50/4"	100	●
13.0	○●○●								
14.0	○●○●	Orange brown fine to medium sand with rock fragments, pebbles	14.00	42.29					
15.0	○●○●				S-7*		30-32-50/4"	100	●
16.0	○●○●								
17.0	○●○●								
18.0	○●○●	Notes: * wet ** moist							
19.0	○●○●	Hard choppy augering from 12'6" to 18'6" and from 21' to 22'6"							
20.0	○●○●								

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample(2" O.D.), C = Rock Coring Run.



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Boring Number : B24

Sheet 2 of 2

Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 35'
 Drilling Method #2: 2" OD Split spoon sampler from 35' to 36.42'

Project Number : 4287G1
 Date Drilled : 12/27/2012
 Inspected by : MTU
 Boring Depth: 36.42'
 Ground Surface Elevation (ft msl) : 56.29'
 Water Level - Immediate (ft bgs) : 8.83'
 Water Level -Static (ft bgs):

DEPTH BELOW	WATER LEVEL	LITHOLOGY				SAMPLING DATA				
		LITHOLOGIC SYMBOL	GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)
21.0						S-8*		48-50/4"	100	
22.0				22.50	33.79					
23.0			Orange brown and tan fine sand and silt							
24.0										
25.0										
26.0						S-9*		8-9-16-28	25	
27.0										
28.0										
29.0										
30.0										
31.0						S-10**		10-12-27-41	39	
32.0										
33.0										
34.0										
35.0										
36.0				36.17	20.12	S-11**		21-32-50/5"	100	
37.0			Stratum IVB Orange brown and brown weathered quartz schist							
38.0			Spoon Refusal on dense weathered schist							
39.0										
40.0										

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample (2" O.D.), C = Rock Coring Run.



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Boring Number : B25

Sheet 1 of 2

Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 35'
 Drilling Method #2: 2" OD Split spoon sampler from 35' to 39.92'

Project Number : 4287G1
 Date Drilled : 12/24/2012
 Inspected by : MTU
 Boring Depth: 39.92'
 Ground Surface Elevation (ft msl) : 55.33'
 Water Level - Immediate (ft bgs) : 7.75'
 Water Level -Static (ft bgs):

DEPTH BELOW WATER LEVEL	LITHOLOGIC SYMBOL	LITHOLOGY			SAMPLING DATA				
		GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)
1.0	▲▲▲▲	Topsoil with rock fragments (3")							
2.0	▲▲▲▲	Stratum IMF FILL consisting of brown and orange brown fine sand with rock fragments	3.00	52.33	S-1*		2-3-4-4	7	
3.0	▲▲▲▲	FILL consisting of fine sand, some slag, coal, some silt			S-2*		2-3-3-3	6	
4.0	▲▲▲▲				S-3**		3-3-3-3	6	
5.0	▲▲▲▲		7.00	48.33					
6.0	▲▲▲▲	Grey organic silt			S-4*		3-4-5-4	9	
7.0	▲▲▲▲		9.17	46.16					
8.0	▲▲▲▲	Stratum II Reddish brown fine sand and silt	11.33	44.00	S-5*		2-2-4-21	6	
9.0	▲▲▲▲	Stratum III Reddish brown fine sand, some medium sand with rock fragments	14.00	41.33	S-6**		24-39-50/4"	100	
10.0	▲▲▲▲				S-7**		35-50/5"	100	
11.0	▲▲▲▲	Orange brown fine to medium sand with rock fragments, pebbles							
12.0	▲▲▲▲		19.00	36.33					
13.0	▲▲▲▲	Orange brown fine sand and silt			S-8		11-20-34-38	54	
14.0	▲▲▲▲	Stratum IVA Multi-colored weathered phyllitic limestone	21.25	34.08					
15.0	▲▲▲▲								
16.0	▲▲▲▲								
17.0	▲▲▲▲								
18.0	▲▲▲▲								
19.0	▲▲▲▲								
20.0	▲▲▲▲								
21.0	▲▲▲▲								
22.0	▲▲▲▲								
23.0	▲▲▲▲								
24.0	▲▲▲▲								
25.0	▲▲▲▲								

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample (2" O.D.), C = Rock Coring Run.



Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 35'
 Drilling Method #2: 2" OD Split spoon sampler from 35' to 39.92'

Project Number : 4287G1
 Date Drilled : 12/24/2012
 Inspected by : MTU
 Boring Depth: 39.92'
 Ground Surface Elevation (ft msl) : 55.33'
 Water Level - Immediate (ft bgs) : 7.75'
 Water Level -Static (ft bgs):

DEPTH BELOW	WATER LEVEL	LITHOLOGY				SAMPLING DATA						
		LITHOLOGIC SYMBOL	GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 5 10 20 30 40 50	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)		
26.0		[Pattern]										
27.0	S-9*										17-25-11-50/4"	36
28.0												
29.0												
30.0												
31.0	S-10*										9-11-13-16	24
32.0												
33.0												
34.0												
35.0												
36.0	S-11										1/12"-1/12" N.R.	1
37.0												
38.0	S-12										2-3-5-10	8
39.0												
39.92	S-13	23-50/5"	100									
40.0	Boring Terminated											
41.0												
42.0												
43.0												
44.0												
45.0												
46.0												
47.0												
48.0												
49.0												
50.0												

Notes:
 * very moist
 ** wet
 Fairly hard, choppy augering from 13'

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample (2" O.D.), C = Rock Coring Run.



Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 29'
 Drilling Method #2: 2" OD Split spoon sampler from 29' to 45'

Project Number : 4287G1
 Date Drilled : 12/19/2012
 Inspected by : MTU
 Boring Depth: 45.00'
 Ground Surface Elevation (ft msl) : 52.97'
 Water Level - Immediate (ft bgs) : 6.17'
 Water Level -Static (ft bgs):

DEPTH BELOW	WATER LEVEL	LITHOLOGY				SAMPLING DATA				
		LITHOLOGIC SYMBOL	GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)
1.0		[Symbol: Dotted pattern]	Stratum IMF FILL consisting of black fine sand with rock fragments, brick, concrete, boulders	1.00	51.97					
2.0			Concrete							
3.0		[Symbol: Dotted pattern]	FILL consisting of black fine sand, some slag, coal			S-1*		2-1-1-1	2	
4.0										
5.0		[Symbol: Dotted pattern]		6.00	46.97	S-2*		1-1-1-2	2	
6.0										
7.0		[Symbol: Horizontal lines]	Reddish brown and grey slightly organic silt			S-3*		1/12"-1-3	1	
8.0					8.25	44.72				
9.0		[Symbol: Horizontal lines]	Stratum III Reddish brown and orange brown fine sand and silt			S-4*		4-4-5-8	9	
10.0					10.17	42.80				
11.0		[Symbol: Horizontal lines]	Reddish brown fine to medium sand with rock fragments, pebbles			S-5**		12-15-17-24	32	
12.0										
13.0		[Symbol: Horizontal lines]		14.00	38.97					
14.0										
15.0		[Symbol: Horizontal lines]	Orange brown fine sand and silt with occasional rock fragments			S-6**		1/24"	1	
16.0										
17.0		[Symbol: Horizontal lines]				S-7**		1-2-8-9	10	
18.0										
19.0		[Symbol: Horizontal lines]		20.00	32.97	S-8**		8-11-10-8	21	
20.0										
21.0		[Symbol: Horizontal lines]	Stratum IVA Grey and brown weathered limestone							
22.0										
23.0		[Symbol: Horizontal lines]								
24.0										
25.0		[Symbol: Horizontal lines]				S-9**		11-12-13-12	25	
26.0										
27.0										

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample (2" O.D.), C = Rock Core Run.



Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 29'
 Drilling Method #2: 2" OD Split spoon sampler from 29' to 45'

Project Number : 4287G1
 Date Drilled : 12/19/2012
 Inspected by : MTU
 Boring Depth: 45.00'
 Ground Surface Elevation (ft msl) : 52.97'
 Water Level - Immediate (ft bgs) : 6.17'
 Water Level -Static (ft bgs):

DEPTH BELOW	WATER LEVEL	LITHOLOGY				SAMPLING DATA							
		LITHOLOGIC SYMBOL	GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)			
											1	100	
28.0		[Lithologic Symbol: Bricks]											
29.0													
30.0											S-10**	2-2-4-5	6
31.0													
32.0											S-11**	5-7-6-6	13
33.0													
34.0											S-12**	2-1-1/12"	1
35.0													
36.0													
37.0											S-13**	1/48"	1
38.0													
39.0													
40.0											S-14**	2-2-6-3	8
41.0													
42.0											S-15**	1/12"-1/18"	1
43.0													
44.0		S-16**	6-28-33-35	61									
45.0			45.00	7.97									
46.0		Boring Terminated											
47.0													
48.0													
49.0													
50.0													
51.0													
52.0													
53.0													
54.0													

Notes:
 * very moist
 ** wet

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample(2" O.D.), C=Rock Coring Run.



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Boring Number : B27

Sheet 1 of 1

Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 35'
 Drilling Method #2: 2" OD Split spoon sampler from 35' to 35.08'

Project Number : 4287G1
 Date Drilled : 12/24/2012
 Inspected by : MTU
 Boring Depth: 35.08'
 Ground Surface Elevation (ft msl) : 55.80'
 Water Level - Immediate (ft bgs) : 9.67'
 Water Level -Static (ft bgs):

DEPTH BELOW WATER LEVEL	LITHOLOGIC SYMBOL	LITHOLOGY			SAMPLING DATA				
		GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)
1.0		Top soil with rock fragments, concrete (4")							
3.0		Stratum IMF	3.00	52.80					
4.0		FILL consisting of concrete boulders, brick, some brown fine sand			S-1*		2-3-2-2	5	
6.0		Concrete			S-2*		2-2-1-1	3	
8.0		FILL consisting of black fine sand, cinders, some slag, coal, some brick	8.17	47.63					
9.0			9.75	46.05	S-3*		2-1-1-2	2	
11.0		Grey organic silt			S-4*		5-6-6-5	12	
12.0		Stratum II	12.67	43.13					
13.0		Reddish brown fine sand and silt			S-5*		5-14-35-42	49	
15.0		Stratum III							
16.0		Reddish brown fine sand, some medium sand with rock fragments	18.00	37.80			12-15-21-24	36	
19.0		Orange brown fine to medium sand with rock fragments, pebbles, occasional boulders			S-7**		35-41-50/5"	100	
23.0			23.50	32.30					
24.0		Stratum IVB							
25.0		Orange brown, brown, and grey weatehred quartz schist			S-8**		6-9-12-13	21	
27.0		Notes: * very moist ** wet							
28.0		Fairly hard choppy augering from 19' to 23'6"			S-9**		5-6-7-8	13	
30.0		Hard augering from 33'6"							
32.0		Very hard augering from 34'6"							
34.0			35.08	20.72	S-10		50/1" N.R.	100	
35.0		Boring Terminated							

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample(2" O.D.), C=Rock Coring Run.



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Boring Number : B28

Sheet 1 of 1

Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 32.67'
 Drilling Method #2:

Project Number : 4287G1
 Date Drilled : 12/20/2012
 Inspected by : MTU
 Boring Depth: 32.67'
 Ground Surface Elevation (ft msl) : 56.12'
 Water Level - Immediate (ft bgs) : 7.17'
 Water Level -Static (ft bgs):

DEPTH BELOW WATER LEVEL	LITHOLOGIC SYMBOL	LITHOLOGY			SAMPLING DATA				
		GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)
1.0		Topsoil with rock fragments (3")							
2.0		Stratum IMF	3.00	53.12	S-1*		2-3-4-4	7	
3.0		FILL consisting of orange brown fine sand and silt with rock fragments, slag			S-2*		4-4-6-7	10	
4.0		FILL consisting of black and orange brown fine sand, some slag, coal			S-3*		5-6-5-3	11	
5.0			8.50	47.62	S-4**		2-3-2-1	5	
6.0		Reddish brown and brown organic silt with roots			S-5**		2-2-2-2	4	
7.0			12.25	43.87	S-6*		2-8-16-40	24	
8.0		Stratum II	13.25	42.87	S-6*				
9.0		Reddish brown fine sand and silt	14.50	41.62					
10.0		Stratum III			S-7***		13-22-21-19	43	
11.0		Reddish brown fine sand, some medium sand with occasional rock fragments							
12.0		Reddish brown fine to medium sand with rock fragments, pebbles	21.00	35.12	S-8**		9-13-8-16	21	
13.0		Stratum IVA							
14.0		Orange brown, tan, and grey weathered limestone			S-9		50/5"	100	
15.0									
16.0									
17.0									
18.0									
19.0									
20.0									
21.0									
22.0									
23.0									
24.0									
25.0									
26.0									
27.0									
28.0									
29.0									
30.0									
31.0									
32.0			32.67	23.45	S-10		50/1" N.R.	100	
33.0		Auger Refusal on limestone bedrock							
34.0									
35.0		Notes:							
36.0		* moist							
37.0		** very moist							
38.0		*** wet							
39.0		Hard augering from 25'6"							
40.0		Very hard augering from 29'6"							

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample (2" O.D.), C = Rock Coring Run.



Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 35'
 Drilling Method #2: 2" OD Split spoon sampler from 35' to 36.75'

Project Number : 4287G1
 Date Drilled : 12/27/2012
 Inspected by : MTU
 Boring Depth: 36.75'
 Ground Surface Elevation (ft msl) : 55.78'
 Water Level - Immediate (ft bgs) : 7.33'
 Water Level -Static (ft bgs):

DEPTH BELOW WATER LEVEL	LITHOLOGIC SYMBOL	LITHOLOGY				SAMPLING DATA			
		GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)
0.0		Stratum IMF FILL consisting of dark brown fine sand with rock fragments, some boulders							
3.0		FILL consisting of black and orange brown fine sand, some slag, coal, cinders	3.00	52.78	S-1*		2-3-2-2	5	
5.0							3-3-2-1	5	
7.0							1-1-1-1	2	
8.17		Grey organic silt	8.17	47.61	S-3**				
10.0							1/12"-1-2	1	
10.17		Reddish brown slightly organic silt	10.17	45.61					
10.58			10.58	45.20					
11.25		Stratum II Reddish brown fine sand and silt	11.25	44.53	S-5*		2-3-3-4	6	
12.67		Orange brown fine sand and silt, some clay	12.67	43.11	S-6*		9-29-42-54	71	
14.50		Stratum III Reddish brown fine sand, some medium sand with rock fragments, pebbles	14.50	41.28					
15.0		Orange brown fine to medium sand with rock fragments, pebbles			S-7**		50/5"	100	

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample (2" O.D.), C = Rock Coring Run.



Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 35'
 Drilling Method #2: 2" OD Split spoon sampler from 35' to 36.75'

Project Number : 4287G1
 Date Drilled : 12/27/2012
 Inspected by : MTU
 Boring Depth: 36.75'
 Ground Surface Elevation (ft msl) : 55.78'
 Water Level - Immediate (ft bgs) : 7.33'
 Water Level - Static (ft bgs):

DEPTH BELOW	WATER LEVEL	LITHOLOGY				SAMPLING DATA				
		LITHOLOGIC SYMBOL	GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)
20.0										
21.0						S-8**	29-32-39-44	71		
22.0										
23.0			Stratum IVB	23.00	32.78					
24.0			Multi-colored weathered schist							
25.0										
26.0						S-9*	14-15-19-32	34		
27.0										
28.0										
29.0			Notes:							
30.0			* very moist							
31.0			** wet							
31.0			Hard augering from 14'3" to 16'6"			S-10	29-50/5"	100		
32.0										
33.0										
34.0										
35.0										
36.0						S-11	17-20-44-50/3"	64		
36.75				36.75	19.03					
37.0			Boring Terminated							
38.0										

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Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 35'
 Drilling Method #2: 2" OD Split spoon sampler from 35' to 35.17'

Project Number : 4287G1
 Date Drilled : 12/20/2012
 Inspected by : MTU
 Boring Depth: 35.17'
 Ground Surface Elevation (ft msl) : 53.91'
 Water Level - Immediate (ft bgs) : 7.25'
 Water Level -Static (ft bgs):

DEPTH BELOW	WATER LEVEL	LITHOLOGY				SAMPLING DATA				
		LITHOLOGIC SYMBOL	GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)
1.0			Topsoil (4")							
2.0			Stratum IMF							
3.0			FILL consisting of orange brown fine sand and silt with some slag, rock fragments, coal, brick							
4.0					S-1*		2-2-3-2	5		
5.0					S-2*		2-2-2-2	4		
6.0				7.00	46.91	S-3*		3-2-2-2	4	
7.0			Brown and reddish brown organic silt							
8.0					S-4*		2-2-4-4	6		
9.0			Stratum II	9.43	44.48					
10.0			Reddish brown fine sand and silt, some clay	10.25	43.66					
11.0					S-5**		13-26-32-36	58		
12.0			Stratum III							
13.0			Reddish brown fine to medium sand with rock fragments, pebbles							
14.0					S-6***		18-23-32-34	55		
15.0				18.00	35.91					
16.0			Stratum IV							
17.0			Multi-colored weathered schist							
18.0					S-7		50/5"	100		
19.0										
20.0					S-8		50/4"	100		
21.0										
22.0										
23.0										
24.0										
25.0										
26.0										
27.0										
28.0										
29.0										
30.0										
31.0										
32.0										
33.0										
34.0										
35.0				35.17	18.74	S-10		50/2" N.R.	100	
36.0			Boring Terminated							

Notes:
 * very moist
 ** moist
 *** wet

Hard augering from 18'

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample(2" O.D.), C=Rock Coring Run.



Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 31.42'
 Drilling Method #2:

Project Number : 4287G1
 Date Drilled : 12/21/2012
 Inspected by : MTU
 Boring Depth: 31.42'
 Ground Surface Elevation (ft msl) : 55.18'
 Water Level - Immediate (ft bgs) : 6.42'
 Water Level -Static (ft bgs):

DEPTH BELOW WATER LEVEL	LITHOLOGIC SYMBOL	LITHOLOGY			SAMPLING DATA						
		GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)		
1.0	[Symbol: Brown fine sand with rock fragments]	Brown fine sand with rock fragments	3.00	52.18	S-1*		2-3-4-5	7	[SPT Graph: Plotted points at (3.0, 7), (4.0, 7), (5.0, 5), (6.0, 4), (10.0, 1), (11.0, 34), (16.0, 100), (21.0, 19), (26.0, 35), (30.0, 100)]		
2.0											
3.0											
4.0											
5.0	[Symbol: FILL consisting of black fine sand with some slag, coal fragments and coal dirt]	Stratum IMF FILL consisting of black fine sand with some slag, coal fragments and coal dirt			S-2*		6-4-3-3	7			
6.0											
7.0											
8.0											
9.0											
10.0			10.00	45.18	S-4*		2-2-2-3	4			
11.0	[Symbol: Reddish brown fine sand and silt]	Stratum II Reddish brown fine sand and silt			S-5		1/12"-1-2 N.R.	1			
12.0											
13.0					S-6*		1-12-22-35	34			
14.0	[Symbol: Reddish brown fine to medium sand with rock fragments, pebbles, occasional boulders]	Stratum III Reddish brown fine to medium sand with rock fragments, pebbles, occasional boulders									
15.0											
16.0											
17.0											
18.0											
19.0											
20.0											
21.0			21.00	34.18	S-8**		8-6-13-15	19			
22.0	[Symbol: Multi-colored weathered schist]	Stratum IVB Multi-colored weathered schist									
23.0											
24.0											
25.0											
26.0					S-9*		11-16-19-21	35			
27.0											
28.0											
29.0											
30.0					S-10		50/2" N.R.	100			
31.0			31.42	23.76							
32.0		Auger Refusal on schist bedrock									
33.0											
34.0											
35.0											

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample(2" O.D.), C=Rock Coring Run.



Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 26.50'
 Drilling Method #2:

Project Number : 4287G1
 Date Drilled : 12/19/2012
 Inspected by : MTU
 Boring Depth: 26.50'
 Ground Surface Elevation (ft msl) : 56.12'
 Water Level - Immediate (ft bgs) : 9.17'
 Water Level -Static (ft bgs):

DEPTH BELOW WATER LEVEL	LITHOLOGIC SYMBOL	LITHOLOGY			SAMPLING DATA				
		GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)
1.0	▲▲▲▲	Topsoil (3")							
2.0	▲▲▲▲	Stratum IMF FILL consisting of orange brown fine sand and silt, some clay with pebbles	3.00	53.12	S-1*		2-2-3-3	5	
4.0	▲▲▲▲	FILL consisting of black and orange brown fine sand, some slag, coal, brick			S-2*		3-3-4-2	7	
5.0					S-3*		3-3-3-3	6	
6.0					S-4*		3-3-2-2	5	
7.0			9.50	46.62					
8.0					S-5*		2-1-2-1	3	
9.0		Brown and reddish brown slightly organic silt with some roots	12.25	43.87					
10.0		Stratum II			S-6*		2-4-7-23	11	
11.0		Orange brown and reddish brown fine sand and silt, trace of clay	13.75	42.37					
12.0		Stratum III			S-7*		42-50/5"	100	
13.0		Reddish brown fine to medium sand with rock fragments, pebbles	18.00	38.12					
14.0		Stratum IVB			S-8		16-31-50/4"	100	
15.0		Multi-colored weathered phyllite							
16.0									
17.0									
18.0									
19.0									
20.0									
21.0									
22.0									
23.0		Notes: *very moist							
24.0		Hard augering from 20'4"			S-9		50/2" N.R.	100	
25.0									
26.0			26.50	29.62					
27.0		Auger Refusal on schist bedrock							

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S=Split Spoon sample(2" O.D.), C=Rock Coring Run.



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Boring Number : B33

Sheet 1 of 2

Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 34'
 Drilling Method #2: 2" OD Split spoon sampler from 34' to 34.08'

Project Number : 4287G1
 Date Drilled : 12/27/2012
 Inspected by : MTU
 Boring Depth: 34.08'
 Ground Surface Elevation (ft msl) : 55.90'
 Water Level - Immediate (ft bgs) : 8.92'
 Water Level -Static (ft bgs):

DEPTH BELOW	WATER LEVEL	LITHOLOGY				SAMPLING DATA					
		LITHOLOGIC SYMBOL	GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)	
1.0		▲▲▲▲▲	Stratum IMF FILL consisting of concrete fragments and boulders with rock fragments, fine sand								
2.0		▲▲▲▲▲									
3.0		▲▲▲▲▲		3.50	52.40	S-1*		3-2-2-2	4		
4.0		○●○●○●	FILL consisting of black fine sand, some slag, coal, cinders, brick								
5.0		○●○●○●				S-2*		2-2-1-1	3		
6.0		○●○●○●									
7.0		○●○●○●		7.00	48.90	S-3*		1/12"-1/12"	1		
8.0		○●○●○●	Reddish brown and brown slightly organic silt								
9.0		○●○●○●				S-4*		1/12"-1/12"	1		
10.0		○●○●○●		10.50	45.40						
11.0		○●○●○●	Stratum II Reddish brown fine sand and silt, trace of clay			S-5**		1-2-2-2	4		
12.0		○●○●○●		12.25	43.65						
13.0		○●○●○●	Orange brown fine sand and silt, some clay			S-6*		3-3-6-6	9		
14.0		○●○●○●		14.00	41.90						
15.0		○●○●○●	Orange brown fine sand and silt, some clay with some rock fragments and pebbles			S-7**		18-42-50/4"	100		
16.0		○●○●○●									
17.0		○●○●○●		17.00	38.90						
18.0		○●○●○●	Stratum III Orange brown fine to medium sand with rock fragments, pebbles								
19.0		○●○●○●									
20.0		○●○●○●		20.00	35.90	S-8		23-16-13-22	29		
21.0		○●○●○●	Stratum IVB Multi-colored weathered schist								
22.0		○●○●○●									
23.0		○●○●○●									
24.0		○●○●○●				S-9		50/3"	100		
25.0		○●○●○●									

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample(2" O.D.), C=Rock Coring Run.



Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 34'
 Drilling Method #2: 2" OD Split spoon sampler from 34' to 34.08'

Project Number : 4287G1
 Date Drilled : 12/27/2012
 Inspected by : MTU
 Boring Depth: 34.08'
 Ground Surface Elevation (ft msl) : 55.90'
 Water Level - Immediate (ft bgs) : 8.92'
 Water Level -Static (ft bgs):

DEPTH BELOW	WATER LEVEL	LITHOLOGY				SAMPLING DATA				
		LITHOLOGIC SYMBOL	GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot) 1 100
26.0										
27.0										
28.0										
29.0										
30.0						S-10		50/2" N.R.	100	
31.0										
32.0										
33.0										
34.0				34.08	21.82	S-11		50/1" N.R.	100	
35.0			Boring Terminated							
36.0										
37.0										
38.0										
39.0										
40.0										
41.0										
42.0										
43.0										
44.0										
45.0										
46.0										
47.0										
48.0										
49.0										
50.0										

Notes:

* very moist
 ** wet

Very hard augering from 21'6" to 23'

Hard augering from 23'

Very hard augering from 31'

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample (2" O.D.), C = Rock Coring Run.



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Boring Number : B34

Sheet 1 of 2

Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 34'
 Drilling Method #2: 2" OD Split spoon sampler from 34' to 34.17'

Project Number : 4287G1
 Date Drilled : 12/21/2012
 Inspected by : MTU
 Boring Depth: 34.17'
 Ground Surface Elevation (ft msl) : 54.04'
 Water Level - Immediate (ft bgs) : 5.75'
 Water Level -Static (ft bgs):

DEPTH BELOW	WATER LEVEL	LITHOLOGIC SYMBOL	LITHOLOGY				SAMPLING DATA											
			GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)								
											510	20	30	40	50			
1.0		▲▲▲▲▲	Topsoil (4")															
2.0		▲▲▲▲▲	Stratum IMF FILL consisting of orange brown fine sand and silt with some rock fragments	3.50	50.54	S-1*					1-2-3-2	5						
4.0		○●○●○●	FILL consisting of black fine sand, some slag, coal fragments and coal dirt, some wood			S-2*					2-2-2-2	4						
6.0	▼	○●○●○●				S-3*					1-2-3-2	5						
8.0		○●○●○●		8.25	45.79	S-3*												
9.0		○●○●○●	Brown and reddish brown organic silt with roots	9.50	44.54	S-4*					2-2-2-3	4						
10.0		○●○●○●	Stratum II Orange brown fine sand and silt, some clay			S-5*					2-3-4-6	7						
12.0		○●○●○●				S-6*					5-8-10-10	18						
14.0		○●○●○●		14.25	39.79	S-6*												
15.0		○●○●○●	Stratum III Reddish brown fine sand, some medium sand with rock fragments			S-7*					29-37-41-46	78						
17.0		○●○●○●		17.50	36.54	S-7*												
18.0		○●○●○●	Reddish brown fine to medium sand with rock fragments, pebbles			S-8**					24-27-28-30	55						
20.0		○●○●○●				S-8**												
22.0		○●○●○●		22.00	32.04	S-8**												
23.0		○●○●○●	Stratum IVB Multi-colored weathered schist			S-9					50/3"	100						
24.0		○●○●○●				S-9												
25.0		○●○●○●				S-9												

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample (2" O.D.), C = Rock Coring Run.



Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 34'
 Drilling Method #2: 2" OD Split spoon sampler from 34' to 34.17'

Project Number : 4287G1
 Date Drilled : 12/21/2012
 Inspected by : MTU
 Boring Depth: 34.17'
 Ground Surface Elevation (ft msl) : 54.04'
 Water Level - Immediate (ft bgs) : 5.75'
 Water Level -Static (ft bgs):

DEPTH BELOW WATER LEVEL	LITHOLOGIC SYMBOL	LITHOLOGY				SAMPLING DATA			
		GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)
26.0									
27.0									
28.0									
29.0									
30.0					S-10		50/2" N.R.	100	
31.0									
32.0									
33.0									
34.0			34.17	19.87	S-11		50/2" N.R.	100	
35.0		Boring Terminated							
36.0									
37.0									
38.0									
39.0									
40.0									
41.0									
42.0									
43.0									
44.0									
45.0									
46.0									
47.0									
48.0									
49.0									
50.0									

Notes:
 * very moist
 ** wet
 Hard augering from 22'

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample(2" O.D.), C=Rock Coring Run.



Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 35'
 Drilling Method #2: 2" OD Split spoon sampler from 35' to 35.17'

Project Number : 4287G1
 Date Drilled : 12/20/2012
 Inspected by : MTU
 Boring Depth: 35.17'
 Ground Surface Elevation (ft msl) : 53.31'
 Water Level - Immediate (ft bgs) : 6.08'
 Water Level -Static (ft bgs):

DEPTH BELOW WATER LEVEL	LITHOLOGIC SYMBOL	LITHOLOGY				SAMPLING DATA			
		GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)
0.0		Topsoil (4")							
1.0		Stratum IMF FILL consisting of brown and orange brown fine sand and silt with rock fragments							
2.0									
3.0		FILL consisting of black fine sand, some slag, coal	3.00	50.31	S-1*		2-2-2-2	4	
4.0									
5.0							2-2-7-6	9	
6.0									
7.0		Reddish brown and brown slightly organic fine sand and silt	7.00	46.31	S-3*		6-4-2-2	6	
8.0									
9.0		Stratum II Reddish brown fine sand and silt, some clay			S-4*		3-6-6-7	12	
10.0									
11.0							5-8-8-11	16	
12.0									
13.0		Stratum III Reddish brown fine sand, some medium sand with rock fragments	12.17	41.14	S-6		20-46-50/3"	100	
14.0									
15.0									
16.0		Reddish brown fine to medium sand with rock fragments, pebbles	14.50	38.81	S-7**		13-16-21-24	37	
17.0									
18.0									

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample (2" O.D.), C = Rock Core Run.



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Boring Number : B35

Sheet 2 of 2

Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 35'
 Drilling Method #2: 2" OD Split spoon sampler from 35' to 35.17'

Project Number : 4287G1
 Date Drilled : 12/20/2012
 Inspected by : MTU
 Boring Depth: 35.17'
 Ground Surface Elevation (ft msl) : 53.31'
 Water Level - Immediate (ft bgs) : 6.08'
 Water Level -Static (ft bgs):

DEPTH BELOW WATER LEVEL	LITHOLOGIC SYMBOL	LITHOLOGY				SAMPLING DATA			
		GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)
19.0									
20.0			20.50	32.81					
21.0		Stratum IVB Multi-colored weathered phyllite			S-8*		15-18-39-49	57	
22.0									
23.0									
24.0									
25.0					S-9		50/2"	100	
26.0							N.R.		
27.0									
28.0									
29.0									
30.0					S-10		50/1"	100	
31.0							N.R.		
32.0									
33.0									
34.0									
35.0			35.17	18.14	S-11		50/2"	100	
36.0		Boring Terminated					N.R.		

Notes:
 * very moist
 ** wet
 Hard augering from 22'6"

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample(2" O.D.), C = Rock Coring Run.



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Boring Number : B36

Sheet 1 of 1

Project : Proposed Residential Structures
 Location : 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 29.17'
 Drilling Method #2:

Project Number : 4287G1
 Date Drilled : 1/8/2013
 Inspected by : MTU
 Boring Depth: 29.17'
 Ground Surface Elevation (ft msl) : 50.93'
 Water Level - Immediate (ft bgs) : 4.17'
 Water Level - Static (ft bgs):

DEPTH BELOW WATER LEVEL	LITHOLOGIC SYMBOL	LITHOLOGY				SAMPLING DATA			
		GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)
1.0	▲▲▲▲	Topsoil with rock fragments (2")							
2.0	▲▲▲▲	Stratum IMF							
3.0	▲▲▲▲	FILL consisting of orange brown, brown and black fine sand and silt with rock fragments	4.50	46.43	S-1*		1-3-4-5	7	
4.0	▲▲▲▲								
5.0	▲▲▲▲	FILL consisting of black and some slag, cinders, coal	5.75	45.18	S-2**		4-3-3-2	6	
6.0	▲▲▲▲								
7.0	▲▲▲▲	Reddish brown and brown organic silt	8.17	42.76	S-3**		2-3-3-4	6	
8.0	▲▲▲▲								
9.0	▲▲▲▲	Stratum III			S-4*		15-22-18-26	40	
10.0	▲▲▲▲	Reddish brown fine to medium sand with rock fragments, pebbles			S-5**		23-16-15-19	31	
11.0	▲▲▲▲								
12.0	▲▲▲▲								
13.0	▲▲▲▲								
14.0	▲▲▲▲								
15.0	▲▲▲▲								
16.0	▲▲▲▲		16.00	34.93	S-6		50/2" N.R.	100	
17.0	▲▲▲▲	Stratum IVB							
18.0	▲▲▲▲	Multi-colored weathered quartz schist							
19.0	▲▲▲▲								
20.0	▲▲▲▲								
21.0	▲▲▲▲	Notes:			S-7*		8-22-31-43	53	
22.0	▲▲▲▲	* very moist							
23.0	▲▲▲▲	** wet							
24.0	▲▲▲▲	Hard choppy augering from 12'6" to 15'9"							
25.0	▲▲▲▲	Hard augering from 27'							
26.0	▲▲▲▲	Very hard augering from 29'			S-8*		10-16-38-50/4"	54	
27.0	▲▲▲▲								
28.0	▲▲▲▲								
29.0	▲▲▲▲		29.17	21.76					
30.0	▲▲▲▲	Auger Refusal on schist bedrock							

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample(2" O.D.), C=Rock Coring Run.



Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 20.67'
 Drilling Method #2:

Project Number : 4287G1
 Date Drilled : 1/8/2013
 Inspected by : MTU
 Boring Depth: 20.67'
 Ground Surface Elevation (ft msl) : 65.08'
 Water Level - Immediate (ft bgs) : 4.42'
 Water Level - Static (ft bgs):

DEPTH BELOW	WATER LEVEL	LITHOLOGY				SAMPLING DATA				
		LITHOLOGIC SYMBOL	GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)
1.0		▲▲▲▲▲	Topsoil with rock fragments (5")							
2.0		▲▲▲▲▲	Stratum IF							
3.0		▲▲▲▲▲	FILL consisting of brown and orange brown fine sand and silt with rock fragments	3.00	62.08	S-1*		2-2-2-2	4	
4.0		▲▲▲▲▲		4.00	61.08					
5.0		▲▲▲▲▲	Stratum IMF			S-2*		1-1-1-1	2	
6.0		▲▲▲▲▲	FILL consisting of black slag, coal, occasional rock fragments							
7.0		▲▲▲▲▲		7.33	57.75	S-3*		2-2-7-11	9	
8.0		▲▲▲▲▲	Stratum II							
9.0		▲▲▲▲▲	Reddish brown fine sand and silt			S-4**		12-13-18-21	31	
10.0		▲▲▲▲▲	Stratum III			S-5**		46-50/2"	100	
11.0		▲▲▲▲▲	Reddish brown fine to medium sand with rock fragments, pebbles, occasional boulders							
12.0		▲▲▲▲▲								
13.0		▲▲▲▲▲								
14.0		▲▲▲▲▲		14.00	51.08					
15.0		▲▲▲▲▲	Orange brown fine sand, trace of silt with some small pebbles			S-6*		14-17-29-53	46	
16.0		▲▲▲▲▲								
17.0		▲▲▲▲▲								
18.0		▲▲▲▲▲								
19.0		▲▲▲▲▲		19.25	45.83					
20.0		▲▲▲▲▲	Stratum IVB							
21.0		▲▲▲▲▲	Multi-colored weathered schist	20.67	44.41	S-7		50/1" N.R.	100	
22.0		▲▲▲▲▲	Auger Refusal							
23.0		▲▲▲▲▲	Notes:							
24.0		▲▲▲▲▲	* very moist							
25.0		▲▲▲▲▲	** wet							
26.0		▲▲▲▲▲	Hard, choppy augering from 10'3" to 14'							
27.0		▲▲▲▲▲	Very hard augering from 19'3".							
28.0		▲▲▲▲▲	First attempt auger refusal at 20'8".							
29.0		▲▲▲▲▲	Second attempt 10 feet towards B21. Very hard augering from 20'. Auger refusal at 21'7".							
30.0		▲▲▲▲▲								

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample(2" O.D.), C = Rock Coring Run.



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Boring Number : B38

Sheet 1 of 2

Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 33.67'
 Drilling Method #2:

Project Number : 4287G1
 Date Drilled : 1/4/2013
 Inspected by : MTU
 Boring Depth: 33.67'
 Ground Surface Elevation (ft msl) : 53.29'
 Water Level - Immediate (ft bgs) : 6.17'
 Water Level -Static (ft bgs):

DEPTH BELOW WATER LEVEL	LITHOLOGIC SYMBOL	LITHOLOGY			SAMPLING DATA			
		GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value
0.0 - 1.0	Topsoil (3")							
1.0 - 3.25	Stratum IMF FILL consisting of brown fine sand and silt with some rock fragments	3.25	50.04	S-1*		3-2-2-3	4	
3.25 - 6.17	FILL consisting of black fine sand, coal dirt, some orange brown fine sand, coal, cinders			S-2*		4-4-3-3	7	
6.17 - 8.33	Black organic silt	8.33	44.96	S-3**		1/12"-1/12"	1	
8.33 - 10.0	Stratum III Reddish brown fine to medium sand with rock fragments, pebbles			S-4**		2-8-9-8	17	
10.0 - 15.0				S-5***		10-14-19-24	33	
15.0 - 16.0				S-6***		28-43-50/3"	100	

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample (2" O.D.), C = Rock Coring Run.



Project : Proposed Residential Structures
 Location : 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 33.67'
 Drilling Method #2:

Project Number : 4287G1
 Date Drilled : 1/4/2013
 Inspected by : MTU
 Boring Depth: 33.67'
 Ground Surface Elevation (ft msl) : 53.29'
 Water Level - Immediate (ft bgs) : 6.17'
 Water Level - Static (ft bgs):

DEPTH BELOW	WATER LEVEL	LITHOLOGIC SYMBOL	LITHOLOGY			SAMPLING DATA				
			GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)
20.0										
21.0			Stratum IVA Orange brown, brown and grey weathered limestone	21.00	32.29	S-7***		13-16-20-21	36	
22.0										
23.0										
24.0										
25.0										
26.0						S-8***		8-8-32-21	40	
27.0										
28.0										
29.0										
30.0										
31.0						S-9***		18-31-50/5"	100	
32.0										
33.0										
34.0			Auger Refusal on limestone bedrock	33.67	19.62					
35.0			Notes: * moist ** very moist *** wet Hard augering from 31'6"							
36.0										
37.0										
38.0										

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample(2" O.D.), C=Rock Coreing Run.



Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 25'
 Drilling Method #2: 2" OD Split spoon sampler from 25' to 37'

Project Number : 4287G1
 Date Drilled : 1/4/2013
 Inspected by : MTU
 Boring Depth: 37.00'
 Ground Surface Elevation (ft msl) : 54.61'
 Water Level - Immediate (ft bgs) : 7.33'
 Water Level -Static (ft bgs):

DEPTH BELOW WATER LEVEL	LITHOLOGIC SYMBOL	LITHOLOGY			SAMPLING DATA			
		GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value
0.0 - 1.0	▲▲▲▲▲	Topsoil (3")						
1.0 - 3.0	▲▲▲▲▲	Stratum IMF FILL consisting of brown and dark brown fine sand and silt with rock fragments	3.00	51.61	S-1		2-3-4-3	7
3.0 - 6.5	○●○●○●	FILL consisting of black fine sand and silt with coal dirt, some brick and orange brown fine sand			S-2		4-4-5-4	9
6.5 - 7.25	▨▨▨▨▨	Reddish brown slightly organic silt	7.25	47.36	S-3		2-2-2-2	4
7.25 - 9.83	▨▨▨▨▨	Stratum II Reddish brown fine sand and silt			S-4		2-2-3-6	5
9.83 - 10.50	▨▨▨▨▨	Stratum III Reddish brown fine sand, some silt with occasional pebbles	10.50	44.11	S-5		9-16-17-17	33
10.50 - 15.0	●●●●●	Orange brown fine to medium sand with rock fragments, pebbles, occasional boulders			S-6		50/2" N.R.	100
15.0 - 18.5	●●●●●							
18.5 - 18.50	▨▨▨▨▨	Stratum IVB Multi-colored weathered schist	18.50	36.11				
18.50 - 20.0	▨▨▨▨▨							

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample (2" O.D.), C = Rock Coring Run.



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Boring Number : B39

Sheet 2 of 2

Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 25'
 Drilling Method #2: 2" OD Split spoon sampler from 25' to 37'

Project Number : 4287G1
 Date Drilled : 1/4/2013
 Inspected by : MTU
 Boring Depth: 37.00'
 Ground Surface Elevation (ft msl) : 54.61'
 Water Level - Immediate (ft bgs) : 7.33'
 Water Level -Static (ft bgs):

DEPTH BELOW	WATER LEVEL	LITHOLOGIC SYMBOL	LITHOLOGY			SAMPLING DATA				
			GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)
21.0						S-7		7-7-13-14	20	
22.0										
23.0										
24.0										
25.0										
26.0			26.00	28.61		S-8		5-5-3-11	8	
27.0			Stratum IVA Grey and tan pinnaced weathered limestone							
28.0						S-9		11-12-6-6 N.R.	18	
29.0										
30.0						S-10		6-7-6-5	13	
31.0			Notes: Samples S-1 and S-2 were moist. Samples S-3 and S-4 were very moist. Samples S-5, S-8, and S-10 through S-13 were wet.							
32.0			The spoon bent on pinnaced limestone during sampling for S-9. Cleaned out spoon, straightened it a bit and drove it continuously from 29' to 37'. Bent again.							
33.0						S-11		7-8-7-3	15	
34.0										
35.0			Very hard, choppy augering from 14'6" to 18'6"							
36.0						S-12		2-9-10-13	19	
37.0			37.00	17.61		S-13		13-16-31-46	47	
38.0			Boring Terminated							
39.0										
40.0										

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample (2" O.D.), C = Rock Coring Run.



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Boring Number : B40

Sheet 1 of 1

Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 30'
 Drilling Method #2: 2" OD Split spoon sampler from 30' to 48.83'

Project Number : 4287G1
 Date Drilled : 1/8/2013
 Inspected by : MTU
 Boring Depth: 48.83'
 Ground Surface Elevation (ft msl) : 52.97'
 Water Level - Immediate (ft bgs) : 4.75'
 Water Level -Static (ft bgs):

DEPTH BELOW	WATER LEVEL	LITHOLOGIC SYMBOL	LITHOLOGY				SAMPLING DATA											
			GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)								
											510	20	30	40	50			
1.0			Topsoil (3")															
2.0			Stratum IMF															
3.0			FILL consisting of orange brown and brown fine sand and silt with rock fragments, brick	6.25	46.72	S-1*					3-2-2-1	4						
4.0		S-2*									2-2-3-3	5						
5.0		S-3**									1-1-1-2	2						
6.0			Stratum II	9.50	43.47	S-4**					2-3-3-8	6						
7.0			Brown fine sand and silt			S-5**					24-31-50/5"	100						
8.0																		
9.0			Stratum III															
10.0			Orange brown fine to medium sand with rock fragments, pebbles			S-6**					44-27-38-54	65						
11.0																		
12.0			Orange brown fine sand and silt and fine sand layers with some phyllitic limestone fragments	19.00	33.97	S-7*					11-15-16-14	31						
13.0																		
14.0			Notes: * very moist ** wet			S-8*					8-20-28-37	48						
15.0																		
16.0			Hard augering from 11'6" to 14'6"			S-9*					1/12"-1-1 N.R.	1						
17.0																		
18.0			Notes: * very moist ** wet			S-10*					7-10-11-5	21						
19.0																		
20.0			Notes: * very moist ** wet			S-11*					5-4-6-5	10						
21.0																		
22.0			Notes: * very moist ** wet			S-12*					5-5-4-4	9						
23.0																		
24.0			Notes: * very moist ** wet			S-13*					5-6-6-7	12						
25.0																		
26.0			Notes: * very moist ** wet			S-14*					5-5-5-5	10						
27.0																		
28.0			Notes: * very moist ** wet			S-15*					4-4-3-4	7						
29.0																		
30.0			Notes: * very moist ** wet			S-16*					3-3-2-2	5						
31.0																		
32.0			Notes: * very moist ** wet			S-17*					3-4-4-4	8						
33.0																		
34.0			Notes: * very moist ** wet			S-18*					23-50/4"	100						
35.0																		
36.0			Notes: * very moist ** wet															
37.0																		
38.0			Notes: * very moist ** wet															
39.0																		
40.0			Notes: * very moist ** wet															
41.0																		
42.0			Notes: * very moist ** wet															
43.0																		
44.0			Notes: * very moist ** wet															
45.0																		
46.0			Notes: * very moist ** wet															
47.0																		
48.0			Stratum IVA	47.00	5.97	S-17*					3-4-4-4	8						
49.0			Grey and orange brown weathered limestone	48.83	4.14	S-18*					23-50/4"	100						
50.0			Spoon Refusal on dense weathered limestone															
51.0																		
52.0			Spoon Refusal on dense weathered limestone															
53.0																		
54.0			Spoon Refusal on dense weathered limestone															
55.0																		

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample (2" O.D.), C = Rock Core Run.



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Boring Number : B41

Sheet 1 of 2

Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 25'
 Drilling Method #2: 2" OD Split spoon sampler from 25' to 45'

Project Number : 4287G1
 Date Drilled : 1/7/2013
 Inspected by : MTU
 Boring Depth: 45.00'
 Ground Surface Elevation (ft msl) : 52.96'
 Water Level - Immediate (ft bgs) : 7.25'
 Water Level -Static (ft bgs):

DEPTH BELOW WATER LEVEL	LITHOLOGIC SYMBOL	LITHOLOGY			SAMPLING DATA			
		GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value
0.0 - 1.0	Topsoil (3")							
1.0 - 2.75	Stratum IMF FILL consisting of brown and dark brown fine sand and silt with some occasional rock fragments	2.75	50.21	S-1		2-2-3-4	5	
2.75 - 3.0	FILL consisting of black coal dirt with silt			S-2		3-4-4-4	8	
3.0 - 4.0				S-3		3-2-1-1	3	
4.0 - 5.0				S-4		1-2-3-4	5	
5.0 - 9.50	Stratum II Reddish brown fine sand and silt	9.50	43.46	S-5		16-24-30-44	54	
9.50 - 10.0								
10.0 - 14.0	Stratum III Reddish brown fine sand, some medium sand with rock fragments, pebbles	14.00	38.96	S-6		11-22-27-50/3"	49	
14.0 - 15.0								
15.0 - 16.0	Orange brown and reddish brown fine to medium sand with rock fragments, pebbles, boulders			S-7		50/4"	100	
16.0 - 17.0								
17.0 - 18.0								
18.0 - 19.0								
19.0 - 20.0								
20.0 - 21.0								
21.0 - 22.0								
22.0 - 23.0								

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample (2" O.D.), C = Rock Coring Run.



Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 25'
 Drilling Method #2: 2" OD Split spoon sampler from 25' to 45'

Project Number : 4287G1
 Date Drilled : 1/7/2013
 Inspected by : MTU
 Boring Depth: 45.00'
 Ground Surface Elevation (ft msl) : 52.96'
 Water Level - Immediate (ft bgs) : 7.25'
 Water Level - Static (ft bgs):

DEPTH BELOW	WATER LEVEL	LITHOLOGIC SYMBOL	LITHOLOGY			SAMPLING DATA				
			GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)
						5 10 20 30 40 50			1 100	
23.50	29.46									
24.0			Orange brown fine sand with limestone fragments							
25.0										
26.0					S-8		3-2-2-1	4		
27.0										
28.0					S-9		1-2-6-4	8		
29.0										
30.0					S-10		1/12"-1-1	1		
31.0							N.R.			
32.0					S-11		1/12"-1/12"	1		
33.0							N.R.			
34.0					S-12		3-3-2-2	5		
35.0										
36.0					S-13		2-3-2-1	5		
37.0										
38.0					S-14		2-1-1-2	2		
39.0										
40.0					S-15		1-2-3-1	5		
41.0										
42.0					S-16		6-7-8-19	15		
43.0										
44.0			Stratum IVA Grey and orange brown weathered limestone	42.75	10.21					
45.0					S-17		16-17-24-27	41		
45.0										
46.0			Boring Terminated	45.00	7.96					

Notes:
 Samples S-1 through S-4 were moist. Sample S-5 was very moist. Samples S-6 through S-9 and S-12 through S-17 were wet.
 No recovery for S10 & S11. Drove spoon from 33' to 43' and a spoon at 43'
 Hard and choppy augering through boulders from 17' to 23'6"

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample (2" O.D.), C = Rock Coring Run.



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Boring Number : B42

Sheet 1 of 1

Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 28.17'
 Drilling Method #2:

Project Number : 4287G1
 Date Drilled : 1/4/2013
 Inspected by : MTU
 Boring Depth: 28.17'
 Ground Surface Elevation (ft msl) : 55.38'
 Water Level - Immediate (ft bgs) : 9.25'
 Water Level -Static (ft bgs):

DEPTH BELOW	WATER LEVEL	LITHOLOGY				SAMPLING DATA				
		LITHOLOGIC SYMBOL	GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)
1.0			Topsoil (4")							
2.0			Stratum IMF	2.50	52.88					
3.0			FILL consisting of brown and orange brown fine sand and silt with some rock fragments, coal dirt			S-1*		3-4-5-9	9	
4.0						S-2**		5-6-10-6	16	
5.0			FILL consisting of black coal dirt with some orange brown fine sand, some silt, occasional rock fragments			S-3**		4-3-4-4	7	
6.0						S-4**		4-2-2-3	4	
7.0				10.33	45.05					
8.0			Stratum II			S-5***		1-2-2-2	4	
9.0			Reddish brown fine sand and silt	12.33	43.05					
10.0			Reddish brown fine sand with clayey silt	13.33	42.05	S-6***		4-11-30-41	41	
11.0			Stratum III							
12.0			Reddish brown fine sand and silt, some medium sand with rock fragments, pebbles	18.00	37.38	S-7*		18-23-25-28	48	
13.0			Orange brown fine to medium sand with rock fragments, pebbles	21.00	34.38	S-8		9-13-16-23	29	
14.0			Stratum IVB							
15.0			Orange brown, brown and grey weathered schist							
16.0						S-9		50/2" N.R.	100	
17.0										
18.0				28.17	27.21					
19.0			Auger Refusal on schist bedrock							
20.0										
21.0										
22.0										
23.0										
24.0										
25.0										
26.0										
27.0										
28.0										
29.0										
30.0										
31.0										
32.0										
33.0										
34.0										
35.0										

Notes:

- * moist
- ** very moist
- *** wet

Hard augering from 23'

Very hard augering from 26'

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample (2" O.D.), C = Rock Coring Run.



Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 23.17'
 Drilling Method #2:

Project Number : 4287G1
 Date Drilled : 1/7/2013
 Inspected by : MTU
 Boring Depth: 23.17'
 Ground Surface Elevation (ft msl) : 52.01'
 Water Level - Immediate (ft bgs) : 4.50'
 Water Level -Static (ft bgs):

DEPTH BELOW WATER LEVEL	LITHOLOGIC SYMBOL	LITHOLOGY				SAMPLING DATA			
		GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)
1.0	▲▲▲▲	Topsoil (4")							
2.0	▲▲▲▲	Stratum IMF FILL consisting of brown fine sand and silt with rock fragments	3.00	49.01	S-1*		2-2-3-3	5	
4.0	▲▲▲▲	FILL consisting of black coal with silt	5.25	46.76	S-2*		3-2-1-1	3	
6.0	▲▲▲▲	Reddish brown and brown organic silt, roots							
7.0	▲▲▲▲		7.75	44.26	S-3*		1-1-1-6	2	
8.0	▲▲▲▲	Stratum II Reddish brown fine sand and clayey silt							
9.0	▲▲▲▲		10.33	41.68	S-4*		6-9-9-13	18	
10.0	▲▲▲▲	Stratum III Reddish brown fine to medium sand with rock fragments, pebbles							
11.0	▲▲▲▲		14.00	38.01	S-5**		8-10-16-24	26	
12.0	▲▲▲▲								
13.0	▲▲▲▲								
14.0	▲▲▲▲	Reddish brown fine to medium sand, occasional rock fragments							
15.0	▲▲▲▲		17.33	34.68	S-6**		3-2-2-2	4	
16.0	▲▲▲▲								
17.0	▲▲▲▲		18.25	33.76	S-7		4-11-21-24	32	
18.0	▲▲▲▲	Reddish brown fine to medium sand with rock fragments, pebbles							
19.0	▲▲▲▲								
20.0	▲▲▲▲	Stratum IVB Multi-colored weathered schist							
21.0	▲▲▲▲				S-8		50/2" N.R.	100	
22.0	▲▲▲▲								
23.0	▲▲▲▲		23.17	28.84					
24.0	▲▲▲▲	Auger Refusal on schist bedrock							
25.0	▲▲▲▲	Notes: * very moist ** wet							
26.0	▲▲▲▲								
27.0	▲▲▲▲	Hard, choppy augering from 12' to 14'							
28.0	▲▲▲▲								
29.0	▲▲▲▲	Hard, smooth augering from 19'6" to 20'6"							
30.0	▲▲▲▲								

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample (2" O.D.), C = Rock Coring Run.



Project : Proposed Residential Structures
 Location : 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 27.83'
 Drilling Method #2:

Project Number : 4287G1
 Date Drilled : 1/7/2013
 Inspected by : MTU
 Boring Depth: 27.83'
 Ground Surface Elevation (ft msl) : 50.75'
 Water Level - Immediate (ft bgs) : 4.33'
 Water Level - Static (ft bgs):

DEPTH BELOW	WATER LEVEL	LITHOLOGY				SAMPLING DATA				
		LITHOLOGIC SYMBOL	GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)
0.0		▲▲▲▲	Topsoil (4")							
1.0		▲▲▲▲	Stratum IMF	1.50	49.25					
2.0		○●○●	FILL consisting of brown fine sand and silt, occasional rock fragments			S-1*		2-3-3-3	6	
3.0		○●○●	FILL consisting of black coal with silt			S-2*		2-3-2-2	5	
4.0	▼	○●○●		6.25	44.50					
5.0		○●○●	Reddish brown and brown organic silt, occasional rock fragments	7.33	43.42	S-3*		1-1-9-8	10	
6.0		○●○●	Stratum III			S-4**		6-5-5-6	10	
7.0		○●○●	Brown fine sand with rock fragments	10.00	40.75			3-7-3-2	9	
8.0		○●○●	Brown organic silt with roots	12.42	38.33	S-5**		6-39-50/5"	100	
9.0		○●○●	Stratum III			S-6**				
10.0		○●○●	Reddish brown fine sand, some medium sand with rock fragments, pebbles, occasional boulders	16.25	34.50	S-7***		35-50/5"	100	
11.0		○●○●	Orange brown fine to medium sand with rock fragments, pebbles	17.00	33.75					
12.0		○●○●	Stratum IVB			S-8		50/4"	100	
13.0		○●○●	Multi-colored weathered schist							
14.0		○●○●								
15.0		○●○●								
16.0		○●○●								
17.0		○●○●								
18.0		○●○●								
19.0		○●○●								
20.0		○●○●								
21.0		○●○●								
22.0		○●○●								
23.0		○●○●								
24.0		○●○●								
25.0		○●○●								
26.0		○●○●								
27.0		○●○●		27.83	22.92			50/1" N.R.	100	
28.0		○●○●	Auger Refusal on schist bedrock							
29.0		○●○●								

Notes:
 * very moist
 ** wet
 Hard, choppy augering from 13' to 17'
 Hard, smooth augering from 17'
 Very hard augering from 26'

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample (2" O.D.), C = Rock Coring Run.



Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 32.83'
 Drilling Method #2:

Project Number : 4287G1
 Date Drilled : 1/3/2013
 Inspected by : MTU
 Boring Depth: 32.83'
 Ground Surface Elevation (ft msl) : 51.92'
 Water Level - Immediate (ft bgs) : 5.50'
 Water Level -Static (ft bgs):

DEPTH BELOW WATER LEVEL	LITHOLOGIC SYMBOL	LITHOLOGY				SAMPLING DATA			
		GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)
1.0		Topsoil (5")							
2.0		Stratum IMF							
3.0		FILL consisting of black coal dirt with roots			S-1*		1-2-3-3	5	
4.0			4.50	47.42					
5.0		FILL consisting of brown and orange brown fine sand with some slag, rock fragments	5.25	46.67	S-2**		2-3-8-3	11	
6.0									
7.0		Stratum II			S-3***		2-1-2-2	3	
8.0		Reddish brown fine sand and silt	8.17	43.75					
9.0					S-4**		4-6-7-10	13	
10.0		Reddish brown fine sand and clayey silt							
11.0					S-5**		10-14-17-22	31	
12.0			13.00	38.92					
13.0		Stratum III							
14.0		Reddish brown fine to medium sand with rock fragments, pebbles			S-6***		22-28-38-40	66	
15.0									
16.0									
17.0									
18.0			18.50	33.42					
19.0		Stratum IVB							
20.0		Orange brown, brown, and grey weathered schist			S-7		50/2" N.R.	100	
21.0									
22.0									
23.0									
24.0									
25.0					S-8		50/1" N.R.	100	
26.0									
27.0		Notes: * moist ** very moist *** wet							
28.0									
29.0		Hard augering from 18'6"							
30.0									
31.0					S-9		50/1" N.R.	100	
32.0			32.83	19.09					
33.0		Auger Refusal							

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample(2" O.D.), C = Rock Coring Run.



DAVID BLACKMORE & ASSOCIATES, INC.
Geotechnical & Environmental Engineers

Phone: 610-495-6255 Fax: 610-495-7353
 www.dbaengineering.com

Boring Number : B46

Sheet 1 of 1

Project : Proposed Residential Structures
 Location: 401 & 433 Washington Street
 Twp/City/State: Conshohocken Borough, Montgomery County, PA
 Drilling Contractor : Corcoran Drilling Co., Inc.
 X Coordinate (ft) : 0 Y Coordinate (ft) : 0
 Drilling Method #1 : 5" diameter Solid Augers from 0' to 35'
 Drilling Method #2: 2" OD Split spoon sampler from 35' to 35.17'

Project Number : 4287G1
 Date Drilled : 1/3/2013
 Inspected by : MTU
 Boring Depth: 35.17'
 Ground Surface Elevation (ft msl) : 54.44'
 Water Level - Immediate (ft bgs) : 7.75'
 Water Level -Static (ft bgs):

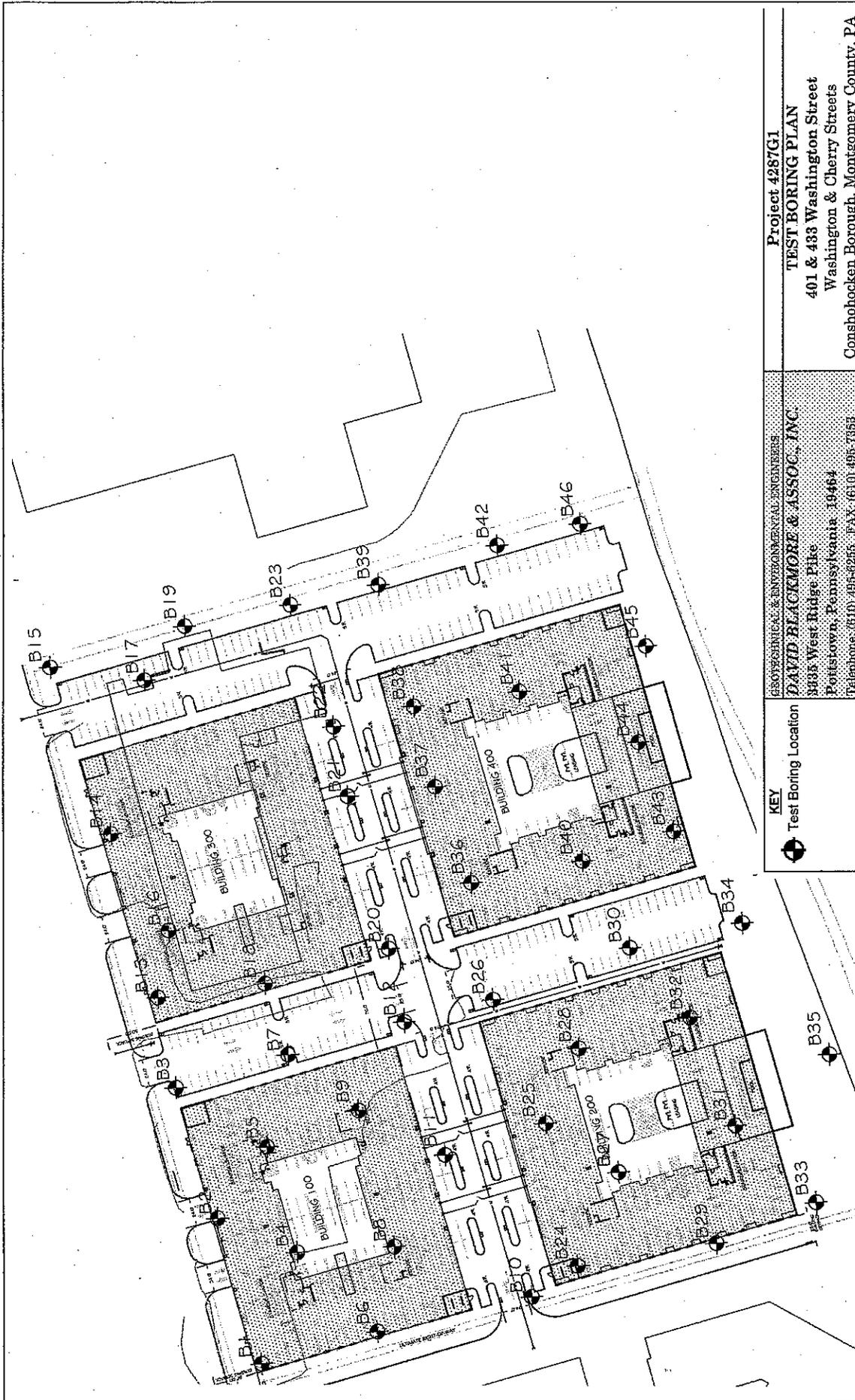
DEPTH BELOW	WATER LEVEL	LITHOLOGY				SAMPLING DATA				
		LITHOLOGIC SYMBOL	GEOLOGIC DESCRIPTION OF SOIL AND ROCK STRATA	DEPTH (FT)	ELEVATION	NUMBER	Water Content 510 20 30 40 50	SPT DATA	SPT Value	SPT GRAPH (Blows Per Foot)
1.0			Topsoil (5")							
2.0			Stratum IMF							
3.0			FILL consisting of coal with some orange brown fine sand and silt			S-1*		2-3-4-6	7	
4.0						S-2*		4-3-4-6	7	
5.0						S-3*		3-2-2-3	4	
6.0						S-4**	8.25	3-2-2-2	4	
7.0			Stratum II			S-5**	46.19	3-2-2-2	4	
8.0			Reddish brown fine sand and silt			S-6**	10.33	2-3-6-7	9	
9.0			Reddish brown fine sand and clayey silt			S-7***	12.67	6-18-23-28	41	
10.0			Stratum III			S-8		33-50/3"	100	
11.0			Reddish brown fine sand, some medium sand and silt with rock fragments, pebbles			S-9		6-9-28-53	37	
12.0						S-10	20.58	50/2" N.R.	100	
13.0			Stratum IVB			S-11	33.86	50/3" N.R.	100	
14.0			Multi-colored weathered schist					50/2" N.R.	100	
15.0										
16.0										
17.0										
18.0										
19.0										
20.0										
21.0										
22.0										
23.0										
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27.0										
28.0										
29.0										
30.0										
31.0										
32.0										
33.0										
34.0										
35.0										
36.0										

Notes:
 * moist
 ** very moist
 *** wet

Fairly hard choppy augering from 13'6" to 16'9"
 Very hard augering from 16'9" to 19'
 Hard augering from 22'6"

The boring results represent subsurface conditions at the boring locations only and are not necessarily representative of conditions at other locations. Water levels are taken at the time of drilling and are not indicative of seasonal variations in the ground water level. NR = No Recovery, S = Split Spoon sample(2" O.D.), C=Rock Coring Run.

TEST BORING LOCATION PLAN



1. PROPERTY IDENTIFICATION - BEING KNOWN AS TAX PARID:

401 WASHINGTON: (CONSHOHOCKEN BOROUGH) 050011904007 DEED BOOK: 4221 PG: 02635
(WHITEMARSH TOWNSHIP) 650011904007 DEED BOOK: 4221 PG: 02635
433 WASHINGTON: (CONSHOHOCKEN BOROUGH) 050011908003 DEED BOOK: 4221 PG: 02635
(WHITEMARSH TOWNSHIP) 650012685012 DEED BOOK: 4221 PG: 02635

AS SHOWN IN THE CURRENT OFFICIAL TAX MAPS OF THE BOROUGH OF CONSHOHOCKEN AND WHITEMARSH TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA. ADDRESS FOR THE SITE IS 401/433 WASHINGTON STREET.
2. THE SUBJECT PROPERTIES ARE LOCATED IN THE SPECIALLY PLANNED TWO (SP-2) ZONING DISTRICT/FLOODPLAIN CONSERVATION DISTRICT (CONSHOHOCKEN BOROUGH) AND THE HEAVY INDUSTRIAL (HYV)/RIVERFRONT DEVELOPMENT (RDD-1) SUB DISTRICT/FLOODPLAIN CONSERVATION OVERLAY DISTRICT/RIPARIAN CORRIDOR CONSERVATION OVERLAY DISTRICT (WHITEMARSH TOWNSHIP). THE PROPOSED USE OF THE SUBJECT PROPERTIES IS MULTI-FAMILY RESIDENTIAL APARTMENTS AND IS PERMITTED BY RIGHT IN THE SPECIALLY PLANNED TWO (SP-2) ZONING DISTRICT, (CONSHOHOCKEN BOROUGH) AND PERMITTED BY RIGHT IN THE RIVERFRONT DEVELOPMENT DISTRICT (RDD-1) (WHITEMARSH TOWNSHIP).

3. OWNER:

SPECTRUM-C LLC
47 WHITNEY STREET
WESTPORT, CT. 06880

4. APPLICANT/EQUITABLE OWNER:

KRE ACQUISITION CORP.
520 US HWY 22
PO BOX 6872
BRIDGEWATER, NJ 08807
P. (908) 725-8100

5. STATEMENT OF INTENT - THE PROPOSED USE IS MULTI-FAMILY RESIDENTIAL. EACH PROPOSED APARTMENT BUILDING IS FOUR FLOORS OVER AT-GRADE PARKING.

6. BOUNDARY AND TOPOGRAPHIC INFORMATION SHOWN HEREON WAS OBTAINED FROM FIELD SURVEY PERFORMED ON APRIL 7, 2021 AND PREPARED BY VALLEY LAND SERVICES, LLC. PLAN DATED APRIL 26, 2021 AND LAST REVISED MAY 7, 2021.

7. DEED REFERENCE - DEED BOOK 4221 PAGE 02635

8. MAP REFERENCES -

A. A MAP ENTITLED: "ALTAINSPS LAND TITLE SURVEY" PREPARED BY VALLEY LAND SERVICES, LLC, DATED APRIL 26, 2021, LAST REVISED JUNE 16, 2021.

9. THIS PLAN WAS PREPARED WITH THE BENEFIT OF A TITLE REPORT, ISSUED BY FIRST AMERICAN TITLE INSURANCE COMPANY, COMMITMENT NO. PFA20-5471 GD, DATED APRIL 6, 2021. THIS PROPERTY MAY BE SUBJECT TO RESTRICTIONS, COVENANTS AND/OR EASEMENTS, WRITTEN OR IMPLIED AS THEY APPEAR WITHIN THE TITLE REPORT AS FOLLOWS:

- A. CONDITIONS AS IN DEED BOOK 2702 PAGE 415 AND DEED BOOK 2818 PAGE 327. (AS TO PREMISES "A"), -PLOTTED ON SURVEY.
B. CONTRACTUAL CONSENT OF LANDOWNER AS IN DEED BOOK 4722 PAGE 407. (AS TO PREMISES "A"), -NOT PLOTTED ON SURVEY, BLANKET IN NATURE.
C. RIGHT OF WAY GRANTED TO PHILADELPHIA SUBURBAN WATER COMPANY AS IN DEED BOOK 1957 PAGE 563. (AS TO PREMISES "A"), -NOT PLOTTED ON SURVEY, BLANKET IN NATURE.
D. RIGHT OF WAY GRANTED TO PHILADELPHIA ELECTRIC COMPANY AS IN DEED BOOK 4702 PAGE 1122. (AS TO PREMISES "A"), -NOT PLOTTED ON SURVEY, BLANKET IN NATURE.
E. INTENTIONALLY OMITTED. - NOT PLOTTED IN SURVEY, BLANKET IN NATURE.
F. POSSIBLE RIGHTS OF THE UNITED STATES OF AMERICA, THE COMMONWEALTH OF PENNSYLVANIA, THE PUBLIC AND OTHER RIPARIAN OWNERS BETWEEN HIGH AND LOW WATER MARKS OF THE SCHUYLKILL RIVER. (AS TO PREMISES "A"), -NOT PLOTTED ON SURVEY, NO DOCUMENTATION PROVIDED.
G. SUBJECT TO THE LAWS AND AUTHORITY OF THE FEDERAL AND STATE GOVERNMENT, THEIR POLITICAL SUBDIVISIONS AND AGENCIES, TO REGULATE COMMERCE AND NAVIGATION OVER PART OF THE PREMISES EXTENDING BEYOND THE HIGH WATER MARK OF THE SCHUYLKILL RIVER AND TO EXERT GOVERNMENTAL TITLE AND OWNERSHIP IN THE AREA LYING BEYOND THE ORIGINAL LOW WATER MARK. (AS TO PREMISES "A"), - NOT PLOTTED ON SURVEY, NO DOCUMENTATION PROVIDED.
H. RESERVATIONS AND CONDITIONS AS IN DEED BOOK 2820 PAGE 189. (AS TO PREMISES "B"), - PLOTTED ON SURVEY.
I. RIGHT OF WAY GRANTED TO THE PHILADELPHIA ELECTRIC COMPANY AS IN DEED BOOKS 3632 PAGE 80. (AS TO PREMISES "B"), - NOT PLOTTED ON SURVEY, BLANKET IN NATURE.
J. CONDITIONS, NOTES, ULTIMATE WIDENING OF WASHINGTON STREET, BUILDING SETBACK LINES, VARIOUS FENCES PARKING SPACES, INLETS, PIPES, GRAVEL DRIVES, ETC., AS SHOWN ON PLAN BOOK A-55 PAGE 498. (AS TO PREMISES "B"), - NOT PLOTTED ON SURVEY, DOCUMENT ILLIGIBLE.
K. CONDITIONS AND RESTRICTIONS AS IN DEED BOOK 5342 PAGE 2085; AMENDMENT THERETO TERMINATING RESIDENTIAL DEED RESTRICTIONS AND GRANTOR'S RIGHT OF ACCESS AS IN DEED BOOK 5601 PAGE 365. (AS TO PREMISES "B"), - NOT PLOTTED ON SURVEY, BLANKET IN NATURE.
10. THE EXISTENCE OF ANY UNDERGROUND STORAGE TANKS, IF ANY, WAS NOT KNOWN AT THE TIME OF THE SURVEY.
11. TOPOGRAPHIC INFORMATION SHOWN HEREON WAS TAKEN FROM GROUND SURVEY PERFORMED BY VALLEY LAND SERVICES, LLC. THE LOCATION OF ALL UNDERGROUND UTILITIES AS SHOWN HEREON ARE APPROXIMATE AND ARE BASED ON VISIBLE SURFACE STRUCTURES AND ANY UTILITY MAPS PROVIDED BY UTILITY COMPANIES REFERENCED HEREON.
12. EXISTING SITE TOPOGRAPHIC INFORMATION AS SHOWN HEREON IS BASED UPON NAVD 88.
13. BENCHMARKS: + MAG NAIL, ELEV. 57.31
14. CONCRETE MONUMENTS, PK NAILS, AND IRON PINS SHALL BE SET UPON APPROVAL OF THIS PLAN PRIOR TO RECORDING, AS NEEDED.
15. ZONE DATA:

CONSHOHOCKEN BOROUGH ZONING DATA:

401 WASHINGTON STREET

SPECIALLY PLANNED DISTRICT TWO (SP-2)

Table with 4 columns: ITEM, ZONING ORDINANCE, PERMITTED, PROPOSED. Rows include Minimum Lot Area, Minimum Lot Width, Maximum Impervious Coverage, etc.

- (a) 75 FEET WITH SURFACE PARKING BETWEEN BUILDINGS.
(b) EACH BUILDING CONTAINS FOUR (4) HABITABLE RESIDENTIAL STORIES THAT ARE LOCATED ABOVE ONE STORY OF OPEN PODIUM PARKING.

433 WASHINGTON STREET

SPECIALLY PLANNED DISTRICT TWO (SP-2)

Table with 4 columns: ITEM, ZONING ORDINANCE, PERMITTED, PROPOSED. Rows include Minimum Lot Area, Minimum Lot Width, Maximum Impervious Coverage, etc.

- (a) 75 FEET WITH SURFACE PARKING BETWEEN BUILDINGS.
(b) EACH BUILDING CONTAINS FOUR (4) HABITABLE RESIDENTIAL STORIES THAT ARE LOCATED ABOVE ONE STORY OF OPEN PODIUM PARKING.

WHITEMARSH TOWNSHIP ZONING DATA:

HEAVY INDUSTRIAL DISTRICT (HYV) WITH RDD-1 SUB DISTRICT

Table with 4 columns: ITEM, ZONING ORDINANCE, PERMITTED, PROPOSED. Rows include Minimum Lot Area, Minimum Lot Width at Building Setback, etc.

- (a) 60 UNITS ARE LOCATED IN THE WHITEMARSH TOWNSHIP PORTION OF 433 WASHINGTON STREET. WITH THE WHITEMARSH TOWNSHIP PORTION OF THE LOT MEASURING 2.91 ACRES.
(b) EACH BUILDING CONTAINS FOUR (4) HABITABLE RESIDENTIAL STORIES THAT ARE LOCATED ABOVE ONE STORY OF OPEN PODIUM PARKING.

16. PARKING CALCULATIONS:

Table with 6 columns: NUMBER OF UNITS, REQUIRED PARKING, PROVIDED PARKING, COMPACT ALLOWED**, COMPACT PROVIDED**#, ADA PARKING PROVIDED**#. Rows for 401 WASHINGTON ST, 433 WASHINGTON ST, 433 WASHINGTON ST (WHITEMARSH).

* REQUIRED PARKING: 1.2 SPACES PER DWELLING UNIT IN CONSHOHOCKEN & 1.75 SPACES PER DWELLING UNIT IN WHITEMARSH
** COMPACT SPACES:35% OF TOTAL ALLOWED IN CONSHOHOCKEN & 0% OF TOTAL ALLOWED IN WHITEMARSH
*** ADA REQUIRES 2% OF TOTAL SPACES

- THE PARKING ALONG CHERRY STREET WAS MODIFIED FROM PARALLEL SPACES TO PERPENDICULAR SPACES. THIS MODIFICATION INCREASED THE EXISTING PARKING FROM 23 SPACES TO 48 SPACES. THE 25 ADDITIONAL SPACES ARE INCLUDED IN THE TOTAL PARKING FOR 401 WASHINGTON INCREASING THE SITE FROM 317 TO 342 TOTAL SPACES, WHICH IS LESS THAN THE REQUIRED AMOUNT OF 386 SPACES.

- 17. POTABLE WATER SERVICE WILL BE BY EXISTING PUBLIC WATER SUPPLY AND SANITARY SEWER SERVICE WILL BE BY PUBLIC SEWAGE.
18. WETLANDS ARE SHOWN ON PLAN.
19. BY GRAPHICAL REPRESENTATION ONLY THIS PROPERTY IS LOCATED IN FLOOD HAZARD ZONE AE AS SHOWN ON FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NO. 42091 C0358G WHICH HAS AN EFFECTIVE DATE OF MARCH 2, 2016 AND IS IN A SPECIAL FLOOD HAZARD AREA, NO FIELD SURVEY WAS PERFORMED TO DETERMINE THIS ZONE. THE FEMA CALCULATED 100-YEAR FLOOD ELEVATION FOR THIS PROJECT IS 60.5 FEET (NAVD 88) IN ACCORDANCE FRM MAP NUMBER 42091 C0358G DATED MARCH 2, 2016.
20. ALL SOILS ON SITE WERE TAKEN FROM THE NRCS WEB SOIL SURVEY.
21. THE SITE IS UNDERLAIN BY THE OLIGOCLEMASICA SCHIST OF THE WISSAHICKON FORMATION AND THE IMPURE LIMSTONE AND DOLOMITE OF THE CONESTOGA FORMATION.
22. THE PROPOSED DEVELOPMENT IS WITHIN THE LOWER SCHUYLKILL RIVER WATERSHED, WHICH DOES NOT HAVE AN APPROVED ACT 167 PLAN.
23. NO TOPSOIL SHALL BE REMOVED FROM THE SITE UNLESS AUTHORIZED BY THE TOWNSHIP AND/OR MCCD. PERMANENT REMOVAL OF TOPSOIL FROM LAND WITHIN CONSHOHOCKEN BOROUGH & WHITEMARSH TOWNSHIP IS PROHIBITED. NO TOPSOIL SHALL BE USED AS SOIL.
24. EXCESS CONSTRUCTION WASTE AND DEBRIS SHALL BE REMOVED FROM THE SITE AT THE COMPLETION OF THE PROJECT. UNDER NO CIRCUMSTANCES SHALL SUCH MATERIAL BE ALLOWED TO BE BURIED OR USED AS BACKFILL MATERIAL.
25. MATERIALS, WORKMANSHIP, AND CONSTRUCTION FOR THE SITE IMPROVEMENTS SHOWN HEREON SHALL BE IN ACCORDANCE WITH:
A. PENNSYLVANIA DEPARTMENT OF TRANSPORTATION "SPECIFICATIONS PUBLICATION 408", 2020; AS SUPPLEMENTED.
B. CURRENT PREVAILING MUNICIPAL, COUNTY, AND/OR STATE AGENCY SPECIFICATIONS, STANDARDS, CONDITIONS, AND REQUIREMENTS.
C. CURRENT PREVAILING UTILITY COMPANY/AUTHORITY SPECIFICATIONS, STANDARDS, AND REQUIREMENTS.
D. CURRENT MANUFACTURER SPECIFICATIONS, STANDARDS, AND REQUIREMENTS.
26. APPROVAL OF THIS PLAN DOES NOT GUARANTEE PERMIT ISSUANCE FOR SEWAGE DISPOSAL.
27. UTILITY RELOCATIONS SHOWN HEREON, IF ANY, ARE FOR INFORMATIONAL PURPOSES ONLY AND MAY NOT REPRESENT ALL REQUIRED UTILITY RELOCATIONS. THE CONTRACTOR IS RESPONSIBLE FOR PERFORMING AND/OR COORDINATING ALL REQUIRED UTILITY RELOCATIONS IN COOPERATION WITH THE RESPECTIVE UTILITY COMPANY/ AUTHORITIES.
28. PIPE COVER SHALL BE MAINTAINED DURING ALL PHASES OF CONSTRUCTION. PIPE LENGTHS SHOWN HEREON ARE FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE.
29. TRAFFIC SIGNAGE AND STRIPING PLAN CORRESPOND TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
30. THIS IS A SITE DEVELOPMENT PLAN AND UNLESS SPECIFICALLY NOTED ELSEWHERE HEREON, IS NOT A SURVEY.
31. ALL STRUCTURES SHALL CONFORM TO THE APPROVED BULK ZONING REQUIREMENTS.
32. DO NOT SCALE DRAWINGS AS THEY PERTAIN TO ADJACENT AND SURROUNDING PHYSICAL CONDITIONS, BUILDINGS, STRUCTURES, ETC. THEY ARE SCHEMATIC ONLY, EXCEPT WHERE DIMENSIONS ARE SHOWN THERETO.
33. THIS SET OF PLANS HAS BEEN PREPARED FOR THE PURPOSES OF MUNICIPAL AND AGENCY REVIEW AND APPROVAL. THIS SET OF PLANS SHALL NOT BE UTILIZED AS CONSTRUCTION DOCUMENTS UNTIL ALL APPROVALS REQUIRED HAVE BEEN OBTAINED. ALL CONDITIONS OF APPROVAL HAVE BEEN SATISFIED AND THE DRAWINGS HAVE BEEN STAMPED "ISSUED FOR CONSTRUCTION". THIS SHALL INCLUDE APPROVAL OF ALL CATALOG CUTS, SHOP DRAWINGS AND/OR DESIGN CALCULATIONS AS REQUIRED BY THE PROJECT OWNER AND/OR MUNICIPAL ENGINEER.
34. EXISTING UTILITY INFORMATION SHOWN HEREON HAS BEEN COLLECTED FROM VARIOUS SOURCES AND IS NOT GUARANTEED AS TO ACCURACY OR COMPLETENESS. THE CONTRACTOR SHALL VERIFY ALL INFORMATION TO HIS SATISFACTION PRIOR TO EXCAVATION, WHERE EXISTING UTILITIES ARE TO BE CROSSED BY PROPOSED CONSTRUCTIONS, TEST PITS SHALL BE DUG BY THE CONTRACTOR PRIOR TO CONSTRUCTION TO ASCERTAIN EXISTING INVERTS, MATERIALS, AND SIZES. TEST PIT INFORMATION SHALL BE GIVEN TO THE ENGINEER PRIOR TO CONSTRUCTION TO PERMIT ADJUSTMENTS AS REQUIRED TO AVOID CONFLICTS. THE CONTRACTOR SHALL NOTIFY THE UNDERSIGNED PROFESSIONAL IMMEDIATELY IF ANY FIELD CONDITIONS ENCOUNTERED DIFFER MATERIALLY FROM THOSE REPRESENTED HEREON. SUCH CONDITIONS COULD RENDER THE DESIGNS HEREON INAPPROPRIATE OR INEFFECTIVE.
35. THE CONTRACTOR IS RESPONSIBLE FOR PROJECT SAFETY, INCLUDING PROVISION OF ALL APPROPRIATE SAFETY DEVICES AND TRAINING REQUIRED.
36. STORMWATER FACILITIES SHALL BE OWNED AND MAINTAINED BY THE PROPERTY OWNER IN PERPETUITY. THE PROPERTY OWNER SHALL PROVIDE A BLANKET STORMWATER ACCESS EASEMENT TO THE BOROUGH AND TOWNSHIP FOR THE PURSUIT OF ACCESS TO THE STORMWATER FACILITIES. IF, IN THE JUDGMENT OF THE BOROUGH AND/OR TOWNSHIP ENGINEERS, THE OWNER HAS FAILED TO MAINTAIN THE STORMWATER FACILITIES IN SUCH A MANNER AS TO ENSURE THEIR PROPER FUNCTIONING, THE BOROUGH AND/OR TOWNSHIP AFTER PROVIDING A WRITTEN NOTICE SHALL HAVE THE RIGHT TO ENTER UPON THE LANDS OF THE OWNER AND TO MAKE ANY REPAIRS AS MAY BE NECESSARY TO THE STORMWATER FACILITIES TO ENSURE THAT SUCH FACILITIES FUNCTION AND PERFORM IN ACCORDANCE WITH THE DESIGN SPECIFICATIONS, ANY AND ALL COSTS INCURRED BY THE BOROUGH AND/OR TOWNSHIP FOR SUCH REPAIRS AND/OR MAINTENANCE SHALL BE PAID IN FULL BY THE OWNER. A LIEN OR LIENS MAY BE PLACED AGAINST THE PROPERTY IF THE OWNER FAILS TO REHIT PAYMENT WITHIN SIXTY (60) DAYS.
37. DRAINAGE EASEMENTS, IF ANY, MAY NOT BE ALTERED WITHOUT THE WRITTEN PERMISSION OF THE TOWNSHIP/BOROUGH ENGINEER. NO OBSTRUCTIONS SUCH AS PLANTED BERMS OR FENCES MAY BE INSTALLED IN THE DRAINAGE EASEMENT AREAS WITHOUT SUFFICIENT PROVISION FOR THE PASSAGE OF STORMWATER, AND ANY SUCH PROPOSED PROVISION SHALL BE APPROVED IN WRITING BY THE TOWNSHIP/ BOROUGH ENGINEER.
38. STORMWATER BMPs ARE FIXTURES THAT CAN BE ALTERED OR REMOVED ONLY AFTER APPROVAL BY THE TOWNSHIP.

Table with 2 columns: DATE, OWNER/APPLICANT. Rows for 401 WASHINGTON STREET and 433 WASHINGTON STREET.

- 40. CONTRACTOR(S) SHALL RECEIVE A COPY OF THE APPROVED EROSION & SEDIMENTATION CONTROL PLANS.
41. WHITEMARSH TOWNSHIP AND CONSHOHOCKEN BOROUGH SHALL NOT BE RESPONSIBLE FOR THE MAINTENANCE OF ANY AREA NOT DEDICATED TO THE TOWNSHIP.
42. THERE SHALL BE NO CHANGES OR DEVIATION FROM THESE PLANS UNLESS APPROVED BY THE ENGINEER, SUCH PLAN CHANGES, SHOULD THEY BECOME NECESSARY, ARE SUBJECT TO THE WHITEMARSH TOWNSHIP AND CONSHOHOCKEN BOROUGH ORDINANCES.
43. THE CONTRACTOR SHALL NOTIFY ALL APPROPRIATE UTILITIES AT LEAST SEVENTY-TWO (72) HOURS PRIOR TO THE START OF ANY CONSTRUCTION. ALL UTILITIES HAVE BEEN IDENTIFIED BASED ON THE BEST AVAILABLE INFORMATION AND LISTED ON THESE PLANS IN ACCORDANCE WITH ACT 387 REQUIREMENTS. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF EXISTING UTILITIES AND ALL EFFORTS SHALL BE UNDERTAKEN TO PROTECT EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE TO UTILITIES BY THE CONTRACTOR SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE. RESTORATION OF ALL EXISTING SURFACE IMPROVEMENTS DAMAGED OR ALTERED DURING CONSTRUCTION, INCLUDING LANDSCAPING, SHALL ALSO BE THE RESPONSIBILITY OF THE CONTRACTOR.
44. THE CONTRACTOR SHALL MAKE PROVISIONS FOR MAINTAINING THE SAFE FLOW OF TRAFFIC DURING CONSTRUCTION WITHIN THE EXISTING ROAD RIGHTS-OF-WAY WHILE OBTAINING AND LEAVING THE SITE.
45. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTINUING ANY PERMITS RELATIVE TO THE CONSTRUCTION PROPOSED ON THE PLANS.
46. ENGINEERING PERMITS: PRIOR TO ANY WORK WITHIN THE RIGHT OF WAY, PERMITS MUST BE OBTAINED FROM THE TOWNSHIP.
47. BY SUBMISSION OF THESE PLANS, THE ENGINEER ON RECORD CERTIFIES THAT THESE PLANS ARE IN COMPLETE COMPLIANCE WITH THE WHITEMARSH TOWNSHIP AND CONSHOHOCKEN BOROUGH STORMWATER MANAGEMENT ORDINANCE.
48. THIS LAND DEVELOPMENT PLAN WAS PREPARED IN ACCORDANCE WITH REQUIREMENTS ESTABLISHED IN THE WHITEMARSH TOWNSHIP AND CONSHOHOCKEN BOROUGH SUBDIVISION AND LAND DEVELOPMENT ORDINANCE AND THE ZONING ORDINANCE OF WHITEMARSH TOWNSHIP AND CONSHOHOCKEN BOROUGH.
49. ALL CROSSWALKS, STOP BARS, ARROWS, AND "ONLY'S" WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE HOT THERMOPLASTIC.

50. ALL SHEETS INCLUDED IN THIS LAND DEVELOPMENT PLAN SET ARE TO BE CONSIDERED AS IF RECORDED WITH THE RECORD PLAN.

- 51. THERE SHALL BE A PRE CONSTRUCTION CONFERENCE AND INSPECTION WITH THE WHITEMARSH TOWNSHIP SHADE TREE COMMISSION PRIOR TO START OF CONSTRUCTION. AFTER THE INSPECTION IS COMPLETE, THE SHADE TREE COMMISSION SHALL NOTIFY WHITEMARSH TOWNSHIP IN WRITING, UPON WHITEMARSH TOWNSHIP APPROVAL, DEMOLITION, GRADING AND CONSTRUCTION MAY PROCEED.
52. POOLS SHALL BE ENTIRELY ENCLOSED WITH A FENCE NOT LESS THAN FOUR FEET IN HEIGHT.
53. 10.67 ACRES IS THE SUM OF THE NET LOT AREA OF 401 WASHINGTON STREET (4.97 ACRES) AND 433 WASHINGTON STREET (5.69 ACRES).
54. ALL ELECTRIC, TELEPHONE, AND COMMUNICATION SERVICE FACILITIES, BOTH MAIN AND SERVICE LINES, SHALL BE PROVIDED BY UNDERGROUND CABLES, INSTALLED IN ACCORDANCE WITH THE PREVAILING STANDARDS AND PRACTICES OF THE UTILITY AND OTHER COMPANIES PROVIDING SUCH SERVICE.
55. COMPACT PARKING SPACES IN CONSHOHOCKEN BOROUGH EXCEED THE MINIMUM REQUIRED DIMENSION OF 7 1/2' X 16' AND ARE LABELED ON THE OVERALL SITE PLAN. ALL OTHER CONVENTIONAL PARKING SPACE SIZES ARE SHOWN ON THE OVERALL SITE PLAN. ALL HANDICAP ACCESSIBLE (ADA) SPACES ARE VAN ACCESSIBLE.
56. PROPOSED CURB ALONG WASHINGTON STREET SHALL BE BELGIAN BLOCK CURB. PROPOSED CURB INTERIOR TO SITE SHALL BE VERTICAL CONCRETE CURB, UNLESS OTHERWISE NOTED.
57. UNDER NO CIRCUMSTANCES SHALL CHLORINATED SWIMMING POOL DISCHARGE BE DIRECTED TO THE RIVER OR TO ANY PIPING SYSTEM THAT DISCHARGES TO THE RIVER.
58. THE MINIMUM FLOOR AREA PER DWELLING UNIT WILL BE IN CONFORMANCE WITH 27-1511.4.A & B.
59. ALL CONSTRUCTION AND MATERIALS TO BE IN ACCORDANCE WITH PENNDOT PUBLICATION 408 AND CONSHOHOCKEN BOROUGH CONSTRUCTION STANDARDS.
60. THESE PLANS CONFORM WITH THE CONSHOHOCKEN BOROUGH FLOODPLAIN ORDINANCE.
61. THE PROPOSED BRICK SIDEWALK ALONG WASHINGTON STREET SHALL BE CONSISTENT IN APPEARANCE WITH ADJACENT WASHINGTON STREET DEVELOPMENT.
62. ALL PROPOSED OPEN SPACE WILL BE DEED RESTRICTED FROM FUTURE DEVELOPMENT.
63. PER CONSHOHOCKEN CODE 22-404.3.D CONCRETE WHEEL STOPS SHALL BE PROVIDED ON ALL PARKING SPACES WHICH ARE NOT UNDER THE BUILDINGS, SO THAT "NO PART OF ANY PARKED VEHICLE WILL EXTEND BEYOND THE BOUNDARIES OF THE PARKING LOT."
64. PURSUANT TO 27-1504.D(3)(A), (B), AND (C), THERE SHALL BE RIVERFRONT ACCESS VIA EASEMENT OR PUBLIC RIGHT-OF-WAY.
65. OPEN SPACE IS PROHIBITED FROM FURTHER DEVELOPMENT BASED ON THIS PLAN.
66. RECREATION AREA IS TO BE OFFERED FOR DEDICATION TO CONSHOHOCKEN BOROUGH.
67. APPLE STREET SHALL BE VACATED.
68. PERMISSION SHALL BE GRANTED FOR EXTENSION OF THE 26' WIDE EMERGENCY ACCESS EASEMENT PARALLEL TO THE RIVER AT SUCH TIME AS CONSTRUCTION OF SAID EASEMENT IS TO BE PERFORMED.
69. THE RIGHT-OF-WAY FOR THE PROPOSED PUBLIC ACCESS SHALL BE OFFERED FOR DEDICATION TO THE TOWNSHIP. IF THE AREA IS NOT ACCEPTED FOR DEDICATION, AN EASEMENT FOR PUBLIC USE MUST BE PROVIDED ALONG WITH MAINTENANCE AGREEMENTS ACCEPTABLE TO THE TOWNSHIP. THE TOWNSHIP SHALL BE RESPONSIBLE FOR DEDICATION, MAINTENANCE RESPONSIBILITIES FOR STORMWATER COLLECTION AND CONVEYANCE FACILITIES SHALL BE THE RESPONSIBILITY OF THE PROPERTY OWNER.
70. AN AS-BUILT SURVEY SHALL BE COMPLETED AND SUBMITTED TO THE BOROUGH OF CONSHOHOCKEN AND WHITEMARSH TOWNSHIP IN BOTH PAPER AND DIGITAL CADD FORMATS.
71. THIS SET OF PLANS IS NOT DEPICTING ENVIRONMENTAL CONDITIONS OR A CERTIFICATION/ WARRANTY REGARDING THE PRESENCE OR ABSENCE OF ENVIRONMENTALLY IMPACTED SITE CONDITIONS. MASER CONSULTING HAS PERFORMED NO EXPLORATORY OR TESTING SERVICES, INTERPRETATIONS, CONCLUSIONS, OR OTHER SITE ENVIRONMENTAL SERVICES RELATED TO THE DETERMINATION OF THE POTENTIAL FOR CHEMICAL, TOXIC, RADIOACTIVE, OR OTHER TYPE OF CONTAMINANTS AFFECTING THE PROPERTY AND THE UNDERSIGNED PROFESSIONAL IS NOT QUALIFIED TO DETERMINE THE EXISTENCE OF THE SAME. SHOULD ENVIRONMENTAL CONTAMINATION OR WASTE BE DISCOVERED, THE OWNER AND CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE LAWS AND REGULATIONS.
72. THESE GENERAL NOTES APPLY TO ALL SHEETS IN THE SET.

FLOOD PROOFING NOTES:

- 1. ALL COMPONENTS OF THIS PROJECT WILL BE FLOOD PROOFED IN ACCORDANCE WITH THE UNITED STATES ARMY CORPS OF ENGINEERS CHAPTER 1145 D DATED 1/19/81, AS AMENDED, AND FLOOD PROOFING REGULATIONS.
2. NO STRUCTURE SHALL BE LOCATED, RELOCATED, RECONSTRUCTED, ENLARGED, OR STRUCTURALLY ALTERED EXCEPT IN FULL COMPLIANCE WITH THE TERMS AND PROVISIONS OF ARTICLE XXII AND ANY OTHER APPLICABLE ORDINANCES AND REGULATIONS WHICH APPLY TO USES WITHIN THE JURISDICTION OF THE FLOODPLAIN CONSERVATION OVERLAY DISTRICT.
3. ALL ENCLOSED SPACES IN THE FLOODPLAIN, INCLUDING ELEVATORS, STAIR TOWERS AND TRASH COMPACTOR AREAS ("LOWER AREAS"), WILL BE WET FLOOD PROOFED IN ACCORDANCE WITH U.S. ARMY CORPS OF ENGINEERS "WET FLOOD PROOFING STANDARDS". THE SPACES WILL PERMIT THE FREE MOVEMENT OF FLOOD WATERS AND THEY WILL BE CONSTRUCTED WITH FLOOD-RESISTANT MATERIALS.
4. PUBLIC WATER FACILITIES WILL BE IN WATER-TIGHT PVC WATER PIPES AND BE INSTALLED UNDERGROUND. WHERE WATER PIPES EXIT THE GROUND TO REACH UP TO ELEVATED BUILDINGS, THEY WILL TRANSITION TO DUCTILE IRON FLANGED PIPE (BEFORE EXITING THE GROUND). THE DUCTILE IRON PIPE WILL BE INSULATED FROM FREEZING AND BE BAFFLED BY AND ANCHORED TO THE CONCRETE BUILDING COLUMNS.
5. ELECTRICAL POWER LINES WILL BE INSTALLED UNDERGROUND IN INSULATED WATER PROOF CONDUIT. WHERE ELECTRIC LINES EXIT THE GROUND TO REACH UP TO ELEVATED BUILDINGS, THEY WILL BE INSTALLED IN RIGID, WATERPROOF CONDUITS, BAFFLED BY AND ANCHORED TO THE CONCRETE BUILDING COLUMNS. ELECTRIC TRANSFORMERS WILL BE EITHER POLE MOUNTED OR MOUNTED ON CONCRETE PLATFORMS ABOVE THE 100-YEAR FLOOR ELEVATION.
6. NATURAL GAS FACILITIES WILL BE IN RIGID PIPES AND INSTALLED UNDERGROUND. WHERE NATURAL GAS PIPES EXIT THE GROUND TO REACH UP TO ELEVATED BUILDINGS, THEY WILL BE INSTALLED IN RIGID CONDUIT, BAFFLED BY AND ANCHORED TO THE BUILDING COLUMNS.
7. COMMUNICATION LINES WILL BE INSTALLED UNDERGROUND IN WATERPROOF CONDUIT. WHERE COMMUNICATION LINES EXIT THE GROUND TO REACH UP TO ELEVATED BUILDINGS, THEY WILL BE INSTALLED IN RIGID, WATERPROOF CONDUITS, BAFFLED BY AND ANCHORED TO THE CONCRETE BUILDING COLUMNS.
8. GRANITARY SANITARY SEWER PIPES AND SANITARY SEWER MANHOLES WILL BE INSTALLED UNDERGROUND. PIPES WILL BE HAND-TESTED AND BOTH PIPES AND MANHOLES WILL BE PRESSURE TESTED AFTER INSTALLATION. MANHOLES WILL BE FITTED WITH BOLT-DOWN WATERPROOF (GASKETED) LIDS.
9. THE PROPOSED LIVING SPACES FOR EACH BUILDING WILL BE AT LEAST 24 INCHES ABOVE THE 100-YEAR FLOOD ELEVATION (NAVD 1988).
10. ALL PROPOSED STRUCTURES WILL BE PERMANENTLY ANCHORED SO AS TO PREVENT FLOTATION OR LATERAL MOVEMENT.
11. ALL PROPOSED STORM DRAINAGE FACILITIES WILL CONVEY THE FLOW OF STORM WATER RUNOFF IN A SAFE AND EFFICIENT MANNER. THE SYSTEM WILL ENSURE PROPER DRAINAGE ALONG DRIVEWAYS AND PARKING LOTS AND PROVIDE POSITIVE DRAINAGE AWAY FROM BUILDINGS. THE STORM WATER MANAGEMENT SYSTEM WILL ALSO PREVENT THE DISCHARGE OF EXCESS RUNOFF ONTO ADJACENT PROPERTIES.
12. ALL APARTMENT RESIDENT VEHICLES WILL BE MOVED OUTSIDE THE FLOODPLAIN BY VEHICLE OWNER IN THE EVENT OF A FLOOD WARNING. VEHICLES NOT MOVED BY VEHICLE OWNER WILL BE TOWED OUTSIDE THE FLOODPLAIN BY A TOWING COMPANY CONTRACTED BY THE APARTMENT BUILDING OWNER.
13. TRASH COMPACTORS WILL BE FULLY ENCLOSED WITH CONTAINERS (HOPPERS) MECHANICALLY COUPLED TO COMPACTOR.
14. SEWAGE DISPOSAL PROPOSED FOR THIS PROJECT BY PUBLIC SEWER.
15. I, C. RICHARD ROSEBERRY, A PROFESSIONAL ENGINEER REGISTERED IN THE COMMONWEALTH OF PENNSYLVANIA, DO HEREBY CERTIFY THAT THE FLOOD PROOFING METHODS EMPLOYED ON THIS PROJECT USED TO PROTECT SEWER, WATER AND ELECTRIC LINES TO A HEIGHT OF 24 INCHES ABOVE THE 100-YEAR FLOOD ELEVATION, ARE ADEQUATE TO WITHSTAND THE FLOOD DEPTHS, PRESSURES, VELOCITIES, IMPACT AND UPLIFT FORCES AND OTHER FACTORS ASSOCIATED WITH THE 100-YEAR FLOOD AND A RECORD OF SUCH CERTIFICATIONS INDICATING THE SPECIFIC ELEVATION (IN RELATION TO MEAN SEA LEVEL WITH A DATUM OF NAVD 1988) TO WHICH THE SEWER, WATER AND ELECTRIC LINES ARE FLOOD PROOFED SHALL BE MAINTAINED WITH THE DIRECTOR OF BUILDING AND PLANNING.

DATE PROFESSIONAL ENGINEER: C. RICHARD ROSEBERRY, PE ENGINEER NO. PE46162-R

MCPC NO. _____

PROCESSED AND REVIEWED. A report has been prepared by the Montgomery County Planning Commission in accordance with the Municipalities Planning Code.

Certified this date _____

For The Director _____

MONTGOMERY COUNTY PLANNING COMMISSION

IMPERVIOUS COVERAGE TABLE

Table with 5 columns: PROPERTY, FEATURE, AREA (SF), % OF LOT AREA (a), TOTAL IMPERVIOUS % OF LOT AREA (a). Rows for 401 and 433.

100-YEAR FLOODPLAIN ENCROACHMENT TABLE

Table with 3 columns: FEATURE, AREA (SF), VOLUME CHANGE IN FLOODWAY (CUBIC FEET). Rows for Site Outside of Floodway and Floodway Area.

DU TO THE REDUCTION IN FLOODPLAIN ENCROACHMENT BETWEEN THE EXISTING AND THE PROPOSED CONDITION, THERE IS MORE FLOODPLAIN STORAGE VOLUME IN THE PROPOSED CONDITION.

OWNER'S CERTIFICATION

SPECTRUM-C LLC, a Pennsylvania limited liability company

By: Name: _____ Title: _____

County of Montgomery : ss AND NOW, this _____ day of _____, 20____, before me, the undersigned Notary, personally appeared _____ who acknowledged himself to be the _____ of Spectrum-c LLC, the sole general partner of Spectrum-c LLC, a Pennsylvania limited liability company and he, as such, being authorized to do so, executed the foregoing instrument for the purposes therein contained. IN WITNESS WHEREOF, I hereunder set my hand and official seal.

Notary Public. My commission expires: _____

OWNER'S CERTIFICATION

SPECTRUM-C LLC, a Pennsylvania limited liability company

By: Name: _____ Title: _____

County of Montgomery : ss AND NOW, this _____ day of _____, 20____, before me, the undersigned Notary, personally appeared _____ who acknowledged himself to be the _____ of Spectrum-c LLC, the sole general partner of Spectrum-c LLC, a Pennsylvania limited liability company and he, as such, being authorized to do so, executed the foregoing instrument for the purposes therein contained. IN WITNESS WHEREOF, I hereunder set my hand and official seal.

Notary Public. My commission expires: _____

PLAN PREPARER'S STATEMENTS

I, _____, A REGISTERED SURVEYOR OF THE COMMONWEALTH OF PENNSYLVANIA, DO HEREBY CERTIFY THAT THE PLAN, PREPARED FROM A FIELD SURVEY ON _____, 20____, CORRECTLY REPRESENTS THE PROPERTY BOUNDARY OF THE PROPOSED SUBDIVISION OR LAND DEVELOPMENT.

DATE REGISTERED SURVEYOR'S SIGNATURE _____

I, _____, A LICENSED PROFESSIONAL ENGINEER OF THE COMMONWEALTH OF PENNSYLVANIA, DO HEREBY CERTIFY THAT THE ACCOMPANYING APPLICATION, PLANS, AND SUPPORTING DOCUMENTATION ARE TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE.

DATE LICENSED ENGINEER'S SIGNATURE _____

MUNICIPAL APPROVAL / REVIEW BLOCK

REVIEWED BY THE CONSHOHOCKEN BOROUGH ENGINEER THIS _____ DAY OF _____, 20____.

CONSHOHOCKEN BOROUGH ENGINEER SIGNATURE _____

APPROVED BY THE BOROUGH OF CONSHOHOCKEN THIS _____ DAY OF _____, 20____.

CONSHOHOCKEN BOROUGH MANAGER SIGNATURE _____

REVIEWED BY THE WHITEMARSH TOWNSHIP ENGINEER THIS _____ DAY OF _____, 20____.

WHITEMARSH TOWNSHIP ENGINEER SIGNATURE _____

APPROVED BY THE TOWNSHIP OF WHITEMARSH THIS _____ DAY OF _____, 20____.

WHITEMARSH TOWNSHIP MANAGER SIGNATURE _____

RECORDER OF DEEDS

RECORDED IN THE OFFICE FOR THE RECORDING OF DEEDS IN AND FOR COUNTY OF MONTGOMERY, AT NORRISTOWN, PA. IN PLAN BOOK _____ PAGE NO. _____ ON _____, 20____.

BUILDING USE DATA

PROPOSED USE: LUXURY APARTMENTS

Table with 3 columns: APARTMENT TYPE, PERCENTAGE, UNITS. Rows for 1 Bedroom, 2 Bedroom, 3 Bedroom, Total.

PUBLIC AMENITIES

WHITEMARSH TOWNSHIP 116-283 B.(10)

Table with 2 columns: RECREATION AREA, RIVER TRAIL, TOTAL, AREA OF AMENITIES, PERCENT OF LOT AREA.

THE LOT AREA OF 401 WASHINGTON IS 216,558 SF AND THE LOT AREA FOR 433 WASHINGTON STREET IS 247,906 SF. TOTAL = 464,464 SF.

FLOOR AREA RATIO CALCULATIONS

(CONSHOHOCKEN 27-1511.3.D.):

Table with 5 columns: LOT, NET BUILDABLE LOT AREA, FLOOR AREA (X4 FLOORS), FAR. Rows for 401 WASHINGTON, 433 WASHINGTON.

STEEP SLOPE DISTURBANCE

Table with 4 columns: TOTAL SITE, STEEP SLOPE, AREA, DISTURBED AREA, PERCENT DISTURBED. Rows for 15-25 %, 25% +.

WITHIN WHITEMARSH TOWNSHIP

Table with 4 columns: STEEP SLOPE, AREA, DISTURBED AREA, PERCENT DISTURBED. Rows for 15-25 %, 25% +.

ALLOWABLE AREA DISTURBANCE

Table with 4 columns: STEEP SLOPE, AREA, DISTURBED AREA, PERCENT DISTURBED. Rows for 15-25 %, 25% +.

Colliers Engineering & Design www.colliersengineering.com

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Table with 2 columns: DATE, DESCRIPTION. Rows for drawing revisions.

C. Richard Roseberry REGISTERED PROFESSIONAL ENGINEER ENGINEER No. 46162

PRELIMINARY/FINAL LAND DEVELOPMENT PLANS FOR 401/433 WASHINGTON STREET APARTMENTS

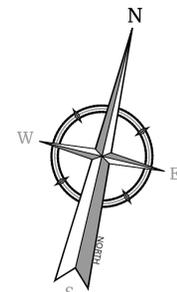
Colliers Engineering & Design 941 Marcon Boulevard, Suite 801

Table with 4 columns: SCALE, DATE, DRAWN BY, CHECKED BY.

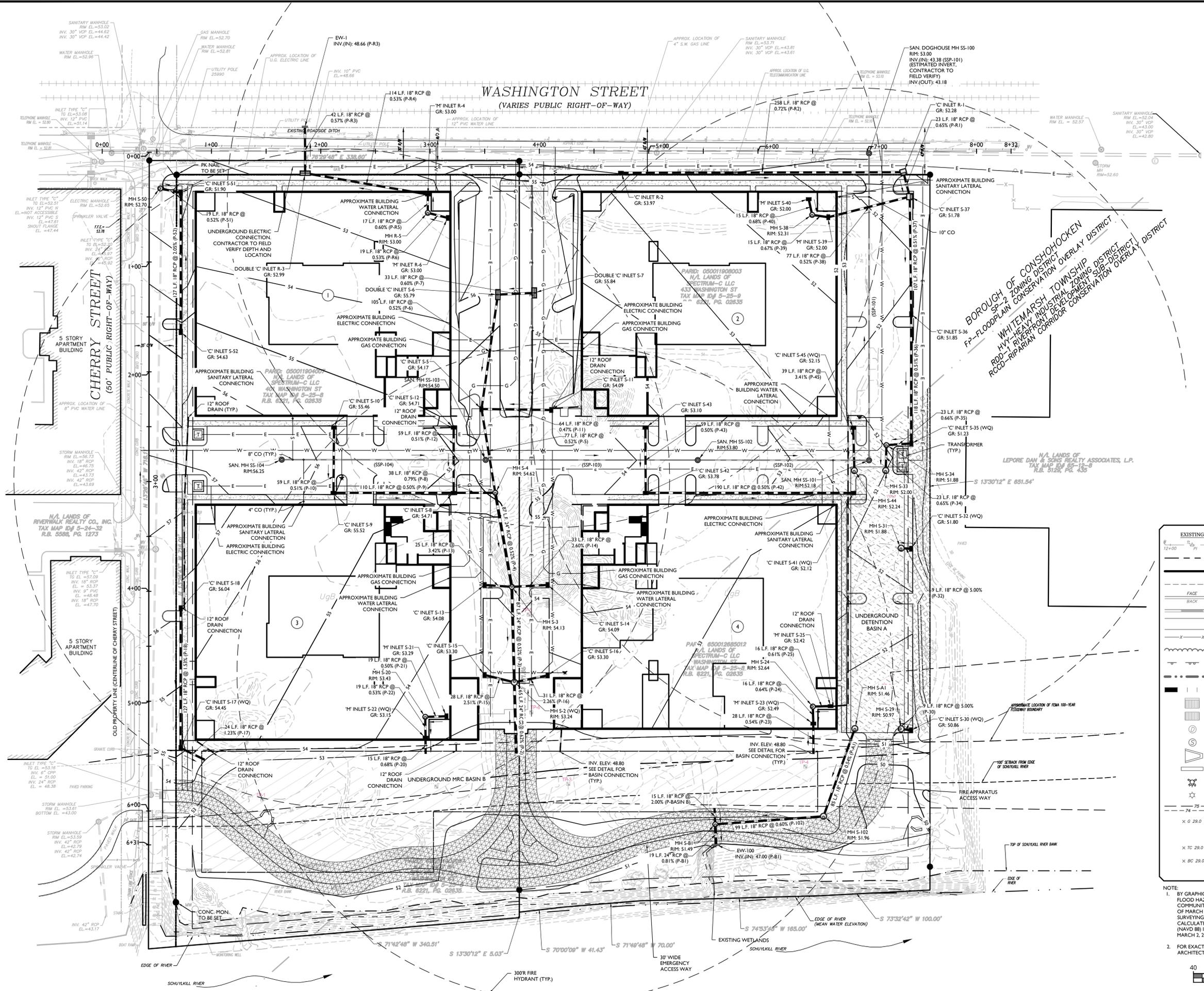
SHEET TITLE GENERAL NOTES

SHEET NUMBER 2 of 23

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.



WASHINGTON STREET (VARIES PUBLIC RIGHT-OF-WAY)



BOROUGH OF CONSHOHOCKEN
SP-2 ZONING DISTRICT
FP-FLOODPLAIN CONSERVATION OVERLAY DISTRICT
WHITEMARSH TOWNSHIP
HVV-HEAVY INDUSTRIAL ZONING DISTRICT
RDD-RIVERFRONT DEVELOPMENT SUB-DISTRICT
RCCD-RIPARIAN CONSERVATION OVERLAY DISTRICT

LEGEND table with columns for EXISTING and PROPOSED symbols. It lists various utility features like right of way lines, property lines, curbs, manholes, and inlets, along with their corresponding graphical representations.

NOTE: 1. BY GRAPHICAL REPRESENTATION ONLY THIS PROPERTY IS LOCATED IN FLOOD HAZARD ZONE AE AS SHOWN ON FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NO. 42091C0358G WHICH HAS AN EFFECTIVE DATE OF MARCH 2, 2016 AND IS IN A SPECIAL FLOOD HAZARD AREA. NO FIELD SURVEYING WAS PERFORMED TO DETERMINE THIS ZONE. THE FEMA (CALCULATED 100-YEAR FLOOD ELEVATION FOR THIS PROJECT IS 60.5 FEET (NAVD 88) IN ACCORDANCE WITH MAP NUMBER 42091C0358G DATED MARCH 2, 2016. 2. FOR EXACT BUILDING UTILITY TIE-IN LOCATIONS, SEE THE ARCHITECTURAL PLANS.

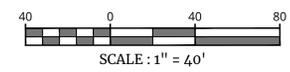


Table with columns for REV, DATE, DRAWN BY, and DESCRIPTION. It contains a grid for recording revision details.

Professional Engineer seal for C. Richard Roseberry, No. 46162, State of Pennsylvania. Includes the text 'C. Richard Roseberry PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER LICENSE NUMBER: PE046162R COLLIERS ENGINEERING & DESIGN, INC.'

PRELIMINARY/FINAL LAND DEVELOPMENT PLANS FOR 401/433 WASHINGTON STREET APARTMENTS 401 & 403 WASHINGTON STREET CONSHOHOCKEN BOROUGH & WHITEMARSH TOWNSHIP MONTGOMERY COUNTY PENNSYLVANIA

Colliers Engineering & Design logo and contact information: 941 Marcon Boulevard, Suite 801, Allentown, PA 18109, Phone: 610.868.4201.

Table with columns for SCALE, DATE, DRAWN BY, CHECKED BY, PROJECT NUMBER, and SHEET NAME. It contains project-specific data.

401/433 Washington Street Apartments – Project Narrative

The applicant proposes to construct a 598 unit residential apartment complex in four buildings at 401 & 433 Washington Street located in both the Borough of Conshohocken and Whitemarsh Township, Montgomery County, Pennsylvania. The entire project site is approximately 10.7 acres in size. The 401 and 433 Washington Street properties are approximately 4.97 acres and 5.69 acres, respectively. The project is bordered by Washington Street to the north, the Schuylkill River to the south, an industrial property to the east, and Cherry Street to the west. The proposed apartment buildings will be built on concrete columns so that all living spaces will be situated several feet above the 100-year FEMA delineated floodplain elevation for the Schuylkill River. Parking for the apartments is located underneath the living spaces as well as adjacent to the four buildings.

The properties have functioned as industrial uses since the 1800s. The 401 Washington Street site is currently a vacant lot that contains a foundation and parking lot of an industrial building formerly owned and occupied by C&D Battery. The 433 Washington Street site is former property of Hale Pump that contains a vacant industrial building and parking area. All of the existing features from the prior industrial uses will be demolished. The site soils consist of Urban Land (UgB), also referred to as Made Soils (MdB) in older soil surveys. This site has been located in an urban industrial center for over 150 years and as such, the site soils are comprised of mixed fill material with no definite, homogenous characteristics. The site is part of the PADEP Act 2 program for onsite soil contaminants.

The properties are located in the Specially Planned District Two (SP-2) Zoning District with the Floodplain (FP) Conservation District Overlay in the Borough of Conshohocken and the Heavy Industrial District (HVY) with the Riverfront Development District One (RDD-1) Overlay, Riparian Corridor Conservation District (RCCD), Steep Slope Overlay District (SS) and the Floodplain Conservation Overlay District (FLPL) in Whitemarsh Township. Multi-family housing use is permitted by-right in the Whitemarsh Township RDD-1 Zoning District; however, grading and utility work in the floodway fringe required approval by Special Exception, which was received on November 3, 2021.

The present and proposed source of potable water is provided by AQUA Pennsylvania. Sanitary sewer will be connected into the existing Whitemarsh Township Sewer Authority's sanitary sewer main running underneath Washington Street.

R:\Projects\2014\14000908C\Project Information\211203_Project Narrative.docx

PURCHASE AND SALE AGREEMENT
(401 & 433 Washington Street, Conshohocken, Pennsylvania)

THIS PURCHASE AND SALE AGREEMENT (this “Agreement”) is made as of January 22, 2021 (the “Effective Date”), by and between **SPECTRUM-C LLC**, a Delaware limited liability company (“Seller”), and **KRE ACQUISITION CORP.**, a New Jersey corporation (“Buyer”).

In consideration of the mutual covenants and representations herein contained, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and intending to be legally bound, Seller and Buyer agree as follows:

1. PURCHASE AND SALE

1.1 Purchase and Sale. Subject to the terms and conditions of this Agreement, Seller hereby agrees to sell and convey to Buyer, and Buyer hereby agrees to purchase from Seller, all of Seller’s right, title and interest in and to the property described in this Section 1.1 (the “Property”).

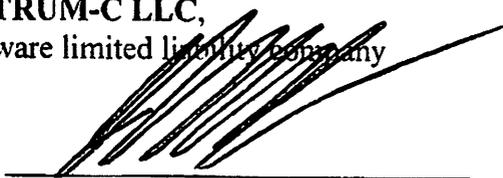
(a) Land. That certain premises known as (i) 401 Washington Street, Borough of Conshohocken, County of Montgomery, Commonwealth of Pennsylvania, being identified as Parcel Identification Numbers 05-00-11904-00-7 and 65-00-11904-00-7 (the “401 Washington Property”), as more particularly described in Exhibit “A-1” attached hereto and (ii) 433 Washington Street, Borough of Conshohocken, County of Montgomery, Commonwealth of Pennsylvania, being identified as Parcel Identification Numbers 05-00-11908-00-3 and 65-00-12685-01-2 (the “433 Washington Property”), as more particularly described in Exhibit “A-2” attached hereto, together with all rights, including development rights, if any, easements, licenses, rights of way, reservations, privileges, appurtenances and other estates, rights and interests appurtenant thereto, including all right, title and interest of Seller, 401 Washington Street Associates, L.P. (“401 Washington”) or Washington Street Associates, III, L.P. (“433 Washington”), as applicable (to the extent such interests of 401 Washington and 433 Washington, if any, are transferred to Seller as part of Seller’s acquisition of the 401 Washington Property and 433 Washington Property, if such acquisitions shall occur as provided hereinbelow), if any, in and to (i) all strips and gores and all alleys adjoining said parcels, and the land lying in the bed of any street, road or avenue, opened or proposed, in front of or adjoining said parcels, to the center line thereof; (ii) any award made or to be made and any unpaid award for any taking by condemnation or any damages to said parcels or the Improvements (as hereinafter defined) by reason of a change of grade of any street, road or avenue; and (iii) the airspace above said parcels (and rights to use such airspace) and any transferable development or similar rights appurtenant to said parcels by allocation under applicable laws, by zoning lot merger or otherwise (all of the foregoing hereinafter referred to collectively as, the “Land”).

(b) Improvements. All buildings, structures and other improvements located on the Land (the “Improvements”).

IN WITNESS WHEREOF, the parties hereto have executed this Agreement under seal as of the date set forth below.

SELLER:

SPECTRUM-C LLC,
a Delaware limited liability company

By: 

Name: Jeffrey Schaffer

Title: Managing Member

BUYER:

KRE ACQUISITION CORP.,
a New Jersey corporation

By: _____

Name: Murray Kushner

Title: President

IN WITNESS WHEREOF, the parties hereto have executed this Agreement under seal as of the date set forth below.

SELLER:

SPECTRUM-C LLC,
a Delaware limited liability company

By: _____
Name: Jeffrey Schaffer
Title: Managing Member

BUYER:

KRE ACQUISITION CORP.,
a New Jersey corporation

By: _____
Name: Murray Kushner
Title: President

JOINDER OF ESCROW AGENT

The undersigned hereby agrees to: (a) act as Escrow Agent under the foregoing Purchase and Sale Agreement, (b) be the person responsible for reporting the transaction to the Internal Revenue Service under then-current Treasury Regulations, and (c) hold and disburse the Deposit in accordance with the terms of the Purchase and Sale Agreement.

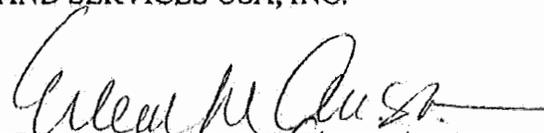
Dated: 1/22/2021
FIRST AMERICAN TITLE INSURANCE
COMPANY

By: Leslie Hudson
Name: Leslie Hudson
Title: Escrow Operations Manager

JOINDER OF ESCROW AGENT

The undersigned hereby agrees to: (a) act as Escrow Agent under the foregoing Purchase and Sale Agreement, (b) be the person responsible for reporting the transaction to the Internal Revenue Service under then-current Treasury Regulations, and (c) hold and disburse the Deposit in accordance with the terms of the Purchase and Sale Agreement.

Dated: 1/21/21
LAND SERVICES USA, INC.

By: 
Name: Eileen M. Christian
Title: EVP + Counsel

SETTLEMENT AGREEMENT

This Settlement Agreement and Release ("Agreement") is made and entered into by and between 401 Washington Street Associates, L.P. ("401"), Washington Street Associates III, L.P. ("WSA III" and collectively with 401, "WSA") and the Borough of Conshohocken (the "Borough" and collectively with WSA, the "Parties") this 22ND day of OCTOBER, 2014.

BACKGROUND

The 401/433 Dispute

1. 401 is the record owner of certain real property located at 401 Washington Street in the Borough of Conshohocken (the "401 Property").
2. WSA III is the record owner of certain real property located at 433 Washington Street in the Borough of Conshohocken (the "433 Property" and collectively with the 401 Property, the "Property.")
3. WSA proposes to develop approximately 600 multi-family residential dwelling units, parking, certain amenities and related facilities at the Property (the "Development").
4. On or about June 28, 2013, 401/433 submitted an application (the "Conditional Use Application") to the Borough requesting conditional use approval to allow construction of the certain improvements and stormwater facilities at the 401/433 Property located in the floodway pursuant to Article 17 of the Conshohocken Zoning Ordinance.
5. In particular, 401/433 requested conditional use for: a) the installation of stormwater outfalls into the Schuylkill River (the "River") pursuant to §27-1705.5(D); b) permission to grade and/or regrade land, including the deposit of topsoils and the grades in relation to the installation of the improvements and the stormwater facilities pursuant to §27-1705.5(F);

and c) the installation of utility lines related to the installation of the improvements and stormwater facilities pursuant to § 27-17505.5(G).

6. The Borough Council of the Borough of Conshohocken (“Council”) convened a hearing on August 21, 2013 with regard to the 401/433 Application.

7. On or about October 16, 2013, Council voted to deny the 401/433 Application (the “Denial”).

8. 401/433 filed a timely appeal from the 401/433 Denial in the Court of Common Pleas of Montgomery County which is docketed at 2013-33624 (the “Appeal”).

9. Notwithstanding the Denial and subsequent Appeal, WSA continued to pursue certain land development approvals necessary for the Development.

10. On or about November 20, 2013, the Borough granted preliminary land development approval for the Development (the “Preliminary Approval”) prepared by Right Angle Engineering, dated May, 2013 (the “Preliminary Plans”). For demonstrative purposes, page 3, entitled “Overall Site Plan” of the Preliminary Plans is attached hereto as Exhibit “A”.

11. The Preliminary Plans proposed, among other things, 619 multi-family residential units.

12. The Preliminary Approval Plans were approved subject to conditions outlined in a December 11, 2013 letter to WSA by the Borough’s solicitor, Michael Savona.

13. Thereafter, WSA submitted an application for final land development which included plans prepared by Right Angle Engineering, with a last revision date of April 4, 2014 (the “Final Plans”). For demonstrative purposes, page 4 of the Final Plans, entitled “Overall Site Plan” is attached hereto as Exhibit “B.”

14. The Final Plans reflected the conditions imposed as part of the Preliminary Approval.

15. The Final Plans proposed 602 multi-family residential units.

16. The Final Land Development Plans were reviewed by:
 - a. The Montgomery County Planning Commission by virtue of their letter dated May 22, 2014
 - b. The Conshohocken Planning Commission at their May 27, 2014 and August 24, 2014 meetings.
 - c. The Conshohocken Borough Engineer by virtue of their letter dated May 22, 2014.
 - d. The Conshohocken Borough professional planner, KSK, by virtue of their letter dated June 24, 2014.

17. In response to the aforementioned reviews, WSA submitted revised the Final Plans, prepared by Right Angle Engineering, with a last revision date of August 29, 2014, which among other things, reduced the number of proposed residential dwelling units to 598 and eliminated above ground rain gardens in order to maximize the utility of riverfront open space, (the "Revised Final Plans). For demonstrative purposes, pages 4 and 5 of the Revised Final Plans entitled "Overall Site Plan" is attached hereto as Exhibit "C."

TERMS OF THE SETTMENT

18. The Parties desire to avoid the cost and expense of additional litigation relating to the Disputes and have agreed to settle and release all claims they may have against each other and execute this Agreement in order to memorialize the terms of this Agreement.

19. Final land development approval, including all waivers, zoning relief, conditional use approval and all other Borough approvals necessary for the Development of the Property consistent with the plans attached hereto as Exhibit "C" ("the Plan") is hereby granted and approved by Borough Council, subject to all of the terms and conditions set forth under this

Agreement. As a part of this approval, the final record plans are hereby approved for recording upon final review and approval by the Borough Engineer and Borough Solicitor.

20. WSA shall pay a general impact fee to the Borough in the amount of \$2,510.00 per residential dwelling unit (the "Impact Fee"). These Impact Fees will be paid at the time a building permit is issued for vertical construction of the proposed residential building. For example, when a building permit is issued for vertical construction of a building that will contain 150 residential units, an Impact Fee of \$376,500.00 will be paid.

21. The requirements of section 804 of the Borough's Subdivision and Land Development Ordinance (the "SALDO") for the Development and the Property are satisfied pursuant to the proposed offer to dedicate riverfront land to the Borough or an easement for the public's benefit on such property. The respective landowners shall retain the obligation to maintain such land. The dedication provided under this paragraph shall be in the form of a fee simple conveyance of the riverfront portions of the Property located in the Borough from WSA to the Borough. To the extent that subdivision of the required riverfront property is required, such subdivision is approved under the terms of this Agreement, subject to final review and approval of an appropriate minor subdivision plan for each conveyance by the Borough Engineer and Borough Solicitor.

22. WSA will convey easements to Borough across the Property in order to confirm public access to the riverfront areas and riverfront trails.

23. WSA agrees that it shall modify the Plan to include the construction of certain public amenities on the riverfront land to be dedicated to the Borough. The public amenities shall include an elevated wooden boardwalk walkway, not less than ten (10) feet wide and running the entire width of the Property, to be located at or near the top of the bank of the Schuylkill River, as well as a floating walkway, similar to the boat launch located at the Conshohocken Rowing Center, to be used for pedestrian access only, subject to the following conditions: 1) The

exclusion of additional impervious coverage from zoning calculations; 2) The waiver of any requirement to obtain conditional use as these will be Borough amenities; 3) Approval from DEP and/or the Army Corps of Engineers as applicable; 4) Final design approval of the boardwalk and pedestrian river walk by the Borough on or before January 31, 2015; 5) Subject to outside agency approvals, Public Amenity construction must be commenced during construction of the first phase of development, however commencement of construction of phase one improvements shall not be delayed by the construction of any public amenities; and 6) WSA shall be given full credit for the cost of the construction of the public amenities under this paragraph against the payment of any general impact fees under paragraph 20. In no event shall the costs of the public amenities exceed the total impact fees under paragraph 20.

24. WSA, its successors or assigns, shall agree to accept bids for the construction of any and all improvements at the 401 and 433 Properties on an open shop basis.

25. WSA will revise the Plans to demonstrate that any and all storm water which is proposed to be discharged from the Property into the Schuylkill River shall first be captured and cleaned by appropriate and acceptable storm water best management practices, approved by the Borough Engineer, prior to discharge into the Schuylkill River

26. WSA agrees that no less than 50 of the residential units proposed for the 401 Property and 50 of the units proposed for the 433 Property will be furnished and made available for rental as hotel and/or "extended stay" products.

27. WSA will include green development initiatives in the construction of the buildings on the 401 Property and 433 Property, such as LED light bulbs, use of recycled/sustainable insulation and other building materials and supplies, bike racks, electric vehicle charging stations and other similar green development features.

28. The Development will proceed in two phases, each phase comprising approximately 300 residential units. Building permits for construction for the second phase of

approximately 300 residential units shall not be issued before October 1, 2017.

29. The Borough acknowledges that WSA (and its affiliates) have paid the total sum of \$35,000.00 to reimburse the Borough for the cost of that comprehensive traffic study prepared by Pennoni Associates, Inc. at the request and direction of the Borough of Conshohocken and summarized in a memorandum from Pennoni Engineer Brian R., Keaveney, PE, PTOE to Borough Manager Fran Marabella and dated October 2, 2013 (the "Global Traffic Study"). This payment, in conjunction with the Impact Fees discussed above in paragraph 20, will satisfy the requirement for any traffic study and all off-site traffic improvements needed for future development at the Property and the balance of development at Millennium Bock A, provided that any development of Millennium Block A proceeds as a non-residential use and that permits for construction are obtained not more than thirty-six (36) months from the date of this Agreement. The Borough will provide each of the OPG related entities with complete and full copies of all records, studies and reports prepared by the Borough's Traffic Engineer.

30. To the extent that the Global Traffic Study recommends the design, permitting, purchase, construction and installation of a Global Traffic Light Traffic Adaptive Signaling ("TAS") within the Borough and/or in neighboring municipalities, at the Borough's request, the WSA shall design, permit, purchase, construct and install TAS systems at intersections directed by the Borough within twenty-four (24) months of the date of execution of this Agreement. Such work shall be done in conjunction with the Borough and subject to PennDOT permitting and design requirements and standards. WSA shall receive a credit for all such work against Impact Fees due under this Agreement. In no event shall the combined public amenities under paragraph 23 and the TAS systems under this paragraph exceed the total impact fees under paragraph 20.

31. The Parties agree that the approvals referenced above in paragraph 19 shall be submitted to the Court for approval pursuant to a stipulation between the Parties.

32. This Agreement shall be construed, governed and enforced under the laws of the

Commonwealth of Pennsylvania.

33. This Agreement is an integrated agreement containing the entire understanding among the Parties regarding the matters addressed herein, and, except as set forth in this Agreement, no representations, warranties, or promises have been made or relied upon by the Parties to this Agreement. This Agreement shall prevail over prior communications regarding the matters addressed herein.

34. This Agreement shall be binding upon and inure to the benefit of the Parties and their respective heirs, successors, executors, trustees, administrators and assigns.

35. To be effective, any modification of this Agreement must be in writing and must be executed by all Parties hereto, and approved by the Court.

36. The provisions of this Agreement are severable and if any provision is held to be unenforceable or invalid, it shall not affect the validity or enforceability of any other provision.

37. The Parties shall each pay their own expenses and legal fees in respect of the Litigation and the negotiation and execution of this Agreement.

38. Nothing contained in this Agreement shall preclude the Parties from initiating legal action solely for the purpose of enforcing their rights under this Agreement.

39. This Agreement may be executed in counterparts, each of which shall be an original and all of which shall constitute one agreement. Facsimile signatures on this Agreement are and shall be enforceable for all purposes. The Parties executing this Agreement represent that they each have sole authority to prosecute, compromise and release any and all claims released by this Agreement and that none of said claims has been sold, assigned, conveyed or otherwise transferred to any other person or entity.

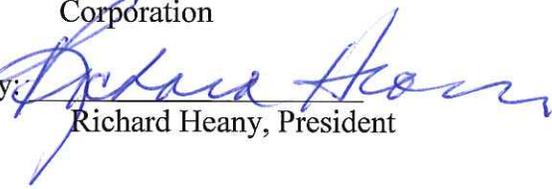
[Signatures appear on the following page.]

IN WITNESS WHEREOF, intending to be legally bound hereby, the parties have executed this Agreement the day and date first written above.

BOROUGH OF CONSHOHOCKEN

By: 
RICHARD J. Manfredi, Manager

WASHINGTON STREET ASSOCIATES III, L.P.
By: Washington Street Associates III Acquisition Corporation

By: 
Richard Heany, President

401 WASHINGTON STREET ASSOCIATES, L.P.
By: 401 Washington Street Associates Acquisition Corporation

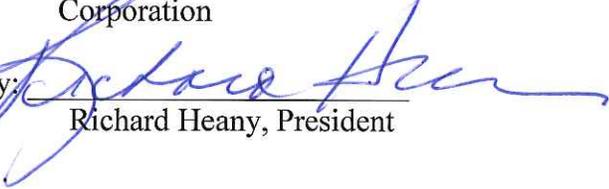
By: 
Richard Heany, President

EXHIBIT A

EXHIBIT B

100 South Washington Blvd
 King of Prussia, PA 19380
 610-261-1100
 Fax: 610-261-1188

REVISED FINAL PLAN SUBMISSION
OVERALL SITE PLAN
 402 WASHINGTON STREET
 KING OF PRUSSIA, PA 19380
 PROJECT NO. 12.100.00
 DATE: 04/20/11
 SHEET NO. 04

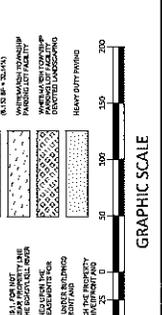
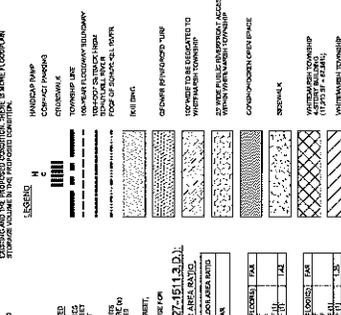
DATE	11/14/10
BY	MM
REVISED	04/20/11
BY	MM
DATE	04/20/11
BY	MM
DATE	04/20/11
BY	MM

FLOOD PROOFING NOTES:

1. ALL FLOOD PROOFING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF FEMA'S FLOOD PROOFING MANUAL, 2001.
2. ALL FLOOD PROOFING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF FEMA'S FLOOD PROOFING MANUAL, 2001.
3. ALL FLOOD PROOFING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF FEMA'S FLOOD PROOFING MANUAL, 2001.
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5. ALL FLOOD PROOFING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF FEMA'S FLOOD PROOFING MANUAL, 2001.
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9. ALL FLOOD PROOFING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF FEMA'S FLOOD PROOFING MANUAL, 2001.
10. ALL FLOOD PROOFING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF FEMA'S FLOOD PROOFING MANUAL, 2001.

100-YEAR FLOODPLAIN ENCROACHMENT TABLE

ENCROACHMENT	AREA (SQ. FT.)	PERCENT OF TOTAL AREA
ENCROACHMENT 1	1000	1.00%
ENCROACHMENT 2	2000	2.00%
ENCROACHMENT 3	3000	3.00%
ENCROACHMENT 4	4000	4.00%
ENCROACHMENT 5	5000	5.00%
ENCROACHMENT 6	6000	6.00%
ENCROACHMENT 7	7000	7.00%
ENCROACHMENT 8	8000	8.00%
ENCROACHMENT 9	9000	9.00%
ENCROACHMENT 10	10000	10.00%



GENERAL NOTES:

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE INTERNATIONAL BUILDING CODE (IBC).
2. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE INTERNATIONAL BUILDING CODE (IBC).
3. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE INTERNATIONAL BUILDING CODE (IBC).
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8. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE INTERNATIONAL BUILDING CODE (IBC).
9. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE INTERNATIONAL BUILDING CODE (IBC).
10. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE INTERNATIONAL BUILDING CODE (IBC).

CONSTRUCTION SCHEDULE DATA

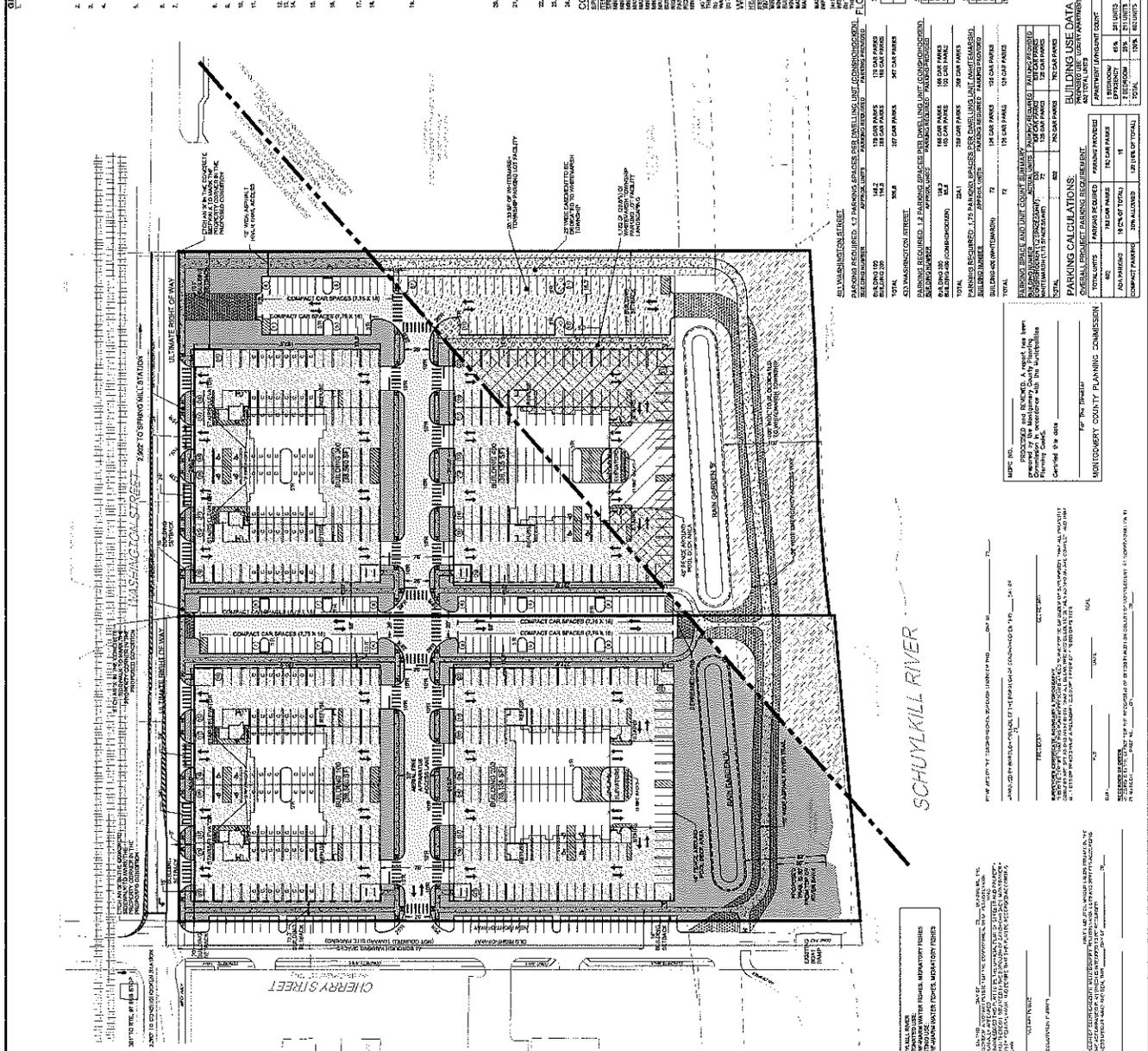
ITEM	DESCRIPTION	START DATE	END DATE
1	FOUNDATION	05/01/11	06/01/11
2	FLOORING	06/01/11	07/01/11
3	MECHANICAL	07/01/11	08/01/11
4	ELECTRICAL	08/01/11	09/01/11
5	PAINTING	09/01/11	10/01/11
6	LANDSCAPING	10/01/11	11/01/11

WHITE MARSH TOWNSHIP ZONING DATA

ZONE	PERMITTED USES	MINIMUM LOT AREA	MINIMUM FRONT YARD SETBACK	MINIMUM SIDE YARD SETBACK	MINIMUM REAR YARD SETBACK	MINIMUM BUILDING HEIGHT	MINIMUM LOT COVERAGE
RESIDENTIAL SINGLE-FAMILY	Single-Family Detached	10,000	30	5	10	35	25%
RESIDENTIAL MEDIUM-DENSITY	Single-Family Detached, Townhomes	5,000	20	5	10	35	30%
RESIDENTIAL HIGH-DENSITY	Single-Family Detached, Townhomes, Multi-Family	3,000	15	5	10	35	35%

FLOOR AREA CALCULATIONS (CONSHOCKEN Z-1011.1.B.1.)

USE	FLOOR AREA (SQ. FT.)	PERCENT OF TOTAL
RESIDENTIAL	10,000	10.00%
COMMERCIAL	20,000	20.00%
INDUSTRIAL	30,000	30.00%
PARKING	40,000	40.00%
TOTAL	100,000	100.00%



CONTRACTOR NOTES:

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE INTERNATIONAL BUILDING CODE (IBC).
2. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE INTERNATIONAL BUILDING CODE (IBC).
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9. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE INTERNATIONAL BUILDING CODE (IBC).
10. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE INTERNATIONAL BUILDING CODE (IBC).

Exhibit B

EXHIBIT C

Letter of Transmittal

To: Borough of Conshohocken
 Planning Commission
 Borough Hall
 400 Fayette Street
 Conshohocken, PA 19428

Date: December 3, 2021	Project no.: 14000908C
Subject: 401/433 Washington Street	

We are sending you:

- | | |
|--|---|
| <input checked="" type="checkbox"/> Attached | <input type="checkbox"/> Under separate cover |
| <input type="checkbox"/> Shop Drawings | <input type="checkbox"/> Prints <input checked="" type="checkbox"/> Plans |
| <input type="checkbox"/> Samples | <input type="checkbox"/> Specifications <input type="checkbox"/> Copy of Letter |
| <input type="checkbox"/> Change Order | |

Copies	Date	Revised	No.	Description
7				Application (1 originals and 6 copies)
1				Application Fee - \$1,000
7				Escrow Agreement (1 original and 6 copies)
1				Escrow Fee - \$5,000
7				Planning Process Extension Agreement (1 original and 6 copies)
7				Application for County Review
7				Project Narrative
7				Waiver Request Letter
7				LD Plans (23 Sheets)
7				E&S Plans (5 Sheets)
7				PCSM Plans (6 Sheets)
7				Landscape & Lighting Plans (10 Sheets)
7				Drainage Area Maps (3 Sheets)
7				Existing Tree Location Survey Plan (1 Sheet)
7				PCSM Report (Stormwater Calculations)
7				Proof of Ownership - Deed & PSA with Spectrum
7				Photos - Façade & Secondary Elevations
7				Architectural drawings & renderings
1				Electronic Submission (via email)



- | | | |
|--|---|---|
| <input checked="" type="checkbox"/> For approval | <input type="checkbox"/> Approved as submitted | <input type="checkbox"/> Resubmit copies for approval |
| <input type="checkbox"/> For your use | <input type="checkbox"/> Approved as noted | <input type="checkbox"/> Submit copies for distribution |
| <input type="checkbox"/> As requested | <input type="checkbox"/> Returned for corrections | <input type="checkbox"/> Returned corrected prints |
| <input type="checkbox"/> For review and comment | | |
| <input type="checkbox"/> FOR BIDS DUE: | <input type="checkbox"/> PRINTS RETURNED AFTER LOAN TO US | |

Remarks:

A handwritten signature in black ink, appearing to read "C. Roseberry".

Copy to:

Signed: C. Richard Roseberry

December 3, 2021

Borough of Conshohocken
Planning Commission
Borough Hall
400 Fayette Street
Conshohocken, PA 19428

401/433 Washington Street
Colliers Engineering & Design Project No. 14000908C

Dear Borough Council,

On behalf of our clients, KRE Acquisition Corp., we are requesting the following deviations of the Zoning Ordinance and SALDO for the above referenced project. Waivers and variances that were previously granted by the Borough as part of the Settlement Agreement (dated 10/27/14) are still sought.

ZONING RELIEF ADDRESSED BY SETTLEMENT AGREEMENT:

1. Section 27-1511.8.E. – TO ALLOW UNDERGROUND PARKING BE WITHOUT PLANTINGS.
2. Section 27-1505.B(3) – TO ALLOW SIDEWALKS, PLANTED VERGE, AND LANDSCAPING ALONG THE NORTHERN SIDE OF HORIZONTAL DRIVE TO BE BROKEN UP BY INGRESS/EGRESS POINTS.
3. Section 27-2007.I – TO ALLOW TWO (2) ADDITIONAL ACCESSWAYS ON WASHINGTON STREET.

ZONING RELIEF REQUESTED BY SETTLEMENT AGREEMENT AMENDMENT:

1. Section 27-1511.8.A.(I) – TO ALLOW PARKING IN 401 WASHINGTON STREET TO BE LESS THAN THE REQUIRED MINIMUM. Consistent with the plan submitted in 2016, the applicant proposes to satisfy the on-site parking demand with the construction of perpendicular parking on Cherry Street and within the 433 Washington tract.

SALDO RELIEF ADDRESSED BY SETTLEMENT AGREEMENT:

1. Section 22-404.1.A – ALLEYS SHALL BE PROVIDED IN ALL RESIDENTIAL DEVELOPMENTS.
2. Section 22-404.2.A – DRIVEWAYS AND DRIVEWAY CURB CUTS SHALL BE EXPRESSLY PROHIBITED IN THE FRONT YARD SETBACK OF RESIDENTIAL PROPERTIES.
3. Section 22-404.2.F – NO MORE THAN TWO (2) DRIVEWAYS SHALL BE PROVIDED TO ANY SINGLE PROPERTY TRACT
4. Section 22-405.1.C – SIDEWALKS SHALL NOT BE LESS THAN FIVE FEET IN WIDTH IN RESIDENTIAL AREAS.
5. Section 22-419.1 – CONCRETE MONUMENTS SHALL BE SHOWN AT REAR PROPERTY CORNERS
6. Section 22-804.4.A.(7) – DENYING AREAS DEDICATED TO THE BOROUGH TO BE USED IN CALCULATING DENSITY

SALDO RELIEF REQUESTED BY SETTLEMENT AGREEMENT AMENDMENT:

1. Section 22-405.1.E – CROSSWALKS SHALL NOT BE LESS THAN 10 FEET WIDE. The sidewalks were reduced to 5' wide throughout the development as part of the settlement agreement. As such, the crosswalks leading up to these reduced width sidewalks should also be reduced. The crosswalk width should be no more than 1' wider than the sidewalk width (0.5' on either side), so we are proposing 6' wide crosswalks with the 5' wide sidewalks.

SUBMISSION CHECKLIST RELIEF REQUESTED:

2. SUBMISSION OF A TRAFFIC STUDY. The applicant seeks a waiver for submitting a traffic study as a payment in lieu of this is provided in the Settlement Agreement.

Sincerely,

Colliers Engineering & Design, Inc.
(DBA Maser Consulting)



C. Richard Roseberry, P.E.
Regional Manager



GILMORE & ASSOCIATES, INC.
ENGINEERING & CONSULTING SERVICES

January 7, 2022

File No. 17-02105

Stephanie Cecco, Borough Manager
Borough of Conshohocken
400 Fayette Street, Suite 200
Conshohocken, PA 19428

Reference: 401/433 Washington Street Apartments, LD 2013-05
Amended Settlement Agreement and Check Set Review
TMPs 05-00-11904-00-7 and 05-00-11908-00-3

Dear Ms. Cecco:

As requested, Gilmore & Associates, Inc. has reviewed the revised major land development submission associated with the above referenced project. Upon review we offer the following comments for consideration by the Conshohocken Borough Council:

I. Submission

- A. Final Land Development Plans consisting of 23 sheets, as prepared by Colliers Engineering & Design Inc. for KRE Acquisition Corp., dated October 29, 2021
- B. Post Construction Stormwater Management Plans consisting of 6 sheets, as prepared by Colliers Engineering & Design Inc. for KRE Acquisition Corp., dated December 3, 2021
- C. Erosion and Sediment Pollution Control Plans consisting of 5 sheets, as prepared by Colliers Engineering & Design Inc. for KRE Acquisition Corp., dated December 3, 2021
- D. Landscaping and Lighting Plans consisting of 10 sheets, as prepared by MBC Landscape Architecture, dated December 3, 2021
- E. Post Construction Stormwater Management Report, as prepared by Colliers Engineering & Design Inc. for KRE Acquisition Corp., dated December 3, 2021

II. Review Comments

Based on the submission, the Applicant will need to amend the Settlement Agreement, dated October 22, 2014, to permit the proposed multi-family residential development of 4 apartment buildings with 4 floors over at-grade parking. In addition, we offer the following comments:

1. We offer the following comments related to specific terms of the Settlement Agreement:
 - a. Per Paragraph 20 of the Settlement Agreement, the Applicant shall pay a general impact fee to the Borough, in the amount of \$2,510.00 per residential dwelling unit, at the time a building permit is issued for vertical construction of the proposed residential building.
 - b. Per Paragraphs 21 and 22 of the Settlement Agreement, the Applicant shall offer to dedicate riverfront land to the Borough or an easement for the public's benefit. While General Note 66 on the General Notes plan, Sheet 2, indicates that recreation area is to be offered for dedication to Conshohocken Borough, the limits of the recreation are not shown on the plans. The amenities and areas offered to Conshohocken Borough for the public's benefit shall be defined on the plans and the Applicant shall coordinate with the Borough regarding whether the Borough desires dedication or an easement.
 - c. The elevated wooden boardwalk and floating walkway required by Paragraph 23 of the Settlement Agreement are not shown on the plans. be provided. If this modification is acceptable to Council, the Applicant shall offer a fee-in-lieu or different riverside amenities and provide information to indicate the

65 East Butler Avenue | Suite 100 | New Britain, PA 18901 | Phone: 215-345-4330 | Fax: 215-345-8606

cost associated with the boardwalk and walkway.

- d. Per Paragraph 25 of the Settlement Agreement, the Applicant shall provide information to confirm that any and all stormwater which is proposed to be discharged from the property into the Schuylkill River shall first be captured and cleaned by acceptable stormwater BMPs, prior to discharge into the Schuylkill River. Additional information shall be provided to support the values used in the Water Quality worksheet provided in the Post-Construction Stormwater Management Report.
 - e. Paragraph 26 of the Settlement Agreement requires that no less than 50 of the residential units in each the 401 and 433 Washington Street properties be furnished and made available for rental as hotel and/or "extended stay" products. Since is our understanding the Applicant's intention is for all units to be apartments, this condition must be modified if acceptable to Council.
 - f. Paragraph 27 of the Settlement Agreement requires green development initiatives be provided, such as LED light bulbs, use of recycled/sustainable building materials, bike racks, and electric vehicle charging stations. The site-related green development initiatives shall be clearly identified on the plans with related details.
 - g. Paragraph 28 of the Settlement Agreement references development proceeding in two phases. Since the current submission is set up as one phase, this condition should be modified accordingly.
 - h. The Applicant has indicated that they are requesting relief, through amendment of the settlement agreement, from the requirement to provide a traffic study, which we defer to the Borough's Traffic Engineer. Paragraph 29 of the Settlement Agreement shall be revised accordingly.
 - i. The Applicant has indicated that they are requesting relief, through amendment of the settlement agreement, from the requirement that crosswalks be at least 10 feet wide. The plans propose 10 foot wide crosswalks along Washington Street and 6 foot wide crosswalks elsewhere.
2. We offer the following comments related to rights-of-way:
- a. References to Cherry Street as a public right-of-way shall be removed from the plans as the Borough has not accepted dedication.
 - b. Easements, including those required for access, operations, and maintenance, shall be provided as required, including: cross-access; Cherry Street right-of-way; public and emergency access routes located outside the rights-of-way; lands to be dedicated; open space; and recreation space. We recommend a separate plan be added showing the metes and bounds of all property to be dedicated and eased.
 - c. The proposed dedication of the Washington Street right-of-way shall be extended to the western property line. The western metes and bounds for the Washington Street right-of-way offered for dedication shall be added to the plans, proposed the iron pin revised accordingly, and documentation provided in a form acceptable to the Borough Solicitor.
 - d. General Note 67 on the General Notes plan, Sheet 2, indicates Apple Street shall be vacated. The area to be vacated shall be clearly identified on the plans and documentation related to the proposed vacation shall be provided in a form acceptable to the Borough Solicitor.
3. We offer the following comments related to the proposed grading:
- a. Additional grading information shall be added to the plans in sufficient detail to clarify the proposed longitudinal and cross slopes for the pedestrian pathways, driveway aprons, and drainage patterns.
 - b. Top and bottom of curb elevations shall be provided for all existing and proposed curbing, including proposing 6 inch reveal curb along Washington and Cherry Streets per the Borough's standard detail. This shall include confirming adequate access is provided to the fire apparatus access way.
 - c. Detailed designs shall be provided for each proposed curb ramp. This information shall include spot elevations, slopes, and any additional notes/details required to confirm the designs will comply with PennDOT Publication 72 RC-67.
4. We offer the following comments related to the storm sewer, stormwater management design, Post-Construction Stormwater Management Plans, and Post-Construction Stormwater Management Report:

- a. The information presented on the Post-Construction Stormwater Management Plans differ from the information provided on the Construction Details plan, Sheet 21, of the land development plans. All plans and Post-Construction Stormwater Management Report shall be revised for consistency.
- b. §22-410.1.F – The stormwater management design shall be revised such that the post-development peak discharge at Study Point 1 is no greater than the pre-development peak discharge for all design storms.
- c. §22-410.4.A – The storm pipe calculations shall be revised to utilize the "n" factor of 0.015 as required.
- d. §22-410.4.A.(1)(a) - Storm pipe calculations shall be provided the 100-year storm to verify that the hydraulic grade line does not exceed the surface elevation at any point.
- e. §22-410.4.D.(2) – The plans and calculations shall be revised such that, in roadways, the inlets are spaced to allow a maximum gutter flow of 4.0 cubic feet per second.
- f. §22-410.4.K – The drainage area plans shall be revised to clearly identify the proposed roof drain system and confirm that all roof drains discharge to a stormwater BMP as required.
- g. Section 2.1 of the Post-Construction Stormwater Management Report indicates that the site is not located within an area that is prone to sinkholes; however, General Note 21 on the General Notes plan, Sheet 2, references an underlying Conestoga Formation and the Existing Conditions and Demolition Plan, Sheet 3, references evidence of potential sinkhole activity and the presence of limestone bedrock which is subject to development of karst features. The information shall be revised for consistency and the General Construction Guidelines for Carbonate Geology notes included in the Report of Geotechnical Exploration shall be added to the plans.
- h. It shall be clarified whether underground detention basin A is proposed to be lined with filter fabric, per the Underground Detention Basin A (Closed System) Detail provided on the PCSM Details plan, Sheet P5, or a 30 mil impermeable liner as referenced in Section 4.0 of the Post-Construction Stormwater Management Report.
- i. The proposed location of the dual 8 inch orifices within the Outlet Control Structure UGD A and B Details (Single Chamber) provided on the PCSM Details plan, Sheet P5, shall be confirmed. Modeling information provided in the Post-Construction Stormwater Management Report suggests the orifices are through the weir but this is not represented in the details. As shown in the Details, the outlet structure would function as additional storage area until the weir elevation is reached.
- j. Information shall be provided in the Post-Construction Stormwater Management Report and added to the Underground Detention Basin (Closed System) Details on the PCSM Details plan, Sheet P5, to indicate where the 100-year water surface elevations are located within underground basins A and B.
- k. Information shall be provided regarding how and where maintenance access is provided for underground basins A and B, including access for the indicated sediment removal and potential system vacuuming.
- l. The proposed material of underground basin A shall be clarified since the Underground Detention Basin A (Closed System) Detail provided on the PCSM Details plan, Sheet P5, references both RCP and thermoplastic pipe materials. Also, the location of MH S-A1 shall be revised for consistency between plan views and the Detail.
- m. Based on the water levels indicated in the logs for boring numbers B17, B19, B23, B39, and B46, water elevations are at the bottom or within proposed underground detention basin A. Information shall be provided to indicate how groundwater displacement and potential for buoyancy are adequately addressed.
- n. The top storage elevation for underground basin B shall be confirmed since the Underground Detention Basin B (Closed System) Detail provided on the PCSM Details plan, Sheet P5, references 51.70 feet and the calculations provided in the Post-Construction Stormwater Management Report references 51.80 feet. Also, the location of MH S-B2 shall be shown in plan views.
- o. The Outlet Control Structure UGD B Detail (Single Chamber) provided on the PCSM Details plan, Sheet P5, shall be revised to show the proposed underdrain connection and confirm whether an upturned elbow or horizontal connection is proposed from the 4 inch underdrain.
- p. A detail for the StormTrap SingleTrap Concrete Structures proposed for underground basin B shall be

- provided, along with information supporting the void ratio used in the calculations.
- q. The drainage areas which 'M' Inlet R-4, MH R-5, and 'M' Inlet R-6 are contributing to shall be confirmed since they are shown on the Proposed Drainage Map, DA-Post, within DA-3 (to MRC) but are connected to the pipe system associated with DA-1.
 - r. Additional grading information shall be provided for the proposed curb along the island between Buildings 1 and 2 to support the DA-3 (to MRC) boundary indicated by Washington Street.
 - s. A backflow preventer shall be installed at EW-100.
5. We offer the following comments related to the Erosion and Sediment Pollution Control Plans:
- a. The Site Work construction sequence on the Erosion and Sediment Pollution Control Details plan, Sheet 4, shall be updated to match the current design.
 - b. Information shall be provided to indicate where equipment and materials are proposed to be stored and staged during building construction.
 - c. The proposed topsoil stockpile area shall be relocated outside the 100-year floodplain.
 - d. Note 21 on the Cover Sheet, Sheet 1, shall be revised to reference both Conshohocken Borough and Whitemarsh Township. This same revision shall be made to the Post-Construction Stormwater Management Plans.
 - e. The Utility Notes on the Cover Sheet, Sheet 1, shall be revised to reference the local authorities, the improvements associated with this project, and reference Conshohocken Borough, Whitemarsh Township, and the Montgomery County Conservation District as applicable. The same revisions shall be made to the Post-Construction Stormwater Management Plans.
6. We offer the following comments related to the Landscaping and Lighting Plans:
- a. The plan view layout, lot line locations, grading, materials, etc. shown on the plans shall be revised to match the current land development plans.
 - b. A chart shall be provided which lists all pertinent landscape requirements and shows compliance with the same. We may have additional comments once this information is provided.
 - c. Replacement trees shall be provided, at a minimum of 3.5 caliper inches, for each tree six inches or more in caliper that is to be removed within Conshohocken Borough.
 - d. Proposed utilities, limits of the stormwater BMPs, and lighting fixtures shall be shown on the plans to confirm that proposed landscaping will not interfere with the installation and maintenance of other proposed features. We recommend a minimum of 10 feet be provided between proposed trees and all above- and under- ground utilities.
 - e. The ground condition proposed along the southern edge of Building 4 shall be clarified. We recommend shrubs and/or a seed mix, as proposed in other areas, be provided.
 - f. A plant schedule shall be provided for the two areas identified as "Amenity Roof Deck Shown Above" on Sheet L-102.
 - g. There does not appear to be sufficient cover available for the shade trees proposed in the three parking islands above underground basin A or for the shade tree clusters proposed above underground basin B. The proposed landscaping layout shall be coordinated with the stormwater BMPs.
 - h. Several light fixtures proposed in the open space above underground basin B would not have sufficient cover to support an adequate footing depth. The proposed light fixture locations shall be coordinated for constructability.
 - i. It appears that the pedestrian sidewalk along the south side of Washington Street is being lit using building mounted light fixtures; however, it also appears this approach leaves gaps in the lighting at the driveways. The plans shall be revised to provide continuous, uniform light levels along entire pedestrian corridor.
 - j. The plans shall be revised to provide a more detailed breakdown of the lighting calculations for the sidewalk and pedestrian areas to clarify the proposed conditions. Currently, the Calculation Summary

indicates light level statistics for "PATH AREA;" however, it is unclear what area(s) are included in the "PATH AREA."

- k. Lighting design information shall be provided for the parking areas proposed under the residential units.
 - l. Lighting details, including related poles and footings, shall be provided for each proposed fixture.
 - m. The courtyard area between Buildings 1 and 2 is proposed to be illuminated using light column type fixtures which are not dark-sky compliant. We recommend an alternative type of fixture be proposed to reduce glare to the proposed residential units and comply with dark-skies initiatives.
 - n. The light columns and un-lit impact rated bollards proposed at the terminus of the parking area between Buildings 3 and 4 shall be revised to for coordination with the proposed access point to the fire apparatus access way.
 - o. The isolux lines shall be labeled to identify what light levels they represent or a more detailed light level grid shall be provided for review.
 - p. Bollard lights proposed along the pedestrian path adjacent to the Schuylkill River are situated outside of the reinforced turf area for the fire apparatus access way and will provide very minimal lighting to the actual pedestrian path. An alternative lighting design for the path shall be provided.
7. We offer the following general plan comments:
- a. Though we defer the required number of parking spaces to the Zoning Officer, the plans shall be revised to show that the required number of parking spaces are provided and indicate how the 25 parking spaces along Cherry Street will be reserved for the development's use only.
 - b. A signature block for the Borough Council President and Secretary shall be provided as signature blocks the Cover Sheet, General Notes, and Dimension Plans plan, Sheets 1, 2, and 4, instead of the Conshohocken Borough Manager.
 - c. One of the two Owner's Certification signature blocks provided on the Cover Sheet, General Notes, and Dimension Plans plan, Sheets 1, 2, and 4, shall be revised for signature by the Owner and indicate they certify to being the registered owner of the property of the land to be developed, they consent to the approval the plan has granted, and they desire the same to be recorded.
 - d. General Notes 22, 37, and 41 on the General Notes plan, Sheet 2, shall be revised to reference both Conshohocken Borough and Whitemarsh Township.
 - e. All improvements proposed to be made to Washington and Cherry Streets shall be clearly indicated. This includes identifying the limits all proposed upright and depressed curb, mill and overlay, new pavement, line striping, signage, etc. General Note 56 on the General Notes plan, Sheet 2, and construction details shall be revised to indicate 6 inch reveal concrete curbing shall be installed along Washington and Cherry Streets.
 - f. The Dimension Plan, Sheet 4, shall be revised to show proposed monumentation at each corner of land to be dedicated.
 - g. The open space areas indicated on the Riverfront Access, Recreation, and Open Space Plan, Sheet 5, do not match the measured hatched areas shown in plan view and shall be updated accordingly.
 - h. The storm pipe calculations in the Post-Construction Stormwater Management Report do not match the information provided on Utility and Profiles plans, Sheets 7-11, and shall be revised for consistency. The information shall be updated on the Erosion and Sediment Pollution Control and Post-Construction Stormwater Management Plans accordingly.
 - i. All applicable Borough Standard details and notes shall be added to the Construction Details plans, Sheets 14-22, including revising the provided details for work within Conshohocken Borough to be in accordance with these Standards.
 - j. The proposed locations of the two Eastern Face Borough of Conshohocken Signs detailed on the Construction Details plan, Sheet 15, shall be clarified. Also, we recommend the location of the proposed two-panel Western Face Borough of Conshohocken Sign be relocated to enhance wayfinding.

- k. The location of the retaining wall detailed on the Construction Details plan, Sheet 22, shall be clearly identified in plan view or the detail removed. If proposed, a note shall be added to the Retaining Wall Typ. Section detail indicating that detailed retaining designs and calculations, which have been signed and sealed by a professional engineer registered in the Commonwealth of Pennsylvania, shall be provided to the Borough for review and approval prior to plan recording.
 - l. The plans shall be revised to incorporate an aerial map plan, showing all existing features within 100 feet of the proposed development.
 - m. The SEPTA right-of-way and the locations of property lines on the northern side of Washington Street, with associated tax parcel and owner information, shall be shown on the plans.
 - n. Signage proposed at the traffic circle shall be relocated outside the pedestrian pathway and into the adjacent landscape islands.
 - o. The Do Not Enter sign proposed to be mounted back-to-back with the Stop sign at the one-way egress to Washington Street shall be relocated to its own pole or the Stop sign enlarged such that the Do Not Enter sign is within the edges of the Stop sign as required.
 - p. The plans shall be revised to align the proposed trail connection at Cherry Street with the existing paved walk on the other side of the roadway.
 - q. The plans shall be revised to maintain the marked pedestrian access across Washington Street at Cherry Street.
 - r. We recommend a pedestrian walkway from Washington Street to the river trail be provided through the site. As currently shown, the only pedestrian connectivity to the river trail is from the sidewalk proposed along Cherry Street.
 - s. The plans shall be revised to provide minimum 5 foot curb radii, including throughout the site and along Cherry Street.
 - t. The limits of the geoweb reinforced turf shall be clarified since it overlaps the proposed asphalt trail and public seating areas. Also, information shall be provided for the proposed Hastings Pavement Co. Inc. grass pavers to confirm they can withstand the emergency vehicle loading.
 - u. Additional space shall be provided at the terminus of the southern compact parking space rows and eastern parking space rows for sufficient vehicle turnaround in the event that all parking spaces along the row are full.
 - v. Shared bike lane markings are proposed in the centerline of Cherry Street, which appears to create a safety hazard for users. We defer to the Borough's Traffic Engineer regarding whether the shared bike lane markings shall be relocated and related signage added to the plans. Since it our understanding that the Borough does not intend to accept the Cherry Street right-of-way, we note that maintenance of the markings and signage would be the developer's responsibility.
 - w. Refuse collection locations shall be identified on the plans and a sanitation truck turning template provided, showing the truck is able to service all proposed refuse collection areas and that sufficient space is provided for maneuverability.
8. The Applicant shall coordinate with the necessary utility providers regarding the proposed removal of the existing utility poles along the Washington Street frontage and relocation of all services on the poles to underground.
 9. The Applicant shall provide a signed and sealed copy of the survey plan prepared by Valley Land Services, LLC as referenced in General Note 6 on the General Notes plan, Sheet 2. Legal descriptions for all proposed dedication areas and easements shall also be submitted to our office.
 10. The Applicant shall obtain all required approvals, permits, etc. (e.g. Conshohocken Borough Sewer Authority, Fire Marshal, Whitmarsh Township, MCPC, MCCD, PADEP, AQUA, etc.). Copies of these approvals and permits shall be submitted to the Borough of Conshohocken and our office.
 11. The Applicant shall execute all necessary Agreements, including for Storm Water Operations and Maintenance, Land Development and Escrow, easements, etc., for the project satisfactory to the Borough Solicitor. An Engineer's Opinion of Probable Cost shall be submitted to our office for review.

If you have any questions regarding the above, please contact this office.

Sincerely,



Karen M. MacNair, P.E.
Borough Engineer
Gilmore & Associates, Inc.

KMM/gja/

cc: Ray Sokolowski, Executive Director of Operations
Brittany Rogers, Executive Assistant
Michael E. Peters, Esq., Borough Solicitor



BOROUGH OF CONSHOHOCKEN

Office of the Borough Manager

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Yaniv Aronson

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Karen Tutino, Member

MEMORANDUM

Stephanie Cecco
Borough Manager

Date: January 7, 2022

To: Brittany Rogers, Executive Assistant to Borough Manager

From: Tim Gunning, Fire Marshal

Re: 401/433 Washington Street
12/3/21 Submission

As requested, the following materials were submitted for the above references land development proposal were reviewed:

- Final Land Development Plans consisting of 23 sheets, as prepared by Colliers Engineering & Design Inc. for KRE Acquisition Corp., dated October 29, 2021.

The following comments are presented:

1. Fire department apparatus access way in rear of building is located too far away from building. The requirement for the fire department access way in the rear is a minimum of 15 feet from the building and a maximum of 30 feet from the building. The plan shall be revised to comply with this requirement.
2. Provide a plan for the existing poles along the south side of Washington Street. Photo of existing poles attached.

BCONS21021

January 7, 2022

Stephanie Cecco
Borough Manager
Borough of Conshohocken
400 Fayette Street, Suite 200
Conshohocken, PA 19428

**RE: Traffic Engineering Review
401/433 Washington Street Apartments**

Dear Ms. Cecco:

We have completed our review of the submission for the above referenced land development proposal. The submission consisted of Preliminary/Final Land Development Plans, dated 10/29/21, and project narrative, prepared by Colliers Engineering & Design, and a Settlement Agreement between Washington Street Associates (WSA) and the Borough of Conshohocken, dated October 22, 2014. The proposed development consists of four (4) new buildings containing 598 new apartments, located on the southeast corner of Washington Street and Cherry Street. The project proposes to convert the existing parallel parking along Cherry Street to a perpendicular configuration. Access to the site is proposed via three (3) new driveways to Washington Street, and one (1) new driveway to Cherry Street. We offer the following comments and information for your consideration:

1. §27-824 - Traffic Impact Study

In accordance with this section, a Traffic Impact Study would normally be required for the proposed development. However, the referenced settlement agreement indicates the previous traffic study prepared by the Borough in 2013 shall constitute satisfaction of this requirement and that any offsite improvements determined to be necessary shall be credited towards the impact fees identified within the agreement.

We have updated the Borough's traffic model to reflect the proposed development and have evaluated the anticipated impact of this development on the adjacent roadway network. Based on this analysis, the following intersections will experience deficient Levels of Service due to the proposed development, and will require mitigation to offset the anticipated impacts, including the consideration of new traffic signal installations:

- East Elm Street (SR 3059) & Ash Street
- Washington Street & Ash
- Washington Street & Harry

2. §22-403 – Streets

- a. The proposed widening of Washington Street along the site frontage must match the configuration, dimensions, and specifications of Washington Street to the west of the development. Additionally, the southwest corner of Washington Street and Cherry Street must be adjusted to properly align with the proposed curb line along the frontage of the site.
- b. A pavement marking and signage plan for Washington Street along the frontage of the site, inclusive of the intersection of Washington Street and Cherry Street, must be provided.

3. §22-404 – Alleys, Driveways, and Parking Areas

- a. The maneuverability diagrams shown on the plans for fire and emergency services vehicles must be approved by the Borough Fire Marshal.
- b. The plans must show available corner sight distance measurements for each proposed driveway and internal intersection, including the intersection of Washington Street and Cherry Street due to the proposed change in parking configuration. Additionally, all proposed 'Stop' signs within the site and along Cherry Street must have adequate sight distance without potential interference from proposed parking spaces.
- c. The signage for the internal circular intersection (roundabout) should consist of conventional signage as outlined in the Manual of Uniform Traffic Control Devices (MUTCD), including R6-5P signs in combination with the proposed 'Stop' signs, and W2-6 signs on each approach to the intersection.
- d. The proposed bicycle 'Sharrow' pavement markings along Cherry Street should be shown in both directions and located adjacent to the curb line and/or parking area. Additionally, signage should be considered along Cherry Street to support the use of the markings. A note should also be placed on the plans indicating that the markings will be maintained by the applicant.
- e. The dead-end parking areas at the southern ends of the central and eastern parking areas are undesirable and must include provisions for traffic to re-circulate through the site or turn around within the parking area and exit without reversing out of the parking area.

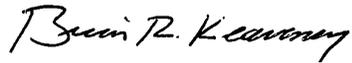
4. §22-405 – Sidewalks and Curbs

- a. Pedestrian accommodations, including crosswalks and ADA compliant ramps must be provided on each approach of the internal circular intersection.
- b. Pedestrian connectivity from the parking area along the eastern side of the site to the public trail should be considered.
- c. All crosswalks/pedestrian ramps must be ADA compliant.

If you have any questions or require additional information, please do not hesitate to contact me.

Very truly yours,

PENNONI ASSOCIATES INC.



Brian R. Keaveney, PE, PTOE
Transportation Division

cc: Ray Sokolowski, Executive Director of Operations
George Metz, Chief of Police
Timothy Gunning, Fire Chief and Fire Marshal
Karen MacNair, PE, Borough Engineer
Michael Peters, Esq., Borough Solicitor
Brittany Rogers, Executive Assistant to the Borough Manager

January 7, 2022

BCONS 21028

Stephanie Cecco, Borough Manager
Conshohocken Borough
400 Fayette Street, Suite 200
Conshohocken, PA 19428

RE: Zoning Review
401-433 Washington Street – Preliminary/Final Land Development Application

Dear Ms. Cecco:

As requested, we reviewed the following in connection with the referenced project:

- *“Preliminary/Final Land Development Plans for 401/433 Washington Street,”* (23 sheets) prepared by Colliers Engineering and Design, dated October 29, 2021.
- *“401& 403 Washington Street - Architectural Drawings and Rendering,”* (10 sheets) prepared by Major, dated December 3, 2021.
- *“401 Washington Street – Landscaping Plans,”* (10 sheets) prepared by Melillo-Bauer Carman Landscape Architects, dated December 3, 2021.

The applicant, KRE acquisition Corp., proposes to construct a 598-unit residential development consisting of four buildings located at 401-433 Washington Street. The property is divided by the municipal boundary line between Conshohocken Borough and Whitemarsh Township. The project site is approximately 10.7 acres with the 401 property containing 4.97 acres and the 433 property containing 5.69 acres. The entirety of the site is located within the FEMA Special Flood Hazard Area, including a portion of the site located within the FEMA defined floodway. The residential units are proposed to be elevated above the base flood elevation. Parking and site amenities are proposed on the ground level.

The development is subject to the terms of the settlement reached between the Borough of Conshohocken and the property owner, dated October 22, 2014.

We offer the following comments:

1. The proposed development is located within the floodway and zone AE floodplain Special Flood Hazard Areas of the Schuylkill River as defined by the FEMA Flood Insurance Rate Map. Per FEMA and Borough floodplain regulations, no new construction, substantial improvements, or other development shall be permitted within the floodway or zone AE flood hazard areas unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development up and down stream of the development, will not increase the water surface elevation of the base flood more than one foot at any point in the zone AE and will not result in any increase within the floodway. A hydrologic and hydraulic analyses prepared and signed by a Professional Engineer in accordance with standard engineering practices is required to demonstrate compliance with the floodplain development standards. Based on the results of the study, the applicant may be required to obtain a CLOMR and/or LOMR from FEMA. Additionally, the

applicant will be required to obtain all necessary permit approvals from state and federal agencies including but not limited to the Department of Environmental Protection.

We do note that the table on the plans indicate a de minimis net cut of soil within the floodplain and floodway; however, the landscaping plan indicates the placement of fill within the floodway. Additionally, the proposed building and accessory structures are obstructions that can impact flood waters and therefore must be modeled in the hydrologic and hydraulic analyses.

2. Per FEMA and Borough floodplain regulations, in residential structures any new construction or substantial improvement shall have the lowest floor elevated a minimum of 2 feet above the regulatory flood elevation. Fully enclosed space below the lowest floor shall only be used for the parking of a vehicle, building access, or incidental storage and shall be designed and constructed to allow for the automatic entry and exit of floodwaters for the purpose of equalizing hydrostatic forces on exterior walls.

Building access lobbies are permitted below the base flood elevation; however, the provided plans indicate amenity areas, mechanical rooms, trash rooms, move in rooms, and bike rooms located below the base flood elevation.

3. The applicant will be required to obtain a Floodplain Development Permit from the Borough prior to the start of construction.
4. The proposed development consists of 598 residential units, with 538 units located in Conshohocken Borough and 60 units located in Whitemarsh Township. The parking requirement in Conshohocken is 1.2 spaces per unit and in Whitemarsh is 1.75 spaces per unit. Therefore, the required number of off-street parking spaces is 751. Following correspondence between the Borough and the applicant, an updated parking table was provided reflecting 526 units located in Conshohocken Borough and 72 units located in Whitemarsh Township, requiring 758 parking spaces. The applicant will need to provide updated plans confirming the distribution of units in Conshohocken and Whitemarsh and showing compliance with the required number of parking spaces. The applicant will also need to show how the newly added spaces along Cherry Street will be restricted for the use of the subject development.
5. The proposed parking spaces along Cherry Street extend closer to the intersection with Washington Street compared to the settlement agreement plan. Additional information will need to be provided to the Borough engineer for review.
6. Public access shall be provided between Washington Street and the river front amenities in accordance with §27-1504.D. The settlement agreement plans include multiple continuous sidewalk connections between Washington Street and the riverfront. The current plan submission has a continuous sidewalk along the Cherry Street side of the property; however, the sidewalks down the center of the property appear to be obstructed by signage at the round-a-bout and the sidewalk on the eastern side of the property require pedestrians to walk into the parking lot and around parking spaces.
7. The proposed river front trail does not align with the existing trail to the west of the property and appears to conflict with an existing stormwater inlet.
8. In accordance with the terms of the settlement agreement and applicable Borough codes, the Borough and applicant will need to reach an agreement on the proposed public amenities; including

the offer of dedication and/or easements established for the public access and use. The notes on the plan will need to be updated accordingly, including clarifying the agreement with the Borough and Whitemarsh Township.

9. A landscape compliance table is to be provided to confirm compliance with §27-1506.B.

10. A lighting intensity distribution plan is to be provided to confirm compliance with §27-821.

If you have any questions or concerns, please feel free to contact the undersigned.

Sincerely,



Eric P. Johnson, PE
Zoning Officer
PENNONI ASSOCIATES INC.

EPJ/adc

cc: Ray Sokolowski, Executive Director of Operations
Karen MacNair, PE, Borough Engineer
Michael Peters, Esq., Borough Solicitor
Brittany Rogers, Executive Assistant to the Borough Manager