



Planning Commission MEETING AGENDA

Thursday, March 16, 2023 - 1:00 PM
Council Chambers, Easton Town Office
14 S Harrison Street

1. Call to Order

2. Approval of Minutes.

- a. Approval of the Draft Decision Summary from the February 16, 2023 meeting.

3. Old Business

4. New Business

- a. **Applicant:** Palmer Gillis
File No.: 2023-0864
Agent: Phoenix Physical Therapy
Location: 499 Idlewild Avenue
Tax Map 105, Parcel 2366, Lot 2
Zoning District: BC
Nature of Request: Concept, Use, and Design approval for a signage permit.
- b. **Applicant:** Rise Up Dover Road LLC
File No.: 2023-0874
Agent: Rise Up Coffee Roasters c/o Zachary A. Smith
Location: 625 Dover Road
Tax Map 103, Grid 0EA, Parcel 0990
Zoning District: R-7A
Nature of Request: Site Plan Review for temporary approval to re-erect a tent, and authorization for the tent to remain up through November 30, 2023.
- c. **Applicant:** Rise Up Dover Road LLC
File No.: 2023-0870
Agent: Rise Up Coffee Roasters c/o Ozzie Jimenez
Location: 625 Dover Road
Tax Map 103, Grid 0EA, Parcel 0990

Zoning District:
Nature of Request:

R-7A
Planned Redevelopment Overlay approval that would allow a tent to remain standing at 625 Dover Road on a seasonal basis in perpetuity. The applicant is also requesting approval for the addition of a kitchen and cafe to the existing utilities.

- d. **Applicant:** Mary's Court Venture, LLC
 File No.: 2023-0877
 Agent: Lane Engineering, LLC
 Location: 28595 Mary's Court
 Tax Map 025, Grid 022, Parcel 046, Lot 18

 Zoning District: BC
 Nature of Request: Site Plan and Architectural approval of a Single Lot Subdivision to construct an office/warehouse building.
- e. **Applicant:** Mistletoe Drive LLC
 File No.: 2023-0878
 Agent: Lane Engineering, LLC
 Location: 8992 Mistletoe Drive
 Tax Map 046, Grid 022, Parcel 046 Lot 10

 Zoning District: BC
 Nature of Request: Site Plan and Architectural approval of a Single Lot Subdivision to construct an office/warehouse building.
- f. Proposed Amendment to the Comprehensive Plan's Bicycle and Pedestrian Action Plan.

5. Discussion Item

- a. Continue discussion of Amendments to Zoning Ordinance.

6. Adjournment.



**Town of Easton Planning Commission
Draft Decision Summary**

Thursday, February 16, 2023 at 1:00 p.m.
Town Hall Chamber 2
14 S. Harrison Street, Easton

Archived video of the meeting is available at:
[Town of Easton Agendas and Minutes](http://eastonMD.gov)
 [\(eastonMD.gov\)](http://eastonMD.gov)

Attendance:

Commission Members:

Paul Weber, Chairperson
Jennifer Dindinger, Vice Chairperson
Victoria McAndrews
William Ryall
Philip Toussaint

Staff:

Miguel Salinas, Planning and Zoning Director
Lynn B. Thomas, Town Planner
Joseph Mayer, Plan Reviewer
Nicholas Johnson, Planner
Sharon Van Emburgh Esq., Town Attorney

1. Call to Order—Chairman Weber called the meeting to order at 1:00 pm.

2. Decision Summary Review—

Vice Chairperson Dindinger moved to approve the December 15, 2022 Draft Decision Summary. Commissioner Toussaint seconded the motion.

<u>Vote</u>	<u>5-0</u>
FOR:	5- Weber, Dindinger, McAndrews, Ryall, Toussaint
AGAINST:	0
ABSTAIN:	0
ABSENT:	0

January 19, 2023- The Commission noted the following corrections to the draft decision summary:

a. Grammatical corrections.

Commissioner Toussaint moved to approve the January 19, 2023 Decision Summary. Vice Chairperson Dindinger seconded the motion with amendments.

<u>Vote</u>	<u>5-0</u>
FOR:	5- Weber, Dindinger, McAndrews, Ryall, Toussaint
AGAINST:	0
ABSTAIN:	0
ABSENT:	0

3. Old Business –

- a. Applicant:** Maryland Health Club LLC
Agent: Nupur Nagar
Location: 28449 Clubhouse Drive
Tax Map 034, Grid 015, Parcel 122, Lot 154
Zoning: PUD
Request: The applicant is requesting a continuance of the application to a future meeting.

Public Comment:
Randy Perry

4. New Business

- a. Applicant:** Jeff Nugent
Agent: Richard Haxton, Kent Signs
Location: 218 North Washington Street, Easton, MD 21601
Tax Map 103, Grid 000, Parcel 0571
Zoning: CB
Request: The applicant for 218 N. Washington Street has been withdrawn from the February 16, 2023 Planning Commission agenda and will be rescheduled pending the submission of a revised Master Sign Plan.
- b. Applicant:** Oxford Chase Development, Inc.
Agent: Stacy LeMay, Oxford Chase Development, Inc.
Location: 9577 Black Dog Alley, Easton, MD 21601
Tax Map 025, Grid 006, Parcel 0034
Zoning: CG
Request: The applicant is requesting an amendment to the previously approved final site plan that includes exterior revisions to the awnings and shutters.

Staff Presentation:

Joseph Mayer, Plan Reviewer

Applicant Presentation:

Howard H. Crossan, President of Oxford Chase Development, Inc.

Public Comment:

Robin Page

Commissioner Toussaint moved to deny the applicant's proposal to revise the front and right elevations of their architectural plans and to remain as approved on August 19, 2021. The motion was not seconded.

Commissioner Ryall moved to deny the applicant's proposal to revise their final architectural plans and to remain as approved on August 19, 2021. Commissioner McAndrews seconded the motion.

<u>Vote</u>	<u>5-0</u>
FOR:	5- Weber, Dindinger, McAndrews, Ryall, Toussaint
AGAINST:	0
ABSTAIN:	0
ABSENT:	0

- c. Applicant:** Cooke's Hope Phase VII LLC
Agent: Ryan Showalter
Location: Cooke's Hope Planned Unit Development, Easton, MD 21601
Tax Map 042, Grid 000, Parcel 0056
Zoning: PUD
Request: The application for Cooke's Hope Phase VII has been withdrawn from the February 16, 2023 Planning Commission agenda.

5. Discussion Items —

- a.** Proposed Text Amendment, Deletion of Section 28-201(C) — The Commissioners reviewed a text amendment proposal to consider the removal of Section 28-201.C from the Easton Zoning Ordinance. This provision prohibits the imposition of negative use restrictions or covenants upon real property so as to prevent the use of such property for grocery store purposes.

Staff Presentation:

Lynn Thomas, Town Planner

Sharon Van Emburgh Esq., Town Attorney

Public Comment:

Ryan Showalter

Robin Page

Commissioner McAndrews moved to retain the language of text amendment to Section 28-201.C. Commissioner Ryall seconded the motion. Commissioner McAndrews withdrew her motion. Commissioner Ryall seconded the motion for withdrawal.

Vice Chair Dindinger moved to table the proposed text amendment to Section 28-201.C to further discuss the definition of Grocery Store Use, and to consider other language for the text amendment. Commissioner Ryall seconded the motion.

<u>Vote</u>	<u>5-0</u>
FOR:	5- Weber, Dindinger, McAndrews, Ryall, Toussaint
AGAINST:	0
ABSTAIN:	0
ABSENT:	0

- b. Continue discussion of Amendments to Zoning Ordinance — An ongoing review of the Zoning Code Amendments continued. The Commissioners discussed the appropriate variation of “Live-Work Unit” on the Table of Permissible Uses and its definition. The Commission agreed on proposed terminology to the language of structure and architectural style in the supplemental standards for the use “Multifamily Apartment Complex.” In response to recent community concerns, the Commission also revisited height restrictions for Missing Middle Housing types with language to limit that height. Additionally, language was agreed upon to accommodate zero lot line construction; a proposed use “Any Missing Housing Type not listed above” and those supplemental standards; and the treatment of PUD expirations for projects in phases.

A workshop to continue discussion of Amendments to the Zoning Ordinance was scheduled to be held on March 2, 2023 at 10:00 a.m. in the Town Council Chambers of Easton Town Hall.

Public Comment:
Ryan Showalter

- c. Election of 2023 Officers — Chairman Weber commenced the nomination of Officers with a suggestion to continue the recurring election process, a succession plan with a 2-year term limit, and suggested the addition of a Chair Pro Tem position. The Commissioners agreed to these suggestions.

Victoria McAndrews nominated Philip Toussaint as Vice Chairperson. Jennifer Dindinger seconded the nomination. Philip Toussaint accepted the nomination.

<u>Vote</u>	<u>4-0-1</u>
FOR:	4- Dindinger, McAndrews, Ryall, Weber
AGAINST:	0
ABSTAIN:	1- Toussaint

ABSENT: 0

Philip Toussaint nominated William Ryall as Chair Pro Tem. Jennifer Dindinger seconded the nomination. William Ryall accepted the nomination.

<u>Vote</u>	<u>5-0</u>
FOR:	5- Dindinger, McAndrews, Ryall, Toussaint, Weber
AGAINST:	0
ABSTAIN:	0
ABSENT:	0

Philip Toussaint nominated Jennifer Dindinger as Chairperson. William Ryall seconded the nomination. Jennifer Dindinger accepted the nomination.

<u>Vote</u>	<u>4-0-1</u>
FOR:	4- McAndrews, Ryall, Toussaint, Weber
AGAINST:	0
ABSTAIN:	1- Dindinger
ABSENT:	0

- 6. Adjournment**– Chairperson Dindinger moved to adjourn. Vice Chair Toussaint seconded the motion. The meeting was adjourned at 4:24 p.m.



TOWN OF EASTON
PLANNING & ZONING
14 S Harrison Street, Easton MD 21601

Date of Hearing: March 16, 2023

4a

**PLANNING COMMISSION
PUBLIC HEARING
STAFF REPORT**

SUBJECT: Seeking approval to allow two or more wall signs to occupy one building with a common entrance for 499 Idlewild Drive

ELECTION WARD(S): Ward 4

CRITICAL ACTION DATE: At the pleasure of the Commission

STAFF CONTACTS: Joseph Mayer, Plan Reviewer
Lynn Thomas, Town Planner
Miguel Salinas, Director of Planning and Zoning

APPLICANT: Phoenix Physical Therapy

DOCUMENT CREATED ON: March 9, 2023

PURPOSE: The applicant is seeking approval to allow two or more business wall signs to occupy a building with a common entrance.

RECOMMENDATION: Staff supports a Planning Commission approval with a condition (see below).

—

APPLICATION INFORMATION:	
APPLICANT: Phoenix Physical Therapy 724-343-4060	REPRESENTATIVE: Phoenix Physical Therapy
PARCELS/ACREAGE:	
Parcel Information	Acreage
Map 105, Grid 00EA, Parcel 2366, Lot 2	2.197
ACCEPTANCE DATE: February 13, 2023	LOCATION: 499 Idlewild Avenue, Lot 2
EXISTING ZONING BC	EXISTING LAND USE: Office Building
HISTORIC DISTRICT: Not Applicable	FUTURE LAND USE MAP: Redevelopment Area

CONTEXT:

Location/Site Access – The subject property is located on the South side of Idlewood Avenue.

Existing Conditions – The subject property is currently an office building located adjacent to the Rails to Trails.

Surrounding Properties

- 501 Idlewild Avenue –CG
- 5 Caulk Lane – CG
- 400 South Aurora Street – BC
- 412 South Aurora Street – R10A
- 416 South Aurora Street – R10A
- 418 South Aurora Street – R10A
- 420 South Aurora Street – R10A
- 500 Cadmus Lane – BC

Figure 1: Vicinity Map



PROPOSAL: The applicant is proposing a 120” x 30” sign at the top left side of the entrance. The applicant is seeking approval to allow two or more wall signs to be occupied on a building with a common entrance.

BACKGROUND: This Applicant has submitted a Signage Application #23-17913 to the Easton Building Inspection Division on January 30, 2023 for review. Approval is pending the outcome of the Planning Commission Meeting.

OUTSTANDING ISSUES: None

ZONING ANALYSIS:

28-1101.7(A) 1 SIGNS PERMITTED AFTER ISSUANCE OF PERMIT

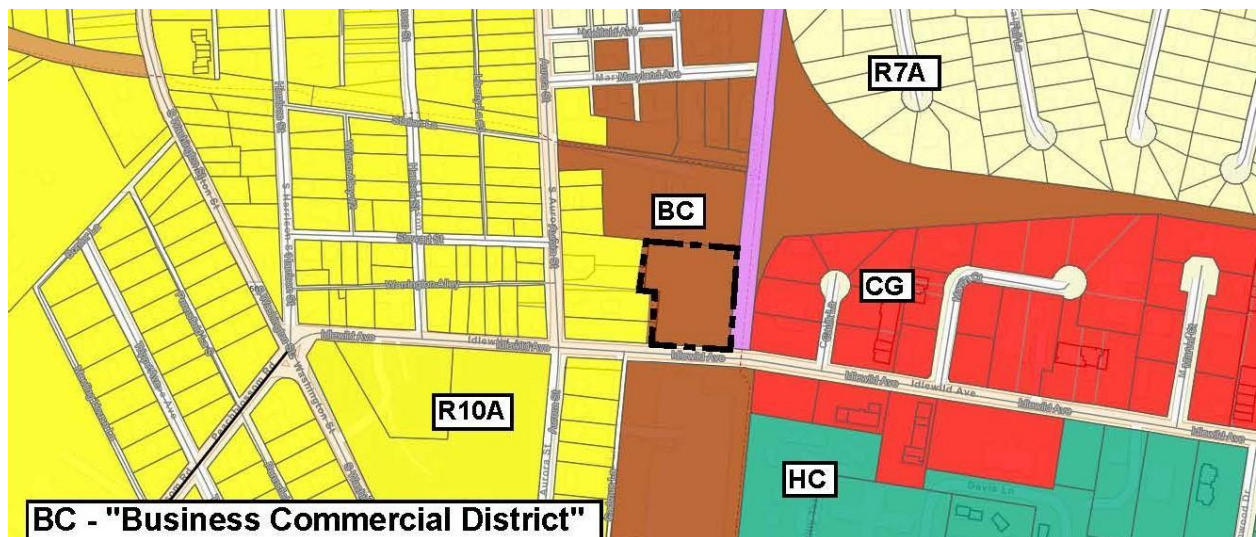
e.7 When two (2) or more businesses occupy one (1) building with common entrances (i.e. without separate entrances) the permitted wall signage shall be approved by the Planning and Zoning Commission during the site plan review process, or as an item from staff by the Planning and Zoning Commission if site plan approval is not required.

Analysis- Per the Section of the Zoning Code cited above, the Commission is charged with

reviewing and approving signs in this scenario of multiple businesses with common entrances. This is a new revision to the Code that we added due to the fact that it has historically proven difficult to prescribe standards for this scenario. Thus, in recognition of the fact that the Commission will almost always be reviewing a site plan, at least for new buildings, the Town added this as the process for review and consideration of such signage, giving the Commission the discretion to approve the proposal, consistent with the design of the building, or based on reasonable criteria.

POLICY ANALYSIS:

Figure 2: Zoning Map



RECOMMENDED CONDITIONS:

1. Upon Planning Commission approval, the applicant shall obtain approval via the appropriate building permit for the installation of signage.

DRAFT MOTIONS:

1. I move that the Planning Commission approve the sign request and the applicant obtain appropriate building permits for the installation of the sign.

OR

2. I move that the Planning Commission forward the application to the April 20, 2023 Commission meeting for further discussion.

OR

3. I move an alternate motion.

ATTACHMENTS:

1. Application, paper copy & PDF
2. Sign Plan View, paper copy & PDF
3. Landlord Signage Permission, paper copy & PDF

**Town of Easton**

Engineering, Planning and Zoning

14 South Harrison Street, Easton, MD 21601

Planning Commission Concept, Use, and Design Application**Site Information**

Structure's Floor Area		Structure's Square Feet	20,000
Area of Disturbance		Number of Dwelling Units	TBD
Property Size	Acres 2	Square Feet	
Address	499 Idlewild Ave, Easton, MD 21601		
Tax Map	0105	Grid	Parcel 2366 Lot 2
Zoning District	2	Historic District	Y ☐ N ☐ PRD Y ☐ N ☐
Other Information			
Existing Use	Commercial		

Owner

Name	Palmer Gillis		
Mailing Address	P.O. Box 282 Salisbury, MD 21803		
Telephone No.	410-749-4821	E-mail	pgillis@GGIBuilds.com

Applicant / Agent

Name	Phoenix Physical Therapy		
Mailing Address	2000 Westinghouse Drive, Suite 200 Cranberry Township, PA 16066		
Telephone No.	724.343.4060	E-mail	mlaplant@phx-pt.com

General Information:

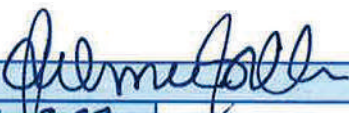
Request for sign permit

Any modifications during review shall warrant an updated application.***I do hereby solemnly declare and affirm that the information provided by this application and the documents attached hereto accurately represent the conditions of the request and that submission of an incomplete application will be returned for correction prior to processing.***

Signature of Applicant or Agent

Date

Printed Name of Applicant or Agent


2.9.23
PALMER GILLIS

For Office Use Only

Planned Commission Meeting Date	03/16/2023	NAV 23-864
Review Fee Amount	\$250.00	
Review Fee Paid Date	03/09/2023	
ESDR Y / N Date		

Revised 02-2019

RECEIVED**FEB 13 2023****TOWN OF EASTON**

G2 Properties LLC

P.O. Box 4322

Salisbury, Md 21802

Landlord Signage Permission Letter

Re: Exterior Sign for Phoenix Physical Therapy

I PALMER GILIN, as (circle one) owner / agent of property
located at (address) 499 EDENWILD DR. EASTON MD. give my permission
for (name of tenant /lessee) PHOENIX, to install
lighted sign cabinet as shown in the artwork provided.



Date 1.25.23

Signature of Owner / Agent

P.O. Box 4322
SALISBURY MD. 21802

Address of Owner / Agent



SIGN PERMIT

10800 Hanna St., Bldg B, Ste T, Beltsville, MD 20705

Ph: 301-474-5051 Fax: 301-595-0017

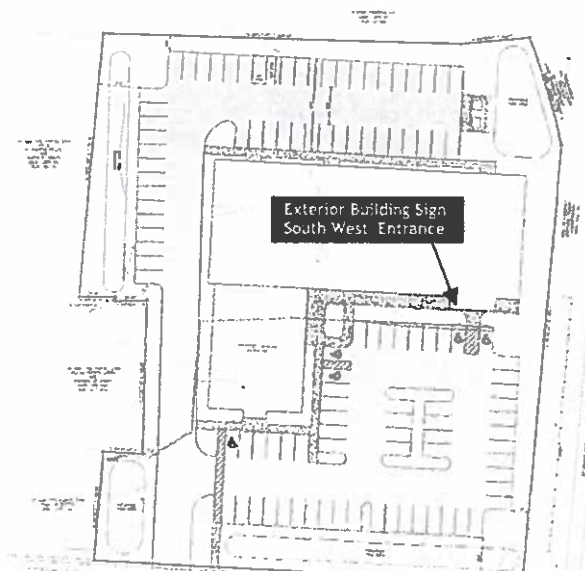
Email: sales@SuburbanSigns.com



CLIENT Phoenix Physical Therapy DATE Jan 25, 2022 SCALE (See Below) PAGE 1 of 3
JOB NAME Phoenix Easton Clinic 499 Idlewild Ave, Easton, MD 21601 Bldg Permit
Zone BC Map 0105 Parcel 2366 Lot 2 District 2
Owner



Location Map



Sign Location
Plan View



SIGN PERMIT

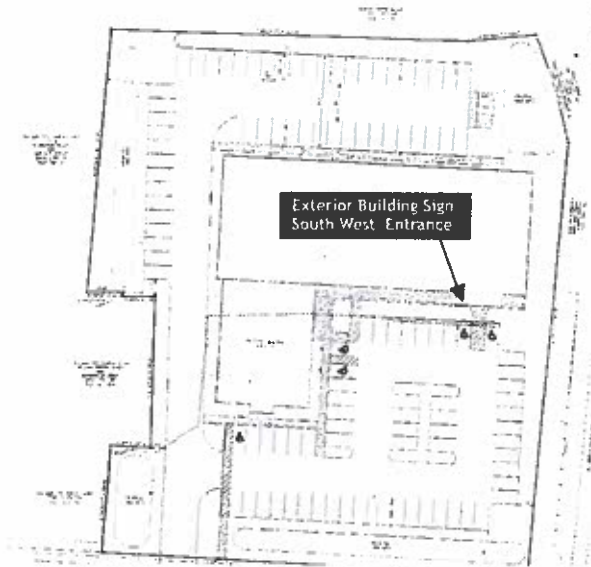
10800 Hanna St., Bldg B, Ste T, Beltsville, MD 20705

Ph: 301-474-5051 Fax: 301-595-0017

Email: sales@SuburbanSigns.com



CLIENT Phoenix Physical Therapy
JOB NAME Phoenix Easton Clinic
499 Idlewild Ave, Easton, MD 21601
Zone BC Map 0105 Parcel 2366 Lot 2 District 2
Owner
DATE Jan 25, 2022
SCALE (See Below)
PAGE 2 of 3
Bldg Permit



Sign Location
Plan View



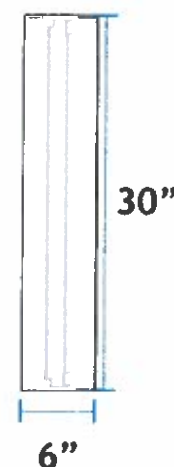
FRONT VIEW

Owner

1 FRONT VIEW
(Scale 3/4" = 1')



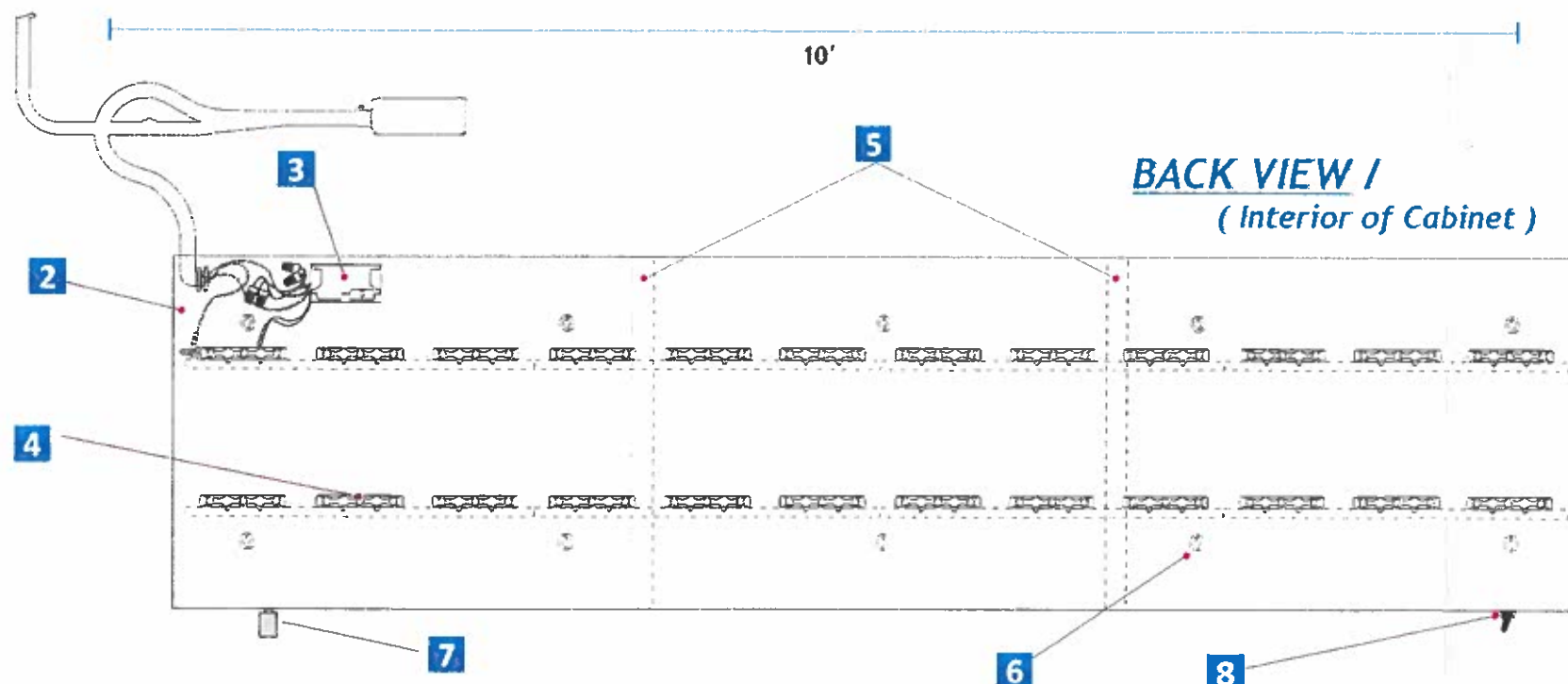
SIDE VIEW



- 1 Qty - Custom Lighted Sign Cabinet
- 30" high x 120" wide x 6" deep cabinet
- Heavy duty welded/painted slide-body aluminum extrusion frame with 1-1/2" retainers
- Painted MAP #41342 SP Brushed Alum, Baked 2-part acrylic polyurethane finish
- 3/16" Acrylic face with flat vinyl graphics
Forrest Green, Kelly Green, Canary Yellow, Black, Red
- 120v high-efficiency LED illumination
- Traditional Cabinet with Photo Cell (Switch on Bottom of Cabinet)
- UL listed and labeled



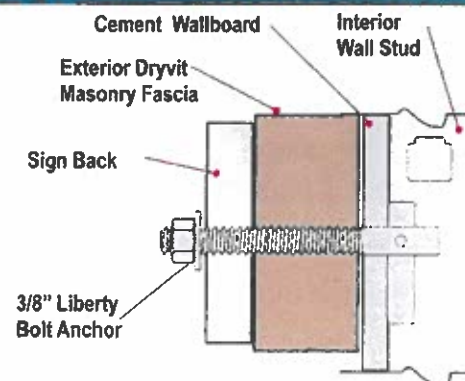
BACK VIEW /
(Interior of Cabinet)



Mounting Hardware Detail:

USE: (10 qty)
3/8" Dia. Liberty Bolts,
Spaced Evenly
27" apart vertically

Seal ALL Hardware with
Silicone / Loctite
Power Grab All-Purpose
Clear Construction
Adhesive



6 TYPICAL LIBERTY BOLT CONNECTION

CABINET DETAILS

- 1** 6" Low Profile Fabricated Alum Cabinet Painted MAP
- 2** Aluminum Cabinet Back

- 3** Low Voltage HanleyLED Premium 24V-150W Power Supply mounted in Formed Stainless Steel Cladding
- 4** HanleyLED WS-6600 6500K LED Modules Wingspan Series
- 5** 2"x 2" sq. alum tube welded for structural support as needed. Placement TBD by Fabricator

- 6** Mounting Hardware - evenly spaced (10 qty) Galvanized Self Drilling Screw 1/4" Diameter, 3/8" Hex Washer Head 1/4-14x3" T/3 EDB981 or appropriate Anchors
- 7** Photocell (Dusk to Dawn Power Control)
- 8** Visible Cut-off Switch w/ removable end cap

Exterior Corporate ID - Phoenix Physical Therapy / Custom Lighted Cabinet Typical Design

UL REQUIRED	URGENT: ATTENTION ELECTRICIANS	AMPERAGE LOAD
	Sign Transformer requires that all circuits must have dedicated hot, neutral ground, terminating at panel. UL Manufacturer #E121500	4 AMPS 120/277 VOLT circuit dedicated to sign ONLY
SIGN MUST BE GROUNDED IN COMPLIANCE WITH ARTICLE 600 OF THE NATIONAL ELECTRIC CODE		

Electrical Specs/Notes: LOAD - 4 Amps

Sign Cabinet set will take # WS- 6600
(30) LED modules. = 180 Watts

Powered by (2 qty) 150w 24 Volt
Hanley LED Power Supplies

Power supply Specs:

Output Characteristics:

Voltage: 24v
Amperage: 4a
Wattage: 150 w
Wingspan
WS-6600

Input Characteristics:

Voltage: 100-277 VAC
Amperage: .62A/120v .28A/277V



TOWN OF EASTON

14 South Harrison Street
Easton, Maryland 21601

March 1, 2023

Dear Resident,

The Easton Planning Commission will hold a public meeting on **Thursday, March 16, 2023 at 1:00 p.m.** in the Easton Town Council Chambers located on the second floor of 14 South Harrison Street. The Town of Easton Zoning Ordinance requires that owners of property located within 400 feet of a parcel on which certain types of applications are pending be given notice of upcoming meetings or hearings. If you are a tenant in or an owner of a multi-unit building, please distribute or post this notice in a visible location for all other tenants or owners to view. If you are a tenant of a rental property, please notify the property owner that this notice letter has been distributed to their property. Notice has also been sent to the Star Democrat, a sign has been posted at the subject property and the hearing agenda has been posted on the Town of Easton website: <http://eastonmd.gov/>.

This letter is sent to inform you that a Concept, Use and Design application for 499 Idlewild Avenue has been filed to request approval for a signage permit.

Copies of the proposed application are on file and available for public review in the Town's Planning Office at 14 South Harrison Street between the hours of 8:30 a.m. and 4:00 p.m., Monday through Friday. **In addition, digital copies are also available for review via the Town's website at <https://www.eastonmd.gov/129/Agendas-Minutes>.** If you have any questions regarding this application, please contact the Planning Office at (410) 822-1943 or via e-mail at ssmith@eastonMD.gov.

Samantha N. Smith

Samantha N. Smith
Administrative Specialist
Planning & Zoning Department
Town of Easton
410-822-1943 ssmith@eastonMD.gov



Sign posted March 3, 2023



TOWN OF EASTON
Planning & Zoning Department
14 South Harrison Street
P.O. Box 520

STAFF MEMORANDUM

To: Easton Planning and Zoning Commission
From: Joseph Mayer, Plan Reviewer
Date: March 9, 2023
Subject: **Extension for Temporary Use Approval for a Tent - Rise Up Coffee, 625 Dover Road**

Rise Up Coffee is returning to you for an extension of the Temporary Use for a Tent located at their site on Dover Road. In summary from the past Planning Commission Approval on March 17, 2022, Rise Up would like to re-erect the tent on site to use temporarily, for cover for outdoor seating on the actual site of the new building, while operating out of the kiosk that you previously approved as a temporary use. The tent was installed last year with appropriate building permits and restroom facilities per the Talbot County Health Department's requirements. Please note, the Applicant has also submitted a separate Planned Redevelopment (PR) site plan application seeking an approval that will permit the tent on a seasonal basis without having to seek a temporary use approval each year. That PR application is also on the Planning Commission's March agenda. Rise Up was unsure if the PR application would be reviewed and approved by the spring, so they filed the request for a temporary approval to ensure that the tent can be erected as soon as it is seasonally appropriate to do so.

RECOMMENDATION

Staff recommends that you approve the request and to establish the time limit to remain through November 30, 2023 with conditions:

- 1. At the end of the temporary approval period, the tent will be taken down and stored offsite.**
- 2. All tripping hazards will be removed as deemed necessary by the Building Inspection Division.**
- 3. The restroom, tables and chairs may all remain in place and ready for use.**

4. Rise Up is required to obtain a building permit for the temporary structure.

Joseph A. Mayer

Plan Reviewer

Engineering and Planning & Zoning Departments

Town of Easton

14 S. Harrison Street

Easton, Maryland 21601

Phone: 410-820-8822

jmayer@eastonMD.gov



ARMISTEAD, LEE, RUST & WRIGHT, P.A.
ATTORNEYS AT LAW

114 Bay STREET, BUILDING C
EASTON, MARYLAND 21601

TELEPHONE: (410) 819-8989
FACSIMILE: (410) 822-4787

EMAIL ADDRESS
ZACHSMITH@ALRWLAW.COM

February 3, 2023

FOR HAND-DELIVERY

Easton Planning Commission
c/o Paul Weber, Chairman
14 S. Harrison Street
Easton Maryland 21601

**Re: Request for Temporary Approval of a Tent for Rise Up Coffee
625 Dover Road Easton, Maryland**

Dear Chairman Weber:

On behalf of Rise Up Dover Road LLC ("Rise Up"), please accept this letter as a request for a temporary approval to once again place a tent at 625 Dover Road. Please recall that the Planning Commission unanimously approved a similar request last year. The tent was very well received and enjoyed by Rise Ups patrons. Accordingly, Rise Up would like to re-erect the tent this spring, and keep it up through the fall – consistent with what was done last year. The tent was taken down and stored at the end of November 2022, but the tent stakes, restroom, tables and chairs all remain in place and ready for use. To re-erect the tent this year Rise Up simply needs to obtain (i) approval of the temporary use from the Planning Commission, and (ii) a building permit for the temporary structure. The purpose of this letter is to request approval of the temporary use from the Planning Commission. The request is identical to last year, i.e. same tent, same purpose, same location and same duration. **Please grant a temporary approval authorizing the tent to once again be erected and remain up through November 30th 2023.**

Attached please find a site plan exhibit showing the location of the tent, which is the same drawing that was submitted last year.

Easton Planning Commission
c/o Paul Weber, Chairman
February 3, 2023
Page 2

Please note, Rise Up will soon submit a separate PR site plan application seeking an approval that will allow it to continue erecting the tent on a seasonal basis without having to seek a temporary use approval each year. That PR application will come before the Planning Commission in the near future, but Rise Up was unsure if that application may be reviewed and approved by the spring, so we are filing this request for a temporary approval to ensure that the tent can be erected as soon as it is seasonally appropriate to do so.

Thank you for your continued support of Rise Up. Rise Up is very excited to bring its tent back this year, to provide a space where our community can once again enjoy great coffee, fresh air and shade while socializing with friends and family! Please grant the temporary approval requested hereunder.

Sincerely,



Zach A. Smith

cc: Rise Up Dover Road LLC

RECEIVED

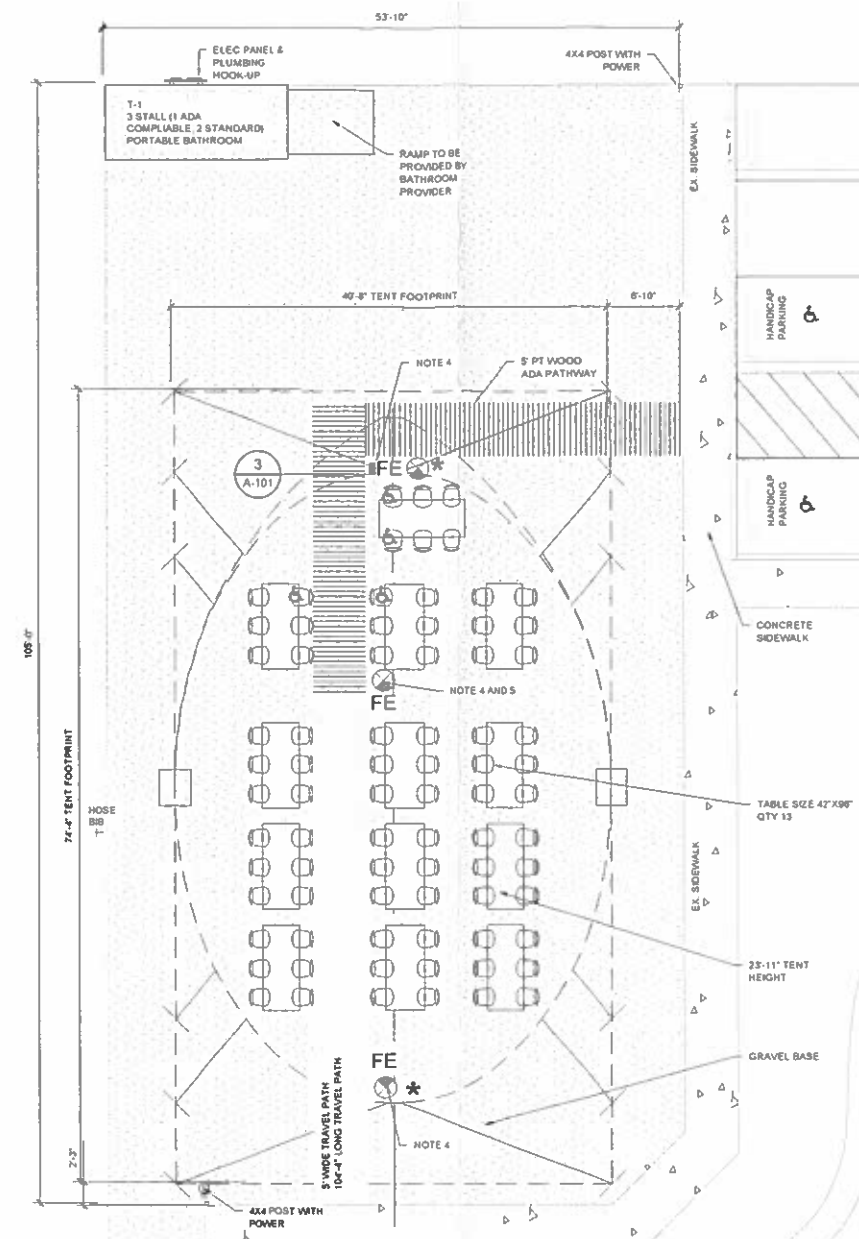
FEB 03 2023

TOWN OF EASTON

NAV 2023-871

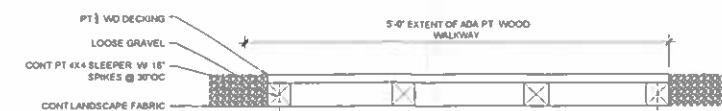
Scale: 1/16" = 1'-0"

TEMPORY SUN SHADE - 6 MONTHS OF THE YEAR				
CODE STUDY				
Area - square foot	1,620			
Code	Description	Required	Provided	Remarks
IBC 2018 303	Occupancy - Assembly A1	Assembly - A1		
IBC 2018 Tbl 1004.5; NFPA 2015 Tbl 7.3.1.2; NFPA 2018 1005.3.2	Assembly - unconcatenated tables & chairs - 150 ft/person		108	78 4 ADA Seats
IBC 2018 1008.3.2	Egress Width in inches		216	80
IBC 2018 1029.7	Minimum Number of Exits		2	2
IBC 2018 1029.7	Travel Distance	400' max	see plan	
NFPA 2015 11.11.5	Fire Extinguishing Equipment		1	2
IPC 2018 Tbl 403.1	Fixture Count - restaurant		1 ADA + 2	based on actual occupants
	male toilets		0.52	1
	female toilets		0.52	1
	ADA		1	1
	lavatory		1	3



2 PROPOSED TENT LAYOUT

Scale: 1/8" = 1'-0"



3 COMPACTED GRAVEL DETAIL

Scale: 1 1/2" = 1'-0"

GENERAL NOTES

- 1 ALL FIRE HAZARDS SHALL BE 10' MINIMUM FROM PERIMETER OF STRUCTURE
- 2 THE LOCAL FIRE DEPARTMENT SHALL BE CONTACTED PRIOR TO OCCUPANCY TO FAMILIARIZE THEMSELVES WITH THE LAYOUT, ACCESSIBILITY, ETC
- 3 A CERTIFICATE OF FLAME SPREAD PROPAGATION FOR THE TEST INDICATING THAT THE TEST MEETS NFPA 701 TEST METHOD 2 SHALL BE POSTED AT ALL TIMES
- 4 PROVIDE ILLUMINATED EXIT SIGNS AT EACH EXIT AND ADEQUATE LIGHTING

TEMPORARY TENT

625 DOVER ROAD, EASTON MD 21601

RISE UP COFFEE ROASTERS

TAX MAP 0103, GRID 0000A, PARCELS 086, 087, 088, 089, 090, 091, 092, & 093
FIRST ELECTION DISTRICT, TALBOT COUNTY, MARYLAND
PREPARED FOR RISE UP DOVER ROAD LLC

RAUCH
INC.

Engineering | Survey | Architecture | Environmental
office 410 770 0083 | fax 410 770 3087
email design@rucheking.com | web: www.rucheking.com
Maryland Office 106 N. Harrison St. - Egleston, MD 21801
Virginia Office 8229 Boone Blvd. Suite 875 - Vienna, VA 22182

ARCHITECT SEAL

PROFESSIONAL CERTIFICATION
I CERTIFY THAT THESE DOCUMENTS WERE
PREPARED BY ME AND THAT I AM A DULY LICENSED ARCHITECT
UNDER THE LAWS OF THE STATE OF
MARYLAND LICENSE NUMBER 76229
EXPIRATION DATE: 01/01/2022

REVISIONS

[illegible]

DATE 05/17/2021

SCALE: AS SHOWN

DRAWN BY

DESIGNED BY:

VPA

SHEET TITLE

LAYOUT

SHEET NO.:

A-101



TOWN OF EASTON

14 South Harrison Street
Easton, Maryland 21601

March 1, 2023

Dear Resident,

The Easton Planning Commission will hold a public meeting on **Thursday, March 16, 2023 at 1:00 p.m.** in the Easton Town Council Chambers located on the second floor of 14 South Harrison Street. The Town of Easton Zoning Ordinance requires that owners of property located within 400 feet of a parcel on which certain types of applications are pending be given notice of upcoming meetings or hearings. If you are a tenant in or an owner of a multi-unit building, please distribute or post this notice in a visible location for all other tenants or owners to view. If you are a tenant of a rental property, please notify the property owner that this notice letter has been distributed to their property. Notice has also been sent to the Star Democrat, a sign has been posted at the subject property and the hearing agenda has been posted on the Town of Easton website: <http://eastonmd.gov/>.

This letter is sent to inform you that a Site Plan application for 625 Dover Road has been filed to request temporary approval to re-erect a tent, and authorization for the tent to remain up through November 30, 2023. The applicant has also submitted a Planned Redevelopment Overlay application to request approval that would allow a tent to remain standing at 625 Dover Road on a seasonal basis in perpetuity. This application also includes an approval request for the addition of a kitchen and cafe to the existing site.

Copies of the proposed application are on file and available for public review in the Town's Planning Office at 14 South Harrison Street between the hours of 8:30 a.m. and 4:00 p.m., Monday through Friday. **In addition, digital copies are also available for review via the Town's website at <https://www.eastonmd.gov/129/Agendas-Minutes>.** If you have any questions regarding this application, please contact the Planning Office at (410) 822-1943 or via e-mail at ssmith@eastonMD.gov.

Samantha N. Smith

Samantha N. Smith
Administrative Specialist
Planning & Zoning Department
Town of Easton
410-822-1943 ssmith@eastonMD.gov



Sign posted on March 3, 2023



Town of Easton
Engineering, Planning and Zoning
14 South Harrison Street, Easton, MD 21601

Planned Redevelopment Overlay Application

Application Type

Subdivision ☐

Site Plan ☒

Subdivision Information

Name
Original Property Size Acres Square Feet
Number of Lots Proposed

Site Plan Information

Property Size Acres 1.089 AC Square Feet
Structure's Floor Area Structure's Square Feet

Property Information

Address 625 Dover Road, Easton, MD 21601
Tax Map 103 Grid Parcel 990 Lot
Deed Reference: Liber 2774 Folio 440
Plat Reference: Liber 87 Folio 44
Zoning District PUD Historic District Y ☐ N ☒
Source of Electricity Easton Utilities

Owner

Name Rise Up Dover Road LLC
Mailing Address 618 Dover Road, Easton, MD 21601
Telephone No. Email

Surveyor / Engineer

Name License No. Expiration Date
Mailing Address
Telephone No. Email

Applicant or Agent

Name Rise Up Coffee Roasters c/o Ozzie Jimenez
Mailing Address 618 Dover Road, Easton, MD 21601
Telephone No. 877-474-7387 Email ozzie@riseupcoffee.com

Request Details

Please describe the purpose of the request being including all information pertinent to said request.
Attach a formal letter detailing request.

See Attached

- If the applicant is other than the owner, include a letter of certification from the owner.
- Attach five (5) copies of the recorded Deed conveying present ownership of the property.
- Attach seven (7) copies of scaled site plan with all dimensions of lot, setbacks, proposed improvements and the distances between improvements.
- Provide all information related to any restrictions imposed by Homeowner Associations, etc.
- Include any additional information related to the request being made..
- ESDR Review Letter
- \$150 Fee Payment

Any modifications during review shall warrant an updated application.

I do hereby solemnly declare and affirm that the information provided by this application and the documents attached hereto accurately represent the conditions of the request and that submission of an incomplete application will be returned for correction prior to processing.

Signature of Applicant or Agent

Date

2/2/2023

Printed Name of Applicant or Agent

Ozzie Jimenez, Operations & Facilities Director

For Office Use Only

Project Number		Fee Received	\$150.00
Application Number	2023-870	Application Notification	
Filing Date	02/17/2023	Property Posting Date	
PC Meeting Date		Notice(s) Published	
If ESDR, Date			
Final Approval Date			
Recordation Date			

Revised 2-2019

RECEIVED
FEB 17 2023
TOWN OF EASTON



**Rise Up Coffee Roasters
618 Dover Rd.
Easton, MD 21601**

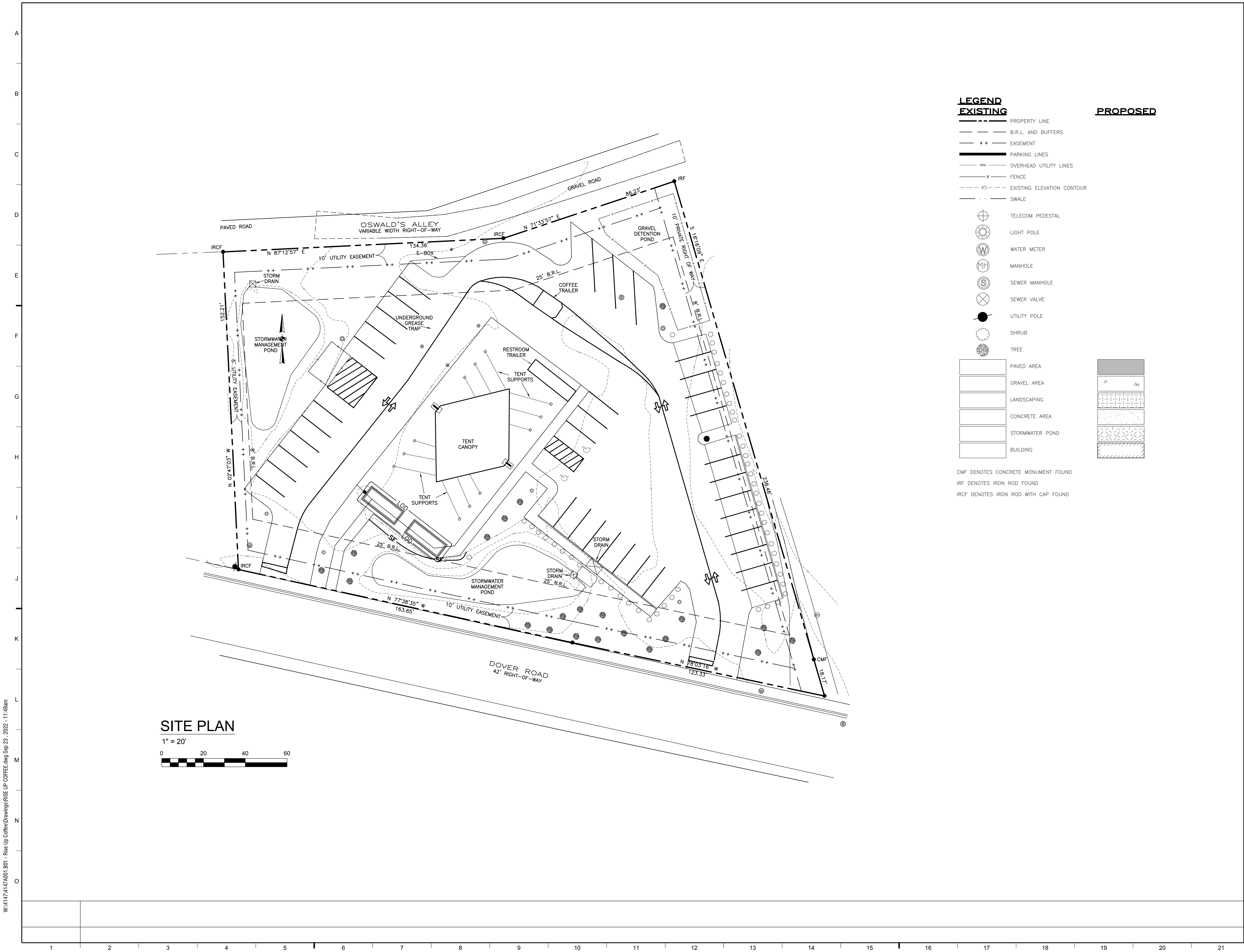
To Whom It May Concern,

Rise Up Dover, LLC would like to request approval that will allow us to erect the tent at 625 Dover Rd permanently. We would continue to take down the tent on a seasonal basis based on the manufacturer's recommendations. We are also including drawings for the new Mad Eggs kitchen and Cafe that we would like to install at the end of the pad site as shown in the drawing. The kitchen and cafe are constructed out of shipping containers that would be tied in to existing utilities that are on site.

Thank you for your time and consideration,

**Ozzie Jimenez
Facilities Director
Rise Up Coffee**

W:\4147\4147A001.B01 - Rise Up Coffee Drawings\RISE UP COFFEE.dwg Sep 23, 2022 - 11:48am



LEGEND

EXISTING

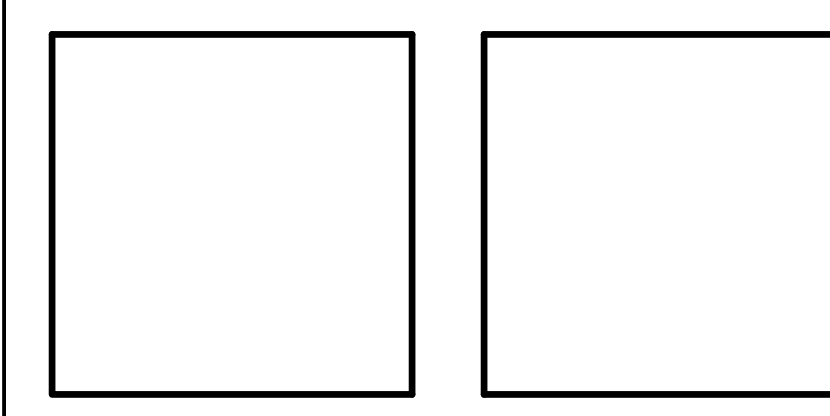
- PROPERTY LINE
- B.R.L. AND BUFFERS
- EASEMENT
- PARKING LINES
- OHU OVERHEAD UTILITY LINES
- FENCE
- EXISTING ELEVATION CONTOUR
- SWALE

PROPOSED

- TELECOM PEDESTAL
- LIGHT POLE
- WATER METER
- MANHOLE
- SEWER MANHOLE
- SEWER VALVE
- UTILITY POLE
- SHRUB
- TREE

CMF DENOTES CONCRETE MONUMENT FOUND
IRF DENOTES IRON ROD FOUND
IRCF DENOTES IRON ROD WITH CAP FOUND

General Notes:



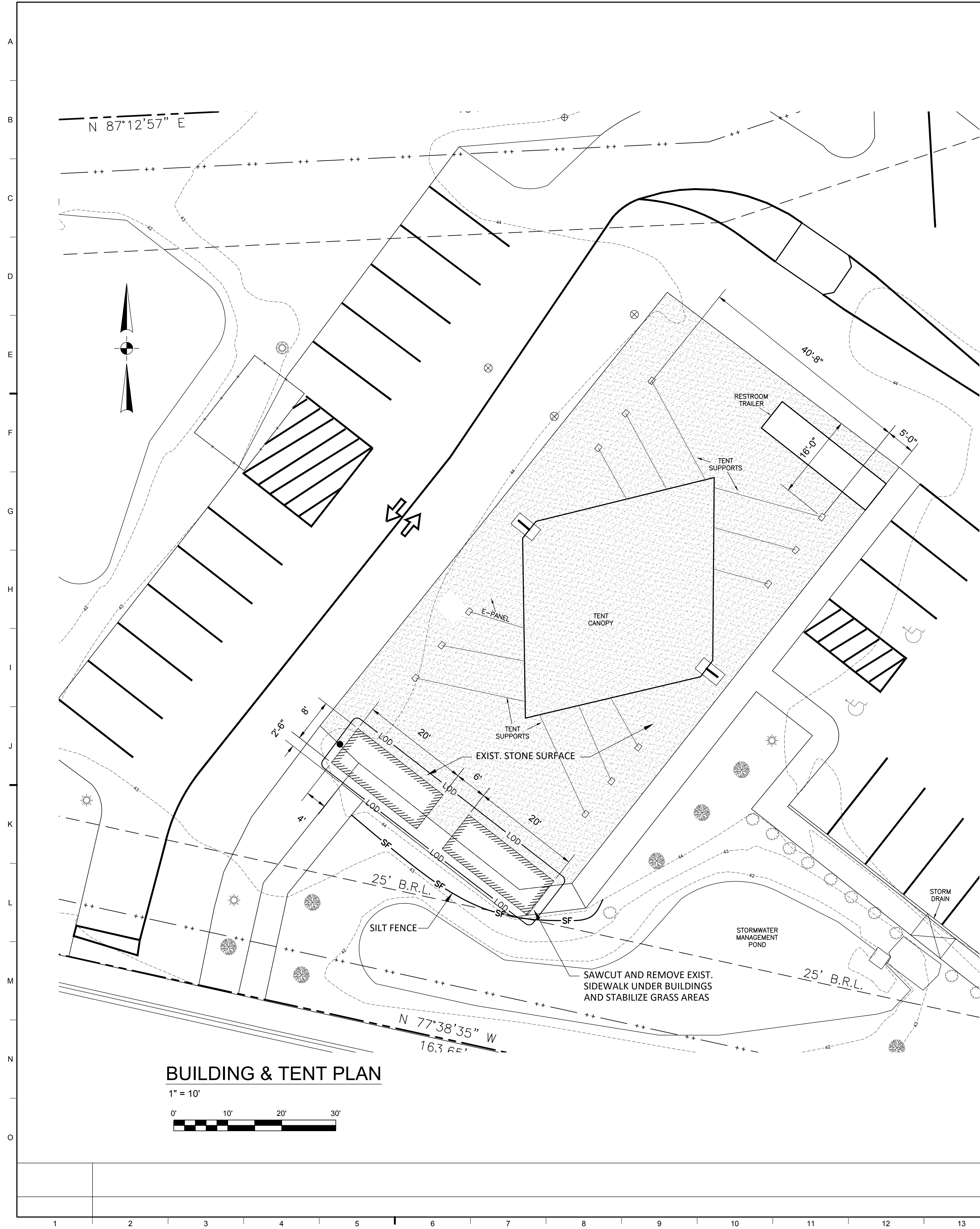
Revision		

Project:
RISE UP COFFEE ROASTERS

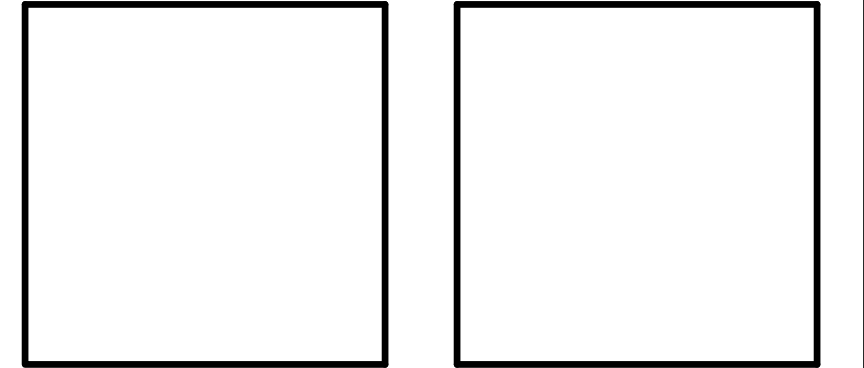
618 DOVER ROAD
EASTON, MARYLAND 21601

Set No.:	Sheet Title: SITE PLAN		
Proj No.: 4147A001.B01	Scale: AS NOTED	Sheet No.: C1	
Dwn By: CAM/SS	Date: 09/23/22		
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General Notes:



Revision		

Project:
RISE UP COFFEE ROASTERS

618 DOVER ROAD
EASTON, MARYLAND 21601

Set No.:		Sheet Title: BUILDING & TENT PLAN	
Proj No.: 4147A001.B01		Scale: AS NOTED	Sheet No.: C2
Wn By: CAM/SS		Date: 09/23/22	
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EROSION AND SEDIMENT CONTROL STANDARDS & SPECIFICATIONS FOR VEGETATIVE STABILIZATION

- Contractor shall install soil erosion and sediment control devices prior to any grading. Following initial disturbance or re-disturbance, permanent or temporary stabilization shall be completed within three (3) calendar days as to the surface of all perimeter controls, dikes, swales, ditches, perimeter slopes greater than three (3) horizontal to one (1) vertical (3:1) and seven (7) days as to all other disturbed or graded areas on the project site not under active grading.
- All temporary erosion and sediment control devices are to be provided as indicated on this plan, with location adjustments to be made in the field as necessary, and to be maintained at the end of each working day until project completion. The minimum area practical shall be disturbed for the minimal amount of time possible.
- Clearing and grubbing shall include all trees, brush, debris, root mat and organic materials to be removed.
- Temporary seeding shall be accomplished between February 15th through April 30th, and August 15th through November 30th. During other times, temporary mulching shall be provided.
- Temporary seeding shall conform to the following applications: 436 lbs. per acre of 10-20-20; 4,000 lbs. per acre of ground limestone, to be incorporated into the soil by disking or other suitable means. Annual ryegrass shall be applied at a rate of 50 lbs. per acre using suitable equipment. Mulching shall be accomplished immediately after seeding.

Seed Mixture (For Hardness Zone 7a) (From Table B.1)				Fertilizer Rate (10-20-20)	Lime Rate
Species	Appl. Rate (lbs. /ac.)	Seeding Dates	Seeding Depths		
ANNUAL RYEGRASS	50#	2/15 - 4/30 8/15 - 11/30	1/2"	436 lbs. /ac. 10 lbs. / 1000 sf	2 tons / ac. 90 lbs. / 1000 sf
BARLEY	90#	2/15 - 4/30; 8/15 - 11/30	1"		
OATS	75#	2/15 - 4/30; 8/15 - 11/30	1"		
WHEAT	120#	2/15 - 4/30; 8/15 - 11/30	1"		
CEREAL RYE	112#	2/15 - 4/30; 8/15 - 12/15	1"		
FOXTAIL MILLET	30#	5/1 - 8/14	1/2"		
PEARL MILLET	20#	5/1 - 8/14	1/2"		

- Mulching shall be un-chopped, un-rotted, small grain straw applied at a rate of 2-2½ tons per acre. Anchor mulch with a mulch anchoring tool on the Contour. Wood cellulose fiber may be used for anchoring straw at a rate of 750 lbs. per acre mixed with water at a maximum of 50 lbs. of wood cellulose fiber per 100 gals. of water, or with a synthetic liquid binder according to manufacturer recommendations. Wood cellulose fiber used as mulch must be applied at a net dry weight of 1,500 lbs. per acre. Mix wood cellulose fiber with water to obtain a mixture with a maximum of 50 lbs. of wood cellulose fiber per 100 gals. of water.
- Permanent seeding shall be accomplished between February 15th through April 30th, or August 15th through October 31st. Permanent seeding at other than specified times will be allowed only upon written approval. Permanent seeding shall conform to the following applications: Permanent seeding for sites having disturbed over five (5) acres shall use fertilizer rates recommended by a soil testing agency and the recommendations provided in the Permanent Seeding Summary Table. Permanent seeding for conditions other than listed above shall be performed at the rates and dates as provided in the Permanent Seeding Summary Table below. Fertilizer and lime amendments shall be incorporated into the top 3"-5" of the soil by disking or other suitable means. Mulching shall be accomplished as discussed in Item #6 of these specifications.

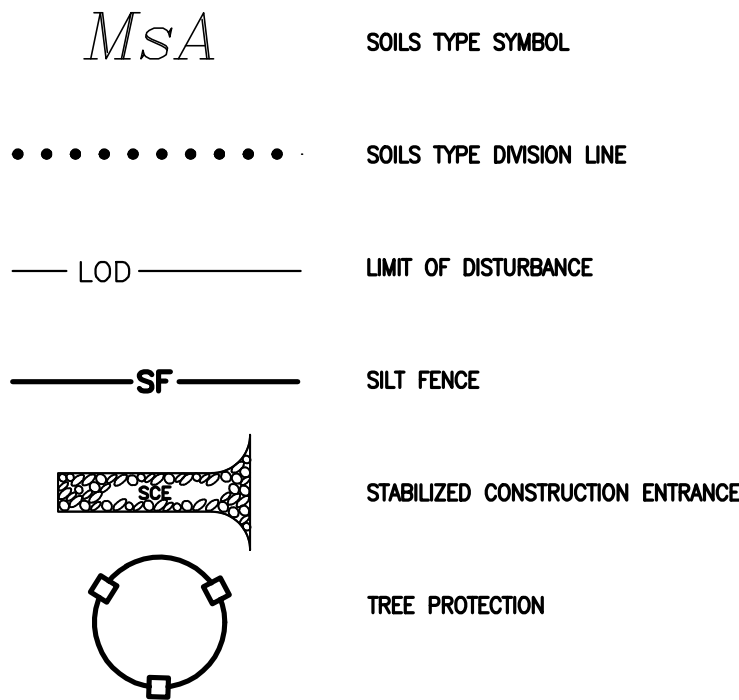
Seed Mixture (For Hardness Zone 7a) (From Table B.3)					Fertilizer Rate (10-20-20)			Lime Rate
No.	Species	Appl. Rate (lbs. / ac.)	Seeding Dates	Seeding Depth	N	P2O5	K2O	
7	CREeping RED FESCUE KENTUCKY BLUEGRASS	60# 15#	2/15-4/30 8/15-10/31	3/4"-1/2"	45 lb. / ac. 1 lb. / 1000 sf	90 lb. / ac. 2 lbs. / 1000 sf	90 lb. / ac. 2 lbs. / 1000 sf	2 tons / ac. 90 lbs. / 1000 sf
8	TALL FESCUE	100#	2/15-4/30 8/15-10/31					
9	TALL FESCUE KENTUCKY BLUEGRASS PERENIAL RYEGRASS	60# 40# 20#	2/15-4/30 8/15-10/31					

- Any spoil or borrow will be placed at a site approved by the Talbot Soil Conservation District.
- All areas remaining or intended to remain disturbed for longer than seven (7) days shall be stabilized in accordance with the USDA, Natural Resources Conservation Service Standards and Specifications for Soil Erosion and Sediment Control in developing areas for critical area stabilization.
- It will be the responsibility of the Contractor or Subcontractor to notify the Engineer of any deviation from this plan. Any change made in this plan without written authorization from the Engineer will place responsibility of said change on the Contractor or Subcontractor.

EROSION AND SEDIMENT CONTROL NOTES

- ALL SEDIMENT AND EROSION MEASURES ARE TO BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE "2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL".
- A PERIODIC MAINTENANCE OF ALL SEDIMENT CONTROL MEASURES SHALL BE REQUIRED TO INSURE EFFECTIVE SEDIMENT CONTROL. INSPECTION OF ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL BE MADE WEEKLY AND AFTER EACH RAINFALL.
- ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL REMAIN IN PLACE UNTIL FINAL STABILIZATION IS ESTABLISHED.
- ALL AREAS NOT COVERED BY BUILDINGS, PAVEMENT, OR OTHER SUITABLE LANDSCAPING WILL BE SEEDED USING PERMANENT SEED MIXTURE SHOWN ON THIS PLAN.
- FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN THREE CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND SEVEN DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE. THE REQUIREMENTS OF THIS SUBPARAGRAPH DO NOT APPLY TO THOSE AREAS WHICH ARE SHOWN ON THE PLAN AND ARE CURRENTLY BEING USED FOR MATERIAL STORAGE OF FOR THESE AREAS ON WHICH ACTUAL CONSTRUCTION ACTIVITIES ARE CURRENTLY BEING PERFORMED.
- THE SOIL CONSERVATION DISTRICT RESERVES THE RIGHT TO REQUIRE ADDITIONAL SEDIMENT AND EROSION MEASURES DURING THE CONSTRUCTION OF THIS PROJECT.
- SEEDING (PERMANENT)
 - SHALL BE CONDUCTED BETWEEN MARCH 1 TO MAY 15 OR AUGUST 15 TO OCTOBER 15.
 - SEED BED PREPARATION: APPLY 10-20-20 FERTILIZER AS SHOWN ON THE PERMANENT SEEDING SUMMARY AND HARROW OR DISC INTO SOIL TO A DEPTH OF 2 TO 4 INCHES; APPLY GRANULATED LIME/STONE AT 2 TONS PER ACRE. LEVEL AND RAKE THE AREA TO PREPARE A PROPER SEEDBED. REMOVE STONES AND DEBRIS OVER 1 ¼ INCHES IN DIAMETER. THE RESULTING SEEDBED MUST BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASSES WILL POSE NO DIFFICULTY.
 - SEEDING: APPLY SEED AS SHOWN IN THE PERMANENT SEEDING SUMMARY ON A MOIST SEED BED WITH SUITABLE EQUIPMENT - MINIMUM COVERAGE 1/4 TO 1/2 INCH. IF SOIL MOISTURE IS DEFICIENT, SUPPLY NEW SEEDINGS WITH ADEQUATE WATERS FOR PLANT GROWTH (1/2 TO 1 INCH EVERY 3 TO 4 DAYS DEPENDING ON SOIL TEXTURE) UNTIL THEY ARE FIRMLY ESTABLISHED. THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE LATE IN THE PLANTING SEASON, IN ABNORMALLY DRY OR HOT SEASONS, OR ON ADVERSE SITES.
 - MULCHING: IMMEDIATELY AFTER SEEDING, UNIFORMLY MULCH ENTIRE AREA WITH UNWEATHERED SMALL GRAIN STRAW AT A RATE OF 2.5 TONS PER ACRE. MULCH TO BE ANCHORED WITH MULCH ANCHORING TOOL ON THE CONTOUR.
- TEMPORARY STABILIZATION:
 - SEED BED PREP: APPLY 10 LB PER 1,000 SQ FT OF 10-20-20.
 - PROVIDE TEMPORARY SEEDING AS SHOWN ON THE TEMPORARY SEEDING SUMMARY, BETWEEN FALL AND SPRING SEEDING DATES USE MULCH ONLY IF GROUND IS FROZEN AND RESEED WHEN THAWED.
 - MULCH PER 7.D. ABOVE.
- IF TEMPORARY STABILIZATION IS REQUIRED, PERMANENT SEEDING SHALL BE PERFORMED DURING THE NEXT APPLICABLE PERIOD PER PARAGRAPH (7) ABOVE.
- ALL FILL SLOPE AREAS SHOWN HEREON ARE TO BE STABILIZED PER PARAGRAPHS (7) OR (8) ABOVE IMMEDIATELY AFTER COMPLETION OF GRADING OPERATIONS FOR THESE SLOPES.
- INSTALL EROSION CONTROL MATTING ON ALL SLOPES 3:1 OR GREATER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING NECESSARY CLEANING OF ACCUMULATED SEDIMENT, DEBRIS, ETC. FROM THE EXISTING STORMWATER MANAGEMENT INFRASTRUCTURE THROUGHOUT THE CONSTRUCTION DURATION.
- THE OWNER SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL STORMWATER MANAGEMENT PRACTICES, ESD DEVICES, AND BMP STRUCTURES.

ESC LEGEND



STANDARD STABILIZATION NOTE

FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:

- THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND
- SEVEN (7) DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING

DESIGN CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, THE 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUMES I & II AND THE MARYLAND ENVIRONMENT EROSION AND SEDIMENT CONTROL AND STORMWATER MANAGEMENT REGULATIONS.

ANDREW E. WELCH
MD P.E. REGISTRATION NO. 18124, EXP. 01/17/23

DATE

RESPONSIBLE PERSONNEL CERTIFICATION

I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION OR DEVELOPMENT, WILL BE DONE PURSUANT TO THIS PLAN AND THAT THE RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF TRAINING AT A DEPARTMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT."

NAME DATE

EASTON UTILITIES

APPROVED BY:

NAME DATE

TOWN OF EASTON PLANNING & ZONING DEPARTMENT

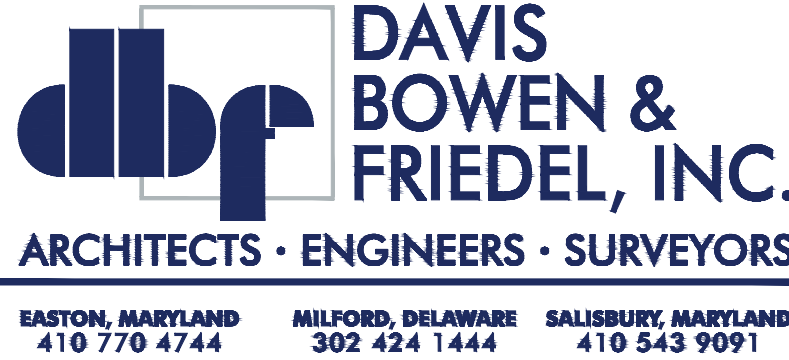
APPROVED BY:

NAME DATE

TOWN OF EASTON ENGINEERING DEPARTMENT

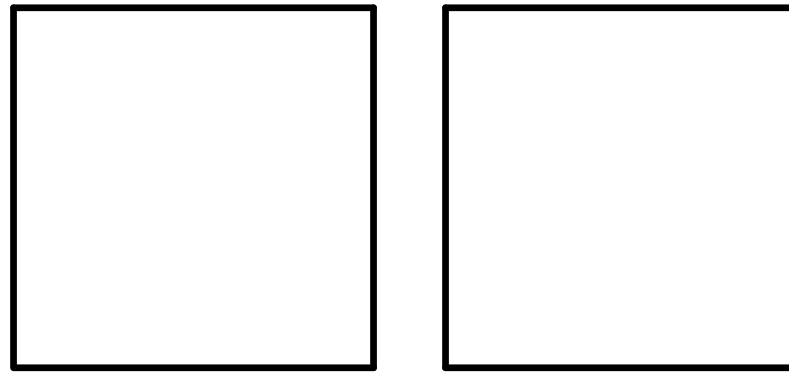
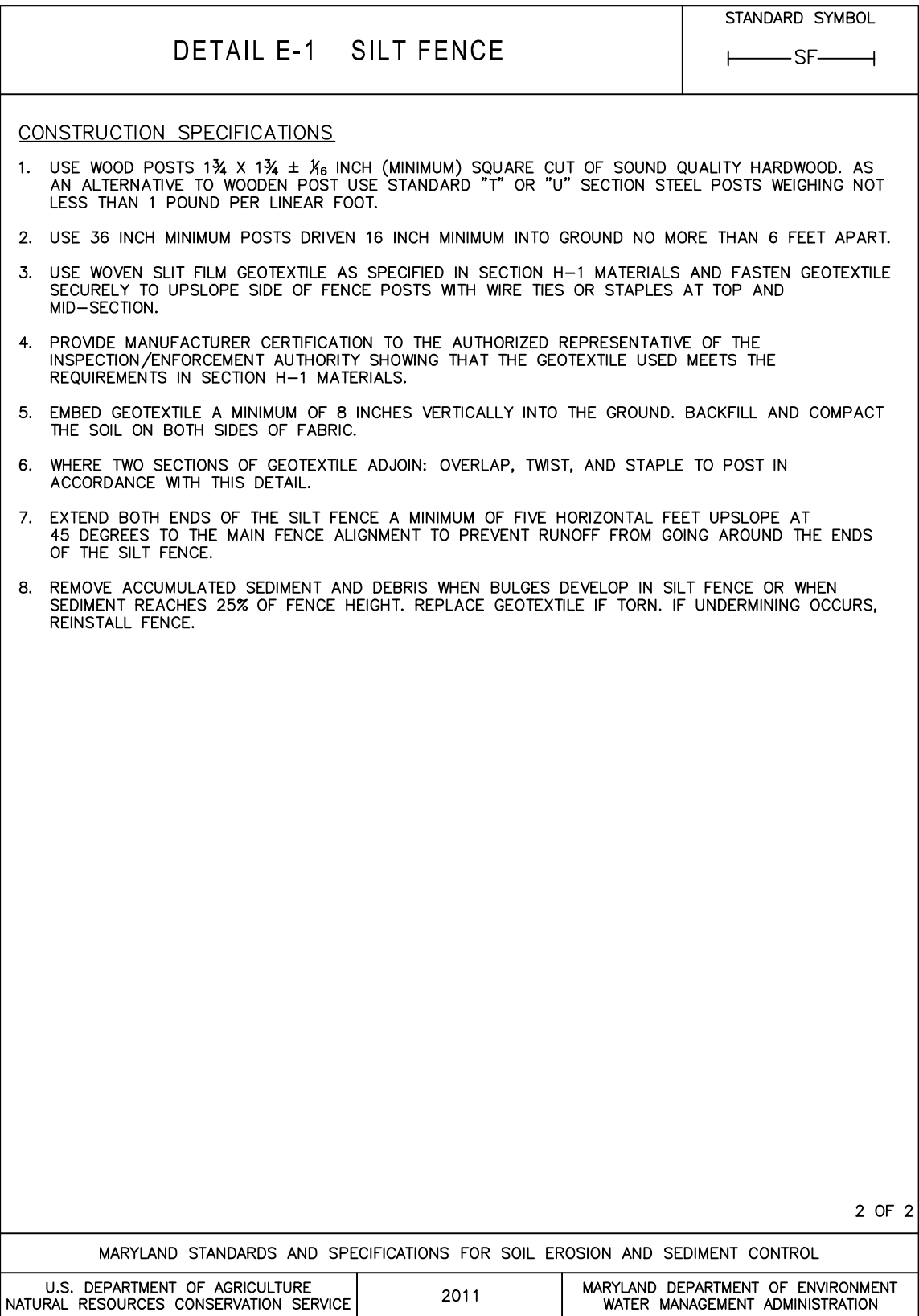
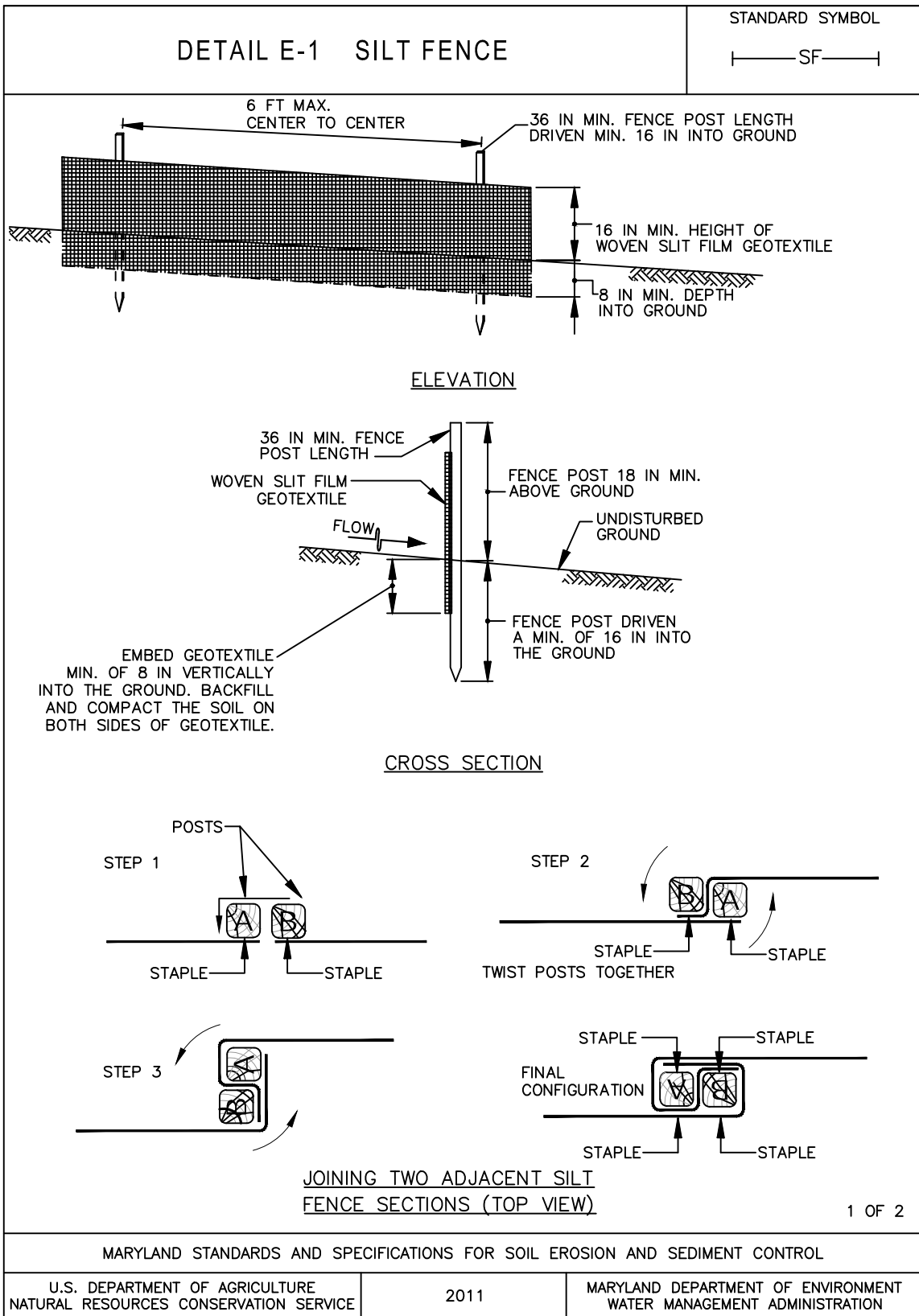
APPROVED BY:

NAME DATE



General Notes:

- AREA OF DISTURBANCE IS 1,000 SF.
- NO NET INCREASE IN IMPERVIOUS SURFACE.



Revision

Project:

RISE UP COFFEE ROASTERS

618 DOVER ROAD
EASTON, MARYLAND 21601

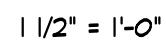
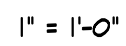
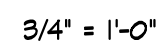
Set No.: Sheet Title:
**SEDIMENT CONTROL NOTES
AND SILT FENCE DETAIL**

Proj No.: 4147A001B01 Scale: AS NOTED Sheet No.:
Dwn By: CAM/SS Date: 09/23/22

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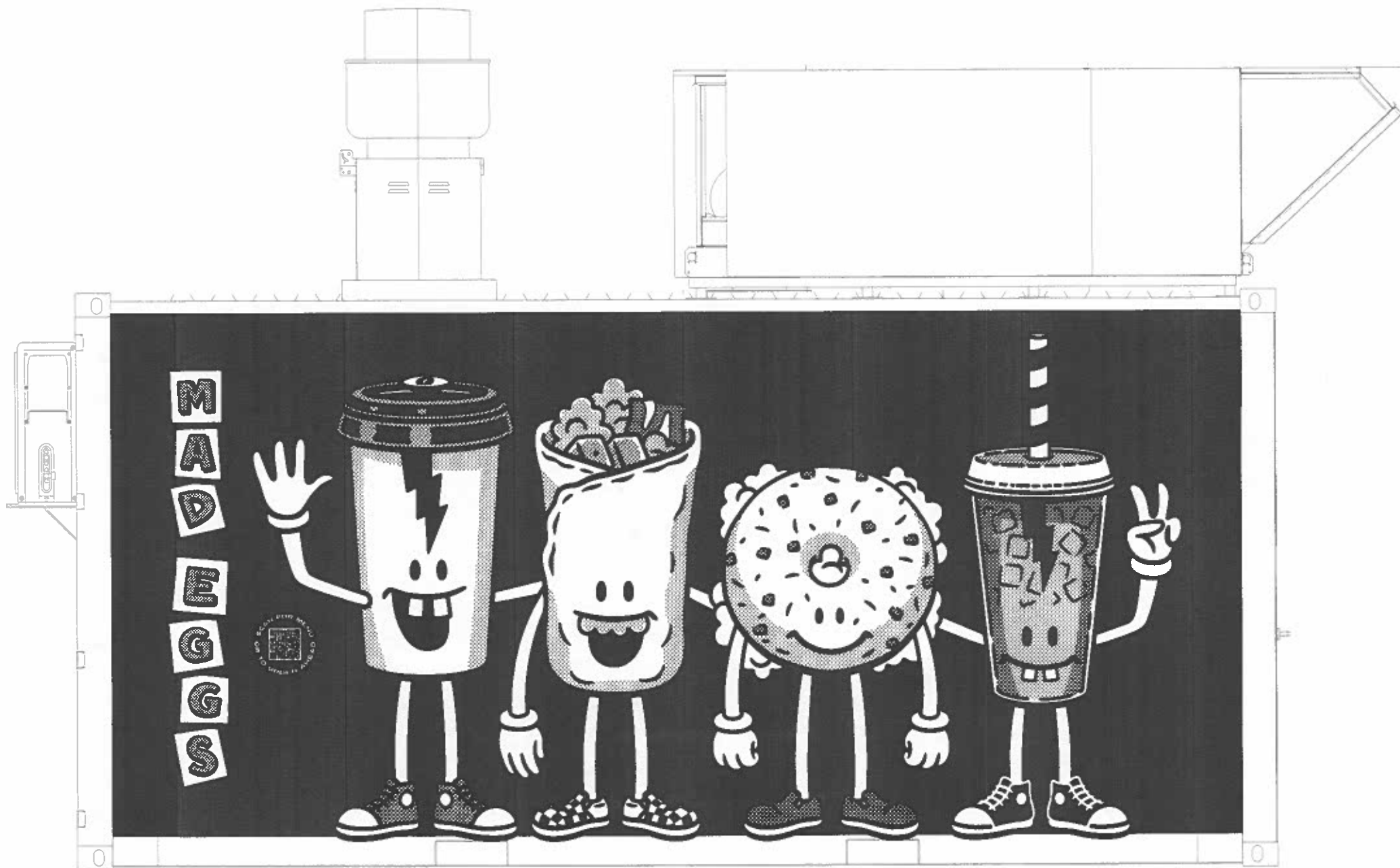
Project:

618 DOVER ROAD
EASTON, MARYLAND 21601

est No.:

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TOWN OF EASTON

14 South Harrison Street
Easton, Maryland 21601

March 1, 2023

Dear Resident,

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This letter is sent to inform you that a Site Plan application for 625 Dover Road has been filed to request temporary approval to re-erect a tent, and authorization for the tent to remain up through November 30, 2023. The applicant has also submitted a Planned Redevelopment Overlay application to request approval that would allow a tent to remain standing at 625 Dover Road on a seasonal basis in perpetuity. This application also includes an approval request for the addition of a kitchen and cafe to the existing site.

Copies of the proposed application are on file and available for public review in the Town's Planning Office at 14 South Harrison Street between the hours of 8:30 a.m. and 4:00 p.m., Monday through Friday. **In addition, digital copies are also available for review via the Town's website at <https://www.eastonmd.gov/129/Agendas-Minutes>.** If you have any questions regarding this application, please contact the Planning Office at (410) 822-1943 or via e-mail at ssmith@eastonMD.gov.

Samantha N. Smith

Samantha N. Smith
Administrative Specialist
Planning & Zoning Department
Town of Easton
410-822-1943 ssmith@eastonMD.gov



Sign posted on March 3, 2023



TOWN OF EASTON
PLANNING & ZONING
14 S Harrison Street, Easton MD 21601

Date of Hearing: March 16, 2023

4d

**PLANNING COMMISSION
PUBLIC HEARING
STAFF REPORT**

DATE: March 8, 2023

SUBJECT: 28595 Mary's Court – Teddy Bear Fresh

ELECTION WARD: Ward 1

CRITICAL ACTION DATE: At the pleasure of the Commission

STAFF CONTACTS: Joseph Mayer, Plan Reviewer
Lynn Thomas, Town Planner
Miguel Salinas, Director of Planning and Zoning

APPLICANT: Mary's Court Venture, LLC

DOCUMENT CREATED ON: March 9, 2023

PURPOSE: The applicant is seeking site plan and bicycle waiver approval from the Planning Commission.

RECOMMENDATION: Staff supports a Planning Commission recommendation of the proposed site plan and bicycle waiver subject to conditions (see below).

APPLICATION INFORMATION:	
APPLICANT: Mary's Court Venture, LLC	REPRESENTATIVE: Lane Engineering, LLC Brett Ewing
PARCELS/ACREAGE:	
Parcel Information	Acreage
Map 025, Grid 0022, Parcel 0046, Lot 18	3.470
ACCEPTANCE DATE: February 27, 2023	LOCATION: 28595 Mary's Court, Lot 18
EXISTING ZONING BC	EXISTING LAND USE: Vacant parcel within Talbot Commerce Park.
HISTORIC DISTRICT: Not Applicable	FUTURE LAND USE MAP: Industrial

CONTEXT:

Location/Site Access – The subject property is located within “Talbot Commerce Park”, fronting on the South side of Mary's Court.

Existing Conditions – The subject property is currently unimproved.

Surrounding Properties

- 28600 Mary's Court - BC
- Mary's Court Lot 14 - BC
- 28640 Mary's Court - BC
- 28659 Mary's Court - BC
- 28527 Glebe Road – Talbot County, MD

Figure 1: Vicinity Map



PROPOSAL: The applicant is proposing a one-story office building with a ground floor area of 2,500 square feet (SF) and a 20,000 SF warehouse. A parking lot, stormwater management facilities and landscaping are proposed as well. There's a proposed 1,024 SF maintenance building and loading dock area for loading/unloading to accommodate the warehouse. The applicant is proposing 48 parking spaces.

The applicant is also requesting a Bicycle Waiver of five spaces.

BACKGROUND: The Applicant submitted an application to the Easton Staff Development Review on February 22, 2023.

ZONING ANALYSIS:

A. Permissible Land Uses:

28-201 table 2.1 (3) 217 "Office"

BC

217	Office*	--	SE	SE	--	P	P	P	P	--	A	
-----	---------	----	----	----	----	---	---	---	---	----	---	--

28-201 table 2.1 (3) 263 "Maintenance Building"

BC

263	Multiple Uses *	--	--	--	--	P	P	P	P	P	P	
-----	-----------------	----	----	----	----	---	---	---	---	---	---	--

28-201 table 2.1 (3) 520 "Warehouse"

BC

520	Warehousing, Wholesale, storage & distribution	--	--	--	--	--	P	SE	P	P	--	
-----	--	----	----	----	----	----	---	----	---	---	----	--

Analysis – The Applicant seeks an approval from the Planning Commission for site plan, architecture and waiver for bicycle spaces. The proposed project is presented and described by the Applicant as an office and warehouse with an outside maintenance building. The proposed uses are permitted within Table 2.1 Table of Permissible Uses.

B. Off-Street Parking

28-1001.3 Parking Requirements

	Use/Activity	Minimum Vehicle Spaces	Maximum Vehicle Spaces	Minimum Bicycle Spaces	Notes
--	--------------	---------------------------	---------------------------	---------------------------	-------

Commercial Buildings					
14	Office or Bank without Drive-Thru	1 per 250 sf GFA	1 per 140 sf GFA	1 per 10 vehicle spaces	

	Use/Activity	Minimum Vehicle Spaces	Maximum Vehicle Spaces	Minimum Bicycle Spaces	Notes
--	--------------	---------------------------	---------------------------	---------------------------	-------

Industrial Buildings					
40	Warehouse	1 per 2000 sf GFA	1 per 350 sf GFA	--	

PARKING CALCULATIONS

Total Site Parking Required

Office – 2,500 SF:

1 Space/250 SF GFA; 10 Spaces Required – Minimum

1 Space/140 SF GFA; 18 Spaces Required – Maximum

Warehouse – 20,000 SF:

1 Space/2,000 SF GFA; 10 Spaces Required – Minimum

1 Space/350 SF GFA; 57 Spaces Required – Maximum

Total Site Parking Provided:

48 Spaces provided.

Bicycle Spaces Required: 1 Bicycle Space/10 Vehicle Spaces; 5 Bicycle Space
(Waiver of 5 Bicycle Spaces requested)

Analysis- Due the site's location, being adjacent to various light industrial, service/ business properties, bicycle spaces would not be advantageous for the proposed site.

C. Development Standards (*Easton Zoning Ordinance, Chapter 28 – 308.2*)

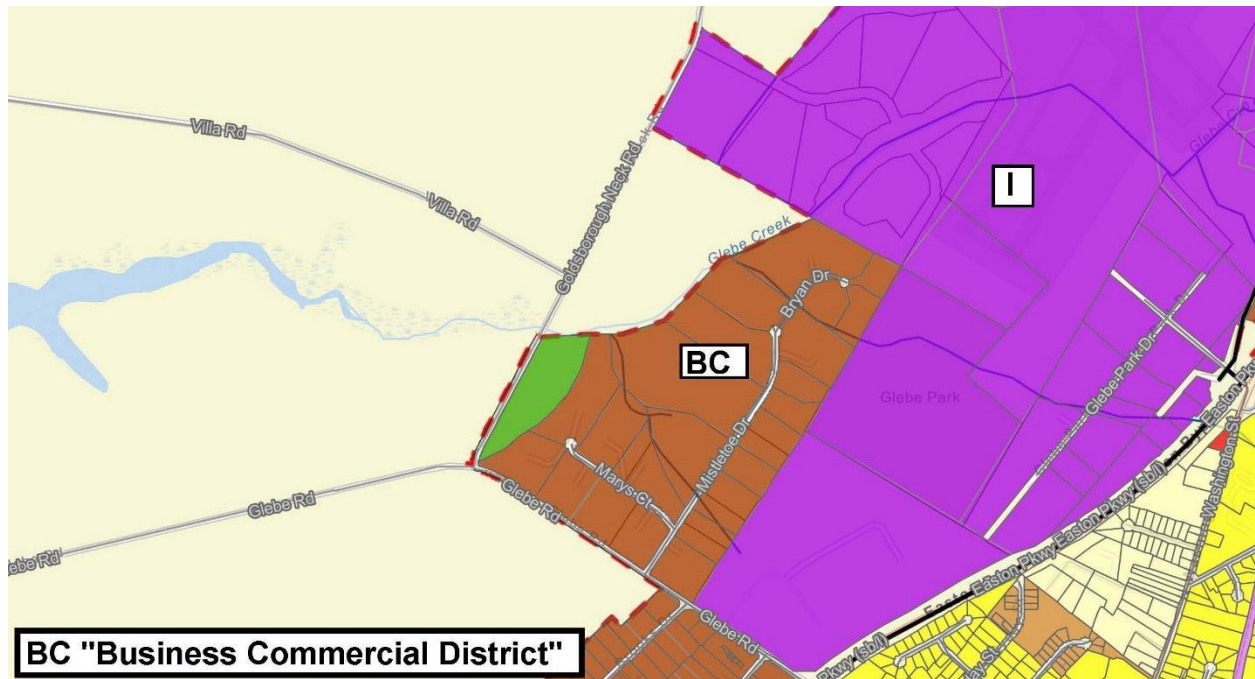
The following minimum development standards shall be observed in the BC District:

- A. The minimum size for all uses hereafter established shall be 40,000 square feet.*
- B. Off-street parking shall be provided in accordance with the provisions of Section 28 – 1001.*
- C. All lots hereafter established shall have a frontage on a public street or way of at least one hundred (100) feet.*
- D. Minimum setbacks for all uses shall be as follows:*
 - 1. Front – forty (40) feet from the property line.*
 - 2. Side – ten (10) feet on each side of the property line.*
 - 3. Rear – thirty (30) feet from the property line.*
- E. Height limitations – thirty-five (35) feet.*
- F. Building Envelope – all lots shall have a minimum building envelope of thirty (30) feet deep by eighty (80) feet wide.*
- G. Lot coverage by all buildings and structures shall not exceed fifty (50%) percent of the lot area.*
- H. There shall be no open storage on any lot or open areas, nor shall any products be displayed in open areas. All outside storage shall be adequately screened and landscaped in accordance with provisions of Section 28 – 1014 of this Ordinance.*
- I. All on-site lighting unless approved otherwise by the Planning and Zoning Commission shall be low cut-off shielded luminaries at 18' height and light shall not shine off-site at levels greater than 1-foot candle.*
- J. All off-street loading and unloading areas shall be screened from view by permanent decorative screens or natural planting, either of which shall be a minimum of eight (8) feet in height, in accordance with the provisions of Section 28 – 1014 of this Ordinance*
- K. All areas not devoted to buildings or parking areas shall be landscaped and maintained in a suitable manner, in accordance with the provisions of Section 28 – 1014 of this Ordinance.*

Analysis - The site falls under the Business Commercial District and meets the 28-308.2 Development Standards. Any comments or concerns from the ESDR review letters will be addressed during the Development Site Plan review.

POLICY ANALYSIS:

Figure 2: Zoning Map



A. Compatibility with the Comprehensive Plan:

Town of Easton 2010 Comprehensive Plan Design Principles (Principle #1) Integrated uses are desirable- *Applicant's response: This development proposal provides additional office and associated storage in this mixed business park.*

(Principle #2) Natural features should determine design – *Applicant's response: No compelling features; site layout oriented to take advantage of natural drainage patterns and to orient "office" buildings front to street and warehouse area to the rear.*

Staff notes that Forest Conservation was approved at the original Subdivision Plat (Plat PC 4/35G).

(Principle #3) Automobiles should not determine design – *Applicant's response: Parking for office users and customers provided for convenience with bulk of the parking to front or side of facility.*

Staff notes that the applicant requests a waiver for bicycle spaces.

(Principle #4) Ample Open Space should be provided within & around neighborhoods – Applicant's response: *Usable Open Space not applicable here.*

Staff notes that open space is not required.

(Principle #5) Architecture should respect Easton's Historical Development – Applicant's response: *This application proposes architecture compatible with Easton and the Commerce Park's Architectural palette.*

(Principle #6) Signs should inform but not dominate – Applicant's response: *Signage, simple and per code.*

Staff notes that any proposed monument sign will require a Signage Application to be submitted prior to installation. Signs should inform but not dominate the area.

(Principle #7/8) Neighborhoods should contain a diversity of housing types – Applicant's response: *Not applicable to this application. Residential neighborhoods should be interesting places – not applicable to this application.*

Staff notes that neighborhood diversity and residential design is not applicable as there is no residential proposed in this application.

(Principle #9) Neighborhoods should connect – Applicant's response: *Not specifically applicable to this application.*

Staff notes that paths have been created to provide connectivity within the existing neighborhood.

RECOMMENDED CONDITIONS:

1. Upon Planning Commission approval, the applicant shall address ESDR review comments and submit for Development Site Plan for review.

DRAFT MOTIONS:

1. I move that the Planning Commission approve the site plan and bicycle waiver subject to the Conditions of Approval.

OR

2. I move that the Planning Commission forward the application to the April 20th Commission meeting for further discussion.

OR

1. I move an alternate motion.

ATTACHMENTS:

1. ESDR Determination, paper copy & PDF
2. 2023-02-25 Aerial-Context Plan, paper copy & PDF
3. 2023-02-25 Comment Response Letter, paper copy & PDF
4. 2023-02-25 Illustrative Plan, paper copy & PDF
5. 2023-02-25 Sketch Site Plan, paper copy & PDF
6. 2023-02-27 Teddy Bear Fresh Concept Stormwater, PDF



TOWN OF EASTON

Planning & Zoning Department

14 South Harrison Street

P.O. Box 520

Easton, Maryland 21601

Easton Staff Development Review Worksheet

Date: February 22, 2023

Project: 28595 Mary's Court – Teddy Bear Fresh

To: Mr. Brett Ewing – Lane Engineering, LLC.

CC: Mary's Court Venture, LLC

The Easton Staff Development Review meeting was held on February 22nd, at 11:00 pm. Staff reviewed the Site Sketch Plan for the proposed Warehouse and Office Building and provided comments for the proposed project.

It was determined that the project is approved to submit application to the Planning Commission for the March 16, 2023 meeting. All comments will need to be addressed as designated within the review letters. Specific areas of Staff concern discussed in the meeting and Comments (attached) are as follows:

- Revise architectural renderings/elevations per the Planning & Zonings review letter and provide documentation no later than **Thursday, March 9th**.
- Address the attached review letters and submit a Planning Commission Concept, Use and Design Application no later than **Monday, February 27th**.
- Submit Stormwater Management documentation no later than **Monday, February 27th** for review and preliminary approval from the Department of Engineering.

Files for presentation at the Planning Commission need to be provided on a flash drive. In addition, provide a digital submittal (via email) of the Planning Commission Application and its supporting documents, including **six paper copies**. Submit all documentation at the described time above. (All digital copies of Site Plan, ESDR, BoZA, HDC Submissions, etc. are to be sent to jmayer@eastonmd.gov and ssmith@eastonmd.gov.)

At this time, based on the ESDR sketch plan submission Staff did not identify any constraints which require action by the Board of Zoning Appeals.

Upon completion of requested items, please submit all documentation to the Planning & Zoning Department. The next available Planning Commission meeting is scheduled for **Thursday, March 16, 2023 at 1:00 pm. Meeting location is at the Council Chambers, Easton Town Office.** Please contact the Planning & Zoning Department at 410 822-1943 with any questions.

Sincerely,

Joseph A. Mayer
Plan Reviewer



TOWN OF EASTON PLANNING & ZONING DEPARTMENT

P.O. Box 520
Easton, Maryland 21601
410-822-1943
www.EastonMD.gov

DATE: February 9, 2023

TO: Brett Ewing – Lane Engineering, LLC/Mary's Court Venture, LLC

Cc: Miguel Salinas – Director, Planning & Zoning Department

Rick Van Emburgh – Town Engineer, Department of Engineering

FROM: Joseph A. Mayer - Plan Reviewer, Planning & Zoning Department

SUBJECT: 28595 Mary's Court - Teddy Bear Fresh

We reviewed the **February 1, 2023** Sketch Plan Submittal for the Subject Project and have the following comments:

PLANNING & ZONING COMMENTS

Sketch Site Plan

1. Per item #8 on the Appendix B-1 Submittal Checklist and Chapter 28-901.3 A 1 of the Zoning Code, show the location of proposed fencing on the sketch plan. Indicate the type of fencing and its minimum height.
2. Per item #11 on the Appendix B-1 Submittal Checklist and Chapter 28-901.3 A 11 of the Zoning Code, provide conceptual building elevations or renderings illustrating the character, scale, and materials of all proposed structures. Such elevations or renderings shall be sealed by a licensed professional as described above. Architecture should be in conformance with the Comprehensive Plan and Architectural Guidelines adopted by the Planning and Zoning Commission.
3. The three architectural renderings provided do not match the sketch plan. Update all renderings to match the sketch plan.
4. Per Chapter 28-1001.3 I of the Zoning Code, referenced parking lots for commercial or industrial uses should, to the extent feasible, be located in rear or side yards. Please examine alternate options for the office parking spaces.
5. Trees shall be located within the parking bays so that no more than 15 parking spaces form an uninterrupted row.
6. The office use requires the minimum bicycle spaces, one per ten vehicle spaces. Please show on plan views and update the Development Data sheets.

7. Provide the dimension between the main access aisle and parking area northwest of the building.
8. Total parking spaces provided do not match what is shown on the site plan (73 spaces shown on plan).
9. The Parking lot tree calculation does not take into account the number of parking spaces shown on the site plan.
10. Include a statement regarding "the nature of the proposed use, its expected impact on its surrounding area, expected truck traffic, and any other information necessary to provide a fair and accurate assessment of the impacts of the proposed use on the subject property and the surrounding area." (28-1007.3.A.6).
11. Show evergreen shrub hedge row between the front parking lot and Marys Court.
12. Show all entrance and garage locations to proposed buildings on all plan views.
13. Dimension offset distances from building to property line.
14. Per Chapter 28-308.2 J of the Zoning Code, any natural plantings used for screening off-street loading and unloading shall be a minimum of eight feet in height. Please revise the Landscape Key on the Illustrative Plan to reflect the required height. However, an option is provided to utilize an evergreen tree buffer planting, minimum 7' height at installation, staggered to create a solid screen at installation. See Chapter 28-1014.6 F(2)d of the Zoning Code.
15. Provide additional screening for the loading and unloading area adjacent to Glebe Road.
16. Show the truck loading space location and its dimensions on the sketch plan. Each loading space shall be not less than ten (10) feet in width and forty-five (45) feet in length, and shall have a minimum overhead clearance of fourteen (14) feet.
17. Add Ward District in the Title Block to all sheets.
18. There appears to be an abandoned lot line from the previous revision plat for lots 18 and 19. Please remove the dashed line shown on the sketch plan.
19. Provide the correct deed and plat reference within the Development Data notes.
20. Correct the Vicinity Map with the current lot lines for lot 18 and 19.
21. Show zoning district boundaries on the Vicinity Map.
22. Show and label jurisdictional boundaries for the property lines adjacent to Talbot County on all plan views.
23. Show proposed site lighting. Indicate that the lights will be eighteen feet in height and

shall not shine off-sight at levels greater than 1-foot candle unless approved otherwise by the Planning Commission.

Sketch Plat

24. Add a signature block for Town Engineer.
25. Revise the plat title to read: "PRELIMINARY PLAT-NOT TO BE RECORDED".
26. Label existing road paving widths on plan view.
27. Label adjacent property owners along Marys Court.
28. Show and label jurisdictional boundaries for the property lines adjacent to Talbot County on the plan view and vicinity map.
29. For the Preliminary Plat only, remove Owner's Certification, Health Officer and Chairman of Planning Commission signature blocks.
30. Surveyor to date and sign plat.
31. Show the location of the Stormwater Management Easements with bearings and distances.

DEPARTMENT OF ENGINEERING

COMMENTS ATTACHED.

EASTON UTILITIES

COMMENTS ATTACHED.

BUILDING INSPECTION & PERMIT DEPARTMENT

COMMENTS ATTACHED.

Plan Review Status

IMPROVEMENT PLAN REVIEW			Comments
Plans Approved	☐ Y	☒ N	Please review comments above Revise and Resubmit.

GRADING PERMIT STATUS			
Application and Final Approved Site Plan Submitted to Town Engineer	☐ Y	☒ N	To be processed by the Department of Engineering.

LEGAL DOCUMENTS			
Storm Water Easement			
☒ Required ☐ Submitted ☐ Approved			To be processed by the Department of Engineering.
Drainage & Utility and Landscape Easement			
☒ Required ☐ Submitted ☐ Approved			To be processed by the Department of Engineering.
Shared Access/Use Easement			
☐ Required ☐ Submitted ☐ Approved			Not required
Sidewalk Easement			
☐ Required ☐ Submitted ☐ Approved			Not required
Declaration of Covenants			
☒ Required ☐ Submitted ☐ Approved			To be prepared by Town Attorney
Public Works Agreement			
☒ Required ☐ Submitted ☐ Approved			To be prepared by Town Attorney
Bond/Letter of Credit/ Cash Agreement			
☒ Required ☐ Submitted ☐ Approved			To be processed by the Department of Engineering.
Talbot Soil Conservation District Approval			
☒ Approval Required			Approval pending.
Forest Stand Delineation & Forest Conservation Plan			
☐ Required ☐ Submitted ☐ Approved			The development of this site has already been mitigated for Forest Conservation under the 1997 Forest Conservation Plan, recorded on record plat 4/35G.
Other			
☐ Required ☐ Submitted ☐ Approved			

Please contact me if you have any questions. Thank you.



TOWN OF
EASTON
ENGINEERING DEPARTMENT

DATE: February, 2023
TO: Mary's Court Venture LLC - Owner
Brett Ewing - Lane Engineering, LLC
Cc: Rick Van Emburgh - Town Engineer
Miguel Salinas - Planning and Zoning Department
Aaron Goller - EUC
FROM: Sierra Clem - Engineering Department
SUBJECT: Teddy Bear Fresh - Sketch Site Plan/Plat Review Comments

I have reviewed the application for the subject project received on 2/3/2023. I have the following comments.

Sketch Site Plan/Plat:

The **Sketch Site Plan and Plat** is **acceptable to the Engineering Department** with the following comments:

1. Please include the site area acreage or SF on the project notes.
2. Please include impervious area, percent impervious and LOD within the project notes.
3. Please verify the aisle width for the aisles in between the building and Mary's Court from the edge of each parking stall.
4. Please label the proposed refuse collection location and clarify if the intent is for public or private collection.
5. Please provide bike racks.
6. Please provide either curb and gutter or wheel stop protection along the edge of parking adjacent to the SWM feature.

Please address the comments above and submit a Preliminary Site Plan and Preliminary Plat.

Stormwater Management:

Stormwater Management Quantity is previously addressed via regional stormwater ponds for Talbot Commerce Park. I have reviewed the **Sketch Stormwater Management Plan** and have the following Comments:

1. Please complete the ESD Summary Chart with the Target ESDv and include this within the SWM report and site plan.
2. Provide the assumed maximum impervious area percentage used in the original Talbot Commerce Park Stormwater Management Report Calculations. Confirm the existing impervious area on 18 and proposed impervious area on 18B will not exceed that maximum.

P.O. Box 520, Easton, Maryland 21601
410-820-8822
Engineering@EastonMD.gov - www.EastonMD.gov

3. Please show the required entrance culvert.

Please address the comments above and submit a revised Sketch Stormwater Management Plan.

Please contact me if you have any questions. Thank you.



TOWN OF EASTON
PO Box 520
Easton, Maryland 21601
(410)-822-2526 Fax (410)-822-8738
Office of Building Inspection.



ESDR- Building Inspection and Permit Department Comments

Date: February 21, 2023

Project; Mary's Court Venture, LLC P.O. Box 3180, Easton, Maryland 21601

A Town of Easton Building Permit is required for all new construction.

- Contact this Department and verify current Building Codes including the Town of Easton's modifications prior to preparation of Building plans. Be advised a new Code Cycle 2021 may be adopted in the future.

The following lists items required on the construction drawings in order to apply for a Building Permit.

- Indicate the type of construction and use as per the International Building Code 2018.
- Construction Documents (3 sets) for any new construction will be required. Documents must be prepared by a registered Maryland Registered Architect, with original plans signed and sealed. A code analysis completed by a Registered Maryland Architect including, classification (use group), construction type, and occupant loads must be completed and included with the application materials. (See Maryland Architectural Act- Comar sect. 3-101, 102, 103)
- The Town of Easton, in accordance with the International Building Code Chapter 17, establishes a building inspections procedure that utilizes qualified, third-party professionals in addition to the Town's Building Inspectors. The purpose of this document is to establish the policy and guidelines for the construction process in accordance with the Building Code requirements and to:
 - Define the responsibility of all parties.
 - Standardize code application.
 - Provide for an orderly and systematic approach for updating standards that apply to the Special Inspections.
 - Set forth a guideline for Special Inspections.

A copy of this can be found on the Towns Web Site

- Items that must be addressed by the construction documents will be structural strength, means of egress (include travel distance), facilities, stability, sanitation, light and ventilation, energy conservation and safety to life and property from fire and other hazards attributed to the built environment, **Accessibility**, and other safety requirements for public access.
 - All mechanical, electrical, and plumbing permits as required must include construction documents signed and sealed by a professional engineer and by a responsible party for the contractor receiving the permit. Be sure the Town of Easton modifications are included. Section 6-16 of the Town Code.
 - Pursuant to Town of Easton Ordinance 477, Chapter 9 Fire Protection, Article VII Security Key Lock Boxes, a lockbox shall be provided on the exterior of the building and shall be located as required by the chief of the Easton Volunteer Fire Department, Inc. (410-822-4848).
 - Certificate of Occupancy Update; A determination needs to be made regarding the hazard classification of this type of change. If there is no increase in the hazard classification and no new construction then a new Certificate of Occupancy may be issued including the new tenant information. If there is an increase in hazard classification a building analysis needs to be completed by a registered design professional to determine if any alterations are necessary which would then require a building permit.
 - An appointment may be set up with this department to review your permit application materials prior to permit application submission.
- **State Fire Marshal**, (410-822-7609) plan review and inspections are required. It is your responsibility to contact them and make application.
 - **Talbot County Health Department**, (410-770-6880) Plan review and inspections may be required.



Easton Utilities Commission

Plan Review Comments

Date: Wednesday, February 15, 2023

To: Joe Mayer; Nicholas Johnson; Sierra Clem

From: Kia Gibbs on behalf of Aaron Goller, PE

Re: 28595 Mary's Court

No. of Pages: 1

Phase: Sketch Site Plan

Review Type: Preliminary

SUBM: 1

Status: Approved as Noted

Easton Utilities Commission has reviewed the above referenced plans and have provided the following comments. Please provide your corrections as listed below. Additional reviews will be required to ensure comments have been addressed. Items or documents not provided on initial submission will be subject to further review. Please contact Kia Gibbs, Admin Support at kgibbs@eucmail.com should you have any questions.

ITEM:	DRAWING / PAGE	COMMENTS:
1	1 of 1	Does utility easements exist?
2	General	Gas is available
3	1 of 1	Capital charges required for sturcture. Provide floor plan of proposed structure.
4	1 of 1	Show existing utilities.

Lane Engineering, LLC

Established 1986

Civil Engineering • Land Planning • Land Surveyors

15 Washington Street
Cambridge, Maryland 21613
Tel 410-221-0818
Fax 410-476-9942

117 Bay Street
P.O. Box 1767
Easton, Maryland 21601
Tel 410-822-8003
Fax 410-822-2024

354 Pennsylvania Avenue
Centreville, Maryland 21617
Tel 410-758-2095
Fax 410-758-4422

February 25, 2023

Joe Mayer
Plan Reviewer
Town of Easton
14 South Harrison Street
Easton, MD 21601

Subject: 28595 Mary's Court – Teddy Bear Fresh

Dear Mr. Mayer,

We have reviewed the Town's comments dated February 9th, and Easton Utilities' comments dated February 15th and have updated the plans accordingly. Please note the Sketch Plat comments from Planning and Zoning are based on Major Subdivision requirements and do not apply for this minor subdivision. Our responses are in order with your letter as follows:

Planning & Zoning

Site Plan:

1. Proposed 4' tall rail fencing has been shown and labeled on the Sketch Site Plan and Illustrative Plan.
2. Sealed architecture plans will be submitted to the Town of Easton by March 9th.
3. Updated renderings and architectural plans will be submitted to the Town of Easton by March 9th.
4. The office parking needs to be located in the front to remain separate from the tractor trailer loading dock. There is no other reasonable layout that provides compliance with parking space requirements and functionality.
5. Overflow parking spaces along northwest side are no longer delineated. All parking has no more than 15 spaces in a row.
6. Waiver requested for the 5 required bike spaces as the site location does not support pedestrian or bike movement; no sidewalks exist in TCP or along Glebe Rd. Also, the business use is office warehouse, bike movement is more associated with residential or commercial retail use.
7. Dimension has been included. Overflow parking along northwest side of the site has been removed.
8. Parking calculations has been updated in Development Data notes.
9. Landscaping requirement notes have been updated.



www.leinc.com
general@leinc.com

10. The Comprehensive design principles are addressed on the plan per the checklist. Also, the code reference in the comment refers to a “light industry” use and requirement that does not apply. The proposed use is warehouse and office.
11. Landscape hedge shown on Sketch Site Plan and Illustrative Plan.
12. Label for the loading dock has been added to the Sketch Site Plan and Illustrative Plan.
13. Dimensions have been added from all proposed buildings to property lines.
14. Landscape Key on the Sketch Site Plan and Illustrative Plan has been updated.
15. Existing berm with landscaping along Glebe. No additional screening required.
16. Loading will occur at the loading docks, which are delineated on the site plan.
17. Ward district has been added to the Development Data notes on the Sketch Site Plan and Illustrative Plan.
18. Abandoned property line has been removed from all plans.
19. Deed and plat references have been updated on all plans in the Development Data notes.
20. Vicinity Map has been updated to show current property lines.
21. Not applicable per Town checklist and code, and is not relevant to the project development standards.
22. Town of Easton town boundary has been added to the Sketch Site Plan and Illustrative Plan.
23. Site lighting note has been added to the Development Data notes on the Sketch Site Plan and Illustrative Plan.

Engineering Department

Plan Review:

1. The site acreage is included on tax parcel label in the plan view.
2. Limits of disturbance has been included in the Development Data notes. Building lot coverage is listed in these notes.
3. Aisle width have been verified, dimensions have been added to Sketch Site Plan.
4. Refuse collection is internal to proposed warehouse. Public or private collection TBD.
5. Waiver requested for the 5 required bike spaces.
6. The entire site will have curb and gutter, a note has been added to the Sketch Site Plan and Illustrative plan indicating such.

Stormwater Management:

1. Town Stormwater charts are added to the revised stormwater report as the last two (2) pages.
2. Onsite quantity management has been provided as demonstrated in the revised report included with this submittal. Quality management has also been provided to current regulatory requirements. As such, previous stormwater management reports, that may or may not have anticipated the buildout of lot 18B, are irrelevant.
3. Proposed 12” RCP culvert has been added to the Sketch Site Plan and Illustrative Plan.

Easton Utilities

1. All easements on previous property lines were abandoned at time of line abandonment. See recorded plats provided with 2/1/23 submittal.
2. Acknowledged.
3. Acknowledged.
4. All existing utilities have been shown based on Easton Utilities GIS information.

Thank you for your review of this project. Should you have any questions or need additional information, please contact me directly at 410-822-8003.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Brett C. Ewing', with a long horizontal flourish extending to the right.

Brett C. Ewing, AICP
Principal

SEAL:

FOR REVIEW
ONLY NOT FOR
CONSTRUCTION

PROFESSIONAL CERTIFICATION:
I CERTIFY THAT THESE DOCUMENTS WERE
PREPARED OR APPROVED BY ME, AND THAT I AM
A FULLY LICENSED ARCHITECT UNDER THE LAWS
OF THE STATE OF MARYLAND.
LICENSE NO.: S5-0007610
EXPIRATION NO.: 01.31.2024

THE DOCUMENTS PREPARED BY FISHER
ARCHITECTURE, LLC, ARE SOLELY FOR
THE PURPOSES OF THE SPECIFIED
PROJECT. THEY ARE NOT INTENDED OR
AUTHORIZED FOR USE ON ANY OTHER
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MAKES NO REPRESENTATION AS TO
THEIR SUITABILITY FOR ANY OTHER USE.
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OF PROFESSIONAL SERVICE. IN WITNESS
OF THE FACT, THESE DOCUMENTS
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CONSULTANTS:

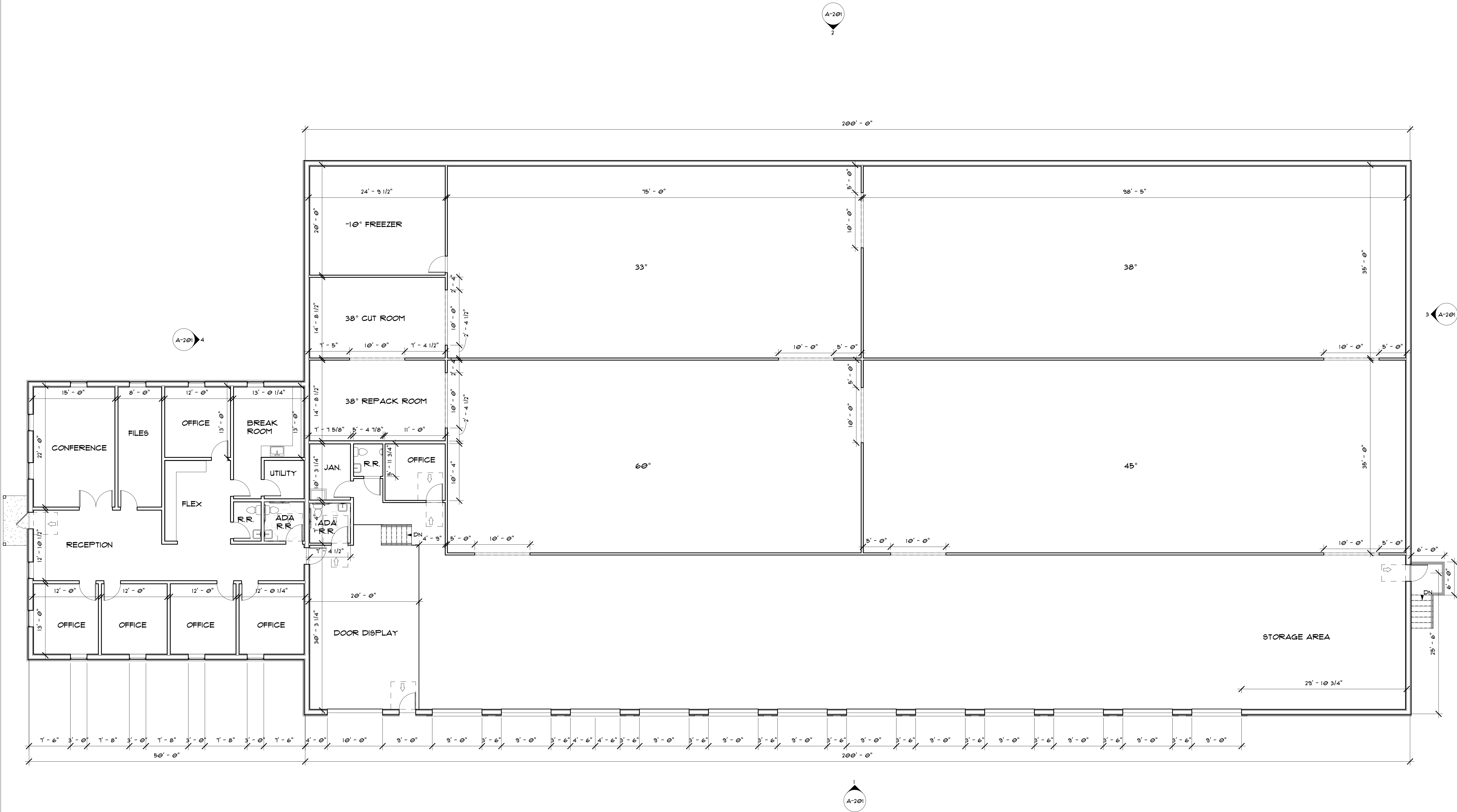
TITAN COLD STORAGE

SHEET INFO:

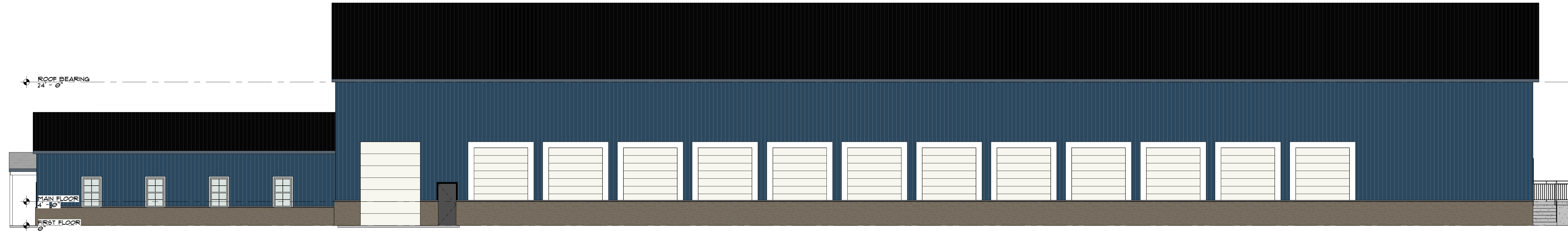
FIRST FLOOR PLAN

REV.	REV. DATE	DESCRIPTION
DATE:	2022.11.29	
PROJECT NO.	2022162	
SCALE:	1/8" = 1'-0"	
FROM MGR:	LEW	
DRAWN BY:	LS	
SHEET NUMBER:		

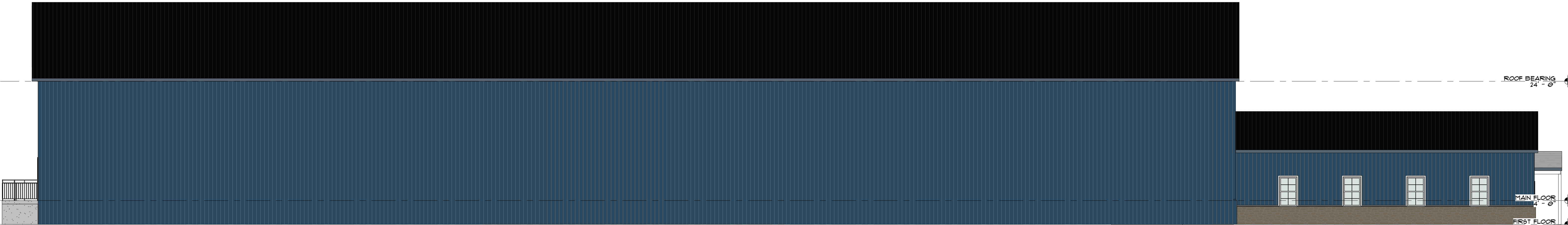
A-101



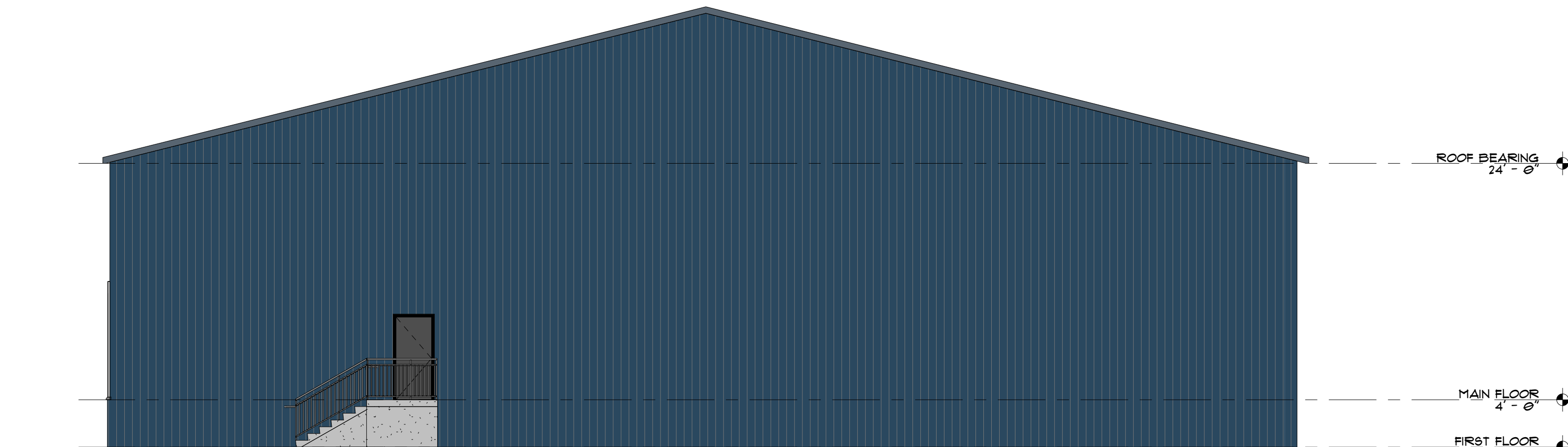
1 MAIN FLOOR
1/8" = 1'-0"



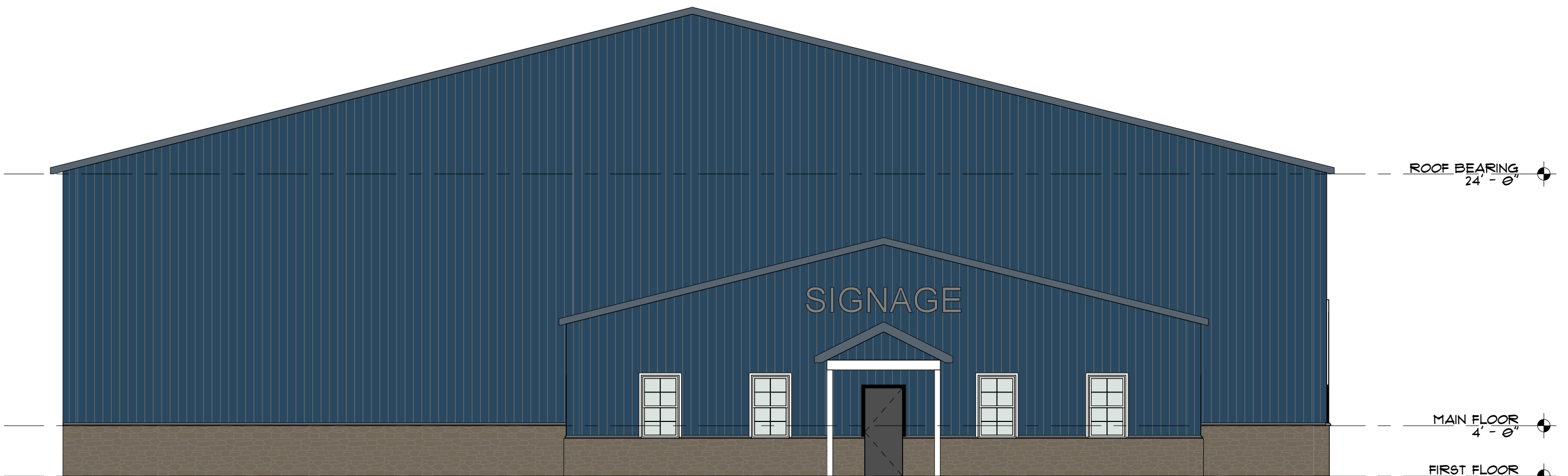
1 ELEVATION SOUTH
1/8" = 1'-0"



2 ELEVATION NORTH
1/8" = 1'-0"



3 ELEVATION EAST
1/8" = 1'-0"



4 ELEVATION WEST
1/8" = 1'-0"



PROFESSIONAL CERTIFICATION:
I CERTIFY THAT THESE DOCUMENTS WERE
PREPARED OR APPROVED BY ME, AND THAT I AM
A LICENSED ARCHITECT UNDER THE LAWS
OF THE STATE OF MARYLAND.
LICENSE NO.: S5-0007610
EXPIRATION NO.: 01.31.2024
THE DOCUMENTS PREPARED BY FISHER
ARCHITECTURE, LLC ARE SOLELY FOR
THE PURPOSES OF THE SPECIFIED
PROJECT. THEY ARE NOT INTENDED OR
AUTHORIZED FOR USE ON ANY OTHER
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MAKES NO REPRESENTATION AS TO
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OF PROFESSIONAL SERVICE IN RESPECT
OF THE PROJECT. THESE DOCUMENTS
ARE, AND SHALL REMAIN, THE PROPERTY
OF FISHER ARCHITECTURE, LLC.

CONSULTANTS:

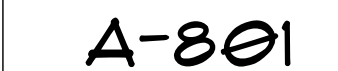
TITAN COLD STORAGE
ADDRESS
CITY, STATE

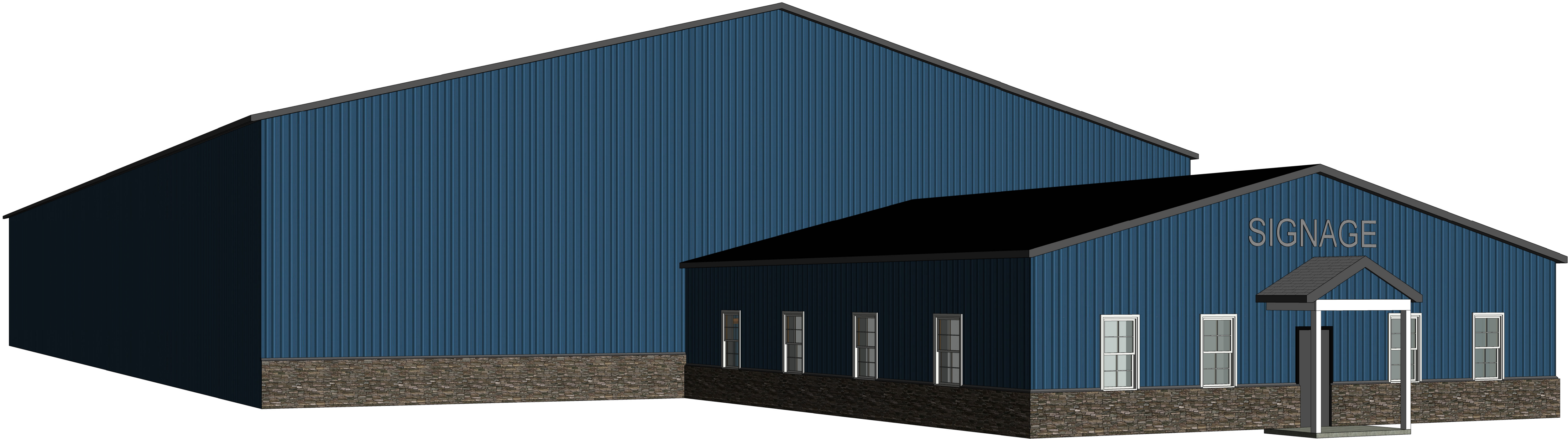
SHEET INFO:

ELEVATIONS

REV	REV DATE	DESCRIPTION
DATE:	2022.11.29	
PROJECT NO.	2022162	
SCALE:	1/8" = 1'-0"	
PROJ MGR:	LEW	
DRAWN BY:	Author	
SHEET NUMBER:		

REV	REV DATE	DESCRIPTION
DATE:	2022.11.29	
PROJECT NO.	2022162	
SCALE:	1/8" = 1'-0"	
PROJ MGR:	LEW	
DRAWN BY:	Author	
SHEET NUMBER:		





1 3D VIEW 3



2 3D VIEW 4



FISHER
ARCHITECTURE
Fisher Architecture, LLC
542 Riverside Drive
Salisbury, MD 21801
(410) 742-0238

SEAL:


PROFESSIONAL CERTIFICATION:
I CERTIFY THAT THESE DOCUMENTS WERE
PREPARED OR APPROVED BY ME, AND THAT I AM
A FULLY LICENSED ARCHITECT UNDER THE LAWS
OF THE STATE OF MARYLAND.

LICENSE NO.: 0019955
EXPIRATION NO.: 09.23.2024

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CONSULTANTS:

TITAN COLD STORAGE

ADDRESS
CITY, STATE

SHEET INFO:

RENDERINGS

REV.	REV. DATE	DESCRIPTION
DATE:	2022.11.29	
PROJECT NO.	2022162	
SCALE:		
FROM MGR:	Lew	
DRAWN BY:	Author	
SHEET NUMBER:		

A-802

STORMWATER MANAGEMENT REPORT

For

**Teddy Bear Fresh, LLC
Easton, Maryland**

Developer

Teddy Bear Fresh
c/o Paul Papagjika
28577 Marys Court, Suite 6,
Easton, MD 21601

Design Professional

Lane Engineering, LLC
117 Bay Street
Easton, Maryland 21601
410-822-8003

Date Prepared

February 1, 2023

Date Revised

February 27, 2023

Prepared by

Alec F. Chosta, E.I.T.
Civil Engineer

Approved by

Timothy W. Glass, P.E.
Principal



PROFESSIONAL CERTIFICATION: I hereby certify that this document was prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 23152, Expiration Date: 7/5/23

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2. General Site Information
3. Proposed Project
4. Stormwater Management and Environmental Site Design (ESD)
 - 4.1 Stormwater Quantity Management
 - 4.2 Stormwater Quality
 - 4.2.1 ESD Practices Evaluation
5. Conclusion

APPENDIX LIST

- APPENDIX A – Environmental Site Design Calculations
APPENDIX B – Drainage Area Exhibits
APPENDIX C – HydroCAD Quantity Management Report

Teddy Bear Fresh, LLC
STORMWATER MANAGEMENT REPORT

1. INTRODUCTION

This report addresses stormwater management for the subdivision and development of the vacant portion of Lot 18 located at 28595 Mary's Court, Easton, Maryland. The stormwater management plan incorporates the requirements of the *2000 Maryland Stormwater Design Manual Volumes I and II* (Manual) as currently updated. Development projects are required to be reviewed during the concept, preliminary site development, and final design stages. This narrative addresses the requirements pertaining to the concept design stage and meets the intent of the guidelines and methodologies presented in the MDE document *Environmental Site Design (ESD) Process & Computations* dated July 2010.

2. GENERAL SITE INFORMATION

This project is comprised of a 3.47-acre property (Lot 18B) to be subdivided from the overall 6.623 acre Lot 18. The property is zoned Industrial and is located entirely outside the Chesapeake Bay Critical Area. This vacant parcel predominantly consists of grassed meadow. Onsite drainage patterns split between discharges to the roadside swale adjacent to Mary's Court and to an existing culvert, beneath the landscape buffer & berm to the south of the site. This culvert then discharges into a swale adjacent to Glebe Road.



Per the USDA soil maps, most of the site soils are Elkton Silt Loams, classified as a C/D soil. The remaining onsite soils, consist of Woodstown Loams and Crosiadore silt Loams which are group C and C/D respectively. Based on field inspection and aerial imagery depicting standing water, it is assumed onsite soils will act more closely to Hydrologic Soil Group D.

3. PROPOSED PROJECT

The proposed improvements intend to subdivide the property into Lots 18 & 18B. Lot 18 will contain the existing Teddy Bear Fresh warehousing operation and associated stormwater management. No construction activity or improvements will be conducted on the newly revised Lot 18 at this time.

Lot 18B will be developed into a similar warehousing operation to the existing Teddy Bear Fresh facility. A 20,000-sf warehouse and 2,500-sf office space will be constructed along with a 1,024-sf maintenance facility. 48 parking spaces will be provided for employees and patrons. Parking for box trucks and a loading bay will be installed to serve the warehouse.

4. STORMWATER MANAGEMENT AND ENVIRONMENTAL SITE DESIGN (ESD)

The proposed improvements have an associated LOD of 137,487-sf (3.16 ac) including grade ties, construction of a commercial entrance, and all internal site improvements.

An ESD target has been developed using Group D soils. The proposed buildings, parking, and loading area result in approximately 75,541-sf (1.73 acres) of impervious cover (55%). Utilizing table 5.3 and onsite soil conditions, a target P_E of 1.8" results in an ESD target volume of 11,239-cf.

In accordance with the Manual, available ESD techniques i.e. Alternative Surfaces, Non-Structural and Micro-Scale Practices were evaluated for use at the site. Considering the proposed site conditions, i.e. location, topography, facility orientation, soil properties, ground water elevation, traffic, economics, use of facility, construction constraints, neighboring properties and available stormwater discharge locations, the following ESD practices are proposed for the site:

- Submerged Gravel Wetland (SGW)

See Appendix A for calculations.

4.1 STORMWATER QUANTITY MANAGEMENT

Onsite quantity management will be provided, despite being upstream of existing regional stormwater management facilities. The primary outlet structure, a notched SHA 374.23 precast inlet, and the size of the SGW facility has resulted in onsite attenuation of the 2- and 10-year events. Reviewing Pre and Post development discharges at the 10-year event for all study points combined results in a decrease of 6.46 cfs for the proposed construction.

Due to the proximity of, existing, subterranean utilities along Mary's Court (based upon best available records) a precast concrete weir will be installed with minimal excavation in proximity to the roadside utility easement. This weir will discharge at a non-erosive velocity during the 100-year event, as an overflow, and is not anticipated to impact existing utilities during or after construction.

Please see appendices B & C for drainage area exhibits and HydroCAD report.

4.2 STORMWATER QUALITY

Due to the poor in-situ soils, as mapped and observed by field inspection, it appears that Submerged Gravel Wetland represents the most economical form of quality treatment. Gravel wetlands are ideal for large drainage areas that generate significant runoff as they need to maintain a saturated media.

Quality management targets, as developed above, are approximately **11,239 cf**. Utilizing the University of New Hampshire guidelines and as affirmed in a MDE supplement to the Manual, the temporary ponding in the practice results in an ESD treatment volume of **13,763 cf**.

ESD practices were evaluated for applicability to the site:

Alternative Surfaces

- Green Rooftops – Not desirable or economical for industrial warehouse uses.
- Permeable Pavements – Permeable pavements require significant maintenance and are not desirable for commercial applications or where there is repeated truck loading.
- Reinforced Turf - Reinforced turf areas are commonly used for emergency equipment access or for areas that receive minimal vehicular use. Reinforced turf is not desirable for commercial applications.

Nonstructural practices

- Disconnection of Rooftop Runoff – Insufficient greenspaces onsite that meet the design criterion for the successful implementation of this practice.
- Disconnection of Non-Rooftop Runoff – Insufficient greenspaces onsite that meet the design criterion for the successful implementation of this practice.
- Sheetflow to Conservation Area – No existing or proposed conservation areas onsite.

Micro-scale practices

- Rainwater Harvesting – Opportunities for on-site reuse of harvested rainwater is limited. Irrigation is not proposed for the site. Operations and maintenance, especially during cold-weather periods, is also a concern.
- **Submerged Gravel Wetlands** – This practice is best suited for sites with a high groundwater table and poor soils, which appear to be present. The large, impervious, drainage area contributing runoff will assist in ensuring saturation of the gravel media.
- Landscape Infiltration – There is not a significant infiltration potential within the project LOD.
- Infiltration Berms – The requirements of the proposed development do not leave enough room for the implementation of this practice.
- Dry Wells – The site appears to exhibit elevated ground water and poor infiltration soils, eliminating this practice as an option.
- Micro-Bioretenion – This practice will provide significant treatment. Maintenance for this practice is reasonable. Hydrologic C & D soils necessitate an underdrain. Unfortunately, existing grades do not allow for functional underdrains onsite. Adequate separation from groundwater also appears a challenge.
- Rain Gardens – This practice is better suited for residential environments.

- Bio-Swales – This practice provides the required treatment, is relatively easy to construct and maintain, and will enhance existing site drainage patterns. Again, adequate separation from groundwater appears a challenge.

A Submerged Gravel Wetland providing treatment and conveyance is ideal for this site. Such practices represent the most cost-effective and practical solution for quality management where in-situ soils severely limit infiltration-based practices.

5. CONCLUSION

This stormwater management analysis indicates that the proposed design will successfully meet stormwater quality requirements with quantity management being previously satisfied at the time of the industrial park subdivision.

APPENDIX A

Environmental Site Design Calculations

ESD Target for Site Development

Earthen Disturbance (LOD) = 3.16 acre = 137,487 sf (excluding offsite utility work)

Onsite Soils in LOD: "HSG D"

Proposed Buildings, Parking, Sidewalks, & Entrance = 75,541 sf

Impervious I = 55%

$R_v = 0.05 + 0.009 (I) = 0.05 + 0.009 (55\%) = 0.545$

Based on I = 55%: HSG C $P_E = 1.8''$

$$ESD_{V_Total_Target} = \frac{(P_e)(R_v)(A)}{12} = \frac{(1.8)(0.545)(137,487)}{12} = \mathbf{11,239 \text{ cf}}$$

Submerged Gravel Wetland (M-2)

$$ESD_{Ponding} = \frac{(Area \text{ at Temporary Ponding Elevation} + Floor Area)}{2} \times \text{Ponding Depth} = \frac{(12,718 + 14,808)}{2} \times 1.00 = \mathbf{13,763 \text{ cf}}$$

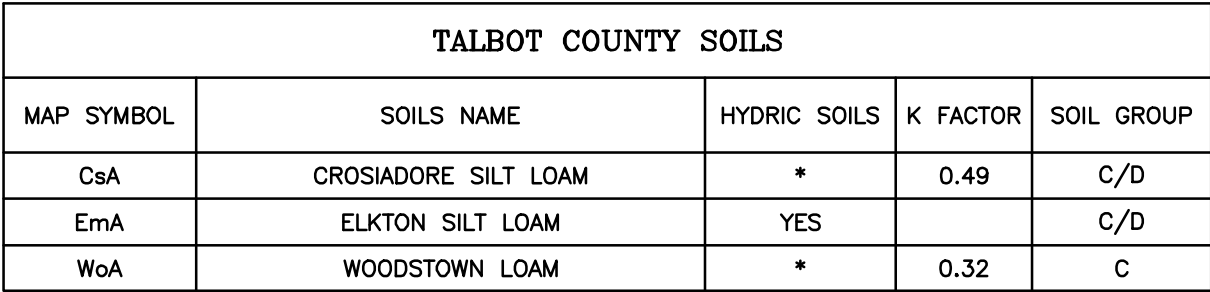
$ESD_{Media} = 0 \text{ cf}$ (Per UNH Guidance)

$$ESD_{Provided} = ESD_{Ponding} + ESD_{Media} = 4,479 + 0 = \mathbf{13,763 \text{ cf}}$$

$ESD_v (\text{provided}) > ESD_v (\text{target})$

APPENDIX B

Drainage Area Exhibits



AREA #	AREA (SF)	TOTAL Tc (MINUTES)	IMPERVIOUS (%)	DESCRIPTION
EX-1	30,496	30.50	0	MEADOW/CROPS
EX-2	25,640	22.60	0	MEADOW/CROPS
EX-3	78,547	16.10	0	MEADOW/CROPS

APPROVED: _____

TOWN OF EASTON – PLANNING & ZONING DATE _____

APPROVED: _____

TOWN OF EASTON – TOWN ENGINEER DATE _____

APPROVED: _____

EASTON UTILITIES – ENGINEER DATE _____

[illegible]

WARNING!

THE LOCATIONS OF EXISTING UTILITIES AS SHOWN ON THIS PLAN ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF THE EXISTING UTILITIES PRIOR TO BEGINNING CONSTRUCTION. QUANTITIES SHOWN ON THIS PLAN ARE FOR INFORMATIONAL AND PERMITTING PURPOSES ONLY. THE CONTRACTOR SHALL VERIFY ALL QUANTITIES TO HIS OWN SATISFACTION PRIOR TO BEGINNING CONSTRUCTION.

THE CONTRACTOR SHALL TEST PIT AND LOCATE EXISTING UTILITIES UNDERGROUND PRIOR TO THE BEGINNING OF CONSTRUCTION AND REPORT THE RESULTS TO THE CITY DEPT. OF PUBLIC WORKS OF ANY POSSIBLE CONFLICT AND REQUEST THE RELOCATION OF THE EXISTING UTILITIES PRIOR TO BEGINNING ANY WORK ON-SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY RELOCATION EXPENSE.



Lane Engineering, LLC

Established 1986

Civil Engineers • Land Planning • Land Surveyors



E-mail: general@lanc.com

117 Boy St.	Easton, MD 21601	(410) 822-8003
15 Washington St.	Centerville, MD 21617	(410) 221-0818
354 Pennsylvania Ave.	Centerville, MD 21617	(410) 758-2095

SEAL _____

DATE _____

PRE-DEVELOPMENT DRAINAGE AREA MAP

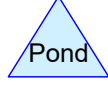
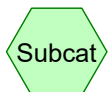
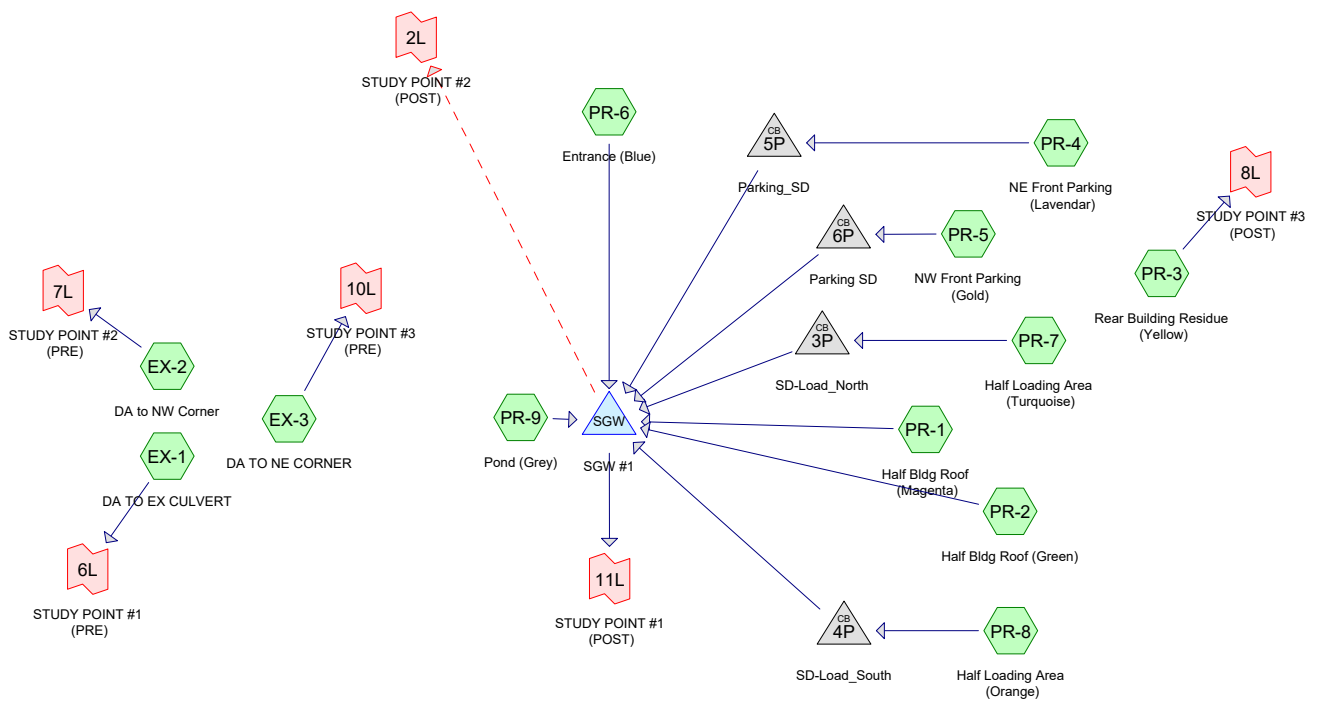
FOR
LOT 18
TALBOT COMMERCE PARK
IN THE TOWN OF EASTON
TALBOT COUNTY, MARYLAND
TAX MAP 25 GRID 22 PARCEL 46 LOT 18

ISSUED/REVISED FOR:	DATE:	BY:
SKETCH SITE PLAN	02/01/23	BCE
PLANNING COMMISSION PACKET	02/25/23	BCE

SHEET No. —	2/01/23
SCALE: AS NOTED	JOB No. 220342
	FILE No. A037

APPENDIX C

HydroCAD Quantity Management Report



Routing Diagram for 220342-TeddyBear-Sketch HydroCAD
 Prepared by Lane Engineering, LLC, Printed 2/26/2023
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220342-TeddyBear-Sketch HydroCAD

Type II 24-hr 2-yr Rainfall=3.40"

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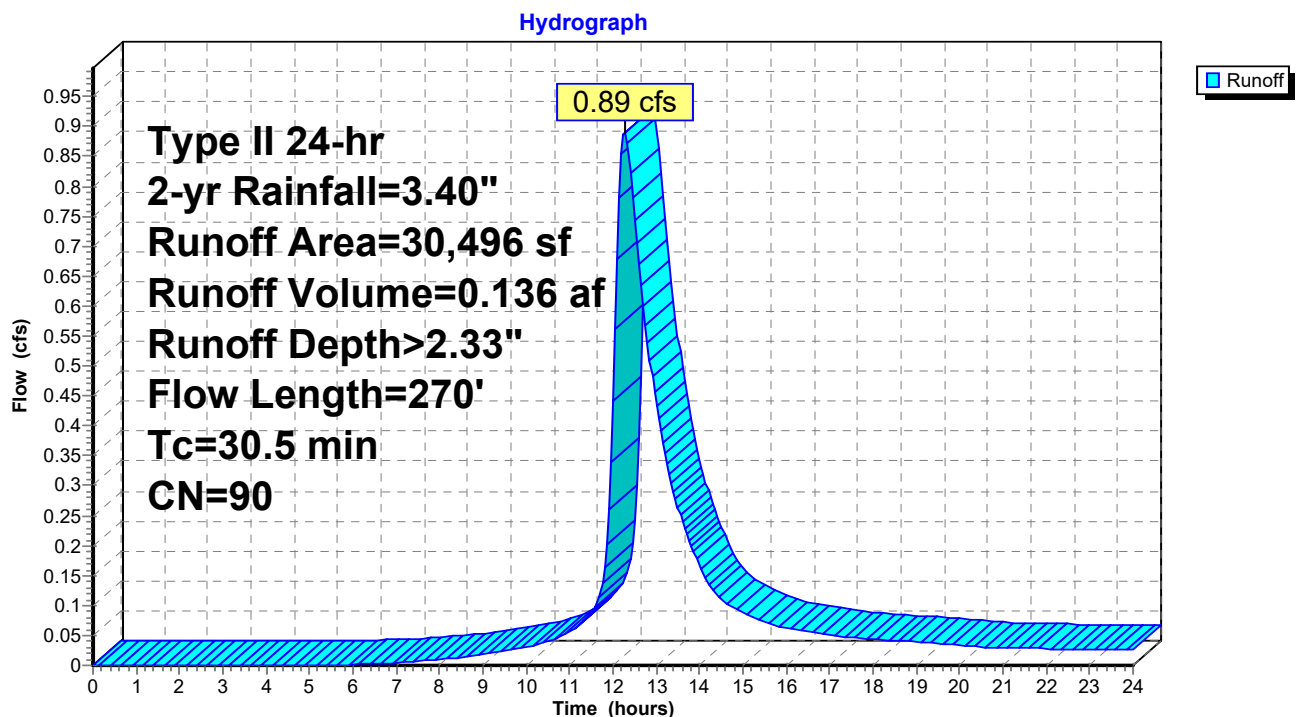
Summary for Subcatchment EX-1: DA TO EX CULVERT

Runoff = 0.89 cfs @ 12.27 hrs, Volume= 0.136 af, Depth> 2.33"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.40"

Area (sf)	CN	Description
30,496	90	Fallow, crop residue, Good, HSG D
30,496		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.6	183	0.0100	0.10		Sheet Flow, Vacant Farmed Parcel Grass: Dense n= 0.240 P2= 3.40"
0.9	87	0.0050	1.61	4.34	Channel Flow, Ex Ag Ditch Area= 2.7 sf Perim= 11.4' r= 0.24' n= 0.025 Earth, clean & winding
30.5	270	Total			

Subcatchment EX-1: DA TO EX CULVERT

220342-TeddyBear-Sketch HydroCAD

Type II 24-hr 2-yr Rainfall=3.40"

Prepared by Lane Engineering, LLC

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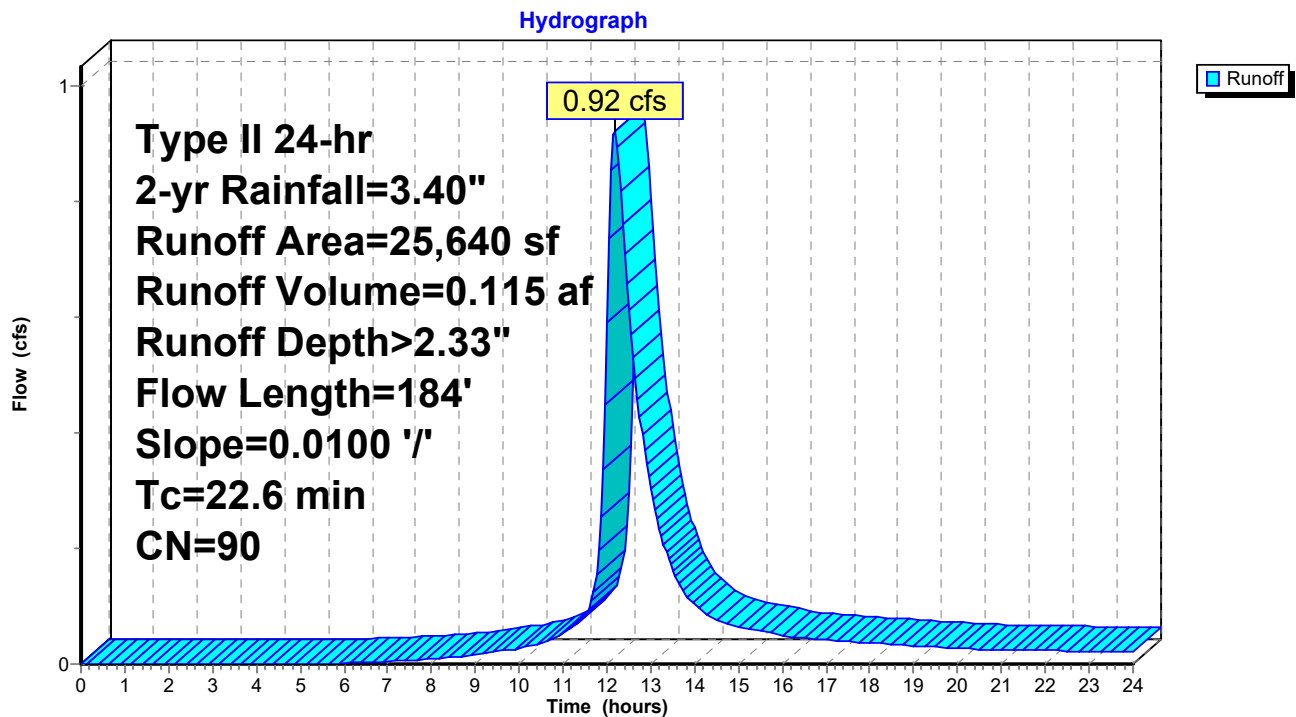
Summary for Subcatchment EX-2: DA to NW Corner

Runoff = 0.92 cfs @ 12.17 hrs, Volume= 0.115 af, Depth> 2.33"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.40"

Area (sf)	CN	Description
25,640	90	Fallow, crop residue, Good, HSG D
25,640		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.6	184	0.0100	0.14		Sheet Flow, AG Field Cultivated: Residue>20% n= 0.170 P2= 3.40"

Subcatchment EX-2: DA to NW Corner

220342-TeddyBear-Sketch HydroCAD

Type II 24-hr 2-yr Rainfall=3.40"

Prepared by Lane Engineering, LLC

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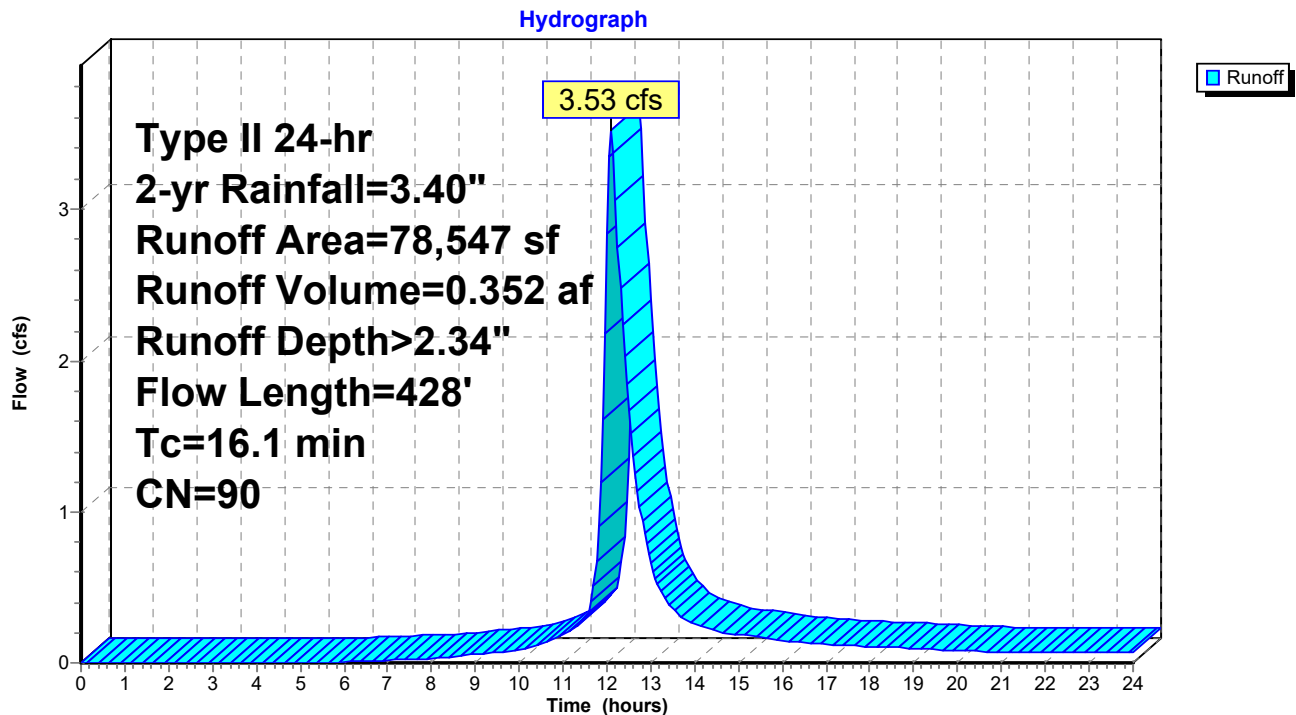
Summary for Subcatchment EX-3: DA TO NE CORNER

Runoff = 3.53 cfs @ 12.10 hrs, Volume= 0.352 af, Depth> 2.34"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.40"

Area (sf)	CN	Description
78,547	90	Fallow, crop residue, Good, HSG D
78,547		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.6	89	0.0100	0.12		Sheet Flow, AG Field
					Cultivated: Residue>20% n= 0.170 P2= 3.40"
3.5	339	0.0050	1.61	4.34	Channel Flow, Ex Ag Ditch
					Area= 2.7 sf Perim= 11.4' r= 0.24' n= 0.025
16.1	428	Total			

Subcatchment EX-3: DA TO NE CORNER

220342-TeddyBear-Sketch HydroCAD

Type II 24-hr 2-yr Rainfall=3.40"

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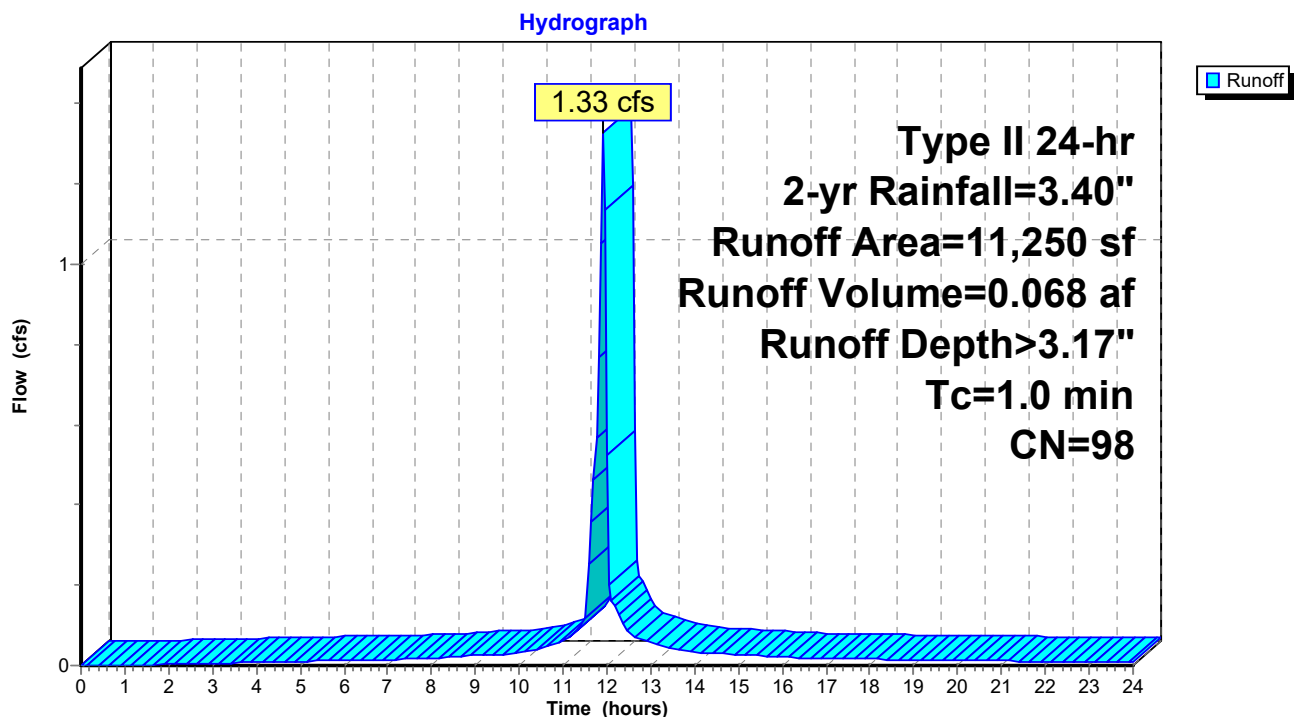
Summary for Subcatchment PR-1: Half Bldg Roof (Magenta)

Runoff = 1.33 cfs @ 11.90 hrs, Volume= 0.068 af, Depth> 3.17"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	11,250	98	Roof
	11,250		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0					Direct Entry, Roof

Subcatchment PR-1: Half Bldg Roof (Magenta)

220342-TeddyBear-Sketch HydroCAD

Type II 24-hr 2-yr Rainfall=3.40"

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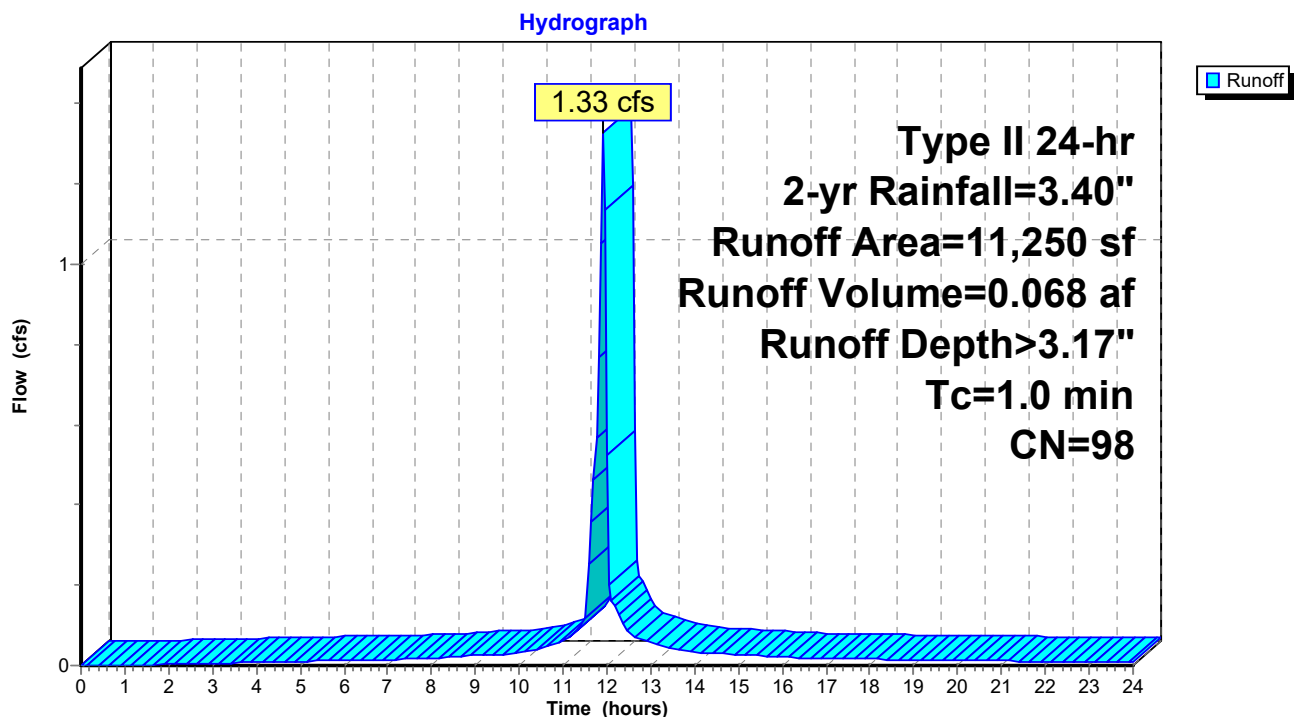
Summary for Subcatchment PR-2: Half Bldg Roof (Green)

Runoff = 1.33 cfs @ 11.90 hrs, Volume= 0.068 af, Depth> 3.17"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	11,250	98	Roof
	11,250		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0					Direct Entry, Roof

Subcatchment PR-2: Half Bldg Roof (Green)

220342-TeddyBear-Sketch HydroCAD

Type II 24-hr 2-yr Rainfall=3.40"

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Summary for Subcatchment PR-3: Rear Building Residue (Yellow)

Runoff = 0.58 cfs @ 12.09 hrs, Volume= 0.055 af, Depth> 1.55"

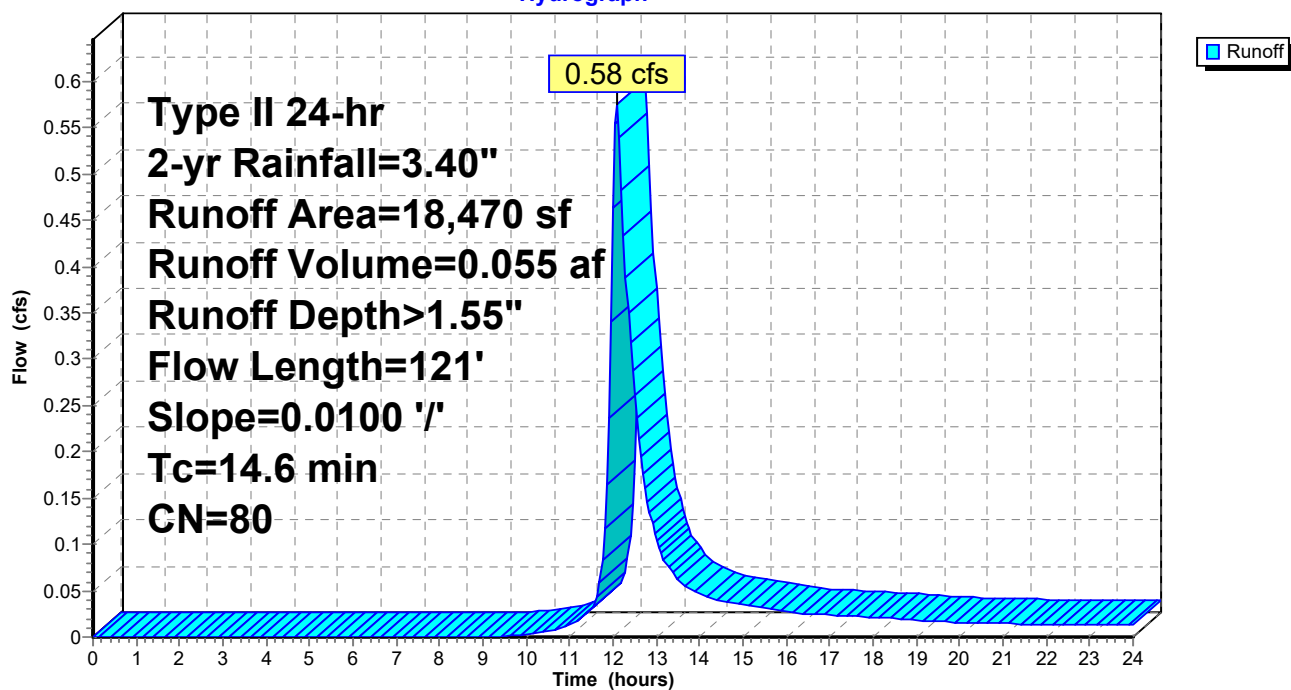
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.40"

Area (sf)	CN	Description
18,470	80	>75% Grass cover, Good, HSG D
18,470		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.6	121	0.0100	0.14		Sheet Flow, Lawn Grass: Short n= 0.150 P2= 3.40"

Subcatchment PR-3: Rear Building Residue (Yellow)

Hydrograph



220342-TeddyBear-Sketch HydroCAD

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Type II 24-hr 2-yr Rainfall=3.40"

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Summary for Subcatchment PR-4: NE Front Parking (Lavendar)

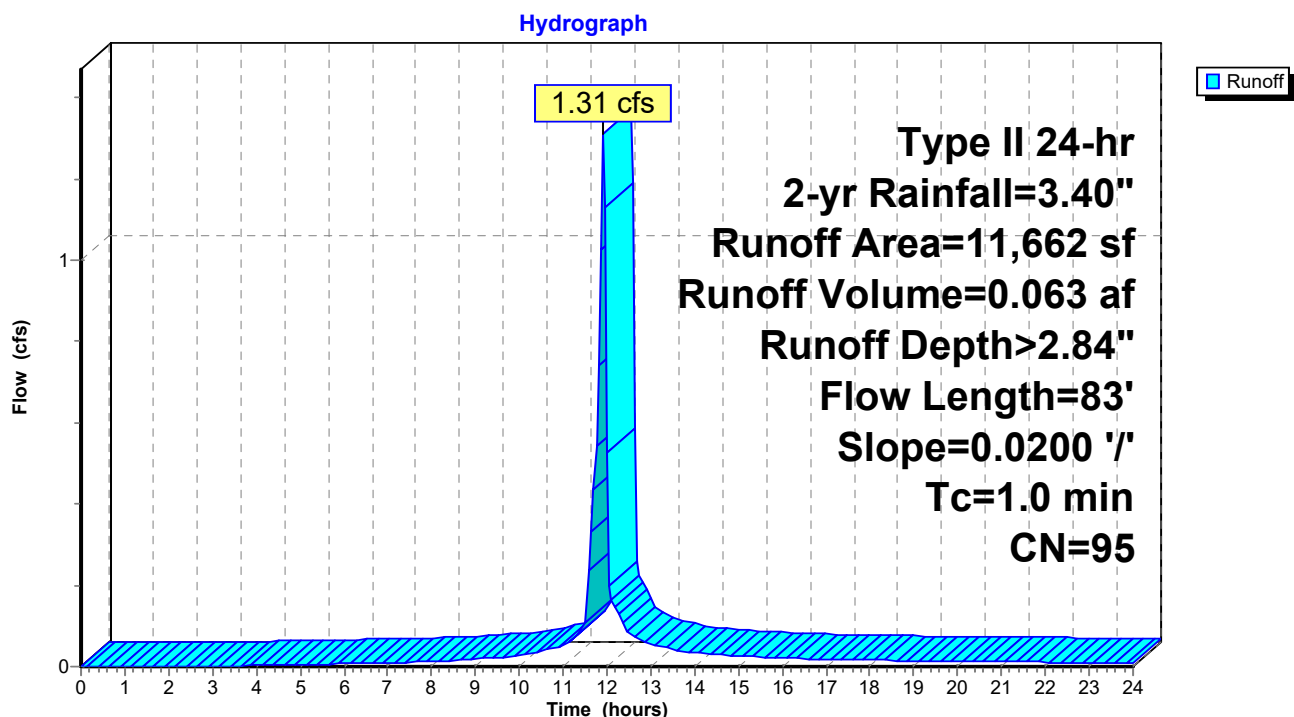
Runoff = 1.31 cfs @ 11.91 hrs, Volume= 0.063 af, Depth> 2.84"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	9,613	98	Asphalt
	2,049	80	>75% Grass cover, Good, HSG D
	11,662	95	Weighted Average
	2,049		17.57% Pervious Area
	9,613		82.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	83	0.0200	1.37		Sheet Flow, Asphalt
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment PR-4: NE Front Parking (Lavendar)



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Type II 24-hr 2-yr Rainfall=3.40"

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Summary for Subcatchment PR-5: NW Front Parking (Gold)

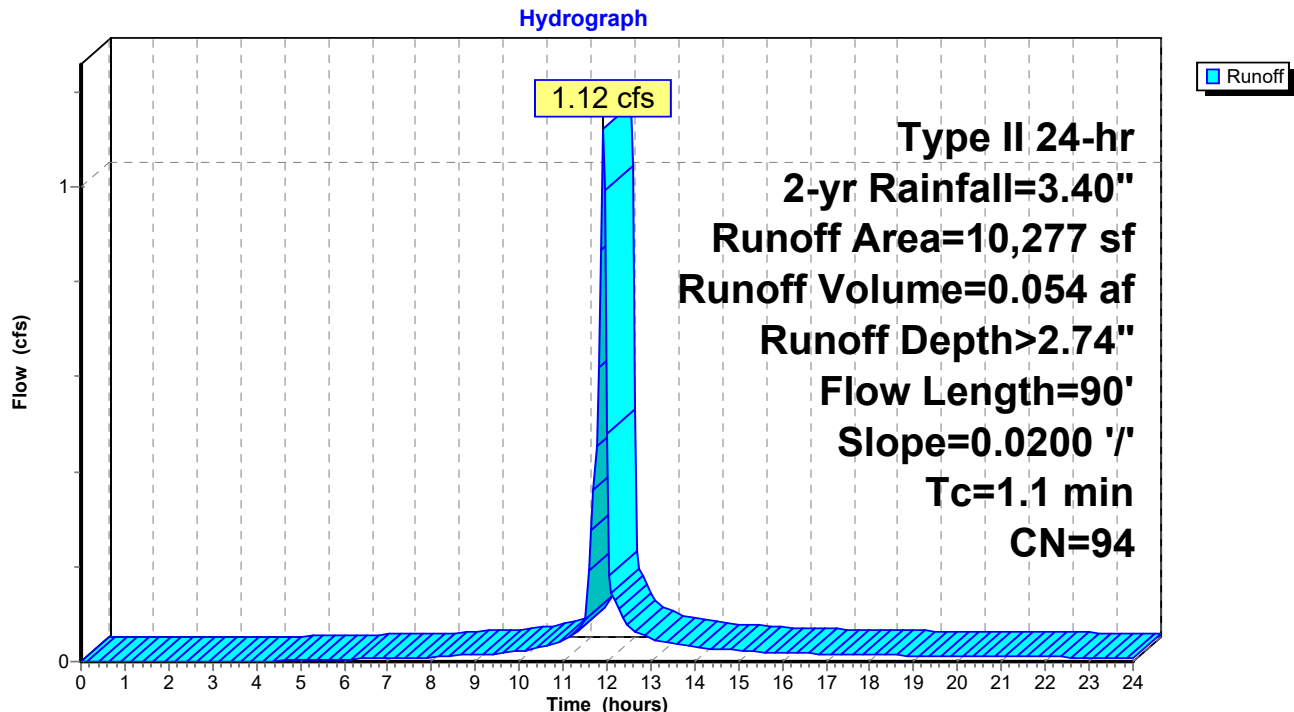
Runoff = 1.12 cfs @ 11.91 hrs, Volume= 0.054 af, Depth> 2.74"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	8,112	98	PARKING
	2,165	80	>75% Grass cover, Good, HSG D
	10,277	94	Weighted Average
	2,165		21.07% Pervious Area
	8,112		78.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	90	0.0200	1.39		Sheet Flow, Parking Lot
					Smooth surfaces n= 0.011 P2= 3.40"

Subcatchment PR-5: NW Front Parking (Gold)



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Type II 24-hr 2-yr Rainfall=3.40"

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Summary for Subcatchment PR-6: Entrance (Blue)

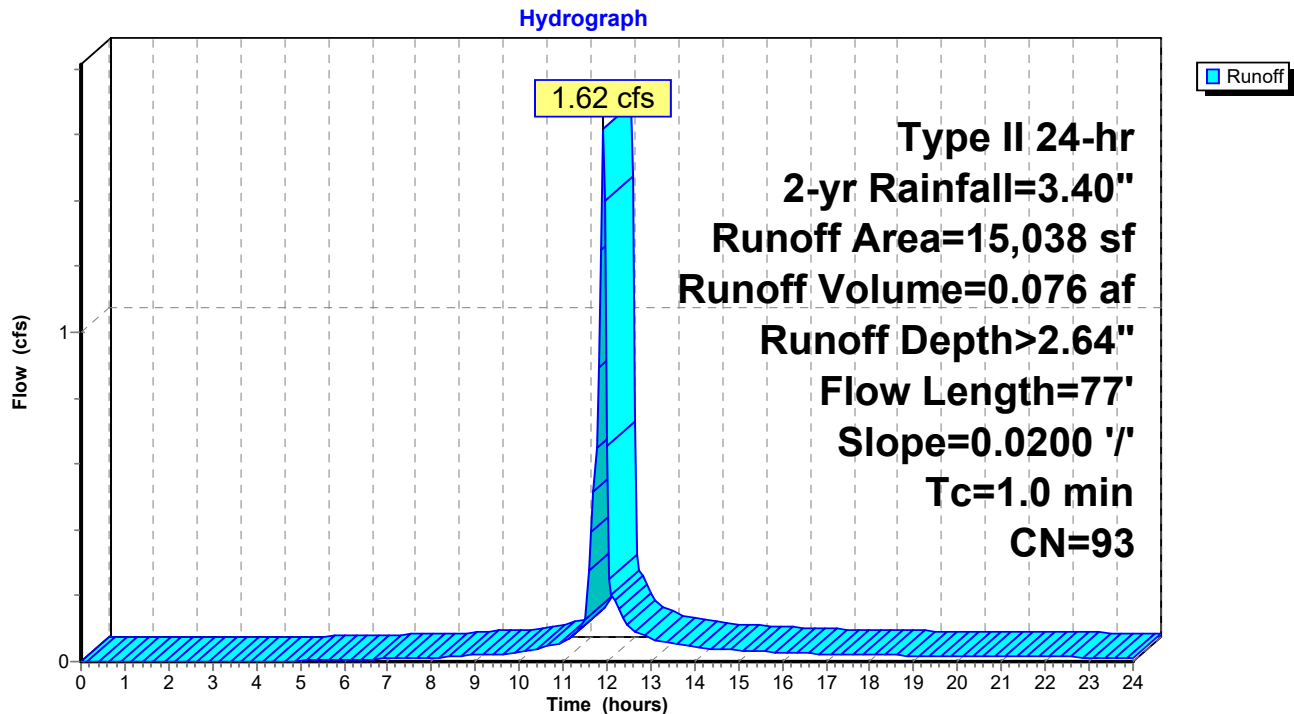
Runoff = 1.62 cfs @ 11.91 hrs, Volume= 0.076 af, Depth> 2.64"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	10,813	98	Asphalt
	4,225	80	>75% Grass cover, Good, HSG D
	15,038	93	Weighted Average
	4,225		28.10% Pervious Area
	10,813		71.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	77	0.0200	1.35		Sheet Flow, Asphalt
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment PR-6: Entrance (Blue)



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Type II 24-hr 2-yr Rainfall=3.40"

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Summary for Subcatchment PR-7: Half Loading Area (Turquoise)

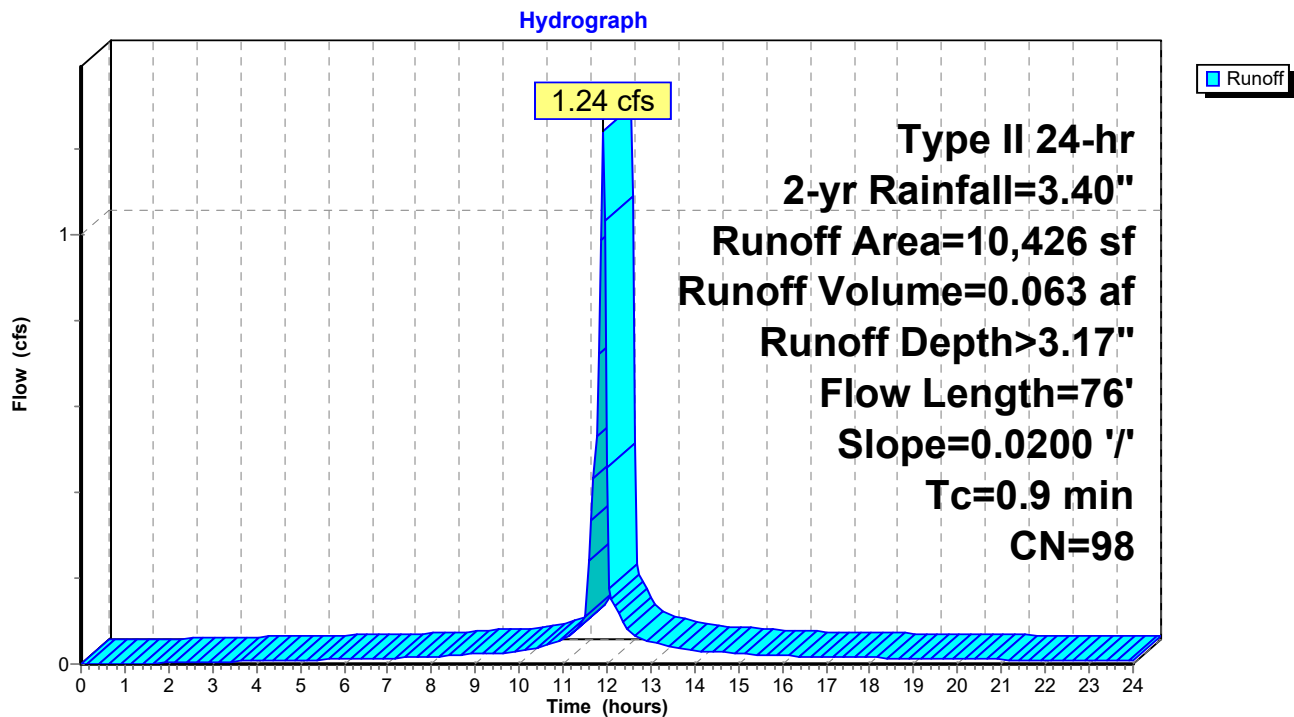
Runoff = 1.24 cfs @ 11.90 hrs, Volume= 0.063 af, Depth> 3.17"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.40"

Area (sf)	CN	Description
* 10,426	98	Asphalt
10,426		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	76	0.0200	1.34		Sheet Flow, Asphalt
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment PR-7: Half Loading Area (Turquoise)



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Type II 24-hr 2-yr Rainfall=3.40"

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Summary for Subcatchment PR-8: Half Loading Area (Orange)

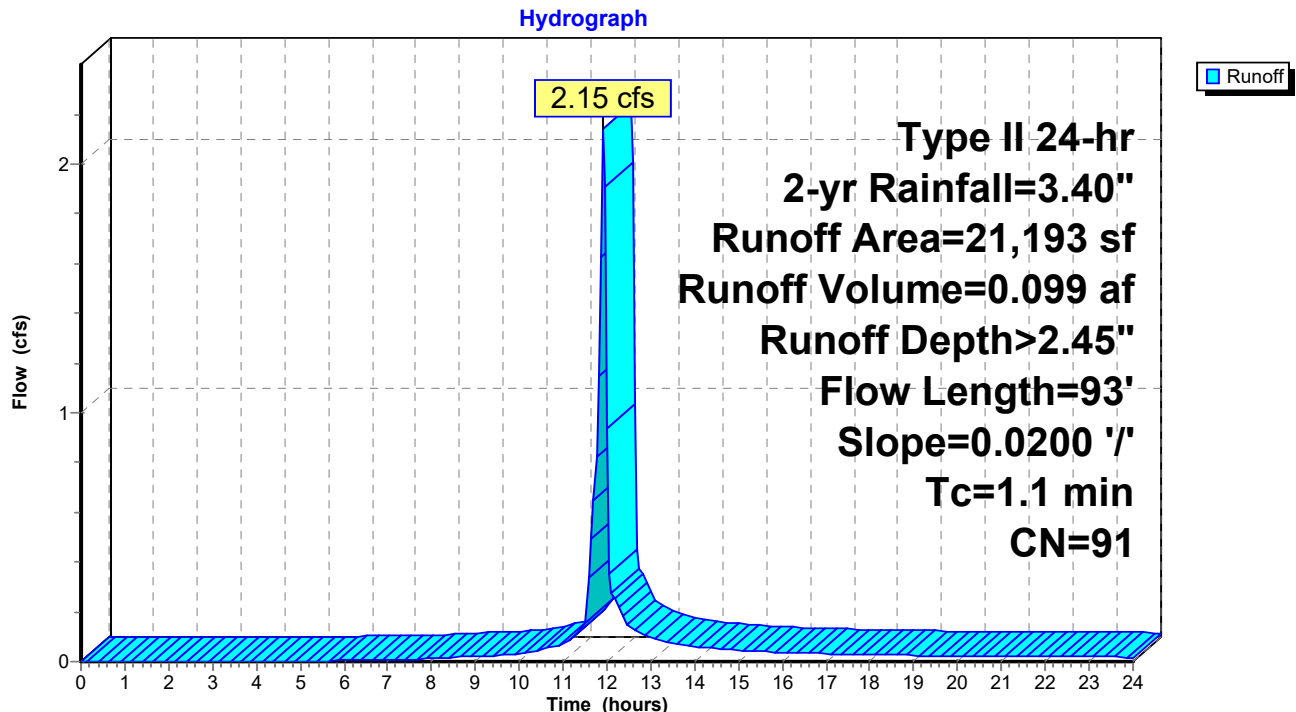
Runoff = 2.15 cfs @ 11.91 hrs, Volume= 0.099 af, Depth> 2.45"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	13,466	98	Loading Area
	7,727	80	>75% Grass cover, Good, HSG D
	21,193	91	Weighted Average
	7,727		36.46% Pervious Area
	13,466		63.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	93	0.0200	1.40		Sheet Flow, Asphalt
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment PR-8: Half Loading Area (Orange)



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Type II 24-hr 2-yr Rainfall=3.40"

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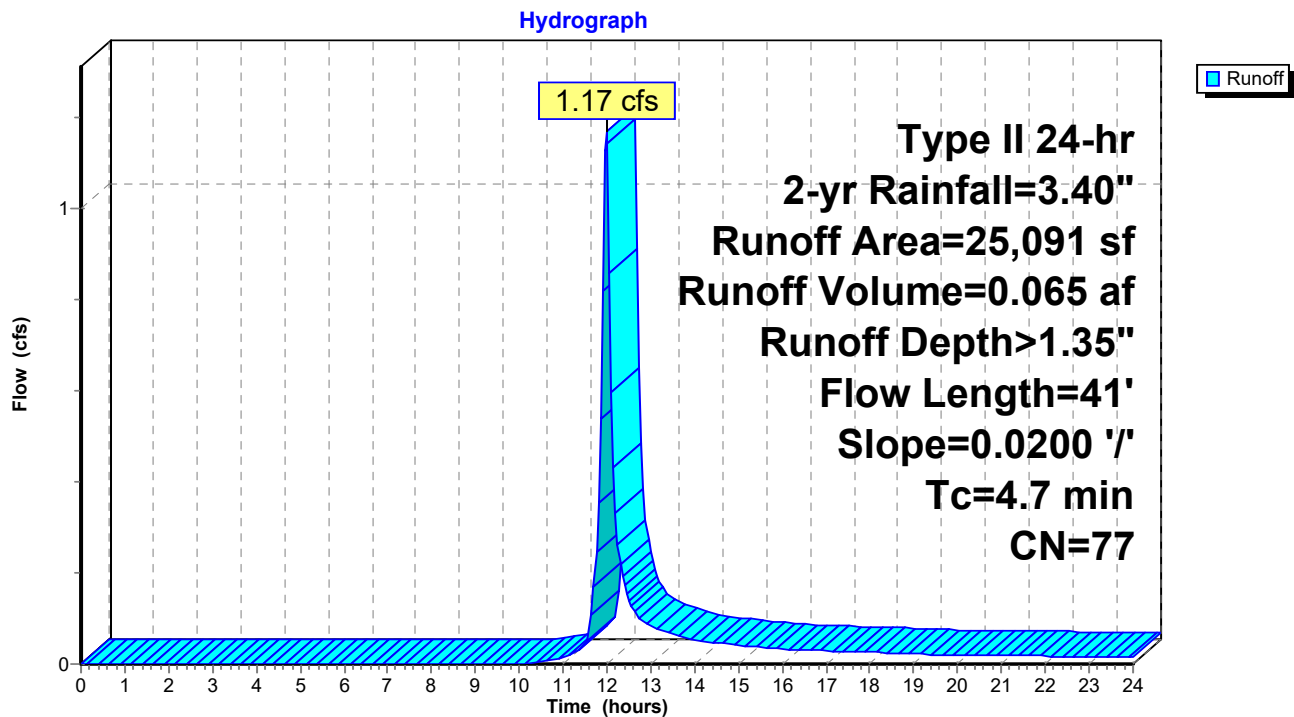
Summary for Subcatchment PR-9: Pond (Grey)

Runoff = 1.17 cfs @ 11.98 hrs, Volume= 0.065 af, Depth> 1.35"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.40"

Area (sf)	CN	Description
25,091	77	Woods, Good, HSG D
25,091		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	41	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.40"

Subcatchment PR-9: Pond (Grey)

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Type II 24-hr 2-yr Rainfall=3.40"

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Summary for Pond 3P: SD-Load_North

Inflow Area = 0.239 ac, 100.00% Impervious, Inflow Depth > 3.17" for 2-yr event
 Inflow = 1.24 cfs @ 11.90 hrs, Volume= 0.063 af
 Outflow = 1.24 cfs @ 11.90 hrs, Volume= 0.063 af, Atten= 0%, Lag= 0.0 min
 Primary = 1.24 cfs @ 11.90 hrs, Volume= 0.063 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

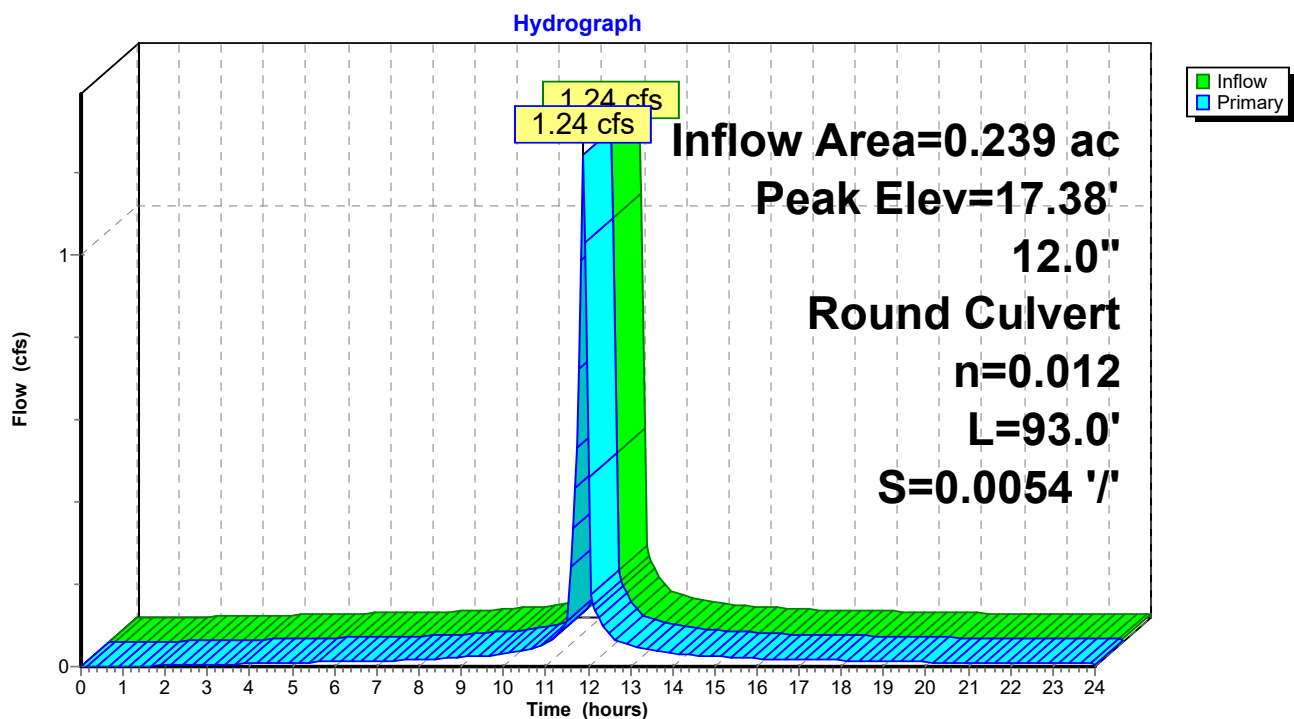
Peak Elev= 17.38' @ 19.40 hrs

Flood Elev= 18.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	16.50'	12.0" Round 12" HDPE L= 93.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 16.50' / 16.00' S= 0.0054 '/ Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.09 cfs @ 11.90 hrs HW=17.19' TW=16.75' (Dynamic Tailwater)

1=12" HDPE (Outlet Controls 1.09 cfs @ 2.68 fps)

Pond 3P: SD-Load_North

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Type II 24-hr 2-yr Rainfall=3.40"

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Stage-Area-Storage for Pond 3P: SD-Load_North

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
16.50	0	17.54	0	18.58	0
16.52	0	17.56	0	18.60	0
16.54	0	17.58	0	18.62	0
16.56	0	17.60	0	18.64	0
16.58	0	17.62	0	18.66	0
16.60	0	17.64	0	18.68	0
16.62	0	17.66	0	18.70	0
16.64	0	17.68	0	18.72	0
16.66	0	17.70	0	18.74	0
16.68	0	17.72	0	18.76	0
16.70	0	17.74	0	18.78	0
16.72	0	17.76	0	18.80	0
16.74	0	17.78	0	18.82	0
16.76	0	17.80	0	18.84	0
16.78	0	17.82	0	18.86	0
16.80	0	17.84	0	18.88	0
16.82	0	17.86	0	18.90	0
16.84	0	17.88	0		
16.86	0	17.90	0		
16.88	0	17.92	0		
16.90	0	17.94	0		
16.92	0	17.96	0		
16.94	0	17.98	0		
16.96	0	18.00	0		
16.98	0	18.02	0		
17.00	0	18.04	0		
17.02	0	18.06	0		
17.04	0	18.08	0		
17.06	0	18.10	0		
17.08	0	18.12	0		
17.10	0	18.14	0		
17.12	0	18.16	0		
17.14	0	18.18	0		
17.16	0	18.20	0		
17.18	0	18.22	0		
17.20	0	18.24	0		
17.22	0	18.26	0		
17.24	0	18.28	0		
17.26	0	18.30	0		
17.28	0	18.32	0		
17.30	0	18.34	0		
17.32	0	18.36	0		
17.34	0	18.38	0		
17.36	0	18.40	0		
17.38	0	18.42	0		
17.40	0	18.44	0		
17.42	0	18.46	0		
17.44	0	18.48	0		
17.46	0	18.50	0		
17.48	0	18.52	0		
17.50	0	18.54	0		
17.52	0	18.56	0		

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Type II 24-hr 2-yr Rainfall=3.40"

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Summary for Pond 4P: SD-Load_South

Inflow Area = 0.487 ac, 63.54% Impervious, Inflow Depth > 2.45" for 2-yr event
 Inflow = 2.15 cfs @ 11.91 hrs, Volume= 0.099 af
 Outflow = 2.15 cfs @ 11.91 hrs, Volume= 0.099 af, Atten= 0%, Lag= 0.0 min
 Primary = 2.15 cfs @ 11.91 hrs, Volume= 0.099 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

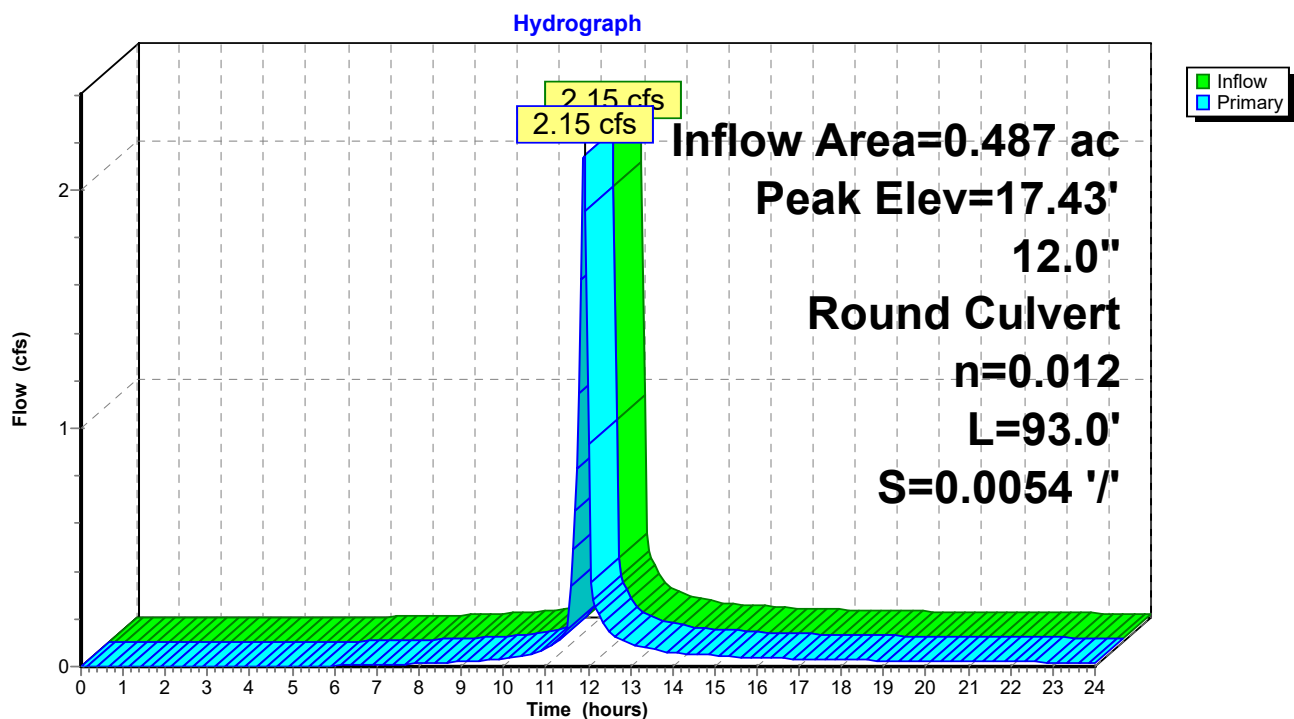
Peak Elev= 17.43' @ 11.92 hrs

Flood Elev= 18.75'

Device	Routing	Invert	Outlet Devices
#1	Primary	16.50'	12.0" Round 12" HDPE L= 93.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 16.50' / 16.00' S= 0.0054 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.99 cfs @ 11.91 hrs HW=17.42' TW=16.77' (Dynamic Tailwater)

1=12" HDPE (Outlet Controls 1.99 cfs @ 3.46 fps)

Pond 4P: SD-Load_South

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Type II 24-hr 2-yr Rainfall=3.40"

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Stage-Area-Storage for Pond 4P: SD-Load_South

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
16.50	0	17.54	0	18.58	0
16.52	0	17.56	0	18.60	0
16.54	0	17.58	0	18.62	0
16.56	0	17.60	0	18.64	0
16.58	0	17.62	0	18.66	0
16.60	0	17.64	0	18.68	0
16.62	0	17.66	0	18.70	0
16.64	0	17.68	0	18.72	0
16.66	0	17.70	0	18.74	0
16.68	0	17.72	0		
16.70	0	17.74	0		
16.72	0	17.76	0		
16.74	0	17.78	0		
16.76	0	17.80	0		
16.78	0	17.82	0		
16.80	0	17.84	0		
16.82	0	17.86	0		
16.84	0	17.88	0		
16.86	0	17.90	0		
16.88	0	17.92	0		
16.90	0	17.94	0		
16.92	0	17.96	0		
16.94	0	17.98	0		
16.96	0	18.00	0		
16.98	0	18.02	0		
17.00	0	18.04	0		
17.02	0	18.06	0		
17.04	0	18.08	0		
17.06	0	18.10	0		
17.08	0	18.12	0		
17.10	0	18.14	0		
17.12	0	18.16	0		
17.14	0	18.18	0		
17.16	0	18.20	0		
17.18	0	18.22	0		
17.20	0	18.24	0		
17.22	0	18.26	0		
17.24	0	18.28	0		
17.26	0	18.30	0		
17.28	0	18.32	0		
17.30	0	18.34	0		
17.32	0	18.36	0		
17.34	0	18.38	0		
17.36	0	18.40	0		
17.38	0	18.42	0		
17.40	0	18.44	0		
17.42	0	18.46	0		
17.44	0	18.48	0		
17.46	0	18.50	0		
17.48	0	18.52	0		
17.50	0	18.54	0		
17.52	0	18.56	0		

220342-TeddyBear-Sketch HydroCAD

Type II 24-hr 2-yr Rainfall=3.40"

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Summary for Pond 5P: Parking_SD

Inflow Area = 0.268 ac, 82.43% Impervious, Inflow Depth > 2.84" for 2-yr event
 Inflow = 1.31 cfs @ 11.91 hrs, Volume= 0.063 af
 Outflow = 1.31 cfs @ 11.91 hrs, Volume= 0.063 af, Atten= 0%, Lag= 0.0 min
 Primary = 1.31 cfs @ 11.91 hrs, Volume= 0.063 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

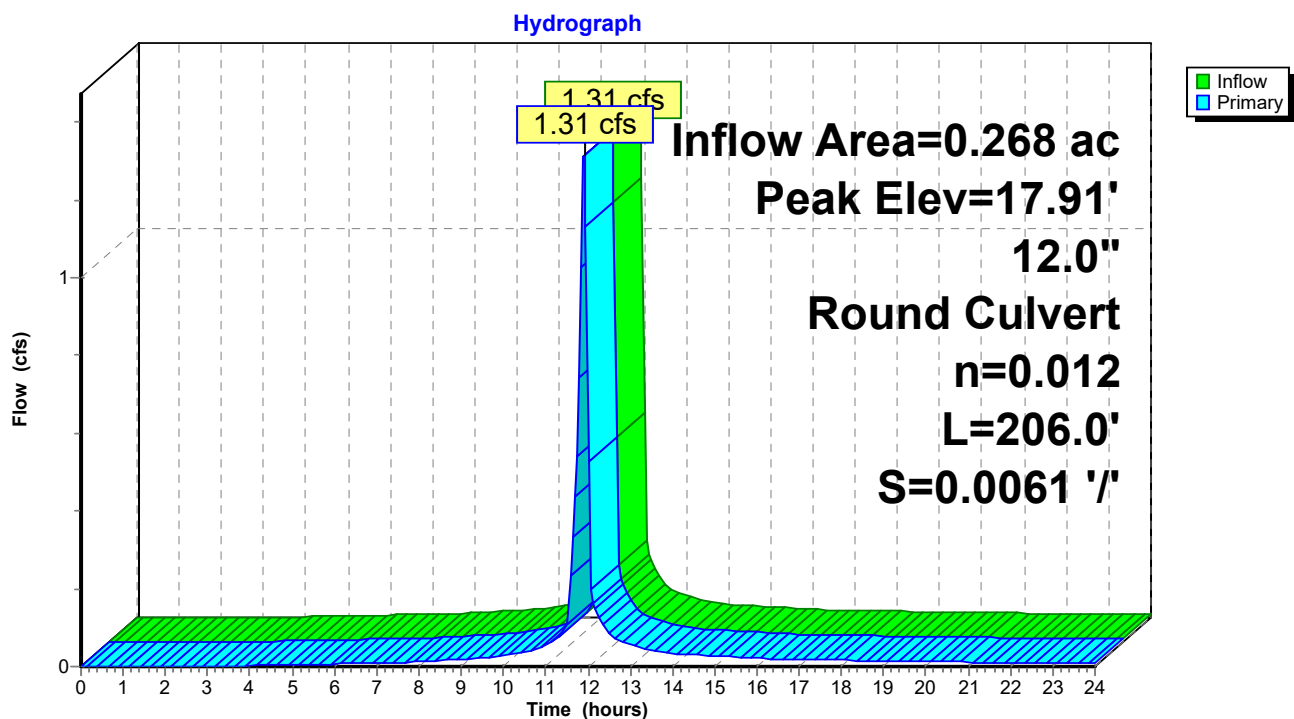
Peak Elev= 17.91' @ 11.91 hrs

Flood Elev= 18.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.25'	12.0" Round 12" HDPE L= 206.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 17.25' / 16.00' S= 0.0061 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.23 cfs @ 11.91 hrs HW=17.90' TW=16.76' (Dynamic Tailwater)

1=12" HDPE (Outlet Controls 1.23 cfs @ 3.22 fps)

Pond 5P: Parking_SD

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Type II 24-hr 2-yr Rainfall=3.40"

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Stage-Area-Storage for Pond 5P: Parking_SD

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
17.25	0	17.77	0	18.29	0
17.26	0	17.78	0	18.30	0
17.27	0	17.79	0		
17.28	0	17.80	0		
17.29	0	17.81	0		
17.30	0	17.82	0		
17.31	0	17.83	0		
17.32	0	17.84	0		
17.33	0	17.85	0		
17.34	0	17.86	0		
17.35	0	17.87	0		
17.36	0	17.88	0		
17.37	0	17.89	0		
17.38	0	17.90	0		
17.39	0	17.91	0		
17.40	0	17.92	0		
17.41	0	17.93	0		
17.42	0	17.94	0		
17.43	0	17.95	0		
17.44	0	17.96	0		
17.45	0	17.97	0		
17.46	0	17.98	0		
17.47	0	17.99	0		
17.48	0	18.00	0		
17.49	0	18.01	0		
17.50	0	18.02	0		
17.51	0	18.03	0		
17.52	0	18.04	0		
17.53	0	18.05	0		
17.54	0	18.06	0		
17.55	0	18.07	0		
17.56	0	18.08	0		
17.57	0	18.09	0		
17.58	0	18.10	0		
17.59	0	18.11	0		
17.60	0	18.12	0		
17.61	0	18.13	0		
17.62	0	18.14	0		
17.63	0	18.15	0		
17.64	0	18.16	0		
17.65	0	18.17	0		
17.66	0	18.18	0		
17.67	0	18.19	0		
17.68	0	18.20	0		
17.69	0	18.21	0		
17.70	0	18.22	0		
17.71	0	18.23	0		
17.72	0	18.24	0		
17.73	0	18.25	0		
17.74	0	18.26	0		
17.75	0	18.27	0		
17.76	0	18.28	0		

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Type II 24-hr 2-yr Rainfall=3.40"

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Summary for Pond 6P: Parking SD

Inflow Area = 0.236 ac, 78.93% Impervious, Inflow Depth > 2.74" for 2-yr event
 Inflow = 1.12 cfs @ 11.91 hrs, Volume= 0.054 af
 Outflow = 1.12 cfs @ 11.91 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.0 min
 Primary = 1.12 cfs @ 11.91 hrs, Volume= 0.054 af

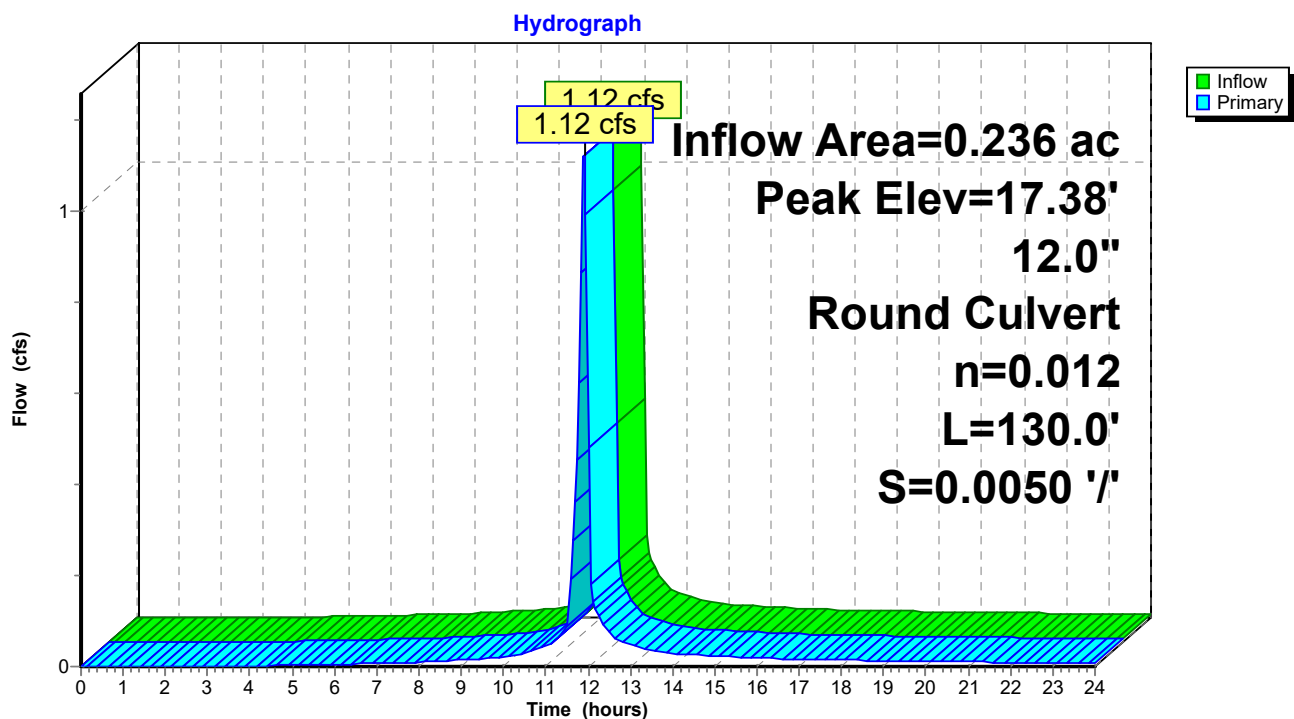
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 17.38' @ 19.40 hrs

Flood Elev= 19.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	16.65'	12.0" Round 12" HPDE L= 130.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 16.65' / 16.00' S= 0.0050 '/ Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.99 cfs @ 11.91 hrs HW=17.30' TW=16.76' (Dynamic Tailwater)
 ↳ **12" HPDE** (Outlet Controls 0.99 cfs @ 2.61 fps)

Pond 6P: Parking SD

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Stage-Area-Storage for Pond 6P: Parking SD

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
16.65	0	17.69	0	18.73	0
16.67	0	17.71	0	18.75	0
16.69	0	17.73	0	18.77	0
16.71	0	17.75	0	18.79	0
16.73	0	17.77	0	18.81	0
16.75	0	17.79	0	18.83	0
16.77	0	17.81	0	18.85	0
16.79	0	17.83	0	18.87	0
16.81	0	17.85	0	18.89	0
16.83	0	17.87	0	18.91	0
16.85	0	17.89	0	18.93	0
16.87	0	17.91	0	18.95	0
16.89	0	17.93	0	18.97	0
16.91	0	17.95	0	18.99	0
16.93	0	17.97	0		
16.95	0	17.99	0		
16.97	0	18.01	0		
16.99	0	18.03	0		
17.01	0	18.05	0		
17.03	0	18.07	0		
17.05	0	18.09	0		
17.07	0	18.11	0		
17.09	0	18.13	0		
17.11	0	18.15	0		
17.13	0	18.17	0		
17.15	0	18.19	0		
17.17	0	18.21	0		
17.19	0	18.23	0		
17.21	0	18.25	0		
17.23	0	18.27	0		
17.25	0	18.29	0		
17.27	0	18.31	0		
17.29	0	18.33	0		
17.31	0	18.35	0		
17.33	0	18.37	0		
17.35	0	18.39	0		
17.37	0	18.41	0		
17.39	0	18.43	0		
17.41	0	18.45	0		
17.43	0	18.47	0		
17.45	0	18.49	0		
17.47	0	18.51	0		
17.49	0	18.53	0		
17.51	0	18.55	0		
17.53	0	18.57	0		
17.55	0	18.59	0		
17.57	0	18.61	0		
17.59	0	18.63	0		
17.61	0	18.65	0		
17.63	0	18.67	0		
17.65	0	18.69	0		
17.67	0	18.71	0		

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Type II 24-hr 2-yr Rainfall=3.40"

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Summary for Pond SGW: SGW #1

Inflow Area = 2.667 ac, 64.49% Impervious, Inflow Depth > 2.50" for 2-yr event
 Inflow = 10.97 cfs @ 11.91 hrs, Volume= 0.557 af
 Outflow = 0.12 cfs @ 19.36 hrs, Volume= 0.103 af, Atten= 99%, Lag= 446.8 min
 Primary = 0.12 cfs @ 19.36 hrs, Volume= 0.103 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 17.38' @ 19.36 hrs Surf.Area= 16,526 sf Storage= 20,061 cf

Plug-Flow detention time= 556.4 min calculated for 0.103 af (18% of inflow)
 Center-of-Mass det. time= 347.7 min (1,125.2 - 777.5)

Volume	Invert	Avail.Storage	Storage Description		
#1	16.00'	30,960 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
16.00	12,718	687.0	0	0	12,718
18.00	18,417	737.0	30,960	30,960	18,560

Device	Routing	Invert	Outlet Devices
#1	Primary	15.66'	12.0" Round 12" HDPE L= 23.3' Box, 0° wingwalls, square crown edge, Ke= 0.700 Inlet / Outlet Invert= 15.66' / 15.55' S= 0.0047 ' S= 0.0047 ' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	17.00'	2.0" W x 9.0" H Vert. Orifice/Grate C= 0.600
#3	Device 1	17.75'	10.7' long Rim SHA 374.23 2 End Contraction(s)
#4	Secondary	17.60'	10.0' long x 0.7' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32

Primary OutFlow Max=0.12 cfs @ 19.36 hrs HW=17.38' TW=0.00' (Dynamic Tailwater)

↑ **1=12" HDPE** (Passes 0.12 cfs of 3.68 cfs potential flow)
 ↑ **2=Orifice/Grate** (Orifice Controls 0.12 cfs @ 1.97 fps)
 ↑ **3=Rim SHA 374.23** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=16.00' TW=0.00' (Dynamic Tailwater)

↑ **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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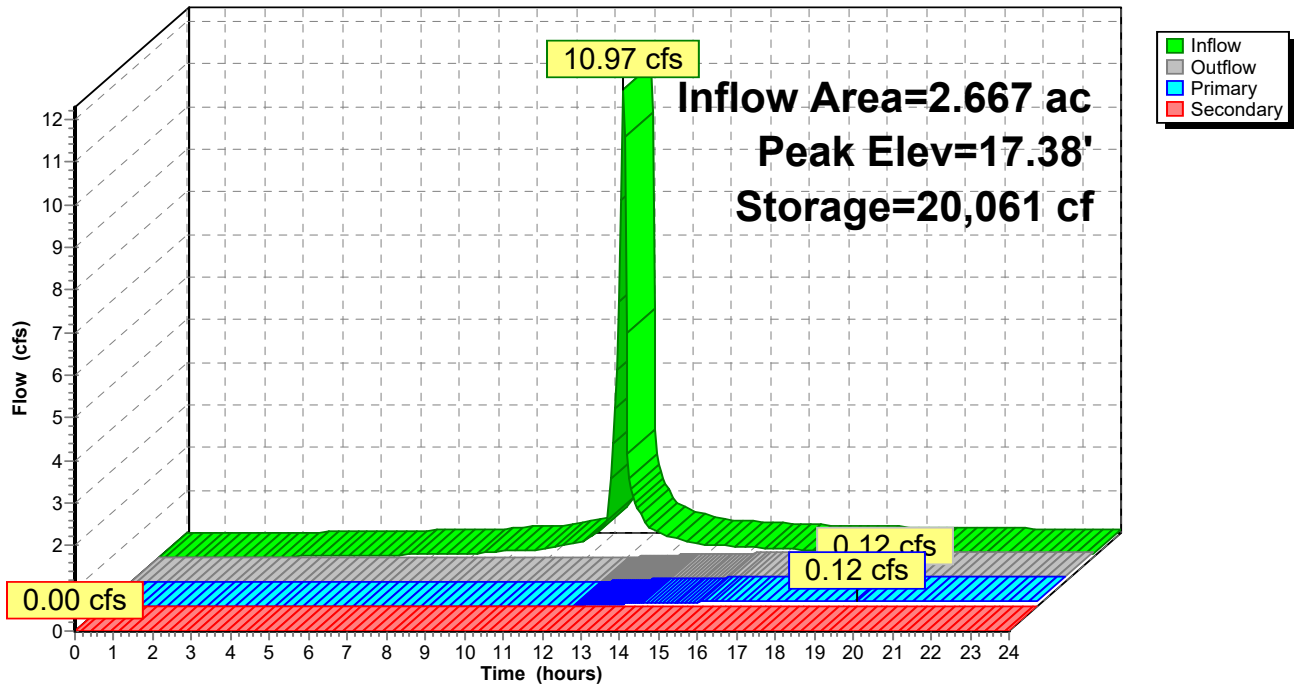
Type II 24-hr 2-yr Rainfall=3.40"

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Pond SGW: SGW #1

Hydrograph



220342-TeddyBear-Sketch HydroCAD

Type II 24-hr 2-yr Rainfall=3.40"

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Stage-Area-Storage for Pond SGW: SGW #1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
16.00	12,718	0	17.04	15,550	14,675
16.02	12,770	255	17.06	15,607	14,986
16.04	12,822	511	17.08	15,665	15,299
16.06	12,874	768	17.10	15,722	15,613
16.08	12,926	1,026	17.12	15,780	15,928
16.10	12,978	1,285	17.14	15,838	16,244
16.12	13,030	1,545	17.16	15,895	16,561
16.14	13,083	1,806	17.18	15,953	16,880
16.16	13,135	2,068	17.20	16,011	17,200
16.18	13,188	2,331	17.22	16,069	17,520
16.20	13,241	2,596	17.24	16,127	17,842
16.22	13,293	2,861	17.26	16,186	18,166
16.24	13,346	3,127	17.28	16,244	18,490
16.26	13,399	3,395	17.30	16,303	18,815
16.28	13,453	3,663	17.32	16,361	19,142
16.30	13,506	3,933	17.34	16,420	19,470
16.32	13,559	4,204	17.36	16,479	19,799
16.34	13,613	4,475	17.38	16,538	20,129
16.36	13,666	4,748	17.40	16,597	20,460
16.38	13,720	5,022	17.42	16,656	20,793
16.40	13,774	5,297	17.44	16,715	21,126
16.42	13,828	5,573	17.46	16,775	21,461
16.44	13,882	5,850	17.48	16,834	21,797
16.46	13,936	6,128	17.50	16,894	22,135
16.48	13,990	6,407	17.52	16,953	22,473
16.50	14,044	6,688	17.54	17,013	22,813
16.52	14,099	6,969	17.56	17,073	23,154
16.54	14,153	7,252	17.58	17,133	23,496
16.56	14,208	7,535	17.60	17,193	23,839
16.58	14,262	7,820	17.62	17,253	24,184
16.60	14,317	8,106	17.64	17,314	24,529
16.62	14,372	8,393	17.66	17,374	24,876
16.64	14,427	8,681	17.68	17,434	25,224
16.66	14,482	8,970	17.70	17,495	25,573
16.68	14,538	9,260	17.72	17,556	25,924
16.70	14,593	9,551	17.74	17,617	26,276
16.72	14,648	9,844	17.76	17,678	26,629
16.74	14,704	10,137	17.78	17,739	26,983
16.76	14,760	10,432	17.80	17,800	27,338
16.78	14,815	10,728	17.82	17,861	27,695
16.80	14,871	11,025	17.84	17,922	28,053
16.82	14,927	11,323	17.86	17,984	28,412
16.84	14,983	11,622	17.88	18,045	28,772
16.86	15,040	11,922	17.90	18,107	29,133
16.88	15,096	12,223	17.92	18,169	29,496
16.90	15,152	12,526	17.94	18,231	29,860
16.92	15,209	12,829	17.96	18,293	30,225
16.94	15,265	13,134	17.98	18,355	30,592
16.96	15,322	13,440	18.00	18,417	30,960
16.98	15,379	13,747			
17.00	15,436	14,055			
17.02	15,493	14,364			

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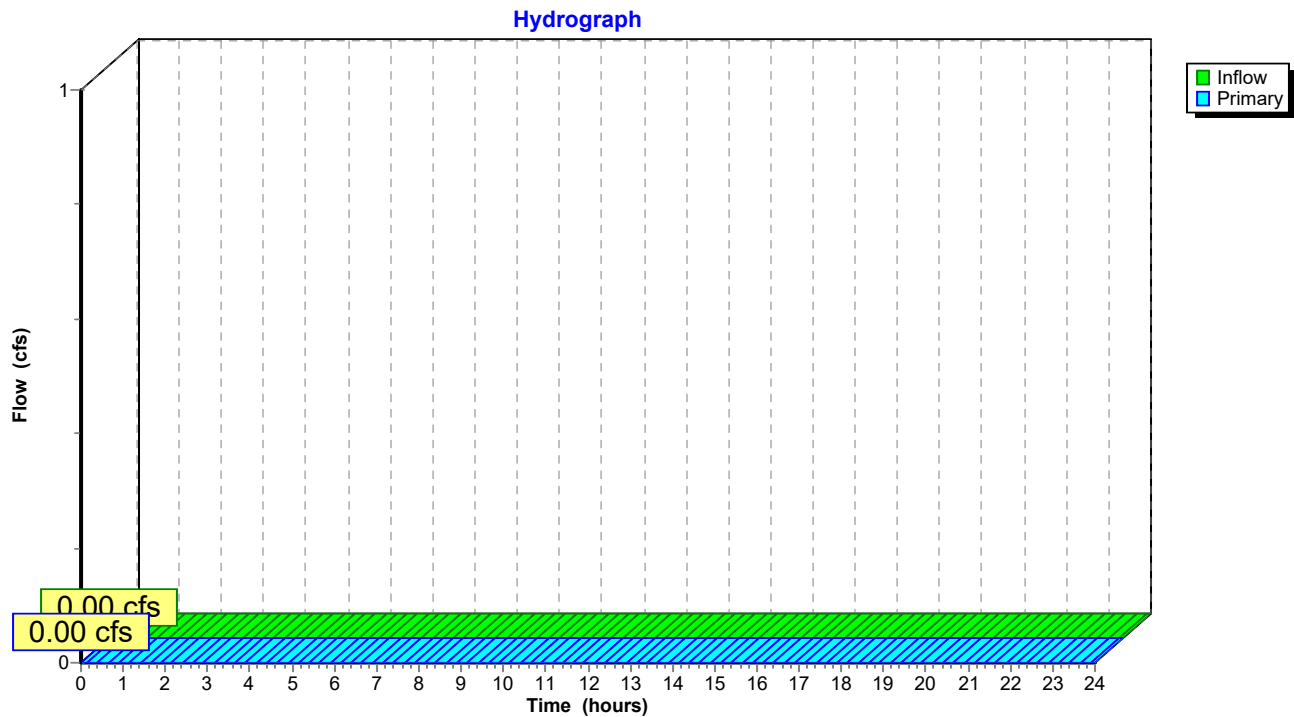
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Summary for Link 2L: STUDY POINT #2 (POST)

Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 2L: STUDY POINT #2 (POST)



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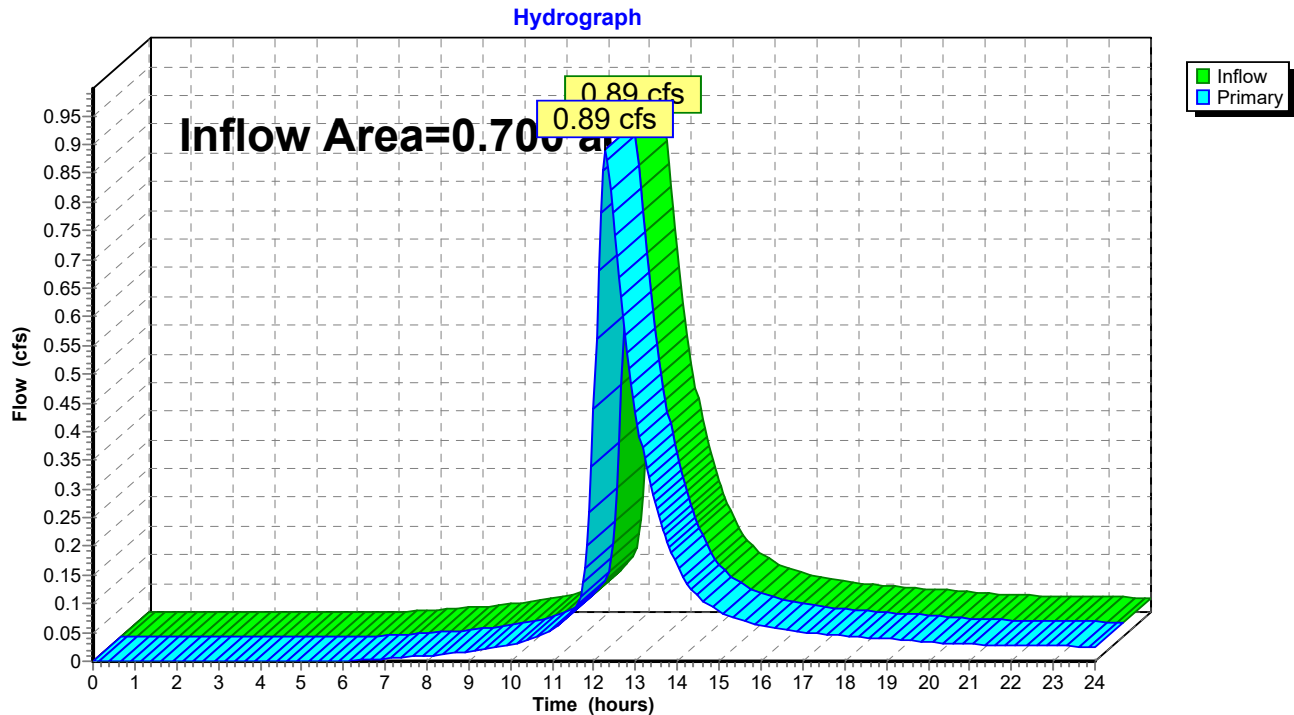
Page 26

Summary for Link 6L: STUDY POINT #1 (PRE)

Inflow Area = 0.700 ac, 0.00% Impervious, Inflow Depth > 2.33" for 2-yr event
Inflow = 0.89 cfs @ 12.27 hrs, Volume= 0.136 af
Primary = 0.89 cfs @ 12.27 hrs, Volume= 0.136 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 6L: STUDY POINT #1 (PRE)



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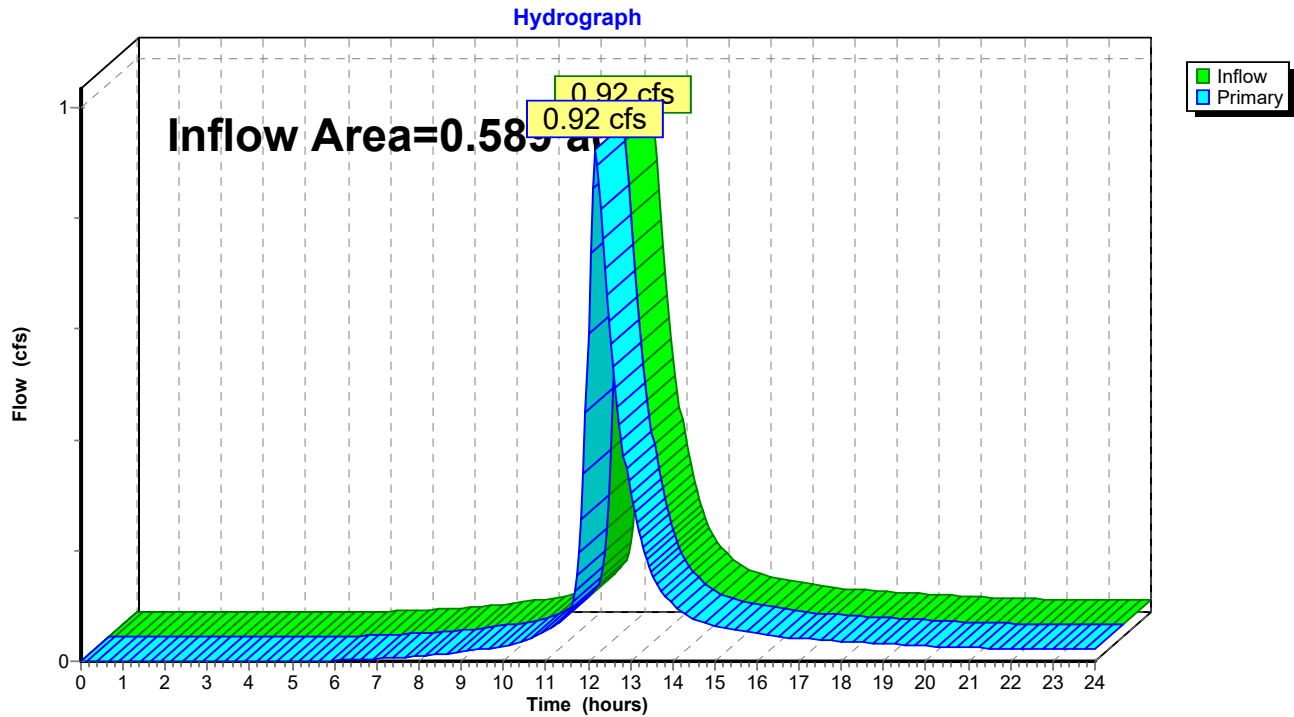
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Summary for Link 7L: STUDY POINT #2 (PRE)

Inflow Area = 0.589 ac, 0.00% Impervious, Inflow Depth > 2.33" for 2-yr event
Inflow = 0.92 cfs @ 12.17 hrs, Volume= 0.115 af
Primary = 0.92 cfs @ 12.17 hrs, Volume= 0.115 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 7L: STUDY POINT #2 (PRE)



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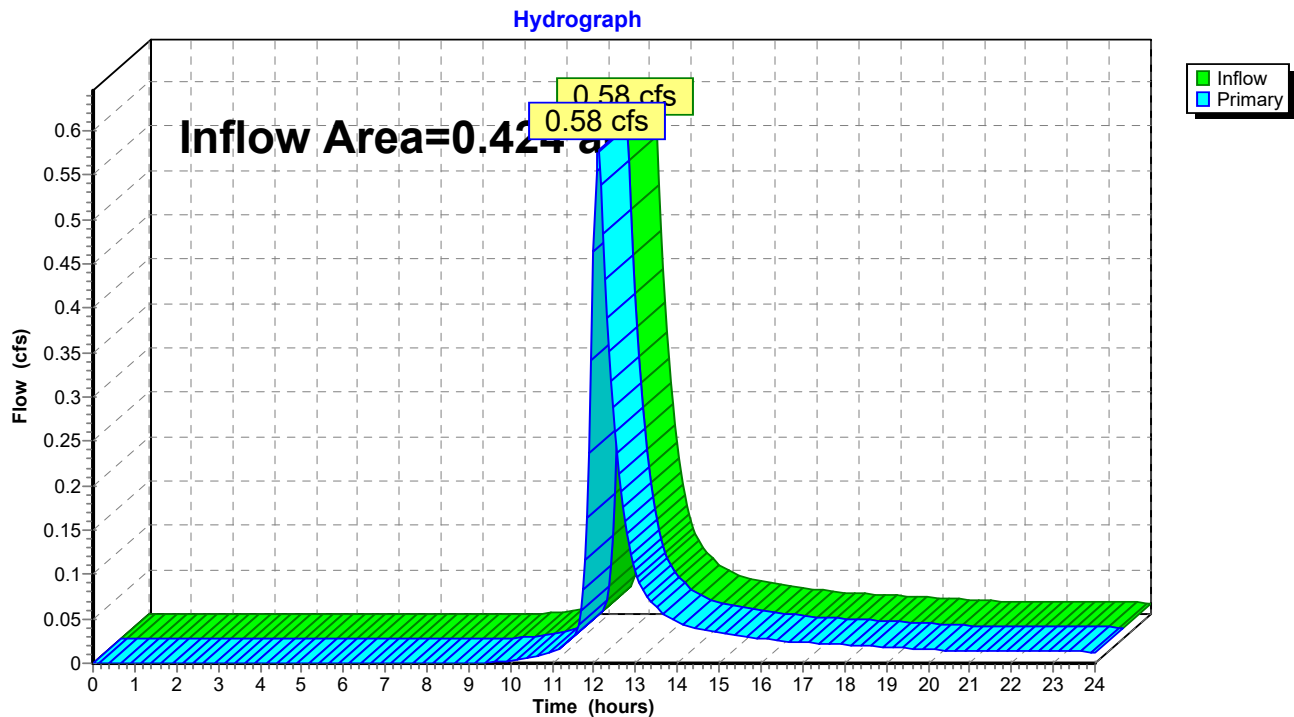
Page 28

Summary for Link 8L: STUDY POINT #3 (POST)

Inflow Area = 0.424 ac, 0.00% Impervious, Inflow Depth > 1.55" for 2-yr event
Inflow = 0.58 cfs @ 12.09 hrs, Volume= 0.055 af
Primary = 0.58 cfs @ 12.09 hrs, Volume= 0.055 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 8L: STUDY POINT #3 (POST)



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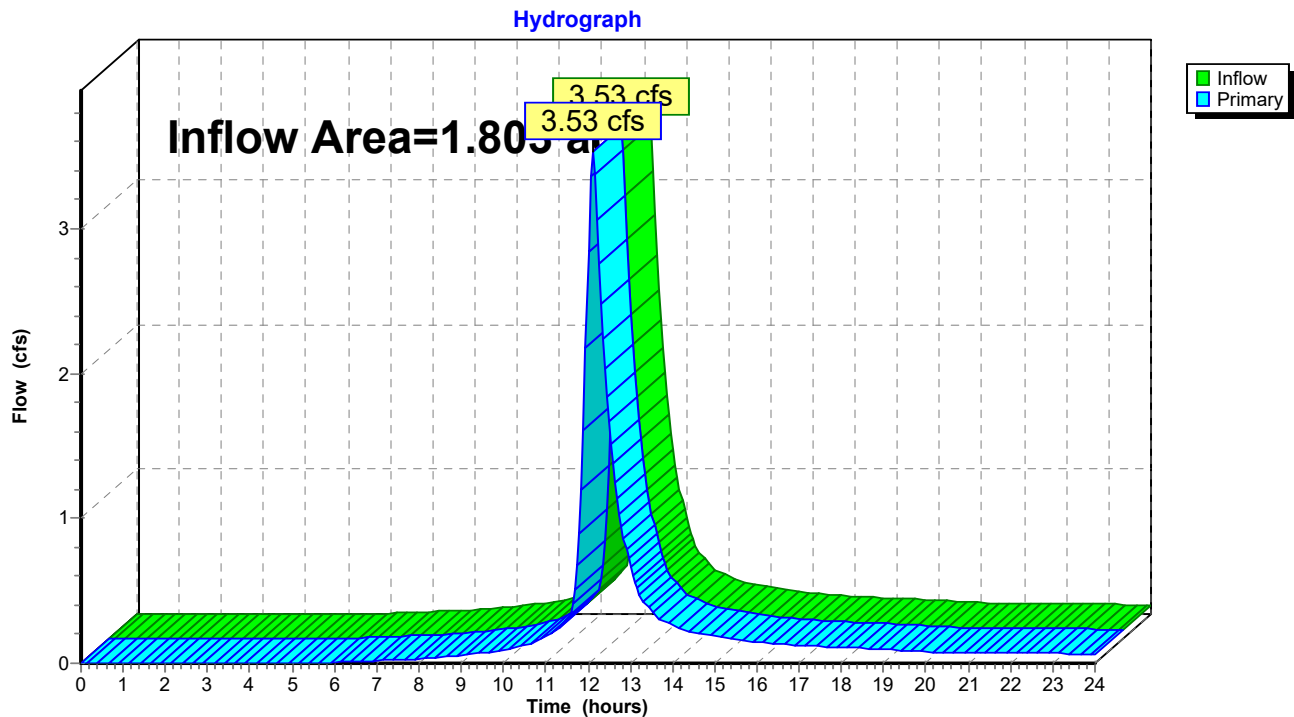
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Summary for Link 10L: STUDY POINT #3 (PRE)

Inflow Area = 1.803 ac, 0.00% Impervious, Inflow Depth > 2.34" for 2-yr event
Inflow = 3.53 cfs @ 12.10 hrs, Volume= 0.352 af
Primary = 3.53 cfs @ 12.10 hrs, Volume= 0.352 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 10L: STUDY POINT #3 (PRE)



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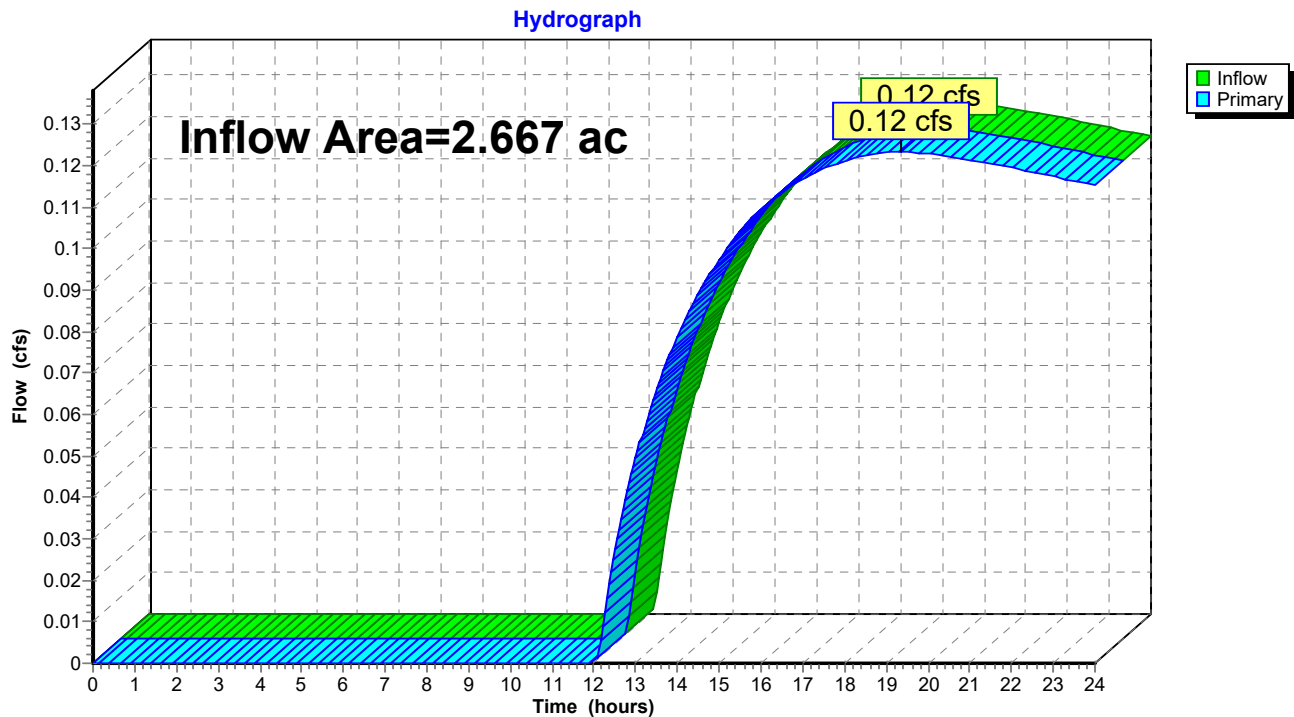
Page 30

Summary for Link 11L: STUDY POINT #1 (POST)

Inflow Area = 2.667 ac, 64.49% Impervious, Inflow Depth > 0.46" for 2-yr event
Inflow = 0.12 cfs @ 19.36 hrs, Volume= 0.103 af
Primary = 0.12 cfs @ 19.36 hrs, Volume= 0.103 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 11L: STUDY POINT #1 (POST)



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Type II 24-hr 10-yr Rainfall=5.30"

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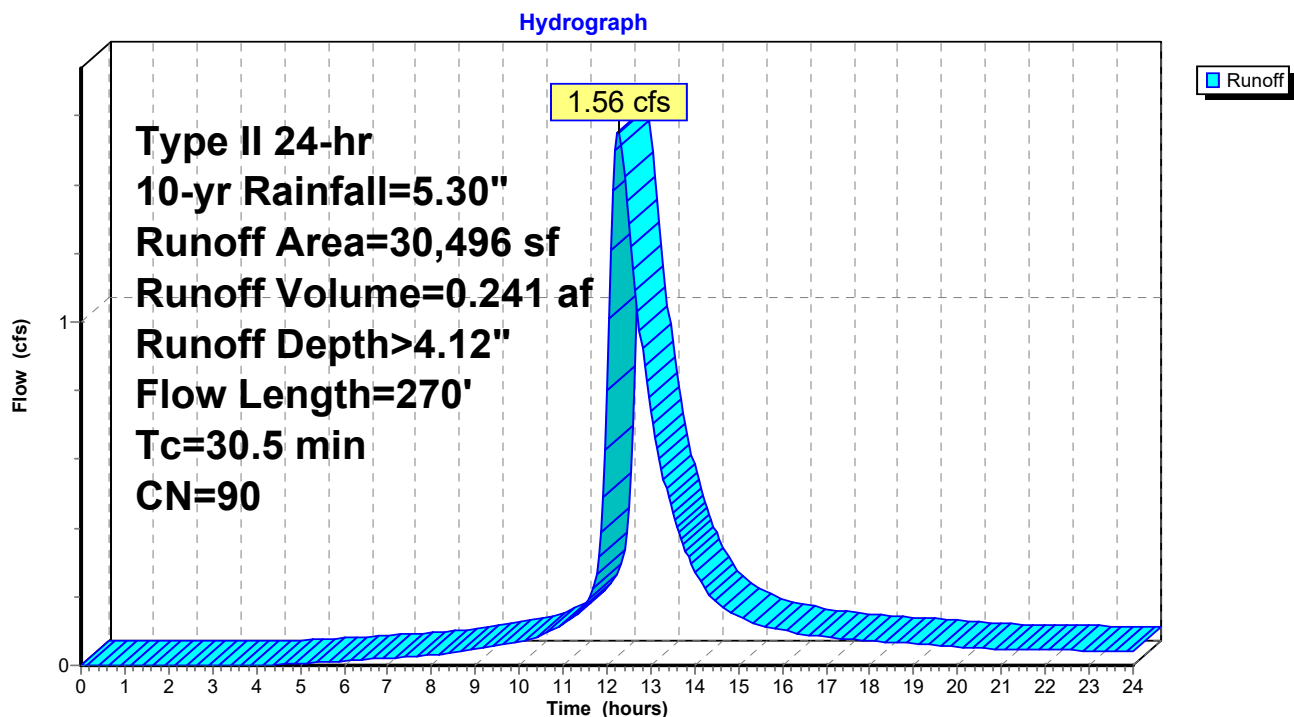
Summary for Subcatchment EX-1: DA TO EX CULVERT

Runoff = 1.56 cfs @ 12.27 hrs, Volume= 0.241 af, Depth> 4.12"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.30"

Area (sf)	CN	Description
30,496	90	Fallow, crop residue, Good, HSG D
30,496		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.6	183	0.0100	0.10		Sheet Flow, Vacant Farmed Parcel Grass: Dense n= 0.240 P2= 3.40"
0.9	87	0.0050	1.61	4.34	Channel Flow, Ex Ag Ditch Area= 2.7 sf Perim= 11.4' r= 0.24' n= 0.025 Earth, clean & winding
30.5	270	Total			

Subcatchment EX-1: DA TO EX CULVERT

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Type II 24-hr 10-yr Rainfall=5.30"

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Summary for Subcatchment EX-2: DA to NW Corner

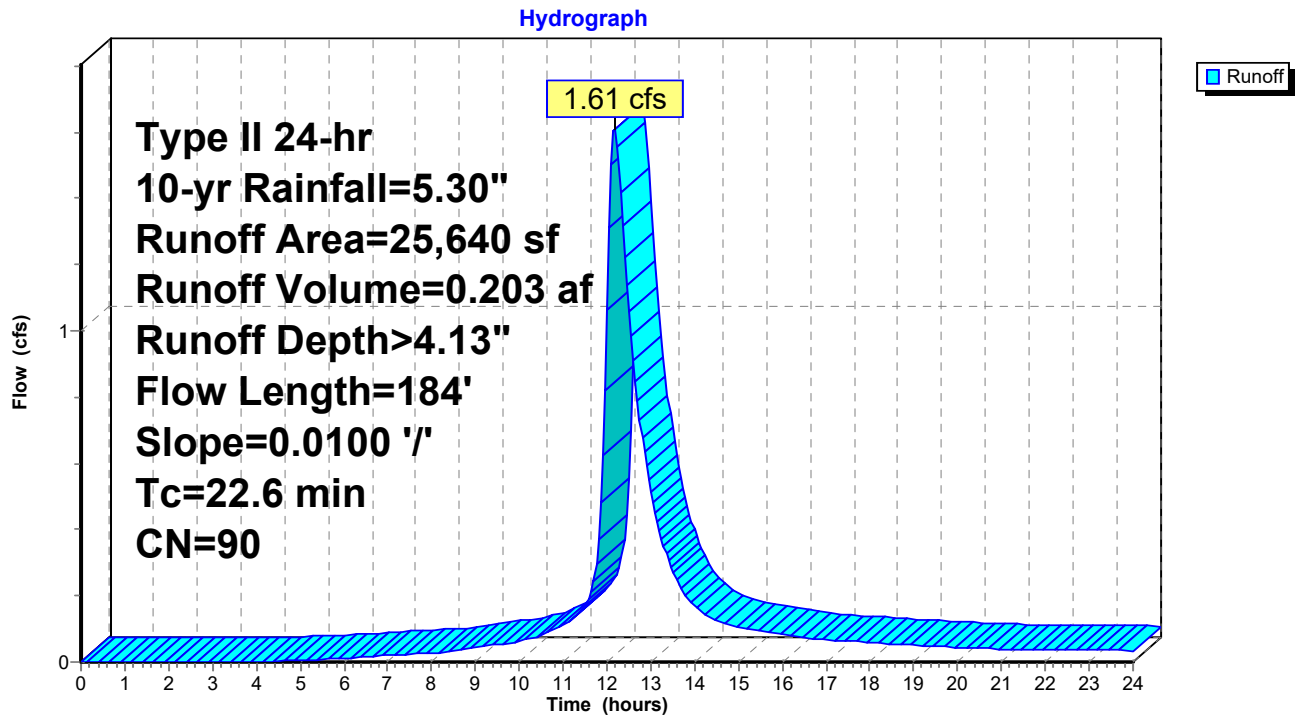
Runoff = 1.61 cfs @ 12.17 hrs, Volume= 0.203 af, Depth> 4.13"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.30"

Area (sf)	CN	Description
25,640	90	Fallow, crop residue, Good, HSG D
25,640		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.6	184	0.0100	0.14		Sheet Flow, AG Field
Cultivated: Residue>20% n= 0.170 P2= 3.40"					

Subcatchment EX-2: DA to NW Corner



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Type II 24-hr 10-yr Rainfall=5.30"

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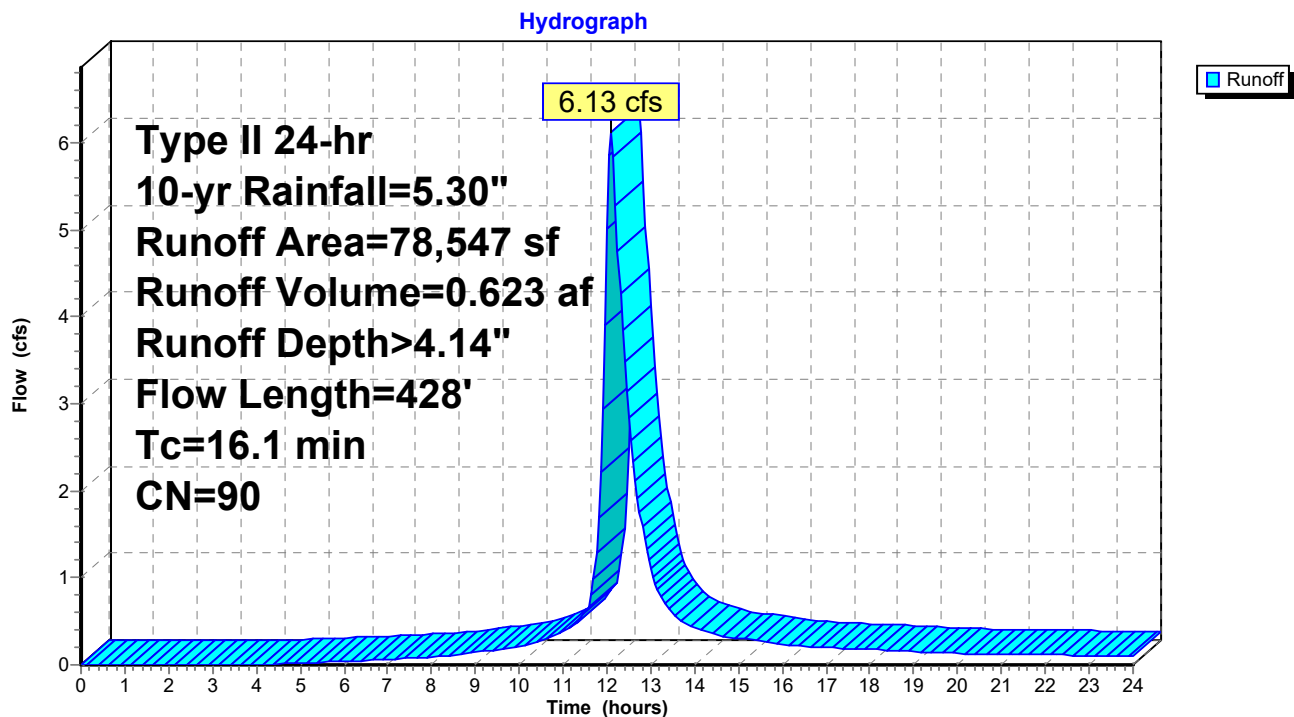
Summary for Subcatchment EX-3: DA TO NE CORNER

Runoff = 6.13 cfs @ 12.10 hrs, Volume= 0.623 af, Depth> 4.14"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.30"

Area (sf)	CN	Description
78,547	90	Fallow, crop residue, Good, HSG D
78,547		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.6	89	0.0100	0.12		Sheet Flow, AG Field Cultivated: Residue>20% n= 0.170 P2= 3.40"
3.5	339	0.0050	1.61	4.34	Channel Flow, Ex Ag Ditch Area= 2.7 sf Perim= 11.4' r= 0.24' n= 0.025
16.1	428	Total			

Subcatchment EX-3: DA TO NE CORNER

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Type II 24-hr 10-yr Rainfall=5.30"

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Summary for Subcatchment PR-1: Half Bldg Roof (Magenta)

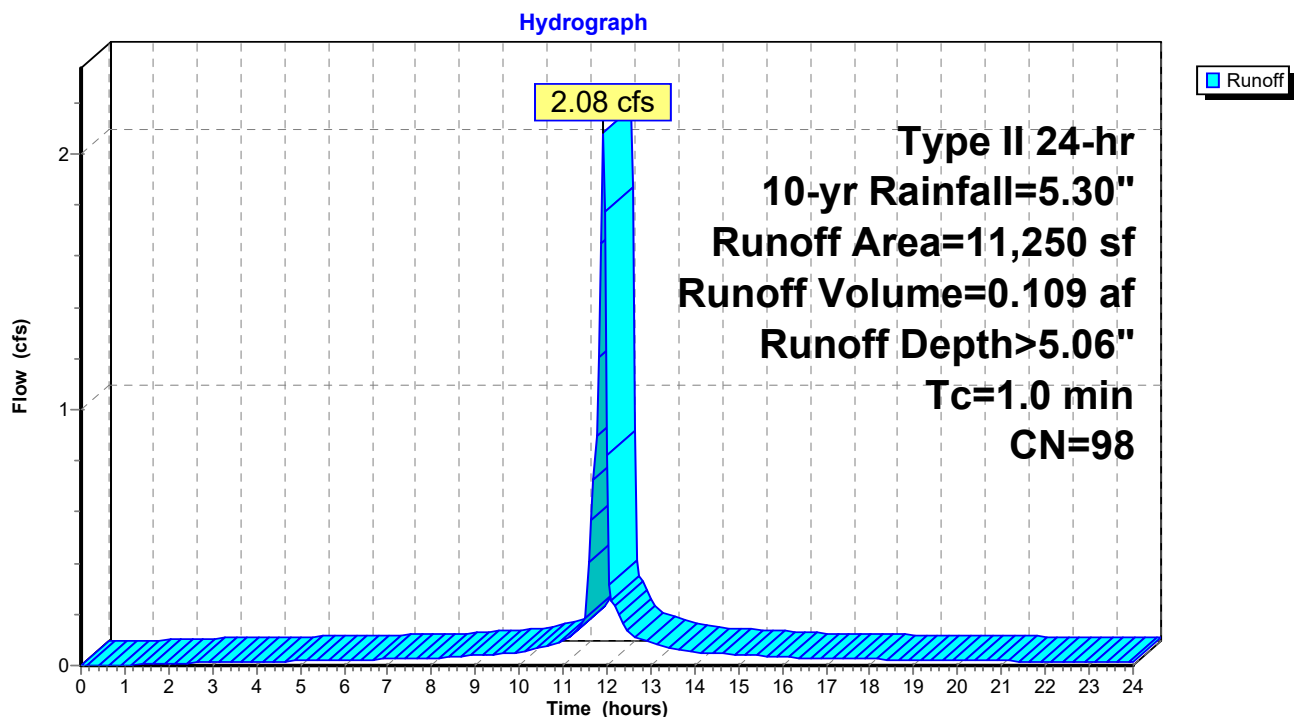
Runoff = 2.08 cfs @ 11.90 hrs, Volume= 0.109 af, Depth> 5.06"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.30"

	Area (sf)	CN	Description
*	11,250	98	Roof
	11,250		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0					Direct Entry, Roof

Subcatchment PR-1: Half Bldg Roof (Magenta)



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Type II 24-hr 10-yr Rainfall=5.30"

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Summary for Subcatchment PR-2: Half Bldg Roof (Green)

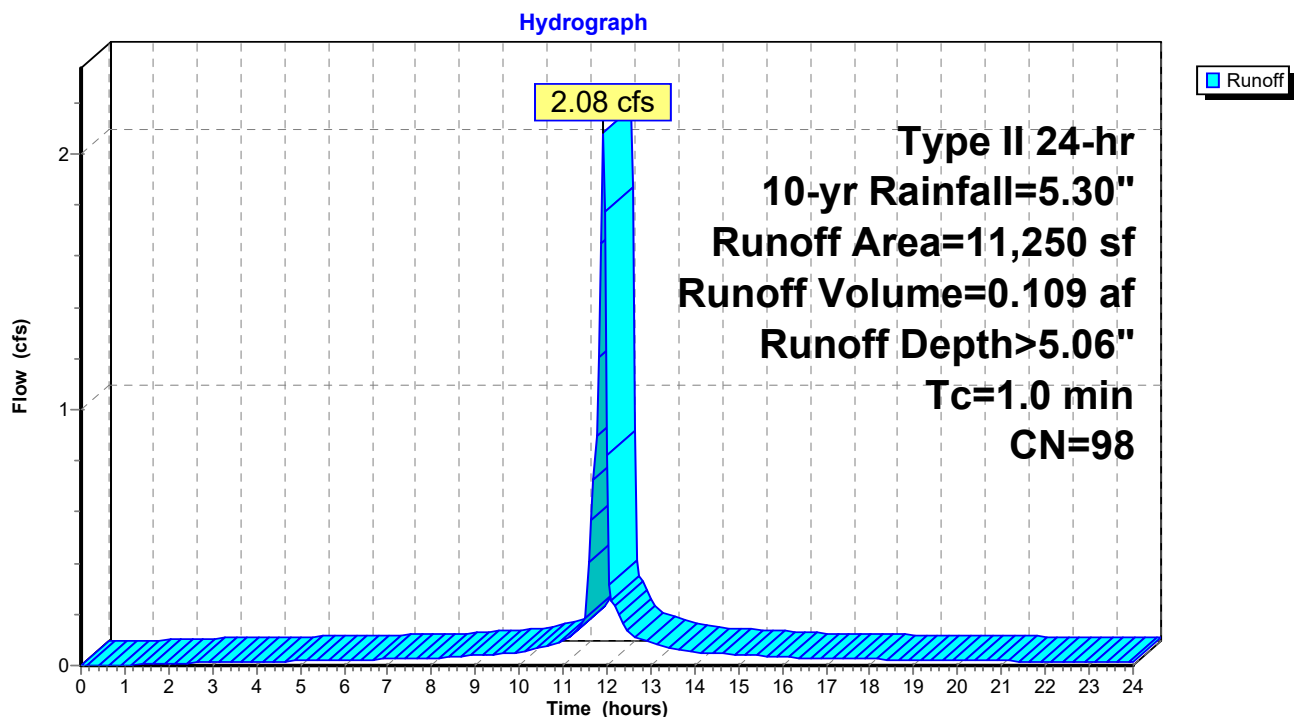
Runoff = 2.08 cfs @ 11.90 hrs, Volume= 0.109 af, Depth> 5.06"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.30"

	Area (sf)	CN	Description
*	11,250	98	Roof
	11,250		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0					Direct Entry, Roof

Subcatchment PR-2: Half Bldg Roof (Green)



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Summary for Subcatchment PR-3: Rear Building Residue (Yellow)

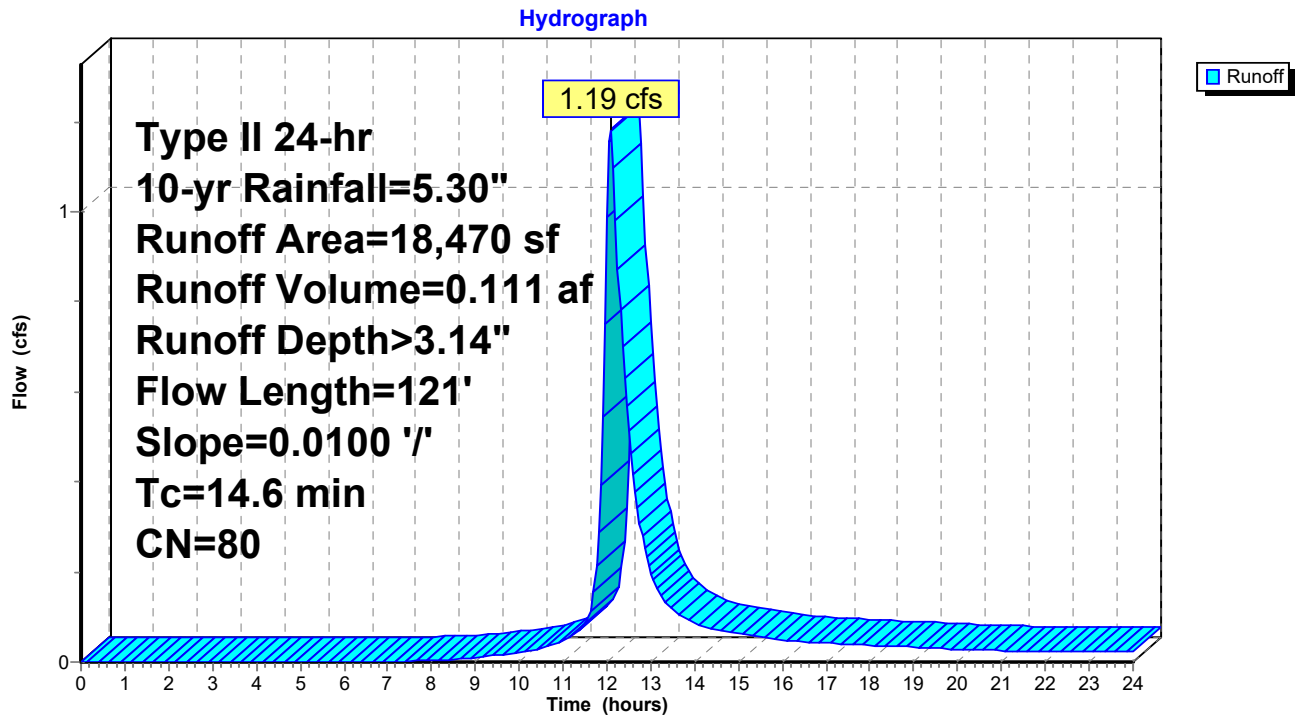
Runoff = 1.19 cfs @ 12.09 hrs, Volume= 0.111 af, Depth> 3.14"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.30"

Area (sf)	CN	Description
18,470	80	>75% Grass cover, Good, HSG D
18,470		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.6	121	0.0100	0.14		Sheet Flow, Lawn Grass: Short n= 0.150 P2= 3.40"

Subcatchment PR-3: Rear Building Residue (Yellow)



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Summary for Subcatchment PR-4: NE Front Parking (Lavendar)

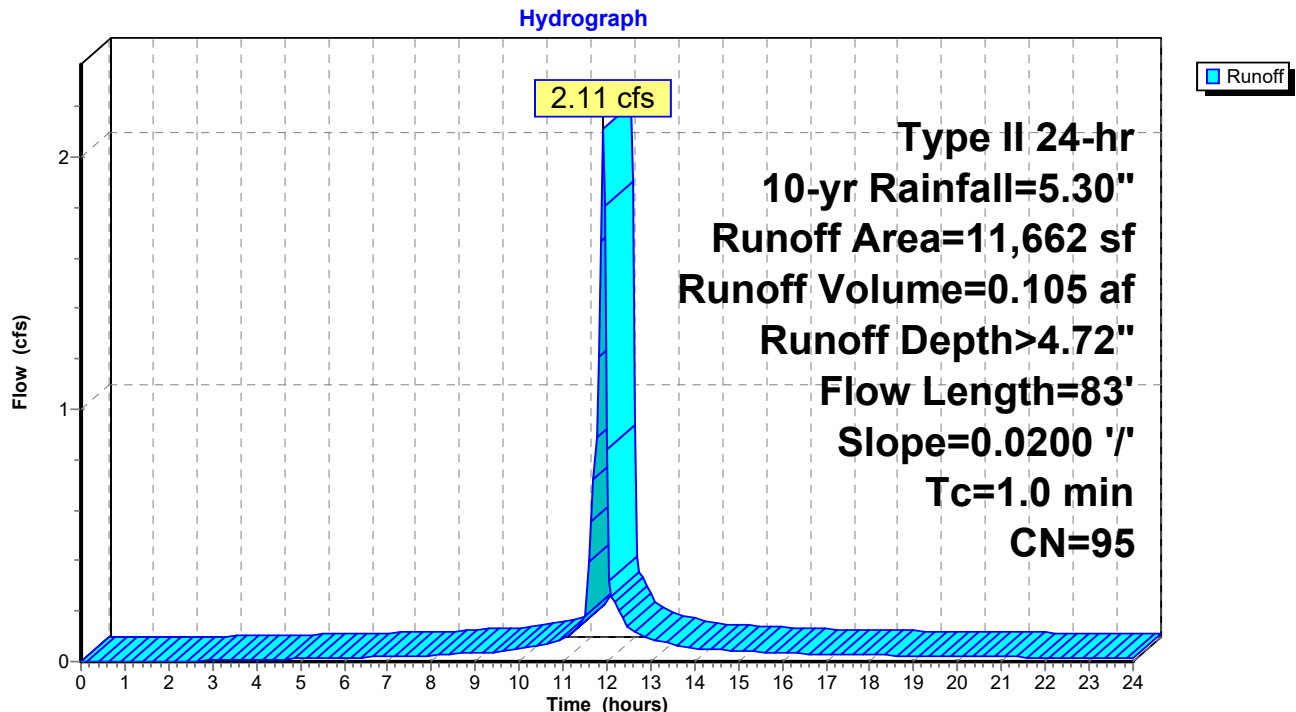
Runoff = 2.11 cfs @ 11.90 hrs, Volume= 0.105 af, Depth> 4.72"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.30"

	Area (sf)	CN	Description
*	9,613	98	Asphalt
	2,049	80	>75% Grass cover, Good, HSG D
	11,662	95	Weighted Average
	2,049		17.57% Pervious Area
	9,613		82.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	83	0.0200	1.37		Sheet Flow, Asphalt
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment PR-4: NE Front Parking (Lavendar)



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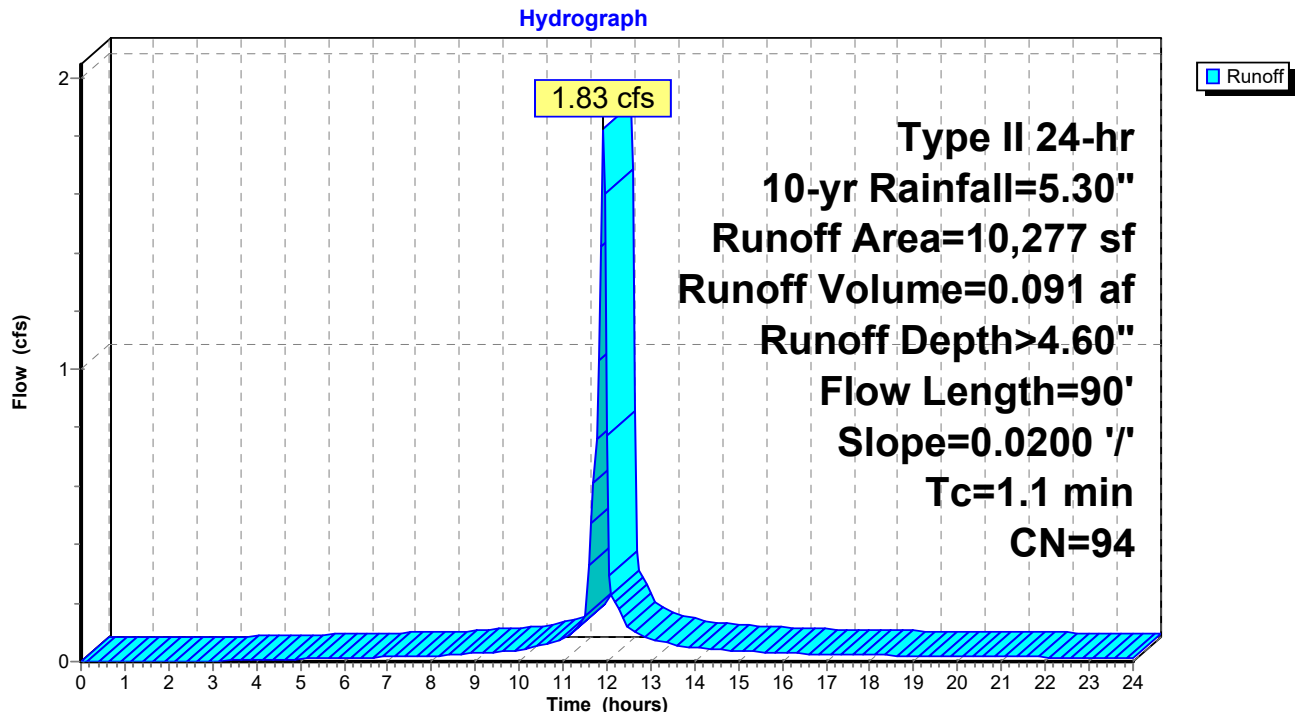
Summary for Subcatchment PR-5: NW Front Parking (Gold)

Runoff = 1.83 cfs @ 11.91 hrs, Volume= 0.091 af, Depth> 4.60"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.30"

	Area (sf)	CN	Description
*	8,112	98	PARKING
	2,165	80	>75% Grass cover, Good, HSG D
	10,277	94	Weighted Average
	2,165		21.07% Pervious Area
	8,112		78.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	90	0.0200	1.39		Sheet Flow, Parking Lot
					Smooth surfaces n= 0.011 P2= 3.40"

Subcatchment PR-5: NW Front Parking (Gold)

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Summary for Subcatchment PR-6: Entrance (Blue)

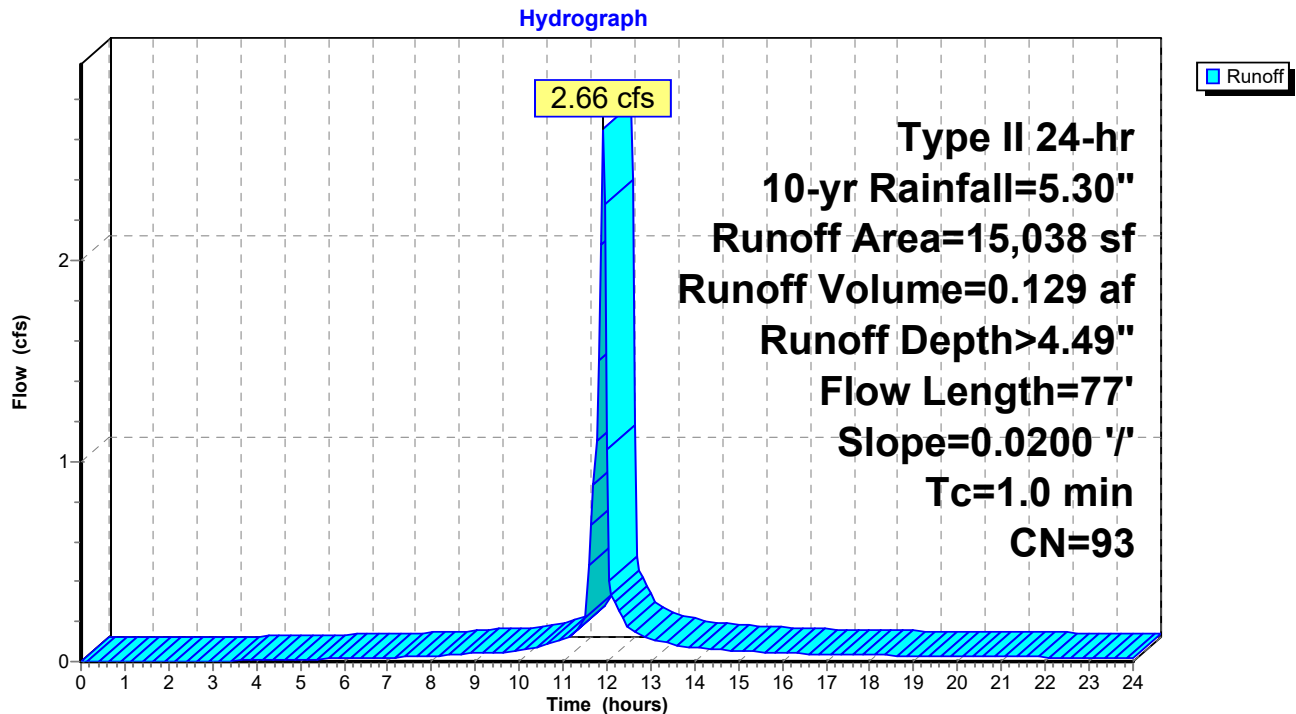
Runoff = 2.66 cfs @ 11.91 hrs, Volume= 0.129 af, Depth> 4.49"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.30"

	Area (sf)	CN	Description
*	10,813	98	Asphalt
	4,225	80	>75% Grass cover, Good, HSG D
	15,038	93	Weighted Average
	4,225		28.10% Pervious Area
	10,813		71.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	77	0.0200	1.35		Sheet Flow, Asphalt Smooth surfaces n= 0.011 P2= 3.40"

Subcatchment PR-6: Entrance (Blue)



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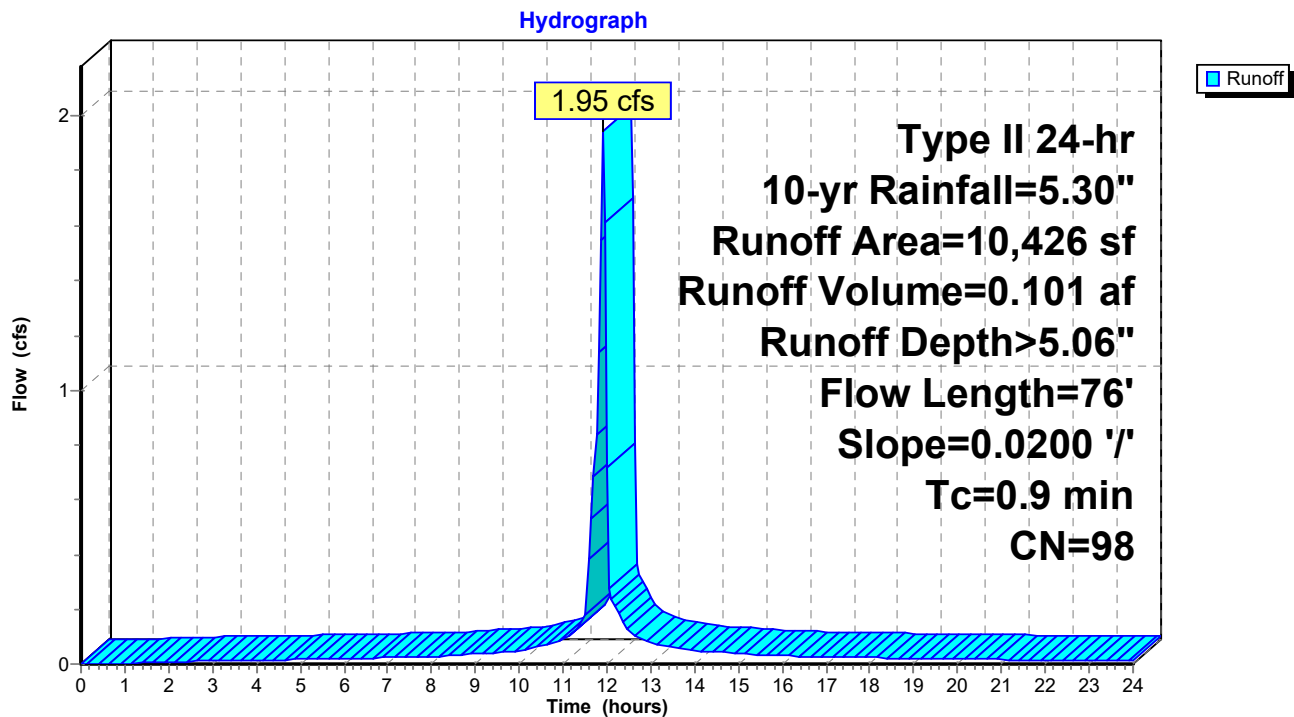
Summary for Subcatchment PR-7: Half Loading Area (Turquoise)

Runoff = 1.95 cfs @ 11.90 hrs, Volume= 0.101 af, Depth> 5.06"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.30"

Area (sf)	CN	Description
* 10,426	98	Asphalt
10,426		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	76	0.0200	1.34		Sheet Flow, Asphalt
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment PR-7: Half Loading Area (Turquoise)

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Summary for Subcatchment PR-8: Half Loading Area (Orange)

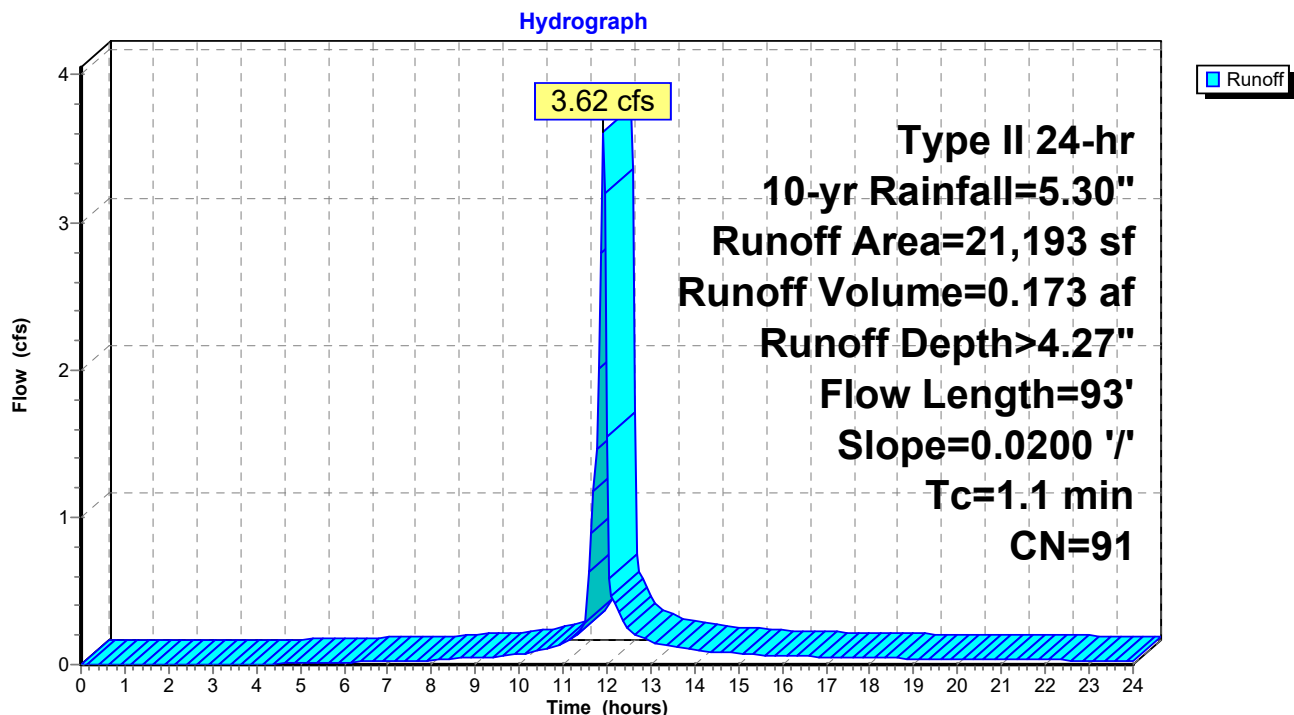
Runoff = 3.62 cfs @ 11.91 hrs, Volume= 0.173 af, Depth> 4.27"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.30"

	Area (sf)	CN	Description
*	13,466	98	Loading Area
	7,727	80	>75% Grass cover, Good, HSG D
	21,193	91	Weighted Average
	7,727		36.46% Pervious Area
	13,466		63.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	93	0.0200	1.40		Sheet Flow, Asphalt
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment PR-8: Half Loading Area (Orange)



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Summary for Subcatchment PR-9: Pond (Grey)

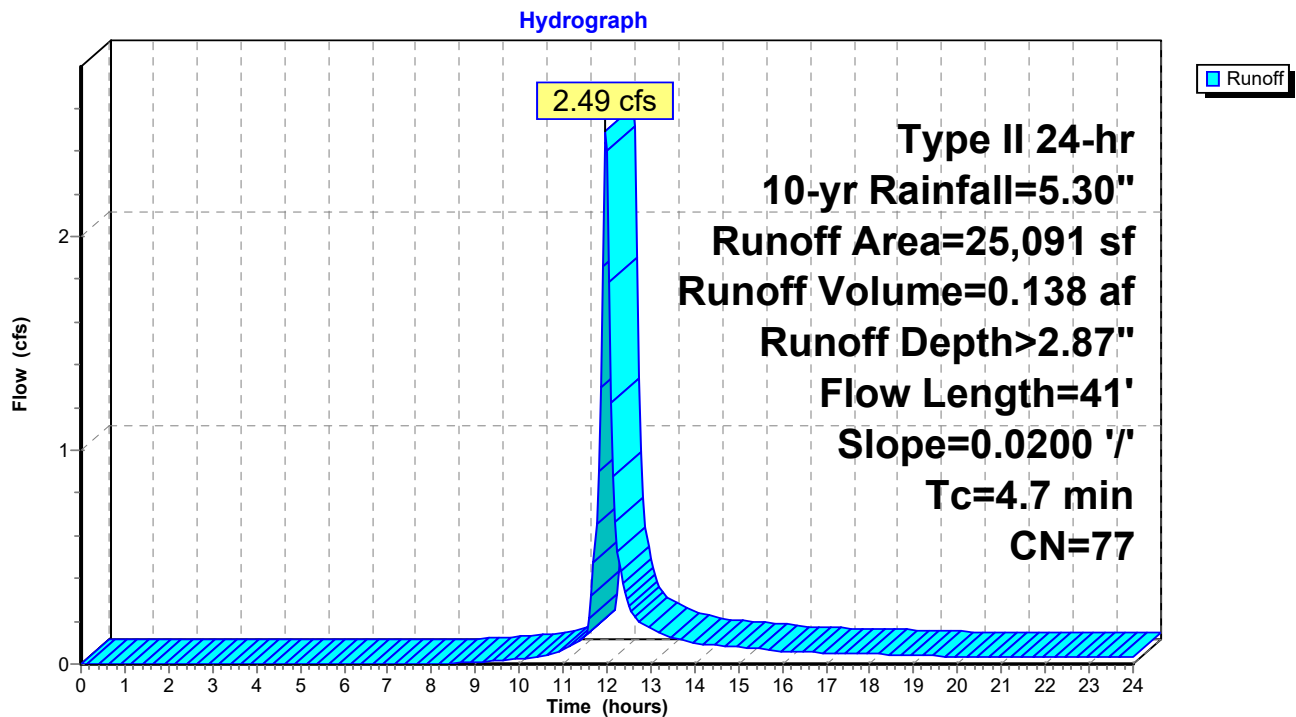
Runoff = 2.49 cfs @ 11.97 hrs, Volume= 0.138 af, Depth> 2.87"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.30"

Area (sf)	CN	Description
25,091	77	Woods, Good, HSG D
25,091		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	41	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.40"

Subcatchment PR-9: Pond (Grey)



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Type II 24-hr 10-yr Rainfall=5.30"

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Summary for Pond 3P: SD-Load_North

Inflow Area = 0.239 ac, 100.00% Impervious, Inflow Depth > 5.06" for 10-yr event
 Inflow = 1.95 cfs @ 11.90 hrs, Volume= 0.101 af
 Outflow = 1.95 cfs @ 11.90 hrs, Volume= 0.101 af, Atten= 0%, Lag= 0.0 min
 Primary = 1.95 cfs @ 11.90 hrs, Volume= 0.101 af

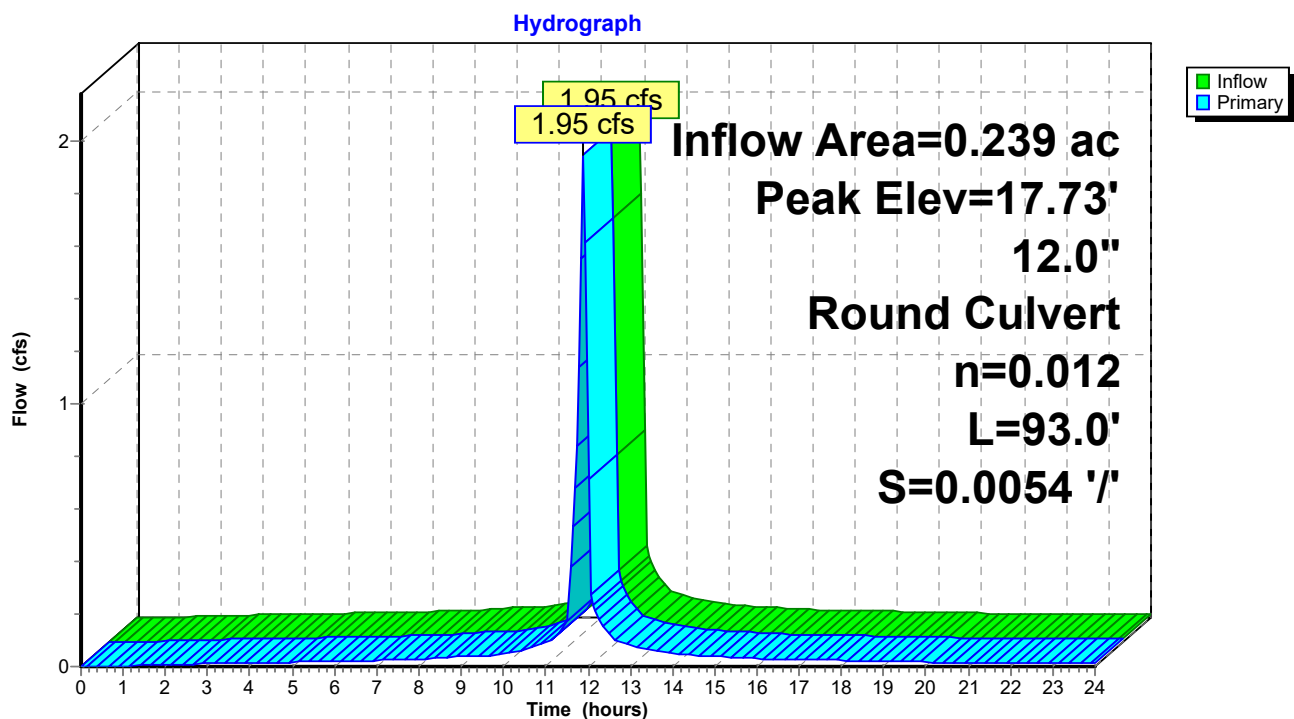
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 17.73' @ 12.42 hrs

Flood Elev= 18.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	16.50'	12.0" Round 12" HDPE L= 93.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 16.50' / 16.00' S= 0.0054 '/ Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.50 cfs @ 11.90 hrs HW=17.55' TW=17.28' (Dynamic Tailwater)
 ↳ **12" HDPE** (Outlet Controls 1.50 cfs @ 2.26 fps)

Pond 3P: SD-Load_North

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Type II 24-hr 10-yr Rainfall=5.30"

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Stage-Area-Storage for Pond 3P: SD-Load_North

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
16.50	0	17.54	0	18.58	0
16.52	0	17.56	0	18.60	0
16.54	0	17.58	0	18.62	0
16.56	0	17.60	0	18.64	0
16.58	0	17.62	0	18.66	0
16.60	0	17.64	0	18.68	0
16.62	0	17.66	0	18.70	0
16.64	0	17.68	0	18.72	0
16.66	0	17.70	0	18.74	0
16.68	0	17.72	0	18.76	0
16.70	0	17.74	0	18.78	0
16.72	0	17.76	0	18.80	0
16.74	0	17.78	0	18.82	0
16.76	0	17.80	0	18.84	0
16.78	0	17.82	0	18.86	0
16.80	0	17.84	0	18.88	0
16.82	0	17.86	0	18.90	0
16.84	0	17.88	0		
16.86	0	17.90	0		
16.88	0	17.92	0		
16.90	0	17.94	0		
16.92	0	17.96	0		
16.94	0	17.98	0		
16.96	0	18.00	0		
16.98	0	18.02	0		
17.00	0	18.04	0		
17.02	0	18.06	0		
17.04	0	18.08	0		
17.06	0	18.10	0		
17.08	0	18.12	0		
17.10	0	18.14	0		
17.12	0	18.16	0		
17.14	0	18.18	0		
17.16	0	18.20	0		
17.18	0	18.22	0		
17.20	0	18.24	0		
17.22	0	18.26	0		
17.24	0	18.28	0		
17.26	0	18.30	0		
17.28	0	18.32	0		
17.30	0	18.34	0		
17.32	0	18.36	0		
17.34	0	18.38	0		
17.36	0	18.40	0		
17.38	0	18.42	0		
17.40	0	18.44	0		
17.42	0	18.46	0		
17.44	0	18.48	0		
17.46	0	18.50	0		
17.48	0	18.52	0		
17.50	0	18.54	0		
17.52	0	18.56	0		

220342-TeddyBear-Sketch HydroCAD

Type II 24-hr 10-yr Rainfall=5.30"

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Summary for Pond 4P: SD-Load_South

Inflow Area = 0.487 ac, 63.54% Impervious, Inflow Depth > 4.27" for 10-yr event
 Inflow = 3.62 cfs @ 11.91 hrs, Volume= 0.173 af
 Outflow = 3.62 cfs @ 11.91 hrs, Volume= 0.173 af, Atten= 0%, Lag= 0.0 min
 Primary = 3.62 cfs @ 11.91 hrs, Volume= 0.173 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

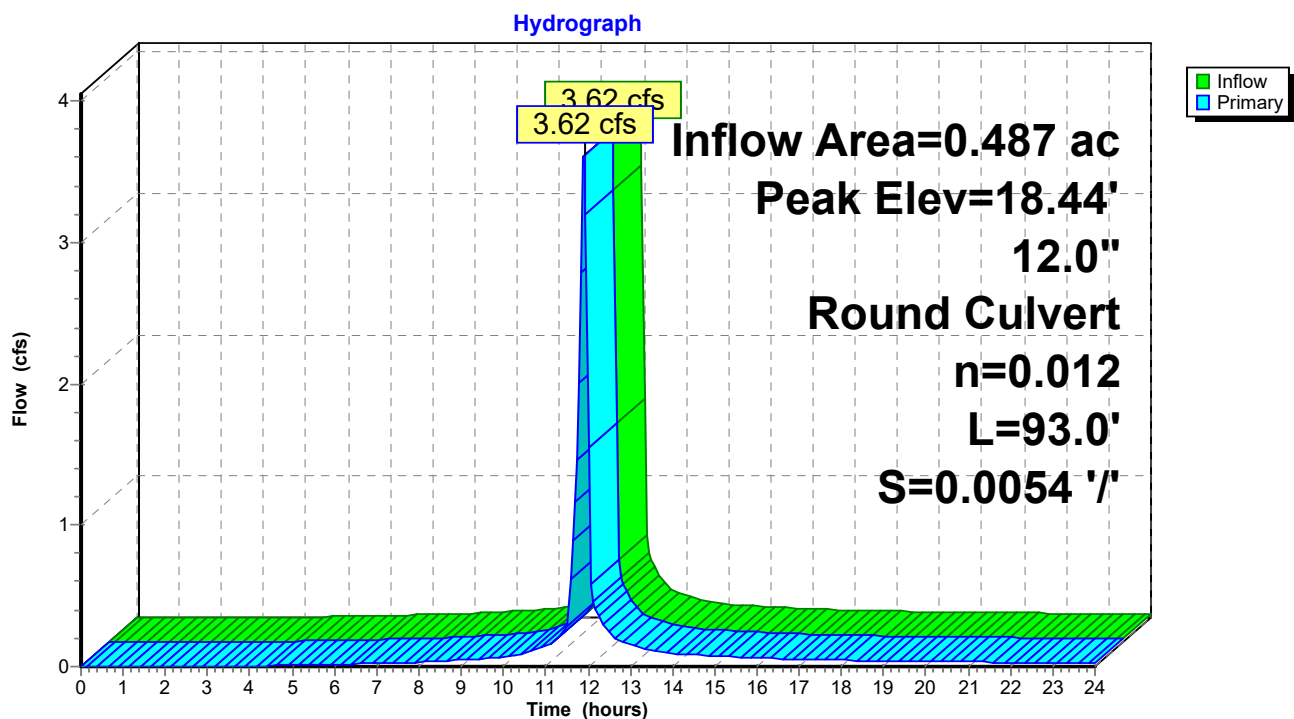
Peak Elev= 18.44' @ 11.92 hrs

Flood Elev= 18.75'

Device	Routing	Invert	Outlet Devices
#1	Primary	16.50'	12.0" Round 12" HDPE L= 93.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 16.50' / 16.00' S= 0.0054 '/ Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=3.27 cfs @ 11.91 hrs HW=18.37' TW=17.30' (Dynamic Tailwater)

1=12" HDPE (Outlet Controls 3.27 cfs @ 4.16 fps)

Pond 4P: SD-Load_South

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Type II 24-hr 10-yr Rainfall=5.30"

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Stage-Area-Storage for Pond 4P: SD-Load_South

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
16.50	0	17.54	0	18.58	0
16.52	0	17.56	0	18.60	0
16.54	0	17.58	0	18.62	0
16.56	0	17.60	0	18.64	0
16.58	0	17.62	0	18.66	0
16.60	0	17.64	0	18.68	0
16.62	0	17.66	0	18.70	0
16.64	0	17.68	0	18.72	0
16.66	0	17.70	0	18.74	0
16.68	0	17.72	0		
16.70	0	17.74	0		
16.72	0	17.76	0		
16.74	0	17.78	0		
16.76	0	17.80	0		
16.78	0	17.82	0		
16.80	0	17.84	0		
16.82	0	17.86	0		
16.84	0	17.88	0		
16.86	0	17.90	0		
16.88	0	17.92	0		
16.90	0	17.94	0		
16.92	0	17.96	0		
16.94	0	17.98	0		
16.96	0	18.00	0		
16.98	0	18.02	0		
17.00	0	18.04	0		
17.02	0	18.06	0		
17.04	0	18.08	0		
17.06	0	18.10	0		
17.08	0	18.12	0		
17.10	0	18.14	0		
17.12	0	18.16	0		
17.14	0	18.18	0		
17.16	0	18.20	0		
17.18	0	18.22	0		
17.20	0	18.24	0		
17.22	0	18.26	0		
17.24	0	18.28	0		
17.26	0	18.30	0		
17.28	0	18.32	0		
17.30	0	18.34	0		
17.32	0	18.36	0		
17.34	0	18.38	0		
17.36	0	18.40	0		
17.38	0	18.42	0		
17.40	0	18.44	0		
17.42	0	18.46	0		
17.44	0	18.48	0		
17.46	0	18.50	0		
17.48	0	18.52	0		
17.50	0	18.54	0		
17.52	0	18.56	0		

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Type II 24-hr 10-yr Rainfall=5.30"

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Summary for Pond 5P: Parking_SD

Inflow Area = 0.268 ac, 82.43% Impervious, Inflow Depth > 4.72" for 10-yr event
Inflow = 2.11 cfs @ 11.90 hrs, Volume= 0.105 af
Outflow = 2.11 cfs @ 11.90 hrs, Volume= 0.105 af, Atten= 0%, Lag= 0.0 min
Primary = 2.11 cfs @ 11.90 hrs, Volume= 0.105 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

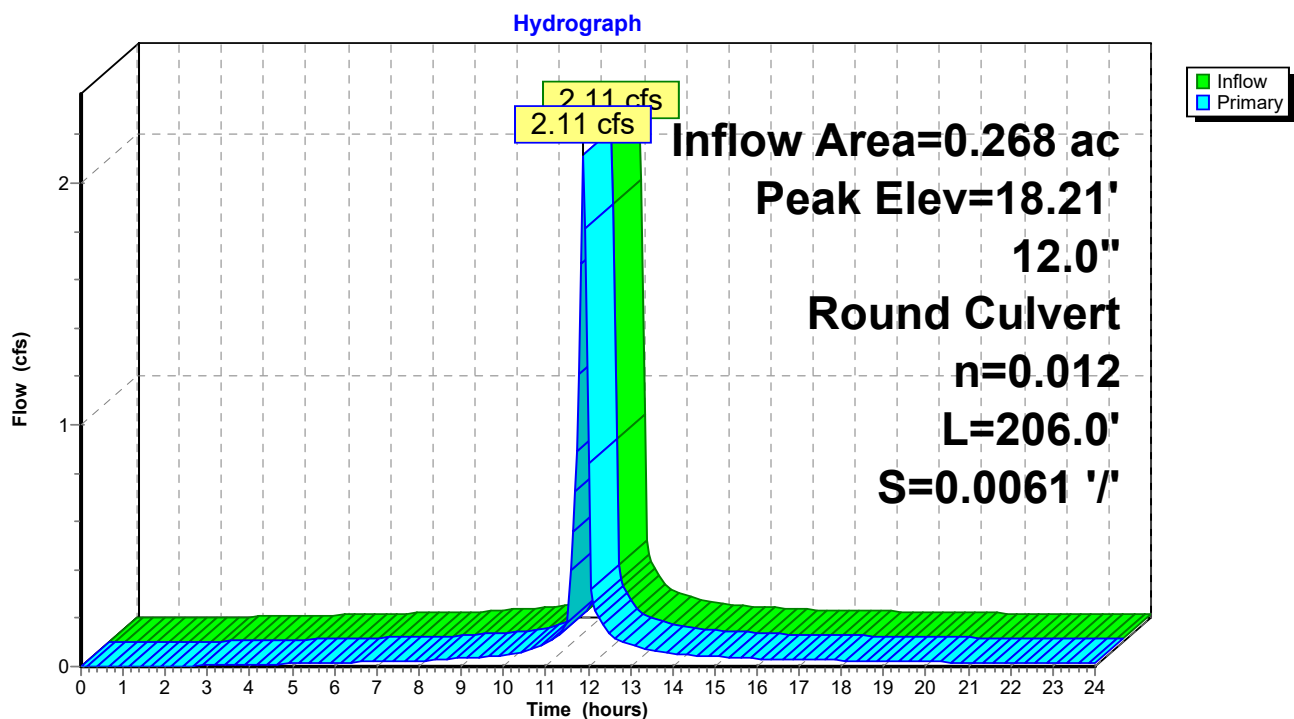
Peak Elev= 18.21' @ 11.92 hrs

Flood Elev= 18.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.25'	12.0" Round 12" HDPE L= 206.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 17.25' / 16.00' S= 0.0061 '/ Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.90 cfs @ 11.90 hrs HW=18.20' TW=17.28' (Dynamic Tailwater)
↑ **12" HDPE** (Outlet Controls 1.90 cfs @ 3.17 fps)

Pond 5P: Parking_SD



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Stage-Area-Storage for Pond 5P: Parking_SD

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
17.25	0	17.77	0	18.29	0
17.26	0	17.78	0	18.30	0
17.27	0	17.79	0		
17.28	0	17.80	0		
17.29	0	17.81	0		
17.30	0	17.82	0		
17.31	0	17.83	0		
17.32	0	17.84	0		
17.33	0	17.85	0		
17.34	0	17.86	0		
17.35	0	17.87	0		
17.36	0	17.88	0		
17.37	0	17.89	0		
17.38	0	17.90	0		
17.39	0	17.91	0		
17.40	0	17.92	0		
17.41	0	17.93	0		
17.42	0	17.94	0		
17.43	0	17.95	0		
17.44	0	17.96	0		
17.45	0	17.97	0		
17.46	0	17.98	0		
17.47	0	17.99	0		
17.48	0	18.00	0		
17.49	0	18.01	0		
17.50	0	18.02	0		
17.51	0	18.03	0		
17.52	0	18.04	0		
17.53	0	18.05	0		
17.54	0	18.06	0		
17.55	0	18.07	0		
17.56	0	18.08	0		
17.57	0	18.09	0		
17.58	0	18.10	0		
17.59	0	18.11	0		
17.60	0	18.12	0		
17.61	0	18.13	0		
17.62	0	18.14	0		
17.63	0	18.15	0		
17.64	0	18.16	0		
17.65	0	18.17	0		
17.66	0	18.18	0		
17.67	0	18.19	0		
17.68	0	18.20	0		
17.69	0	18.21	0		
17.70	0	18.22	0		
17.71	0	18.23	0		
17.72	0	18.24	0		
17.73	0	18.25	0		
17.74	0	18.26	0		
17.75	0	18.27	0		
17.76	0	18.28	0		

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Type II 24-hr 10-yr Rainfall=5.30"

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Summary for Pond 6P: Parking SD

Inflow Area = 0.236 ac, 78.93% Impervious, Inflow Depth > 4.60" for 10-yr event
 Inflow = 1.83 cfs @ 11.91 hrs, Volume= 0.091 af
 Outflow = 1.83 cfs @ 11.91 hrs, Volume= 0.091 af, Atten= 0%, Lag= 0.0 min
 Primary = 1.83 cfs @ 11.91 hrs, Volume= 0.091 af

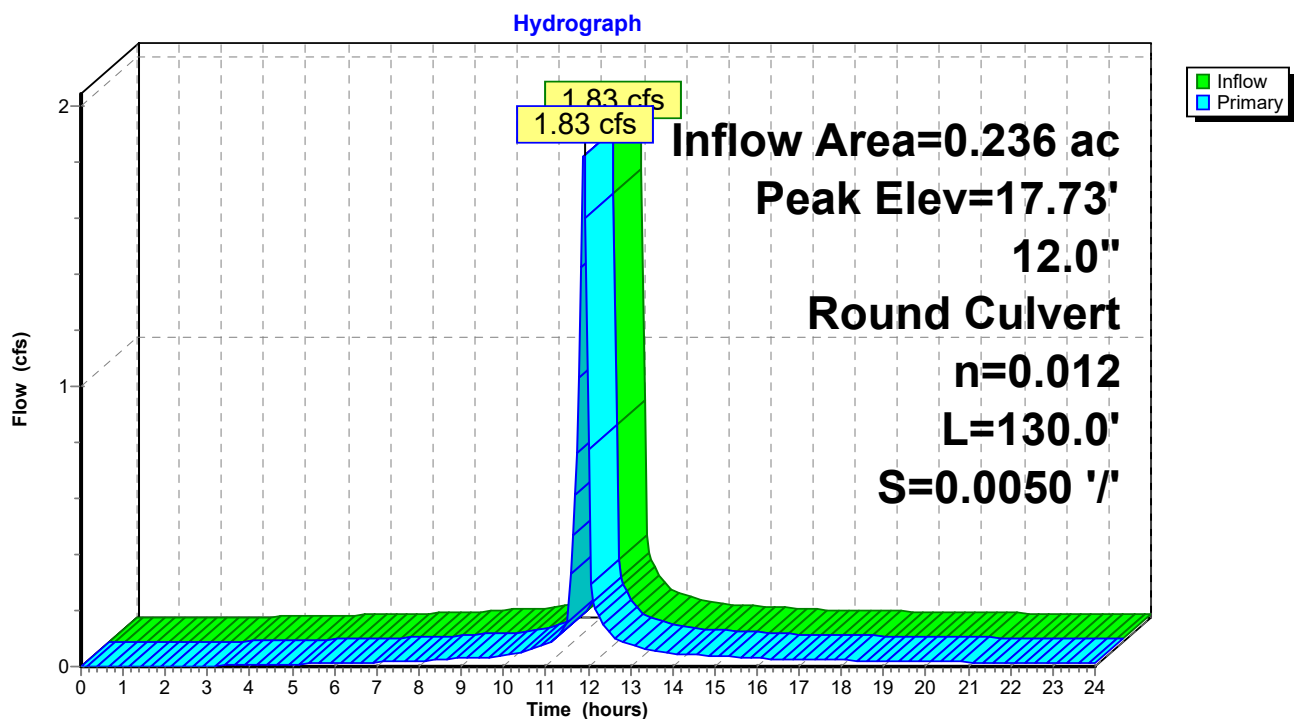
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 17.73' @ 12.42 hrs

Flood Elev= 19.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	16.65'	12.0" Round 12" HPDE L= 130.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 16.65' / 16.00' S= 0.0050 '/ Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.45 cfs @ 11.91 hrs HW=17.64' TW=17.29' (Dynamic Tailwater)
 ↳ 12" HPDE (Outlet Controls 1.45 cfs @ 2.31 fps)

Pond 6P: Parking SD

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Stage-Area-Storage for Pond 6P: Parking SD

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
16.65	0	17.69	0	18.73	0
16.67	0	17.71	0	18.75	0
16.69	0	17.73	0	18.77	0
16.71	0	17.75	0	18.79	0
16.73	0	17.77	0	18.81	0
16.75	0	17.79	0	18.83	0
16.77	0	17.81	0	18.85	0
16.79	0	17.83	0	18.87	0
16.81	0	17.85	0	18.89	0
16.83	0	17.87	0	18.91	0
16.85	0	17.89	0	18.93	0
16.87	0	17.91	0	18.95	0
16.89	0	17.93	0	18.97	0
16.91	0	17.95	0	18.99	0
16.93	0	17.97	0		
16.95	0	17.99	0		
16.97	0	18.01	0		
16.99	0	18.03	0		
17.01	0	18.05	0		
17.03	0	18.07	0		
17.05	0	18.09	0		
17.07	0	18.11	0		
17.09	0	18.13	0		
17.11	0	18.15	0		
17.13	0	18.17	0		
17.15	0	18.19	0		
17.17	0	18.21	0		
17.19	0	18.23	0		
17.21	0	18.25	0		
17.23	0	18.27	0		
17.25	0	18.29	0		
17.27	0	18.31	0		
17.29	0	18.33	0		
17.31	0	18.35	0		
17.33	0	18.37	0		
17.35	0	18.39	0		
17.37	0	18.41	0		
17.39	0	18.43	0		
17.41	0	18.45	0		
17.43	0	18.47	0		
17.45	0	18.49	0		
17.47	0	18.51	0		
17.49	0	18.53	0		
17.51	0	18.55	0		
17.53	0	18.57	0		
17.55	0	18.59	0		
17.57	0	18.61	0		
17.59	0	18.63	0		
17.61	0	18.65	0		
17.63	0	18.67	0		
17.65	0	18.69	0		
17.67	0	18.71	0		

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Type II 24-hr 10-yr Rainfall=5.30"

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Summary for Pond SGW: SGW #1

Inflow Area = 2.667 ac, 64.49% Impervious, Inflow Depth > 4.30" for 10-yr event
 Inflow = 18.27 cfs @ 11.91 hrs, Volume= 0.955 af
 Outflow = 1.66 cfs @ 12.39 hrs, Volume= 0.432 af, Atten= 91%, Lag= 28.5 min
 Primary = 0.33 cfs @ 12.39 hrs, Volume= 0.257 af
 Secondary = 1.32 cfs @ 12.39 hrs, Volume= 0.175 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 17.73' @ 12.39 hrs Surf.Area= 17,592 sf Storage= 26,132 cf

Plug-Flow detention time= 317.0 min calculated for 0.432 af (45% of inflow)
 Center-of-Mass det. time= 188.8 min (955.7 - 767.0)

Volume	Invert	Avail.Storage	Storage Description		
#1	16.00'	30,960 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
16.00	12,718	687.0	0	0	12,718
18.00	18,417	737.0	30,960	30,960	18,560

Device	Routing	Invert	Outlet Devices
#1	Primary	15.66'	12.0" Round 12" HDPE L= 23.3' Box, 0° wingwalls, square crown edge, Ke= 0.700 Inlet / Outlet Invert= 15.66' / 15.55' S= 0.0047 ' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	17.00'	2.0" W x 9.0" H Vert. Orifice/Grate C= 0.600
#3	Device 1	17.75'	10.7' long Rim SHA 374.23 2 End Contraction(s)
#4	Secondary	17.60'	10.0' long x 0.7' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32

Primary OutFlow Max=0.33 cfs @ 12.39 hrs HW=17.73' TW=0.00' (Dynamic Tailwater)

- ↑ **1=12" HDPE** (Passes 0.33 cfs of 4.18 cfs potential flow)
- ↑ **2=Orifice/Grate** (Orifice Controls 0.33 cfs @ 2.75 fps)
- ↑ **3=Rim SHA 374.23** (Controls 0.00 cfs)

Secondary OutFlow Max=1.32 cfs @ 12.39 hrs HW=17.73' TW=0.00' (Dynamic Tailwater)

- ↑ **4=Broad-Crested Rectangular Weir** (Weir Controls 1.32 cfs @ 1.00 fps)

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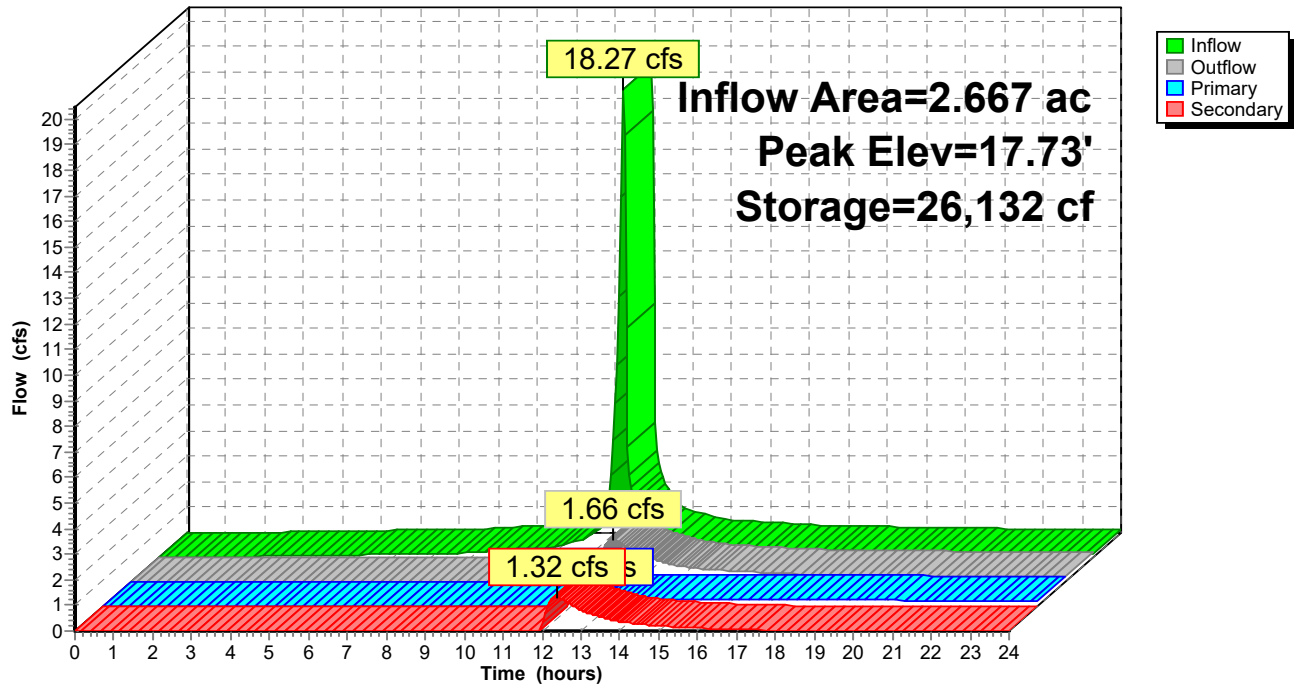
Type II 24-hr 10-yr Rainfall=5.30"

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Pond SGW: SGW #1

Hydrograph



220342-TeddyBear-Sketch HydroCAD*Type II 24-hr 10-yr Rainfall=5.30"*

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Stage-Area-Storage for Pond SGW: SGW #1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
16.00	12,718	0	17.04	15,550	14,675
16.02	12,770	255	17.06	15,607	14,986
16.04	12,822	511	17.08	15,665	15,299
16.06	12,874	768	17.10	15,722	15,613
16.08	12,926	1,026	17.12	15,780	15,928
16.10	12,978	1,285	17.14	15,838	16,244
16.12	13,030	1,545	17.16	15,895	16,561
16.14	13,083	1,806	17.18	15,953	16,880
16.16	13,135	2,068	17.20	16,011	17,200
16.18	13,188	2,331	17.22	16,069	17,520
16.20	13,241	2,596	17.24	16,127	17,842
16.22	13,293	2,861	17.26	16,186	18,166
16.24	13,346	3,127	17.28	16,244	18,490
16.26	13,399	3,395	17.30	16,303	18,815
16.28	13,453	3,663	17.32	16,361	19,142
16.30	13,506	3,933	17.34	16,420	19,470
16.32	13,559	4,204	17.36	16,479	19,799
16.34	13,613	4,475	17.38	16,538	20,129
16.36	13,666	4,748	17.40	16,597	20,460
16.38	13,720	5,022	17.42	16,656	20,793
16.40	13,774	5,297	17.44	16,715	21,126
16.42	13,828	5,573	17.46	16,775	21,461
16.44	13,882	5,850	17.48	16,834	21,797
16.46	13,936	6,128	17.50	16,894	22,135
16.48	13,990	6,407	17.52	16,953	22,473
16.50	14,044	6,688	17.54	17,013	22,813
16.52	14,099	6,969	17.56	17,073	23,154
16.54	14,153	7,252	17.58	17,133	23,496
16.56	14,208	7,535	17.60	17,193	23,839
16.58	14,262	7,820	17.62	17,253	24,184
16.60	14,317	8,106	17.64	17,314	24,529
16.62	14,372	8,393	17.66	17,374	24,876
16.64	14,427	8,681	17.68	17,434	25,224
16.66	14,482	8,970	17.70	17,495	25,573
16.68	14,538	9,260	17.72	17,556	25,924
16.70	14,593	9,551	17.74	17,617	26,276
16.72	14,648	9,844	17.76	17,678	26,629
16.74	14,704	10,137	17.78	17,739	26,983
16.76	14,760	10,432	17.80	17,800	27,338
16.78	14,815	10,728	17.82	17,861	27,695
16.80	14,871	11,025	17.84	17,922	28,053
16.82	14,927	11,323	17.86	17,984	28,412
16.84	14,983	11,622	17.88	18,045	28,772
16.86	15,040	11,922	17.90	18,107	29,133
16.88	15,096	12,223	17.92	18,169	29,496
16.90	15,152	12,526	17.94	18,231	29,860
16.92	15,209	12,829	17.96	18,293	30,225
16.94	15,265	13,134	17.98	18,355	30,592
16.96	15,322	13,440	18.00	18,417	30,960
16.98	15,379	13,747			
17.00	15,436	14,055			
17.02	15,493	14,364			

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Type II 24-hr 10-yr Rainfall=5.30"

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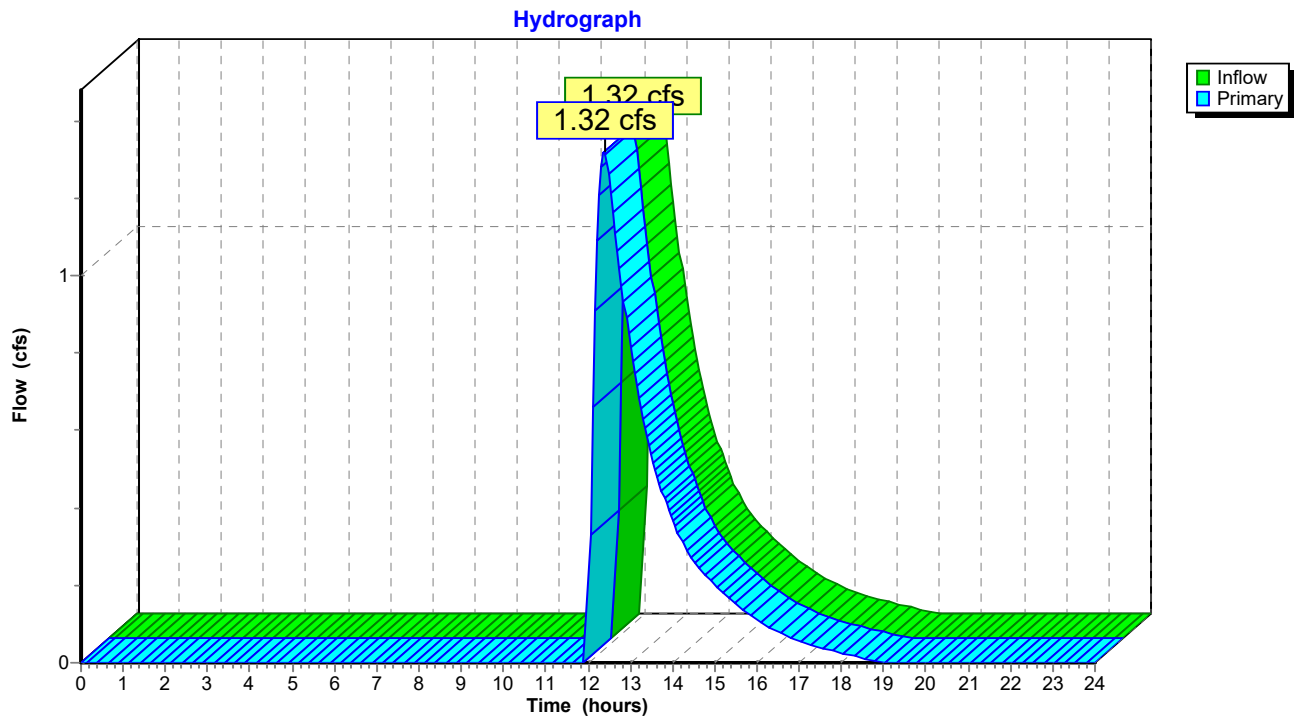
Page 54

Summary for Link 2L: STUDY POINT #2 (POST)

Inflow = 1.32 cfs @ 12.39 hrs, Volume= 0.175 af
Primary = 1.32 cfs @ 12.39 hrs, Volume= 0.175 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 2L: STUDY POINT #2 (POST)



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Type II 24-hr 10-yr Rainfall=5.30"

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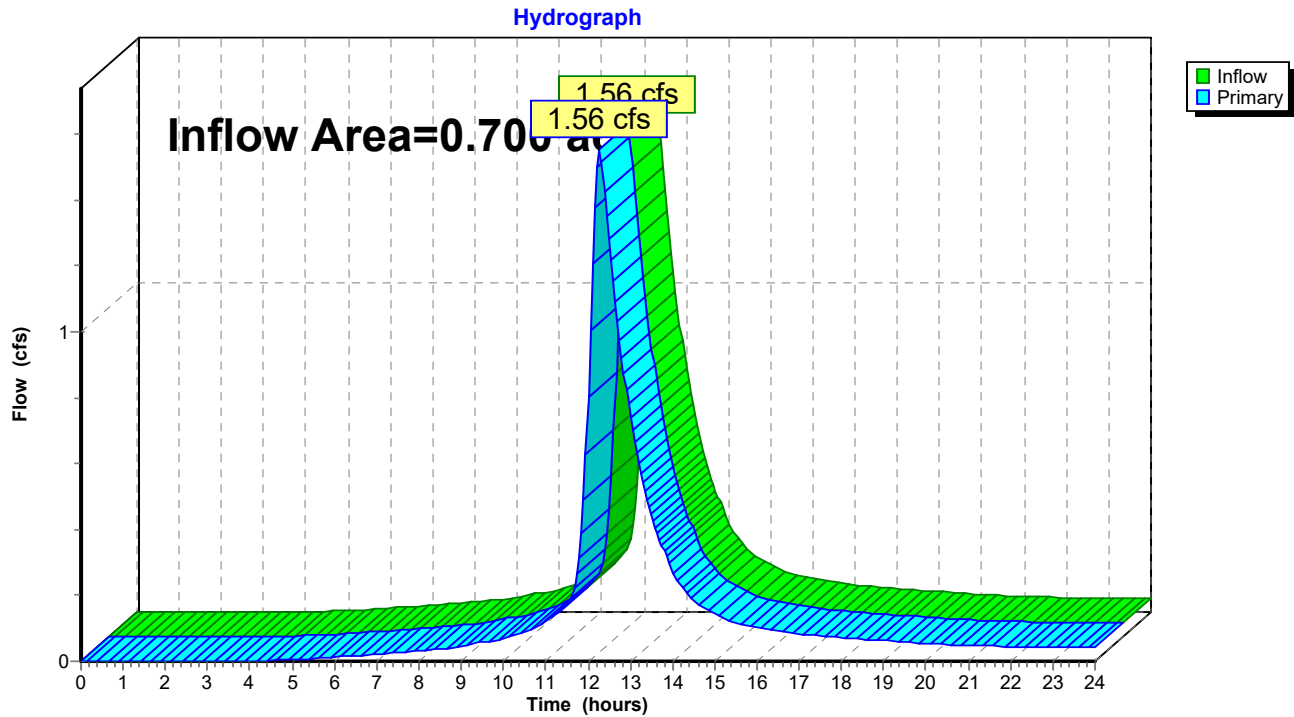
Page 55

Summary for Link 6L: STUDY POINT #1 (PRE)

Inflow Area = 0.700 ac, 0.00% Impervious, Inflow Depth > 4.12" for 10-yr event
Inflow = 1.56 cfs @ 12.27 hrs, Volume= 0.241 af
Primary = 1.56 cfs @ 12.27 hrs, Volume= 0.241 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 6L: STUDY POINT #1 (PRE)



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Type II 24-hr 10-yr Rainfall=5.30"

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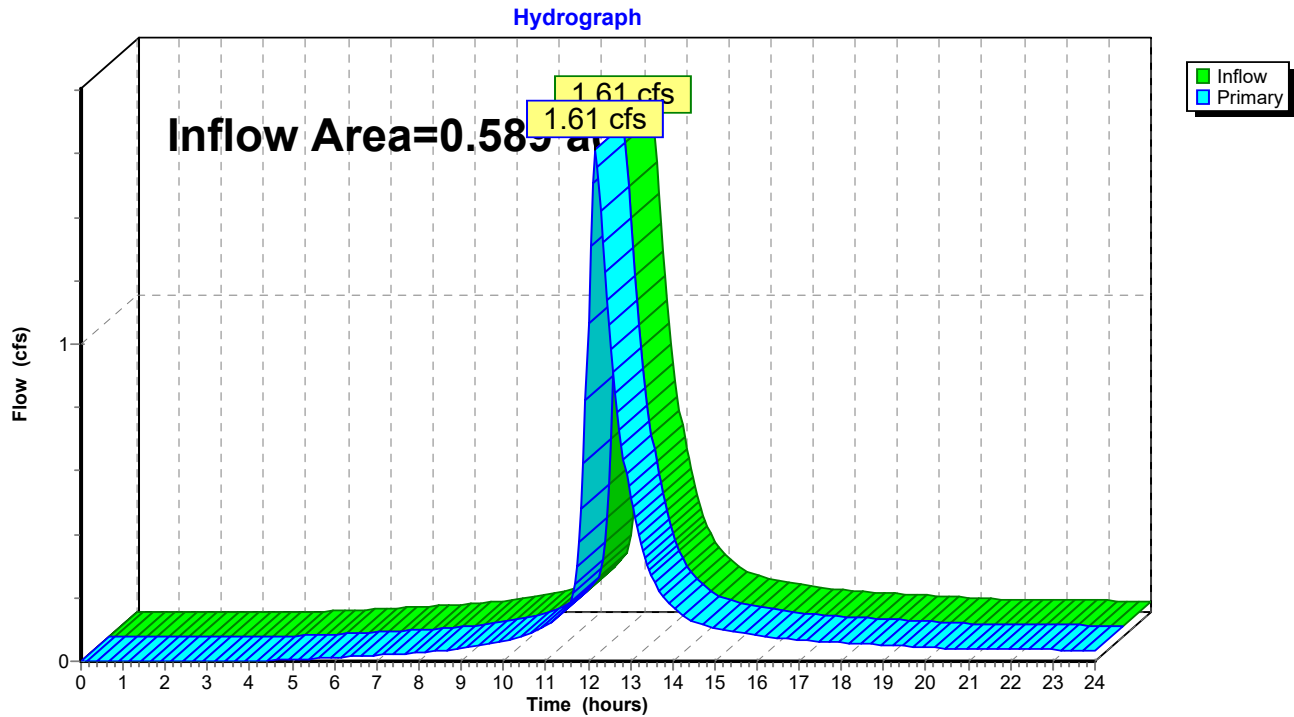
Page 56

Summary for Link 7L: STUDY POINT #2 (PRE)

Inflow Area = 0.589 ac, 0.00% Impervious, Inflow Depth > 4.13" for 10-yr event
Inflow = 1.61 cfs @ 12.17 hrs, Volume= 0.203 af
Primary = 1.61 cfs @ 12.17 hrs, Volume= 0.203 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 7L: STUDY POINT #2 (PRE)



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Type II 24-hr 10-yr Rainfall=5.30"

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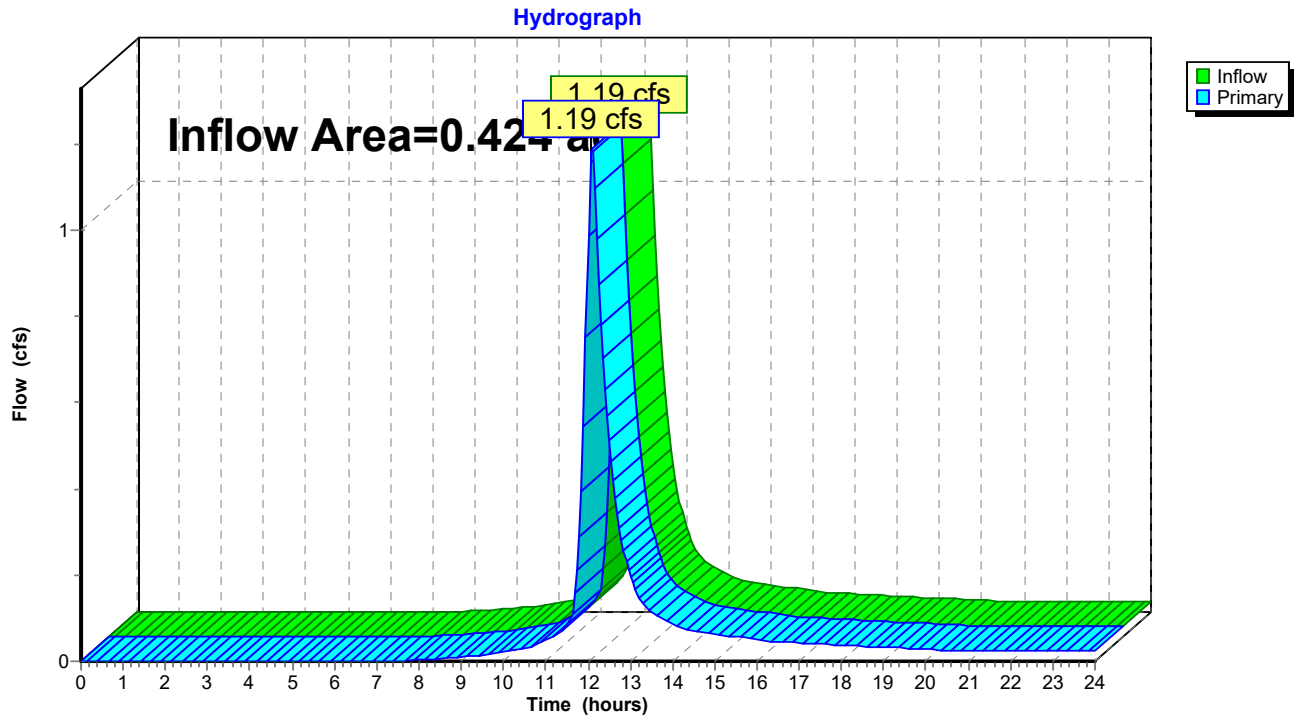
Page 57

Summary for Link 8L: STUDY POINT #3 (POST)

Inflow Area = 0.424 ac, 0.00% Impervious, Inflow Depth > 3.14" for 10-yr event
Inflow = 1.19 cfs @ 12.09 hrs, Volume= 0.111 af
Primary = 1.19 cfs @ 12.09 hrs, Volume= 0.111 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 8L: STUDY POINT #3 (POST)



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Type II 24-hr 10-yr Rainfall=5.30"

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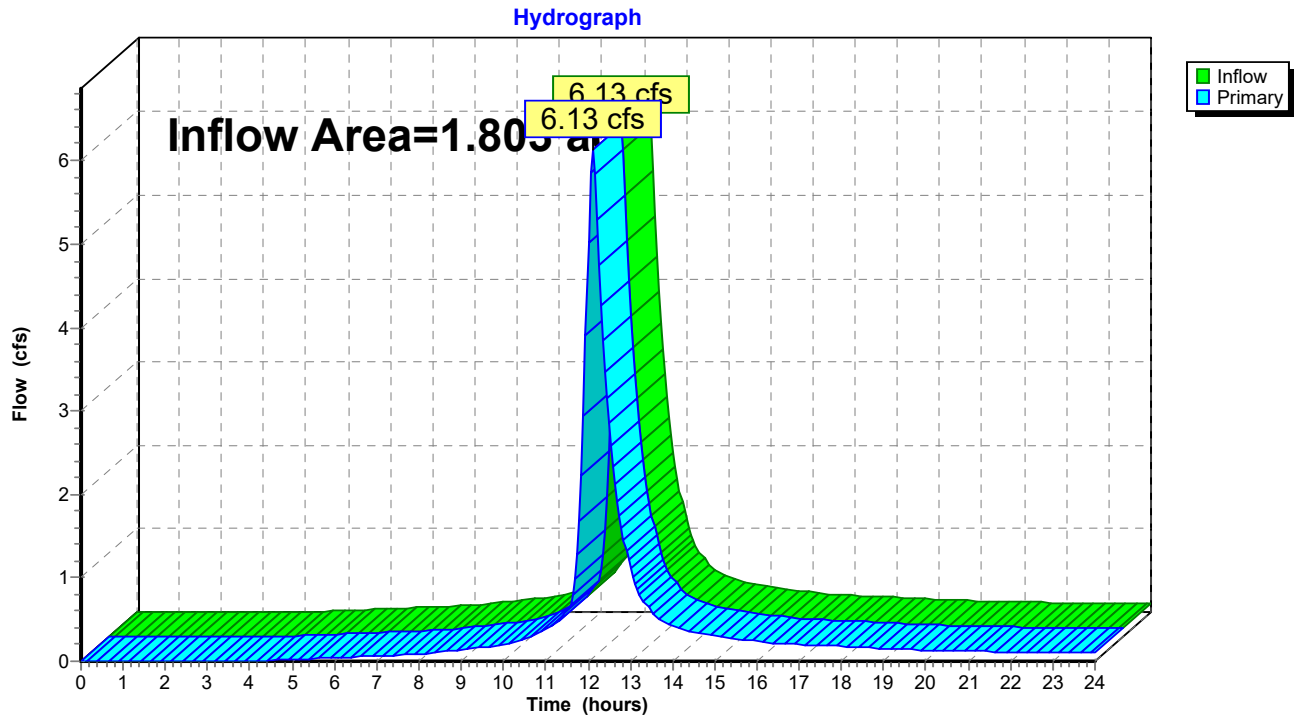
Page 58

Summary for Link 10L: STUDY POINT #3 (PRE)

Inflow Area = 1.803 ac, 0.00% Impervious, Inflow Depth > 4.14" for 10-yr event
Inflow = 6.13 cfs @ 12.10 hrs, Volume= 0.623 af
Primary = 6.13 cfs @ 12.10 hrs, Volume= 0.623 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 10L: STUDY POINT #3 (PRE)



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Type II 24-hr 10-yr Rainfall=5.30"

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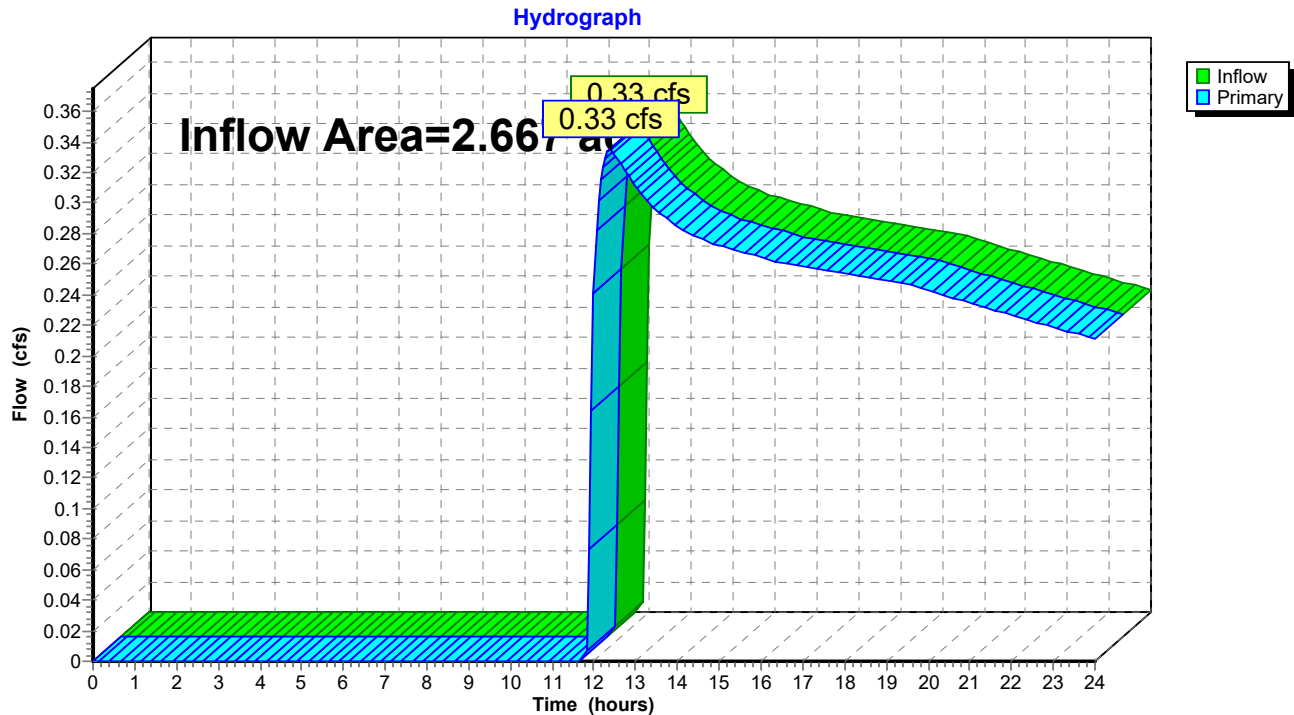
Page 59

Summary for Link 11L: STUDY POINT #1 (POST)

Inflow Area = 2.667 ac, 64.49% Impervious, Inflow Depth > 1.16" for 10-yr event
Inflow = 0.33 cfs @ 12.39 hrs, Volume= 0.257 af
Primary = 0.33 cfs @ 12.39 hrs, Volume= 0.257 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 11L: STUDY POINT #1 (POST)



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Type II 24-hr 100-yr Rainfall=7.60"

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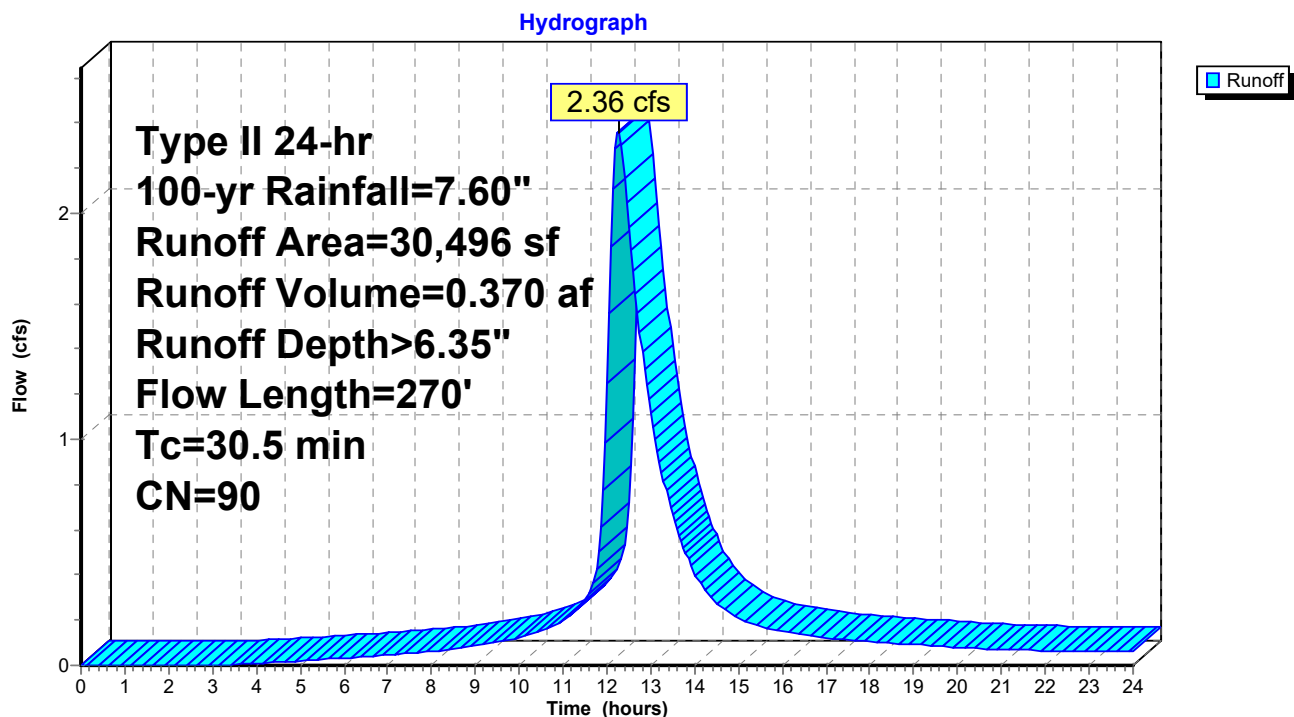
Summary for Subcatchment EX-1: DA TO EX CULVERT

Runoff = 2.36 cfs @ 12.26 hrs, Volume= 0.370 af, Depth> 6.35"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=7.60"

Area (sf)	CN	Description
30,496	90	Fallow, crop residue, Good, HSG D
30,496		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.6	183	0.0100	0.10		Sheet Flow, Vacant Farmed Parcel Grass: Dense n= 0.240 P2= 3.40"
0.9	87	0.0050	1.61	4.34	Channel Flow, Ex Ag Ditch Area= 2.7 sf Perim= 11.4' r= 0.24' n= 0.025 Earth, clean & winding
30.5	270	Total			

Subcatchment EX-1: DA TO EX CULVERT

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Type II 24-hr 100-yr Rainfall=7.60"

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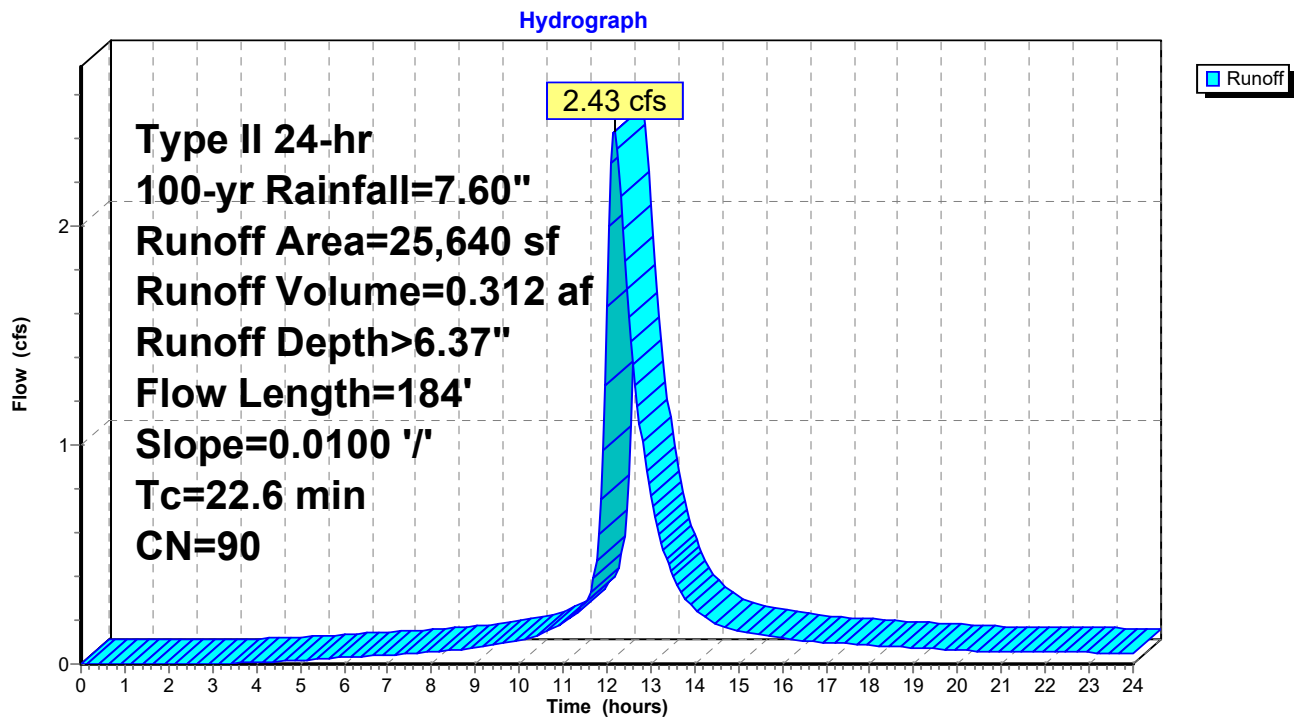
Summary for Subcatchment EX-2: DA to NW Corner

Runoff = 2.43 cfs @ 12.17 hrs, Volume= 0.312 af, Depth> 6.37"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=7.60"

Area (sf)	CN	Description
25,640	90	Fallow, crop residue, Good, HSG D
25,640		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.6	184	0.0100	0.14		Sheet Flow, AG Field Cultivated: Residue>20% n= 0.170 P2= 3.40"

Subcatchment EX-2: DA to NW Corner

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Type II 24-hr 100-yr Rainfall=7.60"

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Summary for Subcatchment EX-3: DA TO NE CORNER

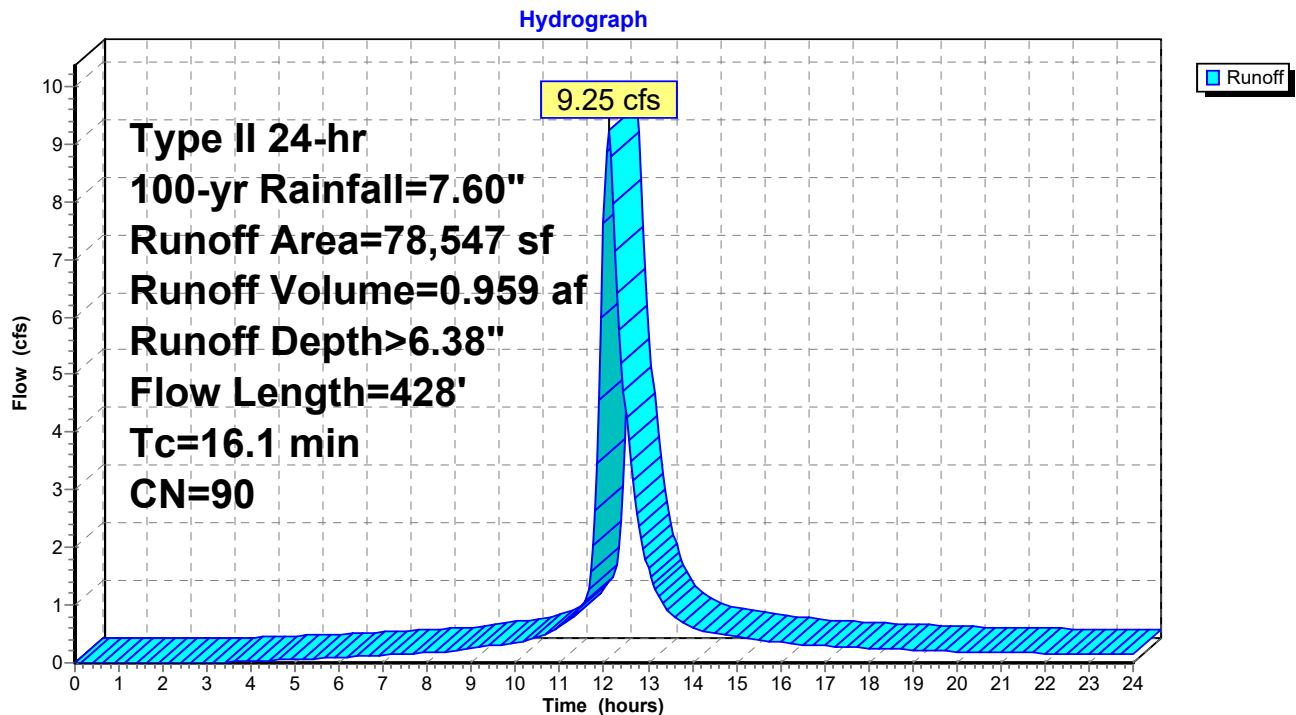
Runoff = 9.25 cfs @ 12.10 hrs, Volume= 0.959 af, Depth> 6.38"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=7.60"

Area (sf)	CN	Description
78,547	90	Fallow, crop residue, Good, HSG D
78,547		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.6	89	0.0100	0.12		Sheet Flow, AG Field Cultivated: Residue>20% n= 0.170 P2= 3.40"
3.5	339	0.0050	1.61	4.34	Channel Flow, Ex Ag Ditch Area= 2.7 sf Perim= 11.4' r= 0.24' n= 0.025
16.1	428	Total			

Subcatchment EX-3: DA TO NE CORNER



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Type II 24-hr 100-yr Rainfall=7.60"

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Summary for Subcatchment PR-1: Half Bldg Roof (Magenta)

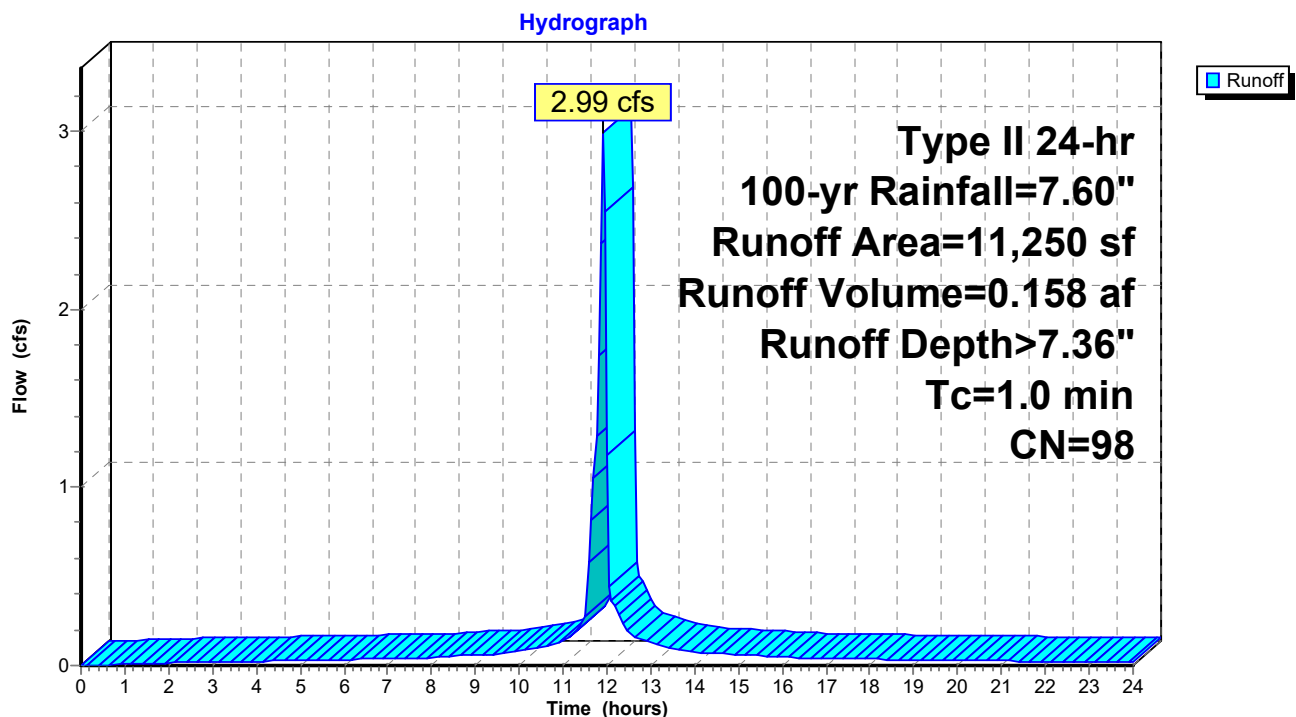
Runoff = 2.99 cfs @ 11.90 hrs, Volume= 0.158 af, Depth> 7.36"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	11,250	98	Roof
	11,250		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0					Direct Entry, Roof

Subcatchment PR-1: Half Bldg Roof (Magenta)



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Type II 24-hr 100-yr Rainfall=7.60"

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Summary for Subcatchment PR-2: Half Bldg Roof (Green)

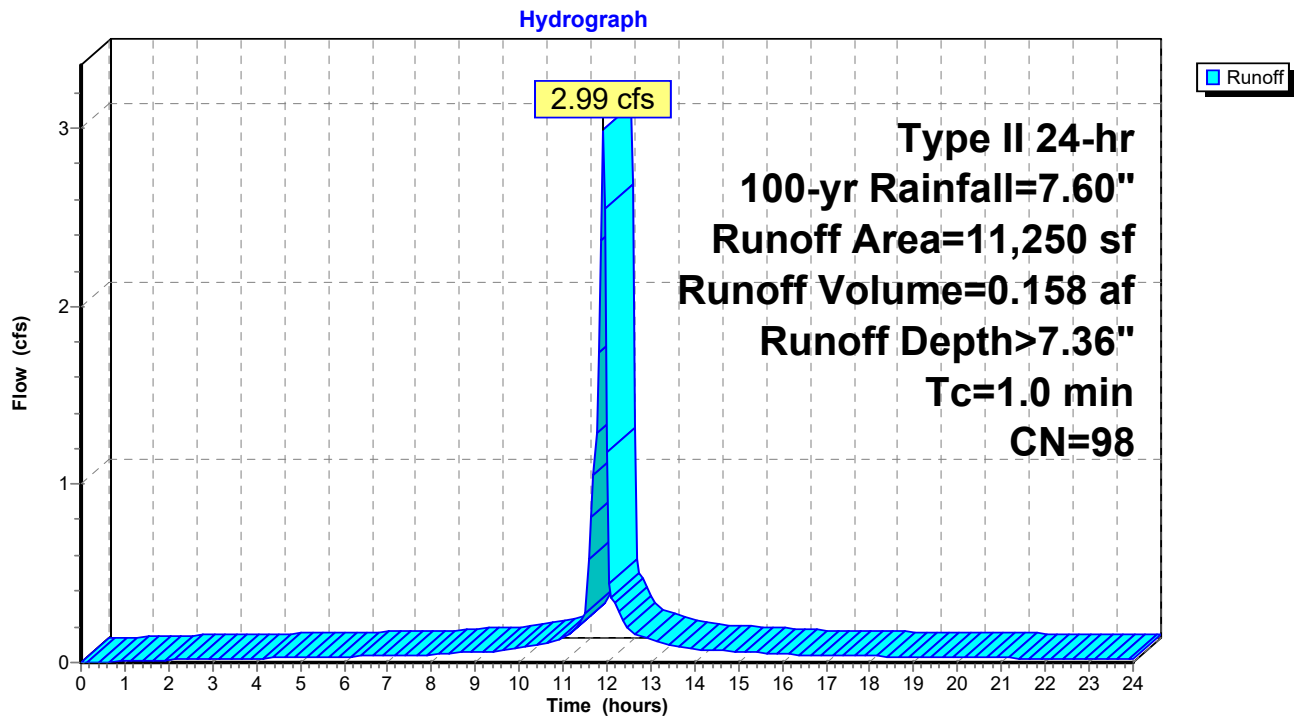
Runoff = 2.99 cfs @ 11.90 hrs, Volume= 0.158 af, Depth> 7.36"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=7.60"

Area (sf)	CN	Description
* 11,250	98	Roof
11,250		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0					Direct Entry, Roof

Subcatchment PR-2: Half Bldg Roof (Green)



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Type II 24-hr 100-yr Rainfall=7.60"

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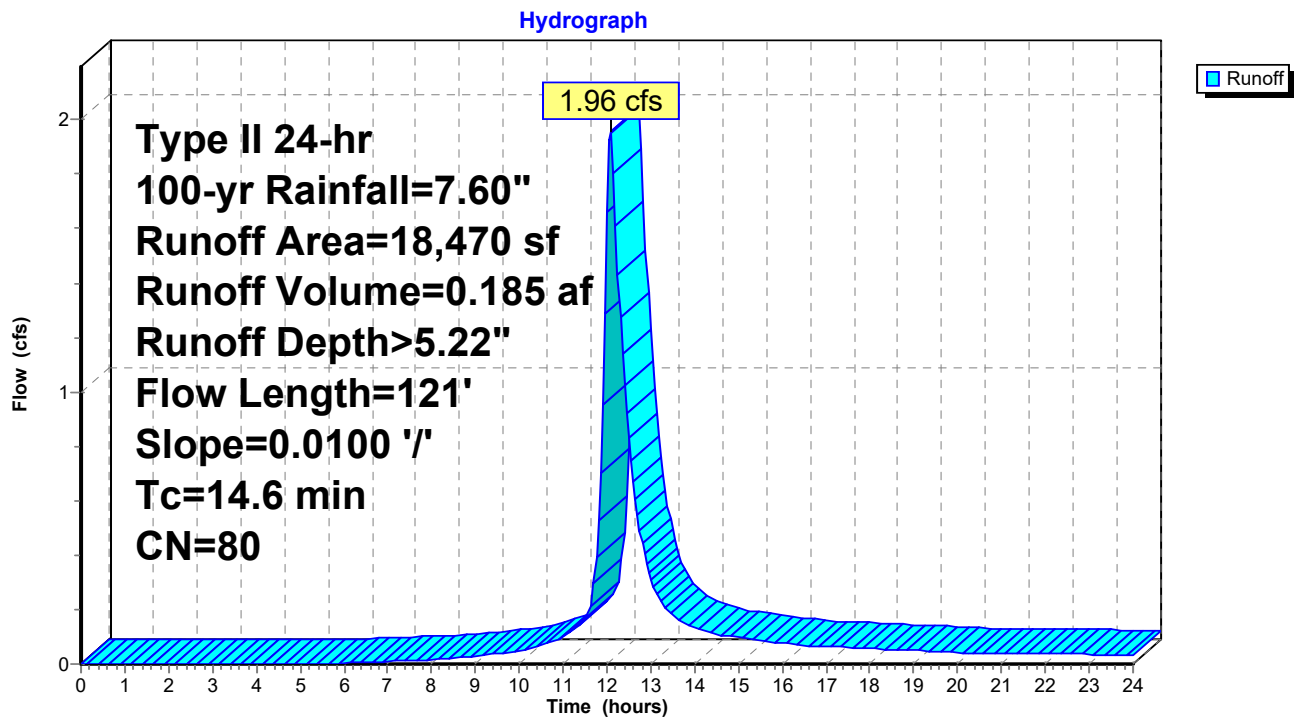
Summary for Subcatchment PR-3: Rear Building Residue (Yellow)

Runoff = 1.96 cfs @ 12.08 hrs, Volume= 0.185 af, Depth> 5.22"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=7.60"

Area (sf)	CN	Description
18,470	80	>75% Grass cover, Good, HSG D
18,470		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.6	121	0.0100	0.14		Sheet Flow, Lawn Grass: Short n= 0.150 P2= 3.40"

Subcatchment PR-3: Rear Building Residue (Yellow)

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Type II 24-hr 100-yr Rainfall=7.60"

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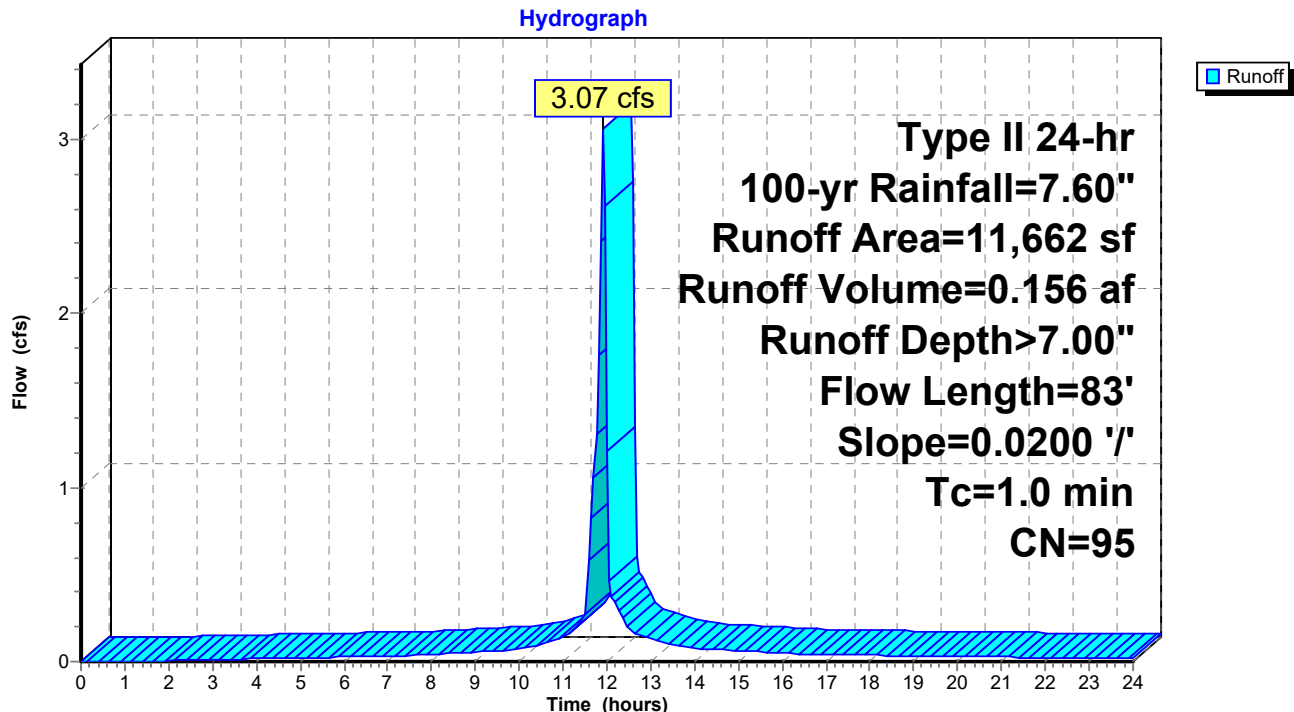
Summary for Subcatchment PR-4: NE Front Parking (Lavendar)

Runoff = 3.07 cfs @ 11.90 hrs, Volume= 0.156 af, Depth> 7.00"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	9,613	98	Asphalt
	2,049	80	>75% Grass cover, Good, HSG D
	11,662	95	Weighted Average
	2,049		17.57% Pervious Area
	9,613		82.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	83	0.0200	1.37		Sheet Flow, Asphalt
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment PR-4: NE Front Parking (Lavendar)

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Type II 24-hr 100-yr Rainfall=7.60"

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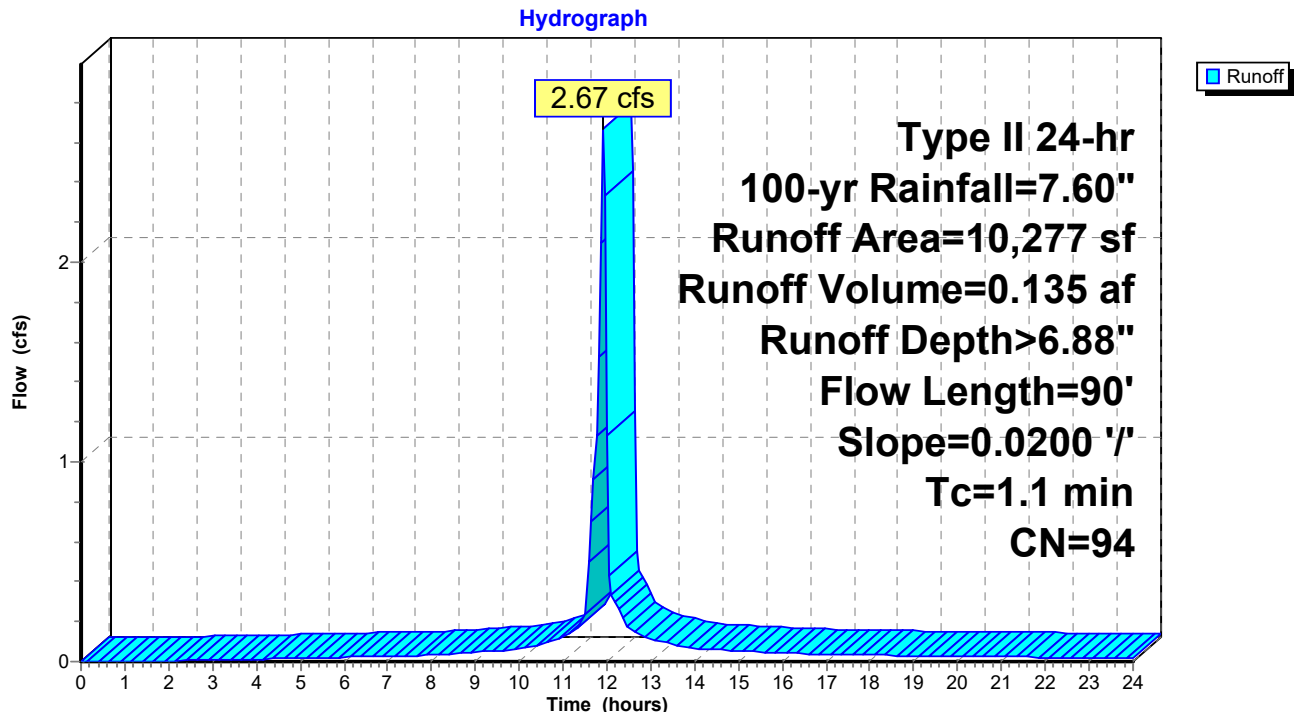
Summary for Subcatchment PR-5: NW Front Parking (Gold)

Runoff = 2.67 cfs @ 11.91 hrs, Volume= 0.135 af, Depth> 6.88"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	8,112	98	PARKING
	2,165	80	>75% Grass cover, Good, HSG D
	10,277	94	Weighted Average
	2,165		21.07% Pervious Area
	8,112		78.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	90	0.0200	1.39		Sheet Flow, Parking Lot Smooth surfaces n= 0.011 P2= 3.40"

Subcatchment PR-5: NW Front Parking (Gold)

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Summary for Subcatchment PR-6: Entrance (Blue)

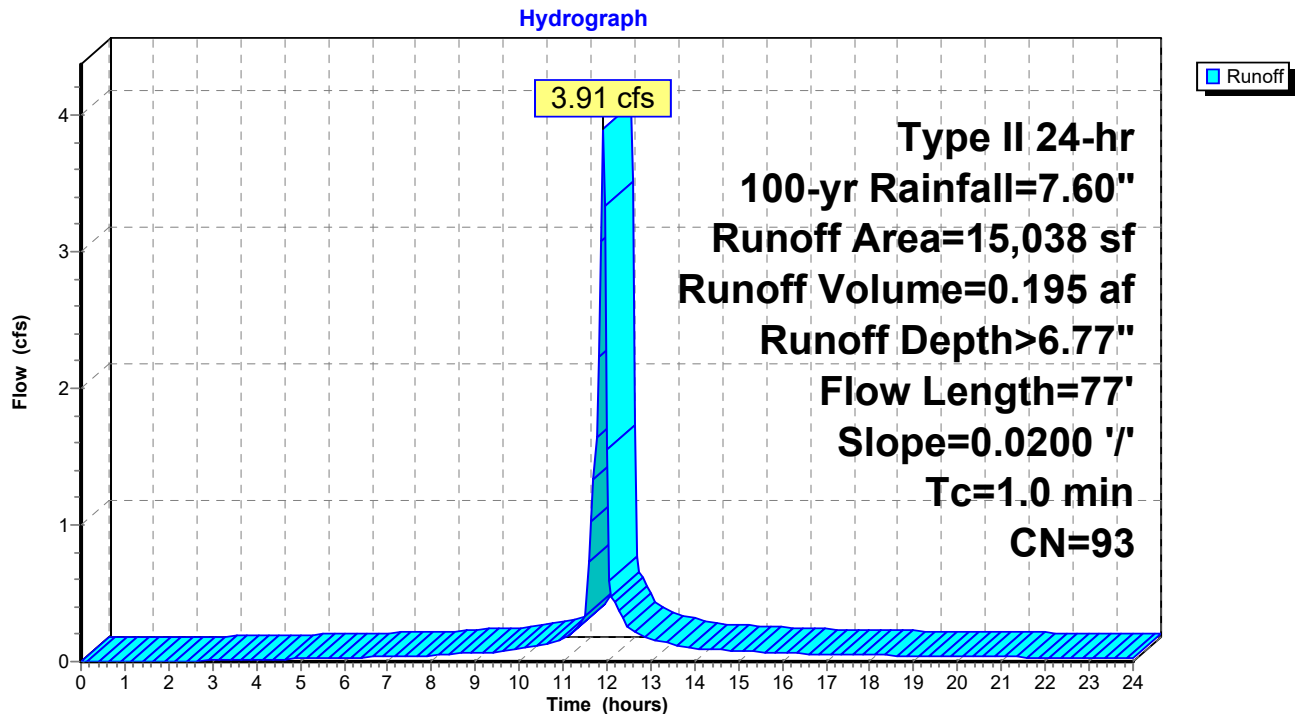
Runoff = 3.91 cfs @ 11.90 hrs, Volume= 0.195 af, Depth> 6.77"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	10,813	98	Asphalt
	4,225	80	>75% Grass cover, Good, HSG D
	15,038	93	Weighted Average
	4,225		28.10% Pervious Area
	10,813		71.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	77	0.0200	1.35		Sheet Flow, Asphalt
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment PR-6: Entrance (Blue)



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Type II 24-hr 100-yr Rainfall=7.60"

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Summary for Subcatchment PR-7: Half Loading Area (Turquoise)

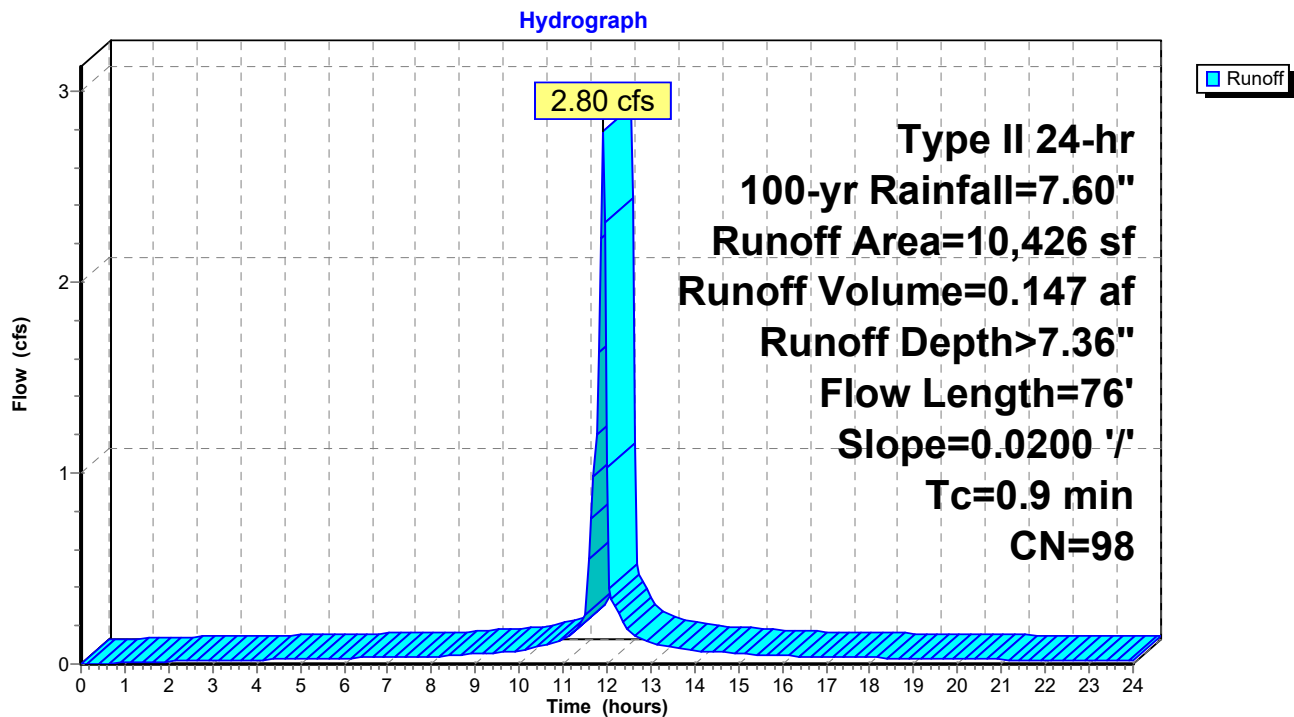
Runoff = 2.80 cfs @ 11.90 hrs, Volume= 0.147 af, Depth> 7.36"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=7.60"

Area (sf)	CN	Description
* 10,426	98	Asphalt
10,426		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	76	0.0200	1.34		Sheet Flow, Asphalt

Smooth surfaces n= 0.011 P2= 3.40"

Subcatchment PR-7: Half Loading Area (Turquoise)

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Summary for Subcatchment PR-8: Half Loading Area (Orange)

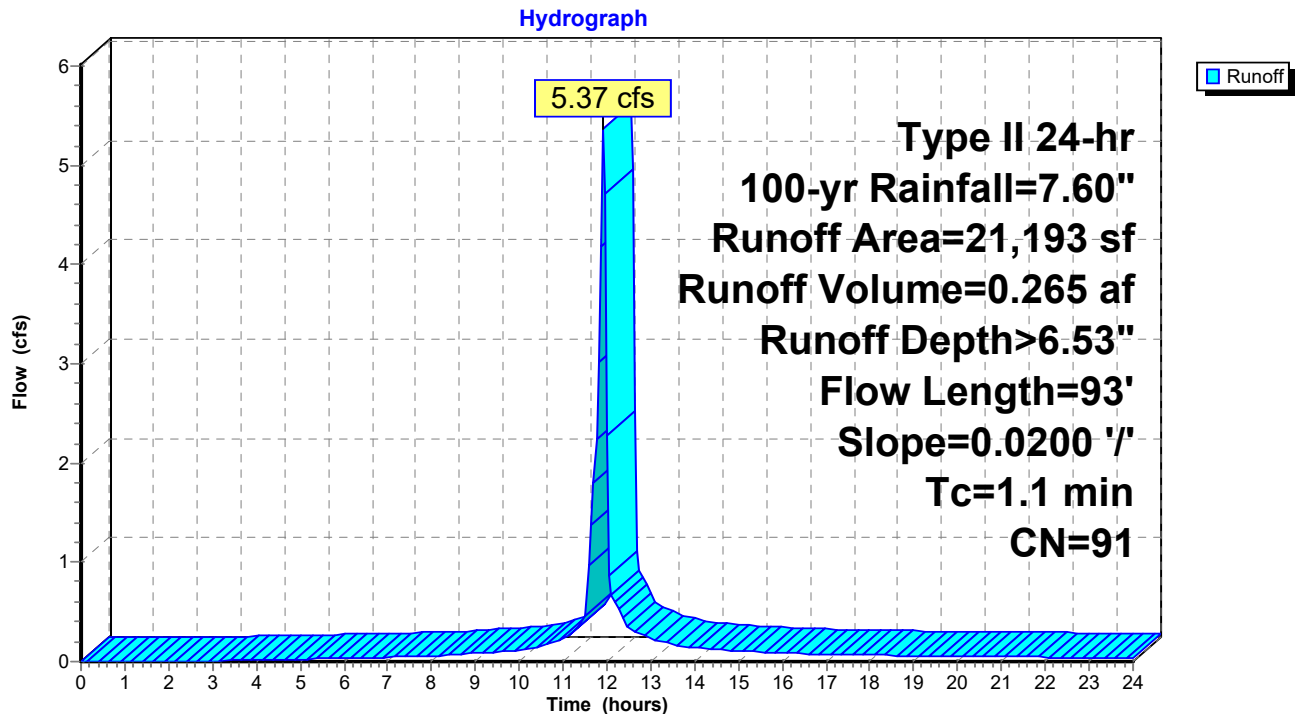
Runoff = 5.37 cfs @ 11.91 hrs, Volume= 0.265 af, Depth> 6.53"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	13,466	98	Loading Area
	7,727	80	>75% Grass cover, Good, HSG D
	21,193	91	Weighted Average
	7,727		36.46% Pervious Area
	13,466		63.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	93	0.0200	1.40		Sheet Flow, Asphalt
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment PR-8: Half Loading Area (Orange)



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Type II 24-hr 100-yr Rainfall=7.60"

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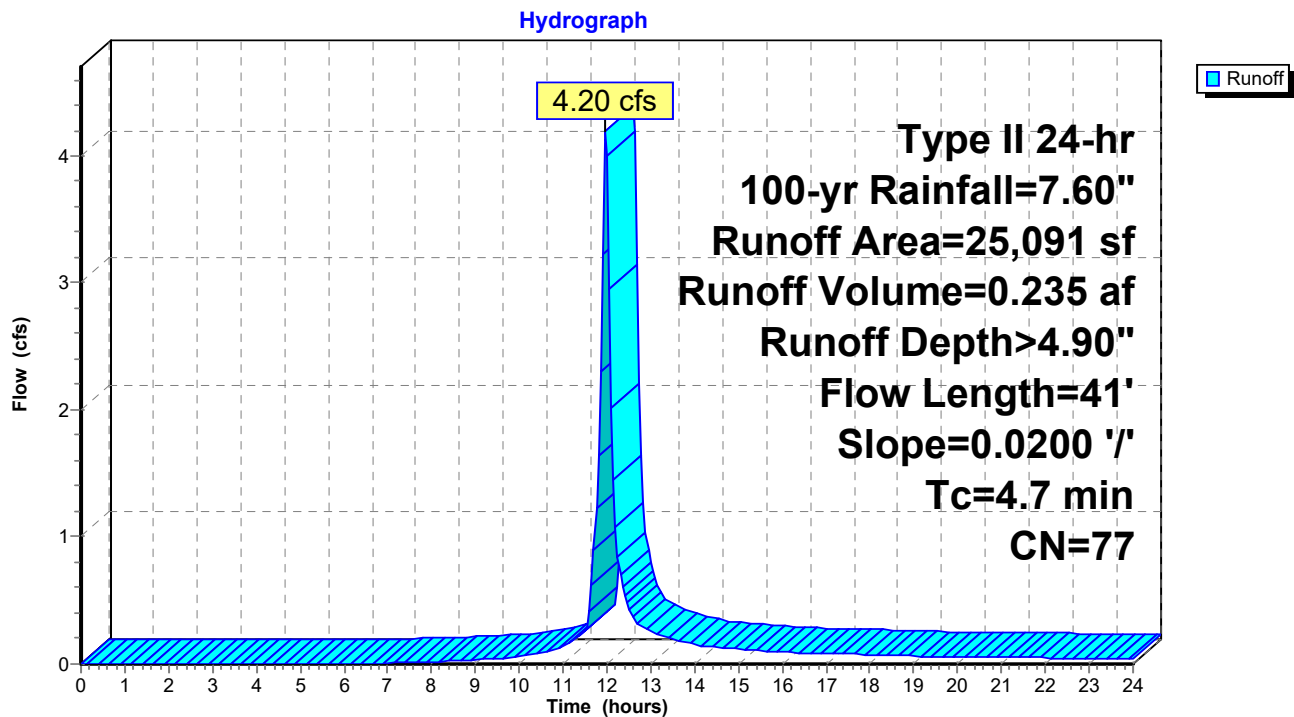
Summary for Subcatchment PR-9: Pond (Grey)

Runoff = 4.20 cfs @ 11.97 hrs, Volume= 0.235 af, Depth> 4.90"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=7.60"

Area (sf)	CN	Description
25,091	77	Woods, Good, HSG D
25,091		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	41	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.40"

Subcatchment PR-9: Pond (Grey)

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Type II 24-hr 100-yr Rainfall=7.60"

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Summary for Pond 3P: SD-Load_North

Inflow Area = 0.239 ac, 100.00% Impervious, Inflow Depth > 7.36" for 100-yr event
 Inflow = 2.80 cfs @ 11.90 hrs, Volume= 0.147 af
 Outflow = 2.80 cfs @ 11.90 hrs, Volume= 0.147 af, Atten= 0%, Lag= 0.0 min
 Primary = 2.80 cfs @ 11.90 hrs, Volume= 0.147 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

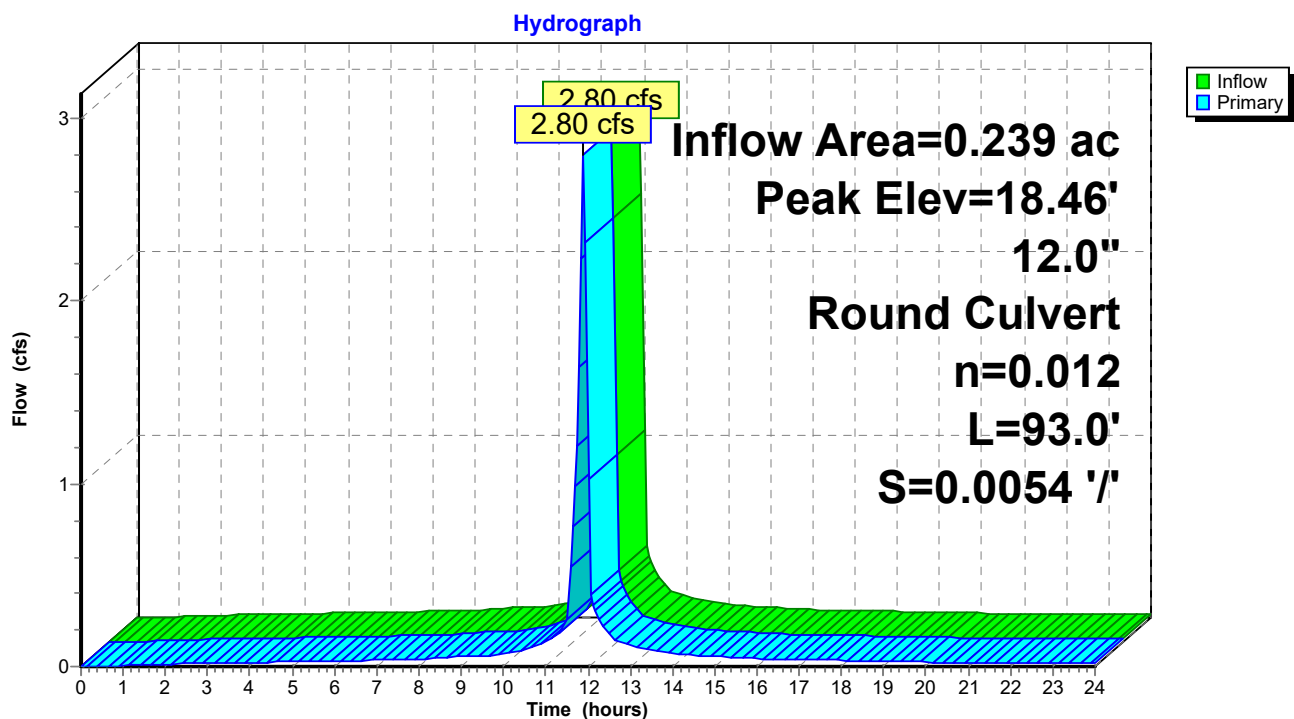
Peak Elev= 18.46' @ 11.92 hrs

Flood Elev= 18.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	16.50'	12.0" Round 12" HDPE L= 93.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 16.50' / 16.00' S= 0.0054 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=2.35 cfs @ 11.90 hrs HW=18.41' TW=17.85' (Dynamic Tailwater)

1=12" HDPE (Outlet Controls 2.35 cfs @ 2.99 fps)

Pond 3P: SD-Load_North

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Stage-Area-Storage for Pond 3P: SD-Load_North

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
16.50	0	17.54	0	18.58	0
16.52	0	17.56	0	18.60	0
16.54	0	17.58	0	18.62	0
16.56	0	17.60	0	18.64	0
16.58	0	17.62	0	18.66	0
16.60	0	17.64	0	18.68	0
16.62	0	17.66	0	18.70	0
16.64	0	17.68	0	18.72	0
16.66	0	17.70	0	18.74	0
16.68	0	17.72	0	18.76	0
16.70	0	17.74	0	18.78	0
16.72	0	17.76	0	18.80	0
16.74	0	17.78	0	18.82	0
16.76	0	17.80	0	18.84	0
16.78	0	17.82	0	18.86	0
16.80	0	17.84	0	18.88	0
16.82	0	17.86	0	18.90	0
16.84	0	17.88	0		
16.86	0	17.90	0		
16.88	0	17.92	0		
16.90	0	17.94	0		
16.92	0	17.96	0		
16.94	0	17.98	0		
16.96	0	18.00	0		
16.98	0	18.02	0		
17.00	0	18.04	0		
17.02	0	18.06	0		
17.04	0	18.08	0		
17.06	0	18.10	0		
17.08	0	18.12	0		
17.10	0	18.14	0		
17.12	0	18.16	0		
17.14	0	18.18	0		
17.16	0	18.20	0		
17.18	0	18.22	0		
17.20	0	18.24	0		
17.22	0	18.26	0		
17.24	0	18.28	0		
17.26	0	18.30	0		
17.28	0	18.32	0		
17.30	0	18.34	0		
17.32	0	18.36	0		
17.34	0	18.38	0		
17.36	0	18.40	0		
17.38	0	18.42	0		
17.40	0	18.44	0		
17.42	0	18.46	0		
17.44	0	18.48	0		
17.46	0	18.50	0		
17.48	0	18.52	0		
17.50	0	18.54	0		
17.52	0	18.56	0		

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Type II 24-hr 100-yr Rainfall=7.60"

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Summary for Pond 4P: SD-Load_South

Inflow Area = 0.487 ac, 63.54% Impervious, Inflow Depth > 6.53" for 100-yr event
 Inflow = 5.37 cfs @ 11.91 hrs, Volume= 0.265 af
 Outflow = 5.37 cfs @ 11.91 hrs, Volume= 0.265 af, Atten= 0%, Lag= 0.0 min
 Primary = 5.37 cfs @ 11.91 hrs, Volume= 0.265 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

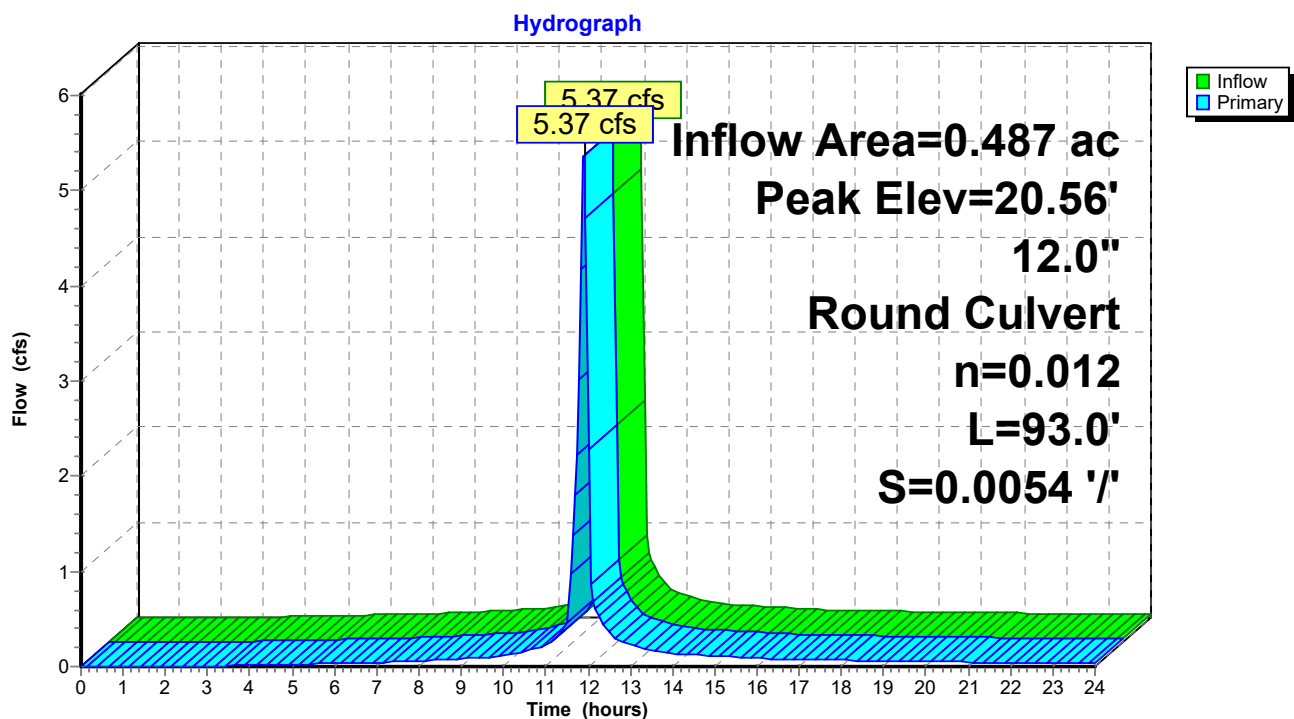
Peak Elev= 20.56' @ 11.91 hrs

Flood Elev= 18.75'

Device	Routing	Invert	Outlet Devices
#1	Primary	16.50'	12.0" Round 12" HDPE L= 93.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 16.50' / 16.00' S= 0.0054 '/ Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=5.05 cfs @ 11.91 hrs HW=20.44' TW=17.88' (Dynamic Tailwater)

1=12" HDPE (Outlet Controls 5.05 cfs @ 6.42 fps)

Pond 4P: SD-Load_South

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Stage-Area-Storage for Pond 4P: SD-Load_South

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
16.50	0	19.10	0
16.55	0	19.15	0
16.60	0	19.20	0
16.65	0	19.25	0
16.70	0	19.30	0
16.75	0	19.35	0
16.80	0	19.40	0
16.85	0	19.45	0
16.90	0	19.50	0
16.95	0	19.55	0
17.00	0	19.60	0
17.05	0	19.65	0
17.10	0	19.70	0
17.15	0	19.75	0
17.20	0	19.80	0
17.25	0	19.85	0
17.30	0	19.90	0
17.35	0	19.95	0
17.40	0	20.00	0
17.45	0	20.05	0
17.50	0	20.10	0
17.55	0	20.15	0
17.60	0	20.20	0
17.65	0	20.25	0
17.70	0	20.30	0
17.75	0	20.35	0
17.80	0	20.40	0
17.85	0	20.45	0
17.90	0	20.50	0
17.95	0		
18.00	0		
18.05	0		
18.10	0		
18.15	0		
18.20	0		
18.25	0		
18.30	0		
18.35	0		
18.40	0		
18.45	0		
18.50	0		
18.55	0		
18.60	0		
18.65	0		
18.70	0		
18.75	0		
18.80	0		
18.85	0		
18.90	0		
18.95	0		
19.00	0		
19.05	0		

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Summary for Pond 5P: Parking_SD

Inflow Area = 0.268 ac, 82.43% Impervious, Inflow Depth > 7.00" for 100-yr event
 Inflow = 3.07 cfs @ 11.90 hrs, Volume= 0.156 af
 Outflow = 3.07 cfs @ 11.90 hrs, Volume= 0.156 af, Atten= 0%, Lag= 0.0 min
 Primary = 3.07 cfs @ 11.90 hrs, Volume= 0.156 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

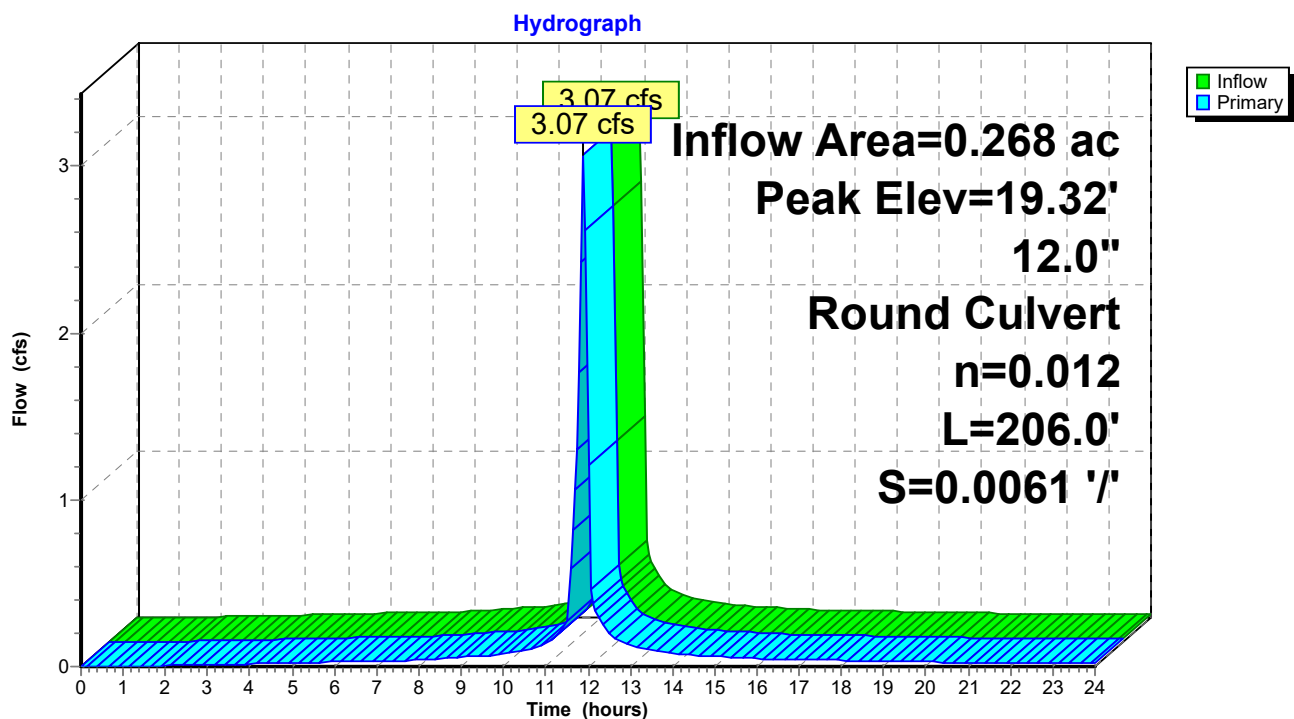
Peak Elev= 19.32' @ 11.91 hrs

Flood Elev= 18.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.25'	12.0" Round 12" HDPE L= 206.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 17.25' / 16.00' S= 0.0061 '/ Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=2.81 cfs @ 11.90 hrs HW=19.26' TW=17.87' (Dynamic Tailwater)

1=12" HDPE (Outlet Controls 2.81 cfs @ 3.58 fps)

Pond 5P: Parking_SD

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Stage-Area-Storage for Pond 5P: Parking_SD

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
17.25	0	18.29	0
17.27	0	18.31	0
17.29	0	18.33	0
17.31	0	18.35	0
17.33	0	18.37	0
17.35	0	18.39	0
17.37	0	18.41	0
17.39	0	18.43	0
17.41	0	18.45	0
17.43	0	18.47	0
17.45	0	18.49	0
17.47	0	18.51	0
17.49	0	18.53	0
17.51	0	18.55	0
17.53	0	18.57	0
17.55	0	18.59	0
17.57	0	18.61	0
17.59	0	18.63	0
17.61	0	18.65	0
17.63	0	18.67	0
17.65	0	18.69	0
17.67	0	18.71	0
17.69	0	18.73	0
17.71	0	18.75	0
17.73	0	18.77	0
17.75	0	18.79	0
17.77	0	18.81	0
17.79	0	18.83	0
17.81	0	18.85	0
17.83	0	18.87	0
17.85	0	18.89	0
17.87	0	18.91	0
17.89	0	18.93	0
17.91	0	18.95	0
17.93	0	18.97	0
17.95	0	18.99	0
17.97	0	19.01	0
17.99	0	19.03	0
18.01	0	19.05	0
18.03	0	19.07	0
18.05	0	19.09	0
18.07	0	19.11	0
18.09	0	19.13	0
18.11	0	19.15	0
18.13	0	19.17	0
18.15	0	19.19	0
18.17	0	19.21	0
18.19	0	19.23	0
18.21	0	19.25	0
18.23	0	19.27	0
18.25	0	19.29	0
18.27	0		

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Summary for Pond 6P: Parking SD

Inflow Area = 0.236 ac, 78.93% Impervious, Inflow Depth > 6.88" for 100-yr event
 Inflow = 2.67 cfs @ 11.91 hrs, Volume= 0.135 af
 Outflow = 2.67 cfs @ 11.91 hrs, Volume= 0.135 af, Atten= 0%, Lag= 0.0 min
 Primary = 2.67 cfs @ 11.91 hrs, Volume= 0.135 af

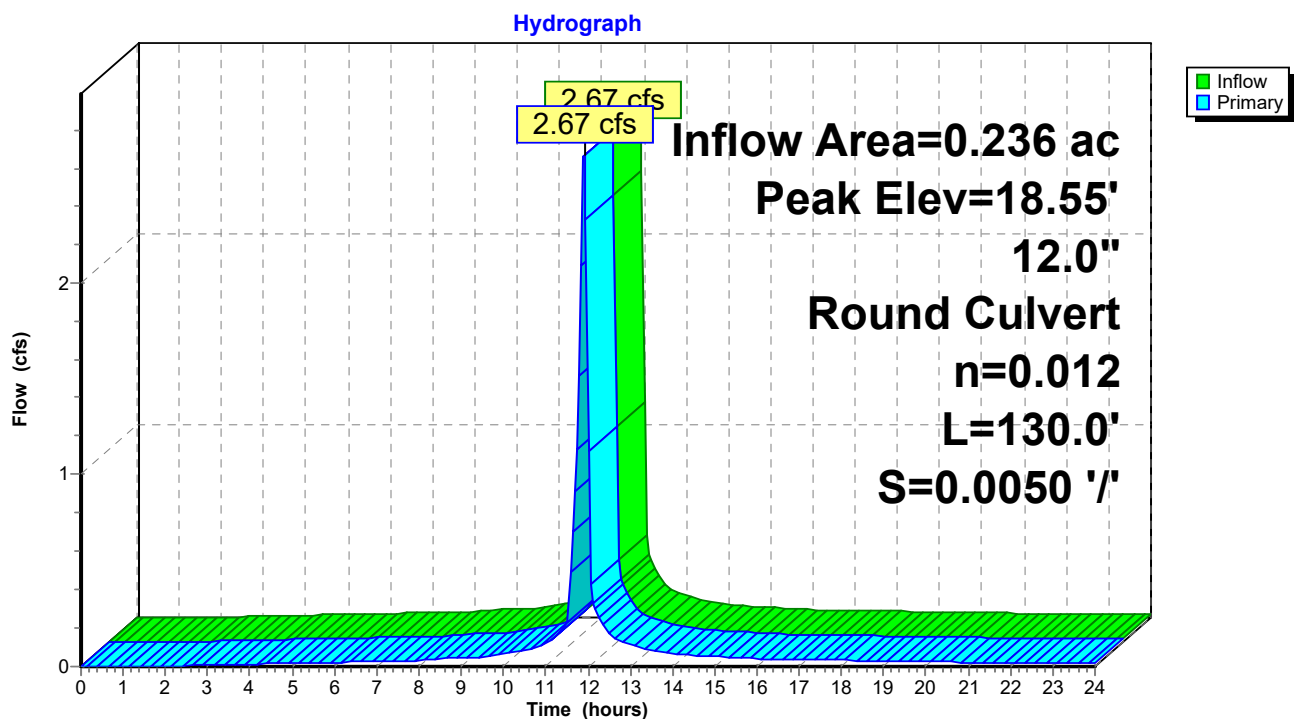
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 18.55' @ 11.93 hrs

Flood Elev= 19.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	16.65'	12.0" Round 12" HPDE L= 130.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 16.65' / 16.00' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=2.25 cfs @ 11.91 hrs HW=18.51' TW=17.88' (Dynamic Tailwater)
 ↳ 1=12" HPDE (Outlet Controls 2.25 cfs @ 2.86 fps)

Pond 6P: Parking SD

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Stage-Area-Storage for Pond 6P: Parking SD

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
16.65	0	17.69	0	18.73	0
16.67	0	17.71	0	18.75	0
16.69	0	17.73	0	18.77	0
16.71	0	17.75	0	18.79	0
16.73	0	17.77	0	18.81	0
16.75	0	17.79	0	18.83	0
16.77	0	17.81	0	18.85	0
16.79	0	17.83	0	18.87	0
16.81	0	17.85	0	18.89	0
16.83	0	17.87	0	18.91	0
16.85	0	17.89	0	18.93	0
16.87	0	17.91	0	18.95	0
16.89	0	17.93	0	18.97	0
16.91	0	17.95	0	18.99	0
16.93	0	17.97	0		
16.95	0	17.99	0		
16.97	0	18.01	0		
16.99	0	18.03	0		
17.01	0	18.05	0		
17.03	0	18.07	0		
17.05	0	18.09	0		
17.07	0	18.11	0		
17.09	0	18.13	0		
17.11	0	18.15	0		
17.13	0	18.17	0		
17.15	0	18.19	0		
17.17	0	18.21	0		
17.19	0	18.23	0		
17.21	0	18.25	0		
17.23	0	18.27	0		
17.25	0	18.29	0		
17.27	0	18.31	0		
17.29	0	18.33	0		
17.31	0	18.35	0		
17.33	0	18.37	0		
17.35	0	18.39	0		
17.37	0	18.41	0		
17.39	0	18.43	0		
17.41	0	18.45	0		
17.43	0	18.47	0		
17.45	0	18.49	0		
17.47	0	18.51	0		
17.49	0	18.53	0		
17.51	0	18.55	0		
17.53	0	18.57	0		
17.55	0	18.59	0		
17.57	0	18.61	0		
17.59	0	18.63	0		
17.61	0	18.65	0		
17.63	0	18.67	0		
17.65	0	18.69	0		
17.67	0	18.71	0		

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Summary for Pond SGW: SGW #1

Inflow Area = 2.667 ac, 64.49% Impervious, Inflow Depth > 6.52" for 100-yr event
 Inflow = 27.16 cfs @ 11.91 hrs, Volume= 1.450 af
 Outflow = 23.32 cfs @ 11.99 hrs, Volume= 0.905 af, Atten= 14%, Lag= 5.0 min
 Primary = 5.01 cfs @ 11.98 hrs, Volume= 0.374 af
 Secondary = 18.35 cfs @ 11.99 hrs, Volume= 0.530 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 18.32' @ 11.99 hrs Surf.Area= 18,417 sf Storage= 30,960 cf

Plug-Flow detention time= 212.3 min calculated for 0.903 af (62% of inflow)
 Center-of-Mass det. time= 107.3 min (866.3 - 759.1)

Volume	Invert	Avail.Storage	Storage Description		
#1	16.00'	30,960 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
16.00	12,718	687.0	0	0	12,718
18.00	18,417	737.0	30,960	30,960	18,560

Device	Routing	Invert	Outlet Devices
#1	Primary	15.66'	12.0" Round 12" HDPE L= 23.3' Box, 0° wingwalls, square crown edge, Ke= 0.700 Inlet / Outlet Invert= 15.66' / 15.55' S= 0.0047 ' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	17.00'	2.0" W x 9.0" H Vert. Orifice/Grate C= 0.600
#3	Device 1	17.75'	10.7' long Rim SHA 374.23 2 End Contraction(s)
#4	Secondary	17.60'	10.0' long x 0.7' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32

Primary OutFlow Max=4.81 cfs @ 11.98 hrs HW=18.24' TW=0.00' (Dynamic Tailwater)

- ↑ 1=12" HDPE (Inlet Controls 4.81 cfs @ 6.12 fps)
- ↑ 2=Orifice/Grate (Passes < 0.55 cfs potential flow)
- ↑ 3=Rim SHA 374.23 (Passes < 11.82 cfs potential flow)

Secondary OutFlow Max=17.19 cfs @ 11.99 hrs HW=18.29' TW=0.00' (Dynamic Tailwater)

- ↑ 4=Broad-Crested Rectangular Weir (Weir Controls 17.19 cfs @ 2.49 fps)

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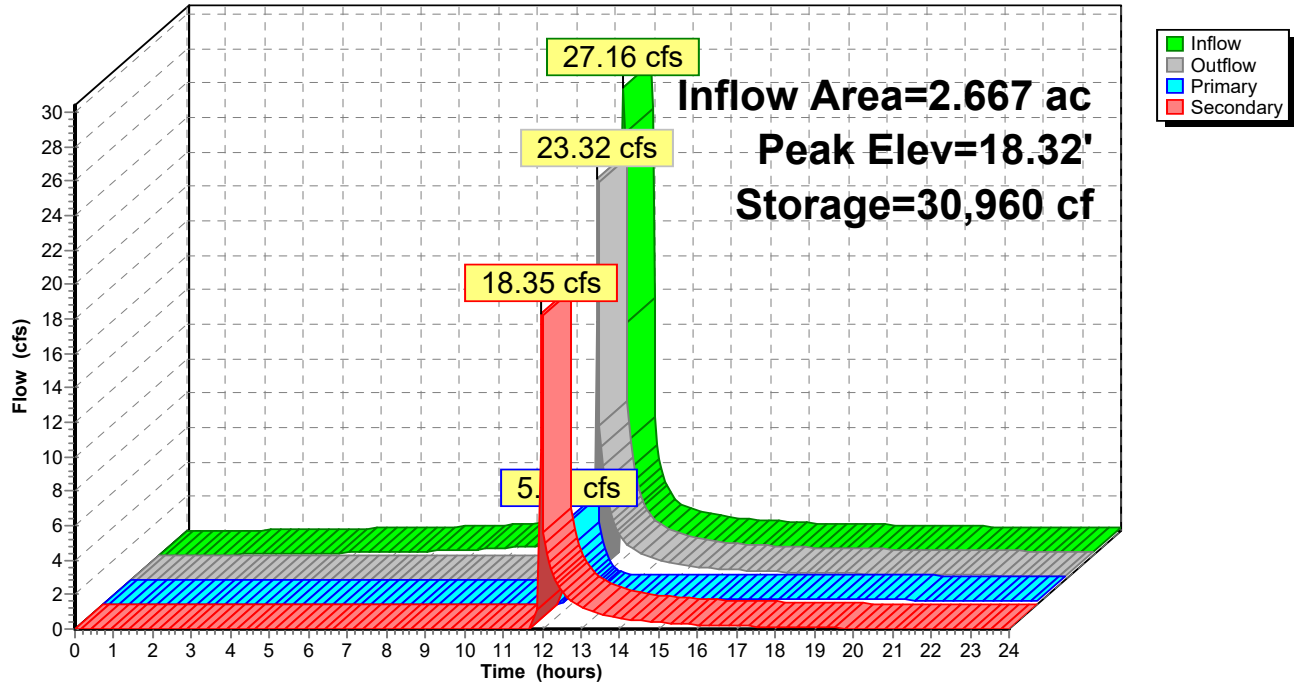
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Pond SGW: SGW #1

Hydrograph



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Stage-Area-Storage for Pond SGW: SGW #1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
16.00	12,718	0
16.05	12,848	639
16.10	12,978	1,285
16.15	13,109	1,937
16.20	13,241	2,596
16.25	13,373	3,261
16.30	13,506	3,933
16.35	13,639	4,612
16.40	13,774	5,297
16.45	13,909	5,989
16.50	14,044	6,688
16.55	14,180	7,393
16.60	14,317	8,106
16.65	14,455	8,825
16.70	14,593	9,551
16.75	14,732	10,284
16.80	14,871	11,025
16.85	15,012	11,772
16.90	15,152	12,526
16.95	15,294	13,287
17.00	15,436	14,055
17.05	15,579	14,830
17.10	15,722	15,613
17.15	15,866	16,403
17.20	16,011	17,200
17.25	16,157	18,004
17.30	16,303	18,815
17.35	16,449	19,634
17.40	16,597	20,460
17.45	16,745	21,294
17.50	16,894	22,135
17.55	17,043	22,983
17.60	17,193	23,839
17.65	17,344	24,702
17.70	17,495	25,573
17.75	17,647	26,452
17.80	17,800	27,338
17.85	17,953	28,232
17.90	18,107	29,133
17.95	18,262	30,043
18.00	18,417	30,960
18.05	18,417	30,960
18.10	18,417	30,960
18.15	18,417	30,960
18.20	18,417	30,960
18.25	18,417	30,960
18.30	18,417	30,960

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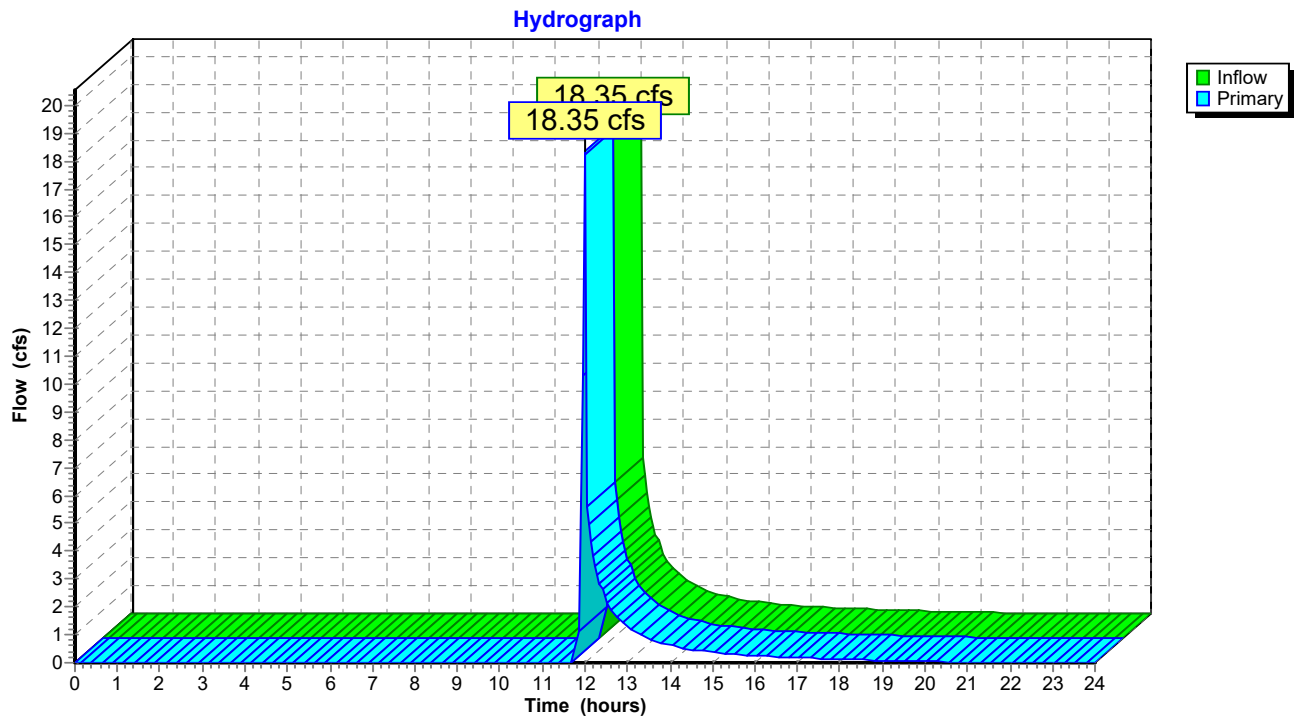
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Summary for Link 2L: STUDY POINT #2 (POST)

Inflow = 18.35 cfs @ 11.99 hrs, Volume= 0.530 af
Primary = 18.35 cfs @ 11.99 hrs, Volume= 0.530 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 2L: STUDY POINT #2 (POST)



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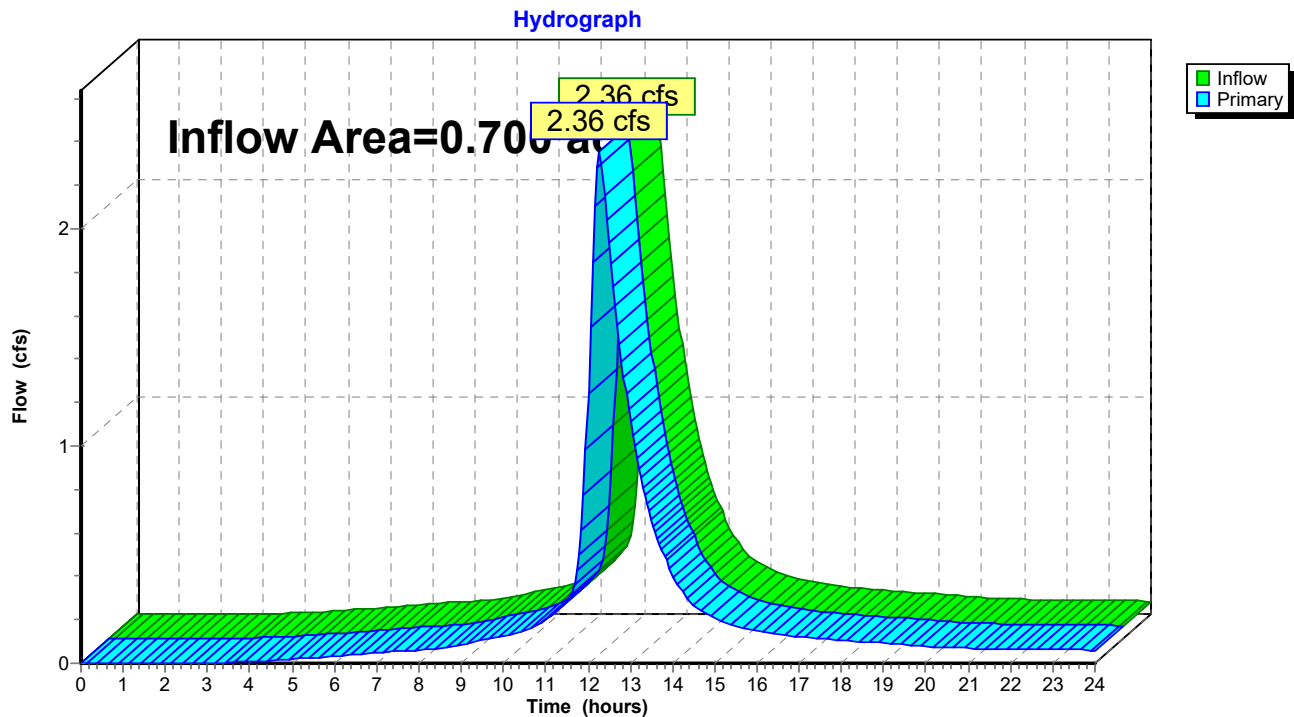
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Summary for Link 6L: STUDY POINT #1 (PRE)

Inflow Area = 0.700 ac, 0.00% Impervious, Inflow Depth > 6.35" for 100-yr event
Inflow = 2.36 cfs @ 12.26 hrs, Volume= 0.370 af
Primary = 2.36 cfs @ 12.26 hrs, Volume= 0.370 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 6L: STUDY POINT #1 (PRE)



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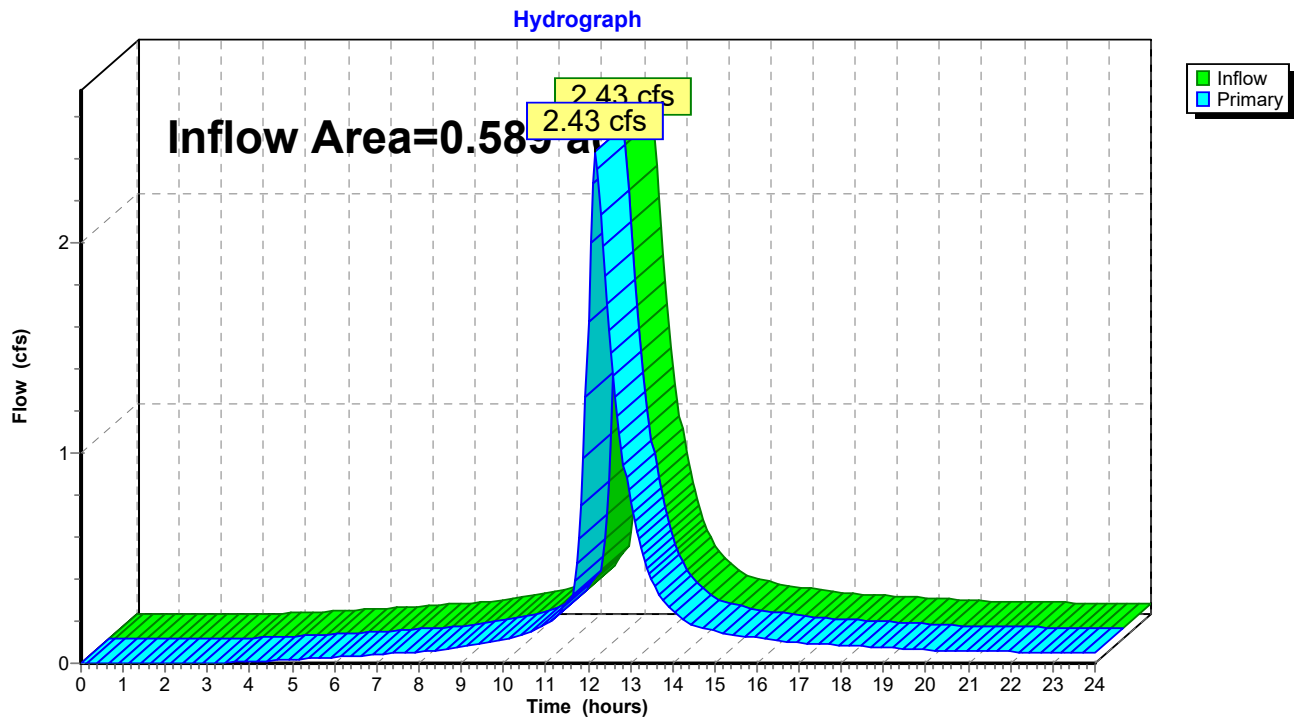
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Summary for Link 7L: STUDY POINT #2 (PRE)

Inflow Area = 0.589 ac, 0.00% Impervious, Inflow Depth > 6.37" for 100-yr event
Inflow = 2.43 cfs @ 12.17 hrs, Volume= 0.312 af
Primary = 2.43 cfs @ 12.17 hrs, Volume= 0.312 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 7L: STUDY POINT #2 (PRE)

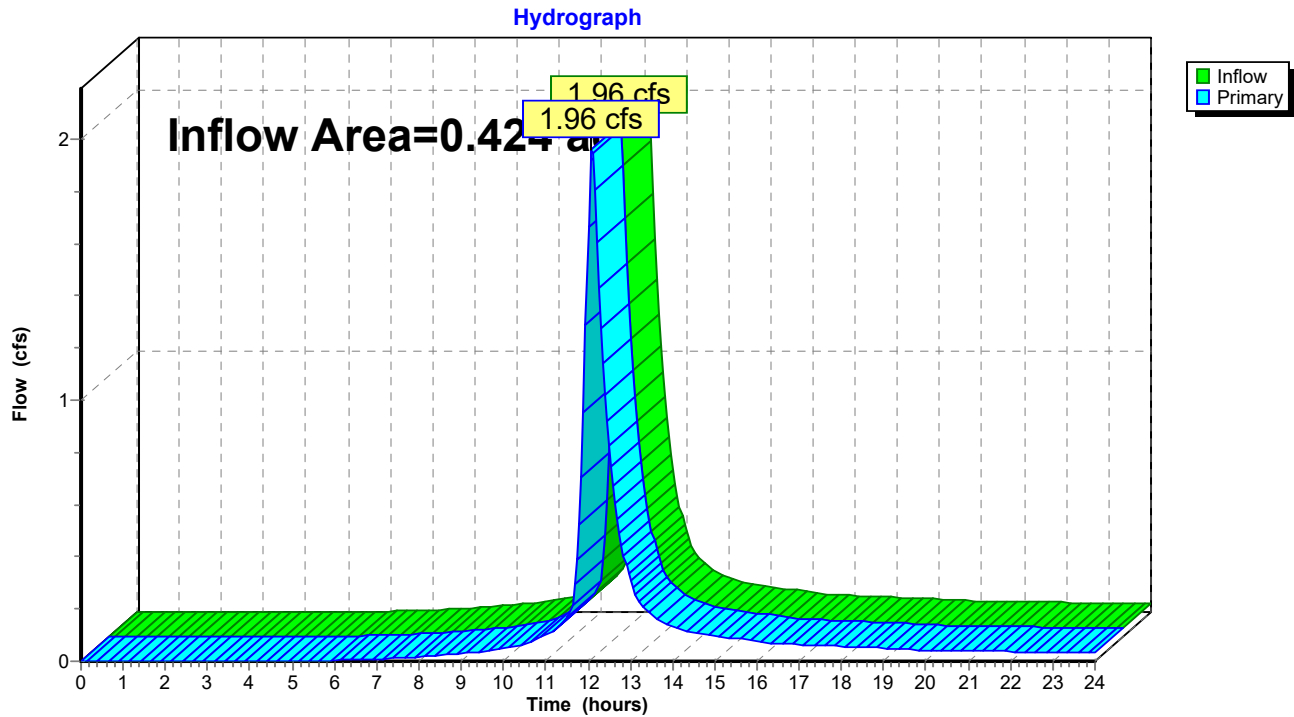


Summary for Link 8L: STUDY POINT #3 (POST)

Inflow Area = 0.424 ac, 0.00% Impervious, Inflow Depth > 5.22" for 100-yr event
 Inflow = 1.96 cfs @ 12.08 hrs, Volume= 0.185 af
 Primary = 1.96 cfs @ 12.08 hrs, Volume= 0.185 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 8L: STUDY POINT #3 (POST)



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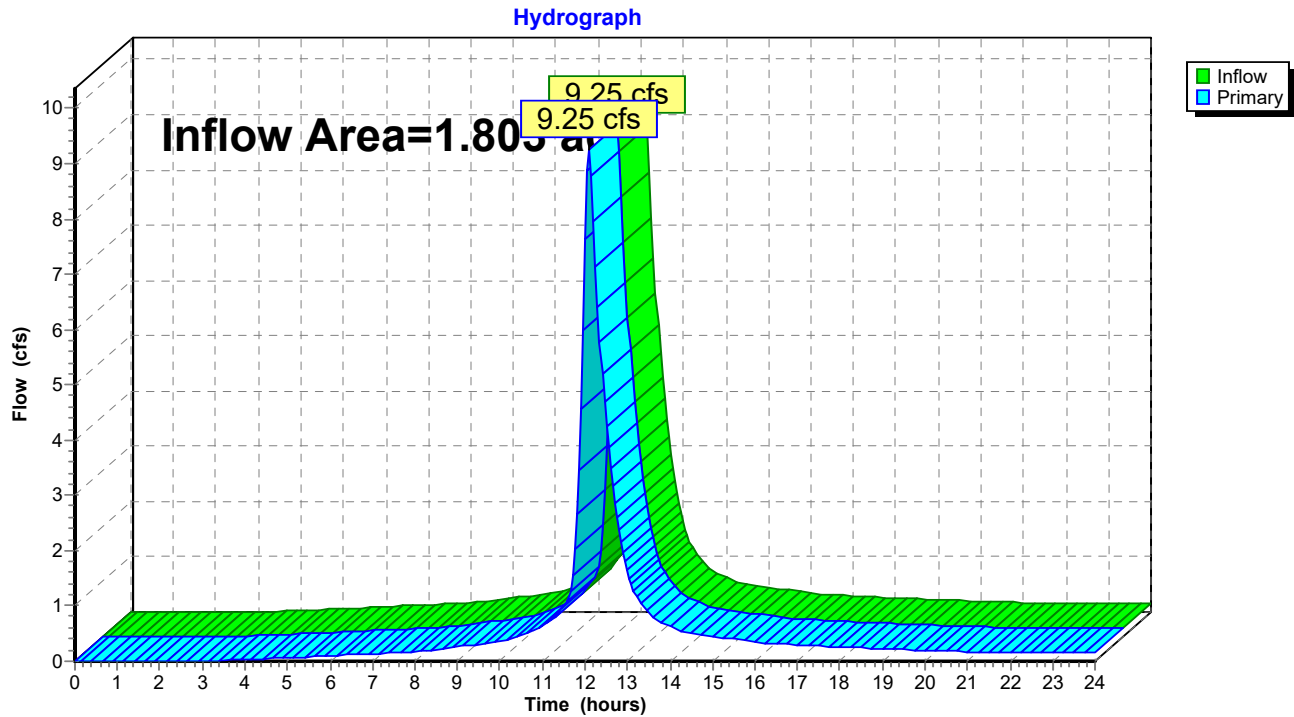
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Summary for Link 10L: STUDY POINT #3 (PRE)

Inflow Area = 1.803 ac, 0.00% Impervious, Inflow Depth > 6.38" for 100-yr event
Inflow = 9.25 cfs @ 12.10 hrs, Volume= 0.959 af
Primary = 9.25 cfs @ 12.10 hrs, Volume= 0.959 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 10L: STUDY POINT #3 (PRE)



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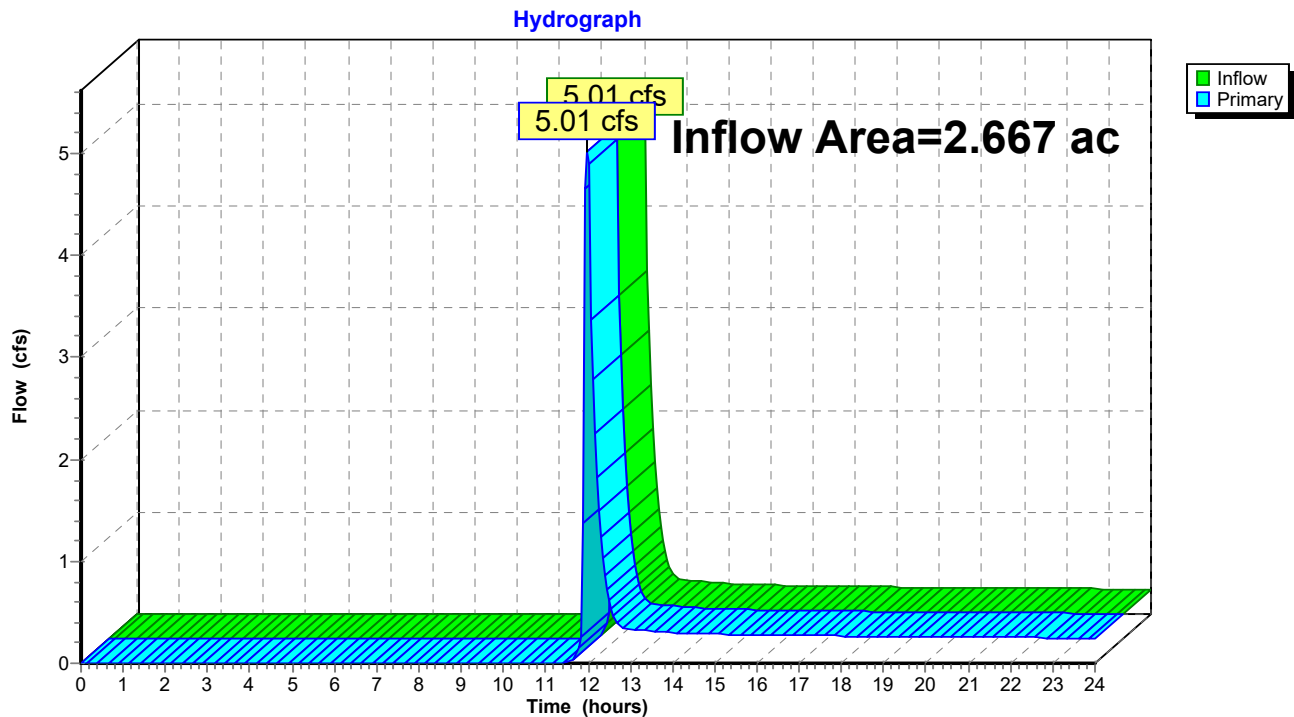
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Summary for Link 11L: STUDY POINT #1 (POST)

Inflow Area = 2.667 ac, 64.49% Impervious, Inflow Depth > 1.68" for 100-yr event
Inflow = 5.01 cfs @ 11.98 hrs, Volume= 0.374 af
Primary = 5.01 cfs @ 11.98 hrs, Volume= 0.374 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 11L: STUDY POINT #1 (POST)



ESD SUMMARY CHART

DRAINAGE AREA	TYPE OF ESD PRACTICE	NAME OF ESD PRACTICE (STRUCTURE NAME)	ON-SITE OR OFF-SITE STRUCTURE	RUNOFF CURVE NUMBER (RCN) WEIGHTED	MARYLAND GRID COORDINATE NAD 83 METERS NORTHING	MARYLAND GRID COORDINATE NAD 83 METERS EASTING	ESD PRACTICE TOTAL DRAINAGE AREA (ACRES)	ESD PRACTICE IMPERVIOUS DRAINAGE AREA (ACRES)	SURFACE AREA OF ESD PRACTICE (ACRES)	TARGET PE (IN.)	ACTUAL PE (IN.)	TARGET ESDv (FT. ³)	ACTUAL ESDv (ft. ³)
1	SGW	SGW-1 (M-2)	ON-SITE	86	411188.4646'	1573431.7909'	3.16	1.73	0.292	1.8	1.8	11,239	13,763
2													
3													
4													
5													
6													
7													
8													
9													
10													
TOTAL/ AVERAGE													



APPROVAL

Rick Van Engle
TOWN ENGINEER

1/2020
DATE

**TOWN OF EASTON
STANDARD DETAILS**

ESD SUMMARY CHART

ISSUED: JANUARY 2020

STANDARD NO: TOE-SWM-7.01

SWM QUANTITY SUMMARY CHART

PRACTICE	DA (ACRES)	IMPERVIOUS (ACRES)	RCN	T _c (MINUTES)	PRE 2 YEAR	POST 2 YEAR	W.S.E.	PRE 10 YEAR	POST 10 YEAR	W.S.E.	PRE 100 YEAR	POST 100 YEAR	W.S.E.
SGW	3.16	1.73	86	5	5.34	0.70	17.38	9.30	2.84	17.73	14.04	25.32	18.32



APPROVAL

Rid Van Engle
TOWN ENGINEER

1/2020
DATE

**TOWN OF EASTON
STANDARD DETAILS**

SWM QUANTITY SUMMARY CHART

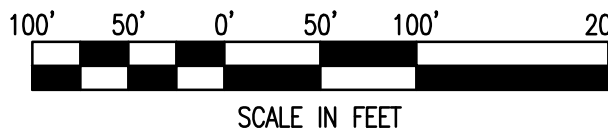
ISSUED: JANUARY 2020

STANDARD NO: TOE-SWM-7.02

Date: 02/27/2023 -- 9:43am User: mhphillips Project Manager: BCE
Drawing Path: J:\2022\0300\220342\Draw\Plots\CSK-220342.dwg | Aerial Context
XREF File(s): PAR-BASE-220342\NSF-BASE-220342\LD-BASE-220342\RSK-BASE-220342\RSK-BASE-220342\LD-BASE-220342\REVISED-BASE-220342\RRS-BASE-24X36-220342\LLP-BASE-220342\RRN-BASE-220342\RLD-EUC-BASE-220342



NOTE: THE LAYOUT AS SHOWN HEREON IS CONCEPTUAL ONLY AND NOT INTENDED TO BE UTILIZED FOR DESIGN OR CONSTRUCTION PURPOSES.



NAD 83 (2011)
MD COORDINATE SYSTEM

APPROVED:

TOWN OF EASTON -- PLANNING & ZONING	DATE
-------------------------------------	------

APPROVED:

TOWN OF EASTON -- TOWN ENGINEER	DATE
---------------------------------	------

APPROVED:

EASTON UTILITIES -- ENGINEER	DATE
------------------------------	------

REVISIONS TO APPROVED PLANS			
No.	DATE	DESCRIPTION	BY

WARNING!!
THE LOCATIONS OF EXISTING UTILITIES AS SHOWN ON THIS PLAN ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF EXISTING UTILITIES PRIOR TO BEGINNING CONSTRUCTION. THE QUANTITIES SHOWN ON THIS PLAN ARE FOR INFORMATIONAL AND PERMITTING PURPOSES ONLY. THE CONTRACTOR SHALL VERIFY ALL QUANTITIES TO HIS OWN SATISFACTION PRIOR TO BEGINNING CONSTRUCTION.
THE CONTRACTOR SHALL TEST PIT AND LOCATE EXISTING UNDERGROUND UTILITIES PRIOR TO THE BEGINNING OF ANY WORK ON-SITE. THE CONTRACTOR SHALL NOTIFY DEPT. OF PUBLIC WORKS OF ANY POSSIBLE CONFLICT AND REQUEST THE RELOCATION OF THE EXISTING UNDERGROUND UTILITIES BEFORE BEGINNING ANY WORK ON-SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY RELOCATION EXPENSE.



Lane Engineering, LLC
Established 1986
Civil Engineers • Land Planning • Land Surveyors

E-mail: general@leinc.com
117 Bay St. Easton, MD 21601 (410) 822-8003
15 Washington St. Centreville, MD 21613 (410) 221-0818
354 Pennsylvania Ave. Centreville, MD 21617 (410) 758-2095

SEAL

DATE

AERIAL CONTEXT PLAN

FOR
LOT 18
TALBOT COMMERCE PARK
IN THE TOWN OF EASTON
TALBOT COUNTY, MARYLAND
TAX MAP 25 GRID 22 PARCEL 46 LOT 18

ISSUED/REVISED FOR: DATE: BY:
SKETCH SITE PLAN 02/01/23 BCE
PLANNING COMMISSION PACKET 02/25/23 BCE

SHEET No.	2/01/23
1 OF 1	JOB No. 220342
SCALE: AS NOTED	FILE No. A037



TOWN OF EASTON

14 South Harrison Street
Easton, Maryland 21601

March 1, 2023

Dear Resident,

The Easton Planning Commission will hold a public meeting on **Thursday, March 16, 2023 at 1:00 p.m.** in the Easton Town Council Chambers located on the second floor of 14 South Harrison Street. The Town of Easton Zoning Ordinance requires that owners of property located within 400 feet of a parcel on which certain types of applications are pending be given notice of upcoming meetings or hearings. If you are a tenant in or an owner of a multi-unit building, please distribute or post this notice in a visible location for all other tenants or owners to view. If you are a tenant of a rental property, please notify the property owner that this notice letter has been distributed to their property. Notice has also been sent to the Star Democrat, a sign has been posted at the subject property and the hearing agenda has been posted on the Town of Easton website: <http://eastonmd.gov/>.

This letter is sent to inform you that a Site Plan Review application for 28595 Marys Court has been filed to request site plan and architectural approval of a Single Lot Subdivision to construct an office/warehouse building.

Copies of the proposed application are on file and available for public review in the Town's Planning Office at 14 South Harrison Street between the hours of 8:30 a.m. and 4:00 p.m., Monday through Friday. **In addition, digital copies are also available for review via the Town's website at <https://www.eastonmd.gov/129/Agendas-Minutes>.** If you have any questions regarding this application, please contact the Planning Office at (410) 822-1943 or via e-mail at ssmith@eastonMD.gov.

Samantha N. Smith

Samantha N. Smith
Administrative Specialist
Planning & Zoning Department
Town of Easton
410-822-1943 ssmith@eastonMD.gov



Sign posted on March 3, 2023



TOWN OF EASTON
PLANNING & ZONING
14 S Harrison Street, Easton MD 21601

Date of Hearing: March 16, 2023

4e

**PLANNING COMMISSION
PUBLIC HEARING
STAFF REPORT**

DATE: **March 7, 2023**

SUBJECT: **8992 Mistletoe Drive**

ELECTION WARD: Ward 1

CRITICAL ACTION DATE: At the pleasure of the Commission

STAFF CONTACTS: Joseph Mayer, Plan Reviewer
Lynn Thomas, Town Planner
Miguel Salinas, Director of Planning and Zoning

APPLICANT: Mistletoe Drive, LLC

DOCUMENT CREATED ON: March 9, 2023

PURPOSE: The applicant is seeking site plan approval from the Planning Commission. The applicant is also seeking waivers for the number of parking spaces and bicycle spaces.

RECOMMENDATION: Staff supports a Planning Commission recommendation of the proposed site plan, architecture, parking waiver and bicycle waiver subject to conditions (see below).

APPLICATION INFORMATION:	
APPLICANT: Mistletoe Drive, LLC	REPRESENTATIVE: Lane Engineering, LLC Brett Ewing
PARCELS/ACREAGE:	
Parcel Information	Acreage
Map 025, Grid 0022, Parcel 0046, Lot 10	5.902
ACCEPTANCE DATE: February 27, 2023	LOCATION: 8992 Mistletoe Drive, Lot 10
EXISTING ZONING BC	EXISTING LAND USE: Vacant parcel within Talbot Commerce Park.
HISTORIC DISTRICT: Not Applicable	FUTURE LAND USE MAP: Industrial

CONTEXT:

Location/Site Access – The subject property is located within “Talbot Commerce Park”, fronting on the West side of Mistletoe Drive.

Existing Conditions – The subject property is currently unimproved.

Surrounding Properties

- 9030 Mistletoe Drive - BC
- 8989 Mistletoe Drive - BC
- 8977 Mistletoe Drive - BC
- 8950 Mistletoe Drive - BC
- Goldsborough Neck – Talbot County, MD

Figure 1: Vicinity Map



PROPOSAL: The applicant is proposing a two-story office building with a ground floor area of 2,400 Square Feet (SF) and a 5,000 SF warehouse. A parking lot, stormwater management facilities and landscaping are proposed as well. There's also a proposed gravel area for loading/unloading to accommodate the warehouse and exterior bins and containers. The applicant is proposing 9 parking spaces, which requires a parking waiver reduction of 6 parking spaces. A bicycle waiver of one space is being requested.

BACKGROUND: This Applicant submitted an application to the Easton Staff Development Review on February 22, 2023.

ZONING ANALYSIS:

A. Permissible Land Uses

28-201 table 2.1 (3) 217

BC

217	Office*	--	SE	SE	--	P	P	P	P	--	A	
-----	---------	----	----	----	----	---	---	---	---	----	---	--

28-201 table 2.1 (3) 520

BC

--	--	--	--	--	--	--	--	--	--	--	--	--

520	Warehousing, Wholesale, storage & distribution	--	--	--	--	--	P	SE	P	P	--	
-----	--	----	----	----	----	----	---	----	---	---	----	--

Analysis – The Applicant seeks an approval from the Planning Commission for site plan and waivers for parking & bicycle spaces. The proposed project is presented and described by the Applicant as an office and warehouse with outside storage bins and containers. The proposed uses are permitted within Table 2.1 Table of Permissible Uses.

B. Off-Street Parking

28-1001.3 Parking Requirements

	Use/Activity	Minimum Vehicle Spaces	Maximum Vehicle Spaces	Minimum Bicycle Spaces	Notes
	Commercial Buildings				
14	Office or Bank without Drive-Thru	1 per 250 sf GFA	1 per 140 sf GFA	1 per 10 vehicle spaces	

	Use/Activity	Minimum Vehicle Spaces	Maximum Vehicle Spaces	Minimum Bicycle Spaces	Notes
	Industrial Buildings				
40	Warehouse	1 per 2000 sf GFA	1 per 350 sf GFA	--	

PARKING CALCULATIONS

Total Site Parking Required

Office – 2,400 SF:

1 Space/250 SF GFA; 10 Spaces Required – Minimum

1 Space/140 SF GFA; 17 Spaces Required – Maximum

Warehouse – 5,000 SF:

1 Space/1,000 SF GFA; 5 Spaces Required – Minimum

1 Space/200 SF GFA; 25 Spaces Required – Maximum

Total Site Parking Provided:

9 Spaces, includes 1 van ADA Accessible Space
 (Waiver of 6 spaces requested)

Bike Rack Required:

1 Bicycle Space/10 Vehicle Spaces; 1 Bicycle Space
 (Waiver of 1 Bicycle Spaces requested)

Analysis- The Applicant indicated at the ESDR Meeting that their current parking demand is minimal and the majority of the parking proposed would be for a few employees. If there was a demand for more parking spaces in the future, there's ample space to expand on the South side of the loading area. Due the sites' location, and being adjacent to various light industrial, service/ business properties, bicycle spaces would not be advantageous for the proposed site.

C. Development Standards (*Easton Zoning Ordinance, Chapter 28 – 308.2*)

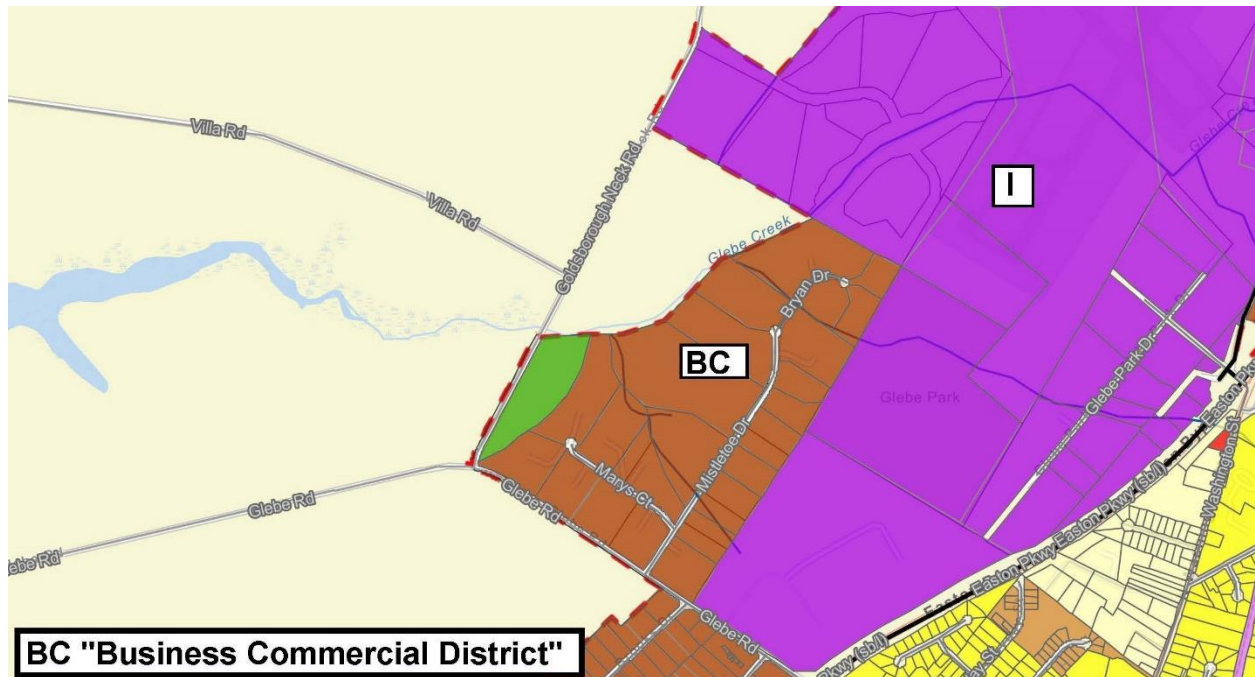
The following minimum development standards shall be observed in the BC District:

- A. The minimum size for all uses hereafter established shall be 40,000 square feet.*
- B. Off-street parking shall be provided in accordance with the provisions of Section 28 – 1001.*
- C. All lots hereafter established shall have a frontage on a public street or way of at least one hundred (100) feet.*
- D. Minimum setbacks for all uses shall be as follows:*
 - 1. Front – forty (40) feet from the property line.*
 - 2. Side – ten (10) feet on each side of the property line.*
 - 3. Rear – thirty (30) feet from the property line.*
- E. Height limitations – thirty-five (35) feet.*
- F. Building Envelope – all lots shall have a minimum building envelope of thirty (30) feet deep by eighty (80) feet wide.*
- G. Lot coverage by all buildings and structures shall not exceed fifty (50%) percent of the lot area.*
- H. There shall be no open storage on any lot or open areas, nor shall any products be displayed in open areas. All outside storage shall be adequately screened and landscaped in accordance with provisions of Section 28 – 1014 of this Ordinance.*
- I. All on-site lighting unless approved otherwise by the Planning and Zoning Commission shall be low cut-off shielded luminaries at 18' height and light shall not shine off-site at levels greater than 1-foot candle.*
- J. All off-street loading and unloading areas shall be screened from view by permanent decorative screens or natural planting, either of which shall be a minimum of eight (8) feet in height, in accordance with the provisions of Section 28 – 1014 of this Ordinance*
- K. All areas not devoted to buildings or parking areas shall be landscaped and maintained in a suitable manner, in accordance with the provisions of Section 28 – 1014 of this Ordinance.*

Analysis - The site falls under the Business Commercial District and meets the 28-308.2 Development Standards. Any comments or concerns from the ESDR review letters will be addressed during the Development Site Plan review.

POLICY ANALYSIS:

Figure 2: Zoning Map



A. Compatibility with the Comprehensive Plan:

Town of Easton 2010 Comprehensive Plan Design Principles (Principle #1) Integrated uses are desirable- Applicant's response: *This development proposal provides additional office and associated storage in this mixed business park.*

(Principle #2) Natural features should determine design – Applicant's response: *No compelling features; site layout oriented to take advantage of natural drainage patterns and to orient "office" buildings front to street storage area to the rear.*

Staff notes that there are compelling natural features on site. Portions of the proposed layout are adjacent to the Forest Conservation Area. The Fifty-foot Intermittent Stream Buffer and Non-Tidal Wetland Buffer have been delineated and no proposed work is within those buffers. Forest Conservation was approved at the original Subdivision Plat (Plat PC 4/35G).

(Principle #3) Automobiles should not determine design – Applicant's response: *Parking for office users and customers provided for convenience with the bulk of the parking to the front or side of the facility.*

Staff notes that the applicant requests a waiver for off-street parking to be reduced.

(Principle #4) Ample Open Space should be provided within & around neighborhoods – *Applicant's response: Usable Open Space not applicable here.*

Staff notes that open space is not required.

(Principle #5) Architecture should respect Easton's Historical Development – *Applicant's response: This application proposes architecture compatible with Easton and the Commerce Park's Architectural palette.*

(Principle #6) Signs should inform but not dominate – *Applicant's response: Signage, simple and per code.*

Staff notes that any proposed monument sign will require a Signage Application to be submitted prior to installation. Signs should inform but not dominate the area.

(Principle #7/8) Neighbors should contain a diversity of housing types – *Applicant's response: Not applicable to this application. Residential neighborhoods should be interesting places – not applicable to this application.*

Staff notes that neighborhood diversity and residential design is not applicable as there is no residential proposed in this application.

(Principle #9) Neighborhoods should connect – *Applicant's response: Not specifically applicable to this application.*

Staff notes that paths have been created to provide connectivity within the existing neighborhood.

RECOMMENDED CONDITIONS:

1. Upon Planning Commission approval, the applicant shall address ESDR review comments and submit for Development Site Plan for review.

DRAFT MOTIONS:

1. I move that the Planning Commission approve the site plan, parking waiver, and bicycle waiver subject to the Conditions of Approval.

OR

2. I move that the Planning Commission forward the application to the April 20th Commission meeting for further discussion.

OR

1. I move an alternate motion.

ATTACHMENTS:

1. ESDR Determination, paper copy & PDF
2. 2023-02-25 Aerial-Context Plan, paper copy & PDF
3. 2023-02-25 Comment Response Letter, paper copy & PDF
2. 2023-02-25 Illustrative Plan, paper copy & PDF
3. 2023-02-25 Sketch Site Plan, paper copy & PDF
4. 2023-02-27 TCP Gosnell Concept Stormwater, paper copy & PDF



TOWN OF EASTON

Planning & Zoning Department

14 South Harrison Street

P.O. Box 520

Easton, Maryland 21601

Easton Staff Development Review Worksheet

Date: February 22, 2023

Project: 8992 Mistletoe Drive-Lot 10

To: Mr. Brett Ewing – Lane Engineering, LLC.

CC: Mr. John Gosnell – Mistletoe Drive LLC

The Easton Staff Development Review meeting was held on February 22nd, at 11:30 pm. Staff reviewed the Site Sketch Plan for the proposed Warehouse and Contractor's Office Building with outside storage and provided comments for the proposed project.

It was determined that the project is approved to submit application to the Planning Commission for the March 16, 2023 meeting. All comments will need to be addressed as designated within the review letters. Specific areas of Staff concern discussed in the meeting and Comments (attached) are as follows:

- Revise architectural renderings/elevations per the Planning & Zoning review letter and provide documentation no later than **Thursday, March 9th**.
- Address the attached review letters and submit a Planning Commission Concept, Use and Design Application no later than **Monday, February 27th**.
- Submit Stormwater Management documentation no later than **Monday, February 27th** for review and approval from the Department of Engineering.
- Submit a Supplemental Waiver Request Application for parking spaces no later than **Monday, February 27th**.

Files for presentation at the Planning Commission need to be provided on a flash drive. In addition, provide a digital submittal (via email) of the Planning Commission Application and its supporting documents, including **six paper copies**. Submit all documentation at the described time above. (All digital copies of Site Plan, ESDR, BoZA, HDC Submissions, etc. are to be sent to jmayer@eastonmd.gov and ssmith@eastonmd.gov.)

At this time, based on the ESDR sketch plan submission Staff did not identify any constraints which require action by the Board of Zoning Appeals.

Upon completion of requested items, please submit all documentation to the Planning & Zoning Department. The next available Planning Commission meeting is scheduled for **Thursday, March 16, 2023 at 1:00 pm. Meeting location is at the Council Chambers, Easton Town Office**. Please contact the Planning & Zoning Department at 410 822-1943 with any questions.

Sincerely,

A handwritten signature in blue ink, appearing to read "Joseph A. Mayer".

Joseph A. Mayer

Plan Reviewer



TOWN OF EASTON PLANNING & ZONING DEPARTMENT

P.O. Box 520
Easton, Maryland 21601
410-822-1943
www.EastonMD.gov

DATE: February 9, 2023
TO: Brett Ewing – Lane Engineering, LLC/Mistletoe Drive, LLC
Cc: Miguel Salinas – Director, Planning & Zoning Department
Rick Van Emburgh – Town Engineer, Department of Engineering

FROM: Joseph A. Mayer - Plan Reviewer, Planning & Zoning Department
SUBJECT: 8992 Mistletoe Drive - Lot 10

We reviewed the **February 1, 2023** Sketch Plan Submittal for the Subject Project and have the following comments:

PLANNING & ZONING COMMENTS

Sketch Site Plan

1. Per item #8 on the Appendix B-1 Submittal Checklist and Chapter 28-901.3 A 1 of the Zoning Code, show the location of proposed fencing on the sketch plan. Indicate the type of fencing and its minimum height.
2. Per item #11 on the Appendix B-1 Submittal Checklist and Chapter 28-901.3 A 11 of the Zoning Code, provide conceptual building elevations or renderings illustrating the character, scale, and materials of all proposed structures. Such elevations or renderings shall be sealed by a licensed professional as described above. Architecture should be in conformance with the Comprehensive Plan and Architectural Guidelines adopted by the Planning and Zoning Commission.
3. The three architectural renderings provided do not match the sketch plan. Update all renderings to match the sketch plan.
4. Per Chapter 28-1001.3 I of the Zoning Code, referenced parking lots for commercial or industrial uses should, to the extent feasible, be located in rear or side yards. Please examine alternate options for the office parking spaces.
5. The office building requires a minimum of ten parking spaces. There are only six parking spaces adjacent to the building with an accessible route to the entrance. Please locate the remaining four parking spaces and provide an adequate path to the entrance.
6. Trees shall be located within the parking bays so that no more than 15 parking spaces

form an uninterrupted row.

7. The office use requires the minimum bicycle spaces, one per ten vehicle spaces. Please show on plan views and update the Development Data sheets.
8. Please show the semi-permanent storage areas (bins and containers) in the elevations.
9. The wrong parking requirements for warehouses were used in the parking calculations. (Should be a minimum of 1 space per 2,000 sq ft and a maximum of 1 space per 350 sq ft).
10. Show all entrance and garage locations to proposed buildings on all plan views.
11. Dimension offset distances from building to property line.
12. Per Chapter 28-308.2 J of the Zoning Code, any natural plantings used for screening off-street loading and unloading shall be a minimum of eight feet in height. Please revise the Landscape Key on the Illustrative Plan to reflect the required height
13. Incorporate the visible facade of the proposed warehouse building into the building facade planting calculations.
14. Per Chapter 28-308.2.J of the Zoning Code, any natural plantings used for screening off-street loading and unloading shall be a minimum of eight feet in height. Please revise the Landscape Key on the Illustrative Plan to reflect the required height. However, an option is provided to utilize an evergreen tree buffer planting, minimum 7' height at installation, staggered to create a solid screen at installation. See Chapter 28-1014.6 F(2)d of the Zoning Code.
15. Provide additional screening for the loading and unloading area at the rear of lot 10 A's parking lot. That area is adjacent to lot 10.
16. Label the building restriction lines for lot 10.
17. As noted on the Sketch Site Plan, the site's close proximity to Easton Airport will require FAA Form 7460-1 Notice of Proposed Construction or Alteration. Please provide FAA determination prior to recording of the Final Record Plat.
18. Add Ward District in the Title Block to all sheets.
19. Show zoning district boundaries on the Vicinity Map.
20. Show and label jurisdictional boundaries for the property lines adjacent to Talbot County on all plan views.
21. Add a note shown on the Illustrative Plan that the proposed wall mounted lights will be eighteen feet in height and shall not shine off-sight at levels greater than 1-foot candle unless approved otherwise by the Planning Commission.

Sketch Plat

22. Add a signature block for Town Engineer.
23. Revise title of plat to read: "PRELIMINARY PLAT-NOT TO BE RECORDED".
24. Label existing road paving widths on plan view.
25. For the Preliminary Plat only, remove Owner's Certification, Health Officer and Chairman of Planning Commission signature blocks.
26. Surveyor to date and sign plat.
27. Show and label jurisdictional boundaries for the property lines adjacent to Talbot County on the plan view and vicinity map.
28. Show the location of the Stormwater Management Easements with bearings and distances.

DEPARTMENT OF ENGINEERING

COMMENTS ATTACHED.

EASTON UTILITIES

COMMENTS ATTACHED.

BUILDING INSPECTION & PERMIT DEPARTMENT

COMMENTS ATTACHED.

Plan Review Status

IMPROVEMENT PLAN REVIEW			Comments
Plans Approved	☐ Y	☒ N	Please review comments above Revise and Resubmit.

GRADING PERMIT STATUS			
Application and Final Approved Site Plan Submitted to Town Engineer	☐ Y	☒ N	To be processed by the Department of Engineering.

LEGAL DOCUMENTS			
Storm Water Easement			
☒ Required ☐ Submitted ☐ Approved			To be processed by the Department of Engineering.
Drainage & Utility and Landscape Easement			
☒ Required ☐ Submitted ☐ Approved			To be processed by the Department of Engineering.
Shared Access/Use Easement			
☒ Required ☐ Submitted ☐ Approved			To be processed by the Department of Engineering.
Sidewalk Easement			
☐ Required ☐ Submitted ☐ Approved			Not required
Declaration of Covenants			
☒ Required ☐ Submitted ☐ Approved			To be prepared by Town Attorney
Public Works Agreement			
☒ Required ☐ Submitted ☐ Approved			To be prepared by Town Attorney
Bond/Letter of Credit/ Cash Agreement			
☒ Required ☐ Submitted ☐ Approved			To be processed by the Department of Engineering.
Talbot Soil Conservation District Approval			
☒ Approval Required			Approval pending.
Forest Stand Delineation & Forest Conservation Plan			
☐ Required ☐ Submitted ☐ Approved			The development of this site has already been mitigated for Forest Conservation under the 1997 Forest Conservation Plan, recorded on record plat 4/35G.
Other			
☐ Required ☐ Submitted ☐ Approved			

Please contact me if you have any questions. Thank you.



TOWN OF
EASTON
ENGINEERING DEPARTMENT

DATE: February, 2023
TO: Mistletoe Drive LLC - Owner
Brett Ewing - Lane Engineering, LLC
Cc: Rick Van Emburgh - Town Engineer
Miguel Salinas - Planning and Zoning Department
Aaron Goller - EUC
FROM: Sierra Clem - Engineering Department
SUBJECT: Mistletoe Drive LLC Lot 10/10A - Sketch Site Plan/Plat Review
Comments

I have reviewed the application for the subject project received on 2/3/2023. I have the following comments.

Sketch Site Plan/Plat:

I have reviewed the **Sketch Site Plan and Plat** and have the following comments:

1. Please provide a bike rack.
2. Please revise the plans and SWM report to correct Bryan Drive to Mistletoe Drive.
3. The Town is considering eliminating the cul-de-sac which may have an impact to the proposed entrance layout for each lot. Please relocate lot 10A commercial entrance north of the existing cul-de-sac on the portion of what was previously known as Bryan Drive. The future lot 10 entrance should be separate from the 10A access point.

Please address the comments above and submit a Revised Sketch Site Plan.

The **Sketch Plat** is acceptable to the Engineering Department, please address the comments above and submit a Preliminary Plat.

Stormwater Management:

I have reviewed the **Sketch Stormwater Management Plan** and have the following Comments:

1. Please complete the ESD Summary Chart with the Target ESDv and include this within the SWM report and on the site plan.
2. Please complete the Quantity summary chart and include this within the SWM report and on the site plan.
3. The site plan labels the a micro-bioretenention feature however the SWM report refers to it as a bio-swale. Please clarify.

P.O. Box 520, Easton, Maryland 21601
410-820-8822
Engineering@EastonMD.gov - www.EastonMD.gov

4. Label the existing ditch where the micro-bioretenction feature is discharging into and provide an easement.
5. Drainage area to any micro-bioretenction feature should be 20,000 SF or less. Please confirm if the proposed Micro-bioretenction feature is treating 20,000SF or less of drainage area.
6. The HydroCAD model in the SWM report identifies both the micro-bioretenction and bio-swale draining to one outfall point. Please clarify how the micro-bioretenction in the front of the property will connect to the outfall.
7. Please show the required entrance culvert.

Please address the comments above and submit a revised Sketch Stormwater Management Plan.

Please contact me if you have any questions. Thank you.



TOWN OF EASTON
PO Box 520
Easton, Maryland 21601
(410)-822-2526 Fax (410)-822-8738
Office of Building Inspection.



ESDR- Building Inspection and Permit Department Comments

Date: February 21, 2023

Project; Mistletoe Drive LLC 21629 Marsh Creek Road, Preston, Maryland 21655

A Town of Easton Building Permit is required for all new construction.

- Contact this Department and verify current Building Codes including the Town of Easton's modifications prior to preparation of Building plans. Be advised a new Code Cycle 2021 may be adopted in the future.

The following lists items required on the construction drawings in order to apply for a Building Permit.

- Indicate the type of construction and use as per the International Building Code 2018.
- Construction Documents (3 sets) for any new construction will be required. Documents must be prepared by a registered Maryland Registered Architect, with original plans signed and sealed. A code analysis completed by a Registered Maryland Architect including, classification (use group), construction type, and occupant loads must be completed and included with the application materials. (See Maryland Architectural Act- Comar sect. 3-101, 102, 103)
- The Town of Easton, in accordance with the International Building Code Chapter 17, establishes a building inspections procedure that utilizes qualified, third-party professionals in addition to the Town's Building Inspectors. The purpose of this document is to establish the policy and guidelines for the construction process in accordance with the Building Code requirements and to:
 - Define the responsibility of all parties.
 - Standardize code application.
 - Provide for an orderly and systematic approach for updating standards that apply to the Special Inspections.
 - Set forth a guideline for Special Inspections.

A copy of this can be found on the Towns Web Site

- Items that must be addressed by the construction documents will be structural strength, means of egress (include travel distance), facilities, stability, sanitation, light and ventilation, energy conservation and safety to life and property from fire and other hazards attributed to the built environment, **Accessibility**, and other safety requirements for public access.
 - All mechanical, electrical, and plumbing permits as required must include construction documents signed and sealed by a professional engineer and by a responsible party for the contractor receiving the permit. Be sure the Town of Easton modifications are included. Section 6-16 of the Town Code.
 - Pursuant to Town of Easton Ordinance 477, Chapter 9 Fire Protection, Article VII Security Key Lock Boxes, a lockbox shall be provided on the exterior of the building and shall be located as required by the chief of the Easton Volunteer Fire Department, Inc. (410-822-4848).
 - Certificate of Occupancy Update; A determination needs to be made regarding the hazard classification of this type of change. If there is no increase in the hazard classification and no new construction then a new Certificate of Occupancy may be issued including the new tenant information. If there is an increase in hazard classification a building analysis needs to be completed by a registered design professional to determine if any alterations are necessary which would then require a building permit.
 - An appointment may be set up with this department to review your permit application materials prior to permit application submission.
- **State Fire Marshal**, (410-822-7609) plan review and inspections are required. It is your responsibility to contact them and make application.
 - **Talbot County Health Department**, (410-770-6880) Plan review and inspections may be required.



Easton Utilities Commission

Plan Review Comments

Date: Wednesday, February 22, 2023

To: Joe Mayer; Nicholas Johnson; Sierra Clem

From: Kia Gibbs on behalf of Aaron Goller, PE

Re: 8992 Mistletoe Drive Lot 10

No. of Pages: 1

Phase: Sketch Site Plan

Review Type: SUBM: 1

Status: Approved as Noted

Easton Utilities Commission has reviewed the above referenced plans and have provided the following comments. Please provide your corrections as listed below. Additional reviews will be required to ensure comments have been addressed. Items or documents not provided on initial submission will be subject to further review. Please contact Kia Gibbs, Admin Support at kgibbs@eucmail.com should you have any questions.

ITEM:	DRAWING / PAGE	COMMENTS:
1	General	Bryan Drive has been extinguished, known as Mistletoe Drive
2	General	Gas is available in the area.
3	1 of 1	Capital charges are required for structure.
4	1 of 1	Show sewer.

Lane Engineering, LLC

Established 1986

Civil Engineering • Land Planning • Land Surveyors

15 Washington Street
Cambridge, Maryland 21613
Tel 410-221-0818
Fax 410-476-9942

117 Bay Street
P.O. Box 1767
Easton, Maryland 21601
Tel 410-822-8003
Fax 410-822-2024

354 Pennsylvania Avenue
Centreville, Maryland 21617
Tel 410-758-2095
Fax 410-758-4422

February 25, 2023

Joe Mayer
Plan Reviewer
Town of Easton
14 South Harrison Street
Easton, MD 21601

Subject: 8992 Mistletoe Drive – Lot 10

Dear Mr. Mayer,

We have reviewed the Town's comments dated February 9th, and have updated the plans accordingly. Please note the Sketch Plat comments from Planning and Zoning are based on Major Subdivision requirements and do not apply for this minor subdivision. Our responses are in order with your letter as follows:

Planning & Zoning

Site Plan:

1. Proposed 8' tall privacy/security fence has been shown and labeled on the Sketch Site Plan and Illustrative Plan.
2. Sealed architecture plans will be submitted to the Town of Easton by March 9th.
3. Updated renderings and architectural plans will be submitted to the Town of Easton by March 9th.
4. The office parking needs to be located in the front to remain separate from the tractor trailer and work truck areas. There is no other reasonable layout that provides compliance with parking space requirements and functionality.
5. Parking layout is modified, and a waiver requested on 6 spaces in the gravel area. 9 spaces are proposed by the office.
6. Overflow parking along southwest side of site has been removed.
7. Waiver of 1 bike space has been requested.
8. These are not fixed containers, and used only intermittently, and are not visible from the ROW.
9. Our calculations are based on the Contractor with outdoor storage use. Parking calculations are correct.
10. Overhead door locations have been shown on Sketch Site Plan and Illustrative Plan.
11. Dimensions from proposed buildings to property lines have been added to the Sketch Site Plan and Illustrative Plan.



www.leinc.com
general@leinc.com

12. Landscape Key has been updated on the Sketch Site Plan and Illustrative Plan.
13. Warehouse façade is not visible to the ROW at the property street frontage. N/A
14. Landscape Key has been updated on the Sketch Site Plan and Illustrative Plan.
15. Buffer yards are required along ROW and different uses/ zoning. It is not required along the rear.
16. Building restriction lines are labeled on Sketch Site Plan and Illustrative Plan.
17. FAA determination will be provided prior to final approval.
18. Ward district information has been added to the Development Data notes on the Sketch Site Plan and Illustrative Plan.
19. Not required per town checklist or code.
20. Town of Easton town boundary has been added to the Sketch Site Plan and Illustrative Plan.
21. Note is on the site plan that indicates wall mounted security lighting.

Engineering Department

Plan Review:

1. Waiver has been requested for the required bike space.
2. Bryan Drive has been updated to Mistletoe Drive on all plans.
3. Acknowledged.

Stormwater Management:

1. Chart included in last couple pages of the stormwater report.
2. Chart included in last couple pages of the stormwater report.
3. Stormwater Management label on the Sketch Site Plan and Illustrative Plan has been updated.
4. Existing easement labels and plat reference shown on Sketch Site Plan and Illustrative Plan.
5. The Micro-Bioretenention has a contributing drainage area of 20,454 sf as shown on the drainage area maps included within the stormwater report. The Bio-Swale has a drainage area of 49,476 sf.
6. Errant/inconsistent labels updated between exhibit maps and HydroCAD model for clarity. The Micro-Bioretenention adjacent to Mistletoe will be routed through the Bio-Swale via a 12" culvert with a control structure on the upstream end. The practices will share a linked underdrain as well. The main outfall for the site will be in the existing swale along the southern property boundary.
7. Proposed 12" RCP culvert is shown on the Sketch Site Plan and Illustrative Plan.

Thank you for your review of this project. Should you have any questions or need additional information, please contact me directly at 410-822-8003.

Sincerely,



Brett C. Ewing, AICP
Principal

TO LANE ENGINEERING, LLC

SEAL:



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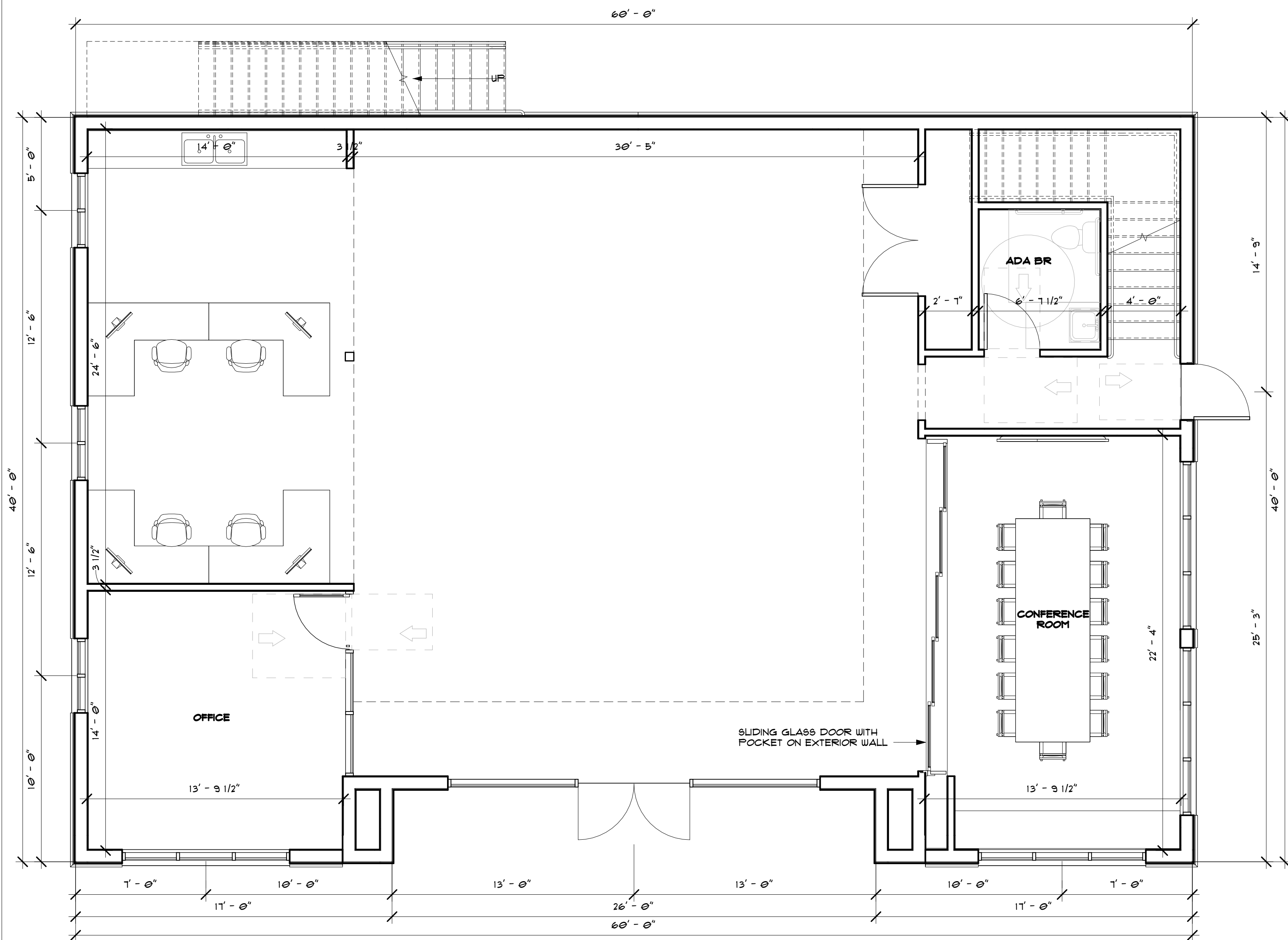
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EASTON, MD

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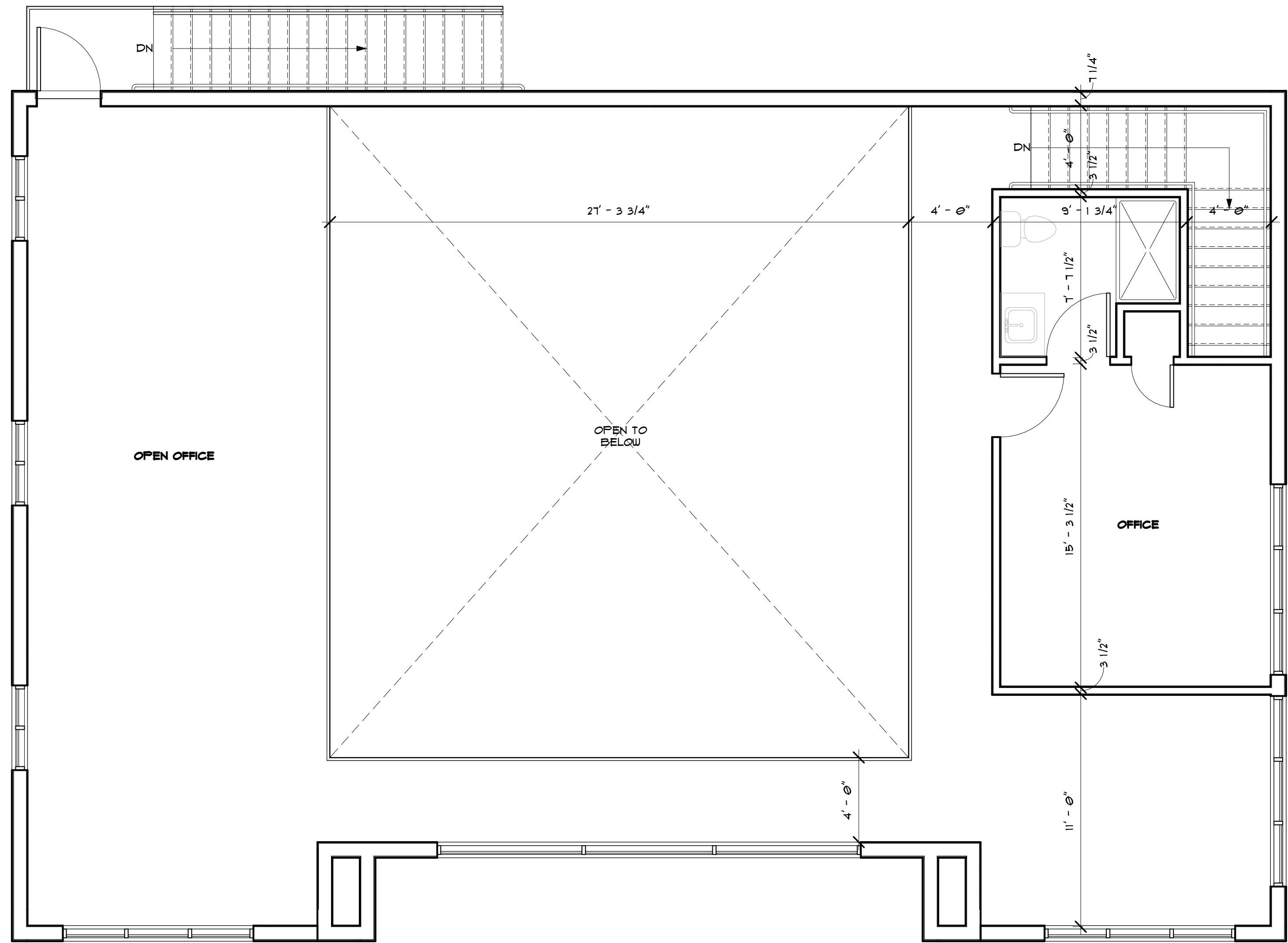
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PROJECT NO.	20230226	
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PRGM MGR:	LEW	
DRAWN BY:	Author	
SHEET NUMBER:		

A-101



① **FIRST FLOOR**
1/4" = 1'-0"



② **SECOND FLOOR**
1/4" = 1'-0"

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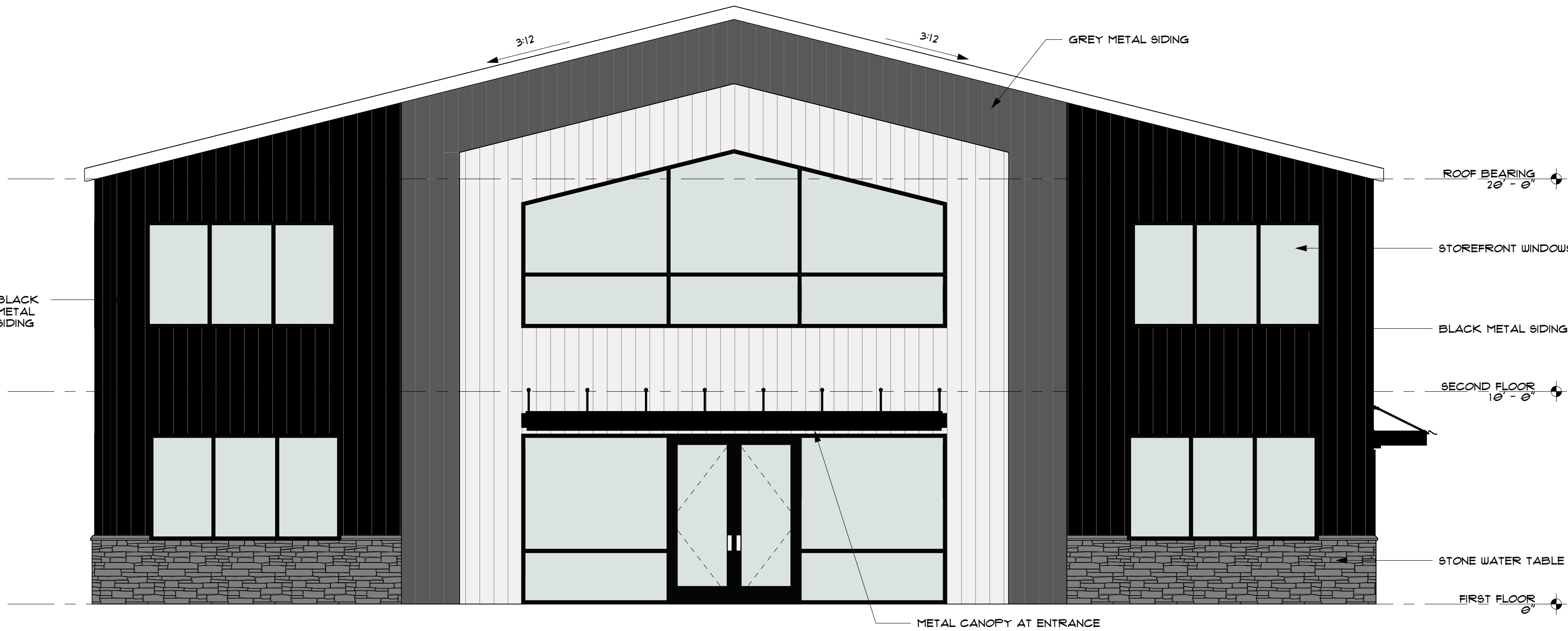
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EASTON, MD

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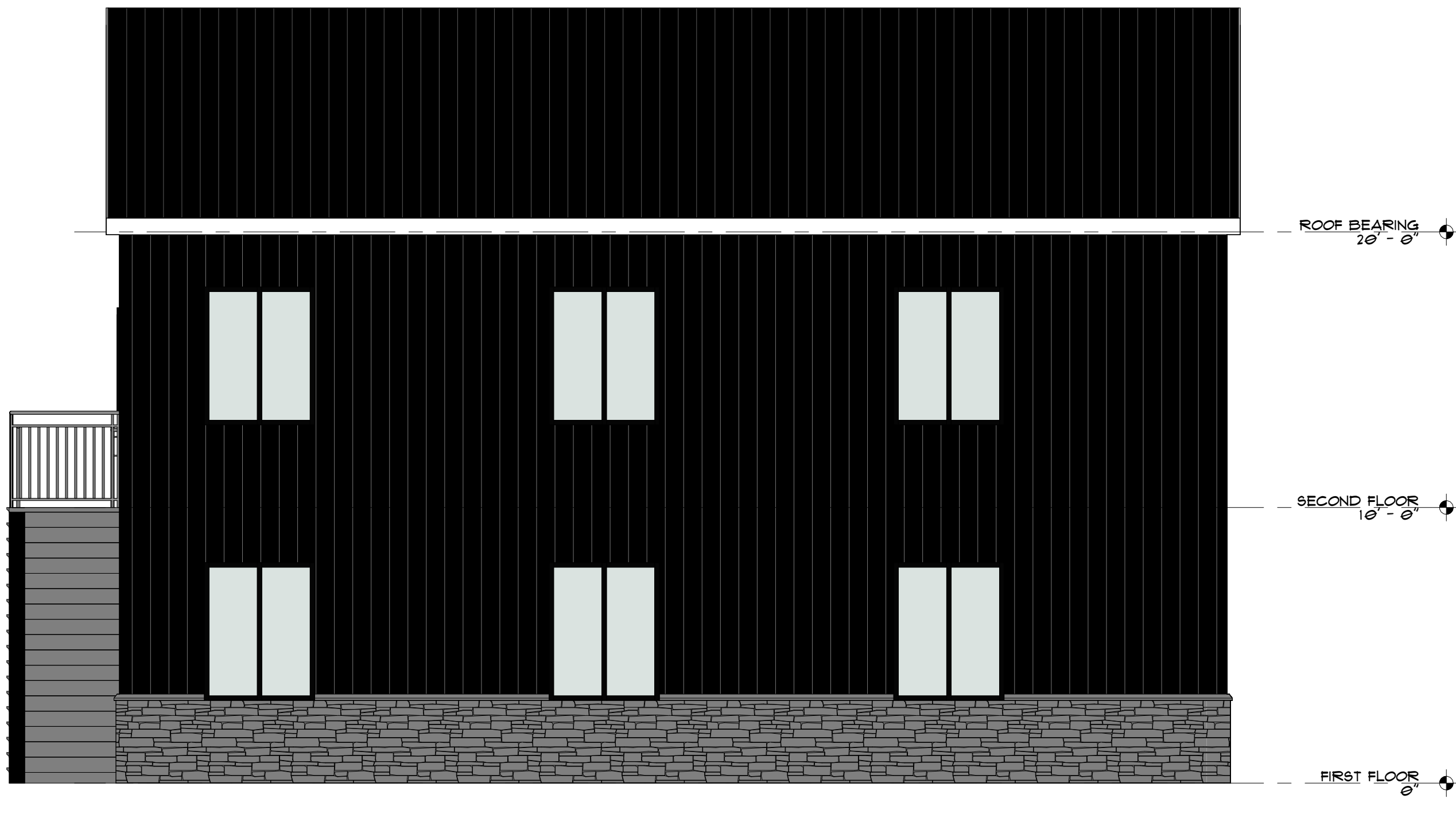
ELEVATIONS -
OPTION 1

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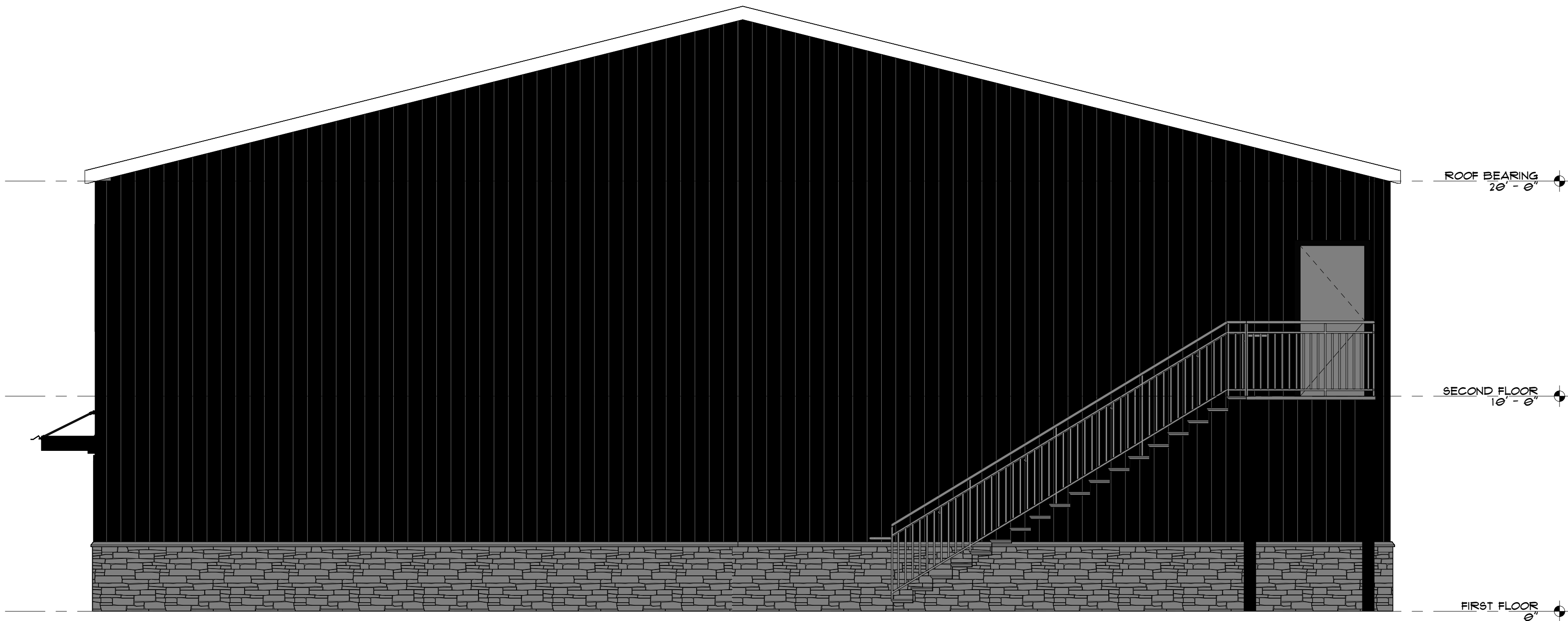
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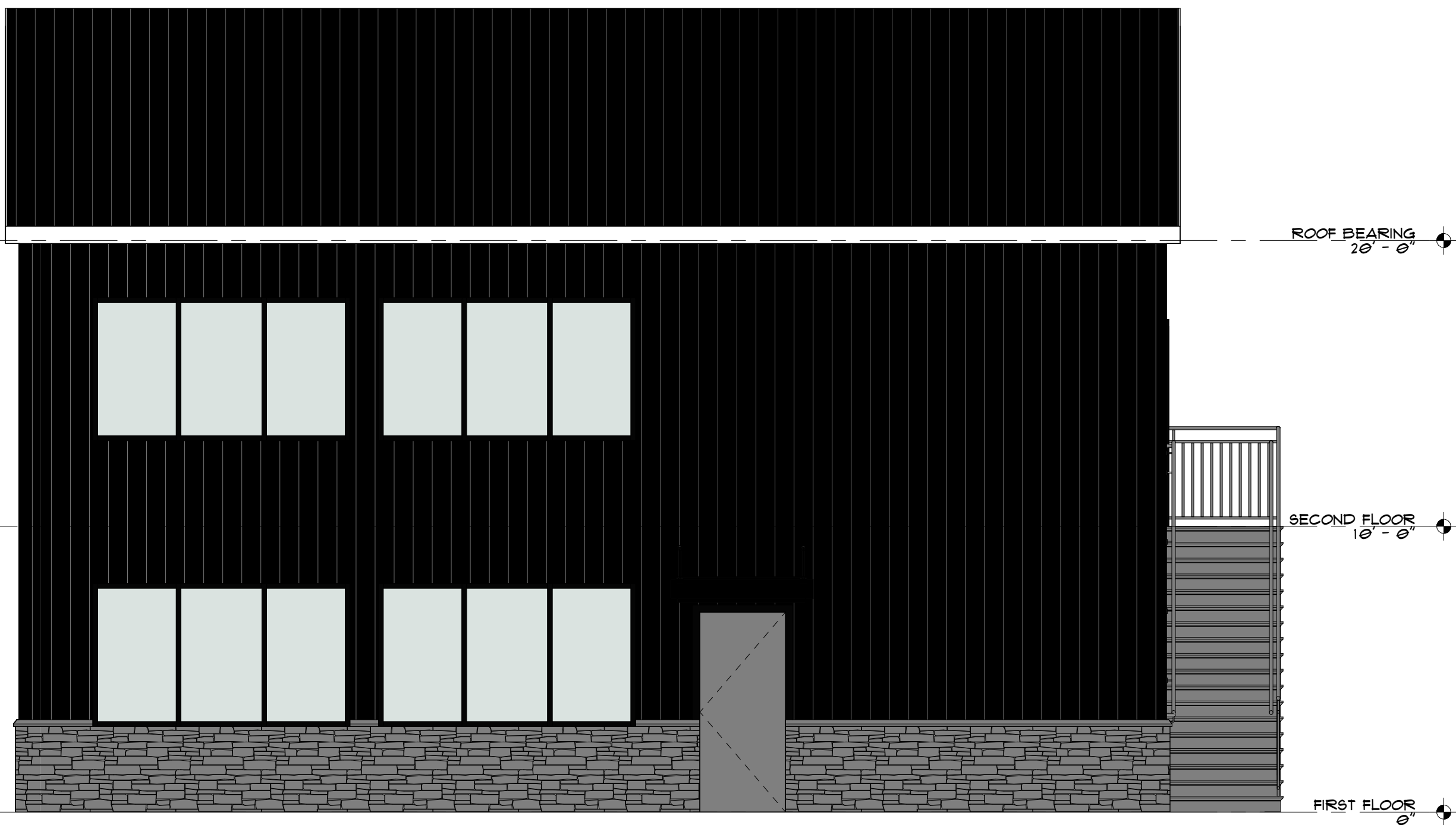
1 FRONT ELEVATION
1/4" = 1'-0"



3 LEFT ELEVATION
1/4" = 1'-0"



2 REAR ELEVATION
1/4" = 1'-0"



4 RIGHT ELEVATION
1/4" = 1'-0"

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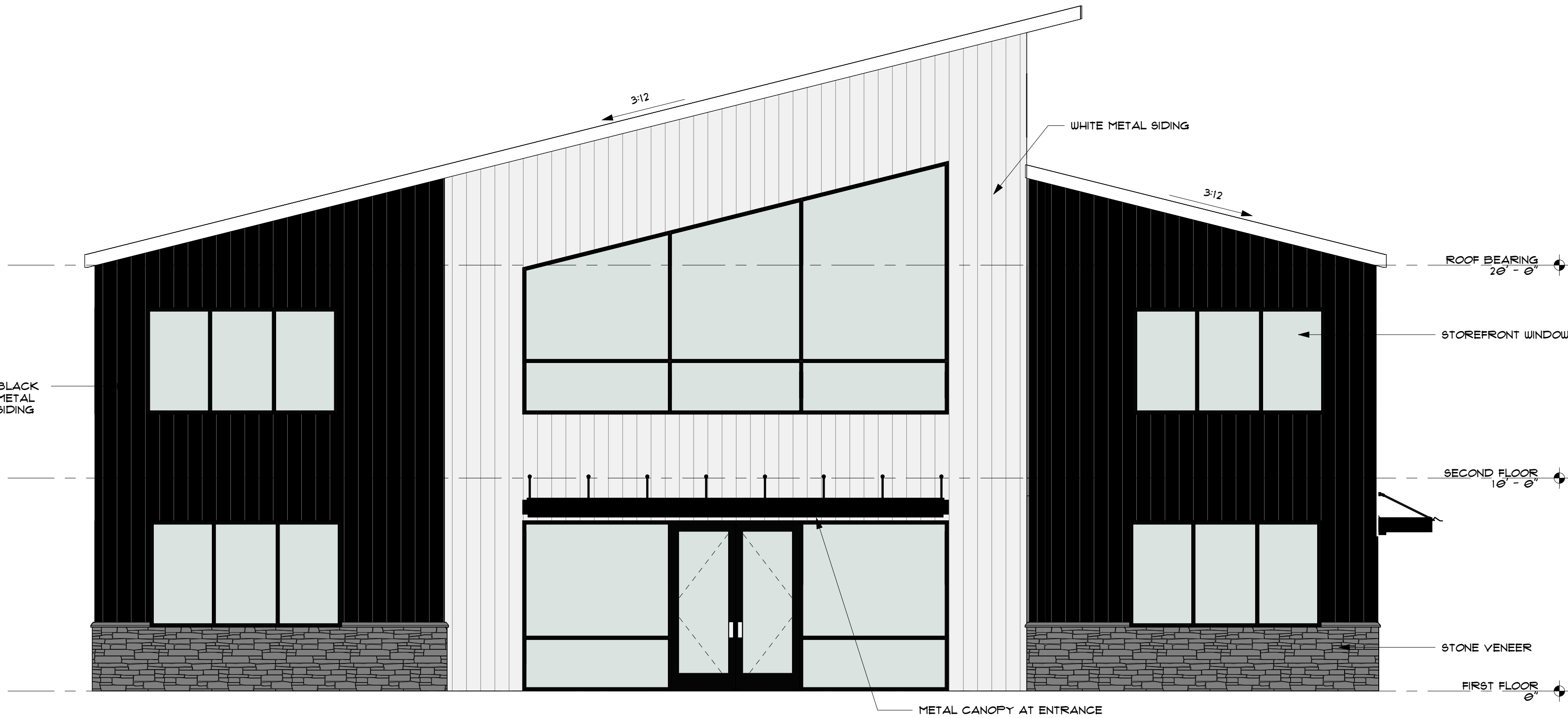
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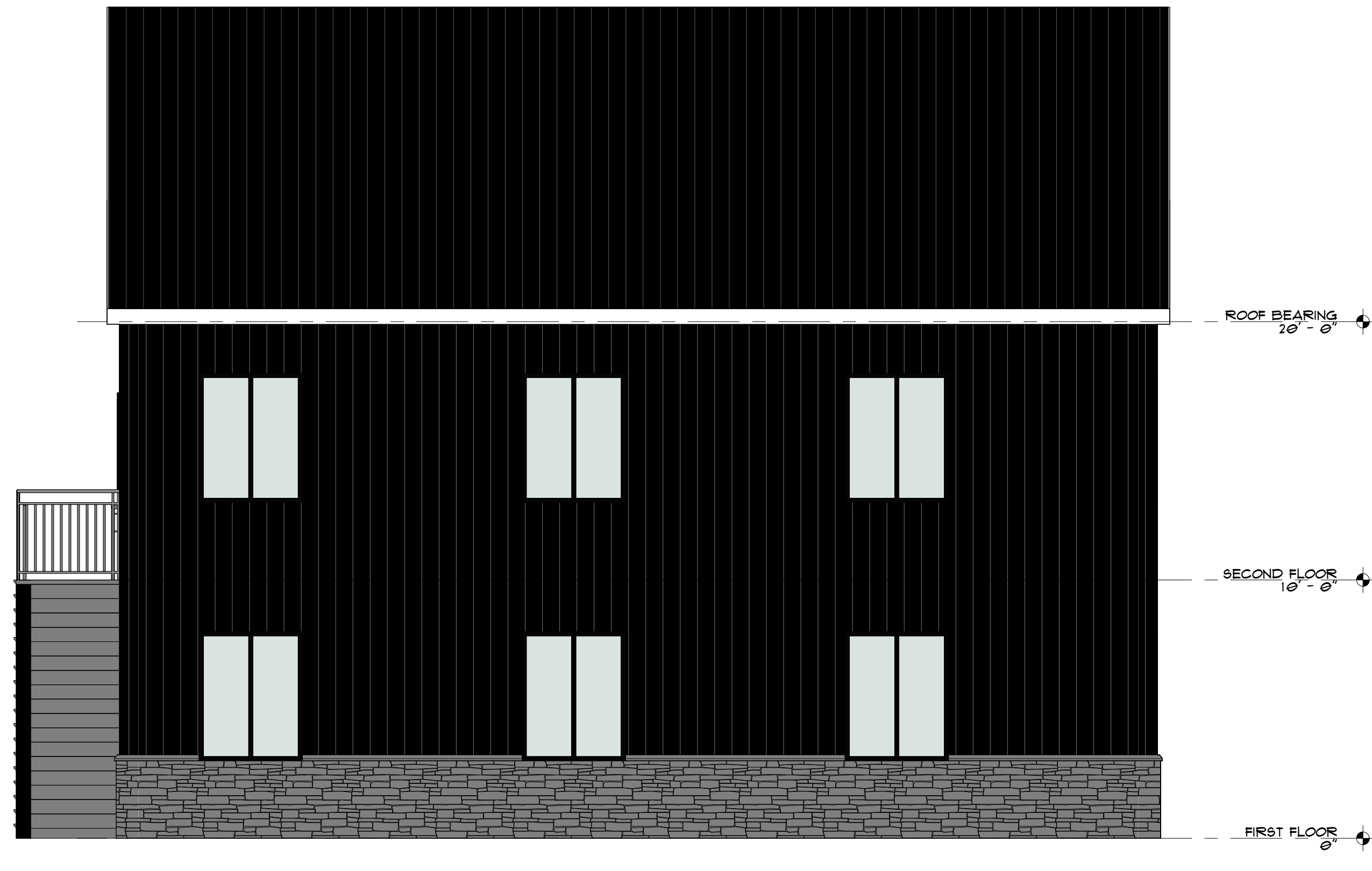
ELEVATIONS -
OPTION 2

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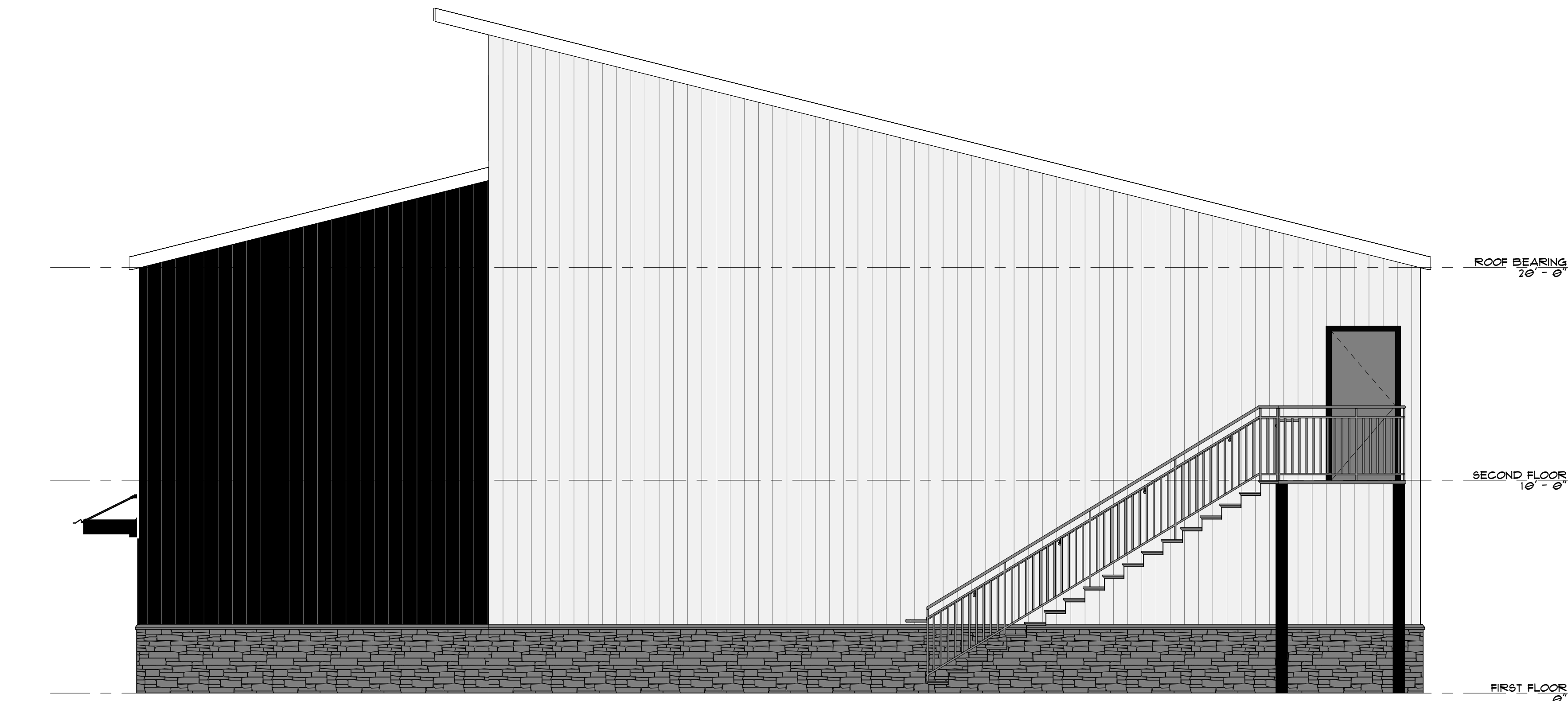
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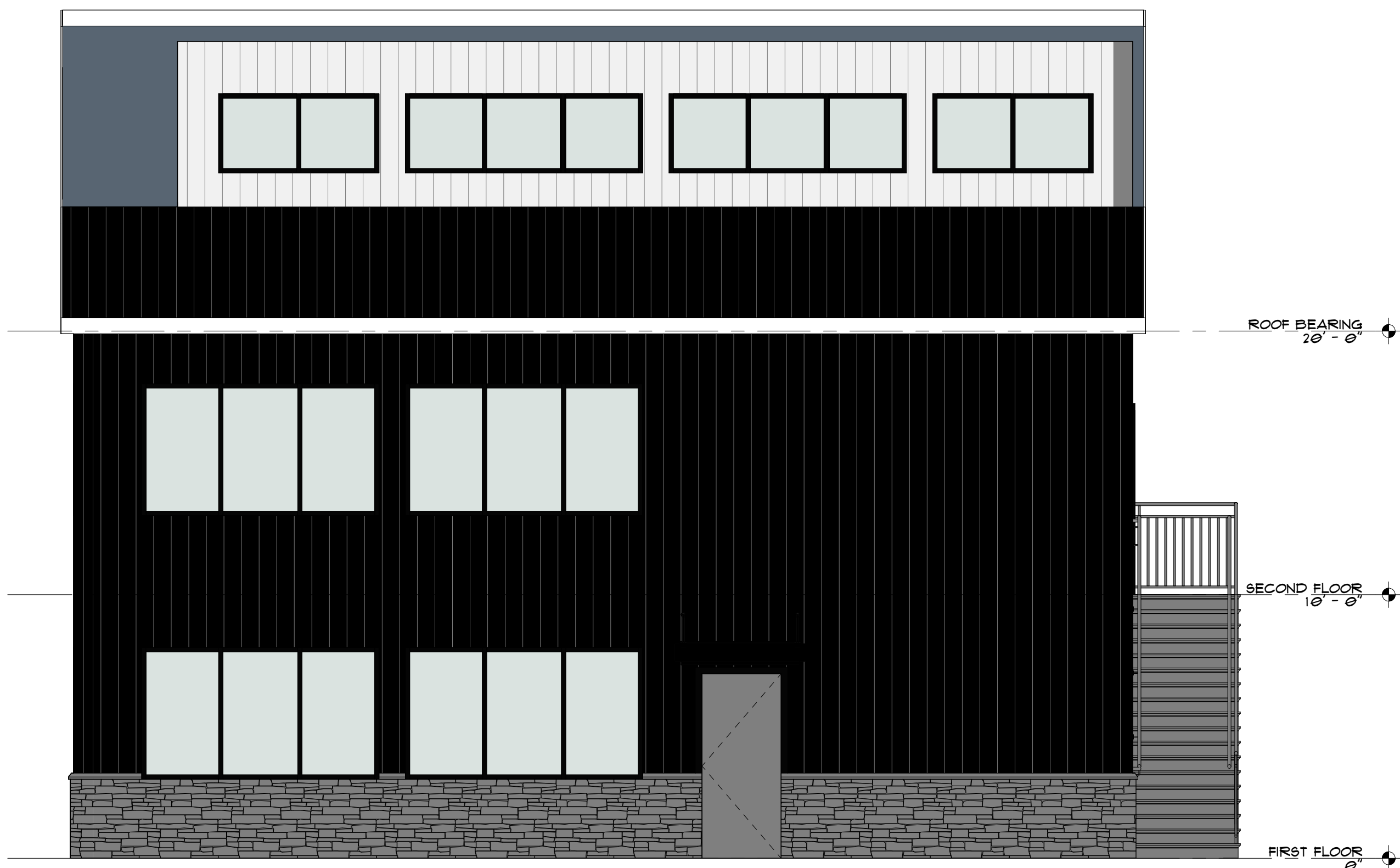
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1/4" = 1'-0"



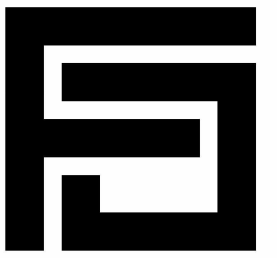
③ LEFT ELEVATION
1/4" = 1'-0"



② REAR ELEVATION
1/4" = 1'-0"



④ RIGHT ELEVATION
1/4" = 1'-0"



FISHER
ARCHITECTURE
Fisher Architecture, LLC
542 Riverside Drive
Salisbury, MD 21801
(410) 742-0238

 ΔL

FOR REVIEW
ONLY NOT FOR
CONSTRUCTION

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CONSULTANTS:

GOSNELL LANDSCAPING

EASTON, MD

SHEET INFO:

RENDERINGS

[illegible]

A-801

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CONSULTANTS:

GOSWELL LANDSCAPING
WAREHOUSE

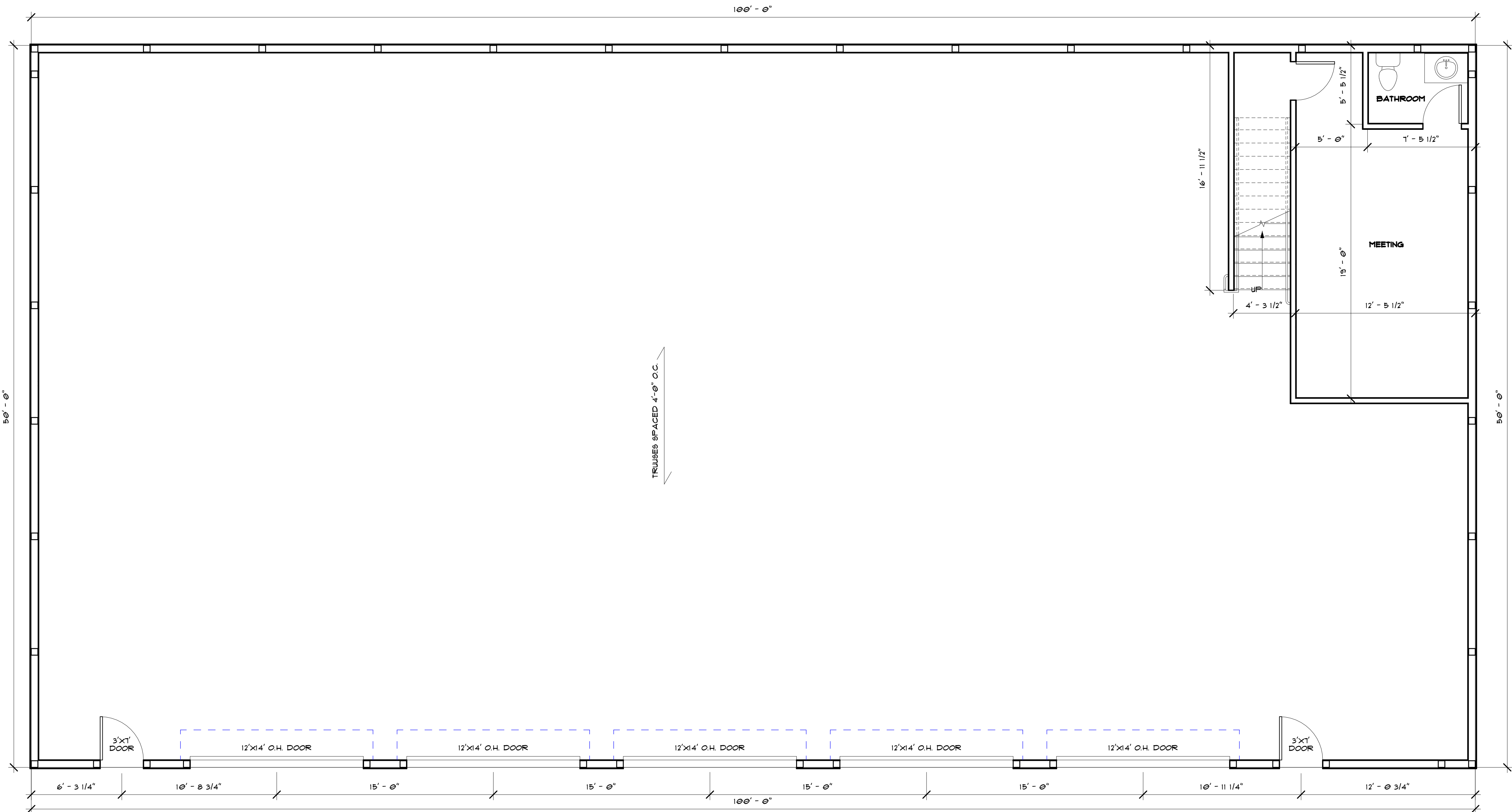
ADDRESS
CITY, STATE

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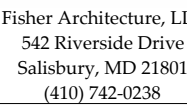
FIRST FLOOR PLAN

REV	REV DATE	DESCRIPTION
1	2023.09.05	PROJECT NO. 20230905
2		SCALE: 1/4" = 1'-0"
3		PROJ MGR: CP
4		DRAWN BY: Author
5		SHEET NUMBER:

A-101



1 FIRST FLOOR PLAN
1/4" = 1'-0"



SEAL:



PROFESSIONAL CERTIFICATION
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PREPARED OR APPROVED BY ME, AND THAT
A DULY LICENSED ARCHITECT UNDER THE
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LICENSE NO.: 06
EXPIRATION NO.: 09.2

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CONSULTANTS:

**GOSWELL LANDSCAPING
WAREHOUSE**

ADDRESS
CITY, STATE

SHEET INFO:

ROOF PLAN

[illegible]

REV	REV DATE	DESCRIPTION
DATE:	2023.03.06	
PROJECT NO.	2023026	
SCALE:	1/4" = 1'-0"	
PROJ MGR:	CP	
DRAWN BY:	Author	
SHEET NUMBER:		

A-102

① ROOF PLAN
1/4" = 1'-0"

STORMWATER MANAGEMENT REPORT

For

**Mistletoe Drive, LLC
Easton, Maryland**

Developer

Gosnell Landscapes
c/o Jonathan Gosnell
21629 Marsh Creek Road
Preston, MD 21655

Design Professional

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Date Prepared

February 1, 2023

Date Revised

February 27, 2023

Prepared by

Alec F. Chosta, E.I.T.
Civil Engineer

Approved by

Timothy W. Glass, P.E.
Principal



PROFESSIONAL CERTIFICATION: I hereby certify that this document was prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 23152, Expiration Date: 7/5/23

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- APPENDIX C – Environmental Site Design Calculations
- APPENDIX D – Drainage Area Maps

Mistletoe Drive, LLC

STORMWATER MANAGEMENT REPORT

1. INTRODUCTION

This report addresses stormwater management for development of the vacant property located at 8892 Mistletoe Drive, Easton, Maryland. The stormwater management plan incorporates the requirements of the *2000 Maryland Stormwater Design Manual Volumes I and II* (Manual) as currently updated. Development projects are required to be reviewed during the concept, preliminary site development, and final design stages. This narrative addresses the requirements pertaining to the concept design stage and meets the intent of the guidelines and methodologies presented in the MDE document *Environmental Site Design (ESD) Process & Computations* dated July 2010.

2. GENERAL SITE INFORMATION

This project is comprised of a 5.90-acre property, zoned Industrial and is located entirely outside the Chesapeake Bay Critical Area. This vacant parcel predominantly consists of grassed meadow with onsite drainage patterns split between the surrounding regional drainage channel and swales constructed along Mistletoe drive. The site is also subject to forest conservation areas, non-tidal wetlands, and various associated buffers.



Per the USDA soil maps, most of the site soils are Hambrook-Sassafras Complex, classified as a B soil. The remaining onsite soils, consist of Woodstown Loams and Zekia Silt Loams which are group C and C/D respectively. Most of the proposed limits of disturbance consist of group B soils.

3. PROPOSED PROJECT

The proposed improvements intend to subdivide the property into Lots A & B, 2.92 and 2.98 acres respectively. Lot B, located to the rear of the project, will remain vacant for future development. Lot A will host the operations of a landscaping company with a proposed warehouse, separate office space, equipment storage yard, and associated parking. Access to the site will be provided by a commercial entrance at the cul-de-sac of Mistletoe & Bryan Drives. This entrance will be shared with Lot B upon future development.

4. STORMWATER MANAGEMENT AND ENVIRONMENTAL SITE DESIGN (ESD)

An ESD target has been developed for disturbance associated with development activity on Lot A. This on-lot disturbance is 69,930 SF (1.61 ac) in Group B soils. The proposed buildings, parking, and storage yard result in approximately 38,925 SF (0.89 acres) of impervious cover (56%). Utilizing table 5.3 and onsite soil conditions, a target P_e of 2.0" results in an ESD target volume of 6,457 cf.

In accordance with the Manual, available ESD techniques i.e. Alternative Surfaces, Non-Structural and Micro-Scale Practices were evaluated for use at the site. Considering the proposed site conditions, i.e. location, topography, facility orientation, soil properties, ground water elevation, traffic, economics, use of facility, construction constraints, neighboring properties and available stormwater discharge locations, the following ESD practices are proposed for the site:

- Micro-Bioretenention (MBR)
- Bio-Swale (BSW)

See Appendix C for calculations.

4.1 STORMWATER QUANTITY MANAGEMENT

For similar projects, on adjacent parcels, quantity management has been previously satisfied at the time of the Talbot Commerce Park Subdivision via the creation of several regional stormwater ponds – See Appendix B for link to construction drawings. Unfortunately, the current project property does not drain into these facilities. As such, onsite quantity management must also be provided in the stormwater features.

Analysis verifies that management of the 2 and 10-year storms is achieved in the proposed facilities. The SWM practices will outfall to the existing swales adjacent to the site. Drainage Area "PR-1" will outlet to the existing swale adjacent to the southern property boundary and Drainage Area "PR-2" will outlet to roadside swale on Bryan Drive.

	2 Year Storm (cfs)		10 Year Storm (cfs)		100 Year Storm (cfs)	
	Pre	Post	Pre	Post	Pre	Post
Study Point 1	0.38	0.00	1.51	0.14	3.29	2.24
Study Point 2	0.03	0.00	0.11	0.00	0.23	0.00

Study Point 3	0.13	0.00	0.50	0.00	1.08	0.00
TOTAL	0.54	0.00	2.12	0.14	4.60	2.24
NET REDUCTION	0.54		1.98		2.36	

Please see Appendix A for HydroCAD calculations and Appendix D for Drainage Area Maps.

4.2 STORMWATER QUALITY

The proposed site is divided into two (2) Drainage Areas. Half the warehouse roof, all the office roof and the front parking will be directed to a Micro-Bioretentation (Drainage Area “PR-2”) to be installed along the frontage of the property, adjacent to Mistletoe Drive. The remaining warehouse roof and storage yard running along the side of the warehouse building will be sheet flowed to a proposed Bio-Swale running parallel to the property line (Drainage Area “PR-1”).

The Micro-Bioretentation will discharge to the existing roadside swale adjacent to Mistletoe Drive via a precast concrete weir, in lieu of the typical piping scheme, to limit excavation in proximity to existing utilities. The Micro-Bioretentation will share a linked underdrain with the Bio-Swale. The Bio-Swale will discharge into an existing regional drainage swale on southwest corner of the lot in a drainage easement.

Drainage Area “PR-1” has a target treatment volume of 4,568 cf with the proposed Bio-Swale treating 8,176 cf. Drainage Area “PR-2” has a target volume of 1,203 cf with a provided treatment of 2,266 cf. Both practices utilize a shared underdrain with 2 feet of media and 1 foot of temporary ponding. The total treatment provided by these features is 10,442 cf and in excess of the site target of 6,457 cf.

See Appendix C for additional information.

4.2.1 ESD PRACTICES EVALUATION

ESD practices were evaluated for applicability to the site:

Alternative Surfaces

- Green Rooftops – Not economical for Industrial usage
- Permeable Pavements – Permeable pavements require significant maintenance and are not desirable for commercial applications or areas of repeated heavy equipment loading.
- Reinforced Turf - Reinforced turf areas are commonly used for emergency equipment access or for areas that receive minimal vehicular use. Reinforced turf is not desirable for commercial applications.

Nonstructural practices

- Disconnection of Rooftop Runoff – Insufficient greenspace onsite to meet the required design criterion.
- Disconnection of Non-Rooftop Runoff – Insufficient greenspace onsite to meet the required design criterion.
- Sheetflow to Conservation Area – The configuration of the improvements do not allow for sheetflow discharge to existing onsite forest conservation areas.

Micro-scale practices

- Rainwater Harvesting – Opportunities for on-site reuse of harvested rainwater is limited. Irrigation is not proposed for the site. Operations and maintenance, especially during cold-weather periods, is also a concern.
- Submerged Gravel Wetlands – This practice is best suited for sites with a high groundwater table and poor soils. Soil mapping indicated HGS “B” soils as the predominant condition.
- Landscape Infiltration – It is assumed there is not a significant infiltration potential within the project LOD without additional geotechnical exploration.
- Infiltration Berms – The requirements of the proposed development do not leave enough room for the implementation of this practice.
- Dry Wells – This practice is viewed as undesirable in Talbot County where many sites frequently have seasonal high ground water and other maintenance concerns. Dry wells are typically reserved for the treatment of building rooftops and would therefore require additional practices to supplement.
- **Micro-Bioretenention** – This practice will provide significant treatment. Maintenance for this practice is reasonable.
- Rain Gardens – This practice is better suited for residential environments.
- **Bio-Swales** – This practice provides the required treatment, is relatively easy to construct and maintain, and will enhance existing site drainage patterns.

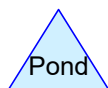
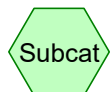
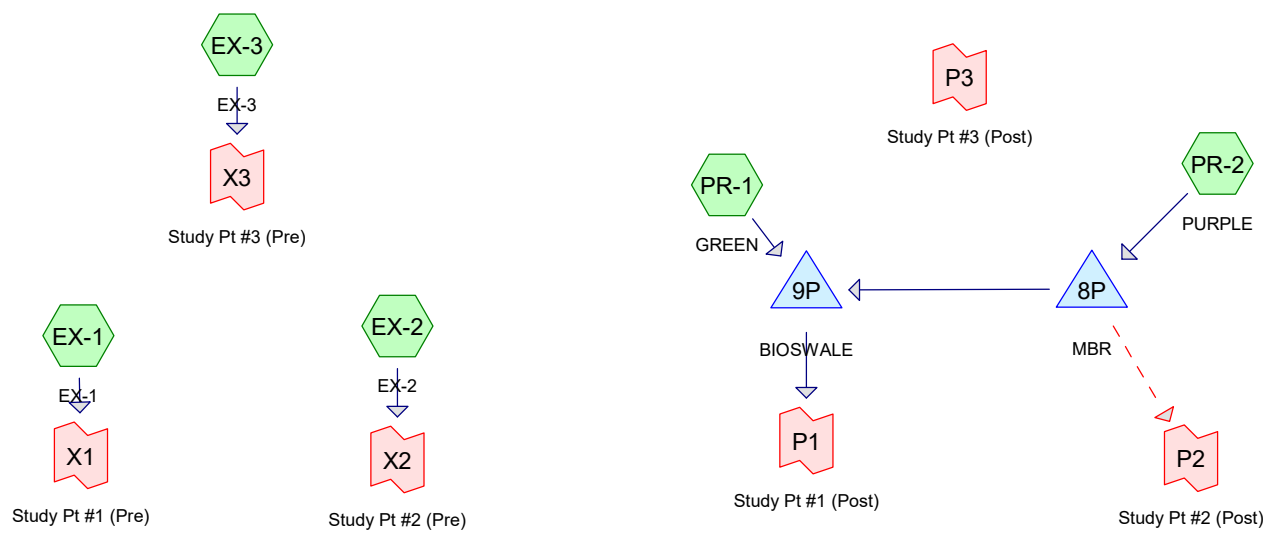
A **Bio-Swale & Micro-Bioretenention** providing treatment and conveyance is ideal for this site. Such practices represent the most cost-effective and practical solution for quantity and quality management.

5. CONCLUSION

This stormwater management analysis indicates that the proposed design will successfully meet stormwater quality and quantity requirements.

APPENDIX A

HydroCAD Quantity Management Calculations



Routing Diagram for 2022-11-16-Sketch HydroCAD
 Prepared by Lane Engineering, LLC, Printed 2/27/2023
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2022-11-16-Sketch HydroCAD

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Type II 24-hr 2-yr Rainfall=3.40"

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Summary for Subcatchment EX-1: EX-1

Runoff = 0.38 cfs @ 12.13 hrs, Volume= 0.054 af, Depth> 0.52"

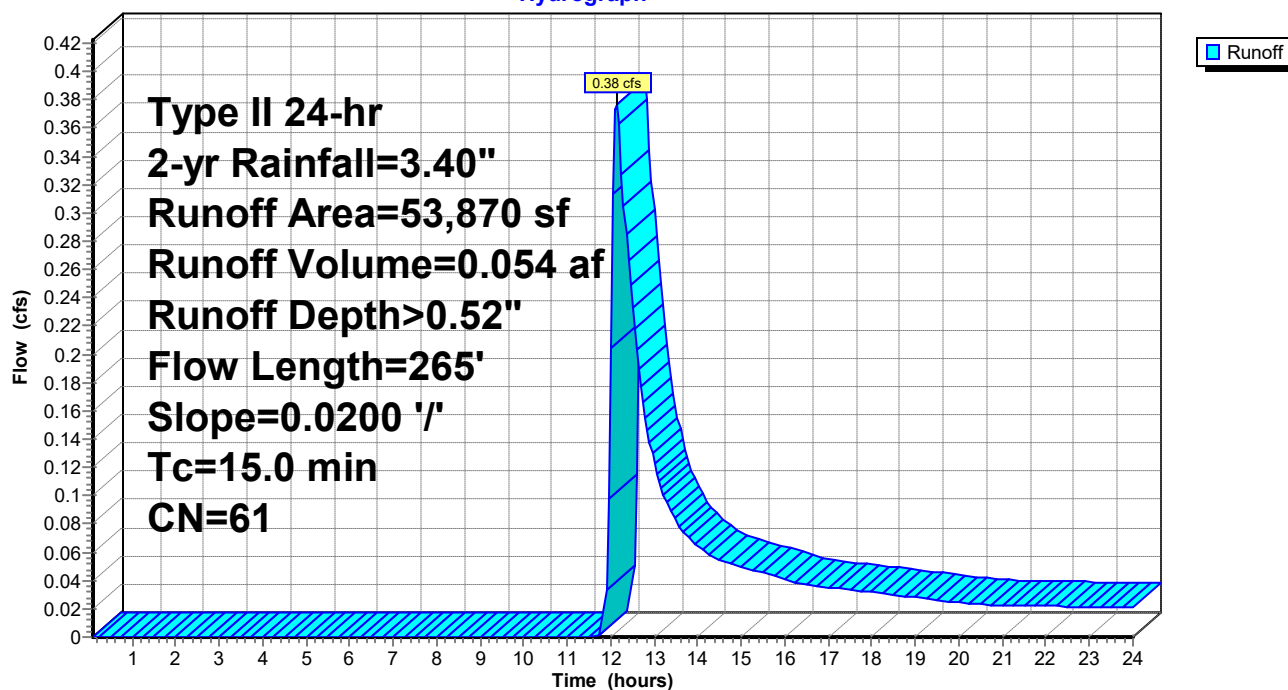
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.10-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.40"

Area (sf)	CN	Description
53,870	61	>75% Grass cover, Good, HSG B
53,870		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	150	0.0200	0.19		Sheet Flow, Field Grass: Short n= 0.150 P2= 3.40"
1.9	115	0.0200	0.99		Shallow Concentrated Flow, Field Short Grass Pasture Kv= 7.0 fps
15.0	265	Total			

Subcatchment EX-1: EX-1

Hydrograph



2022-11-16-Sketch HydroCAD

Prepared by Lane Engineering, LLC

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Type II 24-hr 2-yr Rainfall=3.40"

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Summary for Subcatchment EX-2: EX-2

Runoff = 0.03 cfs @ 12.02 hrs, Volume= 0.002 af, Depth> 0.53"

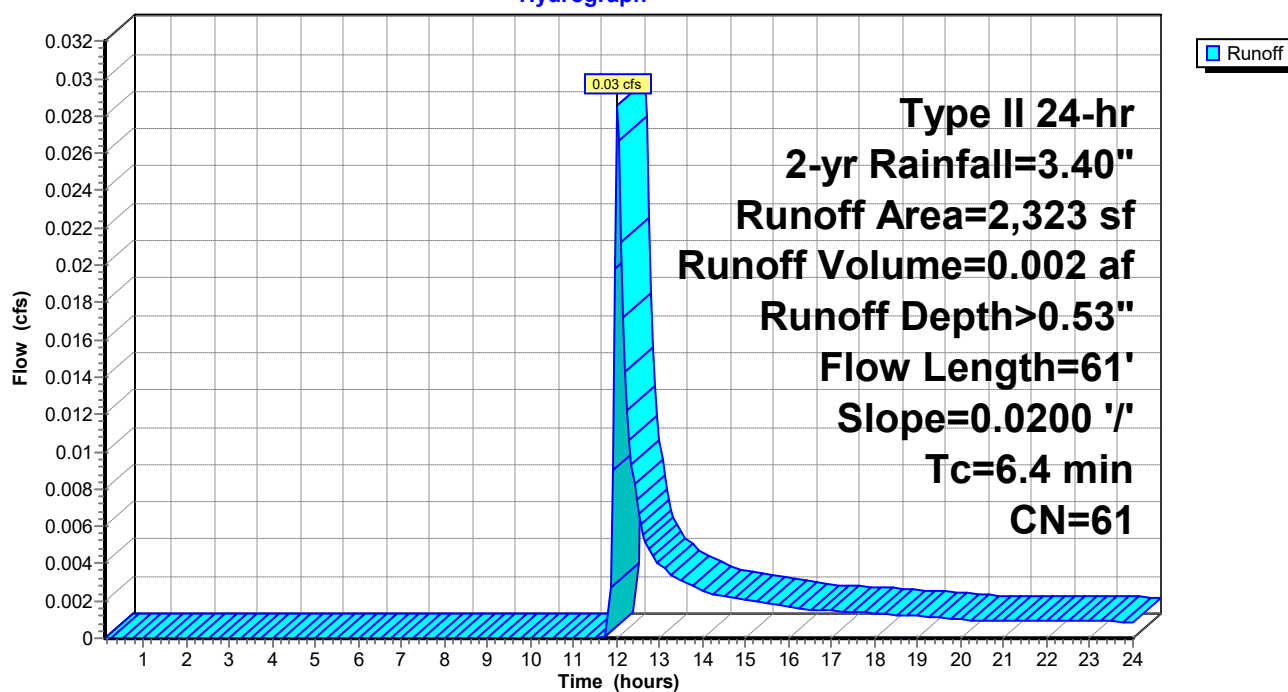
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.10-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.40"

Area (sf)	CN	Description
2,323	61	>75% Grass cover, Good, HSG B
2,323		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	61	0.0200	0.16		Sheet Flow, Field
Grass: Short n= 0.150 P2= 3.40"					

Subcatchment EX-2: EX-2

Hydrograph



2022-11-16-Sketch HydroCAD

Type II 24-hr 2-yr Rainfall=3.40"

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Summary for Subcatchment EX-3: EX-3

Runoff = 0.13 cfs @ 12.06 hrs, Volume= 0.014 af, Depth> 0.52"

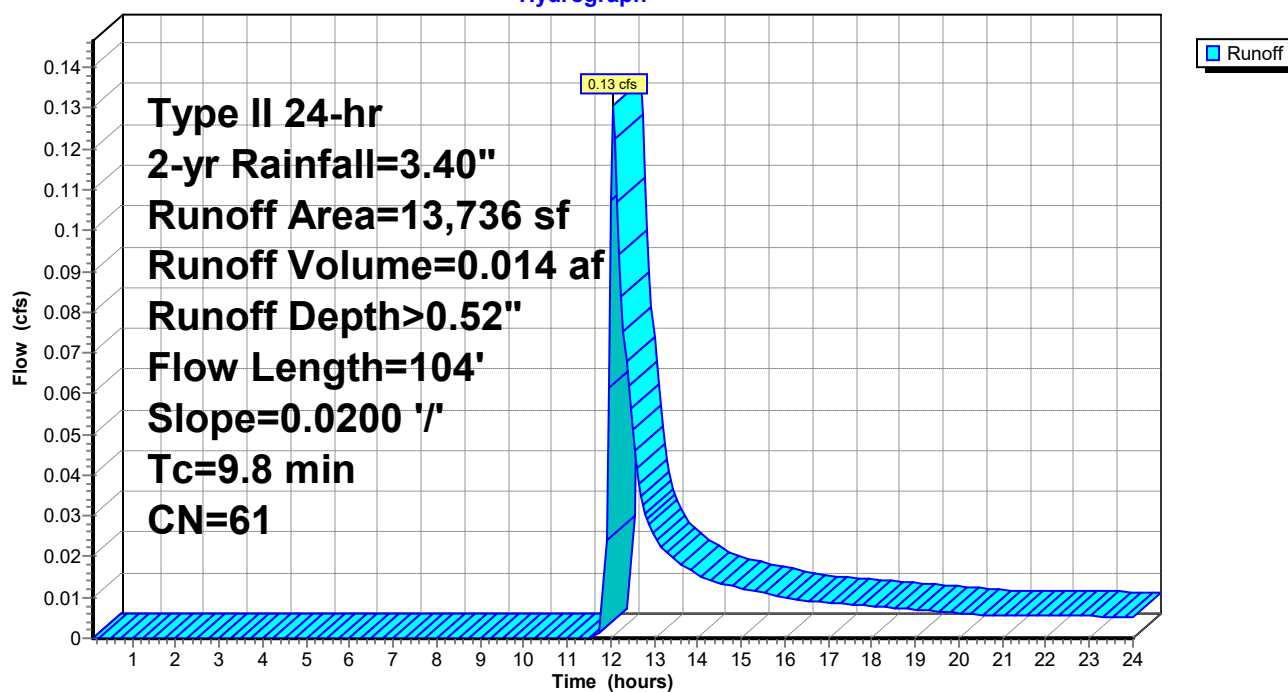
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.10-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.40"

Area (sf)	CN	Description
13,736	61	>75% Grass cover, Good, HSG B
13,736		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	104	0.0200	0.18		Sheet Flow, Field Grass: Short n= 0.150 P2= 3.40"

Subcatchment EX-3: EX-3

Hydrograph



2022-11-16-Sketch HydroCAD

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Type II 24-hr 2-yr Rainfall=3.40"

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Summary for Subcatchment PR-1: GREEN

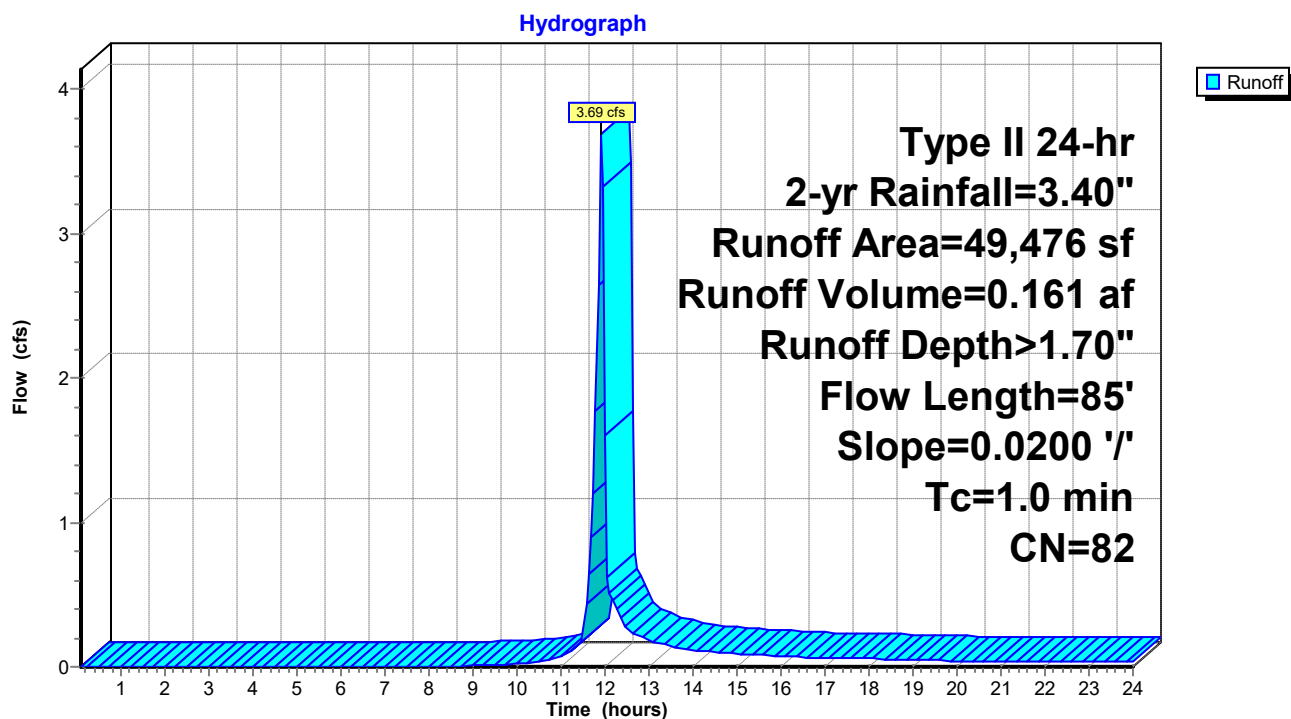
Runoff = 3.69 cfs @ 11.91 hrs, Volume= 0.161 af, Depth> 1.70"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.10-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	27,683	98	Parking Lot
	21,793	61	>75% Grass cover, Good, HSG B
	49,476	82	Weighted Average
	21,793		44.05% Pervious Area
	27,683		55.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	85	0.0200	1.37		Sheet Flow, Parking Lot Smooth surfaces n= 0.011 P2= 3.40"

Subcatchment PR-1: GREEN



2022-11-16-Sketch HydroCAD

Prepared by Lane Engineering, LLC

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Type II 24-hr 2-yr Rainfall=3.40"

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Summary for Subcatchment PR-2: PURPLE

Runoff = 0.84 cfs @ 11.98 hrs, Volume= 0.048 af, Depth> 1.23"

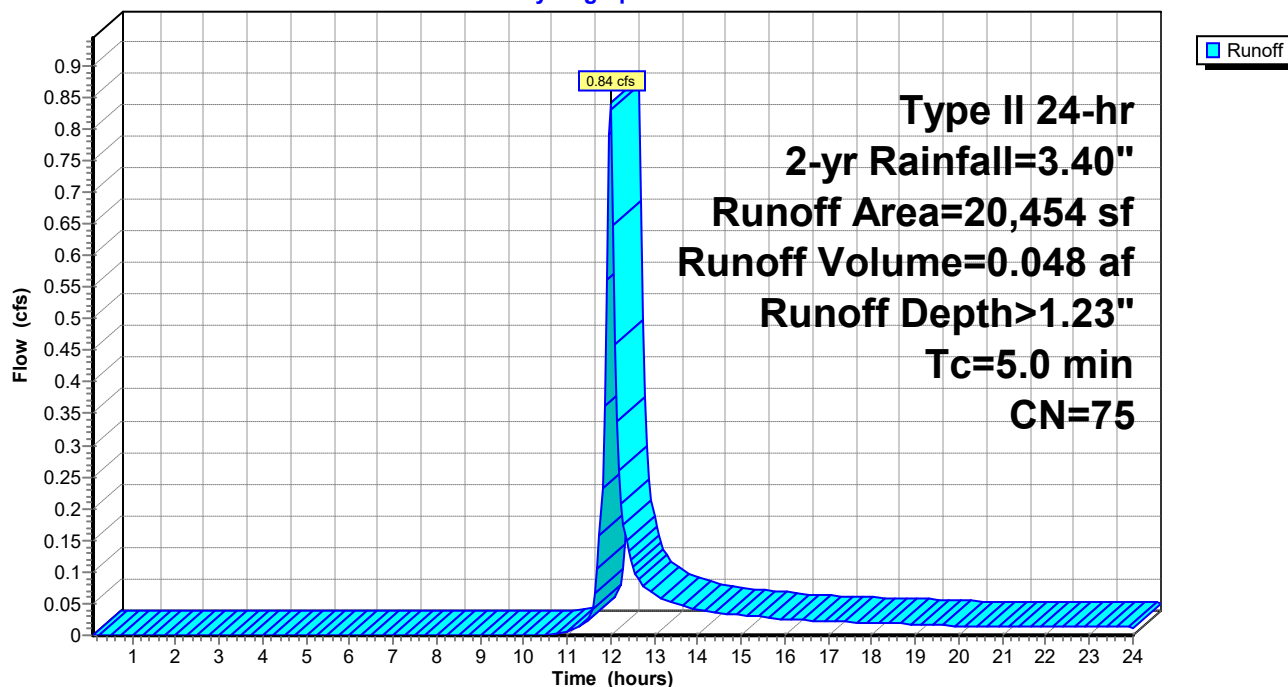
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.10-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	7,775	98	bldg roofs & parking
	12,679	61	>75% Grass cover, Good, HSG B
	20,454	75	Weighted Average
	12,679		61.99% Pervious Area
	7,775		38.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment PR-2: PURPLE

Hydrograph



2022-11-16-Sketch HydroCAD

Type II 24-hr 2-yr Rainfall=3.40"

Prepared by Lane Engineering, LLC

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Summary for Pond 8P: MBR

Inflow Area = 0.470 ac, 38.01% Impervious, Inflow Depth > 1.23" for 2-yr event
 Inflow = 0.84 cfs @ 11.98 hrs, Volume= 0.048 af
 Outflow = 0.00 cfs @ 0.10 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.10 hrs, Volume= 0.000 af
 Secondary = 0.00 cfs @ 0.10 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.10-24.00 hrs, dt= 0.05 hrs

Peak Elev= 17.03' @ 24.00 hrs Surf.Area= 1,514 sf Storage= 2,093 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description			
#1	14.09'	4,888 cf	Custom Stage Data (Irregular) Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
14.09	1,094	137.0	0.0	0	0	1,094
14.10	1,094	137.0	40.0	4	4	1,095
16.09	1,094	137.0	40.0	871	875	1,368
16.10	1,094	137.0	100.0	11	886	1,369
18.50	2,316	185.0	100.0	4,001	4,888	2,659

Device	Routing	Invert	Outlet Devices
#1	Primary	16.10'	12.0" Round 12" HDPE to BioSwale L= 121.0' Box, headwall w/3 rounded edges, Ke= 0.200 Inlet / Outlet Invert= 16.10' / 16.10' S= 0.0000 ' S= 0.0000 ' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	17.10'	2.0" W x 6.0" H Vert. 2" Notch in side of 374.23 Inlet C= 0.600
#3	Device 1	17.60'	10.7' long Rim SHA 374.23 Inlet 0 End Contraction(s)
#4	Secondary	18.10'	5.0' long Precast Weir Adjacent Mistletoe 2 End Contraction(s)

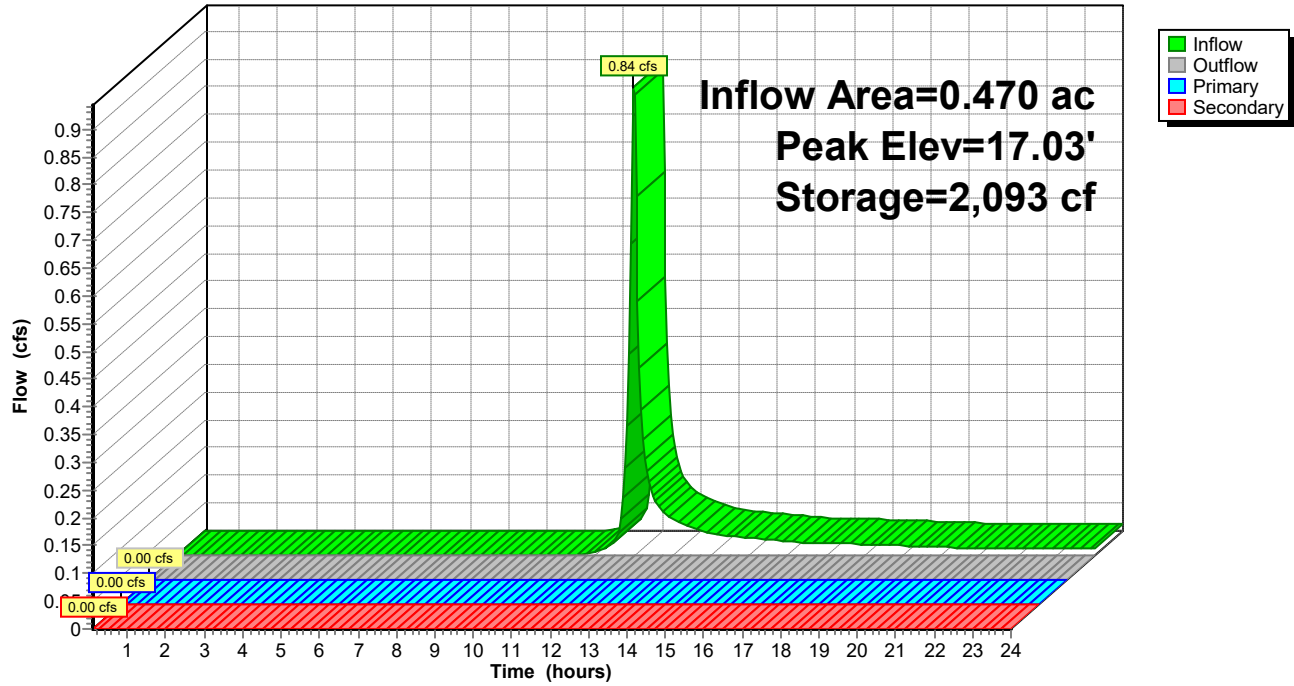
Primary OutFlow Max=0.00 cfs @ 0.10 hrs HW=14.09' TW=14.09' (Dynamic Tailwater)

↑ **1=12" HDPE to BioSwale** (Controls 0.00 cfs)
 ↑ **2=2" Notch in side of 374.23 Inlet** (Controls 0.00 cfs)
 ↑ **3=Rim SHA 374.23 Inlet** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.10 hrs HW=14.09' TW=0.00' (Dynamic Tailwater)↑ **4=Precast Weir Adjacent Mistletoe** (Controls 0.00 cfs)

Pond 8P: MBR

Hydrograph



2022-11-16-Sketch HydroCAD

Type II 24-hr 2-yr Rainfall=3.40"

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Stage-Area-Storage for Pond 8P: MBR

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
14.09	1,094	0	16.64	1,329	1,539
14.14	1,094	22	16.69	1,352	1,606
14.19	1,094	44	16.74	1,376	1,675
14.24	1,094	66	16.79	1,399	1,744
14.29	1,094	88	16.84	1,422	1,815
14.34	1,094	109	16.89	1,446	1,886
14.39	1,094	131	16.94	1,470	1,959
14.44	1,094	153	16.99	1,494	2,033
14.49	1,094	175	17.04	1,519	2,109
14.54	1,094	197	17.09	1,543	2,185
14.59	1,094	219	17.14	1,568	2,263
14.64	1,094	241	17.19	1,593	2,342
14.69	1,094	263	17.24	1,618	2,422
14.74	1,094	284	17.29	1,643	2,504
14.79	1,094	306	17.34	1,669	2,587
14.84	1,094	328	17.39	1,695	2,671
14.89	1,094	350	17.44	1,720	2,756
14.94	1,094	372	17.49	1,747	2,843
14.99	1,094	394	17.54	1,773	2,931
15.04	1,094	416	17.59	1,799	3,020
15.09	1,094	438	17.64	1,826	3,111
15.14	1,094	459	17.69	1,853	3,203
15.19	1,094	481	17.74	1,880	3,296
15.24	1,094	503	17.79	1,907	3,391
15.29	1,094	525	17.84	1,935	3,487
15.34	1,094	547	17.89	1,962	3,584
15.39	1,094	569	17.94	1,990	3,683
15.44	1,094	591	17.99	2,018	3,783
15.49	1,094	613	18.04	2,047	3,885
15.54	1,094	635	18.09	2,075	3,988
15.59	1,094	656	18.14	2,104	4,092
15.64	1,094	678	18.19	2,133	4,198
15.69	1,094	700	18.24	2,162	4,306
15.74	1,094	722	18.29	2,191	4,414
15.79	1,094	744	18.34	2,220	4,525
15.84	1,094	766	18.39	2,250	4,636
15.89	1,094	788	18.44	2,280	4,750
15.94	1,094	810	18.49	2,310	4,864
15.99	1,094	831			
16.04	1,094	853			
16.09	1,094	875			
16.14	1,111	930			
16.19	1,132	986			
16.24	1,153	1,043			
16.29	1,174	1,102			
16.34	1,196	1,161			
16.39	1,218	1,221			
16.44	1,240	1,283			
16.49	1,262	1,345			
16.54	1,284	1,409			
16.59	1,307	1,474			

2022-11-16-Sketch HydroCAD

Type II 24-hr 2-yr Rainfall=3.40"

Prepared by Lane Engineering, LLC

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Summary for Pond 9P: BIOSWALE

Inflow Area = 1.605 ac, 50.70% Impervious, Inflow Depth > 1.20" for 2-yr event
 Inflow = 3.69 cfs @ 11.91 hrs, Volume= 0.161 af
 Outflow = 0.00 cfs @ 0.10 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.10 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.10-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 16.96' @ 24.00 hrs Surf.Area= 6,211 sf Storage= 7,007 cf
 Flood Elev= 18.10' Surf.Area= 10,897 sf Storage= 16,618 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description			
#1	14.09'	16,618 cf	Custom Stage Data (Irregular) Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
14.09	3,533	896.0	0.0	0	0	3,533
14.10	3,533	896.0	40.0	14	14	3,542
16.09	3,533	896.0	40.0	2,812	2,826	5,325
16.10	3,533	896.0	100.0	35	2,862	5,334
18.10	10,897	944.0	100.0	13,757	16,618	12,599

Device	Routing	Invert	Outlet Devices	
#1	Primary	14.10'	12.0" Round HDPE_Round 12" L= 95.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 14.10' / 13.60' S= 0.0053 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf	
#2	Device 1	17.10'	2.0" W x 6.0" H Vert. 2" Notch in side of 374.23 Inlet C= 0.600	
#3	Device 1	17.60'	10.7' long Rim SHA 374.23 Inlet 0 End Contraction(s)	

Primary OutFlow Max=0.00 cfs @ 0.10 hrs HW=14.09' TW=0.00' (Dynamic Tailwater)

↑ **1=HDPE_Round 12"** (Controls 0.00 cfs)
 ↑ **2=2" Notch in side of 374.23 Inlet** (Controls 0.00 cfs)
 ↑ **3=Rim SHA 374.23 Inlet** (Controls 0.00 cfs)

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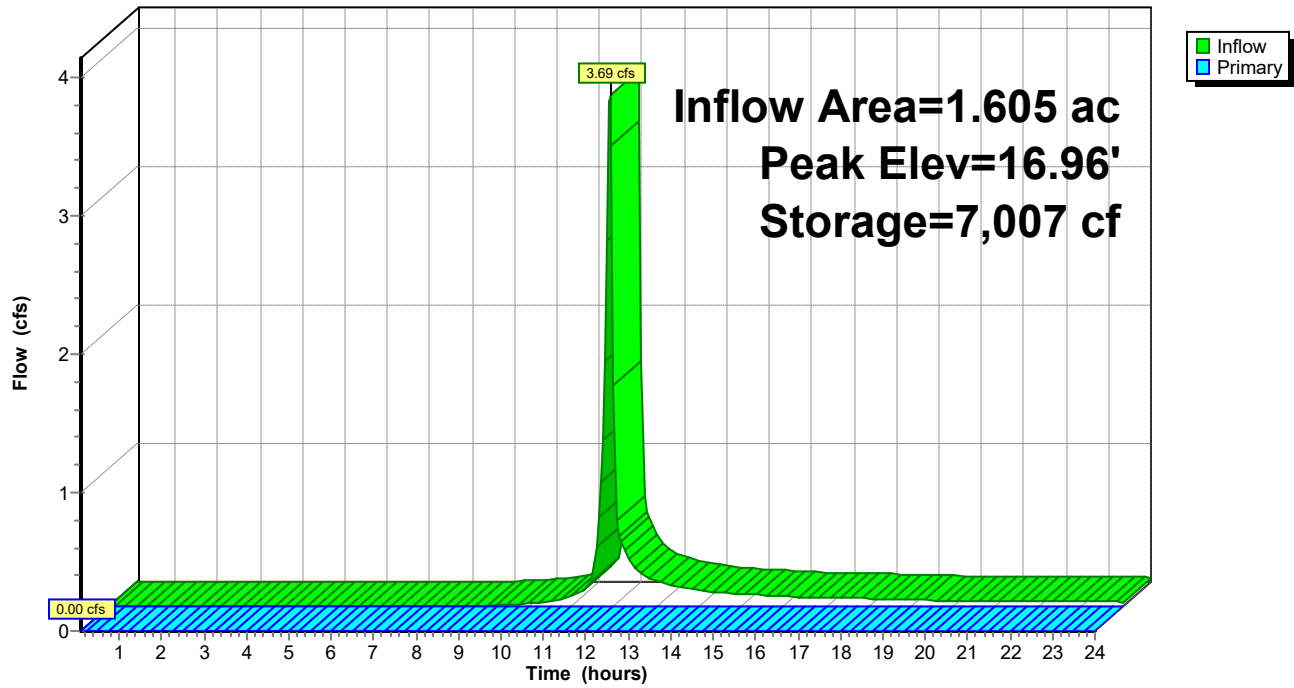
Type II 24-hr 2-yr Rainfall=3.40"

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Pond 9P: BIOSWALE

Hydrograph



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Type II 24-hr 2-yr Rainfall=3.40"

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Stage-Area-Storage for Pond 9P: BIOSWALE

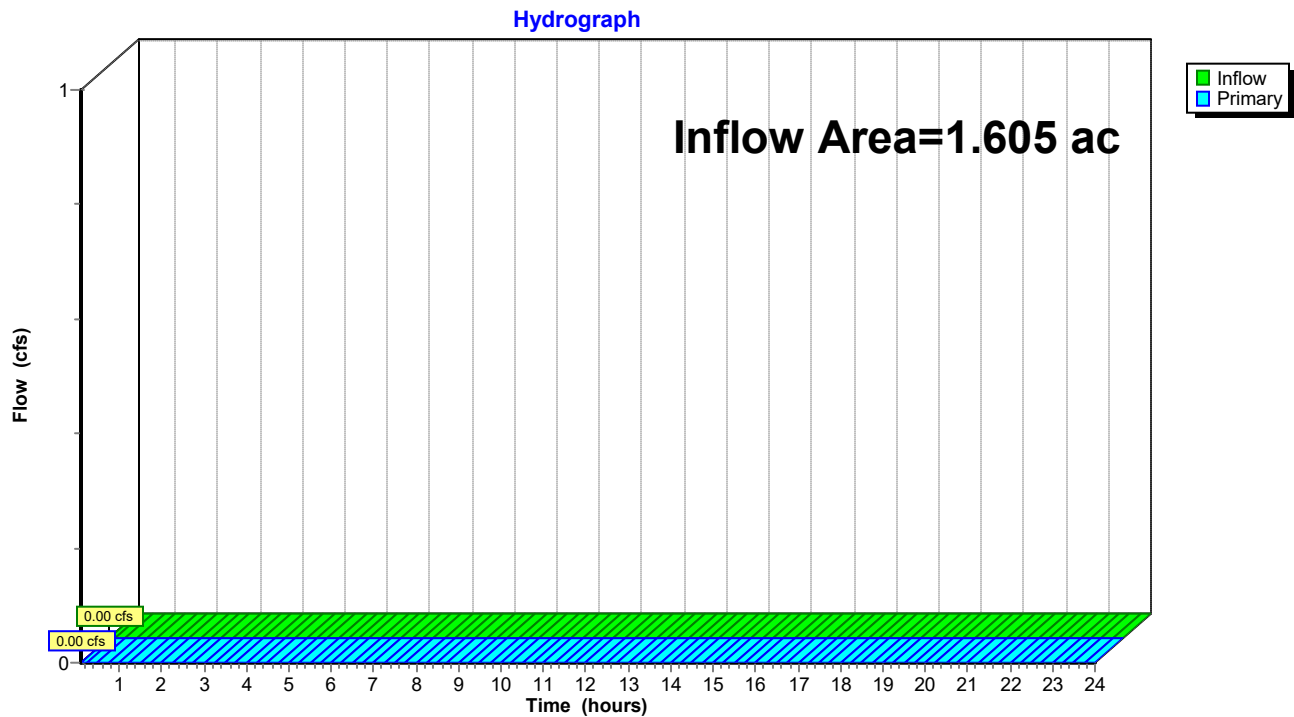
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
14.09	3,533	0	16.64	5,123	5,186
14.14	3,533	71	16.69	5,285	5,446
14.19	3,533	141	16.74	5,450	5,714
14.24	3,533	212	16.79	5,617	5,991
14.29	3,533	283	16.84	5,787	6,276
14.34	3,533	353	16.89	5,959	6,570
14.39	3,533	424	16.94	6,134	6,872
14.44	3,533	495	16.99	6,311	7,183
14.49	3,533	565	17.04	6,491	7,503
14.54	3,533	636	17.09	6,673	7,832
14.59	3,533	707	17.14	6,858	8,170
14.64	3,533	777	17.19	7,045	8,518
14.69	3,533	848	17.24	7,235	8,875
14.74	3,533	919	17.29	7,428	9,241
14.79	3,533	989	17.34	7,623	9,618
14.84	3,533	1,060	17.39	7,820	10,004
14.89	3,533	1,131	17.44	8,020	10,400
14.94	3,533	1,201	17.49	8,223	10,806
14.99	3,533	1,272	17.54	8,428	11,222
15.04	3,533	1,343	17.59	8,635	11,649
15.09	3,533	1,413	17.64	8,845	12,086
15.14	3,533	1,484	17.69	9,058	12,533
15.19	3,533	1,555	17.74	9,273	12,992
15.24	3,533	1,625	17.79	9,491	13,461
15.29	3,533	1,696	17.84	9,711	13,941
15.34	3,533	1,766	17.89	9,934	14,432
15.39	3,533	1,837	17.94	10,159	14,934
15.44	3,533	1,908	17.99	10,387	15,448
15.49	3,533	1,978	18.04	10,617	15,973
15.54	3,533	2,049	18.09	10,850	16,510
15.59	3,533	2,120			
15.64	3,533	2,190			
15.69	3,533	2,261			
15.74	3,533	2,332			
15.79	3,533	2,402			
15.84	3,533	2,473			
15.89	3,533	2,544			
15.94	3,533	2,614			
15.99	3,533	2,685			
16.04	3,533	2,756			
16.09	3,533	2,826			
16.14	3,641	3,005			
16.19	3,778	3,191			
16.24	3,917	3,383			
16.29	4,059	3,582			
16.34	4,203	3,789			
16.39	4,350	4,003			
16.44	4,500	4,224			
16.49	4,652	4,453			
16.54	4,806	4,689			
16.59	4,963	4,933			

Summary for Link P1: Study Pt #1 (Post)

Inflow Area = 1.605 ac, 50.70% Impervious, Inflow Depth = 0.00" for 2-yr event
 Inflow = 0.00 cfs @ 0.10 hrs, Volume= 0.000 af
 Primary = 0.00 cfs @ 0.10 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.10-24.00 hrs, dt= 0.05 hrs

Link P1: Study Pt #1 (Post)



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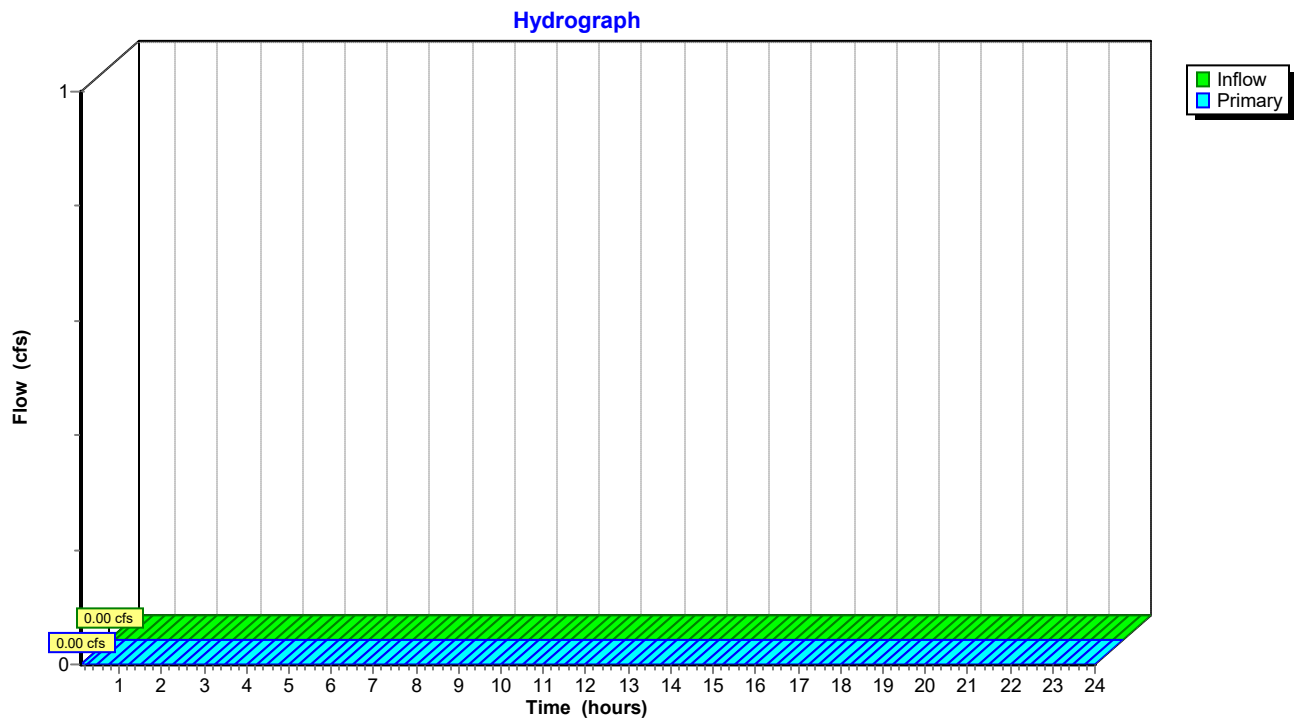
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Summary for Link P2: Study Pt #2 (Post)

Inflow = 0.00 cfs @ 0.10 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.10 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.10-24.00 hrs, dt= 0.05 hrs

Link P2: Study Pt #2 (Post)



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Type II 24-hr 2-yr Rainfall=3.40"

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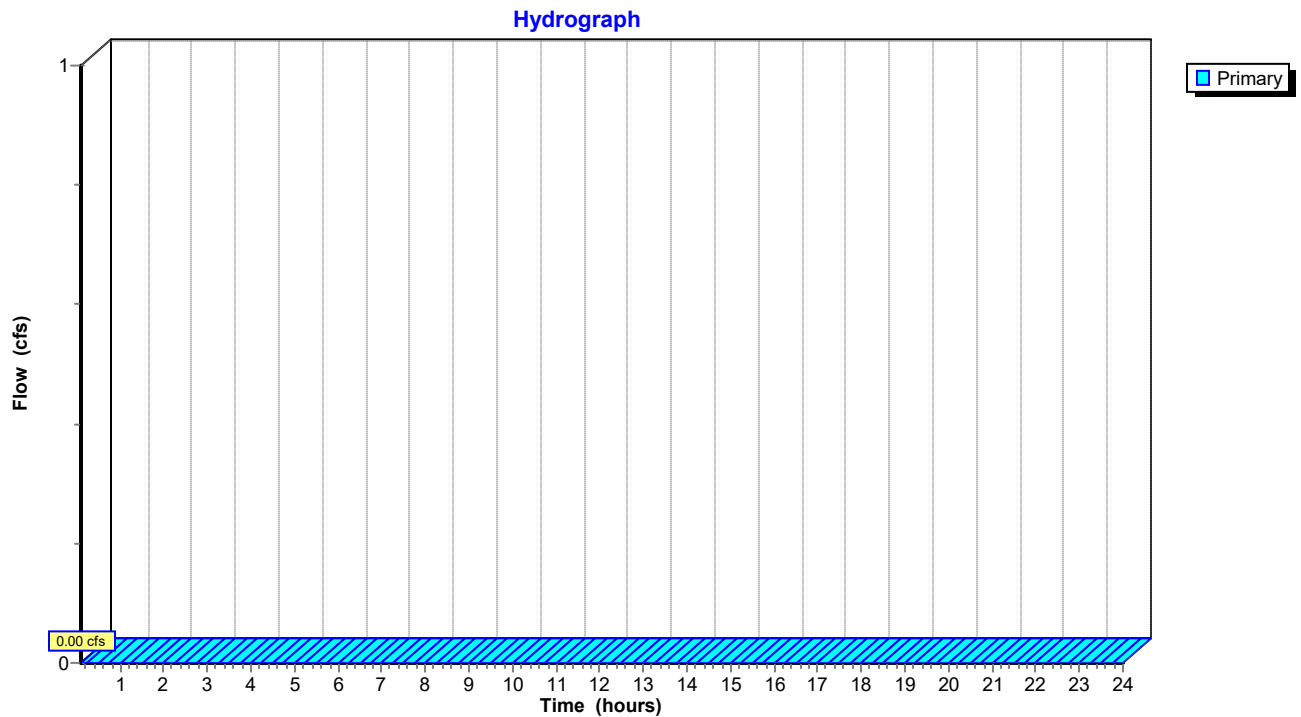
Page 15

Summary for Link P3: Study Pt #3 (Post)

Primary = 0.00 cfs @ 0.10 hrs, Volume= 0.000 af

Primary outflow = Inflow, Time Span= 0.10-24.00 hrs, dt= 0.05 hrs

Link P3: Study Pt #3 (Post)



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Type II 24-hr 2-yr Rainfall=3.40"

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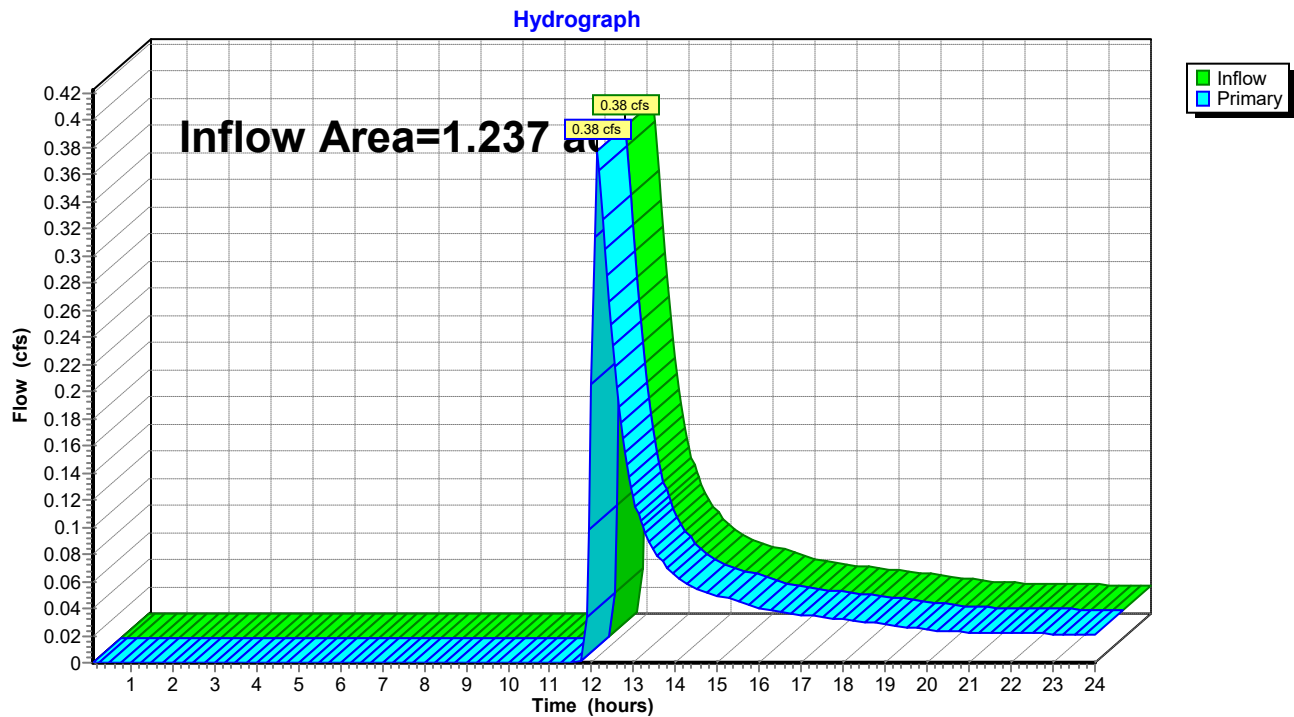
Page 16

Summary for Link X1: Study Pt #1 (Pre)

Inflow Area = 1.237 ac, 0.00% Impervious, Inflow Depth > 0.52" for 2-yr event
Inflow = 0.38 cfs @ 12.13 hrs, Volume= 0.054 af
Primary = 0.38 cfs @ 12.13 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.10-24.00 hrs, dt= 0.05 hrs

Link X1: Study Pt #1 (Pre)



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Type II 24-hr 2-yr Rainfall=3.40"

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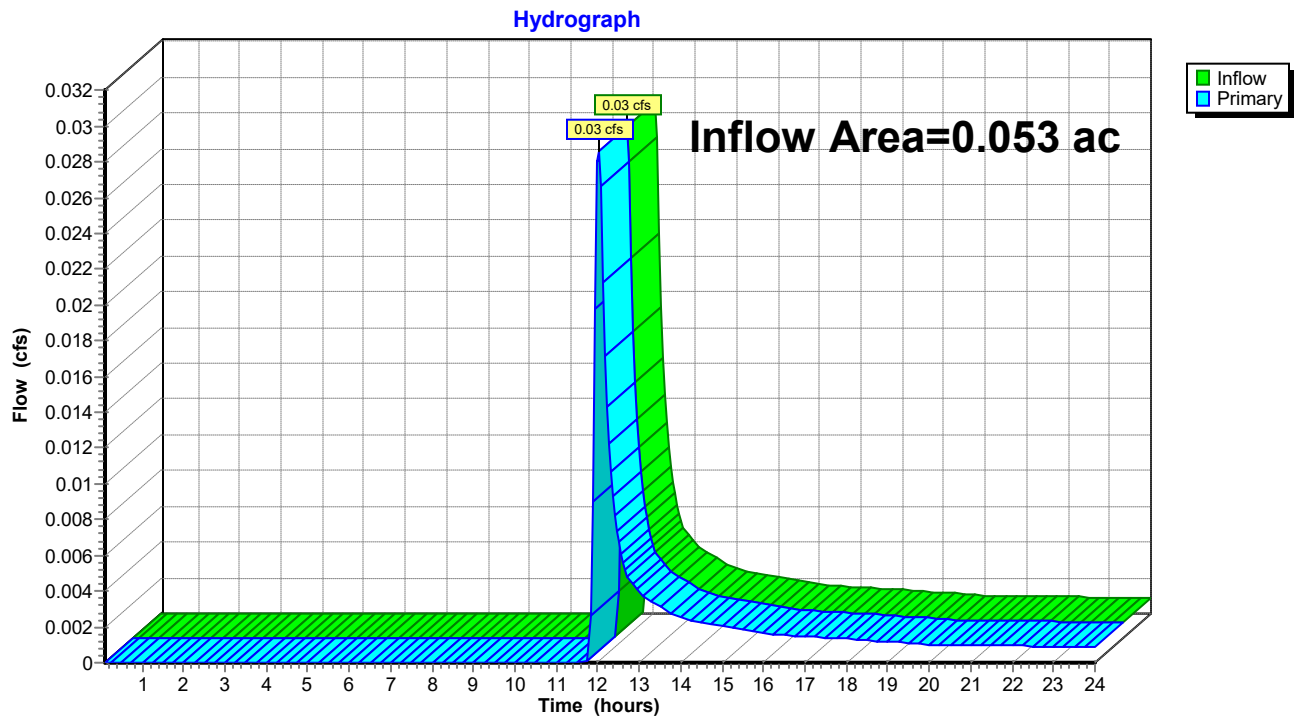
Page 17

Summary for Link X2: Study Pt #2 (Pre)

Inflow Area = 0.053 ac, 0.00% Impervious, Inflow Depth > 0.53" for 2-yr event
Inflow = 0.03 cfs @ 12.02 hrs, Volume= 0.002 af
Primary = 0.03 cfs @ 12.02 hrs, Volume= 0.002 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.10-24.00 hrs, dt= 0.05 hrs

Link X2: Study Pt #2 (Pre)



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Type II 24-hr 2-yr Rainfall=3.40"

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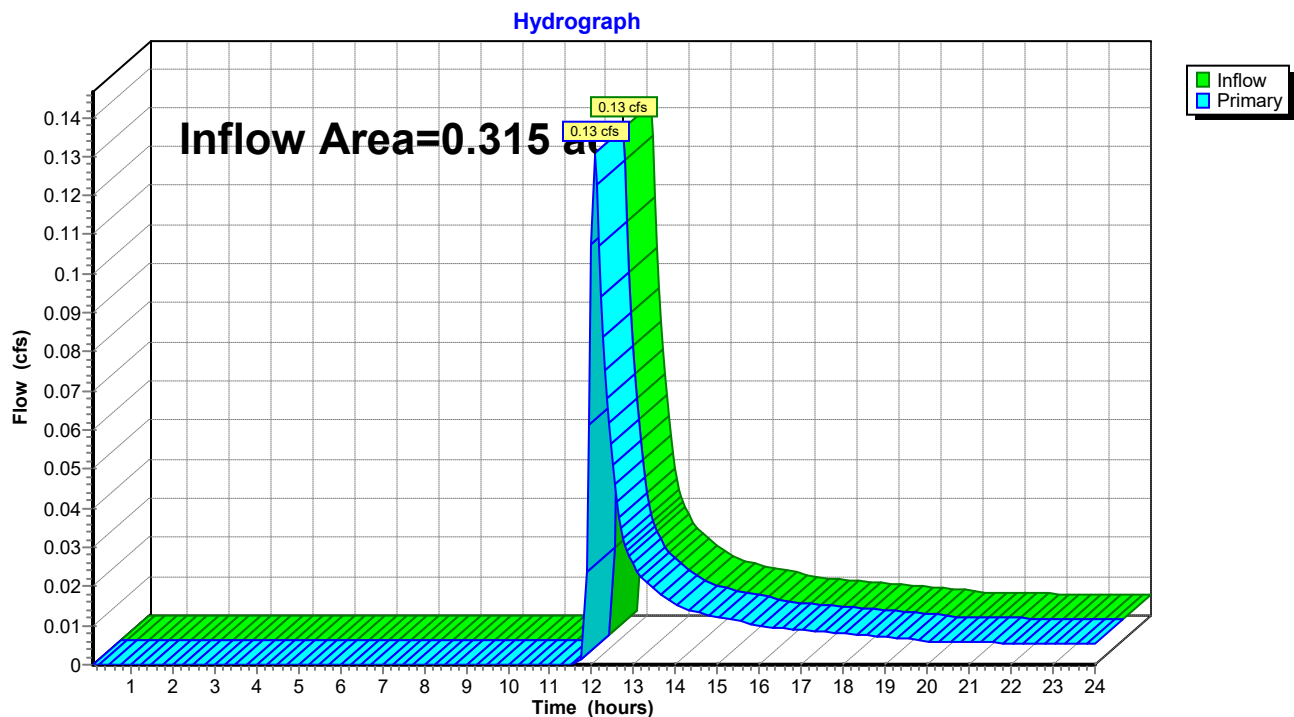
Page 18

Summary for Link X3: Study Pt #3 (Pre)

Inflow Area = 0.315 ac, 0.00% Impervious, Inflow Depth > 0.52" for 2-yr event
Inflow = 0.13 cfs @ 12.06 hrs, Volume= 0.014 af
Primary = 0.13 cfs @ 12.06 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.10-24.00 hrs, dt= 0.05 hrs

Link X3: Study Pt #3 (Pre)



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Type II 24-hr 10-yr Rainfall=5.30"

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Summary for Subcatchment EX-1: EX-1

Runoff = 1.51 cfs @ 12.11 hrs, Volume= 0.159 af, Depth> 1.54"

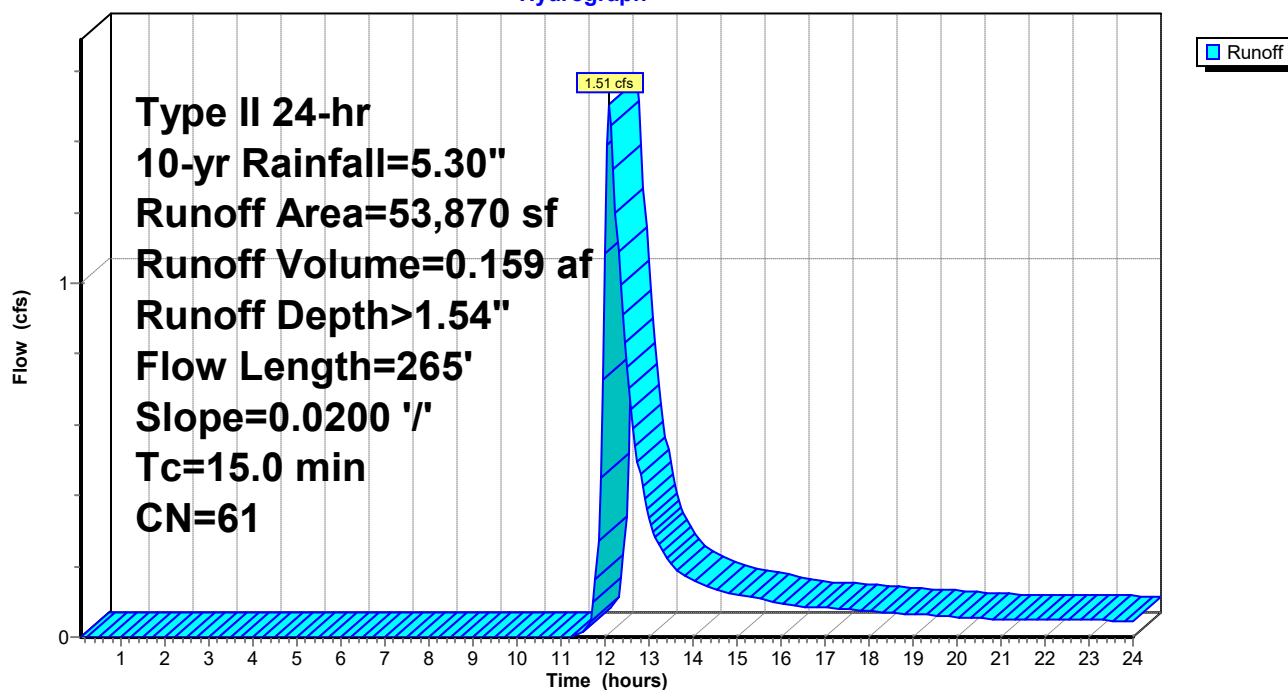
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.10-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.30"

Area (sf)	CN	Description
53,870	61	>75% Grass cover, Good, HSG B
53,870		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	150	0.0200	0.19		Sheet Flow, Field Grass: Short n= 0.150 P2= 3.40"
1.9	115	0.0200	0.99		Shallow Concentrated Flow, Field Short Grass Pasture Kv= 7.0 fps
15.0	265	Total			

Subcatchment EX-1: EX-1

Hydrograph



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Type II 24-hr 10-yr Rainfall=5.30"

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Summary for Subcatchment EX-2: EX-2

Runoff = 0.11 cfs @ 12.00 hrs, Volume= 0.007 af, Depth> 1.55"

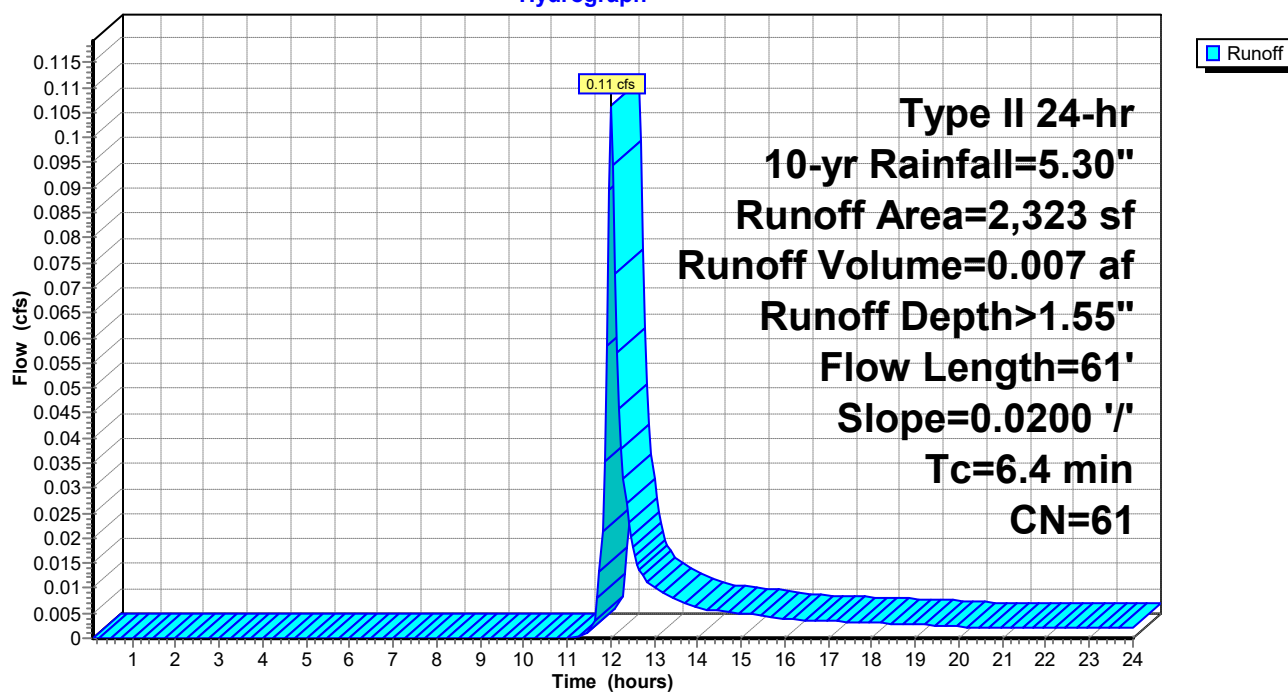
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.10-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.30"

Area (sf)	CN	Description
2,323	61	>75% Grass cover, Good, HSG B
2,323		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	61	0.0200	0.16		Sheet Flow, Field Grass: Short n= 0.150 P2= 3.40"

Subcatchment EX-2: EX-2

Hydrograph



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Type II 24-hr 10-yr Rainfall=5.30"

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Summary for Subcatchment EX-3: EX-3

Runoff = 0.50 cfs @ 12.05 hrs, Volume= 0.041 af, Depth> 1.54"

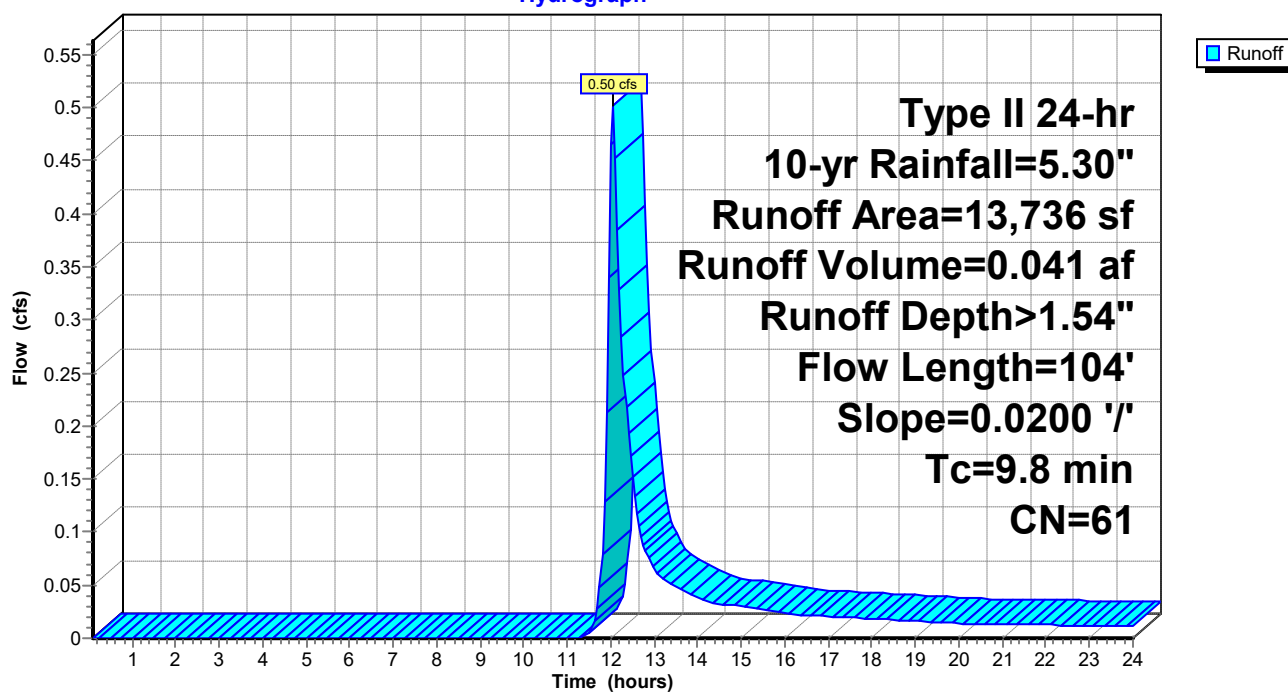
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.10-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.30"

Area (sf)	CN	Description
13,736	61	>75% Grass cover, Good, HSG B
13,736		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	104	0.0200	0.18		Sheet Flow, Field Grass: Short n= 0.150 P2= 3.40"

Subcatchment EX-3: EX-3

Hydrograph



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Type II 24-hr 10-yr Rainfall=5.30"

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Summary for Subcatchment PR-1: GREEN

Runoff = 7.11 cfs @ 11.91 hrs, Volume= 0.317 af, Depth> 3.35"

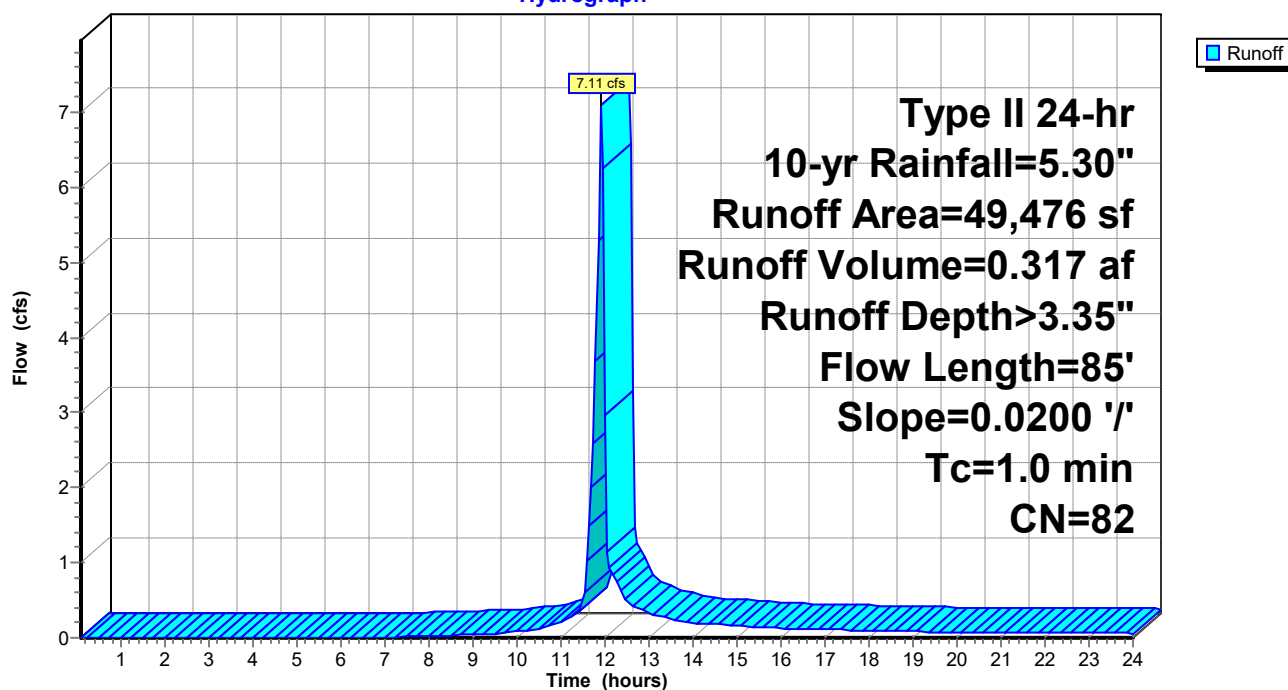
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.10-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.30"

	Area (sf)	CN	Description
*	27,683	98	Parking Lot
	21,793	61	>75% Grass cover, Good, HSG B
	49,476	82	Weighted Average
	21,793		44.05% Pervious Area
	27,683		55.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	85	0.0200	1.37		Sheet Flow, Parking Lot Smooth surfaces n= 0.011 P2= 3.40"

Subcatchment PR-1: GREEN

Hydrograph



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Type II 24-hr 10-yr Rainfall=5.30"

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Summary for Subcatchment PR-2: PURPLE

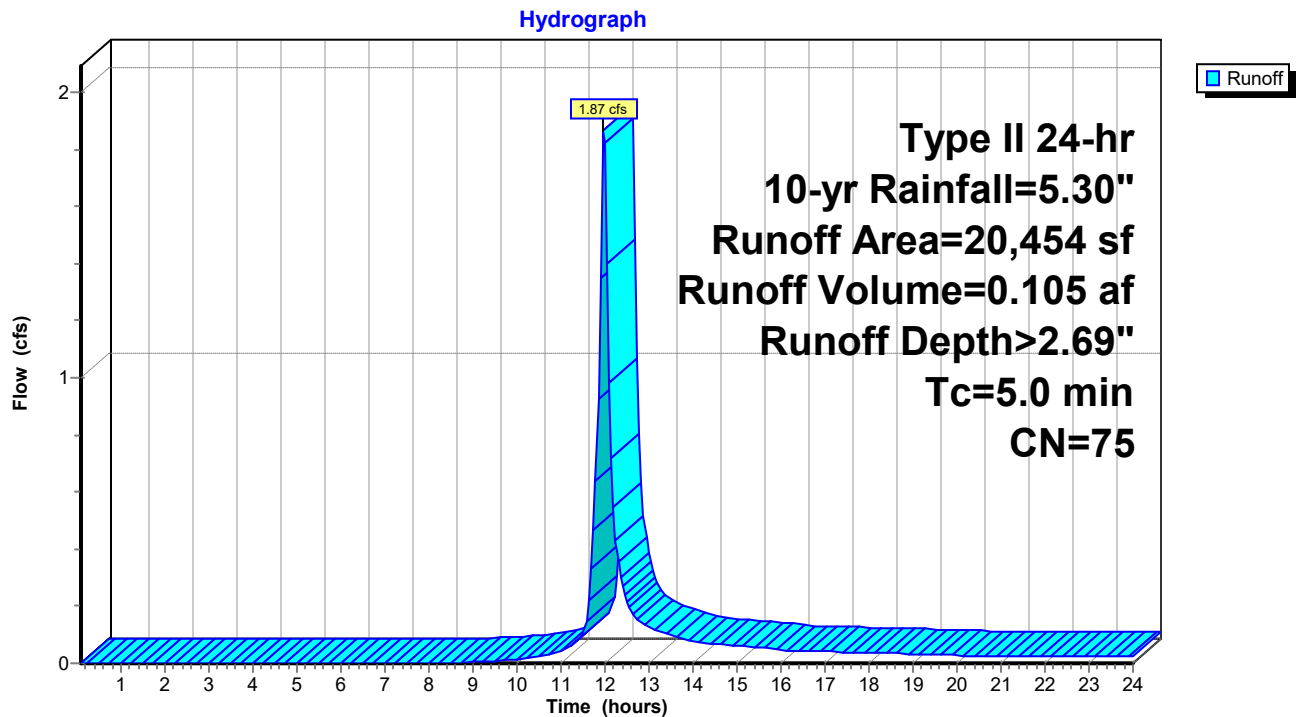
Runoff = 1.87 cfs @ 11.98 hrs, Volume= 0.105 af, Depth> 2.69"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.10-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.30"

	Area (sf)	CN	Description
*	7,775	98	bldg roofs & parking
	12,679	61	>75% Grass cover, Good, HSG B
	20,454	75	Weighted Average
	12,679		61.99% Pervious Area
	7,775		38.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment PR-2: PURPLE



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Type II 24-hr 10-yr Rainfall=5.30"

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Summary for Pond 8P: MBR

Inflow Area = 0.470 ac, 38.01% Impervious, Inflow Depth > 2.69" for 10-yr event
 Inflow = 1.87 cfs @ 11.98 hrs, Volume= 0.105 af
 Outflow = 0.08 cfs @ 13.11 hrs, Volume= 0.041 af, Atten= 96%, Lag= 67.7 min
 Primary = 0.08 cfs @ 13.11 hrs, Volume= 0.041 af
 Secondary = 0.00 cfs @ 0.10 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.10-24.00 hrs, dt= 0.05 hrs

Peak Elev= 17.53' @ 17.38 hrs Surf.Area= 1,768 sf Storage= 2,914 cf

Plug-Flow detention time= 325.1 min calculated for 0.041 af (39% of inflow)

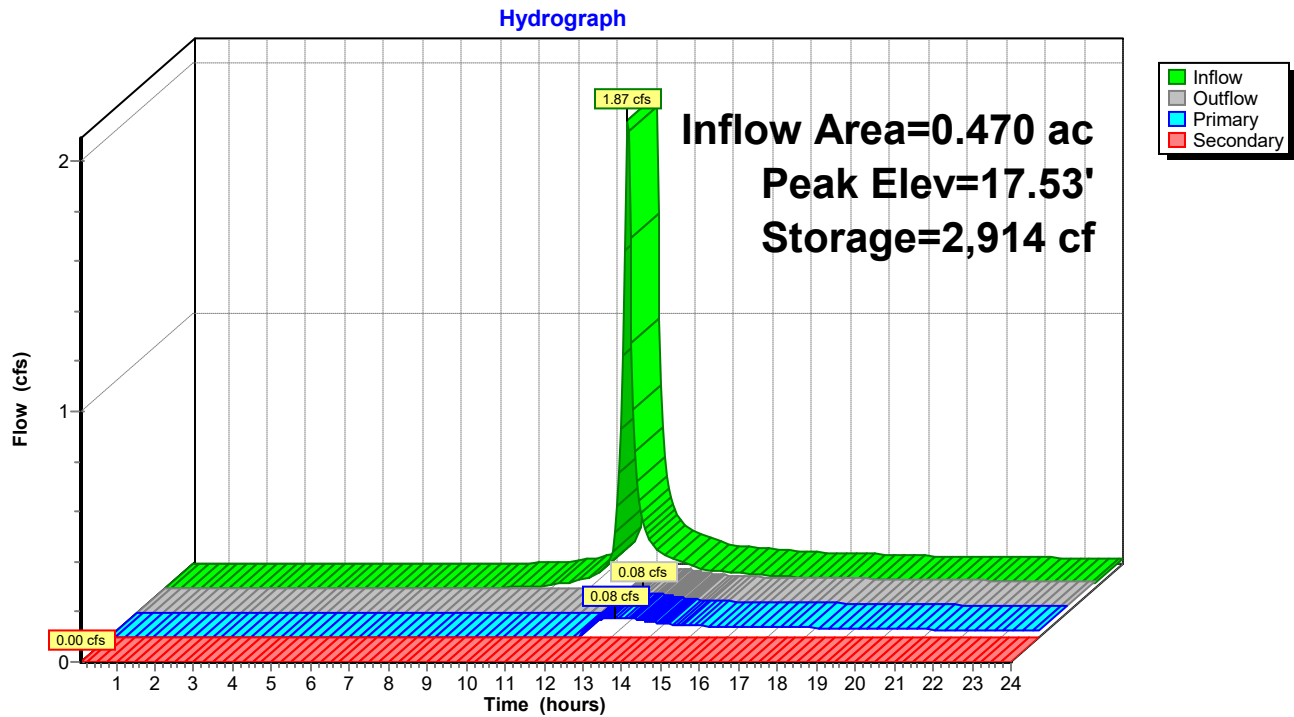
Center-of-Mass det. time= 201.0 min (1,030.9 - 829.9)

Volume	Invert	Avail.Storage	Storage Description			
#1	14.09'	4,888 cf	Custom Stage Data (Irregular) Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
14.09	1,094	137.0	0.0	0	0	1,094
14.10	1,094	137.0	40.0	4	4	1,095
16.09	1,094	137.0	40.0	871	875	1,368
16.10	1,094	137.0	100.0	11	886	1,369
18.50	2,316	185.0	100.0	4,001	4,888	2,659

Device	Routing	Invert	Outlet Devices
#1	Primary	16.10'	12.0" Round 12" HDPE to BioSwale L= 121.0' Box, headwall w/3 rounded edges, Ke= 0.200 Inlet / Outlet Invert= 16.10' / 16.10' S= 0.0000 ' S= 0.0000 ' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	17.10'	2.0" W x 6.0" H Vert. 2" Notch in side of 374.23 Inlet C= 0.600
#3	Device 1	17.60'	10.7' long Rim SHA 374.23 Inlet 0 End Contraction(s)
#4	Secondary	18.10'	5.0' long Precast Weir Adjacent Mistletoe 2 End Contraction(s)

Primary OutFlow Max=0.08 cfs @ 13.11 hrs HW=17.44' TW=17.34' (Dynamic Tailwater)↑ **1=12" HDPE to BioSwale** (Passes 0.08 cfs of 0.95 cfs potential flow)↑ **2=2" Notch in side of 374.23 Inlet** (Orifice Controls 0.08 cfs @ 1.38 fps)↑ **3=Rim SHA 374.23 Inlet** (Controls 0.00 cfs)**Secondary OutFlow** Max=0.00 cfs @ 0.10 hrs HW=14.09' TW=0.00' (Dynamic Tailwater)↑ **4=Precast Weir Adjacent Mistletoe** (Controls 0.00 cfs)

Pond 8P: MBR



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Type II 24-hr 10-yr Rainfall=5.30"

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Stage-Area-Storage for Pond 8P: MBR

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
14.09	1,094	0	16.64	1,329	1,539
14.14	1,094	22	16.69	1,352	1,606
14.19	1,094	44	16.74	1,376	1,675
14.24	1,094	66	16.79	1,399	1,744
14.29	1,094	88	16.84	1,422	1,815
14.34	1,094	109	16.89	1,446	1,886
14.39	1,094	131	16.94	1,470	1,959
14.44	1,094	153	16.99	1,494	2,033
14.49	1,094	175	17.04	1,519	2,109
14.54	1,094	197	17.09	1,543	2,185
14.59	1,094	219	17.14	1,568	2,263
14.64	1,094	241	17.19	1,593	2,342
14.69	1,094	263	17.24	1,618	2,422
14.74	1,094	284	17.29	1,643	2,504
14.79	1,094	306	17.34	1,669	2,587
14.84	1,094	328	17.39	1,695	2,671
14.89	1,094	350	17.44	1,720	2,756
14.94	1,094	372	17.49	1,747	2,843
14.99	1,094	394	17.54	1,773	2,931
15.04	1,094	416	17.59	1,799	3,020
15.09	1,094	438	17.64	1,826	3,111
15.14	1,094	459	17.69	1,853	3,203
15.19	1,094	481	17.74	1,880	3,296
15.24	1,094	503	17.79	1,907	3,391
15.29	1,094	525	17.84	1,935	3,487
15.34	1,094	547	17.89	1,962	3,584
15.39	1,094	569	17.94	1,990	3,683
15.44	1,094	591	17.99	2,018	3,783
15.49	1,094	613	18.04	2,047	3,885
15.54	1,094	635	18.09	2,075	3,988
15.59	1,094	656	18.14	2,104	4,092
15.64	1,094	678	18.19	2,133	4,198
15.69	1,094	700	18.24	2,162	4,306
15.74	1,094	722	18.29	2,191	4,414
15.79	1,094	744	18.34	2,220	4,525
15.84	1,094	766	18.39	2,250	4,636
15.89	1,094	788	18.44	2,280	4,750
15.94	1,094	810	18.49	2,310	4,864
15.99	1,094	831			
16.04	1,094	853			
16.09	1,094	875			
16.14	1,111	930			
16.19	1,132	986			
16.24	1,153	1,043			
16.29	1,174	1,102			
16.34	1,196	1,161			
16.39	1,218	1,221			
16.44	1,240	1,283			
16.49	1,262	1,345			
16.54	1,284	1,409			
16.59	1,307	1,474			

2022-11-16-Sketch HydroCAD

Type II 24-hr 10-yr Rainfall=5.30"

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Summary for Pond 9P: BIOSWALE

Inflow Area = 1.605 ac, 50.70% Impervious, Inflow Depth > 2.68" for 10-yr event
 Inflow = 7.11 cfs @ 11.91 hrs, Volume= 0.358 af
 Outflow = 0.14 cfs @ 17.50 hrs, Volume= 0.117 af, Atten= 98%, Lag= 335.4 min
 Primary = 0.14 cfs @ 17.50 hrs, Volume= 0.117 af

Routing by Dyn-Stor-Ind method, Time Span= 0.10-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 17.52' @ 17.50 hrs Surf.Area= 8,332 sf Storage= 11,028 cf
 Flood Elev= 18.10' Surf.Area= 10,897 sf Storage= 16,618 cf

Plug-Flow detention time= 426.0 min calculated for 0.117 af (33% of inflow)
 Center-of-Mass det. time= 278.1 min (1,110.5 - 832.5)

Volume	Invert	Avail.Storage	Storage Description			
#1	14.09'	16,618 cf	Custom Stage Data (Irregular) Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
14.09	3,533	896.0	0.0	0	0	3,533
14.10	3,533	896.0	40.0	14	14	3,542
16.09	3,533	896.0	40.0	2,812	2,826	5,325
16.10	3,533	896.0	100.0	35	2,862	5,334
18.10	10,897	944.0	100.0	13,757	16,618	12,599

Device	Routing	Invert	Outlet Devices	
#1	Primary	14.10'	12.0" Round HDPE_Round 12" L= 95.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 14.10' / 13.60' S= 0.0053 ' S= 0.0053 ' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf	
#2	Device 1	17.10'	2.0" W x 6.0" H Vert. 2" Notch in side of 374.23 Inlet C= 0.600	
#3	Device 1	17.60'	10.7' long Rim SHA 374.23 Inlet 0 End Contraction(s)	

Primary OutFlow Max=0.14 cfs @ 17.50 hrs HW=17.52' TW=0.00' (Dynamic Tailwater)

- ↑ **1=HDPE_Round 12"** (Passes 0.14 cfs of 5.35 cfs potential flow)
- ↑ **2=2" Notch in side of 374.23 Inlet** (Orifice Controls 0.14 cfs @ 2.07 fps)
- ↑ **3=Rim SHA 374.23 Inlet** (Controls 0.00 cfs)

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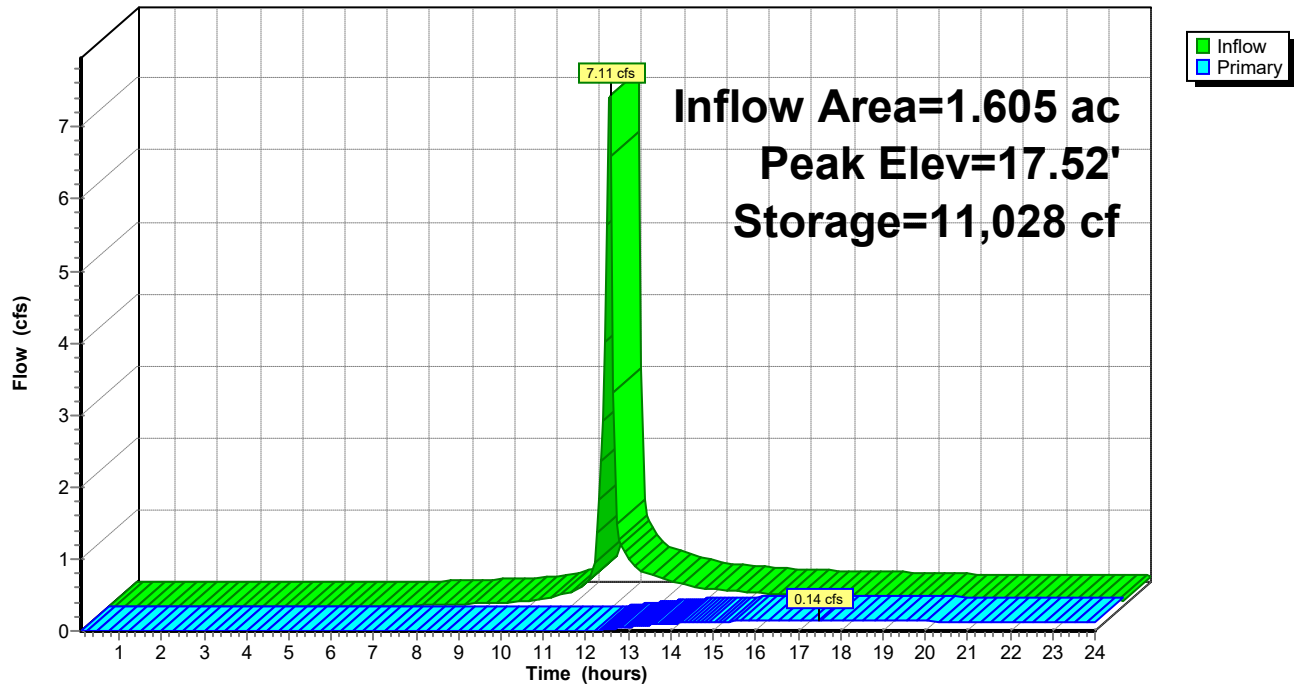
Type II 24-hr 10-yr Rainfall=5.30"

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Pond 9P: BIOSWALE

Hydrograph



2022-11-16-Sketch HydroCAD

Type II 24-hr 10-yr Rainfall=5.30"

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Stage-Area-Storage for Pond 9P: BIOSWALE

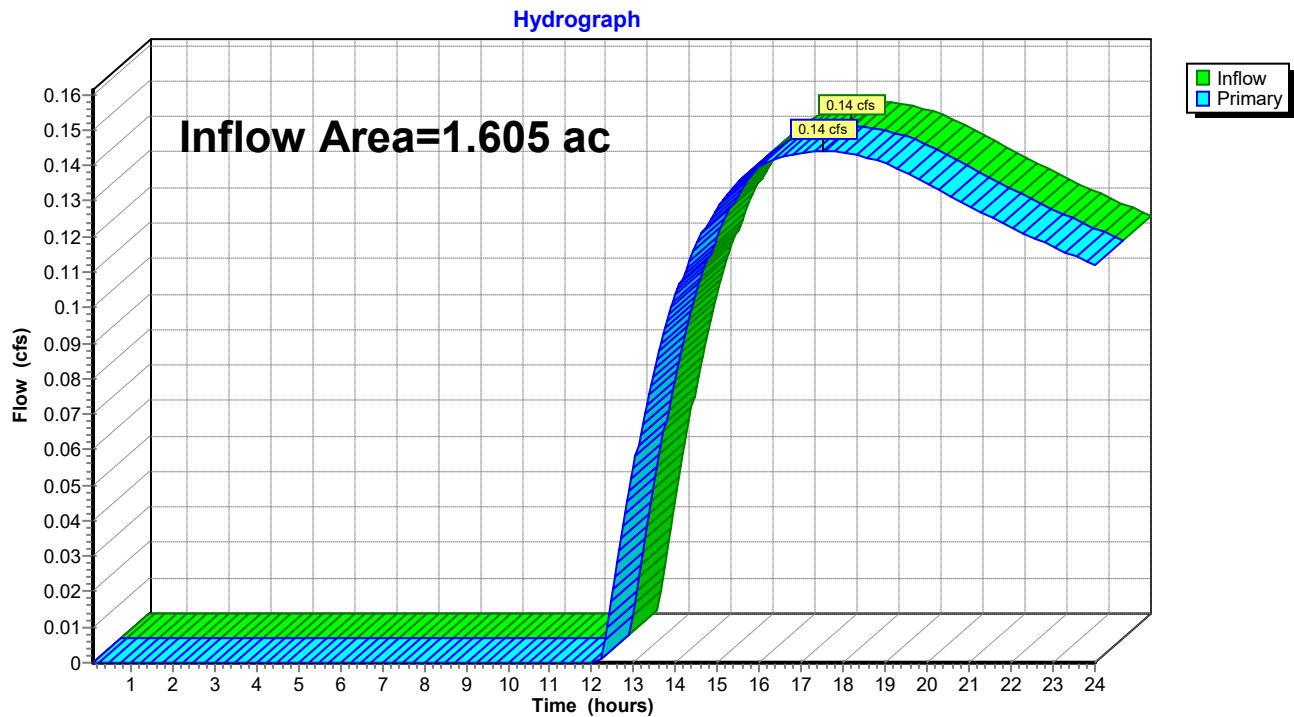
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
14.09	3,533	0	16.64	5,123	5,186
14.14	3,533	71	16.69	5,285	5,446
14.19	3,533	141	16.74	5,450	5,714
14.24	3,533	212	16.79	5,617	5,991
14.29	3,533	283	16.84	5,787	6,276
14.34	3,533	353	16.89	5,959	6,570
14.39	3,533	424	16.94	6,134	6,872
14.44	3,533	495	16.99	6,311	7,183
14.49	3,533	565	17.04	6,491	7,503
14.54	3,533	636	17.09	6,673	7,832
14.59	3,533	707	17.14	6,858	8,170
14.64	3,533	777	17.19	7,045	8,518
14.69	3,533	848	17.24	7,235	8,875
14.74	3,533	919	17.29	7,428	9,241
14.79	3,533	989	17.34	7,623	9,618
14.84	3,533	1,060	17.39	7,820	10,004
14.89	3,533	1,131	17.44	8,020	10,400
14.94	3,533	1,201	17.49	8,223	10,806
14.99	3,533	1,272	17.54	8,428	11,222
15.04	3,533	1,343	17.59	8,635	11,649
15.09	3,533	1,413	17.64	8,845	12,086
15.14	3,533	1,484	17.69	9,058	12,533
15.19	3,533	1,555	17.74	9,273	12,992
15.24	3,533	1,625	17.79	9,491	13,461
15.29	3,533	1,696	17.84	9,711	13,941
15.34	3,533	1,766	17.89	9,934	14,432
15.39	3,533	1,837	17.94	10,159	14,934
15.44	3,533	1,908	17.99	10,387	15,448
15.49	3,533	1,978	18.04	10,617	15,973
15.54	3,533	2,049	18.09	10,850	16,510
15.59	3,533	2,120			
15.64	3,533	2,190			
15.69	3,533	2,261			
15.74	3,533	2,332			
15.79	3,533	2,402			
15.84	3,533	2,473			
15.89	3,533	2,544			
15.94	3,533	2,614			
15.99	3,533	2,685			
16.04	3,533	2,756			
16.09	3,533	2,826			
16.14	3,641	3,005			
16.19	3,778	3,191			
16.24	3,917	3,383			
16.29	4,059	3,582			
16.34	4,203	3,789			
16.39	4,350	4,003			
16.44	4,500	4,224			
16.49	4,652	4,453			
16.54	4,806	4,689			
16.59	4,963	4,933			

Summary for Link P1: Study Pt #1 (Post)

Inflow Area = 1.605 ac, 50.70% Impervious, Inflow Depth > 0.88" for 10-yr event
 Inflow = 0.14 cfs @ 17.50 hrs, Volume= 0.117 af
 Primary = 0.14 cfs @ 17.50 hrs, Volume= 0.117 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.10-24.00 hrs, dt= 0.05 hrs

Link P1: Study Pt #1 (Post)



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Type II 24-hr 10-yr Rainfall=5.30"

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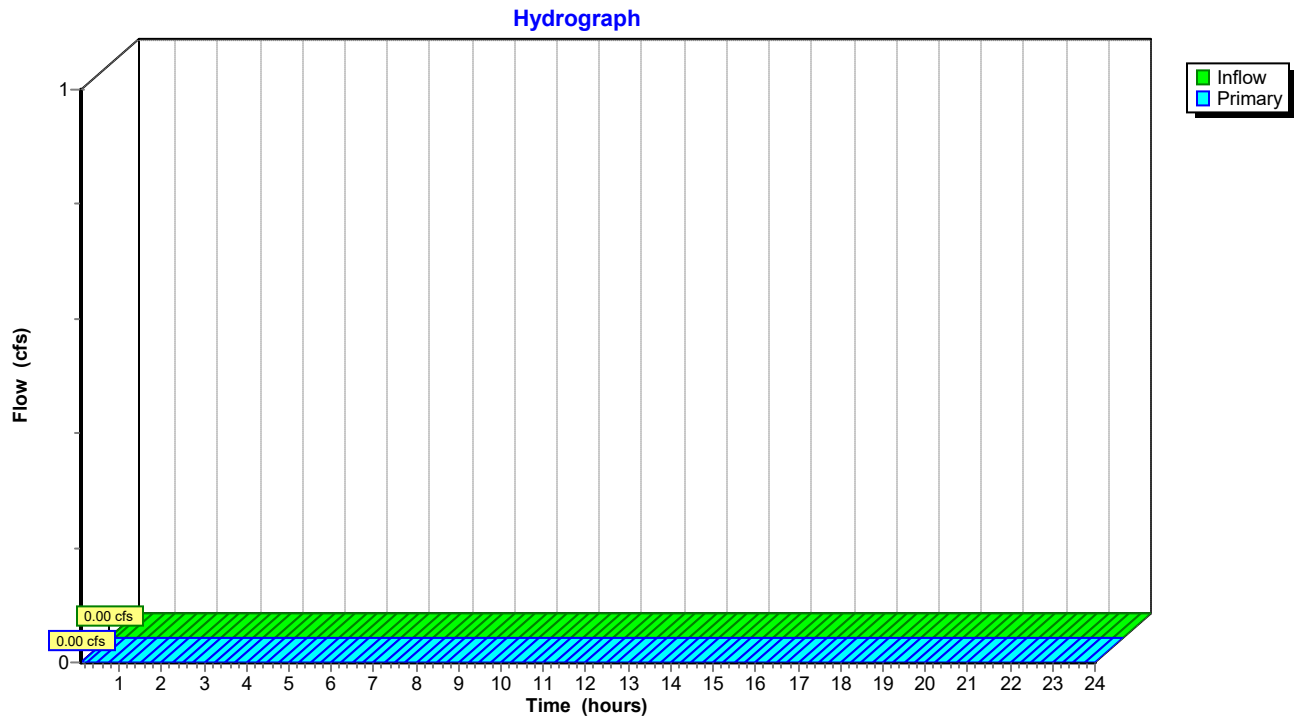
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Summary for Link P2: Study Pt #2 (Post)

Inflow = 0.00 cfs @ 0.10 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.10 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.10-24.00 hrs, dt= 0.05 hrs

Link P2: Study Pt #2 (Post)



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Type II 24-hr 10-yr Rainfall=5.30"

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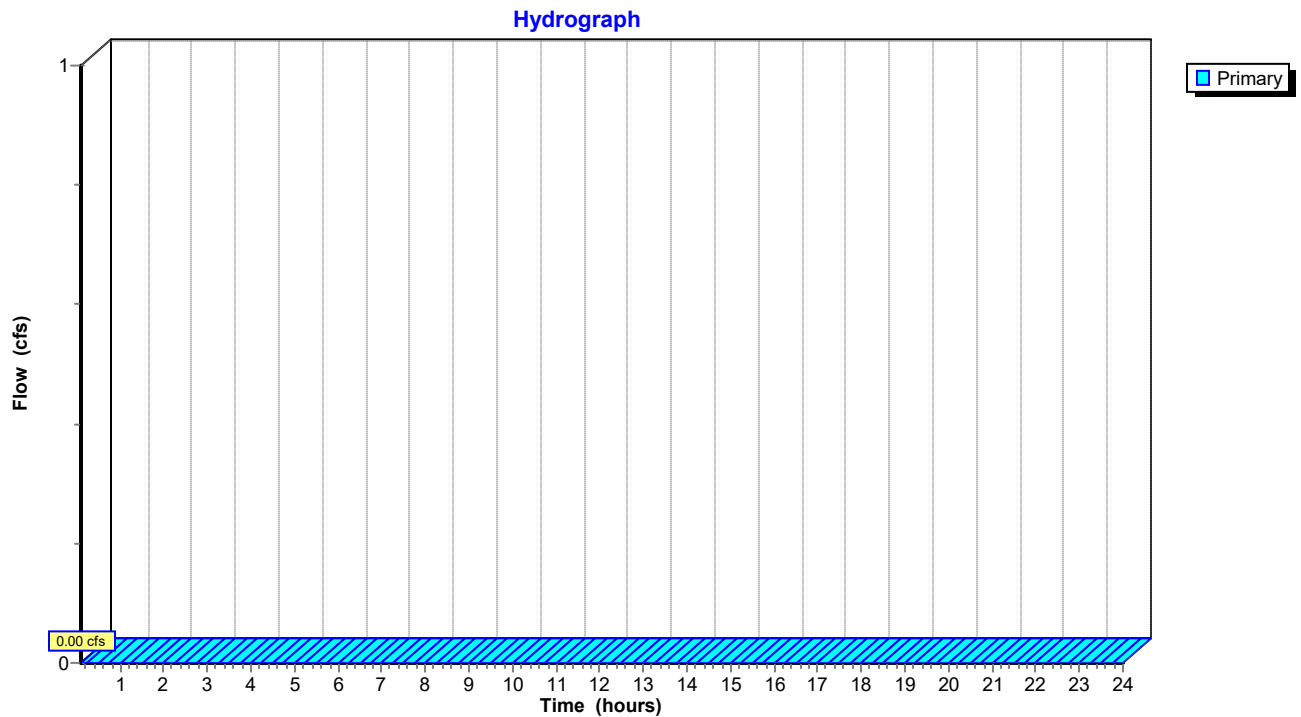
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Summary for Link P3: Study Pt #3 (Post)

Primary = 0.00 cfs @ 0.10 hrs, Volume= 0.000 af

Primary outflow = Inflow, Time Span= 0.10-24.00 hrs, dt= 0.05 hrs

Link P3: Study Pt #3 (Post)

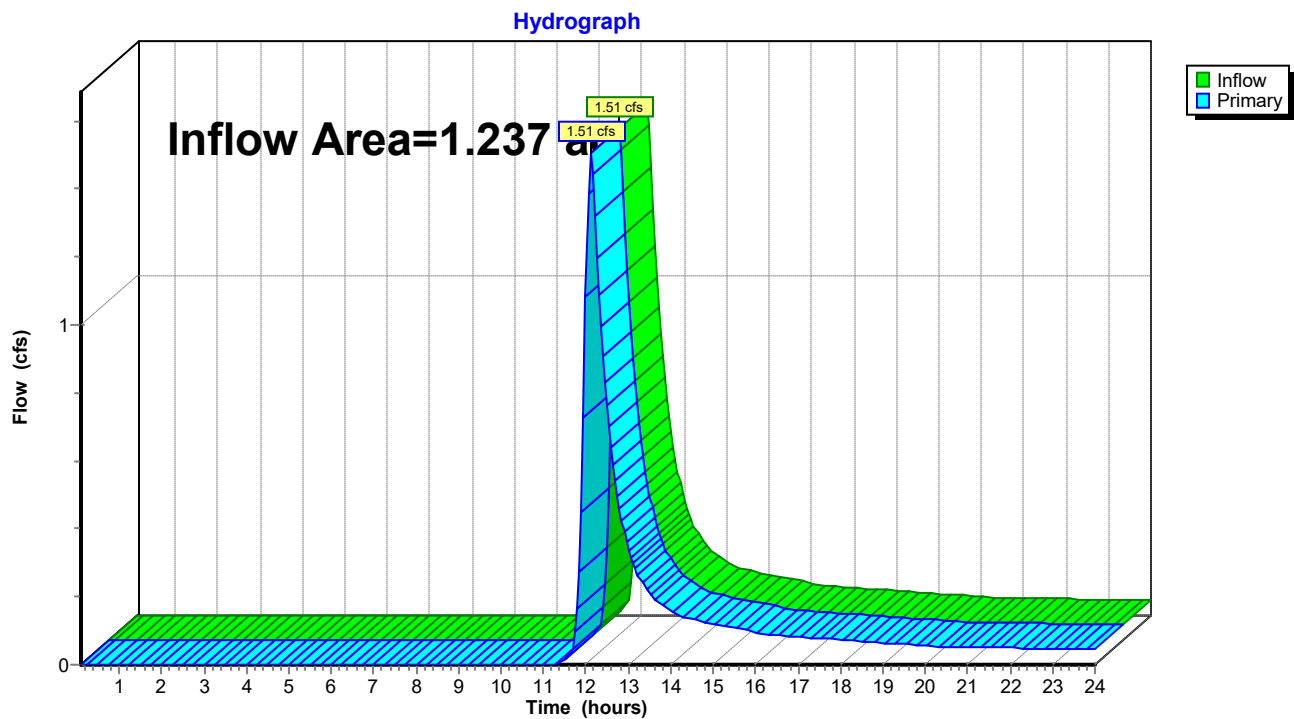


Summary for Link X1: Study Pt #1 (Pre)

Inflow Area = 1.237 ac, 0.00% Impervious, Inflow Depth > 1.54" for 10-yr event
 Inflow = 1.51 cfs @ 12.11 hrs, Volume= 0.159 af
 Primary = 1.51 cfs @ 12.11 hrs, Volume= 0.159 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.10-24.00 hrs, dt= 0.05 hrs

Link X1: Study Pt #1 (Pre)



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Type II 24-hr 10-yr Rainfall=5.30"

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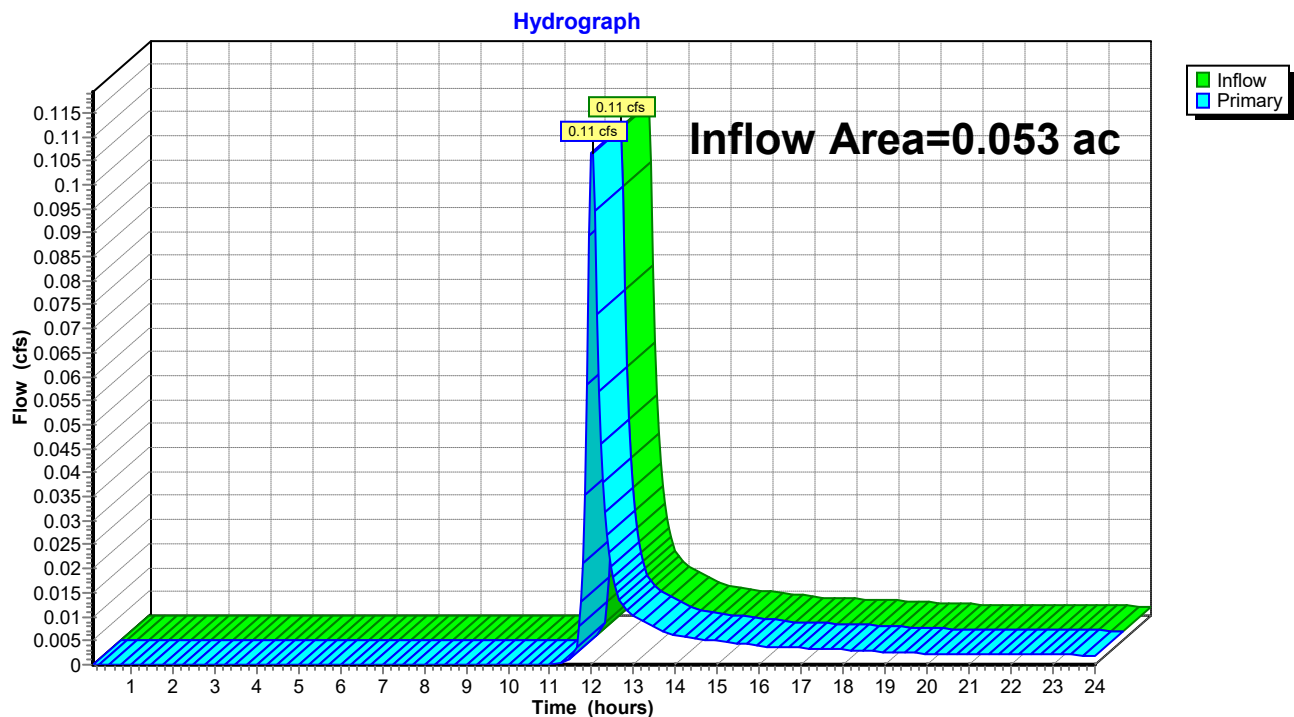
Page 34

Summary for Link X2: Study Pt #2 (Pre)

Inflow Area = 0.053 ac, 0.00% Impervious, Inflow Depth > 1.55" for 10-yr event
Inflow = 0.11 cfs @ 12.00 hrs, Volume= 0.007 af
Primary = 0.11 cfs @ 12.00 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.10-24.00 hrs, dt= 0.05 hrs

Link X2: Study Pt #2 (Pre)



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Type II 24-hr 10-yr Rainfall=5.30"

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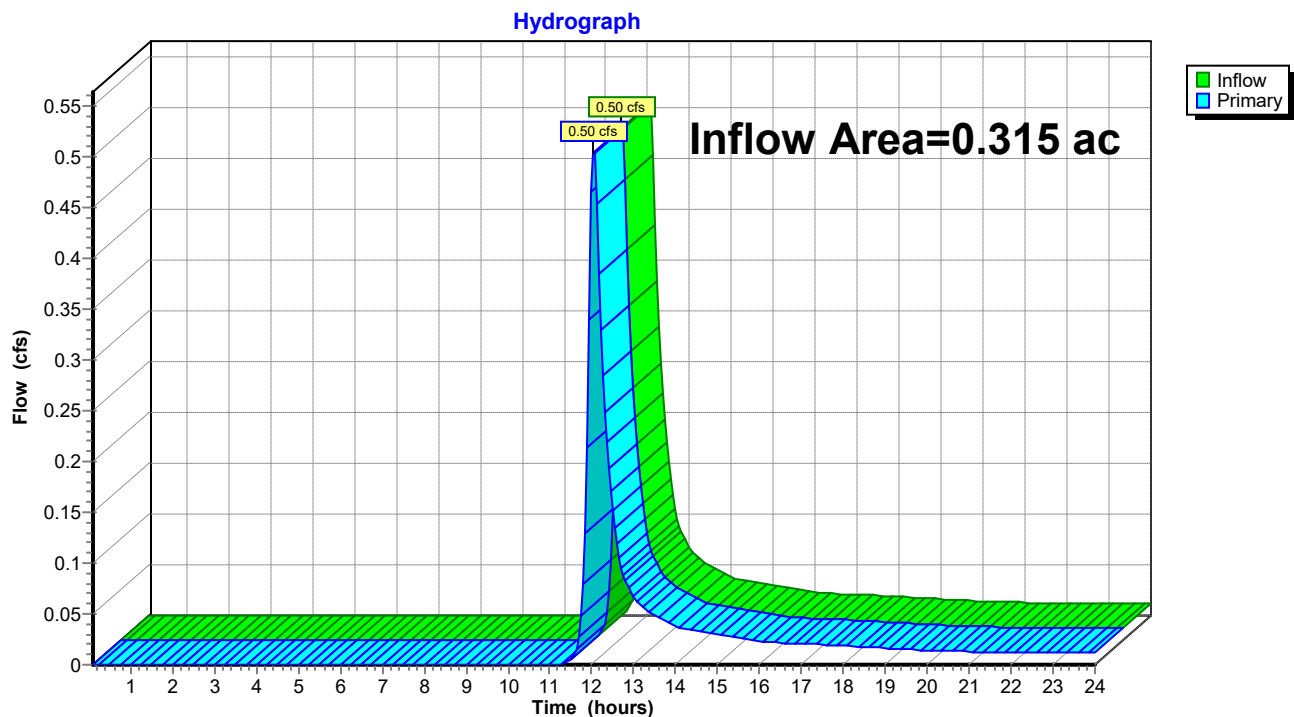
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Summary for Link X3: Study Pt #3 (Pre)

Inflow Area = 0.315 ac, 0.00% Impervious, Inflow Depth > 1.54" for 10-yr event
Inflow = 0.50 cfs @ 12.05 hrs, Volume= 0.041 af
Primary = 0.50 cfs @ 12.05 hrs, Volume= 0.041 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.10-24.00 hrs, dt= 0.05 hrs

Link X3: Study Pt #3 (Pre)



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Type II 24-hr 100-yr Rainfall=7.60"

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Summary for Subcatchment EX-1: EX-1

Runoff = 3.29 cfs @ 12.10 hrs, Volume= 0.322 af, Depth> 3.12"

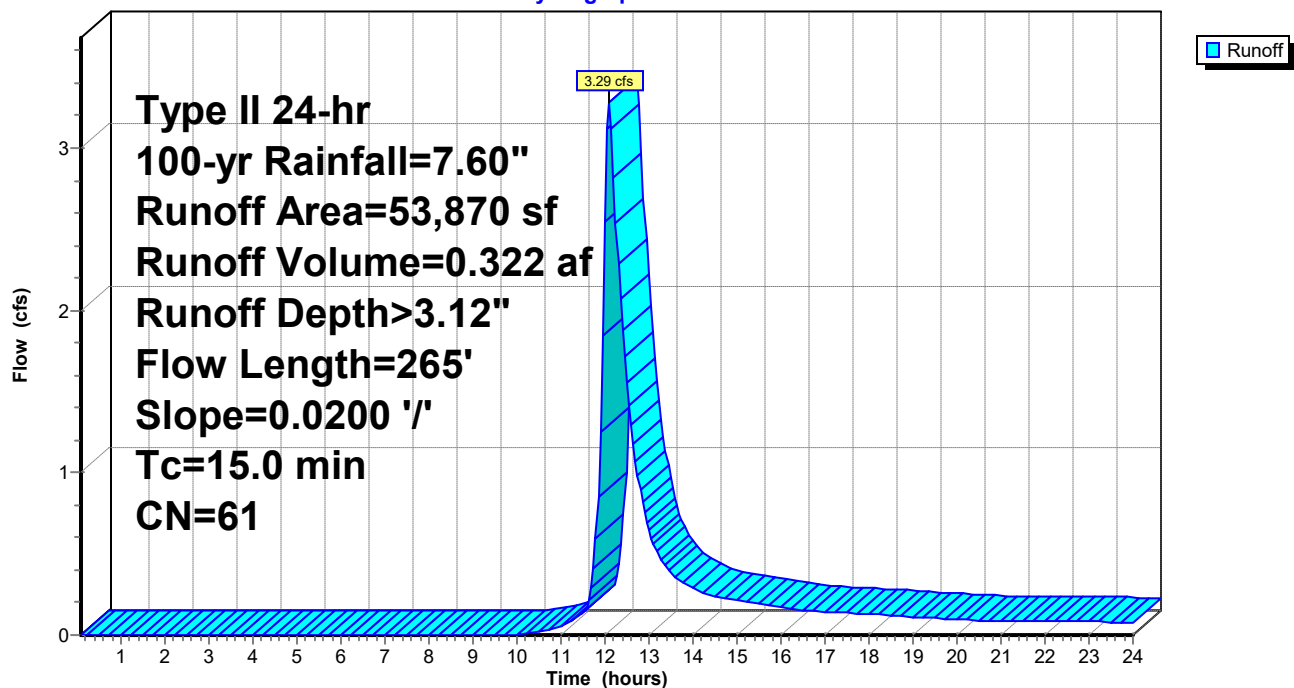
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.10-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=7.60"

Area (sf)	CN	Description
53,870	61	>75% Grass cover, Good, HSG B
53,870		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	150	0.0200	0.19		Sheet Flow, Field Grass: Short n= 0.150 P2= 3.40"
1.9	115	0.0200	0.99		Shallow Concentrated Flow, Field Short Grass Pasture Kv= 7.0 fps
15.0	265	Total			

Subcatchment EX-1: EX-1

Hydrograph



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Type II 24-hr 100-yr Rainfall=7.60"

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Summary for Subcatchment EX-2: EX-2

Runoff = 0.23 cfs @ 12.00 hrs, Volume= 0.014 af, Depth> 3.13"

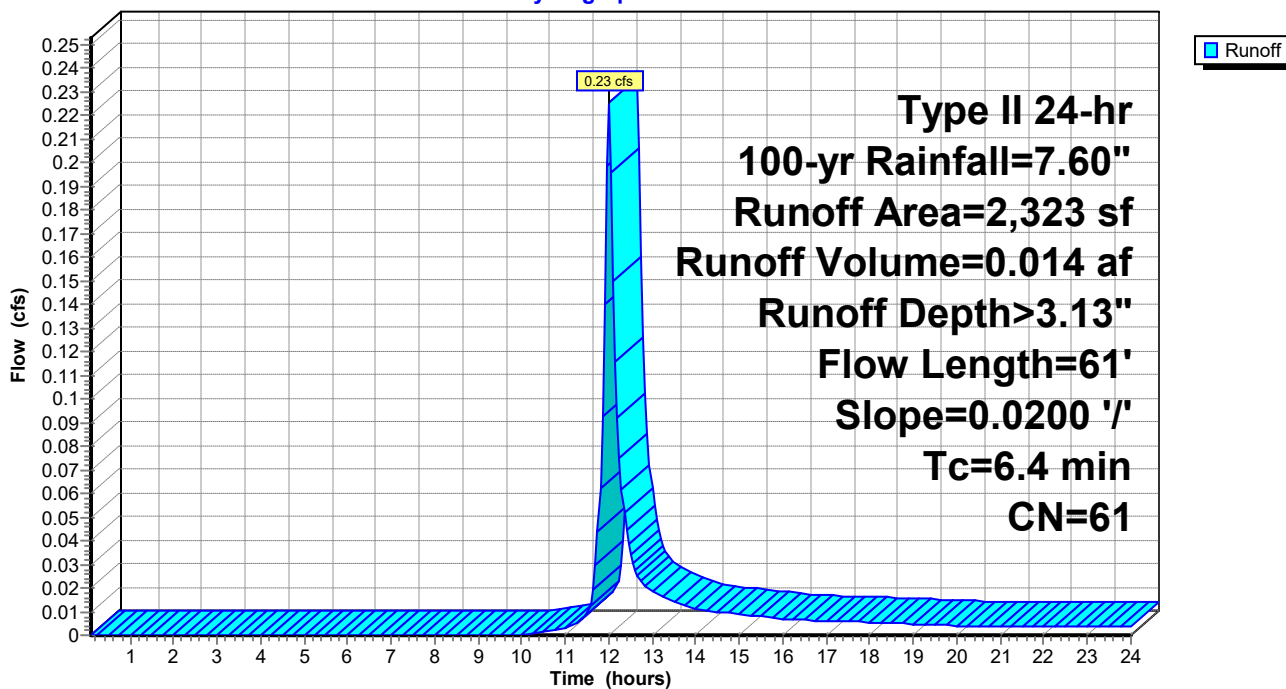
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.10-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=7.60"

Area (sf)	CN	Description
2,323	61	>75% Grass cover, Good, HSG B
2,323		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	61	0.0200	0.16		Sheet Flow, Field Grass: Short n= 0.150 P2= 3.40"

Subcatchment EX-2: EX-2

Hydrograph



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Type II 24-hr 100-yr Rainfall=7.60"

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Summary for Subcatchment EX-3: EX-3

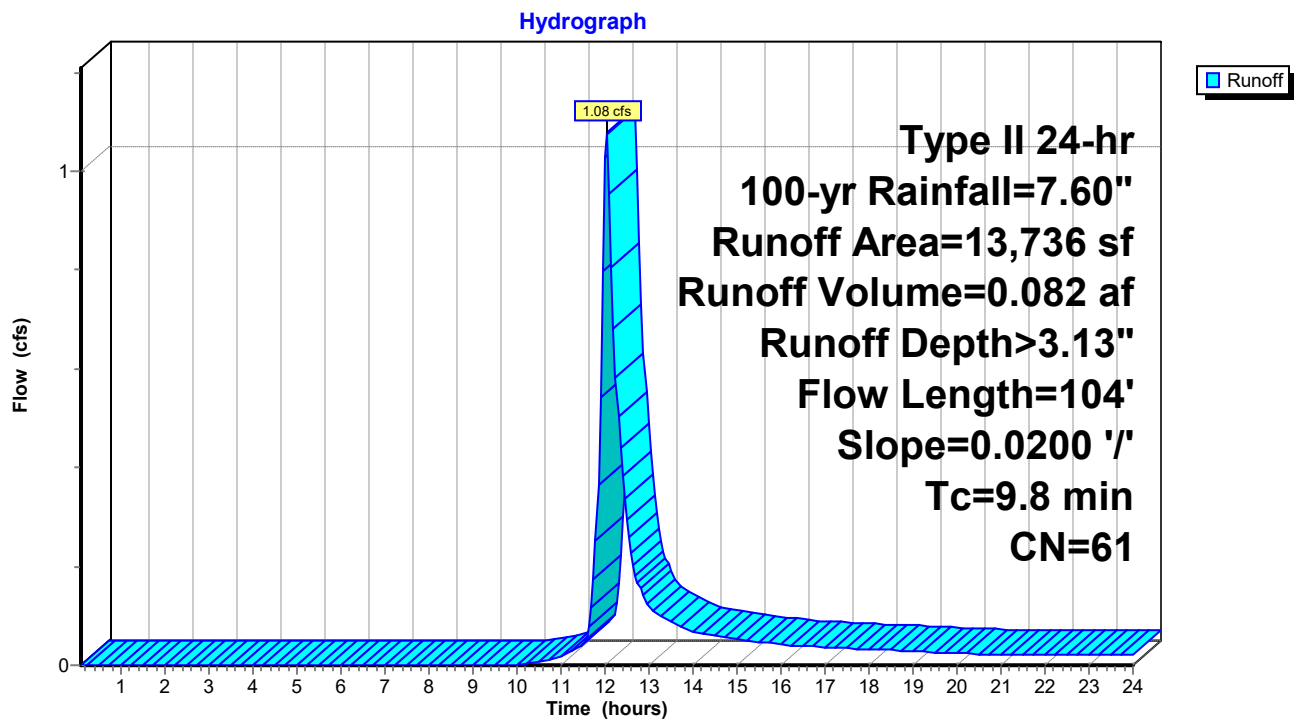
Runoff = 1.08 cfs @ 12.04 hrs, Volume= 0.082 af, Depth> 3.13"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.10-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=7.60"

Area (sf)	CN	Description
13,736	61	>75% Grass cover, Good, HSG B
13,736		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	104	0.0200	0.18		Sheet Flow, Field
					Grass: Short n= 0.150 P2= 3.40"

Subcatchment EX-3: EX-3



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Type II 24-hr 100-yr Rainfall=7.60"

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Summary for Subcatchment PR-1: GREEN

Runoff = 11.32 cfs @ 11.91 hrs, Volume= 0.519 af, Depth> 5.48"

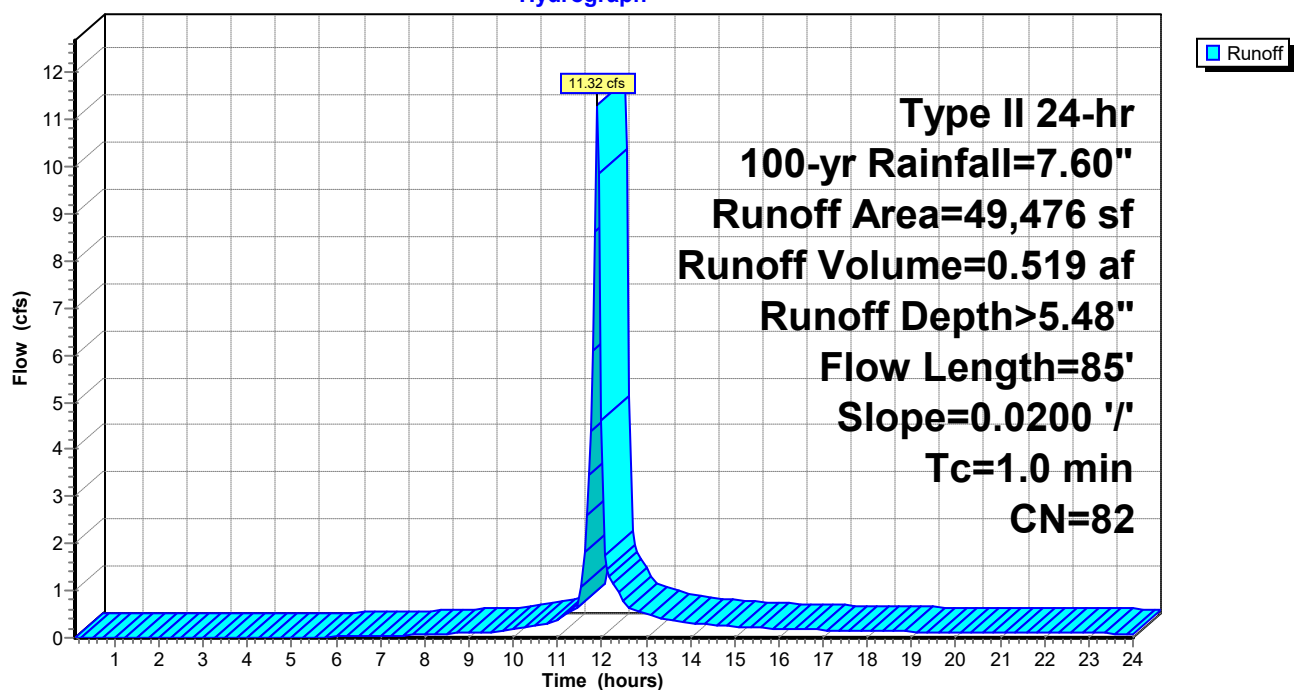
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.10-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	27,683	98	Parking Lot
	21,793	61	>75% Grass cover, Good, HSG B
	49,476	82	Weighted Average
	21,793		44.05% Pervious Area
	27,683		55.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	85	0.0200	1.37		Sheet Flow, Parking Lot Smooth surfaces n= 0.011 P2= 3.40"

Subcatchment PR-1: GREEN

Hydrograph



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Type II 24-hr 100-yr Rainfall=7.60"

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Summary for Subcatchment PR-2: PURPLE

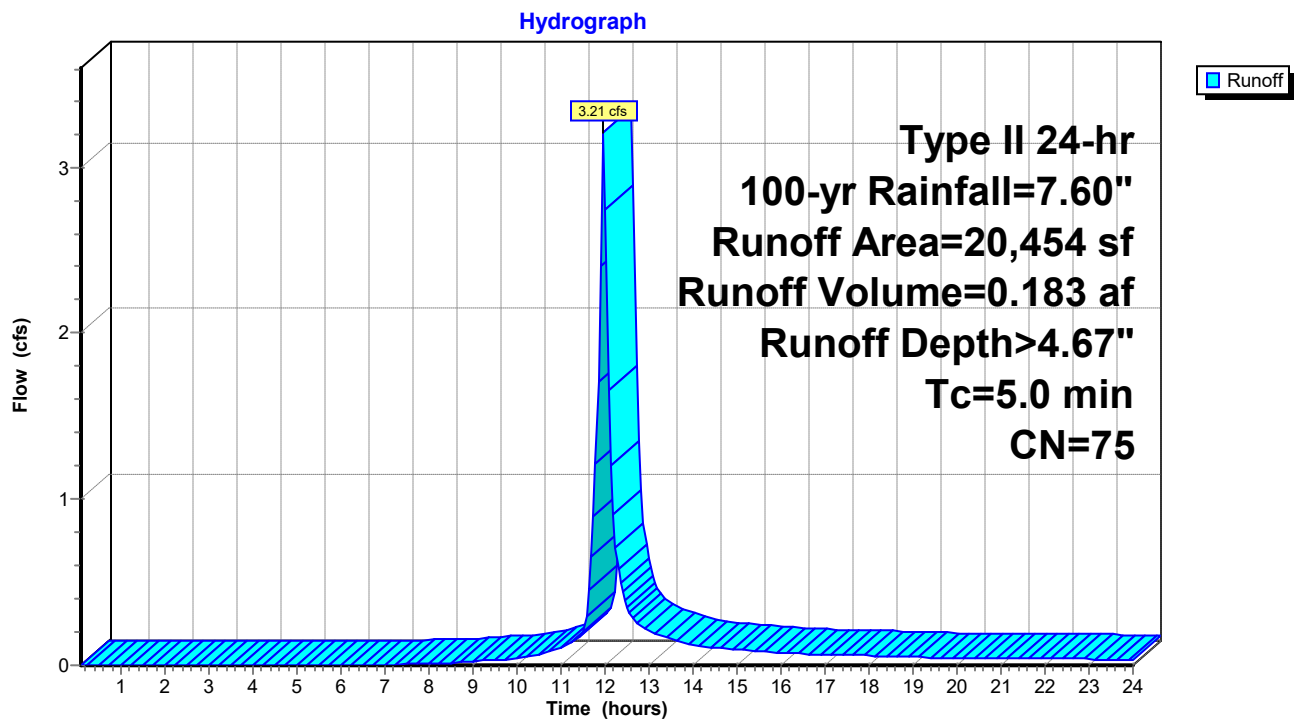
Runoff = 3.21 cfs @ 11.97 hrs, Volume= 0.183 af, Depth> 4.67"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.10-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	7,775	98	bldg roofs & parking
	12,679	61	>75% Grass cover, Good, HSG B
	20,454	75	Weighted Average
	12,679		61.99% Pervious Area
	7,775		38.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment PR-2: PURPLE



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Type II 24-hr 100-yr Rainfall=7.60"

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Summary for Pond 8P: MBR

Inflow Area = 0.470 ac, 38.01% Impervious, Inflow Depth > 4.67" for 100-yr event
 Inflow = 3.21 cfs @ 11.97 hrs, Volume= 0.183 af
 Outflow = 1.17 cfs @ 12.14 hrs, Volume= 0.115 af, Atten= 63%, Lag= 9.8 min
 Primary = 1.17 cfs @ 12.14 hrs, Volume= 0.115 af
 Secondary = 0.00 cfs @ 0.10 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.10-24.00 hrs, dt= 0.05 hrs

Peak Elev= 17.89' @ 12.16 hrs Surf.Area= 1,960 sf Storage= 3,575 cf

Plug-Flow detention time= 194.6 min calculated for 0.115 af (63% of inflow)

Center-of-Mass det. time= 89.3 min (903.5 - 814.2)

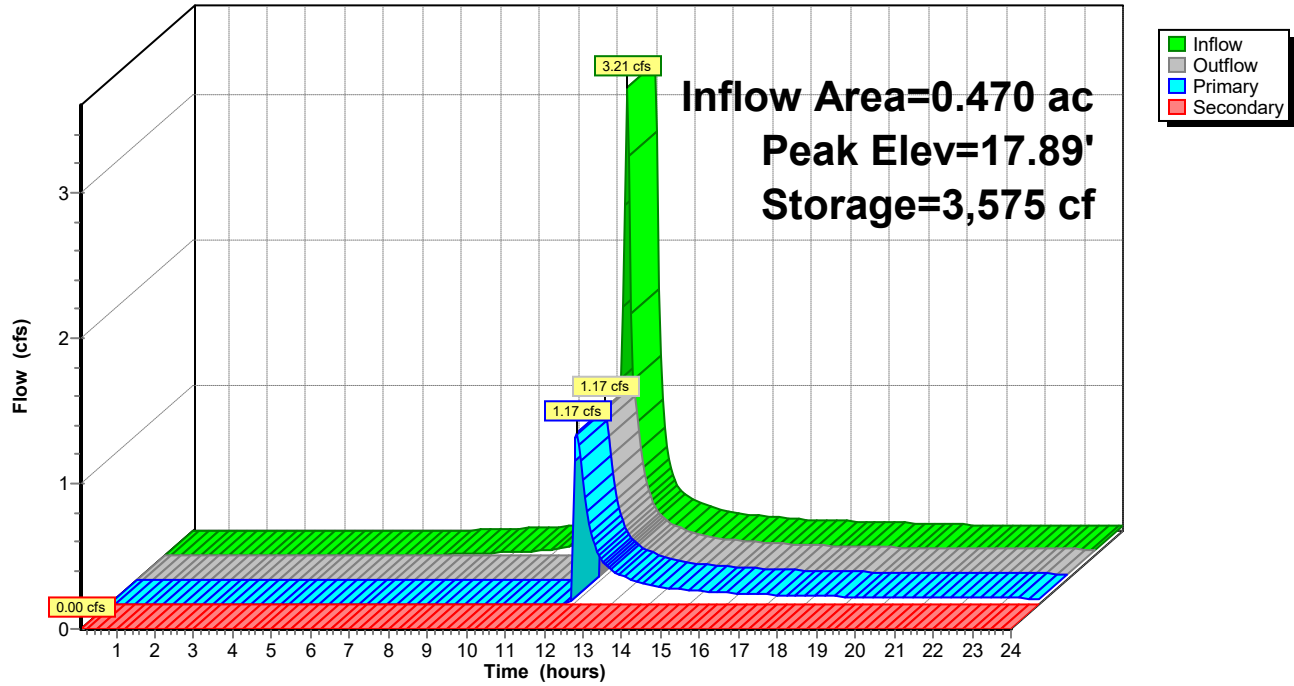
Volume	Invert	Avail.Storage	Storage Description			
#1	14.09'	4,888 cf	Custom Stage Data (Irregular) Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
14.09	1,094	137.0	0.0	0	0	1,094
14.10	1,094	137.0	40.0	4	4	1,095
16.09	1,094	137.0	40.0	871	875	1,368
16.10	1,094	137.0	100.0	11	886	1,369
18.50	2,316	185.0	100.0	4,001	4,888	2,659

Device	Routing	Invert	Outlet Devices
#1	Primary	16.10'	12.0" Round 12" HDPE to BioSwale L= 121.0' Box, headwall w/3 rounded edges, Ke= 0.200 Inlet / Outlet Invert= 16.10' / 16.10' S= 0.0000 ' S= 0.0000 ' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	17.10'	2.0" W x 6.0" H Vert. 2" Notch in side of 374.23 Inlet C= 0.600
#3	Device 1	17.60'	10.7' long Rim SHA 374.23 Inlet 0 End Contraction(s)
#4	Secondary	18.10'	5.0' long Precast Weir Adjacent Mistletoe 2 End Contraction(s)

Primary OutFlow Max=1.12 cfs @ 12.14 hrs HW=17.88' TW=17.74' (Dynamic Tailwater)↑ **1=12" HDPE to BioSwale** (Outlet Controls 1.12 cfs @ 1.42 fps)↑ **2=2" Notch in side of 374.23 Inlet** (Passes < 0.15 cfs potential flow)↑ **3=Rim SHA 374.23 Inlet** (Passes < 4.34 cfs potential flow)**Secondary OutFlow** Max=0.00 cfs @ 0.10 hrs HW=14.09' TW=0.00' (Dynamic Tailwater)↑ **4=Precast Weir Adjacent Mistletoe** (Controls 0.00 cfs)

Pond 8P: MBR

Hydrograph



2022-11-16-Sketch HydroCAD*Type II 24-hr 100-yr Rainfall=7.60"*

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Stage-Area-Storage for Pond 8P: MBR

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
14.09	1,094	0	16.64	1,329	1,539
14.14	1,094	22	16.69	1,352	1,606
14.19	1,094	44	16.74	1,376	1,675
14.24	1,094	66	16.79	1,399	1,744
14.29	1,094	88	16.84	1,422	1,815
14.34	1,094	109	16.89	1,446	1,886
14.39	1,094	131	16.94	1,470	1,959
14.44	1,094	153	16.99	1,494	2,033
14.49	1,094	175	17.04	1,519	2,109
14.54	1,094	197	17.09	1,543	2,185
14.59	1,094	219	17.14	1,568	2,263
14.64	1,094	241	17.19	1,593	2,342
14.69	1,094	263	17.24	1,618	2,422
14.74	1,094	284	17.29	1,643	2,504
14.79	1,094	306	17.34	1,669	2,587
14.84	1,094	328	17.39	1,695	2,671
14.89	1,094	350	17.44	1,720	2,756
14.94	1,094	372	17.49	1,747	2,843
14.99	1,094	394	17.54	1,773	2,931
15.04	1,094	416	17.59	1,799	3,020
15.09	1,094	438	17.64	1,826	3,111
15.14	1,094	459	17.69	1,853	3,203
15.19	1,094	481	17.74	1,880	3,296
15.24	1,094	503	17.79	1,907	3,391
15.29	1,094	525	17.84	1,935	3,487
15.34	1,094	547	17.89	1,962	3,584
15.39	1,094	569	17.94	1,990	3,683
15.44	1,094	591	17.99	2,018	3,783
15.49	1,094	613	18.04	2,047	3,885
15.54	1,094	635	18.09	2,075	3,988
15.59	1,094	656	18.14	2,104	4,092
15.64	1,094	678	18.19	2,133	4,198
15.69	1,094	700	18.24	2,162	4,306
15.74	1,094	722	18.29	2,191	4,414
15.79	1,094	744	18.34	2,220	4,525
15.84	1,094	766	18.39	2,250	4,636
15.89	1,094	788	18.44	2,280	4,750
15.94	1,094	810	18.49	2,310	4,864
15.99	1,094	831			
16.04	1,094	853			
16.09	1,094	875			
16.14	1,111	930			
16.19	1,132	986			
16.24	1,153	1,043			
16.29	1,174	1,102			
16.34	1,196	1,161			
16.39	1,218	1,221			
16.44	1,240	1,283			
16.49	1,262	1,345			
16.54	1,284	1,409			
16.59	1,307	1,474			

2022-11-16-Sketch HydroCAD

Type II 24-hr 100-yr Rainfall=7.60"

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Summary for Pond 9P: BIOSWALE

Inflow Area = 1.605 ac, 50.70% Impervious, Inflow Depth > 4.74" for 100-yr event
 Inflow = 11.32 cfs @ 11.91 hrs, Volume= 0.634 af
 Outflow = 2.24 cfs @ 12.23 hrs, Volume= 0.375 af, Atten= 80%, Lag= 19.6 min
 Primary = 2.24 cfs @ 12.23 hrs, Volume= 0.375 af

Routing by Dyn-Stor-Ind method, Time Span= 0.10-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 17.75' @ 12.23 hrs Surf.Area= 9,308 sf Storage= 13,066 cf
 Flood Elev= 18.10' Surf.Area= 10,897 sf Storage= 16,618 cf

Plug-Flow detention time= 233.1 min calculated for 0.374 af (59% of inflow)
 Center-of-Mass det. time= 116.9 min (929.7 - 812.8)

Volume	Invert	Avail.Storage	Storage Description			
#1	14.09'	16,618 cf	Custom Stage Data (Irregular) Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
14.09	3,533	896.0	0.0	0	0	3,533
14.10	3,533	896.0	40.0	14	14	3,542
16.09	3,533	896.0	40.0	2,812	2,826	5,325
16.10	3,533	896.0	100.0	35	2,862	5,334
18.10	10,897	944.0	100.0	13,757	16,618	12,599

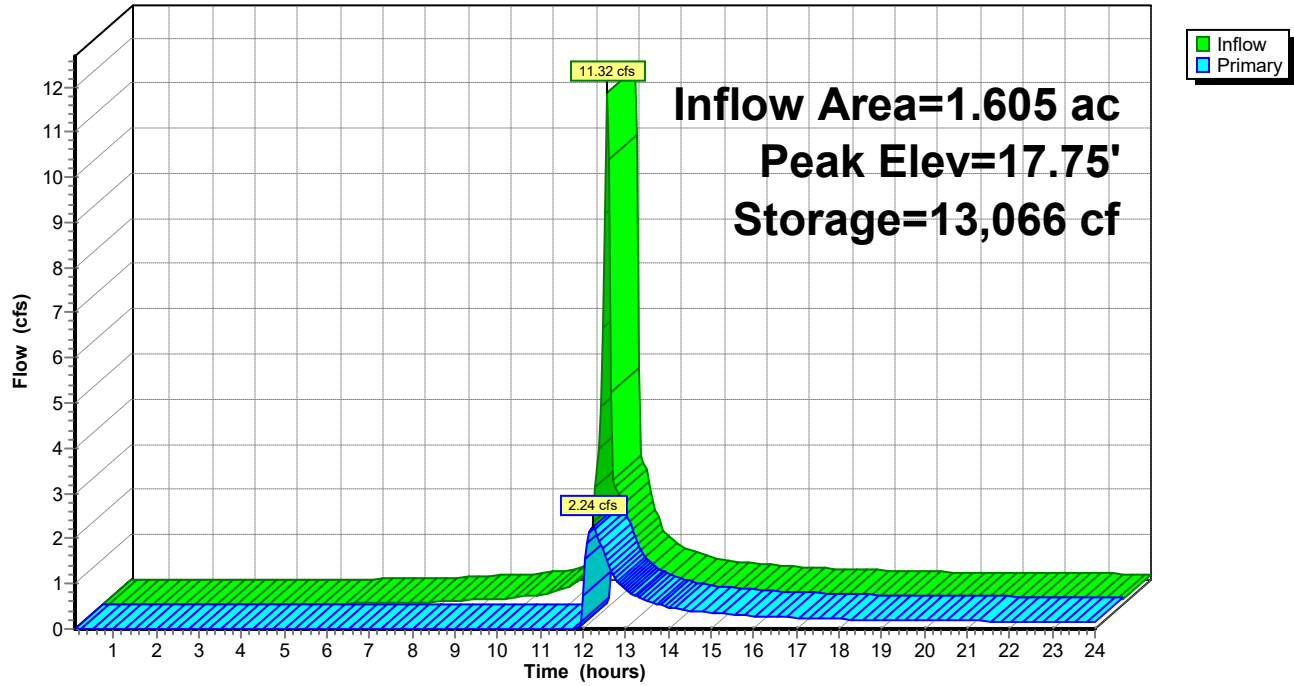
Device	Routing	Invert	Outlet Devices			
#1	Primary	14.10'	12.0" Round HDPE_Round 12" L= 95.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 14.10' / 13.60' S= 0.0053 ' S= 0.0053 ' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf			
#2	Device 1	17.10'	2.0" W x 6.0" H Vert. 2" Notch in side of 374.23 Inlet C= 0.600			
#3	Device 1	17.60'	10.7' long Rim SHA 374.23 Inlet 0 End Contraction(s)			

Primary OutFlow Max=2.23 cfs @ 12.23 hrs HW=17.75' TW=0.00' (Dynamic Tailwater)

1=HDPE_Round 12" (Passes 2.23 cfs of 5.56 cfs potential flow)
 2=2" Notch in side of 374.23 Inlet (Orifice Controls 0.25 cfs @ 2.98 fps)
 3=Rim SHA 374.23 Inlet (Weir Controls 1.98 cfs @ 1.26 fps)

Pond 9P: BIOSWALE

Hydrograph



2022-11-16-Sketch HydroCAD

Type II 24-hr 100-yr Rainfall=7.60"

Prepared by Lane Engineering, LLC

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Stage-Area-Storage for Pond 9P: BIOSWALE

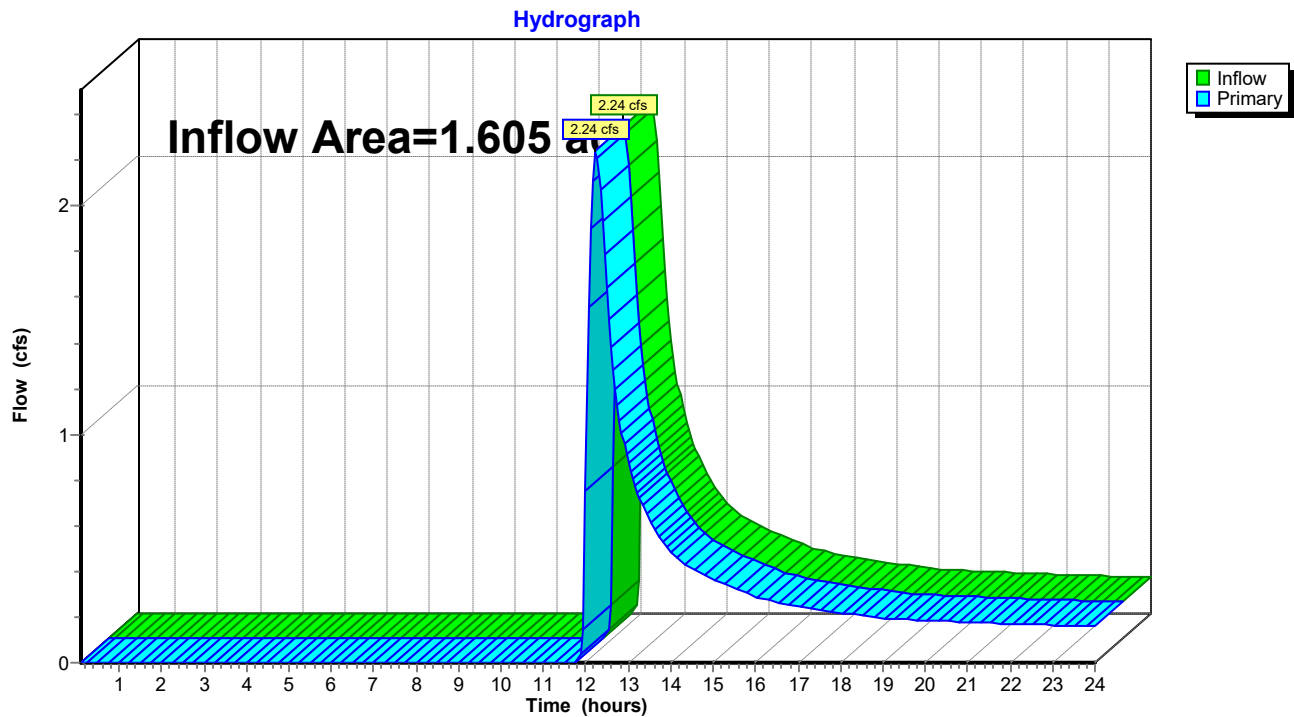
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
14.09	3,533	0	16.64	5,123	5,186
14.14	3,533	71	16.69	5,285	5,446
14.19	3,533	141	16.74	5,450	5,714
14.24	3,533	212	16.79	5,617	5,991
14.29	3,533	283	16.84	5,787	6,276
14.34	3,533	353	16.89	5,959	6,570
14.39	3,533	424	16.94	6,134	6,872
14.44	3,533	495	16.99	6,311	7,183
14.49	3,533	565	17.04	6,491	7,503
14.54	3,533	636	17.09	6,673	7,832
14.59	3,533	707	17.14	6,858	8,170
14.64	3,533	777	17.19	7,045	8,518
14.69	3,533	848	17.24	7,235	8,875
14.74	3,533	919	17.29	7,428	9,241
14.79	3,533	989	17.34	7,623	9,618
14.84	3,533	1,060	17.39	7,820	10,004
14.89	3,533	1,131	17.44	8,020	10,400
14.94	3,533	1,201	17.49	8,223	10,806
14.99	3,533	1,272	17.54	8,428	11,222
15.04	3,533	1,343	17.59	8,635	11,649
15.09	3,533	1,413	17.64	8,845	12,086
15.14	3,533	1,484	17.69	9,058	12,533
15.19	3,533	1,555	17.74	9,273	12,992
15.24	3,533	1,625	17.79	9,491	13,461
15.29	3,533	1,696	17.84	9,711	13,941
15.34	3,533	1,766	17.89	9,934	14,432
15.39	3,533	1,837	17.94	10,159	14,934
15.44	3,533	1,908	17.99	10,387	15,448
15.49	3,533	1,978	18.04	10,617	15,973
15.54	3,533	2,049	18.09	10,850	16,510
15.59	3,533	2,120			
15.64	3,533	2,190			
15.69	3,533	2,261			
15.74	3,533	2,332			
15.79	3,533	2,402			
15.84	3,533	2,473			
15.89	3,533	2,544			
15.94	3,533	2,614			
15.99	3,533	2,685			
16.04	3,533	2,756			
16.09	3,533	2,826			
16.14	3,641	3,005			
16.19	3,778	3,191			
16.24	3,917	3,383			
16.29	4,059	3,582			
16.34	4,203	3,789			
16.39	4,350	4,003			
16.44	4,500	4,224			
16.49	4,652	4,453			
16.54	4,806	4,689			
16.59	4,963	4,933			

Summary for Link P1: Study Pt #1 (Post)

Inflow Area = 1.605 ac, 50.70% Impervious, Inflow Depth > 2.80" for 100-yr event
 Inflow = 2.24 cfs @ 12.23 hrs, Volume= 0.375 af
 Primary = 2.24 cfs @ 12.23 hrs, Volume= 0.375 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.10-24.00 hrs, dt= 0.05 hrs

Link P1: Study Pt #1 (Post)

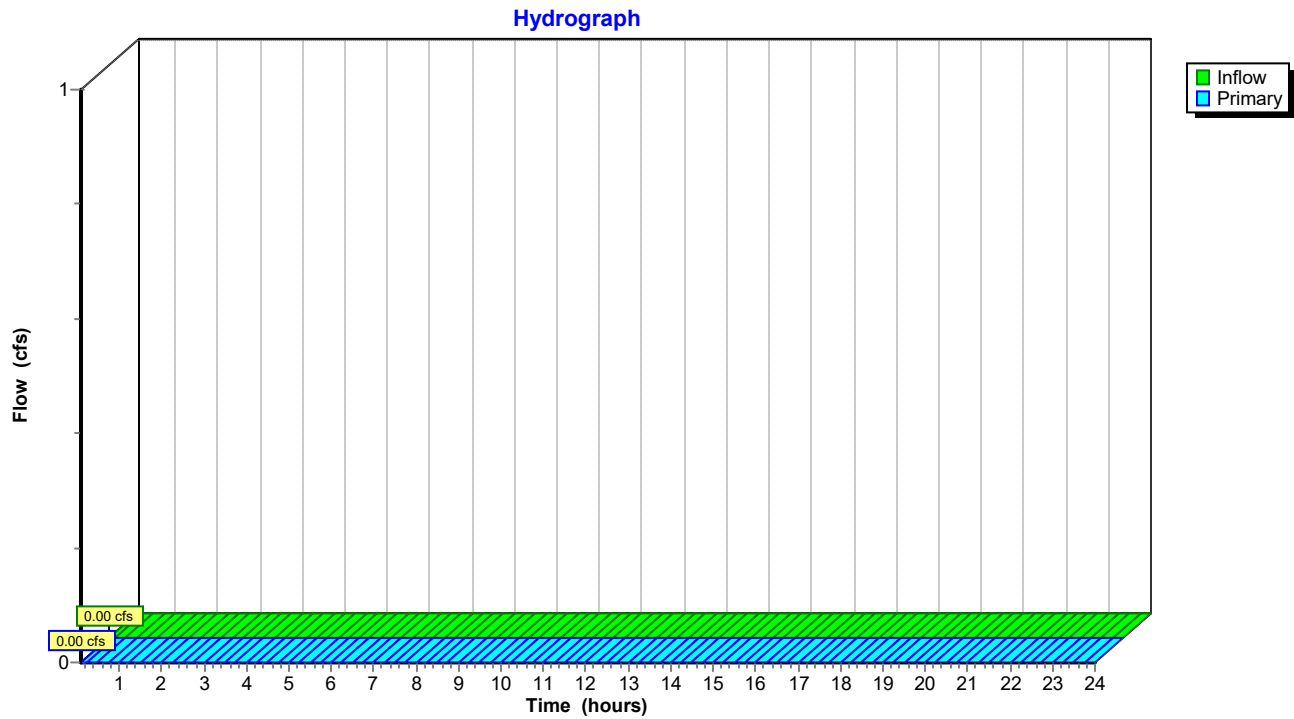


Summary for Link P2: Study Pt #2 (Post)

Inflow = 0.00 cfs @ 0.10 hrs, Volume= 0.000 af
 Primary = 0.00 cfs @ 0.10 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.10-24.00 hrs, dt= 0.05 hrs

Link P2: Study Pt #2 (Post)



2022-11-16-Sketch HydroCAD

Prepared by Lane Engineering, LLC

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220093

Type II 24-hr 100-yr Rainfall=7.60"

Printed 2/27/2023

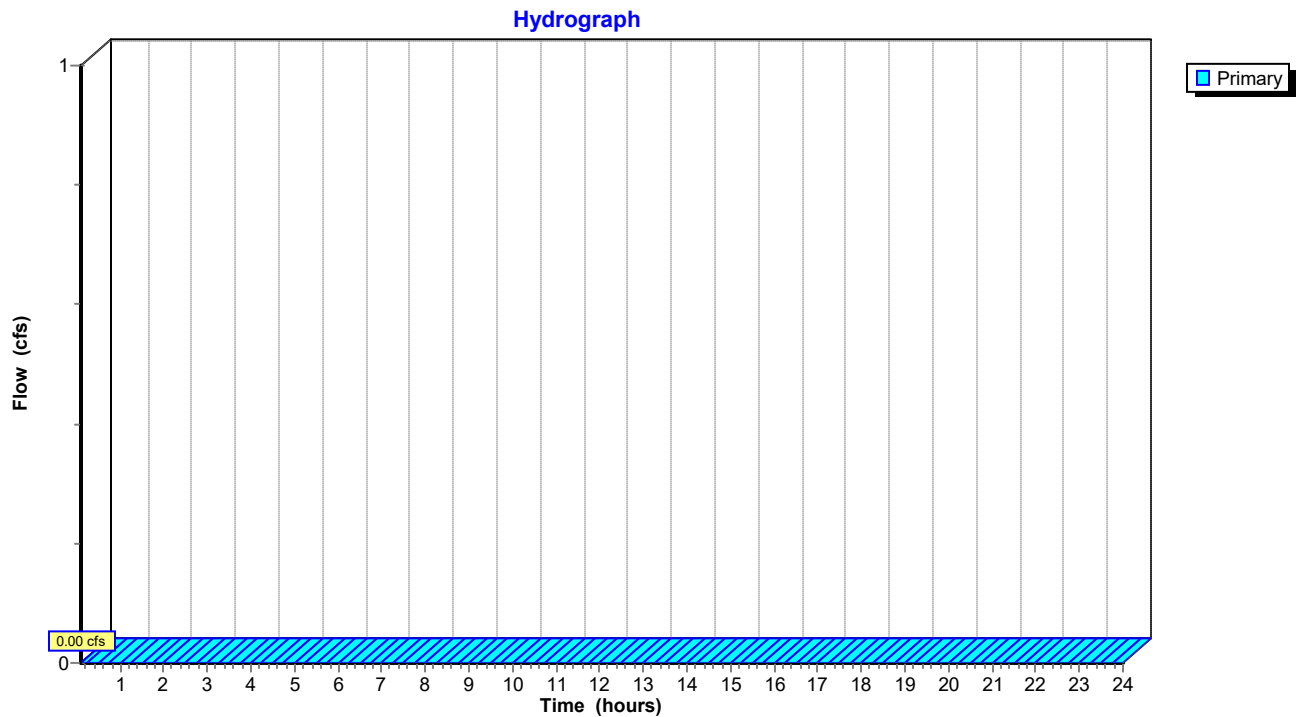
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Summary for Link P3: Study Pt #3 (Post)

Primary = 0.00 cfs @ 0.10 hrs, Volume= 0.000 af

Primary outflow = Inflow, Time Span= 0.10-24.00 hrs, dt= 0.05 hrs

Link P3: Study Pt #3 (Post)



2022-11-16-Sketch HydroCAD

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Type II 24-hr 100-yr Rainfall=7.60"

Printed 2/27/2023

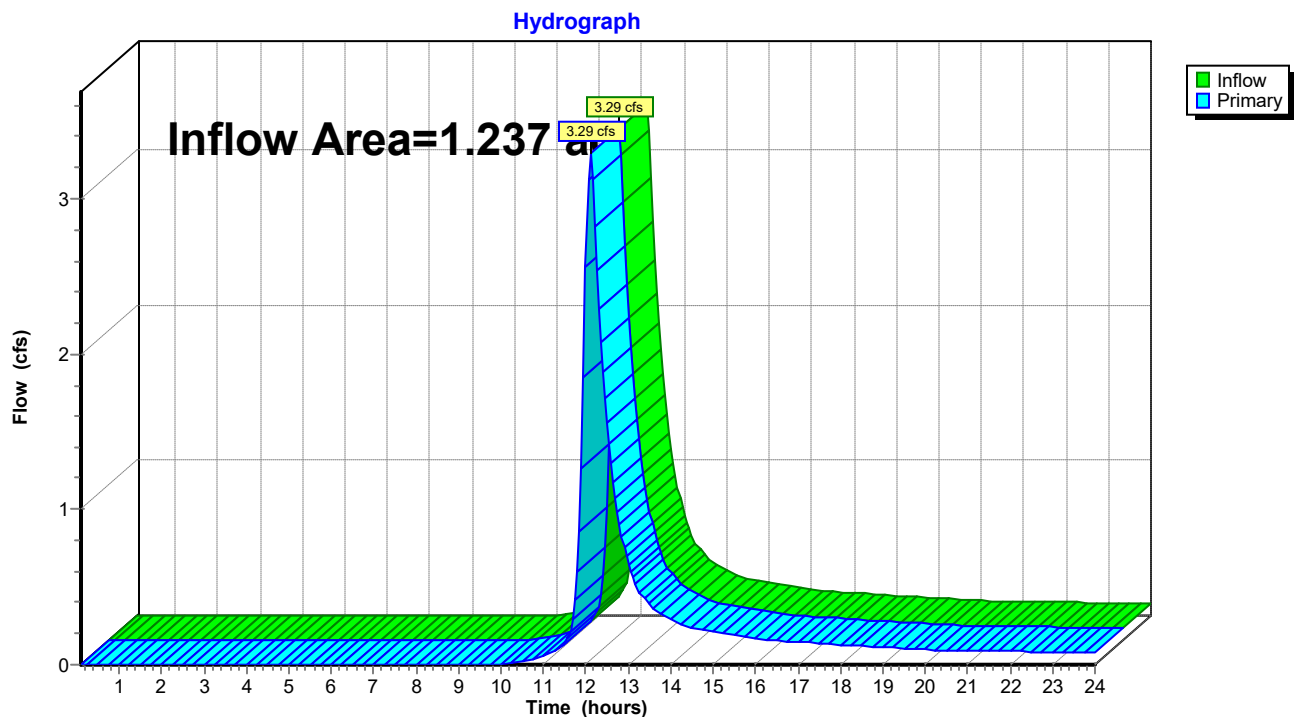
Page 50

Summary for Link X1: Study Pt #1 (Pre)

Inflow Area = 1.237 ac, 0.00% Impervious, Inflow Depth > 3.12" for 100-yr event
Inflow = 3.29 cfs @ 12.10 hrs, Volume= 0.322 af
Primary = 3.29 cfs @ 12.10 hrs, Volume= 0.322 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.10-24.00 hrs, dt= 0.05 hrs

Link X1: Study Pt #1 (Pre)



2022-11-16-Sketch HydroCAD

Prepared by Lane Engineering, LLC

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220093

Type II 24-hr 100-yr Rainfall=7.60"

Printed 2/27/2023

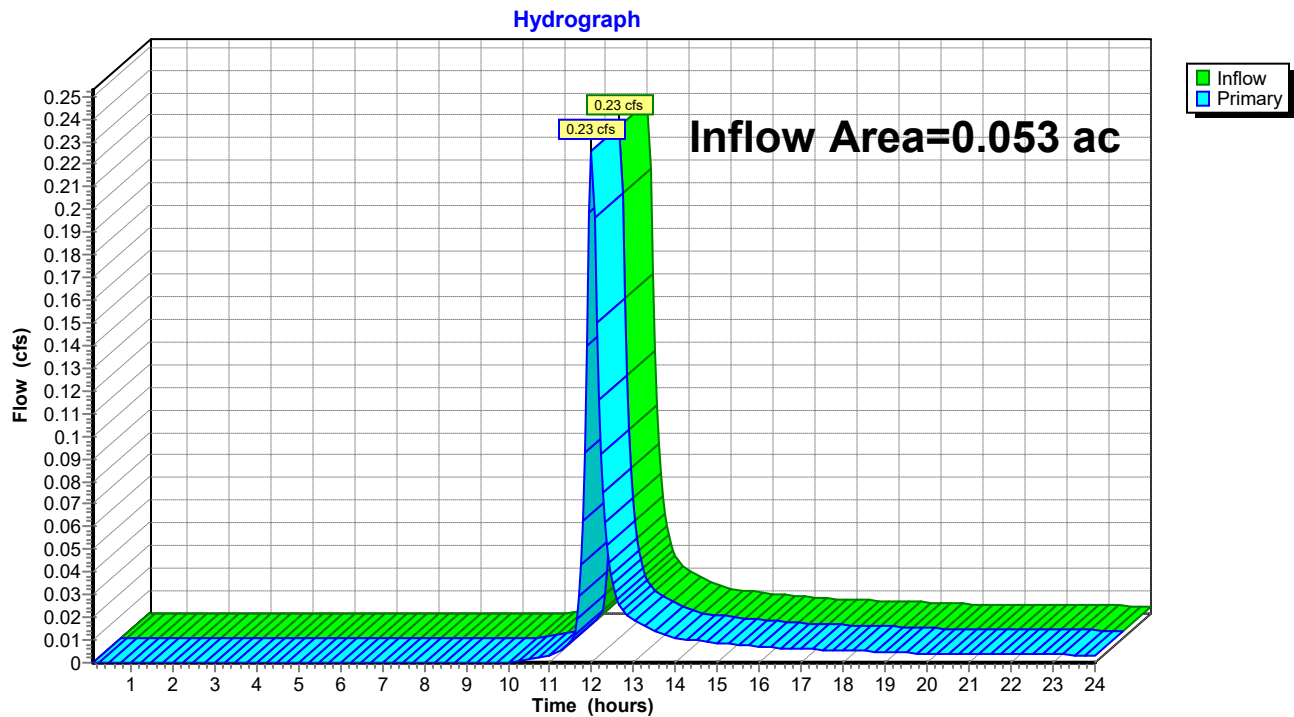
Page 51

Summary for Link X2: Study Pt #2 (Pre)

Inflow Area = 0.053 ac, 0.00% Impervious, Inflow Depth > 3.13" for 100-yr event
Inflow = 0.23 cfs @ 12.00 hrs, Volume= 0.014 af
Primary = 0.23 cfs @ 12.00 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.10-24.00 hrs, dt= 0.05 hrs

Link X2: Study Pt #2 (Pre)

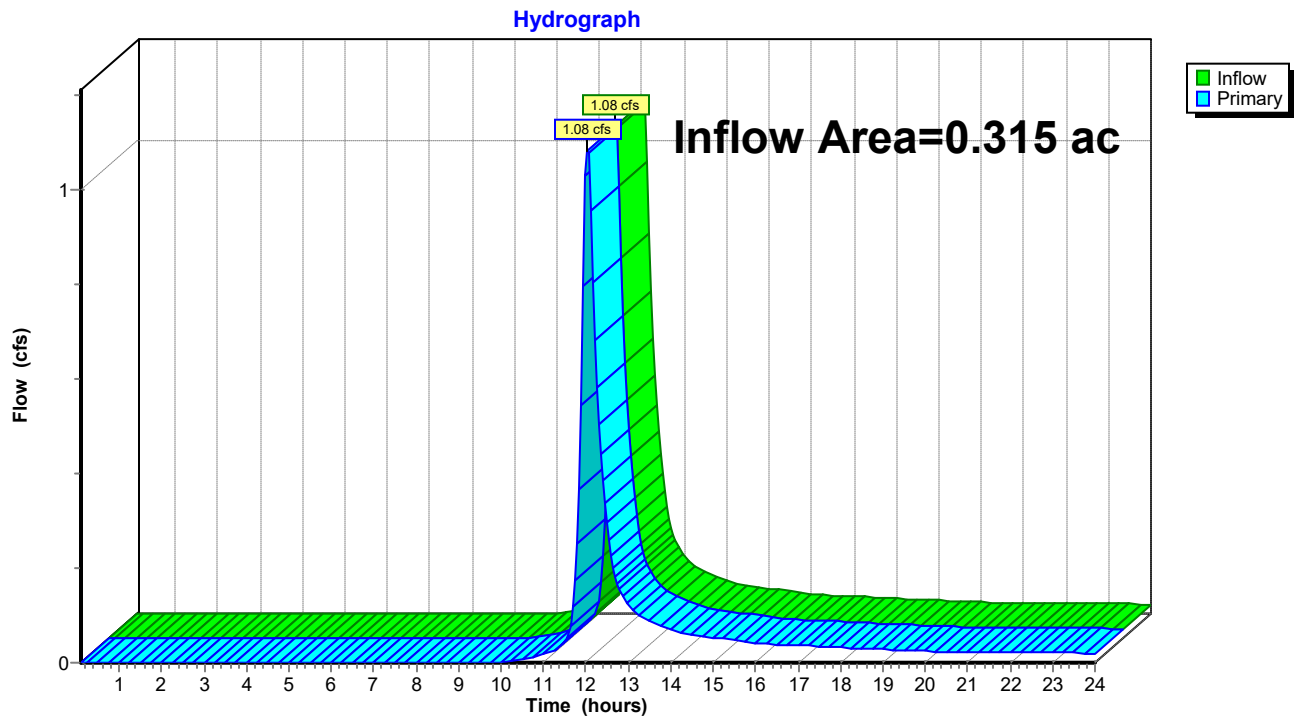


Summary for Link X3: Study Pt #3 (Pre)

Inflow Area = 0.315 ac, 0.00% Impervious, Inflow Depth > 3.13" for 100-yr event
 Inflow = 1.08 cfs @ 12.04 hrs, Volume= 0.082 af
 Primary = 1.08 cfs @ 12.04 hrs, Volume= 0.082 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.10-24.00 hrs, dt= 0.05 hrs

Link X3: Study Pt #3 (Pre)



APPENDIX B

1997 Talbot Commerce Park Subdivision & Infrastructure Plans

[TCP Infrastructure Plans - 1997.pdf](#)

Note that link is subject to expiration.

APPENDIX C

Environmental Site Design Calculations

ESD Target for Site Development (Total Site)

Earthen Disturbance (LOD) = 1.70 acre = 69,930 sf (excluding offsite utility work & grade ties on Lot B)

Onsite Soils in LOD: "HSG B"

Proposed Buildings, Parking, Sidewalks, & Entrance = 38,925 sf

Impervious I = 56%

$$R_v = 0.05 + 0.009 (I) = 0.05 + 0.009 (56\%) = 0.554$$

Based on I = 56%: HSG C $P_E = 2.0''$

$$ESD_{V_Total_Target} = \frac{(Pe)(Rv)(A)}{12} = \frac{(2.0)(0.554)(69,930)}{12} = \mathbf{6,457 \text{ cf}}$$

Bio Swale (DA-1)

Drainage Area = 49,476 sf

Proposed Improvements = 27,683 sf; Impervious I = 56%

$$R_v = 0.05 + 0.009 (I) = 0.05 + 0.009 (56\%) = 0.554$$

Based on I = 56%: HSG B $P_E = 2.0''$

$$ESD_{V_Total_Target_DA-1} = \frac{(Pe)(Rv)(A)}{12} = \frac{(2.0)(0.554)(49,476)}{12} = \mathbf{4,568 \text{ cf}}$$

$$ESD_{Ponding} = \frac{(Area \text{ at Temporary Ponding Elevation} + Floor Area)}{2} \times \text{Ponding Depth} = \frac{(3,533+7,166)}{2} \times 1.00 = \mathbf{5,350 \text{ cf}}$$

$$ESD_{Media} = Porosity \text{ of Media} \times Media \text{ depth} \times Floor \text{ Area} = 0.4 \times 3,533 \times 2.0 = \mathbf{2,826 \text{ cf}}$$

$$ESD_{Provided} = ESD_{Ponding} + ESD_{Media} = 5,350 + 2,826 = \mathbf{8,176 \text{ cf}}$$

ESD_v (provided DA -1) > ESD_v (target DA-1)

Micro-Bioretention (DA-2)

Drainage Area = 20,454 sf

Proposed Improvements = 7,775 sf; Impervious I = 38%

$$R_v = 0.05 + 0.009 (I) = 0.05 + 0.009 (38\%) = 0.392$$

Based on I = 38%: HSG B $P_E = 1.8''$

$$ESD_{V_Total_Target_DA-2} = \frac{(Pe)(Rv)(A)}{12} = \frac{(1.8)(0.392)(20,454)}{12} = \mathbf{1,203 \text{ cf}}$$

$$ESD_{Ponding} = \frac{(Area \text{ at Temporary Ponding Elevation} + Floor Area)}{2} \times \text{Ponding Depth} = \frac{(1,093+1,691)}{2} \times 1.00 = \mathbf{1,392 \text{ cf}}$$

$$ESD_{Media} = Porosity \text{ of Media} \times Media \text{ depth} \times Floor \text{ Area} = 0.4 \times 1,093 \times 2.0 = \mathbf{874 \text{ cf}}$$

$$ESD_{Provided} = ESD_{Ponding} + ESD_{Media} = 874 + 1,392 = \mathbf{2,266 \text{ cf}}$$

ESD_v (provided DA -2) > ESD_v (target DA-2)

APPENDIX D

Drainage Area Maps

Date: 02/27/2023 - 9:13am User: ascheto Project Manager: BCE
Drawing Path: J:\2023\0000\220093\Civil3D\Draw Plots\CA-PDS-220093.dwg | PRE
XREF File(s): C:\A-BASE-220093\RSF-BASE-180180\CSK-BASE-220093\RLD-EUC-BASE-220093\JLD-BASE-220093\RRS-BASE-24X36-220093\HSL-BASE-220093

- LEGEND**
- COMPUTED POINT
 - MAJOR CONTOUR
 - MINOR CONTOUR
 - NON-TIDAL WETLAND
 - NON-TIDAL WETLAND BUFFER
 - WATER LINE
 - ELECTRIC TRANSFORMER
 - ELECTRIC HANDHOLE
 - CABLE PEDESTAL
 - SANITARY SEWER CLEANOUT
 - PROPOSED SHARED ACCESS EASEMENT (REQUIRED UPON SUBDIVISION OF LOT)

TALBOT COUNTY SOILS				
MAP SYMBOL	SOILS NAME	HYDRIC SOILS	K FACTOR	SOIL GROUP
H1B	HAMBROOK-SASSAFRAS COMPLEX		0.37	B
H1C	HAMBROOK-SASSAFRAS COMPLEX		0.32	B
WdB	WOODSTOWN SANDY LOAM	*	0.2	C
Zk	ZEKIAH	YES	0.37	C/D

* POSSIBLE SMALL AREAS OF HYDRIC SOIL INCLUSIONS SUBJECT TO FIELD VERIFICATION.

SWM PRE DEVELOPMENT DISCHARGES (CFS)			
STUDY POINT	Q ₂	Q ₁₀	Q ₁₀₀
1	0.38	1.51	3.29
2	0.03	0.11	0.23
3	0.13	0.50	1.08

STORMWATER MANAGEMENT DRAINAGE AREA TABLE				
AREA #	AREA (SF)	TOTAL T _c (MINUTES)	IMPERVIOUS (%)	DESCRIPTION
EX-1	53,870	15.00	0	MEADOW/CROPS
EX-2	2,323	6.40	0	MEADOW/CROPS
EX-3	13,736	9.80	0	MEADOW/CROPS

APPROVED:

TOWN OF EASTON - PLANNING & ZONING DATE

APPROVED:

TOWN OF EASTON - TOWN ENGINEER DATE

APPROVED:

EASTON UTILITIES - ENGINEER DATE

REVISIONS TO APPROVED PLANS			
No.	DATE	DESCRIPTION	BY

WARNING!!

THE LOCATIONS OF EXISTING UTILITIES AS SHOWN ON THIS PLAN ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF EXISTING UTILITIES PRIOR TO BEGINNING CONSTRUCTION. THE QUANTITIES SHOWN ON THIS PLAN ARE FOR INFORMATIONAL AND PERMITTING PURPOSES ONLY. THE CONTRACTOR SHALL VERIFY ALL QUANTITIES TO HIS OWN SATISFACTION PRIOR TO BEGINNING CONSTRUCTION.

THE CONTRACTOR SHALL TEST PIT AND LOCATE EXISTING UNDERGROUND UTILITIES PRIOR TO THE BEGINNING OF ANY WORK ON-SITE. THE CONTRACTOR SHALL NOTIFY DEPT. OF PUBLIC WORKS OF ANY POSSIBLE CONFLICT AND REQUEST THE RELOCATION OF THE EXISTING UNDERGROUND UTILITIES BEFORE BEGINNING ANY WORK ON-SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY RELOCATION EXPENSE.



Lane Engineering, LLC
Established 1986
Civil Engineers • Land Planning • Land Surveyors

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117 Bay St. Easton, MD 21601 (410) 822-8003
15 Washington St. Cambridge, MD 21613 (410) 221-0818
354 Pennsylvania Ave. Centerville, MD 21617 (410) 758-2095

SEAL

DATE

PRE-DEVELOPMENT DRAINAGE AREA MAP

FOR
8992 MISTLETOE DRIVE

IN THE TOWN OF EASTON
TALBOT COUNTY, MARYLAND
TAX MAP 25 GRID 22 PARCEL 46 LOT 10

ISSUED/REVISED FOR: SKETCH SITE PLAN
DATE: 02/01/23 BCE
BY: PLANNING COMMISSION PACKET

SHEET No. 2/01/23

SCALE: AS NOTED

JOB No. 220093

FILE No. A037

ESD SUMMARY CHART

DRAINAGE AREA	TYPE OF ESD PRACTICE	NAME OF ESD PRACTICE (STRUCTURE NAME)	ON-SITE OR OFF-SITE STRUCTURE	RUNOFF CURVE NUMBER (RCN) WEIGHTED	MARYLAND GRID COORDINATE NAD 83 METERS NORTHING	MARYLAND GRID COORDINATE NAD 83 METERS EASTING	ESD PRACTICE TOTAL DRAINAGE AREA (ACRES)	ESD PRACTICE IMPERVIOUS DRAINAGE AREA (ACRES)	SURFACE AREA OF ESD PRACTICE (ACRES)	TARGET PE (IN.)	ACTUAL PE (IN.)	TARGET ESDv (FT. ³)	ACTUAL ESDv (ft. ³)
1	M-8	Bio-Swale #1	ON-SITE	82	412716.2834'	1574658.9577'	1.14	0.89	0.08	2.0	2.0	4,568	8,176
2	M-6	Micro-Bioretenction	ON-SITE	74	412703.7699'	1574926.5857'	0.47	0.18	0.03	1.8	1.8	1,203	2,266
3													
4													
5													
6													
7													
8													
9													
10													
TOTAL/ AVERAGE													



APPROVAL

Ridh Van Engle
TOWN ENGINEER

1/2020
DATE

**TOWN OF EASTON
STANDARD DETAILS**

ESD SUMMARY CHART

ISSUED: JANUARY 2020

STANDARD NO: TOE-SWM-7.01

SWM QUANTITY SUMMARY CHART

PRACTICE	DA (ACRES)	IMPERVIOUS (ACRES)	RCN	T _c (MINUTES)	PRE 2 YEAR	POST 2 YEAR	W.S.E.	PRE 10 YEAR	POST 10 YEAR	W.S.E.	PRE 100 YEAR	POST 100 YEAR	W.S.E.
M-8	1.14	0.89	82	1.00	0.38	0.00	16.96	1.51	0.14	17.52	3.29	2.24	17.75
M-6	0.47	0.18	74	5.00	0.03	0.00	17.03	0.11	0.00	17.53	0.23	0.00	17.89



APPROVAL

Rid Van Engle
TOWN ENGINEER

1/2020
DATE

**TOWN OF EASTON
STANDARD DETAILS**

SWM QUANTITY SUMMARY CHART

ISSUED: JANUARY 2020

STANDARD NO: TOE-SWM-7.02



TOWN OF EASTON

14 South Harrison Street
Easton, Maryland 21601

March 1, 2023

Dear Resident,

The Easton Planning Commission will hold a public meeting on **Thursday, March 16, 2023 at 1:00 p.m.** in the Easton Town Council Chambers located on the second floor of 14 South Harrison Street. The Town of Easton Zoning Ordinance requires that owners of property located within 400 feet of a parcel on which certain types of applications are pending be given notice of upcoming meetings or hearings. If you are a tenant in or an owner of a multi-unit building, please distribute or post this notice in a visible location for all other tenants or owners to view. If you are a tenant of a rental property, please notify the property owner that this notice letter has been distributed to their property. Notice has also been sent to the Star Democrat, a sign has been posted at the subject property and the hearing agenda has been posted on the Town of Easton website: <http://eastonmd.gov/>.

This letter is sent to inform you that a Site Plan application for 8992 Mistletoe Drive has been filed to request site plan and architectural approval of a Single Lot Subdivision to construct an office/warehouse building.

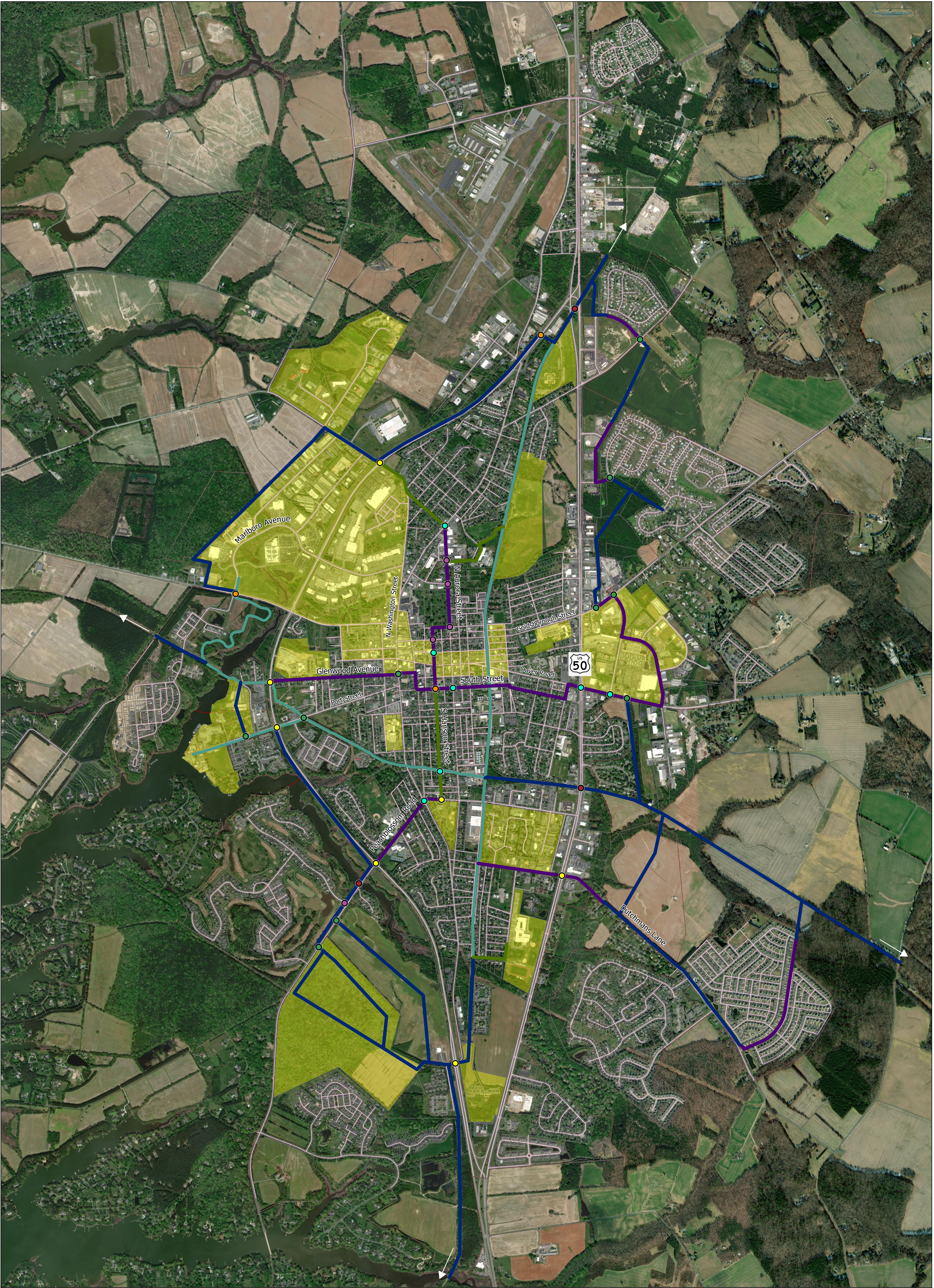
Copies of the proposed application are on file and available for public review in the Town's Planning Office at 14 South Harrison Street between the hours of 8:30 a.m. and 4:00 p.m., Monday through Friday. **In addition, digital copies are also available for review via the Town's website at <https://www.eastonmd.gov/129/Agendas-Minutes>.** If you have any questions regarding this application, please contact the Planning Office at (410) 822-1943 or via e-mail at ssmith@eastonMD.gov.

Samantha N. Smith

Samantha N. Smith
Administrative Specialist
Planning & Zoning Department
Town of Easton
410-822-1943 ssmith@eastonMD.gov



Sign posted on March 3, 2023



Proposed Crossing Improvements

- Active Warning Beacon for Bike Route at Un-signalized Intersection
- Bicycle Signal
- Bridge
- Hybrid Beacon
- Intersection Crossing Marks
- Through Bike Lanes

Proposed Bicycle Network Expansion

- Bicycle Boulevard
- On road bicycle lane
- Road Separated Trail
- Current Rails to Trails
- Destinations

Proposed Bicycle Network

