



Planning Commission MEETING AGENDA

Thursday, April 20, 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 March 16, 2023 meeting.
- b. Approval of the Draft Comprehensive Plan and Zoning Code Workshop Summary from February 2, 2023.
- c. Approval of the Draft Zoning Code Amendment Workshop Summary from March 2, 2023.

3. Old Business

- a. **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: Amendment to a previously approved Temporary Use Permit to include temporary approval for the addition of a kitchen facility.

4. New Business

- a. **Applicant:** Benjamin and Patricia Philips
File No.: 2023-0908
Location: 710 Lomax Street
Tax Map 103, Grid 0EA, Parcel 0866, Lot 85
Zoning District: R-10A
Nature of Request: Supplemental Waiver Request of one (1) parking space for a proposed

handicap ramp to be located over a portion of the existing driveway.

- b. **Applicant:** Catherine Joyce
 File No.: 2023-0903
 Location: 220 S. Harrison Street
 Tax Map 105, Grid 0EA, Parcel 2107

 Zoning District: R-10A
 Nature of Request: Site Plan approval to request a parking space waiver.
- c. **Applicant:** Callahan Signs
 File No.: 2023-0912
 Agent: John Callahan
 Location: 28464 Marlboro Avenue
 Tax Map 034, Grid 003, Parcel 0020, Lot 5

 Zoning District: PUD
 Nature of Request: Signage permit approval to allow a business wall sign to occupy one building with a common entrance.
- d. **Applicant:** Easton Utilities Commission
 File No.: 2023-0882
 Agent: Madeline Selick Barbalance
 Location: 8670 Commerce Drive
 Tax Map 101, Grid 002, Parcel 004, Lot 3

 Zoning District: BC
 Nature of Request: **The Applicant is requesting a continuance of the application to a future meeting.**
- e. **Applicant:** Naima Ventures, LLC
 File No.: 2023-0914
 Applicant: Kendrick Daly
 Location: 22, 30, 36 & 44 Jowite Street
 Tax Map 104, Grid 0EA, Parcels 1369, 1370, 1371, 1372

 Zoning District: R-7A, with PRD overlay
 Request: Site Plan approval to redevelop parcels 1369, 1370, 1371 and 1372; and Sketch Stormwater Management approval for

the construction of new residential structures.

5. Discussion Item

6. Adjournment.



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

Thursday, March 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](https://www.eastonmd.gov/Agendas/Agendas%20and%20Minutes)
[\(eastonmd.gov\)](https://www.eastonmd.gov/)

Attendance:

Commission Members:

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

Staff:

Miguel Salinas, Planning and Zoning Director
Lynn B. Thomas, Town Planner
Joseph Mayer, Plan Reviewer
Nicholas Johnson, Planner
William Chapman, Attorney

Absent:

Commission Members:

Paul Weber

- 1. Call to Order**—Chairperson Dindinger called the meeting to order at 1:00 pm.
- 2. Decision Summary Review**—

**Commissioner Ryall moved to approve the September 19, 2022 Decision Summary.
Vice Chairperson Toussaint seconded the motion.**

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

- 3. Old Business** – None

4. New Business

- a. Applicant:** Palmer Gillis
File No.: 2023-0864
Agent: Phoenix Physical Therapy
Location: 499 Idlewild Avenue, Easton, MD 21601
Tax Map 105, Parcel 2366, Lot 2
Zoning: BC
Request: The applicant is seeking approval to allow five business wall signs to be occupied on a building with a common entrance. Staff recommends the following condition:

1. The applicant will need to obtain approval from the appropriate building permit for the installation of the sign.

Staff Presentation:

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

Applicant Presentation:

Kendall Hurst, Suburban Signs

Public Comment— None

Vice Chairperson Toussaint moved to approve the request for an additional wall sign with the condition to obtain the appropriate building permit. Commissioner Ryall seconded the motion.

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

- b. Applicant:** Rise Up Dover Road LLC
File No.: 2023-0874
Agent: Rise Up Coffee Roasters % Zachary A. Smith
Location: 625 Dover Road, Easton, MD 21601
Tax Map 103, Grid 0EA, Parcel 0990
Zoning: R-7A
Request: The applicant is seeking temporary approval to re-erect a tent, and authorization for the tent to remain up through November 30, 2023. Staff recommends the following 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.

Staff Presentation:

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

Applicant Presentation:

Zachary A. Smith

Public Comment:

Joan Leanos

Vice Chairperson Toussaint moved to approve the 2023 temporary seasonal request with the following conditions:

1. All tripping hazards will be removed as deemed necessary by the Building Inspection Division.
2. Music from the loudspeakers is not to be played prior to 8 a.m.

Commissioner Ryall seconded the motion.

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

- c. Applicant:** Rise Up Dover Road LLC
File No.: 2023-0870
Agent: Rise Up Coffee Roasters % Ozzie Jimenez
Location: 625 Dover Road, Easton, MD 21601
 Tax Map 103, Grid 0EA, Parcel 0990
Zoning: R-7A
Request: The applicant withdrew their Planned Redevelopment Overlay application from the March 16, 2023 Planning Commission agenda and will be rescheduled pending the submission of a PUD Amendment Request along with an amended Temporary Use Permit and kitchen utility site plan.

- d. **Applicant:** Mary's Court Venture, LLC
File No.: 2023-0877
Agent: Lane Engineering, LLC
Location: 28595 Mary's Court, Easton, MD 21601
Tax Map 025, Grid 022, Parcel 0046, Lot 18
Zoning: BC
Request: The applicant is seeking site plan and bicycle waiver approval.
Staff recommends the following condition:

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

Staff Presentation:

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

Applicant Presentation:

Brett Ewing, Lane Engineering
Daniel Coblentz, Titan Buildings

Public Comment— None

**Vice Chairperson Toussaint moved to approve the site plan subject to the condition that all prior ESDR review comments are addressed.
Commissioner McAndrews seconded the motion.**

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

- e. **Applicant:** Mistletoe Drive LLC
File No.: 2023-0878
Agent: Lane Engineering, LLC
Location: 8992 Mistletoe Drive, Easton, MD 21601
Tax Map 046, Grid 022, Parcel 0046, Lot 10
Zoning: BC
Request: The applicant is seeking site plan approval from the Planning Commission. The applicant is also seeking waivers for the number of parking and bicycle spaces. Staff recommends the following condition:

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

Staff Presentation:

Joseph Mayer, Plan Reviewer

Lynn Thomas, Town Planner

Miguel Salinas, Director of Planning and Zoning

Applicant Presentation:

Brett Ewing, Lane Engineering

John Gosnell, Mistletoe Drive LLC

Public Comment— None

Commissioner McAndrews moved to approve the site plan options subject to the condition that all prior ESDR review comments are addressed; and the installation of a bicycle rack. Commissioner Ryall seconded the motion.

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

6. Discussion Items —

- a. Proposed Amendment to the Comprehensive Plan’s Bicycle and Pedestrian Action Plan — Planning and Zoning staff in partnership with the Engineering Department is seeking a recommendation from the Commission for the Bicycle and Pedestrian Action Plan to be incorporated with the current Comprehensive Plan. This project was modified based on public feedback received during the Comprehensive Plan Workshop on October 14, 2022. Participants desired to see bicycle trails extended on Oxford Road, Saint Michaels Road, and Talbot Commerce Park. Public feedback also included advocacy for more bike lanes, pavement markings and bicycle boulevards in low traffic streets. Staff incorporated these findings by establishing destination centers that connect with low stress bicycle networks; and establishing on-road and off-road paths. This Action Plan received a favorable recommendation by the Park Advisory Board.

The Commission recommended further mapping and signage detail and the identification and treatment of problematic intersections and cross sections. Commissioner Ryall identified a crucial cross section to be included at the RTC Park. The Commission also recommended consideration of possible regulations of electric bicycles and scooters on off-road trails in the Comprehensive Plan Update.

Staff Presentation:

Nicholas Johnson
Miguel Salinas

Public Comment:

Margaret Enloe North, Talbot Thrive
Tom Ledvina, President of Papermill Crossing Homeowners Association

**Commissioner Ryall moved to approve the current draft of the action plan.
Vice Chairperson Toussaint seconded the motion.**

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

- b.** Continue discussion of Amendments to Zoning Ordinance — This discussion item was concluded at the Zoning Code Amendment Workshop on March 2, 2023.
- 7. Adjournment**– Vice Chairperson Toussaint moved to adjourn. Commissioner Ryall seconded the motion. The meeting was adjourned at 2:45 p.m.



**Town of Easton Planning Commission
Comprehensive Plan and Zoning Code Workshop
Draft Work Session Summary**

Monday, February 2, 2023 at 10:00 a.m.
Town Hall Chamber 2
14 S. Harrison Street, Easton

Archived video of the meeting is available at:

[Town of Easton Agendas and Minutes](https://eastonmd.gov)
 [\(eastonmd.gov\)](https://eastonmd.gov)

Attendance:

Commission Members:

Paul Weber, Chairperson
Victoria McAndrews
Philip Toussaint

Absent:

Commission Members:

Jennifer Dindinger, Vice Chairperson
William Ryall

Staff:

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

- 1. Introductions**— Chairman Weber called the meeting to order at 10:08 a.m.
- 2. Comprehensive Plan Work Session**— Mr. Lynn Thomas summarized the purpose of the workshop as to review all ongoing efforts to update the Town's Comprehensive Plan. Mr. Thomas also sought feedback and recommendations from the Commission in establishing potential revisions. A timeline to begin the first draft of the Comprehensive Plan was established for August, 2023.
 - a.** An in depth discussion followed regarding policies from the Implementation Chapter of the Town's growth policy:
 - i. Containing sprawl with an urban growth underneath;
 - ii. Increasing density;
 - iii. Building neighborhoods;
 - iv. Improving design; and
 - v. Managing the rate of growth.

- b. New Chapters for Sustainability and The Arts were agreed upon. The Commission recommended incorporating aspects of the Sustainability Chapter to include sea level impacts; and an allowance for renewable energy.
- c. The Commission continued with discussion for future growth and accommodating growth via infill or redevelopment. This discussion will be revisited to support compliance with the Subdivision Regulations and Zoning Code.

Public Comment:

Ron Engle

3. Zoning Code Amendments —

- a. The Commissioners briefly examined a recently submitted 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.

Public Comment:

Ryan Showalter

Joe Minarick

- b. 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.

4. Adjournment— Chairman Weber adjourned the meeting at **12:12 pm**.



**Town of Easton Planning Commission
Zoning Code Amendment Workshop
Draft Decision Summary**

Thursday, March 2, 2023 at 10:00 a.m.
Town Hall Chamber 2
14 S. Harrison Street, Easton

Archived video of the meeting is available at:
[Town of Easton Agendas and Minutes](https://www.eastonmd.gov/Agendas/Agendas%20and%20Minutes)
[\(eastonmd.gov\)](https://www.eastonmd.gov/)

Attendance:

Commission Members:

Philip Toussaint, Vice Chairperson
Victoria McAndrews
William Ryall
Paul Weber

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

Absent:

Commission Members:

Jennifer Dindinger, Chairperson

1. Introductions— Vice Chairperson Toussaint called the meeting to order at 10:00 a.m.

2. Zoning Code Amendments —

- a. Ongoing review of the Zoning Code Amendments continued. Mr. Lynn Thomas reviewed five revisions to the Town’s Zoning Code for the Commission’s consideration to finalize:
 - i. Short-term housing to be permitted in the Mixed Use Waterfront Zoning District;
 - ii. Measures to facilitate widespread use of “Middle Housing Types” as adopted in December, 2021;
 - iii. Setback requirements for uses with the sale of alcoholic beverages;
 - iv. Lot Line and setback adjustments in a PUD when not in a developable lot;
 - v. Consideration of the treatment of expiration of approvals for PUD projects that are constructed in phases; and
 - vi. The prohibition of negative use restrictions or covenants upon real property so as to prevent the use of such property for grocery store

purposes.

- b. The Commission continued to deliberate the scope, scale and story requirements of the Supplemental Standards of Missing Middle Housing (MMH) types. Language was decided to describe that the maximum height for all MMH types shall not exceed that of the surrounding neighborhood within a 400' radius. MMH types in the Commercial Business District that exceed the maximum height shall be permitted by Special Exception and Planning Commission approval. The Commission revised setback requirement language to facilitate fee-simple housing types; and included an annotation to the illustrations featured on the definition of MMH units to indicate that those graphics are for illustrative purposes only. The Commission discussed a variation of a MMH Type Not Listed category that would be permissible via Special Exception and their Supplemental Standards.
- c. The Commission addressed the process of granting PUD approvals that have since expired; particularly PUD projects that have been approved in phases. The Commission decided to add a process for the reinstatement of expired PUDs and determined that reinstated PUDs shall expire within two years.
- d. The Commission amended language where "Live-Work Unit" is listed twice in the Table of Permissible Uses. It was proposed to rename the second definition of the use to "Residential Use in a Commercial Building"; and to revise the Supplemental Standards for "Live-Work Unit" to include "Business, Personal or Professional Uses".
- e. The Commission revisited a provision that 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. Language to define "Grocery Store" was established and the language was revised so as to only apply for grocery stores exceeding a 15,000 sq ft threshold.

Public Comment – None

**Commissioner Weber moved to accept the proposed amendments to the Zoning Ordinance as revised; and to recommend approval to the Town Council.
Commissioner Ryall seconded the motion.**

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

- 3. Adjournment**– Chairman Weber adjourned the meeting at 4:24 pm.



Easton Utilities Commission

Plan Review Comments

Date: Tuesday, April 11, 2023

To: Joe Mayer; Nicholas Johnson; Sierra Clem

From: Kia Gibbs on behalf of Aaron Goller, PE

Re: 625 Dover Road - Rise Up Coffee

No. of Pages: 1

Phase:

Review Type:

SUBM:

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	Provide seating plan to assess capital charges. Include <u>ALL</u> seating.



EASTON UTILITIES

Life. Made better.™

	DRAWING /	
ITEM:	PAGE	COMMENTS:



TOWN OF
EASTON
ENGINEERING DEPARTMENT

DATE: March 10th, 2023
TO: Rise Up - Owner
Zach Smith - Attorney
Cc: Rick Van Emburgh - Town Engineer
Miguel Salinas - Planning and Zoning Department
Aaron Goller - EUC
FROM: Sierra Clem - Engineering Department
SUBJECT: 625 Dover Road - Rise Up - Temporary and Permanent Tent Requests

I have reviewed the request for a temporary tent at 625 Dover Road - Rise Up. The Engineering Department does not have any comment on this request.

I have reviewed the request for a permanent tent structure at 625 Dover Road - Rise Up. The Engineering Department has noted that the Stormwater Management features and access to Town ROW were installed per the 2020-03-31 Approved Site Plans. The Engineering Department does not have any comment on the request for a permanent tent structure.

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



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: April 12, 2023
Subject: #3A - Amendment for Temporary Use Approval for a Tent and Kitchen Facility For Rise Up Coffee at 625 Dover Road

Rise Up Coffee is returning to you for an amendment of their previously approved Temporary Use permit for a Tent located at their site on 625 Dover Road. In summary, from the past Planning Commission approval on March 15, 2023, Rise Up would like to amend their Temporary Use permit to add a new kitchen facility at 625 Dover Road for “Mad Eggs”. The kitchen is fabricated from a shipping container, and will replace the food service functions currently provided by the existing trolley unit at 618 Dover Road. To date the applicant has not submitted any technical information regarding the proposed kitchen structure to the Building Department. At the least the structure will need a Building, Plumbing, Electrical, HVAC and possibly a Cooking Hood and Gas permit. The unit will also need to be attached to a foundation and will not be considered a mobile unit. The Health Department and Building Inspection Division will also consider this a permanent structure and it will be required to hook up to public water & sewer and have a permanent foundation. If still temporary after November, it will be a cost to the applicant to remove this once it's in place.

Please note, the Applicant is preparing to submit a PUD amendment application seeking an approval that will permit the tent on a seasonal basis without having to seek a temporary use approval each year and for the permanent use of the “Mad Eggs” kitchen facility at 625 Dover Road.

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 and kitchen facility will be taken down and stored offsite.
2. All tripping hazards will be removed as deemed necessary by the Building Inspection Division.
3. Music from the loudspeakers is not to be played prior to 8 a.m.
4. The restroom, tables and chairs may all remain in place and ready for use.
5. Rise Up is required to obtain a building permit for the temporary structures. In addition, approval from the Fire Marshal, Talbot County Health Department and Easton Utilities Commission is required.

Joseph A. Mayer
Plan Reviewer
Planning & Zoning Department
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

March 31, 2023

Via email to: ssmith@eastonmd.gov

Easton Planning Commission
c/o Samantha Smith, Administrative Specialist
14 S. Harrison Street
Easton Maryland 21601

**Re: Request for Amendment to Temporary Approval for Rise Up Coffee
625 Dover Road Easton, Maryland**

Dear Planning Commission:

On behalf of Rise Up Dover Road LLC ("Rise Up"), please accept this letter as a request to amend the temporary approval for 625 Dover Road that was issued by the Planning Commission on March 15, 2023. As discussed at the March meeting, Rise Up plans to add a new kitchen facility at 625 Dover for "Mad Eggs." The kitchen will be fabricated from a shipping container, and will replace the food service functions currently provided by the existing trolley unit that is located at 618 Dover. The trolley unit has worked very well, but needs to be replaced, and given the parking and outdoor seating area at 625 Dover, Rise Up has determined that it makes sense to locate the new unit at 625. **Please include this amendment request on the April 20th Planning Commission agenda.**

As previously discussed, Rise Up plans to submit a request for a permanent approval of this facility, but due to time constraints we are requesting an amendment to the temporary approval to permit the new unit to be placed on the property this spring, subject of course to compliance with all applicable code requirements, including applicable Health Department requirements. We will soon be submitting a PUD amendment application seeking a permanent approval for this facility.

Easton Planning Commission
c/o Paul Weber, Chairman
March 31, 2023
Page 2

Attached hereto as Exhibit A please find a site plan showing the location of the proposed kitchen facility. We are also providing elevations of the facility (labeled Exhibit B) and a floor plan (labeled as Exhibit C). While Exhibit B shows the elevations generally, Rise Up proposes to use different graphics than what are shown on Exhibit B. The graphics proposed for the side of the facility that will face north (into the site) are shown on Exhibit D. The graphics that are proposed for the side that will face south (towards Dover Road) are shown on Exhibit E.

Thank you for your continued support of Rise Up. We look forward to discussing this request further with the Commission on April 20th.

Sincerely,



Zach A. Smith

cc: Rise Up Dover Road LLC



- PROPOSED

Set No.:	Sheet Title:
SITE PLAN	
Proj No.:	Scale:
4/47A001/EO	AS NOTED
Dwn By:	Date:
CAM/SS	09/23/22
THIS DRAWING, THE DESIGN AND CONSTRUCTION FEATURES DISCLOSED ARE PROPRIETARY TO DAVIS, BOWEN & FREED, INC. AND SHALL NOT BE ALTERED OR REUSED WITHOUT WRITTEN PERMISSION.	
COPYRIGHT © 2022	

Exhibit B

ROXBOX
ROXBOX
4721 Tronton St. Suite A
Denver, CO 80239

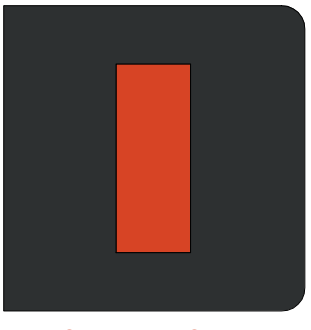
RISE UP / MADD EGGS
20' HC KITCHEN

THIS DRAWING HAS NOT BEEN PUBLISHED BUT RATHER, HAS BEEN PREPARED BY ROXBOX CONTAINERS FOR USE BY THE CLIENT NAMED IN THE TITLE BLOCK SOLELY IN RESPECT OF THE CONSTRUCTION, OPERATION AND MAINTENANCE OF THE FACILITY NAMED IN THE TITLE BLOCK AND SHALL NOT BE USED FOR ANY OTHER PURPOSES OR FURNISHED TO ANY OTHER PARTY WITHOUT THE EXPRESS CONSENT OF ROXBOX CONTAINERS

REV. 2.2	PROJECT NUMBER 1163	S	02

NOTE: DESIGN PER PERMANUFACTURED CONTAINER
PROVIDED BY ROXBOX

Design Consultant:



**ARCHITECTURE
INNOVATION & DESIGN
in ARCHITECTURE, Inc.**
15 PINE AVE, SUITE 250
Long Beach, CA 90802
www.idaexperience.com

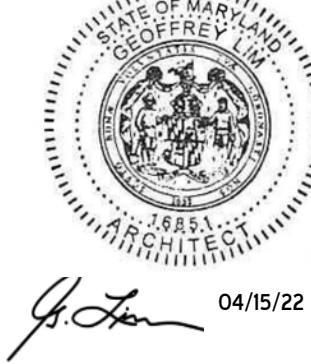
Architect:

**GEOFFREY B. LIM
AIA, NCARB, LEED AP**

Plans, maps, specifications, studies, and reports not containing a seal imprint accompanied by an original signature of the licensed professional may have been fraudulently altered and shall not be considered an original copy. All information should be designated correct and verified by the professional whose signature appears below.
Copyright Protected © 2022

Engineering Consultant:

Stamp:



NEW CONSTRUCTION

ROXBOX
4721 IRONTON ST. SUITE A
DENVER, CO 80239

Project Address:
MADD EGGS

625 DOVER ROAD
EASTON, MD 21601

Issue For:

PERMIT

Issue Date:

04/15/2022

Revisions:

NO.	REASON	DATE
1	PLAN CHECK CORRECTIONS	JUNE 30, 2022

Principal in Charge:

or

Project Manager:

or

Drawn By:

Project Number:

199-001-22

Sheet Title:

OVERVIEW

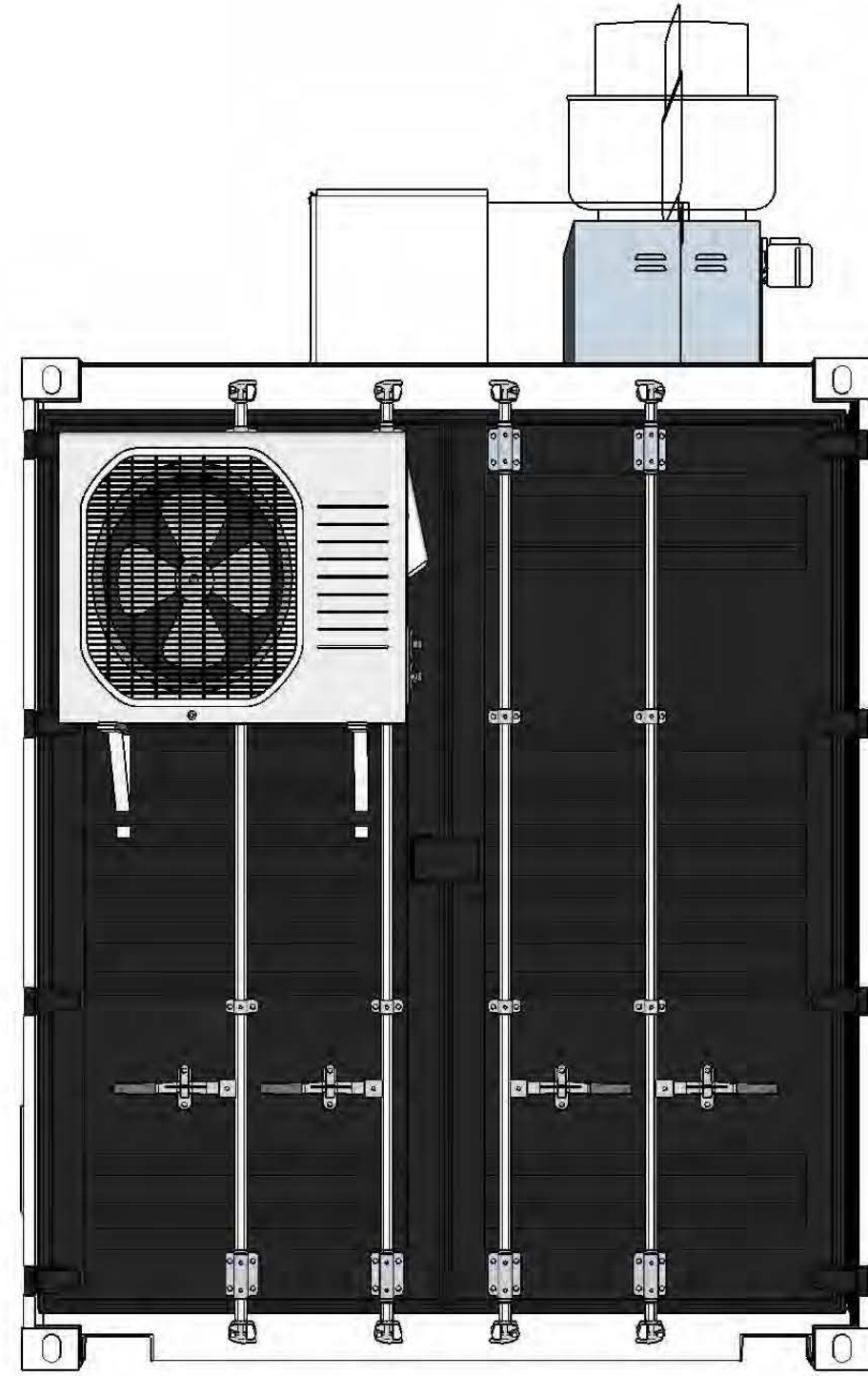
APPROVED RADCO APPROVED
Aug 04, 2022

Sheet Number:

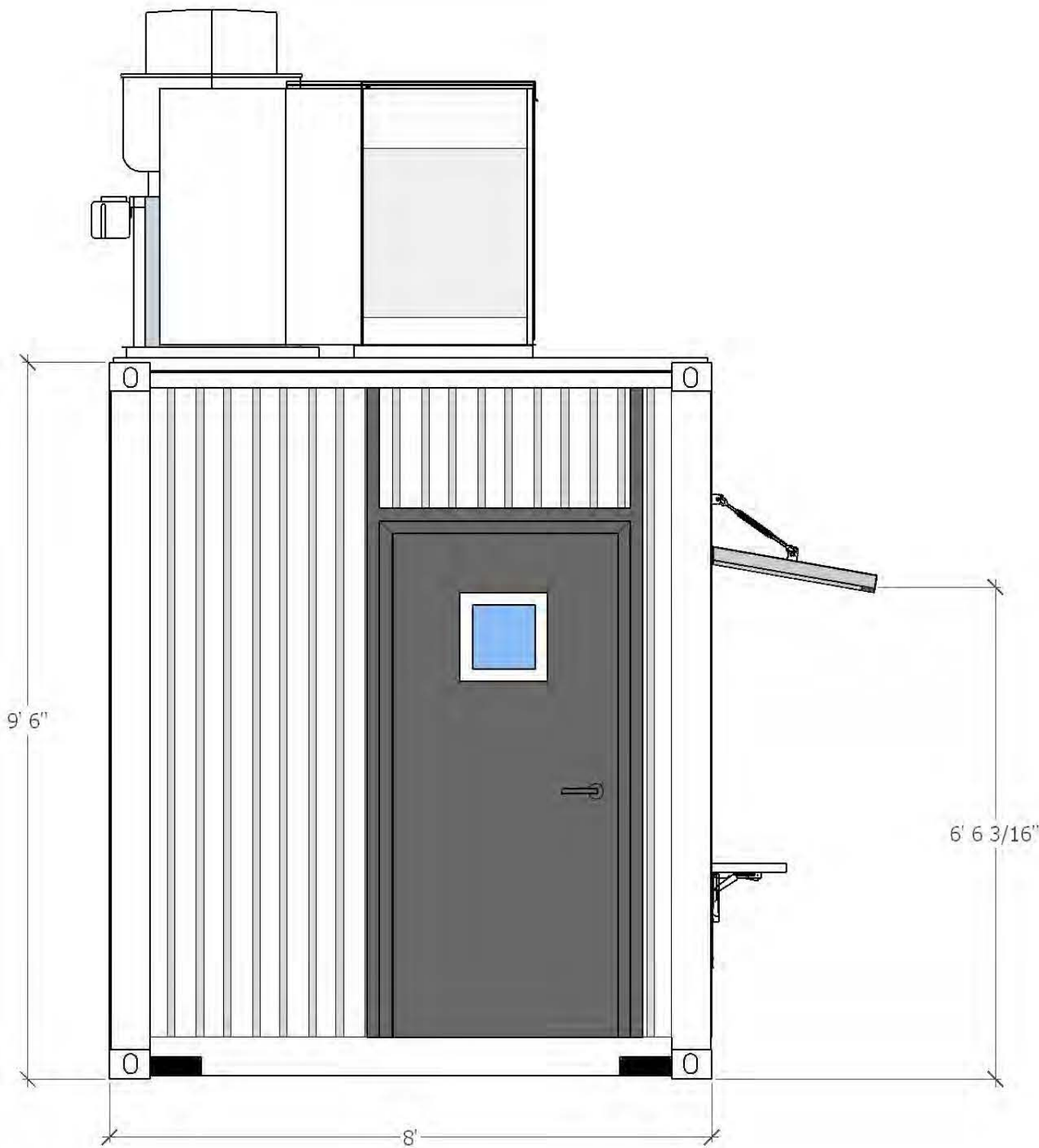
S 02



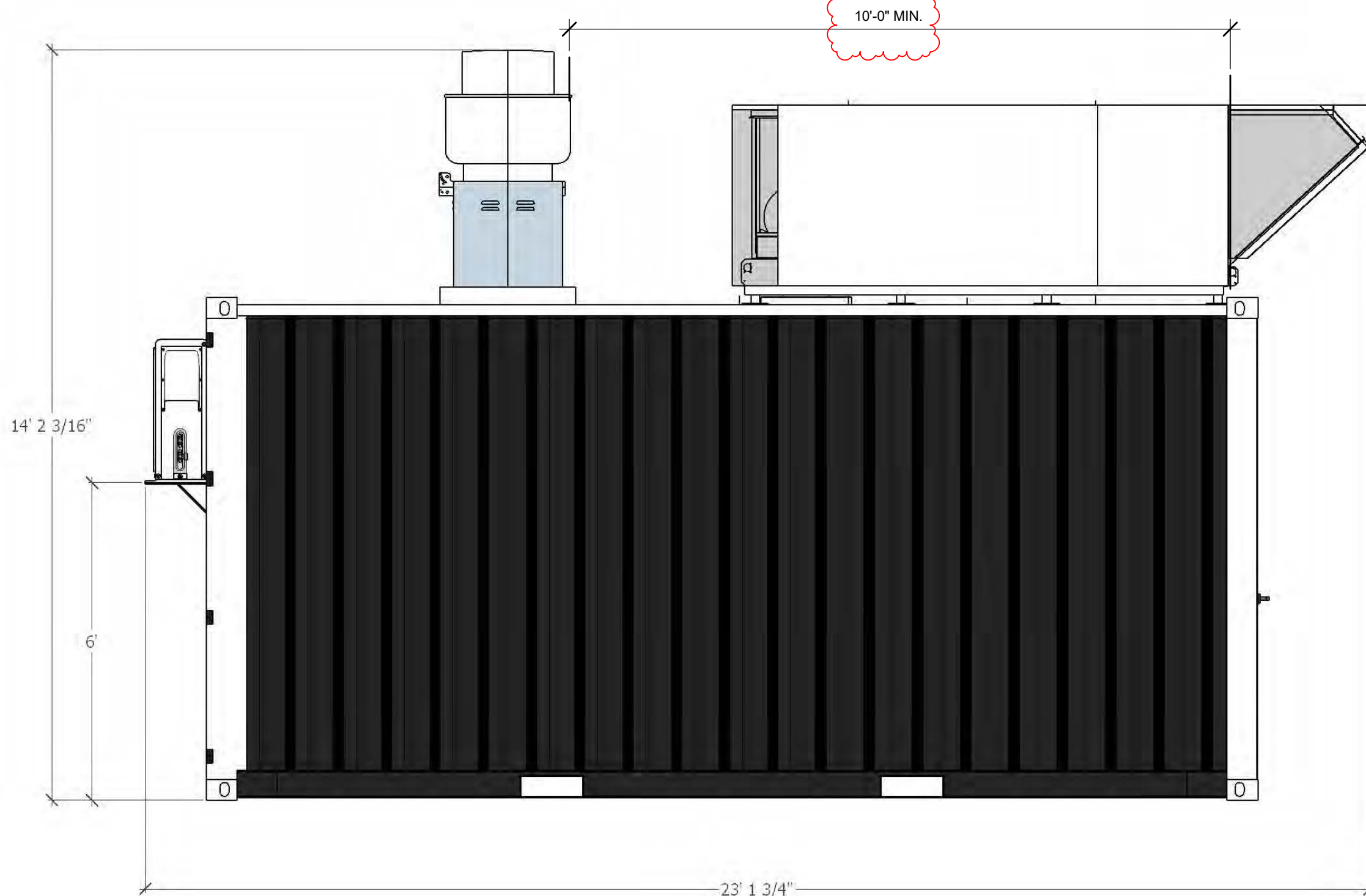
1 FRONT



2 CARGO DOOR END



3 MAN DOOR END



4 BACK

Exhibit C



ROXBOX
ROXBOX
4721 Ironton St. Suite A
Denver, CO 80239

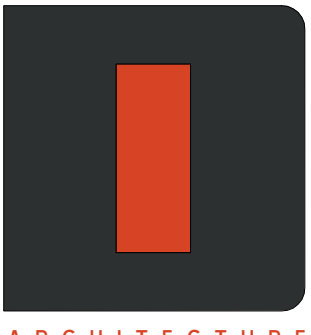
RISE UP / MADD EGGS
20' HC KITCHEN
SECTION PLANS

REVISONS	DRAWN BY:	DESIGNED BY:	DATE:
	SB	SB	1/27/2022
REV. 2.2			
PROJECT NUMBER 1163			
S	03		

THIS DRAWING HAS NOT BEEN PUBLISHED BUT RATHER HAS BEEN PREPARED BY ROXBOX CONTAINERS FOR USE BY THE CLIENT NAMED IN THE TITLE BLOCK SOLELY IN RESPECT OF THE CONSTRUCTION, OPERATION AND MAINTENANCE OF THE FACILITY NAMED IN THE TITLE BLOCK AND SHALL NOT BE USED FOR ANY OTHER PURPOSES OR FURNISHED TO ANY OTHER PARTY WITHOUT THE EXPRESS CONSENT OF ROXBOX CONTAINERS

NOTE: DESIGN PER PERMANUFACTURED CONTAINER PROVIDED BY ROXBOX

Design Consultant:



ARCHITECTURE
INNOVATION & DESIGN
in ARCHITECTURE, Inc.
115 PINE AVE, SUITE 250
Long Beach, CA 90802
www.idaexperience.com

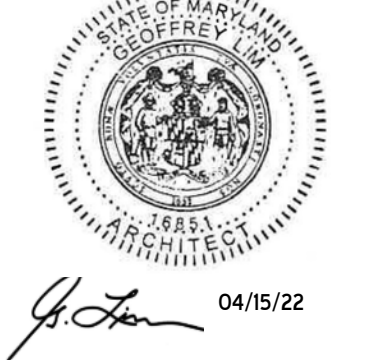
Architect:

GEOFFREY B. LIM
AIA, NCARB, LEED AP

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Engineering Consultant:

Stamp:



NEW CONSTRUCTION
ROXBOX
4721 Ironton St. Suite A
DENVER, CO 80239
Project Address:
MADD EGGS

625 DOVER ROAD
EASTON, MD 21601

Issue For:

PERMIT

Issue Date:

04/15/2022

Revisions:

NO.	REASON	DATE
1	PLAN CHECK CORRECTIONS	JUNE 30, 2022

Principal in Charge:

GC

Project Manager:

GC

Drawn By:

Project Number:

199-001-22

Sheet Title:

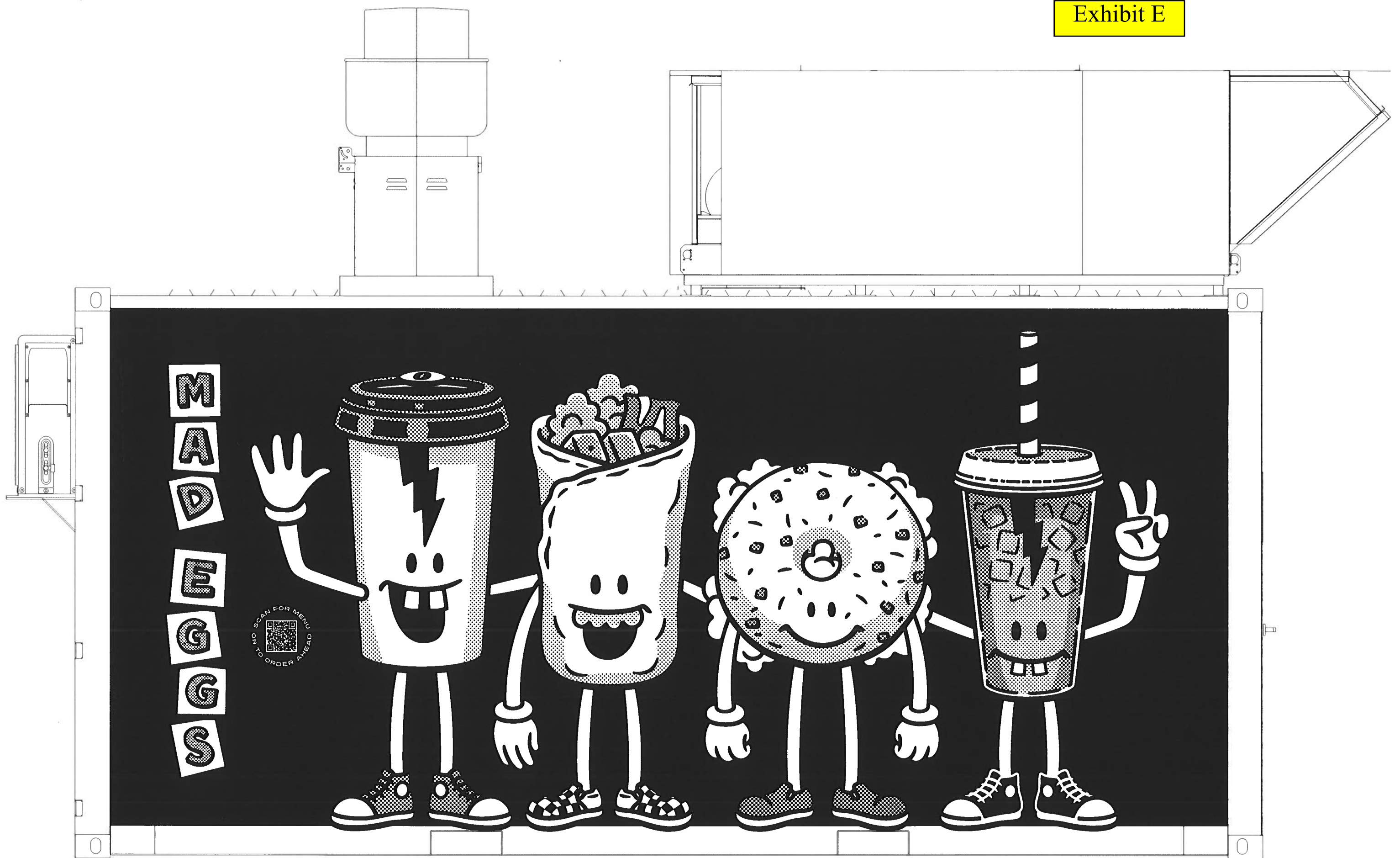
SECTION PLANS

APPROVED **RADCO** **APPROVED**
Aug 04, 2022

Sheet Number:

S 03







TOWN OF EASTON

14 South Harrison Street
Easton, Maryland 21601

April 3, 2023

Dear Resident,

The Easton Planning Commission will hold a public meeting on **Thursday, April 20, 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 an amendment to a previously approved Temporary Use Permit has been filed for 625 Dover Road to include temporary approval for the addition of a kitchen facility.

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
410-822-1943 ssmith@eastonMD.gov

Phone: Fax:
<http://www.chespub.com>

Cust. AcctID:	Creation Date: 04/03/23
	Ad Date: 04/05/23
	Class: 10
Name: Joanne Drummer	Ad ID: 3018322
Company: TOWN OF EASTON (L)	Ad Taker: AHALL
Address: PO Box 520	Sales Person: 503
EASTON, MD 21601	Words: 373
	Lines: 70
Telephone: (410) 822-2525	Agate Lines: 324
Email:	Depth: 9.0
Description: Planning Comm Meeting	Inserts: 2
	Blind Box:

Other Charges:	\$0.00	Total:	\$472.50
Discount:	\$0.00		
Surcharge:	\$0.00	Paid Amount:	- \$0.00
Credits:	\$0.00		
Bill Depth:	9.0	Amount Due:	\$472.50

CREDIT CARD DETAILS

PT	CT	CN	Number	Exp.	Amnt.

Publication	Start	Stop	Inserts	Cost
The Star Democrat	04/05/23	04/05/23	1	\$472.50

Sign posted on April 3, 2023

Ad Note:

Customer Note:



Planning Commission MEETING AGENDA Thursday, April 20, 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 March 16, 2023 meeting.
b.	Approval of the Draft Comprehensive Plan and Zoning Code Workshop Summary from February 2, 2023.
c.	Approval of the Draft Zoning Code Amendment Workshop Summary from March 2, 2023.
3.	Old Business
a.	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 OEA, Parcel 0990 Zoning District: R-7A Nature of Request: Amendment to a previously approved Temporary Use Permit to include temporary approval for the addition of a kitchen facility.
4.	New Business
a.	Applicant: Benjamin and Patricia Philips File No.: 2023-0808 Location: 715 Lomas Street Tax Map 103, Grid OEA, Parcel 0866, Lot 85 Zoning District: R-10A Nature of Request: Supplemental Waiver Request of one (1) parking space for a proposed handicap ramp to be located over a portion of the existing driveway.
b.	Applicant: Catherine Joyce File No.: 2023-0803 Location: 228 S. Harrison Street Tax Map 105, Grid OEA, Parcel 2107 Zoning District: R-10A Nature of Request: Site Plan approval to request a parking space waiver.
c.	Applicant: Callahan Signs File No.: 2023-0812 Agent: John Callahan Location: 28464 Marlboro Avenue Tax Map 034, Grid 003, Parcel 0020, Lot 5 Zoning District: PUD Nature of Request: Signage permit approval to allow a business wall sign to occupy one building with a common entrance.
d.	Applicant: Easton Utilities Commission File No.: 2023-0862 Agent: Madeline Selick Barabance Location: 8870 Commerce Drive Tax Map 101, Grid 002, Parcel 004, Lot 9 Zoning District: BC Nature of Request: Sketch Plan and Sketch Stormwater Management approval for a new Water Treatment Plant.
e.	Applicant: Nanna Ventures, LLC File No.: 2023-0883 Agent: Kendrick Daily Location: 22, 30, 38 & 44 Jowite Street Tax Map 104, Grid OEA, Parcels 1369, 1370, 1371, 1372 Zoning District: R-7A, with PRO overlay Request: Site Plan approval to redevelop parcels 1369, 1370, 1371 and 1372, and Sketch Stormwater Management approval for the construction of new residential structures.
6.	Discussion Item
6.	Adjournment.
3018322.SD 4/5/2023	

We Appreciate Your Business!
Thank You Joanne Drummer!



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

Date of Hearing: April 20, 2023

4a

**PLANNING COMMISSION
PUBLIC HEARING
STAFF REPORT**

SUBJECT: 710 Lomax Street – Parking Waiver

ELECTION WARD: Ward 1

CRITICAL ACTION DATE: At the pleasure of the Commission

STAFF CONTACTS: Joseph Mayer, Plan Reviewer
Miguel Salinas, Director of Planning and Zoning

APPLICANT: Benjamin & Patricia Phillips

DOCUMENT CREATED ON: April 13, 2023

PURPOSE: The applicant is seeking a Supplemental Waiver Request of one (1) parking space.

RECOMMENDATION: Staff supports a Planning Commission recommendation of the waiver request subject to the condition that the waiver does not continue with the future sale of the property.

APPLICATION INFORMATION:	
APPLICANT: Benjamin & Patricia Phillips, Owner	REPRESENTATIVE: Patricia Phillips, Owner
PARCELS/ACREAGE:	
Parcel Information	Acreage
Map 103, Grid 0000, Parcel 866, Lot 85	0.193
ACCEPTANCE DATE: April 3, 2023	LOCATION: 710 Lomax Street, Lot 85
EXISTING ZONING R-10A	EXISTING LAND USE: Residential-Single Family.
HISTORIC DISTRICT: Not Applicable	FUTURE LAND USE MAP: Residential

CONTEXT:

Location/Site Access – The subject property is located in the Calvert Terrace Subdivision (platted in April 1963) on the South side of Lomax Street. The site is fronting along Lomax Street and the rear of the property faces Branch Lane.

Existing Conditions – The subject property is currently a residential, single-family home.

Surrounding Properties

- 708 Lomax Street – R-10A
- 709 Lomax Street – R-10A
- 711 Lomax Street – R-10A
- 712 Lomax Street – R-10A
- 713 Lomax Street – R-10A
- 709 Howard Street – R-10A
- 711 Howard Street – R-10A
- 713 Howard Street – R-10A

Figure 1: Vicinity Map



PROPOSAL: The applicant is seeking a Supplemental Waiver Request of one (1) parking space.

BACKGROUND: The applicant received an Inspection Notice on February 27, 2023 for construction without a Building Permit. The Applicant submitted a Residential Application for a Building Permit to the Building Inspection Division on March 3, 2023. They are proposing a handicapped ramp on the rear of the house connected to their existing deck.

ZONING ANALYSIS:

A. Permissible Land Uses

28-201 table 2.1 (1) 106

R-10A

106	Single Family Detached*	P	P	P	P	P	--	--	--	--	--	
-----	-------------------------	---	---	---	---	---	----	----	----	----	----	--

Analysis – The site consists of an existing single family detached dwelling and a driveway roughly ten feet wide by thirty-five feet long. The existing use is 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
	Residential Buildings				
1	Single-Family Detached	2 per du	--	--	

Total Site Parking Required

Single-Family Detached: 2 Spaces per dwelling unit – Minimum
 No maximum spaces required

Easton Zoning Ordinance, Chapter 28 – 1001.2

J. A driveway ten (10) feet wide and thirty-five (35) feet long shall be deemed sufficient parking space, for single family or each unit in a duplex.

Analysis- Off-street parking is required within the R-10A Residential District. The applicant has indicated on the Site Plan that additional existing parking is available along Lomax Street. The existing driveway is located at the rear of the dwelling and accesses Branch Lane. The proposed handicapped ramp encroaches eight feet onto the top portion of the existing driveway, accommodating only one parking space. The staff recommends approval subject to the condition that the waiver does not continue with the future sale of the property.

C. Zoning District Standards

Easton Zoning Ordinance, Chapter 28 – 303.2

The following minimum development standards shall be observed in the R-10A District:

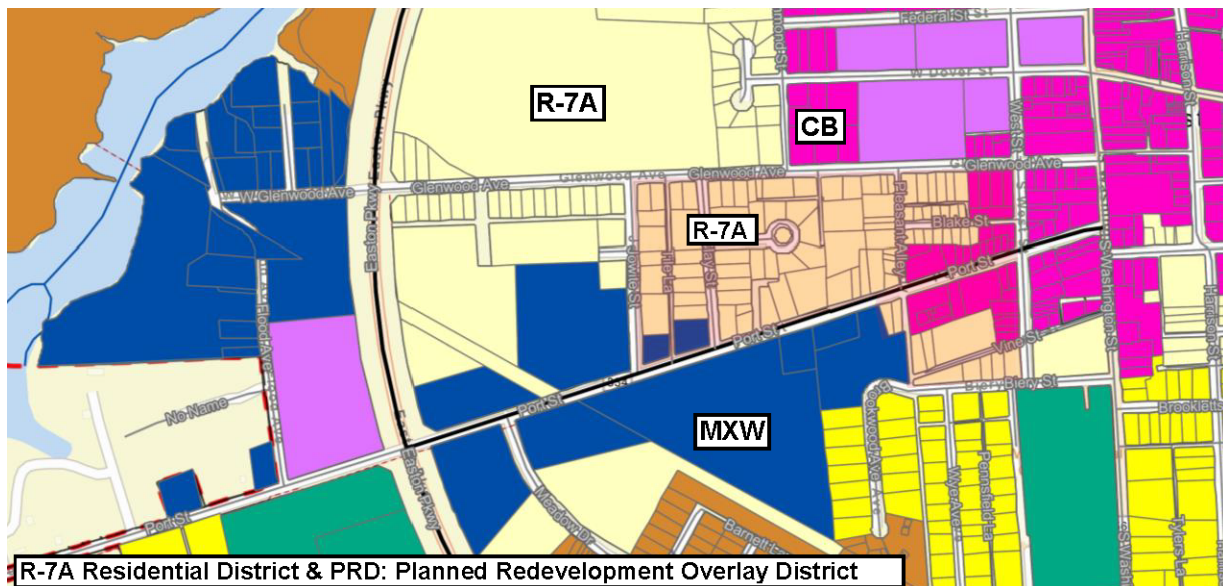
- A. The minimum lot size for all uses shall be 10,000 square feet except as modified below.**
 - 1. Minimum lot sizes – Up to 50% of the lots within an R-10A subdivision may be less than the required minimum lot size. Of these smaller lots, 75% must have a minimum lot size of at least 7,000 square feet.**
 - 2. Lot frontage – Each lot hereinafter established shall have a minimum frontage on a public street or way of thirty-five (35) feet. However, houses served by rear alleys may front directly onto parks or public open space, which shall have perimeter sidewalks**
- B. Off-Street Parking shall be provided for all uses in accordance with the standards of Section 28 – 1001.**
- C. Minimum setbacks for all uses and structures:**
 - 1. Front setback – fifteen (15) feet.**
 - 2. Rear setback – thirty (30) feet.**
 - 3. Side setback – two side setbacks are required of eight (8) feet each**
- D. Height Limitations – thirty-five (35) feet.**

- E. Building Envelope** – All lots shall have a minimum building envelope of fifty-five (55) feet deep by thirty (30) feet wide
- F. Lot coverage** – Within the building envelope 100% of the land area may be covered with buildings or structures. Outside of the building envelope permitted accessory structures may be constructed in accordance with the supplemental standards pertaining to said use. In total, such accessory structures may not occupy more than fifty (50%) percent of the rear yard area. This provision shall not be construed to permit any accessory structures to be located in the established front yard
- G. For single family dwellings** the maximum density permitted in the R-10A district shall be 3.5 dwelling units per acre. A density increase is permitted where the subdivision proposal provides on-site or off-site housing opportunities for low- or moderate-income households, as defined by the Town of Easton Affordable Housing Board. When off-site housing provision is proposed, the Commission shall require evidence that these units will in fact be constructed by a certain date. For each affordable unit provided under this subsection, one additional building lot or dwelling unit shall be permitted, up to a maximum 15% increase in dwelling units. For multi-family dwellings the maximum density shall be five (5) dwelling units per acre. The maximum permitted density for two-family dwellings shall be two (2) du/lot provided said lot is expanded in accordance with Section 28 – 1007.1.A.(9).

Analysis - The site falls under the R-10A Residential District and meets the 28-303.2 Development Standards.

POLICY ANALYSIS:

Figure 2: Zoning Map



RECOMMENDED CONDITION:

1. The staff recommends approval subject to the condition that the waiver does not continue with the future sale of the property. Upon Planning Commission approval, the applicant shall obtain building Permit approval from the Building Inspection Division.

DRAFT MOTIONS:

1. I move that the Planning Commission approve the parking waiver subject to the Conditions of Approval.

OR

2. I move that the Planning Commission forward the application to the May 18th Commission meeting for further discussion.

OR

3. I move an alternate motion.

ATTACHMENT:

1. 2023-04-03 Waiver Request Application, paper copy & PDF
1. 2023-04-03 400' Notice Letter, paper copy & PDF
2. 2023-04-03 Sign Post, paper copy & PDF



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

Supplemental Waiver Request Application

Waiver Request Type

Sidewalk ☐ Parking Spaces ☒ Parking/Aisle Dimension ☐
Landscaping & Buffering ☐ Signage ☐ Other ☐

Project Information

Address	710 Lomax Street, Easton, Maryland 21601						
Tax Map	103	Grid	000EA	Parcel	866	Lot	85
Zoning District	R10A	PC Meeting Date	4/20/2023	Historic District	Yes ☐	No ☒	
Owner or Agent	Benjamin E & Patricia P Phillips						
Mailing Address	710 Lomax Street, Easton, Maryland 21601						
Telephone No.	410-310-0950	Email	poppop21601@gmail.com				

Request Details

Please attach a detailed description of the waiver request(s) being made and the justification(s) for requesting said waiver(s).

The proposed handicap ramp is located over a portion of the existing driveway. A driveway is required to be ten (10') wide and thirty-five feet long for a single family unit. The proposed ramp reduces the the driveway length to twenty-seven feet +/- . There's ample parking along Lomax Street.
A waiver request of one (1) parking space is requested.

☐ Ordinance Section Supporting Waiver Request. **Section 28-1001.2 J**

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

Patricia P. Phillips

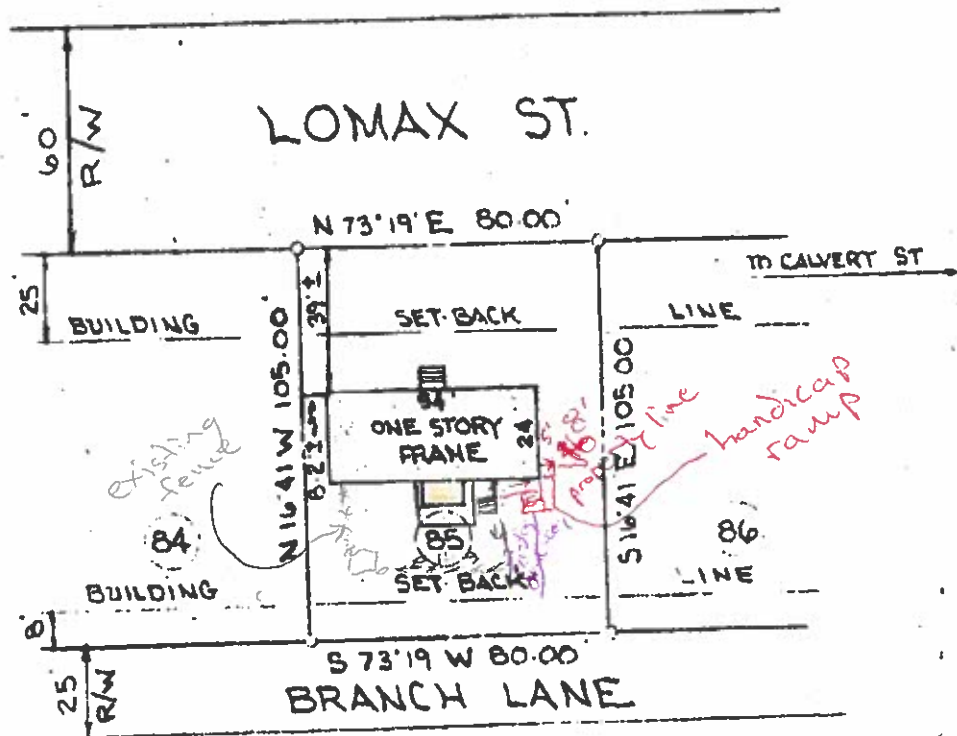
Patricia P. Phillips

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RECEIVED

MAR 29 2023

TOWN OF EASTON



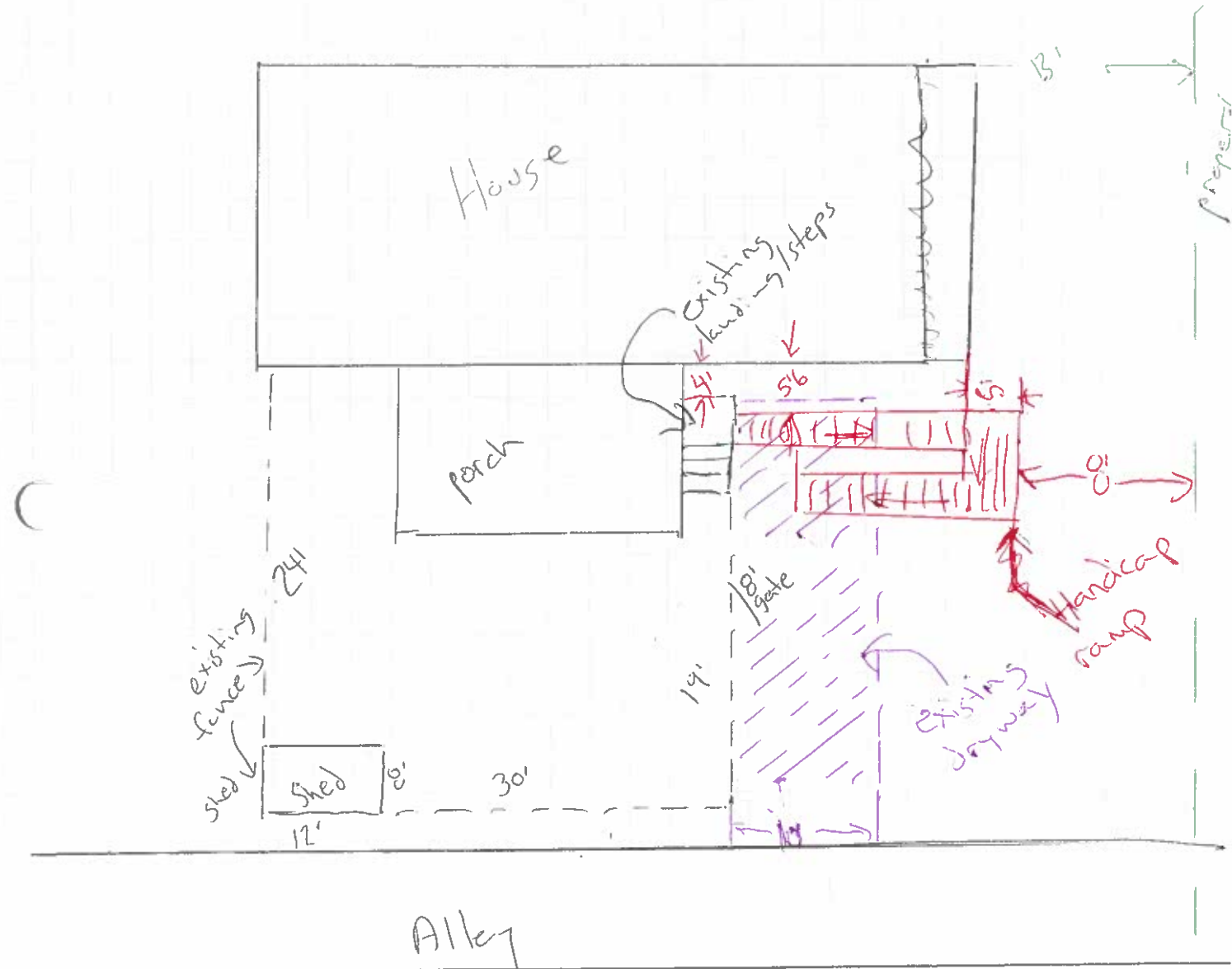
ZONING REVIEW APPROVED
 BY [Signature]
 DATE 8/16/64



THE INFORMATION ON THIS PLAT SHOWS ONLY THAT THE IMPROVEMENTS INDICATED HEREON ARE LOCATED AS SHOWN WITHIN THE OUTLINES OF THE LOT UPON WHICH THEY ARE ERECTED, AND IS NOT TO BE CONSTRUED AS AN ESTABLISHMENT OF PROPERTY LINES.

Scale 1" = 50'	Date 8-30-72	 Frederick Ward Associates, Inc. Consulting Engineers CENTURY BUILDING • 601 AVE. MARYLAND 21201	LOCATION OF EXISTING STRUCTURE LOT 85
Dr. By W C	Ch. By		CALVERT TERRACE
Plat No. A-72	Job No. 165		LOCATED THE TOWN OF EASTON TALBOT COUNTY MARYLAND

710 Lomax St





TOWN OF EASTON

14 South Harrison Street
Easton, Maryland 21601

April 3, 2023

Dear Resident,

The Easton Planning Commission will hold a public meeting on **Thursday, April 20, 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 Waiver Request application for 710 Lomax Street has been filed to request a waiver of one (1) parking space for a proposed handicap ramp to be located over a portion of the existing driveway.

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
410-822-1943 ssmith@eastonMD.gov

Phone: Fax:
<http://www.chespub.com>

Cust. AcctID:	Creation Date: 04/03/23
	Ad Date: 04/05/23
	Class: 10
Name: Joanne Drummer	Ad ID: 3018322
Company: TOWN OF EASTON (L)	Ad Taker: AHALL
Address: PO Box 520	Sales Person: 503
EASTON, MD 21601	Words: 373
	Lines: 70
Telephone: (410) 822-2525	Agate Lines: 324
Email:	Depth: 9.0
Description: Planning Comm Meeting	Inserts: 2
	Blind Box:

Other Charges:	\$0.00	Total:	\$472.50
Discount:	\$0.00		
Surcharge:	\$0.00	Paid Amount:	- \$0.00
Credits:	\$0.00		
Bill Depth:	9.0	Amount Due:	\$472.50

CREDIT CARD DETAILS

PT	CT	CN	Number	Exp.	Amnt.

Publication	Start	Stop	Inserts	Cost
The Star Democrat	04/05/23	04/05/23	1	\$472.50

Sign posted on April 3, 2023

Planning Commission MEETING AGENDA Thursday, April 20, 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 March 16, 2023 meeting.
b.	Approval of the Draft Comprehensive Plan and Zoning Code Workshop Summary from February 2, 2023.
c.	Approval of the Draft Zoning Code Amendment Workshop Summary from March 2, 2023.
3.	Old Business
a.	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 R-7A Zoning District: R-7A Nature of Request: Amendment to a previously approved Temporary Use Permit to include temporary approval for the addition of a kitchen facility.
4.	New Business
a.	Applicant: Benjamin and Patricia Philips File No.: 2023-0908 Location: 715 Lomas Street Tax Map 103, Grid 0EA, Parcel 0866, Lot 85 Zoning District: R-10A Nature of Request: Supplemental Waiver Request of one (1) parking space for a proposed handicap ramp to be located over a portion of the existing driveway.
b.	Applicant: Catherine Joyce File No.: 2023-0903 Location: 220 S. Harrison Street Tax Map 105, Grid 0EA, Parcel 2107 Zoning District: R-10A Nature of Request: Site Plan approval to request a parking space waiver.
c.	Applicant: Callahan Signs File No.: 2023-0912 Agent: John Callahan Location: 28464 Marlboro Avenue Tax Map 03A, Grid 003, Parcel 0020, Lot 5 Zoning District: PUD Nature of Request: Signage permit approval to allow a business wall sign to occupy one building with a common entrance.
d.	Applicant: Easton Utilities Commission File No.: 2023-0982 Agent: Madeline Selick Barabance Location: 8870 Commerce Drive Tax Map 101, Grid 002, Parcel 004, Lot 9 Zoning District: BC Nature of Request: Sketch Plan and Sketch Stormwater Management approval for a new Water Treatment Plant.
e.	Applicant: Nanna Ventures, LLC File No.: 2023-0983 Agent: Kendrick Daily Location: 22, 30, 38 & 44 Jowle Street Tax Map 104, Grid 0EA, Parcels 1369, 1370, 1371, 1372 Zoning District: R-7A, with PRO overlay Request: Site Plan approval to redevelop parcels 1369, 1370, 1371 and 1372, and Sketch Stormwater Management approval for the construction of new residential structures.
6.	Discussion Item
6.	Adjournment.

Ad Note:

Customer Note:

We Appreciate Your Business!
Thank You Joanne Drummer!



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

Date of Hearing: April 20, 2023

4b

**PLANNING COMMISSION
PUBLIC HEARING
STAFF REPORT**

DATE: April 12, 2023

SUBJECT: 220 S. Harrison Street – Parking Waiver

ELECTION WARD: Ward 2

CRITICAL ACTION DATE: At the pleasure of the Commission

STAFF CONTACTS: Joseph Mayer, Plan Reviewer
Miguel Salinas, Director of Planning and Zoning

APPLICANT: Catherine Joyce

DOCUMENT CREATED ON: April 12, 2023

PURPOSE: The applicant is seeking a Supplemental Waiver Request of two (2) parking spaces. However, there is an accessory dwelling unit within the existing single-family dwelling, requiring a total of three parking spaces. The applicant proposes one parallel parking space at the proposed garage.

RECOMMENDATION: Staff supports a Planning Commission recommendation of the waiver request subject to the condition that the waiver be modified to request all three parking spaces (see below).

APPLICATION INFORMATION:	
APPLICANT: Catherine Joyce, Owner	REPRESENTATIVE: Catherine Joyce, Owner
PARCELS/ACREAGE:	
Parcel Information	Acreage
Map 105, Grid 0000, Parcel 2107	0.40
ACCEPTANCE DATE: April 3, 2023	LOCATION: 220 S. Harrison Street
EXISTING ZONING R-10A, HD	EXISTING LAND USE: Residential-Single Family.
HISTORIC DISTRICT: Applicable	FUTURE LAND USE MAP: Residential

CONTEXT:

Location/Site Access – The subject property is located on the East side of Harrison Street. The site is fronting along Harrison Street and the rear of the property faces Wilson Lane.

Existing Conditions – The subject property is currently a residential, single-family home built around 1920.

Surrounding Properties

- 218 S. Harrison Street – R-10A
- 219 S. Harrison Street – R-10A
- 221 S. Harrison Street – R-10A
- 300 S. Harrison Street – R-10A
- 301 S. Harrison Street – R-10A
- 303 S. Harrison Street – R-10A
- 106 E. Earl Avenue – R-10A
- 107 E. Earl Avenue – R-10A
- 221 S. Hanson Street – R-10A

Figure 1: Vicinity Map



PROPOSAL: The applicant is seeking a Supplemental Waiver Request of two (2) parking spaces.

BACKGROUND: This Applicant submitted a Residential Application for a Building Permit to the Building Inspection Division on December 5, 2022. The applicant received Historic District Commission approval on January 9, 2023 for their renovations and addition.

ZONING ANALYSIS:

A. Permissible Land Uses

28-201 table 2.1 (1) 106

R-10A

106	Single Family Detached*	P	P	P	P	P	--	--	--	--	--	
-----	-------------------------	---	---	---	---	---	----	----	----	----	----	--

28-201 table 2.1 (1) 101

R-10A

101	Accessory Dwelling Unit *	SE	SE	SE	--	SE	--	--	--	--	--	
-----	---------------------------	----	----	----	----	----	----	----	----	----	----	--

Analysis – The site consists of an existing single family detached dwelling. They have proposed a parallel driveway in front of the proposed one-car garage. The existing use is permitted within Table 2.1 Table of Permissible Uses. Please note, Special Exception #SE-757 for the Accessory Dwelling Unit was granted/filed on April 01, 2021.

B. Off-Street Parking

28-1001.3 Parking Requirements

	Use/Activity	Minimum Vehicle Spaces	Maximum Vehicle Spaces	Minimum Bicycle Spaces	Notes
	Residential Buildings				
1	Single-Family Detached	2 per du	--	--	

Single-Family Detached: 2 Spaces per dwelling unit – Minimum
 No maximum paces required

Accessory Dwelling Unit: 1 Space per dwelling unit

Analysis - There are three required parking spaces. The applicant is requesting a waiver of two parking spaces and proposes to include one off-site parallel parking space at the proposed garage and adjacent to the alley.

C. Development Standards

1. Easton Zoning Ordinance, Chapter 28 – 1001.2

A driveway ten (10) feet wide and thirty-five (35) feet long shall be deemed sufficient parking space, for single family or each unit in a duplex.

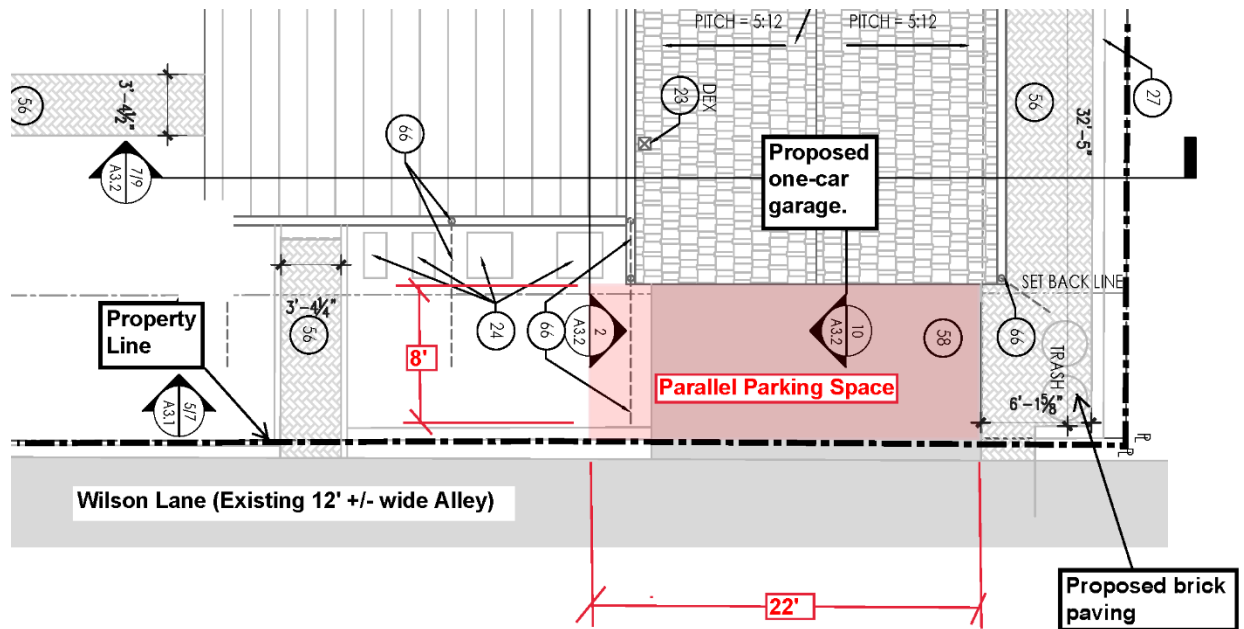
2. Easton Zoning Ordinance, Chapter 28 – 1007.1 (1)

Granny Flat/Accessory Dwelling Unit: One additional off-street parking space shall be provided for the granny flat.

3. Easton Zoning Ordinance, Chapter 28-1001.2Table 10.1

Angle	Minimum Stall Width (W)	Minimum Stall Length (L)	(Minimum Aisle Width Maneuvering Space) (A)
90°	9 feet	18 feet **	24 feet
60°	9 feet	18 feet **	18 feet one-way 22 feet two-way
45°	9 feet	18 feet **	16 feet one-way 22 feet two-way
30°	9 feet	18 feet **	14 feet one-way 22 feet two-way
Parallel	8 feet	22 feet	16 feet one-way 22 feet two-way

**** - Vehicle Overhang:** Up to two (2) feet of vehicle overhang into any planter area is allowed provided the planter is a minimum of six feet wide, in this situation the minimum required depth of the parking stall may be reduced by up to two 2 feet When utilizing this option, curbing shall be utilized at the edge of the paved area, rather than wheel stops.





Analysis- Three off-street parking spaces are required for a single-family dwelling and accessory dwelling unit (staff notes that parking inside a garage cannot be included in the off-site parking

calculations). However, additional on-street parking is available along E. Earl Street for all three required parking spaces. The Town's development standards (Easton Zoning Ordinance, Chapter 28-1001.2, Table 10.1) require the aisle width to be a minimum of sixteen feet for a one-way aisle and twenty-two feet for a two-way aisle for parallel parking. The existing aisle width for Wilson Lane is approximately twelve feet +/- . The proposed parallel parking space would not provide enough maneuverability to allow the vehicle doors to open. Staff would have no objection if all three parking spaces were waived. A staff site inspection demonstrates there is adequate parking along East Earle Avenue. . With this being said, the adjacent property is using space in front of their alley garage as a parallel parking space, as depicted above.

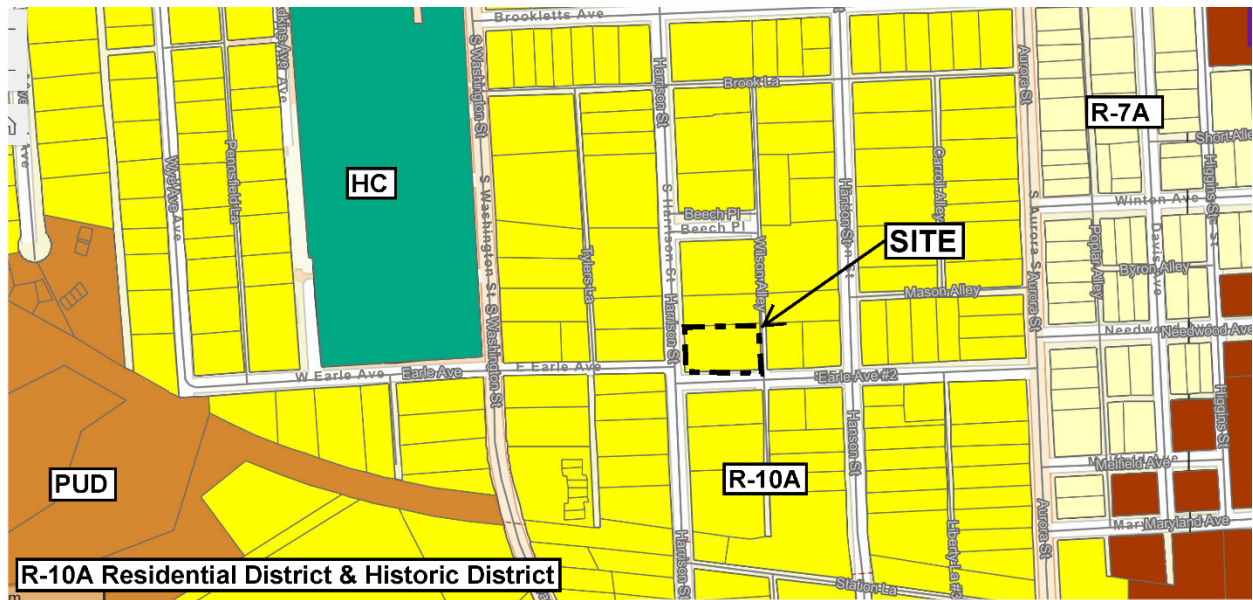
4. Easton Zoning Ordinance, Chapter 28 – 303.2

The following minimum development standards shall be observed in the R-10A District:

- A. The minimum lot size for all uses shall be 10,000 square feet except as modified below.*
 - 1. Minimum lot sizes – Up to 50% of the lots within an R-10A subdivision may be less than the required minimum lot size. Of these smaller lots, 75% must have a minimum lot size of at least 7,000 square feet.*
 - 2. Lot frontage – Each lot hereinafter established shall have a minimum frontage on a public street or way of thirty-five (35) feet. However, houses served by rear alleys may front directly onto parks or public open space, which shall have perimeter sidewalks*
- B. Off-Street Parking shall be provided for all uses in accordance with the standards of Section 28 – 1001.*
- C. Minimum setbacks for all uses and structures:*
 - 1. Front setback – fifteen (15) feet.*
 - 2. Rear setback – thirty (30) feet.*
 - 3. Side setback – two side setbacks are required of eight (8) feet each*
- D. Height Limitations – thirty-five (35) feet.*
- E. Building Envelope – All lots shall have a minimum building envelope of fifty-five (55) feet deep by thirty (30) feet wide*
- F. Lot coverage – Within the building envelope 100% of the land area may be covered with buildings or structures. Outside of the building envelope permitted accessory structures may be constructed in accordance with the supplemental standards pertaining to said use. In total, such accessory structures may not occupy more than fifty (50%) percent of the rear yard area. This provision shall not be construed to permit any accessory structures to be located in the established front yard*
- G. For single family dwellings the maximum density permitted in the R-10A district shall be 3.5 dwelling units per acre. A density increase is permitted where the subdivision proposal provides on-site or off-site housing opportunities for low- or moderate-income households, as defined by the Town of Easton Affordable Housing Board. When off-site housing provision is proposed, the Commission shall require evidence that these units will in fact be constructed by a certain date. For each affordable unit provided under this subsection, one additional building lot or dwelling unit shall be permitted, up to a maximum 15% increase in dwelling units. For multi-family dwellings the maximum density shall be five (5) dwelling units per acre. The maximum permitted density for two-family dwellings shall be two (2) du/lot provided said lot is expanded in accordance with Section 28 – 1007.1.A.(9).*

Analysis - The site falls under the R-10A Residential District and meets the 28-303.2 Development Standards.

Figure 2: Zoning Map



RECOMMENDED CONDITION:

1. The staff recommends approval of the waiver with the condition that the request be revised to three parking spaces.

DRAFT MOTIONS:

1. I move that the Planning Commission approve the parking waiver subject to the Conditions of Approval.

OR

2. I move that the Planning Commission forward the application to the May 18th Commission meeting for further discussion.

OR

1. I move an alternate motion.

ATTACHMENT:

1. 2023-03-24 PC Application 220 S. Harrison Street, paper copy & PDF
2. 2023-04-03 400' Notice Letter
3. 2023-04-03 Sign Posting
4. 2023-04-04 Revised planning Commission Agenda for 2023.04.20



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

Supplemental Waiver Request Application

Waiver Request Type

Sidewalk ☐ Parking Spaces ☒ Parking/Aisle Dimension ☐
 Landscaping & Buffering ☐ Signage ☐ Other ☐

Project Information

Address 220 S. Harrison Street Easton MD 21601
 Tax Map 105 Grid EA Parcel 2107 Lot 000
 Zoning District R-10A PC Meeting Date 04/20/2023 Historic District Yes ☐ No ☐
 Owner or Agent Catherine Joyce
 Mailing Address 220 S. Harrison Street Easton MD 21601
 Telephone No. 703 801 2844 Email Catherine.joyce@gmail.com

Request Details

Please attach a detailed description of the waiver request(s) being made and the justification(s) for requesting said waiver(s).

Approved BOZA Application # SE-757, for continuation of Dranny Hat granted 11/19/13
 Given approval above and current remodel, I am requesting variance
 for 2 parking spaces. The third space can be parallel with adjacent alley (see
 Exhibit 1). Also, there is ample street parking on side street E. Earle Ave as my lot
 is on corner (see Exhibit 2). See exhibit 3 for example of neighbor parallel space
 along garage. Neither streets (Earle or Harrison) are congested with cars.

☐ Ordinance Section Supporting Waiver Request.

Sect. 28-1007.1.7(b)

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

Catherine Joyce
3/23/23
Catherine Joyce

Review Fee Amount: \$250.00

File No.: 2023-0903

Planning Commission

Meeting Date: 04/20/2023

RECEIVED

MAR 24 2023

TOWN OF EASTON

EAST EARLE AVENUE

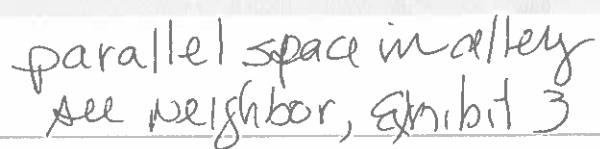
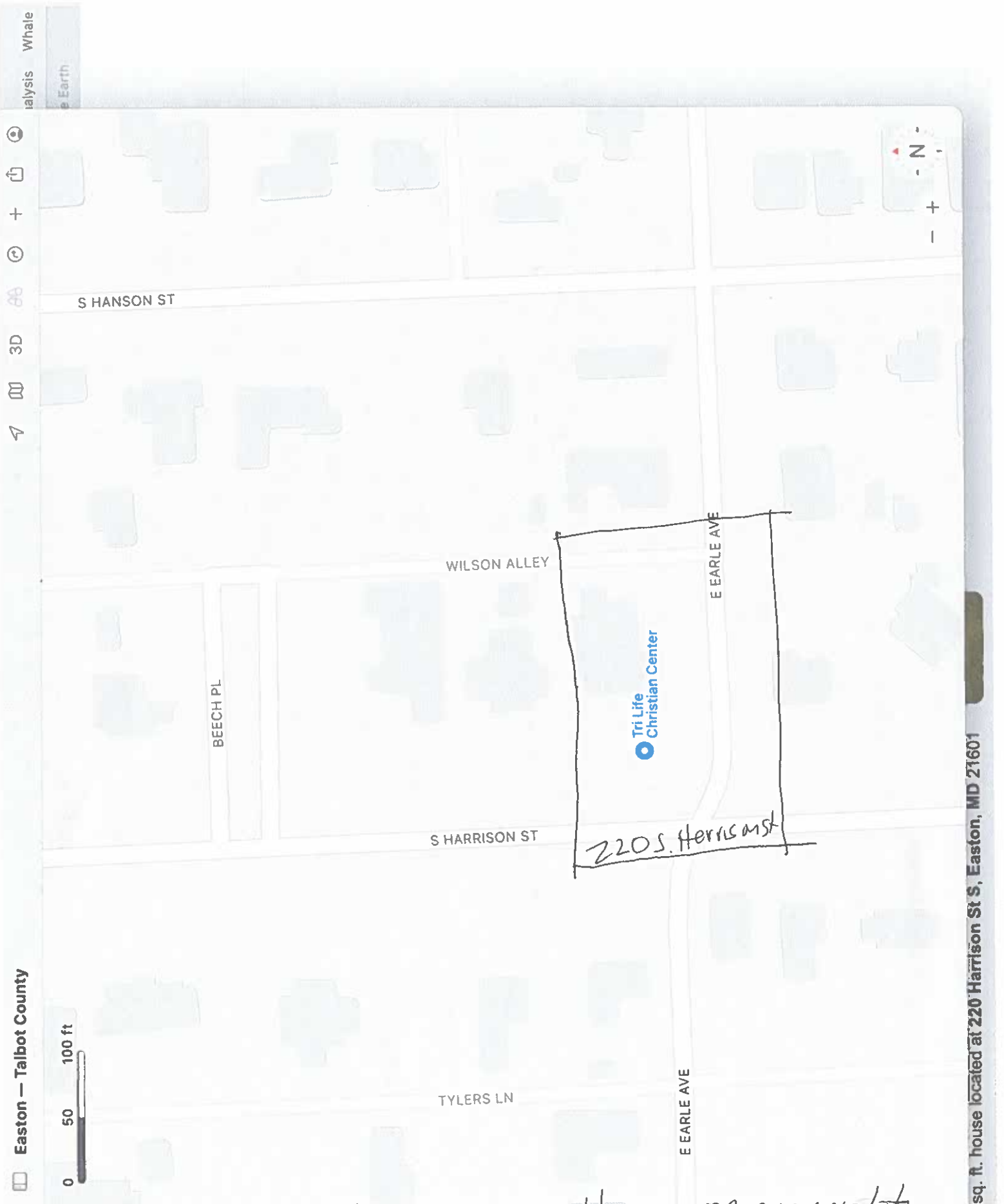


Exhibit Z



NO Christian Life Center
@ this address

- House on corner lot
- Ample parking on E. Earle Ave

Exhibit 3

From: Catherine Joyce catherine.joyce01@gmail.com
Subject: alley
Date: March 22, 2023 at 8:43 AM
To: Catherine Joyce catherine.joyce01@gmail.com





TOWN OF EASTON

14 South Harrison Street
Easton, Maryland 21601

April 3 2023

Dear Resident,

The Easton Planning Commission will hold a public meeting on **Thursday, April 20, 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 220 S. Harrison Street has been filed for Site Plan approval to request a parking space waiver.

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
410-822-1943 ssmith@eastonMD.gov

Phone: Fax:
<http://www.chespub.com>

Cust. AcctID:	Creation Date: 04/03/23
	Ad Date: 04/05/23
	Class: 10
Name: Joanne Drummer	Ad ID: 3018322
Company: TOWN OF EASTON (L)	Ad Taker: AHALL
Address: PO Box 520	Sales Person: 503
EASTON, MD 21601	Words: 373
	Lines: 70
Telephone: (410) 822-2525	Agate Lines: 324
Email:	Depth: 9.0
Description: Planning Comm Meeting	Inserts: 2
	Blind Box:

Other Charges:	\$0.00	Total:	\$472.50
Discount:	\$0.00		
Surcharge:	\$0.00	Paid Amount:	- \$0.00
Credits:	\$0.00		
Bill Depth:	9.0	Amount Due:	\$472.50

CREDIT CARD DETAILS

PT	CT	CN	Number	Exp.	Amnt.

Publication	Start	Stop	Inserts	Cost
The Star Democrat	04/05/23	04/05/23	1	\$472.50

Sign posted on April 3, 2023



Ad Note:

Customer Note:

Planning Commission MEETING AGENDA Thursday, April 20, 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 March 16, 2023 meeting.
b.	Approval of the Draft Comprehensive Plan and Zoning Code Workshop Summary from February 2, 2023.
c.	Approval of the Draft Zoning Code Amendment Workshop Summary from March 2, 2023.
3.	Old Business
a.	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 OEA, Parcel 0990 Zoning District: R-7A Nature of Request: Amendment to a previously approved Temporary Use Permit to include temporary approval for the addition of a kitchen facility.
4.	New Business
a.	Applicant: Benjamin and Patricia Philips File No.: 2023-0908 Location: 715 Lomas Street Tax Map 103, Grid OEA, Parcel 0866, Lot 85 Zoning District: R-10A Nature of Request: Supplemental Waiver Request of one (1) parking space for a proposed handicap ramp to be located over a portion of the existing driveway.
b.	Applicant: Catherine Joyce File No.: 2023-0903 Location: 220 S. Harrison Street Tax Map 105, Grid OEA, Parcel 2107 Zoning District: R-10A Nature of Request: Site Plan approval to request a parking space waiver.
c.	Applicant: Callahan Signs File No.: 2023-0912 Agent: John Callahan Location: 28464 Marlboro Avenue Tax Map 034, Grid 003, Parcel 0020, Lot 5 Zoning District: PLO Nature of Request: Signage permit approval to allow a business wall sign to occupy one building with a common entrance.
d.	Applicant: Easton Utilities Commission File No.: 2023-0982 Agent: Madeline Selick Barabance Location: 8870 Commerce Drive Tax Map 101, Grid 002, Parcel 004, Lot 9 Zoning District: BC Nature of Request: Sketch Plan and Sketch Stormwater Management approval for a new Water Treatment Plant.
e.	Applicant: Nanna Ventures, LLC File No.: 2023-0983 Agent: Kendrick Daly Location: 22, 30, 38 & 44 Jowile Street Tax Map 104, Grid OEA, Parcels 1369, 1370, 1371, 1372 Zoning District: R-7A, with PRO overlay Request: Site Plan approval to redevelop parcels 1369, 1370, 1371 and 1372, and Sketch Stormwater Management approval for the construction of new residential structures.
6.	Discussion Item
6.	Adjournment.

We Appreciate Your Business!
Thank You Joanne Drummer!



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

Date of Hearing: April 20, 2023

4c

**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 28464 Marlboro Avenue

ELECTION WARD(S): Ward 1

CRITICAL ACTION DATE: At the pleasure of the Commission

STAFF CONTACTS: Joseph Mayer, Plan Reviewer
Miguel Salinas, Director of Planning and Zoning

APPLICANT: Callahan Signs

DOCUMENT CREATED ON: April 13, 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 one condition (see below).

APPLICATION INFORMATION:	
APPLICANT: Callahan Signs 410-422-9331	REPRESENTATIVE: Callahan Signs c/o John Callahan
PARCELS/ACREAGE:	
Parcel Information	Acreage
Map 034, Grid 003EA, Parcel 0020, Lot 5	7.39
ACCEPTANCE DATE: March 31, 2023	LOCATION: 28464 Marlboro Avenue
EXISTING ZONING PUD	EXISTING LAND USE: Office Building
HISTORIC DISTRICT: Not Applicable	FUTURE LAND USE MAP: Mixed Use – Commercial/Residential

CONTEXT:

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

Existing Conditions – The subject property is currently an office building located within the Waterside Village-PUD.

Surrounding Properties

- 8600 Brooks Drive –BC
- 28528 Marlboro Avenue – PUD
- 28601 Marlboro Avenue – PUD
- 28438 Marlboro Avenue – PUD
- Tax Map 34, Grid 0003, Parcel 20 – Forest Conservation

Figure 1: Vicinity Map



PROPOSAL: The applicant is proposing two 48" x 96" signs for Axis Geospatial and Avon Dixon Insurance Agency at the south side of the building facing Target. 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 will submit a Signage Application to the Easton Building Inspection Division pending the outcome of the Planning Commission Meeting.

OUTSTANDING ISSUES: None

ZONING ANALYSIS:

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

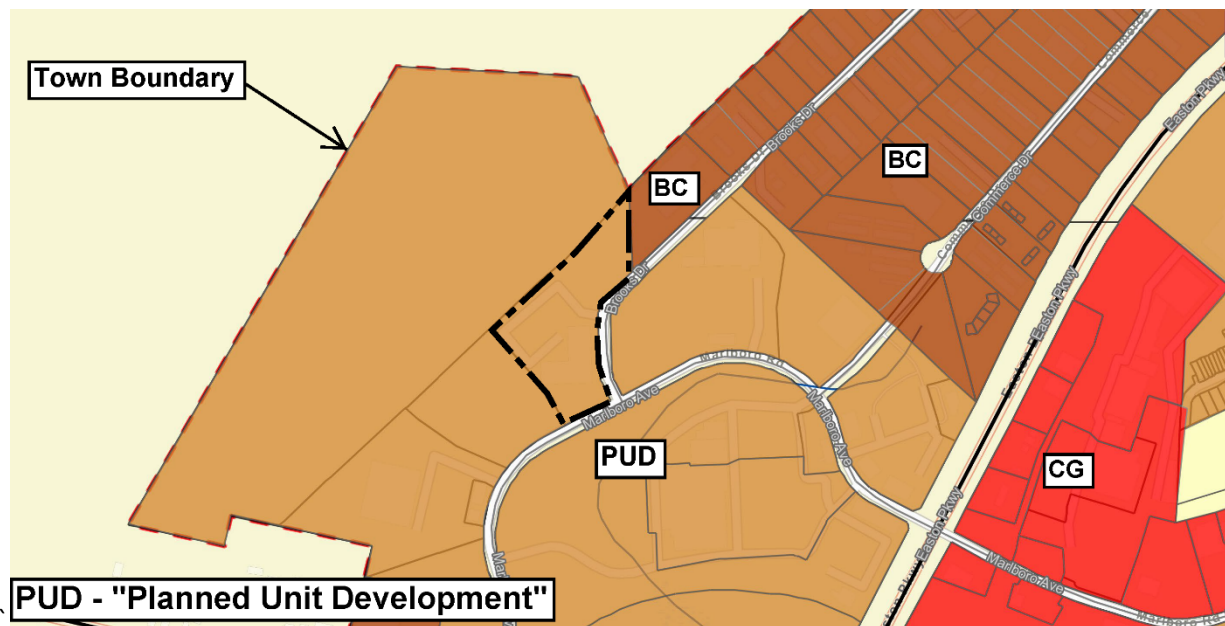
e.7 When two (2) or more businesses occupy one (1) building with common entrances (i.e. without separate entrances) the permitted wall signage shall be approved by the Planning and Zoning Commission during the site plan review process, or as an item from staff by the Planning and Zoning Commission if 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 the Town 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 CONDITION:

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 May 18, 2023 Commission meeting for further discussion.

OR

3. I move an alternate motion.

ATTACHMENTS:

1. 2023-03-31 Application, paper copy & PDF
2. 2023-04-03 Sign Detail, paper copy & PDF
3. 2023-03-30 Landlord Signage Permission, paper copy & PDF
4. 2023-04-03 400' Notice Letter, paper copy & PDF
5. 2023-04-03 Revised Planning Commission Agenda for 2023.04.03, paper copy & PDF
6. 2023-04-03 Sign Posting, 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	
Area of Disturbance		Number of Dwelling Units	
Property Size	Acres	7.39	Square Feet
Address	28464 Marlboro Ave		
Tax Map	0034	Grid	0003
		Parcel	0020
		Lot	5
Zoning District	PUD	Historic District	Y ☐ N ☒
		PRD	Y ☐ N ☒
Other Information			
Existing Use			

Owner

Name	Easton Emerald LLC	
Mailing Address	3462 77th Pl, Mercer Island, WA 98040	
Telephone No.		Email

Applicant / Agent

Name	John Callahan/Callahan Signs	
Mailing Address	511 Hollyday st, Easton, MD 21601	
Telephone No.	410.422.9331	Email
		jcallahansigns@gmail.com

General Information:

Axis Geospatial and Avon Dixon are renting a wing of the Qlarant building. There is a single entrance to the building. They currently have no exterior signage to indicate that they are located at this new location and there is confusion among their clients about where their office is. The request is for signage to go up on building with measurements, as pictured.

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 3/30/23

Printed Name of Applicant or Agent

John Callahan / Callahan Signs

For Office Use Only

Planned Commission Meeting Date	04/20/2023	
Review Fee Amount	\$250.00	
Review Fee Paid Date	03/31/2003	Application No.: 2023-0912
ESDR Y / N	Date	

Revised 02-2019



March 30, 2023

Dear Sir/Madam

Qlarant, Inc., a tenant at 28464 Marlboro Ave. in Easton has sublet portions of the building to Avon Dixon Insurance and Axis Geospatial, LLC. Please be advised that Qlarant hereby approves the installation of signage in accordance with the rendering below on the southwest corner of the building along Marlboro Avenue.



Regards,

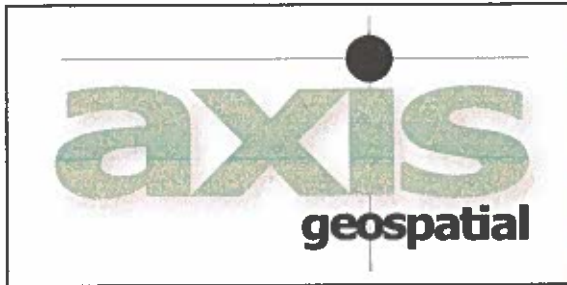
A handwritten signature in black ink that reads "Richie Gaines".

Richie Gaines
Director, Facilities & Administrative Services

South side of building facing Target

36 sqft each

4' x 8'



4' x 8'





TOWN OF EASTON

14 South Harrison Street
Easton, Maryland 21601

April 3, 2023

Dear Resident,

The Easton Planning Commission will hold a public meeting on **Thursday, April 20, 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 28464 Marlboro Avenue has been filed to request approval for a signage permit to allow a business wall sign to occupy one building with a common entrance.

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
410-822-1943 ssmith@eastonMD.gov

Phone: Fax:
<http://www.chespub.com>

Cust. AcctID:	Creation Date: 04/03/23
	Ad Date: 04/05/23
	Class: 10
Name: Joanne Drummer	Ad ID: 3018322
Company: TOWN OF EASTON (L)	Ad Taker: AHALL
Address: PO Box 520	Sales Person: 503
EASTON, MD 21601	Words: 373
	Lines: 70
Telephone: (410) 822-2525	Agate Lines: 324
Email:	Depth: 9.0
Description: Planning Comm Meeting	Inserts: 2
	Blind Box:

Other Charges:	\$0.00	Total:	\$472.50
Discount:	\$0.00		
Surcharge:	\$0.00	Paid Amount:	- \$0.00
Credits:	\$0.00		
Bill Depth:	9.0	Amount Due:	\$472.50

CREDIT CARD DETAILS

PT	CT	CN	Number	Exp.	Amnt.

Publication	Start	Stop	Inserts	Cost
The Star Democrat	04/05/23	04/05/23	1	\$472.50



Sign posted on April 4, 2023

Ad Note:

Customer Note:

Planning Commission MEETING AGENDA Thursday, April 20, 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 March 16, 2023 meeting.
b.	Approval of the Draft Comprehensive Plan and Zoning Code Workshop Summary from February 2, 2023.
c.	Approval of the Draft Zoning Code Amendment Workshop Summary from March 2, 2023.
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a.	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 OEA, Parcel 0990 Zoning District: R-7A Nature of Request: Amendment to a previously approved Temporary Use Permit to include temporary approval for the addition of a kitchen facility.
4.	New Business
a.	Applicant: Benjamin and Patricia Philips File No.: 2023-0908 Location: 715 Lomas Street Tax Map 103, Grid OEA, Parcel 0866, Lot 85 Zoning District: R-10A Nature of Request: Supplemental Waiver Request of one (1) parking space for a proposed handicap ramp to be located over a portion of the existing driveway.
b.	Applicant: Catherine Joyce File No.: 2023-0903 Location: 228 S. Harrison Street Tax Map 105, Grid OEA, Parcel 2107 Zoning District: R-10A Nature of Request: Site Plan approval to request a parking space waiver.
c.	Applicant: Callahan Signs File No.: 2023-0912 Agent: John Callahan Location: 28464 Marlboro Avenue Tax Map 03A, Grid 003, Parcel 0020, Lot 5 Zoning District: PUD Nature of Request: Signage permit approval to allow a business wall sign to occupy one building with a common entrance.
d.	Applicant: Easton Utilities Commission File No.: 2023-0902 Agent: Madeline Selick Barabance Location: 8870 Commerce Drive Tax Map 101, Grid 002, Parcel 004, Lot 9 Zoning District: BC Nature of Request: Sketch Plan and Sketch Stormwater Management approval for a new Water Treatment Plant.
e.	Applicant: Nanna Ventures, LLC File No.: 2023-0903 Agent: Kendrick Daly Location: 22, 30, 38 & 44 Jowile Street Tax Map 104, Grid OEA, Parcels 1369, 1370, 1371, 1372 Zoning District: R-7A, with PRO overlay Request: Site Plan approval to redevelop parcels 1369, 1370, 1371 and 1372, and Sketch Stormwater Management approval for the construction of new residential structures.
6.	Discussion Item
6.	Adjournment.

We Appreciate Your Business!
Thank You Joanne Drummer!



TOWN OF EASTON

14 South Harrison Street
Easton, Maryland 21601

April 3, 2023

Dear Resident,

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This letter is sent to inform you that an application for 8670 Commerce Drive has been filed to request Sketch Site Plan and Sketch Stormwater Management approval for a new Water Treatment Plant.

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
410-822-1943 ssmith@eastonMD.gov



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

Date of Hearing: April 20, 2023

4e

**PLANNING COMMISSION
PUBLIC HEARING
STAFF REPORT**

SUBJECT: 22, 30, 36 & 44 Jowite Street-Naima Phase II

ELECTION WARD: Ward 4

CRITICAL ACTION DATE: At the pleasure of the Commission

STAFF CONTACTS: Joseph Mayer, Plan Reviewer
Miguel Salinas, Director of Planning and Zoning

APPLICANT: Mistletoe Drive, LLC

DOCUMENT CREATED ON: April 13, 2023

PURPOSE: The applicant is seeking site plan approval from the Planning Commission, which also includes a deviation from the landscaping & buffering requirements through a waiver request.

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

APPLICATION INFORMATION:	
APPLICANT: Naima Ventures, LLC	REPRESENTATIVE: Rauch, Inc.: Brian Fitzgerald & Paul Rogers Naima Ventures, LLC: Kendrick Daly
PARCELS/ACREAGE:	
Parcel Information	Acreage
Map 104, Grid 0000, Parcel 1369-1372	1.323
ACCEPTANCE DATE: April 3, 2023	LOCATION: 22,30,36 & 44 Jowite Street
EXISTING ZONING R-7A & PRD Overlay	EXISTING LAND USE: Residential-Middle Housing
HISTORIC DISTRICT: Not Applicable	FUTURE LAND USE MAP: Residential

CONTEXT:

Location/Site Access – The subject property is located on the East side of Jowite Street. The site is fronting along Jowite Street and the rear of the property faces Tile Lane.

Existing Conditions – The subject property is currently residential, middle housing.

Surrounding Properties

- 20 Jowite Street – R-7A
- 19 Clay Street – R-7A
- 35 Clay Street – R-7A
- 43 Clay Street – R-7A
- 51 Clay Street – R-7A
- 401 Port Street – MXW
- 56 Jowite Street – MXW
- 51 Jowite Street – MXW
- 31 Jowite Street – R-7A
- 21 Jowite Street – R-7A

Figure 1: Vicinity Map



PROPOSAL: The applicant is proposing to construct eight (8) two-story middle housing mansion apartments with a total of fifty-two (52) units with associated parking, stormwater management facilities and landscaping. The applicant is requesting a landscaping and buffering waiver from the requirement in Section 28-1014.6.B.1.b for one tree/island. The request would enable one additional parking space.

The site is located on a previously developed area covered by impervious surface; existing walks, driveways and homes. In addition, the site is within the priority funding area. Therefore, the applicant is seeking an exemption of forest conservation requirement from Article III of the Town's *Forest Conservation Ordinance Section 31-3.2.O; an activity on a previously area covered by impervious surface and located in the priority funding area*. The site is zoned R-7A and is within the Planned Redevelopment Overlay District area allowing a maximum density of 40 units per gross residential acre. The proposed density is 39.3 units per acre.

BACKGROUND: The applicant submitted an application to the Easton Staff Development Review Committee on March 29, 2023. Naima Phase II is a continuation of the previously approved Naima Project Phase I located on Clay Street.

ZONING ANALYSIS:

A. Permissible Land Uses

28-201 table 2.1 (1) 103.7 R-7A

103.7	Mansion Apartment*	--	SE	SE	--	SE	--	--	--	--	--	
-------	--------------------	----	----	----	----	----	----	----	----	----	----	--

Analysis –The proposed project is presented and described by the Applicant as Mansion Apartments located in the R-7A Zoning District and Planned Redevelopment Overlay District Area which allows a maximum density of 40 units per gross residential acre. The proposed density is 39.3 units per acre. The proposed use is permitted by special exception in the R-7A zoning district within Table 2.1 Table of Permissible Uses. However, uses allowed in base residential zoning districts are permitted under the Planned Redevelopment Overlay District process for new infill. In addition, middle housing types are exempt from their applicable supplemental design standards.

B. Off-Street Parking

28-1001.3 Parking Requirements

	Use/Activity	Minimum Vehicle Spaces	Maximum Vehicle Spaces	Minimum Bicycle Spaces	Notes
	Residential Buildings				
3	Any Middle Housing Type (except single-family attached/Townhome)	0.75 per du	1.0 per du		

Total Site Parking Required:

Middle Housing: 0.75 Space per dwelling unit required-Minimum
 52 units x 0.75 = 39 spaces required-Minimum
 1 Space per dwelling unit required-Maximum
 52 units x 1 = 52 spaces required-Maximum
Total spaces provided: 38

Analysis- Off-street parking is not required within the Planned Redevelopment Overlay District. However, the adequacy of the parking relative to the proposed use of Mansion Apartments needs to be evaluated. The applicant has provided thirty-eight (38) off-street parking spaces along Tile Lane. Please note, the applicant only needs one additional off-street parking space to meet the requirement of thirty-eight (38) spaces. There's also additional on-street parking along Jowite and Clay Street.

Staff recommends approval of the landscape requirement for internal parking that requires no more than ten parking spaces to form an uninterrupted row. The waiver is needed to provide a row of fourteen (14) continuous spaces proposed along Tile Lane. The Planning Commission needs to determine if the applicant has provided adequate parking for the proposed use.

C. PR District Development Standards

For new infill development projects, the setback, lot size, lot coverage, height, and yard requirements shall be established for each individual project by the Planning and Zoning Commission. In establishing these requirements the Planning and Zoning Commission shall consider such factors as the proposed intensity of the project and the existing character of the neighborhood.

Table 1. Development Standards		
R-7A Zoning District	Standard	Proposed
Setbacks	Front = 15 feet Side - 8 feet Rear = 25 feet	Front = 5 feet Side - 5 feet Rear = 15 feet
Lot Size (min.)	7,500 square feet	7,200 square feet
Lot Frontage (min.)	30 feet	60 feet
Building Envelope (min.)	60 feet x 30 feet	100 feet X 50 feet
Lot Coverage (max.)	100% (Building Envelope) 50% (Rear Yard)	100% (Building Envelope) 0% (Rear Yard)
Height (max.)	35 feet	35 feet
Bufferyard	Not required	Not required

Development within the Planned Redevelopment Overlay District shall also meet these additional requirements:

- 1. The area proposed for a planned redevelopment shall be in one (1) ownership, or, if in several ownerships, the proposal shall be filed jointly by all the owners of the property included in the development plan.*
- 2. The site shall be of a configuration suitable for the development proposed*
- 3. Public water and sewerage shall be available.*
- 4. The site shall be located adjacent to adequate transportation facilities capable of serving existing traffic and that expected to be generated by the proposed development.*
- 5. The overall residential density of a Planned Redevelopment project shall not exceed forty (40) units per gross residential acre. For the purposes of this subsection, the gross residential area shall include all land within the area intended to be used for residences, residential parking space, and reservation for community recreation and education facilities. Any land mapped as floodway by the Federal Emergency Management Agency, and non-residential uses shall be excluded in computing the gross area. The Planning and Zoning Commission may require a lower density if review of the proposed development indicates that the maximum allowable density is*

excessive for the surrounding area.

- 6. Off-street parking is not required for projects proposed in the Planned Redevelopment Overlay District, although adequacy of parking may be a consideration of site plan review.**
- 7. Sidewalks shall be constructed along any public right-of-way (except for alleys) adjacent to the site along the entire frontage(s) of the property. To the extent practicable, walkways shall be constructed on the site to tie building entrances and/or pedestrian pathway systems into existing or proposed public sidewalk systems.**

Analysis - The site also falls under the Planned Redevelopment Overlay District Area and meets the 28-501 Development Standards, provided the Planning and Zoning Commission approves the setback, lot size, lot coverage, and yard requirements as indicated in Table 1 above..

Any comments or concerns from the ESDR review letters will be addressed during the Development Site Plan review.

C. Forest Conservation

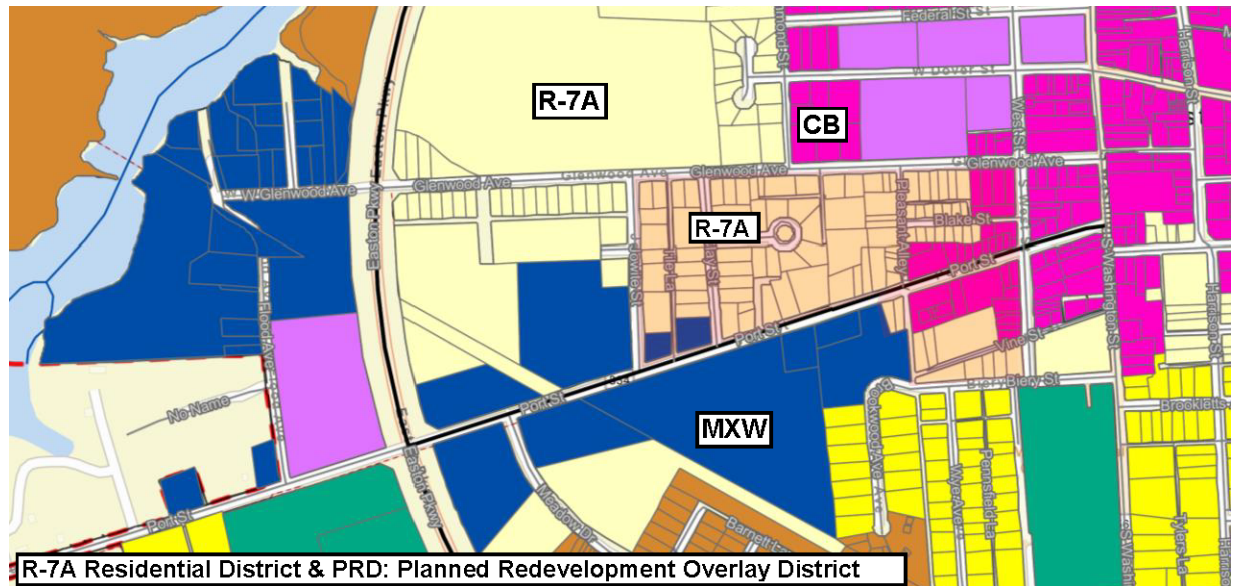
Easton Forest Conservation Ordinance #718, Article III, § 31-3.2 Exemptions

O. An activity on a previously developed area covered by impervious surface and located in the priority funding area.

Analysis - The site is within the priority funding area and is an existing developed area covered by impervious surface; existing walks, driveways and homes. The overall site area is 1.323 acres with eight mansion apartment buildings and associated parking, stormwater management and landscaping. Required Forest Conservation would be 0.198 acres or 8,644.48 square feet. The intent of the project is to maximize density within the infill area and provide adequate facilities to accommodate the site. The applicant has provided a landscape plan with twenty-four deciduous-shade/canopy trees and twenty evergreen trees that is greater than the required forest conservation area. Based on the existing conditions and priority funding area, the staff supports the exemption.

POLICY ANALYSIS:

Figure 2: Zoning Map



The submission of a site plan for a proposed use or development activity shall not be approved unless it meets the factors below:

1. The site plan meets the design principles and standards and required improvements set forth in this Ordinance, the Town Comprehensive Plan, the Town of Easton Subdivision Regulations, and other ordinances, regulations, and policies established by the Town of Easton.

Analysis -

Town of Easton 2010 Comprehensive Plan Design Principles (Principle #1) - Integrated uses are desirable- Applicant's response: *This project proposes a middle housing development which is similar to the existing uses for the parcels but also is part of a neighborhood which has mixed uses such as a school and athletic center nearby on Jowite Street.*

Staff notes that the proposed redevelopment of the site ticks many of the boxes of the Comprehensive Plan, to include promoting infill/redevelopment, increasing density and expanding the variety and options of housing.

(Principle #2) Natural features should determine design – Applicant's response: *To accommodate the proposed project, the proposed stormwater management areas will be constructed to improve water quality prior to offsite disposal. There are no existing wetlands on the site. Existing trees shall be protected and retained as much as possible.*

Staff notes that there are no compelling natural features on site.

(Principle #3) Automobiles should not determine design – *Applicant's response: This site is designed for residents who will most likely be working in town and should promote more green transportation such as biking or walking.*

Staff notes that the applicant has provided off-street parking along Tile Lane and there's on-street parking along Jowite Street.

(Principle #4) Ample Open Space should be provided within & around neighborhoods – *Applicant's response: The project strives to achieve maximum functionality while still providing open green space at the front of the buildings.*

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 zoning classification R-7A and design and materials of neighboring buildings.*

(Principle #6) Signs should inform but not dominate – *Applicant's response: Signs will be compatible with neighboring buildings and follow the trend of the development.*

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) Neighbors should contain a diversity of housing types – *Applicant's response: The building will be diverse in color and roof pitches which will help to break up any noticeable redundancy.*

(Principle #8) Residential neighborhoods should be interesting places – *Applicant's response: The project is designed to be welcoming and has sidewalks between buildings. There will be planter boxes which can act as learning opportunities for those walking past the project to learn about the importance of treating stormwater runoff.*

(Principle #9) Neighborhoods should connect – *Applicant's response: The project connects via Tile Lane and Jowite Street to other neighborhoods.*

Staff notes that the site has access to both Tile Lane and Jowite Street. This provides connectivity within the existing neighborhood.

2. The site plan avoids or minimizes adverse impacts upon features (whether on-site or off-site) of historical, cultural or ecological significance.

Analysis - The proposed site is not within the Historic District or the Critical Area. This infill project would provide middle housing, mansion apartments with improved amenities; adequate parking, stormwater management facilities and landscaping.

3. The proposed use or development activity will not substantially increase traffic hazards due to traffic generated by the proposed use, the location of curb cuts or the layout of internal traffic circulation.

Analysis - Though the proposed site will maximize the density, the proposed use and activity will not increase traffic hazards in the surrounding area. Off-street parking is provided via access along Tile Lane and any additional parking could be achieved along Jowite Street and Clay Street.

4. The site plan and the proposed use or uses do not cause any adverse impact upon the health or safety of persons residing or working in the area surrounding the site or upon the character of the neighborhood surrounding the site; and

Analysis - There would be no adverse impacts. The existing property is currently residential, middle housing with existing sidewalks and driveways. Proposed use would provide eight mansion apartments, adequate parking, landscaping features and stormwater management facilities.

5. The site plan improves the water quality of the Chesapeake Bay or its tributaries.

Analysis - The proposed site would meet required design practices for stormwater management.

RECOMMENDED CONDITION:

1. Staff recommends the Planning Commission approve the sketch site plan, including minimum setbacks, minimum lot size, and landscape waiver, pursuant to the Planned Redevelopment Overlay District review process with the following conditions:
 - The minimum front setback is five feet (5'), side setback is five feet (5') and the rear setback is fifteen feet (15').
 - The minimum lot size is 7,200 square feet.

DRAFT MOTIONS:

1. I move that the Planning Commission approve the sketch site plan, including minimum setbacks, minimum lot size, and landscape waiver, pursuant to the Planned Redevelopment Overlay District and subject to staff's Conditions of Approval.

OR

2. I move that the Planning Commission forward the application to the May 18th Commission meeting for further discussion.

OR

3. I move an alternate motion.

ATTACHMENTS:

1. 2023-03-29 ESDR Determination Naima Phase II, paper copy & PDF
2. 2023-04-03 Aerial Perspective, paper copy & PDF
3. 2023-04-03 Building Elevation, paper copy & PDF
4. 2023-04-03 Building Floor Plan, paper copy & PDF
5. 2023-04-03 Comment Response Letter #1, paper copy & PDF
6. 2023-04-03 ESDR Application, paper copy & PDF
7. 2023-04-03 ESDR Checklist-Sketch Plan, paper copy & PDF
8. 2023-04-03 ESDR Checklist-Sketch SWM Plan, paper copy & PDF
9. 2023-04-03 Infrastructure Improvement Plans, paper copy & PDF
10. 2023-04-03 EUC Plan Review Comment Sheet, paper copy & PDF
11. 2023-04-03 PRD Application, paper copy & PDF
12. 2023-04-03 Revised Planning Commission Agenda for 2023.04.20
13. 2023-04-03 Sign Posting
14. 2023-04-03 SWM Report, PDF
15. 2023-04-03 Waiver Request, paper copy & PDF
16. 2023-04-03 FCP Exemption, paper copy & PDF



EASTON UTILITIES

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Easton Utilities Commission

Plan Review Comments

Date: Monday, April 10, 2023

To: Joe Mayer; Nicholas Johnson; Sierra Clem

From: Kia Gibbs on behalf of Aaron Goller, PE

Re: 22, 30, 36 & 44 Jowite Street - Naima Ventures

No. of Pages: 1

Phase: Planning Commission

Review Type: SUBM: 1

Status: Approved

Easton Utilities Commission has reviewed the above referenced plans do not have any comments to provide.

Please contact Kia Gibbs, Admin Support at kgibbs@eucmail.com should you have any questions.



TOWN OF
EASTON
ENGINEERING DEPARTMENT

DATE: March 23rd, 2023
TO: Derek Daly - Naima
Brian Fitzgerald - Rauch Engineering LLC
Cc: Rick Van Emburgh - Town Engineer
Miguel Salinas - Planning and Zoning Department
Aaron Goller - EUC
FROM: Sierra Clem - Engineering Department
SUBJECT: Jowite Street Naima- ESDR Sketch Site Plan Review Comments

I have reviewed the application for the subject project received on 2/28/2023. I have the following comments.

Sketch Site Plan/Plat:

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

1. Please provide a statement on G-100 describing generally how Stormwater Management has been addressed.
2. Please label parking stall dimensions or provide a typical driveway detail.
3. Please label the distance from the proposed parking stall edge to the parking stall edge across Tile Lane - this should be the width of the drivable area in Tile Lane.
4. Please relocate the parking stalls, islands and underdrains out of the ROW to be located entirely within the property.

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

Stormwater Management:

The **Sketch Stormwater Management Plan** is approved.

Please submit a Preliminary 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: March 28, 2023

Project; Naima Ventures, LLC Lots 22,30,36 & 44 Jowite Street

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

- Applicant should contact this Department and verify current Building Codes including the Town of Easton's modifications prior to preparation of Building plans.

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 listed in the International Building Code Chapter Three.
- 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. Be sure to address ADA standards for multi-family units.
- The Town of Easton, in accordance with the International Building Code Chapter 17, establishes a building inspections procedure (Statement of Special Inspections) 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. A copy of this can be found on the Town's 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.
- 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.



TOWN OF EASTON

Planning & Zoning Department

14 South Harrison Street

P.O. Box 520

Easton, Maryland 21601

Easton Staff Development Review Worksheet

Date: March 29, 2023

Project: 22,30,36 & 44 Jowite Street – Naima Phase II

To: Brian Fitzgerald – Rauch Inc.

CC: Kendrick Daly – Naima Ventures, LLC

The Easton Staff Development Review meeting was held on March 29th, at 11:00 am. Staff reviewed the Site Sketch Plan for the proposed eight (8) multifamily buildings with a total of fifty-two (52) units and provided comments for the proposed project.

It was determined that the project is approved to submit application to the Planning Commission for the April 20, 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:

- Submit Planned Redevelopment Overlay Application.
- Submit a Supplemental Waiver Request Application for landscape per Chapter 28-1014.6 B 1 (b) of the Zoning Code, Trees shall be located within the parking bays so that no more than ten (10) parking spaces form an uninterrupted row.
- Show specific zoning requirements per Planning & Zoning's review comment #6.
- Add concrete wheel stops at parking spaces.
- Label parking stall and road dimensions.

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 by Monday, April 3, 2023.** (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, April 20, 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
410-820-8822
www.EastonMD.gov

DATE: March 20, 2023
TO: Brian Fitzgerald, Casey Rauch - Rauch Inc./Naima Ventures, LLC c/o Kendrick Daly
cc: Miguel Salinas – Director of Planning & Zoning Department
Rick Van Emburgh – Town Engineer, Department of Engineering
FROM: Joseph A. Mayer - Plan Reviewer, Planning & Zoning Department
SUBJECT: 22, 30, 36 & 44 Jowite Street – Naima Phase II

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

PLANNING & ZONING COMMENTS

Sketch Site Plan

1. Add a north arrow to sheet C-101.00.
2. Revise all title blocks to read; "Ward District 4, Easton, Maryland".
3. The zoning district boundaries shall be shown when a property is located in more than one zoning district. Also, the zoning overlay district boundaries shall be shown when a property is located within any zoning overlay district.
4. The standard title block is missing on sheet C-200.01.
5. Revise Site Data on sheet G-100 to include building use. Is this a multi-family apartment?
6. In tabular form show the specific zoning requirements, in accordance with the Zoning Ordinance, including any approved conditions or variances, for the subject property and the existing zoning districts to include but not limited to: maximum lot coverage; minimum lot size; minimum lot frontage; building envelope; minimum front, side and rear setbacks; maximum building heights; parking spaces required and provided (including standard and handicap accessible) proposed uses and proposed number of lots.
7. Include a statement within the Zoning & Parking Note, found on sheet G-100, to clarify the adequacy of proposed parking.
8. For adjoining property information, show: Tax Map and Parcel and adjacent zoning district. Please add to all plan views.

9. Revise Site Data shown on sheet G-100 to include the applicant obtaining a Demolition Permit prior to removing existing structures.
10. Add note on sheet G-100 to read: *"No roof overhang or building foundation shall extend beyond any utility distribution right-of-way and easement."*
11. Provide typical dimensions between building and property line.
12. The setback, lot size, lot coverage, height, and yard requirements shall be established for each individual project by the Planning and Zoning Commission.
13. Per Chapter 28-1014.6 B 1 (b) of the Zoning Code, Trees shall be located within the parking bays so that no more than ten (10) parking spaces form an uninterrupted row. Please revise the parking bay along Tile Lane.
14. Per Chapter 28-501 C 2 of the Zoning Code, your application is exempt from the supplemental standards otherwise applicable to multi-family units. Therefore, per Chapter 28-1007.1 (14) f of the Zoning Code, areas not utilized for building or off-street parking shall be landscaped and maintained in accordance with Section 28 – 1014 of this Ordinance are exempt. The proposed landscaping along Jowite Street is adequate and does not require a Bufferyard.
15. Verify distance of proposed curb/gutter and pavement to the adjacent property lines.
16. Please explore the option of requesting an exemption from forest conservation. See Article III, § 31-3.2 O, an activity on a previously developed area covered by impervious surface and located in the priority funding area.
17. Add Comprehensive Plan Design Principles response narrative to sheet G-100.

Plan Review Status

IMPROVEMENT PLAN REVIEW			Comments
Plans Approved	☐ Y	☒ N	Please review any outstanding comments from the Engineering Department and Easton Utilities.

GRADING PERMIT STATUS			
Application and Final Approved Site Plan Submitted to Town Engineer	☐ Y	☒ N	To be processed by the Engineering Department.
LEGAL DOCUMENTS			
Storm Water Easement			
☒ Required ☐ Submitted ☐ Approved			To be processed by the Engineering Department.
Utility Easement			
☒ Required ☐ Submitted ☐ Approved			To be processed by the Engineering Department.
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 Engineering Department.
Talbot Soil Conservation District Approval			
☒ Approval Required			Required.
Forest Stand Delineation & Forest Conservation Plan			
☐ Required ☐ Submitted ☐ Approved			To be determined.
Other			
☐ Required ☐ Submitted ☐ Approved			

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



TOWN OF
EASTON
ENGINEERING DEPARTMENT

DATE: March 23rd, 2023
TO: Derek Daly - Naima
Brian Fitzgerald - Rauch Engineering LLC
Cc: Rick Van Emburgh - Town Engineer
Miguel Salinas - Planning and Zoning Department
Aaron Goller - EUC
FROM: Sierra Clem - Engineering Department
SUBJECT: Jowite Street Naima- ESDR Sketch Site Plan Review Comments

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4. Please relocate the parking stalls, islands and underdrains out of the ROW to be located entirely within the property.

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

Stormwater Management:

The **Sketch Stormwater Management Plan** is approved.

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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: March 28, 2023

Project; Naima Ventures, LLC Lots 22,30,36 & 44 Jowite Street

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- The Town of Easton, in accordance with the International Building Code Chapter 17, establishes a building inspections procedure (Statement of Special Inspections) 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. A copy of this can be found on the Town's Web Site.
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- 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.
- 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.



Easton Utilities Commission

Plan Review Comments

Date: Monday, March 20, 2023

To: Joe Mayer; Nicholas Johnson; Sierra Clem

From: Kia Gibbs on behalf of Aaron Goller, PE

Re: 22 - 44 Jowite Street, Naima Ventures Infrastructure

No. of Pages:

Sketch Site Plan

Review Type:

SUBM: 1

Phase:

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	2" Communications conduit to follow electric
2	General	Provide digital drawing to Easton Utilities for electric design. Easton Utilities to abandon overhead electric on Tile Lane. Poles turned over to Verizon after electric removed. Is Verizon abandoning overhead?
3	General	Contact Will Cottingham for addressing
4	V-101.1 V101.2 V101.3	Water services and sewer laterals to be abandoned at property. Pits and cleanouts to be removed if not reused. Unused sewer, if connected to new sewer main and shall be abandoned to the main.
5	C-203	Crossings not shown
6	C-401.1	Water main to be extended past garbage can corral. Valves and cleanouts shall not be in parking area.
8	C-401.1	Water main, sewer laterals, water meter pits etc shall be abandoned properly according to Easton Utilities requirements.
9	C-401.1	Water meter pits not shown in easement.
10	C-401.1	Valves shall be added to fire service
11	C-401.1	Sewer cleanout shall be located at ROW and 5' from building envelope
12	C-401.1	Contractors to confirm sewer main use. If not use, abandon gravity sewer.
13	C-401.1	Show sewer manhole on Jowite
14	C-401.02	Show parking space lines at 20' to show distribution of utilities.



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	DRAWING /	
ITEM:	PAGE	COMMENTS:



EASTON UTILITIES

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CONTACT INFORMATION

OWNER/DEVELOPER: NAIMA VENTURES, LLC
29760 STANDISH STREET
EASTON, MD 21601
410-310-6241

ENGINEER: RAUCH inc.
106 N HARRISON ST
EASTON, MARYLAND 21301
(410)770-9081

ZONING & PARKING NOTE: THE REQUIREMENTS FOR OFF-STREET PARKING IN THE SUPPLEMENTAL REQUIREMENTS OF THE ZONING ORDINANCE ARE NOT A REQUIREMENT IN A PRD OVERLAY ZONE. THE MULTI-FAMILY RESIDENTIAL USE IS NOW PERMITTED IN THE PRD OVERLAY DISTRICT. NO SPECIAL EXCEPTION IS REQUIRED.
36 PARKING SPACES ARE PROPOSED AND PROVIDED.
2 OF THE 36 TOTAL SPACES ARE ADA ACCESSIBLE. BOTH ADA SPACES ARE VAN ACCESSIBLE.

TOTAL ACREAGE:
PARCEL 1372: 14,400 SQ-FT / 0.331 AC.
PARCEL 1371: 7,200 SQ-FT / 0.165 AC.
PARCEL 1370: 14,400 SQ-FT / 0.331 AC.
PARCEL 1369: 21,600 SQ-FT / 0.496 AC.

TOTAL ACREAGE: 1.323 AC.

DWELLING UNIT NOTE: THE ALLOWABLE DENSITY IN THE PRD OVERLAY IS 40 DWELLING UNITS PER ACRE. 52 UNITS ARE PROPOSED AND PROVIDED.
52 UNITS / 1.323 TOTAL ACRES = 39.31 UNITS PER ACRE < 40 OK

SITE DATA

PROPERTY ADDRESS: 22, 30, 36 & 44 JOWITE STREET
EASTON, MD 21601

LATITUDE: : N 038°46'19.19"

LONGITUDE: W 076°04'59.11"

PRESENT ZONING CLASSIFICATION: R7A W/ A PRD OVERLAY

PRESENT USE: RESIDENTIAL

TAX MAP: 0104
GRID: 000EA
PARCELS: 1369, 1370, 1371, 1372
DEED REFERENCE: 02616/00084

FEMA FLOOD MAP: PANEL 24041C0189D

FOREST CONSERVATION PLAN: WORKSHEET INCLUDED WITH SUBMISSION; PAY-IN-LIEU

LANDSCAPING PLAN: SEE PLANTER BOX DETAIL AND LANDSCAPING PLAN FOR PLANTINGS

NAIMA VENTURES, LLC

PHASE 2 INFRASTRUCTURE PLANS

FOR
NAIMA VENTURES, LLC
TALBOT COUNTY, MARYLAND 21601



VICINITY MAP
SCALE: 1" = 2,000'

DRAWING LIST	
SHEET NUMBER	DRAWING TITLE
G-100	COVER SHEET
C-101.00	MASTER KEY SHEET
C-200.00	EROSION AND SEDIMENT CONTROL COVER
C-200.01	EROSION AND SEDIMENT CONTROL LEGEND
V-101.01-03	EXISTING & DEMOLITION PLAN
C-201.01-03	STORMWATER & EROSION AND SEDIMENT CONTROL PLAN
C-201.04	MASTER EXISTING DRAINAGE PLAN
C-201.05	MASTER PROPOSED DRAINAGE PLAN
C-201.06-08	PROPOSED DRAINAGE AREA PLAN
C-203.01	STORMWATER & STORM DRAIN PROFILES
C-203.02	STORMWATER & STORM DRAIN SCHEDULES
C-205.01-02	STORMWATER DETAILS
C-205.03-04	EROSION AND SEDIMENT CONTROL DETAILS
C-301.01-03	SITE GRADING PLAN
C-305.01-02	SITE DETAILS
C-401.01-03	UTILITY PLAN
C-405.01	ELECTRICAL, COMMUNICATIONS, & SEWER UTILITY DETAILS
C-405.02	WATER UTILITY DETAILS
C-501.01-03	LIGHTING & LANDSCAPING PLAN
C-505.01	LANDSCAPING NOTES & DETAILS
C-601.01	FIRE MARSHALL PLAN

LINETYPES

TOPOGRAPHY
MAJOR CONTOURS
MINOR CONTOURS
TOP OF SLOPE BREAKLINE
BOTTOM OF SLOPE BREAKLINE
TOPOGRAPHY BREAKLINE

CATCHMENT AREA

To FLOW PATH

PARCEL BOUNDARY
PARCEL SETBACK/EASEMENT
FENCELINE WOOD
FENCELINE STEEL
TREELINE/VEGETATION
ROADWAY CENTERLINE
HIGHWAY BARRIER

UTILITIES

OVERHEAD ELECTRIC
UNDERGROUND ELECTRIC
TELEPHONE LINE
GAS PIPE LINE
CABLE TV
WATER PIPE
STORMWATER PIPE

UNDERDRAIN
SANITARY SEWER
FORCE MAIN SEWER

ENVIRONMENTAL

WETLAND LINE
FLOOD PLANE 100/500 YR
MEAN HIGH WATER
MEAN LOW WATER
CRITICAL AREA BOUNDARY
BUFFER 25'/100'
SOILS BOUNDARY
SWM EASEMENT 5'/10'

EROSION AND SEDIMENT CONTROL

SILT FENCE
SUPER SILT FENCE
SILT FENCE ON PAVEMENT
LIMITS OF DISTURBANCE
LOD & SILT FENCE
LOD & SUPER SILT FENCE
LOD & SILT FENCE ON PAVEMENT
STANDARD INLET PROTECTION

AT-GRADE INLET PROTECTION

CURB INLET PROTECTION

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SYMBOLS

FLARED END SECTION

YARD INLET

CURB INLET

CUSTOM INLET

NYLOPLAST INLET

STORM DRAIN MANHOLE

SANITARY SEWER MANHOLE

CLEANOUT

GATE VALVE

STUB

SIGN

WATER METER

FIRE HYDRANT

WELL

BOLLARD

ELECTRIC TRANSFORMER

TELEPHONE PEDESTAL

UTILITY POLE

GUY WIRE

CONIFEROUS TREE

DECIDUOUS TREE

SPOT ELEVATION

LAND SLOPE

BENCHMARK

BOREHOLE/MONITORING WELL

LIGHTING

RIPRAP OUTLET SEDIMENT

TRAP

STONE OUTLET SEDIMENT

TRAP

TYPE-1 INLET PROTECTION

PROPOSED

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HATCHES

ASPHALT

GRAVEL

CONCRETE

RIPRAP/ROCK

ESD BED BOTTOM

BRICK PAVING

EXISTING, TO BE

DEMOLISHED

STEEP SLOPES

ABBREVIATIONS

ADA

AGIP

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BM

BRL

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C/O

CHRD

CI

CIP

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CMF

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PERFORATED

PROPOSED

POINT OF TANGENCY

POLYVINYL CHLORIDE

POINT OF VERTICAL INTERSECTION

DISCHARGE

RADIUS

REINFORCED CONCRETE PIPE

RUNOFF CURVE NUMBER

RIGHT-OF-WAY

RIGHT

SOUTH

STABILIZED CONSTRUCTION ENTRANCE

STORM DRAIN

STORM DRAIN MANHOLE

FRICTION SLOPE

SILT FENCE

STATE HIGHWAY ADMINISTRATION

STANDARD INLET PROTECTION

SQUARE

SANITARY SEWER

SUPER SILT FENCE

SANITARY SEWER MANHOLE

STATION

STANDARD

STORM WATER MANAGEMENT

TANGENT

THRUST BLOCK

TO BE REMOVED

TOP OF CURB

TIME OF CONCENTRATION

TAX PARCEL

TYPICAL

UNDERGROUND ELECTRIC

UNDERGROUND LIGHT CABLE

UNDERGROUND TELEPHONE

VELOCITY

WEST

WITH

GENERAL NOTES

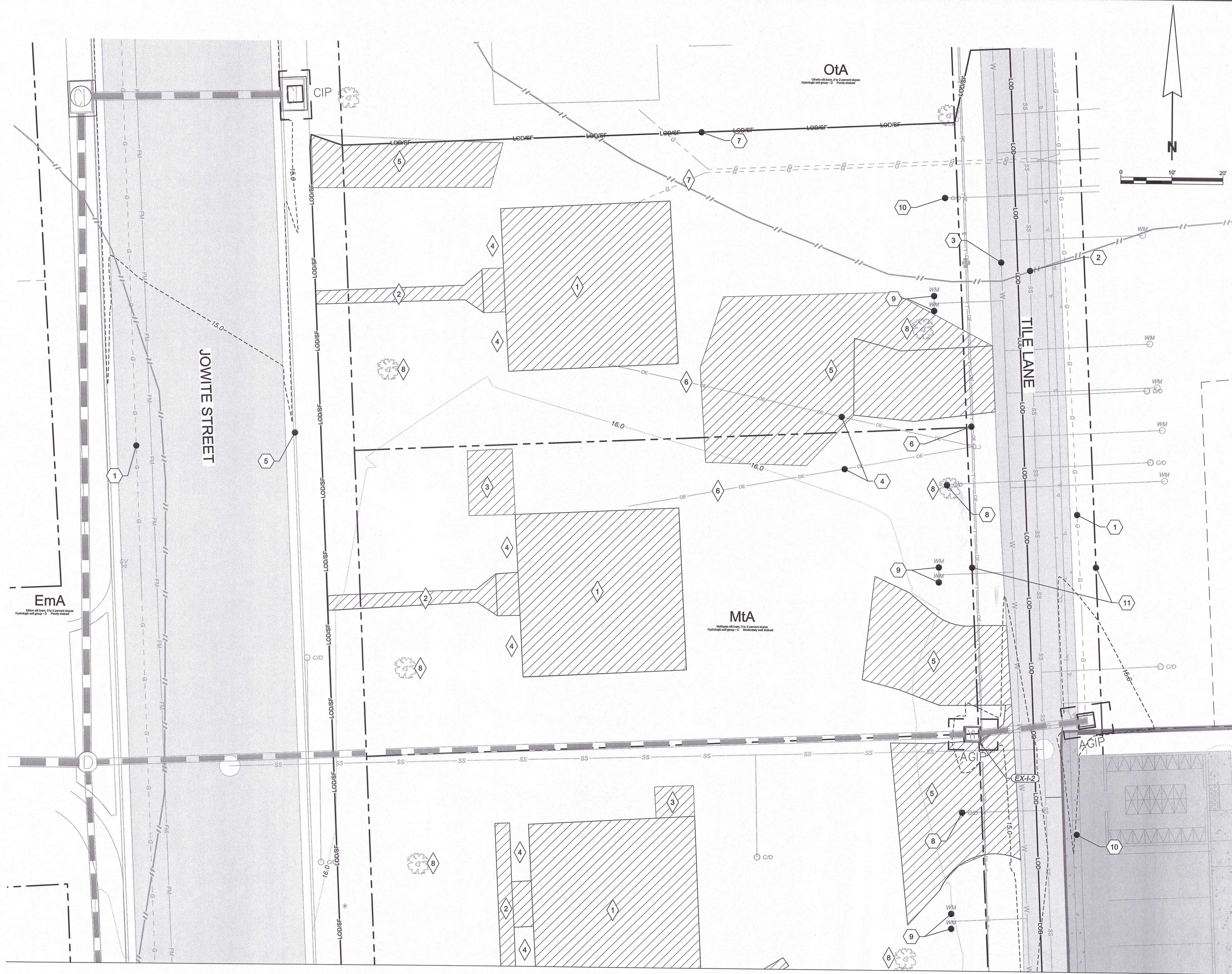
ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL CONFORM TO THE DRAWINGS, SPECIFICATIONS, LOCAL BUILDING CODES, BEST PRACTICES OF THE RESPECTIVE TRADES AND THE STANDARD SPECIFICATIONS AND DETAILS REFERRED TO HEREON.

THIS DRAWING SHOWS INFORMATION OBTAINED FROM AVAILABLE RECORDS REGARDING PIPES, CONDUITS, TELEPHONE LINES AND OTHER STRUCTURES AND CONDITIONS WHICH EXIST WITHIN LIMITS OF THE WORK AT AND BELOW THE SURFACE OF THE GROUND. THE CONTRACTOR IS RESPONSIBLE FOR SUPPORTING AND PROTECTING ALL PIPES, CONDUITS, TELEPHONE LINES, AND OTHER STRUCTURES.

THE CONTRACTOR SHALL NOTIFY THE FOLLOWING TWO (2) WEEKS PRIOR TO START OF CONSTRUCTION AND SHALL COORDINATE ALL CONSTRUCTION PHASES WITH THEM:

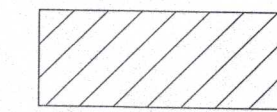
MDE (Main Number)	410-537-3000
MDE (Eastern Shore Field Office)	410-901-4020
TOWN OF	

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EXISTING FEATURES

- 1 GAS MAIN
- 2 8" VCP SEWER MAIN
- 3 6" CAST IRON WATER MAIN
- 4 OVERHEAD ELECTRIC
- 5 6" CONCRETE CURB
- 6 TELEPHONE LINE
- 7 NEIGHBORING PROPERTY LINE (TYP.)
- 8 SEWER CLEANOUT TO REMAIN
- 9 WATER METER TO REMAIN
- 10 STANDARD ASPHALT VALLEY GUTTER
- 11 TILE LANE RIGHT OF WAY



DEMOLITION TO BE DONE UNDER THIS CONTRACT UNDER DIRECTION OF NAIMA

DEMOLITION NOTES

- 1 EXISTING STRUCTURE TO BE DEMOLISHED
- 2 EXISTING SIDEWALK TO BE DEMOLISHED
- 3 EXISTING PATIO TO BE DEMOLISHED
- 4 EXISTING LANDSCAPING TO BE REMOVED
- 5 EXISTING PARKING AREA TO BE DEMOLISHED
- 6 EXISTING OVERHEAD UTILITIES TO BE DEMOLISHED
- 7 EXISTING UNDERGROUND UTILITIES TO BE DEMOLISHED
- 8 SEE SHEETS C-501.01 - C-501.03 FOR DETAILS REGARDING TREE REMOVAL

EXISTING & DEMOLITION PLAN

FOR
NAIMA - PHASE 2
INFRASTRUCTURE IMPROVEMENT PLANS
TAX MAP 0104, GRID 000EA
ELECTION DISTRICT 01-001, TALBOT COUNTY, MARYLAND
PREPARED FOR NAIMA VENTURES, LLC

RAUCH
INC.

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www.rauchinc.com
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Virginia Office: 6225 Boone Blvd., Suite 625, Vienna, VA 22182

REVISIONS

REV. #	DATE	DESCRIPTION

DATE: 03/03/2021

SCALE: 1" = 10'

DRAWN BY: BBF

DESIGNED BY: BBF

APPROVED BY:

SHEET NO.:

V-101.01

APPROVED:

TOWN OF EASTON - TOWN ENGINEER

DATE

APPROVED:

TOWN OF EASTON PLANNING AND ZONING

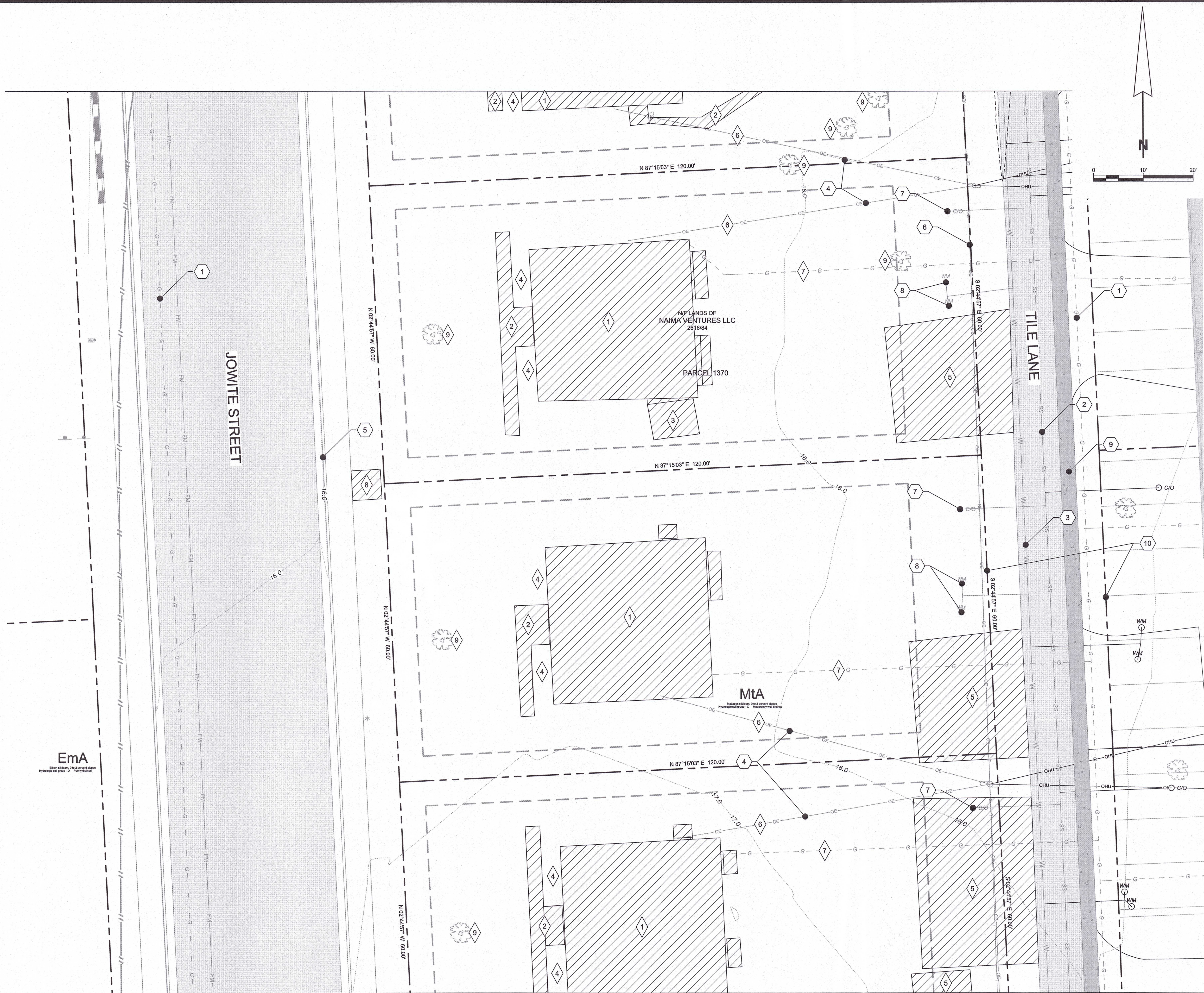
DATE

APPROVED:

EASTON UTILITIES - MANAGER OF ENGINEERING

DATE

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ALL EXISTING TREES TO BE REMOVED

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NAIMA - PHASE 2
INFRASTRUCTURE IMPROVEMENT PLANS
TAX MAP 0104, GRID 000EA
ELECTION DISTRICT 01-001, TALBOT COUNTY, MARYLAND
PREPARED FOR NAIMA VENTURES, LLC

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APPROVED BY:

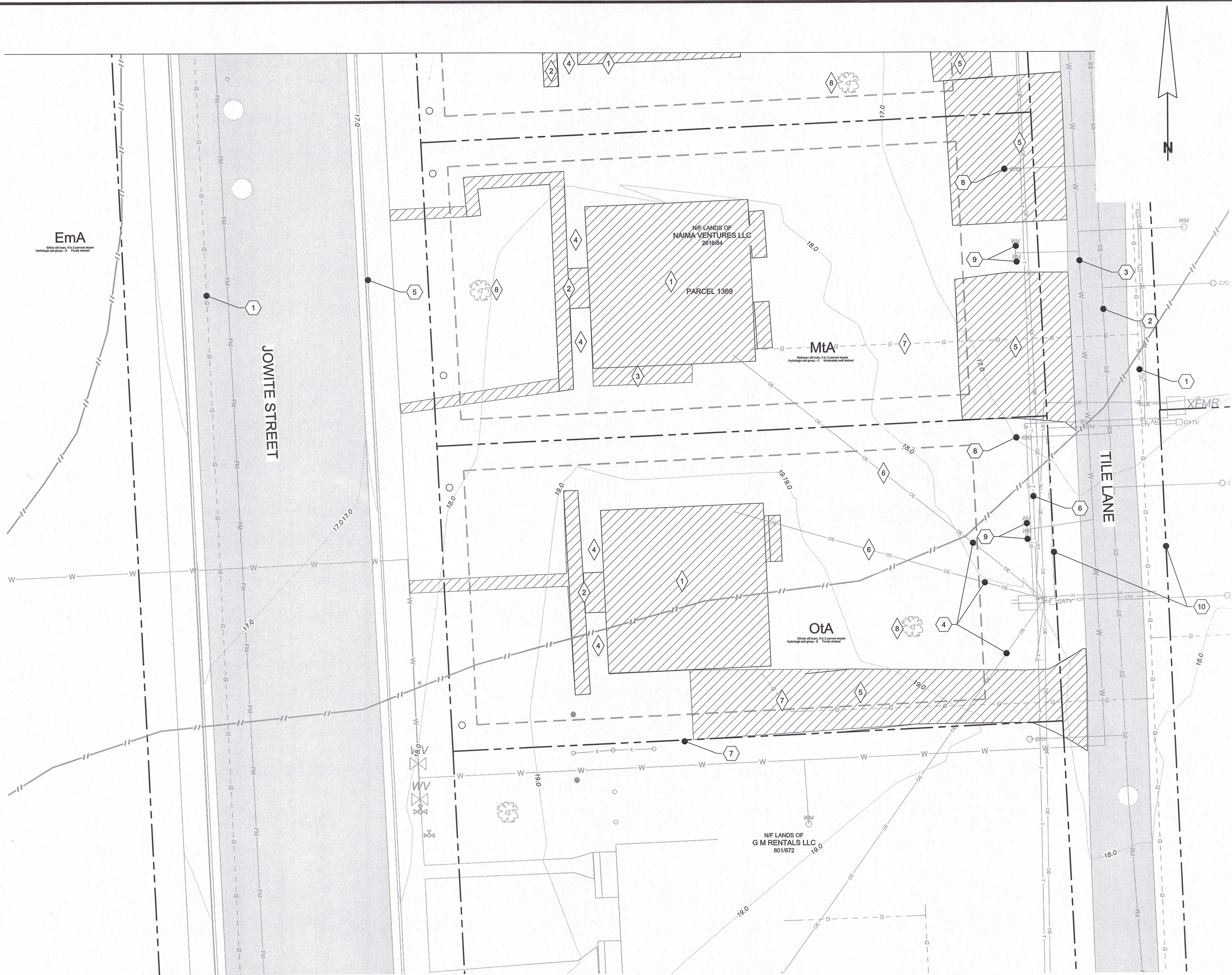
SHEET NO.: V-101.02

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TOWN OF EASTON - TOWN ENGINEER

APPROVED:
TOWN OF EASTON PLANNING AND ZONING

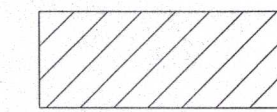
APPROVED:
EASTON UTILITIES - MANAGER OF ENGINEERING

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INFRASTRUCTURE IMPROVEMENT PLANS
TAX MAP 0104, GRID 000EA
ELECTION DISTRICT 01-001, TALBOT COUNTY, MARYLAND
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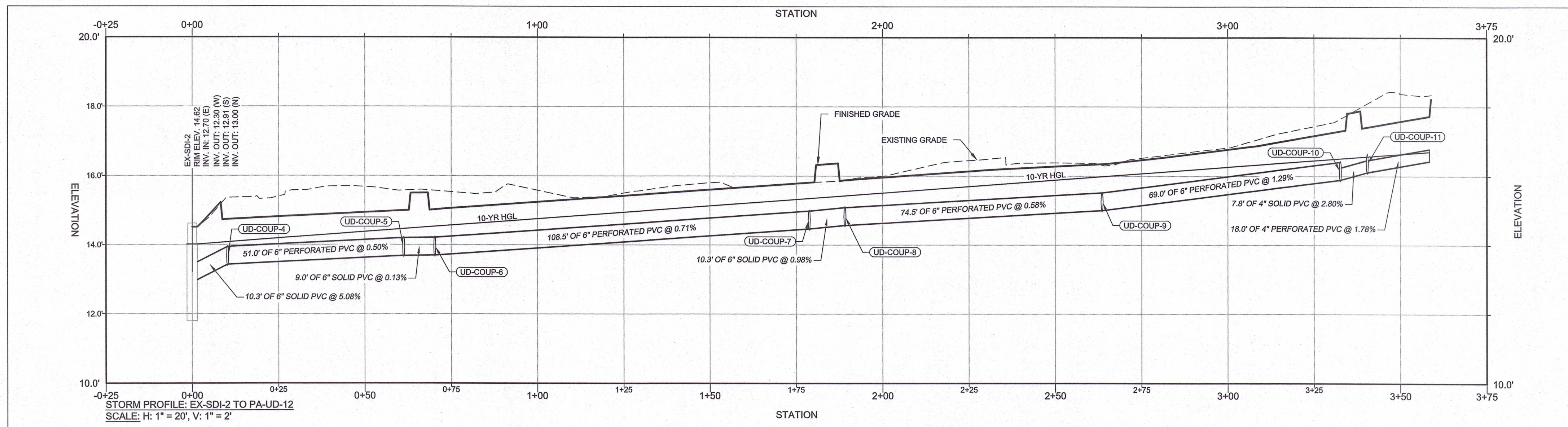
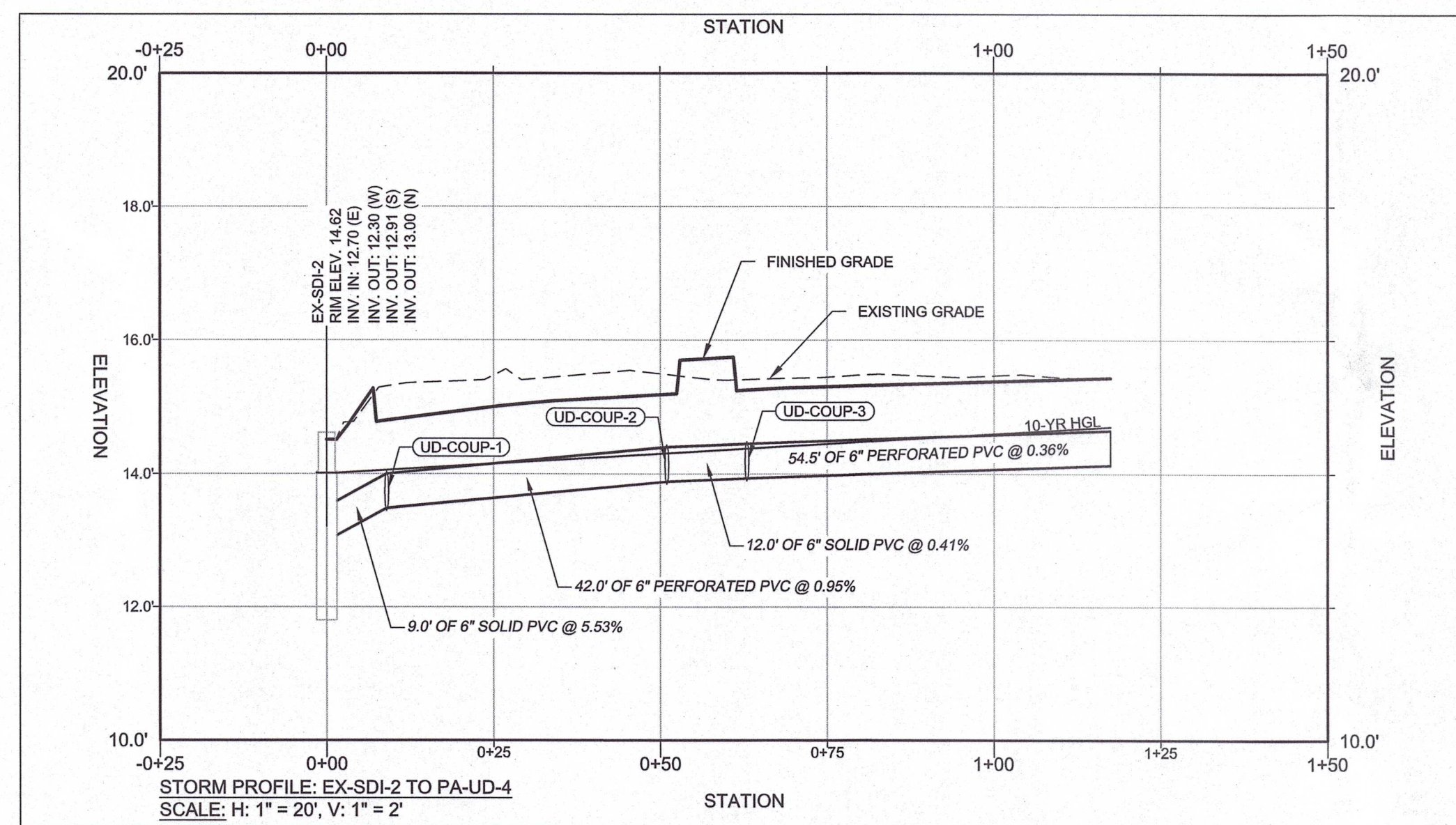
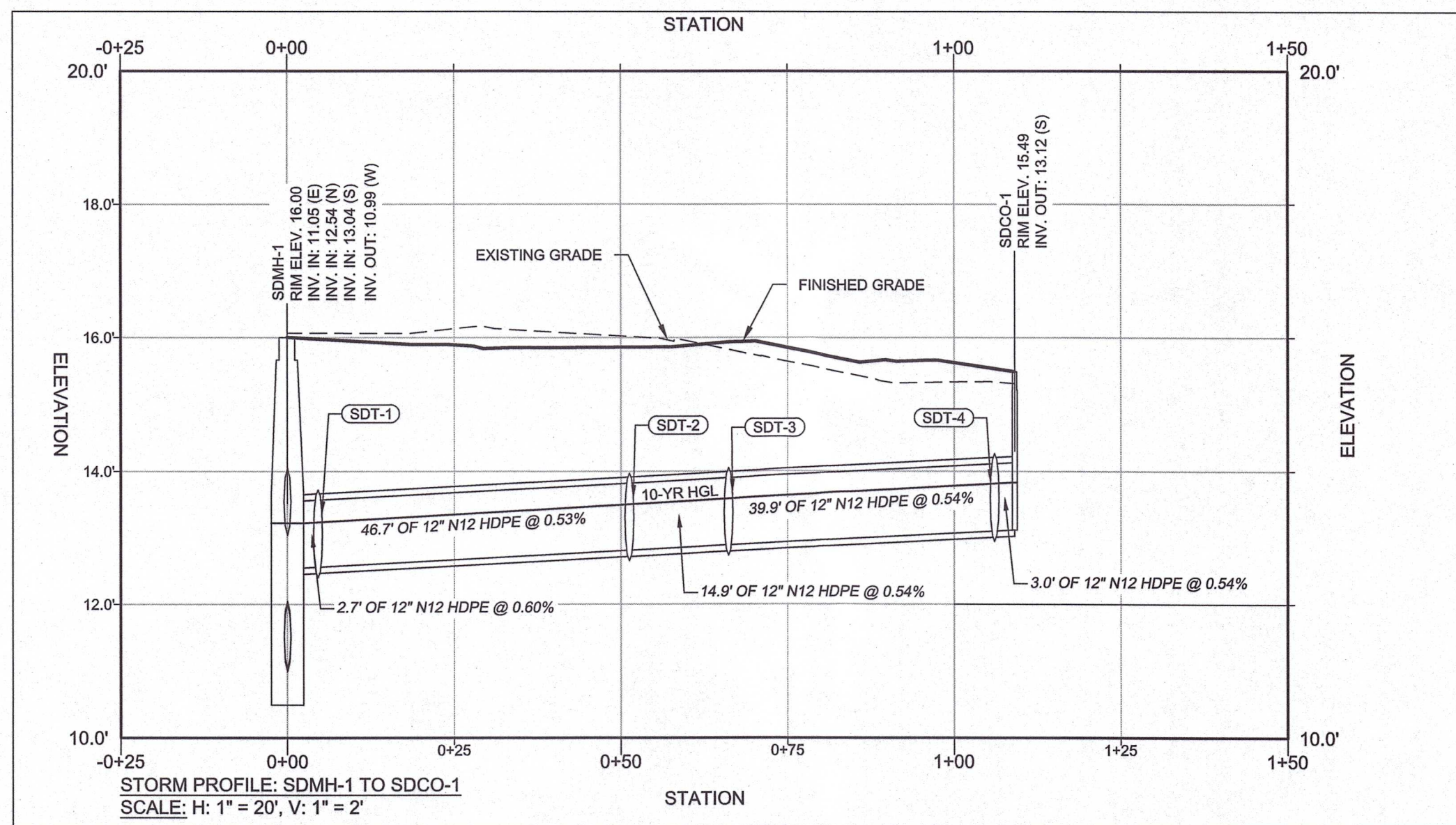
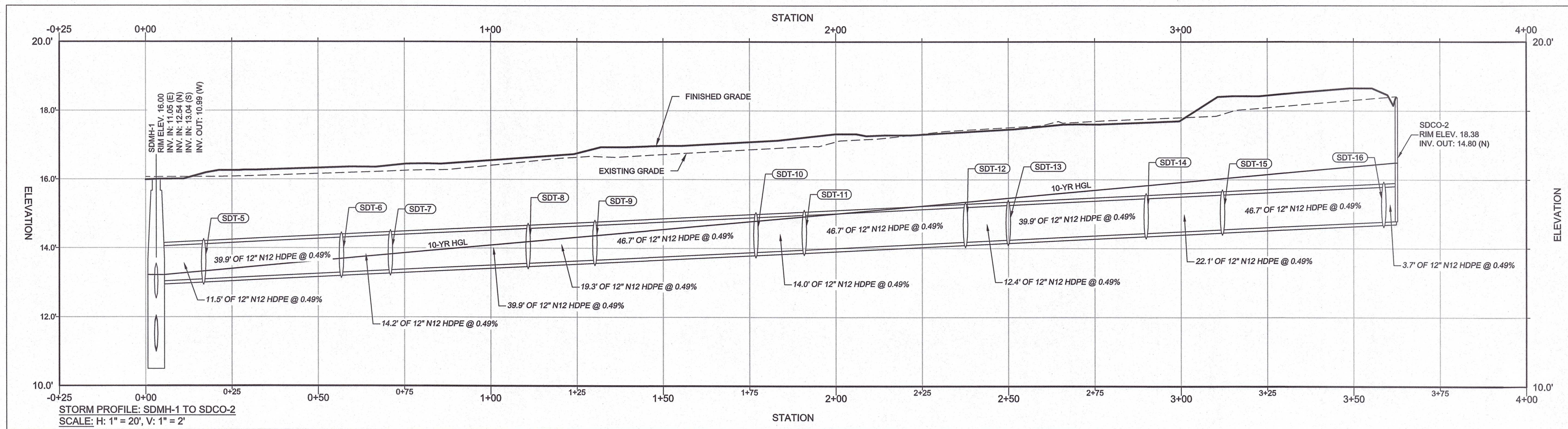
office: 410.770.3881 fax: 410.770.3887
email: design@raucheng.com | web: www.raucheng.com
10000 Old Dominion Blvd., Suite 200, Fairfax, VA 22030
Virginia Office: 6228 Boone Blvd., Suite 625 - Vienna, VA 22182

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DATE:	03/03/2021
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DESIGNED BY:	BBF
APPROVED BY:	
SHEET NO.:	V-101.03

APPROVED:	APPROVED:	APPROVED:
TOWN OF EASTON - TOWN ENGINEER	TOWN OF EASTON PLANNING AND ZONING	EASTON UTILITIES - MANAGER OF ENGINEERING
DATE	DATE	DATE



STORMWATER & STORM DRAIN PROFILES

FOR
NAIMA - PHASE 2
INFRASTRUCTURE IMPROVEMENT PLANS
TAX MAP 0104, GRID 000EA
ELECTION DISTRICT 01-001, TALBOT COUNTY, MARYLAND
PREPARED FOR NAIMA VENTURES, LLC

RAUCH
inc. engineering design & development services

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Maryland Office: 106 N. Harrison St. • Easton, MD 21601
Virginia Office: 8229 Boone Blvd, Suite 625 • Vienna, VA 22182

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DATE: 03/03/2021

SCALE: N/A

DRAWN BY: BBF

DESIGNED BY:

APPROVED BY:

SHEET NO.:

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TOWN OF EASTON - TOWN ENGINEER

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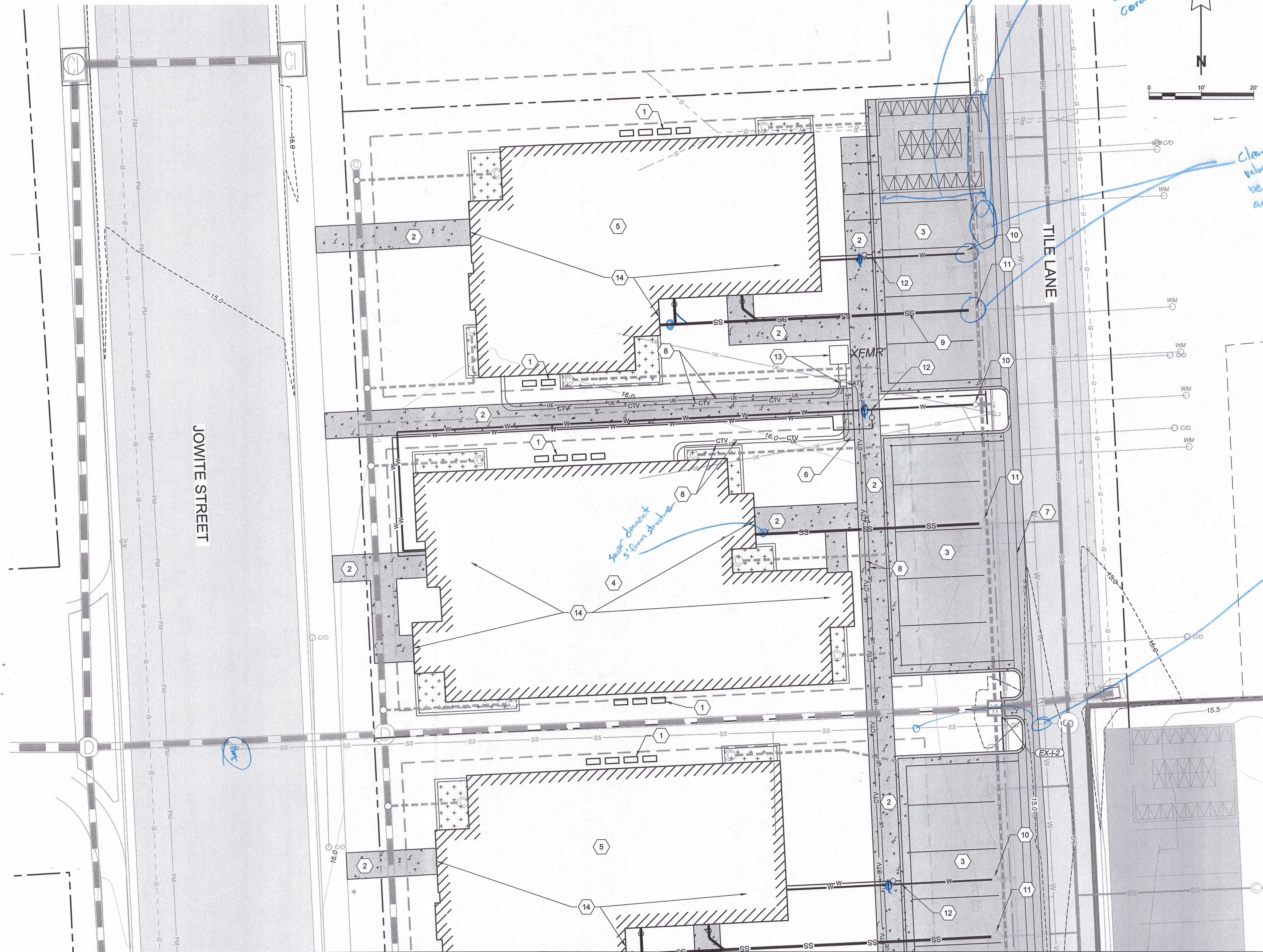
TOWN OF EASTON PLANNING AND ZONING

DA7

APPROVED:

FASTON UTILITIES, MANAGER OF ENGINEERING

DA*



PROPOSED FEATURES

- 1 HVAC UNITS TYP. SEE MECHANICAL PLAN FOR DETAIL
- 2 4" SIDEWALK. DETAIL ON 305.01
- 3 PERVIOUS ASPHALT PARKING. DETAIL ON 405.01
- 4 7 UNIT DWELLING
- 5 6 UNIT DWELLING
- 6 CLUSTER MAILBOX
- 7 STANDARD ASPHALT VALLEY GUTTER WITH A VALLEY SLOPE OF 0.47%. DETAIL ON 305.02
- 8 1-2 1/2" ELECTRIC AND 1-2" COMM SCH40 CONDUITS. ALL CONDUITS TO HAVE 36" COVER.
- 9 6" SEWER HOUSE CONNECTION TO BE INSTALLED ACCORDING TO DETAIL ON 505.01
- 10 TIE IN TO EXISTING 4" C-800 DR-18 WATER SERVICE WITH A 4" C509 AWWA GATE VALVE AT MAIN SEE DETAIL ON SHEET C-505.01
- 11 EXISTING SEWER CLEANOUT
- 12 4" X 2" TEE TO 2" DR-18 C-800 PVC POTABLE WATER SERVICE TO 2" METER & METER PIT PER EUC DETAIL SHEET C-505.01.
- 13 ELECTRIC TRANSFORMER PAD AND COMMUNICATION PEDESTAL. DETAIL ON C-505.01. TRANSFORMER BY OTHERS.
- 14 TYPICAL EXTERIOR WALL MOUNTED LIGHT TO BE INSTALLED 6.5' ABOVE FINISHED FLOOR AND 1' OFF DOOR HORIZONTALLY. LIGHT TO BE LITHONIA OLF 13 PE BZ OR EQUAL.

NOTE:

- ALL WATER CONNECTIONS AND SERVICES TO BE A MINIMUM OF 3.5' BELOW GRADE.
- ALL SEWER HOUSE CONNECTIONS TO BE INSTALLED ABOVE OR BELOW ANY STORM DRAIN/PLANTER BOX OUTFALLS TO AVOID CROSSING CONFLICTS. AT NO POINT SHOULD THE SEWER SERVICES BE BELOW 1.0% OR ABOVE 10% SLOPE.
- ALL PVC ELBOW FITTINGS FOR CONDUITS SHALL HAVE A MINIMUM 24" RADIUS. REQUIRED FOR ALL ELECTRIC AND COMM CONDUITS.
- INSTALL A PULL ROPE (1,800-POUND MINIMUM TENSILE STRENGTH) IN EACH CONDUIT TO EACH STRUCTURE AND TERMINAL END. PROVIDE 10' OF SLACK AT EACH END OF PULL ROPE. REQUIRED FOR ALL ELECTRIC AND COMM CONDUITS.

UTILITY PLAN

FOR
NAMA - PHASE 2
INFRASTRUCTURE IMPROVEMENT PLANS
TAX MAP 0104, GRID 000EA
ELECTION DISTRICT 01-001, TALBOT COUNTY, MARYLAND
PREPARED FOR NAMA VENTURES, LLC

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Maryland Office: 108 N. Harrison St. - Easton, MD 21601
Virginia Office: 6228 Boone Blvd. Suite 625 - Vienna, VA 22182

REVISIONS

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DATE: 03/03/2021

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DESIGNED BY: BBF

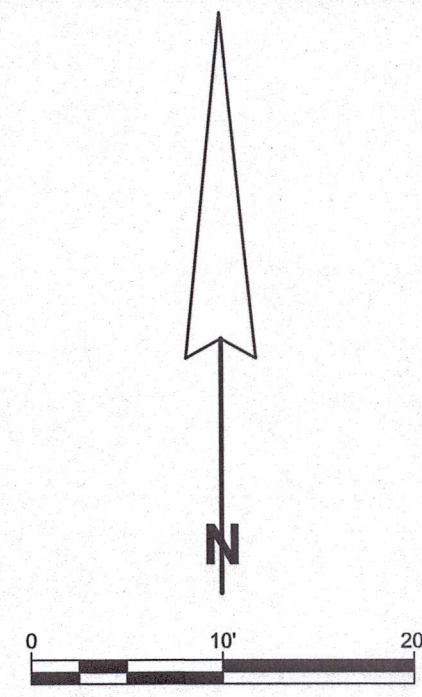
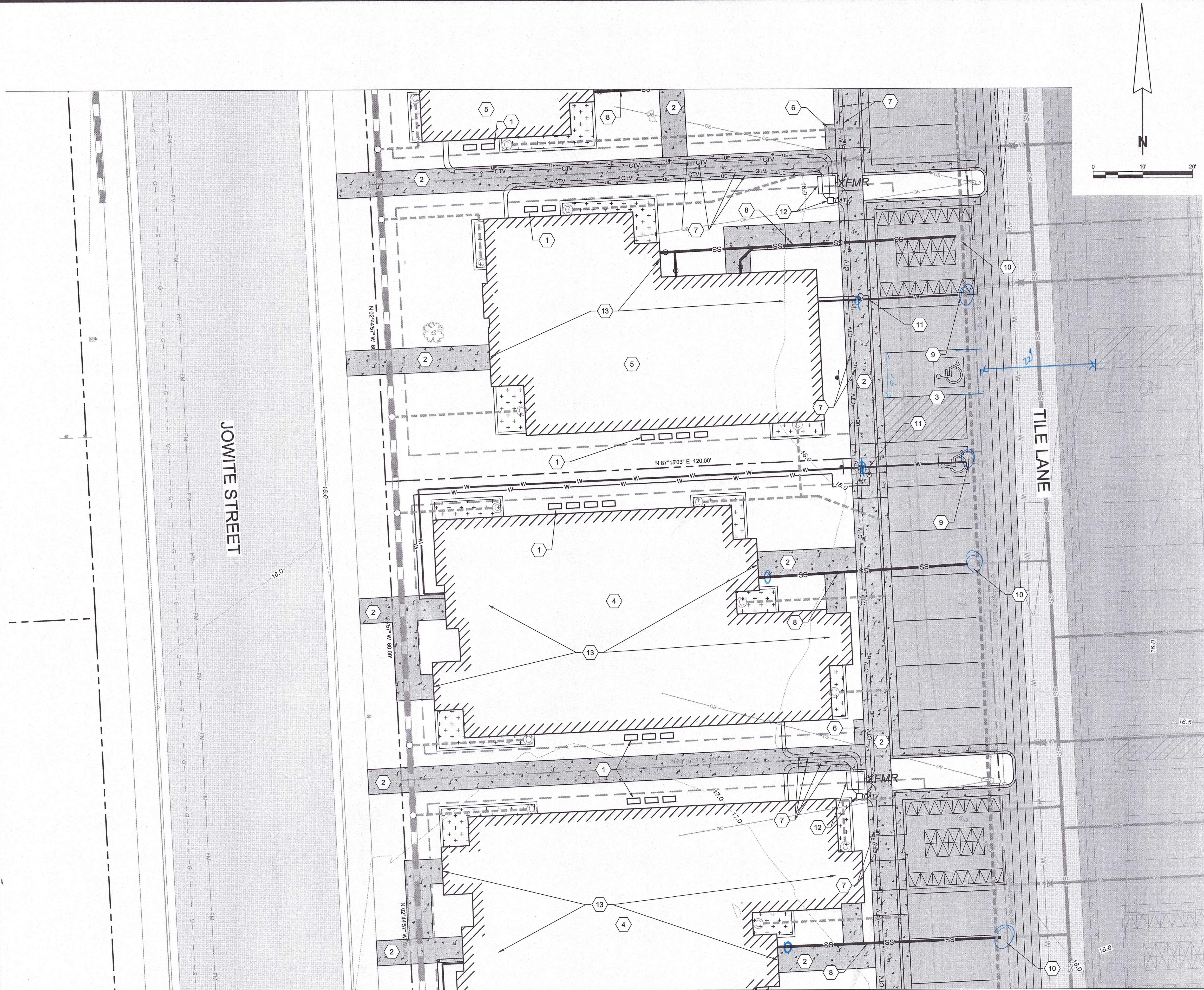
APPROVED BY:

SHEET NO.:
C-401.01

APPROVED:
TOWN OF EASTON - TOWN ENGINEER
DATE

APPROVED:
TOWN OF EASTON PLANNING AND ZONING
DATE

APPROVED:
EASTON UTILITIES - MANAGER OF ENGINEERING
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APPROVED:	APPROVED:	APPROVED:
TOWN OF EASTON - TOWN ENGINEER	TOWN OF EASTON PLANNING AND ZONING	EASTON UTILITIES - MANAGER OF ENGINEERING
DATE	DATE	DATE

UTILITY PLAN

FOR
NAIMA - PHASE 2
INFRASTRUCTURE IMPROVEMENT PLANS
TAX MAP 0104, GRID 000EA
ELECTION DISTRICT 01-001, TALBOT COUNTY, MARYLAND
PREPARED FOR NAIMA VENTURES, LLC

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DRAWN BY:	BBF
DESIGNED BY:	BBF
APPROVED BY:	
SHEET NO.:	C-401.02



EASTON UTILITIES

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Easton Utilities Commission

Plan Review Comments

Date: Monday, April 10, 2023

To: Joe Mayer; Nicholas Johnson; Sierra Clem

From: Kia Gibbs on behalf of Aaron Goller, PE

Re: 22, 30, 36 & 44 Jowite Street - Naima Ventures

No. of Pages: 1

Phase: Planning Commission

Review Type: SUBM: 1

Status: Approved

Easton Utilities Commission has reviewed the above referenced plans do not have any comments to provide.

Please contact Kia Gibbs, Admin Support at kgibbs@eucmail.com should you have any questions.



Friday, March 31, 2023

Town of Easton
14 S. Harrison Street
Easton, MD 21601

ATTN: Joe Mayer

RE: NAIMA - Sketch SITE PLAN REVIEW – 22, 30, 36 & 44 Jowite Street – Phase II
Infrastructure Plans

Mr. Mayer,

RAUCH inc. has reviewed comments received March 1, 2023, and offers the following responses to the Easton Town Engineer, Town of Easton Planning and Zoning, and Easton Utilities:

OFFICE OF BUILDING INSPECTION COMMENTS

1. Applicant should contact this Department and verify current Building Codes including the Town of Easton's modifications prior to preparation of Building plans.

Noted

- a. The following lists items required on the construction drawings in order to apply for a Building Permit.
 - i. Indicate the type of construction and use as listed in the International Building Code Chapter Three.

Will be provided.
 - ii. 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

Page | 1

completed and included with the application materials. Be sure to address ADA standards for multi-family units.

Will be provided.

- iii. The Town of Easton, in accordance with the International Building Code Chapter 17, establishes a building inspections procedure (Statement of Special Inspections) 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. A copy of this can be found on the Towns Web Site.

Understood

- iv. 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.

Will be provided.

- v. 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.

Will be provided.

- vi. An appointment may be set up with this department to review your permit application materials prior to permit application submission.

Understood

- 2. State Fire Marshal, (410-822-7609) plan review and inspections are required. It is your responsibility to contact them and make application.

Noted and we have been in contact with them.

PLANNING & ZONING COMMENTS

Site Plan

1. Add a north arrow to sheet C-101.00.

Revised as noted

2. Revise all title blocks to read; "Ward District 4, Easton, Maryland".

Revised as noted

3. The zoning district boundaries shall be shown when a property is located in more than one zoning district. Also, the zoning overlay district boundaries shall be shown when a property is located within any zoning overlay district.

This project is located in its entirety in Ward 4. District boundaries are located well beyond the limits of this project.

4. The standard title block is missing on sheet C-200.01.

Title block is visible on all sheets.

5. Revise Site Data on sheet G-100 to include building use. Is this a multi-family apartment?

Project consists of "Middle Housing". Data has been revised to reflect this

6. In tabular form show the specific zoning requirements, in accordance with the Zoning Ordinance, including any approved conditions or variances, for the subject property and the existing zoning districts to include but not limited to: maximum lot coverage; minimum lot size; minimum lot frontage; building envelope; minimum front, side and rear setbacks; maximum building heights; parking spaces required and provided (including standard and handicap accessible) proposed uses and proposed number of lots.

Shown on G-100

7. Include a statement within the Zoning & Parking Note, found on sheet G-100, to clarify

the adequacy of proposed parking.

Notes have been added/revised.

8. For adjoining property information, show: Tax Map and Parcel and adjacent zoning district. Please add to all plan views.

Revised as noted. Adding to all plan view cluttered plan views and was distracting from the intention of the plan sheet. We believe adding to only C-101.00 for reference was adequate.

9. Revise Site Data shown on sheet G-100 to include the applicant obtaining a Demolition Permit prior to removing existing structures.

Note added

10. Add note on sheet G-100 to read: "No roof overhang or building foundation shall extend beyond any utility distribution right-of-way and easement."

Note added

11. Provide typical dimensions between building and property line.

Dimensions added to sheet C-101.00

12. The setback, lot size, lot coverage, height, and yard requirements shall be established for each individual project by the Planning and Zoning Commission.

Understood

13. Per Chapter 28-1014.6 B 1 (b) of the Zoning Code, Trees shall be located within the parking bays so that no more than ten (10) parking spaces form an uninterrupted row. Please revise the parking bay along Tile Lane.

Waiver request included.

14. Per Chapter 28-501 C 2 of the Zoning Code, your application is exempt from the supplemental standards otherwise applicable to multi-family units. Therefore, per Chapter 28-1007.1 (14) f of the Zoning Code, areas not utilized for building or off-street parking shall be landscaped and maintained in accordance with Section 28 – 1014 of this Ordinance are exempt. The proposed landscaping along Jowite Street is adequate

Page | 4

and does not require a Bufferyard.

Understood.

15. Verify distance of proposed curb/gutter and pavement to the adjacent property lines.

Distances shown on C-301.01 and C-301.03

16. Please explore the option of requesting an exemption from forest conservation. See Article III, § 31-3.2 O, an activity on a previously developed area covered by impervious surface and located in the priority funding area.

Noted and will pursue through this code.

17. Add Comprehensive Plan Design Principles response narrative to sheet G-100.

Revised as noted

ENGINEERING COMMENTS

Plan Review

1. Please provide a statement on G-100 describing generally how Stormwater Management has been addressed.

Statement added

2. Please label parking stall dimensions or provide a typical driveway detail.

Dimensions added

3. Please label the distance from the proposed parking stall edge to the parking stall edge across Tile Lane - this should be the width of the drivable area in Tile Lane.

Dimension added

4. Please relocate the parking stalls, islands and underdrains out of the ROW to be located entirely within the property.

Underdrain is outside of ROW. Islands created around existing electric/comm poles with curb to protect poles from traffic (as discussed).

EASTON UTILITIES COMMENTS

1. 2" Communications conduit to follow electric

Notation revised to state: "1-2 1/2" ELECTRIC AND 1-2" COMM SCH40 CONDUITS.
ALL CONDUITS TO HAVE 36" COVER. CONDUITS MAY BE RUN IN SAME TRENCH"

2. Provide digital drawing to Easton Utilities for electric design. Easton Utilities to abandon overhead electric on Tile Lane. Poles turned over to Verizon after electric removed. Is Verizon abandoning overhead?

If desired by property owner, any Verizon utility connections shall be made overhead from existing poles. EUC is providing underground option for communications service.

3. Contact Will Cottingham for addressing

Noted

4. Water services and sewer laterals to be abandoned at property. Pits and cleanouts to be removed if not reused. Unused sewer, if connected to new sewer main and shall be abandoned to the main.

Services for structures slated for demolition will be abandoned, pits and cleanouts removed. Laterals have been installed to new mains during construction of Phase 1 to provide connections to new Phase 2 structures.

5. Crossings not shown

Water and sewer crossings have been shown in Phase 1 construction documents. All service connections proposed in Phase 2 will be made to new water meter pits and sewer cleanouts installed under Phase 1.

6. Water main to be extended past garbage can corral. Valves and cleanouts shall not be in parking area.

Revised as noted.

7. Water main, sewer laterals, water meter pits etc shall be abandoned properly according to Easton Utilities requirements.

Noted

8. Water meter pits not shown in easement.

Noted. Easement to be provided upon final location of water meter pits, cleanouts, and dry utilities.

9. Valves shall be added to fire service

Revised as noted

10. Sewer cleanout shall be located at ROW and 5' from building envelope

Sewer cleanouts have been added 5' from building envelope. Cleanouts at ROW will be installed during Phase 1 construction.

11. Contractors to confirm new sewer main use. If not use, abandon gravity sewer.

All proposed sewer connections shall be to the new sewer main during Phase 1 construction. Connections for Phase 2 will utilize cleanouts installed during Phase 1 construction.

12. Show sewer manhole on Jowite

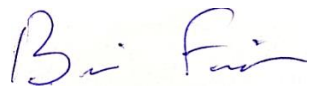
Shown

13. Show parking space lines at 20' to show distribution of utilities.

Parking stall lines are shown to be 20' from face of curb to end of stall.

Feel free to contact me at 410-770-9081 with any questions.

Thank you,



Brian Fitzgerald, P.E.

CONTACT INFORMATION

OWNER/DEVELOPER: NAIMA VENTURES, LLC
29760 STANDISH STREET
EASTON, MD 21601
410-310-6241

ENGINEER: RAUCH inc.
106 N HARRISON ST
EASTON, MARYLAND 21301
(410)770-9081

PLANNED REDEVELOPMENT OVERLAY DISTRICT ZONING REQUIREMENTS:

1. MAXIMUM LOT COVERAGE: N/A
2. MINIMUM LOT SIZE: N/A
3. MINIMUM LOT FRONTAGE: N/A
4. BUILDING ENVELOPE: N/A
5. MINIMUM FRONT SETBACK: 5 FEET
6. MINIMUM SIDE SETBACK: 5 FEET
7. MINIMUM REAR SETBACK: 15 FEET
8. MAXIMUM BUILDING HEIGHT: 35 FEET
9. PARKING: N/A - PROVIDED 38 SPACES
10. PROPOSED USE: RESIDENTIAL - MIDDLE HOUSING - MANSION APARTMENTS
11. PROPOSED LOTS: N/A - RETAIN EXISTING 4 PARCELS AS IS
12. MAXIMUM UNITS: 40 PER ACRE
PROVIDED 52 UNITS IN 1.323 ACRES
= 39.3 UNITS PER ACRE....OK

ZONING & PARKING NOTE: THE REQUIREMENTS FOR OFF-STREET PARKING IN THE SUPPLEMENTAL REQUIREMENTS OF THE ZONING ORDINANCE ARE NOT A REQUIREMENT IN A PRD OVERLAY ZONE. THE MIDDLE HOUSING RESIDENTIAL USE IS NOW PERMITTED IN THE PRD OVERLAY DISTRICT. NO SPECIAL EXCEPTION IS REQUIRED.

38 PARKING SPACES REQUIRED FOR MIDDLE HOUSING NOT IN THE PRD = 0.75 SPACES PER UNIT.

THIS PROJECT IS WITHIN THE PRD OVERLAY WHICH HAS NO REGULATION ON PARKING. HOWEVER, WE HAVE PROVIDED 37.5% OF THE OFF-STREET PARKING THAT WOULD HAVE BEEN REQUIRED. WITH ONLY NEEDING 1 ADDITIONAL SPACE TO MEET THE REQUIREMENT, RESIDENTS WILL FIND AMPLE ADDITIONAL PARKING AVAILABILITY ON THE OVERSIZED JOWITE AND CLAY STREET.

38 PARKING SPACES ARE PROPOSED AND PROVIDED.

2 OF THE 38 TOTAL SPACES ARE ADA ACCESSIBLE. BOTH ADA SPACES ARE VAN ACCESSIBLE.

TOTAL ACREAGE:

PARCEL 1372: 14,400 SQ-FT / 0.331 AC.
PARCEL 1371: 7,200 SQ-FT / 0.165 AC.
PARCEL 1370: 14,400 SQ-FT / 0.331 AC.
PARCEL 1369: 21,600 SQ-FT / 0.496 AC.
TOTAL ACREAGE: 1.323 AC.

SITE DATA

PROPERTY ADDRESS: 22, 30, 36 & 44 JOWITE STREET
EASTON, MD 21601

LATITUDE : N 038°46'19.19"

LONGITUDE W 076°04'59.11"

PRESENT ZONING CLASSIFICATION: RTA W/ A PRD OVERLAY

PRESENT USE RESIDENTIAL - MIDDLE HOUSING - MANSION APARTMENTS

TAX MAP: 0104
GRID: 000EA
PARCELS: 1369, 1370, 1371, 1372
DEED REFERENCE: 02616/00084

FEMA FLOOD MAP: PANEL 24041C0189D

FOREST CONSERVATION PLAN: WORKSHEET INCLUDED WITH SUBMISSION; PAY-IN-LIEU

LANDSCAPING PLAN: SEE PLANTER BOX DETAIL AND LANDSCAPING PLAN FOR PLANTINGS

DEMOLITION PLAN: APPLICANT SHALL OBTAIN DEMOLITION PERMIT PRIOR TO REMOVAL OF EXISTING STRUCTURES

DRAWING LIST	
SHEET NUMBER	DRAWING TITLE
G-100	COVER SHEET
C-101.00	MASTER KEY SHEET
C-200.00	EROSION AND SEDIMENT CONTROL COVER
C-200.01	EROSION AND SEDIMENT CONTROL LEGEND
V-101.01-03	EXISTING & DEMOLITION PLAN
C-201.01-03	STORMWATER & EROSION AND SEDIMENT CONTROL PLAN
C-201.04	MASTER EXISTING DRAINAGE PLAN
C-201.05	MASTER PROPOSED DRAINAGE PLAN
C-201.06-08	PROPOSED DRAINAGE AREA PLAN
C-203.01	STORMWATER & STORM DRAIN PROFILES
C-203.02	STORMWATER & STORM DRAIN SCHEDULES
C-205.01-02	STORMWATER DETAILS
C-205.03-04	EROSION AND SEDIMENT CONTROL DETAILS
C-301.01-03	SITE GRADING PLAN
C-305.01-02	SITE DETAILS
C-401.01-03	UTILITY PLAN
C-405.01	ELECTRICAL, COMMUNICATIONS, & SEWER UTILITY DETAILS
C-405.02	WATER UTILITY DETAILS
C-501.01-03	LIGHTING & LANDSCAPING PLAN
C-505	LANDSCAPING NOTES & DETAILS
C-601	FIRE MARSHALL PLAN

COMPREHENSIVE PLAN DESIGN PRINCIPLES RESPONSE NARRATIVE

- PRINCIPLE #1 - MIXED USES ARE DESIRABLE - THIS PROJECT PROPOSES A MIDDLE HOUSING DEVELOPMENT WHICH IS SIMILAR TO THE EXISTING USE FOR THE PARCELS BUT ALSO IS PART OF A NEIGHBORHOOD WHICH HAS MIXED USES SUCH AS A SCHOOL AND ATHLETIC CENTER NEARBY ON JOWITE.
- PRINCIPLE #2 - NATURAL FEATURES SHOULD DETERMINE DESIGN - TO ACCOMMODATE THE PROPOSED PROJECT, THE PROPOSED STORMWATER MANAGEMENT AREAS WILL BE CONSTRUCTED TO IMPROVE WATER QUALITY PRIOR TO OFFSITE DISPOSAL. THERE ARE NO EXISTING WETLANDS ON THE SITE. EXISTING TREES SHALL BE PROTECTED AND RETAINED AS MUCH AS POSSIBLE.
- PRINCIPLE #3 - AUTOMOBILES SHOULD NOT DETERMINE DESIGN - THIS SITE IS DESIGNED FOR RESIDENTS WHO WILL MOST LIKELY BE WORKING IN TOWN AND SHOULD PROMOTE MORE GREEN TRANSPORTATION SUCH AS BIKING OR WALKING.
- PRINCIPLE #4 - AMPLE COMMUNITY OPEN SPACE - THE PROJECT STRIVES TO ACHIEVE MAXIMUM FUNCTIONALITY WHILE STILL PROVIDING OPEN GREEN SPACE AT THE FRONT OF THE BUILDINGS.
- PRINCIPLE #5 - ARCHITECTURE SHOULD RESPECT EASTON'S HISTORICAL DEVELOPMENT - THIS APPLICATION PROPOSES ARCHITECTURE COMPATIBLE WITH ZONING CLASSIFICATION RTA AND DESIGN AND MATERIALS OF NEIGHBORING BUILDINGS.
- PRINCIPLE #6 - SIGNS SHOULD INFORM BUT NOT DOMINATE - SIGNS WILL BE COMPATIBLE WITH NEIGHBORING BUILDINGS AND FOLLOW THE TREND OF THE DEVELOPMENT.
- PRINCIPLE #7 - NEIGHBORHOODS SHOULD CONTAIN A DIVERSITY OF HOUSING TYPES - THE BUILDINGS WILL BE DIVERSE IN COLOR AND ROOF PITCHES WHICH WILL HELP TO BREAK UP ANY NOTICEABLE REDUNDANCY.
- PRINCIPLE #8 - RESIDENTIAL NEIGHBORHOODS SHOULD BE INTERESTING PLACES - THE PROJECT IS DESIGNED TO BE WELCOMING AND HAS SIDEWALKS BETWEEN BUILDINGS. THERE WILL BE PLANTER BOXES WHICH CAN ACT AS LEANING OPPORTUNITIES FOR THOSE WALKING PAST THE PROJECT TO LEARN ABOUT THE IMPORTANCE OF TREATING STORMWATER RUNOFF.
- PRINCIPLE #9 - NEIGHBORHOODS SHOULD CONNECT - THE PROJECT CONNECTS VIA TILE LANE AND JOWITE TO OTHER NEIGHBORHOODS.

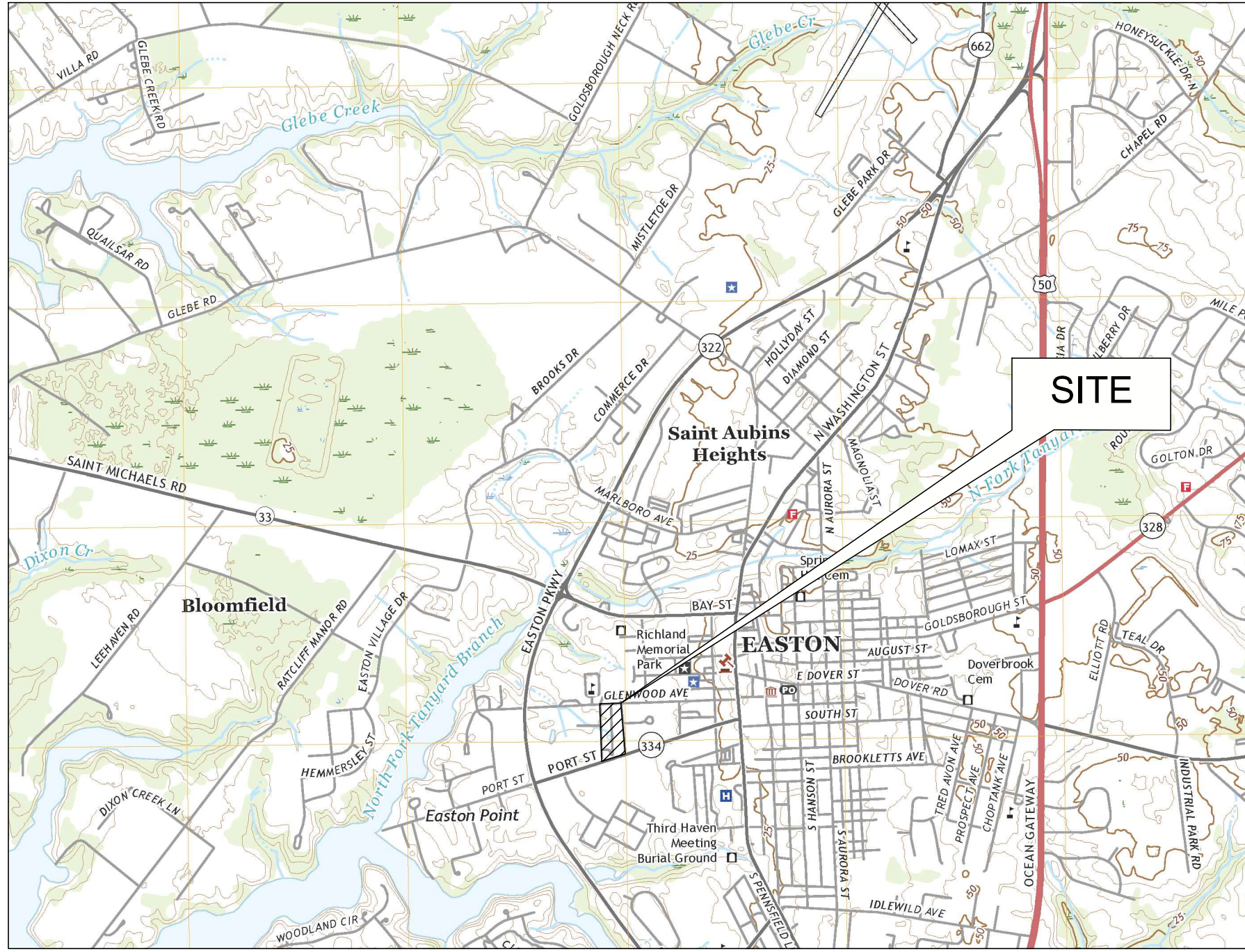
NOTES

1. NO ROOF OVERHANG OR BUILDING FOUNDATION SHALL EXTEND BEYOND ANY UTILITY DISTRIBUTION RIGHT-OF-WAY AND EASEMENT.
2. STORMWATER MANAGEMENT WILL BE HANDLED VIA PLANTER BOXES AND PERMEABLE PAVEMENT FOR BOTH QUALITY AND QUANTITY MANAGEMENT FOR THE PROJECT.

NAIMA VENTURES, LLC

PHASE 2 INFRASTRUCTURE PLANS

FOR
NAIMA VENTURES, LLC
TALBOT COUNTY, MARYLAND 21601



VICINITY MAP
SCALE: 1" = 2,000'

GENERAL NOTES

ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL CONFORM TO THE DRAWINGS, SPECIFICATIONS, LOCAL BUILDING CODES, BEST PRACTICES OF THE RESPECTIVE TRADES AND THE STANDARD SPECIFICATIONS AND DETAILS REFERRED TO HEREON.

THIS DRAWING SHOWS INFORMATION OBTAINED FROM AVAILABLE RECORDS REGARDING PIPES, CONDUITS, TELEPHONE LINES AND OTHER STRUCTURES AND CONDITIONS WHICH EXIST WITHIN LIMITS OF THE WORK AT AND BELOW THE SURFACE OF THE GROUND. THE CONTRACTOR IS RESPONSIBLE FOR SUPPORTING AND PROTECTING ALL PIPES, CONDUITS, TELEPHONE LINES, AND OTHER STRUCTURES.

THE CONTRACTOR SHALL NOTIFY THE FOLLOWING TWO (2) WEEKS PRIOR TO START OF CONSTRUCTION AND SHALL COORDINATE ALL CONSTRUCTION PHASES WITH THEM:

MDE (Main Number)	410-537-3000
MDE (Eastern Shore Field Office)	410-901-4020
TOWN OF EASTON DPW	410-882-0513
EASTON UTILITIES	410-822-6110
TALBOT COUNTY SCD	410-882-1577 x 3
MISS UTILITY	800-257-7777 or 811

SHOULD ANY DAMAGE OCCUR TO ANY MARKED UTILITIES, THEY SHALL BE REPAIRED SOLELY AT THE CONTRACTORS EXPENSE.

ALL LANDSCAPING SHALL BE PERFORMED BY QUALIFIED PROFESSIONALS. ALL PLANT MATERIALS SHALL BE FROM CERTIFIED NURSERYMAN AND BE GUARANTEED FOR ONE (1) YEAR FROM THE DATE OF PLANTING.

ANY PROPERTY LINE MONUMENTATION DISTURBED DURING CONSTRUCTION SHALL BE REPLACED SOLELY AT THE CONTRACTORS EXPENSE.

LINETYPES

TOPOGRAPHY
MAJOR CONTOURS
MINOR CONTOURS
TOP OF SLOPE BREAKLINE
BOTTOM OF SLOPE BREAKLINE
TOPOGRAPHY BREAKLINE

CATCHMENT AREA

Tc FLOW PATH

PARCEL BOUNDARY
PARCEL SETBACK/EASEMENT
FENCELINE WOOD
FENCELINE STEEL
TREELINE/VEGETATION
ROADWAY CENTERLINE
HIGHWAY BARRIER

UTILITIES
OVERHEAD ELECTRIC
UNDERGROUND ELECTRIC
TELEPHONE LINE
GAS PIPE LINE
CABLE TV
WATER PIPE
STORMWATER PIPE

UNDERDRAIN
SANITARY SEWER
FORCE MAIN SEWER

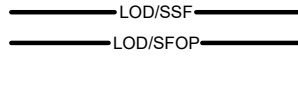
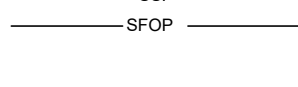
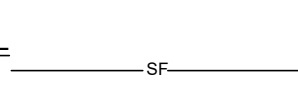
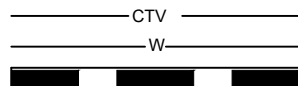
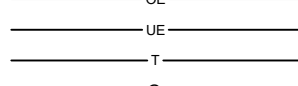
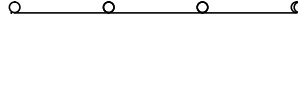
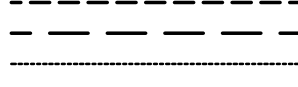
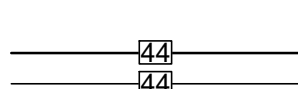
ENVIRONMENTAL
WETLAND LINE
FLOOD PLANE 100/500 YR
MEAN HIGH WATER
MEAN LOW WATER
CRITICAL AREA BOUNDARY
BUFFER 25'/100'
SOILS BOUNDARY
SWM EASEMENT 5'/10'

EROSION AND SEDIMENT CONTROL
SILT FENCE
SUPER SILT FENCE
SILT FENCE ON PAVEMENT
LIMITS OF DISTURBANCE
LOD & SILT FENCE
LOD & SUPER SILT FENCE
LOD & SILT FENCE ON PAVEMENT
STANDARD INLET PROTECTION

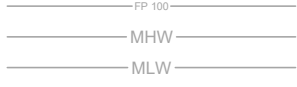
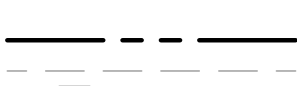
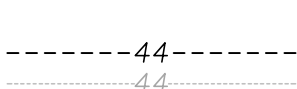
AT-GRADE INLET PROTECTION

CURB INLET PROTECTION

PROPOSED



EXISTING



SYMBOLS

FLARED END SECTION

YARD INLET

CURB INLET

CUSTOM INLET

NYLOPLAST INLET

STORM DRAIN MANHOLE

SANITARY SEWER MANHOLE

CLEANOUT

GATE VALVE

STUB

SIGN

WATER METER

FIRE HYDRANT

WELL

BOLLARD

ELECTRIC TRANSFORMER

TELEPHONE PEDESTAL

UTILITY POLE

GUY WIRE

CONIFEROUS TREE

DECIDUOUS TREE

SPOT ELEVATION

LAND SLOPE

BENCHMARK

BOREHOLE/MONITORING WELL

LIGHTING

RIPRAP OUTLET SEDIMENT

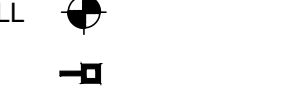
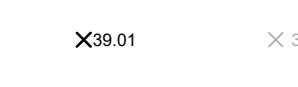
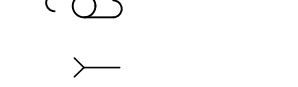
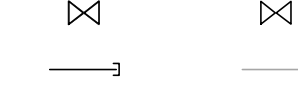
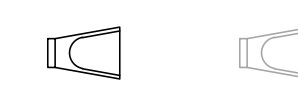
TRAP

STONE OUTLET SEDIMENT

TRAP

TYPE-1 INLET PROTECTION

PROPOSED



HATCHES

ASPHALT

GRAVEL

CONCRETE

RIPRAP/ROCK

ESD BED BOTTOM

BRICK PAVING

EXISTING TO BE DEMOLISHED

STEEP SLOPES

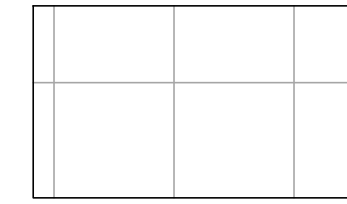


ABBREVIATIONS

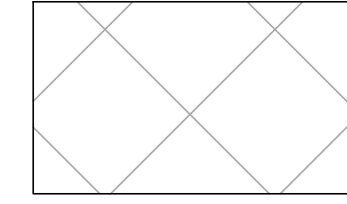
ADA	AMERICANS WITH DISABILITIES ACT
AGIP	AT GRADE INLET PROTECTION
@	PROPOSED
BC	BACK OF CURB
BM	BENCHMARK
BRL	BUILDING RESTRICTION LINE
CES	CONCRETE END SECTION
C/O	CLEAN OUT
CHRD	CHORD
CI	CURB INLET
CIP	CURB INLET PROTECTION
CL	CENTERLINE
CMF	CONCRETE MONUMENT FOUND
CMP	CORRUGATED METAL PIPE
Cul	CUSTOM INLET
CY	CUBIC YARD
DI	DUCTILE IRON
E	EAST
EL/ELEV	ELEVATION
EP	EDGE OF PAVE
ESC	EROSION AND SEDIMENT CONTROL
EX	EXISTING
FES	FLARED END SECTION
FFE	FINISHED FLOOR ELEVATION
FFH	FIRE HYDRANT
FL	FLOW LINE
FT	FOOT
GFA	GROSS FLOOR AREA
GPD	GALLONS PER DAY
GV	GATE VALVE
HDPE	HIGH DENSITY POLYETHYLENE
I	INLET
INV	INVERT
KV	KILOVOLTS
L	ARC LENGTH
LF	LINEAR FEET
LOD	LIMITS OF DISTURBED AREA
LT	LEFT
MAX	MAXIMUM
MBR	MICRO-BIORETENTION
MD	MARYLAND
MEP	MECHANICAL, ELECTRICAL, AND PLUMBING
MH	MANHOLE



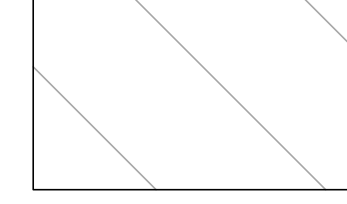
ZONING



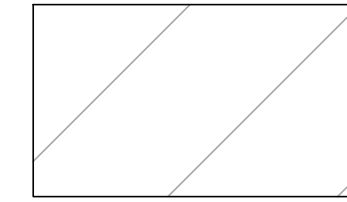
R7A



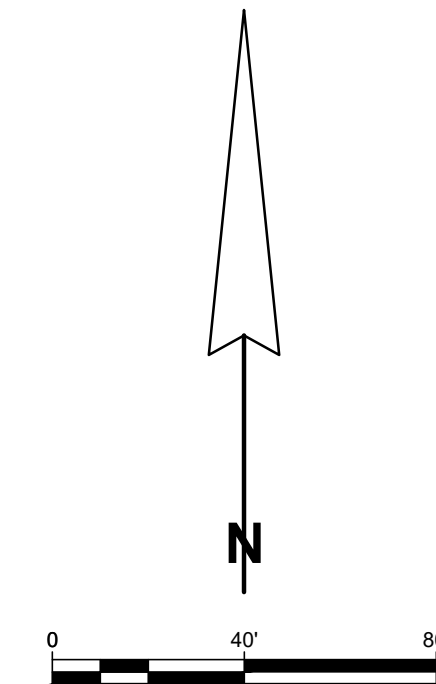
R7A - PRD OVERLAY



MXV



MXW - PRD OVERLAY



APPROVED:	APPROVED:	APPROVED:
TOWN OF EASTON - TOWN ENGINEER	TOWN OF EASTON PLANNING AND ZONING	EASTON UTILITIES - ENGINEER
DATE	DATE	DATE

[illegible]

STANDARD EROSION AND SEDIMENT CONTROL NOTES

- The contractor shall notify the Maryland Department of the Environment (MDE) Sediment Control Inspector at 410-901-4020 and the Talbot County Department of Public Works (DPW) at 410-770-8170 at least 48 hours prior to commencing any land disturbing activities and, unless waived by the Sediment Control inspector, shall be required to hold a pre-construction meeting at the project site. The contractor must provide the name of the person on the site who is responsible for inspection and maintenance of erosion and sediment control measures and a copy of their green card to the Sediment Control Inspector.
- All projects with construction activities disturbing 1 acre or more are required to submit a General Permit (NOI) to MDE to comply with the General Permit for Construction Activity for Stormwater Discharges. The General Permit must be approved prior to disturbance activities. To obtain a General Permit (NOI) form, contact the Permits Coordinator at the MDE Compliance Program at 410-537-3510.
- The limit of disturbance shall be clearly delineated in the field prior to the pre-construction meeting and any grading activities to ensure compliance with the approved plan.
- The approved Erosion and Sediment Control Plan must be kept at the project site.
- The Talbot Soil Conservation District (TSCD) reserves the right to modify the Erosion and Sediment Control Plans.
- The TSCD may revoke the approval of the Erosion and Sediment Control Plan if work performed at the project site does not conform to the provisions of the grading permit, to the approved plan or to any written instructions from MDE, Talbot County DPW or the TSCD.
- The contractor must request that the Sediment Control Inspector approve work completed in accordance with the approved Erosion and Sediment Control Plan, the grading or building permit and the Talbot County Erosion and Sediment Control Ordinance at the following points of project development:
 - Upon completion of the installation of perimeter erosion and sediment control measures but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by MDE is made.
 - Prior to removal or modification of any sediment control structures(s).
 - Upon final stabilization of the site and prior to the removal of any sediment control measures.
- The contractor shall construct all erosion and sediment control measures per the approved plan and construction sequence and shall have them inspected and approved by the Sediment Control Inspector prior to beginning any other land disturbances.
- The contractor shall ensure that all runoff from disturbed areas is directed to the sediment control devices and shall not remove any erosion or sediment control measure without prior permission from the Sediment Control Inspector.
- The following minor plan modifications may be approved by the Sediment Control Inspector in the field:
 - Sediment control structures (except basins and traps) may be moved to meet the existing contours and field conditions, when moving these structures would have no impact on their function or design criteria.
 - Substitution of perimeter control measures may be made provided the measure substituted is equivalent (i.e., silt fence for straw bales) or is an upgrade of the original measure (i.e., silt fence to a perimeter berm with properly sized outlet).
 - Addition and extension of perimeter controls (including stone construction entrances) may be made to meet field conditions. Any modifications to the plan which are not listed above require the plan to be submitted to the TSCD for review and approval.
- The contractor shall protect all points of construction ingress and egress to prevent the deposition of materials onto public roads. All materials deposited onto public roads shall be removed immediately.
- On-site temporary stockpile areas must be placed as shown on the approved plan. If the construction schedule is to exceed 3 days, the stockpile areas must be stabilized. Stockpile areas should not exceed fifteen feet in height. If a stockpile is to exceed fifteen feet in height, it must be shown on the plan to be terraced with pipe slope drains installed and approved by TSCD. Upon the completion of the use of the stockpile area, existing ground surfaces shall be restored to their original conditions and permanently stabilized.
- Various steps in the sequence of construction may require the contractor to remove excess excavated material to an approved location or to import material from an approved location. For purposes of this plan, an approved location shall be one which is operating under an approved erosion and sediment control plan and an active grading permit at the time of construction.
- The contractor shall inspect daily and maintain continuously in an effective operating condition all erosion and sediment control measures until such time as they are removed with prior permission from the Sediment Control Inspector.
- Following initial soil 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, and all slopes equal to or greater than 3 horizontal to 1 vertical (3:1), and
 - Seven (7) days as to all other disturbed or graded areas on the project site. The above requirements do not apply to those areas which are shown on the plan and are currently being used for material storage or for those areas on which actual construction activities are currently being performed or to interior areas of a surface mine site where the stabilization material would contaminate the recoverable resource. Maintenance shall be performed as necessary to ensure that the stabilized areas continuously meet the appropriate requirements of the most current Maryland Standards and Specifications for Soil Erosion and Sediment Control.
- Sediment control practices will be maintained until the entire contributing area to the practice has been permanently stabilized and meets the satisfaction of the Sediment Control Inspector. Sediment controls may only be removed with the authorization of the Sediment Control Inspector.
- All areas disturbed by the removal of sediment control devices must be immediately stabilized.
- Surface drainage flows over unstabilized cut and fill slopes shall be controlled by either preventing drainage flows from traversing the slopes or by installing protective devices to convey the water downslope without causing erosion. Dikes shall be installed and maintained at the top of cut or fill slopes until the slope and drainage area to it are fully stabilized, at which time the dikes must be removed and final grading done to promote sheet flow drainage. Erosion control measures must be implemented at points of concentrated flow where erosion is likely to occur.
- No permanent cut or fill slope with a gradient steeper than 3:1 will be permitted in lawn maintenance areas. A slope gradient of up to 2:1 will be permitted in non-maintenance areas provided that these areas are indicated on the erosion and sediment control plans with a low-maintenance ground cover specified for permanent stabilization. Slope gradient steeper than 2:1 will not be permitted with vegetation stabilization.
- All flow lines are to be stabilized with sod or seed with erosion control matting to a depth of flow of 1 foot.
- Sediment traps or basins are not permitted within 20 feet of a foundation which is existing or under construction. No structure may be constructed within 20 feet of an active sediment trap or basin.
- Temporary sediment traps and sediment basins shall be cleaned out and restored to the original dimensions when sediment has accumulated to one half (1/2) the wet storage depth of the trap or basin.
- Sediment removed from traps (and basins) shall be placed and stabilized in approved areas, but not within a floodplain, wetland or forest retention area. When pumping sediment laden water, the discharge must be directed to a sediment trapping device prior to release from the site.
- For approved dewatering strategies for traps and basins, see section F of the 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control. Pumping sediment laden water into the waters of the State without filtration is strictly forbidden.
- Sediment control devices placed in infiltration areas must have bottom elevations at least two (2) feet higher than the finished grade elevation of the infiltration practice. When converting a sediment trap to an infiltration device, all accumulated sediment must be removed and disposed of prior to final grading of infiltration device.
- The developer is responsible for obtaining all necessary permits prior to any construction activities. Further, the issuance of a grading permit does not relieve the developer of the responsibility to obtain any additional local, state or federal permits.

GENERAL NOTES

ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL CONFORM TO THE DRAWINGS, SPECIFICATIONS, LOCAL BUILDING CODES, BEST PRACTICES OF THE RESPECTIVE TRADES AND THE STANDARD SPECIFICATIONS AND DETAILS REFERRED TO HEREON.

THIS DRAWING SHOWS INFORMATION OBTAINED FROM AVAILABLE RECORDS REGARDING PIPES, CONDUITS, TELEPHONE LINES AND OTHER STRUCTURES AND CONDITIONS WHICH EXIST WITHIN LIMITS OF THE WORK AT AND BELOW THE SURFACE OF THE GROUND. THE CONTRACTOR IS RESPONSIBLE FOR SUPPORTING AND PROTECTING ALL PIPES, CONDUITS, TELEPHONE LINES, AND OTHER STRUCTURES.

THE CONTRACTOR SHALL NOTIFY THE FOLLOWING TWO (2) WEEKS PRIOR TO START OF CONSTRUCTION AND SHALL COORDINATE ALL CONSTRUCTION PHASES WITH THEM:

MDE (Main Number)	410-537-3000
MDE (Eastern Shore Field Office)	410-901-4020
TOWN OF EASTON DPW	410-882-0513
TALBOT COUNTY SCD	410-882-1577 x 3
MISS UTILITY	800-257-7777 or 811

SHOULD ANY DAMAGE OCCUR TO ANY MARKED UTILITIES, THEY SHALL BE REPAIRED SOLELY AT THE CONTRACTORS EXPENSE.

ALL LANDSCAPING SHALL BE PERFORMED BY QUALIFIED PROFESSIONALS. ALL PLANT MATERIALS SHALL BE FROM CERTIFIED NURSERYMAN AND BE GUARANTEED FOR ONE (1) YEAR FROM THE DATE OF PLANTING.

ANY PROPERTY LINE MONUMENTATION DISTURBED DURING CONSTRUCTION SHALL BE REPLACED SOLELY AT THE CONTRACTORS EXPENSE.

ENVIRONMENTAL NOTES:

- THE PROJECT SITE IS NOT LOCATED WITHIN THE CRITICAL AREA BUFFER
- THE SITE IS NOT LOCATED WITHIN A 100 YEAR FLOODPLAIN
- STEEP SLOPES ARE NOT PRESENT ON SITE
- NON TIDAL WETLANDS ARE PRESENT ON SITE

HYDROLOGY NOTES:

- STORMWATER RUNOFF DURING CONSTRUCTION WILL BE HANDLED THROUGH SILT FENCE AND INLET PROTECTION MEASURES TO PREVENT ANY SEDIMENT FROM LEAVING THE SITE AND ENTERING THE TOWN OF EASTON STORM DRAIN NETWORK. POST CONSTRUCTION STORMWATER RUNOFF FROM THE BUILDINGS WILL BE HANDLED WITH A SERIES OF PLANTER BOXES.
- THE PROJECT WILL NOT ALTER HYDROLOGY TO OR FROM THE SITE
- NO OUTLETS WILL BE ALTERED BY THIS PROJECT

STANDARD STABILIZATION NOTE

FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETE WITHIN:

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

NAIMA VENTURES, LLC

PHASE 2 EROSION & SEDIMENT CONTROL PLANS

FOR
NAIMA VENTURES, LLC
EASTON, TALBOT COUNTY, MARYLAND 21601



VICINITY MAP
SCALE: 1" = 2,000'

REVIEWED FOR THE TALBOT SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS

APPROVED:

TALBOT SOIL CONSERVATION DISTRICT

DATE

NOTE: THE TALBOT SOIL CONSERVATION DISTRICT RESERVES THE RIGHT TO ADD, DELETE, MODIFY OR OTHERWISE ALTER THE EROSION CONTROL PROVISIONS OF THIS PLAN IN THE EVENT THAT ADDITIONAL PROTECTION BECOMES NECESSARY.

DEVELOPER'S CERTIFICATION

I HEREBY CERTIFY THAT ALL OF THE DEVELOPMENT AND/OR CONSTRUCTION SHALL BE DONE IN ACCORDANCE TO THIS PLAN OF EROSION AND SEDIMENT CONTROL.

SIGNATURE

DATE

- IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR OR SUBCONTRACTOR TO NOTIFY THE ENGINEER OF ANY DEVIATION MADE IN THIS PLAN. ANY CHANGE MADE TO THIS PLAN WITHOUT WRITTEN AUTHORIZATION FROM THE ENGINEER WILL PLACE RESPONSIBILITY FOR SAID CHANGE ON THE CONTRACTOR OR SUBCONTRACTOR.
- ANY RESPONSIBLE PERSONNEL INVOLVED IN THIS CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT THE DEPARTMENT OF ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF EROSION AND SEDIMENT BEFORE BEGINNING THE PROJECT.

The following items have been addressed to meet the requirements of the GENERAL PERMIT FOR STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITY (NPDES NUMBER MDR10, STATE DISCHARGE PERMIT NUMBER 09GP).

- Utilization of environmental site design
- Maintenance of limits of disturbance to protect natural areas
- Control of construction equipment and vehicles
- Evaluation and appropriate limitation of site clearing
- Evaluation and designation of site area for phasing or sequencing
- Identification of soils at high risk for erosion and advanced stabilization techniques to be used
- Identification of steep slopes and designation of limitations on clearing them
- Evaluation and designation of stabilization requirements and time limits and protection measures for discharges to the Chesapeake Bay, impaired waters or waters with an established Total Maximum Daily Load (TMDL).

CONTACT INFORMATION

OWNER/DEVELOPER: NAIMA VENTURES, LLC
29760 STANDISH STREET
EASTON, MD 21601
410-310-6241

ENGINEER: RAUCH inc.
106 N HARRISON ST
EASTON, MARYLAND 21301
(410)770-9081

SITE DATA

PROPERTY ADDRESS: 35 CLAY STREET
401 PORT STREET
EASTON, MD 21601

LONGITUDE: 38°46'16.40" N
38°46'21.36" N

LATITUDE: 76°04'56.18" W
76°04'59.78" W

PRESENT ZONING CLASSIFICATION: R7A W/ A PRD OVERLAY

PRESENT USE: RESIDENTIAL

TAX MAP: 0104
GRID: 000EA
PARCEL: 1381, 1382
DEED REFERENCE: 02627/0235

SITE AREA: 0.752 ACRES

PROPOSED TOTAL LIMIT OF DISTURBANCE: 1.255 ACRES
TOTAL EXISTING IMPERVIOUS: 14,265 SF
TOTAL PROPOSED IMPERVIOUS: 17,804 SF
AREA OF VEGETATIVE STABILIZATION: 13,840 SF

TOTAL CUT: 190.5 CY
TOTAL FILL: 288.8 CY
NET CUT/FILL: 98.3 CY (FILL)

FEMA FLOOD MAP: PANEL 24041C0189D

TABLE OF CONTENTS

SHEET NO.

DRAWING TITLE

C-200.00	COVER SHEET
C-200.01	LEGEND
V-101.01 - V-101.03	EXISTING CONDITIONS AND DEMOLITION PLAN
C-201.01 - C-201.03	EROSION & SEDIMENT CONTROL PLAN
C-201.04	STORMWATER MANAGEMENT EXISTING QUANTITY MAP
C-201.05 - C-201.07	STORMWATER MANAGEMENT PLAN & PROPOSED QUANTITY MAP
C-203.01 - C-203.02	STORMWATER PROFILES AND SCHEDULES
C-205.01 - C-205.02	EROSION & SEDIMENT CONTROL DETAILS
C-205.03	STORMWATER MANAGEMENT DETAILS

SITE SEQUENCE OF CONSTRUCTION:

- NOTIFY MDE AT (410) 901-4020
TALBOT SOIL CONSERVATION DISTRICT AT (410) 822-1577
TOWN OF EASTON AT (410) 822-0513
- PRE-CONSTRUCTION MEETING.
- INSTALL STABILIZED CONSTRUCTION ENTRANCE.
- INSTALL ALL SEDIMENT AND EROSION CONTROL MEASURES (SILT FENCING & INLET PROTECTION) PER PLANS.
- COMPLETE SITE DEMOLITION AND HAUL OFF SITE (SEE SHEETS V-101.01 - V-101.03).
- REMOVE TOPSOIL AND HAUL OFFSITE. CONTRACTOR MAY STOCKPILE ONSITE AT OPEN BUILDING PADS AND WITHIN LOD. ANY STOCKPILE AREAS OUTSIDE OF LOD SHALL BE APPROVED BY ENGINEER AND TALBOT SCD.
- ROUGH GRADE SITE INSIDE LIMITS OF DISTURBANCE.
- INSTALL ALL PROPOSED STORM DRAIN PIPES/STRUCTURES ACCORDING TO PLANS
- INSTALL WATER/SEWER/UTILITY SERVICES AND STRUCTURES
- FINE GRADE SITE TO PROVIDE POSITIVE DRAINAGE AWAY FROM BUILDING PADS.
- ONCE ALL UTILITIES/ STORM DRAIN PIPES/LINES HAVE BEEN INSTALLED, INSTALL ALL PERMEABLE PAVEMENT STONE TO SPECIFIED GRADE AS WELL AS THE 2" PERFORATED PVC PIPE (CORE DRILLED INTO EXISTING INLET AND SEALED WITH WATERTIGHT SEAL).
- INSTALL CONCRETE SIDEWALK/CURB/VALLEY GUTTER TO SPECIFIED GRADE.
- FINAL PAVING OF PERMEABLE PAVEMENT.
- CONSTRUCT BUILDINGS.
- INSTALL/CONSTRUCT PLANTER BOXES AND CONNECT ALL DOWNSPOUTS INTO THEM.
- ALL DISTURBED AREAS TO BE PERMANENTLY STABILIZED.
- MAINTAIN ALL PERIMETER CONTROLS AND SEDIMENT CONTROL DEVICES UNTIL FINAL STABILIZATION HAS BEEN COMPLETELY ESTABLISHED.
- REMOVE PERIMETER CONTROLS UPON APPROVAL BY THE MDE SEDIMENT CONTROL INSPECTOR

APPROVED:

TOWN OF EASTON - TOWN ENGINEER

APPROVED:

TOWN OF EASTON PLANNING AND ZONING

APPROVED:

EASTON UTILITIES - MANAGER OF ENGINEERING

DATE

DATE

DATE

RAUCH
INC.
engineering design &
development services

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REVISIONS

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DATE: 12/28/2022

SCALE: N/A

DRAWN BY: BBF

DESIGNED BY: BBF

APPROVED BY:

SHEET NO.:

C-200.00

LINETYPES

TOPOGRAPHY
MAJOR CONTOURS
MINOR CONTOURS
TOP OF SLOPE BREAKLINE
BOTTOM OF SLOPE BREAKLINE
TOPOGRAPHY BREAKLINE

CATCHMENT AREA

Tc FLOW PATH

PARCEL BOUNDARY
PARCEL SETBACK/EASEMENT
FENCELINE WOOD
FENCELINE STEEL
TREELINE/VEGETATION
ROADWAY CENTERLINE
HIGHWAY BARRIER

UTILITIES

OVERHEAD ELECTRIC
UNDERGROUND ELECTRIC
TELEPHONE LINE
GAS PIPE LINE
CABLE TV
WATER PIPE
STORMWATER PIPE

UNDERDRAIN
SANITARY SEWER
FORCE MAIN SEWER

ENVIRONMENTAL

WETLAND LINE
FLOOD PLANE 100/500 YR
MEAN HIGH WATER
MEAN LOW WATER
CRITICAL AREA BOUNDARY
BUFFER 25'/100'
SOILS BOUNDARY
SWM EASEMENT 5'/10'

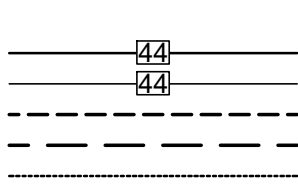
EROSION AND SEDIMENT CONTROL

SILT FENCE
SUPER SILT FENCE
SILT FENCE ON PAVEMENT
LIMITS OF DISTURBANCE
LOD & SILT FENCE
LOD & SUPER SILT FENCE
LOD & SILT FENCE ON PAVEMENT
STANDARD INLET PROTECTION

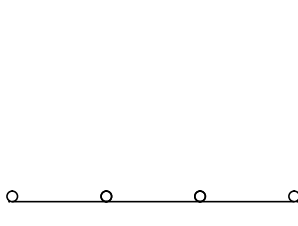
AT-GRADE INLET PROTECTION

CURB INLET PROTECTION

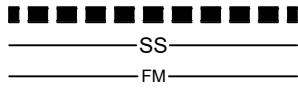
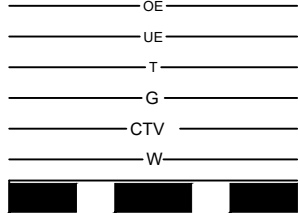
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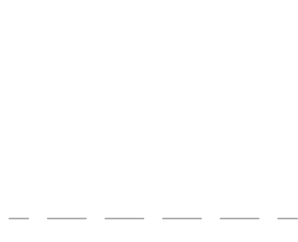
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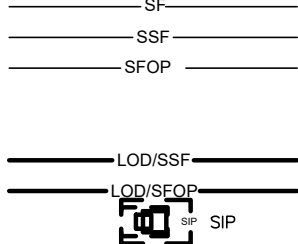
UTILITIES



ENVIRONMENTAL



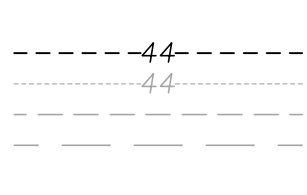
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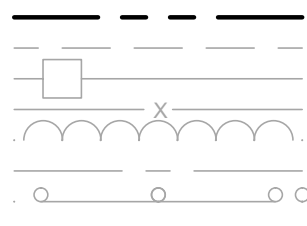
AT-GRADE INLET PROTECTION



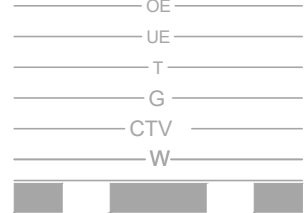
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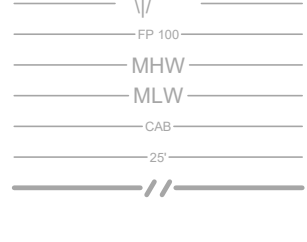
CATCHMENT AREA



UTILITIES



ENVIRONMENTAL



EROSION AND SEDIMENT CONTROL



AT-GRADE INLET PROTECTION



SYMBOLS

FLARED END SECTION

YARD INLET

CURB INLET

CUSTOM INLET

NYLOPLAST INLET

STORM DRAIN MANHOLE

SANITARY SEWER MANHOLE

CLEANOUT

GATE VALVE

STUB

SIGN

WATER METER

FIRE HYDRANT

WELL

ELECTRIC TRANSFORMER

TELEPHONE PEDESTAL

UTILITY POLE

GUY WIRE

CONIFEROUS TREE

DECIDUOUS TREE

SPOT ELEVATION

LAND SLOPE

BENCHMARK

BOREHOLE/MONITORING WELL

LIGHTING

RIPRAP OUTLET SEDIMENT

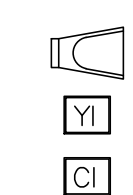
TRAP

STONE OUTLET SEDIMENT

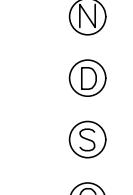
TRAP

TYPE-1 INLET PROTECTION

PROPOSED



EXISTING



HATCHES

ASPHALT

GRAVEL

CONCRETE

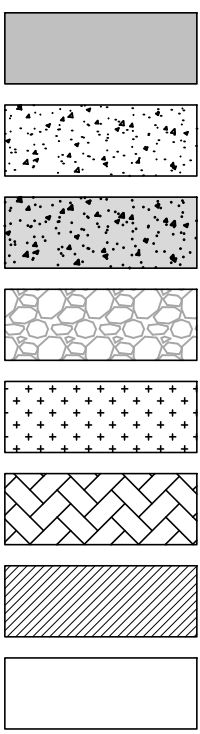
RIPRAP/ROCK

ESD BED BOTTOM

BRICK PAVING

EXISTING, TO BE DEMOLISHED

STEEP SLOPES



ABBREVIATIONS

ADA AMERICANS WITH DISABILITIES ACT
AGIP AT GRADE INLET PROTECTION
@ AT
BC BACK OF CURB
BM BENCHMARK
BRL BUILDING RESTRICTION LINE
CES CONCRETE END SECTION
C/O CLEAN OUT
CHRD CHORD
CI CURB INLET
CIP CURB INLET PROTECTION
CL CENERLINE
CMF CONCRETE MONUMENT FOUND
CMP CORRUGATED METAL PIPE
Cul CUSTOM INLET
CY CUBIC YARD
DI DUCTILE IRON
E EAST
EL/ELEV ELEVATION
EP EDGE OF PAVE
ESC EROSION AND SEDIMENT CONTROL
EX EXISTING
FES FLARED END SECTION
FFE FINISHED FLOOR ELEVATION
FH FIRE HYDRANT
FL FLOW LINE
FT FOOT
GFA GROSS FLOOR AREA
GPD GALLONS PER DAY
GV GATE VALVE
HDPE HIGH DENSITY POLYETHYLENE
I INLET
INV INVERT
KV KILOVOLTS
L ARC LENGTH
LF LINEAR FEET
LOD LIMITS OF DISTURBED AREA
LT LEFT
MAX MAXIMUM
MBR MICRO-BIORETENTION
MD MARYLAND
MEP MECHANICAL, ELECTRICAL, AND PLUMBING
MH MANHOLE
MHW MEAN HIGH WATER
MIN MINIMUM
MLW MEAN LOW WATER
MSHA MARYLAND STATE HIGHWAY ADMINISTRATION
MUTCD MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES
N NORTH
NO NUMBER
PC POINT OF CURVATURE

PE POLYETHYLENE
PERF PERFORATED
PR PROPOSED
PT POINT OF TANGENCY
PVC POLYVINYL CHLORIDE
PVI POINT OF VERTICAL INTERSECTION
Q DISCHARGE
R RADIUS
RCP REINFORCED CONCRETE PIPE
RCN RUNOFF CURVE NUMBER
ROW RIGHT-OF-WAY
RT RIGHT
S SOUTH
SCE STABILIZED CONSTRUCTION ENTRANCE
SD STORM DRAIN
SDMH STORM DRAIN MANHOLE
SF FRICTION SLOPE
SF SILT FENCE
SHA STATE HIGHWAY ADMINISTRATION
SIP STANDARD INLET PROTECTION
SQ SQUARE
SS SANITARY SEWER
SSF SUPER SILT FENCE
SSMH SANITARY SEWER MANHOLE
STA STATION
STD STANDARD
SWM STORM WATER MANAGEMENT
TAN TANGENT
TB THRUST BLOCK
TBR TO BE REMOVED
TC TOP OF CURB
Tc TIME OF CONCENTRATION
TP TAX PARCEL
TYP TYPICAL
UE UNDERGROUND ELECTRIC
UL UNDERGROUND LIGHT CABLE
UT UNDERGROUND TELEPHONE
V VELOCITY
W WEST
W/ WITH

SOILS DATA				
SYMBOL	SOIL SERIES	SLOPE	HYDRIC	HIGHLY ERODIBLE
OtA	OTHELLO SILT LOAM	0-2%	YES	YES
MtCA	MATTAPEX SILT LOAM	0-2%	NO	YES

APPROVED:	APPROVED:	APPROVED:
TOWN OF EASTON - TOWN ENGINEER	TOWN OF EASTON PLANNING AND ZONING	EASTON UTILITIES - MANAGER OF ENGINEERING
DATE	DATE	DATE

EROSION AND SEDIMENT CONTROL LEGEND

FOR
NAMA - PHASE 2
INFRASTRUCTURE IMPROVEMENT PLANS

TAX MAP 0104, GRID 000EA
WARD DISTRICT 4, EASTON, MARYLAND
PREPARED FOR NAMA VENTURES, LLC

RAUCH
INC.
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development services

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REVISIONS

REV. #	DATE	DESCRIPTION
1	03/29/2023	REVISED PER TOWN/LOPZ COMMENTS

DATE: 12/28/2022

SCALE: 1" = 10'

DRAWN BY: BBF

DESIGNED BY: BBF

APPROVED BY:

SHEET NO.:

C-200.01



EXISTING FEATURES

- 1 GAS MAIN
- 2 8" VCP SEWER MAIN
- 3 6" CAST IRON WATER MAIN
- 4 OVERHEAD ELECTRIC
- 5 6" CONCRETE CURB
- 6 TELEPHONE LINE
- 7 NEIGHBORING PROPERTY LINE (TYP.)
- 8 SEWER CLEANOUT TO REMAIN
- 9 WATER METER TO REMAIN
- 10 STANDARD ASPHALT VALLEY GUTTER
- 11 TILE LANE RIGHT OF WAY

DEMOLITION TO BE DONE UNDER THIS CONTRACT UNDER DIRECTION OF NAIMA

DEMOLITION NOTES

- 1 EXISTING STRUCTURE TO BE DEMOLISHED
- 2 EXISTING SIDEWALK TO BE DEMOLISHED
- 3 EXISTING PATIO TO BE DEMOLISHED
- 4 EXISTING LANDSCAPING TO BE REMOVED
- 5 EXISTING PARKING AREA TO BE DEMOLISHED
- 6 EXISTING OVERHEAD UTILITIES TO BE DEMOLISHED
- 7 EXISTING UNDERGROUND UTILITIES TO BE DEMOLISHED
- 8 SEE SHEETS C-501.01 - C-501.03 FOR DETAILS REGARDING TREE REMOVAL.

EXISTING & DEMOLITION PLAN

FOR
NAIMA - PHASE 2
INFRASTRUCTURE IMPROVEMENT PLANS
TAX MAP 0104, GRID 000EA
WARD DISTRICT 4, EASTON, MARYLAND
PREPARED FOR NAIMA VENTURES, LLC

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DRAWN BY: BBF

DESIGNED BY: BBF

APPROVED BY:

SHEET NO.: V-101.01

APPROVED:

TOWN OF EASTON - TOWN ENGINEER

DATE

APPROVED:

TOWN OF EASTON PLANNING AND ZONING

DATE

APPROVED:

EASTON UTILITIES - MANAGER OF ENGINEERING

DATE



- EXISTING FEATURES

1

GAS MAIN

2

8" VCP SEWER MAIN

3

6" CAST IRON WATER MAIN

4

OVERHEAD ELECTRIC

5

6" CONCRETE CURB

6

TELEPHONE LINE

7

SEWER CLEANOUT TO REMAIN

8

WATER METER TO REMAIN

9

STANDARD ASPHALT VALLEY GUTTER

10

TILE LANE RIGHT OF WAY
- DEMOLITION TO BE DONE UNDER THIS CONTRACT UNDER DIRECTION OF NAIMA
- DEMOLITION NOTES

1

EXISTING STRUCTURE TO BE DEMOLISHED

2

EXISTING SIDEWALK TO BE DEMOLISHED

3

EXISTING PATIO TO BE DEMOLISHED

4

EXISTING LANDSCAPING TO BE REMOVED

5

EXISTING PARKING AREA TO BE DEMOLISHED

6

EXISTING OVERHEAD UTILITIES TO BE DEMOLISHED

7

EXISTING UNDERGROUND UTILITIES TO BE DEMOLISHED

8

EXISTING CLUSTER MAILBOX TO BE DEMOLISHED

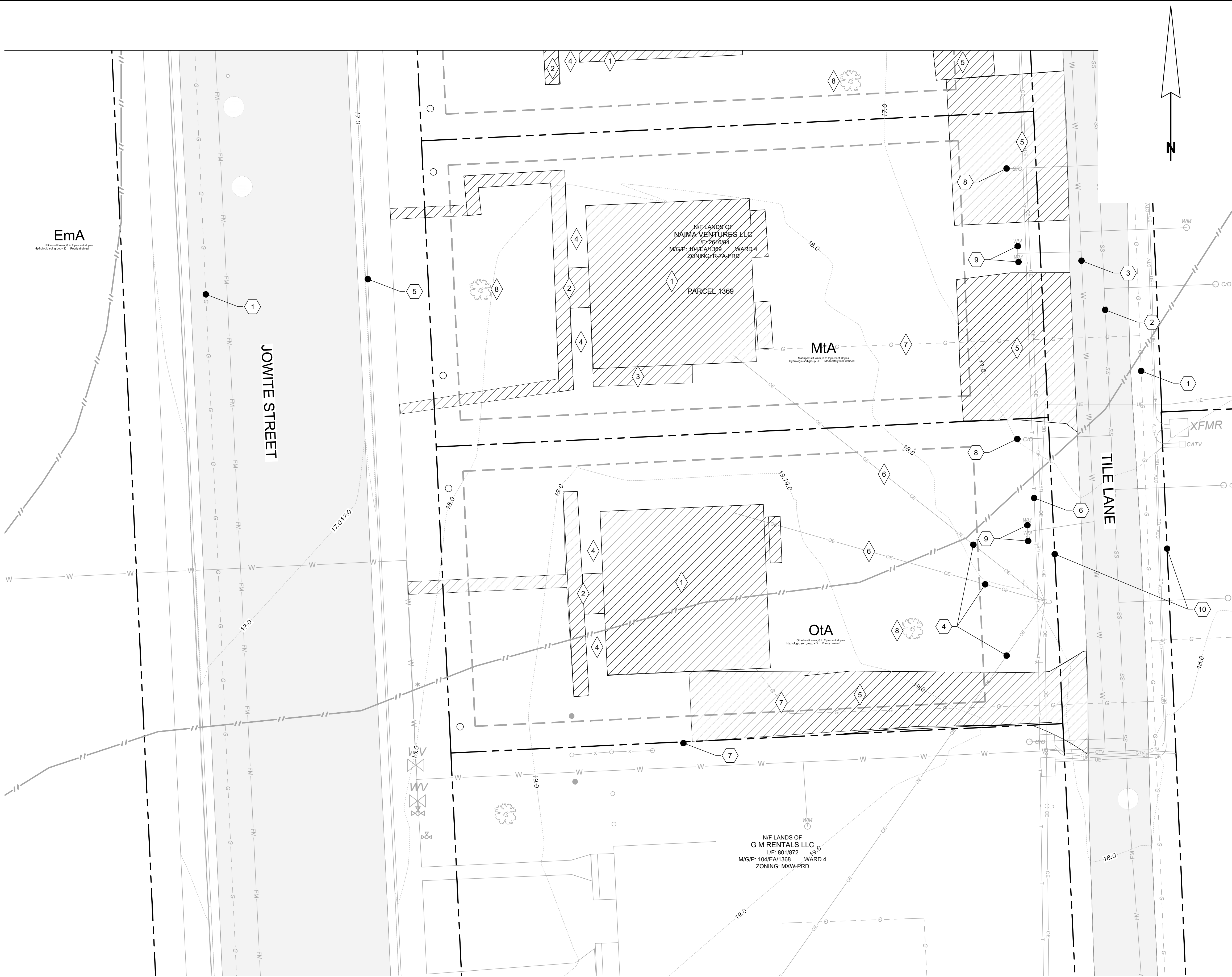
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SEE SHEETS C-501.01 - C-501.03 FOR DETAILS REGARDING TREE REMOVAL.

NOTE:
ALL EXISTING TREES TO BE REMOVED

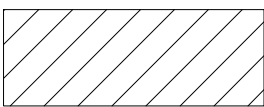
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TOWN OF EASTON - TOWN ENGINEER	TOWN OF EASTON PLANNING AND ZONING	EASTON UTILITIES - MANAGER OF ENGINEERING
DATE	DATE	DATE

EXISTING & DEMOLITION PLAN		FOR		NAIMA - PHASE 2		INFRASTRUCTURE IMPROVEMENT PLANS		TAX MAP 0104, GRID 000EA		WARD DISTRICT 4, EASTON, MARYLAND		PREPARED FOR NAIMA VENTURES, LLC	
RAUCH		INC.		engineering design & development services		office: 410.770.0881 fax: 410.770.3667		email: design@rauchinc.com web: www.rauchinc.com		Maryland Office: 105 N. Harrison St. - Easton, MD 21601		Virginia Office: 8229 Boone Blvd, Suite 625 - Vienna, VA 22182	
REVISIONS		DATE		DESCRIPTION		REVISED PER TOWN/LOCAL COMMENTS							
1		03/29/2023											



EXISTING FEATURES

- 1 GAS MAIN
- 2 8" VCP SEWER MAIN
- 3 6" CAST IRON WATER MAIN
- 4 OVERHEAD ELECTRIC
- 5 6" CONCRETE CURB
- 6 TELEPHONE LINE
- 7 NEIGHBORING PROPERTY LINE (TYP.)
- 8 SEWER CLEANOUT TO REMAIN
- 9 WATER METER TO REMAIN
- 10 TILE LANE RIGHT OF WAY



DEMOLITION TO BE DONE UNDER THIS CONTRACT UNDER DIRECTION OF NAIMA

DEMOLITION NOTES

- 1 EXISTING STRUCTURE TO BE DEMOLISHED
- 2 EXISTING SIDEWALK TO BE DEMOLISHED
- 3 EXISTING PATIO TO BE DEMOLISHED
- 4 EXISTING LANDSCAPING TO BE REMOVED
- 5 EXISTING PARKING AREA TO BE DEMOLISHED
- 6 EXISTING OVERHEAD UTILITIES TO BE DEMOLISHED
- 7 EXISTING UNDERGROUND UTILITIES TO BE DEMOLISHED
- 8 SEE SHEETS C-501.01 - C-501.03 FOR DETAILS REGARDING TREE REMOVAL.

NOTE:
ALL EXISTING TREES TO BE REMOVED

APPROVED:
TOWN OF EASTON - TOWN ENGINEER
DATE

APPROVED:
TOWN OF EASTON PLANNING AND ZONING
DATE

APPROVED:
EASTON UTILITIES - MANAGER OF ENGINEERING
DATE

EXISTING & DEMOLITION PLAN

FOR
NAIMA - PHASE 2
INFRASTRUCTURE IMPROVEMENT PLANS
TAX MAP 0104, GRID 000EA
WARD DISTRICT 4, EASTON, MARYLAND
PREPARED FOR NAIMA VENTURES, LLC

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REVISIONS

REV. #	DATE	DESCRIPTION
1	03/29/2023	REVISED PER TOWN/UPZ COMMENTS

DATE: 12/28/2022

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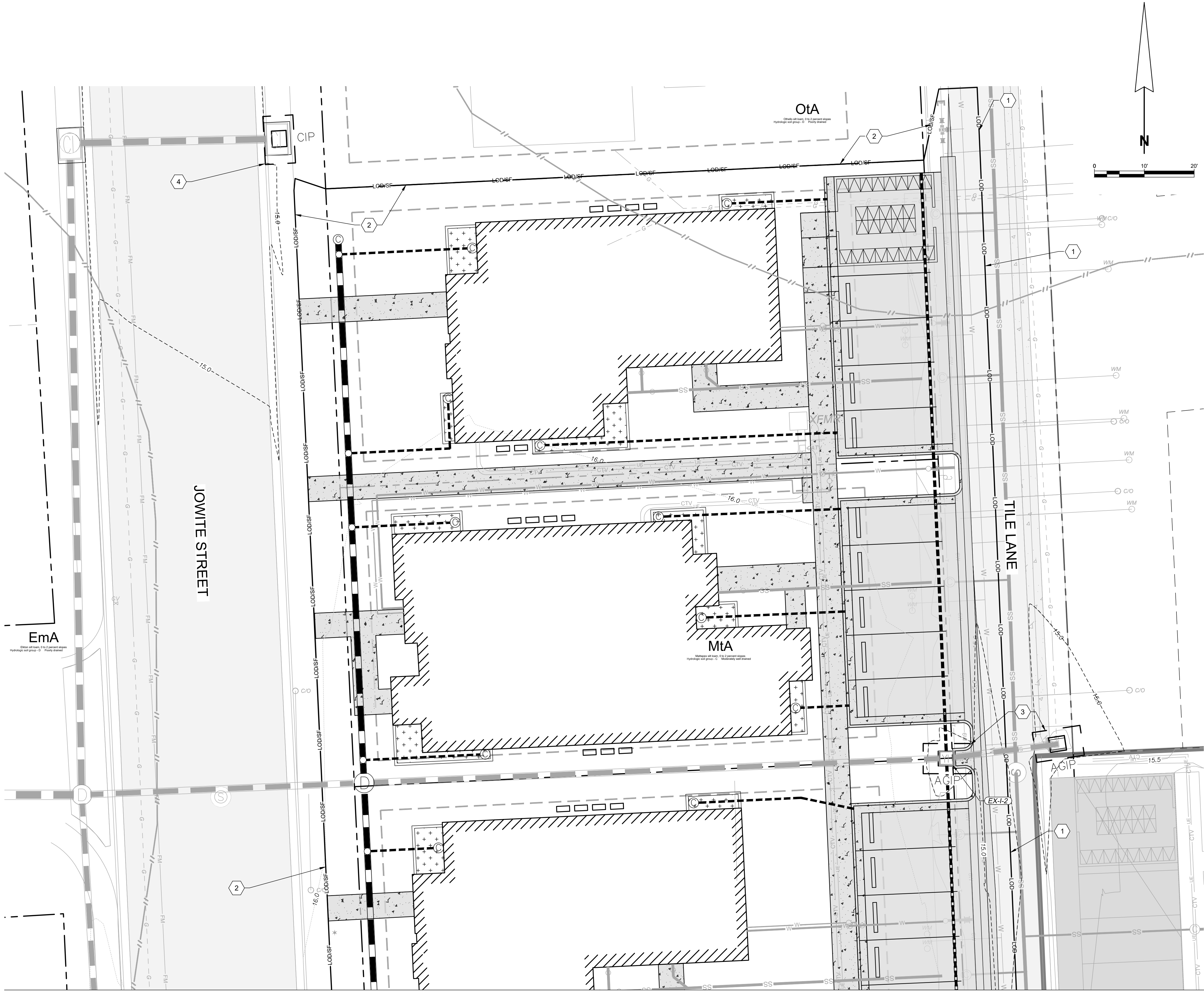
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DESIGNED BY: BBF

APPROVED BY:

SHEET NO.:
V-101.03

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PROPOSED FEATURES

- 1 LIMITS OF DISTURBANCE
- 2 LIMITS OF DISTURBANCE AND SILT FENCE PER DETAIL SHEET C-205.01
- 3 AT GRADE INLET PROTECTION (AGIP) PER DETAIL SHEET C-205.01
- 4 CURB INLET PROTECTION (CIP) PER DETAIL SHEET C-205.01

APPROVED:	APPROVED:	APPROVED:
TOWN OF EASTON - TOWN ENGINEER	TOWN OF EASTON PLANNING AND ZONING	EASTON UTILITIES - MANAGER OF ENGINEERING
DATE	DATE	DATE

REVISIONS	
REV. #	DESCRIPTION
1	REVISED PER TOWN/UPZ COMMENTS

DATE:	12/28/2022
SCALE:	1" = 10'
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DESIGNED BY:	BBF
APPROVED BY:	
SHEET NO.:	C-201.01

EROSION & SEDIMENT CONTROL PLAN

FOR

NAIMA - PHASE 2

INFRASTRUCTURE IMPROVEMENT PLANS

TAX MAP 0104, GRID 000EA

WARD DISTRICT 4, EASTON, MARYLAND

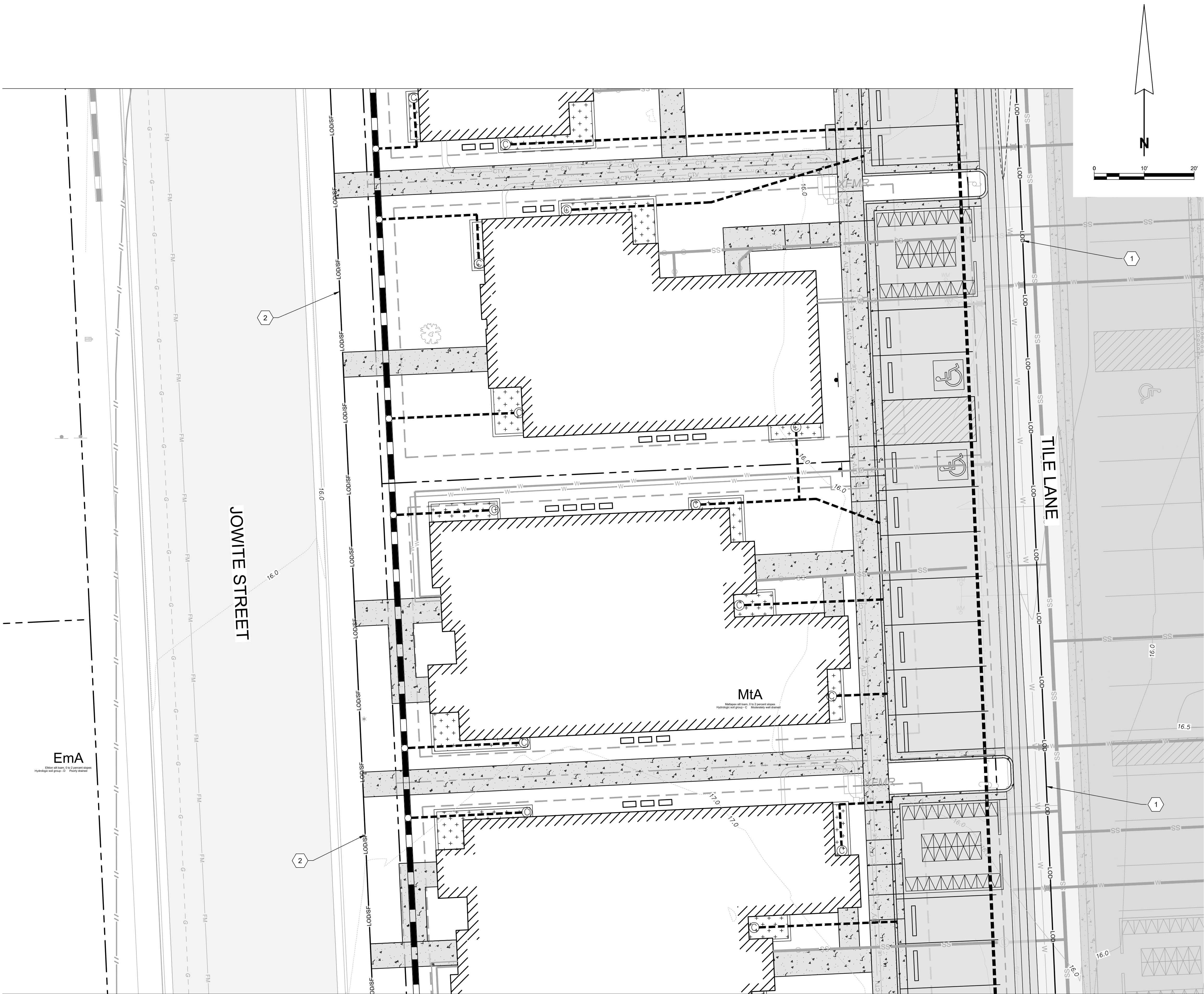
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PROPOSED FEATURES

- 1 LIMITS OF DISTURBANCE
- 2 LIMITS OF DISTURBANCE AND SILT FENCE PER DETAIL SHEET C-205.01

NOTE: PARCEL 1382 TO BE USED AS STOCKPILE & STAGING AREA FIRST. ONCE CONSTRUCTION BEGINS ON PARCEL 1382, FRONT YARDS TO BE UTILIZED AS STOCKPILE & STAGING AREAS

APPROVED:	APPROVED:	APPROVED:
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DATE	DATE	DATE

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1	03/29/2023	REVISED PER TOWN/LOPZ COMMENTS

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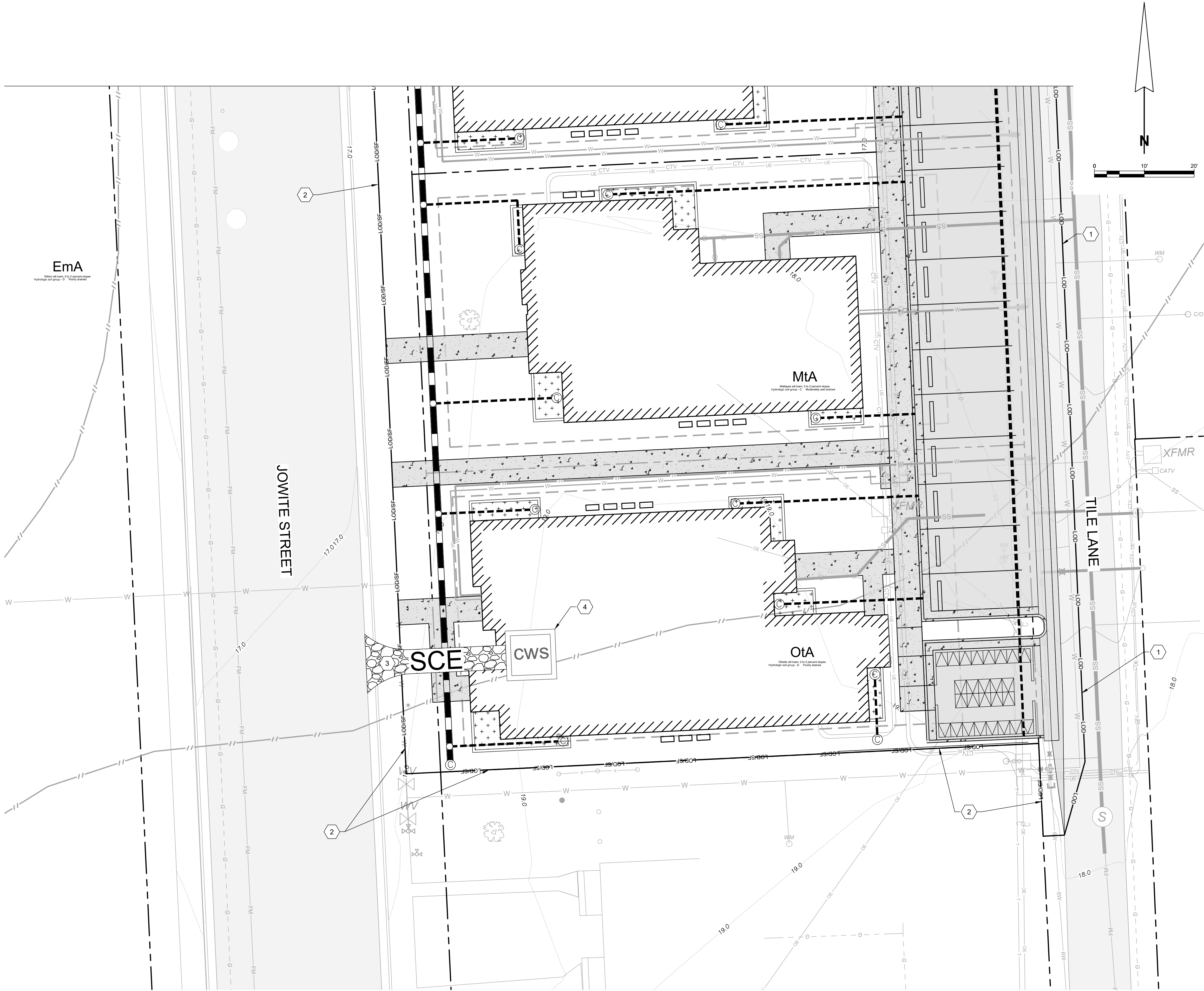
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EROSION & SEDIMENT CONTROL PLAN

FOR
NAIMA - PHASE 2
INFRASTRUCTURE IMPROVEMENT PLANS

TAX MAP 0104, GRID 000EA
WARD DISTRICT 4, EASTON, MARYLAND
PREPARED FOR NAIMA VENTURES, LLC

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PROPOSED FEATURES

- 1 LIMITS OF DISTURBANCE
- 2 LIMITS OF DISTURBANCE AND SILT FENCE PER DETAIL SHEET C-205.01
- 3 STABILIZED CONSTRUCTION ENTRANCE (SCE) PER DETAIL SHEET C-205.01
- 4 CONCRETE WASHOUT STRUCTURE PER DETAIL SHEET C-205.01

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EROSION & SEDIMENT CONTROL PLAN

FOR
NAMA - PHASE 2
INFRASTRUCTURE IMPROVEMENT PLANS

TAX MAP 0104, GRID 000EA
WARD DISTRICT 4, EASTON, MARYLAND
PREPARED FOR NAMA VENTURES, LLC

REVISIONS	
REV. #	DESCRIPTION
1	REVISED PER TOWN/PLANNING COMMENTS

DATE: 12/28/2022

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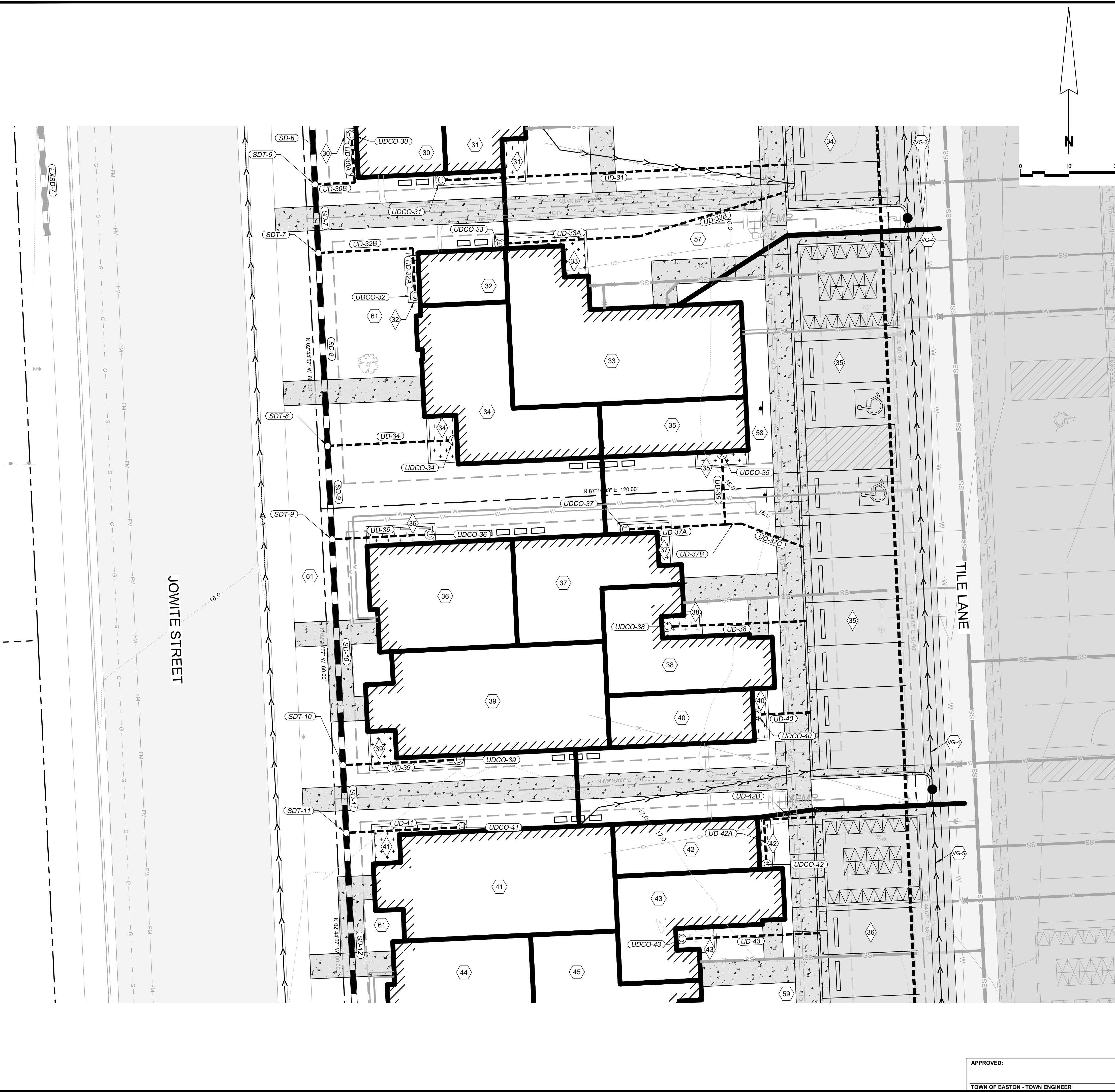
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DESIGNED BY: BBF

APPROVED BY:

SHEET NO.: C-201.03

APPROVED:	APPROVED:	APPROVED:
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DATE	DATE	DATE



ROOFTOP DRAINAGE AREAS

30	DRAINAGE AREA #30 = 199 S.F.	----->	30
31	DRAINAGE AREA #31 = 1,136 S.F.	----->	31
32	DRAINAGE AREA #32 = 199 S.F.	----->	32
33	DRAINAGE AREA #33 = 1,136 S.F.	----->	33
34	DRAINAGE AREA #34 = 741 S.F.	----->	34
35	DRAINAGE AREA #35 = 333 S.F.	----->	35
36	DRAINAGE AREA #36 = 648 S.F.	----->	36
37	DRAINAGE AREA #37 = 547 S.F.	----->	37
38	DRAINAGE AREA #38 = 550 S.F.	----->	38
39	DRAINAGE AREA #39 = 1,025 S.F.	----->	39
40	DRAINAGE AREA #40 = 322 S.F.	----->	40
41	DRAINAGE AREA #41 = 1,025 S.F.	----->	41
42	DRAINAGE AREA #42 = 322 S.F.	----->	42
43	DRAINAGE AREA #43 = 550 S.F.	----->	43
44	DRAINAGE AREA #44 = 648 S.F.	----->	44
45	DRAINAGE AREA #45 = 547 S.F.	----->	45

PLANTER BOX NUMBER

30	PLANTER BOX #30. DETAIL AND TABLE ON 205.03
31	PLANTER BOX #31. DETAIL AND TABLE ON 205.03
32	PLANTER BOX #32. DETAIL AND TABLE ON 205.03
33	PLANTER BOX #33. DETAIL AND TABLE ON 205.03
34	PLANTER BOX #34. DETAIL AND TABLE ON 205.03
35	PLANTER BOX #35. DETAIL AND TABLE ON 205.03
36	PLANTER BOX #36. DETAIL AND TABLE ON 205.03
37	PLANTER BOX #37. DETAIL AND TABLE ON 205.03
38	PLANTER BOX #38. DETAIL AND TABLE ON 205.03
39	PLANTER BOX #39. DETAIL AND TABLE ON 205.03
40	PLANTER BOX #40. DETAIL AND TABLE ON 205.03
41	PLANTER BOX #41. DETAIL AND TABLE ON 205.03
42	PLANTER BOX #42. DETAIL AND TABLE ON 205.03
43	PLANTER BOX #43. DETAIL AND TABLE ON 205.03
44	NOT SHOWN. SEE NEXT SHEET. PLANTER BOX #44. DETAIL AND TABLE ON 205.03
45	NOT SHOWN. SEE NEXT SHEET. PLANTER BOX #45. DETAIL AND TABLE ON 205.03

OTHER DRAINAGE AREAS

57	DRAINAGE AREA #57 = 4,540 S.F. CN = 88
58	DRAINAGE AREA #58 = 6,269 S.F. CN = 92
59	DRAINAGE AREA #59 = 8,366 S.F. CN = 92
61	DRAINAGE AREA #61 = 14,486 S.F. CN = 74

POROUS ASPHALT AREAS

34	POROUS ASPHALT #4 (PA-4) AREA = 1,097 S.F.
35	POROUS ASPHALT #5 (PA-5) AREA = 2,333 S.F.
36	POROUS ASPHALT #6 (PA-6) AREA = 3,085 S.F.

VALLEY GUTTERS

VG-3	VALLEY GUTTER 3
VG-4	VALLEY GUTTER 4
VG-5	VALLEY GUTTER 5

NOTE:

- ALL ROOFTOP TO HAVE APPROXIMATELY 37" OF SHEET FLOW AT 41.7% (5/8" ROOF PITCH) THEREFORE THE TIME OF CONCENTRATION IS AT 0.2 MINUTES OR ALMOST NEGLIGIBLE.
- ROOFTOP #20,22,24,25,27,29,31,33,35,37,38,40,42,43,45,47,49,51, & 52 WILL DISCHARGE INTO A PLANTER BOX AND OUT ONTO THE PERMEABLE PAVEMENT THROUGH THE PROPOSED CURB VIA A 4" PIPE.

APPROVED:
TOWN OF EASTON - TOWN ENGINEER

APPROVED:
TOWN OF EASTON PLANNING AND ZONING

APPROVED:
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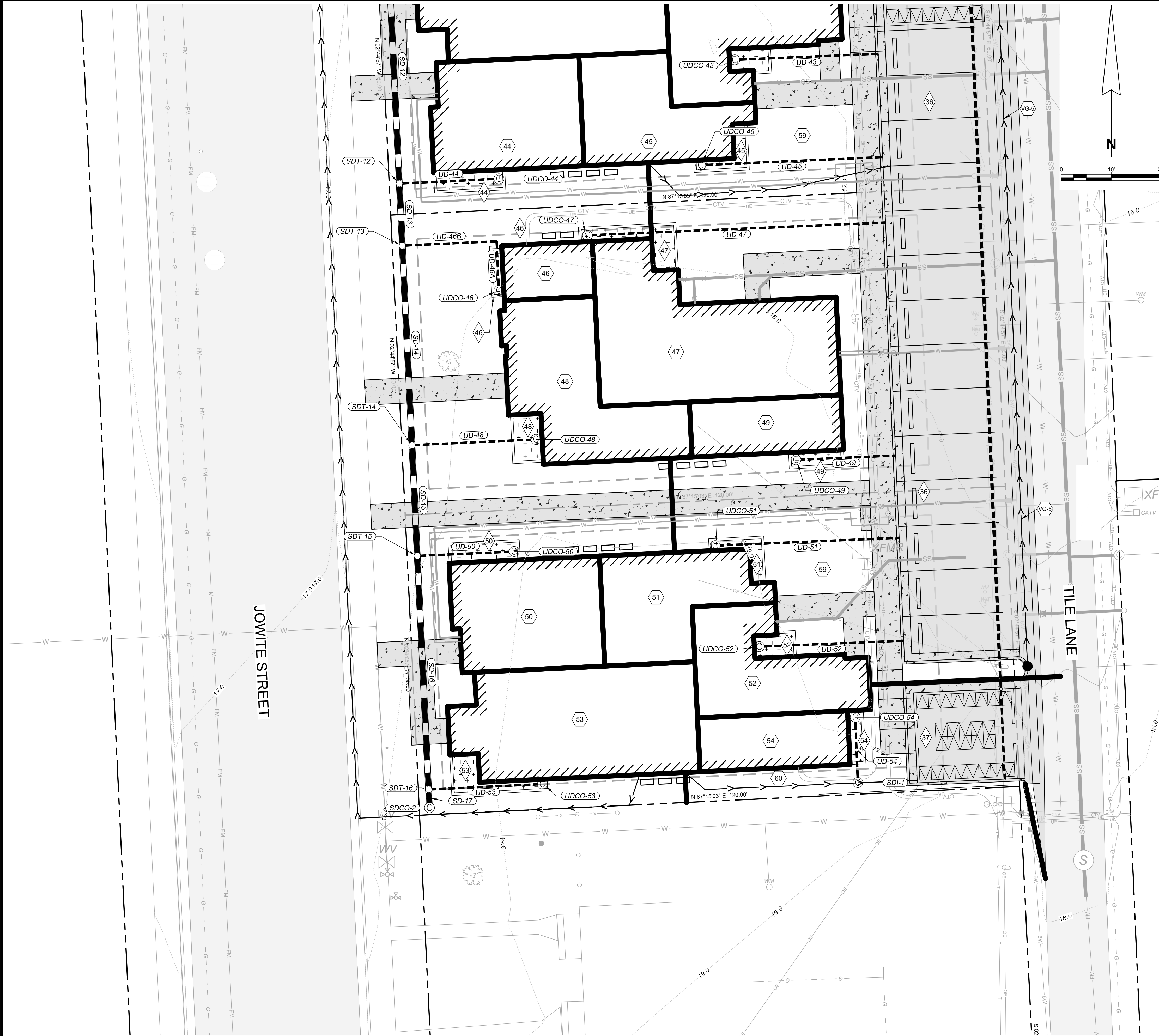
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REV. #	DATE	REVISION PER TOWN/LOCAL COMMENTS
1	03/29/2023	

DATE: 12/28/2022
SCALE: 1" = 10'
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DESIGNED BY: BBF
APPROVED BY:
SHEET NO.: C-201.06

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PROPOSED DRAINAGE AREA PLAN
FOR
NAMA - PHASE 2
INFRASTRUCTURE IMPROVEMENT PLANS
TAX MAP 0104, GRID 000EA
WARD DISTRICT 4, EASTON, MARYLAND
PREPARED FOR NAMA VENTURES, LLC



ROOFTOP DRAINAGE AREAS

44	DRAINAGE AREA #44 = 648 S.F.	44	PLANTER BOX #44. DETAIL AND TABLE ON 205.03
45	DRAINAGE AREA #45 = 547 S.F.	45	PLANTER BOX #45. DETAIL AND TABLE ON 205.03
46	DRAINAGE AREA #46 = 199 S.F.	46	PLANTER BOX #46. DETAIL AND TABLE ON 205.03
47	DRAINAGE AREA #47 = 1,136 S.F.	47	PLANTER BOX #47. DETAIL AND TABLE ON 205.03
48	DRAINAGE AREA #48 = 741 S.F.	48	PLANTER BOX #48. DETAIL AND TABLE ON 205.03
49	DRAINAGE AREA #49 = 333 S.F.	49	PLANTER BOX #49. DETAIL AND TABLE ON 205.03
50	DRAINAGE AREA #50 = 648 S.F.	50	PLANTER BOX #50. DETAIL AND TABLE ON 205.03
51	DRAINAGE AREA #51 = 547 S.F.	51	PLANTER BOX #51. DETAIL AND TABLE ON 205.03
52	DRAINAGE AREA #52 = 550 S.F.	52	PLANTER BOX #52. DETAIL AND TABLE ON 205.03
53	DRAINAGE AREA #53 = 1,025 S.F.	53	PLANTER BOX #53. DETAIL AND TABLE ON 205.03
54	DRAINAGE AREA #54 = 322 S.F.	54	PLANTER BOX #54. DETAIL AND TABLE ON 205.03

PLANTER BOX NUMBER

44	PLANTER BOX #44. DETAIL AND TABLE ON 205.03
45	PLANTER BOX #45. DETAIL AND TABLE ON 205.03
46	PLANTER BOX #46. DETAIL AND TABLE ON 205.03
47	PLANTER BOX #47. DETAIL AND TABLE ON 205.03
48	PLANTER BOX #48. DETAIL AND TABLE ON 205.03
49	PLANTER BOX #49. DETAIL AND TABLE ON 205.03
50	PLANTER BOX #50. DETAIL AND TABLE ON 205.03
51	PLANTER BOX #51. DETAIL AND TABLE ON 205.03
52	PLANTER BOX #52. DETAIL AND TABLE ON 205.03
53	PLANTER BOX #53. DETAIL AND TABLE ON 205.03
54	PLANTER BOX #54. DETAIL AND TABLE ON 205.03

OTHER DRAINAGE AREAS

59	DRAINAGE AREA #59 = 8,366 S.F. CN = 92
60	DRAINAGE AREA #60 = 1,133 S.F. CN = 91
61	DRAINAGE AREA #61 = 14,486 S.F. CN = 74

POROUS ASPHALT AREAS

36	POROUS ASPHALT #6 (PA-6) AREA = 3,085 S.F.
37	POROUS ASPHALT #7 (PA-7) AREA = 387 S.F.

VALLEY GUTTERS

VG-5	VALLEY GUTTER 5
------	-----------------

- NOTE:
- ALL ROOFTOP TO HAVE APPROXIMATELY 37' OF SHEET FLOW AT 41.7% ($\frac{5}{12}$ ROOF PITCH) THEREFORE THE TIME OF CONCENTRATION IS AT 0.2 MINUTES OR ALMOST NEGLIGIBLE.
 - ROOFTOP #20,22,24,25,27,29,31,33,35,37,38,40,42,43,45,47,49,51, & 52 WILL DISCHARGE INTO A PLANTER BOX AND OUT ONTO THE PERMEABLE PAVEMENT THROUGH THE PROPOSED CURB VIA A 4" PIPE.

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REVISIONS

REV. #	DATE	DESCRIPTION
1	03/29/2023	REVISED PER TOWN/PLZ COMMENTS

DATE: 12/28/2022

SCALE: 1" = 10'

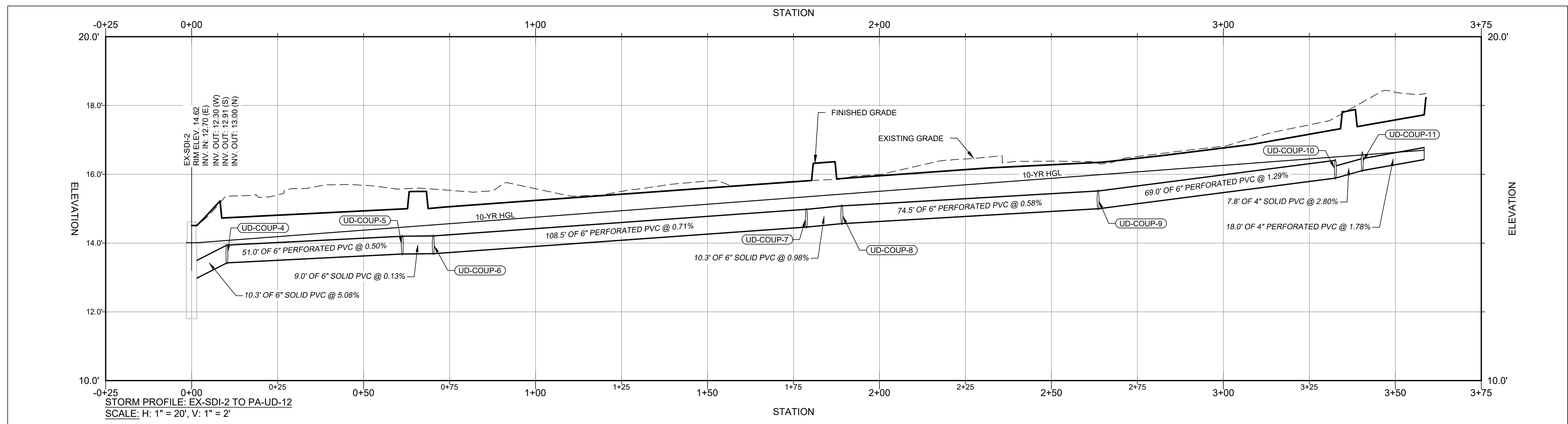
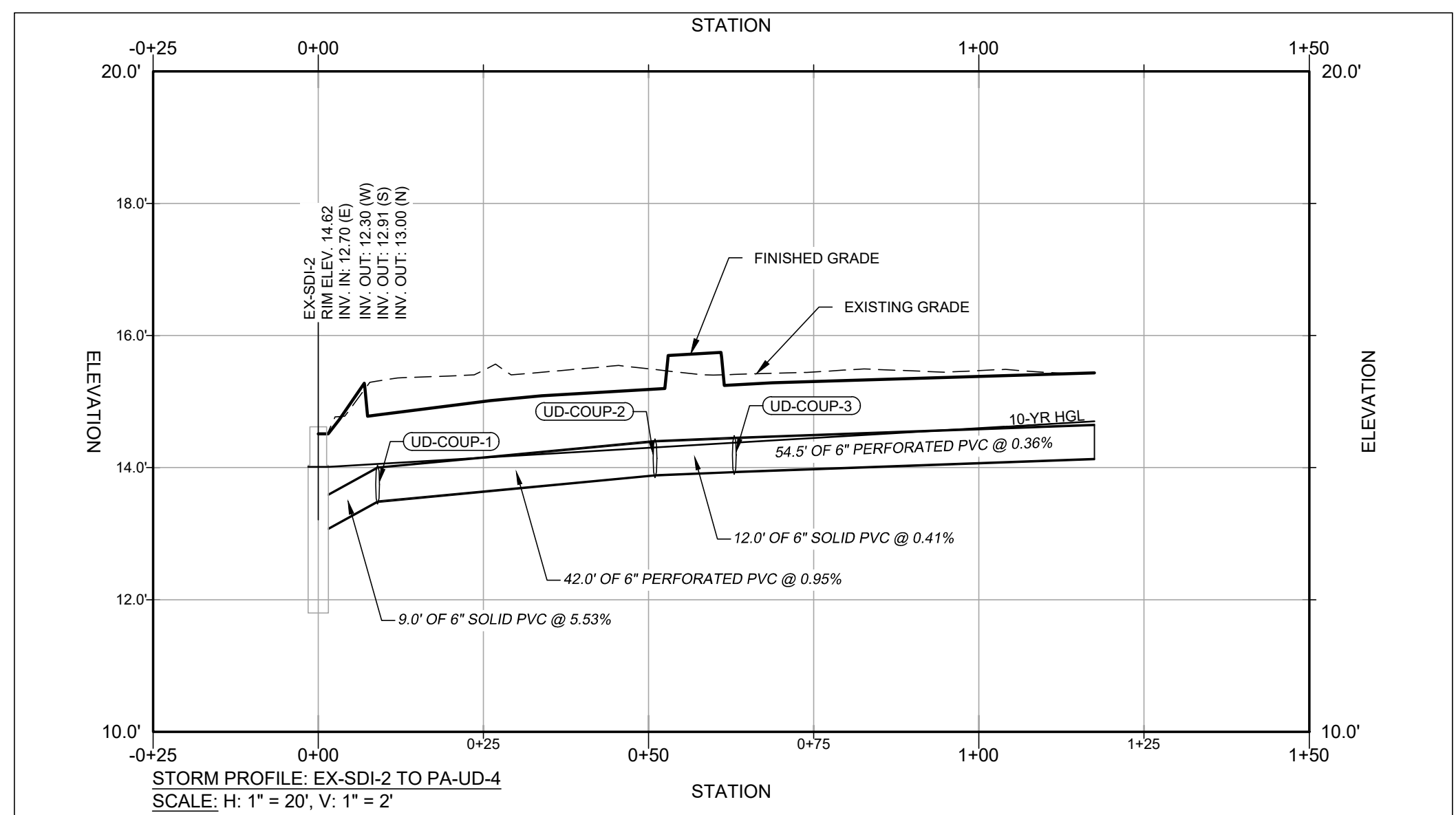
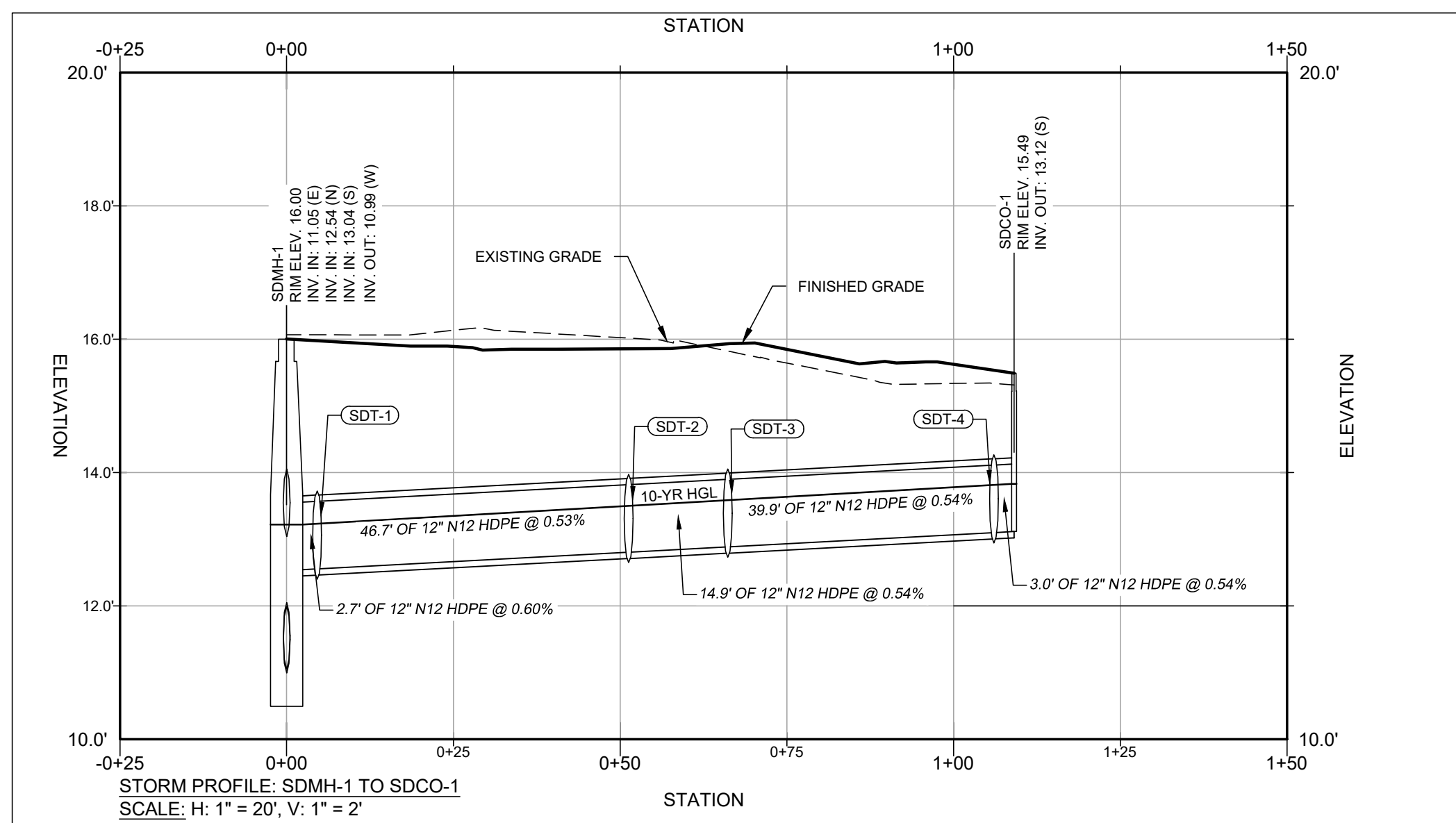
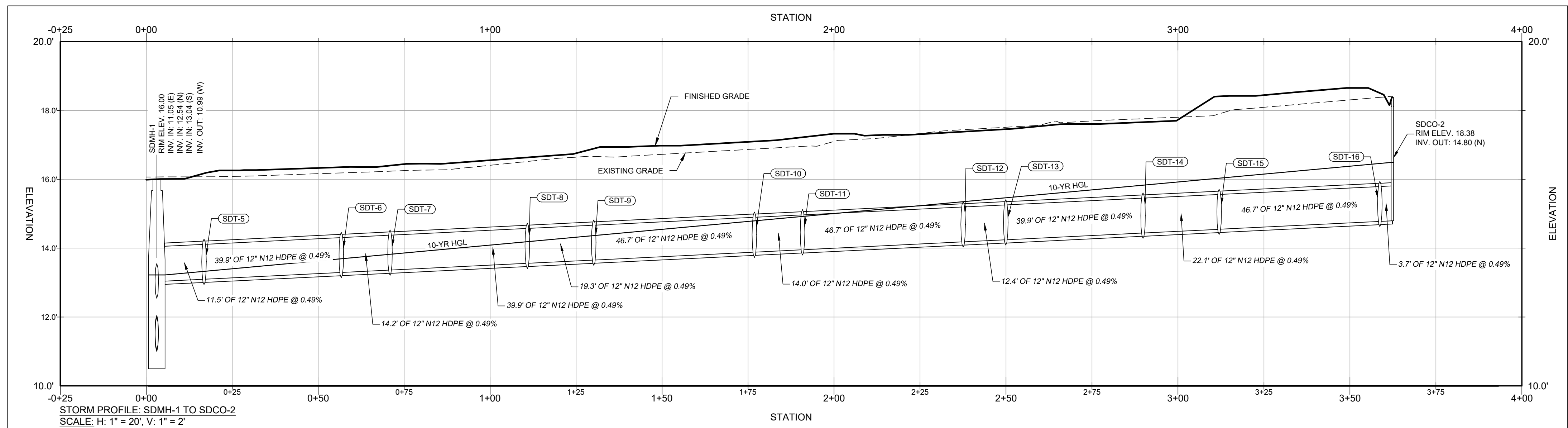
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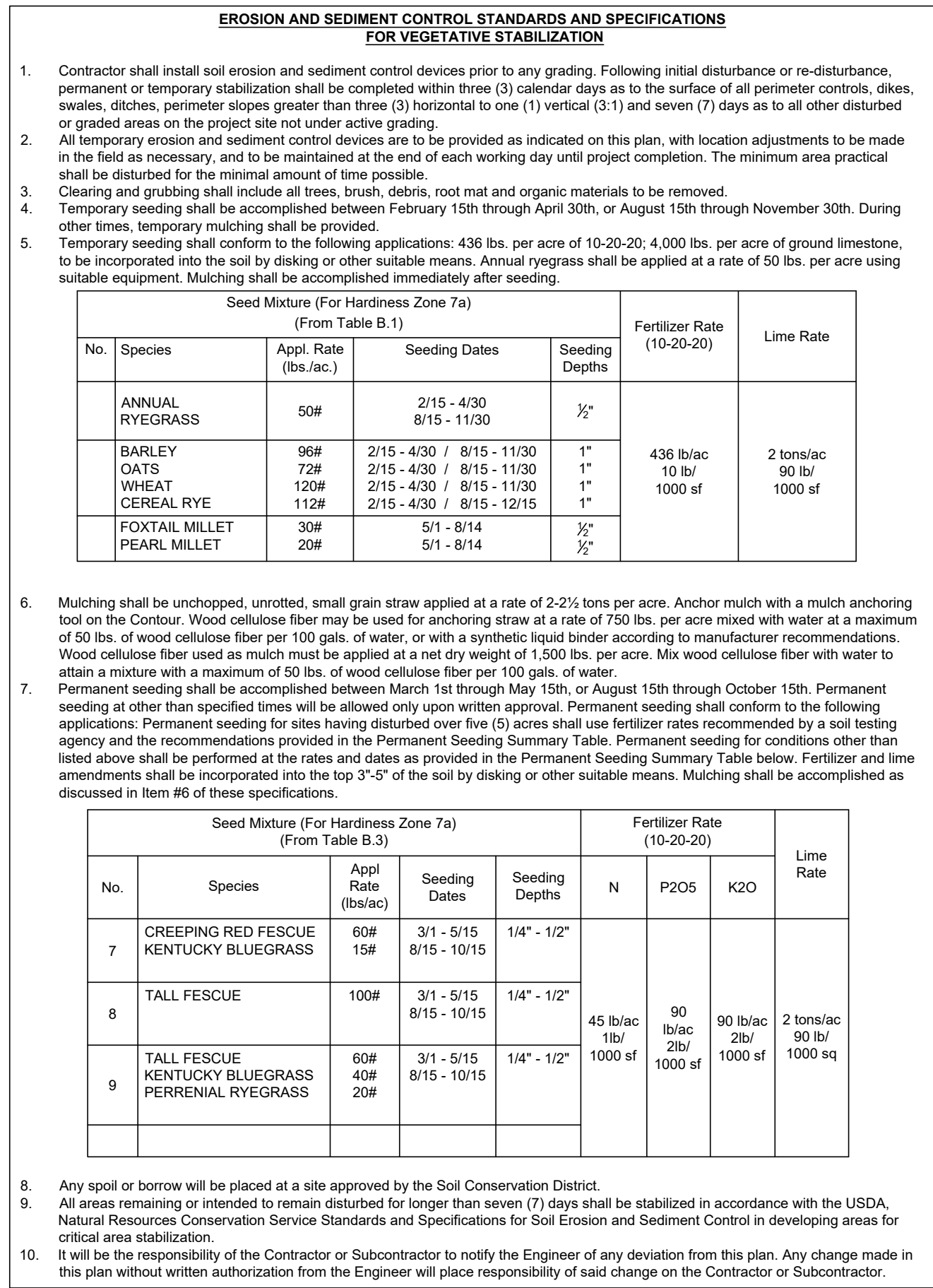
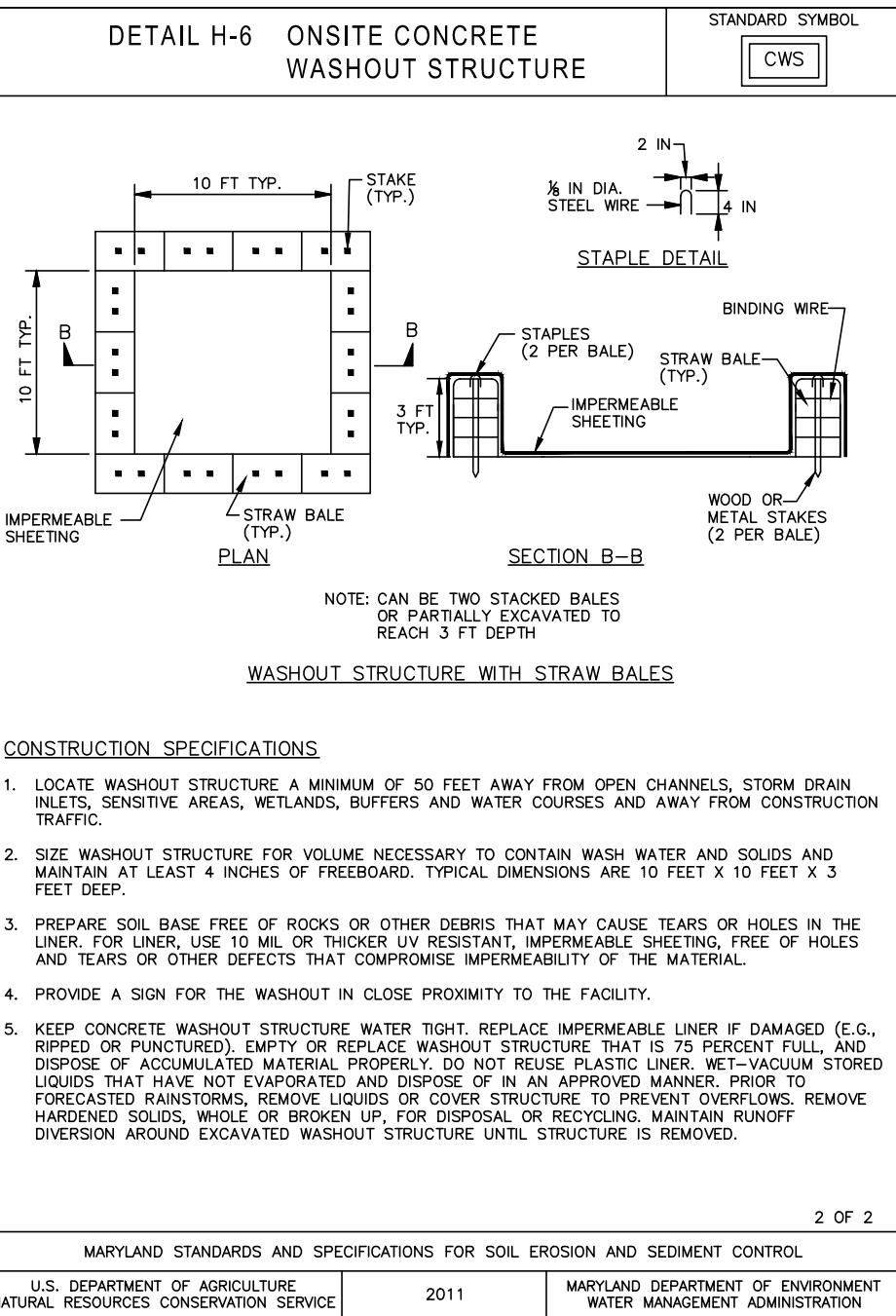
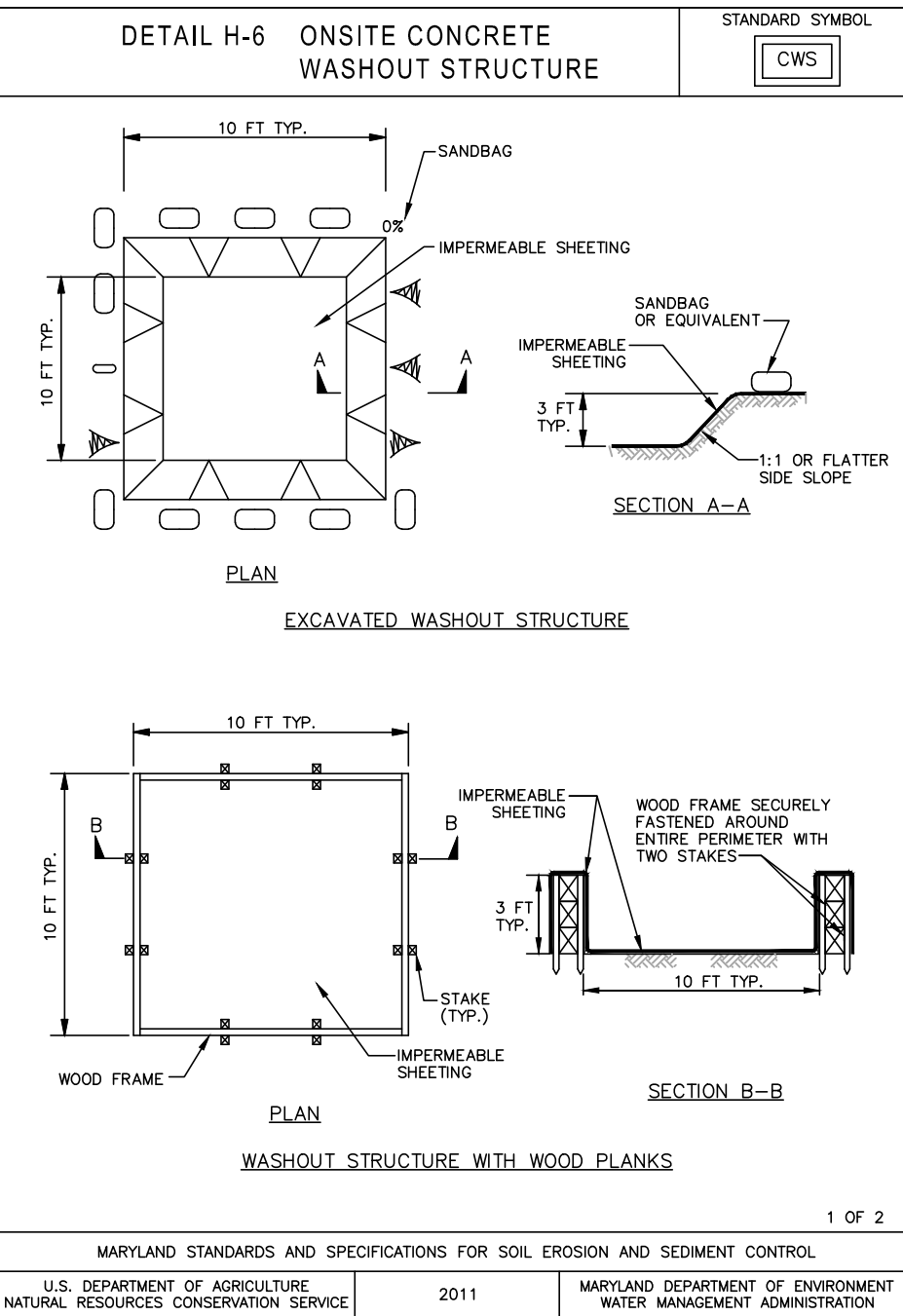
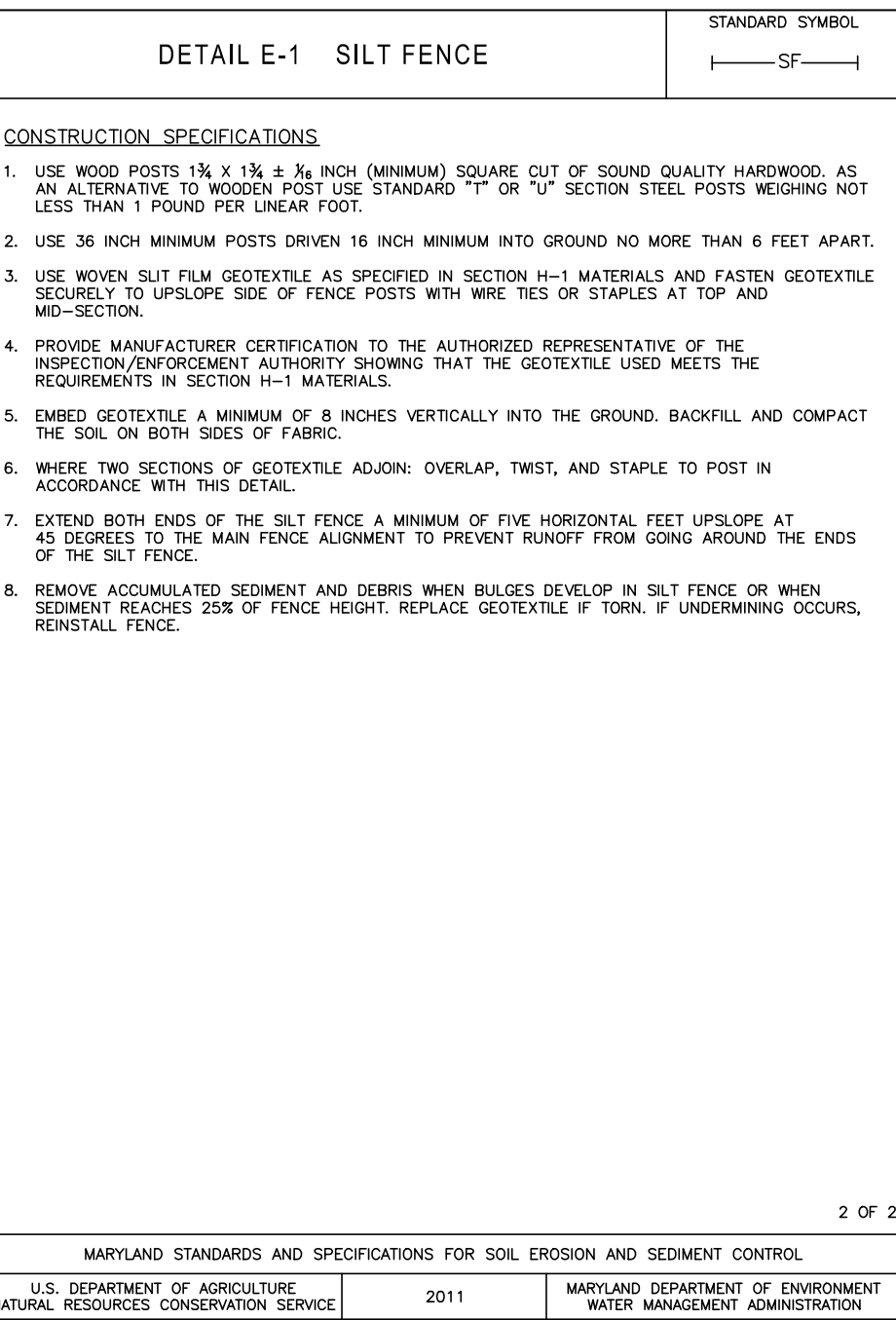
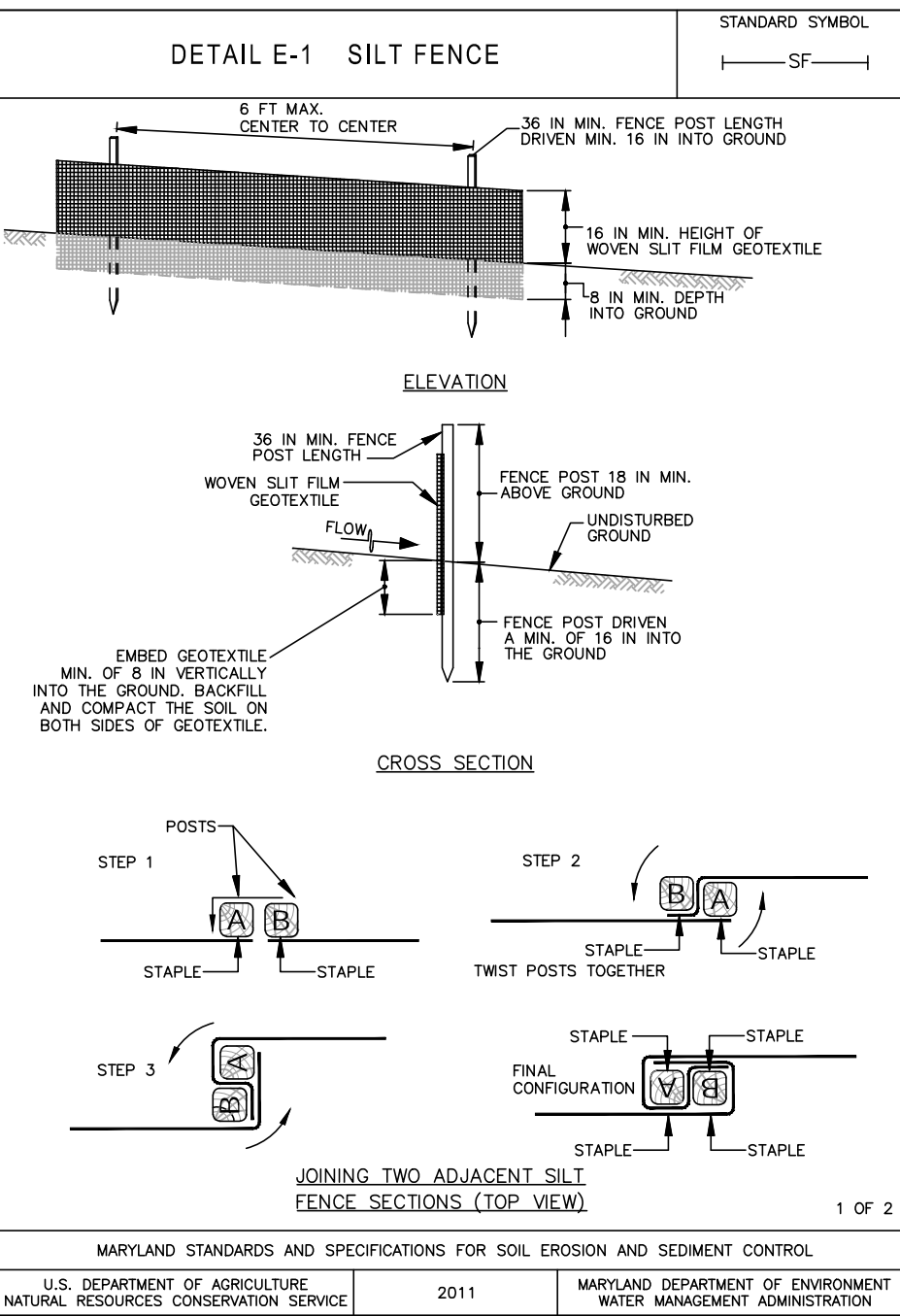
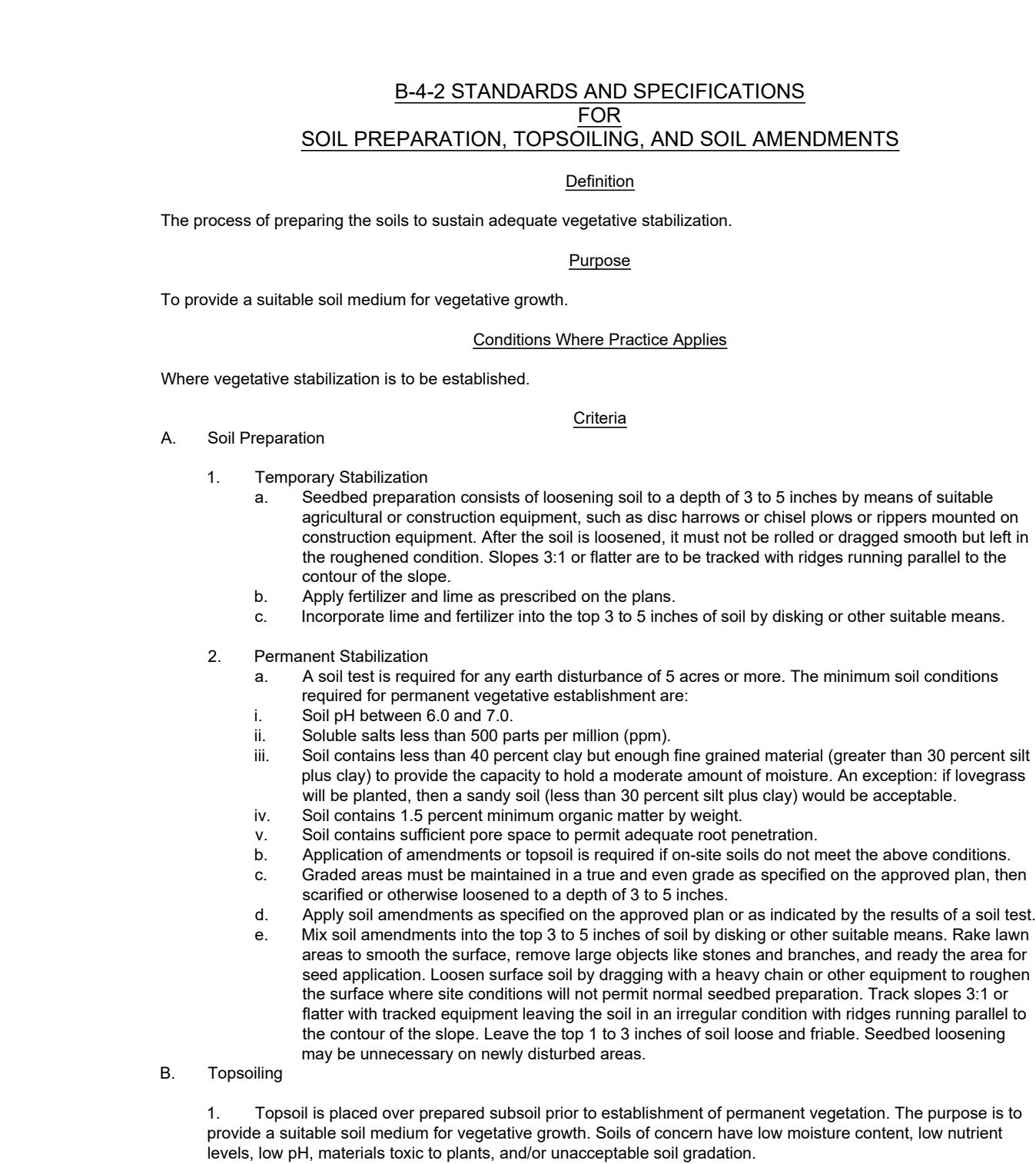
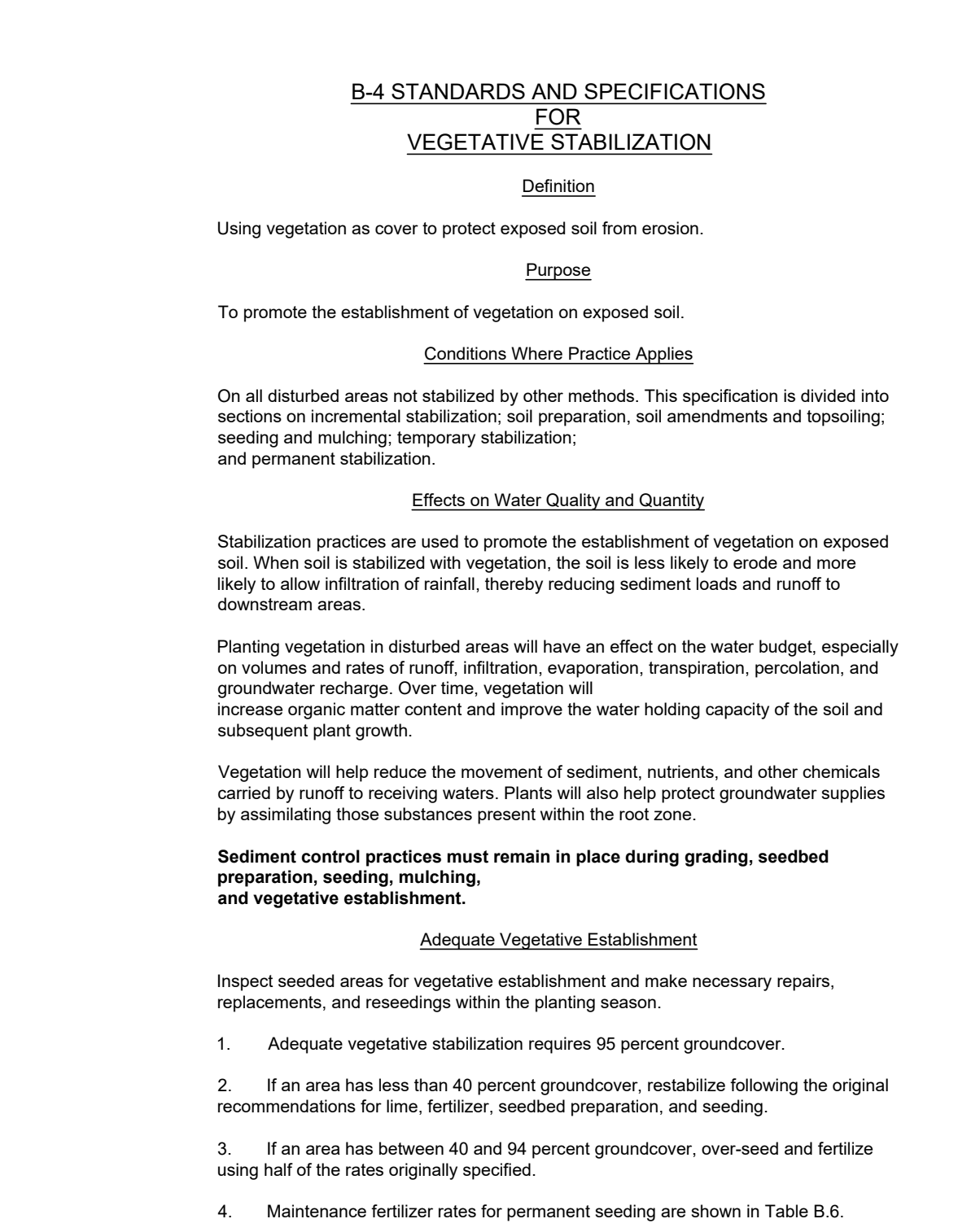
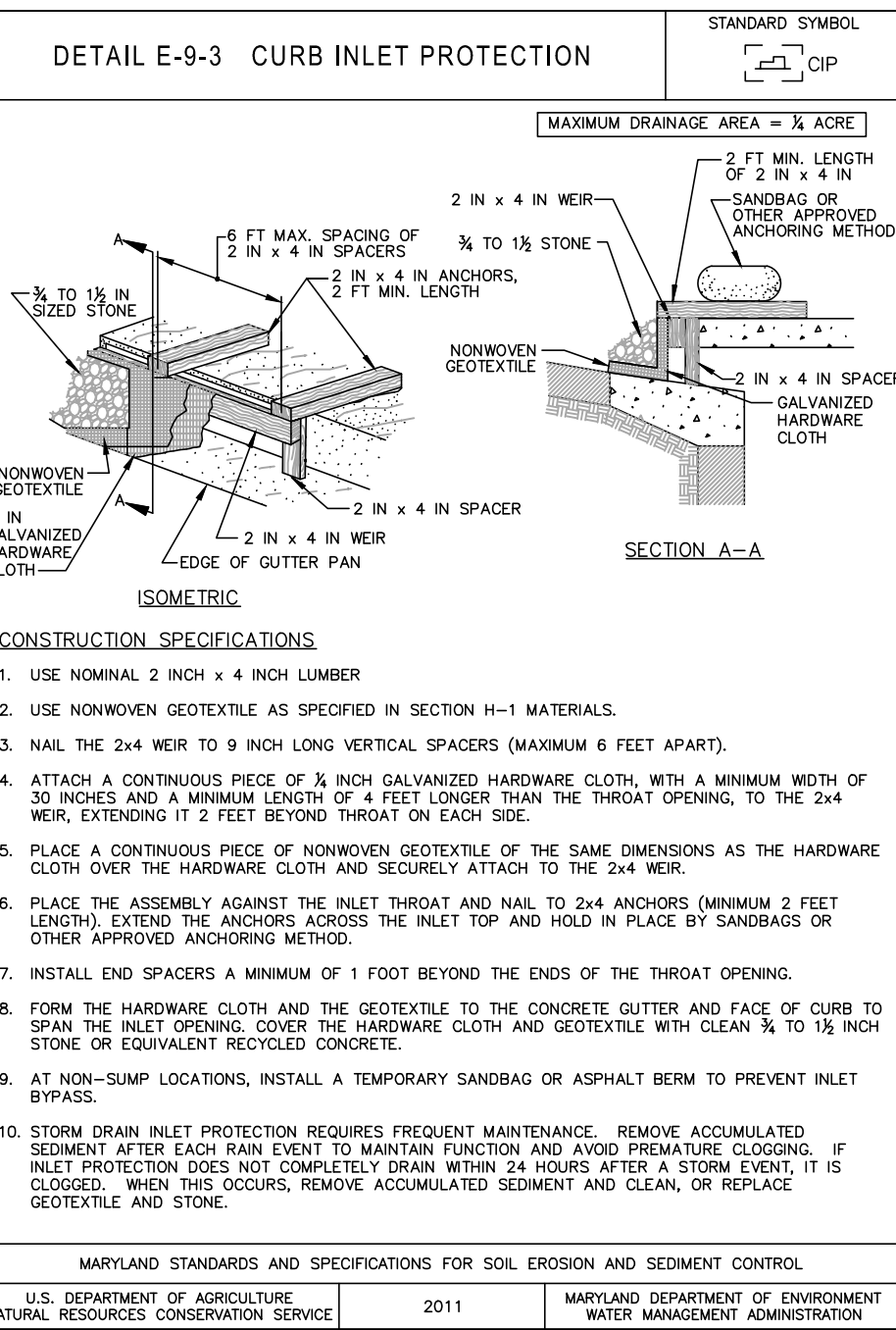
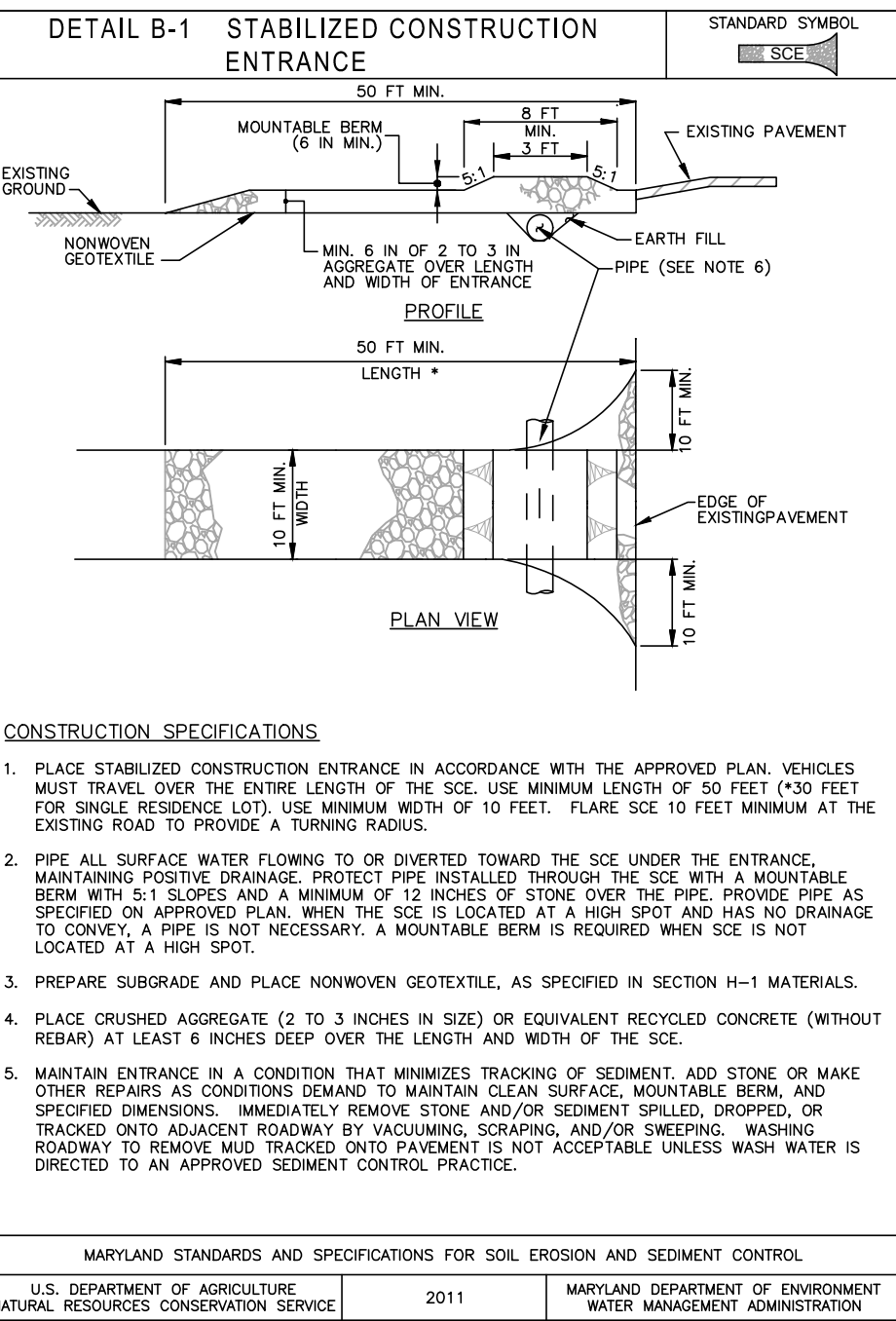
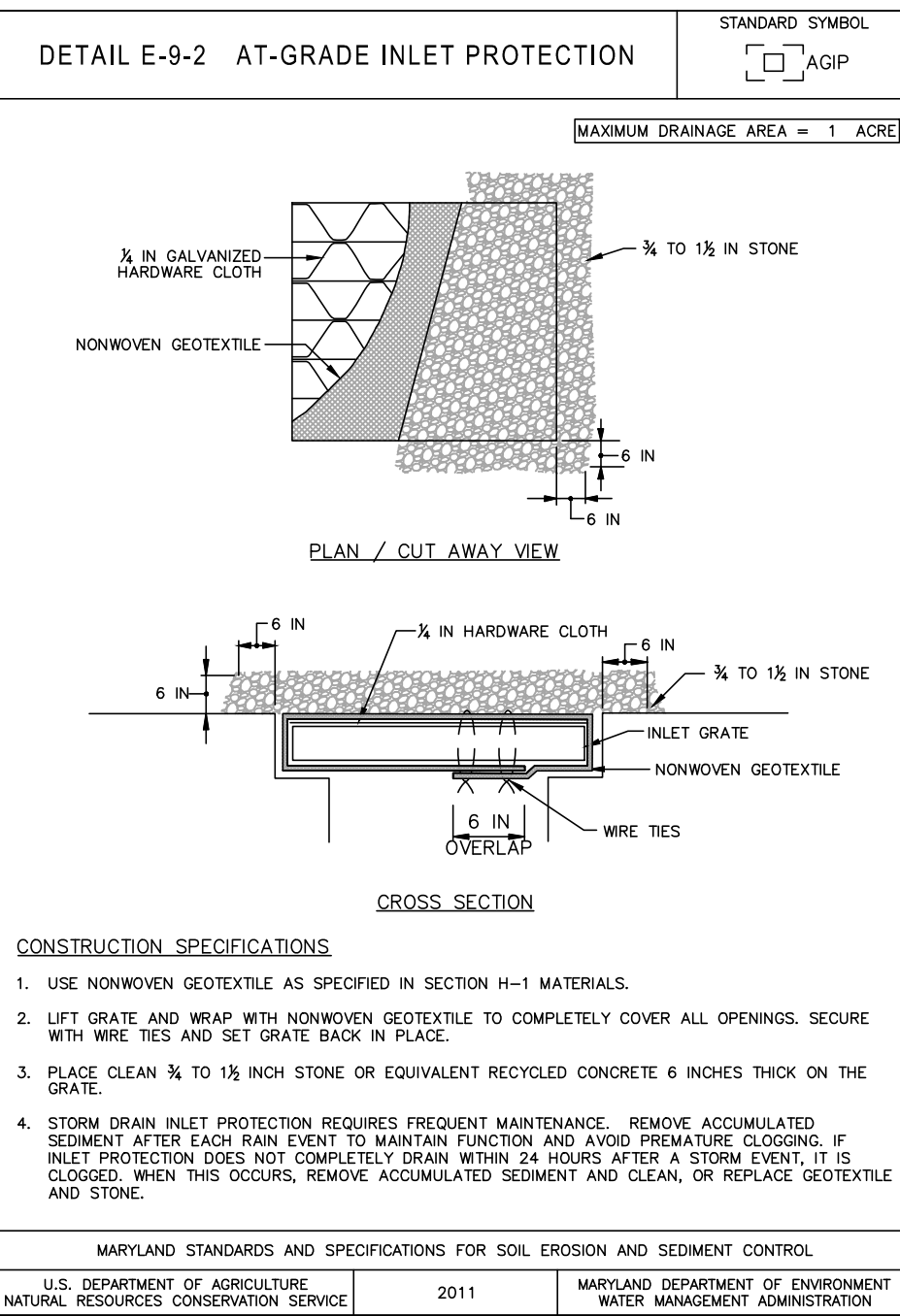
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DATE:	12/28/2022
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DESIGNED BY:	BBF
APPROVED BY:	
SHEET NO.:	C-203.01

STORMWATER & STORM DRAIN PROFILES

FOR
NAIMA - PHASE 2
INFRASTRUCTURE IMPROVEMENT PLANS
TAX MAP 0104, GRID 000EA
WARD DISTRICT 4, EASTON, MARYLAND
PREPARED FOR NAIMA VENTURES, LLC

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EROSION AND SEDIMENT CONTROL DETAILS

FOR

NAMA - PHASE 2

INFRASTRUCTURE IMPROVEMENT PLANS

TAX MAP 0104, GRID 0006A

WARD DISTRICT 4, EASTON, MARYLAND

PREPARED FOR NAMA VENTURES, LLC

REVISIONS

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DESIGNED BY: BBF		
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APPROVED:

TOWN OF EASTON - TOWN ENGINEER

DATE

APPROVED:

TOWN OF EASTON PLANNING AND ZONING

DATE

APPROVED:

EASTON UTILITIES - MANAGER OF ENGINEERING

DATE

B-4-2 STANDARDS AND SPECIFICATIONS
FOR
SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

Definition
The process of preparing the soils to sustain adequate vegetative stabilization.

Purpose
To provide a suitable soil medium for vegetative growth.

Conditions Where Practice Applies
Where vegetative stabilization is to be established.

- Criteria**
- A. Soil Preparation
- Temporary Stabilization
 - Seeded preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened, it must not be rolled or dragged smooth but left in the roughened condition. Slopes 3:1 or flatter are to be tracked with ridges running parallel to the contour of the slope.
 - Apply fertilizer and lime as prescribed on the plans.
 - Incorporate lime and fertilizer into the top 3 to 5 inches of soil by disking or other suitable means.
 - Permanent Stabilization
 - A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are:
 - Soil pH between 6.0 and 7.0.
 - Soluble salts less than 500 parts per million (ppm).
 - Soil contains less than 40 percent clay but enough fine grained material (greater than 30 percent silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception: If lovegrass will be planted, then a sandy soil (less than 30 percent silt plus clay) would be acceptable.
 - Soil contains sufficient pore space to permit adequate root penetration.
 - Application of amendments or topsoil is required if on-site soils do not meet the above conditions.
 - Graded areas must be maintained in a true and even grade as specified on the approved plan, then scarified or otherwise loosened to a depth of 3 to 5 inches.
 - Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.
 - Mix soil amendments into the top 3 to 5 inches of soil by disking or other suitable means. Rake lawn areas to smooth the surface, remove large objects like stones and branches, and ready the area for seed application. Loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface where site conditions will not permit normal seedbed preparation. Track slopes 3:1 or flatter with tracked equipment leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. Leave the top 1 to 3 inches of soil loose and friable. Seeded loosening may be unnecessary on newly disturbed areas.

- B. Topsoiling
- Topsoil is placed over prepared subsoil prior to establishment of permanent vegetation. The purpose is to provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.
 - Topsoil salvaged from an existing site may be used provided it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-NRCS.
 - Topsoiling is limited to areas having 2:1 or flatter slopes where:
 - The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
 - The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
 - The original soil to be vegetated contains material toxic to plant growth.
 - The soil is so acidic that treatment with limestone is not feasible.
 - Areas having slopes steeper than 2:1 require special consideration and design.
 - Topsoil Specifications: Soil to be used as topsoil must meet the following criteria:
 - Topsoil must be a loam, sandy loam, clay loam, silt loam, sandy clay loam, or loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Topsoil must not be a mixture of contrasting textured subsoils and must contain less than 5 percent by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1½ inches in diameter.
 - Topsoil must be free of noxious plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nut sedge, poison ivy, thistle, or others as specified.
 - Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.
 - Topsoil Application
 - Erosion and sediment control practices must be maintained when applying topsoil.
 - Uniformly distribute topsoil in a 5 to 8 inch layer and lightly compact to a minimum thickness of 4 inches. Spreading is to be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations must be corrected in order to prevent the formation of depressions or water pockets.
 - Topsoil must not be placed if the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

- C. Soil Amendments (Fertilizer and Lime Specifications)
- Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas of 5 acres or more. Soil analysis may be performed by a recognized private or commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.
 - Fertilizers must be uniform in composition, free flowing and suitable for accurate application by appropriate equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers must all be delivered to the site fully labeled according to the applicable laws and must bear the name, trade name or trademark and warranty of the producer.
 - Lime materials must be ground limestone (hydrated or burnt lime may be substituted except when hydroseeding) which contains at least 50 percent total oxides (calcium oxide plus magnesium oxide). Limestone must be ground to such fineness that at least 50 percent will pass through a #100 mesh sieve and 98 to 100 percent will pass through a #20 mesh sieve.
 - Lime and fertilizer are to be evenly distributed and incorporated into the top 3 to 5 inches of soil by disking or other suitable means.
 - Where the subsoil is either highly acidic or composed of heavy clays, spread ground limestone at the rate of 4 to 8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil.

B-4-3 STANDARDS AND SPECIFICATIONS
FOR
SEEDING AND MULCHING

Definition
The application of seed and mulch to establish vegetative cover.

Purpose
To protect disturbed soils from erosion during and at the end of construction.

Conditions Where Practice Applies
To the surface of all perimeter controls, slopes, and any disturbed area not under active grading.

- Criteria**
- A. Seeding
- Specifications
 - All seed must meet the requirements of the Maryland State Seed Law. All seed must be subject to re-testing by a recognized seed laboratory. All seed used must have been tested within the 6 months immediately preceding the date of sowing such material on any project. Refer to Table B.4 regarding the quality of seed. Seed tags must be available upon request to the inspector to verify type of seed and seeding rate.
 - Mulch alone may be applied between the fall and spring seeding dates only if the ground is frozen. The appropriate seeding mixture must be applied when the ground thaws.
 - Inoculants: The inoculant for treating legume seed in the seed mixtures must be a pure culture of nitrogen fixing bacteria prepared specifically for the species. Inoculants must not be used later than the date indicated on the container. Add fresh inoculants as directed on the package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75 to 80 degrees Fahrenheit can weaken bacteria and make the inoculant less effective. Sod or seed must not be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phyto-toxic materials.
 - Application
 - Dry Seeding: This includes use of conventional drop or broadcast spreaders.
 - Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B.1, Permanent Seeding Table B.3, or site-specific seeding summaries.
 - Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction. Roll the seeded area with a weighted roller to provide good seed to soil contact.
 - Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
 - Cultipacker seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seeded must be firm after planting.
 - Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction.
 - Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer).
 - If fertilizer is being applied at the time of seeding, the application rates should not exceed the following: nitrogen, 100 pounds per acre total of soluble nitrogen; P2O5 (phosphorous), 200 pounds per acre; K2O (potassium), 200 pounds per acre.
 - Lime: Use only ground agricultural limestone (up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.
 - Mix seed and fertilizer on site and seed immediately and without interruption.
 - When hydroseeding do not incorporate seed into the soil.

- B. Mulching
- Mulch Materials (in order of preference)
 - Straw consisting of thoroughly threshed wheat, rye, oat, or barley and reasonably bright in color. Straw is to be free of noxious weed seeds as specified in the Maryland Seed Law and not musty, moldy, caked, decayed, or excessively dusty. Note: Use only sterile straw mulch in areas where one species of grass is desired.
 - Wood Cellulose Fiber Mulch (WCFM) consisting of specially prepared wood cellulose processed into a uniform fibrous physical state.
 - WCFM is to be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
 - WCFM, including dyes, must contain no germination or growth inhibiting factors.
 - WCFM materials are to be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material must form a blotter-like ground cover, on application, having moisture absorption and percolation properties and must cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
 - WCFM material must not contain elements or compounds at concentration levels that will be phyto-toxic. WCFM must conform to the following physical requirements: fiber length of approximately 10 millimeters, diameter approximately 1 millimeter, pH range of 4.0 to 8.5, ash content of 1.6 percent maximum and water holding capacity of 90 percent minimum.
 - Application
 - Apply mulch to all seeded areas immediately after seeding.
 - When straw mulch is used, spread it over all seeded areas at the rate of 2 tons per acre to a uniform loose depth of 1 to 2 inches. Apply mulch to achieve a uniform distribution and depth so that the soil surface is not exposed. When using a mulch anchoring tool, increase the application rate to 2.8 tons per acre.
 - Wood cellulose fiber used as mulch must be applied at a net dry weight of 1500 pounds per acre. Mix the wood cellulose fiber with water to attain a mixture with a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
 - Anchoring
 - Perform mulch anchoring immediately following application of mulch to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon the size of the area and erosion hazard:
 - A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of 2 inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should follow the contour.
 - Wood cellulose fiber may be used for anchoring straw. Apply the fiber binder at a net dry weight of 750 pounds per acre. Mix the wood cellulose fiber with water at a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
 - Synthetic binders such as Acrylic DLR (Agro-Tack), DCA-70, Petrosel, Terra Tax II, Terra Tack AR or other approved equal may be used. Follow application rates as specified by the manufacturer. Application of liquid binders needs to be heavier at the edges where wind catches mulch, such as in valleys and on crests of banks. Use of asphalt binders is strictly prohibited.
 - Lightweight plastic netting may be stapled over the mulch according to manufacturer recommendations. Netting is usually available in rolls 4 to 15 feet wide and 300 to 3,000 feet long.

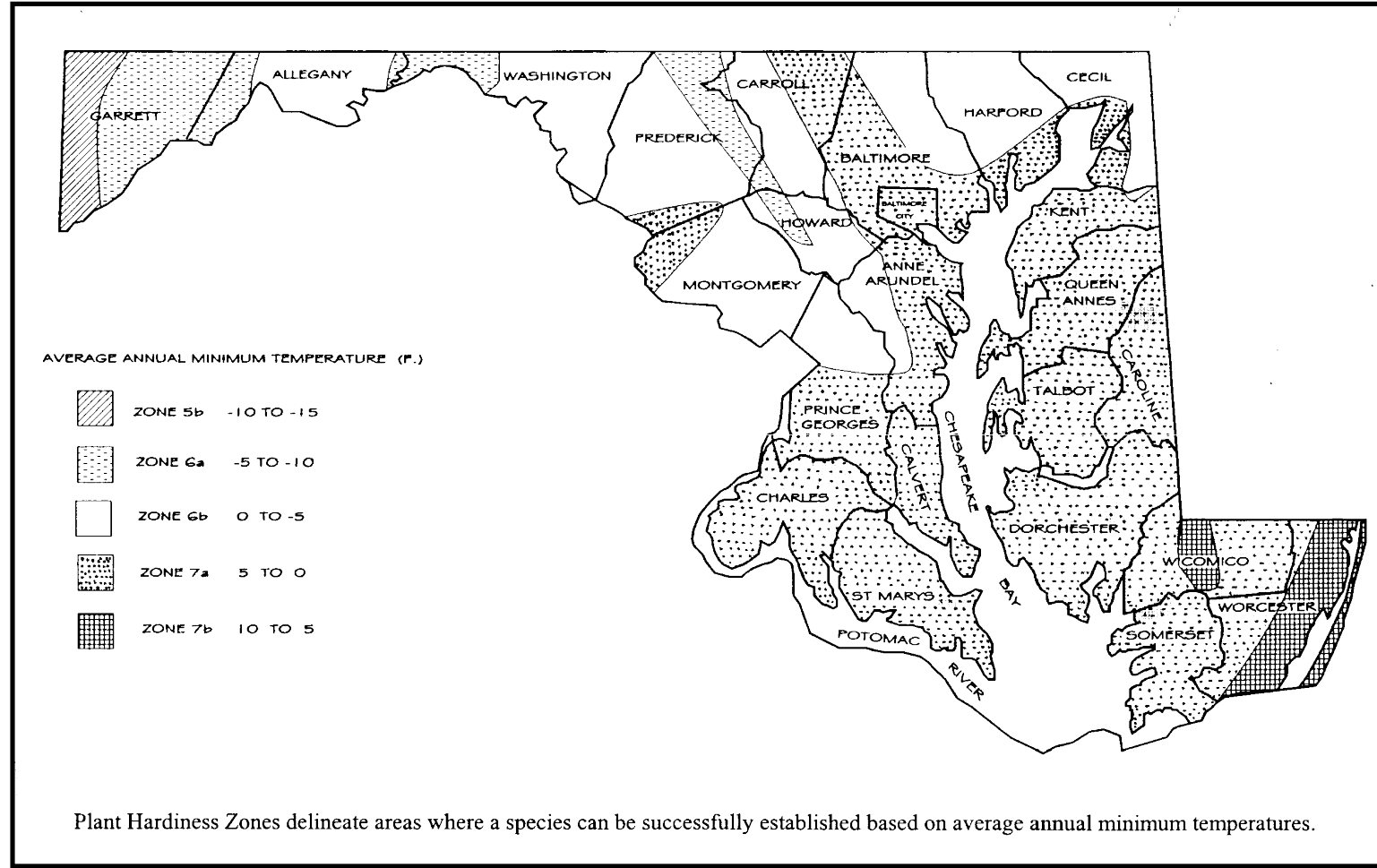


Figure B.3. U.S.D.A. Plant Hardiness Zones

Table B.1: Temporary Seeding for Site Stabilization

Plant Species	Seeding Rate ^{1/}		Seeding Depth ^{2/} (inches)	Recommended Seeding Dates by Plant Hardiness Zone ^{3/}		
	lb/ac	lb/1000 ft ²		5b and 6a	6b	7a and 7b
Cool-Season Grasses						
Annual Ryegrass (<i>Lolium perenne</i> ssp. <i>multiflorum</i>)	40	1.0	0.5	Mar 15 to May 31; Aug 1 to Sep 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30
Barley (<i>Hordeum vulgare</i>)	96	2.2	1.0	Mar 15 to May 31; Aug 1 to Sep 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30
Oats (<i>Avena sativa</i>)	72	1.7	1.0	Mar 15 to May 31; Aug 1 to Sep 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30
Wheat (<i>Triticum aestivum</i>)	120	2.8	1.0	Mar 15 to May 31; Aug 1 to Sep 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30
Cereal Rye (<i>Secale cereale</i>)	112	2.8	1.0	Mar 15 to May 31; Aug 1 to Oct 31	Mar 1 to May 15; Aug 1 to Nov 15	Feb 15 to Apr 30; Aug 15 to Dec 15
Warm-Season Grasses						
Foxtail Millet (<i>Setaria italica</i>)	30	0.7	0.5	Jun 1 to Jul 31	May 16 to Jul 31	May 1 to Aug 14
Pearl Millet (<i>Pennisetum glaucum</i>)	20	0.5	0.5	Jun 1 to Jul 31	May 16 to Jul 31	May 1 to Aug 14

NOTES:

- 1/ Seeding rates for the warm-season grasses are in pounds of Pure Live Seed (PLS). Actual planting rates shall be adjusted to reflect percent seed germination and purity, as tested. Adjustments are usually not needed for the cool-season grasses.

Seeding rates listed above are for temporary seedings, when planted alone. When planted as a nurse crop with permanent seed mixes, use 1/3 of the seeding rate listed above for barley, oats, and wheat. For smaller-seeded grasses (annual ryegrass, pearl millet, foxtail millet), do not exceed more than 5% (by weight) of the overall permanent seeding mix. Cereal rye generally should not be used as a nurse crop, unless planting will occur in very late fall beyond the seeding dates for other temporary seedings. Cereal rye has allelopathic properties that inhibit the germination and growth of other plants. If it must be used as a nurse crop, seed at 1/5 of the rate listed above.

Oats are the recommended nurse crop for warm-season grasses.

- 2/ For sandy soils, plant seeds at twice the depth listed above.
3/ The planting dates listed are averages for each Zone and may require adjustment to reflect local conditions, especially near the boundaries of the zone.

B-4-4 STANDARDS AND SPECIFICATIONS
FOR
TEMPORARY STABILIZATION

Definition
To stabilize disturbed soils with vegetation for up to 6 months.

Purpose
To use fast growing vegetation that provides cover on disturbed soils.

Conditions Where Practice Applies
Exposed soils where ground cover is needed for a period of 6 months or less. For longer duration of time, permanent stabilization practices are required.

- Criteria**
- Select one or more of the species or seed mixtures listed in Table B.1 for the appropriate Plant Hardiness Zone (from Figure B.3), and enter them in the Temporary Seeding Summary below along with application rates, seeding dates and seeding depths. If this Summary is not put on the plan and completed, then Table B.1 plus fertilizer and lime rates must be put on the plan.
 - For sites having soil tests performed, use and show the recommended rates by the testing agency. Soil tests are not required for Temporary Seeding.
 - When stabilization is required outside of a seeding season, apply seed and mulch or straw mulch alone as prescribed in Section B-4-3.A.1.b and maintain until the next seeding season.

Temporary Seeding Summary

Hardiness Zone (from Figure B.3): Seed Mixture (from Table B.1):				Seeding Depths	Fertilizer Rate (10-20-20)	Lime Rate
No.	Species	Appl. Rate (lbs./ac.)	Seeding Dates			
	ANNUAL RYEGRASS	40	FEB 15 - APR 30 AUG 15 - NOV 30	0.5		
	BARLEY	96	FEB 15 - APR 30 AUG 15 - NOV 30	1.0	436 lb/ac 10 lb/ 1000 sf	2 tons/ac 90 lb/ 1000 sf

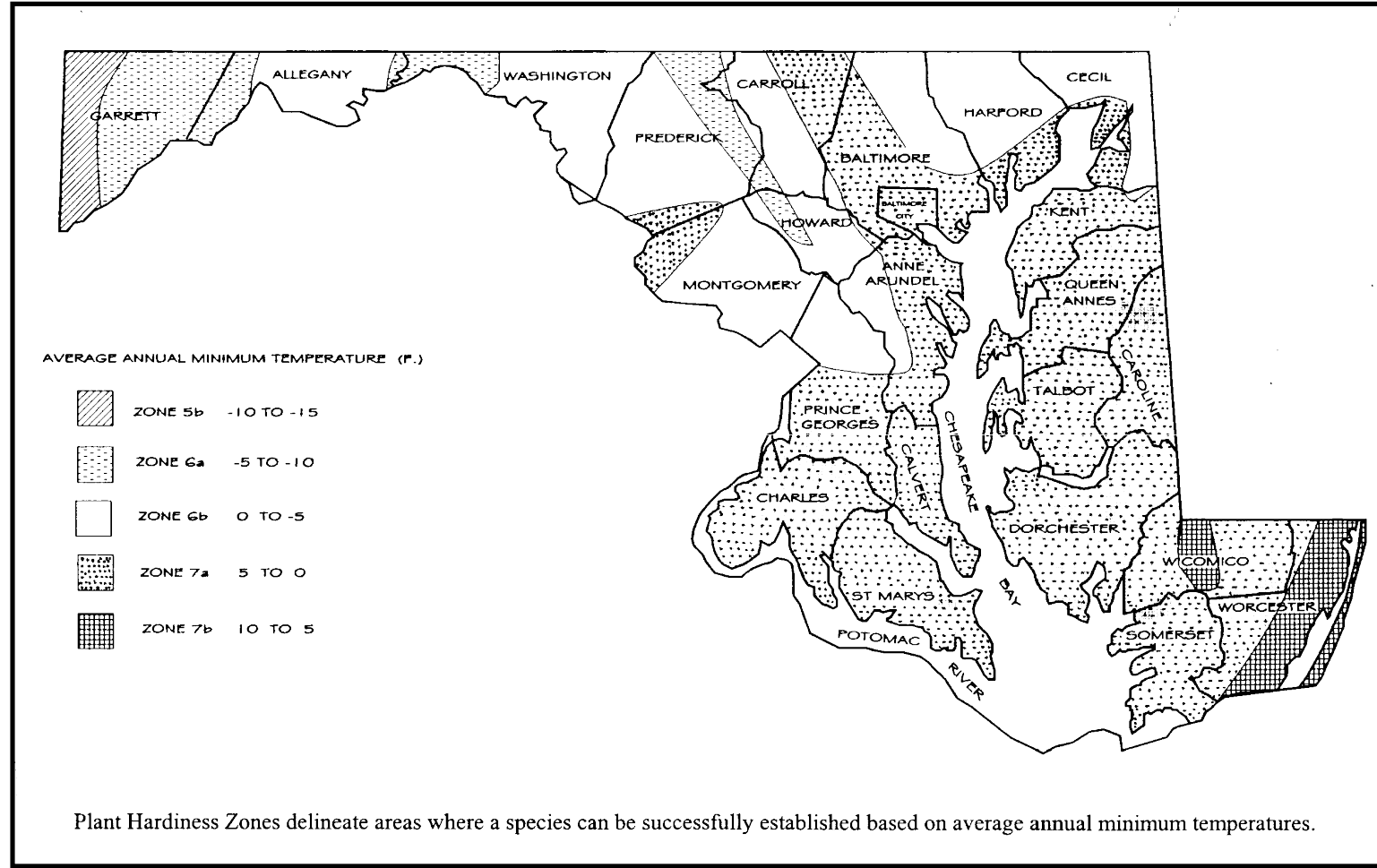


Figure B.3. U.S.D.A. Plant Hardiness Zones

Table B.1: Temporary Seeding for Site Stabilization

Plant Species	Seeding Rate ^{1/}		Seeding Depth ^{2/} (inches)	Recommended Seeding Dates by Plant Hardiness Zone ^{3/}		
	lb/ac	lb/1000 ft ²		5b and 6a	6b	7a and 7b
Cool-Season Grasses						
Annual Ryegrass (<i>Lolium perenne</i> ssp. <i>multiflorum</i>)	40	1.0	0.5	Mar 15 to May 31; Aug 1 to Sep 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30
Barley (<i>Hordeum vulgare</i>)	96	2.2	1.0	Mar 15 to May 31; Aug 1 to Sep 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30
Oats (<i>Avena sativa</i>)	72	1.7	1.0	Mar 15 to May 31; Aug 1 to Sep 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30
Wheat (<i>Triticum aestivum</i>)	120	2.8	1.0	Mar 15 to May 31; Aug 1 to Sep 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30
Cereal Rye (<i>Secale cereale</i>)	112	2.8	1.0	Mar 15 to May 31; Aug 1 to Oct 31	Mar 1 to May 15; Aug 1 to Nov 15	Feb 15 to Apr 30; Aug 15 to Dec 15
Warm-Season Grasses						
Foxtail Millet (<i>Setaria italica</i>)	30	0.7	0.5	Jun 1 to Jul 31	May 16 to Jul 31	May 1 to Aug 14
Pearl Millet (<i>Pennisetum glaucum</i>)	20	0.5	0.5	Jun 1 to Jul 31	May 16 to Jul 31	May 1 to Aug 14

NOTES:

- 1/ Seeding rates for the warm-season grasses are in pounds of Pure Live Seed (PLS). Actual planting rates shall be adjusted to reflect percent seed germination and purity, as tested. Adjustments are usually not needed for the cool-season grasses.

Seeding rates listed above are for temporary seedings, when planted alone. When planted as a nurse crop with permanent seed mixes, use 1/3 of the seeding rate listed above for barley, oats, and wheat. For smaller-seeded grasses (annual ryegrass, pearl millet, foxtail millet), do not exceed more than 5% (by weight) of the overall permanent seeding mix. Cereal rye generally should not be used as a nurse crop, unless planting will occur in very late fall beyond the seeding dates for other temporary seedings. Cereal rye has allelopathic properties that inhibit the germination and growth of other plants. If it must be used as a nurse crop, seed at 1/5 of the rate listed above.

Oats are the recommended nurse crop for warm-season grasses.

- 2/ For sandy soils, plant seeds at twice the depth listed above.
3/ The planting dates listed are averages for each Zone and may require adjustment to reflect local conditions, especially near the boundaries of the zone.

B-4-5 STANDARDS AND SPECIFICATIONS
FOR
PERMANENT STABILIZATION

Definition
To stabilize disturbed soils with permanent vegetation.

Purpose
To use long-lived perennial grasses and legumes to establish permanent ground cover on disturbed soils.

Conditions Where Practice Applies
Exposed soils where ground cover is needed for 6 months or more.

- Criteria**
- A. Seed Mixtures
- General Use
 - Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardiness Zone (from Figure B.3) and based on the site condition or purpose found on Table B.2. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The Summary is to be placed on the plan.
 - Additional planting specifications for exceptional sites such as shorelines, stream banks, or dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-NRCS Technical Field Office Guide, Section 342 - Critical Area Planting.
 - For sites having disturbed area over 5 acres, use and show the rates recommended by the soil testing agency.
 - For areas receiving low maintenance, apply urea form fertilizer (46-0-0) at 3½ pounds per 1000 square feet (150 pounds per acre) at the time of seeding in addition to the soil amendments shown in the Permanent Seeding Summary.
 - Turfgrass Mixtures
 - Areas where turfgrass may be desired include lawns, parks, playgrounds, and commercial sites which will receive a medium to high level of maintenance.
 - Select one or more of the species or mixtures listed below based on the site conditions or purpose. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The summary is to be placed on the plan.
 - Kentucky Bluegrass: Full Sun Mixture: For use in areas that receive intensive management. Irrigation required in the areas of central Maryland and Eastern Shore. Recommended Certified Kentucky Bluegrass Cultivars Seeding Rate: 1.5 to 2.0 pounds per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.
 - Kentucky Bluegrass/Perennial Rye: Full Sun Mixture: For use in full sun areas where rapid establishment is necessary and when turf will receive medium to intensive management. Certified Perennial Ryegrass Cultivars/Certified Kentucky Bluegrass Seeding Rate: 2 pounds mixture per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.
 - Tall Fescue/Kentucky Bluegrass: Full Sun Mixture: For use in drought prone areas and/or for areas receiving low to medium management in full sun to medium shade. Recommended mixture includes: Certified Tall Fescue Cultivars 85 to 100 percent, Certified Kentucky Bluegrass Cultivars 0 to 5 percent. Seeding Rate: 5 to 8 pounds per 1000 square feet. One or more cultivars may be blended.
 - Kentucky Bluegrass/Fine Fescue: Shade Mixture: For use in areas with shade in Bluegrass Lawns. For establishment in high quality, intensively managed turf area. Mixture includes: Certified Kentucky Bluegrass Cultivars 30 to 40 percent and Certified Fine Fescue and 60 to 70 percent. Seeding Rate: 1½ to 3 pounds per 1000 square feet.

Notes:

Select turfgrass varieties from those listed in the most current University of Maryland Publication, Agronomy Memo #77, "Turfgrass Cultivar Recommendations for Maryland"

Choose certified material. Certified material is the best guarantee of cultivar purity. The certification program of the Maryland Department of Agriculture, Turf and Seed Section, provides a reliable means of consumer protection and assures a pure genetic line

Ideal Times of Seeding for Turf Grass Mixtures

Western MD: March 15 to June 1, August 1 to October 1 (Hardiness Zones: 5b, 6a)

Central MD: March 1 to May 15, August 15 to October 15 (Hardiness Zone: 6b)

Southern MD: Eastern Shore: March 1 to May 15, August 15 to October 15 (Hardiness Zones: 7a, 7b)

- Till areas to receive seed by disking or other approved methods to a depth of 2 to 4 inches, level and rake the areas to prepare a proper seedbed. Remove stones and debris over 1½ inches in diameter. The resulting seedbed must be in such condition that future mowing of grasses will pose no difficulty. If soil moisture is deficient, supply new seedlings with adequate water for plant growth (½ to 1 inch every 3 to 4 days depending on soil texture) until they are firmly established. This is especially true when seedlings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites.

Permanent Seeding Summary

Seed Mixture (For Hardiness Zone 7a) (From Table B.1)				Fertilizer Rate (10-20-20)			Lime Rate
No.	Species	Appl. Rate (lbs./ac.)	Seeding Dates	Seeding Depths	N	P2O5	
7	CREeping RED FESCUE KENTUCKY BLUEGRASS	60w 15w	2/15-4/30 8/15-10/31	1/2"-1/2"	45 lb/ac 1.8w 1000 sf	90 lb/ac 2.1w 1000 sf	90 lb/ac 2.1w 1000 sf
8	TALL FESCUE	100w	2/15-4/30 8/15-10/31	1/2"-1/2"			2 tons/ac 90 lb/ 1000 sf
9	TALL FESCUE KENTUCKY BLUEGRASS PERENNIAL RYEGRASS	60w 60w 20w	2/15-4/30 8/15-10/31	1/2"-1/2"			

- B. Sod: To provide quick cover on disturbed areas (2:1 grade or flatter).
- General Specifications
 - Class of turfgrass sod must be Maryland State Certified. Sod labels must be made available to the job foreman and inspector.
 - Sod must be machine cut at a uniform soil thickness of ¾ inch, plus or minus ¼ inch, at the time of cutting. Measurement for thickness must exclude top growth and thatch. Broken pads and torn or uneven ends will not be acceptable.
 - Standard size sections of sod must be strong enough to support their own weight and retain their size and shape when suspended vertically with a firm grasp on the upper 10 percent of the section.
 - Sod must not be harvested or transplanted when moisture content (excessively dry or wet) may adversely affect its survival.
 - Sod must be harvested, delivered, and installed within a period of 36 hours. Sod not transplanted within this period must be approved by an agronomist or soil scientist prior to its installation.
 - Sod Installation
 - During periods of excessively high temperature or in areas having dry subsoil, lightly irrigate the subsoil immediately prior to laying the sod.
 - Lay the first row of sod in a straight line with subsequent rows placed parallel to it and tightly wedged against each other. Stagger lateral joints to promote more uniform growth and strength. Ensure that sod is not stretched or overlapped and that all joints are butted tight in order to prevent voids which would cause air drying of the roots.
 - Wherever possible, lay sod with the long edges parallel to the contour and with staggering joints. Roll and tamp, peg or otherwise secure the sod to prevent slippage on slopes. Ensure solid contact exists between sod roots and the underlying soil surface.
 - Water the sod immediately following rolling and tamping until the underside of the new sod pad and soil surface below the sod are thoroughly wet. Complete the operations of laying, tamping and irrigating for any piece of sod within eight hours.
 - Sod Maintenance
 - In the absence of adequate rainfall, water daily during the first week or as often and sufficiently as necessary to maintain moist soil to a depth of 4 inches. Water sod during the heat of the day to prevent wilting.
 - After the first week, sod watering is required as necessary to maintain adequate moisture content. Do not mow until the sod is firmly rooted. No more than ½ of the grass leaf must be removed by the initial cutting or subsequent cuttings. Maintain a grass height of at least 3 inches unless otherwise specified.

EROSION AND SEDIMENT CONTROL DETAILS

FOR
NAMA - PHASE 2
INFRASTRUCTURE IMPROVEMENT PLANS
TAX MAP 0104, GRID 0006A
WARD DISTRICT 4, EASTON, MARYLAND
PREPARED FOR NAMA VENTURES, LLC

BAUCH
INC.
engineering design &
development services

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www.bauchinc.com
Maryland Office: 105 N. Harrison St., Easton, MD 21601
Virginia Office: 8229 Boone Blvd., Suite 625 - Vienna, VA 22182

REVISIONS

REV. #	DATE	DESCRIPTION
1	03/26/2023	REVISED PER TOWNLEOPZ COMMENTS

DATE: 12/28/2022

SCALE: N/A

DRAWN BY: BBF

DESIGNED BY: BBF

APPROVED BY:

SHEET NO.: C-205.02

APPROVED:

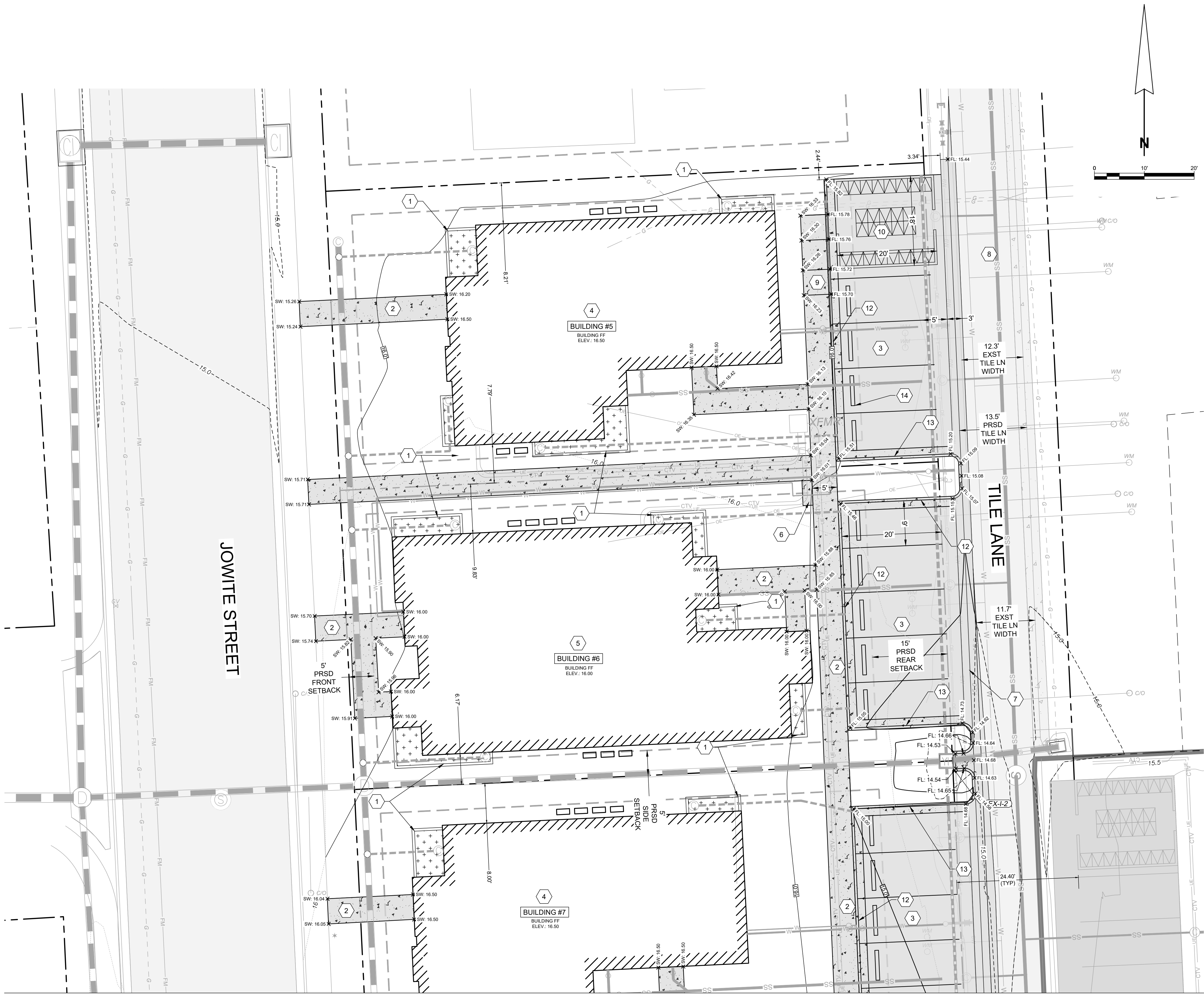
TOWN OF EASTON - TOWN ENGINEER

APPROVED:

TOWN OF EASTON PLANNING AND ZONING

APPROVED:

EASTON UTILITIES - MANAGER OF ENGINEERING



PROPOSED FEATURES

- 1 PLANTER BOX. DETAIL ON 405.01
- 2 4" SIDEWALK. DETAIL ON 305.01
- 3 PERVIOUS ASPHALT PARKING. DETAIL ON 405.01
- 4 6 UNIT DWELLING
- 5 7 UNIT DWELLING
- 6 CLUSTER MAILBOX
- 7 STANDARD ASPHALT VALLEY GUTTER WITH A VALLEY SLOPE OF 0.47%. DETAIL ON 305.02
- 8 2" MILL AND OVERLAY TO EXISTING TILE LANE ONCE ALL UTILITIES HAVE BEEN INSTALLED AND CONNECTIONS HAVE BEEN MADE. WEDGING REQUIRED ON TILE LANE ALONG ENTIRE LENGTH OF THE PROPOSED VALLEY GUTTER PER SPOT SHOTS ON THE SITE GRADING PLAN
- 9 PARALLEL SIDEWALK RAMP PER DETAIL ON 305.02
- 10 18'x20' FENCED REFUSE ENCLOSURE. 3' CLEAR AISLES. 4' OPENINGS WITH ADA ACCESS ON EACH END. SPACE FOR (26) 95-GALLON CARTS.
- 11 A.D.A. ACCESS AISLE
- 12 6" STANDARD CURB WITH REVERSE GRADE GUTTER PAN. SEE DETAIL ON SHEET C-305.02
- 13 6" STANDARD CURB. SEE DETAIL ON SHEET C-305.02
- 14 6" STANDARD WHEELSTOP. SEE DETAIL ON SHEET C-305.02

SITE GRADING PLAN
FOR
NAIMA - PHASE 2
INFRASTRUCTURE IMPROVEMENT PLANS
TAX MAP 0104, GRID 000EA
WARD DISTRICT 4, EASTON, MARYLAND
PREPARED FOR NAIMA VENTURES, LLC

RAUCH
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engineering design &
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Maryland Office: 106 N. Harrison St., Easton, MD 21601
Virginia Office: 8229 Boone Blvd., Suite 625 - Vienna, VA 22182

REVISIONS

REV. #	DATE	DESCRIPTION
1	03/29/2023	REVISED PER TOWN/LOCAL COMMENTS

DATE: 12/28/2022

SCALE: 1" = 10'

DRAWN BY: BBF

DESIGNED BY: BBF

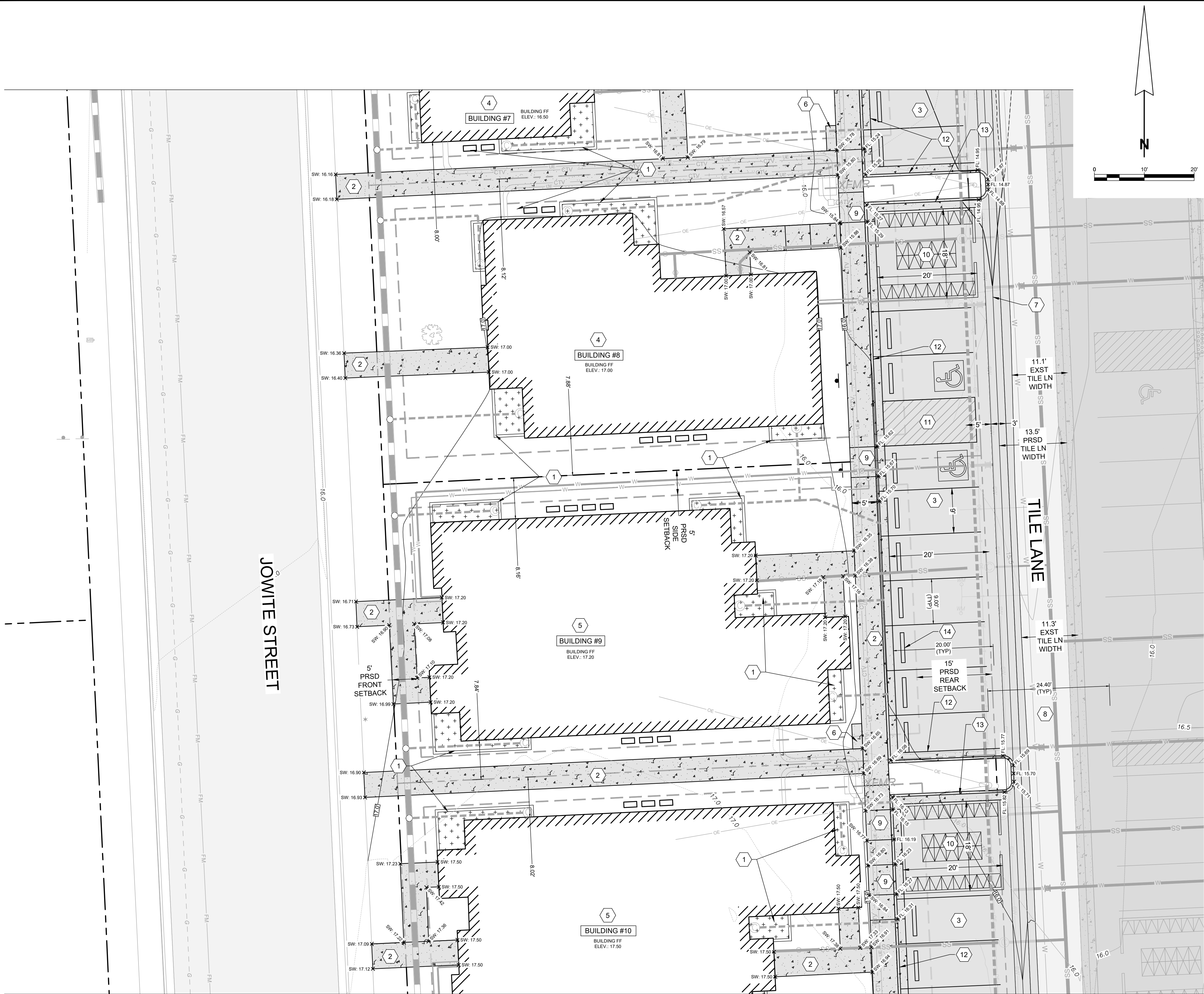
APPROVED BY:

SHEET NO.: C-301.01

APPROVED:
TOWN OF EASTON - TOWN ENGINEER

APPROVED:
TOWN OF EASTON PLANNING AND ZONING

APPROVED:
EASTON UTILITIES - MANAGER OF ENGINEERING



PROPOSED FEATURES

- 1 PLANTER BOX. DETAIL ON 405.01
- 2 4" SIDEWALK. DETAIL ON 305.01
- 3 PERVIOUS ASPHALT PARKING. DETAIL ON 405.01
- 4 6 UNIT DWELLING
- 5 7 UNIT DWELLING
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SITE GRADING PLAN

FOR
NAIMA - PHASE 2
INFRASTRUCTURE IMPROVEMENT PLANS
TAX MAP 0104, GRID 000EA
WARD DISTRICT 4, EASTON, MARYLAND
PREPARED FOR NAIMA VENTURES, LLC

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REVISIONS

REV. #	DATE	DESCRIPTION
1	03/30/2023	REVISED PER TOWN/ELC/PTZ COMMENTS

DATE: 12/28/2022

SCALE: 1" = 10'

DRAWN BY: BBF

DESIGNED BY: BBF

APPROVED BY:

SHEET NO.: C-301.02

APPROVED:

TOWN OF EASTON - TOWN ENGINEER

DATE

APPROVED:

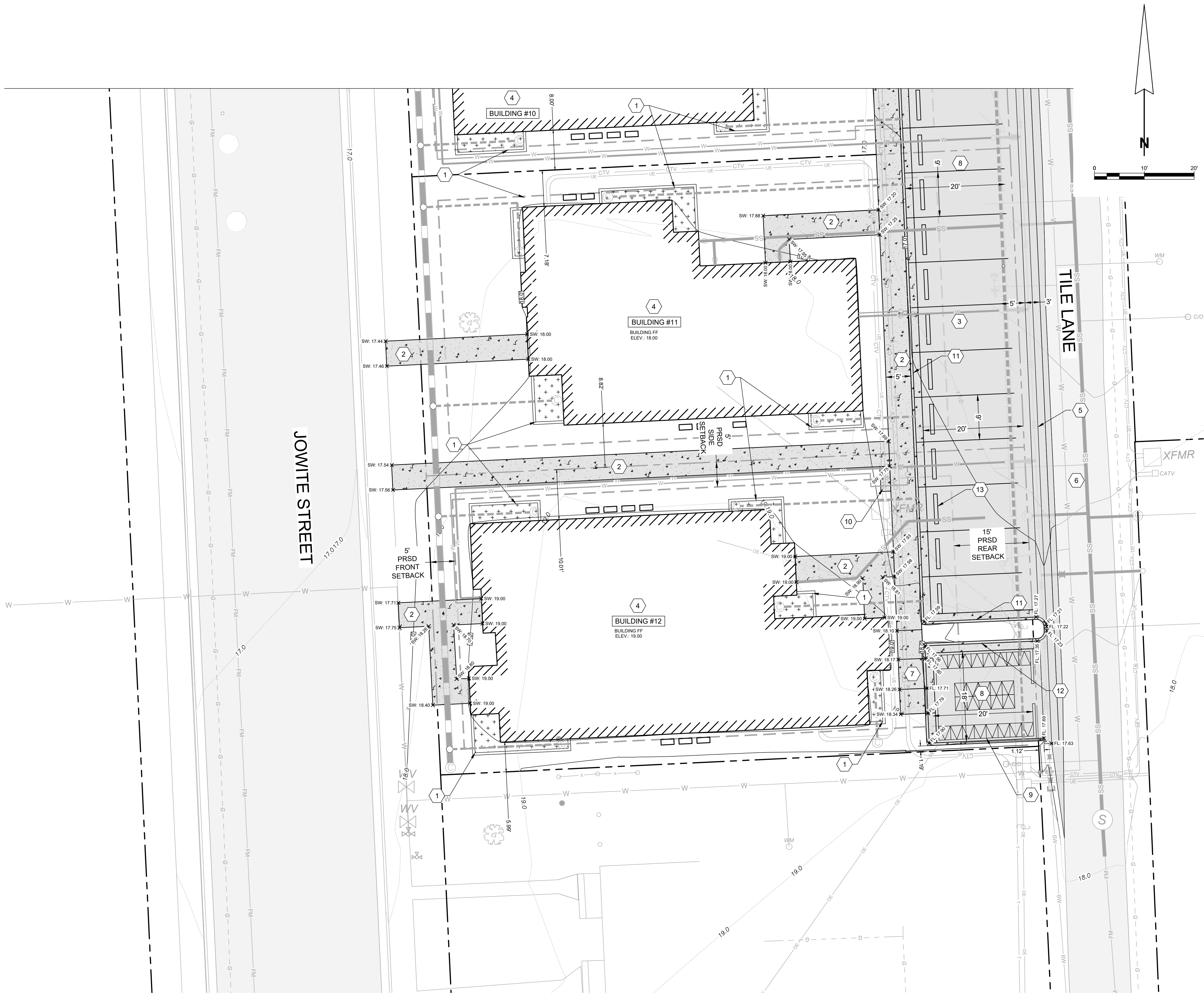
TOWN OF EASTON PLANNING AND ZONING

DATE

APPROVED:

EASTON UTILITIES - MANAGER OF ENGINEERING

DATE



PROPOSED FEATURES

- 1 PLANTER BOX. DETAIL ON 405.01
- 2 4" SIDEWALK. DETAIL ON 305.01
- 3 PERVIOUS ASPHALT PARKING. DETAIL ON 405.01
- 4 6 UNIT DWELLING
- 5 STANDARD ASPHALT VALLEY GUTTER WITH A VALLEY SLOPE OF 0.47%. DETAIL ON 305.02
- 6 2" MILL AND OVERLAY TO EXISTING TILE LANE ONCE ALL UTILITIES HAVE BEEN INSTALLED AND CONNECTIONS HAVE BEEN MADE. WEDGING REQUIRED ON TILE LANE ALONG ENTIRE LENGTH OF THE PROPOSED VALLEY GUTTER PER SPOT SHOTS ON THE SITE GRADING PLAN
- 7 PARALLEL SIDEWALK RAMP PER DETAIL ON 305.02
- 8 18'x20' FENCED REFUSE ENCLOSURE. 3' CLEAR AISLES. 4' OPENINGS WITH ADA ACCESS ON EACH END. SPACE FOR (26) 95-GALLON CARTS.
- 9 END OF PERMEABLE ASPHALT
- 10 CLUSTER MAILBOX
- 11 6" STANDARD CURB WITH REVERSE GRADE GUTTER PAN. SEE DETAIL ON SHEET C-305.02
- 12 6" STANDARD CURB. SEE DETAIL ON SHEET C-305.02
- 13 6" STANDARD WHEELSTOP. SEE DETAIL ON SHEET C-305.02

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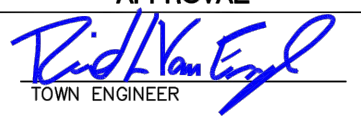
Office: 410.770.0831 | Fax: 410.770.3667
www.rauchinc.com
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Virginia Office: 8229 Boone Blvd, Suite 625 - Vienna, VA 22182

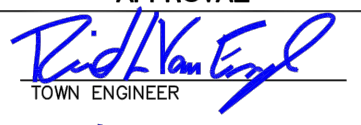
REVISIONS

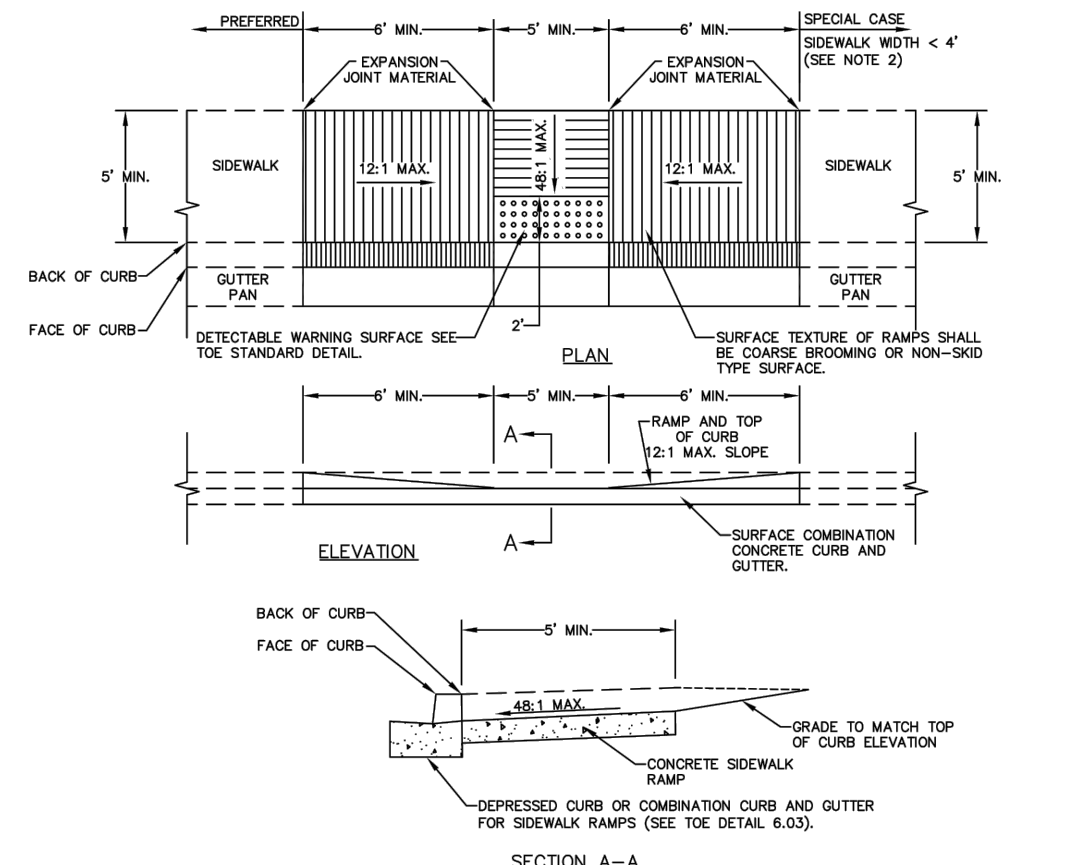
REV. #	DATE	DESCRIPTION
1	03/29/2023	REVISED PER TOWN/LOPZ COMMENTS

DATE:	12/28/2022
SCALE:	1" = 10'
DRAWN BY:	BBF
DESIGNED BY:	BBF
APPROVED BY:	
SHEET NO.:	C-301.03

APPROVED:	APPROVED:	APPROVED:
TOWN OF EASTON - TOWN ENGINEER	TOWN OF EASTON PLANNING AND ZONING	EASTON UTILITIES - MANAGER OF ENGINEERING
DATE	DATE	DATE

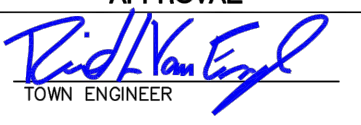
	APPROVAL  TOWN ENGINEER DATE: 1/1/2020	TOWN OF EASTON STANDARD DETAILS PAVING SPECIFICATIONS
OVERLAY	- HMA SUPERPAVE 9.5 MM, PG 64-22LEVEL 2, FOR 1-1/2" OVERLAYS. - HMA SUPERPAVE 12.5 MM, PG 64-22LEVEL 2, FOR 2" OVERLAYS. - MATCH THE SURFACE COURSE SPECIFIED FOR THE ADJUSTMENT FULL DEPTH PAVING IF DIFFERENT FROM THE ABOVE.	
COMMERCIAL ASPHALT PAVEMENT FOR ROADS	SURFACE COURSE: 2" HOT MIX ASPHALT SUPERPAVE 9.5 MM BASE COURSE: 4" HOT MIX ASPHALT SUPERPAVE, 19.0 MM PLACED IN 2-2" LIFTS SUB BASE: 9" CR-6 GRADED AGGREGATE COMPACTED TO 95% OF ASTM D1557, MODIFIED PROCTOR METHOD.	
RESIDENTIAL ASPHALT PAVEMENT FOR ALLEYS	SURFACE COURSE: 2" HOT MIX ASPHALT SUPERPAVE 9.5 MM BASE COURSE: 2 1/2" HOT MIX ASPHALT SUPERPAVE, 19.0 MM SUB BASE: 6" CR-6 GRADED AGGREGATE COMPACTED TO 95% OF ASTM D1557, MODIFIED PROCTOR METHOD.	
CONCRETE PAVEMENT	6" PORTLAND CEMENT CONCRETE MIX #7. SUB BASE: 6" CR-6 GRADED AGGREGATE COMPACTED TO 95% OF ASTM D1557, MODIFIED PROCTOR METHOD.	
ISSUED:	JANUARY 2020	STANDARD NO.: TOE-R-101

	APPROVAL  TOWN ENGINEER DATE: 1/1/2020	TOWN OF EASTON STANDARD DETAILS SIDEWALK RAMPS PARALLEL
ISSUED:	JANUARY 2020	STANDARD NO.: TOE-R-704



NOTES:

- TO BE USED WHERE SIDEWALK IS ADJACENT TO THE CURB. THIS STANDARD MAY BE MODIFIED TO SUIT A PARTICULAR LOCATION.
- WHERE 60" SIDEWALK CAN NOT BE PROVIDED, A DESIGN WAIVER MUST BE REQUESTED.
- NO TRAVERSABLE SLOPE ON THE RAMP OR SIDEWALK SHALL EXCEED 12:1 IN THE DIRECTION OF PEDESTRIAN TRAVEL OR 48:1 PERPENDICULAR TO THE DIRECTION OF PEDESTRIAN TRAVEL. THE CROSS SLOPE OF THE LANDING AREA CAN NOT EXCEED GRADE OF ROADWAY.
- EXPANSION JOINT MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH TOE STANDARD DETAIL.
- SIDEWALK RAMPS TO BE SHOWN ON PLANS SYMBOLICALLY AND REFERENCED WITH THE CENTER OF THE RAMP ALIGNED TO A STATION ON THE CONSTRUCTION CENTERLINE. SEPARATE DETAILS SHALL BE SHOWN WHERE PROPOSED RAMP VARIES FROM STANDARD CASES.
- TRANSITION PANELS TO TIE INTO EXISTING SIDEWALK MUST BE A MINIMUM OF 5' IN LENGTH.

	APPROVAL  TOWN ENGINEER DATE: 1/1/2020	TOWN OF EASTON STANDARD DETAILS PAVING NOTES
ISSUED:	JANUARY 2020	STANDARD NO.: TOE-R-102

PAVING NOTES

PAVING REQUIREMENTS

A. BASE COURSE

- SUB-GRADE SHALL BE PLACED ON PREPARED AND COMPACTED REFILLED EXCAVATIONS TO THE COMPACTED DEPTH AS SHOWN ON DETAIL 9W-1.03. MATERIALS AND METHODS OF CONSTRUCTION SHALL MEET THE PROVISIONS OF MD SHA STANDARDS, SECTION 208.
- GRADED AGGREGATE BASE COURSE:
- GRADED AGGREGATE BASE COURSE SHALL BE SPREAD ON PREPARED AND COMPACTED REFILLED EXCAVATION TO THE COMPACTED DEPTH SHOWN ON THE DRAWING DETAILS.
- GRADED AGGREGATE SHALL BE PER MD SHA STANDARD, SECTION 901.
- RECYCLED CRUSHED CONCRETE IS AN ACCEPTABLE ALTERNATIVE PROVIDED THICKNESS ADJUSTMENTS ARE MADE BASED ON SUPPLEMENTAL TESTING TO BE SUBMITTED BY A QUALIFIED TESTING LABORATORY AND APPROVED BY THE TOWN ENGINEER.

B. TRACK COAT

- COATING SHALL BE RESIDUAL ASPHALT UNIFORMLY SPREAD BETWEEN .01 AND .05 GALLONS/SQ. YARD.
- CONTRACTOR SHALL TAKE CARE NOT TO TRACK COAT ON SURFACE COURSES.

C. HOT MIX ASPHALT PAVEMENT

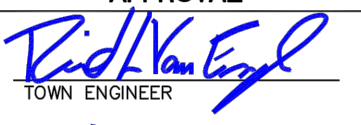
- HOT MIX ASPHALT PAVEMENT SHALL CONSIST OF A NUMBER OF COURSES OF HMA SUPERPAVE MATERIAL AND AGGREGATE ON A PREPARED SUB-BASE AS SHOWN WITHIN THE TOWN STANDARDS.
- MATERIALS AND METHODS OF CONSTRUCTION SHALL MEET THE PROVISIONS OF SECTION 504 AND SECTION 904 OF THE MD SHA STANDARDS AND DETAILS.
- SURFACE COURSES OF BITUMINOUS CONCRETE MIXES SHALL HAVE LESS THAN 15% OF RECYCLED ASPHALT PAVEMENT (RAP).
- BASE COURSES SHALL HAVE NO MORE THAN 20% RAP.
- WEATHER RESTRICTIONS:
- PLANT MIXED SEAL - MINIMUM SURFACE TEMPERATURE 60° AND RISING.
- SURFACE COURSE - MINIMUM SURFACE TEMPERATURE 40° AND RISING.
- BASE COURSE - MINIMUM SURFACE TEMPERATURE 32° AND RISING.

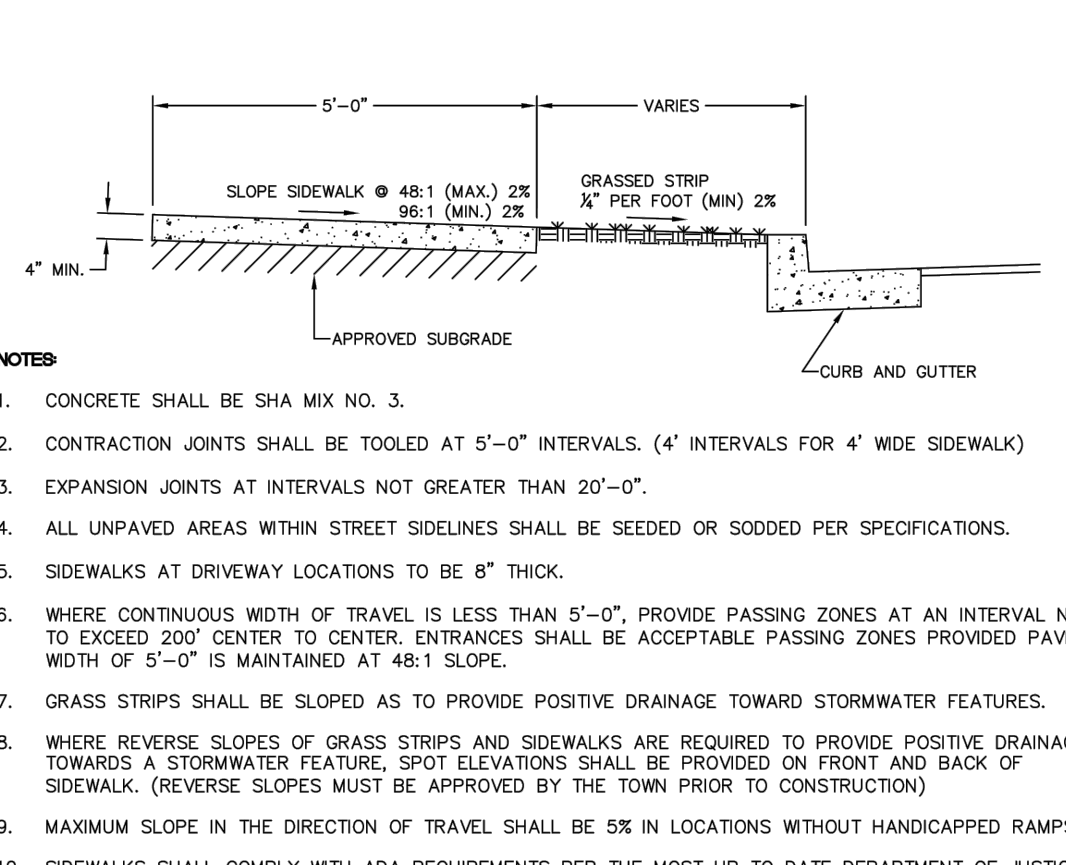
D. CONCRETE PAVEMENT

- CONCRETE USED IN THE RESTORATION OF STREET AND ROADS SHALL BE PLACED TO THE MINIMUM THICKNESS THAT SHALL BE APPROVED BY THE TOWN. CONCRETE MAY BE A BASE COURSE WITH A BITUMINOUS CONCRETE OVERLAY OR A FINISHED SURFACE COURSE.
- CONCRETE PAVEMENT SHALL MEET THE PROVISIONS OF MD SHA STANDARDS, SECTION 522.
- CONCRETE SIDEWALK AND CURB AND GUTTER RESTORATION SHALL BE AS INDICATED WITHIN THE TOWN STANDARDS.

E. SOIL CEMENT

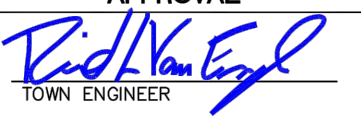
- WHERE THE CBR VALUES ARE FOUND TO BE LOW WITHIN THE PAVED AREA, THE TOWN WILL ALLOW THE SUB-GRADE BE REINFORCED BY A CEMENTITIOUS MATERIAL BEING MIXED IN THE SUBGRADE. APPLICATION SHALL BE SUBJECT TO THE GEOTECHNICAL INVESTIGATION.
- A MINIMUM OF 2" OF GRADED AGGREGATE SHALL BE INSTALLED BETWEEN THE AMENDED SOIL AND BITUMINOUS PAVEMENT.
- MINIMUM MIX DEPTH OF THE SOIL CEMENT MIXTURE SHALL BE 8" WITH A 5-5.5% MINIMUM CEMENT CONTENT.

	APPROVAL  TOWN ENGINEER DATE: 1/1/2020	TOWN OF EASTON STANDARD DETAILS CONCRETE SIDEWALK
ISSUED:	JANUARY 2020	STANDARD NO.: TOE-R-701



NOTES:

- CONCRETE SHALL BE SHA MIX NO. 3.
- CONTRACTION JOINTS SHALL BE TOoled AT 5'-0" INTERVALS. (4' INTERVALS FOR 4' WIDE SIDEWALK)
- EXPANSION JOINTS AT INTERVALS NOT GREATER THAN 20'-0".
- ALL UNPAVED AREAS WITHIN STREET SIDELINES SHALL BE SEEDED OR SODDED PER SPECIFICATIONS.
- SIDEWALKS AT DRIVEWAY LOCATIONS TO BE 8" THICK.
- WHERE CONTINUOUS WIDTH OF TRAVEL IS LESS THAN 5'-0", PROVIDE PASSING ZONES AT AN INTERVAL NOT TO EXCEED 200' CENTER TO CENTER. ENTRANCES SHALL BE ACCEPTABLE PASSING ZONES PROVIDED PAVING WIDTH OF 5'-0" IS MAINTAINED AT 48:1 SLOPE.
- GRASS STRIPS SHALL BE SLOPED AS TO PROVIDE POSITIVE DRAINAGE TOWARD STORMWATER FEATURES.
- WHERE REVERSE SLOPES OF GRASS STRIPS AND SIDEWALKS ARE REQUIRED TO PROVIDE POSITIVE DRAINAGE TOWARDS A STORMWATER FEATURE, SPOT ELEVATIONS SHALL BE PROVIDED ON FRONT AND BACK OF SIDEWALK. (REVERSE SLOPES MUST BE APPROVED BY THE TOWN PRIOR TO CONSTRUCTION)
- MAXIMUM SLOPE IN THE DIRECTION OF TRAVEL SHALL BE 5% IN LOCATIONS WITHOUT HANDICAPPED RAMPS.
- SIDEWALKS SHALL COMPLY WITH ADA REQUIREMENTS PER THE MOST UP TO DATE DEPARTMENT OF JUSTICE REGULATION 28CFR PART 36.

	APPROVAL  TOWN ENGINEER DATE: 1/1/2020	TOWN OF EASTON STANDARD DETAILS CONCRETE QUICK REFERENCE LIST
ISSUED:	JANUARY 2020	STANDARD NO.: TOE-R-103

CONCRETE QUICK REFERENCE LIST

C&T-IN-PLACE CONCRETE SIDEWALKS AND CURBING

A. SUBMITTALS

- SUBMIT MIX DESIGN FOR APPROVAL PRIOR TO PLACING CONCRETE (MSHA MIX #3 FOR ALL CONCRETE SIDEWALKS, AIR ENTRAINED, MINIMUM 3500 PSI MIX). FOR CURB AND GUTTER, UTILIZE MSHA MIX #7, EXCEPT MAXIMUM WATER CEMENTITIOUS RATIO OF 0.45 AND 611 POUNDS MINIMUM CEMENTITIOUS MATERIALS - AIR ENTRAINED, MINIMUM 4200 PSI MIX.
- SUBMIT CONCRETE TESTING AGENCY FOR APPROVAL, WHICH CONTRACTOR OR PROJECT OWNER SHALL EMPLOY FOR INFIELD AND LABORATORY TESTING.

B. CONCRETE PLACEMENT

- NOTIFY TOWN OF INTENTION TO POUR CONCRETE 24 HOURS PRIOR TO PERFORMING WORK. (PHONE: 410-822-8822).
- DRIVER SHALL PRESENT COMPUTER GENERATED MIX DELIVERY TICKET UPON ARRIVAL TO SITE.
- DO NOT ADD WATER TO MIX AT JOB SITE UNLESS APPROVED BY ENGINEER. DO NOT POUR CONCRETE DURING RAIN EVENTS.
- TESTING AGENCY SHALL TEST FOR SLUMP, TEMPERATURE AND AIR ENTRAINMENT AT THE JOB SITE. PRIOR TO POURING EACH TRUCK LOAD DELIVERED TO SITE. THE MAXIMUM TIME FROM ADDING WATER TO BATCH AT PLANT TO DISCHARGE AT SITE SHALL BE WITHIN 1 1/2 HOURS. TESTING AGENCY SHALL VERIFY THAT SUB-GRADE IS PROPERLY COMPACTED.
- TESTING AGENCY SHALL COLLECT CYLINDERS FOR COMPRESSION TESTING ON EACH TRUCK LOAD OF CONCRETE DELIVERED TO SITE PER AD REQUIREMENTS. TEST RESULTS SHALL BE PROVIDED TO THE ENGINEER WITHIN 48 HOURS OF 7 AND 28 DAY BREAKS. REPORT SHALL INCLUDE LOCATION OF POUR PER PLAN STATIONING.
- ENGINEER OF HIS/HER REPRESENTATIVE SHALL VERIFY THAT AREA OF CONCRETE WORK IS PROPERLY PREPARED, FREE OF WATER, FREE OF UNSTABLE MATERIALS AND THAT ALL REINFORCEMENT REQUIRED AT DRIVEWAYS, RAMP, VALLEY GUTTERS, ETC. IS IN PLACE AND PROPERLY SUPPORTED.
- COLD WEATHER CONCRETE PLACEMENT SHALL BE PROTECTED FROM DAMAGE AND FROST, FREEZING ACTION OR LOW TEMPERATURES. NO UNAPPROVED ADJUSTURES ARE PERMITTED.
- CONCRETE CURB AND SIDEWALKS SHALL HAVE PROPER CONTROL JOINTS INSTALLED AT 10 FOOT INTERVALS FOR CURB AND 5 FOOT INTERVALS FOR SIDEWALK. EXPANSION JOINTS FOR CURBING SHALL BE AT EACH 100 FOOT INTERVAL PLUS AT EACH POINT OF TANGENT OR CURVE. SIDEWALKS SHALL HAVE EXPANSION JOINTS AT 20 FOOT INTERVALS OR AT CHANGE OF DIRECTION.

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Virginia Office: 8229 Boone Blvd, Suite 625 - Vienna, VA 22182

REVISIONS

REV. #	DATE	DESCRIPTION
1	03/29/2023	REVISED PER TOWNL02PZ COMMENTS

DATE: 12/28/2022

SCALE: N/A

DRAWN BY: BBF

DESIGNED BY: BBF

APPROVED BY:

SHEET NO.: C-305.01

SITE DETAILS

FOR

NAMA - PHASE 2
INFRASTRUCTURE IMPROVEMENT PLANS

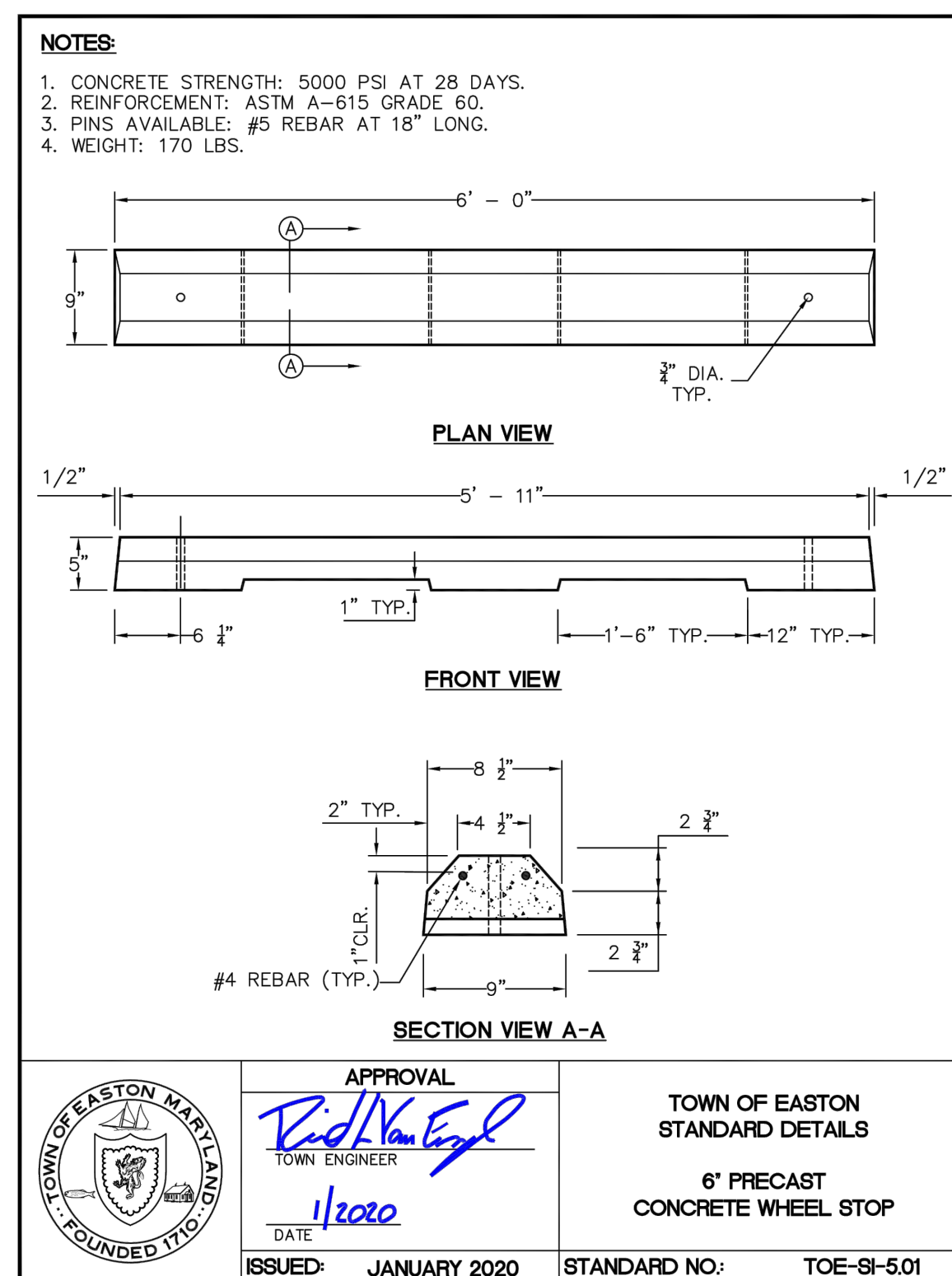
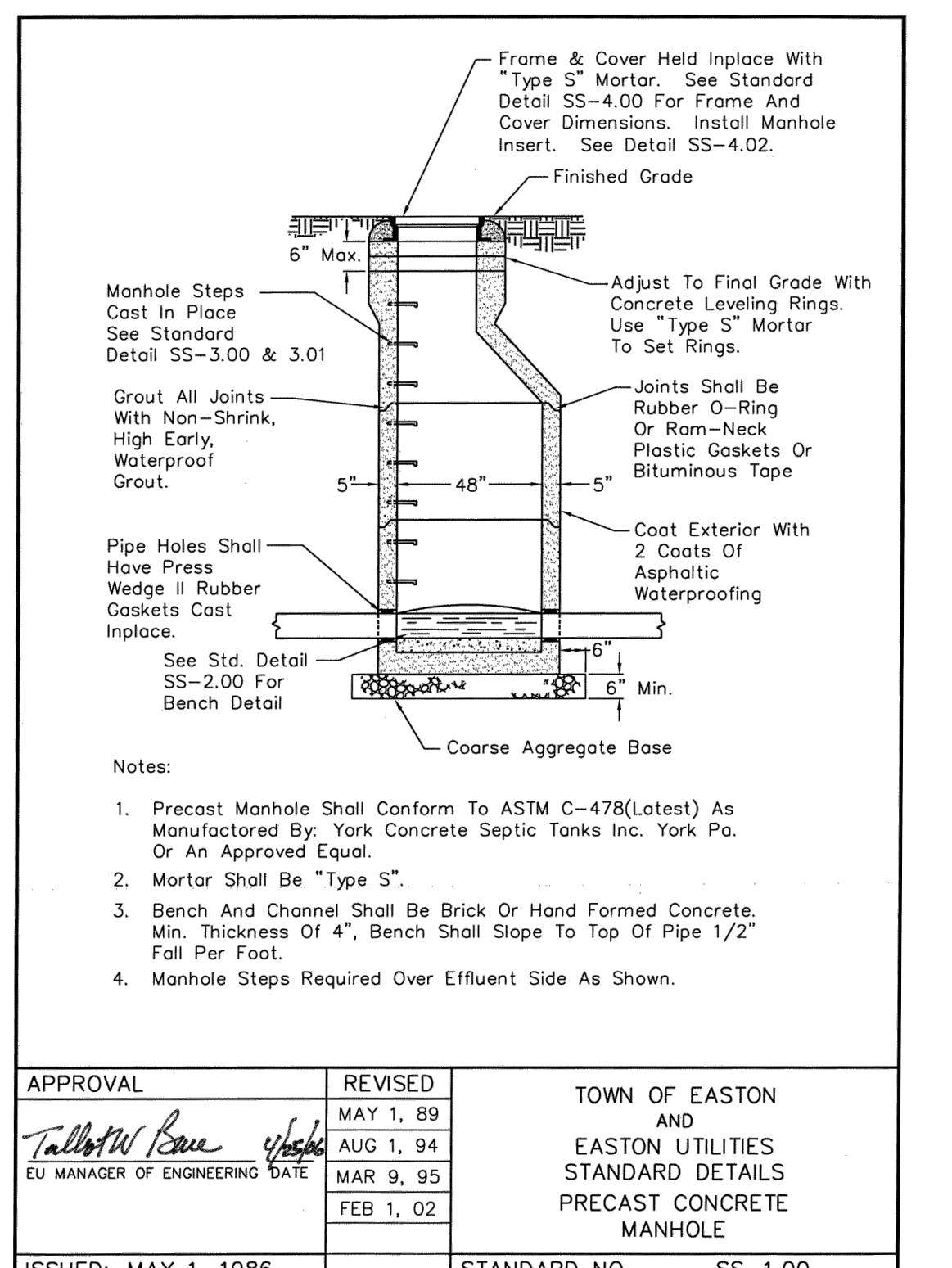
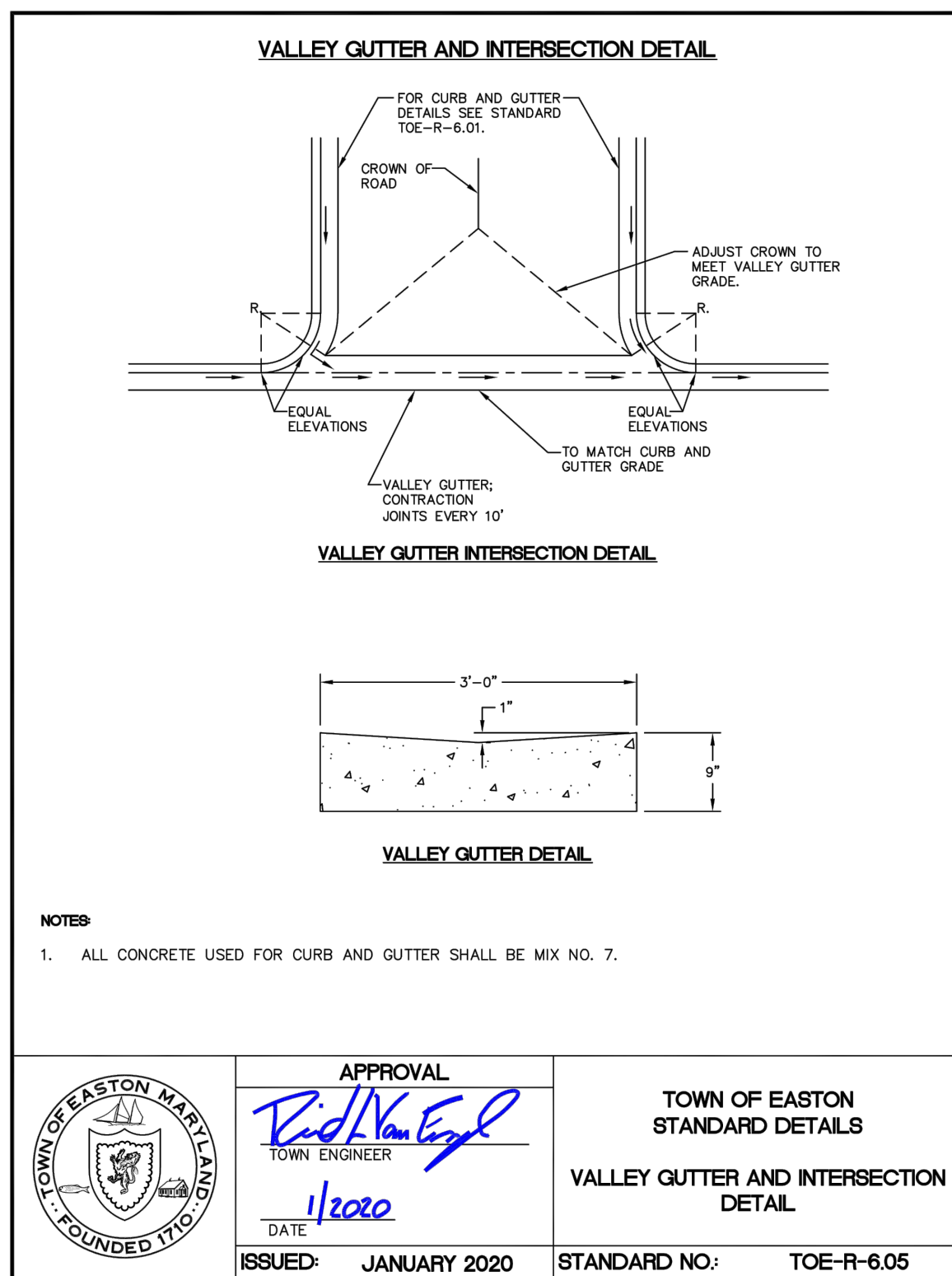
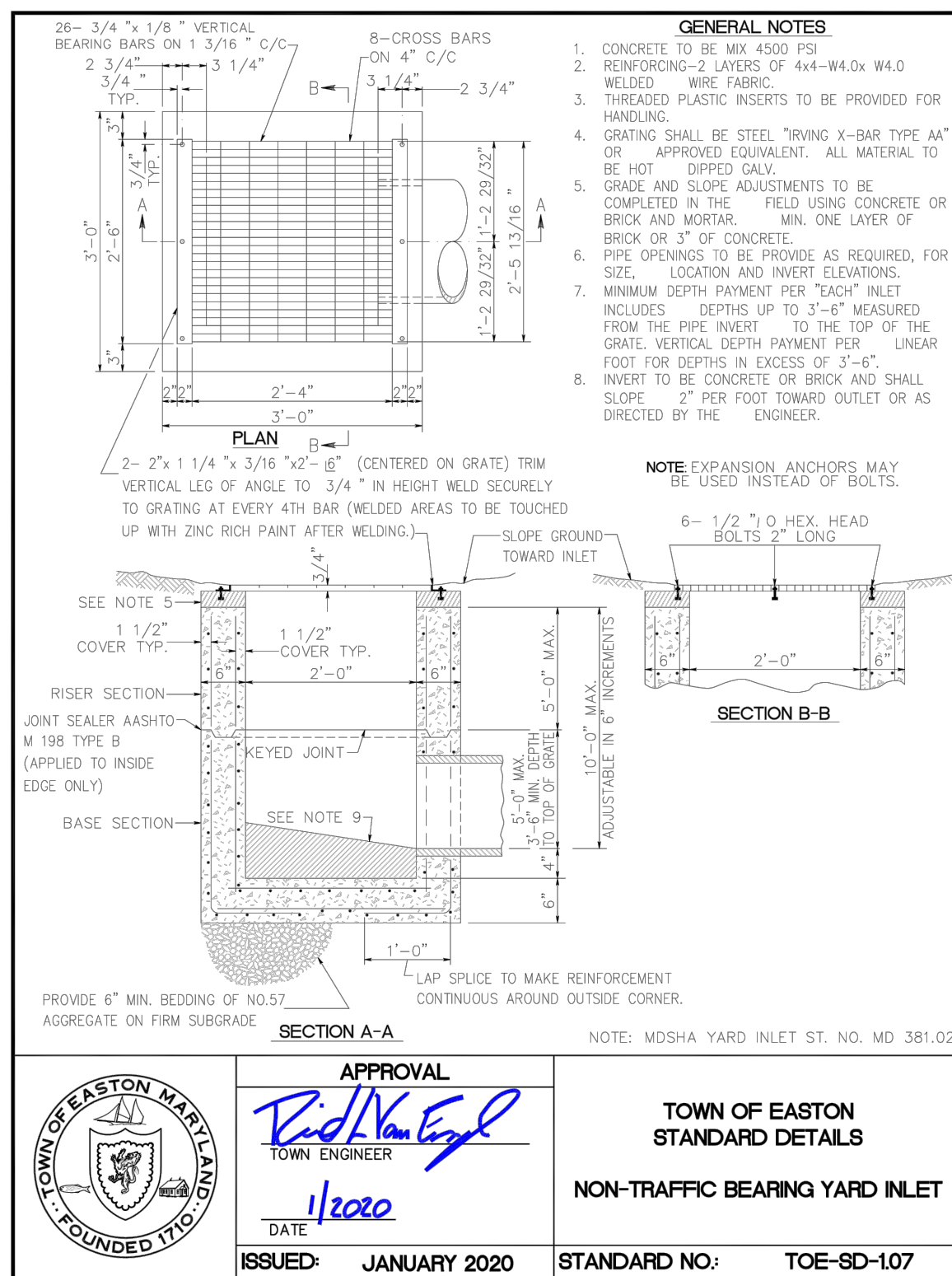
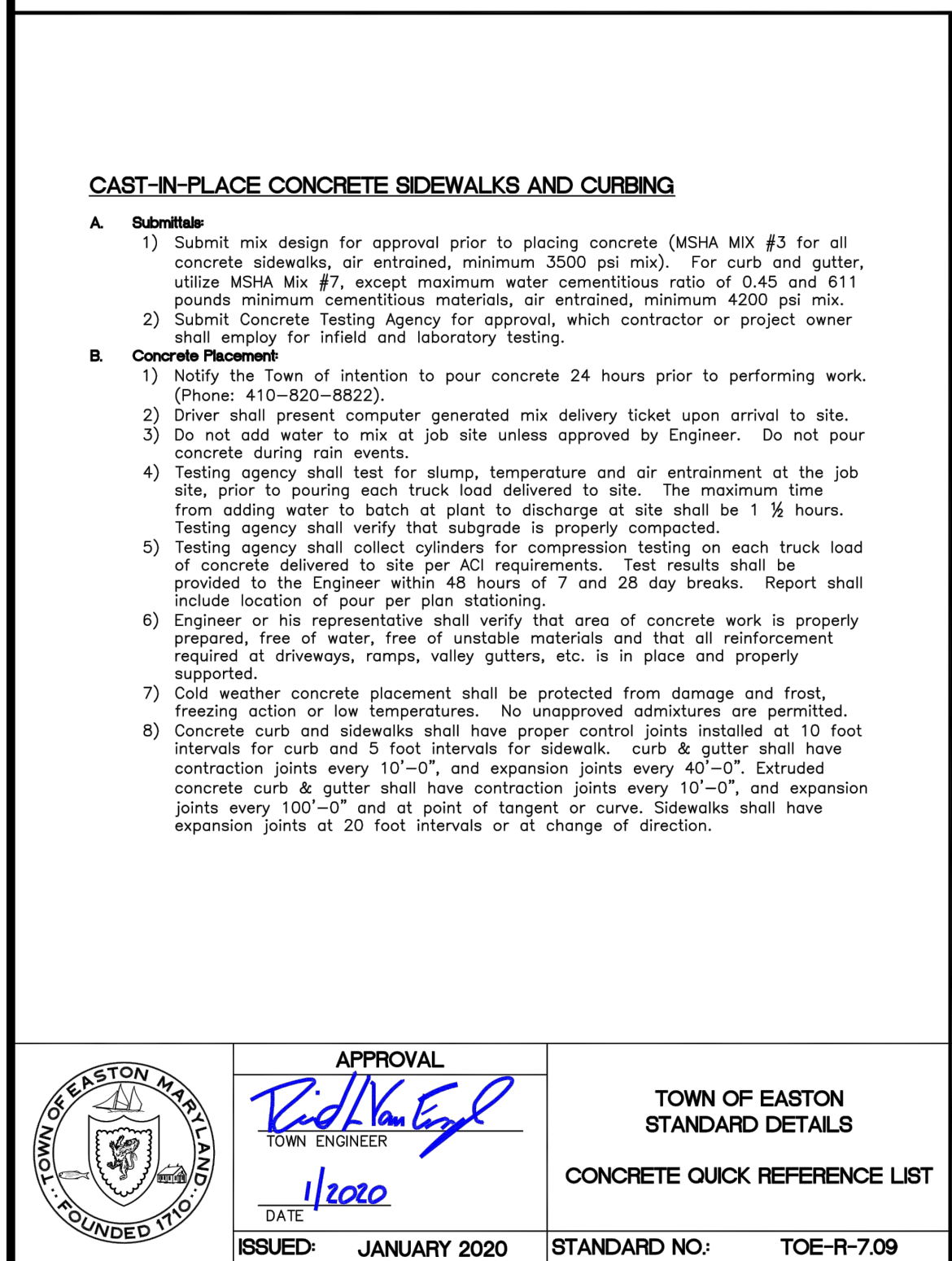
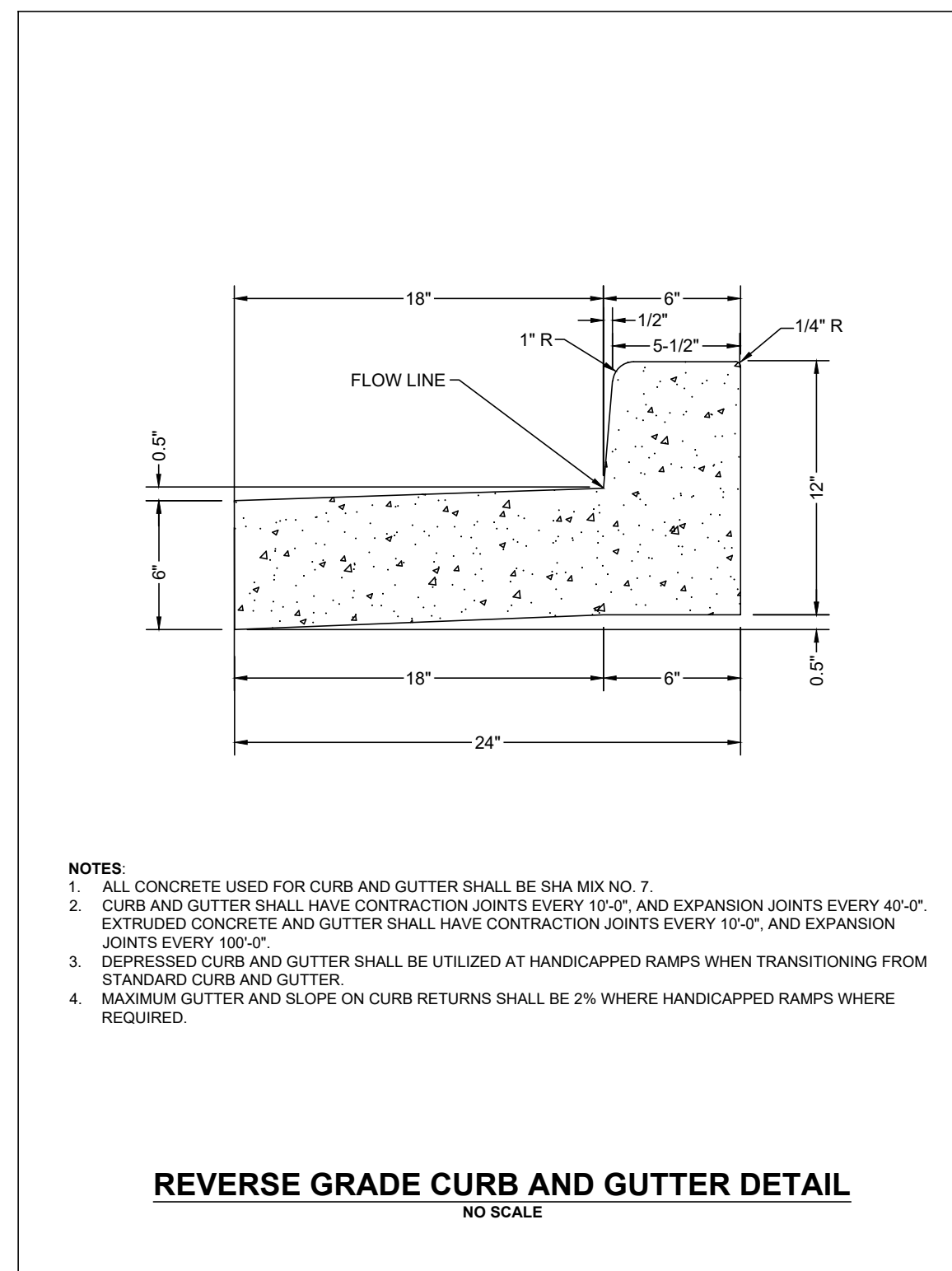
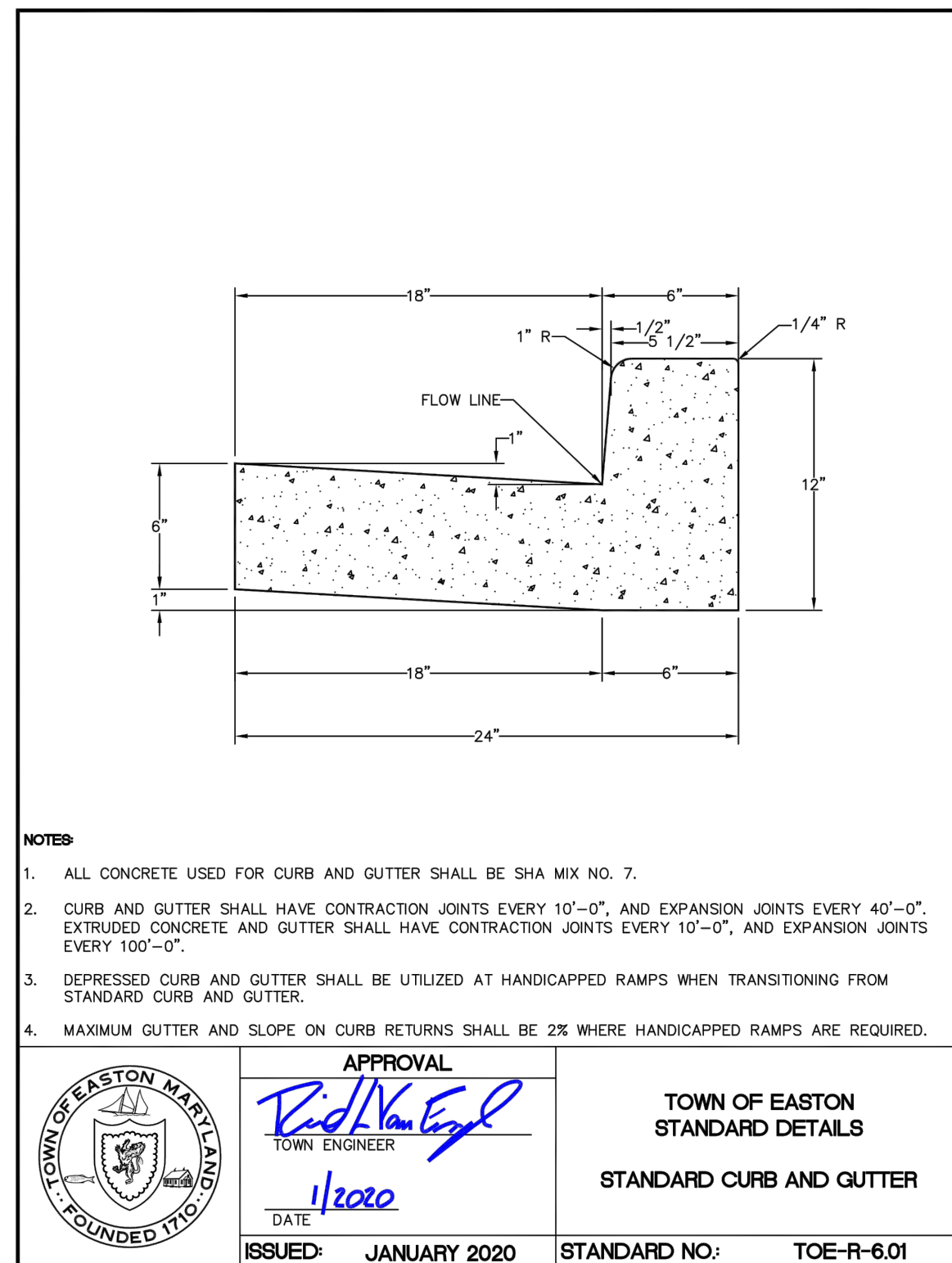
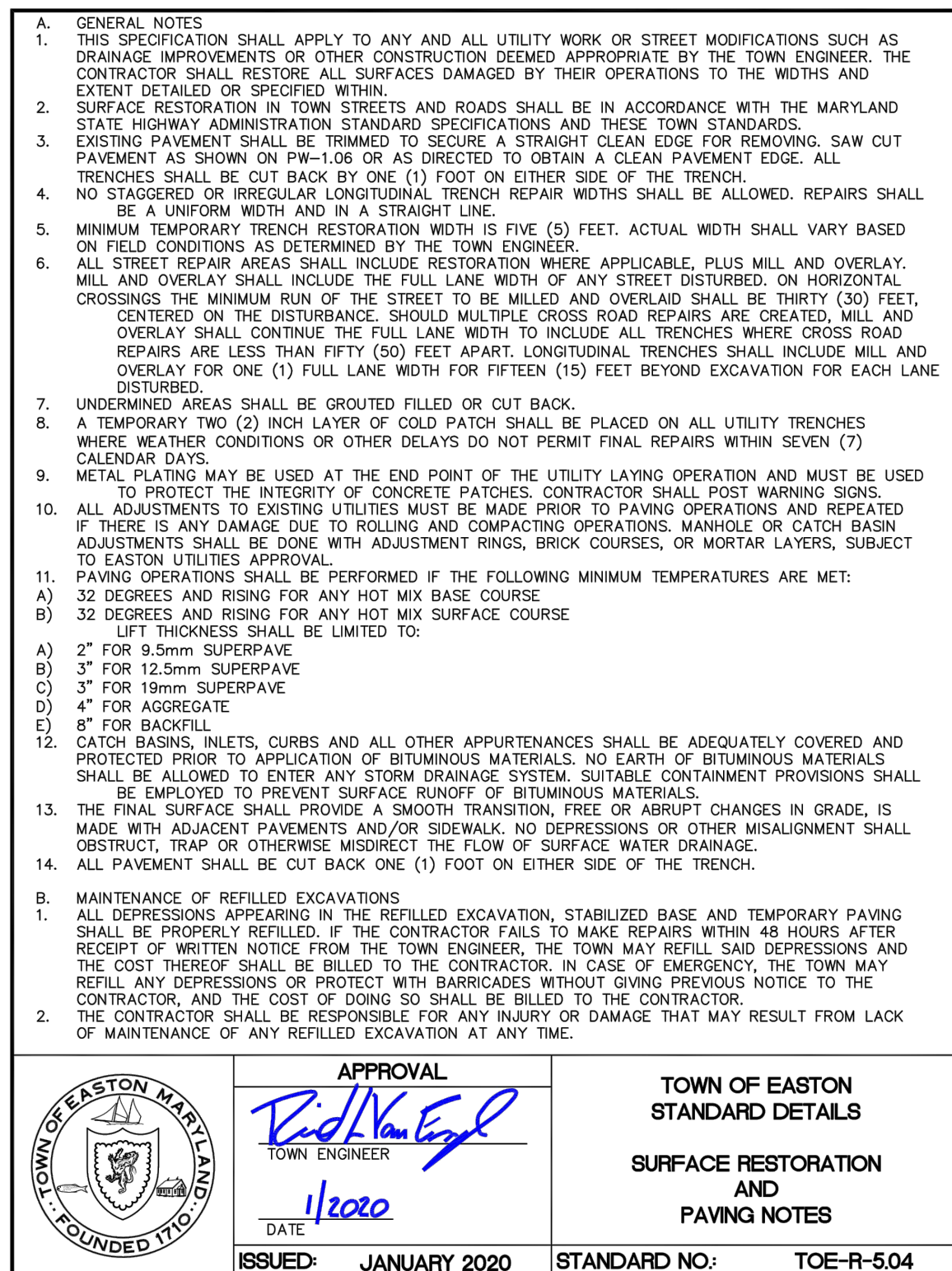
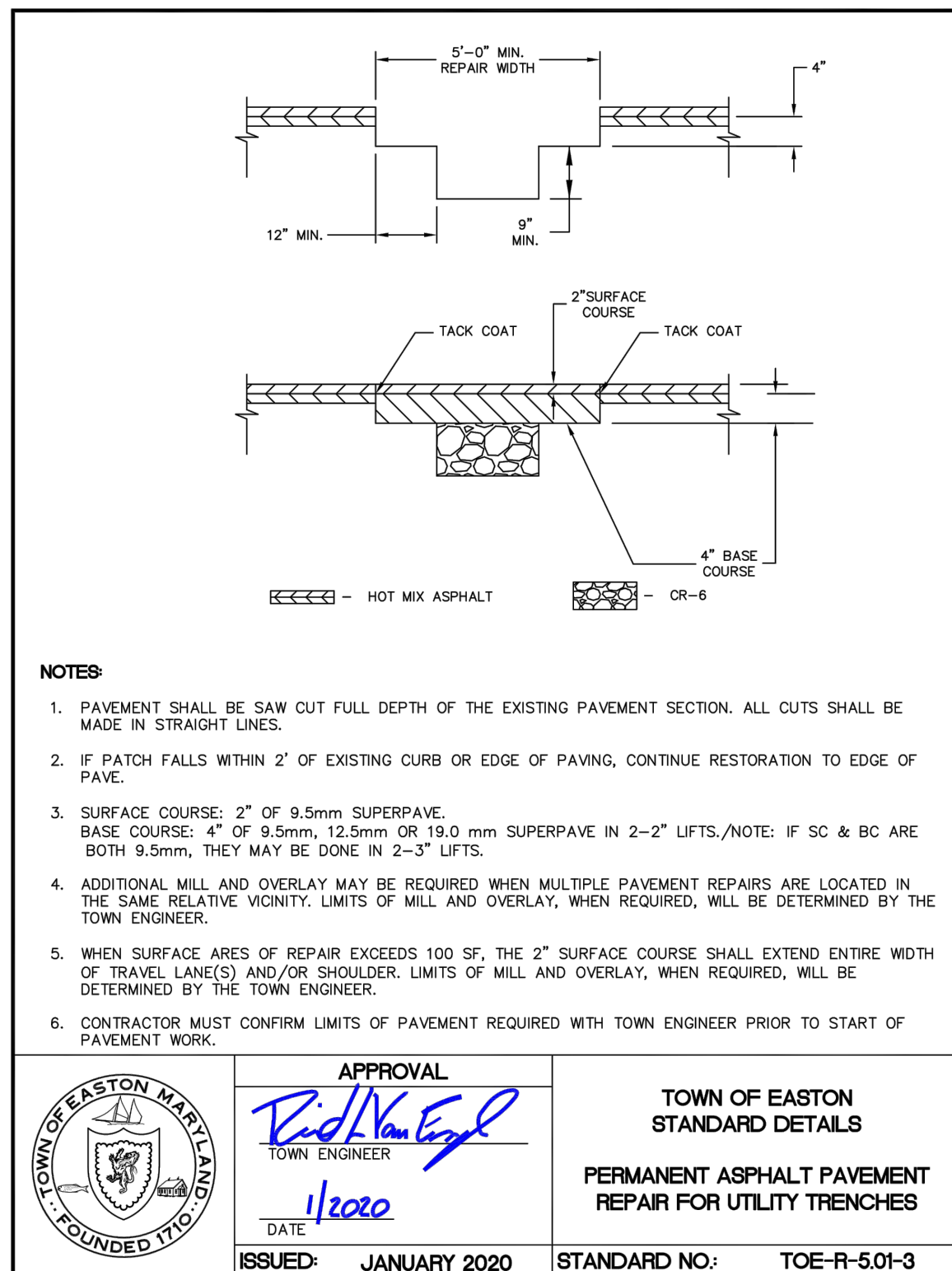
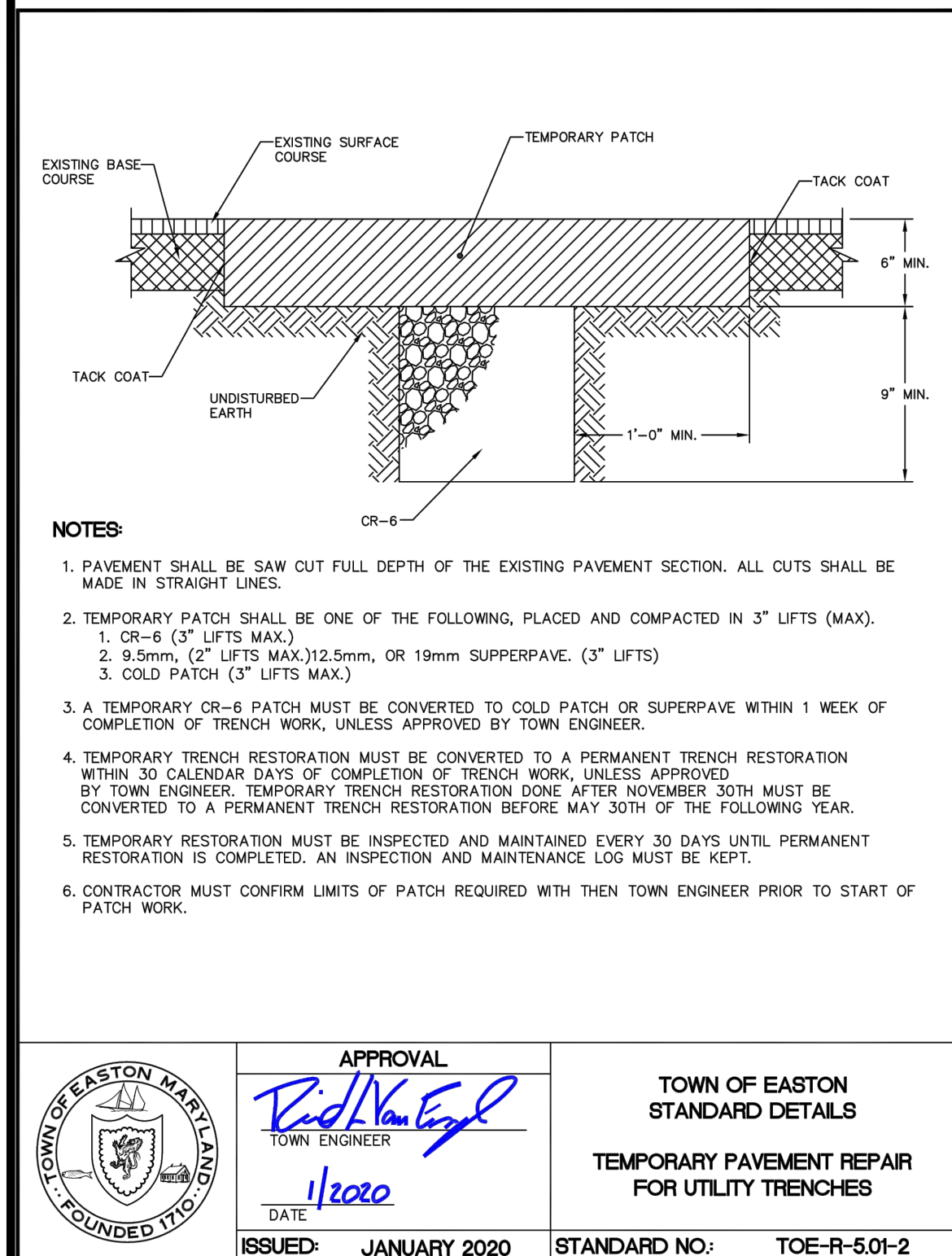
TAX MAP 0104, GRID 000EA

WARD DISTRICT 4, EASTON, MARYLAND
PREPARED FOR NAMA VENTURES, LLC

APPROVED:
TOWN OF EASTON - TOWN ENGINEER

APPROVED:
TOWN OF EASTON PLANNING AND ZONING

APPROVED:
EASTON UTILITIES - MANAGER OF ENGINEERING



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REVISIONS

REV. #	DATE	DESCRIPTION
1	03/29/2023	REVISED PER TOWN ENGINEER COMMENTS

DATE: 12/28/2022

SCALE: N/A

DRAWN BY: BBF

DESIGNED BY: BBF

APPROVED BY:

SHEET NO.: C-305.02

APPROVED:

TOWN OF EASTON - TOWN ENGINEER

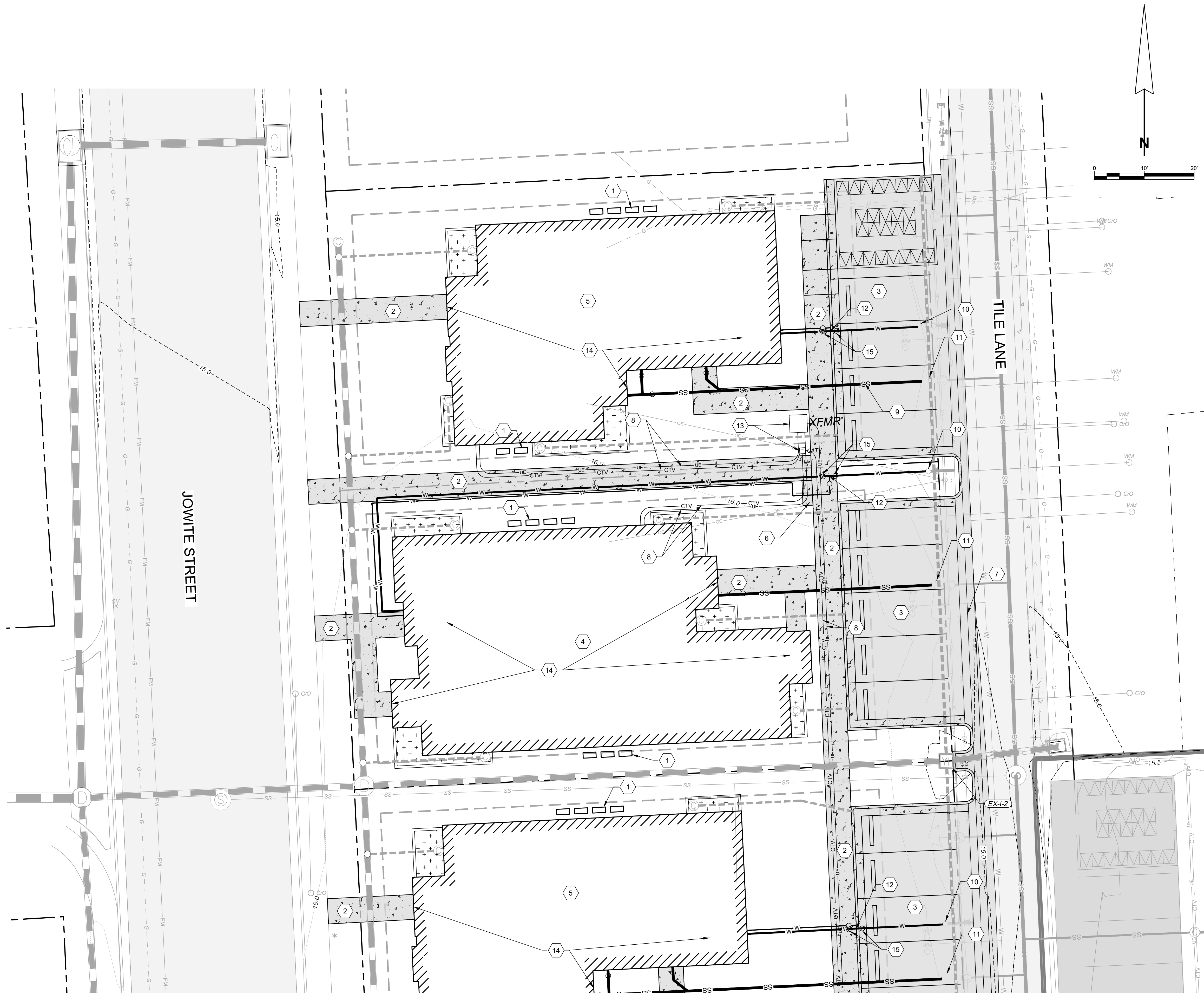
APPROVED:

TOWN OF EASTON PLANNING AND ZONING

APPROVED:

EASTON UTILITIES - MANAGER OF ENGINEERING

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PROPOSED FEATURES

- 1 HVAC UNITS TYP. SEE MECHANICAL PLAN FOR DETAIL
- 2 4" SIDEWALK. DETAIL ON 305.01
- 3 PERVIOUS ASPHALT PARKING. DETAIL ON 405.01
- 4 7 UNIT DWELLING
- 5 6 UNIT DWELLING
- 6 CLUSTER MAILBOX
- 7 STANDARD ASPHALT VALLEY GUTTER WITH A VALLEY SLOPE OF 0.47%. DETAIL ON 305.02
- 8 1-2 1/2" ELECTRIC AND 1-2" COMM SCH40 CONDUITS. ALL CONDUITS TO HAVE 36" COVER. CONDUITS MAY BE RUN IN SAME TRENCH CONDUITS MAY BE RUN IN SAME TRENCH
- 9 6" SEWER HOUSE CONNECTION TO BE INSTALLED ACCORDING TO DETAIL ON 505.01
- 10 TIE IN TO EXISTING 4" C-800 DR-18 WATER SERVICE WITH A 4" C509 AWWA GATE VALVE AT MAIN SEE DETAIL ON SHEET C-505.01
- 11 EXISTING SEWER CLEANOUT
- 12 4" X 2" TEE TO 2" DR-18 C-800 PVC POTABLE WATER SERVICE TO 2" METER & METER PIT PER EUC DETAIL SHEET C-505.01.
- 13 ELECTRIC TRANSFORMER PAD AND COMMUNICATION PEDESTAL. DETAIL ON C-505.01. TRANSFORMER BY OTHERS.
- 14 TYPICAL EXTERIOR WALL MOUNTED LIGHT TO BE INSTALLED 6.5' ABOVE FINISHED FLOOR AND 1' OFF DOOR HORIZONTALLY. LIGHT TO BE LITHONIA OLFL 13 PE BZ OR EQUAL.
- 15 4" VALVE FOR FIRE SERVICE LINE

- NOTE:
- ALL WATER CONNECTIONS AND SERVICES TO BE A MINIMUM OF 3.5' BELOW GRADE.
 - ALL SEWER HOUSE CONNECTIONS TO BE INSTALLED ABOVE OR BELOW ANY STORM DRAIN/PLANTER BOX OUTFALLS TO AVOID CROSSING CONFLICTS. AT NO POINT SHOULD THE SEWER SERVICES BE BELOW 1.0% OR ABOVE 10% SLOPE.
 - ALL PVC ELBOW FITTINGS FOR CONDUITS SHALL HAVE A MINIMUM 24" RADIUS. REQUIRED FOR ALL ELECTRIC AND COMM CONDUITS.
 - INSTALL A PULL ROPE (1,800-POUND MINIMUM TENSILE STRENGTH) IN EACH CONDUIT TO EACH STRUCTURE AND TERMINAL END. PROVIDE 10' OF SLACK AT EACH END OF PULL ROPE. REQUIRED FOR ALL ELECTRIC AND COMM CONDUITS.
 - VERIZON UTILITY CONNECTIONS SHALL BE MADE OVERHEAD.

APPROVED:	APPROVED:	APPROVED:
TOWN OF EASTON - TOWN ENGINEER	TOWN OF EASTON PLANNING AND ZONING	EASTON UTILITIES - MANAGER OF ENGINEERING
DATE	DATE	DATE

UTILITY PLAN

FOR

NAIMA - PHASE 2

INFRASTRUCTURE IMPROVEMENT PLANS

TAX MAP 0104, GRID 000EA

WARD DISTRICT 4, EASTON, MARYLAND

PREPARED FOR NAIMA VENTURES, LLC

RAUCH

INC.

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REV. #	DATE	DESCRIPTION
1	03/29/2023	REVISED PER TOWN/UEP COMMENTS

DATE:

12/28/2022

SCALE:

1" = 10'

DRAWN BY:

BBF

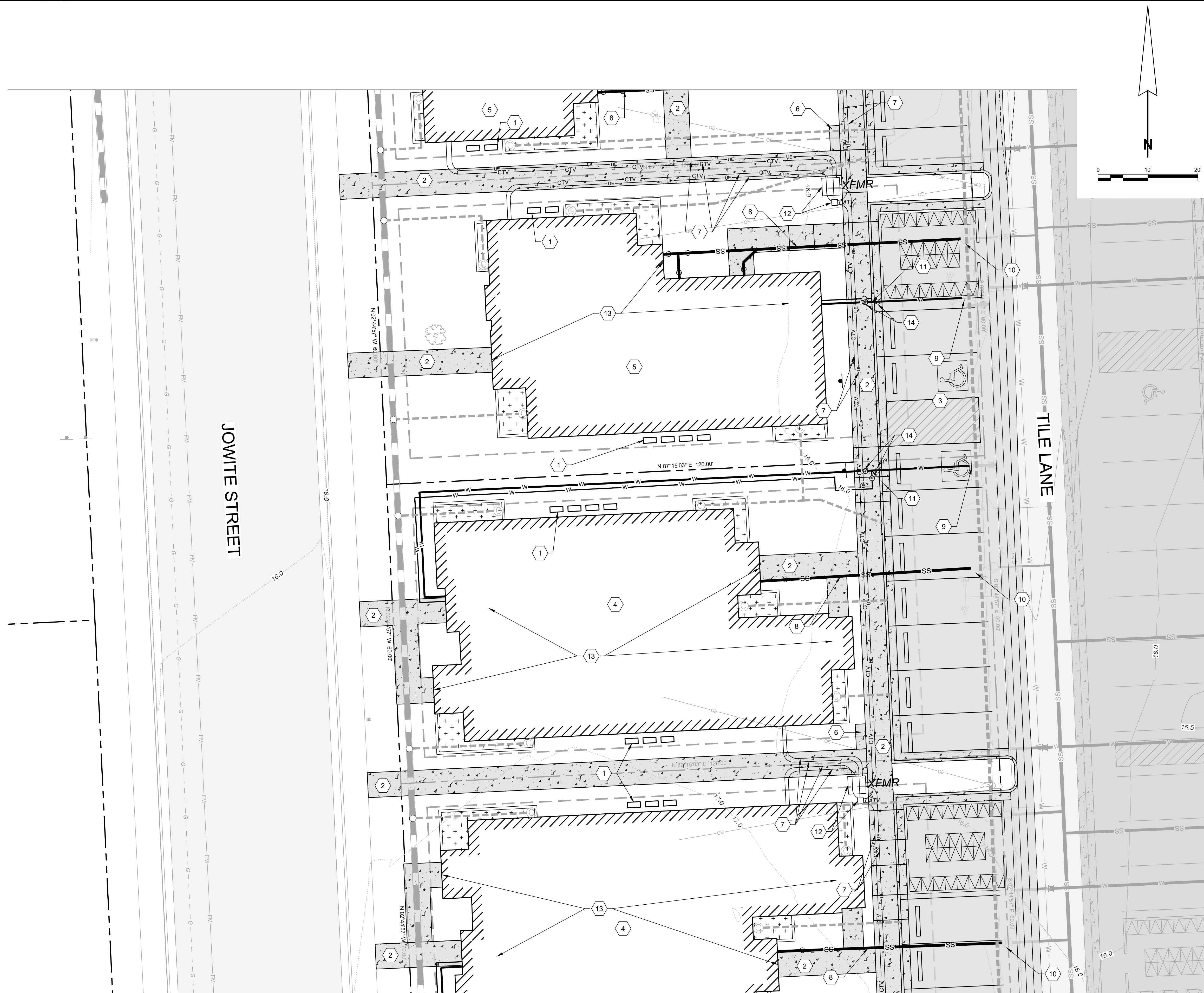
DESIGNED BY:

BBF

APPROVED BY:

SHEET NO.:

C-401.01



PROPOSED FEATURES

- 1 HVAC UNIT TYP. SEE MECHANICAL PLAN FOR DETAIL
- 2 4" SIDEWALK. DETAIL ON 305.01
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- ALL PVC ELBOW FITTINGS FOR CONDUITS SHALL HAVE A MINIMUM 24" RADIUS. REQUIRED FOR ALL ELECTRIC AND COMM CONDUITS.
- A PULL ROPE (1,800-POUND MINIMUM TENSILE STRENGTH) IN EACH CONDUIT TO EACH STRUCTURE AND TERMINAL END, PROVIDE 10' OF SLACK AT EACH END OF PULL ROPE. REQUIRED FOR ALL ELECTRIC AND COMM CONDUITS.
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APPROVED:	APPROVED:	APPROVED:
TOWN OF EASTON - TOWN ENGINEER	TOWN OF EASTON PLANNING AND ZONING	EASTON UTILITIES - MANAGER OF ENGINEERING
DATE	DATE	DATE

REVISIONS

[illegible]

DATE: 12/28/2022

SCALE: 1" = 10'

DRAWN BY: BBF

DESIGNED BY: BBF

SHEET NO.

INFRASTRUCTURE IMPROVEMENT PLANS

TAX MAP 0104, GRID 000EA

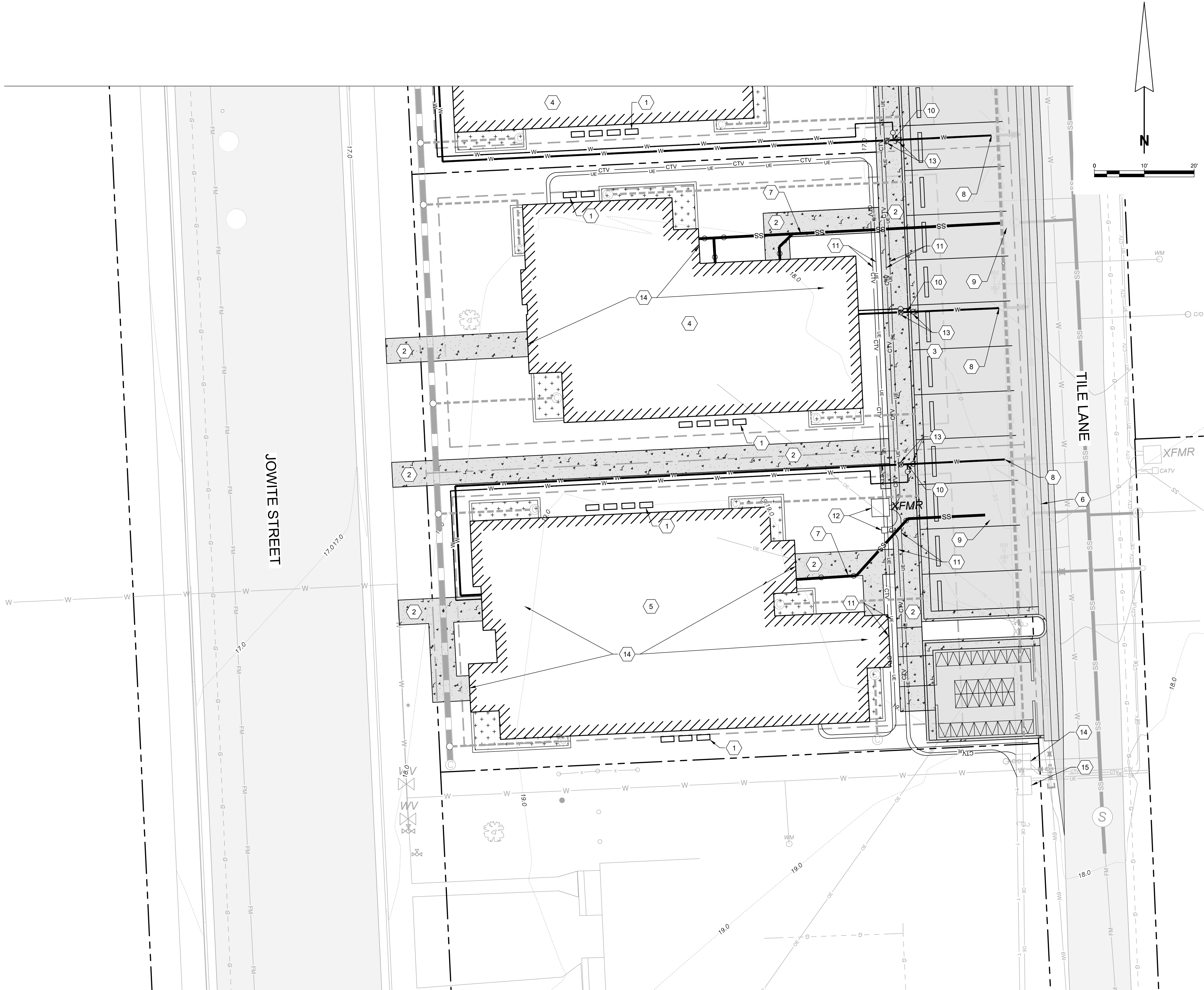
WARD DISTRICT 4, EASTON, MARYLAND

PREPARED FOR NAIMA VENTURES, LLC

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PROPOSED FEATURES

- 1 HVAC UNIT. SEE MECHANICAL PLANS
- 2 4" SIDEWALK. DETAIL ON 305.01
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- 4 6 UNIT DWELLING
- 5 7 UNIT DWELLING
- 6 STANDARD ASPHALT VALLEY GUTTER WITH A VALLEY SLOPE OF 0.47%. DETAIL ON 305.02
- 7 SEWER HOUSE CONNECTION TO BE INSTALLED ACCORDING TO DETAIL ON 505.01
- 8 TIE INTO EXISTING 4" C-900 DR-18 WATER SERVICE WITH A 4" C509 AWWA GATE VALVE AT MAIN SEE DETAIL ON SHEET -505.01
- 9 EXISTING SEWER CLEANOUT
- 10 4" X 2" TEE TO 2" DR-18 C-900 PVC POTABLE WATER SERVICE TO 2" METER & METER PIT PER EUC DETAIL SHEET C-505.01
- 11 1-2 1/2" ELECTRIC AND 1-2" COMM SCH40 CONDUITS. ALL CONDUITS TO HAVE 36" COVER. CONDUITS MAY BE RUN IN SAME TRENCH
- 12 ELECTRIC TRANSFORMER PAD AND COMMUNICATION PEDESTAL. DETAIL ON C-505.01. TRANSFORMER BY OTHERS.
- 13 4" VALVE FOR FIRE SUPPRESSION LINE
- 14 EXISTING 36"x36"x30" QUAZITE BOX FOR EUC-CATV
- 15 EXISTING 1ϕ TAP CABINET FOR EUC-ELECTRICAL

NOTE:

- ALL WATER CONNECTIONS AND SERVICES TO BE A MINIMUM OF 3.5' BELOW GRADE.
- ALL SEWER HOUSE CONNECTIONS TO BE INSTALLED ABOVE OR BELOW ANY STORM DRAIN/PLANTER BOX OUTFALLS TO AVOID CROSSING CONFLICTS. AT NO POINT SHOULD THE SEWER SERVICES BE BELOW 1.0% OR ABOVE 10% SLOPE.
- ALL PVC ELBOW FITTINGS FOR CONDUITS SHALL HAVE A MINIMUM 24" RADIUS. REQUIRED FOR ALL ELECTRIC AND COMM CONDUITS.
- INSTALL A PULL ROPE (1,800-POUND MINIMUM TENSILE STRENGTH) IN EACH CONDUIT TO EACH STRUCTURE AND TERMINAL END. PROVIDE 10' OF SLACK AT EACH END OF PULL ROPE. REQUIRED FOR ALL ELECTRIC AND COMM CONDUITS.
- VERIZON UTILITY CONNECTIONS SHALL BE MADE OVERHEAD.

APPROVED:	APPROVED:	APPROVED:
TOWN OF EASTON - TOWN ENGINEER	TOWN OF EASTON PLANNING AND ZONING	EASTON UTILITIES - MANAGER OF ENGINEERING
DATE	DATE	DATE

RAUCH
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Office: 410.770.9881 | Fax: 410.770.3867
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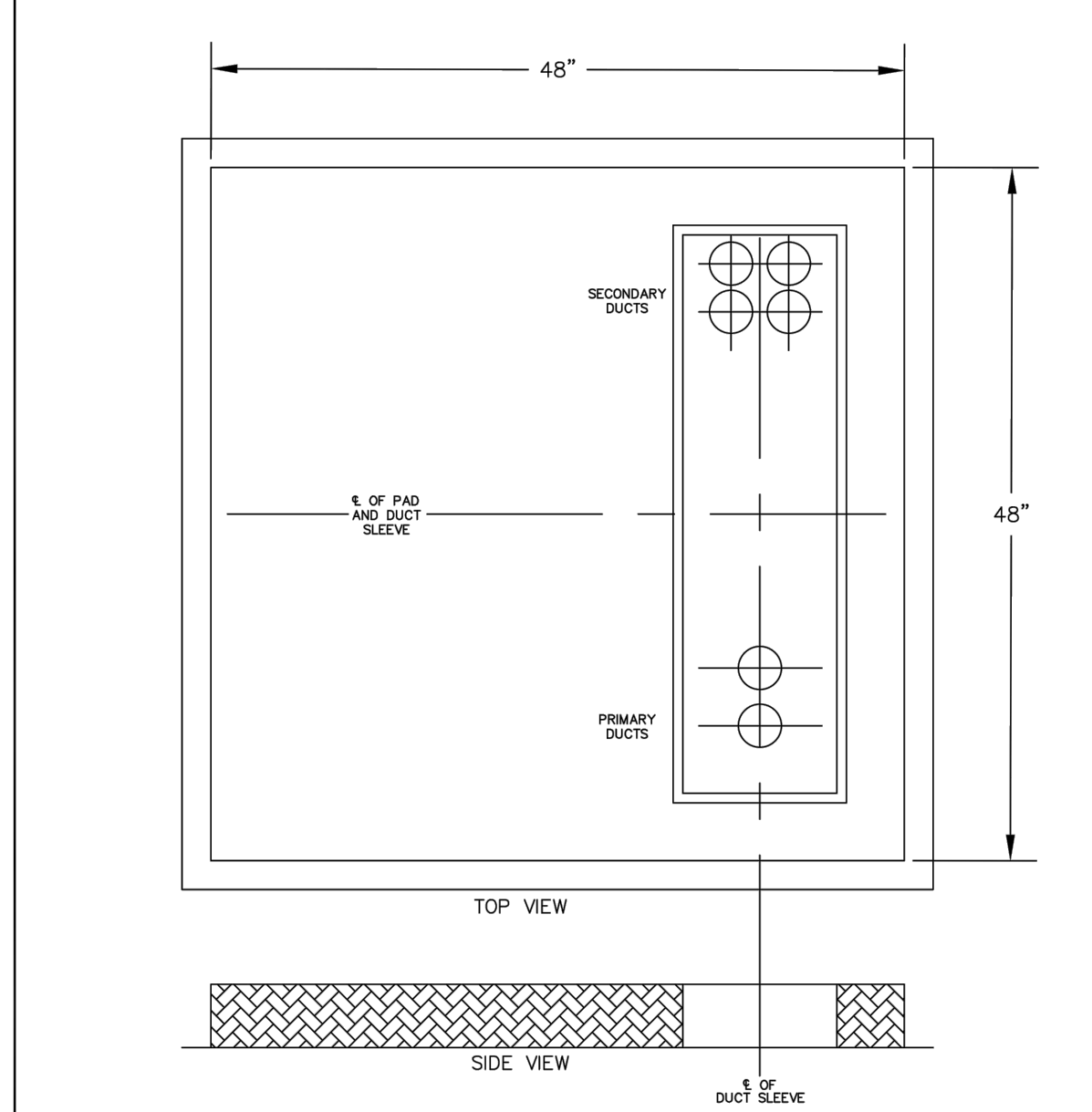
REVISIONS

REV. #	DATE	DESCRIPTION
1	03/29/2023	REVISED PER TOWN/LOPZ COMMENTS

DATE:	12/28/2022
SCALE:	1" = 10'
DRAWN BY:	BBF
DESIGNED BY:	BBF
APPROVED BY:	
SHEET NO.:	C-401.03

UTILITY PLAN

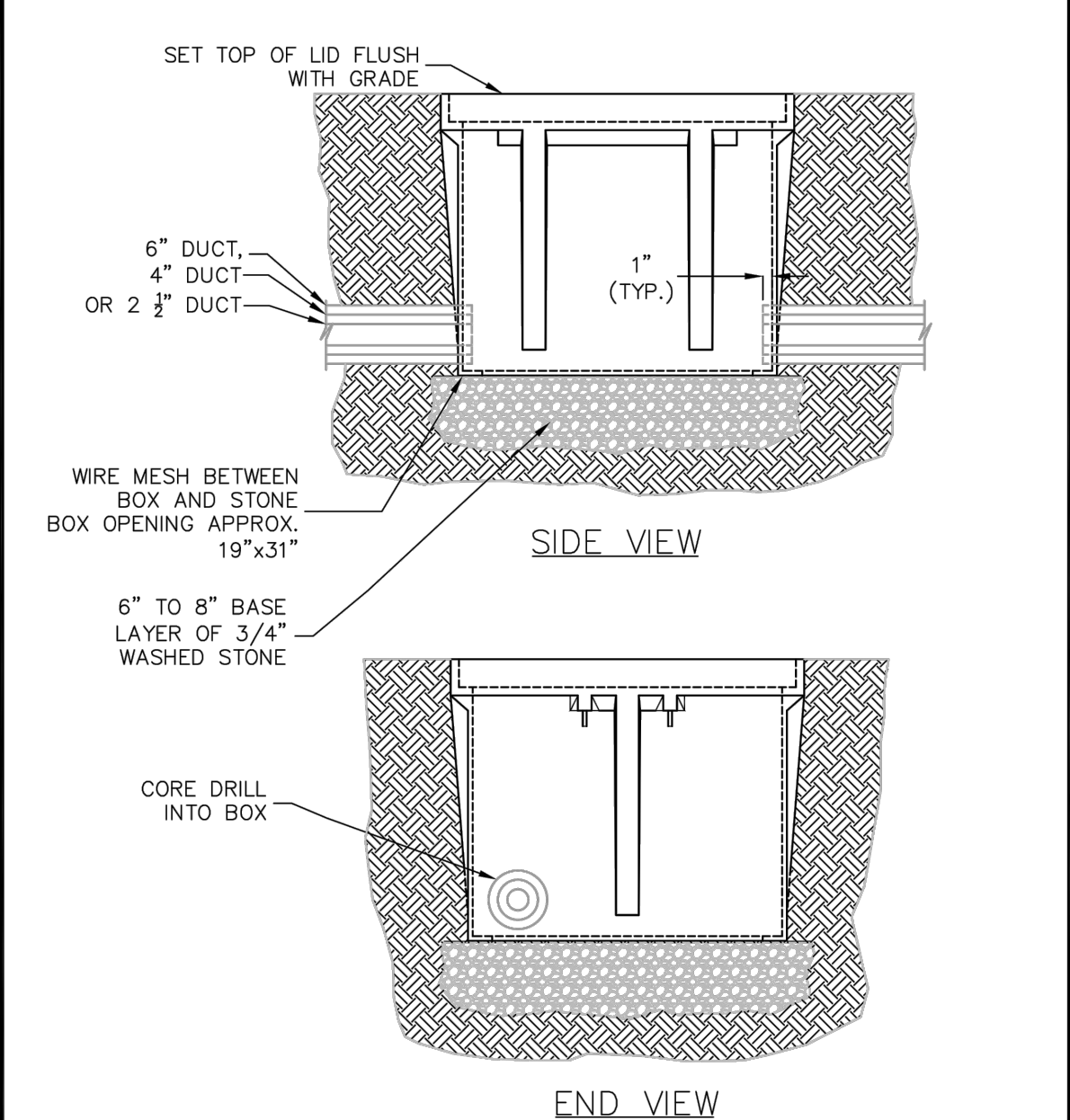
FOR
NAIMA - PHASE 2
INFRASTRUCTURE IMPROVEMENT PLANS
TAX MAP 0104, GRID 000EA
WARD DISTRICT 4, EASTON, MARYLAND
PREPARED FOR NAIMA VENTURES, LLC



NOTES:

- PAD SIZES MAY VARY DEPENDING ON MANUFACTURER. CONTACT EASTON UTILITIES FOR PAD DIMENSIONS.
- INSTALL DUCTS WITH 36" MIN. COVERAGE. TRENCH MUST BE INSPECTED BY E.U. PRIOR TO BACKFILLING.
- REFER TO ELECTRIC PLAN DRAWINGS FOR PRIMARY AND SECONDARY CONDUIT SIZE REQUIREMENTS.
- MINIMUM OF 6" CR6 COMPACTED UNDER TRANSFORMER PAD.

10 TRANSFORMER PAD
75-167 KVA
(SUPPLIED BY EU)
FOR PRIMARY AND SECONDARY DUCT LOCATIONS
SHEET 1 OF 1
E-13.0
ISSUED: JAN 15, 2019
TOWN ENGINEER: [Signature]
MANAGER OF ENGINEERING: [Signature]



APPROVAL	REVISED	INSTALLATION FOR QUAZITE 36X36X30 BOX (HANDHOLE) AND DUCT (BOX SUPPLIED BY EUC)
EU MANAGER OF ENGINEERING DATE		
ISSUED 1/5/23		STANDARD No. C-1.01

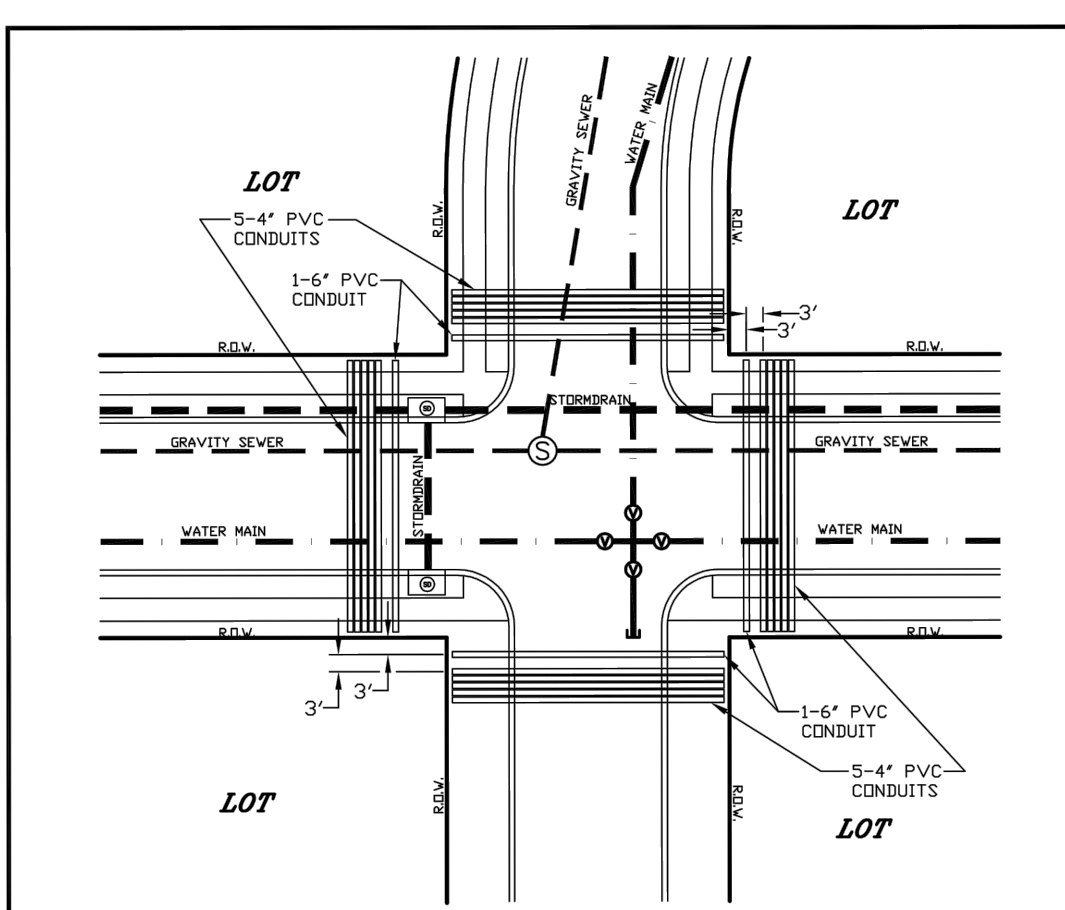
STANDARD EUC NOTES:

GENERAL:

- THE ELECTRIC AND COMMUNICATION DESIGN PROVIDED BY EASTON UTILITIES SHOWN ON THESE DRAWINGS ARE NOT A FINAL DESIGN BUT TO AID THE DESIGN ENGINEER IN THE DESIGN OF A CONSTRUCTABLE PROJECT. INFRASTRUCTURE MODIFICATIONS MAY BE REQUIRED TO ADJUST FOR THE DESIGN OF OTHER PORTIONS OF THE PROJECT SUCH AS LOT LINE LAYOUT, ABOVE GRADE CONFLICTS, CONFLICTS WITH OTHER UTILITIES, ETC. ...
- EXISTING CONDITIONS AND PROPOSED MODIFICATIONS TO THE SITE SHALL BE CONSIDERED DURING THE DUCTBANK DESIGN TO PREVENT CONFLICTS DURING CONSTRUCTION AND FUTURE DEVELOPMENT.
- DUCTBANK SHALL BE CONSTRUCTED USING NONMETALLIC INTERLOCKING DUCT SPACERS TO KEEP CONDUITS ORGANIZED AND PROPERLY SEPARATED.
- DUCTBANK CONDUITS SHALL BE ORGANIZED IN A MANNER THAT ALLOWS CONDUITS TO ENTER OR PASS AROUND A STRUCTURE AS PROVIDED IN THESE DRAWINGS.
- DUCTBANK SHALL ONLY BE BACKFILLED USING SAND OR CONCRETE THAT IS FLUID ENOUGH TO FILL VOIDS, TO A DEPTH OF 6" ABOVE THE DUCT BANK OR AS REQUIRED BY THE DESIGN ENGINEER.
- THERE SHALL NOT BE MORE THAN THE EQUIVALENT OF FOUR QUARTER (90 DEGREE) BENDS (360 DEGREES TOTAL) BETWEEN PULL POINTS. IF MORE THAN FOUR QUARTER BENDS IS NECESSARY ADDITIONAL MANHOLES, VAULTS OR PULL BOXES MAY BE PROPOSED.
- ALL PVC ELBOW FITTINGS 4" AND LARGER SHALL HAVE A MINIMUM RADIUS OF 48".
- ALL PVC ELBOW FITTINGS SMALLER THAN 4" SHALL HAVE A MINIMUM RADIUS OF 24".
- ELECTRIC CONDUITS MUST MAINTAIN A MINIMUM COVER OF 36". THIS COVER WOULD INCLUDE COVER TO THE BOTTOM OF RIP RAP.
- COMMUNICATION CONDUITS MUST MAINTAIN A MINIMUM COVER OF 24". THIS COVER WOULD INCLUDE COVER TO THE BOTTOM OF RIP RAP.
- EQUIPMENT LOCATIONS INCLUDING TRANSFORMERS, COMMUNICATION PEDESTALS, MANHOLES AND TELECOMMUNICATION VAULTS MAY BE ADJUSTED SLIGHTLY AS NECESSARY. IF CONDITIONS EXIST THAT REQUIRE MAJOR MODIFICATIONS, PLEASE NOTIFY EASTON UTILITIES.
- EQUIPMENT INCLUDING TRANSFORMERS, COMMUNICATION PEDESTALS, MANHOLES AND TELECOMMUNICATION VAULTS SHALL NOT BE LOCATED IN SWALES, AT LOW POINTS, OR OTHER DEPRESSIONS IN THE GROUND. POSITIVE DRAINAGE MUST BE MADE AWAY FROM EQUIPMENT AND STRUCTURES.
- STREETLIGHTS SHALL BE LOCATED 12" FROM EDGE OF PAVEMENT OR BACK OF CURB.
- TRANSITION OF CONDUIT MATERIALS REQUIRES THE USE OF POLY-CAM SERIES 737 ID CONTROLLED TRANSITION FITTINGS. (SCHEDULE 40 PVC TO HDPE).

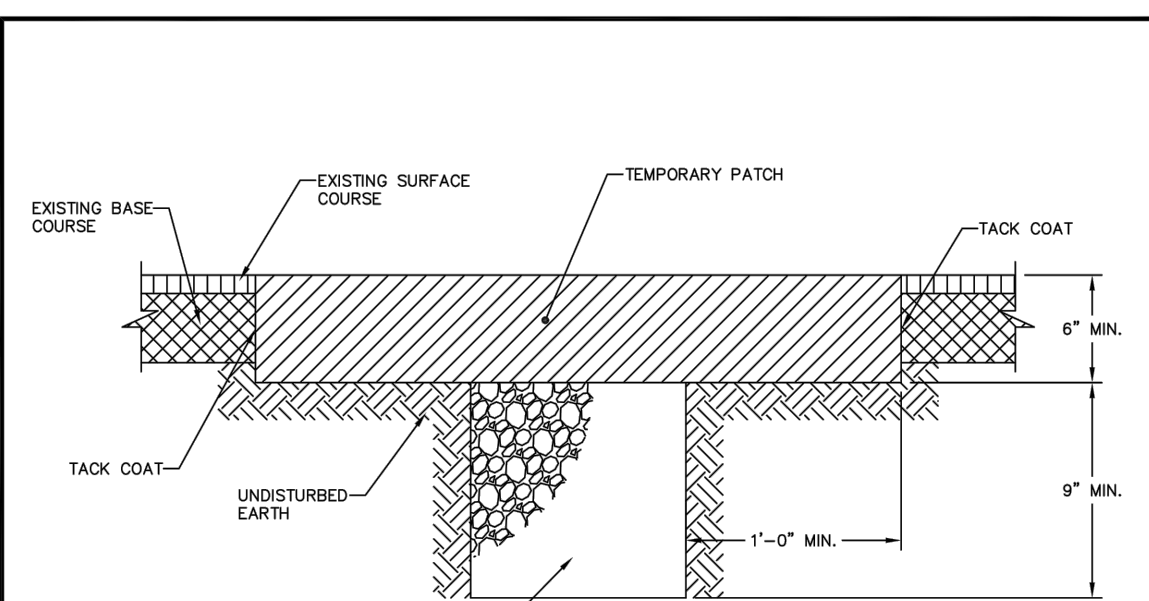
DUCTBANK:

- MINIMUM EARTH COVER OVER COMPLETED DUCT BANK SHALL BE NOT LESS THAN THAT SPECIFIED IN PROFILES.
- THE DUCT BANK SHALL BE ASSEMBLED WITH THE JOINTS STAGGERED BY AT LEAST 4-INCHES IN THE HORIZONTAL AND VERTICAL PLANES SO THAT NO TWO JOINTS IN THE CLUSTER OF JOINTS ALIGN.
- FOR TEN-FOOT LENGTHS OF DUCT, DUCT SPACER ASSEMBLIES SHALL BE PLACED AT 2'-6" ON EITHER SIDE OF THE MID-POINT OF EACH JOINT CLUSTER FOR TWENTY-FOOT LENGTHS OF DUCT, IN ADDITION TO DUCT SPACER ASSEMBLIES BEING PLACED 2'-6" FROM THE MID-POINT OF THE JOINT CLUSTER AT EACH END. INSTALL SPACER ASSEMBLIES AT 5'-0" INTERVALS BETWEEN THE END SPACERS. MANUFACTURERS SPECIFICATION SHOULD BE USED IN THE EVENT ADDITIONAL SPACERS ARE RECOMMENDED.
- DURING DUCT BANK INSTALLATION, DUCT ASSEMBLY ENDS SHALL BE CLOSED WITH PULL TAB EQUIPPED PUSH-IN POLYVINYL CHLORIDE (PVC) PLASTIC DUCT PLUGS TO PREVENT SOIL OR WATER ENTRY.
- DURING THE BACKFILLING OF SAND, PROTECT THE DUCTS; DO NOT PERMIT LARGE LOADS OF SAND TO FALL DIRECTLY ONTO THE DUCTS INSTEAD, SLOWLY BACKFILL WITH DRY FLOWABLE SAND AND SPREAD THE SAND INTO PLACE TO ELIMINATE VOIDS IN AND AROUND THE DUCTS.
- AFTER DUCT BANK INSTALLATION IS COMPLETE, A VERIFICATION MANDREL 12-INCHES LONG AND NOT MORE THAN 1/4-INCH DIAMETER SMALLER THAN THE TRADE SIZE DIAMETER OF THE DUCT SHALL BE DRAWN THROUGH EACH DUCT TO ENSURE THAT DUCT HAS NOT BEEN DEFORMED. WHEREVER A DUCT IS FOUND NOT TO BE ABLE TO PASS THE MANDREL TEST, THE CONTRACTOR, AT NO ADDITIONAL COST TO THE CONTRACT SHALL MAKE REPAIRS FOR EACH FAILED DUCT.
- AFTER THE MANDREL HAS BEEN DRAWN THROUGH THE DUCTS, A DUCT BRUSH AND SWAB SHALL BE PULLED THROUGH EACH DUCT TO ENSURE THAT THE DUCT INTERIOR IS CLEAN PLACE DUCT PLUGS IN THE ENDS OF EACH DUCTS.
- INSTALL RAYCHEM RAYFLAT DUCT SEALING SYSTEM OR AN APPROVED EQUAL WITHIN DUCTS ENTERING AND LEAVING THE NEW ELECTRICAL MANHOLES AND HANDHOLES. THE CONTRACTOR IS RESPONSIBLE FOR SEALING ALL DUCTS, BOTH PERMANENTLY AND TEMPORARILY AFTER EACH ELECTRICAL MANHOLE OR HANDHOLE IS CLEANED.
- GLUE TO BE COMPATIBLE PER PIPE MANUFACTURES RECOMMENDATION.
- ALL CONDUITS TO BE SCHEDULE 40 BELL END MINIMUM 10' LENGTHS.
- INSTALL A PULL ROPE (1800-POUND MIN TENSILE STRENGTH) IN EACH CONDUIT TO EACH STRUCTURE AND TERMINAL END; PROVIDE 10' SLACK AT EACH END.
- CONTRACTOR MAY UTILIZE TRENCH BOX AND/OR SLOPE TRENCH IN ORDER TO CONSTRUCT DUCT BANK. SLOPE OF TRENCH TO BE DETERMINED IN ACCORDANCE WITH ALL APPLICABLE STATE AND FEDERAL REGULATIONS.



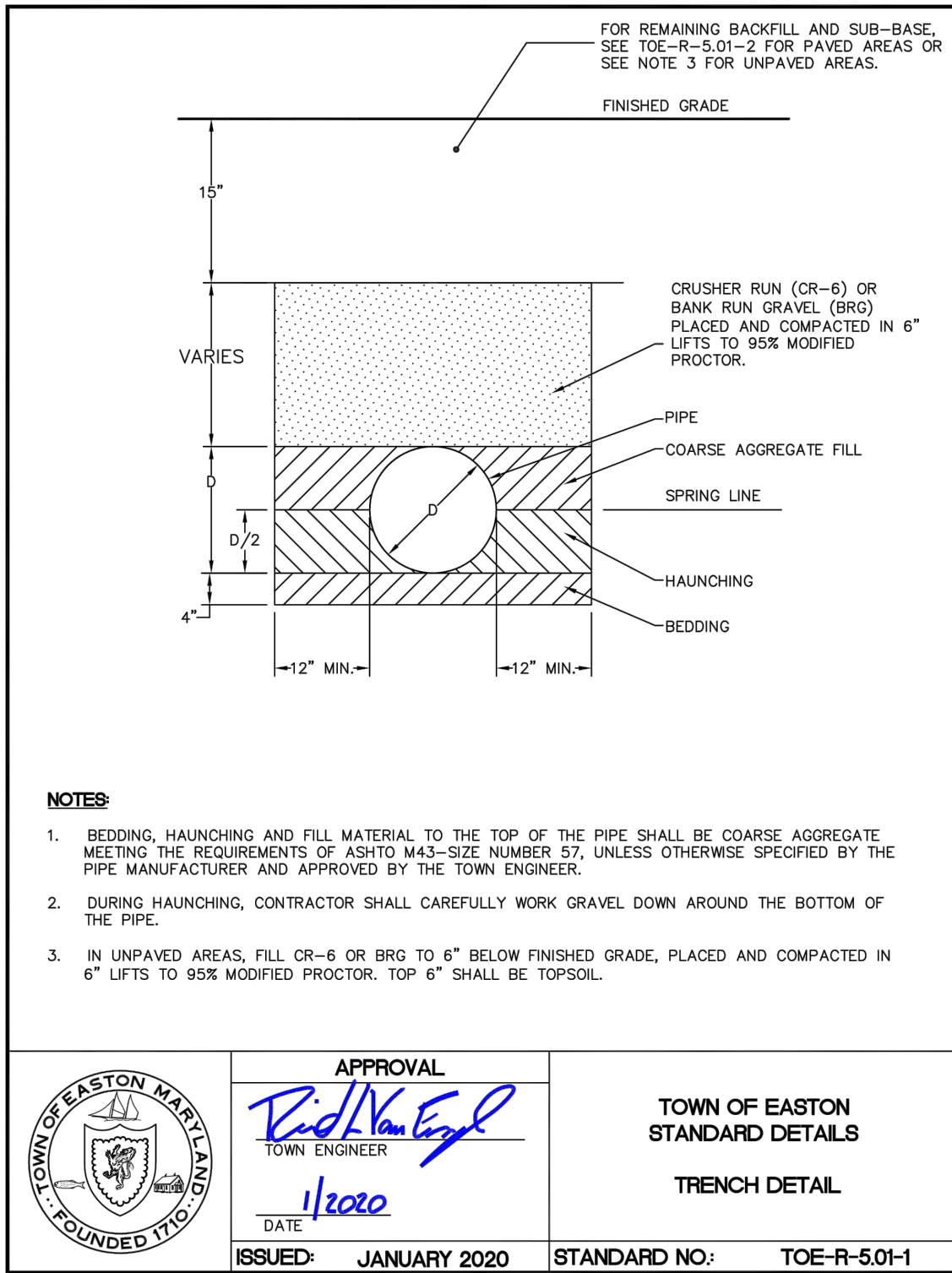
- Notes:
- Proposed Conduits Are To Extend 2' Beyond Back Of Sidewalk.
 - Adjust Location Of Proposed Conduits As Necessary To Avoid Conflicts With Proposed And Existing Utilities.
 - Road Crossings To Be Marked With A 2x4 At Each End. Gas Duct To Be Marked Separate From Duct Bank.
 - Ducts To Have A Minimum Depth Of 36". If Ducts Conflict With Other Utilities And Have A Depth Greater Than 48", Provisions Have To Be Made So Ends Of Ducts Are No Greater Than 48" Deep.

APPROVAL	REVISED	TOWN OF EASTON AND EASTON UTILITIES COMMISSION STANDARD DETAILS TYPICAL/INTERSECTION DUCT BANK INSTALLATION
EU MANAGER OF ENGINEERING DATE		
ISSUED: MAR 24, 2006		STANDARD NO. E-4.00



- NOTES:
- PAVEMENT SHALL BE SAW CUT FULL DEPTH OF THE EXISTING PAVEMENT SECTION. ALL CUTS SHALL BE MADE IN STRAIGHT LINES.
 - TEMPORARY PATCH SHALL BE ONE OF THE FOLLOWING, PLACED AND COMPACTED IN 3" LIFTS (MAX).
 - CR-6 (3" LIFTS MAX.)
 - 9.5mm, (2" LIFTS MAX.) 1/2.5mm, OR 19mm SUPERPAVE. (3" LIFTS)
 - COLD PATCH (3" LIFTS MAX.)
 - A TEMPORARY CR-6 PATCH MUST BE CONVERTED TO COLD PATCH OR SUPERPAVE WITHIN 1 WEEK OF COMPLETION OF TRENCH WORK, UNLESS APPROVED BY TOWN ENGINEER.
 - TEMPORARY TRENCH RESTORATION MUST BE CONVERTED TO A PERMANENT TRENCH RESTORATION WITHIN 30 CALENDAR DAYS OF COMPLETION OF TRENCH WORK, UNLESS APPROVED BY TOWN ENGINEER. TEMPORARY TRENCH RESTORATION DONE AFTER NOVEMBER 30TH MUST BE CONVERTED TO A PERMANENT TRENCH RESTORATION BEFORE MAY 30TH OF THE FOLLOWING YEAR.
 - TEMPORARY RESTORATION MUST BE INSPECTED AND MAINTAINED EVERY 30 DAYS UNTIL PERMANENT RESTORATION IS COMPLETED. AN INSPECTION AND MAINTENANCE LOG MUST BE KEPT.
 - CONTRACTOR MUST CONFIRM LIMITS OF PATCH REQUIRED WITH THEN TOWN ENGINEER PRIOR TO START OF PATCH WORK.

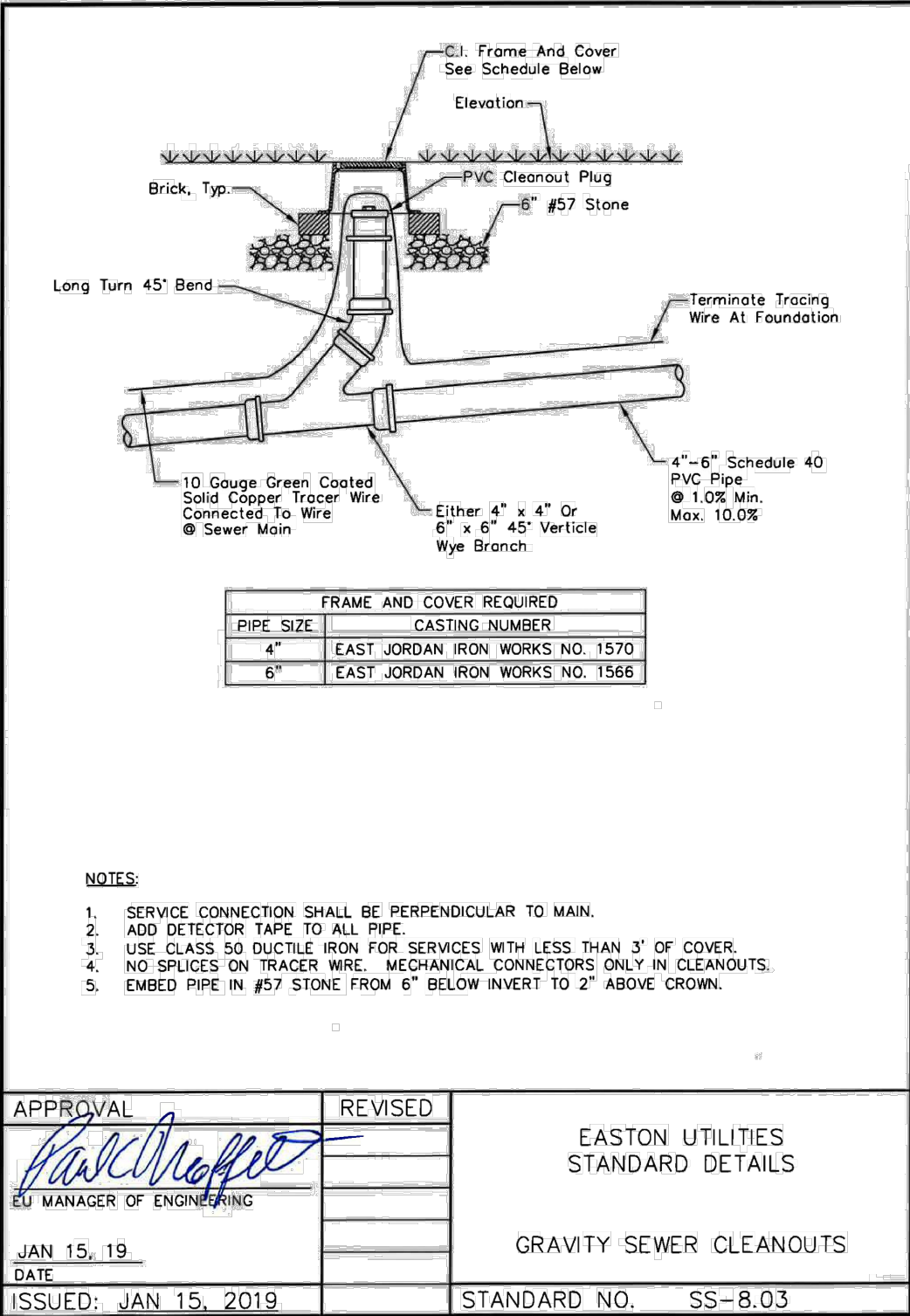
	APPROVAL TOWN ENGINEER [Signature] DATE: 1/3/2020	TOWN OF EASTON STANDARD DETAILS TEMPORARY PAVEMENT REPAIR FOR UTILITY TRENCHES
ISSUED: JANUARY 2020		STANDARD NO: TOE-R-501-2



NOTES:

- BEDDING, HAUNCHING AND FILL MATERIAL TO THE TOP OF THE PIPE SHALL BE COARSE AGGREGATE MEETING THE REQUIREMENTS OF ASHTO M43-SIZE NUMBER 57, UNLESS OTHERWISE SPECIFIED BY THE PIPE MANUFACTURER AND APPROVED BY THE TOWN ENGINEER.
- DURING HAUNCHING, CONTRACTOR SHALL CAREFULLY WORK GRAVEL DOWN AROUND THE BOTTOM OF THE PIPE.
- IN UNPAVED AREAS, FILL CR-6 OR BRG TO 6" BELOW FINISHED GRADE, PLACED AND COMPACTED IN 6" LIFTS TO 95% MODIFIED PROCTOR. TOP 6" SHALL BE TOPSOIL.

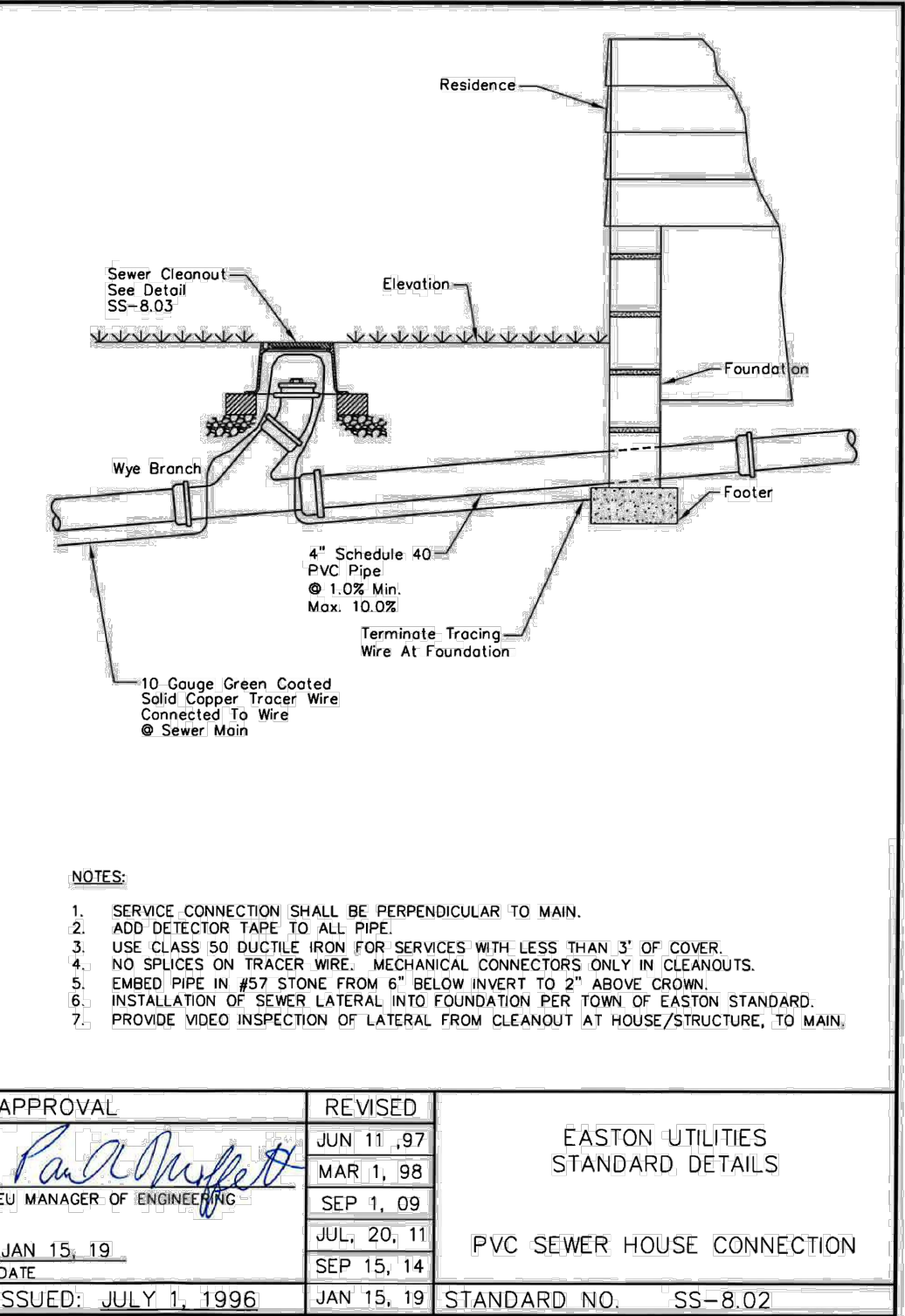
APPROVAL	REVISED	TOWN OF EASTON STANDARD DETAILS TRENCH DETAIL
TOWN ENGINEER [Signature] DATE: 1/3/2020		
ISSUED: JANUARY 2020		STANDARD NO: TOE-R-501-1



NOTES:

- SERVICE CONNECTION SHALL BE PERPENDICULAR TO MAIN.
- ADD DETECTOR TAPE TO ALL PIPE.
- USE CLASS 50 DUCTILE IRON FOR SERVICES WITH LESS THAN 3' OF COVER.
- NO SPLICES ON TRACER WIRE. MECHANICAL CONNECTORS ONLY IN CLEANSOUTS.
- EMBED PIPE IN #57 STONE FROM 6" BELOW INVERT TO 2" ABOVE CROWN.

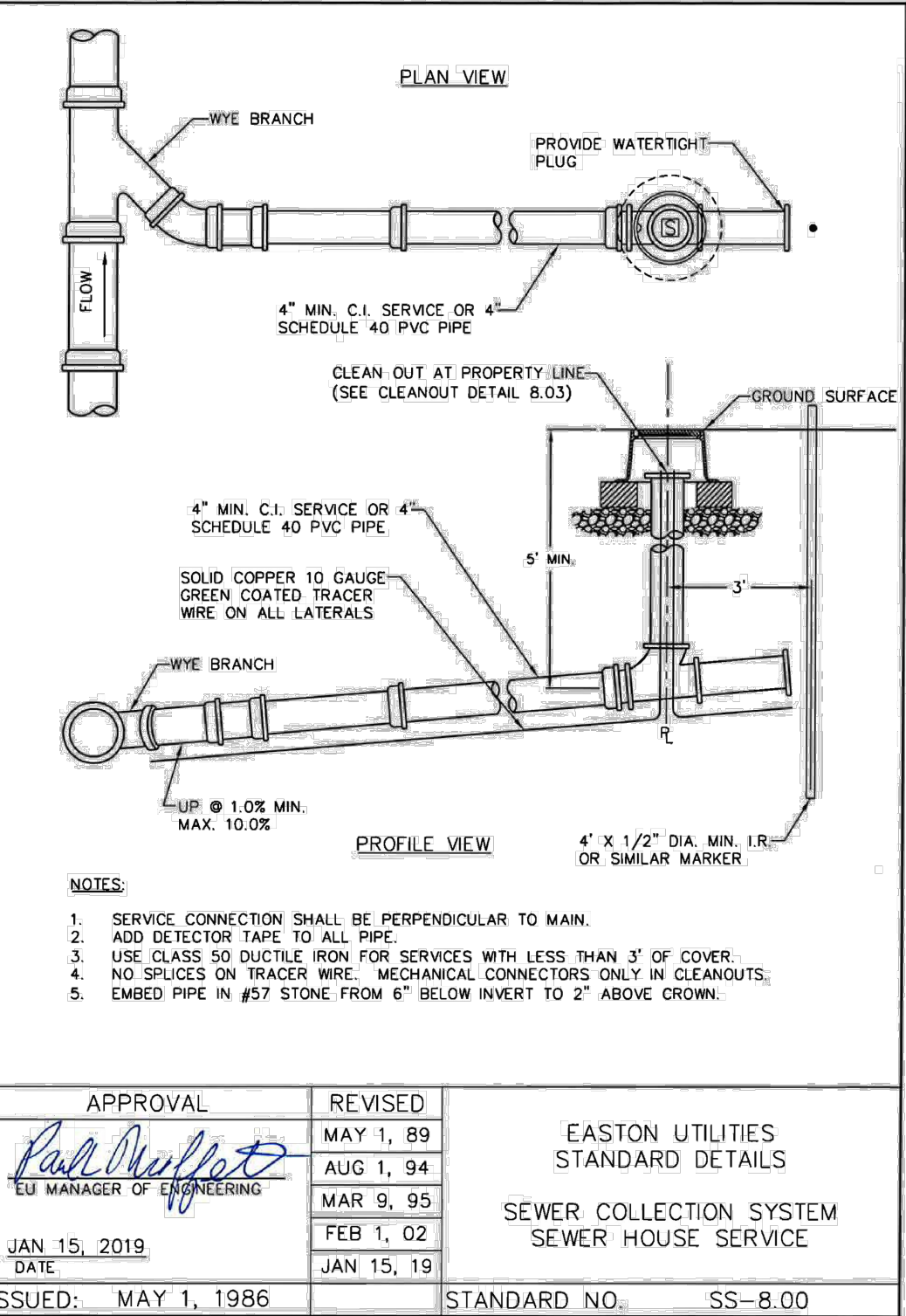
APPROVAL	REVISED	EASTON UTILITIES STANDARD DETAILS GRAVITY SEWER CLEANOUTS
EU MANAGER OF ENGINEERING [Signature] DATE: JAN 15, 2019		
ISSUED: JAN 15, 2019		STANDARD NO. SS-8.03



NOTES:

- SERVICE CONNECTION SHALL BE PERPENDICULAR TO MAIN.
- ADD DETECTOR TAPE TO ALL PIPE.
- USE CLASS 50 DUCTILE IRON FOR SERVICES WITH LESS THAN 3' OF COVER.
- NO SPLICES ON TRACER WIRE. MECHANICAL CONNECTORS ONLY IN CLEANSOUTS.
- EMBED PIPE IN #57 STONE FROM 6" BELOW INVERT TO 2" ABOVE CROWN.
- INSTALLATION OF SEWER LATERAL INTO FOUNDATION PER TOWN OF EASTON STANDARD.
- PROVIDE VIDEO INSPECTION OF LATERAL FROM CLEANSOUT AT HOUSE/STRUCTURE, TO MAIN.

APPROVAL	REVISED	EASTON UTILITIES STANDARD DETAILS PVC SEWER HOUSE CONNECTION
EU MANAGER OF ENGINEERING [Signature] DATE: JAN 15, 2019	JUN 11, 97 MAR 1, 98 SEP 1, 09 JUL 20, 11 SEP 15, 14	
ISSUED: JULY 1, 1996	JAN 15, 19	STANDARD NO. SS-8.02



NOTES:

- SERVICE CONNECTION SHALL BE PERPENDICULAR TO MAIN.
- ADD DETECTOR TAPE TO ALL PIPE.
- USE CLASS 50 DUCTILE IRON FOR SERVICES WITH LESS THAN 3' OF COVER.
- NO SPLICES ON TRACER WIRE. MECHANICAL CONNECTORS ONLY IN CLEANSOUTS.
- EMBED PIPE IN #57 STONE FROM 6" BELOW INVERT TO 2" ABOVE CROWN.

APPROVAL	REVISED	EASTON UTILITIES STANDARD DETAILS SEWER COLLECTION SYSTEM SEWER HOUSE SERVICE
EU MANAGER OF ENGINEERING [Signature] DATE: JAN 15, 2019	MAY 1, 89 AUG 1, 94 MAR 9, 95 FEB 1, 02 JAN 15, 19	
ISSUED: MAY 1, 1986		STANDARD NO. SS-8.00

NOTE:

- EASTUON UTILITIES DETAILS SHOWN ON THIS SHEET ARE CURRENT AS OF THE DATE ON THESE PLANS. HOWEVER, EASTON UTILITIES IS CURRENTLY UPDATING DETAILS AND ONCE AVAILABLE, SHALL BE THE DETAILS USED FOR THIS PROJECT.

APPROVED:	APPROVED:	APPROVED:
TOWN OF EASTON - TOWN ENGINEER	TOWN OF EASTON PLANNING AND ZONING	EASTON UTILITIES - MANAGER OF ENGINEERING
DATE	DATE	DATE

UTILITY DETAILS

FOR

NAIMA - PHASE 2

INFRASTRUCTURE IMPROVEMENT PLANS

TAX MAP 0104, GRID 000EA

WARD DISTRICT 4, EASTON, MARYLAND

PREPARED FOR NAIMA VENTURES, LLC

RAUCH

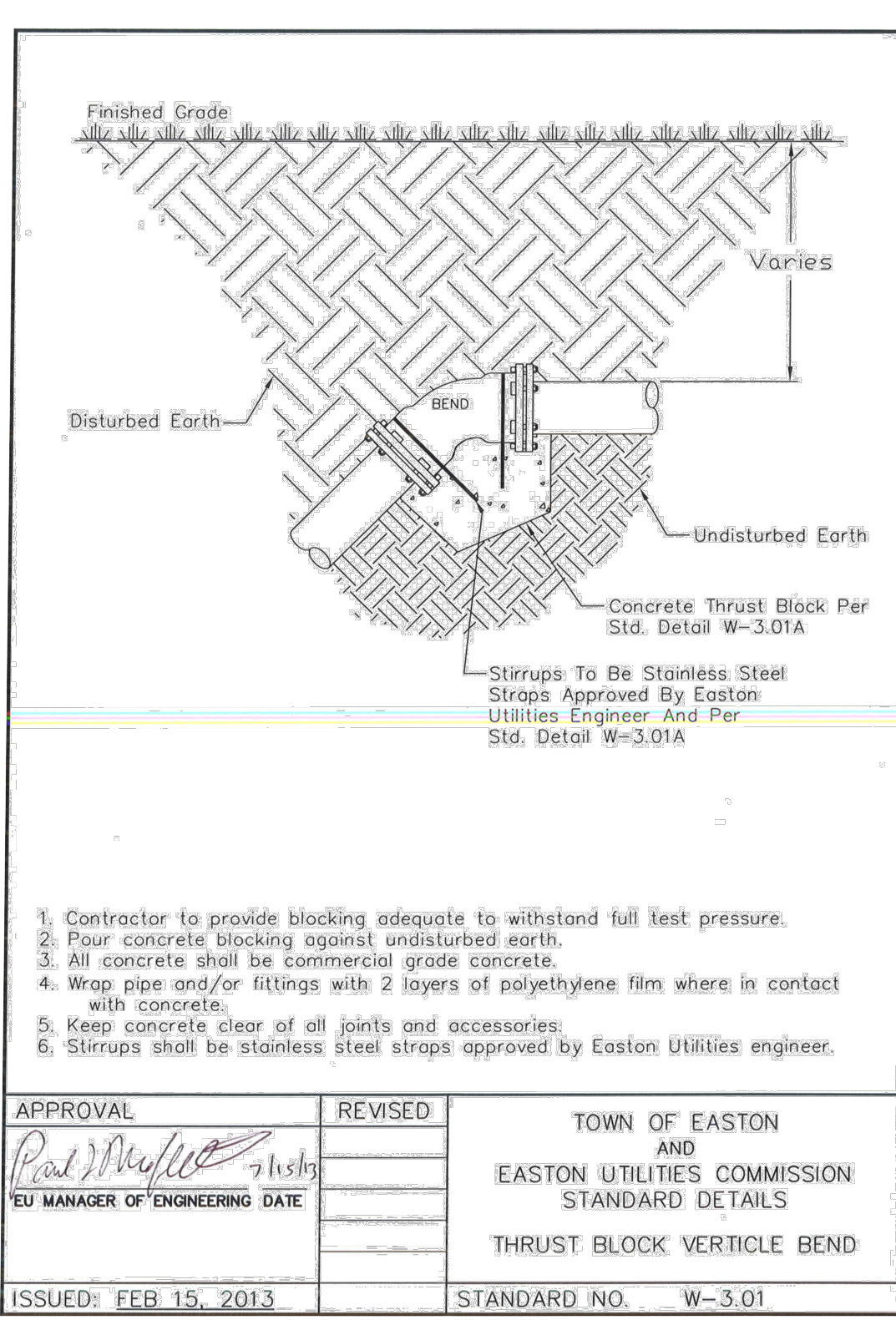
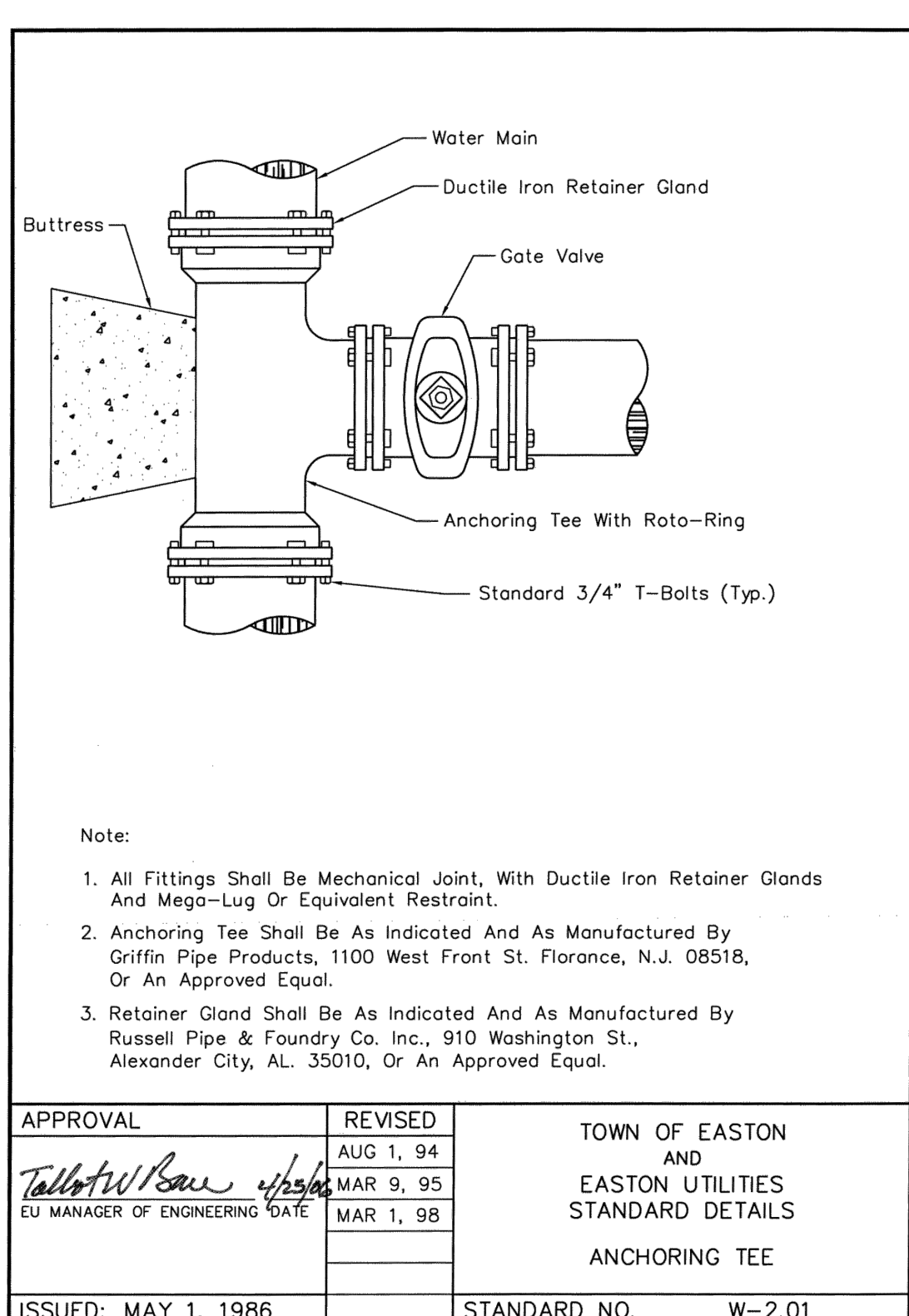
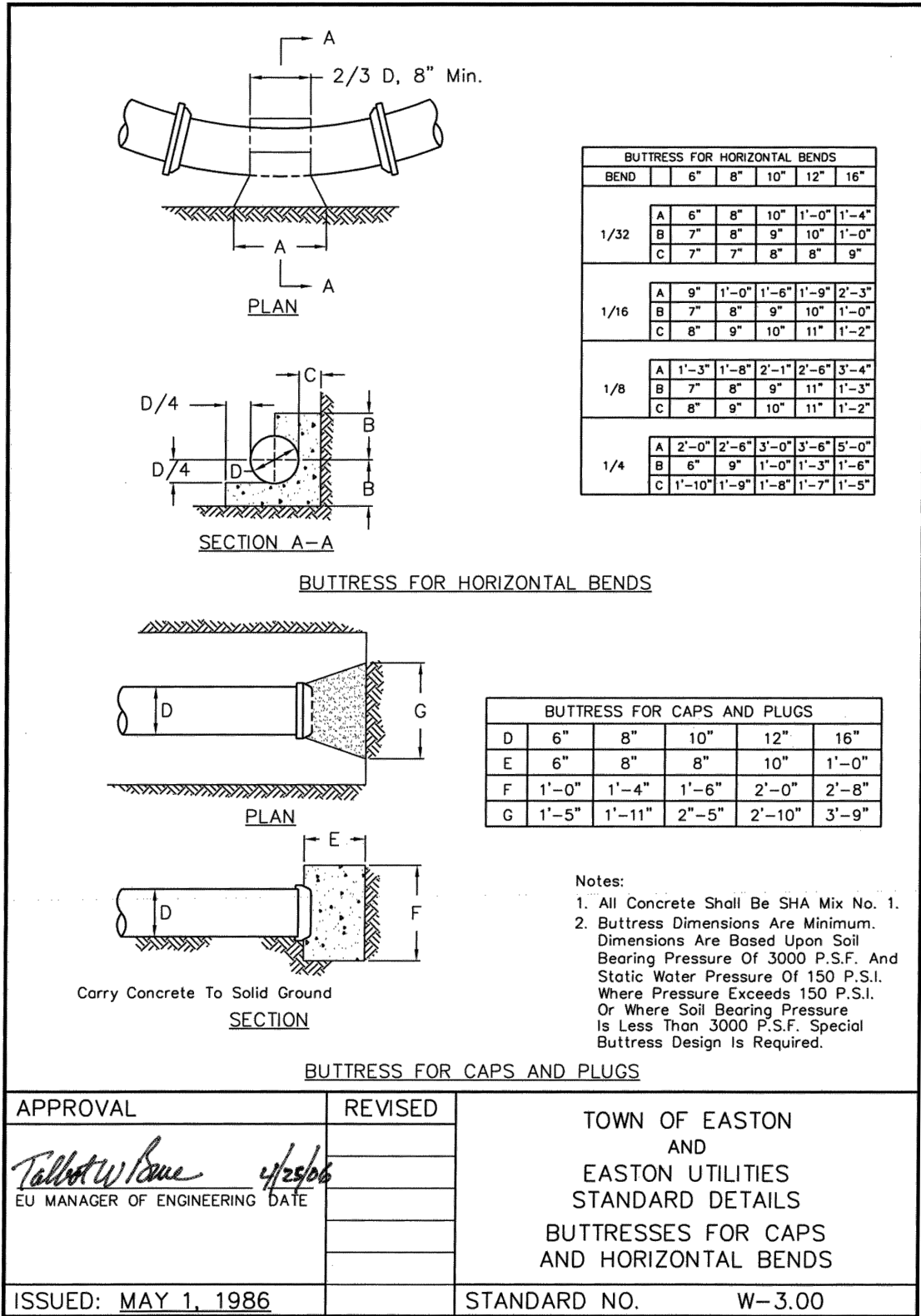
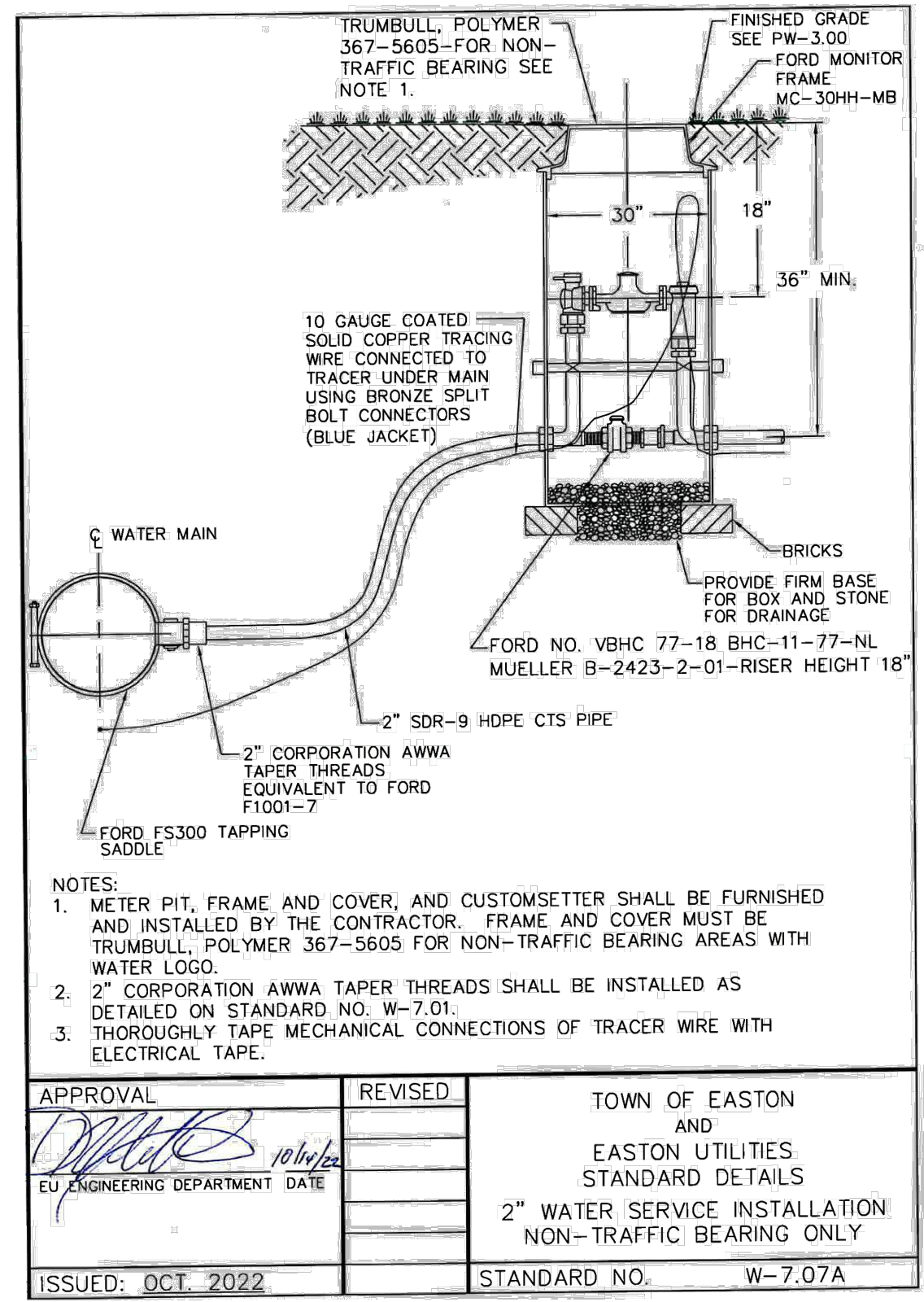
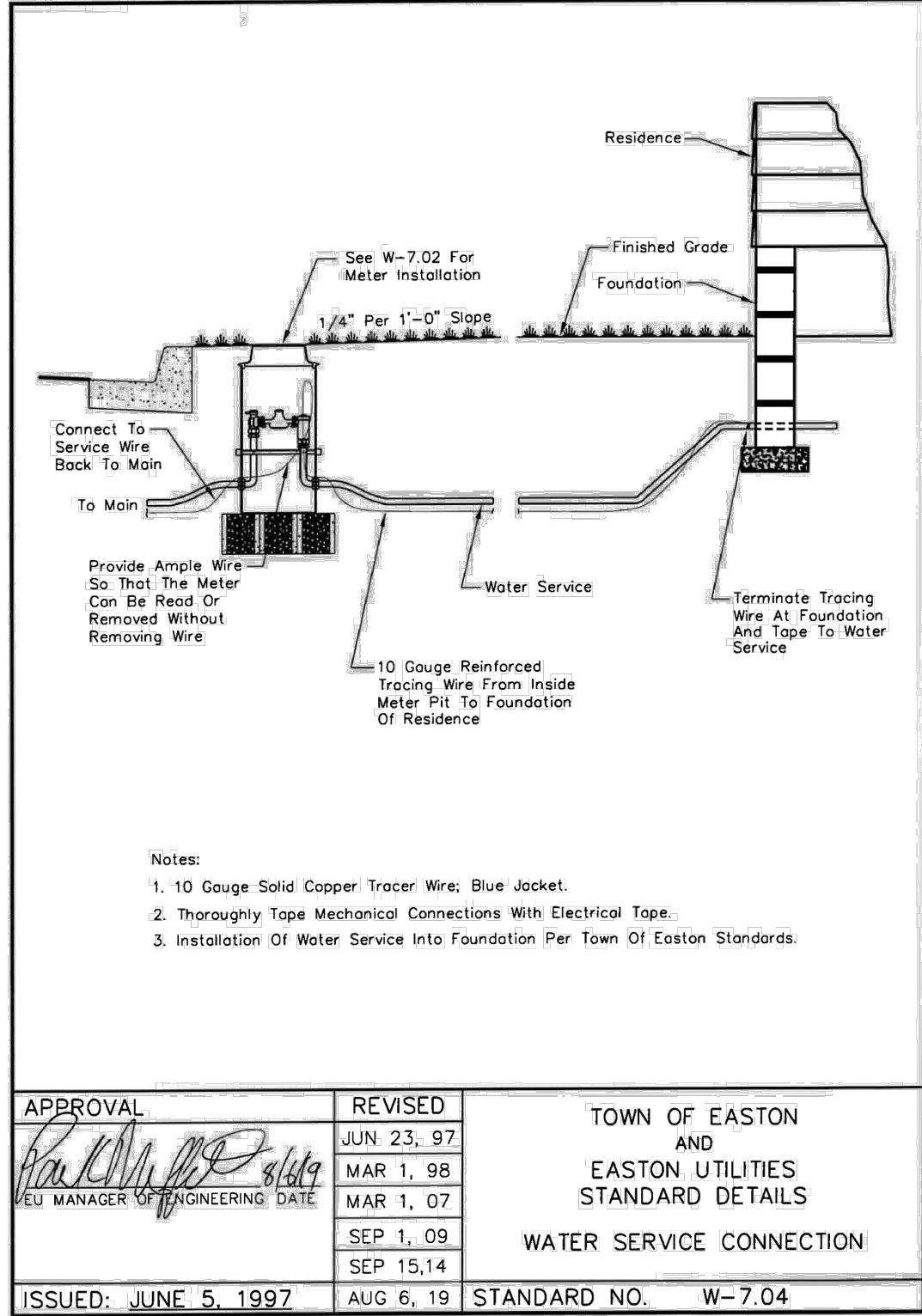
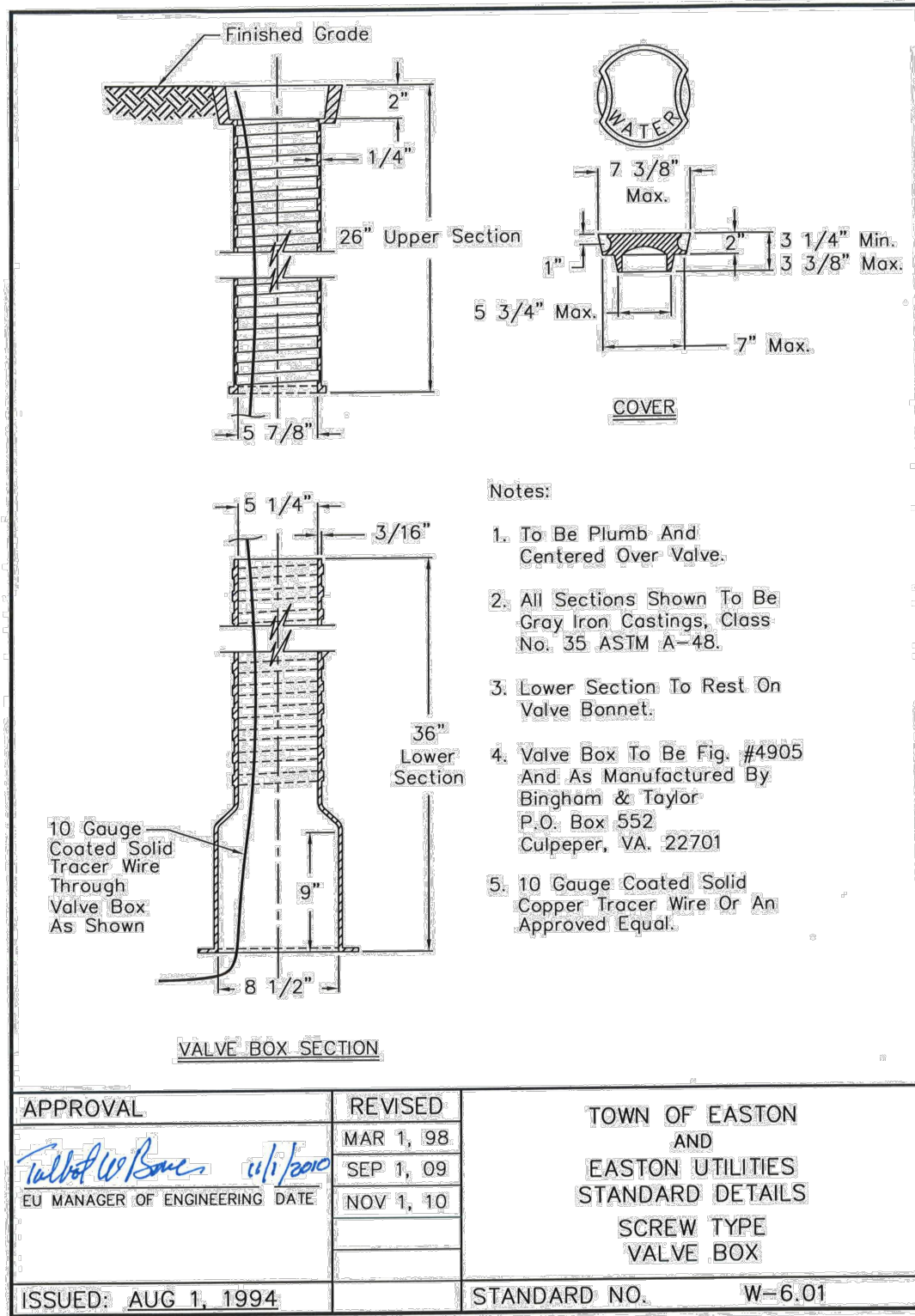
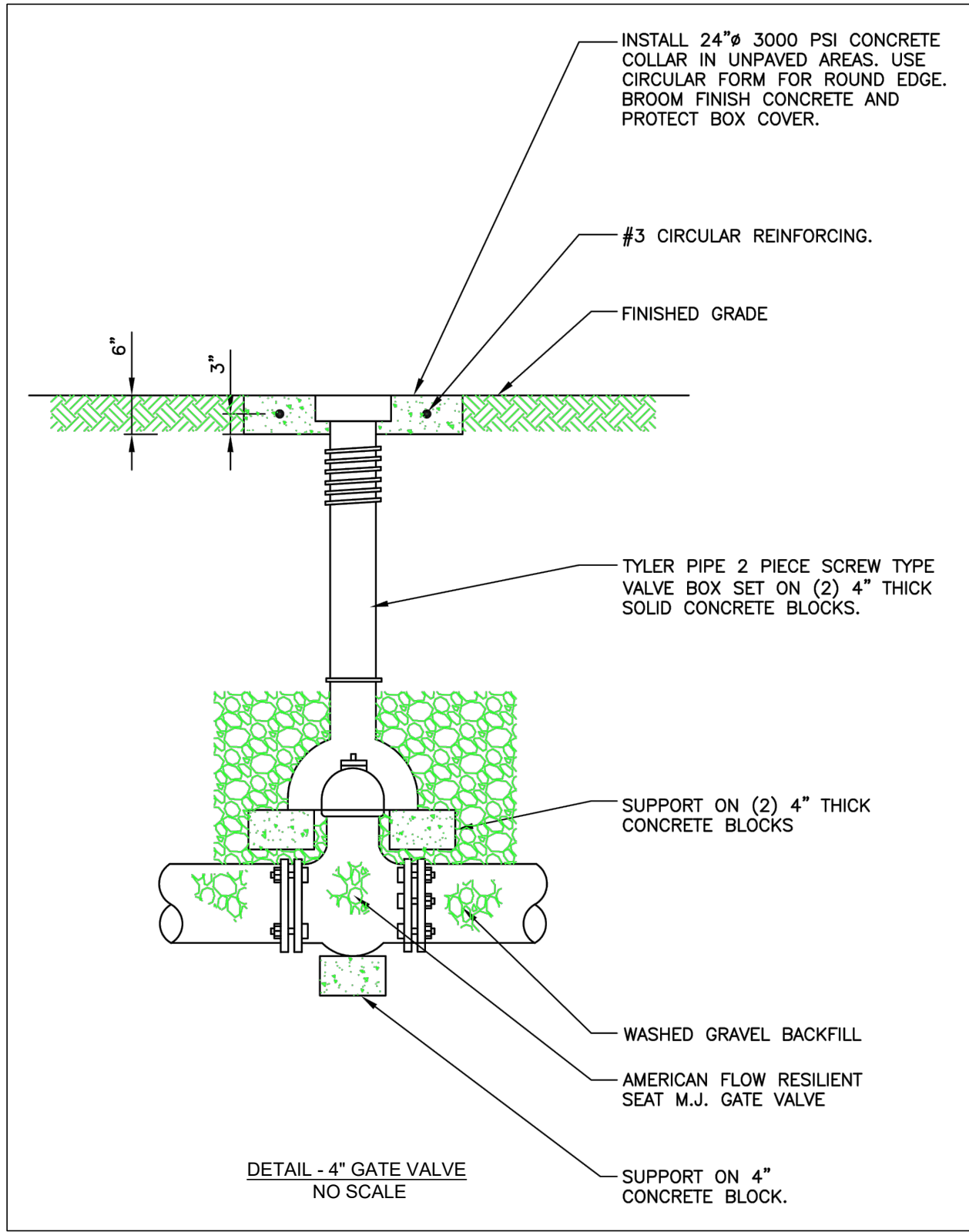
INC.

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Maryland Office: 105 N. Harrison St., Easton, MD 21801
Virginia Office: 8229 Boone Blvd., Suite 625 - Vienna, VA 22182

REV #	DATE	DESCRIPTION
1	03/29/2023	REVISED PER TOWNL0P2 COMMENTS

DATE:	12/28/2022
SCALE:	N/A
DRAWN BY:	BBF
DESIGNED BY:	BBF
APPROVED BY:	
SHEET NO.:	C-405.01



DIMENSION TABLE						
PIPE DIA. IN.	TABLE PRESSURE PSI	BEND ANGLE (DEG.)	CONCRETE VOLUME (CY)	CURB SIZE (FT.)	STIRRUP DIA. (IN.)	STIRRUP EMBEDMENT (IN.)
4"	250	11.25	0.21	1.8	5/8	17
		22.5	0.43	2.3		
		45	0.77	2.8		
6"	250	11.25	0.48	2.4	5/8	17
		22.5	0.95	3.0		
		45	1.79	3.6		
8"	250	11.25	0.86	2.9	5/8	17
		22.5	1.65	3.5		
		45	3.22	4.4		
10"	250	11.25	1.39	3.3	5/8	17
		22.5	2.62	4.1		
		45	4.97	4.1		
12"	250	11.25	1.94	3.7	5/8	17
		22.5	3.91	4.7		
		45	6.89	5.7		
14"	250	11.25	2.62	4.3	5/8	17
		22.5	5.26	5.2		
		45	9.70	6.4		
16"	250	11.25	3.44	4.5	5/8	17
		22.5	6.89	5.7		
		45	12.63	7.0		

APPROVAL	REVISED	TOWN OF EASTON AND EASTON UTILITIES COMMISSION STANDARD DETAILS
<i>Paul W. Boone</i> EU MANAGER OF ENGINEERING DATE		THRUST BLOCK VERTICLE BEND
ISSUED: FEB 15, 2013		STANDARD NO. W-3.01A

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REVISIONS

REV. #	DATE	DESCRIPTION
1	03/29/2023	REVISED PER TOWNEL02 COMMENTS

DATE: 12/28/2022

SCALE: N/A

DRAWN BY: BBF

DESIGNED BY: BBF

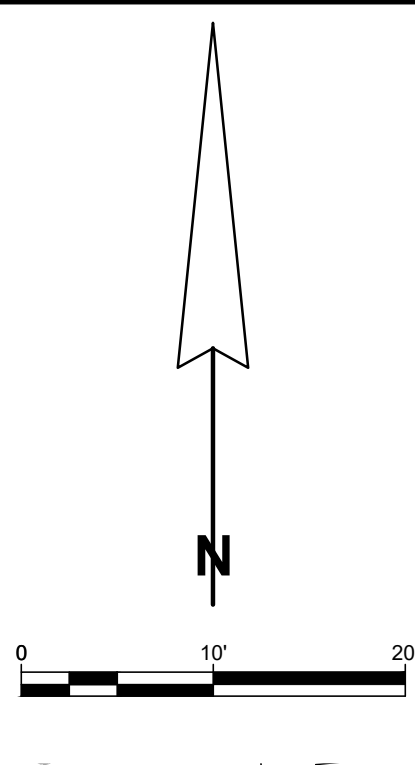
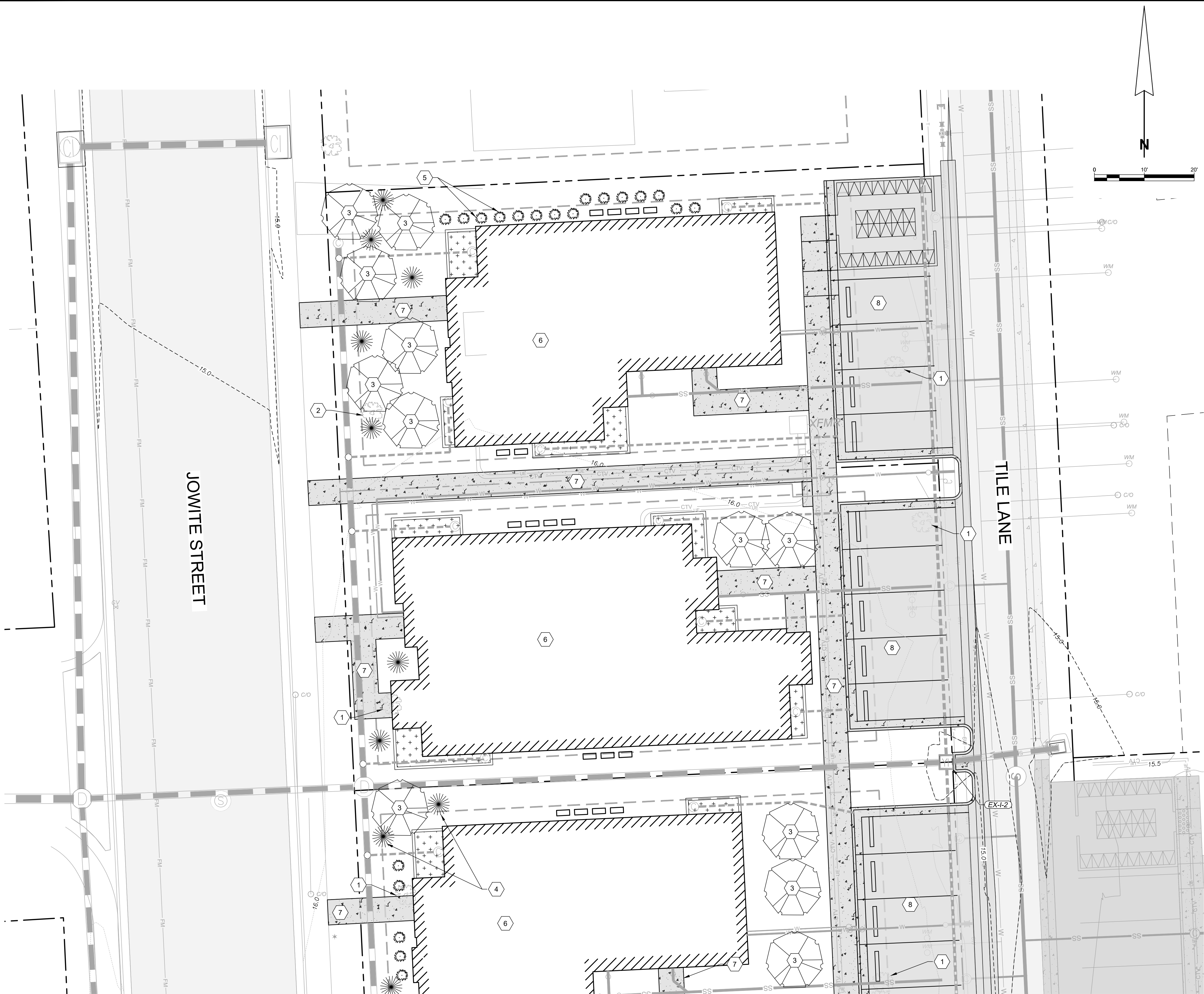
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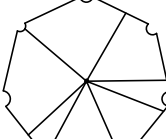
SHEET NO.: C-405.02

APPROVED:
TOWN OF EASTON - TOWN ENGINEER

APPROVED:
TOWN OF EASTON PLANNING AND ZONING

APPROVED:
EASTON UTILITIES - MANAGER OF ENGINEERING



LANDSCAPE SCHEDULE	
	CANOPY - OAK (OR EQUAL) - QTY: 22 PRSD; 2 EXST = 24 TOTAL
	EVERGREEN - AMERICAN HOLLY (OR EQUAL) - QTY: 20
	SHRUB - ILEX GLABRA (OR EQUAL) - QTY: 50

EXISTING FEATURES

- 1 EXISTING TREE TO BE REMOVED
- 2 EXISTING TREE TO BE PRESERVED. CONTRACTOR TO PROTECT AS NECESSARY DURING CONSTRUCTION

LANDSCAPING FEATURES

- 3 PROPOSED CANOPY TREES (SEE PLANTING TABLE ON C-505)
- 4 PROPOSED EVERGREEN TREES (SEE PLANTING TABLE ON C-505)
- 5 PROPOSED SHRUBS (SEE PLANTING TABLE ON C-505)

PROPOSED FEATURES

- 6 PROPOSED RESIDENTIAL UNIT
- 7 PROPOSED CONCRETE SIDEWALK
- 8 PERMEABLE PAVEMENT. DETAIL ON 405.01

APPROVED:	APPROVED:	APPROVED:
TOWN OF EASTON - TOWN ENGINEER	TOWN OF EASTON PLANNING AND ZONING	EASTON UTILITIES - MANAGER OF ENGINEERING
DATE	DATE	DATE

LANDSCAPING PLAN

FOR
NAIMA - PHASE 2
INFRASTRUCTURE IMPROVEMENT PLANS
TAX MAP 0104, GRID 000EA
WARD DISTRICT 4, EASTON, MARYLAND
PREPARED FOR NAIMA VENTURES, LLC

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REVIEWS		DESCRIPTION
REV. #	DATE	REVISION PER TOWN/PLZ COMMENTS
1	03/29/2023	

DATE: 12/28/2022

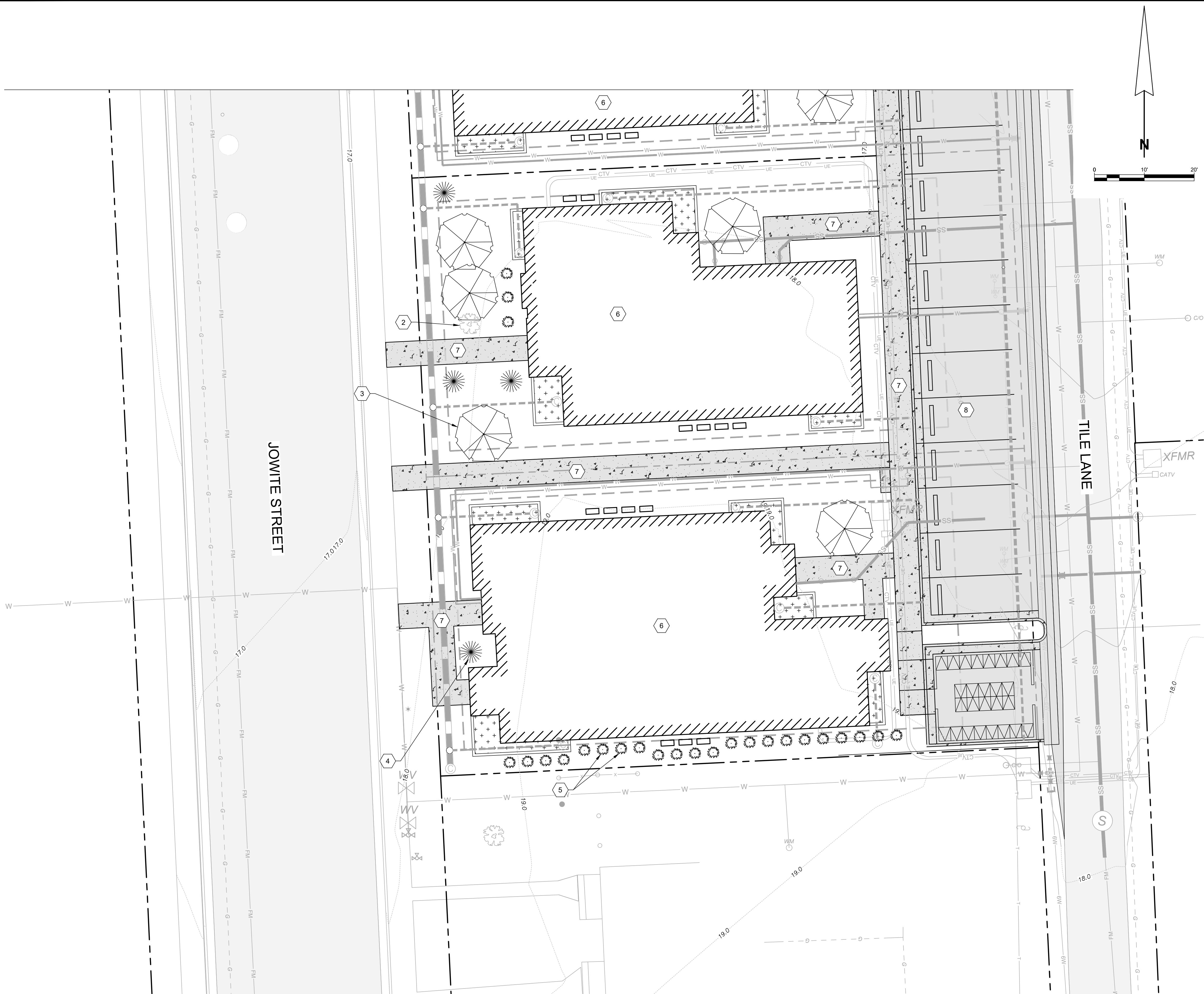
SCALE: 1" = 10'

DRAWN BY: BBF

DESIGNED BY: BBF

APPROVED BY:

SHEET NO.: C-501.01



LANDSCAPE SCHEDULE	
	CANOPY - OAK (OR EQUAL) - QTY: 22 PRSD; 2 EXST = 24 TOTAL
	EVERGREEN - AMERICAN HOLLY (OR EQUAL) - QTY: 20
	SHRUB - ILEX GLABRA (OR EQUAL) - QTY: 50

EXISTING FEATURES

- 1
- EXISTING TREE TO BE REMOVED
- 2
- EXISTING TREE TO BE PRESERVED. CONTRACTOR TO PROTECT AS NECESSARY DURING CONSTRUCTION

LANDSCAPING FEATURES

- 3
- PROPOSED CANOPY TREES (SEE PLANTING TABLE ON C-505)
- 4
- PROPOSED EVERGREEN TREES (SEE PLANTING TABLE ON C-505)
- 5
- PROPOSED SHRUBS (SEE PLANTING TABLE ON C-505)

PROPOSED FEATURES

- 6
- PROPOSED RESIDENTIAL UNIT
- 7
- PROPOSED CONCRETE SIDEWALK
- 8
- PERMEABLE PAVEMENT. DETAIL ON 405.01

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REVISIONS

REV. #	DATE	DESCRIPTION
1	03/29/2023	REVISED PER TOWN/LOPZ COMMENTS

DATE: 12/28/2022

SCALE: 1" = 10'

DRAWN BY: BBF

DESIGNED BY: BBF

APPROVED BY:

SHEET NO.: C-501.03

APPROVED:
TOWN OF EASTON - TOWN ENGINEER

APPROVED:
TOWN OF EASTON PLANNING AND ZONING

APPROVED:
EASTON UTILITIES - MANAGER OF ENGINEERING

Z:\NAMA\ENGINEERING\PHASE 2\PRODUCTION PLANS\NAMA-PHASE 2 - PRODUCTION PLANS.DWG

LANDSCAPE PLANTING REQUIREMENTS

GENERAL REQUIREMENTS:

- COMPLIANCE WITH THE TERMS OF THIS LANDSCAPE PLAN, INCLUDING ALL MAINTENANCE AND WARRANTY REQUIREMENTS PRESCRIBED HEREON IS THE RESPONSIBILITY OF THE OWNER. MAINTENANCE AND WARRANTY TERMS AND RESPONSIBILITIES OF THE CONTRACTOR SHALL BE NEGOTIATED BETWEEN OWNER AND CONTRACTOR.
- THE CONTRACTOR (CONTRACTOR) IS RESPONSIBLE FOR THE COMPLETE INSTALLATION OF ALL LANDSCAPING SHOWN OR IMPLIED ON THIS PLAN. PLANT QUANTITIES ARE SHOWN FOR CONVENIENCE ONLY AND SHALL BE VERIFIED PRIOR TO INSTALLATION. THE CONTRACTOR SHALL NOTIFY THE OWNER, OR DESIGNATED REPRESENTATIVE IF PROPOSED SPECIES AND/OR SITE PLANTING CONDITIONS WARRANT RE-DESIGN CONSIDERATIONS.
- THE CONTRACTOR SHALL DILIGENTLY ATTEMPT TO LOCATE THE SPECIFIED NATIVE PLANT MATERIAL. IF SPECIFIED PLANT MATERIALS CANNOT BE LOCATED, ALTERNATIVES MAY BE CONSIDERED AND APPROVED, IN ADVANCE, BY THE OWNER, OR DESIGNATED REPRESENTATIVE.
- PRIOR TO LANDSCAPE INSTALLATION, THE CONTRACTOR SHALL COORDINATE A SITE MEETING WITH THE OWNER, OR DESIGNATED REPRESENTATIVE TO REVIEW THE PLAN, SITE DRAINAGE CONDITIONS AND TO DETERMINE ANY FIELD ADJUSTMENTS NECESSARY.
- THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO COMMENCING WORK, AND SHALL COORDINATE WITH OTHER CONTRACTORS ON SITE AND MISS UTILITY TO VERIFY UTILITY LOCATIONS. ANY REPAIRS TO EXISTING UNDERGROUND UTILITIES REQUIRED AS A RESULT OF ACTIONS OF THE CONTRACTOR AND/OR HIS ASSIGNS SHALL BE BORNE BY CONTRACTOR.
- THE CONTRACTOR SHALL VERIFY THAT FINAL ROUGH GRADES HAVE BEEN ESTABLISHED AND THAT THE SITE IS READY FOR LANDSCAPE INSTALLATION. THE CONTRACTOR SHALL ENSURE THAT PLANTINGS WILL HAVE ADEQUATE DRAINAGE. THE CONTRACTOR SHALL INSTALL PLANT MATERIAL FACTORING IN ANY "FINAL" GRADING WORK TO BE COMPLETED AFTER LANDSCAPE INSTALLATION.
- THE CONTRACTOR SHALL LAY OUT BEDS AND POSITION PLANTS FOR APPROVAL BY OWNER, OR DESIGNATED REPRESENTATIVE. THE CONTRACTOR SHALL REVIEW ANY SIGNIFICANT FIELD ADJUSTMENTS PRIOR TO INSTALLATION.
- NOTE:** PLANTING WITHIN THE ROOT ZONE OF EXISTING TREES REQUIRES ADDITIONAL CARE. HAND DIGGING OF PLANTING HOLES AND ADJUSTMENT OF PLANTING LAYOUT MAY BE NECESSARY.
- THE CONTRACTOR SHALL MAINTAIN A CLEAN JOB SITE AND REMOVE ALL PLANTING AND RELATED DEBRIS DAILY DURING THE COURSE OF IMPLEMENTATION.
- THE OWNER, OR DESIGNATED REPRESENTATIVE SHALL REJECT ANY AND ALL PLANT MATERIAL THAT DOES NOT MEET SPECIFICATIONS, IS DISEASED OR OTHERWISE UNHEALTHY.
- ALL LANDSCAPE INSTALLATION SHALL BE ACCOMPLISHED WITH QUALIFIED PERSONNEL, UTILIZING INDUSTRY STANDARD PRACTICES AND TECHNIQUES.

PLANT MATERIAL:

- ALL PLANT MATERIAL SHALL CONFORM TO THE AMERICAN STANDARD FOR NURSERY STOCK AS APPROVED BY THE AMERICAN NATIONAL STANDARDS INSTITUTE INC. LATEST EDITIONS.
- ALL PLANT MATERIAL SHALL BE NURSERY GROWN WITH SOUND HORTICULTURAL PRACTICES AND UNLESS OTHERWISE APPROVED BY THE OWNER, OR DESIGNATED REPRESENTATIVE, GROWN IN SOIL AND CLIMATE CONDITIONS SIMILAR TO THIS PROJECT SITE.
- ALL MATERIAL SHALL EXHIBIT HEALTHY GROWTH WITH GOOD BRANCHING STRUCTURE, DENSE FOLIAGE AND A FIBROUS, DEVELOPED ROOT SYSTEM.
- ALL MATERIAL SHALL BE FREE OF INSECT INFESTATION AND DISEASE. THE OWNER RESERVES THE RIGHT TO HAVE THE PLANT MATERIAL INSPECTED AND TAGGED AT THE GROWING SITE, AND TO REJECT ANY DEFICIENT MATERIAL AT THE JOB SITE.

PLANT MATERIAL HANDLING:

- ALL PLANT MATERIAL SHALL ARRIVE AT THE JOB SITE IN A HEALTHY CONDITION.
- THE CONTRACTOR SHALL STAGE DELIVERY AND PLANT INSTALLATION TO MINIMIZE STRESS ON PLANT MATERIAL.
- PLANT MATERIAL TO BE STAGED ON OR OFF THE JOB SITE SHALL BE LOCATED TO MAXIMIZE PROTECTION FROM HOT SUN AND DRYING WINDS, AND SHALL BE WATERED TO MAINTAIN A STRESS FREE CONDITION. ON-SITE WATER MAY NOT BE AVAILABLE FOR THE CONTRACTOR TO USE. THE LACK OF AVAILABLE WATER SHALL NOT RELIEVE THE CONTRACTOR OF ADEQUATE MAINTENANCE.

PLANTING SCHEDULE:

- PLANTING SCHEDULES SHALL COINCIDE WITH THE OVERALL PROGRESS OF SITE CONSTRUCTIONS.
- CERTAIN PLANT SPECIES REQUIRE SPECIFIC SEASON INSTALLATION AND SHALL BE COORDINATED APPROPRIATELY.
- PLANTING IS DISCOURAGED IN THE HOT, DRY PERIODS OF SUMMER AND DURING FROZEN GROUND CONDITIONS IN WINTER, BUT MAY BE CONSIDERED YEAR-ROUND WITH MAINTENANCE REQUIREMENTS ADDRESSED ACCORDINGLY.
- THE CONTRACTOR IS RESPONSIBLE FOR PLANT MATERIAL HEALTH AND VIGOR REGARDLESS OF WHEN THE MATERIAL IS INSTALLED.

TREE & SHRUB PLANTINGS:

- ALL TREE/SHRUB PLANTING PITS SHALL BE EXCAVATED TO A DEPTH SO THAT THE PLANT ROOT FLARE SHALL LIE AT THE FINISHED GRADE SURROUNDING THE PLANT. SOIL THAT MAY HAVE BEEN PLACED ON TOP OF ROOT BALL OR SETTLED AROUND TRUNK OR ROOT FLARE DURING TRANSPORT SHALL BE REMOVED TO ADEQUATELY EXPOSE ROOT FLARE SO PROPER PLANTING DEPTH CAN BE ESTABLISHED.
- THE ROOT BALL SHALL REST ON UNDISTURBED OR STABILIZED SOIL. THE CONTRACTOR SHALL NOTIFY THE OWNER, OR DESIGNATED REPRESENTATIVE IF THIS PLANTING DEPTH SPECIFICATION CANNOT BE IMPLEMENTED.
- TREE PLANTING PITS SHALL BE EXCAVATED DEPTH EQUAL TO THE HEIGHT OF THE ROOT BALL AND TO A WIDTH EQUALING TWICE THE ROOT BALL DIAMETER.
- EXCAVATED SOILS NOT PREVIOUSLY COMPACTED OR OTHERWISE DEGRADED SHALL BE RE-USED FOR PLANTING PIT BACKFILL. EXCAVATED SOILS UNSUITED FOR BACKFILL SHALL BE AMENDED WITH FRIABLE TOPSOIL TO CREATE A SUITABLE PLANTING SOIL AS APPROVED BY THE OWNER, OR DESIGNATED REPRESENTATIVE. EXCAVATED SOILS THAT CANNOT BE RESTORED TO A REASONABLE PLANTING SOIL SHALL BE REMOVED AND REPLACED WITH A SUITABLE PLANTING SOIL. NOTE: FOR BEDDING PURPOSES OR UNLESS OTHERWISE SPECIFIED HERON, THE CONTRACTOR SHALL ASSUME EXCAVATED SOILS ARE SUITABLE FOR PLANTING BACKFILL.
- SLOW RELEASE FERTILIZER TAB(S) (20-10-5, 21 GRAM, 2-YEAR) SHALL BE ADDED TO PLANTING HOLES AS PER MANUFACTURER'S SPECIFICATIONS.
- THE SIDES OF CONTAINER GROWN STOCK SHALL BE CUT OR SCARIFIED TO ELIMINATE BOUND ROOTS AND PROMOTE HEALTHY ROOT GROWTH.
- ALL SYNTHETIC MATERIALS FROM AROUND THE TREE TRUNK AND ROOT BALL SHALL BE REMOVED AND NOT EVIDENT WITHIN THE BACKFILL SOIL MIX. STRING, ROPE, SYNTHETIC BURLAP, PLASTIC, STRAPPING, AND OTHER MATERIALS THAT WILL NOT DECOMPOSE IN THE SOIL SHALL BE REMOVED AT THE TIME OF PLANTING
- SOIL GRADES SHALL BE FEATHERED AROUND PLANTINGS TO BLEND WITH SURROUNDING LANDSCAPE OR TURF AREAS. EXCESS EXCAVATED SOIL SHALL BE REMOVED FROM JOB SITE.
- ALL TREES AND SHRUBS SHALL BE WATERED DURING PLANTING TO MINIMIZE AIR POCKETS AND TO ENSURE SOIL CONTACT WITH ROOTS.

TREE STAKING/ GUYING:

- TREES SHALL BE STAKED TO PREVENT TOPPLING BY STRONG WIND.
- STAKES SHALL BE INSTALLED ACCORDING TO DETAIL PROVIDED ON PLAN. ANOTHER STAKING/GUYING METHOD MAY BE USED WITH APPROVAL OF OWNER'S REPRESENTATIVE.

HERBACEOUS PLANT INSTALLATION:

- ROOT MASSES SHALL BE MOIST, BUT NOT SATURATED, AT THE TIME OF PLANTING.
- PLANT PITS SHALL BE PREPARED USING A DIBBLE, SPADE OR MECHANICAL AUGER BY OPENING A HOLE AT THE PLANTING SITE. FOR PLANTINGS UNDER EXISTING TREES, PLANTING HOLES SHALL BE HAND-DUG AND LOCATIONS ADJUSTED TO ACCOMMODATE EXISTING TREE ROOTS.
- PLANTS SHALL BE PLACED IN PLANTING PITS IN A VERTICAL POSITION.
- SOIL SHALL BE BACKFILLED INTO PLANT PITS, LIGHTLY COMPRESSED TO ELIMINATE AIR POCKETS, AND FIRMED AROUND THE PLANTS.
- ALL PLANTS SHALL BE WATERED DURING PLANTING TO MINIMIZE AIR POCKETS AND TO ENSURE SOIL CONTACT WITH ROOTS.

MULCHING:

- TWO TO THREE INCHES OF SHREDDED HARDWOOD MULCH SHALL BE APPLIED TO ALL NEWLY PLANTED TREES AND SHRUBS.
- TWO TO THREE INCHES OF HARDWOOD MULCH SHALL BE APPLIED TO UPLAND HERBACEOUS PLANTING AREAS AS SHOWN ON THE PLANTING PLAN.
- MULCH SHALL NOT BE APPLIED TO SWALE, FOREBAY, OR WETLAND PLANTING SHELF AREAS.

MAINTENANCE

DURING CONSTRUCTION PERIOD:

- THE CONTRACTOR SHALL MAINTAIN ALL PLANT MATERIAL THROUGHOUT JOB COMPLETION AND FINAL ACCEPTANCE. ALL PLANT MATERIAL SHALL BE WATERED, WEEDED, MULCHED, PRUNED AND TREATED FOR INSECT DAMAGE, FUNGUS OR DISEASE TO INSURE HEALTHY GROWING CONDITIONS. WATERING SHALL PROVIDE ADEQUATE MOISTURE TO SUPPORT VIGOROUS GROWTH. DURING TIMES OF NORMAL PRECIPITATION, ALL TREES SHALL RECEIVE 1", OR APPROX. 5-10 GALLONS OF WATER PER WEEK. PLANTS IN HEAVIER SOILS SHALL BE MONITORED TO AVOID OVER-WATERING. GATOR BAGS, WATERING TRAYS, IRRIGATION, HAND WATERING, OR OTHER INDUSTRY STANDARD TECHNIQUES SHALL BE EMPLOYED TO MAINTAIN ADEQUATE MOISTURE SUPPLY TO THE PLANT MATERIAL. THE CONTRACTOR SHALL INSTRUCT THE OWNER REGARDING THE REQUIRED AND PROPER ON-GOING MAINTENANCE OF LANDSCAPE MATERIAL.

DURING WARRANTY PERIOD:

-

- THE CONTRACTOR SHALL VISIT THE SITE PERIODICALLY TO ADVISE OWNER OF ANY DEFICIENT CONDITIONS AFFECTING PLANT SURVIVABILITY. DEAD OR DYING PLANT MATERIAL SHALL BE REPLACED (SEE WARRANTY BELOW).

LANDSCAPE WARRANTIES

FROM THE 2018 TOWN OF EASTON ZONING ORDINANCE:

- PRIOR TO ISSUANCE OF AN OCCUPANCY PERMIT, THE APPROVED PRELIMINARY LANDSCAPE PLAN SHALL BE IMPLEMENTED BY THE APPLICANT. AT COMPLETION, THE APPLICANT SHALL REQUEST THAT THE TOWN INSPECT THE COMPLETE LANDSCAPING AND ISSUE THE APPROPRIATE APPROVAL. THE TOWN RECOGNIZES THAT PLANTING SCHEDULES AND FAVORABLE WEATHER/CLIMATIC CONDITIONS DO NOT ALWAYS COINCIDE. THE APPLICANT SHALL MAKE EVERY REASONABLE EFFORT TO COORDINATE BUILDING AND SITE CONSTRUCTION WITH LANDSCAPE IMPROVEMENT INSTALLATION SO THAT ALL PROJECT CONSTRUCTION CAN BE COMPLETE PRIOR TO REQUEST FOR OCCUPANCY PERMITS. UPON DEMONSTRATING THAT SOME OR ALL OF THE REQUIRED LANDSCAPE IMPROVEMENTS SHOULD BE POSTPONED, AND SUBJECT TO THE APPROVAL OF THE TOWN, THE APPLICANT SHALL POST AN IRREVOCABLE FINANCIAL SURETY EQUAL TO THE ESTIMATED INSTALLATION COSTS AS APPROVED BY THE TOWN, GUARANTEEING THE COMPLETE IMPLEMENTATION OF THE LANDSCAPE PLAN WITHIN 6 MONTHS OF OCCUPANCY OR USE OF THE SITE OR SUBDIVISION. AFTER INSTALLATION IS COMPLETE AND INSPECTED AND APPROVED BY THE TOWN, THE APPLICANT SHALL REQUEST IN WRITING TO THE TOWN TO RELEASE ANY UNUSED PORTION OF THE SURETY.
- THE OWNER/DEVELOPER SHALL MAINTAIN ALL LANDSCAPE IMPROVEMENTS PROVIDING ADEQUATE GROWING CONDITIONS TO INSURE HEALTHY, VIGOROUS PLANT SURVIVAL AND GROWTH. THE TOWN RESERVES THE RIGHT TO PERIODICALLY REVIEW INSTALLED LANDSCAPES AND REPORT ANY SIGNIFICANT DEFICIENCIES TO THE OWNER/DEVELOPER. AT THE END OF TWO GROWING SEASONS, AND/OR AT ANY TIME PRIOR TO, THE TOWN SHALL ASSESS THE LANDSCAPE IMPROVEMENTS AND DIRECT REPLACEMENT OR REVITALIZATION OF ANY DEFICIENT AREAS. THE OWNER SHALL REPAIR OR REPLACE DEFICIENT ITEMS WITHIN 30 CALENDAR DAYS.
- FAILURE TO MAINTAIN, REPAIR OR REPLACE THE REQUIRED AND APPROVED LANDSCAPE IMPROVEMENTS SHALL BE CONSIDERED A VIOLATION OF THIS ORDINANCE AND SHALL BE ENFORCED IN ACCORDANCE WITH SECTION 28 – 1308 OF THE TOWN OF EASTON ZONING ORDINANCE.

MAINTENANCE:

DURING CONSTRUCTION PERIOD:

THE CONTRACTOR SHALL MAINTAIN ALL PLANT MATERIAL THROUGH JOB COMPLETION AND FINAL ACCEPTANCE, ALL PLANT MATERIAL SHALL BE WATERED, WEEDED, MULCHED, PRUNED AND TREATED FOR INSECT DAMAGE, FUNGUS OR DISEASE TO ENSURE HEALTHY GROWING CONDITIONS. WATERING SHALL PROVIDE ADEQUATE MOISTURE TO SUPPORT VIGOROUS GROWTH. TYPICALLY, ALL TREES SHOULD RECEIVE APPROXIMATELY 1", OR 5-10 GALLONS OF WATER PER WEEK. PLANTS IN HEAVIER SOILS SHALL BE MONITORED TO AVOID OVER-WATERING. GATOR BAGS, WATERING TRAYS, IRRIGATION, HAND WATERING, OR OTHER INDUSTRY STANDARD TECHNIQUES SHALL BE EMPLOYED TO MAINTAIN ADEQUATE MOISTURE SUPPLY TO THE PLANT MATERIAL. INSTRUCT OWNER REGARDING REQUIRED AND PROPER ON-GOING MAINTENANCE OF LANDSCAPE INSTALLATION.

PLANT LIST:

SYMBOL	QUAN	SCIENTIFIC NAME	COMMON NAME	SPECIFICATION
CANOPY TREES				
QP	24	QUERCUS PHELLOS	WILLOW OAK	2" CALIPER, MIN
EVERGREEN TREES				
IO	20	ILEX OPACA	AMERICAN HOLLY	7' HEIGHT, MIN
SHRUB/TREE				
IG	50	ILEX GLABRA	INKBERRY	18" HEIGHT, MIN

NOTE:

PLANTS CAN BE OR EQUAL AS APPROVED BY ENGINEER. PLANTS MUST BE NATIVE SPECIES PER "TALBOT COUNTY BUFFER MANAGEMENT PLAN GUIDELINES & PLANT LIST"

LANDSCAPE REQUIREMENTS SUMMARY PER ZONING ORDINANCE:

SECTION 1014.7:

- BUFFERYARD "C": 20' WIDE, 1 PLANT UNIT/50' OF PROPERTY (480/50) = 10 PLANTING UNITS = 10 CANOPY TREES, 20 EVERGREEN TREES, 50 LARGE SHRUBS

SECTION 1014.6.B:

- OVERALL TREES: 3 TREES*RESIDENTIAL UNIT (3*8) = 24 TREES REQUIRED
- STREET TREES: 1 TREE/25' OF STREET CENTERLINE LENGTH (480/25) = 20 TREES
- PARKING LOTS 1 TREE/ 5 SPACES LOCATED WITHIN PARKING INTERIOR = 8 TREES

MARYLAND ESD REGULATIONS RECOMMEND NO TREES/SHRUBS ALONG ANY PORTION OF PERMEABLE PAVEMENT IN ORDER TO PREVENT THE DISRUPTION OF THE POROSITY OF THE PAVEMENT

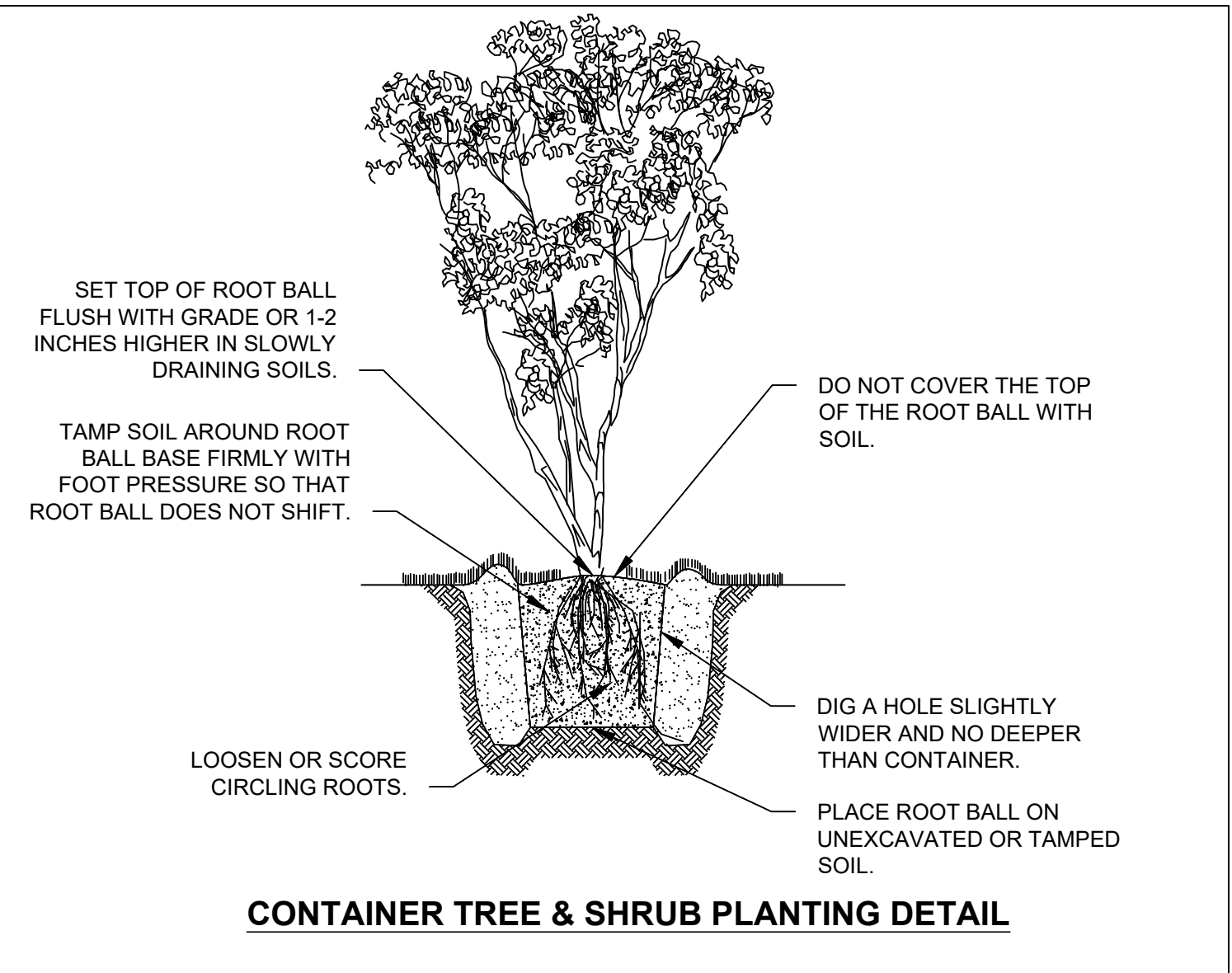
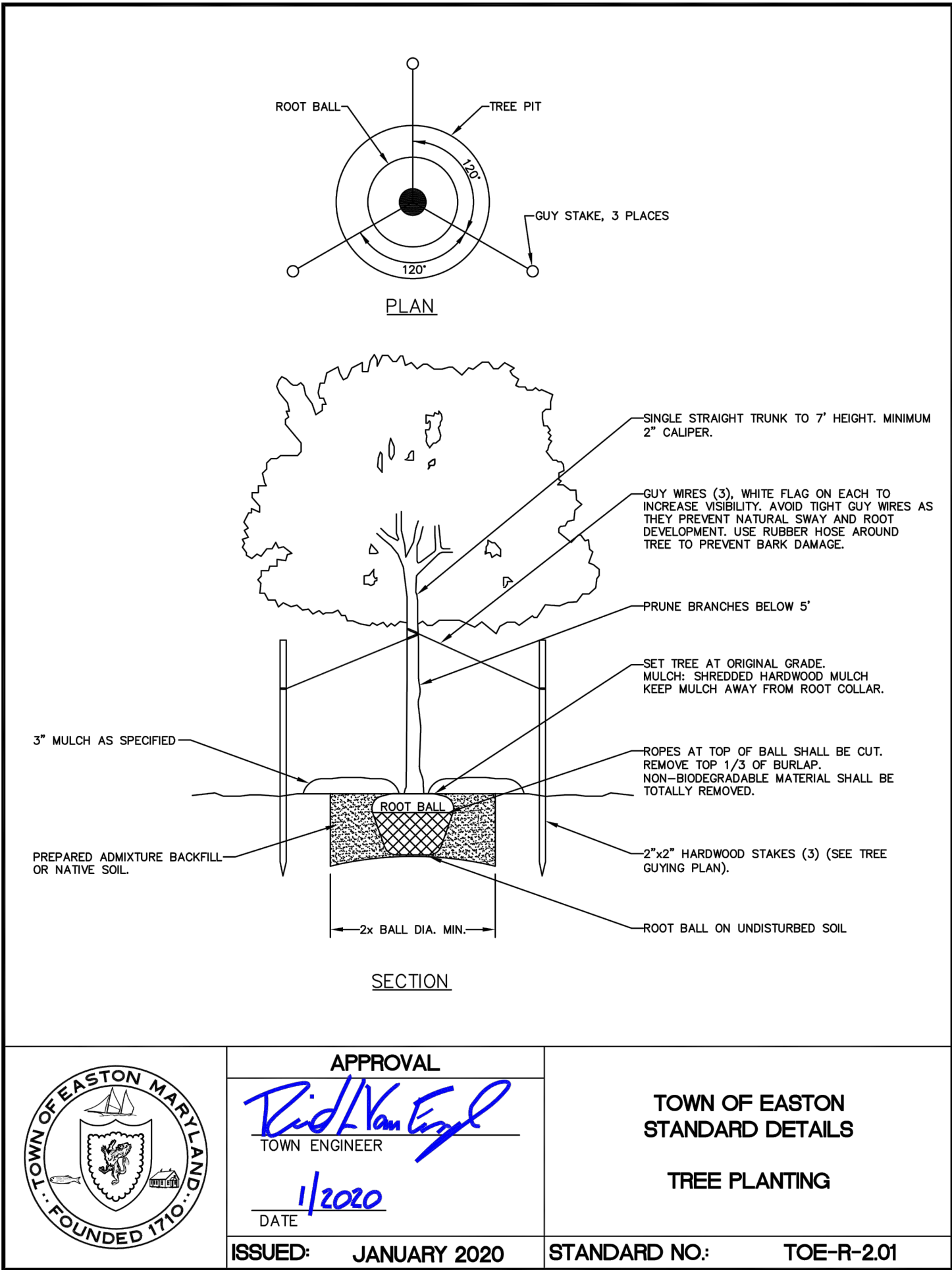
- TOTAL CANOPY TREES REQUIRED (24 OVERALL TREES) = 24 CANOPY TREES
- TOTAL CANOPY TREES PROVIDED = 22 PRSD CANOPY TREES; 2 EXST CANOPY TREES = 24 TOTAL CANOPY TREES
- TOTAL EVERGREEN TREES REQUIRED = 20 EVERGREEN TREES
- TOTAL EVERGREEN TREES PROVIDED = 20 EVERGREEN TREES
- TOTAL LARGE SHRUBS REQUIRED = 50 LARGE SHRUBS
- TOTAL LARGE SHRUBS PROVIDED = 50 LARGE SHRUBS

NOTE:

PER CODE SECTION 28.1014.6.B.d OVERALL APPEARANCE/SCREENING OF THE PROJECT IS BETTER SERVED USING MAX TREES = OVERALL TREES OR 24 TREES. MORE TREES PRESENT ISSUES TO DRAINAGE OF THE SITE AND APPEARANCE OF RESIDENTIAL AREA.

LANDSCAPING NOTES:

- LANDSCAPE INSTALLER SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO COMMENCING WORK. INSTALLER SHALL ENSURE THAT FINAL GRADES HAVE BEEN ESTABLISHED AND THE SITE IS READY FOR LANDSCAPE INSTALLATION.
- LANDSCAPE INSTALLER SHALL MAINTAIN THE LANDSCAPE IMPROVEMENT AREAS IN A CLEAN CONDITION, REMOVING DEBRIS DAILY AND AT THE COMPLETION OF THE INSTALLATION.
- INSTALLER SHALL LAYOUT ALL BEDS AND POSITION PLANTS PER THE PLANS. ADJUST AS REQUIRED FOR FIELD CONDITIONS. REPORT SIGNIFICANT ADJUSTMENTS TO THE OWNER FOR APPROVAL PRIOR TO PLANT INSTALLATION. ALL BED AREAS SHALL BE SPRAYED WITH HERBICIDE AS NEEDED TO KILL AND/OR REMOVE ALL WEED OR GRASS VEGETATION.
- EXCEPT FOR TREE SPADE INSTALLATIONS, ALL TREE PITS SHALL BE EXCAVATED TO A DEPTH SO THAT THE ROOT BALL WILL REST ON SOLID SOIL AT THE PROPER HEIGHT. STREET TREES PLANTING PITS SHALL BE EXCAVATED AND WORKED IN A RECTANGULAR FORM WITH THE SMALL DIMENSION TWICE THE DIAMETER OF THE ROOT BALL AND THE LARGE DIMENSION AT LEAST THREE TIMES THE DIAMETER OF THE ROOT BALL. OPEN AREA TREE PITS SHALL BE EXCAVATED TO A MINIMUM DIMENSION OF TWICE THE ROOTBALL WIDTH. TREES PLANTED ON SLOPES OR SIDE SWALES SHALL BE INSTALLED AT A HEIGHT RELATING TO THE UPHILL SIDE OF THE PIT, AND MOUNDED WITH SOIL AROUND THE LOWER SIDE. ALL SIDES AND BOTTOM OF TREE PLANTING PITS SHALL BE SCARIFIED OR LOOSENED TO PERMIT ROOT GROWTH. EXCAVATED SOILS THAT HAVE BEEN PREVIOUSLY UNDISTURBED SHALL BE LOOSENED AND UTILIZED FOR BACKFILL. COMPACTED SOILS THAT CANNOT BE RESTORED TO A REASONABLE PLANTING SOIL SHALL BE REMOVED AND REPLACED WITH FRIABLE NATIVE SOILS FROM THE REGION.
- ALL SHRUB PLANTING PITS, LANDSCAPE BEDS AND PLANTING MASS AREAS SHALL BE WORKED TOWN OF EASTON 2018 EDITION ZONING ORDINANCE ARTICLE X 10-62 TO A DEPTH OF 12" (OR RAISED SLIGHTLY TO ACHIEVE A 12" FRIABLE SOIL DEPTH). SHRUB PLANTING AREAS SHALL BE WORKED TO 12" MINIMUM OUTSIDE THE ROOT BALL.
- ALL LANDSCAPE BEDS SHALL BE "V" EDGED AND MULCHED WITH MINIMUM 3" DOUBLE SHREDDED HARDWOOD BARK MULCH, OR APPROVED EQUAL. MULCH TO FENCE LINES OR BACK OF CURBS WHERE APPROPRIATE TO ELIMINATE NARROW GRASS AREAS. AVOID MULCH PILED AGAINST TREE TRUNKS, ETC.
- ALL TREES TO BE STAKED AND GUYED WITH HARDWOOD STAKES, MINIMUM OF TWO (2) - 5' LONG, OR OTHER APPROVED GUYING SYSTEM. STAKES SHALL BE DRIVEN INTO STABLE SOILS. PROVIDE WIRE GUYS WITH RUBBER PROTECTANT OR OTHER APPROVED INDUSTRY PRACTICE.
- LANDSCAPE INSTALLER SHALL MAINTAIN ALL PLANT MATERIALS THROUGH THE COMPLETION OF THE LANDSCAPE INSTALLATION, AND THEN AS REQUIRED BY THE OWNER.
- AT THE COMPLETION OF THE LANDSCAPE INSTALLATION (OR BY PHASED COMPLETION IF PROVIDED FOR ON THE PLAN), THE OWNER, OR HIS DESIGNATED REPRESENTATIVE SHALL REQUEST AN INSPECTION BY TOWN OF EASTON.



CONTAINER TREE & SHRUB PLANTING DETAIL

LANDSCAPING NOTES & DETAILS

FOR
NAIMA - PHASE 2
INFRASTRUCTURE IMPROVEMENT PLANS

TAX MAP 0104, GRID 000EA
WARD DISTRICT 4, EASTON, MARYLAND
PREPARED FOR NAIMA VENTURES, LLC

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REVISIONS

REV. #	DATE	DESCRIPTION
1	03/29/2023	REVISED PER TOWNWELPZ COMMENTS

DATE: 12/28/2022

SCALE: N/A

DRAWN BY: BBF

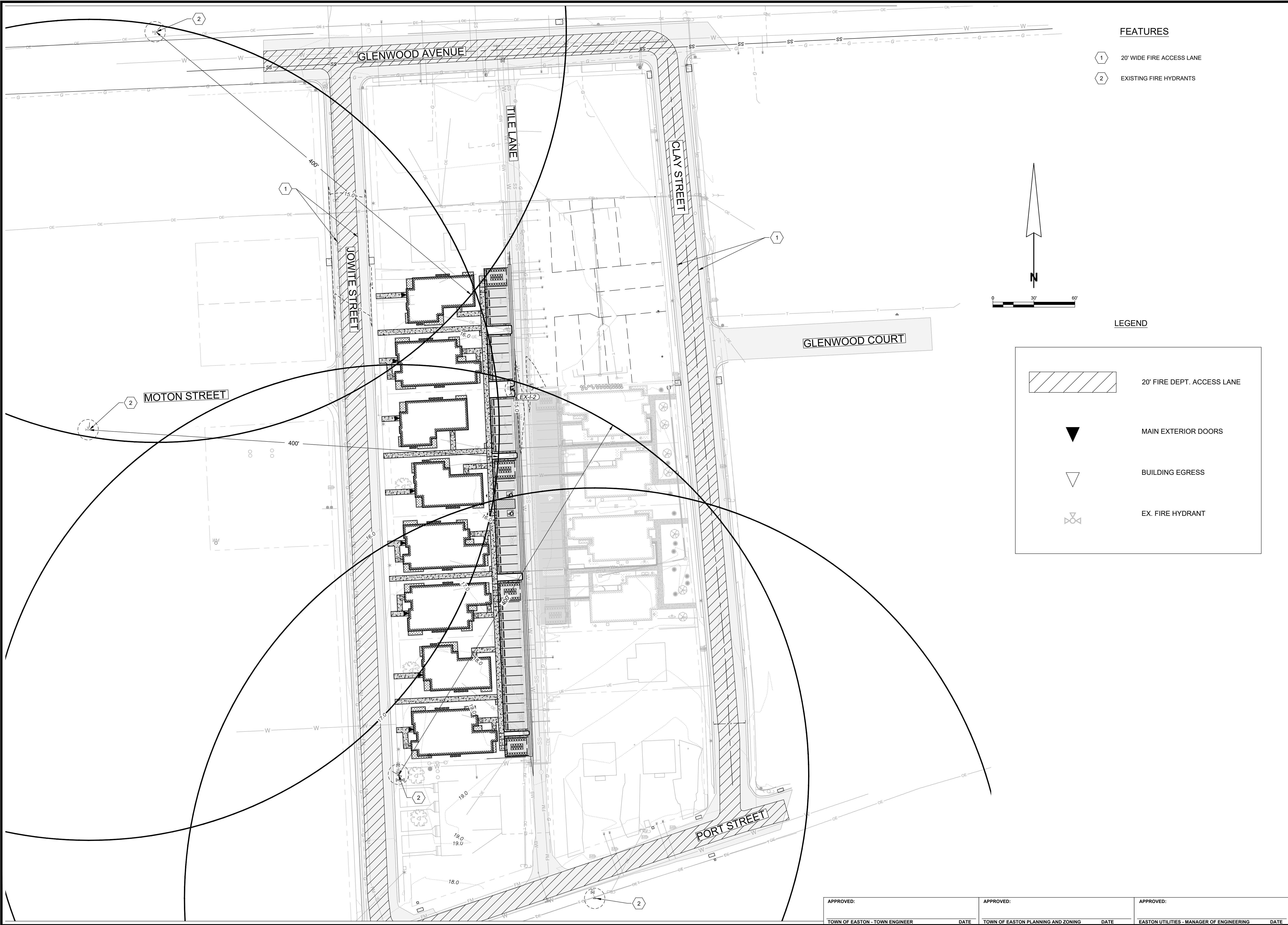
DESIGNED BY: BBF

APPROVED BY:

SHEET NO.:

C-505

Z:\NAMA\ENGINEERING\PHASE 2\PRODUCTION PLANS\NAMA-PHASE 2 - PRODUCTION PLANS.DWG



FEATURES

- 1 20' WIDE FIRE ACCESS LANE
- 2 EXISTING FIRE HYDRANTS

LEGEND

- 20' FIRE DEPT. ACCESS LANE
- MAIN EXTERIOR DOORS
- BUILDING EGRESS
- EX. FIRE HYDRANT

FIRE MARSHALL PLAN

FOR
NAIMA - PHASE 2
INFRASTRUCTURE IMPROVEMENT PLANS
TAX MAP 0104, GRID 000EA
WARD DISTRICT 4, EASTON, MARYLAND
PREPARED FOR NAIMA VENTURES, LLC

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REVISIONS

REV. #	DATE	DESCRIPTION
1	03/29/2023	REVISED PER TOWN/LOPZ COMMENTS

DATE: 12/28/2022

SCALE: 1" = 30'

DRAWN BY: BBF

DESIGNED BY: BBF

APPROVED BY:

SHEET NO.: C-601

APPROVED:
TOWN OF EASTON - TOWN ENGINEER

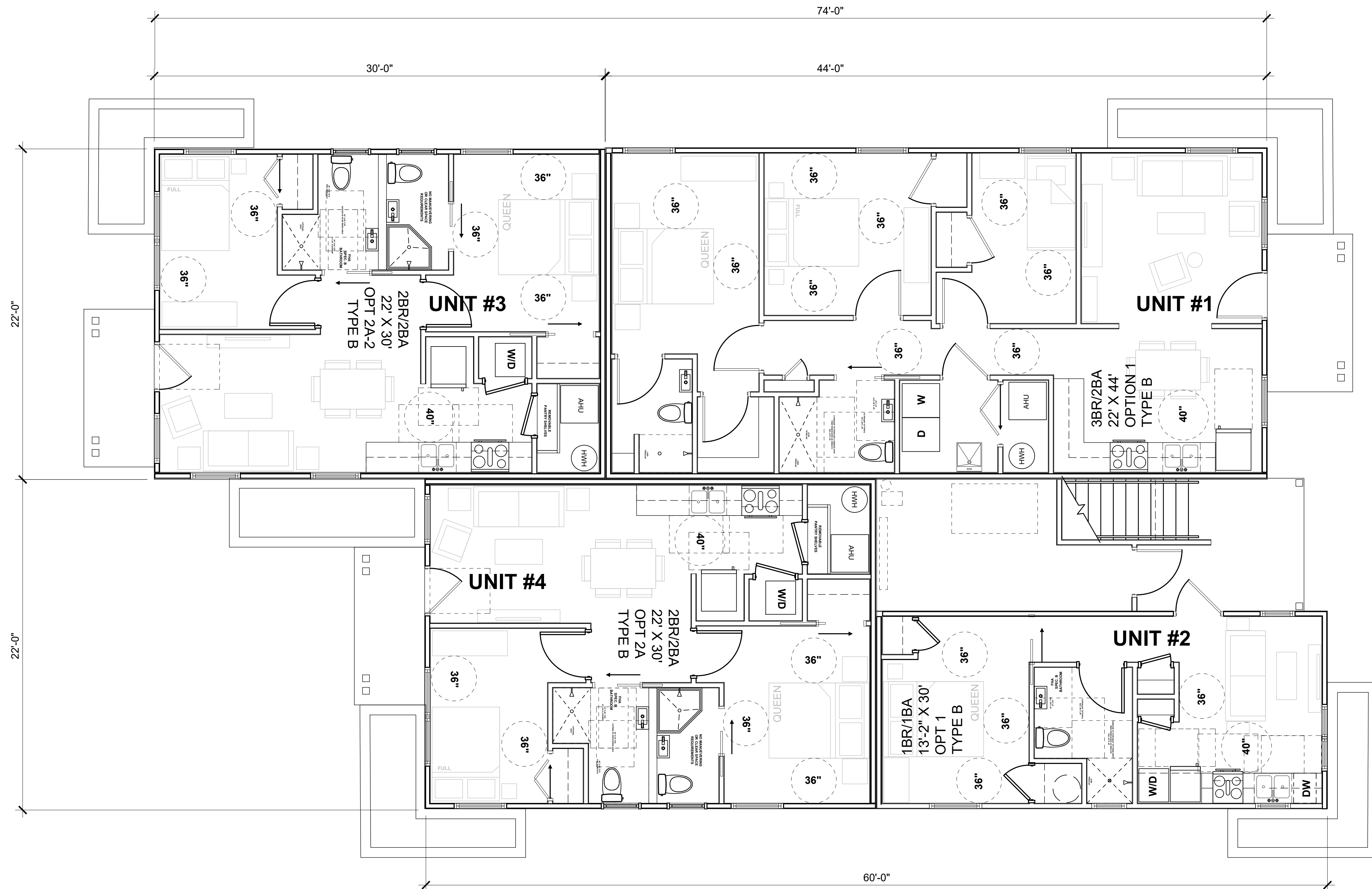
DATE

APPROVED:
TOWN OF EASTON PLANNING AND ZONING

DATE

APPROVED:
EASTON UTILITIES - MANAGER OF ENGINEERING

DATE



1 FIRST FLOOR PLAN - BUILDING TYPE ONE

Scale: 1/4" = 1'-0"

DRAWINGS

FOR

NAIMA VENTURES, LLC

TAX MAP 104, GRID 0, PARCEL 1369, 1382, 1370, 1381, 1371, 1372
FOURTH ELECTION DISTRICT, CAROLINE COUNTY, MARYLAND
PREPARED FOR DERICK DALY

PREPARED FOR DERICK DALY



Engineering | Survey | Architecture | Environmental

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ARCHITECT SEAL:

PROFESSIONAL CERTIFICATION:
I CERTIFY THAT THESE DOCUMENTS WERE
PREPARED OF APPROVED BY ME, AND
THAT I AM A DULY LICENSED ARCHITECT
UNDER THE LAWS OF THE STATE OF
MARYLAND, LICENSE NUMBER 20221
EXPIRATION DATE 01/19/2022.

[illegible]

DATE: 03/03/2021

SCALE: AS SHOWN

DRAWN BY: PR

DESIGNED BY:

SHEET TITLE:

FLOOR PLANS
BUILDING TYPE ONE

SHEET NO.:

A-101

1 SECOND FLOOR PLAN - BUILDING TYPE ONE

Scale: 1/4" = 1'-0"



DRAWINGS

FOR

NAIMA VENTURES, LLC

TAX MAP 104, GRID 0, PARCEL 1369, 1382, 1370, 1381, 1371, 1372
FOURTH ELECTION DISTRICT, CAROLINE COUNTY, MARYLAND
PREPARED FOR DERICK DALY

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EXPIRATION DATE 01/19/2022.

[illegible]

DATE: 03/03/2021

SCALE: AS SHOWN

DRAWN BY: PR

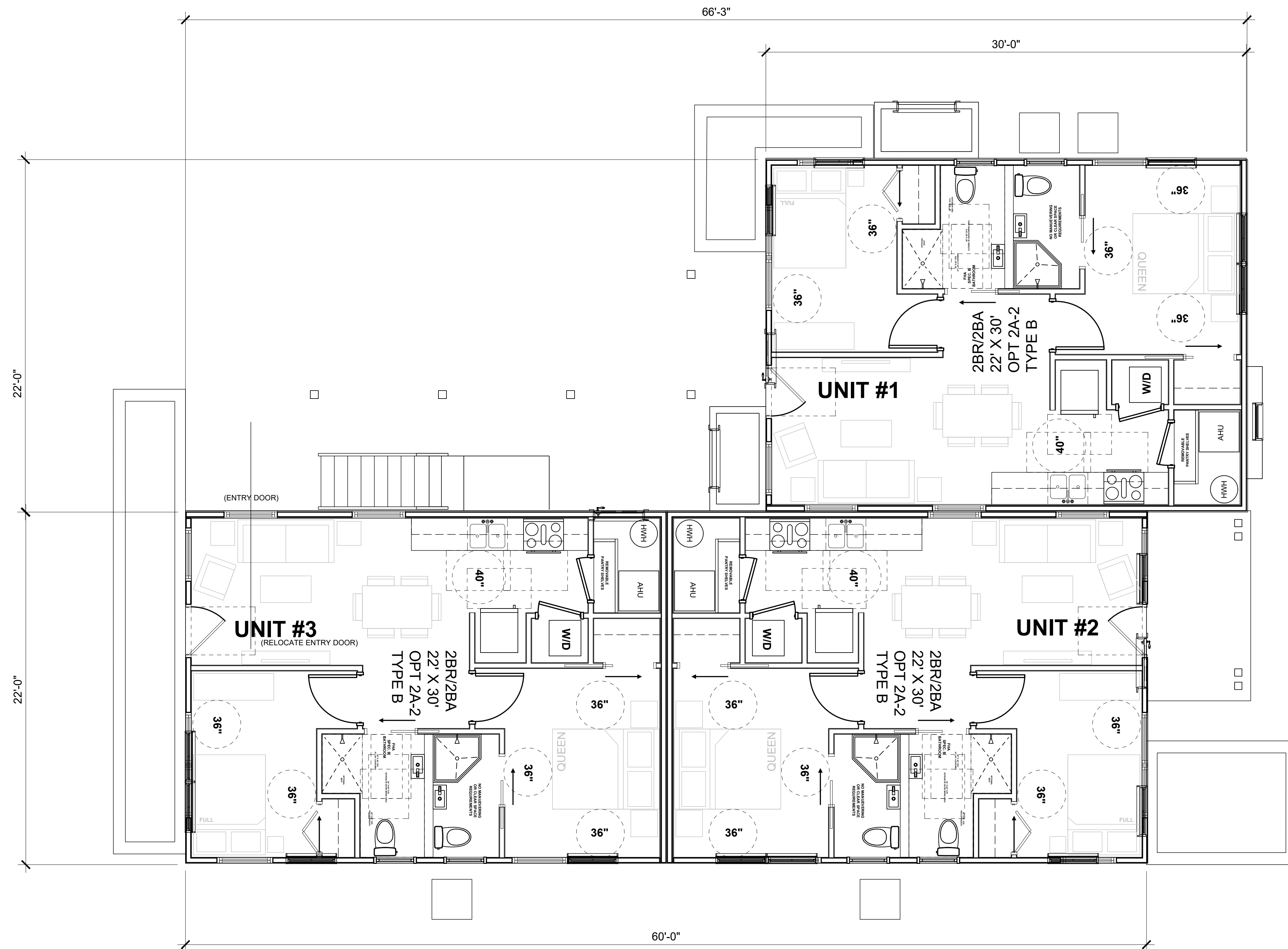
DESIGNED BY:

SHEET TITLE: FLOOR PLAN

FLOOR PLANS
BUILDING TYPE ONE

SHEET NO.:

A-102



1 FIRST FLOOR PLAN - BUILDING TYPE TWO

Scale: 1/4" = 1'-0"

DRAWINGS

FOR

NAIMA VENTURES, LLC

TAX MAP 104, GRID 0, PARCEL 1369, 1382, 1370, 1381, 1371, 1372
FOURTH ELECTION DISTRICT, CAROLINE COUNTY, MARYLAND
PREPARED FOR DERICK DALY

PREPARED FOR DERICK DALY

RAUCH
Inc.

Engineering | Survey | Architecture | Environmental

ARCHITECT SEAL:

PROFESSIONAL CERTIFICATION:
I CERTIFY THAT THESE DOCUMENTS WERE
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THAT I AM A DULY LICENSED ARCHITECT
UNDER THE LAWS OF THE STATE OF
MARYLAND, LICENSE NUMBER 20221
EXPIRATION DATE 01/19/2022.

[illegible]

DATE: 03/03/2021

SCALE: AS SHOWN

DRAWN BY: PR

DESIGNED BY:

SHEET TITLE:

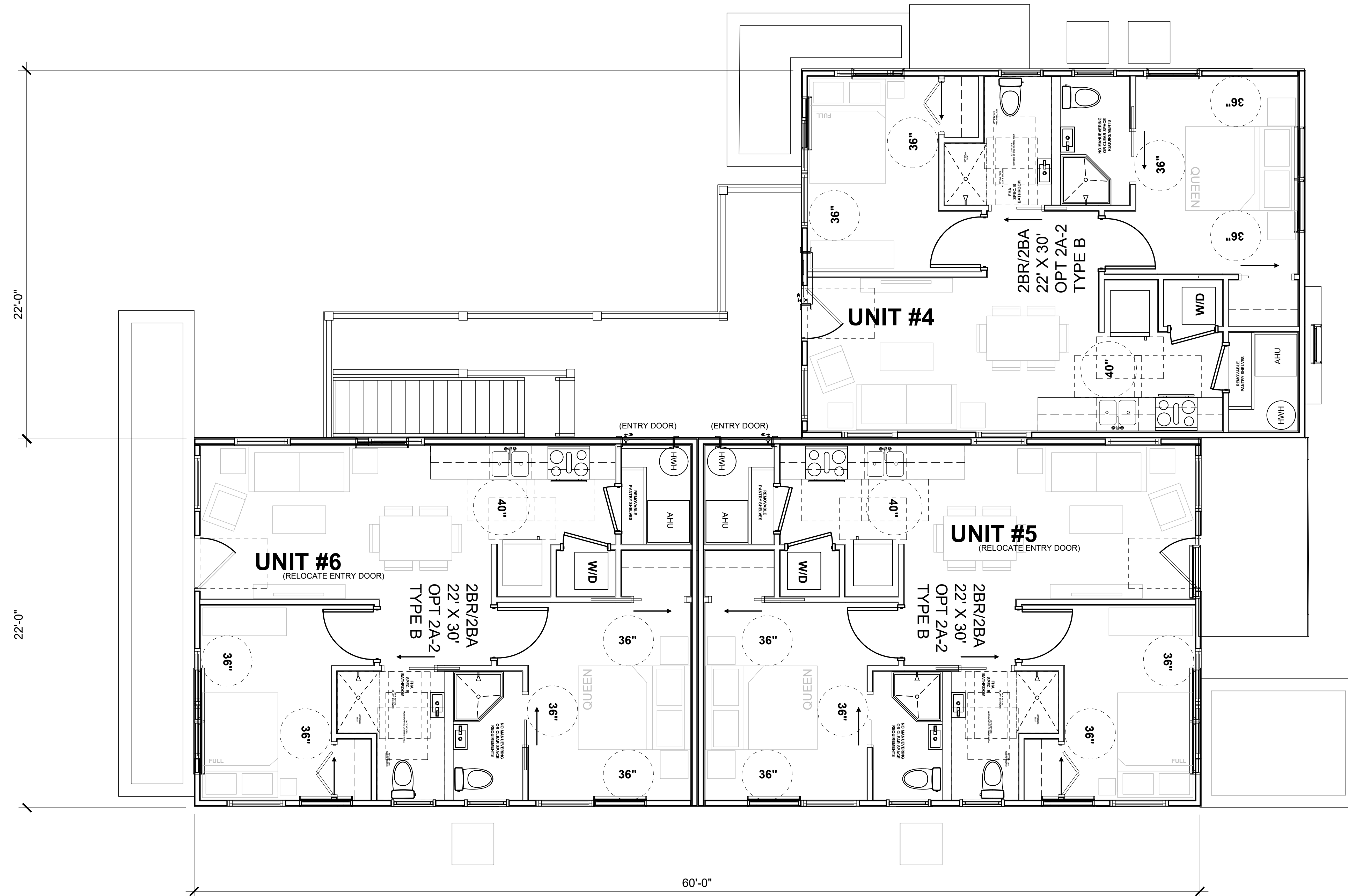
FLOOR PLANS
BUILDING TYPE TWO

SHEET NO.:

A-103

1 SECOND FLOOR PLAN - BUILDING TYPE TWO

Scale: 1/4" = 1'-0"



DRAWINGS

FOR

NAIMA VENTURES, LLC

TAX MAP 104, GRID 0, PARCEL 1369, 1382, 1370, 1381, 1371, 1372

FOURTH ELECTION DISTRICT, CAROLINE COUNTY, MARYLAND
PREPARED FOR DERICK DALY

PREPARED FOR DERICK DALY



office: 410.770.9081 | fax: 410.770.3667
email: design@raucheng.com | web: www.raucheng.com
Maryland Office: 106 N. Harrison St - Easton, MD 21601
Virginia Office: 8229 Boone Blvd, Suite 625 - Vienna, VA 22182

ARCHITECT SEAL:

PROFESSIONAL CERTIFICATION:
I CERTIFY THAT THESE DOCUMENTS WERE
PREPARED OF APPROVED BY ME, AND
THAT I AM A DULY LICENSED ARCHITECT
UNDER THE LAWS OF THE STATE OF
MARYLAND, LICENSE NUMBER 20221
EXPIRATION DATE 01/19/2022.

[illegible]

DATE: 03/03/2021

SCALE: AS SHOWN

DRAWN BY: PR

DESIGNED BY:

SHEET TITLE:

FLOOR PLANS
BUILDING TYPE TWO

SHEET NO.:

A-104



EAST ELEVATION



NORTH ELEVATION

1 EXTERIOR ELEVATIONS - BUILDING TYPE 1

Scale: 1/4" = 1'-0"

DRAWINGS

FOR

NAIMA VENTURES, LLC

TAX MAP 104, GRID 0, PARCEL 1369, 1382, 1370, 1381, 1371, 1372
FOURTH ELECTION DISTRICT, CAROLINE COUNTY, MARYLAND
PREPARED FOR DERICK DALY

RAUCH
INC.
Engineering | Survey | Architecture | Environmental

Engineering | Survey | Architecture | Environmental
office: 410.770.9081 | fax: 410.770.3687
email: design@raucheng.com | web: www.raucheng.com
Maryland Office: 106 N. Harrison St. • Easton, MD 21601
Virginia Office: 8229 Boone Blvd. Suite 625 • Vienna, VA 22182

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UNDER THE LAWS OF THE STATE OF
MARYLAND, LICENSE NUMBER 20221
EXPIRATION DATE 01/19/2022.

[illegible]

DATE: 03/03/2021

SCALE: AS SHOWN

DRAWN BY: PR

DESIGNED BY:

SHEET TITLE:

ELEVATIONS
BUILDING TYPE 1

SHEET NO.:

A-201



WEST ELEVATION



SOUTH ELEVATION

1 EXTERIOR ELEVATIONS - BUILDING TYPE 1

Scale: 1/4" = 1'-0"

DRAWINGS

FOR

NAIMA VENTURES, LLC

TAX MAP 104, GRID 0, PARCEL 1369, 1382, 1370, 1381, 1371, 1372
FOURTH ELECTION DISTRICT, CAROLINE COUNTY, MARYLAND
PREPARED FOR DERICK DALY



ARCHITECT SEAL:

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THAT I AM A DULY LICENSED ARCHITECT
UNDER THE LAWS OF THE STATE OF
MARYLAND, LICENSE NUMBER 20221
EXPIRATION DATE 01/19/2022.

[illegible]

DATE: 03/03/2021

SCALE: AS SHOWN

DRAWN BY: PR

DESIGNED BY:

SHEET TITLE:

ELEVATIONS
BUILDING TYPE 1

SHEET NO.:

A-202



EAST ELEVATION



NORTH ELEVATION

1 EXTERIOR ELEVATIONS - BUILDING TYPE 2

Scale: 1/4" = 1'-0"

DRAWINGS

FOR

NAIMA VENTURES, LLC

TAX MAP 104, GRID 0, PARCEL 1369, 1382, 1370, 1381, 1371, 1372
FOURTH ELECTION DISTRICT, CAROLINE COUNTY, MARYLAND
PREPARED FOR DERICK DALY

RAUCH
INC.
Engineering | Survey | Architecture | Environmental

email: design@raucheng.com | web: www.raucheng.com
office: 410.770.9081 | fax: 410.770.3867
Maryland Office: 106 N. Harrison St., Easton, MD 21601
Virginia Office: 8229 Boone Blvd., Suite 625 - Vienna, VA 22182

ARCHITECT SEAL:

PROFESSIONAL CERTIFICATION:
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PREPARED OR APPROVED BY ME, AND
THAT I AM A DULY LICENSED ARCHITECT
UNDER THE LAWS OF THE STATE OF
MARYLAND, LICENSE NUMBER 20221
EXPIRATION DATE 01/19/2022.

[illegible]

DATE: 03/03/2021

SCALE: AS SHOWN

DRAWN BY: PR

DESIGNED BY:

MEET TITLE: ELEVATIONS

ELEVATIONS
BUILDING TY

SHEET NO.:

A-203



WEST ELEVATION



SOUTH ELEVATION

1

EXTERIOR ELEVATIONS - BUILDING TYPE 2

Scale: 1/4" = 1'-0"

DRAWINGS

FOR

NAIMA VENTURES, LLC

TAX MAP 104, GRID 0, PARCEL 1369, 1382, 1370, 1381, 1371, 1372
FOURTH ELECTION DISTRICT, CAROLINE COUNTY, MARYLAND
PREPARED FOR DERICK DALY

RAUCH
inc.
Engineering | Survey | Architecture | Environmental

Engineering | Survey | Architecture | Environmental

RAUCHENG

office: 410.770.9081 | fax: 410.770.3667
email: design@raucheng.com | web: www.raucheng.com
Maryland Office: 106 N. Harrison St. - Easton, MD 21601
Virginia Office: 8229 Boone Blvd, Suite 625 - Vienna, VA 22182

ARCHITECT SEAL:

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PREPARED OF APPROVED BY ME, AND
THAT I AM A DULY LICENSED ARCHITECT
UNDER THE LAWS OF THE STATE OF
MARYLAND, LICENSE NUMBER 20221
EXPIRATION DATE 01/19/2022.

[illegible]

DATE: 03/03/2021

SCALE: AS SHOWN

DRAWN BY: PR

DESIGNED BY:

PR

SHEET TITLE:
ELEVATIONS

BUILDING TYPE

A-204



**Town of Easton**

Engineering, Planning and Zoning

14 South Harrison Street, Easton, MD 21601

Easton Staff Development Review**Property Information**

Address	22, 30, 36 & 44 Jowite St, Easton, MD, 21601				
Tax Map	104	Grid	EA	Parcel	1369,1370,1371,1372
Deed Reference:	Liber	02616	Folio	00084	
Plat Reference:	Liber	7	Folio	54	
Base Zoning District	R7A-PRD		Historic District	Y ☐ N ☒	
			Planning Redevelopment	Y ☒ N ☐	

Purpose of Application / Description of Work:

Naima Ventures, LLC is looking to redevelop parcels 1369,1370,1371,1372. The redevelopment includes the demolition of existing residential structures, infrastructure improvements along Tile Lane, and construction of new residential structures. Parking and refuse locations will be place along Tile Lane. Forest Conservation will be required and Naima is asking to pay fee-in-lieu as the density of the units for the site restrict the establishment of afforestation. The density is consistent with the Town of Easton comprehensive plan and Naima is asking that the afforestation be satisfied via pay-in-lieu in an effort to prevent future damage by extensive large tree growth to the proposed structures, porous asphalt, stormwater, and other utilities on the site.

Owner

Name	Naima Ventures, LLC	
Mailing Address	29760 Standish St, Easton, MD 21601	
Telephone No.	(410) 310-6241	Email ddaly@baamboys.com

Applicant / Agent

Name	Kendrick Daly	
Mailing Address	112 3rd Haven Heights, Easton, MD 21601	
Telephone No.	(410) 253-4455	Email kendrickdaly@naimaventures.com; brian@raucheng.com

Surveyor / Engineer

Name	Robert Rauch	License No.	11024	Expiration Date	July 24, 2022
Mailing Address	106 N. Harrison St, Easton, MD 21601				
Telephone No.	410-770-9081	Email	robert@raucheng.com - brian@raucheng.com		

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

2/27/23

Printed Name of Applicant or Agent

Kendrick Daly

For Office Use Only

Easton Staff Development Review Meeting Required Y ☒ N ☐

Easton Staff Development Review Meeting Date

Application No. 23-883 / 23-05

Completeness Check Date

Revisions/Resubmissions Required Y ☐ N ☐

Resubmission Date

Documents Received Y ☐ N ☐

Staff Determination

Planning Commission Required Y ☐ N ☐

BOZA Required Y ☐ N ☐

Historic District Commission Required Y ☐ N ☐

Resubmission for ESDR Required Y ☐ N ☐

Staff Signature

Date

RECEIVED
MAR 01 2023
TOWN OF EASTON

Revised 02-2019

APPENDIX B-1

SKETCH PLAN SUBMITTAL CHECKLIST

NOTE: THIS CHECKLIST REPRESENTS THE MINIMUM INFORMATION TO BE SUBMITTED ON A SITE PLAN. ADDITIONAL INFORMATION MAY BE REQUIRED FOR UNIQUE SITUATIONS.

COMPLETE THE CHECKLIST AND SUBMIT IT WITH THE PLAN. IF AN ITEM IS NOT APPLICABLE, ENTER "N/A".

- | | |
|--|------------|
| 1. Location map, | <u>X</u> |
| 2. Boundary, | <u>X</u> |
| 3. Topography, | <u>X</u> |
| 4. General proposed land uses drawn to scale, and | <u>X</u> |
| 5. The Forest Stand Delineation as detailed in the Town of Easton's Forest Conservation Ordinance. | <u>N/A</u> |
| 6. The location of any easements, rights-of-way or any other encumbrances which pertain to the property subject to the site plan review. | <u>X</u> |
| 7. Conditions of concern, for example, water courses, wetlands, floodplains, or other environmentally sensitive features. | <u>X</u> |
| 8. Location of refuse collection, exterior lighting, fencing, and all pedestrian walkways and sidewalks. | <u>X</u> |
| 9. General location and description (r.e. intended function, proposed species, etc.) of proposed landscaping. | <u>X</u> |
| 10. Location of parking including layout and landscaping. | <u>X</u> |
| 11. 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. | <u>X</u> |
| 12. A statement describing the extent to which the application complies with the Recommended Design Principles for Easton set forth on pages 29-31 of the Comprehensive Plan | <u>X</u> |

This checklist completed by Brian Fitzgerald Date 2/27/2023

APPENDIX B-2

SKETCH STORMWATER MANAGEMENT PLAN SUBMITTAL CHECKLIST

EFFECTIVE MAY 4, 2010

NOTE: THE FOLLOWING CHECKLIST REPRESENTS THE MINIMUM INFORMATION TO BE SUBMITTED FOR SUPPORT OF A STORMWATER MANAGEMENT CONCEPT PLAN, SITE DEVELOPMENT PLAN, AND/OR FINAL DESIGN PLAN. THE TOWN MAY REQUEST ADDITIONAL INFORMATION AS DEEMED NECESSARY.

COMPLETE THE APPROPRIATE CHECKLIST AND SUBMIT IT WITH THE PLANS, APPLICATION FORM, NARRATIVE OR REPORT, AND FEE. ITEMS IN BOLD ARE REQUIRED FOR CONCEPT AND/OR SITE DEVELOPMENT PHASE REVIEW.

I. Sketch Plan Submittal

A. Site and Resource Map

Natural Resources Identified on Plan, including, but not limited to:

Please use these responses for the following:

(Provided = P; Not Provided = NP; Not Applicable = N/A)

Tidal and Non-Tidal Wetland Boundaries	<u>N/A</u>	<u>N/A</u>
Wetland Buffers		
Floodplain Boundaries and Elevations	<u>N/A</u>	
Streams and other Waterways	<u>N/A</u>	
Stream Buffers	<u>N/A</u>	
Forest Boundaries		<u>N/A</u>
Forest Buffers	<u>N/A</u>	
Critical Areas	<u>N/A</u>	
Steep Slopes (>25%)	<u>N/A</u>	
Erodible Soils	<u>N/A</u>	
Areas of High Recharge	<u>N/A</u>	
Springs		<u>N/A</u>
Soil Types and Hydrologic Soil Groups	<u>N/A</u>	
Bedrock and/or other Geologic Features	<u>N/A</u>	
Vegetative Cover		<u>P</u>
Existing Drainage Areas and Flow Patterns	<u>P</u>	
Existing Stormwater Outfalls	<u>P</u>	
Site and Resource Map field verified by a properly licensed design professional.	<u>P</u>	

Existing contours (1' max intervals) and utilities shown. P

Large tracts of contiguous open spaces, forested areas and other important resources protected by conservation easements. N/A

Opportunities for afforestation identified. N/A

Wetland, stream and forest buffers enhanced and/or

expanded.	<u>N/A</u>
-----------	------------

B. Site Fingerprinting and Development Layout

Locations of proposed impervious areas provided.	<u>P</u>
Proposed contours (1' max intervals) and utilities shown.	<u>P</u>
Preliminary locations of proposed Environmental Site Design (ESD) practices provided.	<u>P</u>
Locations of stormwater outfalls and conveyance provided with offsite storm drains, culverts and grass channels with size and slope.	<u>P</u>
Limit of disturbance and extent of clearing & grading.	<u>P</u>
Site natural resources protected during construction. If site natural resources must be disturbed during construction, please include an explanation in the stormwater narrative.	<u>P</u>
Better Site Design Techniques incorporated, including:	
Sheetflow and overland flow provided wherever possible	<u>P</u>
Building footprint and site layout designed to protect conservation areas	<u>P</u>
Proposed streets, rights of way, and/or sidewalks with modifications to reduce impervious area	<u>P</u>
Landscaped medians and/or cul-de-sacs	<u>N/A</u>
Stormwater management features in medians or cul-de-sacs	<u>N/A</u>
Private open road section with grass channels and/or biofilters	<u>N/A</u>
Minimize numbers of parking spaces and sizes	<u>P</u>
Narrow frontages to reduce road length	<u>P</u>
Site graded to encourage runoff from impervious areas to pervious areas or other natural conveyance systems	<u>P</u>

C. Stormwater Narrative

Title Page includes:

Job Name	<u>P</u>
Owner/Developer	<u>P</u>
Design Professional	<u>P</u>
Date Prepared	<u>P</u>
Seal and Signature (properly licensed Design Professional)	<u>P</u>
Project is identified as new development or redevelopment. (Redevelopment projects have $\geq 40\%$ total site imperviousness)	<u>P</u>

Project and streets designed for 2-year and 10-year quantitative management. P

Project is identified as being within the Tanyard Branch Watershed. (Projects within this watershed must manage proposed 10-year storm flows to the existing 2-year storm discharge rate.) N/A

A narrative that supports the concept and describes how the design will achieve:

Natural resource protection and enhancement	<u>P</u>
Maintenance of natural flow patterns	<u>P</u>
Reduction of impervious areas through better site design, alternative surfaces, and non-structural practices	<u>NP</u>
Implementation of ESD planning techniques and practices to the Maximum Extent Practicable (MEP)	<u>P</u>
Preliminary ESD sizing calculations provided	<u>P</u>
Integration of erosion and sediment controls (ESC) into the stormwater strategy	<u>P</u>

D. Sketch Plan Meeting

Following the Sketch Plan submittal, a meeting will be scheduled between the Town of Easton Planning & Zoning, Town Engineer, the Talbot County Soil Conservation District (SCD) ESC reviewer, the owner/developer, the SWM and ESC designer(s), and any other reviewers deemed necessary by the Town of Easton and/or the Talbot County SCD. Official Minutes from the Sketch Plan Meeting must be submitted for review and acceptance by all parties. These minutes must accompany all future submittals. OK

This checklist completed by Brian Ftizgerald Date 2/27/2023

**Town of Easton**

Engineering, Planning and Zoning

14 South Harrison Street, Easton, MD 21601

Planned Redevelopment Overlay Application

Application TypeSubdivision ☐Site Plan ☒**Subdivision Information**

Name

Original Property Size

Acres

Square Feet

Number of Lots Proposed

Site Plan Information

Property Size

Acres

1.323

Square Feet

57630

Structure's Floor Area

Total 8 Buildings:
18,256; 15,000

Structure's Square Feet

Total 8 buildings
12,368; 9,636**Property Information**

Address

22, 30, 36, 44 Jowite Street Easton, MD, 21601

Tax Map

104

Grid

000EA

Parcel

1369, 1370,
1371, 1372

Lot

Deed Reference:

Liber

02616

Folio

00084

Plat Reference:

Liber

Folio

Zoning District

R-7A - PRD Historic District Y ☐ N ☒

Source of Electricity

Easton Utilities

Owner

Name

Naima Ventures, LLC

Mailing Address

29760 Standish St, Easton, MD 21601

Telephone No.

(410) 310-6241

Email

kendrickdaly@naimaventures.com

Surveyor / Engineer

Name

Robert Rauch

License No.

11024

Expiration Date

7/24/2024

Mailing Address

106 N. Harrison St, Easton, MD, 21601

Telephone No.

410-770-9081

Email

robert@raucheng.com; brian@raucheng.com

Applicant or Agent

Name

Kendrick Daly

Mailing Address

29760 Standish St, Easton, MD 21601

Telephone No.

(410) 310-6241

Email

kendrickdaly@naimaventures.com

Request Details

Please describe the purpose of the request being including all information pertinent to said request.

Attach a formal letter detailing request.

Proposed construction of middle housing mansion apartments between Jowite St and Tile Ln. Project to include parking stalls, water/sewer/dry utilities, stormwater management, and landscaping.

- 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

Printed Name of Applicant or Agent

[Handwritten Signature]
4/3/23
Kendrick Daly

For Office Use Only

Project Number		Fee Received	
Application Number	2023-0914	Application Notification	
Filing Date	04/03/2023	Property Posting Date	04/04/2023
PC Meeting Date	04/20/2023	Notice(s) Published	04/03/2023
If ESDR, Date			
Final Approval Date			
Recordation Date			

Revised 2-2019

RECEIVED
APR 03 2023
TOWN OF EASTON

**Town of Easton**

Engineering, Planning and Zoning

14 South Harrison Street, Easton, MD 21601

Supplemental Waiver Request Application

Waiver Request TypeSidewalk ☐Parking Spaces ☐Parking/Aisle Dimension ☐Landscaping & Buffering ☒Signage ☐Other ☐**Project Information**

Address	22, 30, 36, 44 Jowite Street Easton, MD, 21601				
Tax Map	104	Grid	000EA	Parcel	1369, 1370, 1371, 1372
Zoning District	R-7A-PRD	PC Meeting Date	4/20/2023	Historic District	Yes ☐ No ☒
Owner or Agent	Naima Ventures, LLC - Kendrick Daly				
Mailing Address	29760 Standish St, Easton, MD 21601				
Telephone No.	(410) 310-6241	Email	kendrickdaly@naimaventures.com		

Request Details

Please attach a detailed description of the waiver request(s) being made and the justification(s) for requesting said waiver(s).

Naima is requesting a variance to the requirement in section 28-1014.6 B.1.b. for 1 tree/island stating "Trees shall be located within the parking bays so that no more than ten (10) parking spaces form an uninterrupted row." With parking being scarce around Tile Ln, we ask the commission members to waive this requirement for this project to allow the maximum parking possible. The only instance in the project where this occurs is along Tile Ln, a row of 14 continuous spaces is proposed. We ask the 10 continuous space maximum be waived for this project to allow the proposed 14 continuous space layout.

☒ Ordinance Section Supporting Waiver Request.

28-1014.6B.B.1.b.

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


4/13/23
Kendrick Daly

Application No. 2023-0914
PC Meeting Date: 04/20/2023
Application Notification:
Property Posting Date: 04/04/2023
Notice(s) Published: 04/03/2023

RECEIVED
APR 03 2023
TOWN OF EASTON



**SITE DEVELOPMENT
STORMWATER MANAGEMENT ANALYSIS
FOR
NAIMA PHASE 2 INFRASTRUCTURE PLANS
EASTON, MD 21601**

**PREPARED FOR
NAIMA VENTURES, LLC
29760 STANDISH STREET
EASTON, MD 21601**

**PREPARED BY
RAUCH, INC
106 N. HARRISON STREET
EASTON, MD 21601**

FEBRUARY 22, 2023



PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENCED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

2/22/2023

ROBERT D. RAUCH, LICENCE NO. 11024
EXPIRATION DATE 7/24/2024

DATE



Section 1 – Narrative



Site Development Stormwater Management Narrative

The proposed Naima Ventures Phase 2 development is located on 1.464 acres of land that is currently platted as 4 individual parcels, zoned R-7A. There are 0.398 acres of existing impervious surfaces on the lot. 91% of the existing soils are hydrologic Soil Type "C" and 9% of the existing soils are hydrologic soil Type "D". The proposed site plan will require disturbance of all 1.464 acres of the parcel area as well as a small portion of Tile Lane for the installation of a proposed valley gutter. The total disturbance for the project is 1.520 acres.

The proposed development plan will create 0.728 acres of impervious surfaces including rooftops, valley gutter, and sidewalks. Eight, Two-Story Dwellings will be constructed on the four parcels. There will be four, 7-unit dwellings and four, 6-unit dwellings. The proposed parking will be permeable pavement and therefore not counted as an impervious surface.

ESD to the MEP will be met through a combination of 36 planter boxes and 9,105 SF of permeable pavement. The outfall of 20 of these planter boxes will daylight through the curb and into the permeable pavement for secondary treatment. A 4" perforated PVC overflow pipe will be installed in the stone portion of the permeable pavement and connect into the existing yard inlet (EX-I-2) to assist with drainage. The remaining overflow will spill into the proposed valley gutter and drain into the rim of the existing yard inlet (EX-I-2). The remaining 16 outfalls of the planter boxes will enter a proposed storm drain network which will discharge into an proposed storm drain manhole. The connections will be made with watertight wye fittings. The outfalls of both existing structure EX-I-2 and proposed structure SDMH-1 will ultimately share a common discharge point into an existing manhole (STMH 20201) to the West of Jowite. This manhole is our Study Point for the quantity analysis of this project (SP-1). The peak flow of from the 2-year and 10-year storms from the proposed conditions at SP-1 will be less than or equal to existing condition peak flows from the same storm events. All BMP's will be designed to ensure that no flooding will occur during the 100-year storm event. See the attached table comparing the existing and proposed flows.

The attached tables confirm that ESD to the MEP table will be achieved through the implementation of the proposed BMPs and stormwater will be hydraulically handled within the finished site so that peak flows during storm events will be less than the existing conditions peak flows.

Quality Tables:

6-Unit Complex											
Planter Box #	Planter Box Surface Area (SF)	Rooftop Area (SF)	Impervious Area (%)	Total Drainage Area (SF)	Runoff Curve Number	Maryland Grid Coordinate (NAD 83, Northing)	Maryland Grid Coordinate (NAD 83, Easting)	Target P.E. (IN.) (site)	Actual P.E. (IN.) (site)	Target ESDv (FT. ³)	Actual ESDv (FT. ³)
19	55.0	741	93.1	796	97	404081.2772'	1573711.5757'	1.80	1.80	42.0	121.0
20	30.0	333	91.7	363	97	404091.7369'	1573770.8382'	1.80	1.80	19.0	66.0
21	20.0	199	90.9	219	97	404042.1028'	1573715.1585'	1.80	1.80	11.0	43.0
22	80.0	1136	93.4	1216	97	404046.3420'	1573741.5053'	1.80	1.80	64.0	176.0
28	55.0	741	93.1	796	97	403961.5089'	1573704.8881'	1.80	1.80	42.0	121.0
29	30.0	333	91.7	363	97	403971.1773'	1573762.4939'	1.80	1.80	19.0	66.0
30	20.0	199	90.9	219	97	403921.7478'	1573708.5262'	1.80	1.80	11.0	43.0
31	80.0	1136	93.4	1216	97	403924.6484'	1573735.0964'	1.80	1.80	64.0	176.0
32	20.0	199	90.9	219	97	403908.4791'	1573720.5040'	1.80	1.80	11.0	43.0
33	80.0	1136	93.4	1216	97	403909.2973'	1573748.4138'	1.80	1.80	64.0	176.0
34	55.0	741	93.1	796	97	403870.0653'	1573720.8004'	1.80	1.80	42.0	121.0
35	30.0	333	91.7	363	97	403864.6344'	1573777.6129'	1.80	1.80	19.0	66.0
46	20.0	199	90.9	219	97	403729.9716'	1573729.2186'	1.80	1.80	11.0	43.0
47	80.0	1136	93.4	1216	97	403730.1204'	1573755.4910'	1.80	1.80	64.0	176.0
48	55.0	741	93.1	796	97	403690.2117'	1573728.1031'	1.80	1.80	42.0	121.0
49	30.0	333	91.7	363	97	403685.6750'	1573786.4532'	1.80	1.80	19.0	66.0

7-Unit Complex											
Planter Box #	Planter Box Surface Area (SF)	Rooftop Area (SF)	Impervious Area (%)	Total Drainage Area (SF)	Runoff Curve Number	Maryland Grid Coordinate (NAD 83, Northing)	Maryland Grid Coordinate (NAD 83, Easting)	Target P.E. (IN.)	Actual P.E. (IN.)	Target ESDv (FT. ³)	Actual ESDv (FT. ³)
23	50.0	648	92.8	698	97	404026.8260'	1573703.9065'	1.80	1.80	37	110.0
24	40.0	547	93.2	587	97	404027.8672'	1573758.8330'	1.80	1.80	31	88.0
25	40.0	550	93.2	590	97	404008.5798'	1573762.2664'	1.80	1.80	31	88.0
26	70.0	1025	93.6	1095	97	403982.0568'	1573700.5829'	1.80	1.80	57	154.0
27	30.0	322	91.5	352	97	403992.0377'	1573778.5777'	1.80	1.80	18	66.0
36	50.0	648	92.8	698	97	403848.2226'	1573712.1768'	1.80	1.80	37	110.0
37	40.0	547	93.2	587	97	403849.8588'	1573766.8800'	1.80	1.80	31	88.0
38	40.0	550	93.2	590	97	403830.5962'	1573770.0058'	1.80	1.80	31	88.0
39	70.0	1025	93.6	1095	97	403802.5949'	1573709.8764'	1.80	1.80	57	154.0
40	30.0	322	91.5	352	97	403813.0814'	1573786.4609'	1.80	1.80	18	66.0
41	70.0	1025	93.6	1095	97	403787.4578'	1573710.1707'	1.80	1.80	57	154.0
42	30.0	322	91.5	352	97	403786.6397'	1573787.4994'	1.80	1.80	18	66.0
43	40.0	550	93.2	590	97	403765.9380'	1573772.6876'	1.80	1.80	31	88.0
44	50.0	648	92.8	698	97	403741.7668'	1573717.4634'	1.80	1.80	37	110.0
45	40.0	547	93.2	587	97	403745.8573'	1573771.4223'	1.80	1.80	31	88.0
50	50.0	648	92.8	698	97	403666.9547'	1573718.2061'	1.80	1.80	37	110.0
51	40.0	547	93.2	587	97	403668.7397'	1573773.9512'	1.80	1.80	31	88.0
52	40.0	550	93.2	590	97	403648.8078'	1573777.0771'	1.80	1.80	31	88.0
53	70.0	1025	93.6	1095	97	403623.8441'	1573717.2444'	1.80	1.80	57	154.0
54	30.0	322	91.5	352	97	403630.3145'	1573794.5731'	1.80	1.80	18	66.0

Permeable Pavement										
Name	Permeable Pavement Surface Area (SF)	Impervious Area (%)	Total Drainage Area (SF)	Runoff Curve Number	Maryland Grid Coordinate (NAD 83, Northing)	Maryland Grid Coordinate (NAD 83, Easting)	Target P.E. (IN.)	Actual P.E. (IN.)	Target ESDv (FT. ³)	Actual ESDv (FT. ³)
PA #2	1172	75.6	3000	92	404067.1155'	1573799.5958'	1.8	0.86	329	157
PA #3	903	54.7	4390	87	404009.6556'	1573801.0577'	1.8	0.61	357	121
PA #4	1097	57.3	4540	88	403940.9959'	1573804.9561'	1.8	0.69	385	147
PA #5	2333	73.8	6269	92	403853.6221'	1573808.3847'	1.8	0.84	672	313
PA #6	3085	73.6	8366	92	403717.6621'	1573813.2639'	1.8	0.83	894	413
PA #7	387	70.9	1133	91	403631.2980'	1573817.6562'	1.8	0.8	117	52

Quantity Table:

STORM	2-YR	10-YR	100-YR
EXISTING	3.33	6.04	9.32
PROPOSED	2.83	4.61	6.24
DELTA	-0.5	-1.43	-3.08



Section 2 – ESD Calculation Spreadsheets

Project Name:	Naima - Phase 2							
Date:	16-Jan-23							
	data input cells							
	calculation cells							
Step 1: Complete ESD Implementation Checklist								
<i>Check all of the Following ESD Practices That Were Implemented at Site</i>				<i>Yes - No - N/A</i>				
Environmental Mapping Was Conducted at Site Prior to Layout				YES				
Natural Areas Were Conserved (e.g., forests, wetlands, steep slopes, floodplains)				YES				
Stream, Wetland and Shoreline Buffers Were Reserved				YES				
Disturbance of Permeable Soils Was Minimized				YES				
Natural Flow Paths Were Maintained Across the Site				YES				
Building Layout Was Fingerprinted to Reduce Clearing and Grading at Site				YES				
Site Grading Promoted Sheetflow From Impervious Areas to Pervious Ones				YES				
Site Design Was Evaluated to Reduce Creation of Needless Impervious Cover				YES				
Site Design Was Evaluated to Maximize Disconnection of Impervious Cover				YES				
Site Design Was Evaluated to Identify Potential Hotspot Generating Area for Stormwater Treatment				YES				
Erosion and Sediment Control Practices and Post Construction Stormwater Management Practices Were Integrated into a Comprehensive Plan				YES				
Tree Planting Was Used at the Site to Convert Turf Areas into Forest				YES				
Step 2: Calculate Site Imperviousness and Water Quality Volume, WQv (for redevelopment)								
defined as A single tract, lot, parcel of land or combination of tracts, lots parcels of land that are in one ownership or are contiguous and in diverse ownership where development is to be performed as part of a unit, subdivision or project. See page 5.117 in the design handbook. This means that a project may be classed as redevelopment even if the LOD is less than 40% impervious								
Total SITE Area, A (acres or sq-ft)	1.323							
Existing SITE Impervious Area (acres or sq-ft)	0.398							
SITE percent impervious	30%							
Development Category (for ESD)	New Development							
LOD Area, A (acres)	1.52							
Existing LOD Impervious Surface Area (acres)	0.45							
Proposed LOD Impervious Surface Area (acres)	0.73							
Rainfall Depth, P (in)	1.0							
Existing LOD Imperviousness, I _{pre}	30%							
Proposed LOD Imperviousness, I _{post}	48%							
<i>Water Quality Calculation for Redevelopment Only</i>								
Required Treatment Area (acres)	0.000							
Runoff Coefficient, Rv	0.95							

Water Quality Volume, WQv (cf)	0							
Step 4: Calculate Environmental Site Design (ESD) Rainfall Target, P _E								
% Soil Type A	0%		RCN Soil Type A	67.75				
% Soil Type B	0%		RCN Soil Type B	79.17				
% Soil Type C	91%		RCN Soil Type C	85.58				
% Soil Type D	9%		RCN Soil Type D	88.58				
Target Pre-Developed Condition, RCN _{woods}	70.61595	Post-Developed Condition, RCN	85.85					
Soil Type A ESD Rainfall Target, P _E (in)	0.00							
Soil Type B ESD Rainfall Target, P _E (in)	0.00							
Soil Type C ESD Rainfall Target, P _E (in)	1.80							
Soil Type D ESD Rainfall Target, P _E (in)	1.80		Runoff depths for H and H analysis					
	1yr		2yr	10yr	100yr			
Maximum P _E (in)	2.7		3.4	5.3	7.6			
Site ESD Rainfall Target, P _E (in)		1.80						
ESD Runoff Depth, Q _E (in)		0.87						
ESD Runoff Volume, ESDv (cf)		4,779						
Total Treatment Volume (cf)		4,779						

Step 5: Select Nonstructural Practices to Treat the ESD Rainfall Target							
Step 6: Select Micro-Scale Practices to Treat the ESD Rainfall Target							
Micro-Scale Practices	P _E Credit Description	Contributing Drainage Area (sf)	Direct ESDv Received by Practice (cf)	WQv or ESDv from Up- Gradient Practices (cf)	WQv or ESDv credit (cf)	Runoff Volume Remaining (cf)	
Pemeable Pavement (C Soils)	ESDv credit is based on subbase thickness	27,698	3,957	N/A	1,203	2,754	
Micro-Bioretenention 1	ESDv credit is based on design storage volume	22,994	4,915	4915	3,652	1,263	

Step 7: Check for ESDv to MEP compliance and Revise Site If Necessary								
	Drainage Area Treated (sf)	50,692			WQv or ESDv Treated (cf) using ESD practices	4,855		
					P _E achieved (inches)	1.83		
					Entire ESDv Treated Through ESD Practices?	YES		
					ESDv Remaining? (cf)	0		
					If ESDV is not fully treated, is ESD to MEP achieved?	YES		
					Redevelopment WQv Requirements Met Through ESD Practices?	N/A		
<i>New Development Water Quality Volume Requirements</i>					WQv Remaining? (cf)	0		
Required Treatment Area (acres)	1.52							
Runoff Coefficient, Rv	0.48							
Water Quality Volume, WQv (cf)	2,655				New Development WQv Requirements Met Through ESD Practices?	YES		
					WQv Remaining? (cf)	0		

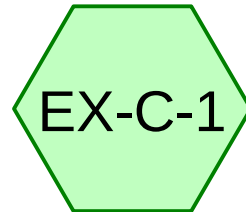
M-6

M-6	Direct drainage				Indirect drainage										
	Contributing Drainage Area (sf)	% Impervious Cover ----- RV	To fully treat sub area ----- PE required ----- WQV required	Max available WQv or ESDv from CDA (cf)	Area of upstream catchment (sf)	WQv or ESDv from Up- Gradient Practices (cf)	Total catchment area ----- Total ESDv to practice				Bed area % of direct catchment area	WQV or ESDv provided (cf)	Runoff Volume Remainin g (cf)	Down-Gradient Practice and Row	SOIL TYPE
Micro-Scale Practices		100%	1.80				22,994	Surface Area (sf)	Ponding Depth (ft)	Media Depth (ft)					
Planter Boxes	22,994	0.95	3277	4,915	0	0	4915	1,660	1	3	7.2%	3,652	1,263		C/D
Total	22,994			4,915		0						3,652	1,263		

A-2

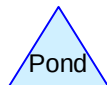
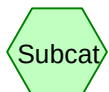
Micro-Scale Practices	Direct drainage				Practice Specific Parameter(s)		WQV or ESDv provided (cf)	Runoff Volume Remaining (cf)	Down-Gradient Practice and Row
	Contributing Drainage Area (sf)	% Impervious Cover ----- RV	To fully treat sub area ----- PE required ----- WQV required	Max available WQv or ESDv from CDA (cf)					
Pemeable Pavement (C Soils)	27,698	65%	1.80	3,957	Pavement Area (sf)	Subbase Thickness (in)	1,203	2,754	
		0.635	2638		8977	9			
Total	27,698			3,957			1,203	2,754	

Section 3 – Pre-Development Quantity Calculations



SDMH 20201 - At
Intersection of Jowite
and Moton

Existing Catchment for
Phase 2 LOD



Routing Diagram for Naima - Phase 2 - Existing HydroCAD
Prepared by RAUCH inc., Printed 02/22/23
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Naima - Phase 2 - Existing HydroCAD

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

Prepared by RAUCH inc.

Printed 02/22/23

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Time span=0.00-72.00 hrs, dt=0.02 hrs, 3601 points

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment EX-C-1: Existing Catchment for Runoff Area=65,850 sf 29.48% Impervious Runoff Depth=2.09"
Flow Length=730' Tc=11.0 min CN=87 Runoff=3.33 cfs 0.264 af

Link SP-1: SDMH 20201 - At Intersection of Jowite and Moton

Inflow=3.33 cfs 0.264 af

Primary=3.33 cfs 0.264 af

Total Runoff Area = 1.512 ac Runoff Volume = 0.264 af Average Runoff Depth = 2.09"
70.52% Pervious = 1.066 ac 29.48% Impervious = 0.446 ac

Naima - Phase 2 - Existing HydroCAD

Prepared by RAUCH inc.

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

Printed 02/22/23

Summary for Subcatchment EX-C-1: Existing Catchment for Phase 2 LOD

Runoff = 3.33 cfs @ 12.04 hrs, Volume= 0.264 af, Depth= 2.09"

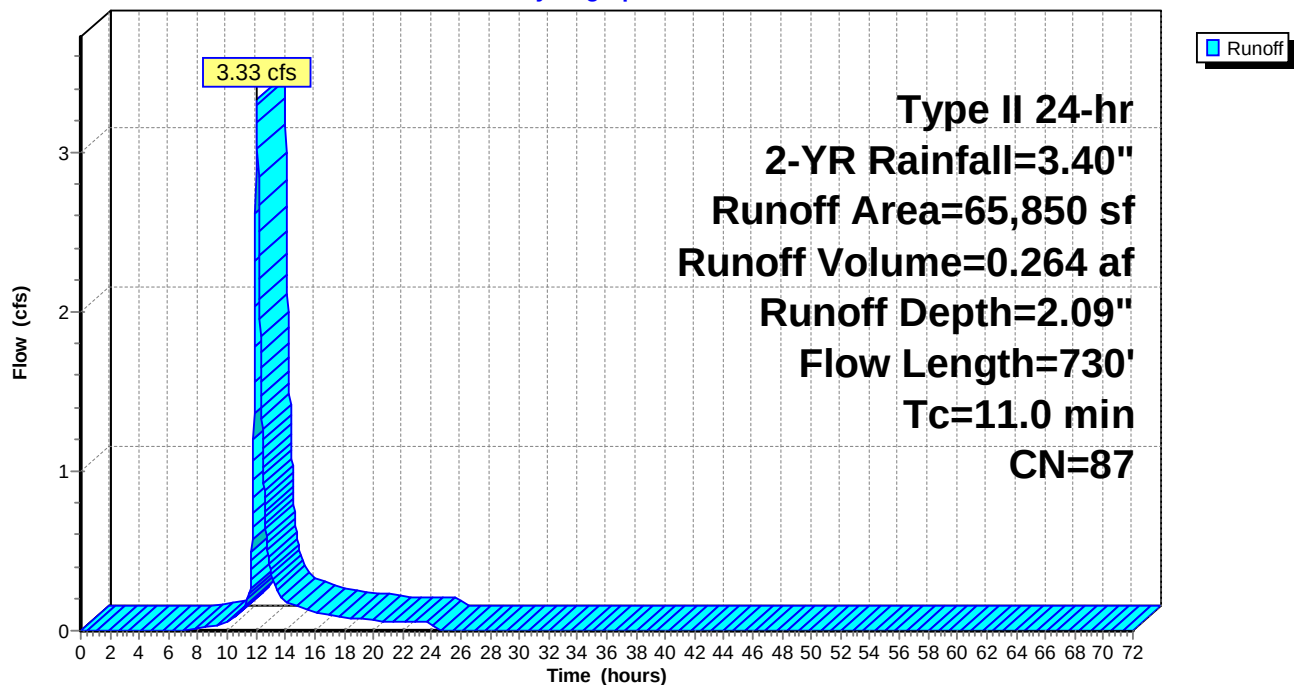
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 2-YR Rainfall=3.40"

Area (sf)	CN	Description
1,814	98	Paved parking, HSG D
17,598	98	Paved parking, HSG C
4,012	86	Woods/grass comb., Poor, HSG D
42,426	82	Woods/grass comb., Poor, HSG C
65,850	87	Weighted Average
46,438		70.52% Pervious Area
19,412		29.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.9	64	0.0429	0.22		Sheet Flow, Yard Grass: Short n= 0.150 P2= 3.40"
5.6	496	0.0053	1.48		Shallow Concentrated Flow, Jowite Gutter Pan Paved Kv= 20.3 fps
0.5	170	0.0087	5.80	7.12	Pipe Channel, Pipe from CI on West Side of Jowite to SDMH-20201 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.011 Concrete pipe, straight & clean
11.0	730	Total			

Subcatchment EX-C-1: Existing Catchment for Phase 2 LOD

Hydrograph

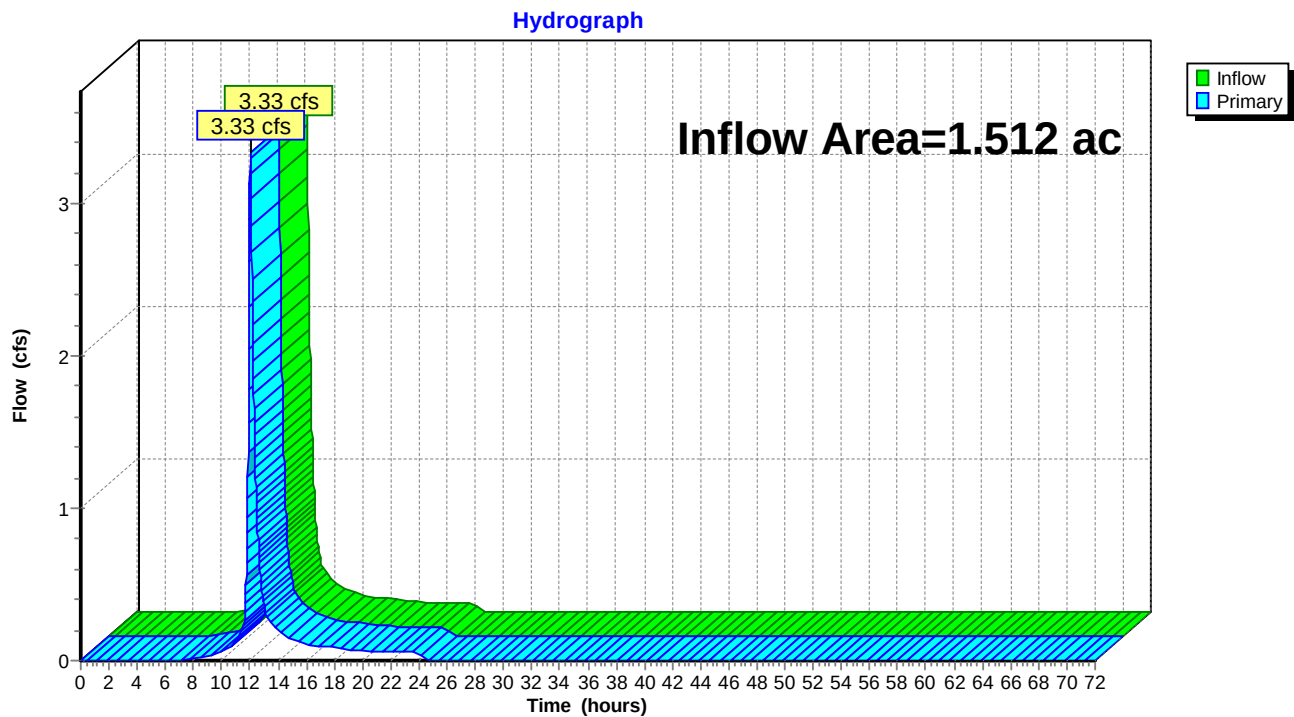


Summary for Link SP-1: SDMH 20201 - At Intersection of Jowite and Moton

Inflow Area = 1.512 ac, 29.48% Impervious, Inflow Depth = 2.09" for 2-YR event
 Inflow = 3.33 cfs @ 12.04 hrs, Volume= 0.264 af
 Primary = 3.33 cfs @ 12.04 hrs, Volume= 0.264 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs

Link SP-1: SDMH 20201 - At Intersection of Jowite and Moton



Naima - Phase 2 - Existing HydroCAD

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

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Time span=0.00-72.00 hrs, dt=0.02 hrs, 3601 points

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment EX-C-1: Existing Catchment for Runoff Area=65,850 sf 29.48% Impervious Runoff Depth=3.85"
Flow Length=730' Tc=11.0 min CN=87 Runoff=6.04 cfs 0.485 af

Link SP-1: SDMH 20201 - At Intersection of Jowite and Moton

Inflow=6.04 cfs 0.485 af

Primary=6.04 cfs 0.485 af

Total Runoff Area = 1.512 ac Runoff Volume = 0.485 af Average Runoff Depth = 3.85"
70.52% Pervious = 1.066 ac 29.48% Impervious = 0.446 ac

Naima - Phase 2 - Existing HydroCAD

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

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Summary for Subcatchment EX-C-1: Existing Catchment for Phase 2 LOD

Runoff = 6.04 cfs @ 12.04 hrs, Volume= 0.485 af, Depth= 3.85"

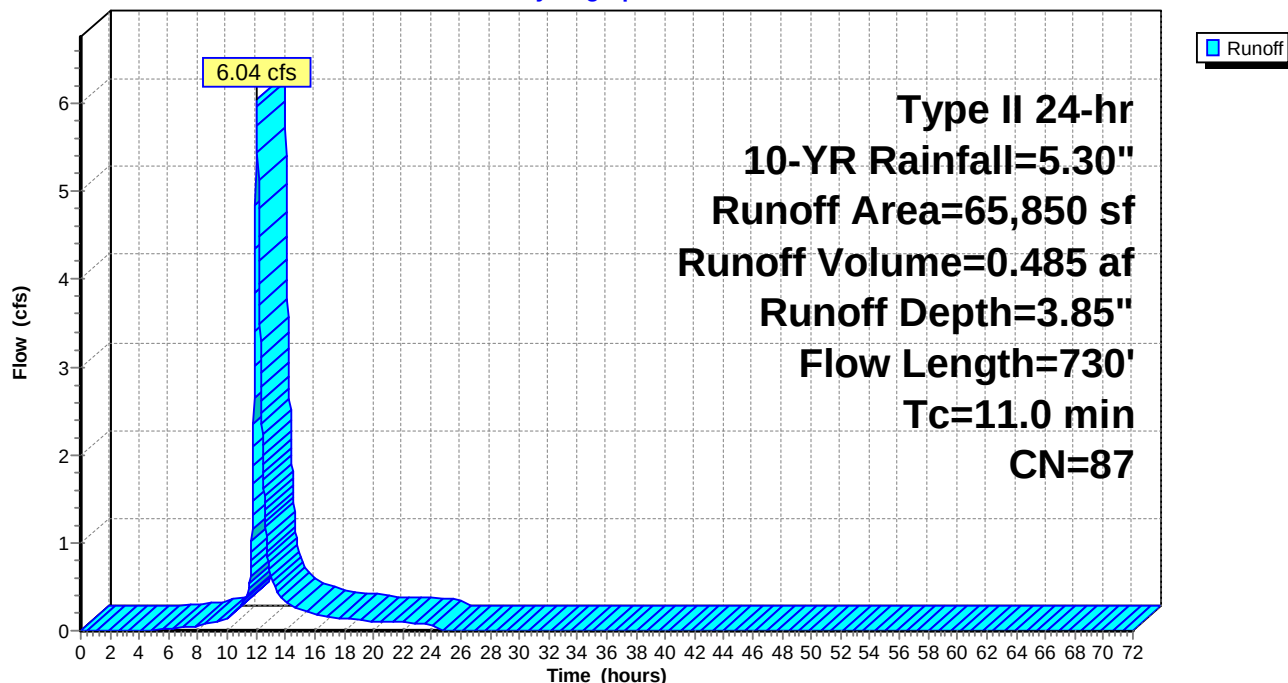
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10-YR Rainfall=5.30"

Area (sf)	CN	Description
1,814	98	Paved parking, HSG D
17,598	98	Paved parking, HSG C
4,012	86	Woods/grass comb., Poor, HSG D
42,426	82	Woods/grass comb., Poor, HSG C
65,850	87	Weighted Average
46,438		70.52% Pervious Area
19,412		29.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.9	64	0.0429	0.22		Sheet Flow, Yard Grass: Short n= 0.150 P2= 3.40"
5.6	496	0.0053	1.48		Shallow Concentrated Flow, Jowite Gutter Pan Paved Kv= 20.3 fps
0.5	170	0.0087	5.80	7.12	Pipe Channel, Pipe from CI on West Side of Jowite to SDMH-20201 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.011 Concrete pipe, straight & clean
11.0	730	Total			

Subcatchment EX-C-1: Existing Catchment for Phase 2 LOD

Hydrograph

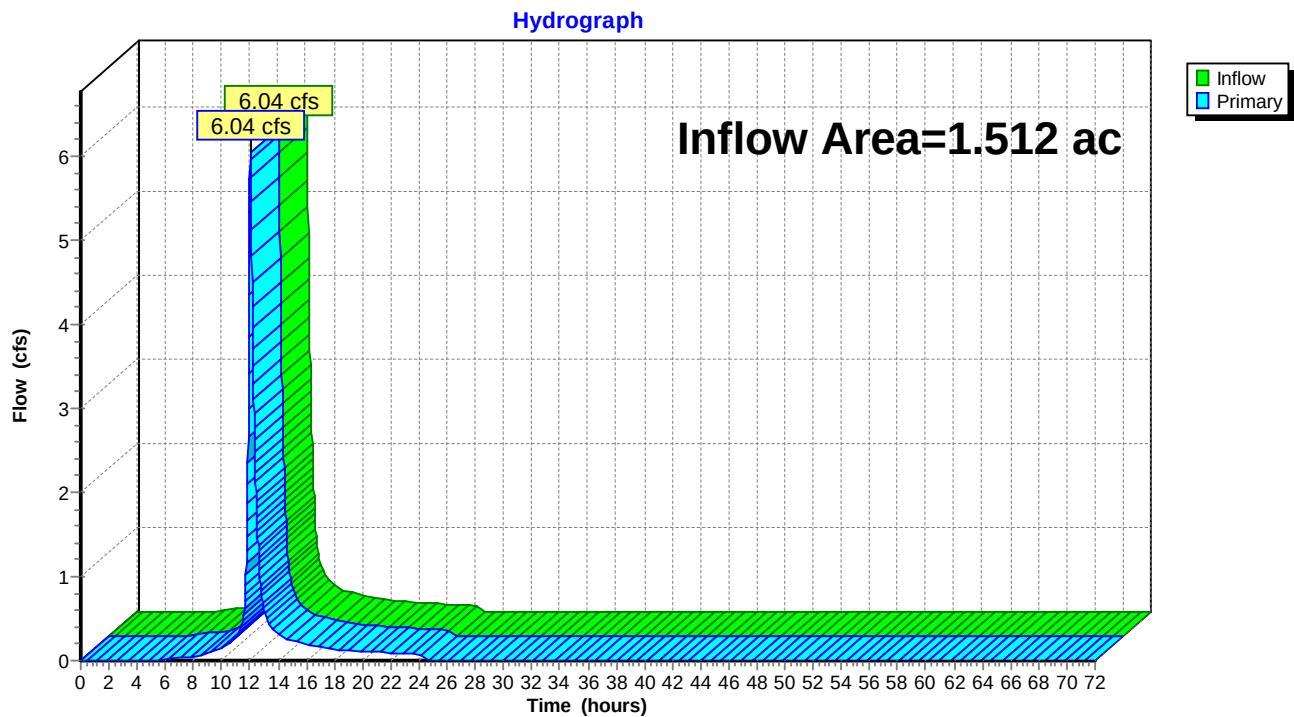


Summary for Link SP-1: SDMH 20201 - At Intersection of Jowite and Moton

Inflow Area = 1.512 ac, 29.48% Impervious, Inflow Depth = 3.85" for 10-YR event
 Inflow = 6.04 cfs @ 12.04 hrs, Volume= 0.485 af
 Primary = 6.04 cfs @ 12.04 hrs, Volume= 0.485 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs

Link SP-1: SDMH 20201 - At Intersection of Jowite and Moton



Naima - Phase 2 - Existing HydroCAD

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

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Time span=0.00-72.00 hrs, dt=0.02 hrs, 3601 points

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment EX-C-1: Existing Catchment for Runoff Area=65,850 sf 29.48% Impervious Runoff Depth=6.06"
Flow Length=730' Tc=11.0 min CN=87 Runoff=9.32 cfs 0.764 af

Link SP-1: SDMH 20201 - At Intersection of Jowite and Moton

Inflow=9.32 cfs 0.764 af

Primary=9.32 cfs 0.764 af

Total Runoff Area = 1.512 ac Runoff Volume = 0.764 af Average Runoff Depth = 6.06"
70.52% Pervious = 1.066 ac 29.48% Impervious = 0.446 ac

Naima - Phase 2 - Existing HydroCAD

Prepared by RAUCH inc.

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

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Summary for Subcatchment EX-C-1: Existing Catchment for Phase 2 LOD

Runoff = 9.32 cfs @ 12.04 hrs, Volume= 0.764 af, Depth= 6.06"

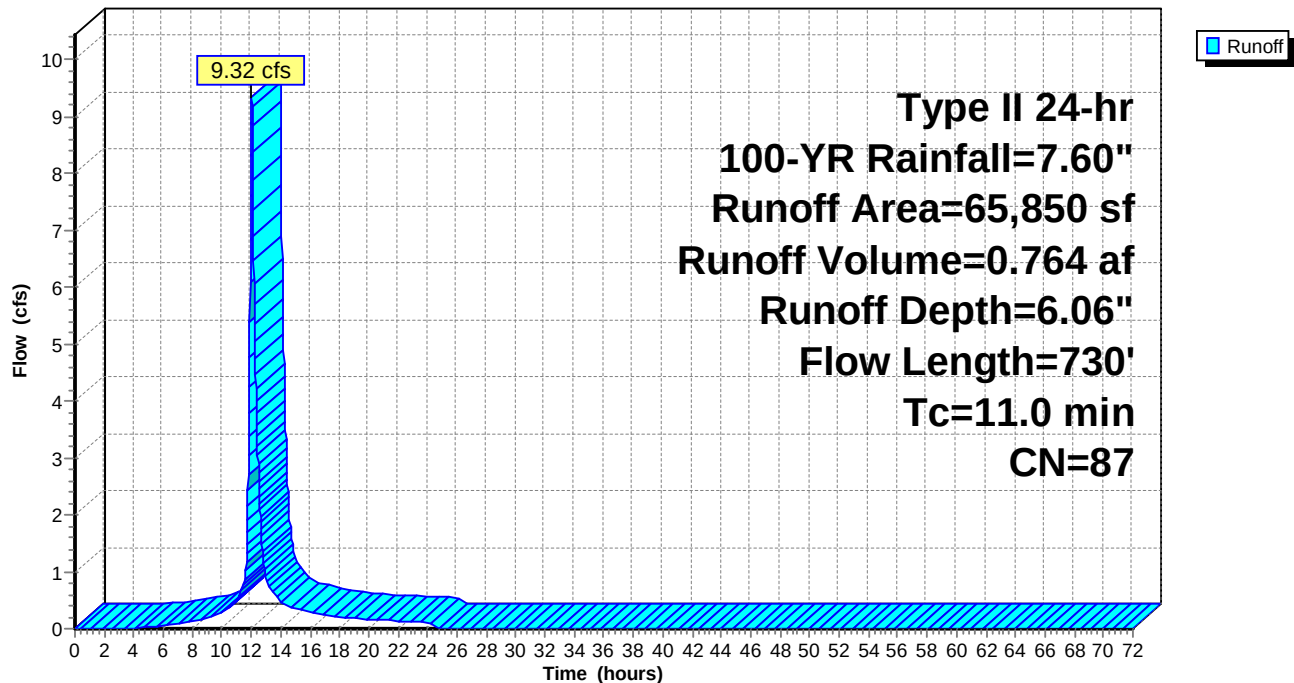
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-YR Rainfall=7.60"

Area (sf)	CN	Description
1,814	98	Paved parking, HSG D
17,598	98	Paved parking, HSG C
4,012	86	Woods/grass comb., Poor, HSG D
42,426	82	Woods/grass comb., Poor, HSG C
65,850	87	Weighted Average
46,438		70.52% Pervious Area
19,412		29.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.9	64	0.0429	0.22		Sheet Flow, Yard Grass: Short n= 0.150 P2= 3.40"
5.6	496	0.0053	1.48		Shallow Concentrated Flow, Jowite Gutter Pan Paved Kv= 20.3 fps
0.5	170	0.0087	5.80	7.12	Pipe Channel, Pipe from CI on West Side of Jowite to SDMH-20201 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.011 Concrete pipe, straight & clean
11.0	730	Total			

Subcatchment EX-C-1: Existing Catchment for Phase 2 LOD

Hydrograph

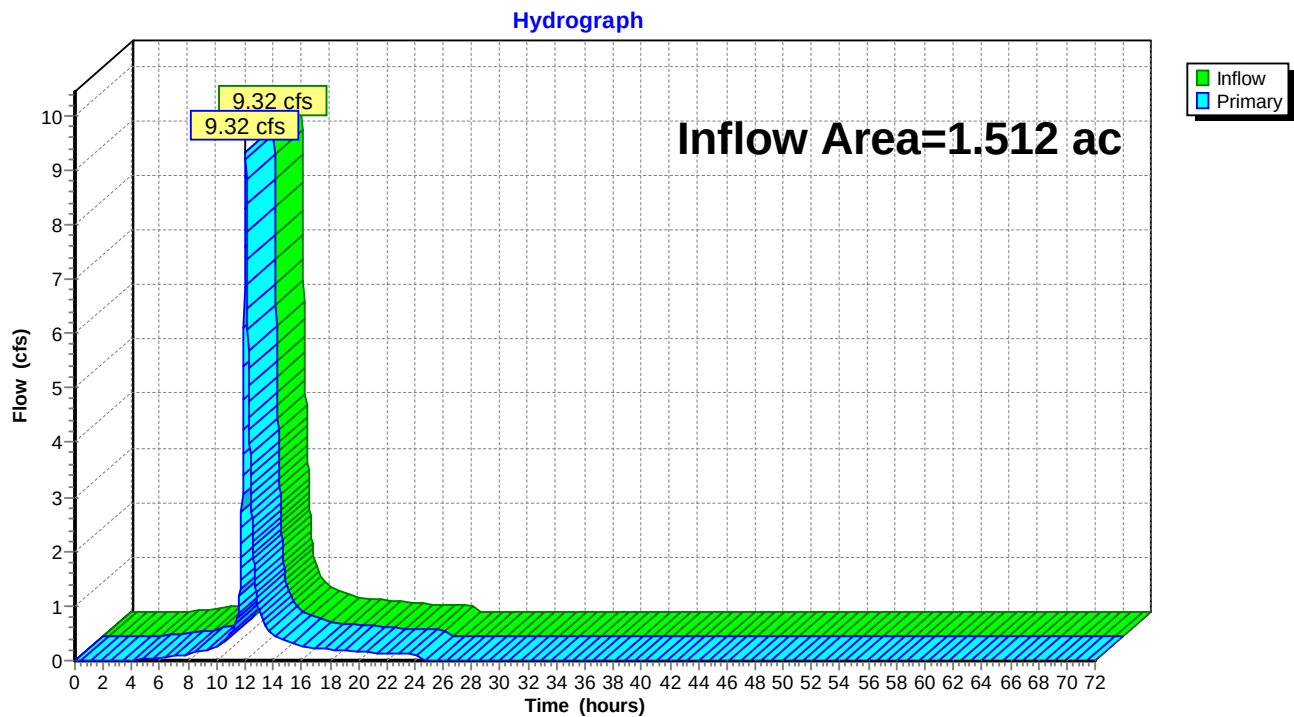


Summary for Link SP-1: SDMH 20201 - At Intersection of Jowite and Moton

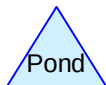
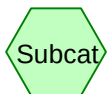
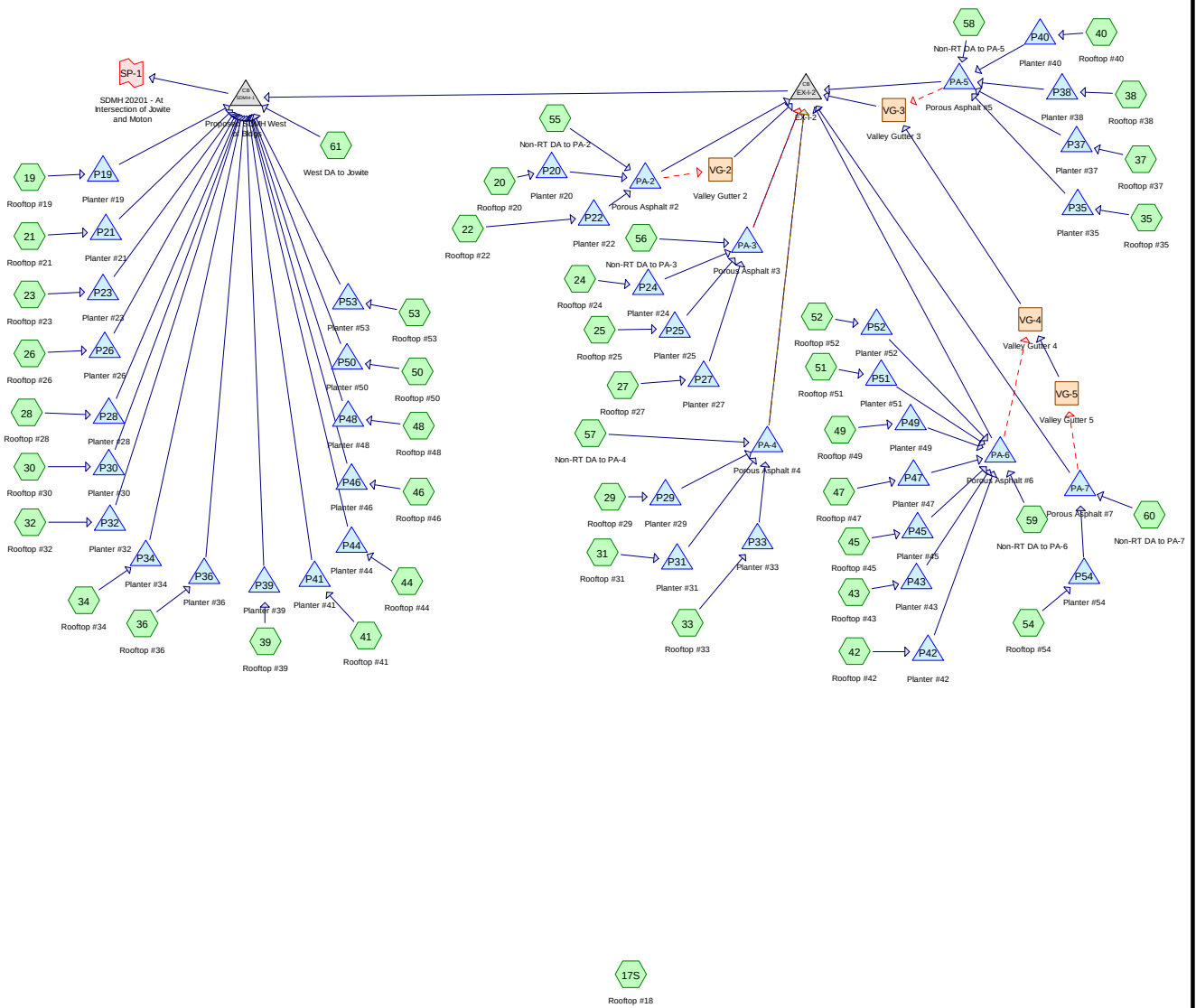
Inflow Area = 1.512 ac, 29.48% Impervious, Inflow Depth = 6.06" for 100-YR event
 Inflow = 9.32 cfs @ 12.04 hrs, Volume= 0.764 af
 Primary = 9.32 cfs @ 12.04 hrs, Volume= 0.764 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs

Link SP-1: SDMH 20201 - At Intersection of Jowite and Moton



Section 4 – Post-Development Quantity Calculations



Routing Diagram for Naima - Phase 2 - Proposed HydroCAD
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Naima - Phase 2 - Proposed HydroCAD

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

Prepared by RAUCH inc.

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Time span=0.00-72.00 hrs, dt=0.02 hrs, 3601 points x 2
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 17S: Rooftop #18	Runoff Area=771 sf 96.11% Impervious Runoff Depth=3.06"
Flow Length=37' Slope=0.4167 'l' Tc=0.2 min CN=97	Runoff=0.10 cfs 0.005 af
Subcatchment 19: Rooftop #19	Runoff Area=796 sf 93.09% Impervious Runoff Depth=2.95"
Flow Length=37' Slope=0.4167 'l' Tc=0.2 min CN=96	Runoff=0.10 cfs 0.004 af
Subcatchment 20: Rooftop #20	Runoff Area=363 sf 91.74% Impervious Runoff Depth=2.95"
Flow Length=37' Slope=0.4167 'l' Tc=0.2 min CN=96	Runoff=0.05 cfs 0.002 af
Subcatchment 21: Rooftop #21	Runoff Area=219 sf 90.87% Impervious Runoff Depth=2.95"
Flow Length=37' Slope=0.4167 'l' Tc=0.2 min CN=96	Runoff=0.03 cfs 0.001 af
Subcatchment 22: Rooftop #22	Runoff Area=1,216 sf 93.42% Impervious Runoff Depth=2.95"
Flow Length=37' Slope=0.4167 'l' Tc=0.2 min CN=96	Runoff=0.15 cfs 0.007 af
Subcatchment 23: Rooftop #23	Runoff Area=698 sf 92.84% Impervious Runoff Depth=2.95"
Flow Length=37' Slope=0.4167 'l' Tc=0.2 min CN=96	Runoff=0.09 cfs 0.004 af
Subcatchment 24: Rooftop #24	Runoff Area=587 sf 93.19% Impervious Runoff Depth=2.95"
Flow Length=37' Slope=0.4167 'l' Tc=0.2 min CN=96	Runoff=0.07 cfs 0.003 af
Subcatchment 25: Rooftop #25	Runoff Area=590 sf 93.22% Impervious Runoff Depth=2.95"
Flow Length=37' Slope=0.4167 'l' Tc=0.2 min CN=96	Runoff=0.07 cfs 0.003 af
Subcatchment 26: Rooftop #26	Runoff Area=1,095 sf 93.61% Impervious Runoff Depth=2.95"
Flow Length=37' Slope=0.4167 'l' Tc=0.2 min CN=96	Runoff=0.14 cfs 0.006 af
Subcatchment 27: Rooftop #27	Runoff Area=352 sf 91.48% Impervious Runoff Depth=2.95"
Flow Length=37' Slope=0.4167 'l' Tc=0.2 min CN=96	Runoff=0.04 cfs 0.002 af
Subcatchment 28: Rooftop #28	Runoff Area=796 sf 93.09% Impervious Runoff Depth=2.95"
Flow Length=37' Slope=0.4167 'l' Tc=0.2 min CN=96	Runoff=0.10 cfs 0.004 af
Subcatchment 29: Rooftop #29	Runoff Area=363 sf 91.74% Impervious Runoff Depth=2.95"
Flow Length=37' Slope=0.4167 'l' Tc=0.2 min CN=96	Runoff=0.05 cfs 0.002 af
Subcatchment 30: Rooftop #30	Runoff Area=219 sf 90.87% Impervious Runoff Depth=2.95"
Flow Length=37' Slope=0.4167 'l' Tc=0.2 min CN=96	Runoff=0.03 cfs 0.001 af
Subcatchment 31: Rooftop #31	Runoff Area=1,216 sf 93.42% Impervious Runoff Depth=2.95"
Flow Length=37' Slope=0.4167 'l' Tc=0.2 min CN=96	Runoff=0.15 cfs 0.007 af
Subcatchment 32: Rooftop #32	Runoff Area=219 sf 90.87% Impervious Runoff Depth=2.95"
Flow Length=37' Slope=0.4167 'l' Tc=0.2 min CN=96	Runoff=0.03 cfs 0.001 af
Subcatchment 33: Rooftop #33	Runoff Area=1,216 sf 93.42% Impervious Runoff Depth=2.95"
Flow Length=37' Slope=0.4167 'l' Tc=0.2 min CN=96	Runoff=0.15 cfs 0.007 af

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Subcatchment 34: Rooftop #34	Runoff Area=796 sf 93.09% Impervious Runoff Depth=2.95"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.10 cfs 0.004 af
Subcatchment 35: Rooftop #35	Runoff Area=363 sf 91.74% Impervious Runoff Depth=2.95"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.05 cfs 0.002 af
Subcatchment 36: Rooftop #36	Runoff Area=698 sf 92.84% Impervious Runoff Depth=2.95"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.09 cfs 0.004 af
Subcatchment 37: Rooftop #37	Runoff Area=587 sf 93.19% Impervious Runoff Depth=2.95"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.07 cfs 0.003 af
Subcatchment 38: Rooftop #38	Runoff Area=590 sf 93.22% Impervious Runoff Depth=2.95"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.07 cfs 0.003 af
Subcatchment 39: Rooftop #39	Runoff Area=1,095 sf 93.61% Impervious Runoff Depth=2.95"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.14 cfs 0.006 af
Subcatchment 40: Rooftop #40	Runoff Area=352 sf 91.48% Impervious Runoff Depth=2.95"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.04 cfs 0.002 af
Subcatchment 41: Rooftop #41	Runoff Area=1,095 sf 93.61% Impervious Runoff Depth=2.95"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.14 cfs 0.006 af
Subcatchment 42: Rooftop #42	Runoff Area=352 sf 91.48% Impervious Runoff Depth=2.95"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.04 cfs 0.002 af
Subcatchment 43: Rooftop #43	Runoff Area=590 sf 93.22% Impervious Runoff Depth=2.95"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.07 cfs 0.003 af
Subcatchment 44: Rooftop #44	Runoff Area=698 sf 92.84% Impervious Runoff Depth=2.95"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.09 cfs 0.004 af
Subcatchment 45: Rooftop #45	Runoff Area=587 sf 93.19% Impervious Runoff Depth=2.95"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.07 cfs 0.003 af
Subcatchment 46: Rooftop #46	Runoff Area=219 sf 90.87% Impervious Runoff Depth=2.95"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.03 cfs 0.001 af
Subcatchment 47: Rooftop #47	Runoff Area=1,216 sf 93.42% Impervious Runoff Depth=2.95"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.15 cfs 0.007 af
Subcatchment 48: Rooftop #48	Runoff Area=796 sf 93.09% Impervious Runoff Depth=2.95"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.10 cfs 0.004 af
Subcatchment 49: Rooftop #49	Runoff Area=363 sf 91.74% Impervious Runoff Depth=2.95"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.05 cfs 0.002 af
Subcatchment 50: Rooftop #50	Runoff Area=698 sf 92.84% Impervious Runoff Depth=2.95"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.09 cfs 0.004 af

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

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Subcatchment 51: Rooftop #51	Runoff Area=587 sf 93.19% Impervious Runoff Depth=2.95" Flow Length=37' Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.07 cfs 0.003 af
Subcatchment 52: Rooftop #52	Runoff Area=590 sf 93.22% Impervious Runoff Depth=2.95" Flow Length=37' Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.07 cfs 0.003 af
Subcatchment 53: Rooftop #53	Runoff Area=1,095 sf 93.61% Impervious Runoff Depth=2.95" Flow Length=37' Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.14 cfs 0.006 af
Subcatchment 54: Rooftop #54	Runoff Area=352 sf 91.48% Impervious Runoff Depth=2.95" Flow Length=37' Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.04 cfs 0.002 af
Subcatchment 55: Non-RT DA to PA-2	Runoff Area=3,000 sf 75.57% Impervious Runoff Depth=2.54" Flow Length=43' Slope=0.0100 '/' Tc=6.4 min CN=92 Runoff=0.23 cfs 0.015 af
Subcatchment 56: Non-RT DA to PA-3	Runoff Area=4,390 sf 54.69% Impervious Runoff Depth=2.09" Flow Length=55' Slope=0.0100 '/' Tc=7.8 min CN=87 Runoff=0.26 cfs 0.018 af
Subcatchment 57: Non-RT DA to PA-4	Runoff Area=4,540 sf 57.29% Impervious Runoff Depth=2.18" Flow Length=62' Slope=0.0100 '/' Tc=8.6 min CN=88 Runoff=0.27 cfs 0.019 af
Subcatchment 58: Non-RT DA to PA-5	Runoff Area=6,269 sf 73.76% Impervious Runoff Depth=2.54" Flow Length=52' Slope=0.0100 '/' Tc=7.4 min CN=92 Runoff=0.46 cfs 0.030 af
Subcatchment 59: Non-RT DA to PA-6	Runoff Area=8,366 sf 73.55% Impervious Runoff Depth=2.54" Flow Length=50' Slope=0.0100 '/' Tc=7.2 min CN=92 Runoff=0.62 cfs 0.041 af
Subcatchment 60: Non-RT DA to PA-7	Runoff Area=1,133 sf 70.87% Impervious Runoff Depth=2.45" Flow Length=48' Slope=0.0100 '/' Tc=7.0 min CN=91 Runoff=0.08 cfs 0.005 af
Subcatchment 61: West DA to Jowite	Runoff Area=14,486 sf 0.00% Impervious Runoff Depth=1.17" Flow Length=721' Tc=13.9 min CN=74 Runoff=0.34 cfs 0.032 af
Reach VG-2: Valley Gutter 2	Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.011 L=57.0' S=0.0061 '/' Capacity=0.14 cfs Outflow=0.00 cfs 0.000 af
Reach VG-3: Valley Gutter 3	Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.011 L=66.0' S=0.0055 '/' Capacity=0.13 cfs Outflow=0.00 cfs 0.000 af
Reach VG-4: Valley Gutter 4	Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.011 L=118.0' S=0.0057 '/' Capacity=0.14 cfs Outflow=0.00 cfs 0.000 af
Reach VG-5: Valley Gutter 5	Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.011 L=152.0' S=0.0103 '/' Capacity=0.18 cfs Outflow=0.00 cfs 0.000 af
Pond EX-I-2: EX-I-2	Peak Elev=13.29' Inflow=1.71 cfs 0.193 af Outflow=1.71 cfs 0.193 af
Pond P19: Planter #19	Peak Elev=13.70' Storage=10 cf Inflow=0.10 cfs 0.004 af 4.0" Round Culvert n=0.012 L=26.8' S=0.0131 '/' Outflow=0.10 cfs 0.004 af

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Pond P20: Planter #20	Peak Elev=15.96' Storage=33 cf Inflow=0.05 cfs 0.002 af 4.0" Round Culvert n=0.012 L=20.1' S=-0.1169 ' / Outflow=0.04 cfs 0.002 af
Pond P21: Planter #21	Peak Elev=13.57' Storage=3 cf Inflow=0.03 cfs 0.001 af 4.0" Round Culvert n=0.012 L=30.2' S=0.0185 ' / Outflow=0.03 cfs 0.001 af
Pond P22: Planter #22	Peak Elev=15.90' Storage=85 cf Inflow=0.15 cfs 0.007 af 4.0" Round Culvert n=0.012 L=59.7' S=-0.0350 ' / Outflow=0.14 cfs 0.007 af
Pond P23: Planter #23	Peak Elev=13.19' Storage=9 cf Inflow=0.09 cfs 0.004 af 4.0" Round Culvert n=0.012 L=20.7' S=0.0068 ' / Outflow=0.08 cfs 0.004 af
Pond P24: Planter #24	Peak Elev=15.66' Storage=47 cf Inflow=0.07 cfs 0.003 af 4.0" Round Culvert n=0.012 L=36.6' S=-0.0683 ' / Outflow=0.07 cfs 0.003 af
Pond P25: Planter #25	Peak Elev=15.53' Storage=45 cf Inflow=0.07 cfs 0.003 af 4.0" Round Culvert n=0.012 L=28.9' S=-0.0820 ' / Outflow=0.07 cfs 0.003 af
Pond P26: Planter #26	Peak Elev=13.27' Storage=15 cf Inflow=0.14 cfs 0.006 af 4.0" Round Culvert n=0.012 L=24.5' S=0.0159 ' / Outflow=0.13 cfs 0.006 af
Pond P27: Planter #27	Peak Elev=15.24' Storage=30 cf Inflow=0.04 cfs 0.002 af 4.0" Round Culvert n=0.012 L=10.8' S=-0.1972 ' / Outflow=0.04 cfs 0.002 af
Pond P28: Planter #28	Peak Elev=13.70' Storage=10 cf Inflow=0.10 cfs 0.004 af 4.0" Round Culvert n=0.012 L=14.3' S=0.0245 ' / Outflow=0.10 cfs 0.004 af
Pond P29: Planter #29	Peak Elev=15.15' Storage=23 cf Inflow=0.05 cfs 0.002 af 4.0" Round Culvert n=0.012 L=32.3' S=-0.0477 ' / Outflow=0.04 cfs 0.002 af
Pond P30: Planter #30	Peak Elev=13.57' Storage=3 cf Inflow=0.03 cfs 0.001 af 4.0" Round Culvert n=0.012 L=18.2' S=0.0088 ' / Outflow=0.03 cfs 0.001 af
Pond P31: Planter #31	Peak Elev=15.60' Storage=75 cf Inflow=0.15 cfs 0.007 af 4.0" Round Culvert n=0.012 L=71.6' S=-0.0246 ' / Outflow=0.14 cfs 0.007 af
Pond P32: Planter #32	Peak Elev=14.07' Storage=3 cf Inflow=0.03 cfs 0.001 af 4.0" Round Culvert n=0.012 L=29.6' S=0.0199 ' / Outflow=0.03 cfs 0.001 af
Pond P33: Planter #33	Peak Elev=15.60' Storage=60 cf Inflow=0.15 cfs 0.007 af 4.0" Round Culvert n=0.012 L=61.0' S=-0.0211 ' / Outflow=0.14 cfs 0.007 af
Pond P34: Planter #34	Peak Elev=14.20' Storage=10 cf Inflow=0.10 cfs 0.004 af 4.0" Round Culvert n=0.012 L=26.1' S=0.0149 ' / Outflow=0.10 cfs 0.004 af
Pond P35: Planter #35	Peak Elev=15.89' Storage=26 cf Inflow=0.05 cfs 0.002 af 4.0" Round Culvert n=0.012 L=31.5' S=-0.0565 ' / Outflow=0.04 cfs 0.002 af
Pond P36: Planter #36	Peak Elev=14.38' Storage=9 cf Inflow=0.09 cfs 0.004 af 4.0" Round Culvert n=0.012 L=20.2' S=0.0248 ' / Outflow=0.08 cfs 0.004 af

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

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Pond P37: Planter #37	Peak Elev=15.94' Storage=32 cf Inflow=0.07 cfs 0.003 af 4.0" Round Culvert n=0.012 L=37.8' S=-0.0418 ' /' Outflow=0.07 cfs 0.003 af
Pond P38: Planter #38	Peak Elev=16.06' Storage=34 cf Inflow=0.07 cfs 0.003 af 4.0" Round Culvert n=0.012 L=28.9' S=-0.0588 ' /' Outflow=0.07 cfs 0.003 af
Pond P39: Planter #39	Peak Elev=14.47' Storage=15 cf Inflow=0.14 cfs 0.006 af 4.0" Round Culvert n=0.012 L=23.9' S=0.0113 ' /' Outflow=0.13 cfs 0.006 af
Pond P40: Planter #40	Peak Elev=16.15' Storage=26 cf Inflow=0.04 cfs 0.002 af 4.0" Round Culvert n=0.012 L=11.2' S=-0.1643 ' /' Outflow=0.04 cfs 0.002 af
Pond P41: Planter #41	Peak Elev=14.77' Storage=15 cf Inflow=0.14 cfs 0.006 af 4.0" Round Culvert n=0.012 L=23.8' S=0.0210 ' /' Outflow=0.13 cfs 0.006 af
Pond P42: Planter #42	Peak Elev=16.30' Storage=25 cf Inflow=0.04 cfs 0.002 af 4.0" Round Culvert n=0.012 L=19.8' S=-0.0854 ' /' Outflow=0.04 cfs 0.002 af
Pond P43: Planter #43	Peak Elev=16.52' Storage=37 cf Inflow=0.07 cfs 0.003 af 4.0" Round Culvert n=0.012 L=28.7' S=-0.0648 ' /' Outflow=0.07 cfs 0.003 af
Pond P44: Planter #44	Peak Elev=14.74' Storage=0 cf Inflow=0.09 cfs 0.004 af 4.0" Round Culvert n=0.012 L=19.9' S=0.0136 ' /' Outflow=0.09 cfs 0.004 af
Pond P45: Planter #45	Peak Elev=16.67' Storage=39 cf Inflow=0.07 cfs 0.003 af 4.0" Round Culvert n=0.012 L=36.4' S=-0.0552 ' /' Outflow=0.07 cfs 0.003 af
Pond P46: Planter #46	Peak Elev=15.07' Storage=3 cf Inflow=0.03 cfs 0.001 af 4.0" Round Culvert n=0.012 L=28.6' S=0.0248 ' /' Outflow=0.03 cfs 0.001 af
Pond P47: Planter #47	Peak Elev=16.96' Storage=71 cf Inflow=0.15 cfs 0.007 af 4.0" Round Culvert n=0.012 L=59.6' S=-0.0277 ' /' Outflow=0.14 cfs 0.007 af
Pond P48: Planter #48	Peak Elev=17.15' Storage=53 cf Inflow=0.10 cfs 0.004 af 4.0" Round Culvert n=0.012 L=24.8' S=-0.0992 ' /' Outflow=0.10 cfs 0.003 af
Pond P49: Planter #49	Peak Elev=17.28' Storage=30 cf Inflow=0.05 cfs 0.002 af 4.0" Round Culvert n=0.012 L=19.9' S=-0.1090 ' /' Outflow=0.04 cfs 0.002 af
Pond P50: Planter #50	Peak Elev=16.18' Storage=9 cf Inflow=0.09 cfs 0.004 af 4.0" Round Culvert n=0.012 L=19.4' S=0.0722 ' /' Outflow=0.08 cfs 0.004 af
Pond P51: Planter #51	Peak Elev=17.52' Storage=28 cf Inflow=0.07 cfs 0.003 af 4.0" Round Culvert n=0.012 L=36.8' S=-0.0370 ' /' Outflow=0.07 cfs 0.003 af
Pond P52: Planter #52	Peak Elev=17.75' Storage=32 cf Inflow=0.07 cfs 0.003 af 4.0" Round Culvert n=0.012 L=28.9' S=-0.0550 ' /' Outflow=0.07 cfs 0.003 af
Pond P53: Planter #53	Peak Elev=16.27' Storage=15 cf Inflow=0.14 cfs 0.006 af 4.0" Round Culvert n=0.012 L=22.8' S=0.0513 ' /' Outflow=0.13 cfs 0.006 af

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

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Pond P54: Planter #54Peak Elev=18.74' Storage=36 cf Inflow=0.04 cfs 0.002 af
4.0" Round Culvert n=0.012 L=13.0' S=-0.2023 ' / Outflow=0.04 cfs 0.002 af**Pond PA-2: Porous Asphalt #2**Peak Elev=14.50' Storage=215 cf Inflow=0.37 cfs 0.023 af
Primary=0.27 cfs 0.023 af Secondary=0.00 cfs 0.000 af Outflow=0.27 cfs 0.023 af**Pond PA-3: Porous Asphalt #3**Peak Elev=14.33' Storage=168 cf Inflow=0.37 cfs 0.026 af
Primary=0.30 cfs 0.026 af Secondary=0.00 cfs 0.000 af Outflow=0.30 cfs 0.026 af**Pond PA-4: Porous Asphalt #4**Peak Elev=14.41' Storage=250 cf Inflow=0.52 cfs 0.035 af
Primary=0.38 cfs 0.034 af Secondary=0.00 cfs 0.000 af Outflow=0.38 cfs 0.034 af**Pond PA-5: Porous Asphalt #5**Peak Elev=14.69' Storage=568 cf Inflow=0.57 cfs 0.041 af
Primary=0.30 cfs 0.040 af Secondary=0.00 cfs 0.000 af Outflow=0.30 cfs 0.040 af**Pond PA-6: Porous Asphalt #6**Peak Elev=15.32' Storage=919 cf Inflow=0.98 cfs 0.065 af
Primary=0.39 cfs 0.063 af Secondary=0.00 cfs 0.000 af Outflow=0.39 cfs 0.063 af**Pond PA-7: Porous Asphalt #7**Peak Elev=16.58' Storage=46 cf Inflow=0.11 cfs 0.007 af
Primary=0.09 cfs 0.007 af Secondary=0.00 cfs 0.000 af Outflow=0.09 cfs 0.007 af**Pond SDMH-1: Proposed SDMH West of Bldgs**Peak Elev=12.86' Inflow=2.82 cfs 0.287 af
Outflow=2.82 cfs 0.287 af**Link SP-1: SDMH 20201 - At Intersection of Jowite and Moton**Inflow=2.82 cfs 0.287 af
Primary=2.82 cfs 0.287 af**Total Runoff Area = 1.529 ac Runoff Volume = 0.298 af Average Runoff Depth = 2.34"**
37.56% Pervious = 0.574 ac 62.44% Impervious = 0.955 ac

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

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Summary for Subcatchment 17S: Rooftop #18

Runoff = 0.10 cfs @ 11.90 hrs, Volume= 0.005 af, Depth= 3.06"

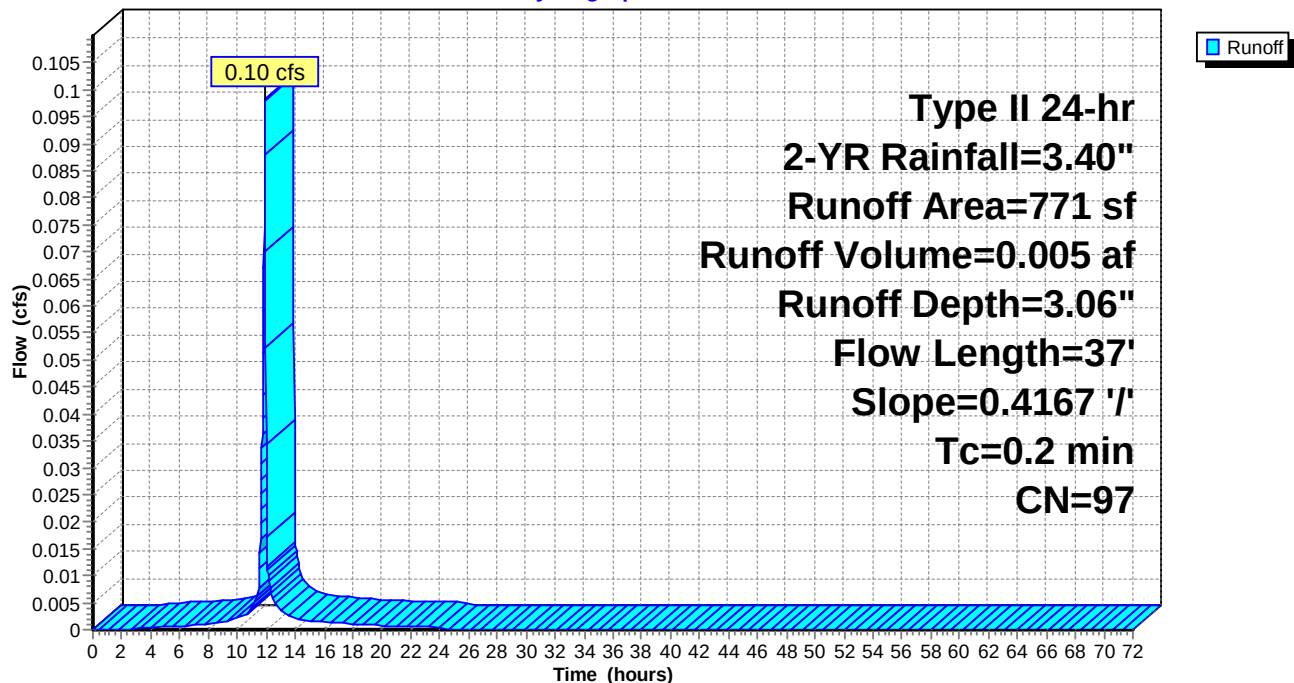
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 2-YR Rainfall=3.40"

Area (sf)	CN	Description
741	98	Roofs, HSG C
30	74	>75% Grass cover, Good, HSG C
771	97	Weighted Average
30		3.89% Pervious Area
741		96.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 17S: Rooftop #18

Hydrograph



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

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Summary for Subcatchment 19: Rooftop #19

Runoff = 0.10 cfs @ 11.90 hrs, Volume= 0.004 af, Depth= 2.95"

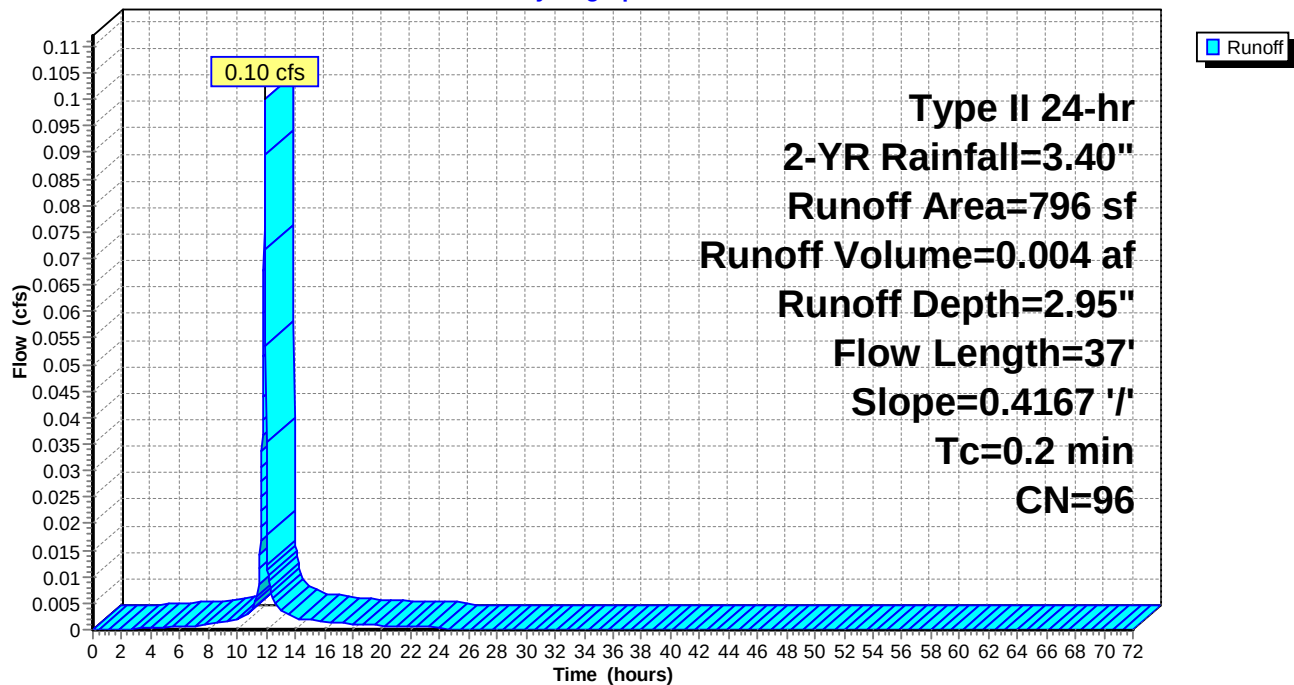
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 2-YR Rainfall=3.40"

Area (sf)	CN	Description
741	98	Roofs, HSG C
55	74	>75% Grass cover, Good, HSG C
796	96	Weighted Average
55		6.91% Pervious Area
741		93.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 19: Rooftop #19

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

Prepared by RAUCH inc.

HydroCAD® 10.00-26 s/n 02413 © 2020 HydroCAD Software Solutions LLC

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

Printed 02/22/23

Summary for Subcatchment 20: Rooftop #20

Runoff = 0.05 cfs @ 11.90 hrs, Volume= 0.002 af, Depth= 2.95"

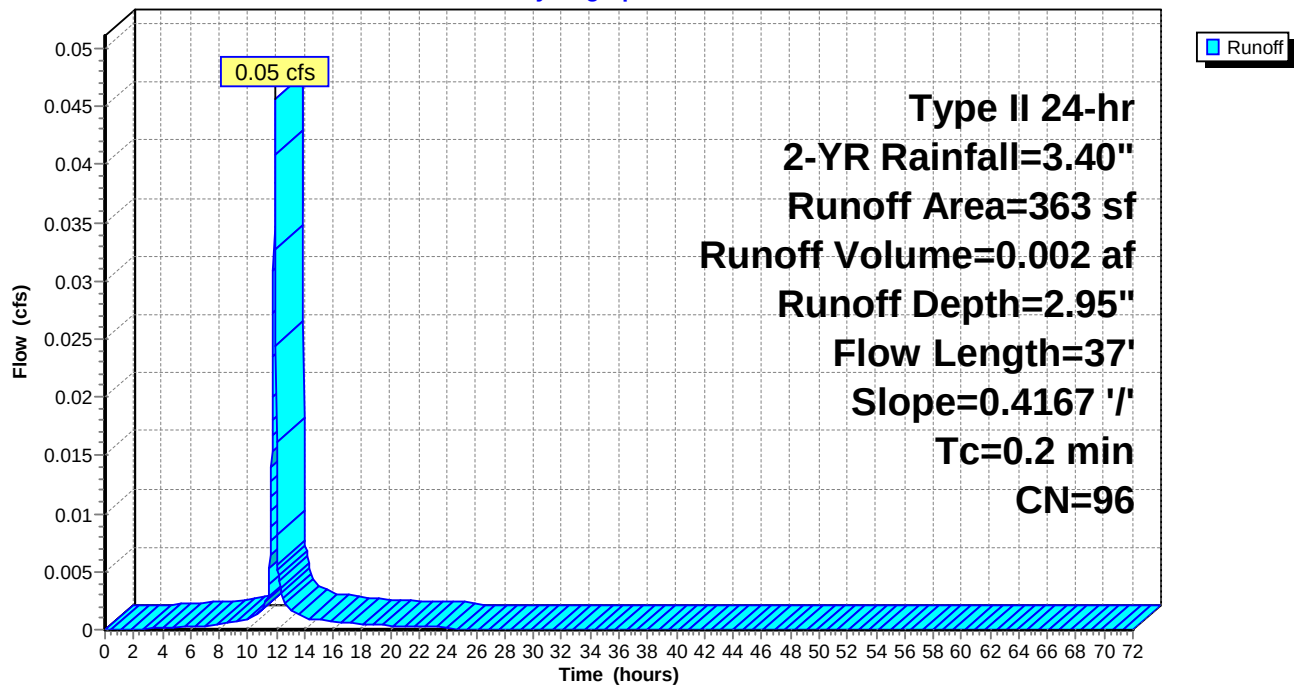
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 2-YR Rainfall=3.40"

Area (sf)	CN	Description
333	98	Roofs, HSG C
30	74	>75% Grass cover, Good, HSG C
363	96	Weighted Average
30		8.26% Pervious Area
333		91.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 20: Rooftop #20

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

Prepared by RAUCH inc.

HydroCAD® 10.00-26 s/n 02413 © 2020 HydroCAD Software Solutions LLC

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

Printed 02/22/23

Summary for Subcatchment 21: Rooftop #21

Runoff = 0.03 cfs @ 11.90 hrs, Volume= 0.001 af, Depth= 2.95"

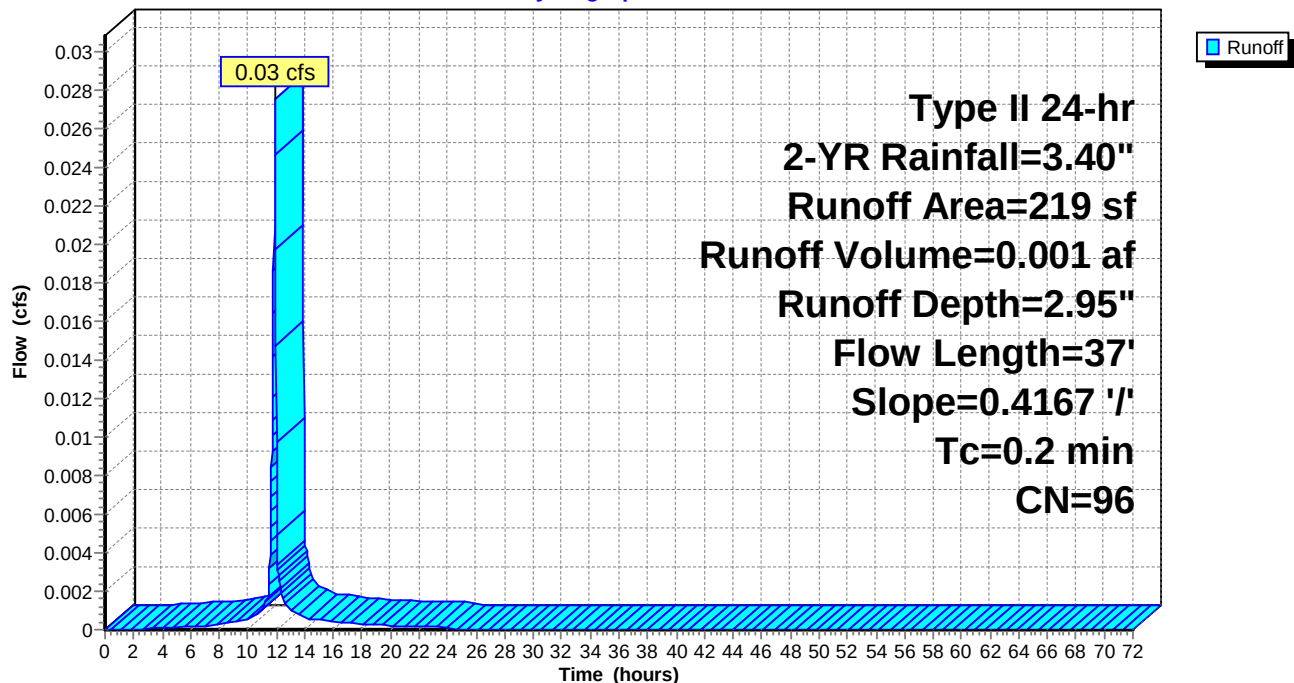
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 2-YR Rainfall=3.40"

Area (sf)	CN	Description
199	98	Roofs, HSG C
20	74	>75% Grass cover, Good, HSG C
219	96	Weighted Average
20		9.13% Pervious Area
199		90.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 21: Rooftop #21

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

Prepared by RAUCH inc.

HydroCAD® 10.00-26 s/n 02413 © 2020 HydroCAD Software Solutions LLC

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

Printed 02/22/23

Summary for Subcatchment 22: Rooftop #22

Runoff = 0.15 cfs @ 11.90 hrs, Volume= 0.007 af, Depth= 2.95"

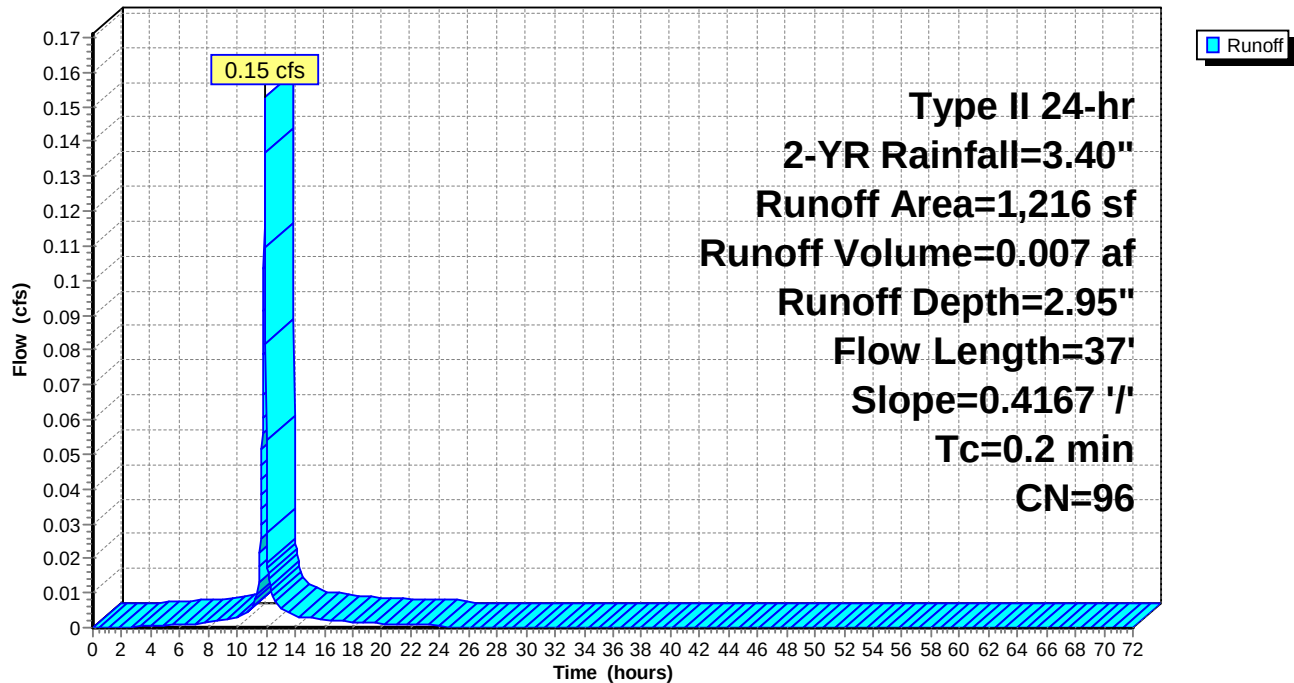
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 2-YR Rainfall=3.40"

Area (sf)	CN	Description
1,136	98	Roofs, HSG C
80	74	>75% Grass cover, Good, HSG C
1,216	96	Weighted Average
80		6.58% Pervious Area
1,136		93.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 22: Rooftop #22

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

Prepared by RAUCH inc.

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

Printed 02/22/23

Summary for Subcatchment 23: Rooftop #23

Runoff = 0.09 cfs @ 11.90 hrs, Volume= 0.004 af, Depth= 2.95"

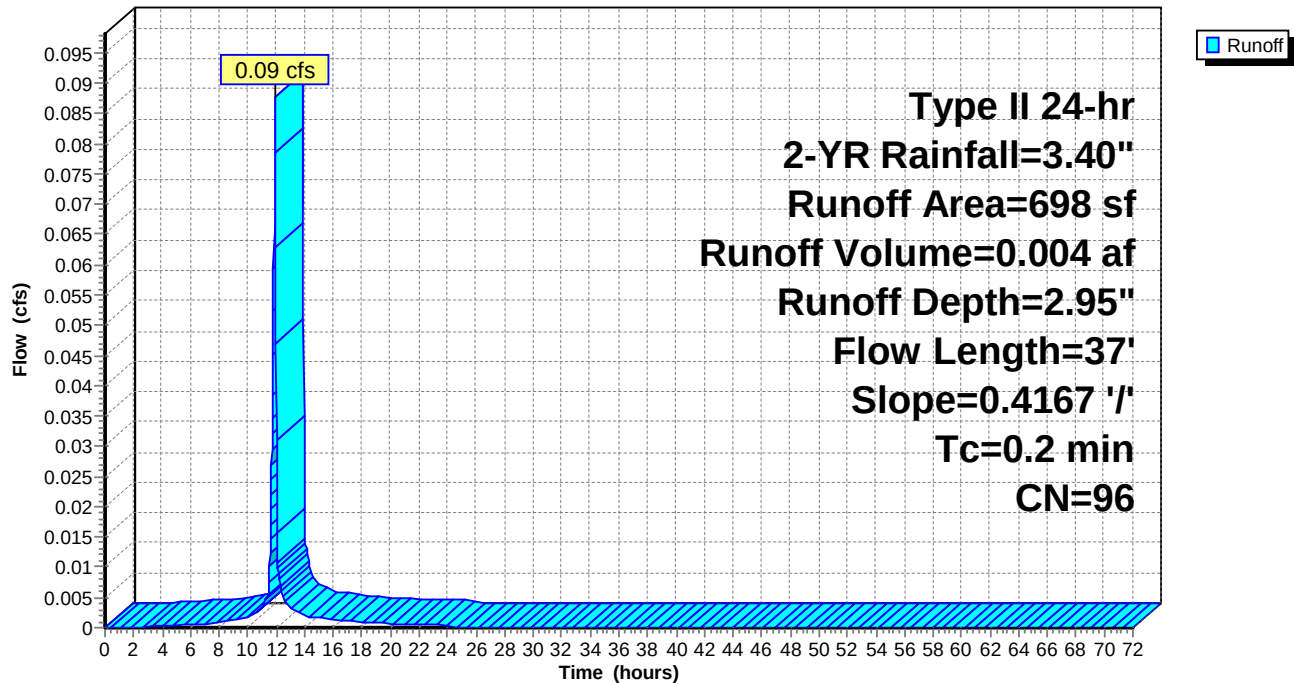
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 2-YR Rainfall=3.40"

Area (sf)	CN	Description
648	98	Roofs, HSG C
50	74	>75% Grass cover, Good, HSG C
698	96	Weighted Average
50		7.16% Pervious Area
648		92.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 23: Rooftop #23

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

Prepared by RAUCH inc.

HydroCAD® 10.00-26 s/n 02413 © 2020 HydroCAD Software Solutions LLC

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

Printed 02/22/23

Summary for Subcatchment 24: Rooftop #24

Runoff = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af, Depth= 2.95"

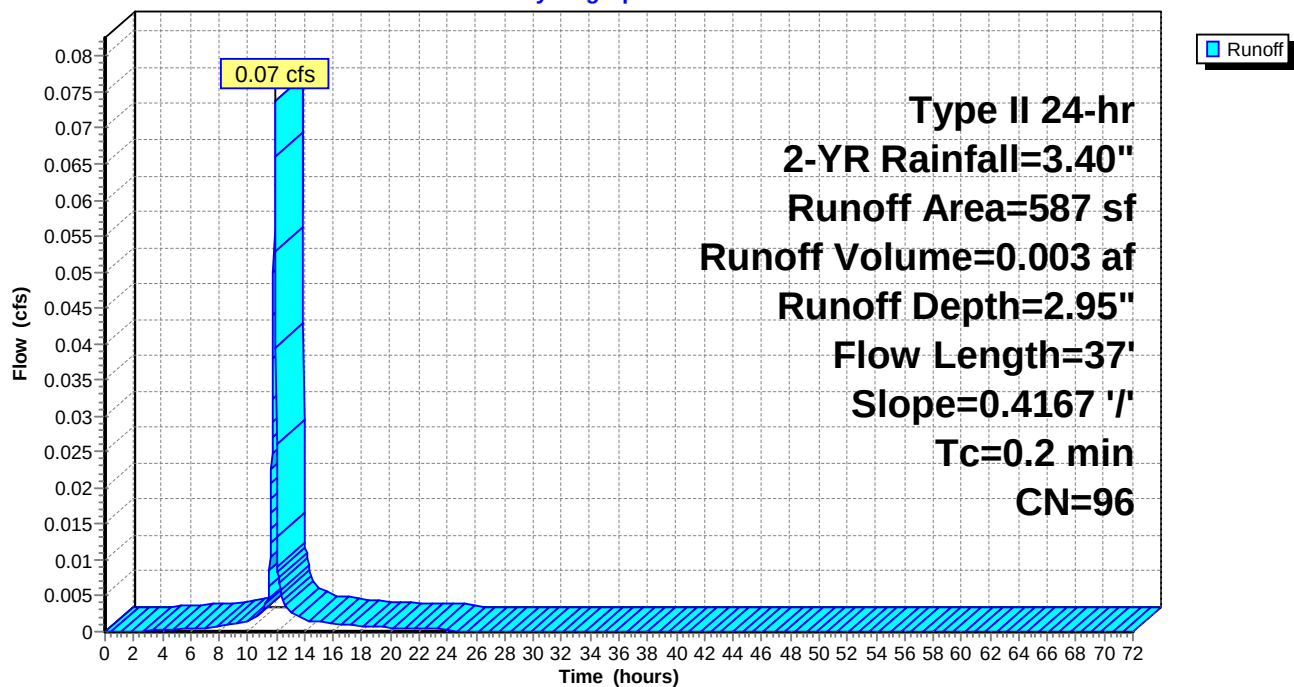
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 2-YR Rainfall=3.40"

Area (sf)	CN	Description
547	98	Roofs, HSG C
40	74	>75% Grass cover, Good, HSG C
587	96	Weighted Average
40		6.81% Pervious Area
547		93.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 24: Rooftop #24

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

Prepared by RAUCH inc.

HydroCAD® 10.00-26 s/n 02413 © 2020 HydroCAD Software Solutions LLC

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

Printed 02/22/23

Summary for Subcatchment 25: Rooftop #25

Runoff = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af, Depth= 2.95"

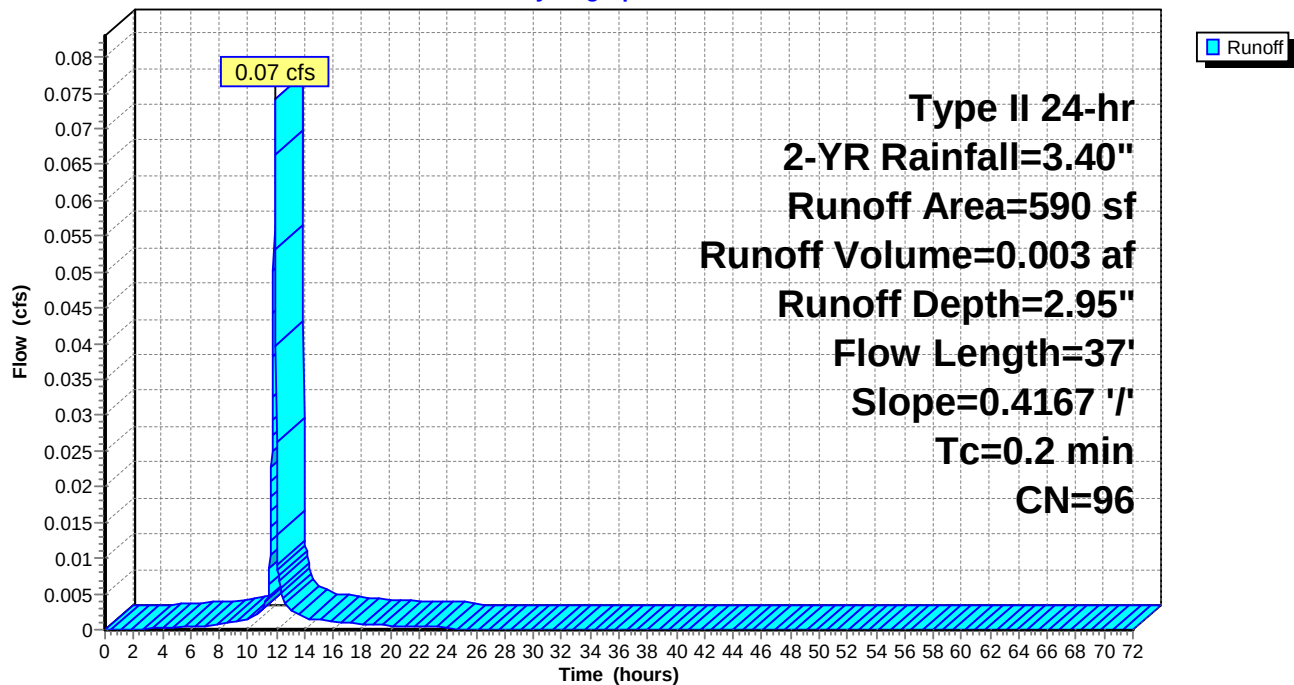
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 2-YR Rainfall=3.40"

Area (sf)	CN	Description
550	98	Roofs, HSG C
40	74	>75% Grass cover, Good, HSG C
590	96	Weighted Average
40		6.78% Pervious Area
550		93.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 25: Rooftop #25

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

Prepared by RAUCH inc.

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

Printed 02/22/23

Summary for Subcatchment 26: Rooftop #26

Runoff = 0.14 cfs @ 11.90 hrs, Volume= 0.006 af, Depth= 2.95"

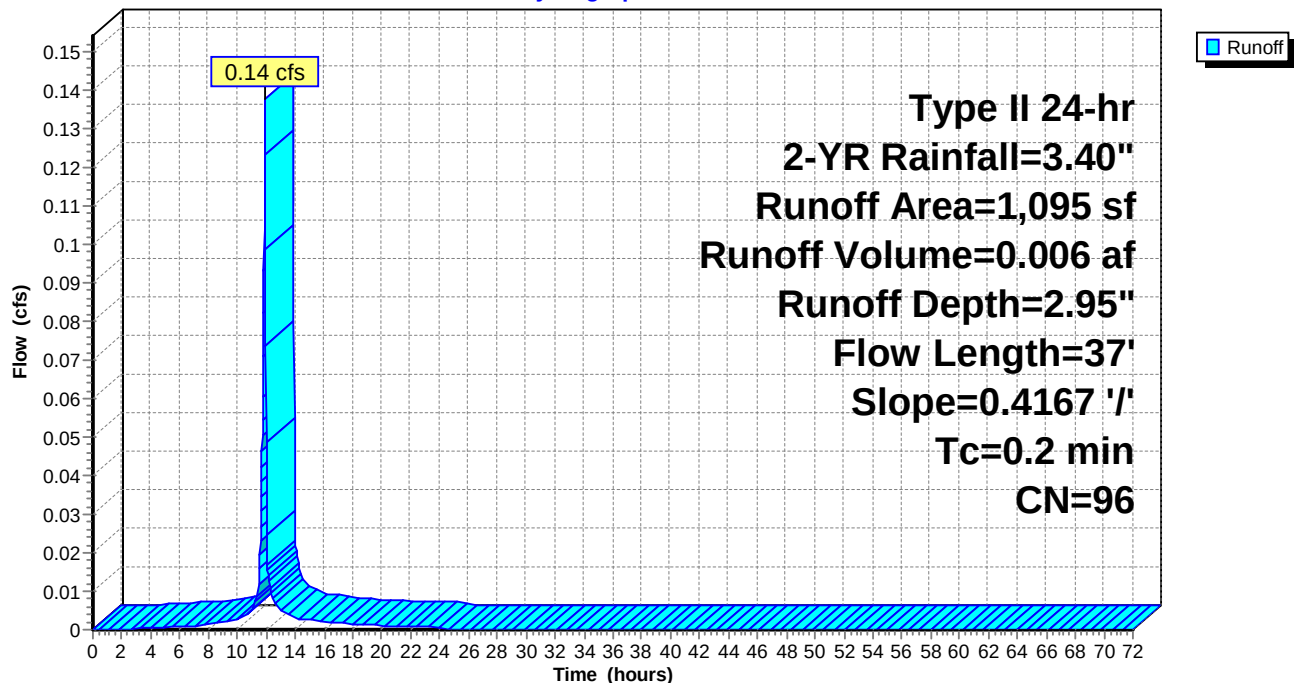
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 2-YR Rainfall=3.40"

Area (sf)	CN	Description
1,025	98	Roofs, HSG C
70	74	>75% Grass cover, Good, HSG C
1,095	96	Weighted Average
70		6.39% Pervious Area
1,025		93.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 26: Rooftop #26

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

Prepared by RAUCH inc.

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

Printed 02/22/23

Summary for Subcatchment 27: Rooftop #27

Runoff = 0.04 cfs @ 11.90 hrs, Volume= 0.002 af, Depth= 2.95"

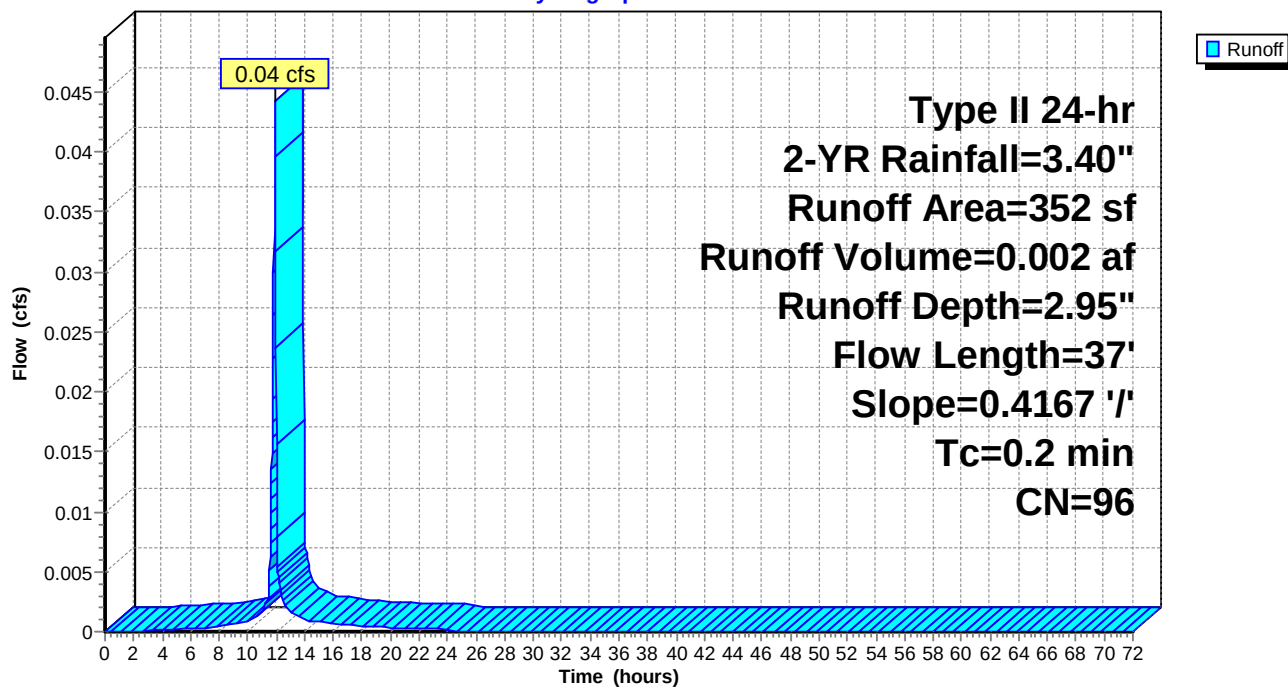
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 2-YR Rainfall=3.40"

Area (sf)	CN	Description
322	98	Roofs, HSG C
30	74	>75% Grass cover, Good, HSG C
352	96	Weighted Average
30		8.52% Pervious Area
322		91.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 27: Rooftop #27

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

Printed 02/22/23

Summary for Subcatchment 28: Rooftop #28

Runoff = 0.10 cfs @ 11.90 hrs, Volume= 0.004 af, Depth= 2.95"

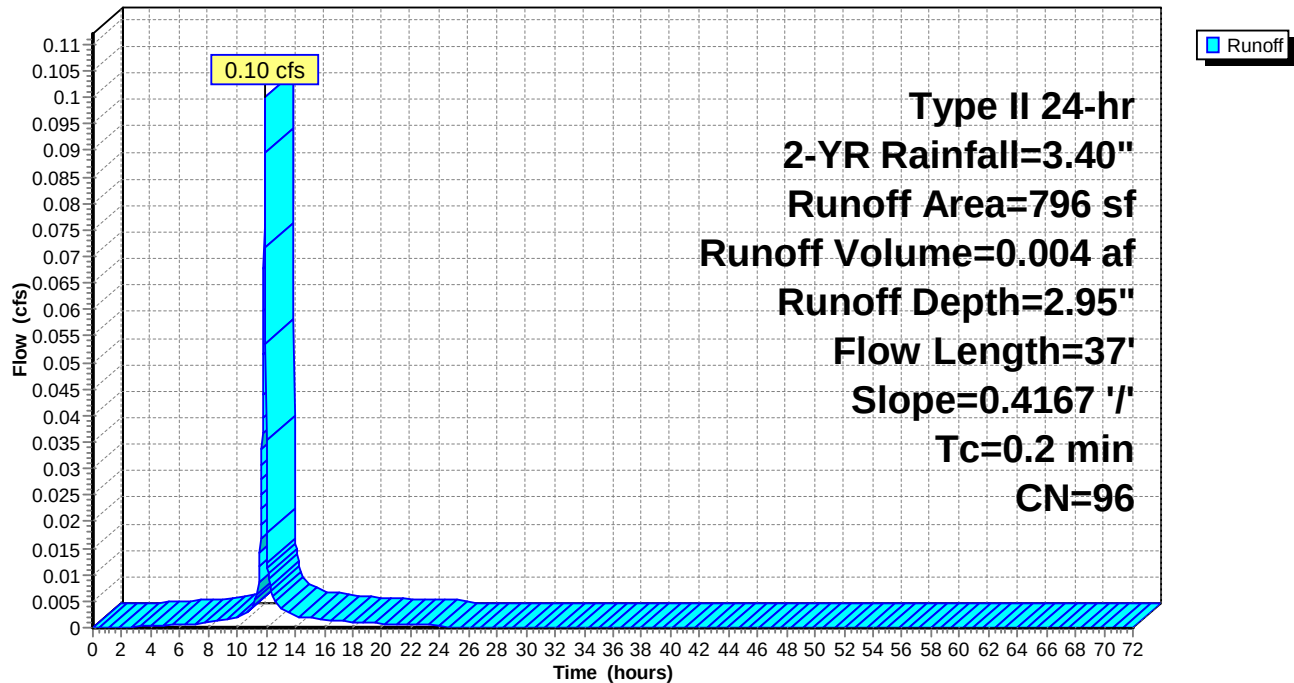
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 2-YR Rainfall=3.40"

Area (sf)	CN	Description
741	98	Roofs, HSG C
55	74	>75% Grass cover, Good, HSG C
796	96	Weighted Average
55		6.91% Pervious Area
741		93.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 28: Rooftop #28

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

Printed 02/22/23

Summary for Subcatchment 29: Rooftop #29

Runoff = 0.05 cfs @ 11.90 hrs, Volume= 0.002 af, Depth= 2.95"

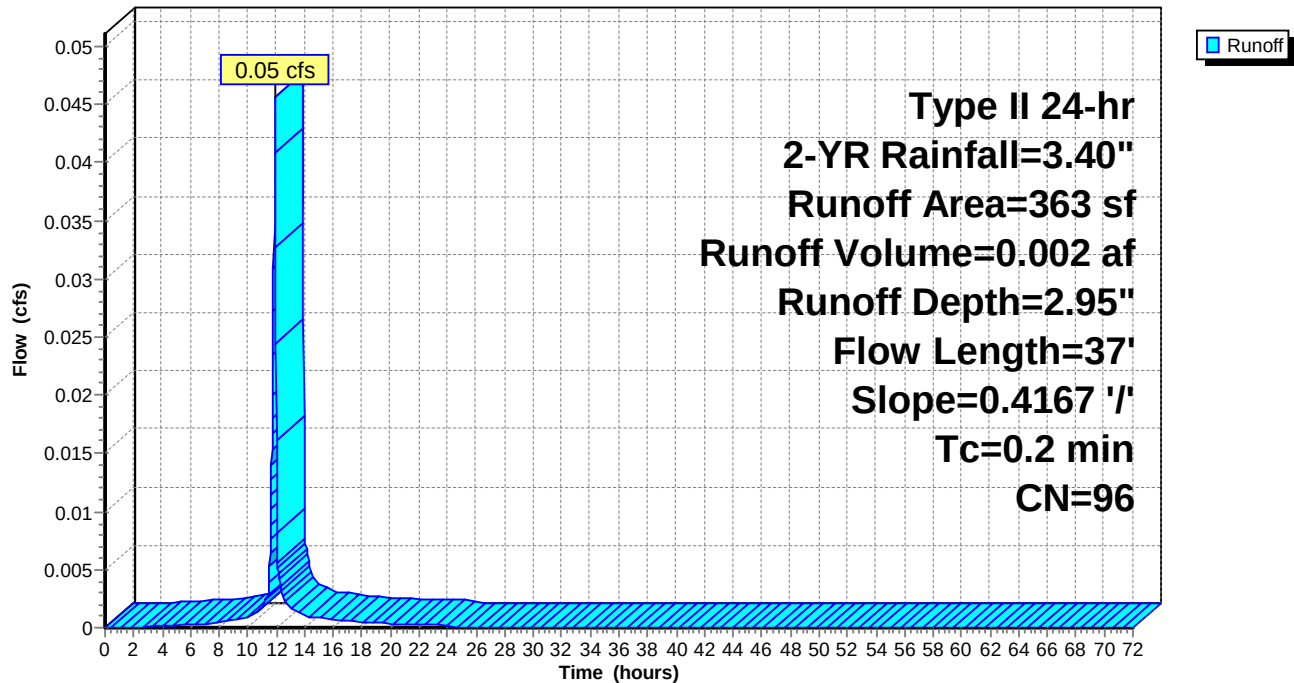
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 2-YR Rainfall=3.40"

Area (sf)	CN	Description
333	98	Roofs, HSG C
30	74	>75% Grass cover, Good, HSG C
363	96	Weighted Average
30		8.26% Pervious Area
333		91.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 29: Rooftop #29

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

Printed 02/22/23

Summary for Subcatchment 30: Rooftop #30

Runoff = 0.03 cfs @ 11.90 hrs, Volume= 0.001 af, Depth= 2.95"

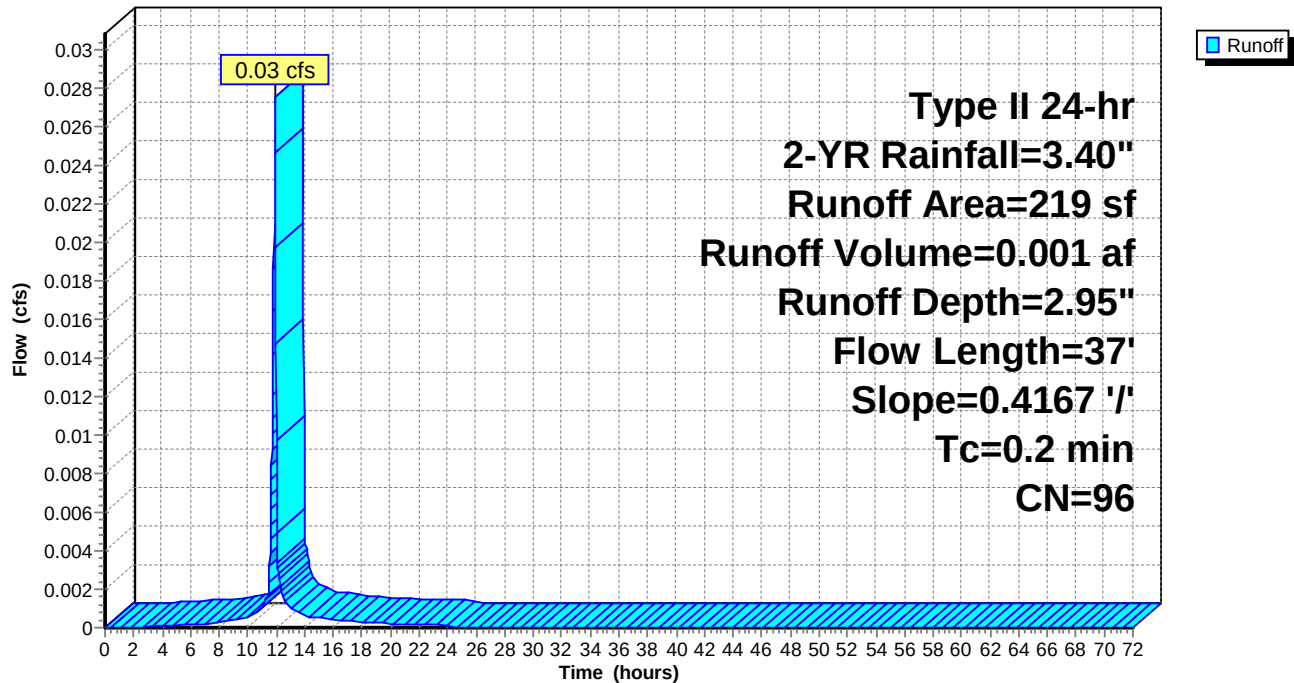
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 2-YR Rainfall=3.40"

Area (sf)	CN	Description
199	98	Roofs, HSG C
20	74	>75% Grass cover, Good, HSG C
219	96	Weighted Average
20		9.13% Pervious Area
199		90.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 30: Rooftop #30

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

Printed 02/22/23

Summary for Subcatchment 31: Rooftop #31

Runoff = 0.15 cfs @ 11.90 hrs, Volume= 0.007 af, Depth= 2.95"

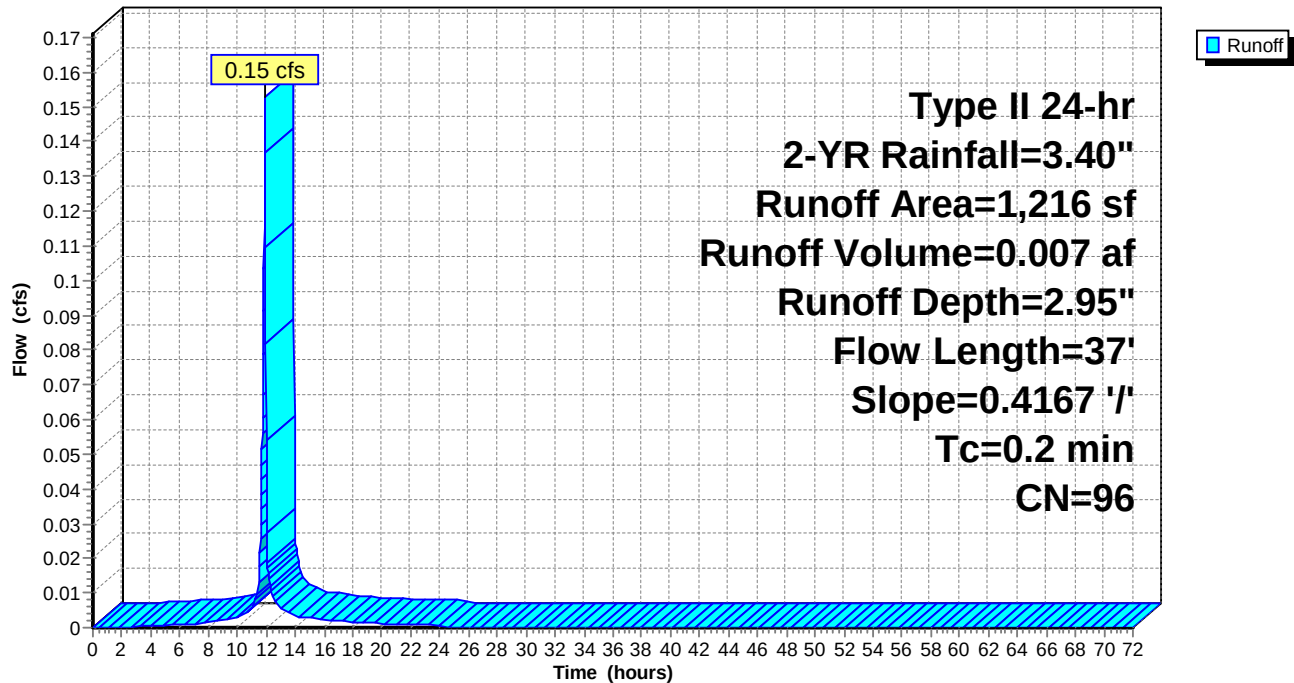
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 2-YR Rainfall=3.40"

Area (sf)	CN	Description
1,136	98	Roofs, HSG C
80	74	>75% Grass cover, Good, HSG C
1,216	96	Weighted Average
80		6.58% Pervious Area
1,136		93.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 31: Rooftop #31

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

Printed 02/22/23

Summary for Subcatchment 32: Rooftop #32

Runoff = 0.03 cfs @ 11.90 hrs, Volume= 0.001 af, Depth= 2.95"

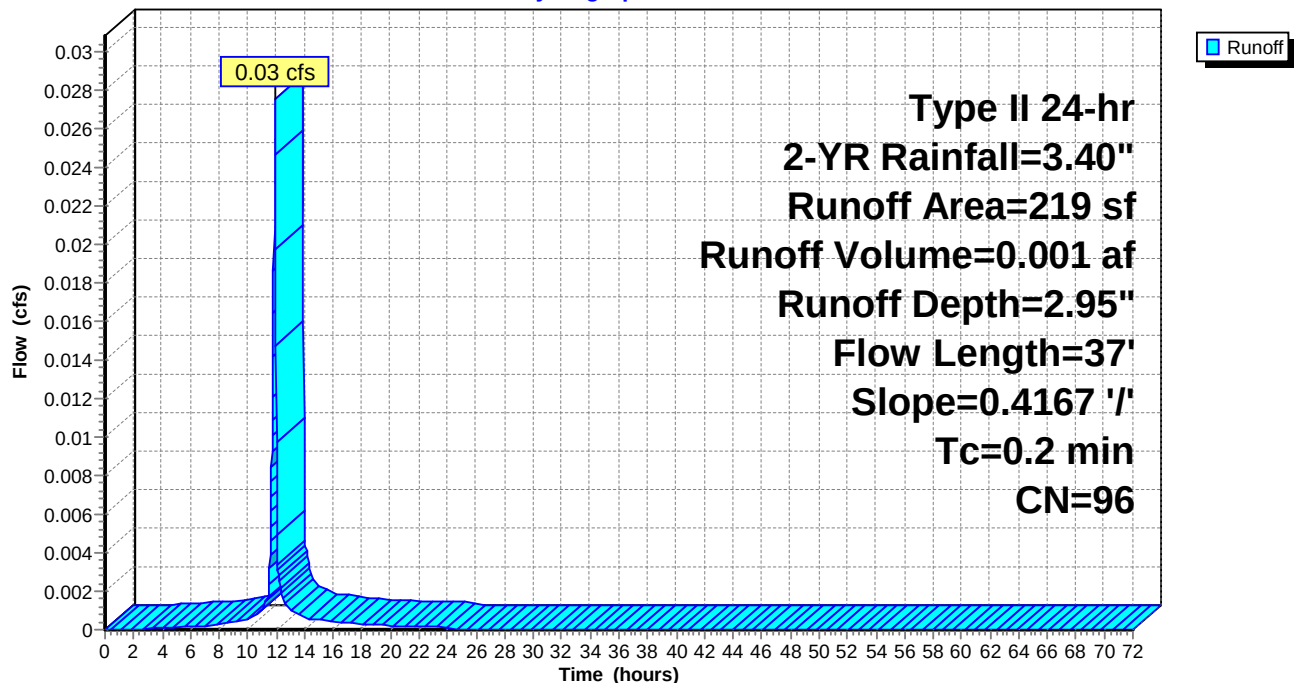
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 2-YR Rainfall=3.40"

Area (sf)	CN	Description
199	98	Roofs, HSG C
20	74	>75% Grass cover, Good, HSG C
219	96	Weighted Average
20		9.13% Pervious Area
199		90.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 32: Rooftop #32

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

Printed 02/22/23

Summary for Subcatchment 33: Rooftop #33

Runoff = 0.15 cfs @ 11.90 hrs, Volume= 0.007 af, Depth= 2.95"

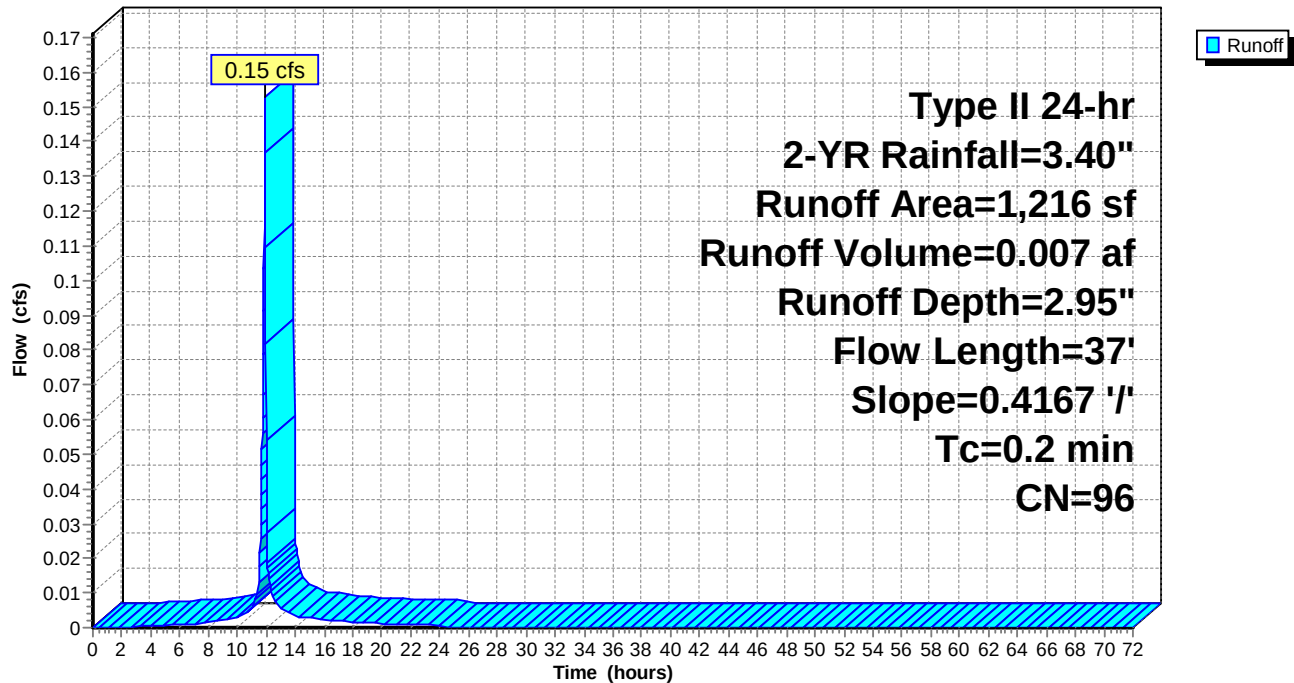
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 2-YR Rainfall=3.40"

Area (sf)	CN	Description
1,136	98	Roofs, HSG C
80	74	>75% Grass cover, Good, HSG C
1,216	96	Weighted Average
80		6.58% Pervious Area
1,136		93.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 33: Rooftop #33

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

Printed 02/22/23

Summary for Subcatchment 34: Rooftop #34

Runoff = 0.10 cfs @ 11.90 hrs, Volume= 0.004 af, Depth= 2.95"

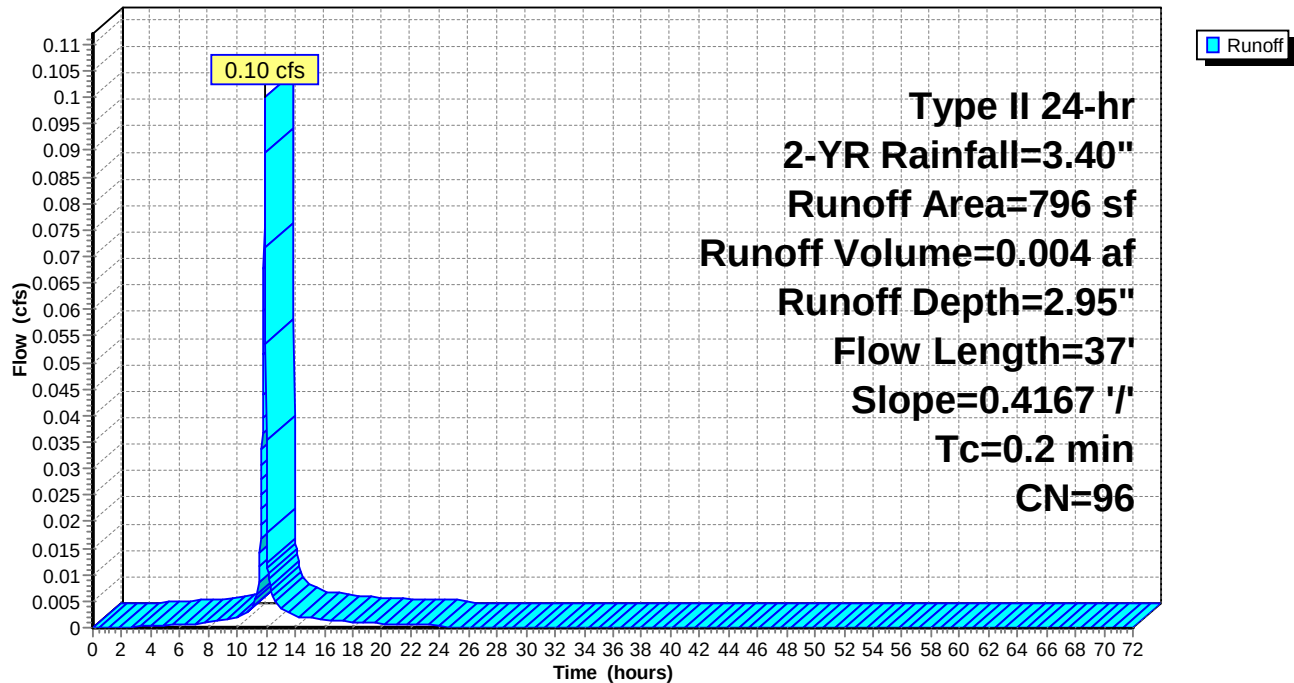
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 2-YR Rainfall=3.40"

Area (sf)	CN	Description
741	98	Roofs, HSG C
55	74	>75% Grass cover, Good, HSG C
796	96	Weighted Average
55		6.91% Pervious Area
741		93.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 34: Rooftop #34

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

Printed 02/22/23

Summary for Subcatchment 35: Rooftop #35

Runoff = 0.05 cfs @ 11.90 hrs, Volume= 0.002 af, Depth= 2.95"

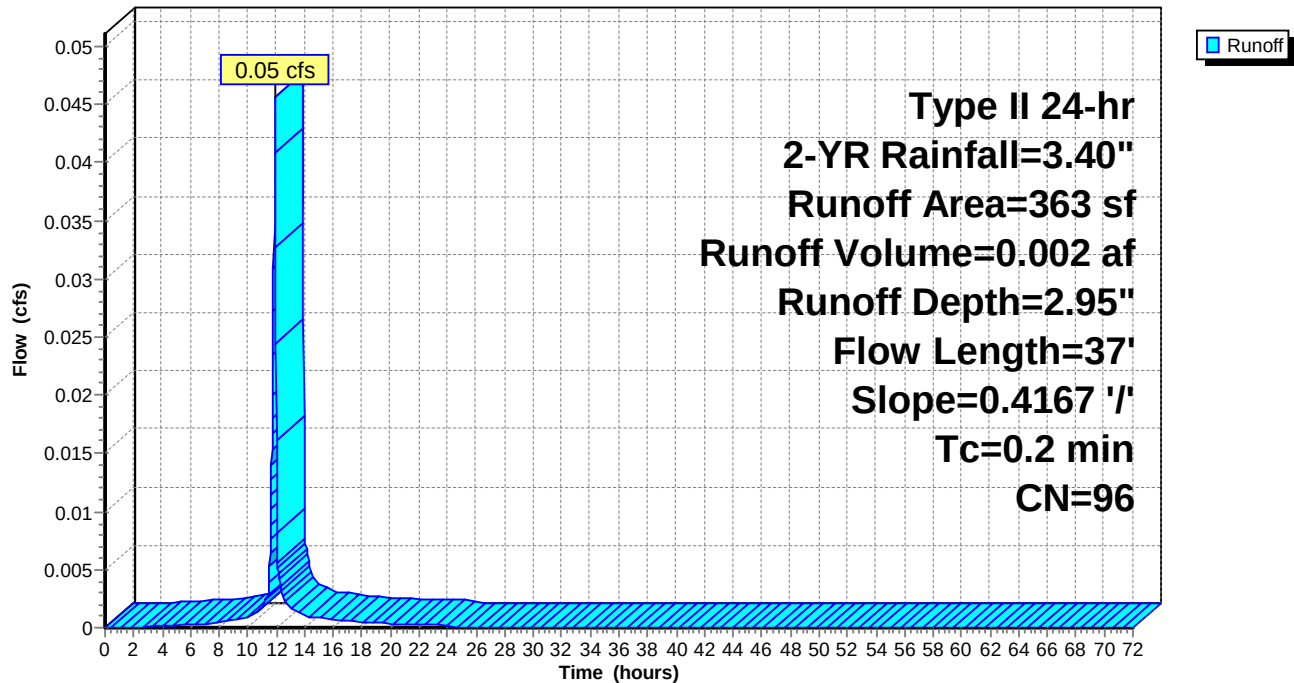
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 2-YR Rainfall=3.40"

Area (sf)	CN	Description
333	98	Roofs, HSG C
30	74	>75% Grass cover, Good, HSG C
363	96	Weighted Average
30		8.26% Pervious Area
333		91.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 35: Rooftop #35

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

Printed 02/22/23

Summary for Subcatchment 36: Rooftop #36

Runoff = 0.09 cfs @ 11.90 hrs, Volume= 0.004 af, Depth= 2.95"

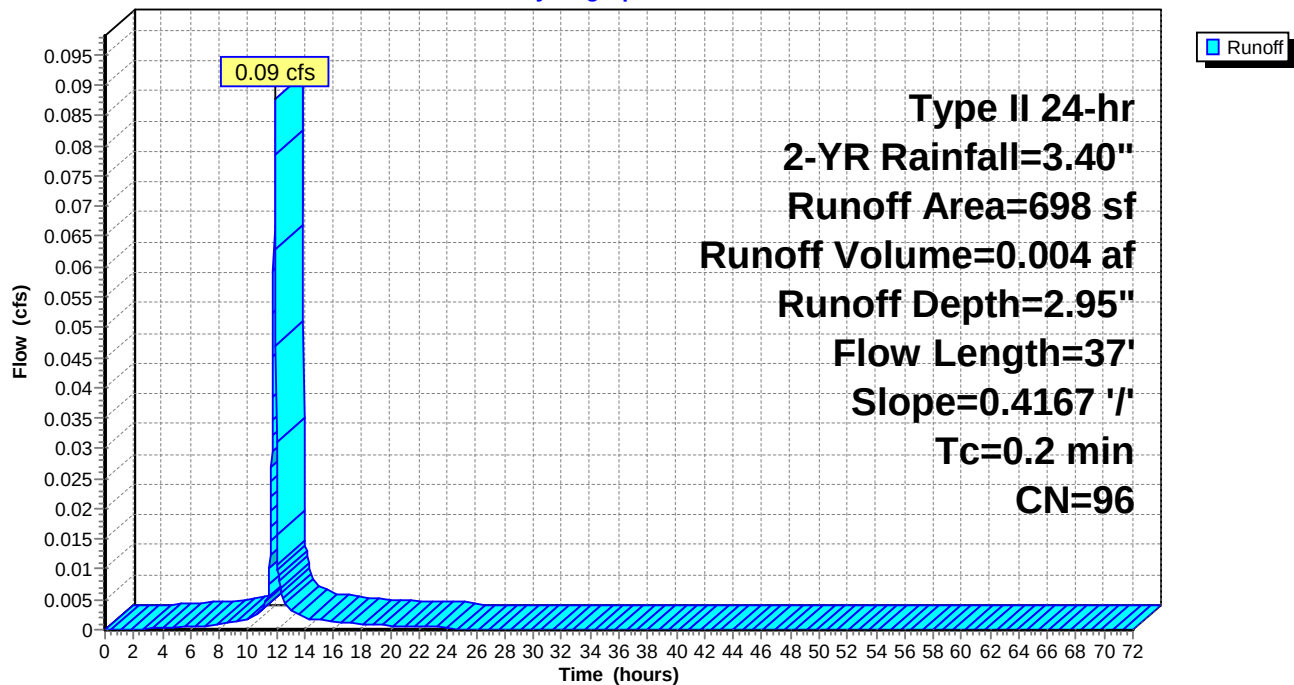
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 2-YR Rainfall=3.40"

Area (sf)	CN	Description
648	98	Roofs, HSG C
50	74	>75% Grass cover, Good, HSG C
698	96	Weighted Average
50		7.16% Pervious Area
648		92.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 36: Rooftop #36

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

Printed 02/22/23

Summary for Subcatchment 37: Rooftop #37

Runoff = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af, Depth= 2.95"

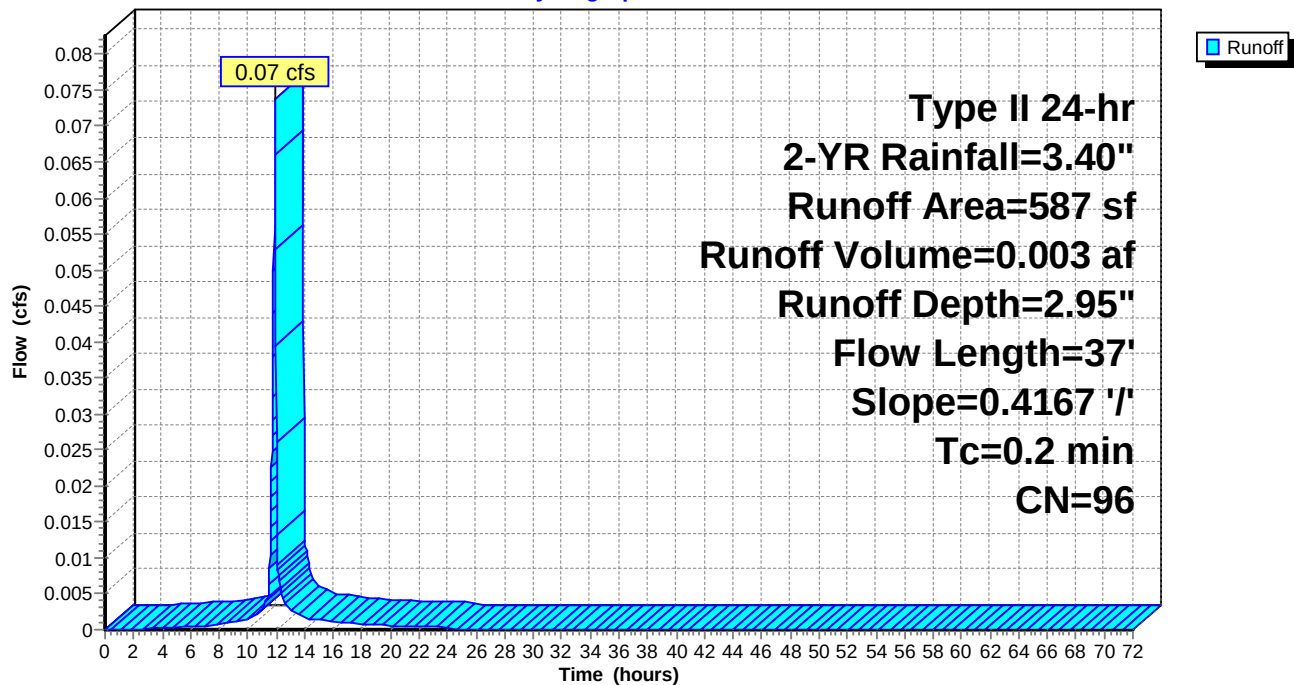
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 2-YR Rainfall=3.40"

Area (sf)	CN	Description
547	98	Roofs, HSG C
40	74	>75% Grass cover, Good, HSG C
587	96	Weighted Average
40		6.81% Pervious Area
547		93.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 37: Rooftop #37

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

Printed 02/22/23

Summary for Subcatchment 38: Rooftop #38

Runoff = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af, Depth= 2.95"

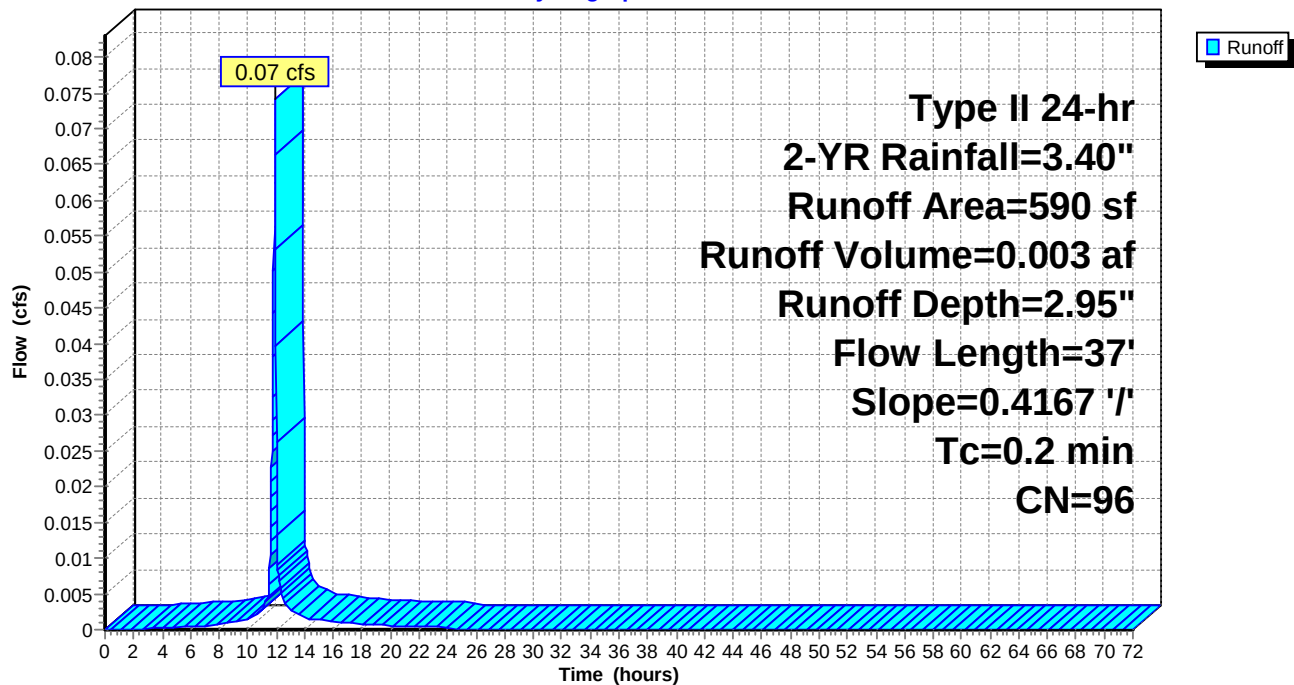
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 2-YR Rainfall=3.40"

Area (sf)	CN	Description
550	98	Roofs, HSG C
40	74	>75% Grass cover, Good, HSG C
590	96	Weighted Average
40		6.78% Pervious Area
550		93.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 38: Rooftop #38

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

Prepared by RAUCH inc.

HydroCAD® 10.00-26 s/n 02413 © 2020 HydroCAD Software Solutions LLC

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

Printed 02/22/23

Summary for Subcatchment 39: Rooftop #39

Runoff = 0.14 cfs @ 11.90 hrs, Volume= 0.006 af, Depth= 2.95"

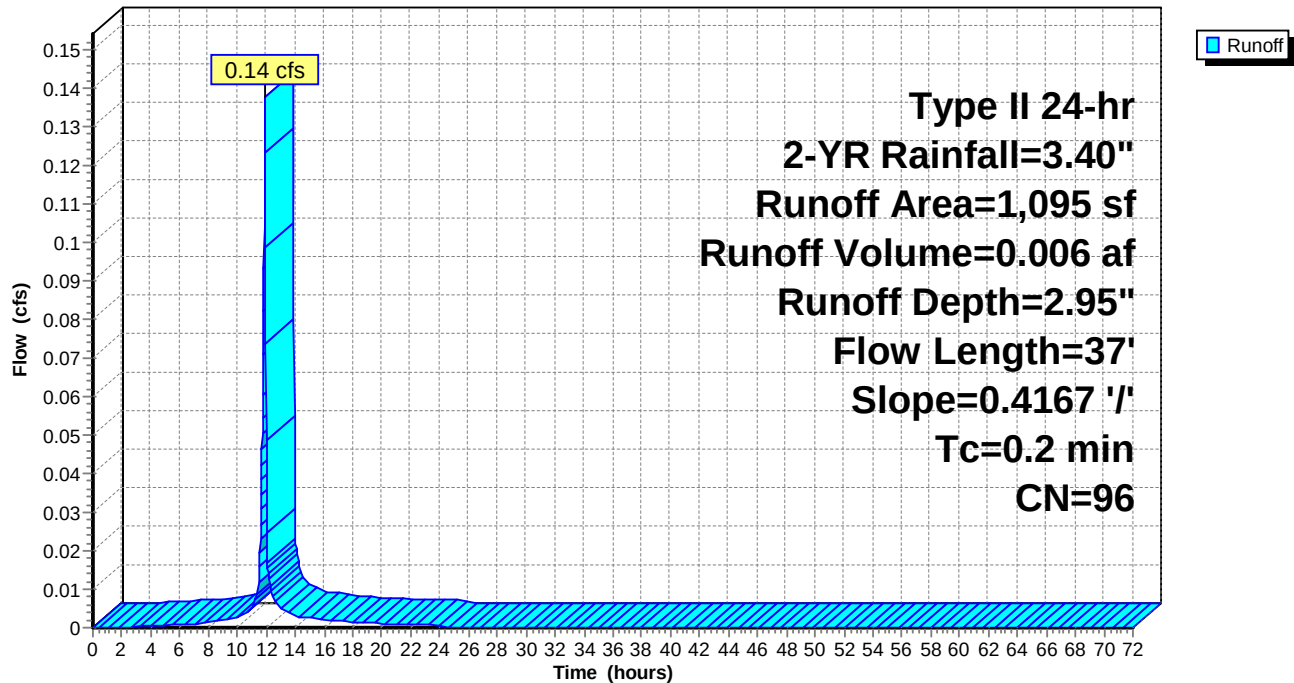
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 2-YR Rainfall=3.40"

Area (sf)	CN	Description
1,025	98	Roofs, HSG C
70	74	>75% Grass cover, Good, HSG C
1,095	96	Weighted Average
70		6.39% Pervious Area
1,025		93.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 39: Rooftop #39

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

Prepared by RAUCH inc.

HydroCAD® 10.00-26 s/n 02413 © 2020 HydroCAD Software Solutions LLC

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

Printed 02/22/23

Summary for Subcatchment 40: Rooftop #40

Runoff = 0.04 cfs @ 11.90 hrs, Volume= 0.002 af, Depth= 2.95"

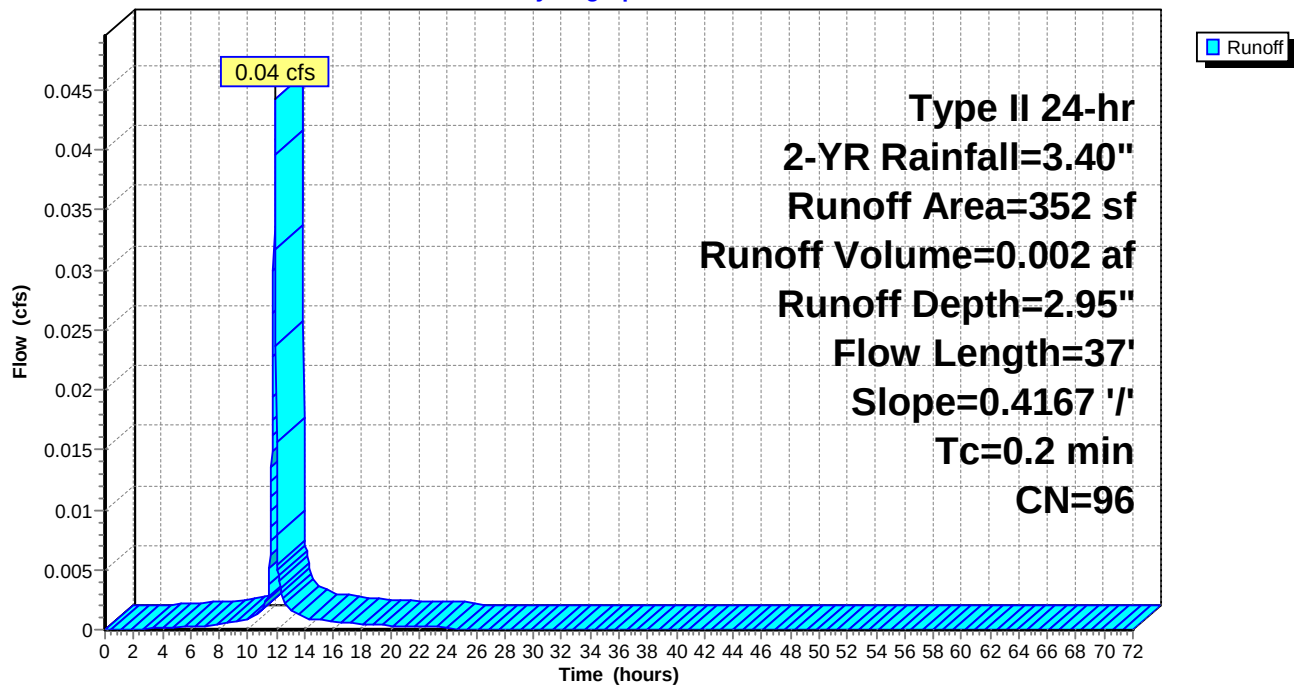
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 2-YR Rainfall=3.40"

Area (sf)	CN	Description
322	98	Roofs, HSG C
30	74	>75% Grass cover, Good, HSG C
352	96	Weighted Average
30		8.52% Pervious Area
322		91.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 40: Rooftop #40

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

Prepared by RAUCH inc.

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

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Summary for Subcatchment 41: Rooftop #41

Runoff = 0.14 cfs @ 11.90 hrs, Volume= 0.006 af, Depth= 2.95"

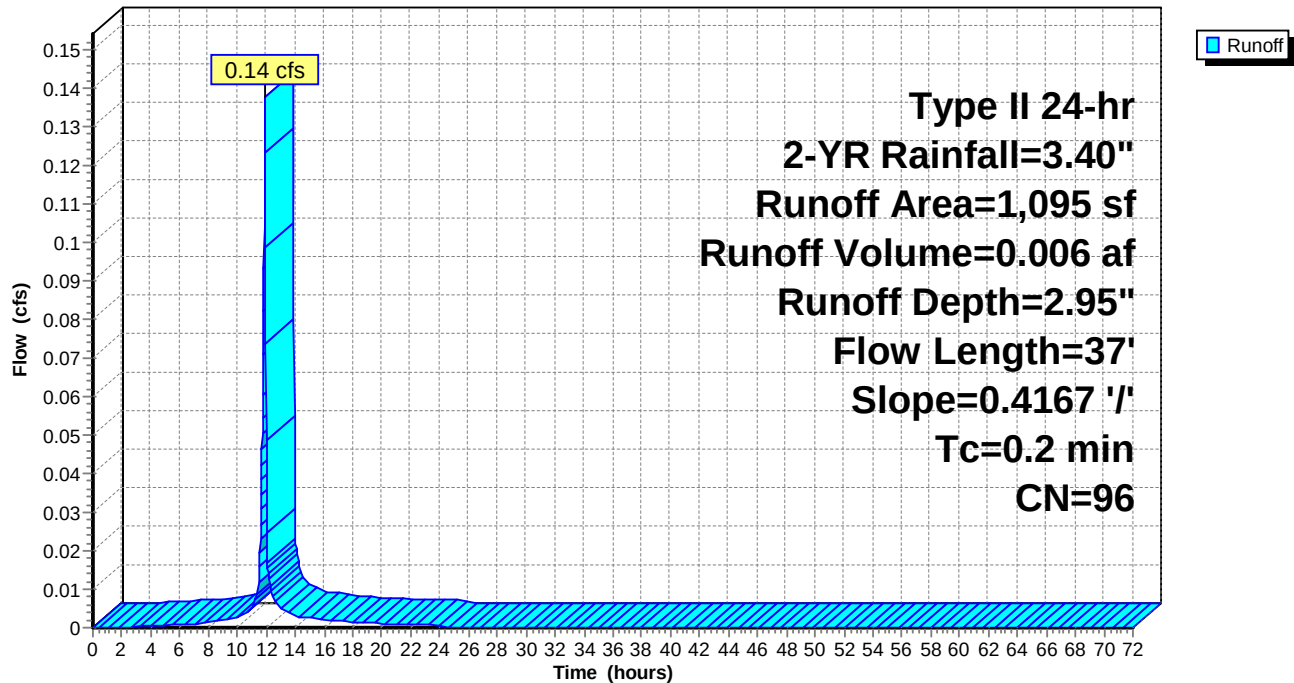
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 2-YR Rainfall=3.40"

Area (sf)	CN	Description
1,025	98	Roofs, HSG C
70	74	>75% Grass cover, Good, HSG C
1,095	96	Weighted Average
70		6.39% Pervious Area
1,025		93.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 41: Rooftop #41

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

Prepared by RAUCH inc.

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

Printed 02/22/23

Summary for Subcatchment 42: Rooftop #42

Runoff = 0.04 cfs @ 11.90 hrs, Volume= 0.002 af, Depth= 2.95"

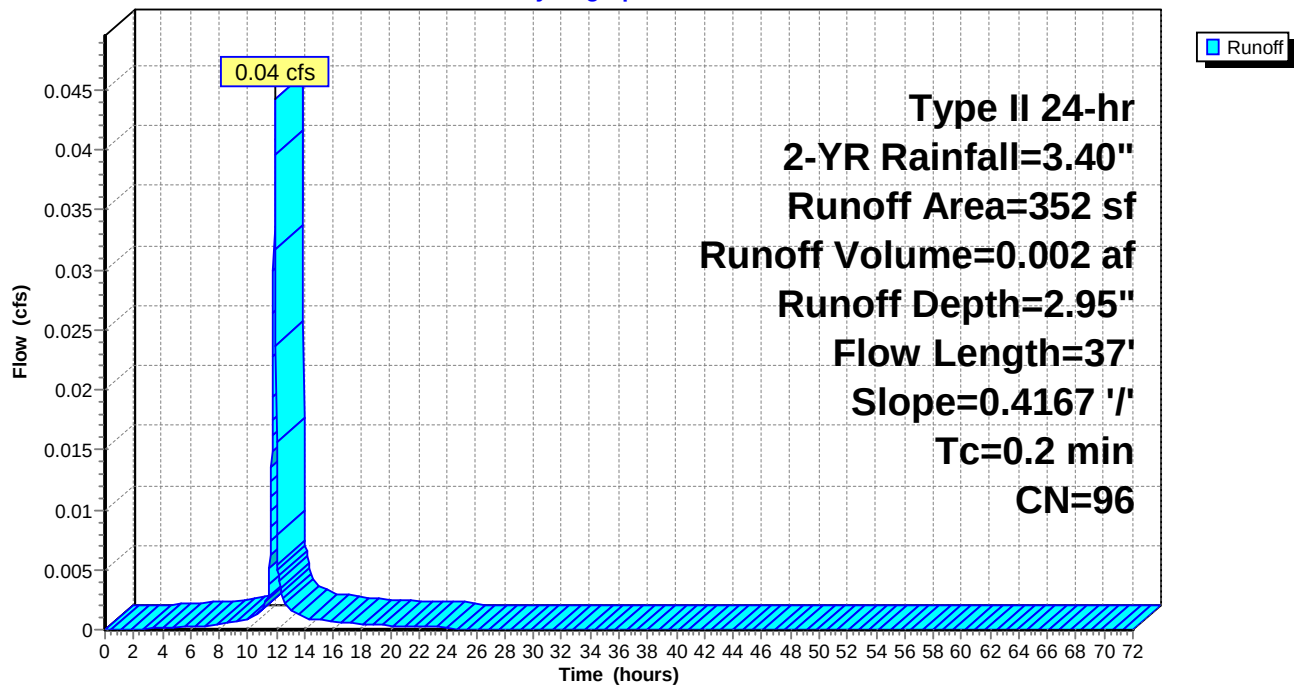
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 2-YR Rainfall=3.40"

Area (sf)	CN	Description
322	98	Roofs, HSG C
30	74	>75% Grass cover, Good, HSG C
352	96	Weighted Average
30		8.52% Pervious Area
322		91.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 42: Rooftop #42

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

Prepared by RAUCH inc.

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

Printed 02/22/23

Summary for Subcatchment 43: Rooftop #43

Runoff = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af, Depth= 2.95"

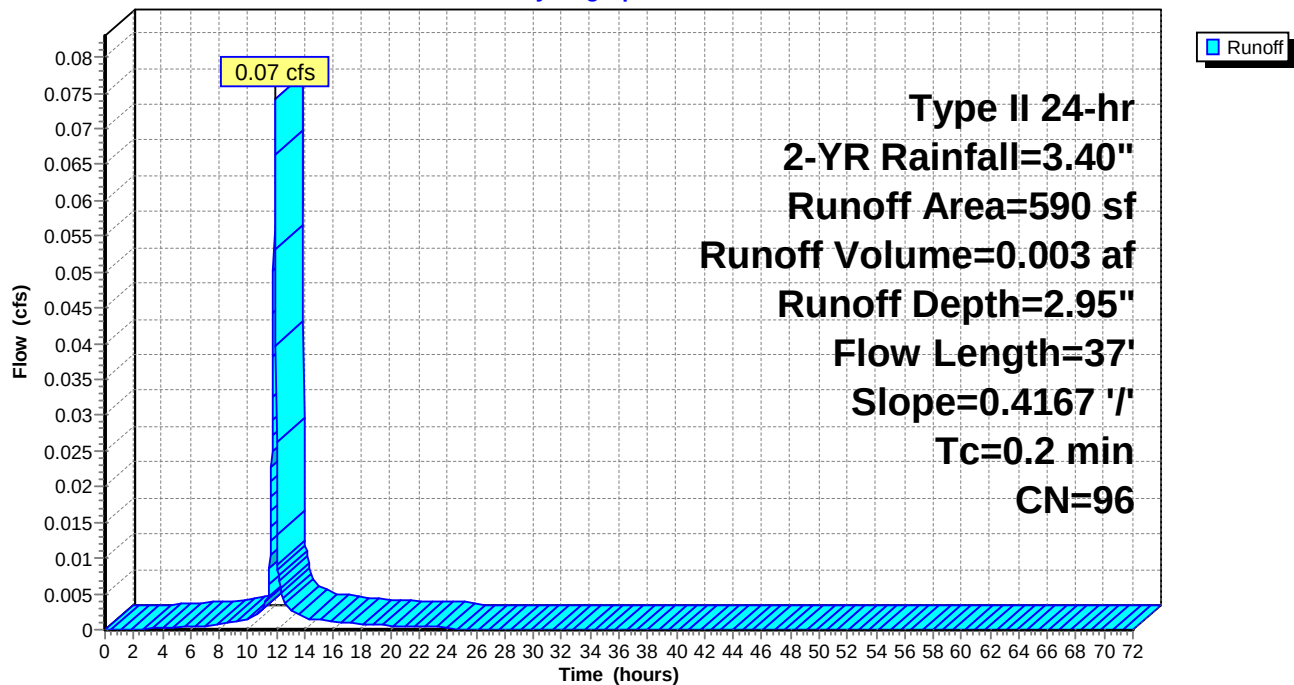
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 2-YR Rainfall=3.40"

Area (sf)	CN	Description
550	98	Roofs, HSG C
40	74	>75% Grass cover, Good, HSG C
590	96	Weighted Average
40		6.78% Pervious Area
550		93.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 43: Rooftop #43

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

Prepared by RAUCH inc.

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

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Summary for Subcatchment 44: Rooftop #44

Runoff = 0.09 cfs @ 11.90 hrs, Volume= 0.004 af, Depth= 2.95"

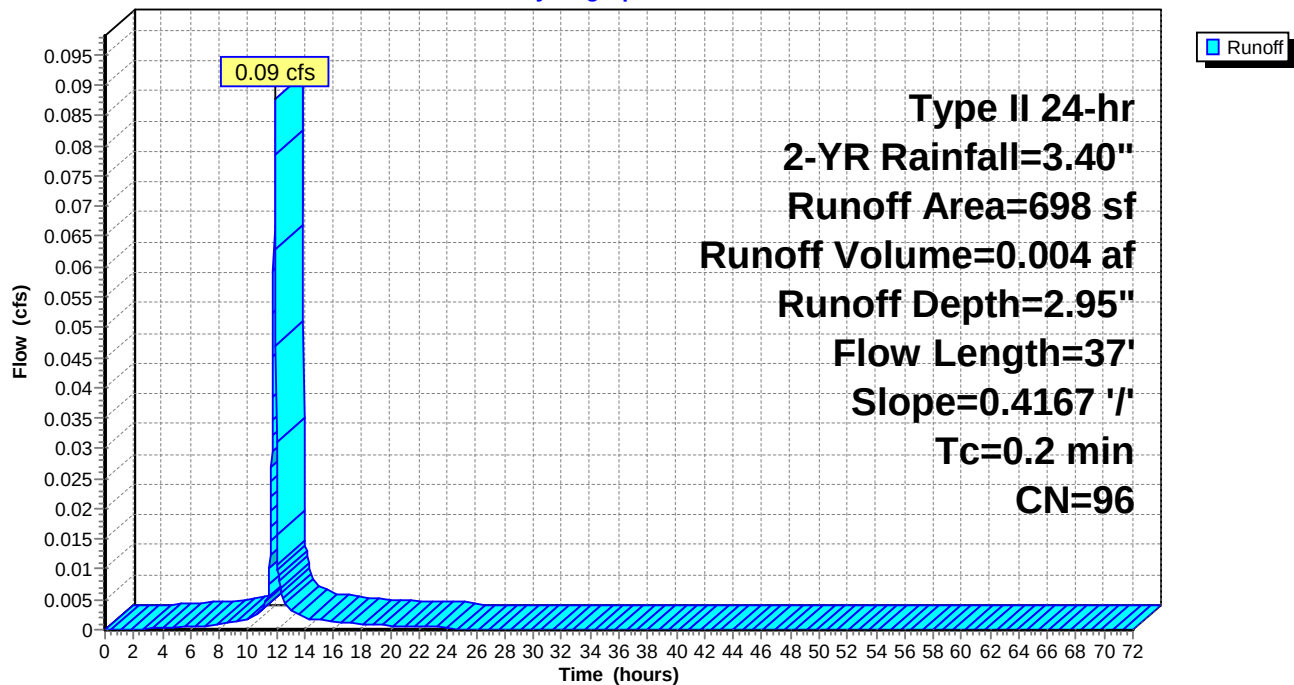
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 2-YR Rainfall=3.40"

Area (sf)	CN	Description
648	98	Roofs, HSG C
50	74	>75% Grass cover, Good, HSG C
698	96	Weighted Average
50		7.16% Pervious Area
648		92.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 44: Rooftop #44

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

Prepared by RAUCH inc.

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

Printed 02/22/23

Summary for Subcatchment 45: Rooftop #45

Runoff = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af, Depth= 2.95"

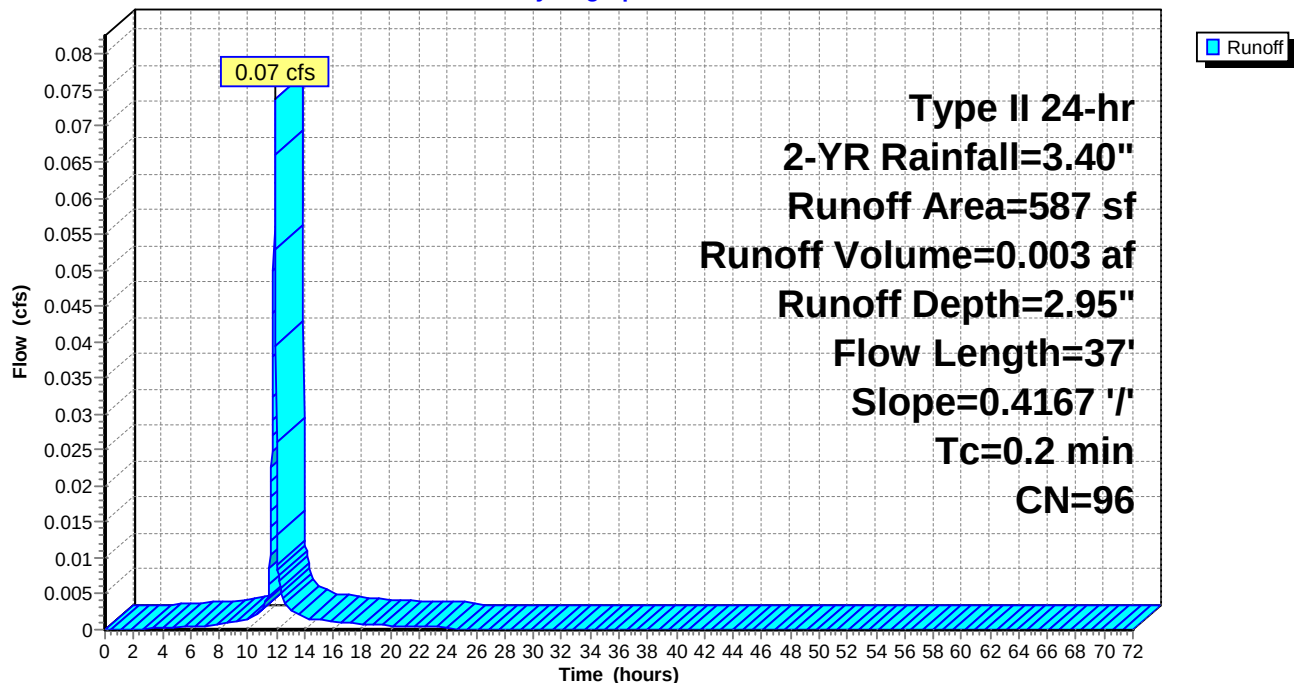
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 2-YR Rainfall=3.40"

Area (sf)	CN	Description
547	98	Roofs, HSG C
40	74	>75% Grass cover, Good, HSG C
587	96	Weighted Average
40		6.81% Pervious Area
547		93.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 45: Rooftop #45

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

Printed 02/22/23

Summary for Subcatchment 46: Rooftop #46

Runoff = 0.03 cfs @ 11.90 hrs, Volume= 0.001 af, Depth= 2.95"

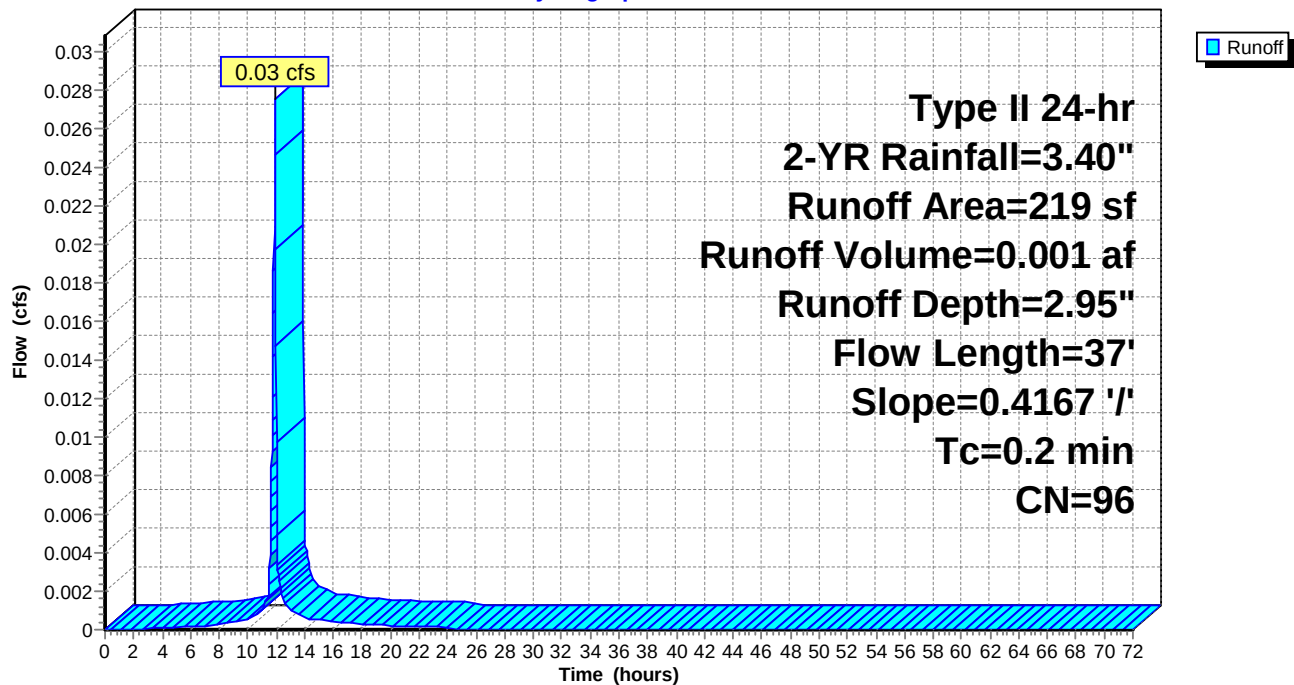
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 2-YR Rainfall=3.40"

Area (sf)	CN	Description
199	98	Roofs, HSG C
20	74	>75% Grass cover, Good, HSG C
219	96	Weighted Average
20		9.13% Pervious Area
199		90.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 46: Rooftop #46

Hydrograph



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

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Summary for Subcatchment 47: Rooftop #47

Runoff = 0.15 cfs @ 11.90 hrs, Volume= 0.007 af, Depth= 2.95"

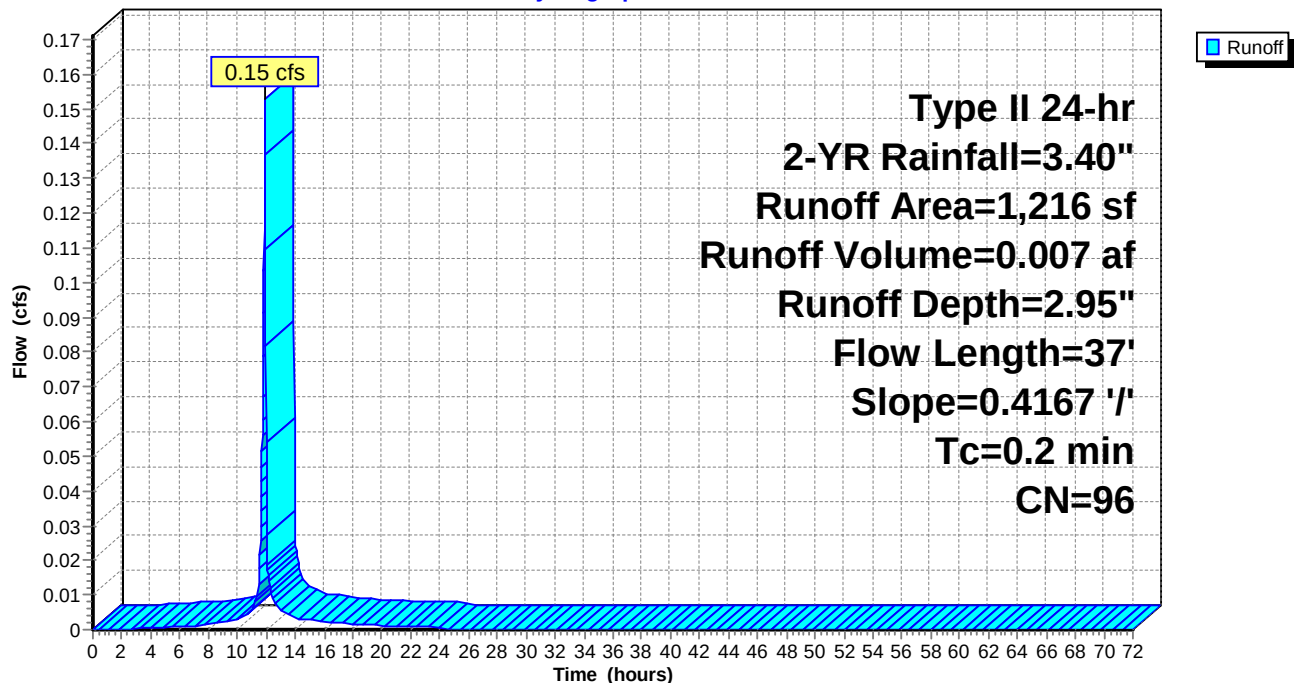
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 2-YR Rainfall=3.40"

Area (sf)	CN	Description
1,136	98	Roofs, HSG C
80	74	>75% Grass cover, Good, HSG C
1,216	96	Weighted Average
80		6.58% Pervious Area
1,136		93.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 47: Rooftop #47

Hydrograph



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

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Summary for Subcatchment 48: Rooftop #48

Runoff = 0.10 cfs @ 11.90 hrs, Volume= 0.004 af, Depth= 2.95"

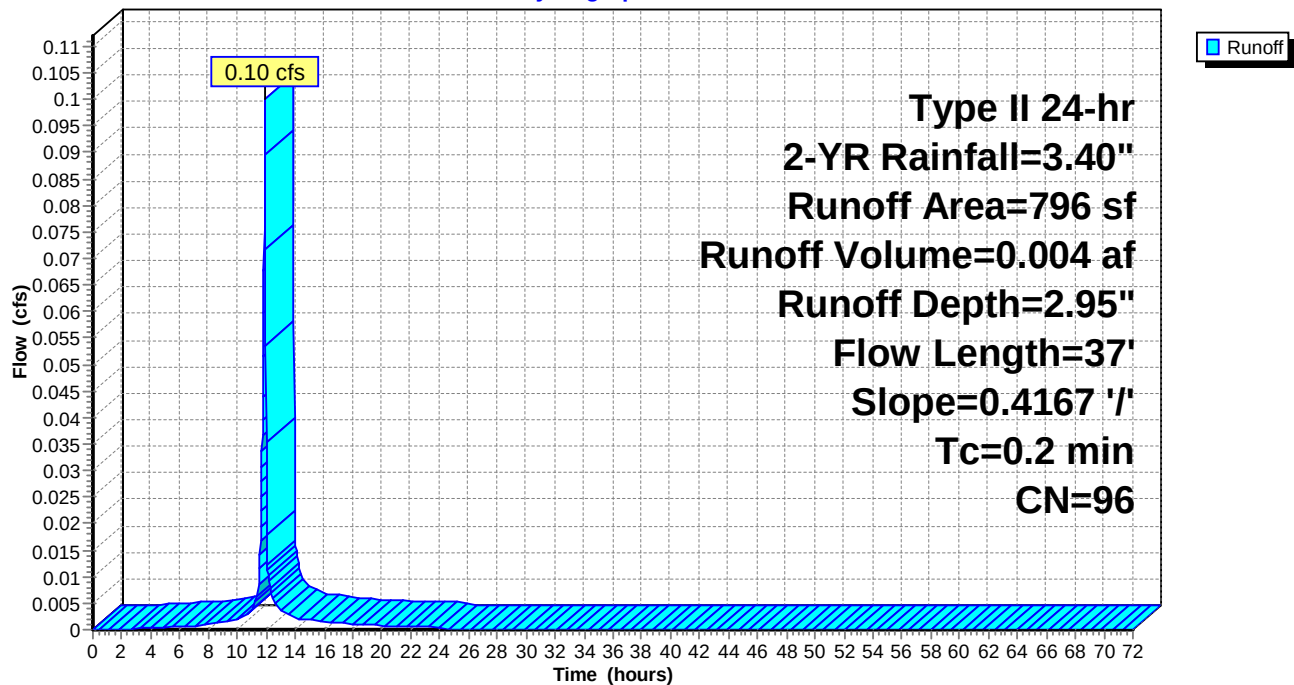
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 2-YR Rainfall=3.40"

Area (sf)	CN	Description
741	98	Roofs, HSG C
55	74	>75% Grass cover, Good, HSG C
796	96	Weighted Average
55		6.91% Pervious Area
741		93.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 48: Rooftop #48

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

Printed 02/22/23

Summary for Subcatchment 49: Rooftop #49

Runoff = 0.05 cfs @ 11.90 hrs, Volume= 0.002 af, Depth= 2.95"

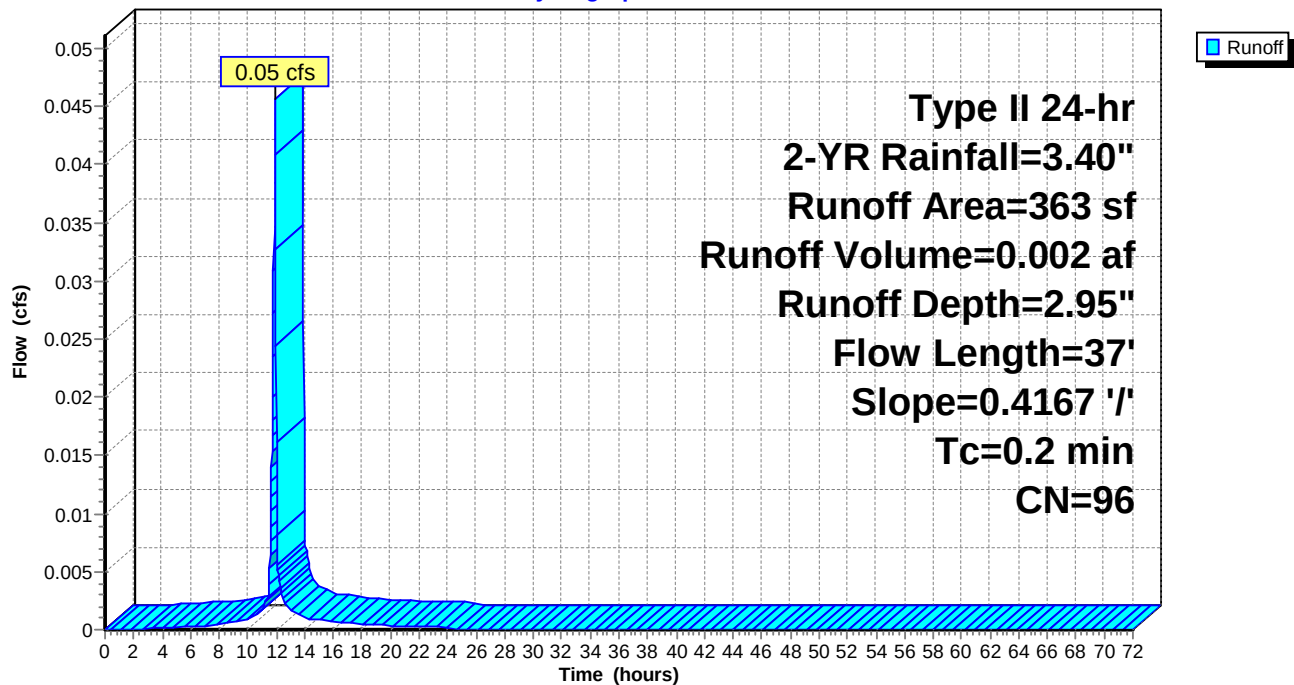
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 2-YR Rainfall=3.40"

Area (sf)	CN	Description
333	98	Roofs, HSG C
30	74	>75% Grass cover, Good, HSG C
363	96	Weighted Average
30		8.26% Pervious Area
333		91.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 49: Rooftop #49

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

Printed 02/22/23

Summary for Subcatchment 50: Rooftop #50

Runoff = 0.09 cfs @ 11.90 hrs, Volume= 0.004 af, Depth= 2.95"

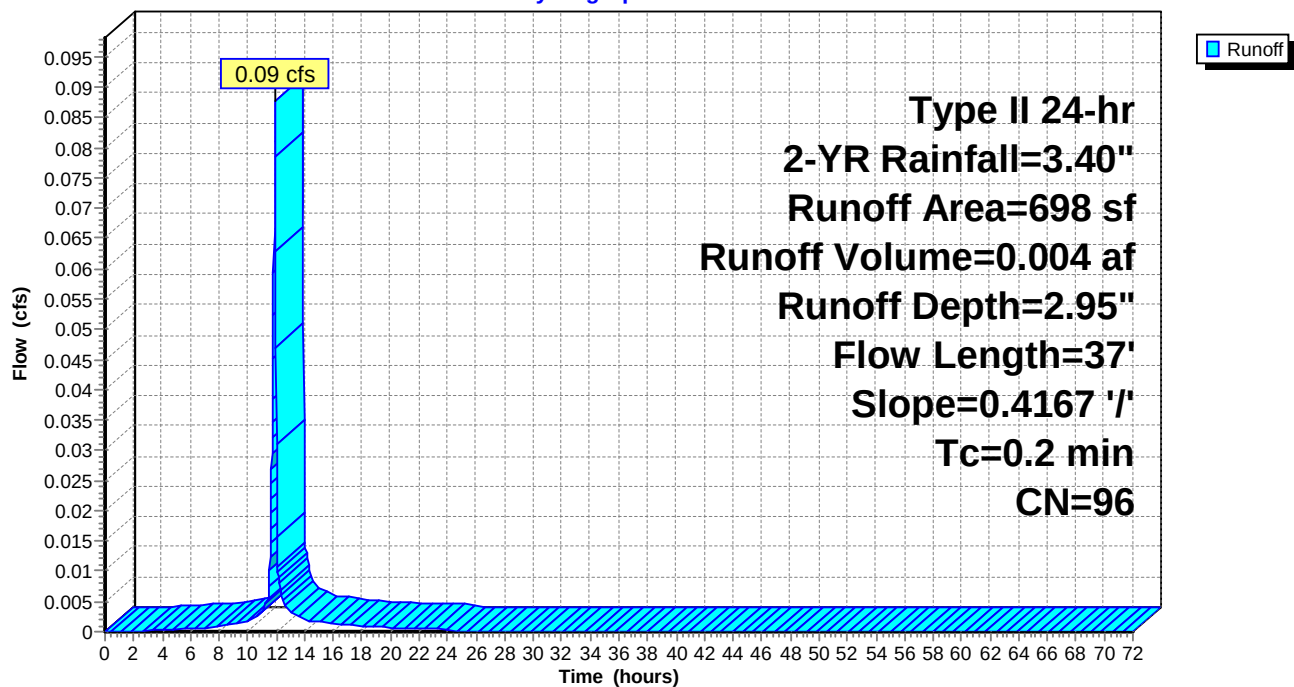
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 2-YR Rainfall=3.40"

Area (sf)	CN	Description
648	98	Roofs, HSG C
50	74	>75% Grass cover, Good, HSG C
698	96	Weighted Average
50		7.16% Pervious Area
648		92.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 50: Rooftop #50

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Subcatchment 51: Rooftop #51

Runoff = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af, Depth= 2.95"

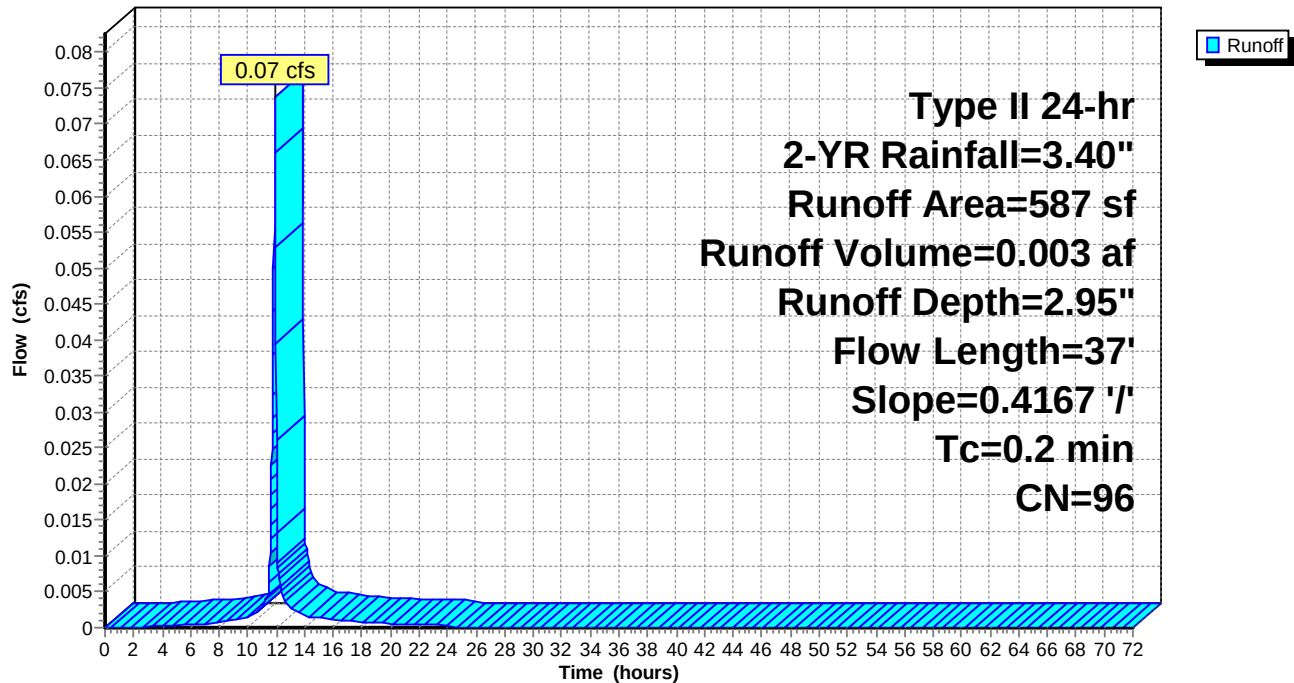
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 2-YR Rainfall=3.40"

Area (sf)	CN	Description
547	98	Roofs, HSG C
40	74	>75% Grass cover, Good, HSG C
587	96	Weighted Average
40		6.81% Pervious Area
547		93.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 51: Rooftop #51

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Subcatchment 52: Rooftop #52

Runoff = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af, Depth= 2.95"

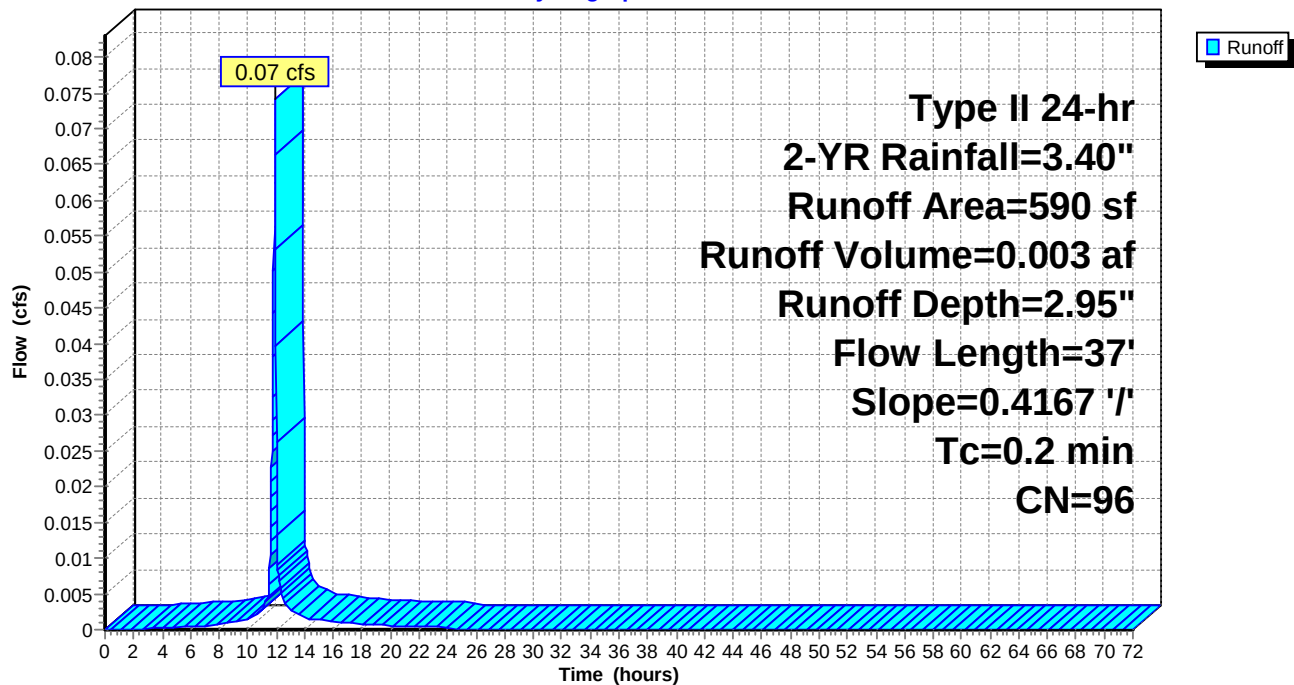
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 2-YR Rainfall=3.40"

Area (sf)	CN	Description
550	98	Roofs, HSG C
40	74	>75% Grass cover, Good, HSG C
590	96	Weighted Average
40		6.78% Pervious Area
550		93.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 52: Rooftop #52

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

Printed 02/22/23

Summary for Subcatchment 53: Rooftop #53

Runoff = 0.14 cfs @ 11.90 hrs, Volume= 0.006 af, Depth= 2.95"

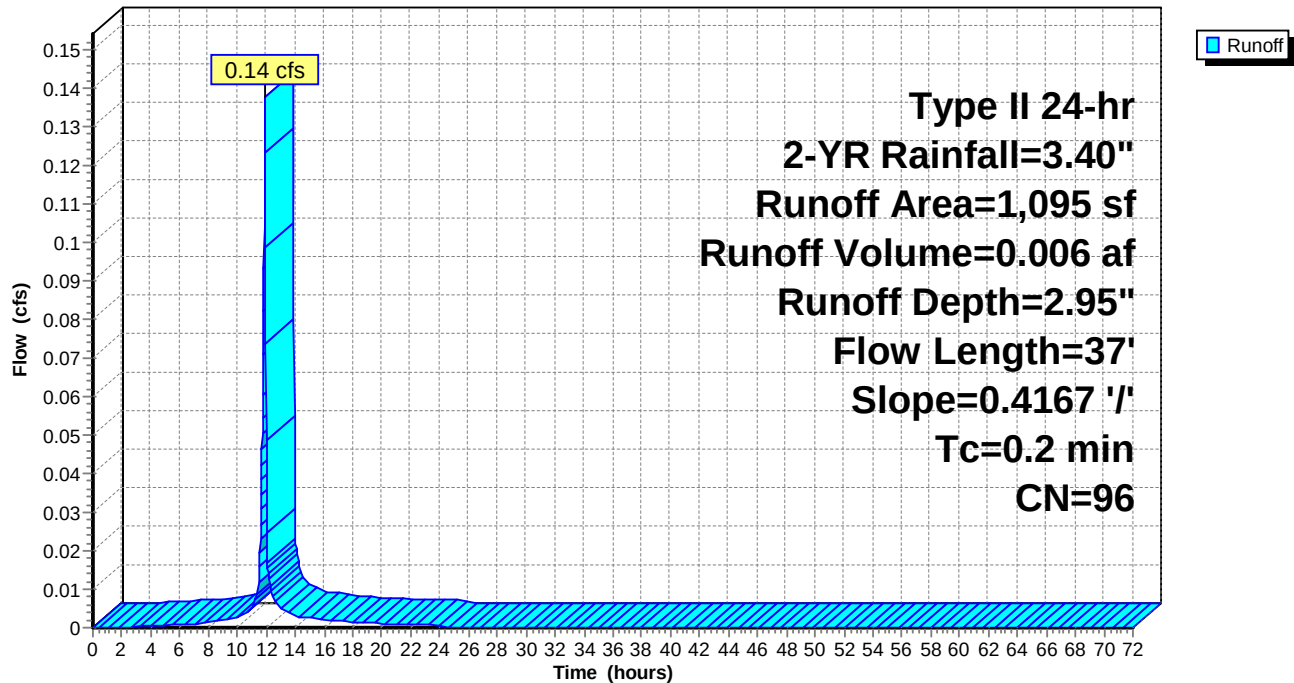
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 2-YR Rainfall=3.40"

Area (sf)	CN	Description
1,025	98	Roofs, HSG C
70	74	>75% Grass cover, Good, HSG C
1,095	96	Weighted Average
70		6.39% Pervious Area
1,025		93.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 53: Rooftop #53

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Subcatchment 54: Rooftop #54

Runoff = 0.04 cfs @ 11.90 hrs, Volume= 0.002 af, Depth= 2.95"

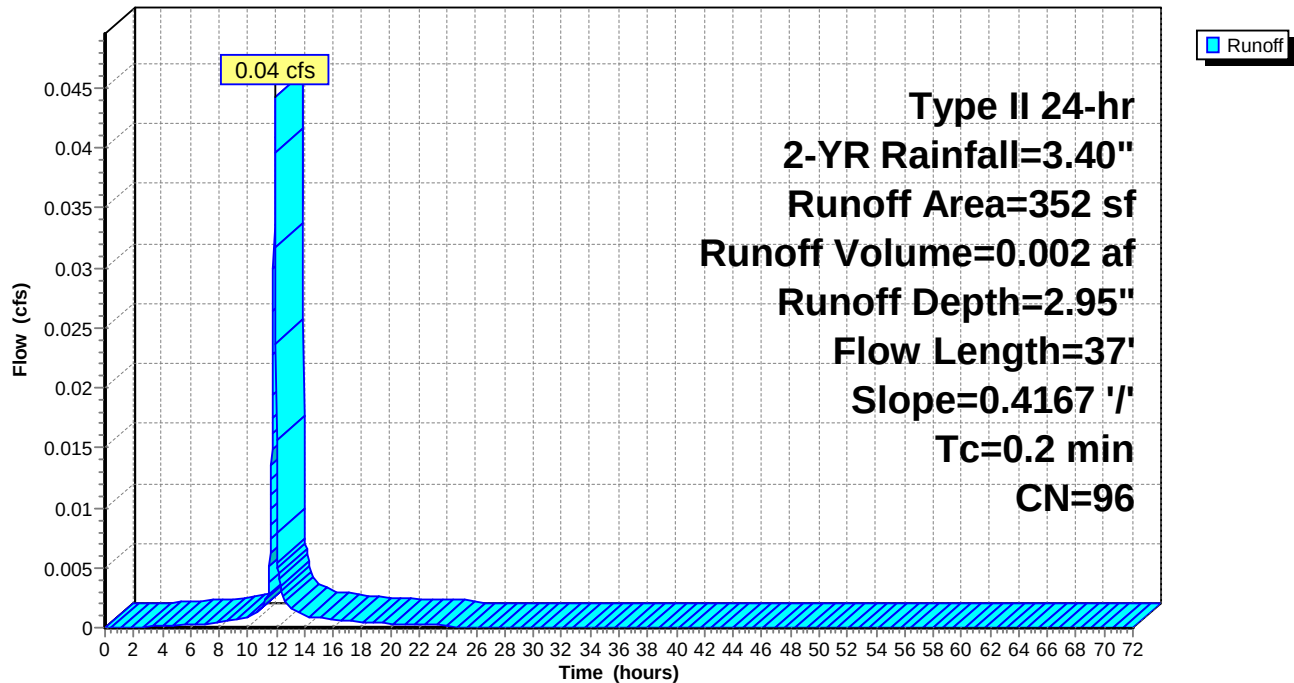
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 2-YR Rainfall=3.40"

Area (sf)	CN	Description
322	98	Roofs, HSG C
30	74	>75% Grass cover, Good, HSG C
352	96	Weighted Average
30		8.52% Pervious Area
322		91.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 54: Rooftop #54

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Subcatchment 55: Non-RT DA to PA-2

Runoff = 0.23 cfs @ 11.99 hrs, Volume= 0.015 af, Depth= 2.54"

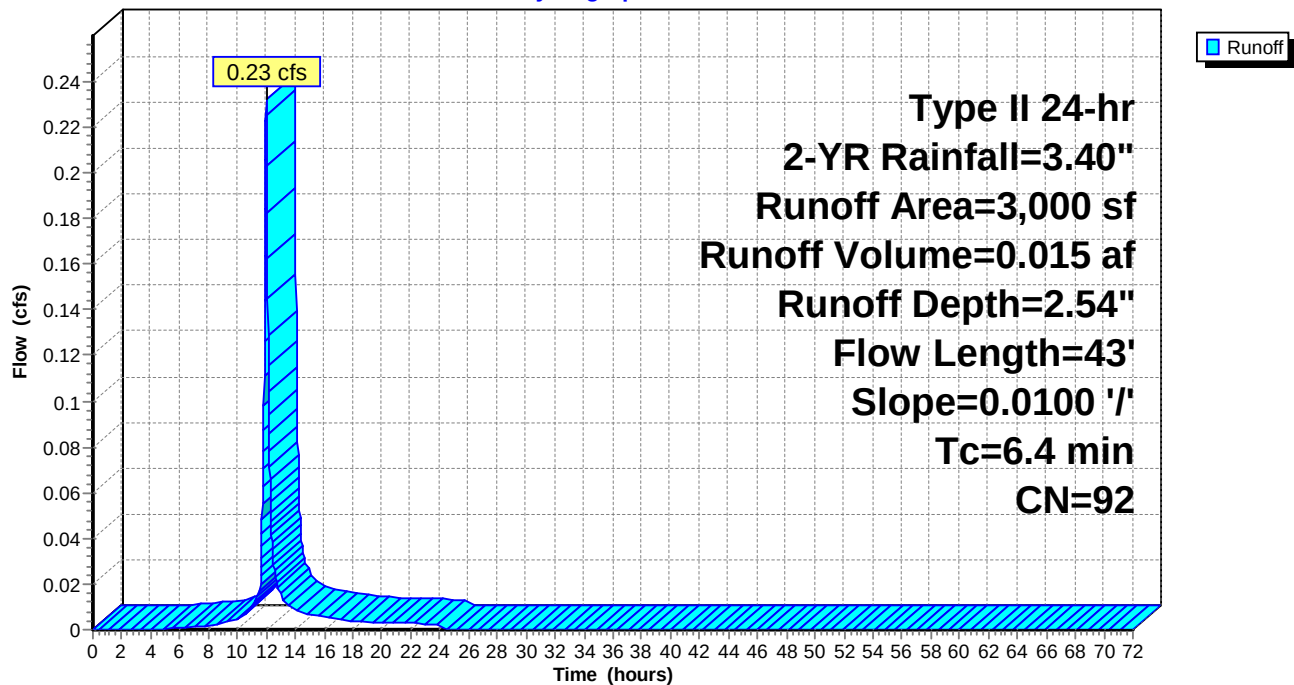
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 2-YR Rainfall=3.40"

Area (sf)	CN	Description
733	74	>75% Grass cover, Good, HSG C
* 2,267	98	Impervious
3,000	92	Weighted Average
733		24.43% Pervious Area
2,267		75.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	43	0.0100	0.11		Sheet Flow, Sideyard
					Grass: Short n= 0.150 P2= 3.40"

Subcatchment 55: Non-RT DA to PA-2

Hydrograph



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

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Summary for Subcatchment 56: Non-RT DA to PA-3

Runoff = 0.26 cfs @ 12.01 hrs, Volume= 0.018 af, Depth= 2.09"

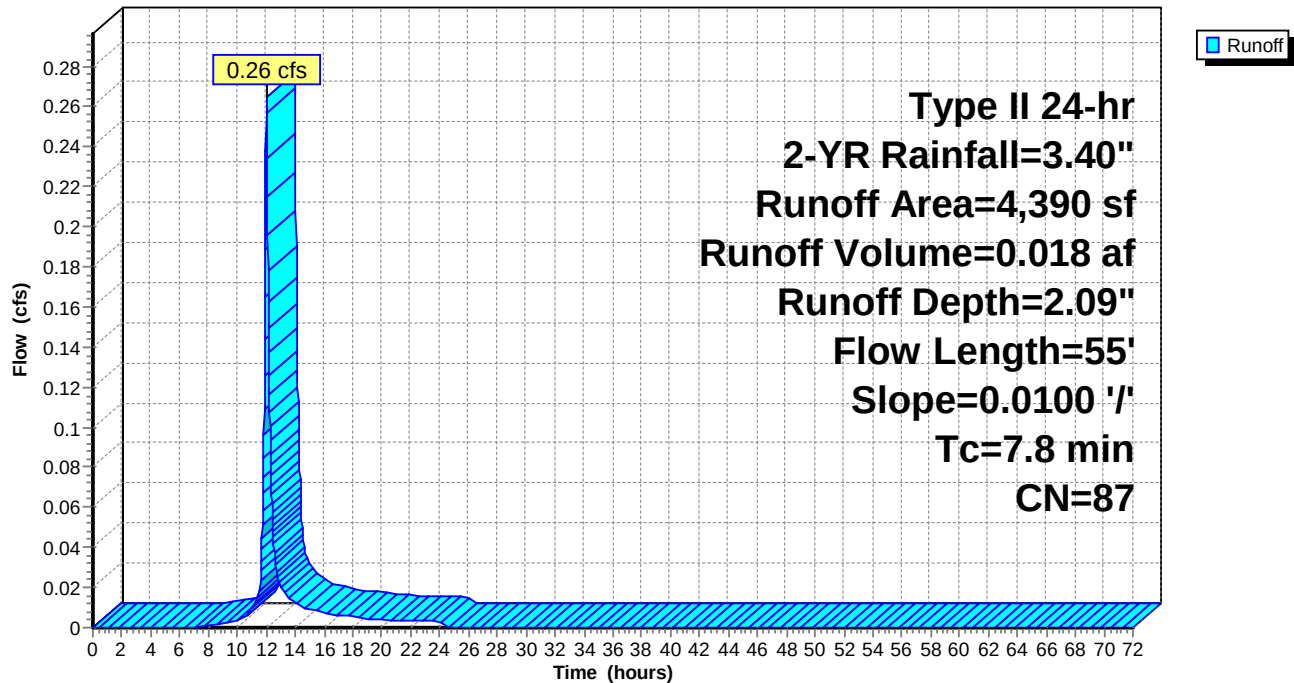
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 2-YR Rainfall=3.40"

Area (sf)	CN	Description
1,989	74	>75% Grass cover, Good, HSG C
2,401	98	Paved parking, HSG C
4,390	87	Weighted Average
1,989		45.31% Pervious Area
2,401		54.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.8	55	0.0100	0.12		Sheet Flow, Sideyard
Grass: Short n= 0.150 P2= 3.40"					

Subcatchment 56: Non-RT DA to PA-3

Hydrograph



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

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Summary for Subcatchment 57: Non-RT DA to PA-4

Runoff = 0.27 cfs @ 12.02 hrs, Volume= 0.019 af, Depth= 2.18"

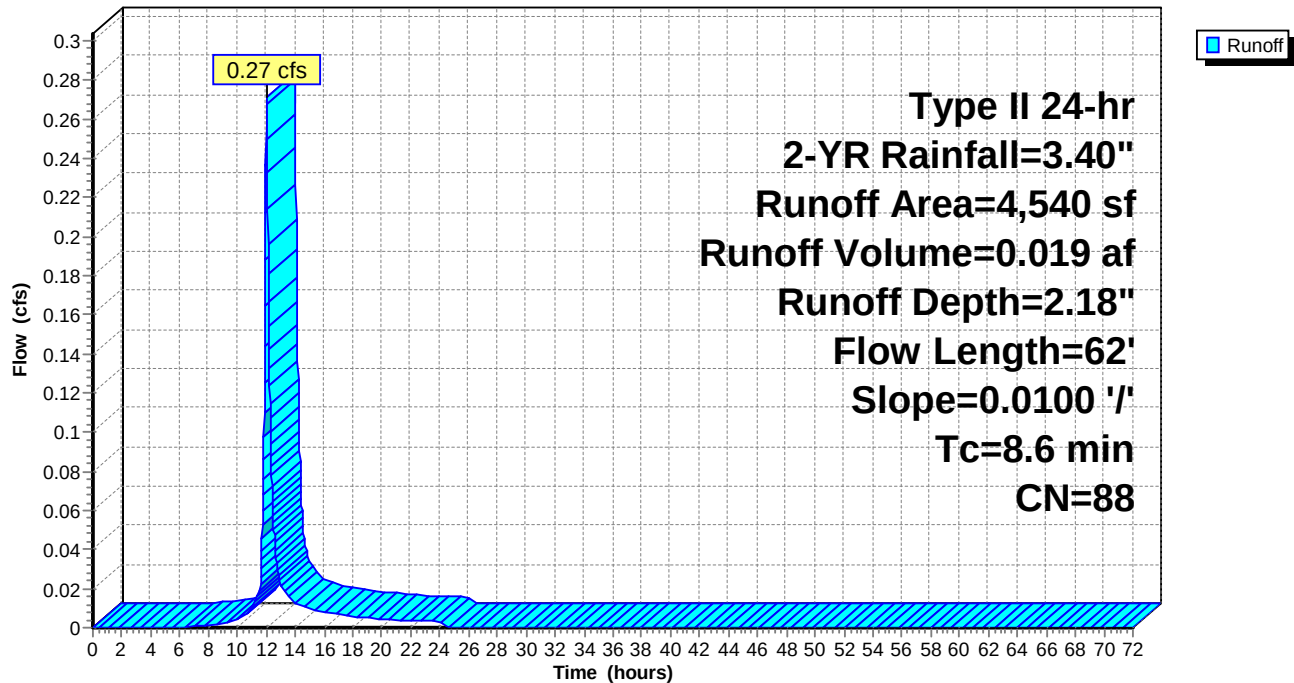
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 2-YR Rainfall=3.40"

Area (sf)	CN	Description
1,939	74	>75% Grass cover, Good, HSG C
2,601	98	Paved parking, HSG C
4,540	88	Weighted Average
1,939		42.71% Pervious Area
2,601		57.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	62	0.0100	0.12		Sheet Flow, Sideyard
Grass: Short n= 0.150 P2= 3.40"					

Subcatchment 57: Non-RT DA to PA-4

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

Prepared by RAUCH inc.

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

Printed 02/22/23

Summary for Subcatchment 58: Non-RT DA to PA-5

Runoff = 0.46 cfs @ 12.00 hrs, Volume= 0.030 af, Depth= 2.54"

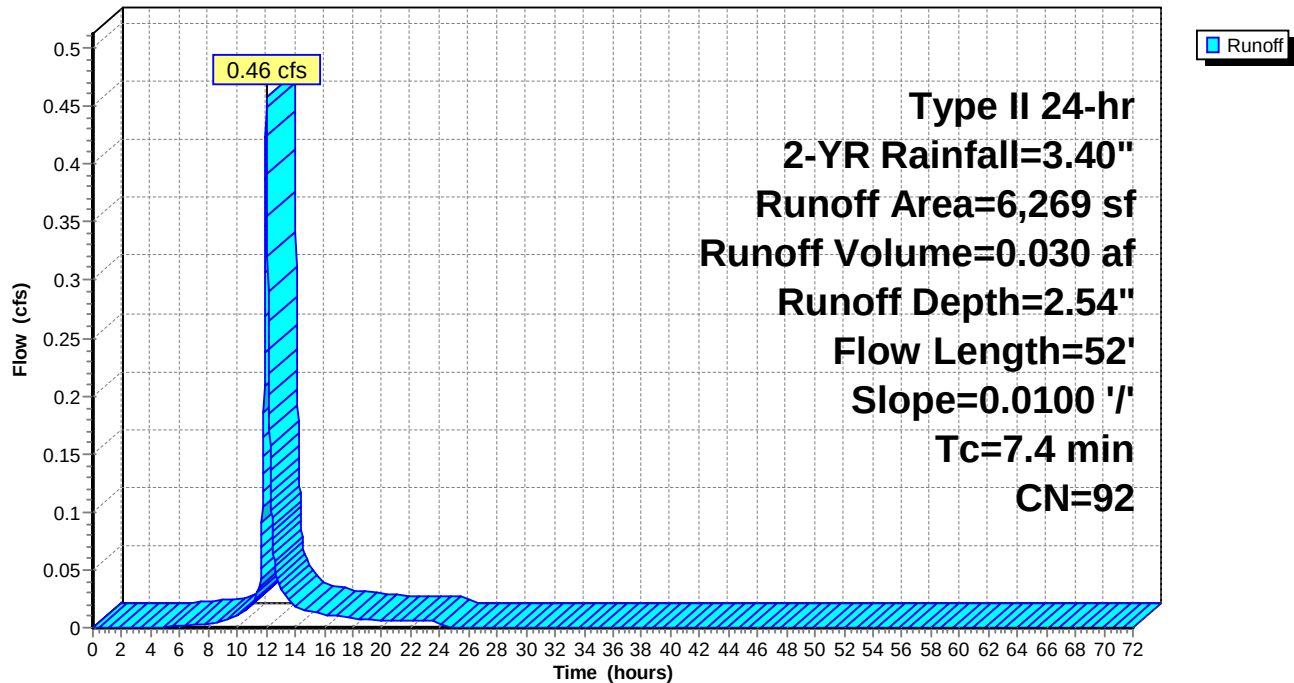
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 2-YR Rainfall=3.40"

Area (sf)	CN	Description
1,645	74	>75% Grass cover, Good, HSG C
4,624	98	Paved parking, HSG C
6,269	92	Weighted Average
1,645		26.24% Pervious Area
4,624		73.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	52	0.0100	0.12		Sheet Flow, Sideyard
Grass: Short n= 0.150 P2= 3.40"					

Subcatchment 58: Non-RT DA to PA-5

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

Prepared by RAUCH inc.

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

Printed 02/22/23

Summary for Subcatchment 59: Non-RT DA to PA-6

Runoff = 0.62 cfs @ 12.00 hrs, Volume= 0.041 af, Depth= 2.54"

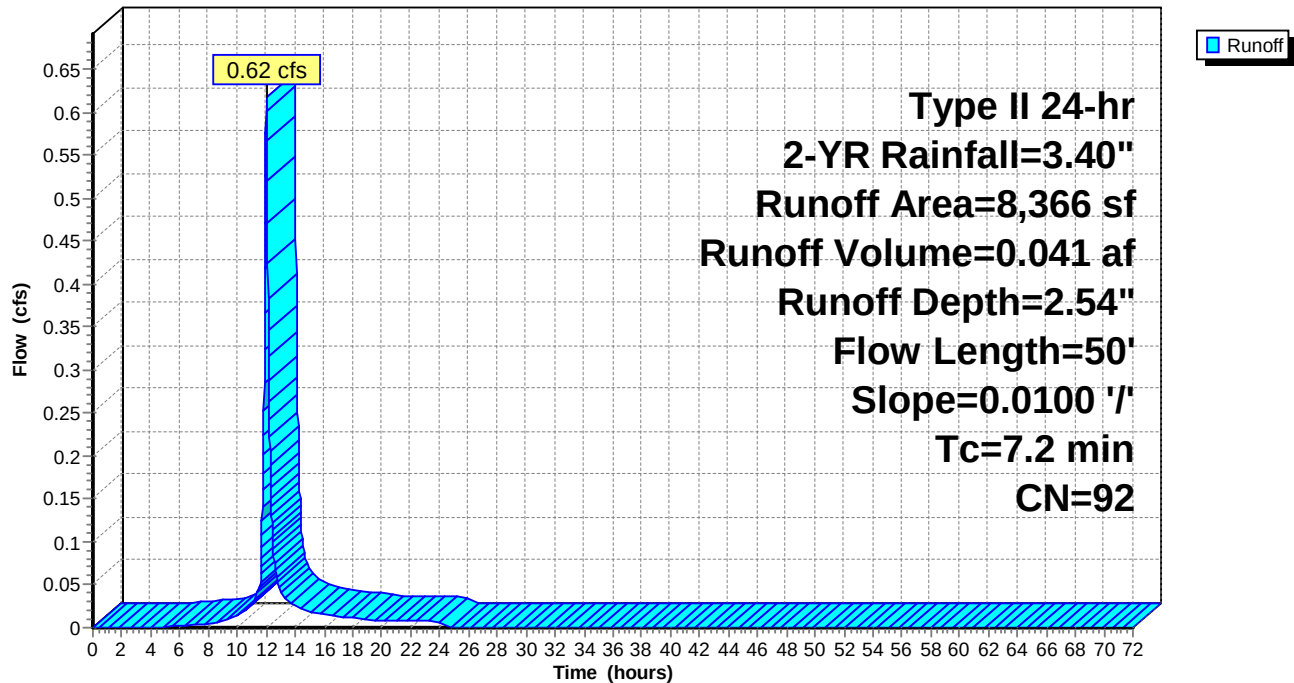
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 2-YR Rainfall=3.40"

Area (sf)	CN	Description
2,213	74	>75% Grass cover, Good, HSG C
6,153	98	Paved parking, HSG C
8,366	92	Weighted Average
2,213		26.45% Pervious Area
6,153		73.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	50	0.0100	0.12		Sheet Flow, Sideyard
Grass: Short n= 0.150 P2= 3.40"					

Subcatchment 59: Non-RT DA to PA-6

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Subcatchment 60: Non-RT DA to PA-7

Runoff = 0.08 cfs @ 12.00 hrs, Volume= 0.005 af, Depth= 2.45"

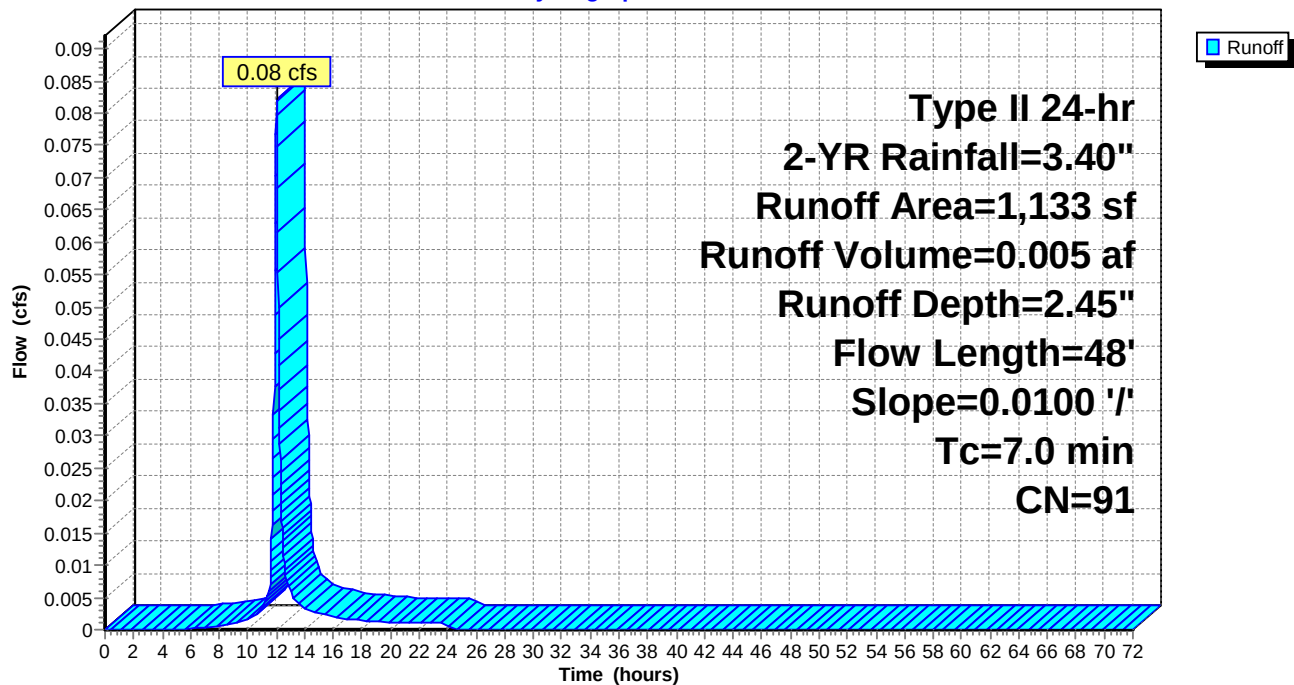
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 2-YR Rainfall=3.40"

Area (sf)	CN	Description
330	74	>75% Grass cover, Good, HSG C
803	98	Paved parking, HSG C
1,133	91	Weighted Average
330		29.13% Pervious Area
803		70.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	48	0.0100	0.11		Sheet Flow, Sideyard
Grass: Short n= 0.150 P2= 3.40"					

Subcatchment 60: Non-RT DA to PA-7

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Subcatchment 61: West DA to Jowite

Runoff = 0.34 cfs @ 12.09 hrs, Volume= 0.032 af, Depth= 1.17"

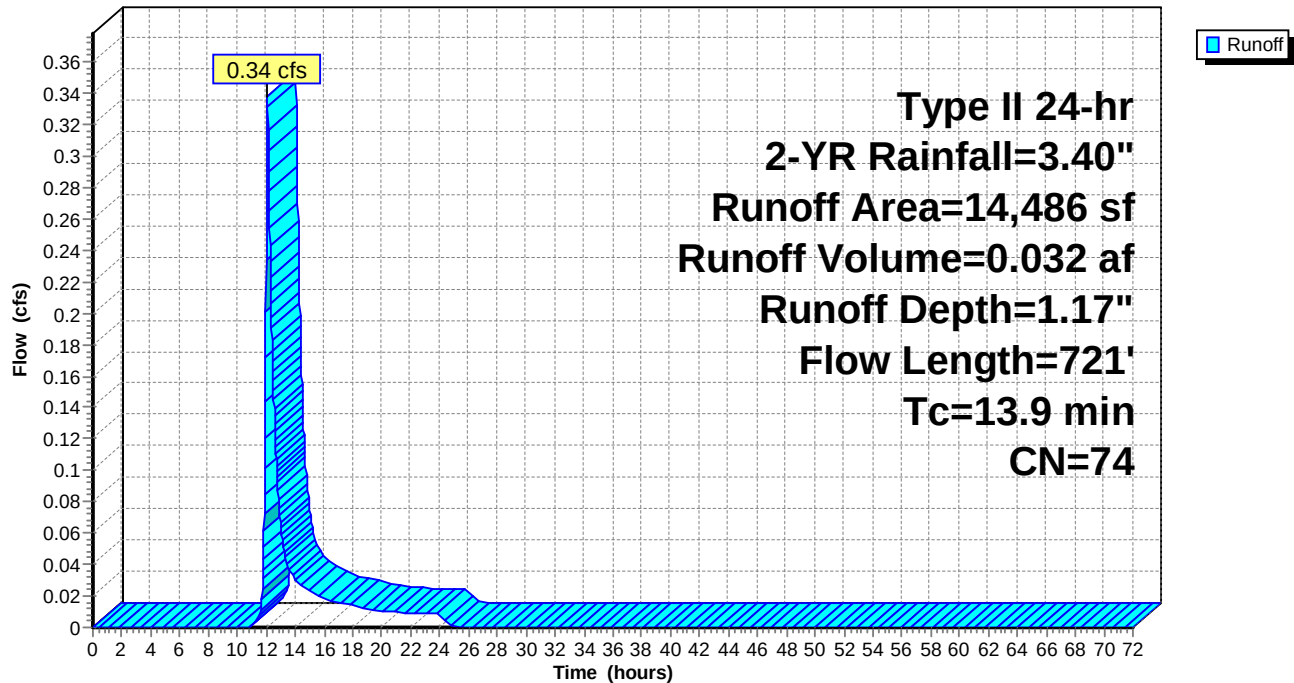
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 2-YR Rainfall=3.40"

Area (sf)	CN	Description
14,486	74	>75% Grass cover, Good, HSG C
14,486		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.8	55	0.0100	0.12		Sheet Flow, Sideyard Grass: Short n= 0.150 P2= 3.40"
5.6	496	0.0053	1.48		Shallow Concentrated Flow, Gutter Pan Paved Kv= 20.3 fps
0.5	170	0.0087	5.80	7.12	Pipe Channel, Pipe from CI on West Side of Jowite to SDMH-20201 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.011 Concrete pipe, straight & clean
13.9	721	Total			

Subcatchment 61: West DA to Jowite

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Reach VG-2: Valley Gutter 2

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

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min

Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs

Average Depth at Peak Storage= 0.00'

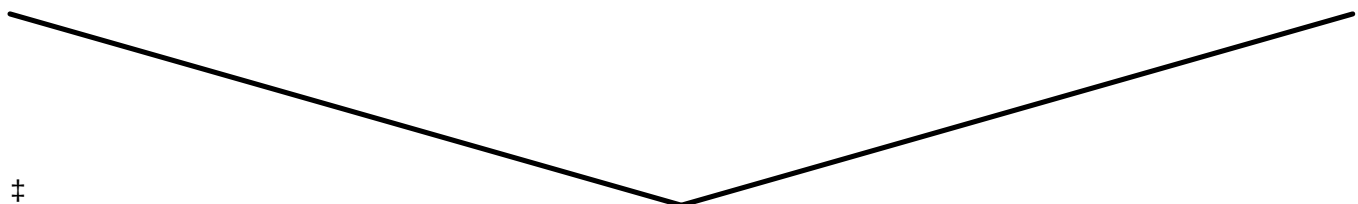
Bank-Full Depth= 0.08' Flow Area= 0.1 sf, Capacity= 0.14 cfs

0.00' x 0.08' deep channel, n= 0.011 Concrete pipe, straight & clean

Side Slope Z-value= 18.0 '/' Top Width= 2.88'

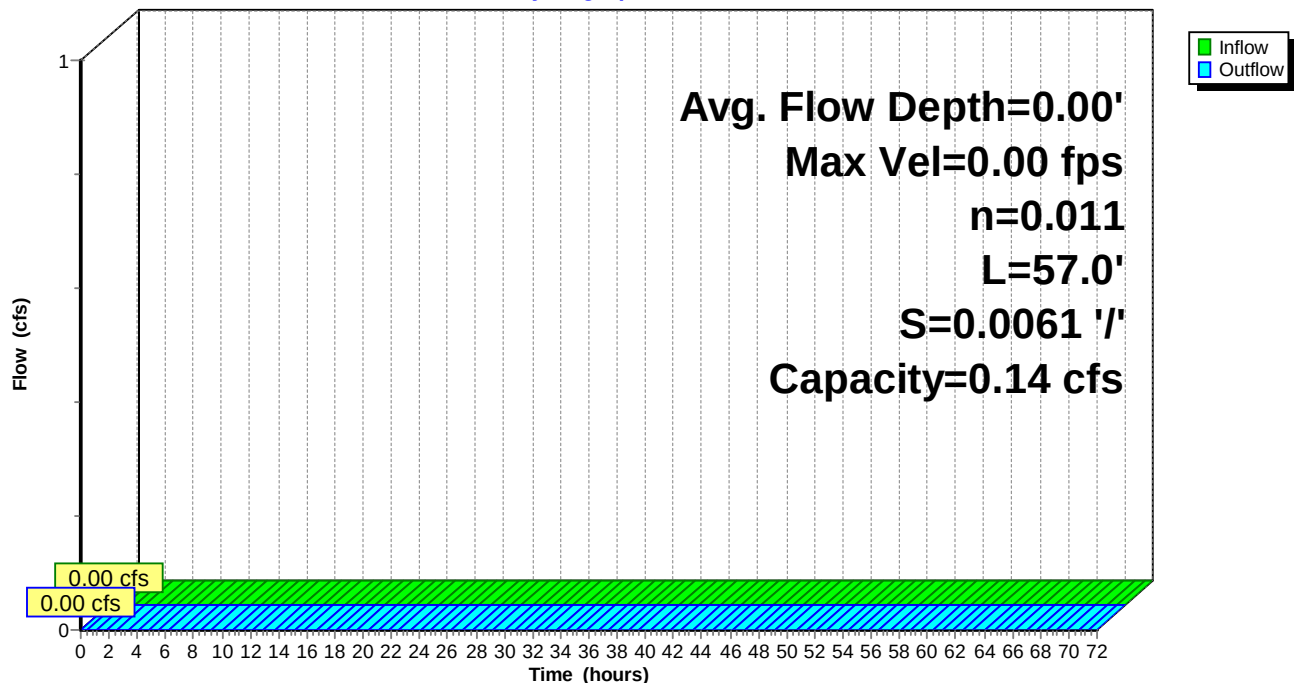
Length= 57.0' Slope= 0.0061 '/'

Inlet Invert= 15.10', Outlet Invert= 14.75'



Reach VG-2: Valley Gutter 2

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

Printed 02/22/23

Summary for Reach VG-3: Valley Gutter 3

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

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min

Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs

Average Depth at Peak Storage= 0.00'

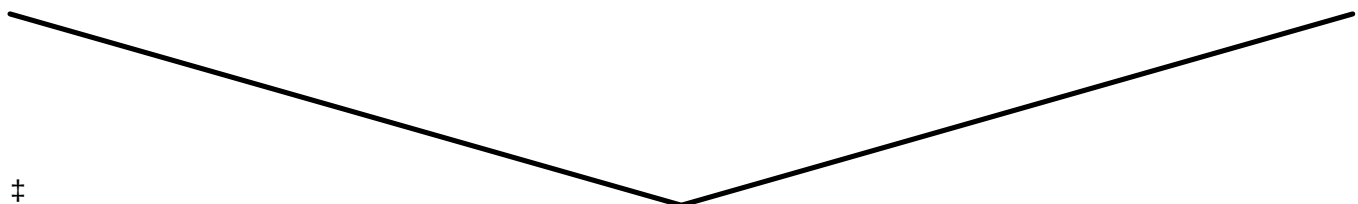
Bank-Full Depth= 0.08' Flow Area= 0.1 sf, Capacity= 0.13 cfs

0.00' x 0.08' deep channel, n= 0.011 Concrete pipe, straight & clean

Side Slope Z-value= 18.0 ' Top Width= 2.88'

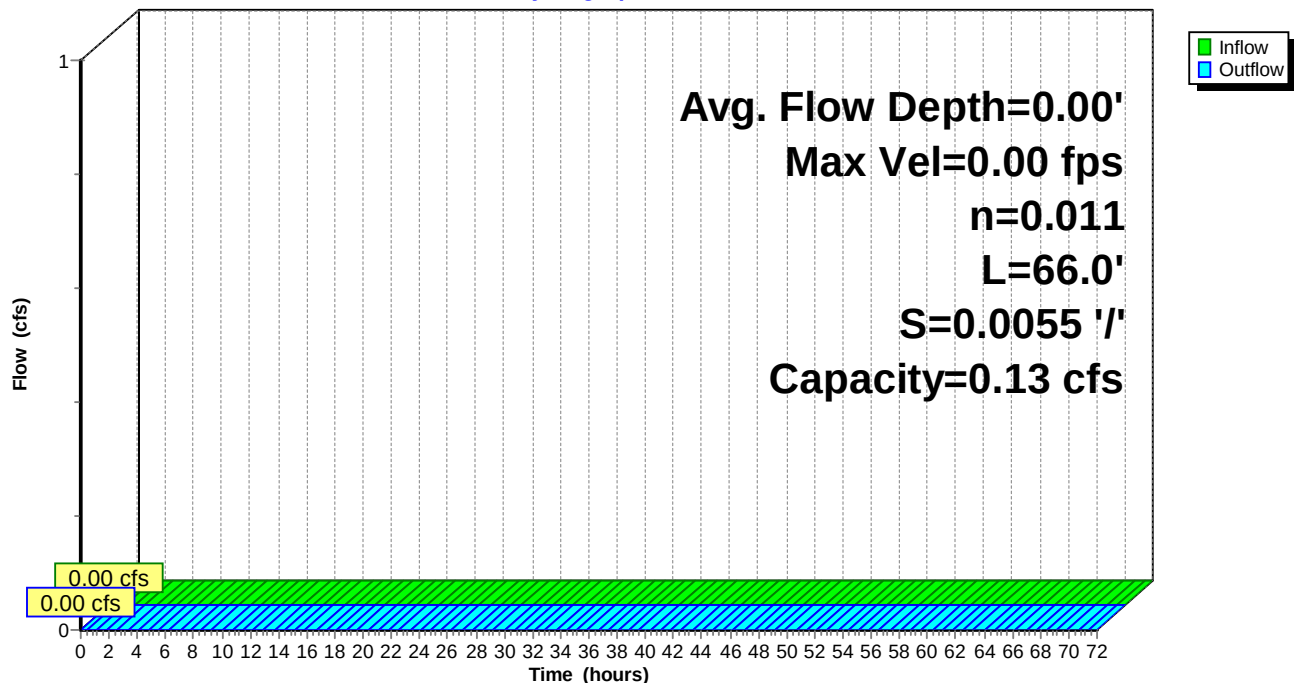
Length= 66.0' Slope= 0.0055 ' / '

Inlet Invert= 15.11', Outlet Invert= 14.75'



Reach VG-3: Valley Gutter 3

Hydrograph



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

Printed 02/22/23

Summary for Reach VG-4: Valley Gutter 4

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

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min

Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs

Average Depth at Peak Storage= 0.00'

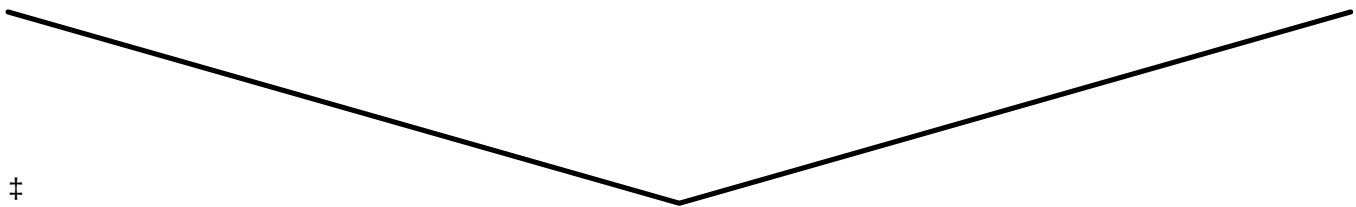
Bank-Full Depth= 0.08' Flow Area= 0.1 sf, Capacity= 0.14 cfs

0.00' x 0.08' deep channel, n= 0.011 Concrete pipe, straight & clean

Side Slope Z-value= 18.0 '/' Top Width= 2.88'

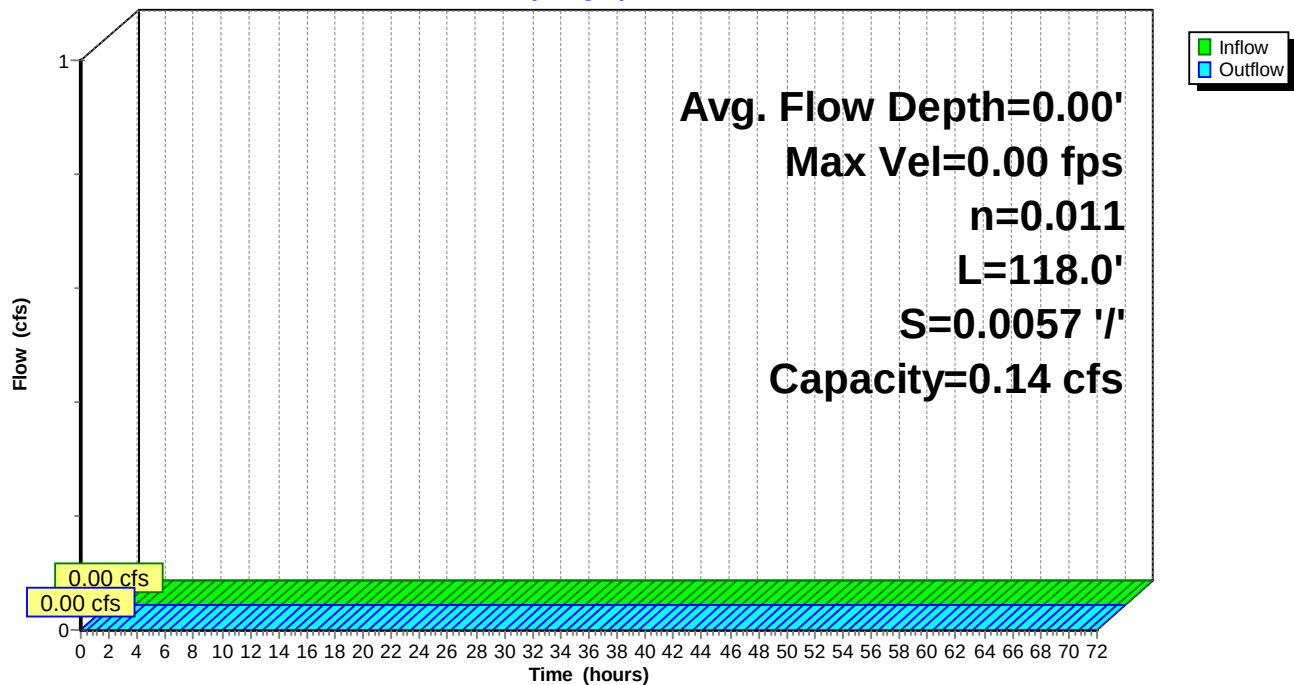
Length= 118.0' Slope= 0.0057 '/'

Inlet Invert= 15.78', Outlet Invert= 15.11'



Reach VG-4: Valley Gutter 4

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Reach VG-5: Valley Gutter 5

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

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min

Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs

Average Depth at Peak Storage= 0.00'

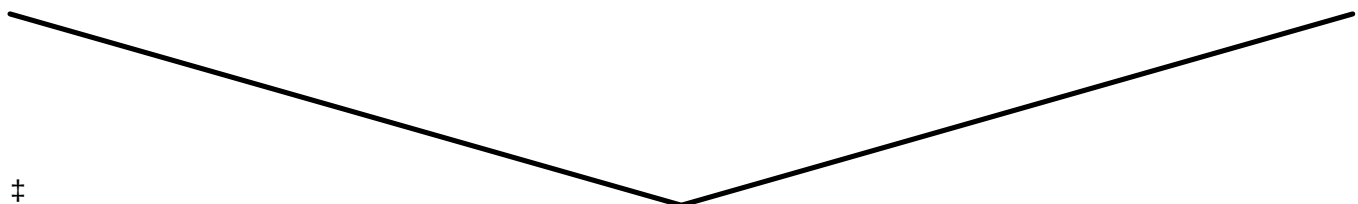
Bank-Full Depth= 0.08' Flow Area= 0.1 sf, Capacity= 0.18 cfs

0.00' x 0.08' deep channel, n= 0.011 Concrete pipe, straight & clean

Side Slope Z-value= 18.0 ' Top Width= 2.88'

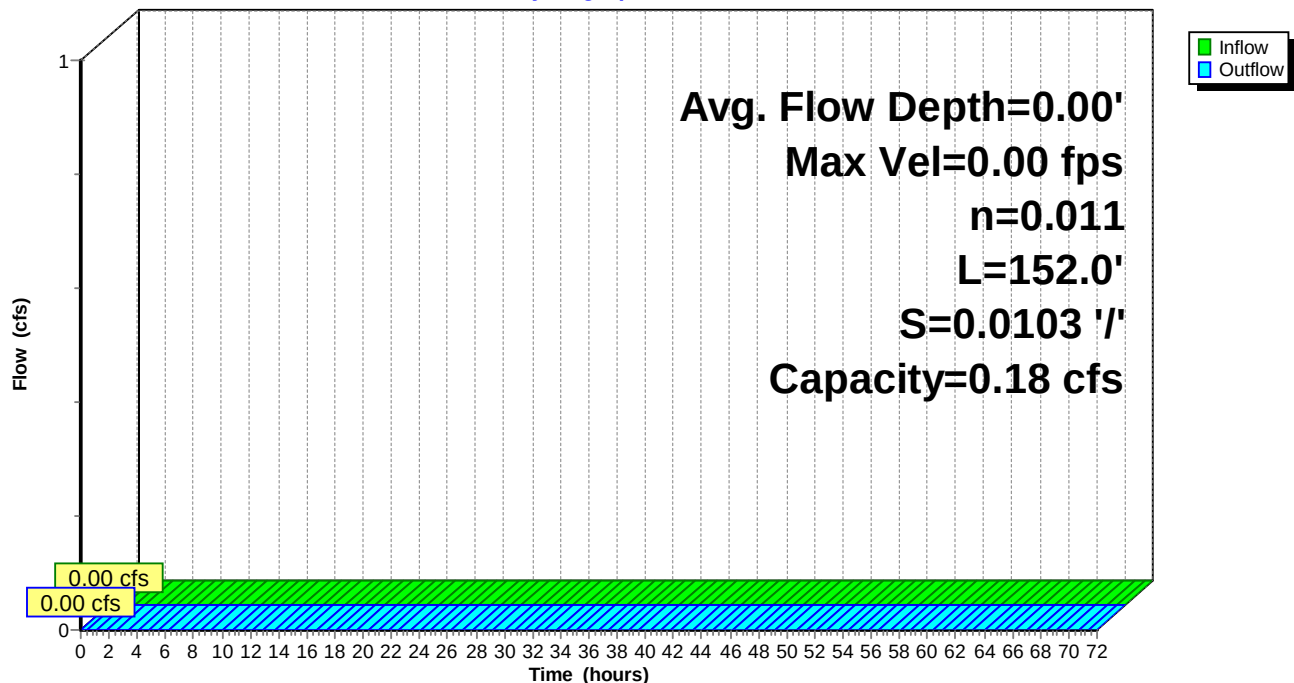
Length= 152.0' Slope= 0.0103 ' /'

Inlet Invert= 17.34', Outlet Invert= 15.78'



Reach VG-5: Valley Gutter 5

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

Printed 02/22/23

Summary for Pond EX-I-2: EX-I-2

Inflow Area = 0.921 ac, 75.76% Impervious, Inflow Depth = 2.52" for 2-YR event
Inflow = 1.71 cfs @ 12.02 hrs, Volume= 0.193 af
Outflow = 1.71 cfs @ 12.02 hrs, Volume= 0.193 af, Atten= 0%, Lag= 0.0 min
Primary = 1.71 cfs @ 12.02 hrs, Volume= 0.193 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 13.29' @ 11.98 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	14.50'	2.0" x 2.0" Horiz. Orifice/Grate X 11.00 columns X 11 rows C= 0.600 in 24.0" x 24.0" Grate (84% open area) Limited to weir flow at low heads
#2	Primary	12.30'	12.0" Round CMP_Round 12" L= 172.1' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 12.30' / 12.00' S= 0.0017 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf

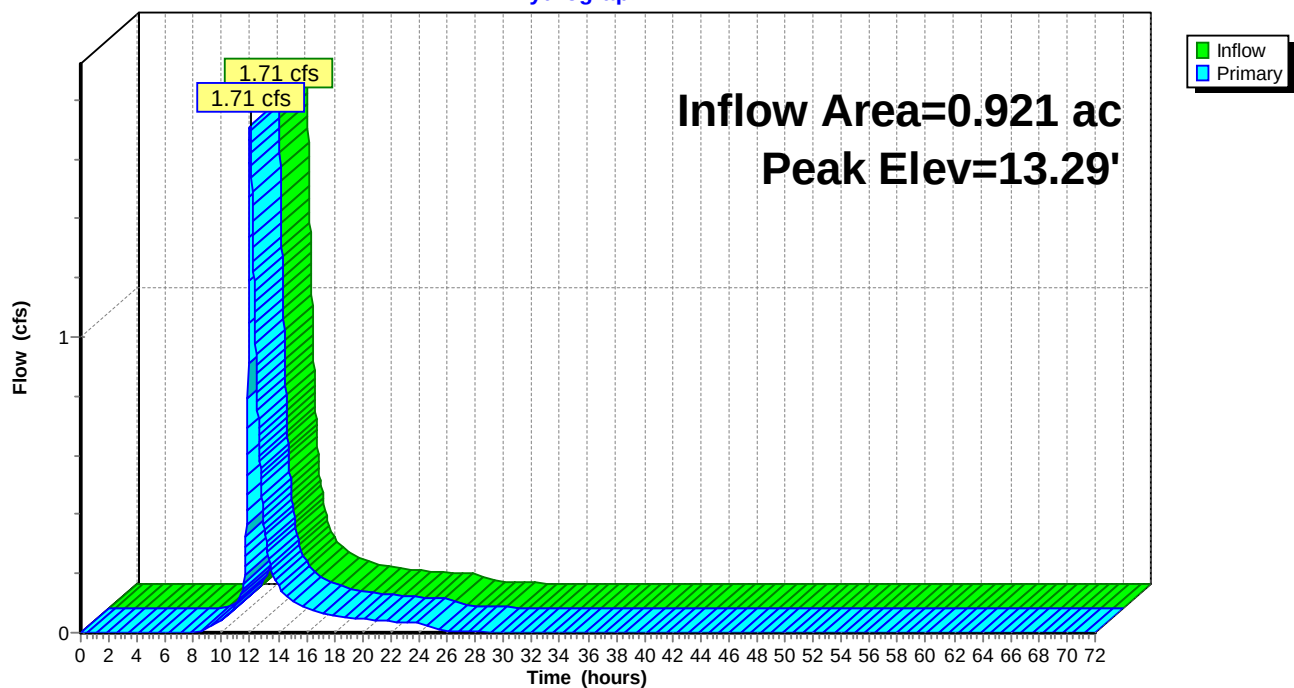
Primary OutFlow Max=1.71 cfs @ 12.02 hrs HW=13.28' TW=12.75' (Dynamic Tailwater)

1=Orifice/Grate (Controls 0.00 cfs)

2=CMP_Round 12" (Outlet Controls 1.71 cfs @ 2.76 fps)

Pond EX-I-2: EX-I-2

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Pond P19: Planter #19

Inflow Area = 0.018 ac, 93.09% Impervious, Inflow Depth = 2.95" for 2-YR event
 Inflow = 0.10 cfs @ 11.90 hrs, Volume= 0.004 af
 Outflow = 0.10 cfs @ 11.91 hrs, Volume= 0.004 af, Atten= 3%, Lag= 0.5 min
 Primary = 0.10 cfs @ 11.91 hrs, Volume= 0.004 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Peak Elev= 13.70' @ 11.91 hrs Surf.Area= 55 sf Storage= 10 cf

Plug-Flow detention time= 30.5 min calculated for 0.004 af (98% of inflow)

Center-of-Mass det. time= 15.2 min (778.7 - 763.5)

Volume	Invert	Avail.Storage	Storage Description	
#1	13.24'	143 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.24	55	0.0	0	0
13.25	55	40.0	0	0
16.99	55	40.0	82	82
17.00	55	100.0	1	83
18.00	55	100.0	55	138
18.01	1,000	100.0	5	143

Device	Routing	Invert	Outlet Devices
#1	Primary	13.45'	4.0" Round Culvert L= 26.8' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.45' / 13.10' S= 0.0131 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.10 cfs @ 11.91 hrs HW=13.70' TW=12.84' (Dynamic Tailwater)↑ **1=Culvert** (Inlet Controls 0.10 cfs @ 1.35 fps)

Naima - Phase 2 - Proposed HydroCAD

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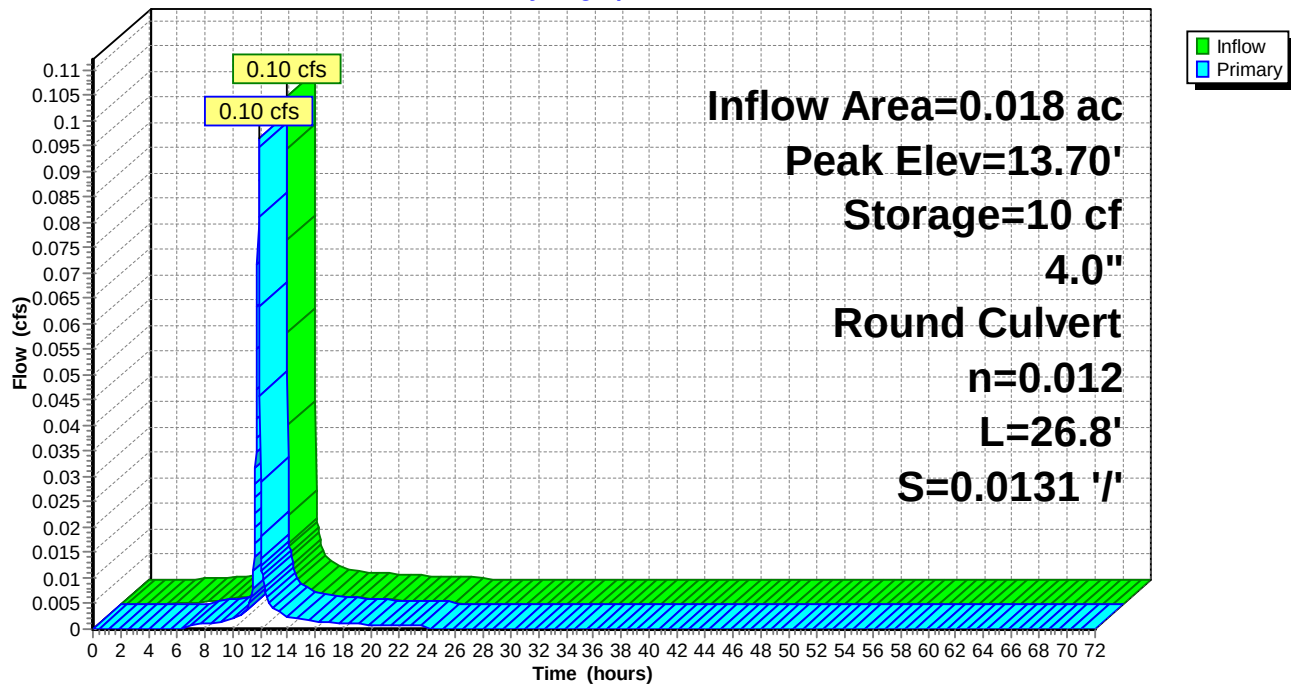
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Type II 24-hr 2-YR Rainfall=3.40"

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Pond P19: Planter #19

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Pond P20: Planter #20

Inflow Area = 0.008 ac, 91.74% Impervious, Inflow Depth = 2.95" for 2-YR event
 Inflow = 0.05 cfs @ 11.90 hrs, Volume= 0.002 af
 Outflow = 0.04 cfs @ 11.90 hrs, Volume= 0.002 af, Atten= 2%, Lag= 0.3 min
 Primary = 0.04 cfs @ 11.90 hrs, Volume= 0.002 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 15.80' Surf.Area= 30 sf Storage= 31 cf

Peak Elev= 15.96' @ 11.90 hrs Surf.Area= 30 sf Storage= 33 cf (2 cf above start)

Plug-Flow detention time= 180.6 min calculated for 0.001 af (66% of inflow)

Center-of-Mass det. time= 3.3 min (766.8 - 763.5)

Volume	Invert	Avail.Storage	Storage Description
#1	13.24'	80 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.24	30	0.0	0	0
13.25	30	40.0	0	0
16.99	30	40.0	45	45
17.00	30	100.0	0	45
18.00	30	100.0	30	75
18.01	1,000	100.0	5	80

Device	Routing	Invert	Outlet Devices
#1	Primary	15.80'	4.0" Round Culvert L= 20.1' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.45' / 15.80' S= -0.1169 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.04 cfs @ 11.90 hrs HW=15.96' TW=14.42' (Dynamic Tailwater)↑ **1=Culvert** (Inlet Controls 0.04 cfs @ 1.07 fps)

Naima - Phase 2 - Proposed HydroCAD

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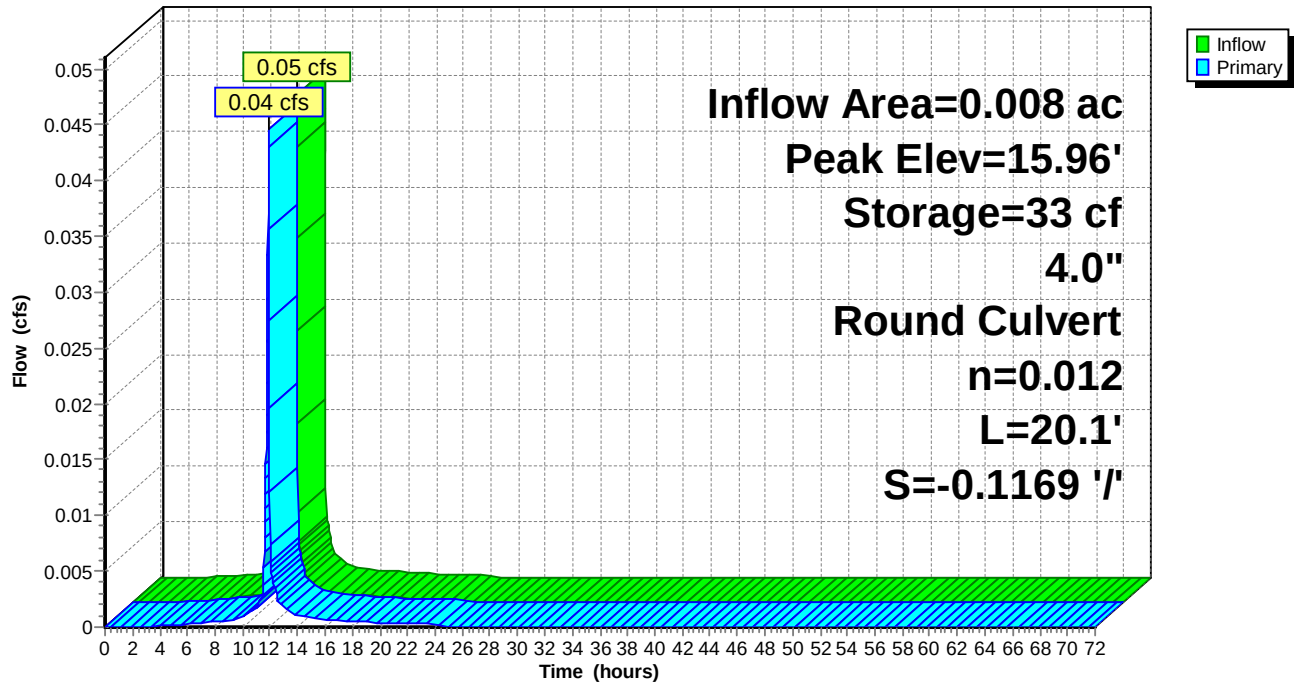
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Type II 24-hr 2-YR Rainfall=3.40"

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Pond P20: Planter #20

Hydrograph



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

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Summary for Pond P21: Planter #21

Inflow Area = 0.005 ac, 90.87% Impervious, Inflow Depth = 2.95" for 2-YR event
 Inflow = 0.03 cfs @ 11.90 hrs, Volume= 0.001 af
 Outflow = 0.03 cfs @ 11.90 hrs, Volume= 0.001 af, Atten= 2%, Lag= 0.3 min
 Primary = 0.03 cfs @ 11.90 hrs, Volume= 0.001 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Peak Elev= 13.57' @ 11.90 hrs Surf.Area= 20 sf Storage= 3 cf

Plug-Flow detention time= 36.7 min calculated for 0.001 af (97% of inflow)

Center-of-Mass det. time= 16.9 min (780.4 - 763.5)

Volume	Invert	Avail.Storage	Storage Description	
#1	13.24'	55 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.24	20	0.0	0	0
13.25	20	40.0	0	0
16.99	20	40.0	30	30
17.00	20	100.0	0	30
18.00	20	100.0	20	50
18.01	1,000	100.0	5	55

Device	Routing	Invert	Outlet Devices
#1	Primary	13.45'	4.0" Round Culvert L= 30.2' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.45' / 12.89' S= 0.0185 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.03 cfs @ 11.90 hrs HW=13.57' TW=12.83' (Dynamic Tailwater)↑ **1=Culvert** (Inlet Controls 0.03 cfs @ 0.94 fps)

Naima - Phase 2 - Proposed HydroCAD

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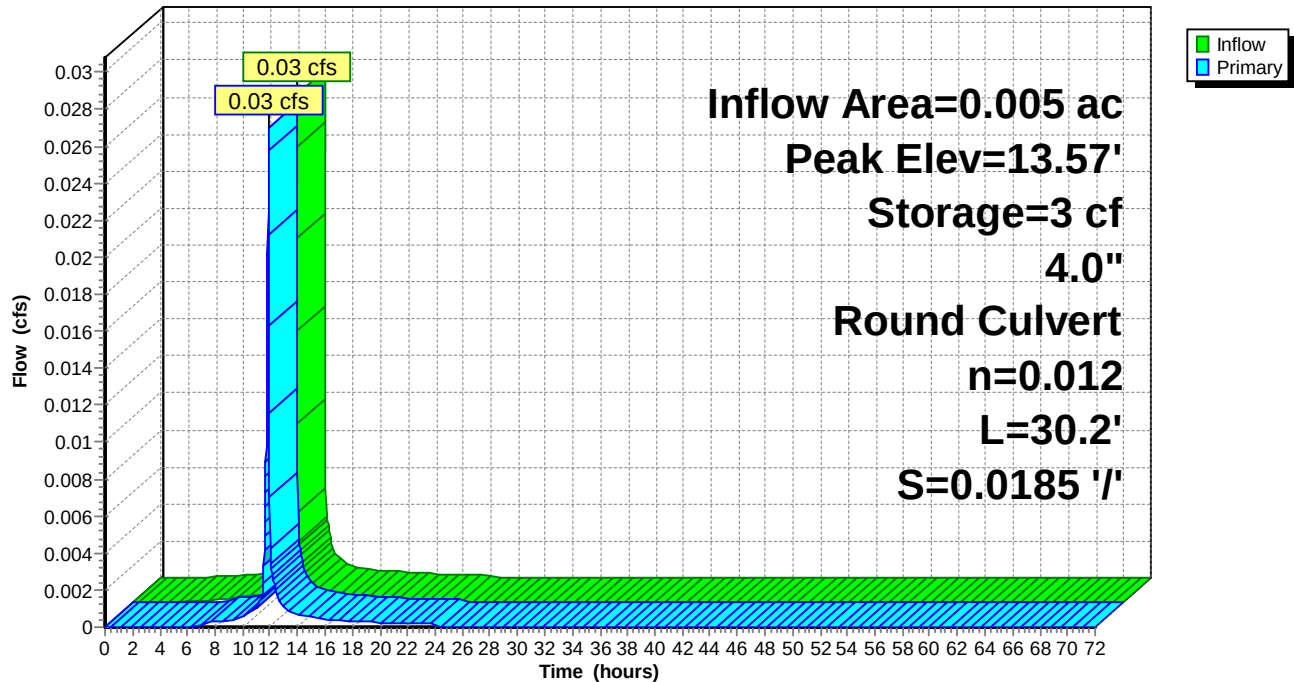
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Type II 24-hr 2-YR Rainfall=3.40"

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Pond P21: Planter #21

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Pond P22: Planter #22

Inflow Area = 0.028 ac, 93.42% Impervious, Inflow Depth = 2.95" for 2-YR event
 Inflow = 0.15 cfs @ 11.90 hrs, Volume= 0.007 af
 Outflow = 0.14 cfs @ 11.91 hrs, Volume= 0.007 af, Atten= 7%, Lag= 1.0 min
 Primary = 0.14 cfs @ 11.91 hrs, Volume= 0.007 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 15.54' Surf.Area= 80 sf Storage= 74 cf

Peak Elev= 15.90' @ 11.92 hrs Surf.Area= 80 sf Storage= 85 cf (11 cf above start)

Plug-Flow detention time= 152.0 min calculated for 0.005 af (75% of inflow)

Center-of-Mass det. time= 4.9 min (768.5 - 763.5)

Volume	Invert	Avail.Storage	Storage Description
#1	13.24'	206 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.24	80	0.0	0	0
13.25	80	40.0	0	0
16.99	80	40.0	120	120
17.00	80	100.0	1	121
18.00	80	100.0	80	201
18.01	1,000	100.0	5	206

Device	Routing	Invert	Outlet Devices
#1	Primary	15.54'	4.0" Round Culvert L= 59.7' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.45' / 15.54' S= -0.0350 ' /' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.14 cfs @ 11.91 hrs HW=15.89' TW=14.43' (Dynamic Tailwater)↑**1=Culvert** (Outlet Controls 0.14 cfs @ 1.61 fps)

Naima - Phase 2 - Proposed HydroCAD

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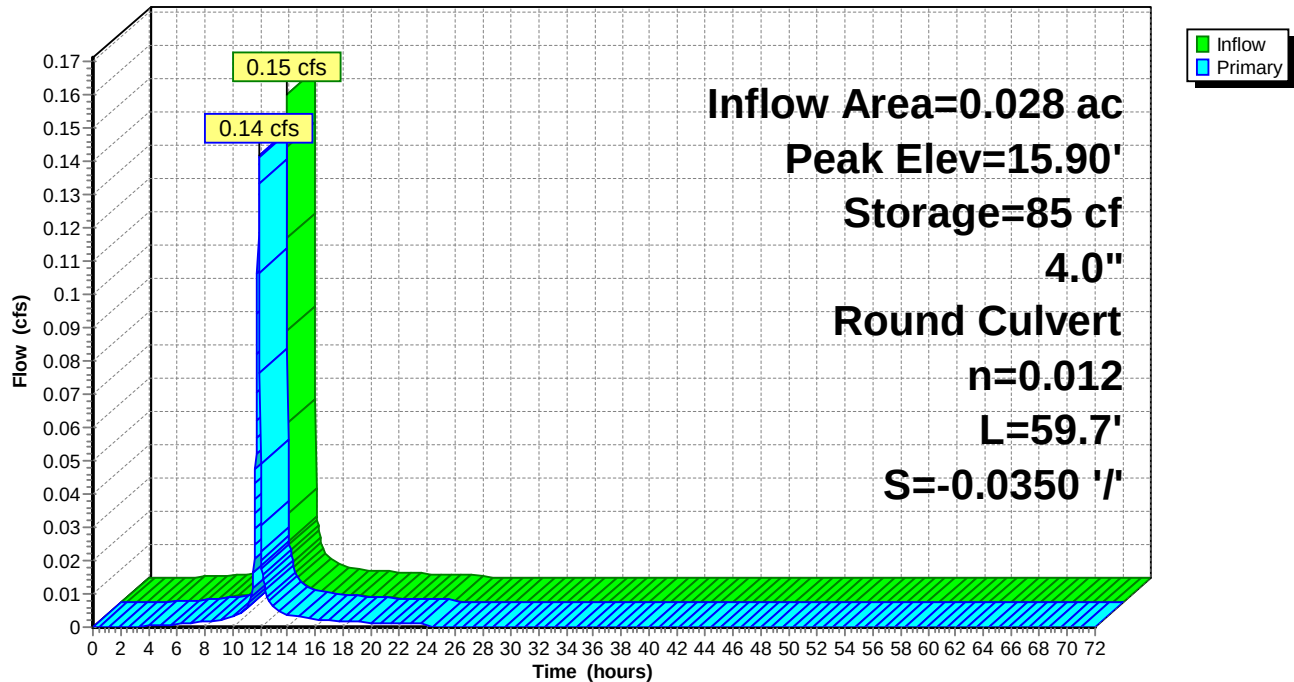
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Type II 24-hr 2-YR Rainfall=3.40"

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Pond P22: Planter #22

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Pond P23: Planter #23

Inflow Area = 0.016 ac, 92.84% Impervious, Inflow Depth = 2.95" for 2-YR event
 Inflow = 0.09 cfs @ 11.90 hrs, Volume= 0.004 af
 Outflow = 0.08 cfs @ 11.91 hrs, Volume= 0.004 af, Atten= 3%, Lag= 0.5 min
 Primary = 0.08 cfs @ 11.91 hrs, Volume= 0.004 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2
 Peak Elev= 13.19' @ 11.91 hrs Surf.Area= 50 sf Storage= 9 cf

Plug-Flow detention time= 31.1 min calculated for 0.004 af (98% of inflow)
 Center-of-Mass det. time= 15.7 min (779.3 - 763.5)

Volume	Invert	Avail.Storage	Storage Description	
#1	12.74'	131 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
12.74	50	0.0	0	0
12.75	50	40.0	0	0
16.49	50	40.0	75	75
16.50	50	100.0	1	76
17.50	50	100.0	50	126
17.51	1,000	100.0	5	131

Device	Routing	Invert	Outlet Devices
#1	Primary	12.95'	4.0" Round Culvert L= 20.7' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 12.95' / 12.81' S= 0.0068 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.08 cfs @ 11.91 hrs HW=13.19' TW=12.83' (Dynamic Tailwater)

↑ **1=Culvert** (Barrel Controls 0.08 cfs @ 1.76 fps)

Naima - Phase 2 - Proposed HydroCAD

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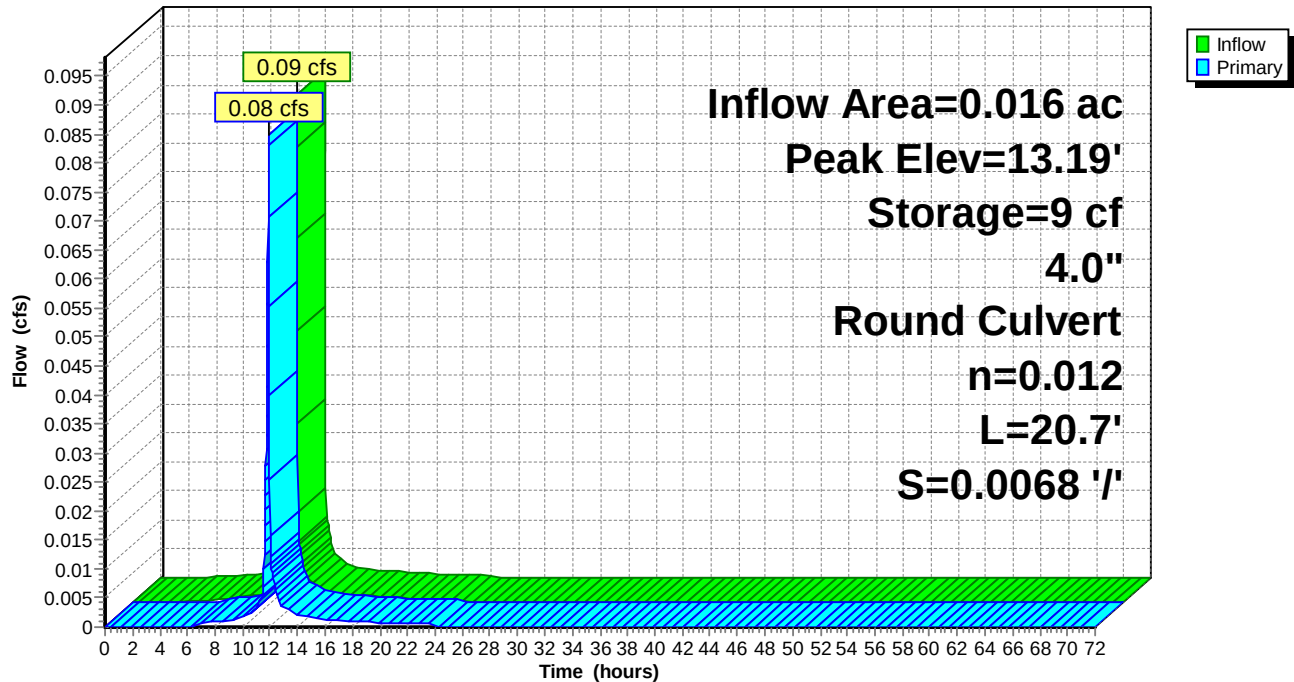
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Type II 24-hr 2-YR Rainfall=3.40"

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Pond P23: Planter #23

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Pond P24: Planter #24

Inflow Area = 0.013 ac, 93.19% Impervious, Inflow Depth = 2.95" for 2-YR event
 Inflow = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af
 Outflow = 0.07 cfs @ 11.91 hrs, Volume= 0.003 af, Atten= 3%, Lag= 0.4 min
 Primary = 0.07 cfs @ 11.91 hrs, Volume= 0.003 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 15.45' Surf.Area= 40 sf Storage= 43 cf

Peak Elev= 15.66' @ 11.91 hrs Surf.Area= 40 sf Storage= 47 cf (3 cf above start)

Plug-Flow detention time= 167.4 min calculated for 0.002 af (70% of inflow)

Center-of-Mass det. time= 3.5 min (767.0 - 763.5)

Volume	Invert	Avail.Storage	Storage Description
#1	12.74'	106 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
12.74	40	0.0	0	0
12.75	40	40.0	0	0
16.49	40	40.0	60	60
16.50	40	100.0	0	60
17.50	40	100.0	40	100
17.51	1,000	100.0	5	106

Device	Routing	Invert	Outlet Devices
#1	Primary	15.45'	4.0" Round Culvert L= 36.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 12.95' / 15.45' S= -0.0683 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.07 cfs @ 11.91 hrs HW=15.66' TW=14.25' (Dynamic Tailwater)↑**1=Culvert** (Inlet Controls 0.07 cfs @ 1.23 fps)

Naima - Phase 2 - Proposed HydroCAD

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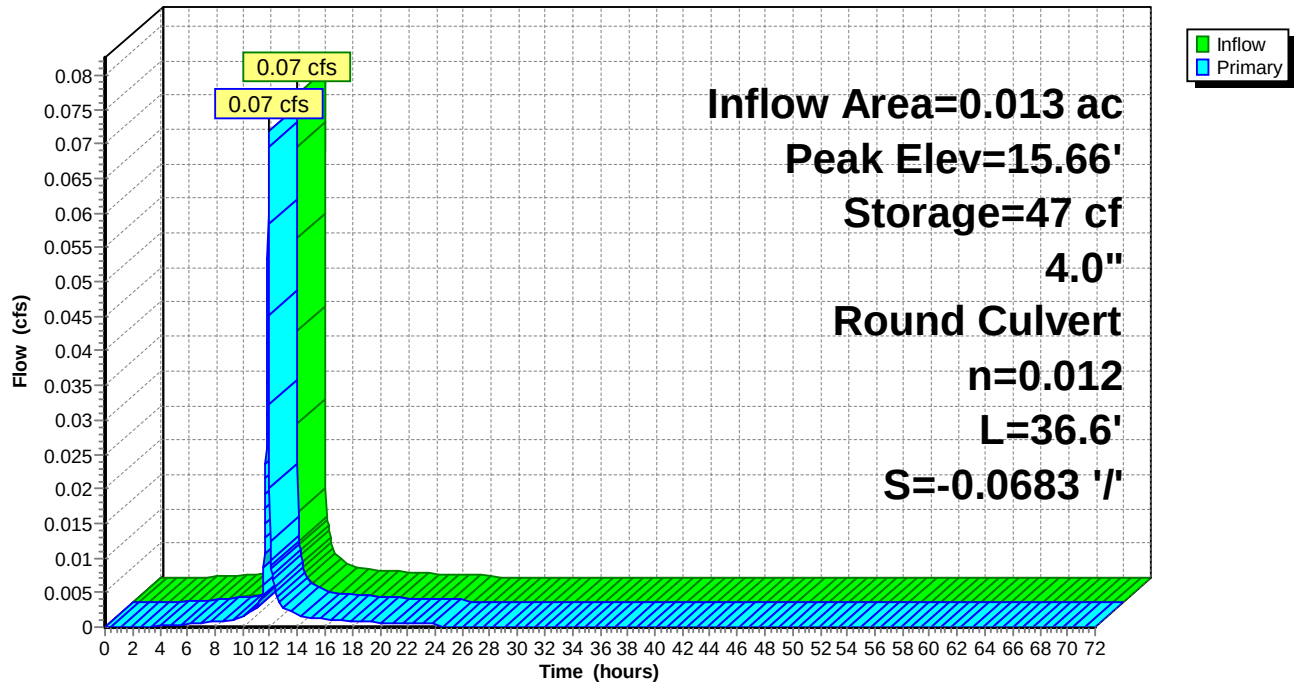
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Pond P24: Planter #24

Hydrograph



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

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Summary for Pond P25: Planter #25

Inflow Area = 0.014 ac, 93.22% Impervious, Inflow Depth = 2.95" for 2-YR event
 Inflow = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af
 Outflow = 0.07 cfs @ 11.91 hrs, Volume= 0.003 af, Atten= 3%, Lag= 0.4 min
 Primary = 0.07 cfs @ 11.91 hrs, Volume= 0.003 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 15.32' Surf.Area= 40 sf Storage= 41 cf

Peak Elev= 15.53' @ 11.91 hrs Surf.Area= 40 sf Storage= 45 cf (3 cf above start)

Plug-Flow detention time= 162.2 min calculated for 0.002 af (71% of inflow)

Center-of-Mass det. time= 3.5 min (767.0 - 763.5)

Volume	Invert	Avail.Storage	Storage Description
#1	12.74'	106 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
12.74	40	0.0	0	0
12.75	40	40.0	0	0
16.49	40	40.0	60	60
16.50	40	100.0	0	60
17.50	40	100.0	40	100
17.51	1,000	100.0	5	106

Device	Routing	Invert	Outlet Devices
#1	Primary	15.32'	4.0" Round Culvert L= 28.9' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 12.95' / 15.32' S= -0.0820 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.07 cfs @ 11.91 hrs HW=15.53' TW=14.25' (Dynamic Tailwater)↑**1=Culvert** (Inlet Controls 0.07 cfs @ 1.23 fps)

Naima - Phase 2 - Proposed HydroCAD

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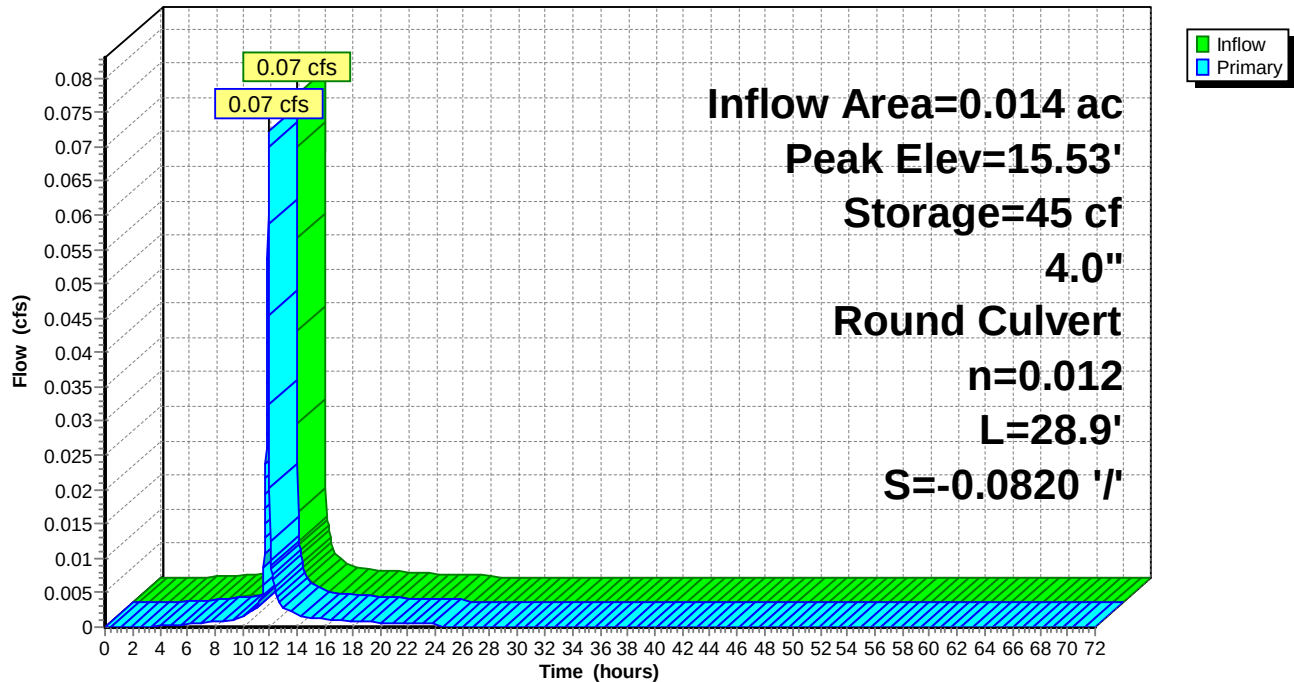
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Pond P25: Planter #25

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

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Summary for Pond P26: Planter #26

Inflow Area = 0.025 ac, 93.61% Impervious, Inflow Depth = 2.95" for 2-YR event
 Inflow = 0.14 cfs @ 11.90 hrs, Volume= 0.006 af
 Outflow = 0.13 cfs @ 11.91 hrs, Volume= 0.006 af, Atten= 4%, Lag= 0.8 min
 Primary = 0.13 cfs @ 11.91 hrs, Volume= 0.006 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2
 Peak Elev= 13.27' @ 11.91 hrs Surf.Area= 70 sf Storage= 15 cf

Plug-Flow detention time= 29.1 min calculated for 0.006 af (98% of inflow)
 Center-of-Mass det. time= 14.8 min (778.4 - 763.5)

Volume	Invert	Avail.Storage	Storage Description	
#1	12.74'	181 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
12.74	70	0.0	0	0
12.75	70	40.0	0	0
16.49	70	40.0	105	105
16.50	70	100.0	1	106
17.50	70	100.0	70	176
17.51	1,000	100.0	5	181

Device	Routing	Invert	Outlet Devices
#1	Primary	12.95'	4.0" Round Culvert L= 24.5' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 12.95' / 12.56' S= 0.0159 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.13 cfs @ 11.91 hrs HW=13.27' TW=12.84' (Dynamic Tailwater)

↑ **1=Culvert** (Inlet Controls 0.13 cfs @ 1.51 fps)

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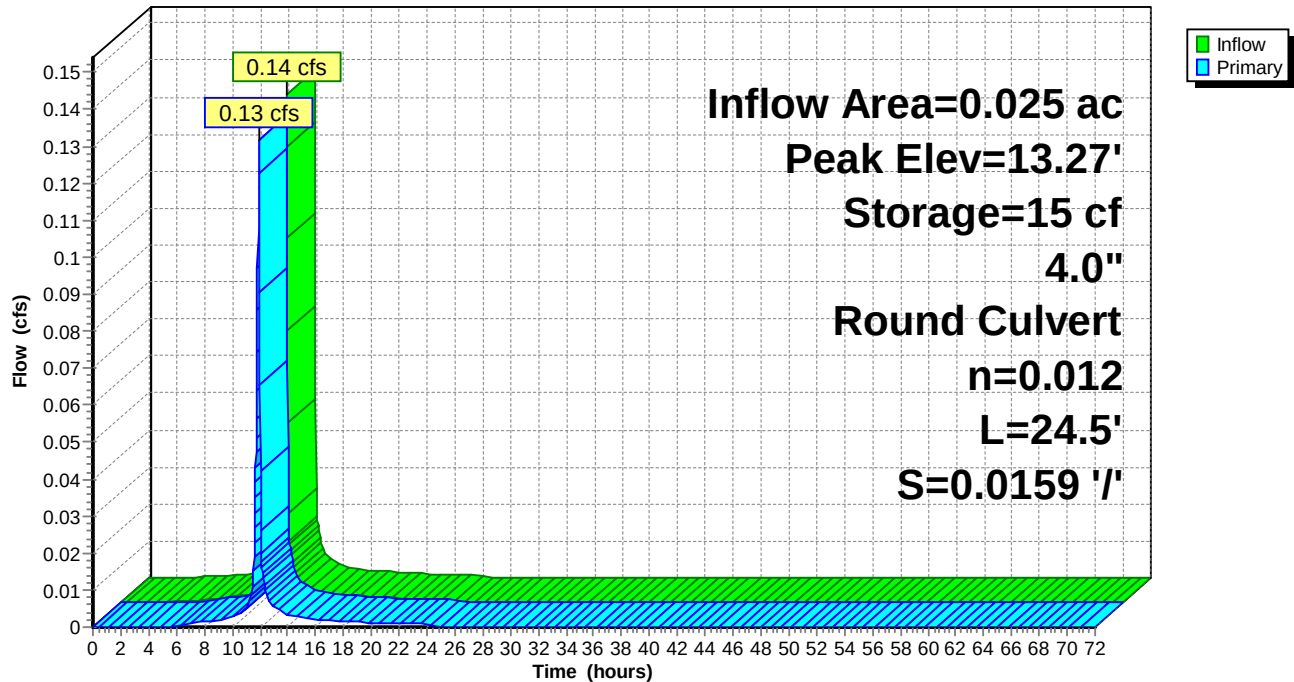
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Type II 24-hr 2-YR Rainfall=3.40"

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Pond P26: Planter #26

Hydrograph



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

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Summary for Pond P27: Planter #27

Inflow Area = 0.008 ac, 91.48% Impervious, Inflow Depth = 2.95" for 2-YR event
 Inflow = 0.04 cfs @ 11.90 hrs, Volume= 0.002 af
 Outflow = 0.04 cfs @ 11.90 hrs, Volume= 0.002 af, Atten= 2%, Lag= 0.4 min
 Primary = 0.04 cfs @ 11.90 hrs, Volume= 0.002 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 15.08' Surf.Area= 30 sf Storage= 28 cf

Peak Elev= 15.24' @ 11.90 hrs Surf.Area= 30 sf Storage= 30 cf (2 cf above start)

Plug-Flow detention time= 174.5 min calculated for 0.001 af (68% of inflow)

Center-of-Mass det. time= 3.3 min (766.9 - 763.5)

Volume	Invert	Avail.Storage	Storage Description
#1	12.74'	80 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
12.74	30	0.0	0	0
12.75	30	40.0	0	0
16.49	30	40.0	45	45
16.50	30	100.0	0	45
17.50	30	100.0	30	75
17.51	1,000	100.0	5	80

Device	Routing	Invert	Outlet Devices
#1	Primary	15.08'	4.0" Round Culvert L= 10.8' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 12.95' / 15.08' S= -0.1972 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.04 cfs @ 11.90 hrs HW=15.24' TW=14.25' (Dynamic Tailwater)↑**1=Culvert** (Inlet Controls 0.04 cfs @ 1.06 fps)

Naima - Phase 2 - Proposed HydroCAD

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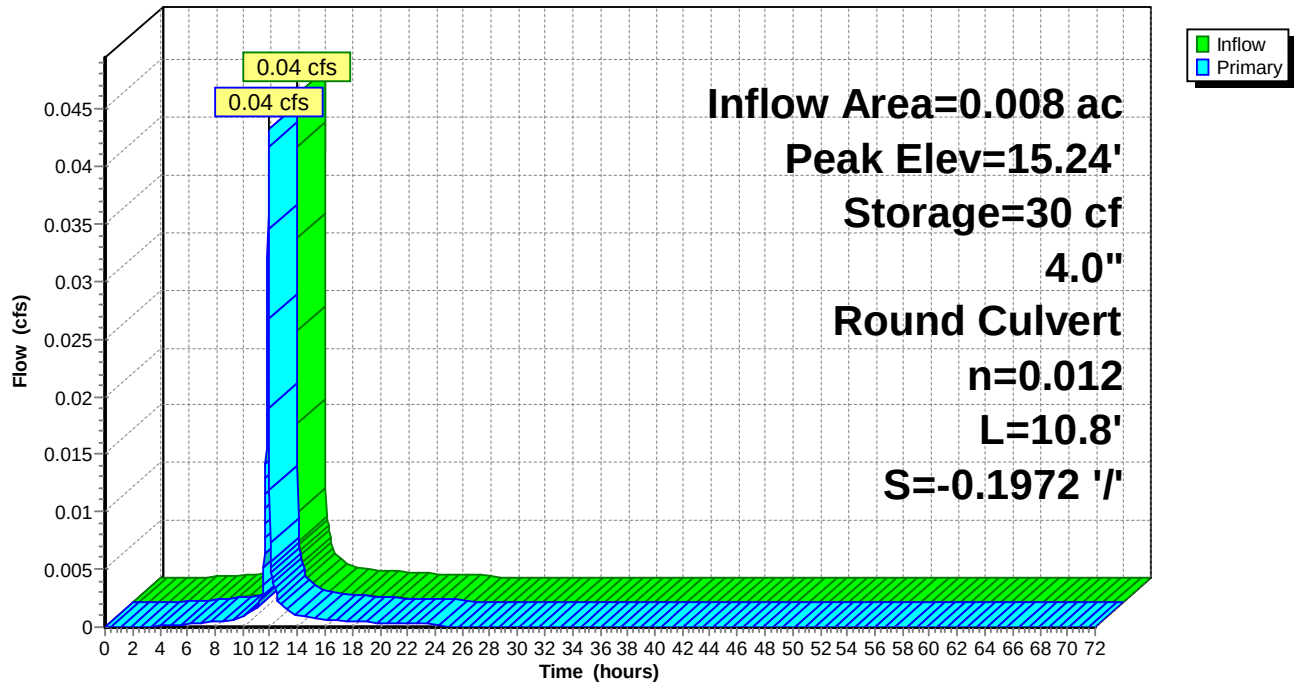
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Pond P27: Planter #27

Hydrograph



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

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Summary for Pond P28: Planter #28

Inflow Area = 0.018 ac, 93.09% Impervious, Inflow Depth = 2.95" for 2-YR event
 Inflow = 0.10 cfs @ 11.90 hrs, Volume= 0.004 af
 Outflow = 0.10 cfs @ 11.91 hrs, Volume= 0.004 af, Atten= 3%, Lag= 0.5 min
 Primary = 0.10 cfs @ 11.91 hrs, Volume= 0.004 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Peak Elev= 13.70' @ 11.91 hrs Surf.Area= 55 sf Storage= 10 cf

Plug-Flow detention time= 30.5 min calculated for 0.004 af (98% of inflow)

Center-of-Mass det. time= 15.2 min (778.7 - 763.5)

Volume	Invert	Avail.Storage	Storage Description	
#1	13.24'	143 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.24	55	0.0	0	0
13.25	55	40.0	0	0
16.99	55	40.0	82	82
17.00	55	100.0	1	83
18.00	55	100.0	55	138
18.01	1,000	100.0	5	143

Device	Routing	Invert	Outlet Devices
#1	Primary	13.45'	4.0" Round Culvert L= 14.3' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.45' / 13.10' S= 0.0245 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.10 cfs @ 11.91 hrs HW=13.70' TW=12.84' (Dynamic Tailwater)↑ **1=Culvert** (Inlet Controls 0.10 cfs @ 1.35 fps)

Naima - Phase 2 - Proposed HydroCAD

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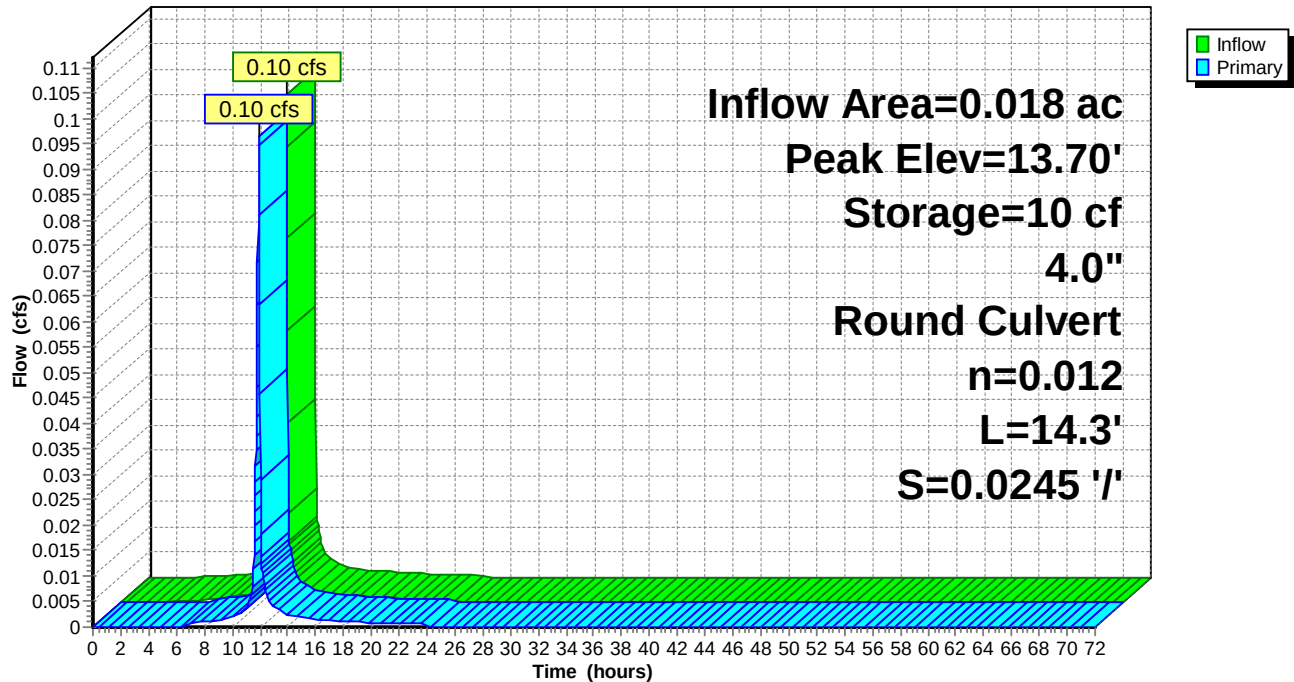
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Type II 24-hr 2-YR Rainfall=3.40"

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Pond P28: Planter #28

Hydrograph



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

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Summary for Pond P29: Planter #29

Inflow Area = 0.008 ac, 91.74% Impervious, Inflow Depth = 2.95" for 2-YR event
 Inflow = 0.05 cfs @ 11.90 hrs, Volume= 0.002 af
 Outflow = 0.04 cfs @ 11.90 hrs, Volume= 0.002 af, Atten= 2%, Lag= 0.3 min
 Primary = 0.04 cfs @ 11.90 hrs, Volume= 0.002 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 14.99' Surf.Area= 30 sf Storage= 21 cf

Peak Elev= 15.15' @ 11.90 hrs Surf.Area= 30 sf Storage= 23 cf (2 cf above start)

Plug-Flow detention time= 146.6 min calculated for 0.002 af (76% of inflow)

Center-of-Mass det. time= 3.3 min (766.8 - 763.5)

Volume	Invert	Avail.Storage	Storage Description
#1	13.24'	80 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

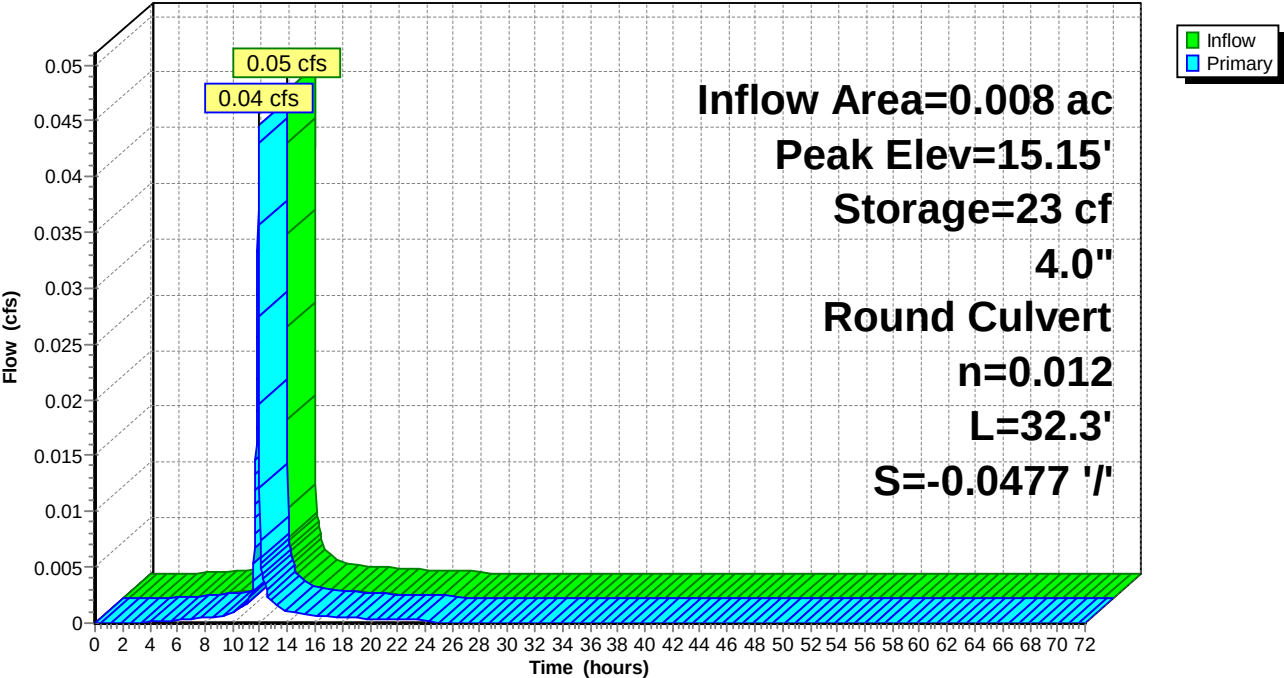
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.24	30	0.0	0	0
13.25	30	40.0	0	0
16.99	30	40.0	45	45
17.00	30	100.0	0	45
18.00	30	100.0	30	75
18.01	1,000	100.0	5	80

Device	Routing	Invert	Outlet Devices
#1	Primary	14.99'	4.0" Round Culvert L= 32.3' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.45' / 14.99' S= -0.0477 ' /' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.04 cfs @ 11.90 hrs HW=15.15' TW=14.31' (Dynamic Tailwater)↑ **1=Culvert** (Inlet Controls 0.04 cfs @ 1.07 fps)

Pond P29: Planter #29

Hydrograph



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

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Summary for Pond P30: Planter #30

Inflow Area = 0.005 ac, 90.87% Impervious, Inflow Depth = 2.95" for 2-YR event
 Inflow = 0.03 cfs @ 11.90 hrs, Volume= 0.001 af
 Outflow = 0.03 cfs @ 11.90 hrs, Volume= 0.001 af, Atten= 2%, Lag= 0.3 min
 Primary = 0.03 cfs @ 11.90 hrs, Volume= 0.001 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Peak Elev= 13.57' @ 11.90 hrs Surf.Area= 20 sf Storage= 3 cf

Plug-Flow detention time= 36.8 min calculated for 0.001 af (97% of inflow)

Center-of-Mass det. time= 17.0 min (780.6 - 763.5)

Volume	Invert	Avail.Storage	Storage Description	
#1	13.24'	55 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.24	20	0.0	0	0
13.25	20	40.0	0	0
16.99	20	40.0	30	30
17.00	20	100.0	0	30
18.00	20	100.0	20	50
18.01	1,000	100.0	5	55

Device	Routing	Invert	Outlet Devices
#1	Primary	13.45'	4.0" Round Culvert L= 18.2' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.45' / 13.29' S= 0.0088 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.03 cfs @ 11.90 hrs HW=13.57' TW=12.83' (Dynamic Tailwater)↑ **1=Culvert** (Inlet Controls 0.03 cfs @ 0.94 fps)

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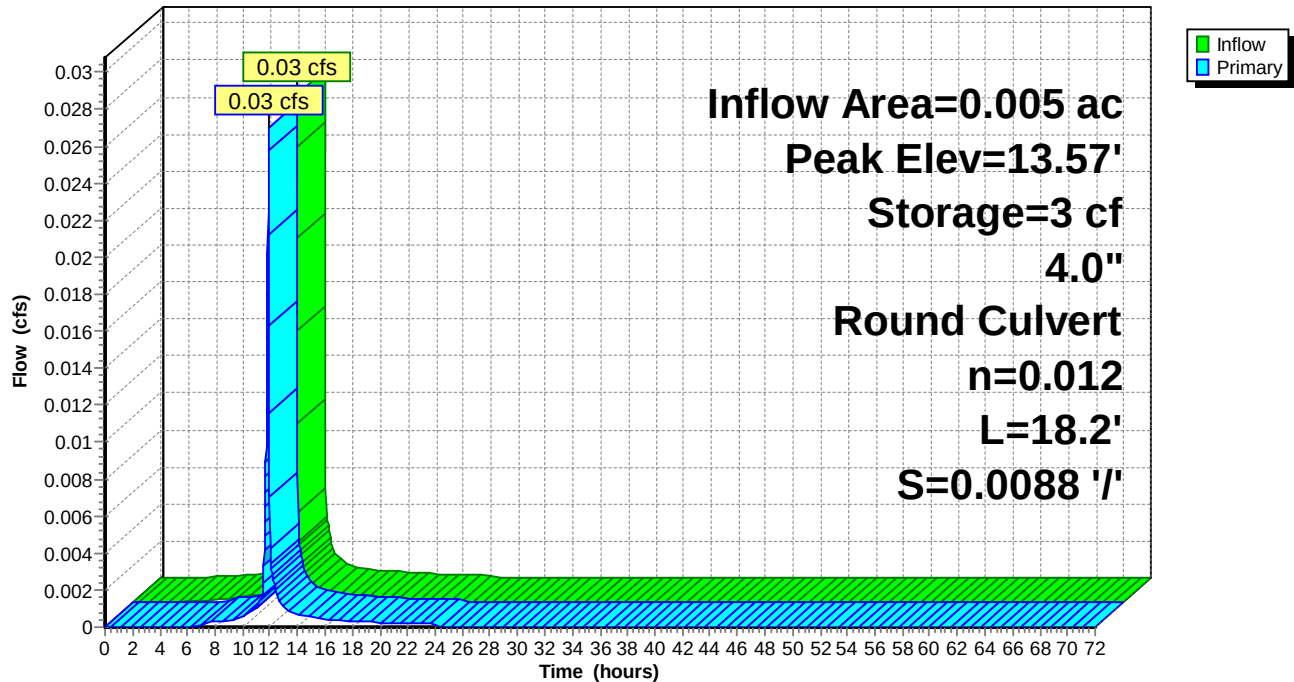
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Type II 24-hr 2-YR Rainfall=3.40"

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Pond P30: Planter #30

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

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Summary for Pond P31: Planter #31

Inflow Area = 0.028 ac, 93.42% Impervious, Inflow Depth = 2.95" for 2-YR event
 Inflow = 0.15 cfs @ 11.90 hrs, Volume= 0.007 af
 Outflow = 0.14 cfs @ 11.92 hrs, Volume= 0.007 af, Atten= 11%, Lag= 1.3 min
 Primary = 0.14 cfs @ 11.92 hrs, Volume= 0.007 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 15.21' Surf.Area= 80 sf Storage= 63 cf

Peak Elev= 15.60' @ 11.92 hrs Surf.Area= 80 sf Storage= 75 cf (12 cf above start)

Plug-Flow detention time= 140.2 min calculated for 0.005 af (79% of inflow)

Center-of-Mass det. time= 4.9 min (768.5 - 763.5)

Volume	Invert	Avail.Storage	Storage Description
#1	13.24'	206 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.24	80	0.0	0	0
13.25	80	40.0	0	0
16.99	80	40.0	120	120
17.00	80	100.0	1	121
18.00	80	100.0	80	201
18.01	1,000	100.0	5	206

Device	Routing	Invert	Outlet Devices
#1	Primary	15.21'	4.0" Round Culvert L= 71.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.45' / 15.21' S= -0.0246 ' /' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.14 cfs @ 11.92 hrs HW=15.60' TW=14.34' (Dynamic Tailwater)↑ **1=Culvert** (Outlet Controls 0.14 cfs @ 1.56 fps)

Naima - Phase 2 - Proposed HydroCAD

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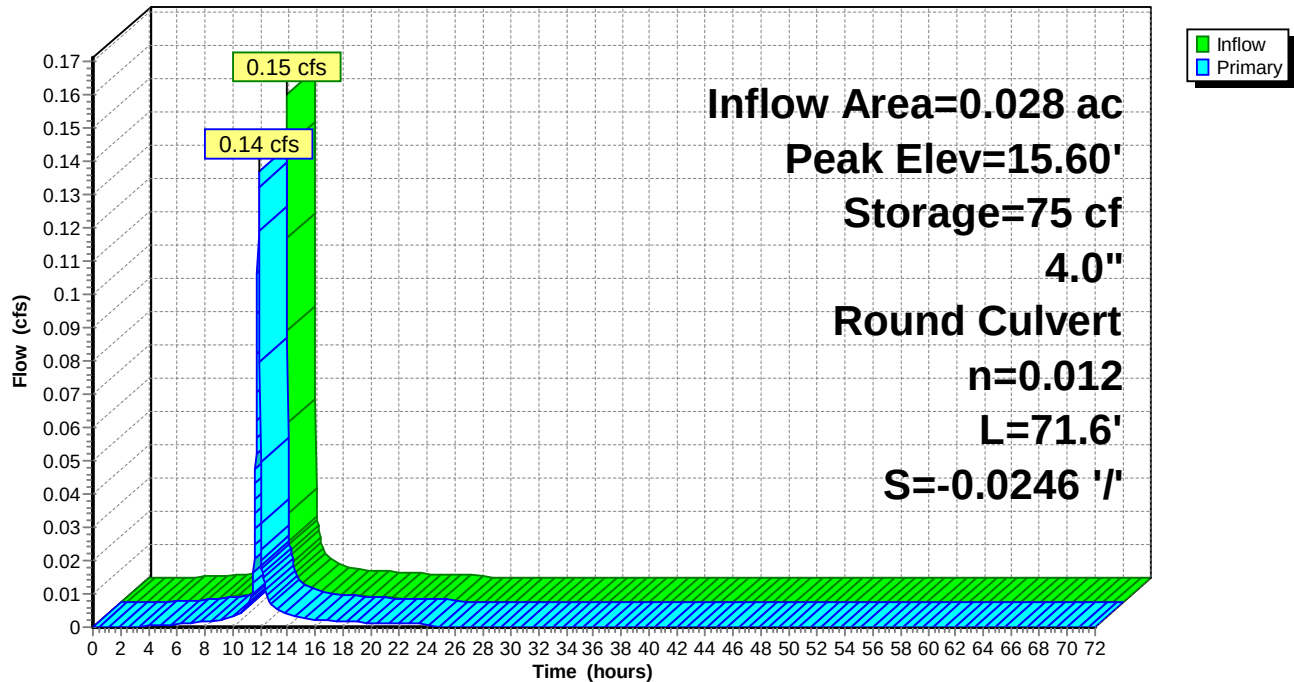
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Pond P31: Planter #31

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Summary for Pond P32: Planter #32

Inflow Area = 0.005 ac, 90.87% Impervious, Inflow Depth = 2.95" for 2-YR event
 Inflow = 0.03 cfs @ 11.90 hrs, Volume= 0.001 af
 Outflow = 0.03 cfs @ 11.90 hrs, Volume= 0.001 af, Atten= 2%, Lag= 0.3 min
 Primary = 0.03 cfs @ 11.90 hrs, Volume= 0.001 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2
 Peak Elev= 14.07' @ 11.90 hrs Surf.Area= 20 sf Storage= 3 cf

Plug-Flow detention time= 36.2 min calculated for 0.001 af (97% of inflow)
 Center-of-Mass det. time= 16.9 min (780.4 - 763.5)

Volume	Invert	Avail.Storage	Storage Description	
#1	13.74'	55 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.74	20	0.0	0	0
13.75	20	40.0	0	0
17.49	20	40.0	30	30
17.50	20	100.0	0	30
18.50	20	100.0	20	50
18.51	1,000	100.0	5	55

Device	Routing	Invert	Outlet Devices
#1	Primary	13.95'	4.0" Round Culvert L= 29.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.95' / 13.36' S= 0.0199 '/' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.03 cfs @ 11.90 hrs HW=14.07' TW=12.83' (Dynamic Tailwater)

↑ **1=Culvert** (Inlet Controls 0.03 cfs @ 0.94 fps)

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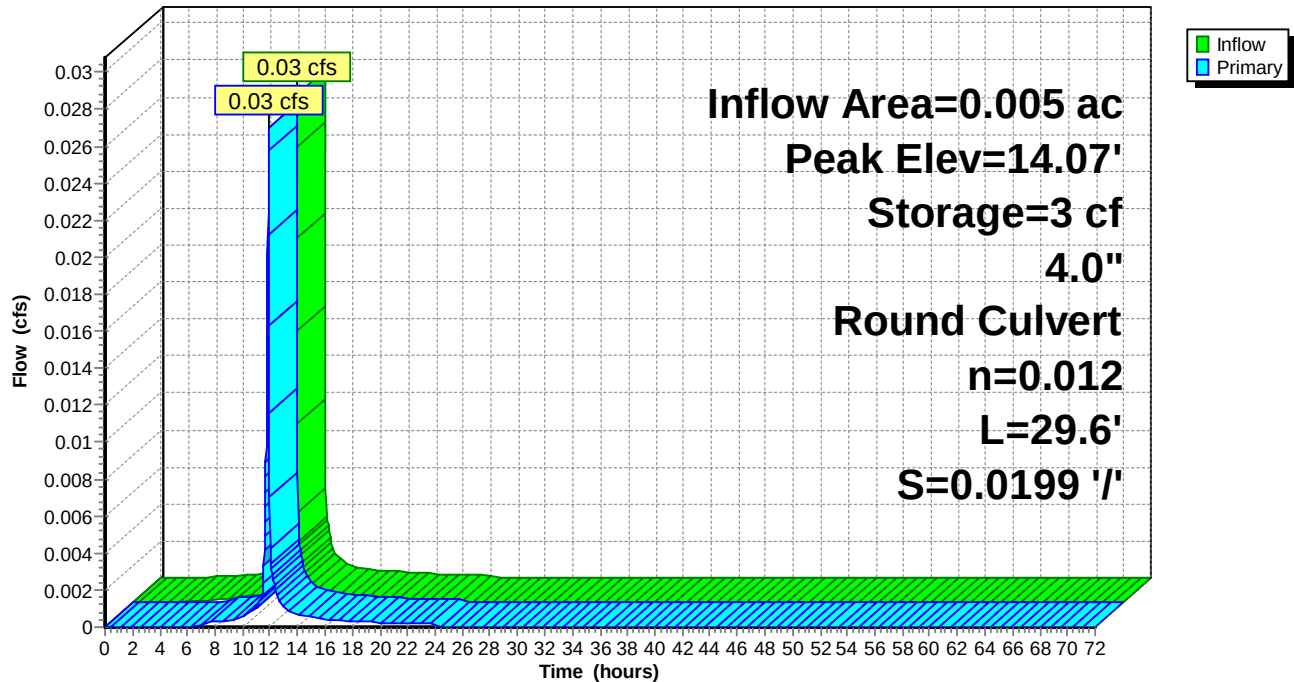
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Pond P32: Planter #32

Hydrograph



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

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Summary for Pond P33: Planter #33

Inflow Area = 0.028 ac, 93.42% Impervious, Inflow Depth = 2.95" for 2-YR event
 Inflow = 0.15 cfs @ 11.90 hrs, Volume= 0.007 af
 Outflow = 0.14 cfs @ 11.92 hrs, Volume= 0.007 af, Atten= 8%, Lag= 1.0 min
 Primary = 0.14 cfs @ 11.92 hrs, Volume= 0.007 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 15.24' Surf.Area= 80 sf Storage= 48 cf

Peak Elev= 15.60' @ 11.92 hrs Surf.Area= 80 sf Storage= 60 cf (12 cf above start)

Plug-Flow detention time= 120.3 min calculated for 0.006 af (84% of inflow)

Center-of-Mass det. time= 4.9 min (768.5 - 763.5)

Volume	Invert	Avail.Storage	Storage Description
#1	13.74'	206 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.74	80	0.0	0	0
13.75	80	40.0	0	0
17.49	80	40.0	120	120
17.50	80	100.0	1	121
18.50	80	100.0	80	201
18.51	1,000	100.0	5	206

Device	Routing	Invert	Outlet Devices
#1	Primary	15.24'	4.0" Round Culvert L= 61.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.95' / 15.24' S= -0.0211 ' / S= -0.0211 ' / Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.14 cfs @ 11.92 hrs HW=15.60' TW=14.33' (Dynamic Tailwater)↑ **1=Culvert** (Outlet Controls 0.14 cfs @ 1.60 fps)

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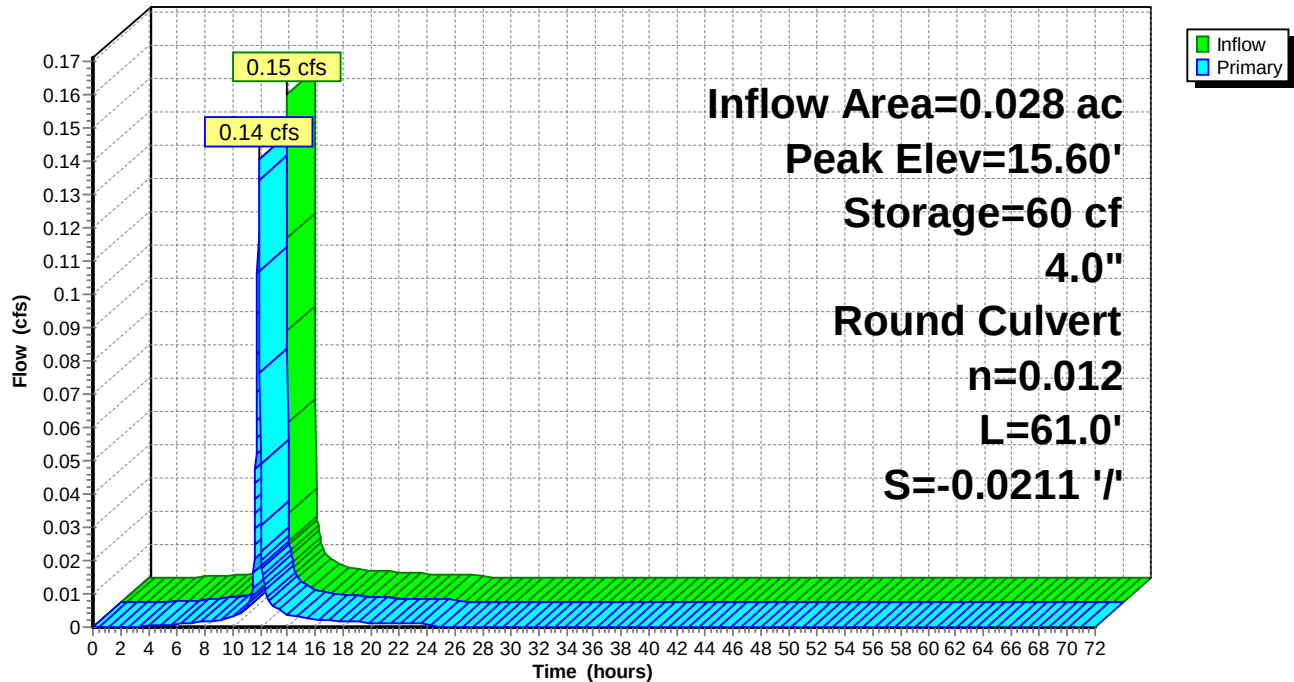
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Type II 24-hr 2-YR Rainfall=3.40"

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Pond P33: Planter #33

Hydrograph



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

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Summary for Pond P34: Planter #34

Inflow Area = 0.018 ac, 93.09% Impervious, Inflow Depth = 2.95" for 2-YR event
 Inflow = 0.10 cfs @ 11.90 hrs, Volume= 0.004 af
 Outflow = 0.10 cfs @ 11.91 hrs, Volume= 0.004 af, Atten= 3%, Lag= 0.5 min
 Primary = 0.10 cfs @ 11.91 hrs, Volume= 0.004 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2
 Peak Elev= 14.20' @ 11.91 hrs Surf.Area= 55 sf Storage= 10 cf

Plug-Flow detention time= 30.1 min calculated for 0.004 af (98% of inflow)
 Center-of-Mass det. time= 15.2 min (778.7 - 763.5)

Volume	Invert	Avail.Storage	Storage Description	
#1	13.74'	143 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.74	55	0.0	0	0
13.75	55	40.0	0	0
17.49	55	40.0	82	82
17.50	55	100.0	1	83
18.50	55	100.0	55	138
18.51	1,000	100.0	5	143

Device	Routing	Invert	Outlet Devices
#1	Primary	13.95'	4.0" Round Culvert L= 26.1' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.95' / 13.56' S= 0.0149 '/' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.10 cfs @ 11.91 hrs HW=14.20' TW=12.84' (Dynamic Tailwater)

↑ **1=Culvert** (Inlet Controls 0.10 cfs @ 1.35 fps)

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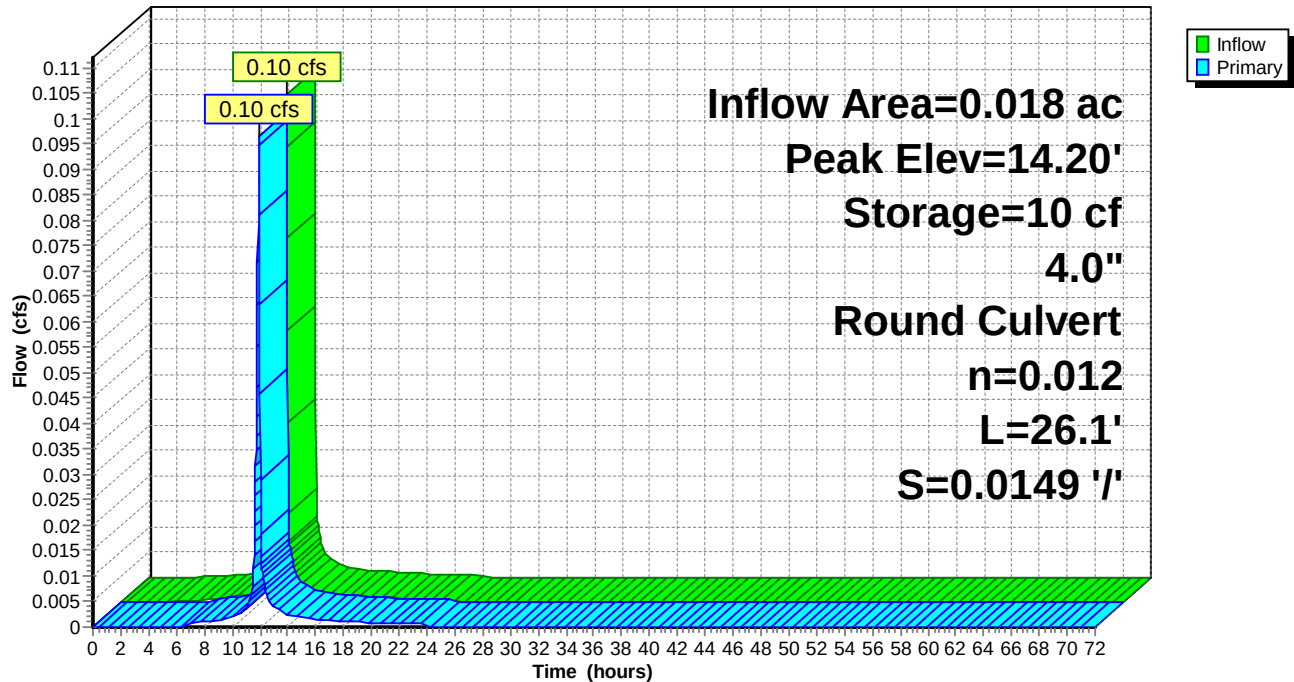
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Pond P34: Planter #34

Hydrograph



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

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Summary for Pond P35: Planter #35

Inflow Area = 0.008 ac, 91.74% Impervious, Inflow Depth = 2.95" for 2-YR event
 Inflow = 0.05 cfs @ 11.90 hrs, Volume= 0.002 af
 Outflow = 0.04 cfs @ 11.90 hrs, Volume= 0.002 af, Atten= 2%, Lag= 0.3 min
 Primary = 0.04 cfs @ 11.90 hrs, Volume= 0.002 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 15.73' Surf.Area= 30 sf Storage= 24 cf

Peak Elev= 15.89' @ 11.90 hrs Surf.Area= 30 sf Storage= 26 cf (2 cf above start)

Plug-Flow detention time= 156.8 min calculated for 0.001 af (73% of inflow)

Center-of-Mass det. time= 3.3 min (766.8 - 763.5)

Volume	Invert	Avail.Storage	Storage Description
#1	13.74'	80 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.74	30	0.0	0	0
13.75	30	40.0	0	0
17.49	30	40.0	45	45
17.50	30	100.0	0	45
18.50	30	100.0	30	75
18.51	1,000	100.0	5	80

Device	Routing	Invert	Outlet Devices
#1	Primary	15.73'	4.0" Round Culvert L= 31.5' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.95' / 15.73' S= -0.0565 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.04 cfs @ 11.90 hrs HW=15.89' TW=14.50' (Dynamic Tailwater)↑**1=Culvert** (Inlet Controls 0.04 cfs @ 1.07 fps)

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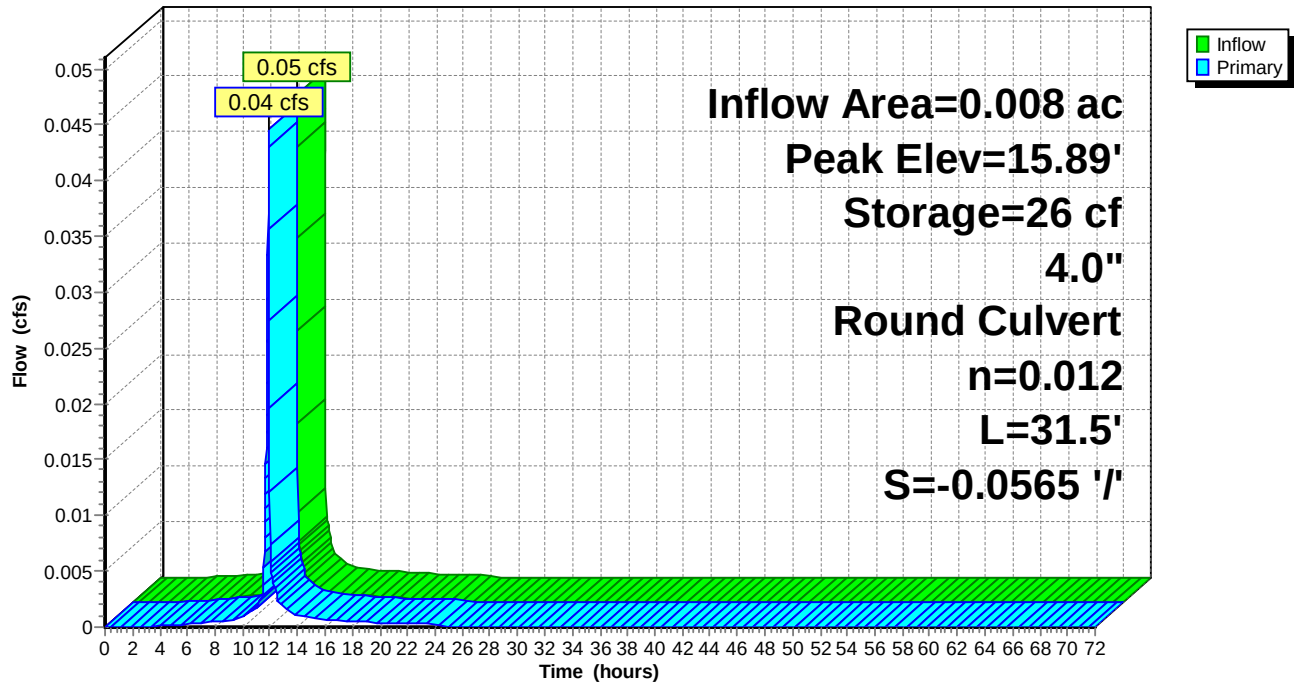
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Pond P35: Planter #35

Hydrograph



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

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Summary for Pond P36: Planter #36

Inflow Area = 0.016 ac, 92.84% Impervious, Inflow Depth = 2.95" for 2-YR event
 Inflow = 0.09 cfs @ 11.90 hrs, Volume= 0.004 af
 Outflow = 0.08 cfs @ 11.91 hrs, Volume= 0.004 af, Atten= 3%, Lag= 0.5 min
 Primary = 0.08 cfs @ 11.91 hrs, Volume= 0.004 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2
 Peak Elev= 14.38' @ 11.91 hrs Surf.Area= 50 sf Storage= 9 cf

Plug-Flow detention time= 31.3 min calculated for 0.004 af (98% of inflow)
 Center-of-Mass det. time= 15.4 min (778.9 - 763.5)

Volume	Invert	Avail.Storage	Storage Description	
#1	13.94'	131 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.94	50	0.0	0	0
13.95	50	40.0	0	0
17.69	50	40.0	75	75
17.70	50	100.0	0	75
18.70	50	100.0	50	125
18.71	1,000	100.0	5	131

Device	Routing	Invert	Outlet Devices
#1	Primary	14.15'	4.0" Round Culvert L= 20.2' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.15' / 13.65' S= 0.0248 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.08 cfs @ 11.91 hrs HW=14.38' TW=12.83' (Dynamic Tailwater)

↑ **1=Culvert** (Inlet Controls 0.08 cfs @ 1.29 fps)

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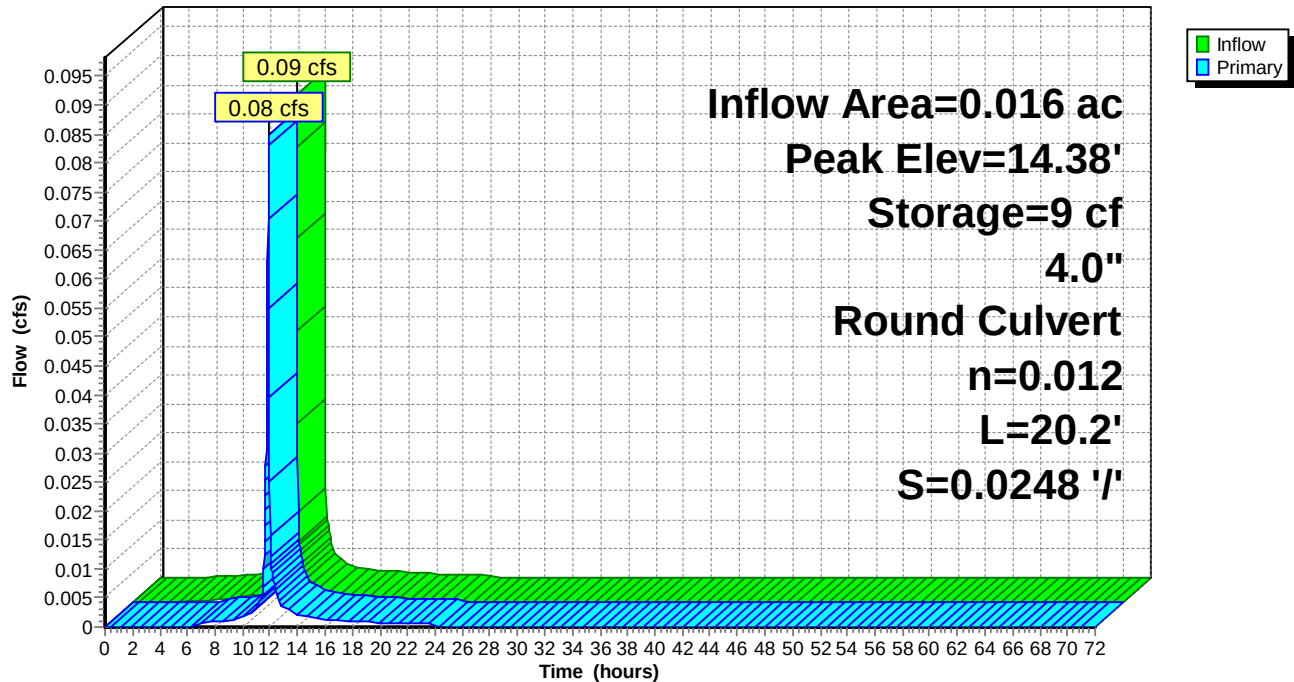
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Pond P36: Planter #36

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

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Summary for Pond P37: Planter #37

Inflow Area = 0.013 ac, 93.19% Impervious, Inflow Depth = 2.95" for 2-YR event
 Inflow = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af
 Outflow = 0.07 cfs @ 11.91 hrs, Volume= 0.003 af, Atten= 3%, Lag= 0.4 min
 Primary = 0.07 cfs @ 11.91 hrs, Volume= 0.003 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 15.73' Surf.Area= 40 sf Storage= 29 cf

Peak Elev= 15.94' @ 11.91 hrs Surf.Area= 40 sf Storage= 32 cf (3 cf above start)

Plug-Flow detention time= 134.4 min calculated for 0.003 af (80% of inflow)

Center-of-Mass det. time= 3.5 min (767.0 - 763.5)

Volume	Invert	Avail.Storage	Storage Description
#1	13.94'	106 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.94	40	0.0	0	0
13.95	40	40.0	0	0
17.69	40	40.0	60	60
17.70	40	100.0	0	60
18.70	40	100.0	40	100
18.71	1,000	100.0	5	106

Device	Routing	Invert	Outlet Devices
#1	Primary	15.73'	4.0" Round Culvert L= 37.8' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.15' / 15.73' S= -0.0418 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.07 cfs @ 11.91 hrs HW=15.94' TW=14.50' (Dynamic Tailwater)↑**1=Culvert** (Inlet Controls 0.07 cfs @ 1.23 fps)

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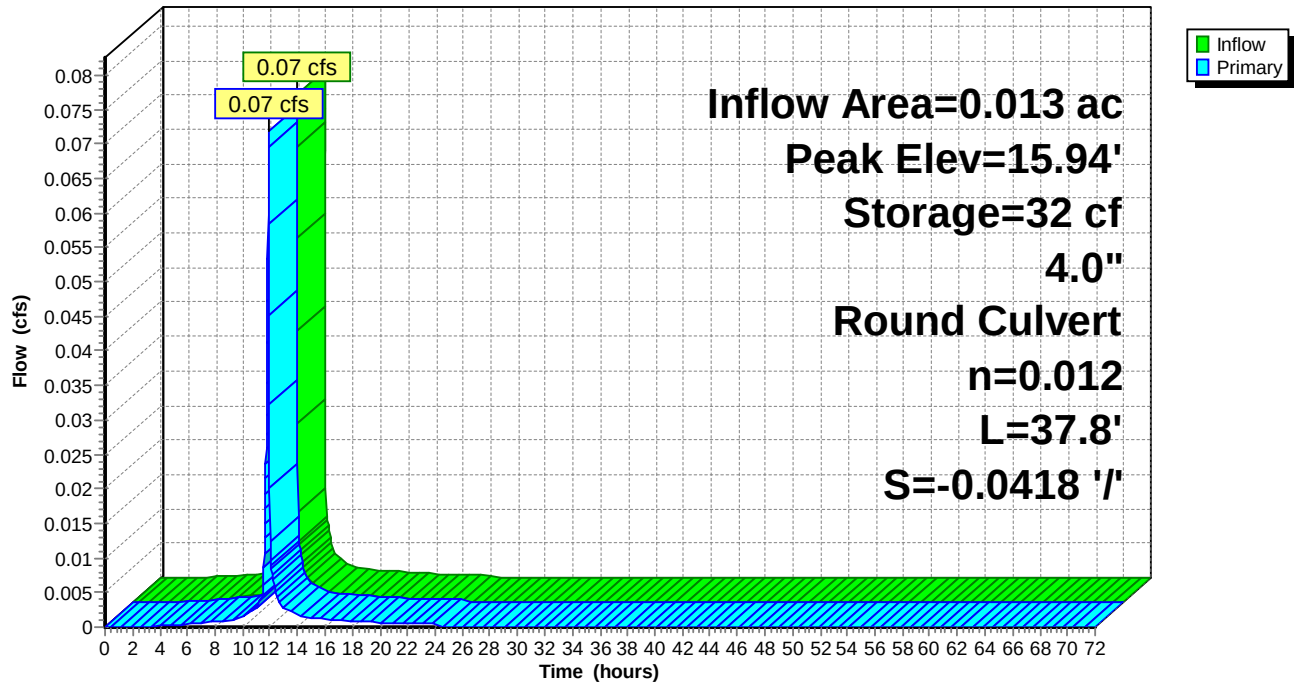
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Pond P37: Planter #37

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

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Summary for Pond P38: Planter #38

Inflow Area = 0.014 ac, 93.22% Impervious, Inflow Depth = 2.95" for 2-YR event
 Inflow = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af
 Outflow = 0.07 cfs @ 11.91 hrs, Volume= 0.003 af, Atten= 3%, Lag= 0.4 min
 Primary = 0.07 cfs @ 11.91 hrs, Volume= 0.003 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 15.85' Surf.Area= 40 sf Storage= 31 cf

Peak Elev= 16.06' @ 11.91 hrs Surf.Area= 40 sf Storage= 34 cf (3 cf above start)

Plug-Flow detention time= 138.4 min calculated for 0.003 af (79% of inflow)

Center-of-Mass det. time= 3.5 min (767.0 - 763.5)

Volume	Invert	Avail.Storage	Storage Description	
#1	13.94'	106 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.94	40	0.0	0	0
13.95	40	40.0	0	0
17.69	40	40.0	60	60
17.70	40	100.0	0	60
18.70	40	100.0	40	100
18.71	1,000	100.0	5	106

Device	Routing	Invert	Outlet Devices	
#1	Primary	15.85'	4.0" Round Culvert L= 28.9' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.15' / 15.85' S= -0.0588 ' / Cc= 0.900 n= 0.012, Flow Area= 0.09 sf	

Primary OutFlow Max=0.07 cfs @ 11.91 hrs HW=16.06' TW=14.50' (Dynamic Tailwater)↑**1=Culvert** (Inlet Controls 0.07 cfs @ 1.23 fps)

Naima - Phase 2 - Proposed HydroCAD

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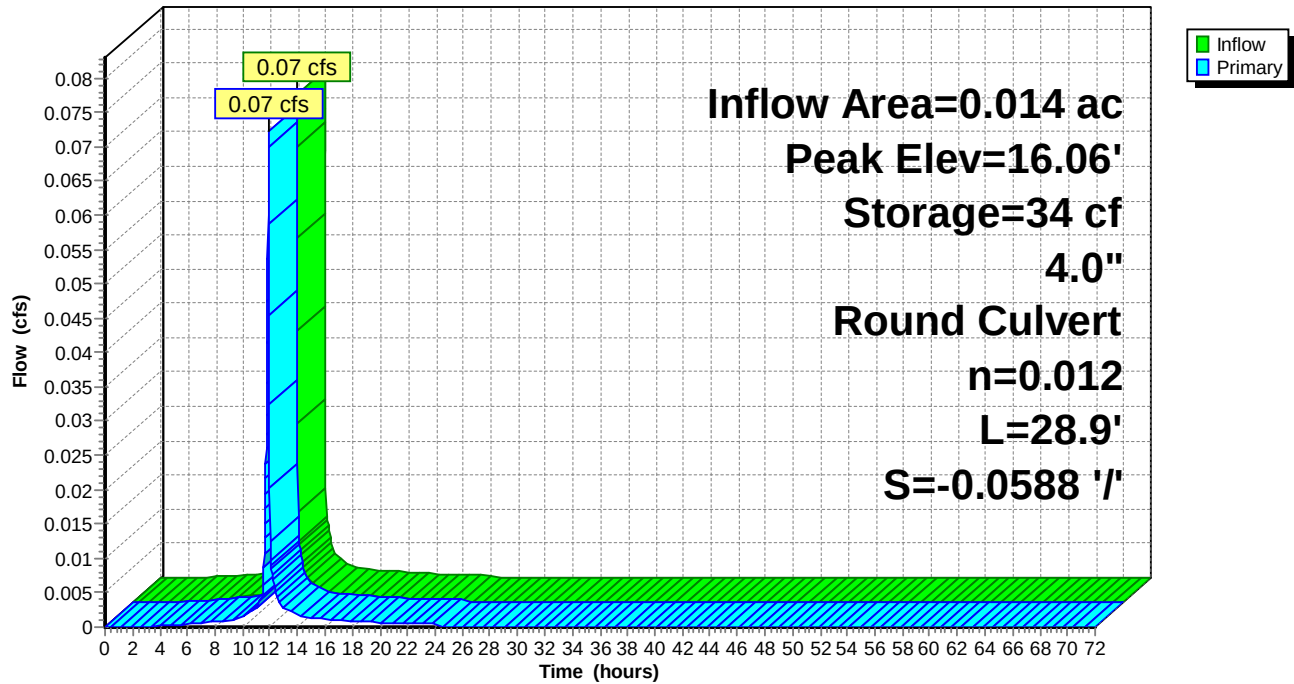
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Pond P38: Planter #38

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

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Summary for Pond P39: Planter #39

Inflow Area = 0.025 ac, 93.61% Impervious, Inflow Depth = 2.95" for 2-YR event
 Inflow = 0.14 cfs @ 11.90 hrs, Volume= 0.006 af
 Outflow = 0.13 cfs @ 11.91 hrs, Volume= 0.006 af, Atten= 4%, Lag= 0.8 min
 Primary = 0.13 cfs @ 11.91 hrs, Volume= 0.006 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2
 Peak Elev= 14.47' @ 11.91 hrs Surf.Area= 70 sf Storage= 15 cf

Plug-Flow detention time= 28.7 min calculated for 0.006 af (98% of inflow)
 Center-of-Mass det. time= 14.8 min (778.4 - 763.5)

Volume	Invert	Avail.Storage	Storage Description	
#1	13.94'	181 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.94	70	0.0	0	0
13.95	70	40.0	0	0
17.69	70	40.0	105	105
17.70	70	100.0	1	106
18.70	70	100.0	70	176
18.71	1,000	100.0	5	181

Device	Routing	Invert	Outlet Devices
#1	Primary	14.15'	4.0" Round Culvert L= 23.9' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.15' / 13.88' S= 0.0113 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.13 cfs @ 11.91 hrs HW=14.47' TW=12.84' (Dynamic Tailwater)

↑ **1=Culvert** (Inlet Controls 0.13 cfs @ 1.51 fps)

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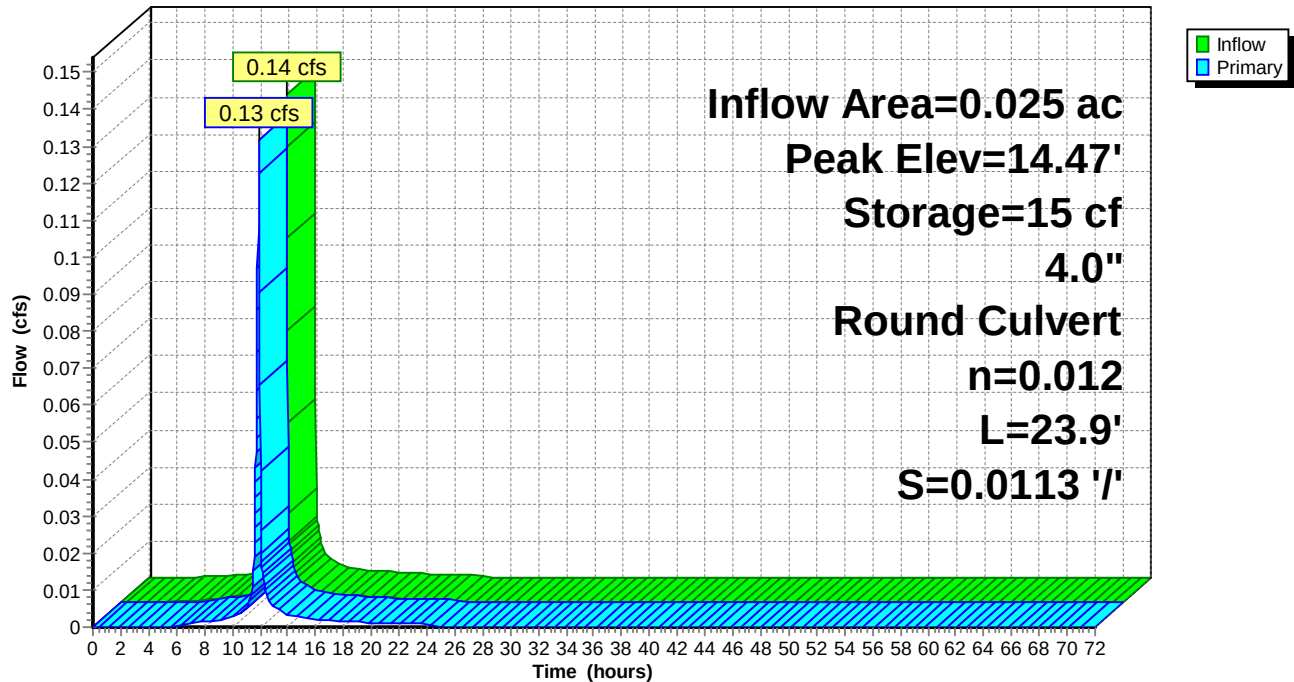
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Type II 24-hr 2-YR Rainfall=3.40"

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Pond P39: Planter #39

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

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Summary for Pond P40: Planter #40

Inflow Area = 0.008 ac, 91.48% Impervious, Inflow Depth = 2.95" for 2-YR event
 Inflow = 0.04 cfs @ 11.90 hrs, Volume= 0.002 af
 Outflow = 0.04 cfs @ 11.90 hrs, Volume= 0.002 af, Atten= 2%, Lag= 0.4 min
 Primary = 0.04 cfs @ 11.90 hrs, Volume= 0.002 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 15.99' Surf.Area= 30 sf Storage= 25 cf

Peak Elev= 16.15' @ 11.90 hrs Surf.Area= 30 sf Storage= 26 cf (2 cf above start)

Plug-Flow detention time= 162.6 min calculated for 0.001 af (72% of inflow)

Center-of-Mass det. time= 3.4 min (766.9 - 763.5)

Volume	Invert	Avail.Storage	Storage Description
#1	13.94'	80 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.94	30	0.0	0	0
13.95	30	40.0	0	0
17.69	30	40.0	45	45
17.70	30	100.0	0	45
18.70	30	100.0	30	75
18.71	1,000	100.0	5	80

Device	Routing	Invert	Outlet Devices
#1	Primary	15.99'	4.0" Round Culvert L= 11.2' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.15' / 15.99' S= -0.1643 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.04 cfs @ 11.90 hrs HW=16.15' TW=14.50' (Dynamic Tailwater)↑ **1=Culvert** (Inlet Controls 0.04 cfs @ 1.06 fps)

Naima - Phase 2 - Proposed HydroCAD

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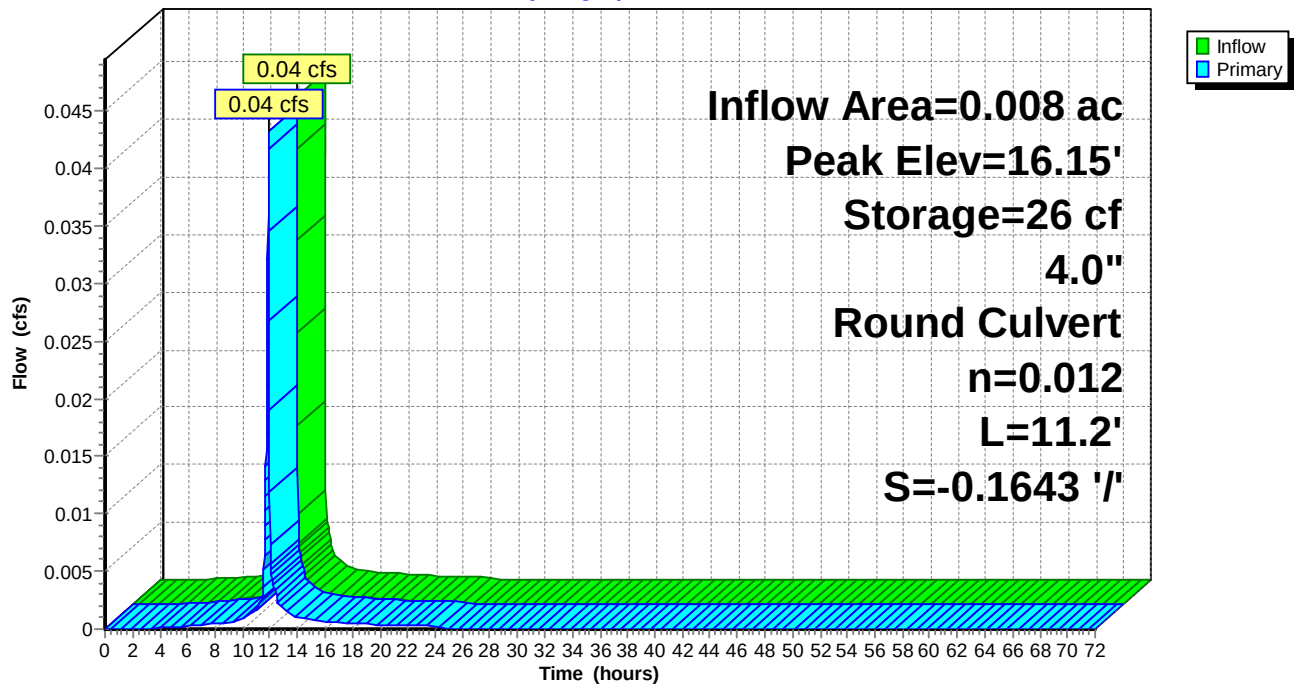
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Pond P40: Planter #40

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

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Summary for Pond P41: Planter #41

Inflow Area = 0.025 ac, 93.61% Impervious, Inflow Depth = 2.95" for 2-YR event
 Inflow = 0.14 cfs @ 11.90 hrs, Volume= 0.006 af
 Outflow = 0.13 cfs @ 11.91 hrs, Volume= 0.006 af, Atten= 4%, Lag= 0.8 min
 Primary = 0.13 cfs @ 11.91 hrs, Volume= 0.006 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2
 Peak Elev= 14.77' @ 11.91 hrs Surf.Area= 70 sf Storage= 15 cf

Plug-Flow detention time= 28.7 min calculated for 0.006 af (98% of inflow)
 Center-of-Mass det. time= 14.8 min (778.4 - 763.5)

Volume	Invert	Avail.Storage	Storage Description	
#1	14.24'	181 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
14.24	70	0.0	0	0
14.25	70	40.0	0	0
17.99	70	40.0	105	105
18.00	70	100.0	1	106
19.00	70	100.0	70	176
19.01	1,000	100.0	5	181

Device	Routing	Invert	Outlet Devices
#1	Primary	14.45'	4.0" Round Culvert L= 23.8' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.45' / 13.95' S= 0.0210 '/' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.13 cfs @ 11.91 hrs HW=14.77' TW=12.84' (Dynamic Tailwater)

↑ **1=Culvert** (Inlet Controls 0.13 cfs @ 1.51 fps)

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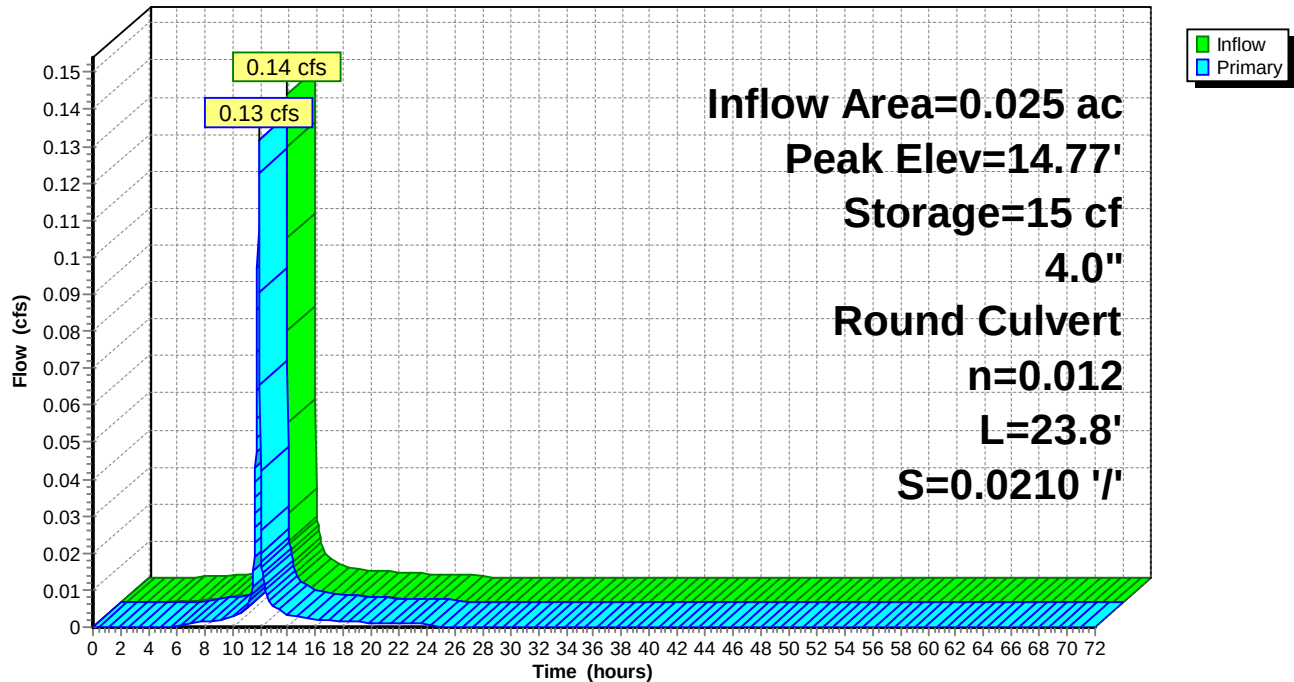
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Pond P41: Planter #41

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

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Summary for Pond P42: Planter #42

Inflow Area = 0.008 ac, 91.48% Impervious, Inflow Depth = 2.95" for 2-YR event
 Inflow = 0.04 cfs @ 11.90 hrs, Volume= 0.002 af
 Outflow = 0.04 cfs @ 11.90 hrs, Volume= 0.002 af, Atten= 2%, Lag= 0.4 min
 Primary = 0.04 cfs @ 11.90 hrs, Volume= 0.002 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 16.14' Surf.Area= 30 sf Storage= 23 cf

Peak Elev= 16.30' @ 11.90 hrs Surf.Area= 30 sf Storage= 25 cf (2 cf above start)

Plug-Flow detention time= 155.6 min calculated for 0.001 af (74% of inflow)

Center-of-Mass det. time= 3.3 min (766.9 - 763.5)

Volume	Invert	Avail.Storage	Storage Description
#1	14.24'	80 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
14.24	30	0.0	0	0
14.25	30	40.0	0	0
17.99	30	40.0	45	45
18.00	30	100.0	0	45
19.00	30	100.0	30	75
19.01	1,000	100.0	5	80

Device	Routing	Invert	Outlet Devices
#1	Primary	16.14'	4.0" Round Culvert L= 19.8' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.45' / 16.14' S= -0.0854 ' /' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.04 cfs @ 11.90 hrs HW=16.30' TW=15.09' (Dynamic Tailwater)↑**1=Culvert** (Inlet Controls 0.04 cfs @ 1.06 fps)

Naima - Phase 2 - Proposed HydroCAD

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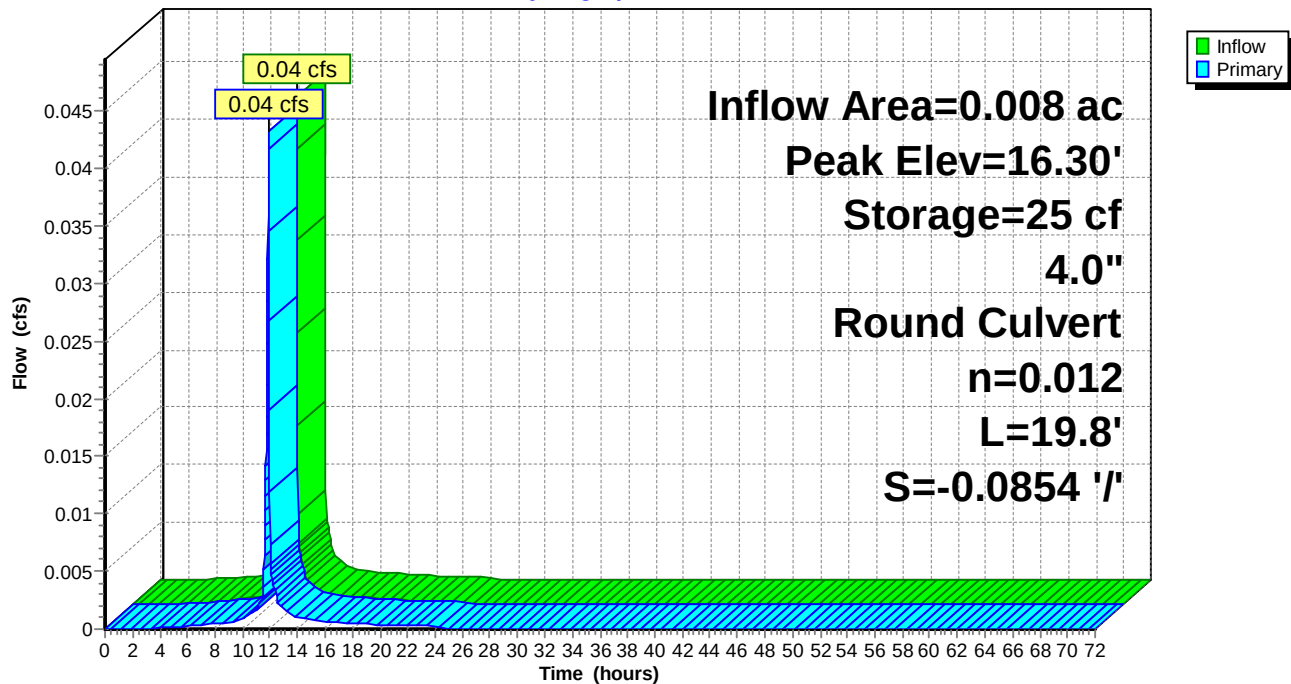
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Type II 24-hr 2-YR Rainfall=3.40"

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Pond P42: Planter #42

Hydrograph



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

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Summary for Pond P43: Planter #43

Inflow Area = 0.014 ac, 93.22% Impervious, Inflow Depth = 2.95" for 2-YR event
 Inflow = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af
 Outflow = 0.07 cfs @ 11.91 hrs, Volume= 0.003 af, Atten= 3%, Lag= 0.4 min
 Primary = 0.07 cfs @ 11.91 hrs, Volume= 0.003 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 16.31' Surf.Area= 40 sf Storage= 33 cf

Peak Elev= 16.52' @ 11.91 hrs Surf.Area= 40 sf Storage= 37 cf (3 cf above start)

Plug-Flow detention time= 144.4 min calculated for 0.003 af (77% of inflow)

Center-of-Mass det. time= 3.5 min (767.0 - 763.5)

Volume	Invert	Avail.Storage	Storage Description
#1	14.24'	106 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
14.24	40	0.0	0	0
14.25	40	40.0	0	0
17.99	40	40.0	60	60
18.00	40	100.0	0	60
19.00	40	100.0	40	100
19.01	1,000	100.0	5	106

Device	Routing	Invert	Outlet Devices
#1	Primary	16.31'	4.0" Round Culvert L= 28.7' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.45' / 16.31' S= -0.0648 ' / Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.07 cfs @ 11.91 hrs HW=16.52' TW=15.10' (Dynamic Tailwater)↑ **1=Culvert** (Inlet Controls 0.07 cfs @ 1.23 fps)

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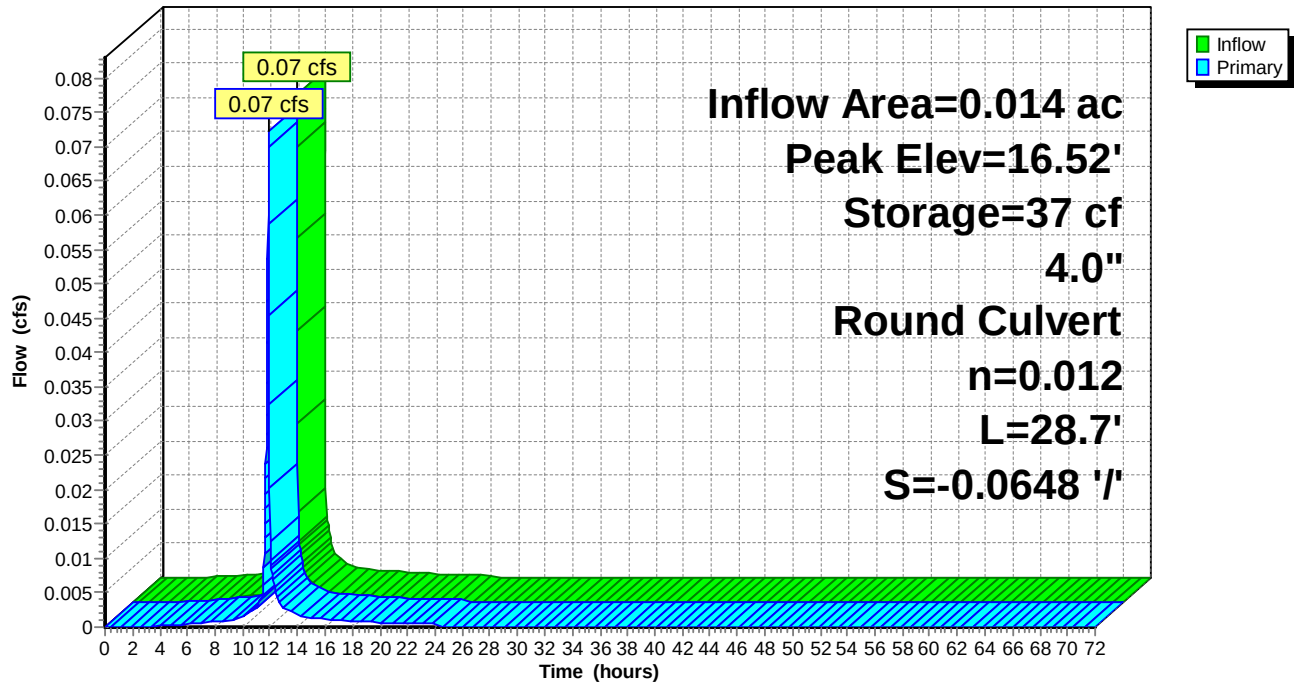
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Type II 24-hr 2-YR Rainfall=3.40"

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Pond P43: Planter #43

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Pond P44: Planter #44

Inflow Area = 0.016 ac, 92.84% Impervious, Inflow Depth = 2.95" for 2-YR event
 Inflow = 0.09 cfs @ 11.90 hrs, Volume= 0.004 af
 Outflow = 0.09 cfs @ 11.90 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.09 cfs @ 11.90 hrs, Volume= 0.004 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2
 Peak Elev= 14.74' @ 11.90 hrs Surf.Area= 50 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 0.0 min (763.5 - 763.5)

Volume	Invert	Avail.Storage	Storage Description	
#1	14.74'	121 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
14.74	50	0.0	0	0
14.75	50	40.0	0	0
17.99	50	40.0	65	65
18.00	50	100.0	1	66
19.00	50	100.0	50	116
19.01	1,000	100.0	5	121

Device	Routing	Invert	Outlet Devices
#1	Primary	14.45'	4.0" Round Culvert L= 19.9' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.45' / 14.18' S= 0.0136 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.12 cfs @ 11.90 hrs HW=14.74' TW=12.82' (Dynamic Tailwater)

↑ **1=Culvert** (Inlet Controls 0.12 cfs @ 1.45 fps)

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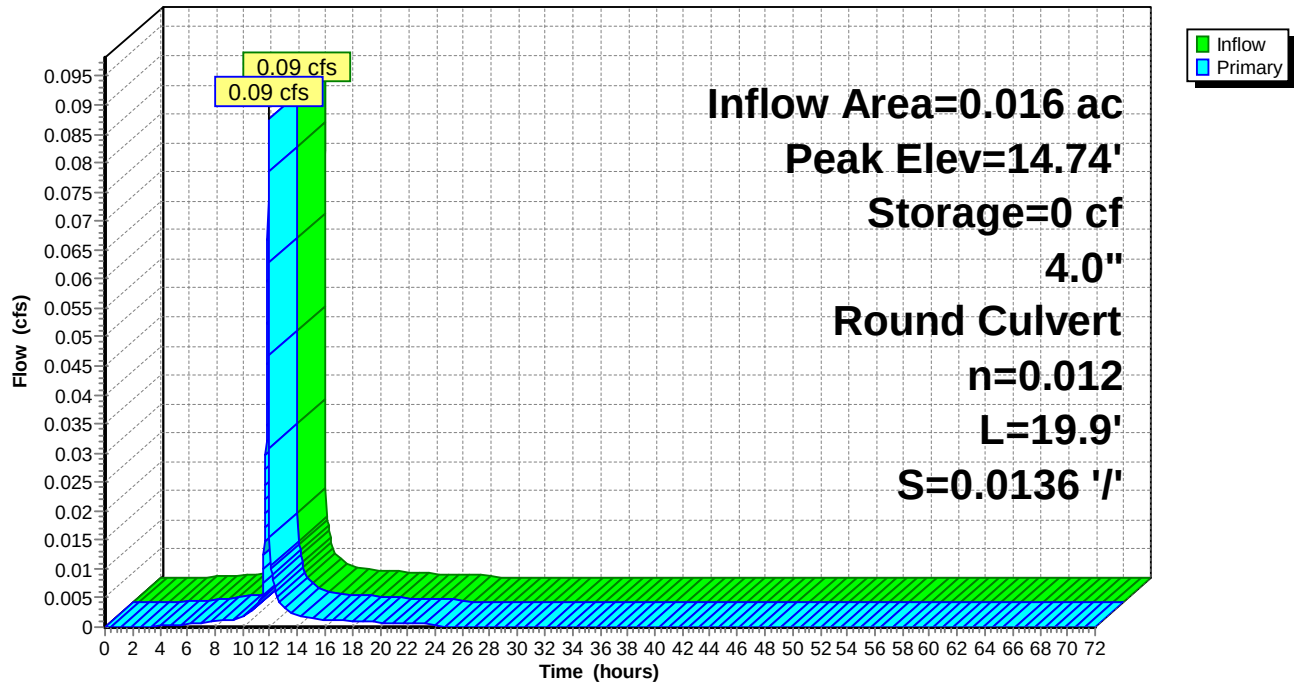
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Type II 24-hr 2-YR Rainfall=3.40"

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Pond P44: Planter #44

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Pond P45: Planter #45

Inflow Area = 0.013 ac, 93.19% Impervious, Inflow Depth = 2.95" for 2-YR event
 Inflow = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af
 Outflow = 0.07 cfs @ 11.91 hrs, Volume= 0.003 af, Atten= 3%, Lag= 0.4 min
 Primary = 0.07 cfs @ 11.91 hrs, Volume= 0.003 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 16.46' Surf.Area= 40 sf Storage= 36 cf

Peak Elev= 16.67' @ 11.91 hrs Surf.Area= 40 sf Storage= 39 cf (3 cf above start)

Plug-Flow detention time= 150.6 min calculated for 0.002 af (75% of inflow)

Center-of-Mass det. time= 3.5 min (767.0 - 763.5)

Volume	Invert	Avail.Storage	Storage Description	
#1	14.24'	106 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
14.24	40	0.0	0	0
14.25	40	40.0	0	0
17.99	40	40.0	60	60
18.00	40	100.0	0	60
19.00	40	100.0	40	100
19.01	1,000	100.0	5	106

Device	Routing	Invert	Outlet Devices	
#1	Primary	16.46'	4.0" Round Culvert L= 36.4' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.45' / 16.46' S= -0.0552 ' / Cc= 0.900 n= 0.012, Flow Area= 0.09 sf	

Primary OutFlow Max=0.07 cfs @ 11.91 hrs HW=16.67' TW=15.10' (Dynamic Tailwater)↑ **1=Culvert** (Inlet Controls 0.07 cfs @ 1.23 fps)

Naima - Phase 2 - Proposed HydroCAD

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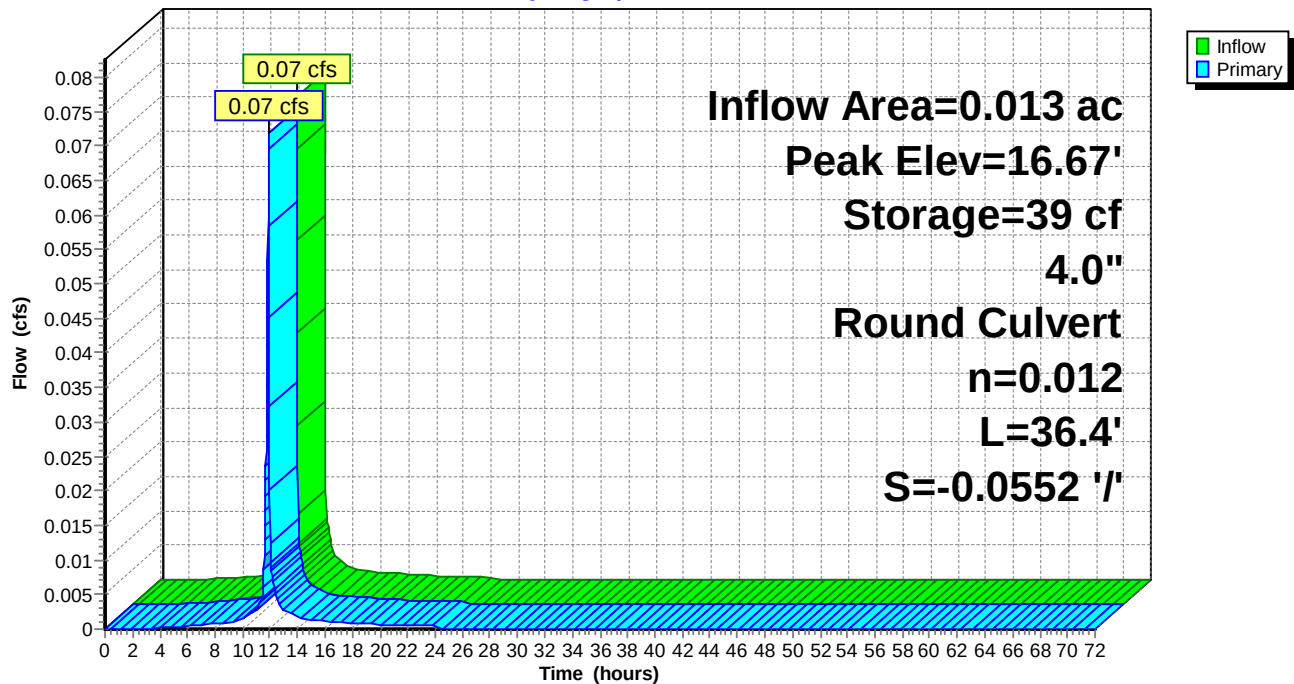
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Type II 24-hr 2-YR Rainfall=3.40"

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Pond P45: Planter #45

Hydrograph



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

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Summary for Pond P46: Planter #46

Inflow Area = 0.005 ac, 90.87% Impervious, Inflow Depth = 2.95" for 2-YR event
 Inflow = 0.03 cfs @ 11.90 hrs, Volume= 0.001 af
 Outflow = 0.03 cfs @ 11.90 hrs, Volume= 0.001 af, Atten= 2%, Lag= 0.3 min
 Primary = 0.03 cfs @ 11.90 hrs, Volume= 0.001 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2
 Peak Elev= 15.07' @ 11.90 hrs Surf.Area= 20 sf Storage= 3 cf

Plug-Flow detention time= 36.7 min calculated for 0.001 af (97% of inflow)
 Center-of-Mass det. time= 16.9 min (780.4 - 763.5)

Volume	Invert	Avail.Storage	Storage Description	
#1	14.74'	55 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
14.74	20	0.0	0	0
14.75	20	40.0	0	0
18.49	20	40.0	30	30
18.50	20	100.0	0	30
19.50	20	100.0	20	50
19.51	1,000	100.0	5	55

Device	Routing	Invert	Outlet Devices
#1	Primary	14.95'	4.0" Round Culvert L= 28.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.95' / 14.24' S= 0.0248 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.03 cfs @ 11.90 hrs HW=15.07' TW=12.83' (Dynamic Tailwater)

↑ **1=Culvert** (Inlet Controls 0.03 cfs @ 0.94 fps)

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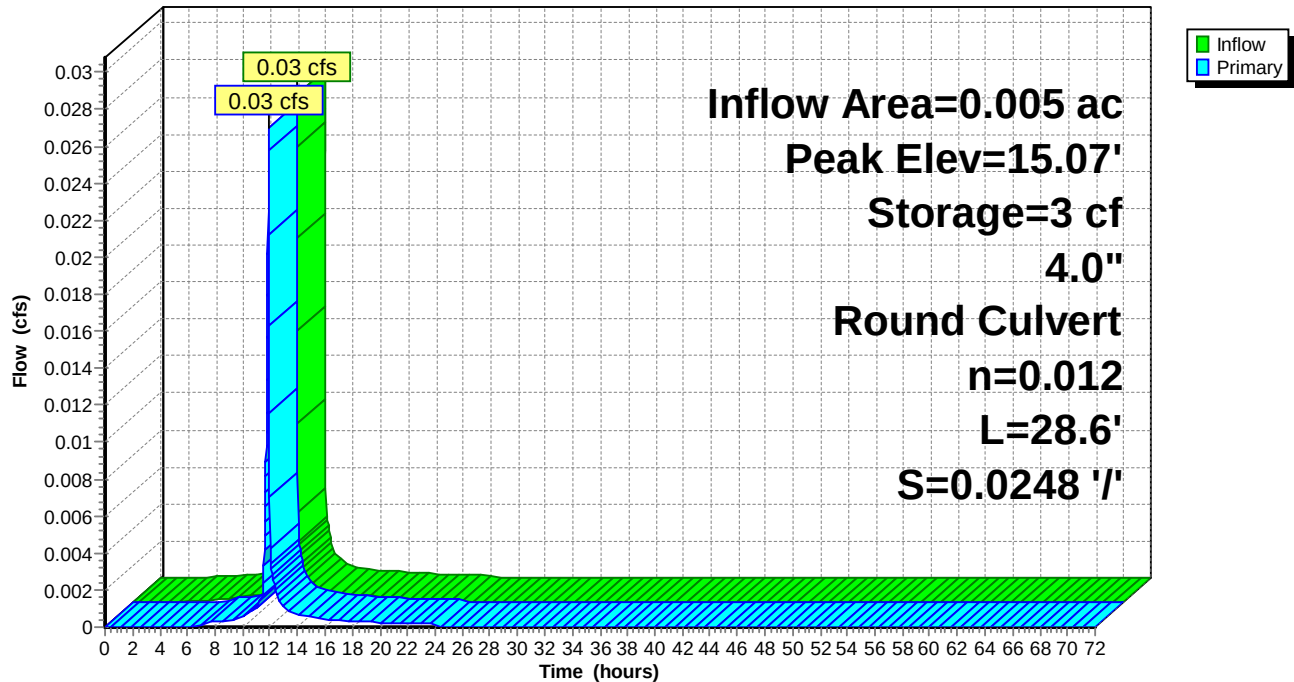
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Type II 24-hr 2-YR Rainfall=3.40"

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Pond P46: Planter #46

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

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Summary for Pond P47: Planter #47

Inflow Area = 0.028 ac, 93.42% Impervious, Inflow Depth = 2.95" for 2-YR event
 Inflow = 0.15 cfs @ 11.90 hrs, Volume= 0.007 af
 Outflow = 0.14 cfs @ 11.91 hrs, Volume= 0.007 af, Atten= 7%, Lag= 1.0 min
 Primary = 0.14 cfs @ 11.91 hrs, Volume= 0.007 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 16.60' Surf.Area= 80 sf Storage= 60 cf

Peak Elev= 16.96' @ 11.92 hrs Surf.Area= 80 sf Storage= 71 cf (11 cf above start)

Plug-Flow detention time= 136.1 min calculated for 0.005 af (80% of inflow)

Center-of-Mass det. time= 4.9 min (768.5 - 763.5)

Volume	Invert	Avail.Storage	Storage Description	
#1	14.74'	206 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
14.74	80	0.0	0	0
14.75	80	40.0	0	0
18.49	80	40.0	120	120
18.50	80	100.0	1	121
19.50	80	100.0	80	201
19.51	1,000	100.0	5	206

Device	Routing	Invert	Outlet Devices	
#1	Primary	16.60'	4.0" Round Culvert L= 59.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.95' / 16.60' S= -0.0277 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf	

Primary OutFlow Max=0.14 cfs @ 11.91 hrs HW=16.95' TW=15.11' (Dynamic Tailwater)↑ **1=Culvert** (Outlet Controls 0.14 cfs @ 1.61 fps)

Naima - Phase 2 - Proposed HydroCAD

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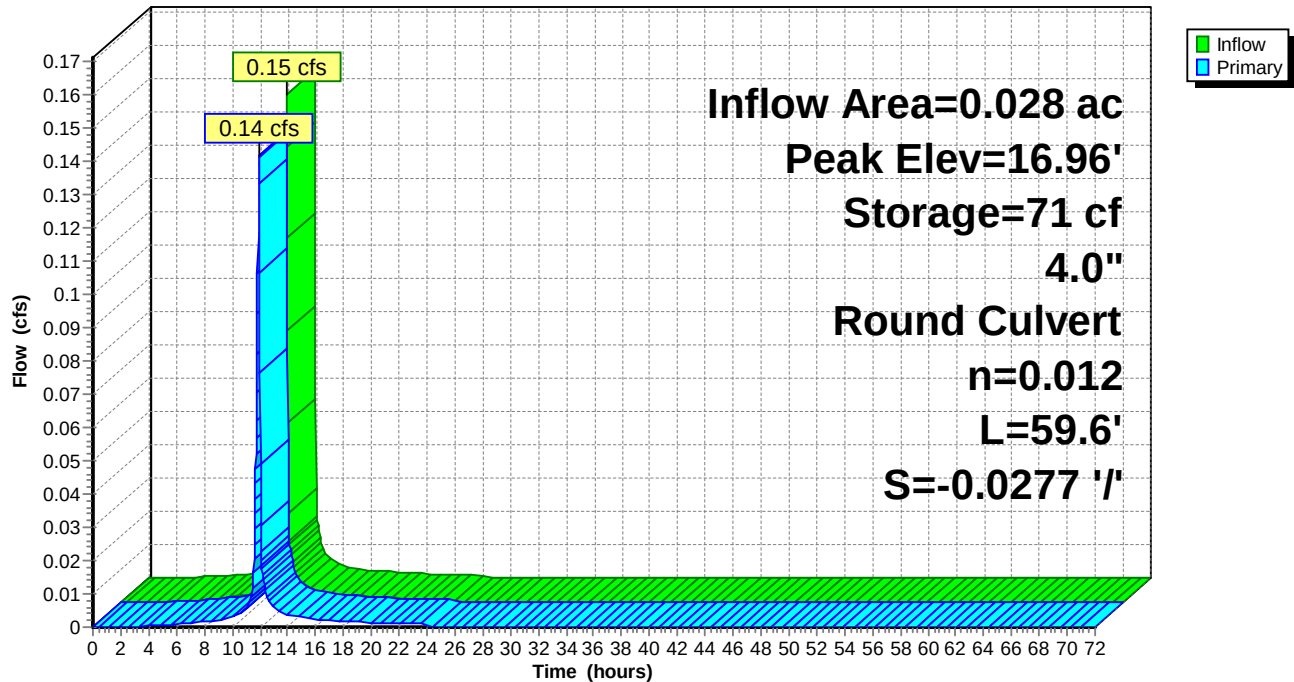
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Type II 24-hr 2-YR Rainfall=3.40"

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Pond P47: Planter #47

Hydrograph



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

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Summary for Pond P48: Planter #48

Inflow Area = 0.018 ac, 93.09% Impervious, Inflow Depth = 2.95" for 2-YR event
 Inflow = 0.10 cfs @ 11.90 hrs, Volume= 0.004 af
 Outflow = 0.10 cfs @ 11.91 hrs, Volume= 0.003 af, Atten= 3%, Lag= 0.5 min
 Primary = 0.10 cfs @ 11.91 hrs, Volume= 0.003 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2
 Peak Elev= 17.15' @ 11.91 hrs Surf.Area= 55 sf Storage= 53 cf

Plug-Flow detention time= 150.0 min calculated for 0.003 af (76% of inflow)
 Center-of-Mass det. time= 62.3 min (825.9 - 763.5)

Volume	Invert	Avail.Storage	Storage Description	
#1	14.74'	143 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
14.74	55	0.0	0	0
14.75	55	40.0	0	0
18.49	55	40.0	82	82
18.50	55	100.0	1	83
19.50	55	100.0	55	138
19.51	1,000	100.0	5	143

Device	Routing	Invert	Outlet Devices
#1	Primary	16.90'	4.0" Round Culvert L= 24.8' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.44' / 16.90' S= -0.0992 ' / Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.10 cfs @ 11.91 hrs HW=17.15' TW=12.84' (Dynamic Tailwater)

↑ **1=Culvert** (Inlet Controls 0.10 cfs @ 1.35 fps)

Naima - Phase 2 - Proposed HydroCAD

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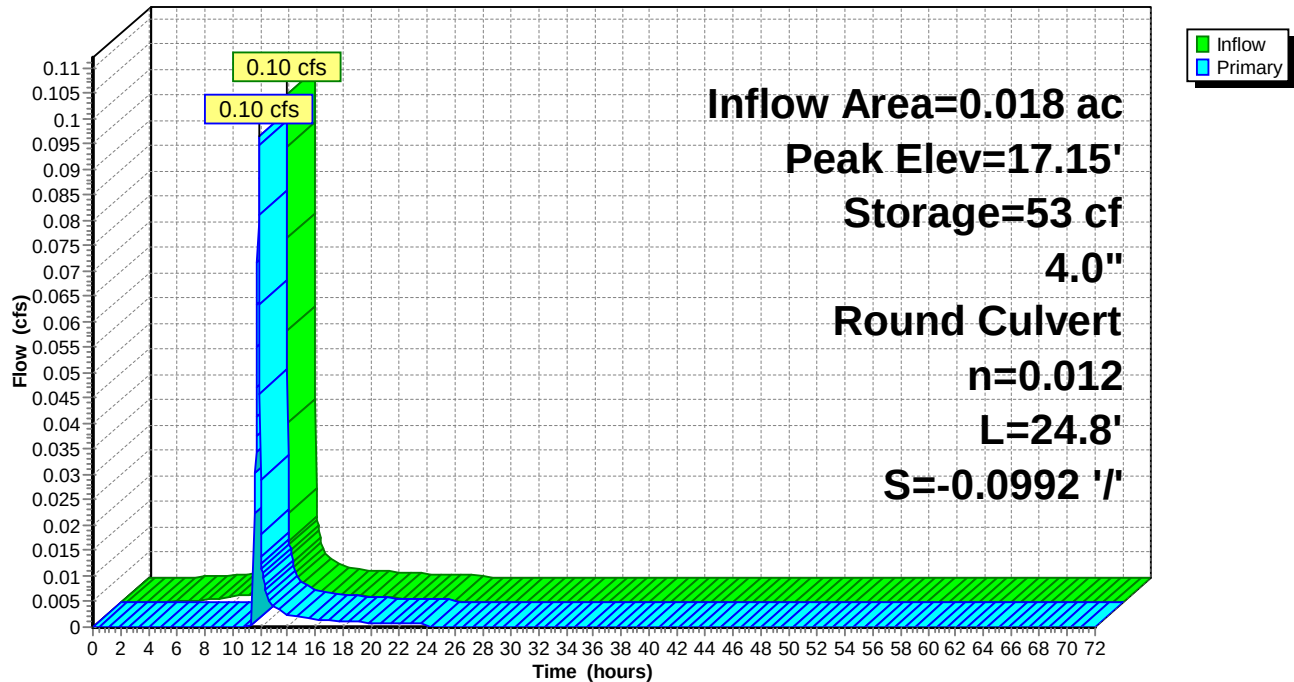
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Type II 24-hr 2-YR Rainfall=3.40"

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Pond P48: Planter #48

Hydrograph



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

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Summary for Pond P49: Planter #49

Inflow Area = 0.008 ac, 91.74% Impervious, Inflow Depth = 2.95" for 2-YR event
 Inflow = 0.05 cfs @ 11.90 hrs, Volume= 0.002 af
 Outflow = 0.04 cfs @ 11.90 hrs, Volume= 0.002 af, Atten= 2%, Lag= 0.3 min
 Primary = 0.04 cfs @ 11.90 hrs, Volume= 0.002 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 17.12' Surf.Area= 30 sf Storage= 29 cf

Peak Elev= 17.28' @ 11.90 hrs Surf.Area= 30 sf Storage= 30 cf (2 cf above start)

Plug-Flow detention time= 173.3 min calculated for 0.001 af (68% of inflow)

Center-of-Mass det. time= 3.3 min (766.8 - 763.5)

Volume	Invert	Avail.Storage	Storage Description
#1	14.74'	80 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
14.74	30	0.0	0	0
14.75	30	40.0	0	0
18.49	30	40.0	45	45
18.50	30	100.0	0	45
19.50	30	100.0	30	75
19.51	1,000	100.0	5	80

Device	Routing	Invert	Outlet Devices
#1	Primary	17.12'	4.0" Round Culvert L= 19.9' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.95' / 17.12' S= -0.1090 ' / Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.04 cfs @ 11.90 hrs HW=17.28' TW=15.09' (Dynamic Tailwater)↑ **1=Culvert** (Inlet Controls 0.04 cfs @ 1.07 fps)

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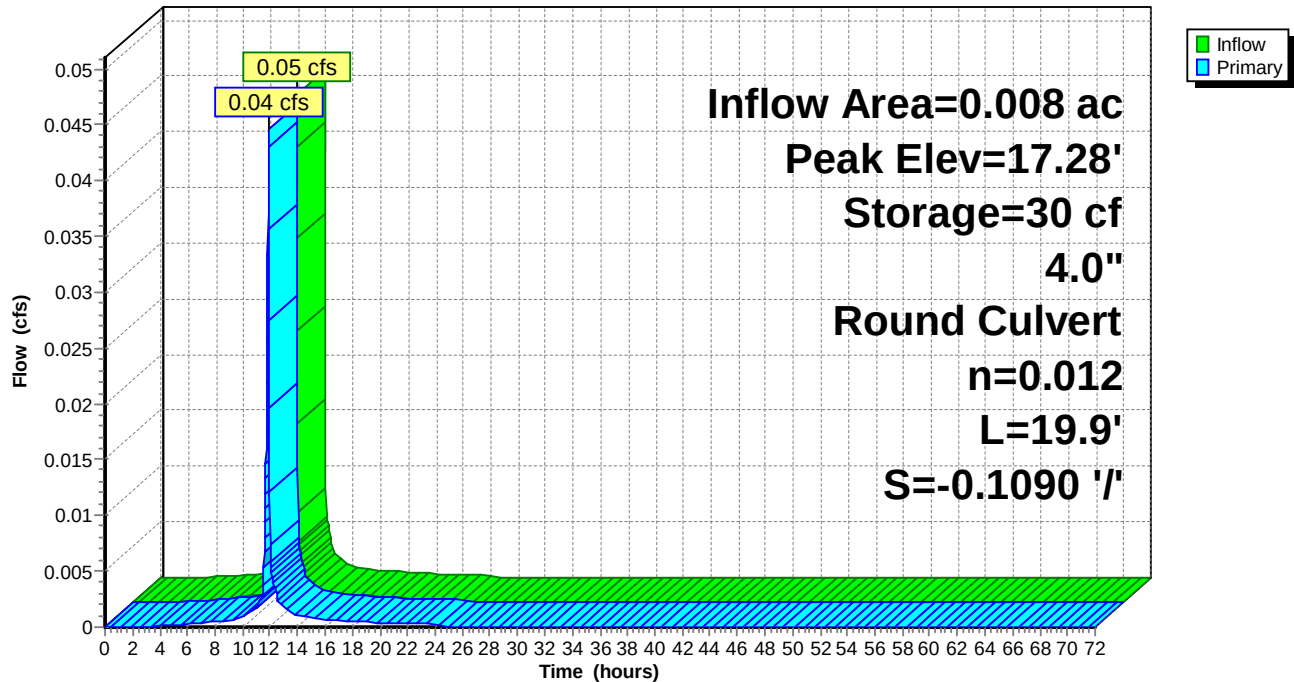
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Pond P49: Planter #49

Hydrograph



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

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Summary for Pond P50: Planter #50

Inflow Area = 0.016 ac, 92.84% Impervious, Inflow Depth = 2.95" for 2-YR event
 Inflow = 0.09 cfs @ 11.90 hrs, Volume= 0.004 af
 Outflow = 0.08 cfs @ 11.91 hrs, Volume= 0.004 af, Atten= 3%, Lag= 0.5 min
 Primary = 0.08 cfs @ 11.91 hrs, Volume= 0.004 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2
 Peak Elev= 16.18' @ 11.91 hrs Surf.Area= 50 sf Storage= 9 cf

Plug-Flow detention time= 31.3 min calculated for 0.004 af (98% of inflow)
 Center-of-Mass det. time= 15.4 min (778.9 - 763.5)

Volume	Invert	Avail.Storage	Storage Description	
#1	15.74'	131 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
15.74	50	0.0	0	0
15.75	50	40.0	0	0
19.49	50	40.0	75	75
19.50	50	100.0	1	76
20.50	50	100.0	50	126
20.51	1,000	100.0	5	131

Device	Routing	Invert	Outlet Devices
#1	Primary	15.95'	4.0" Round Culvert L= 19.4' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.95' / 14.55' S= 0.0722 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.08 cfs @ 11.91 hrs HW=16.18' TW=12.83' (Dynamic Tailwater)

↑ **1=Culvert** (Inlet Controls 0.08 cfs @ 1.29 fps)

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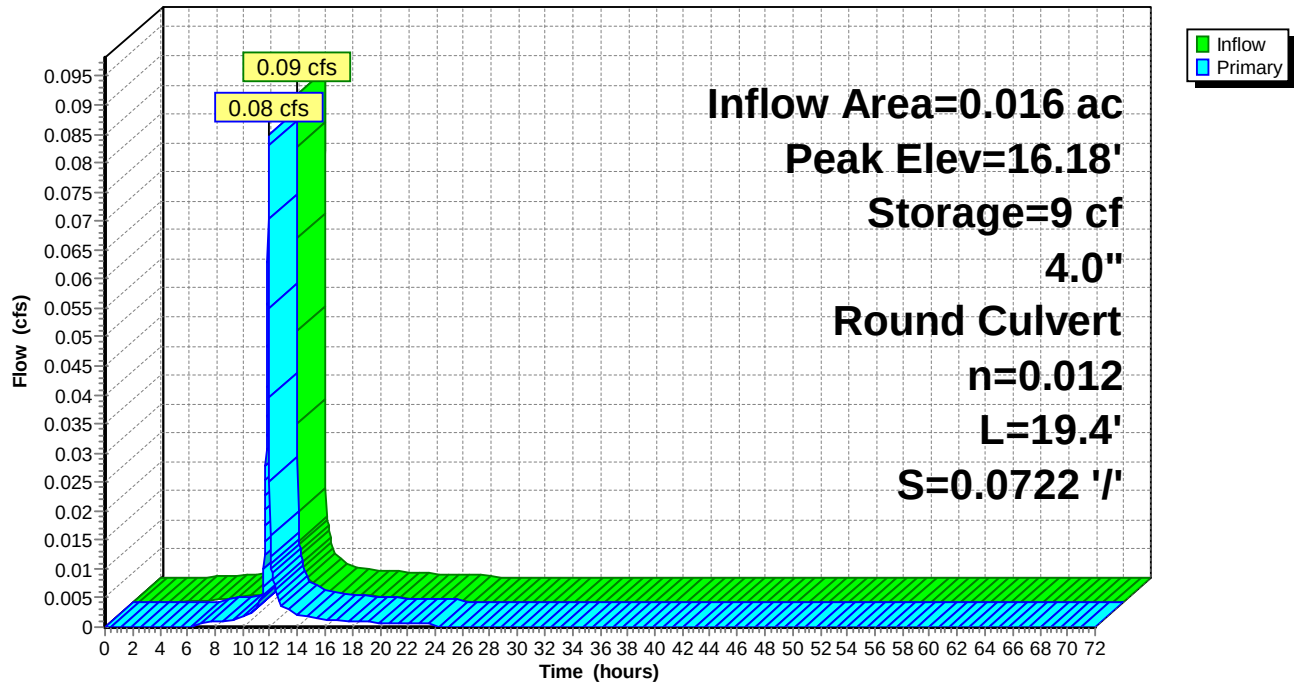
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Pond P50: Planter #50

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Summary for Pond P51: Planter #51

Inflow Area = 0.013 ac, 93.19% Impervious, Inflow Depth = 2.95" for 2-YR event
 Inflow = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af
 Outflow = 0.07 cfs @ 11.91 hrs, Volume= 0.003 af, Atten= 3%, Lag= 0.4 min
 Primary = 0.07 cfs @ 11.91 hrs, Volume= 0.003 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 17.31' Surf.Area= 40 sf Storage= 25 cf

Peak Elev= 17.52' @ 11.91 hrs Surf.Area= 40 sf Storage= 28 cf (3 cf above start)

Plug-Flow detention time= 124.7 min calculated for 0.003 af (83% of inflow)

Center-of-Mass det. time= 3.5 min (767.0 - 763.5)

Volume	Invert	Avail.Storage	Storage Description
#1	15.74'	106 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
15.74	40	0.0	0	0
15.75	40	40.0	0	0
19.49	40	40.0	60	60
19.50	40	100.0	0	60
20.50	40	100.0	40	100
20.51	1,000	100.0	5	106

Device	Routing	Invert	Outlet Devices
#1	Primary	17.31'	4.0" Round Culvert L= 36.8' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.95' / 17.31' S= -0.0370 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.07 cfs @ 11.91 hrs HW=17.52' TW=15.10' (Dynamic Tailwater)↑ **1=Culvert** (Inlet Controls 0.07 cfs @ 1.23 fps)

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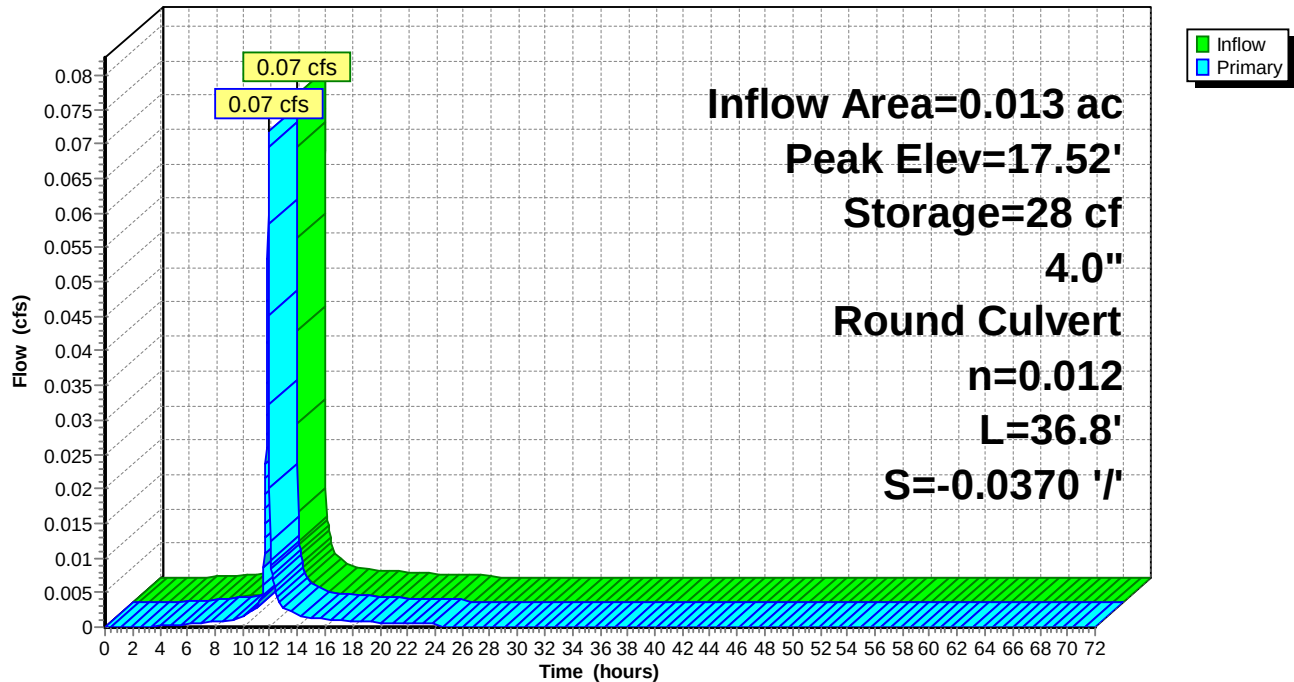
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Pond P51: Planter #51

Hydrograph



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

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Summary for Pond P52: Planter #52

Inflow Area = 0.014 ac, 93.22% Impervious, Inflow Depth = 2.95" for 2-YR event
 Inflow = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af
 Outflow = 0.07 cfs @ 11.91 hrs, Volume= 0.003 af, Atten= 3%, Lag= 0.4 min
 Primary = 0.07 cfs @ 11.91 hrs, Volume= 0.003 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 17.54' Surf.Area= 40 sf Storage= 29 cf

Peak Elev= 17.75' @ 11.91 hrs Surf.Area= 40 sf Storage= 32 cf (3 cf above start)

Plug-Flow detention time= 134.1 min calculated for 0.003 af (80% of inflow)

Center-of-Mass det. time= 3.5 min (767.0 - 763.5)

Volume	Invert	Avail.Storage	Storage Description
#1	15.74'	106 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
15.74	40	0.0	0	0
15.75	40	40.0	0	0
19.49	40	40.0	60	60
19.50	40	100.0	0	60
20.50	40	100.0	40	100
20.51	1,000	100.0	5	106

Device	Routing	Invert	Outlet Devices
#1	Primary	17.54'	4.0" Round Culvert L= 28.9' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.95' / 17.54' S= -0.0550 ' /' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.07 cfs @ 11.91 hrs HW=17.75' TW=15.10' (Dynamic Tailwater)↑**1=Culvert** (Inlet Controls 0.07 cfs @ 1.23 fps)

Naima - Phase 2 - Proposed HydroCAD

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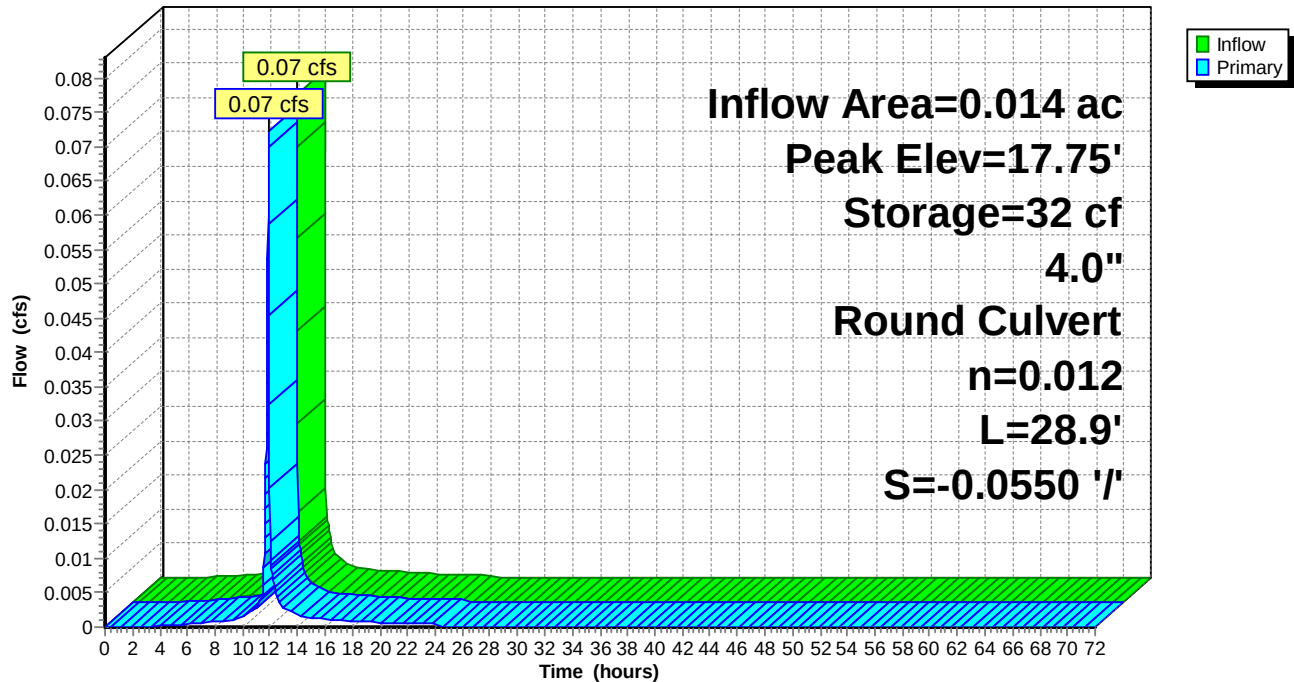
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Type II 24-hr 2-YR Rainfall=3.40"

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Pond P52: Planter #52

Hydrograph



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

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Summary for Pond P53: Planter #53

Inflow Area = 0.025 ac, 93.61% Impervious, Inflow Depth = 2.95" for 2-YR event
 Inflow = 0.14 cfs @ 11.90 hrs, Volume= 0.006 af
 Outflow = 0.13 cfs @ 11.91 hrs, Volume= 0.006 af, Atten= 4%, Lag= 0.8 min
 Primary = 0.13 cfs @ 11.91 hrs, Volume= 0.006 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2
 Peak Elev= 16.27' @ 11.91 hrs Surf.Area= 70 sf Storage= 15 cf

Plug-Flow detention time= 29.1 min calculated for 0.006 af (98% of inflow)
 Center-of-Mass det. time= 14.8 min (778.4 - 763.5)

Volume	Invert	Avail.Storage	Storage Description	
#1	15.74'	181 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
15.74	70	0.0	0	0
15.75	70	40.0	0	0
19.49	70	40.0	105	105
19.50	70	100.0	1	106
20.50	70	100.0	70	176
20.51	1,000	100.0	5	181

Device	Routing	Invert	Outlet Devices
#1	Primary	15.95'	4.0" Round Culvert L= 22.8' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.95' / 14.78' S= 0.0513 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.13 cfs @ 11.91 hrs HW=16.27' TW=12.84' (Dynamic Tailwater)

↑ **1=Culvert** (Inlet Controls 0.13 cfs @ 1.51 fps)

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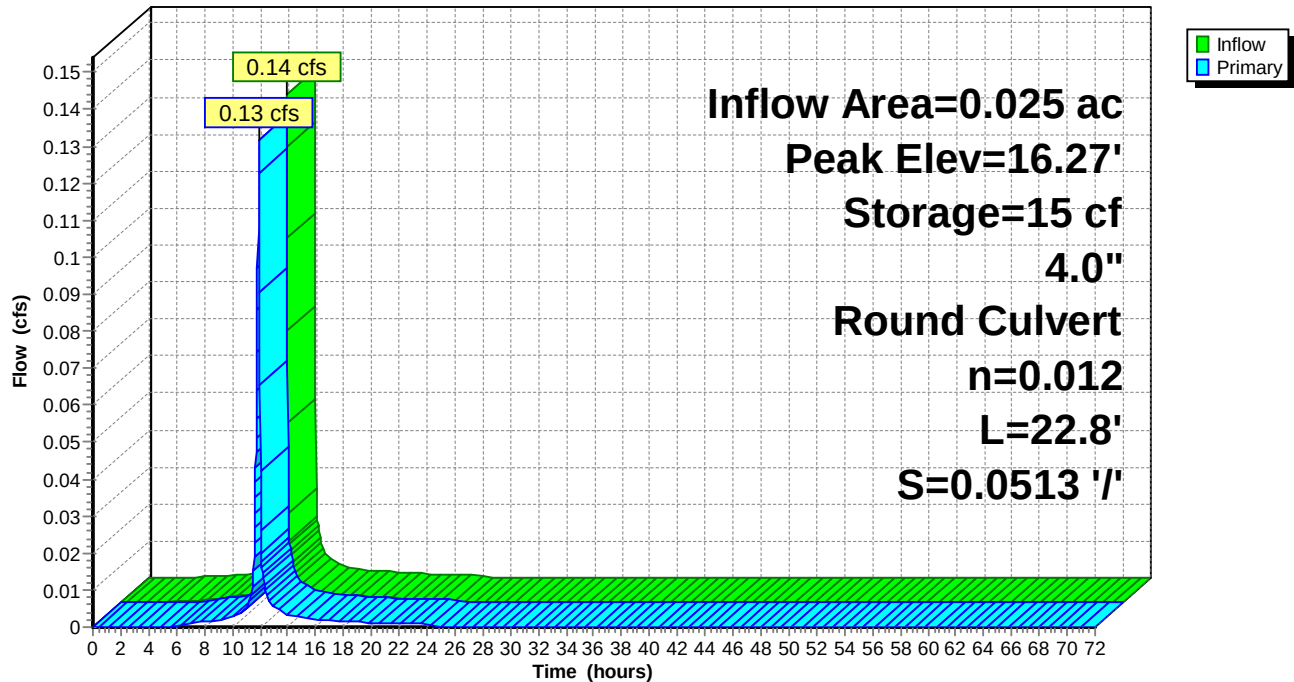
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Type II 24-hr 2-YR Rainfall=3.40"

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Pond P53: Planter #53

Hydrograph



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

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Summary for Pond P54: Planter #54

Inflow Area = 0.008 ac, 91.48% Impervious, Inflow Depth = 2.95" for 2-YR event
 Inflow = 0.04 cfs @ 11.90 hrs, Volume= 0.002 af
 Outflow = 0.04 cfs @ 11.90 hrs, Volume= 0.002 af, Atten= 2%, Lag= 0.4 min
 Primary = 0.04 cfs @ 11.90 hrs, Volume= 0.002 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 18.58' Surf.Area= 30 sf Storage= 34 cf

Peak Elev= 18.74' @ 11.90 hrs Surf.Area= 30 sf Storage= 36 cf (2 cf above start)

Plug-Flow detention time= 196.7 min calculated for 0.001 af (61% of inflow)

Center-of-Mass det. time= 3.3 min (766.9 - 763.5)

Volume	Invert	Avail.Storage	Storage Description
#1	15.74'	80 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
15.74	30	0.0	0	0
15.75	30	40.0	0	0
19.49	30	40.0	45	45
19.50	30	100.0	0	45
20.50	30	100.0	30	75
20.51	1,000	100.0	5	80

Device	Routing	Invert	Outlet Devices
#1	Primary	18.58'	4.0" Round Culvert L= 13.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.95' / 18.58' S= -0.2023 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.04 cfs @ 11.90 hrs HW=18.74' TW=16.53' (Dynamic Tailwater)↑**1=Culvert** (Inlet Controls 0.04 cfs @ 1.06 fps)

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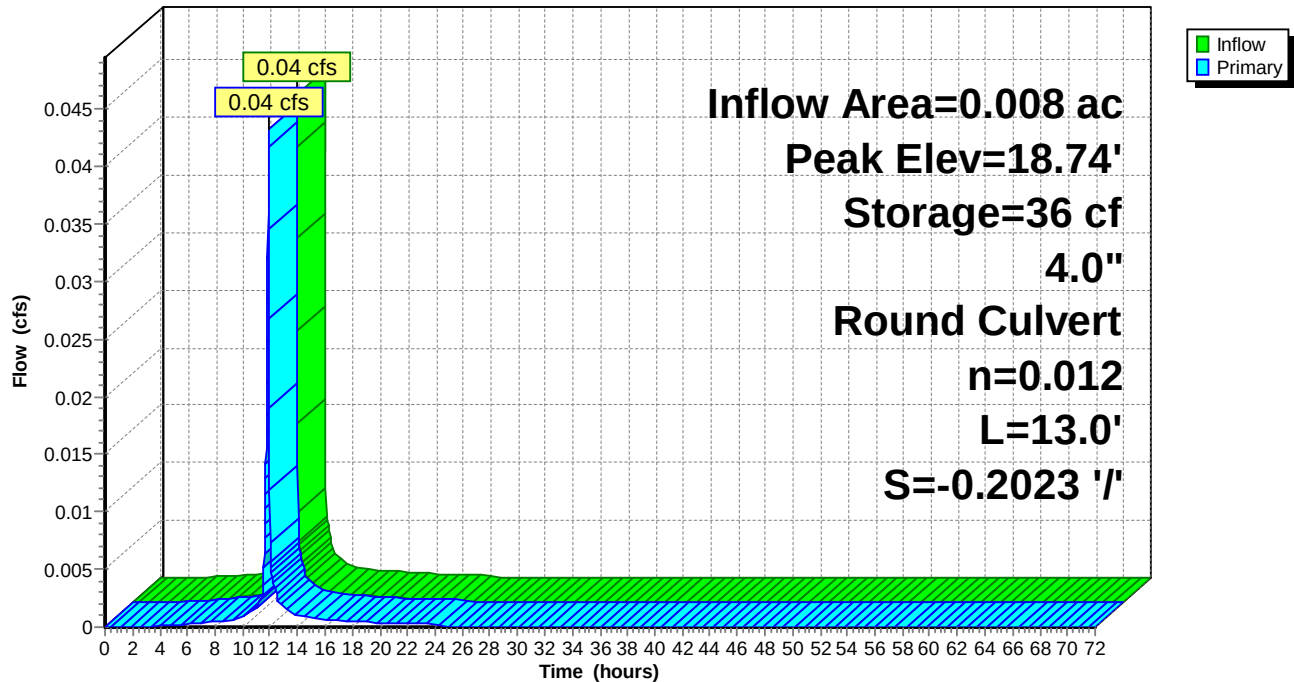
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Type II 24-hr 2-YR Rainfall=3.40"

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Pond P54: Planter #54

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Pond PA-2: Porous Asphalt #2

Inflow Area = 0.105 ac, 81.59% Impervious, Inflow Depth = 2.68" for 2-YR event
 Inflow = 0.37 cfs @ 11.93 hrs, Volume= 0.023 af
 Outflow = 0.27 cfs @ 12.01 hrs, Volume= 0.023 af, Atten= 28%, Lag= 4.7 min
 Primary = 0.27 cfs @ 12.01 hrs, Volume= 0.023 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Peak Elev= 14.50' @ 12.01 hrs Surf.Area= 1,172 sf Storage= 215 cf

Plug-Flow detention time= 63.5 min calculated for 0.023 af (98% of inflow)

Center-of-Mass det. time= 48.6 min (834.4 - 785.9)

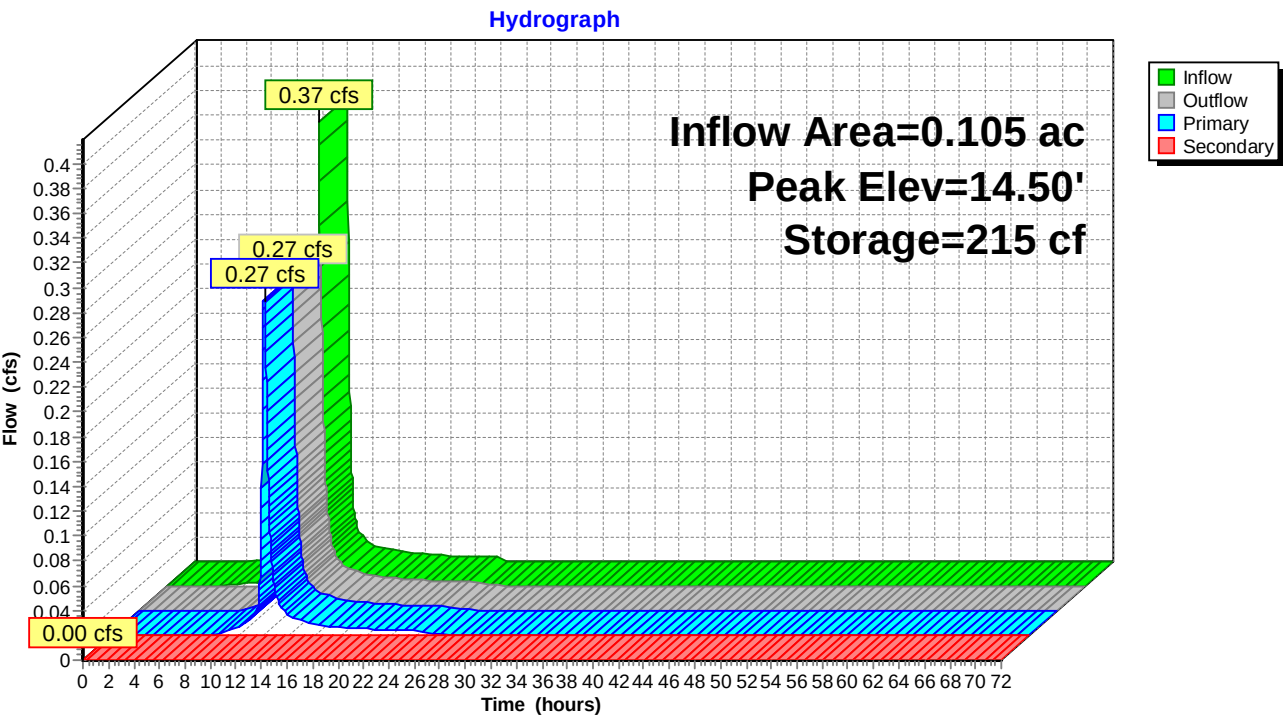
Volume	Invert	Avail.Storage	Storage Description
#1	14.04'	4,998 cf	Porous Asphalt Section (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
14.04	1,172	0.0	0	0
14.05	1,172	40.0	5	5
14.80	1,172	40.0	352	356
14.81	1,172	20.0	2	359
15.21	1,172	20.0	94	452
15.22	12,000	100.0	66	518
15.50	20,000	100.0	4,480	4,998

Device	Routing	Invert	Outlet Devices
#1	Primary	14.09'	6.0" Round Culvert L= 55.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.09' / 13.90' S= 0.0035 ' / S= 0.0035 ' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf
#2	Secondary	15.36'	55.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=0.27 cfs @ 12.01 hrs HW=14.50' TW=13.29' (Dynamic Tailwater)↑ **1=Culvert** (Barrel Controls 0.27 cfs @ 2.14 fps)**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=14.04' TW=15.10' (Dynamic Tailwater)↑ **2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond PA-2: Porous Asphalt #2



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Pond PA-3: Porous Asphalt #3

Inflow Area = 0.136 ac, 64.54% Impervious, Inflow Depth = 2.31" for 2-YR event
 Inflow = 0.37 cfs @ 11.93 hrs, Volume= 0.026 af
 Outflow = 0.30 cfs @ 12.01 hrs, Volume= 0.026 af, Atten= 19%, Lag= 5.2 min
 Primary = 0.30 cfs @ 12.01 hrs, Volume= 0.026 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Peak Elev= 14.33' @ 12.01 hrs Surf.Area= 903 sf Storage= 168 cf

Plug-Flow detention time= 42.1 min calculated for 0.026 af (98% of inflow)

Center-of-Mass det. time= 32.5 min (834.8 - 802.3)

Volume	Invert	Avail.Storage	Storage Description
#1	13.86'	7,773 cf	Porous Asphalt Section (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.86	903	0.0	0	0
13.87	903	40.0	4	4
14.62	903	40.0	271	275
14.63	903	20.0	2	276
15.03	903	20.0	72	349
15.04	12,000	100.0	65	413
15.50	20,000	100.0	7,360	7,773

Device	Routing	Invert	Outlet Devices
#1	Primary	13.91'	6.0" Round Culvert L= 43.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.91' / 13.70' S= 0.0049 ' / ' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf
#2	Secondary	15.04'	43.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=0.30 cfs @ 12.01 hrs HW=14.33' TW=13.29' (Dynamic Tailwater)↑**1=Culvert** (Inlet Controls 0.30 cfs @ 1.73 fps)**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=13.86' TW=12.30' (Dynamic Tailwater)↑**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Naima - Phase 2 - Proposed HydroCAD

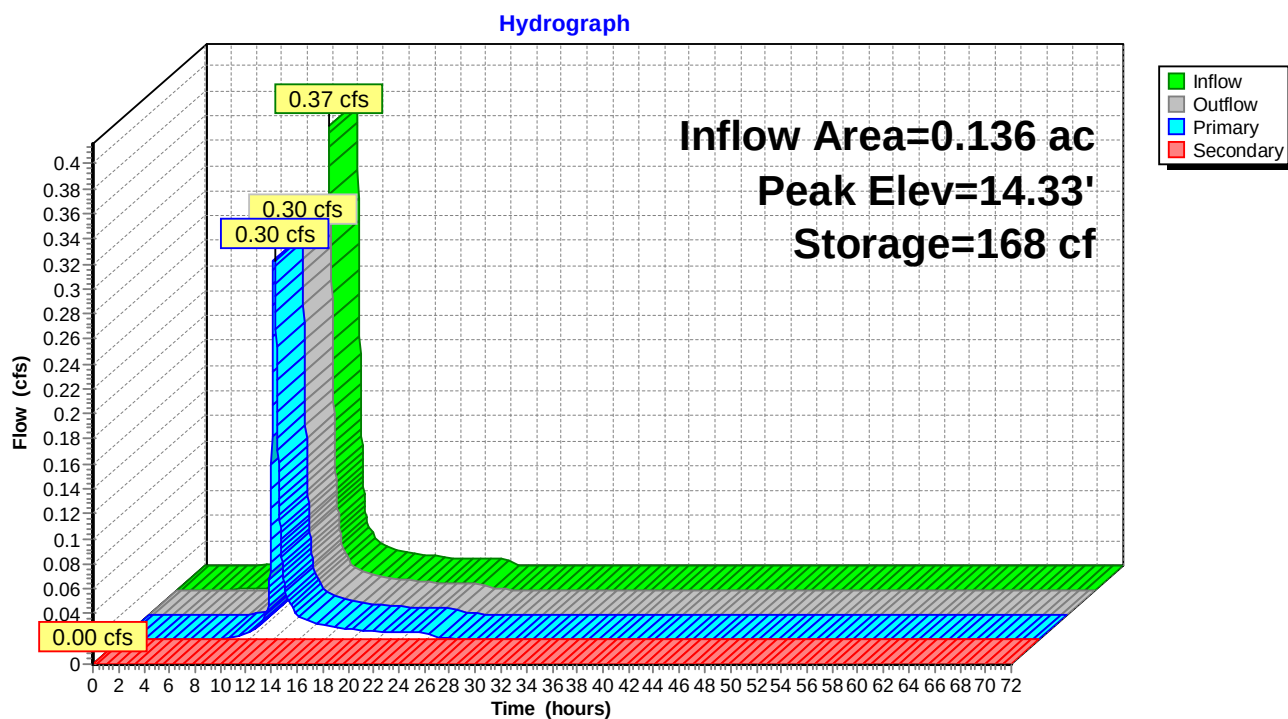
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Pond PA-3: Porous Asphalt #3



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

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Summary for Pond PA-4: Porous Asphalt #4

Inflow Area = 0.168 ac, 70.97% Impervious, Inflow Depth = 2.47" for 2-YR event
 Inflow = 0.52 cfs @ 11.93 hrs, Volume= 0.035 af
 Outflow = 0.38 cfs @ 12.00 hrs, Volume= 0.034 af, Atten= 26%, Lag= 4.0 min
 Primary = 0.38 cfs @ 12.00 hrs, Volume= 0.034 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Peak Elev= 14.41' @ 12.00 hrs Surf.Area= 1,097 sf Storage= 250 cf

Plug-Flow detention time= 45.2 min calculated for 0.034 af (98% of inflow)

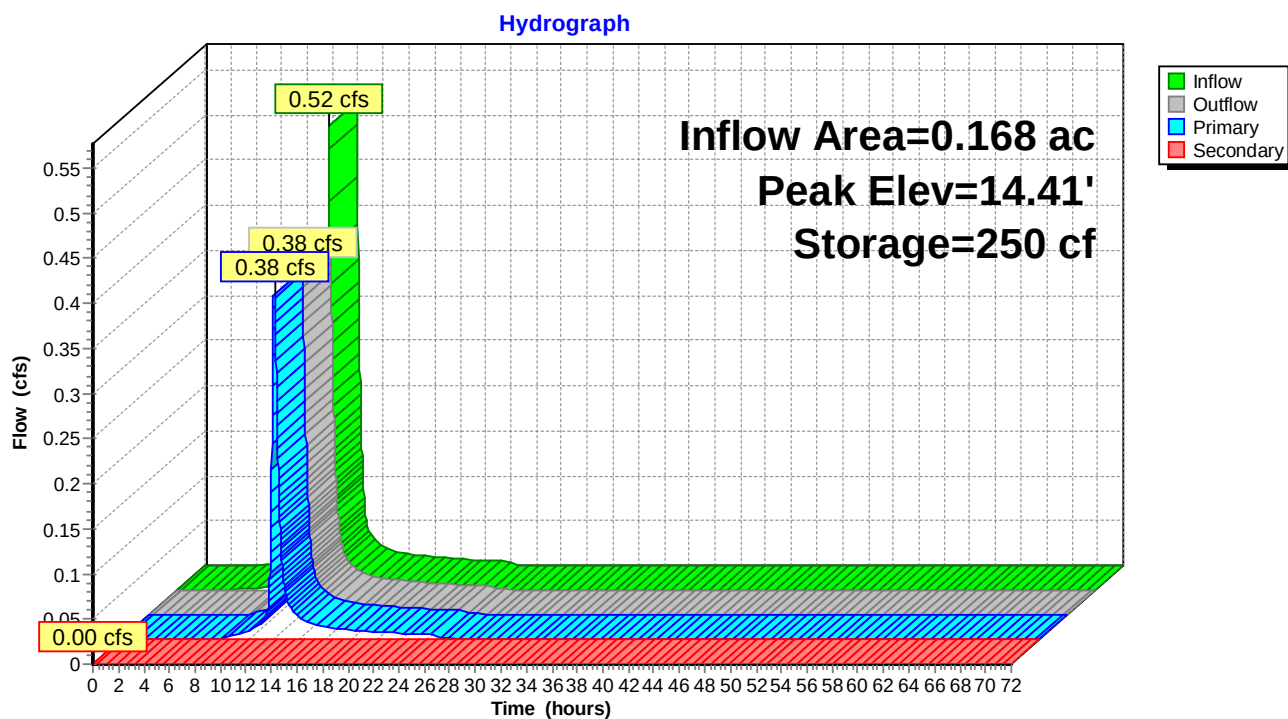
Center-of-Mass det. time= 36.2 min (831.2 - 794.9)

Volume	Invert	Avail.Storage	Storage Description	
#1	13.84'	8,169 cf	Porous Asphalt Section (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.84	1,097	0.0	0	0
13.85	1,097	40.0	4	4
14.60	1,097	40.0	329	333
14.61	1,097	20.0	2	336
15.01	1,097	20.0	88	423
15.02	12,000	100.0	65	489
15.50	20,000	100.0	7,680	8,169

Device	Routing	Invert	Outlet Devices
#1	Primary	13.89'	6.0" Round Culvert L= 52.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.89' / 13.70' S= 0.0037 ' / S= 0.0037 ' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf
#2	Secondary	15.02'	52.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=0.38 cfs @ 12.00 hrs HW=14.41' TW=13.29' (Dynamic Tailwater)↑ **1=Culvert** (Barrel Controls 0.38 cfs @ 2.34 fps)**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=13.84' TW=12.30' (Dynamic Tailwater)↑ **2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond PA-4: Porous Asphalt #4



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

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Summary for Pond PA-5: Porous Asphalt #5

Inflow Area = 0.187 ac, 78.13% Impervious, Inflow Depth = 2.64" for 2-YR event
 Inflow = 0.57 cfs @ 11.94 hrs, Volume= 0.041 af
 Outflow = 0.30 cfs @ 12.13 hrs, Volume= 0.040 af, Atten= 47%, Lag= 11.5 min
 Primary = 0.30 cfs @ 12.13 hrs, Volume= 0.040 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Peak Elev= 14.69' @ 12.13 hrs Surf.Area= 2,333 sf Storage= 568 cf

Plug-Flow detention time= 102.9 min calculated for 0.040 af (97% of inflow)

Center-of-Mass det. time= 85.9 min (876.1 - 790.1)

Volume	Invert	Avail.Storage	Storage Description
#1	14.08'	4,812 cf	Porous Asphalt Section (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
14.08	2,333	0.0	0	0
14.09	2,333	40.0	9	9
14.84	2,333	40.0	700	709
14.85	2,333	20.0	5	714
15.25	2,333	20.0	187	901
15.26	12,000	100.0	72	972
15.50	20,000	100.0	3,840	4,812

Device	Routing	Invert	Outlet Devices
#1	Primary	14.13'	6.0" Round Culvert L= 109.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.13' / 14.00' S= 0.0012 ' / S= 0.0012 ' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf
#2	Secondary	15.26'	109.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=0.30 cfs @ 12.13 hrs HW=14.69' TW=13.22' (Dynamic Tailwater)↑ **1=Culvert** (Barrel Controls 0.30 cfs @ 1.72 fps)**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=14.08' TW=15.11' (Dynamic Tailwater)↑ **2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Naima - Phase 2 - Proposed HydroCAD

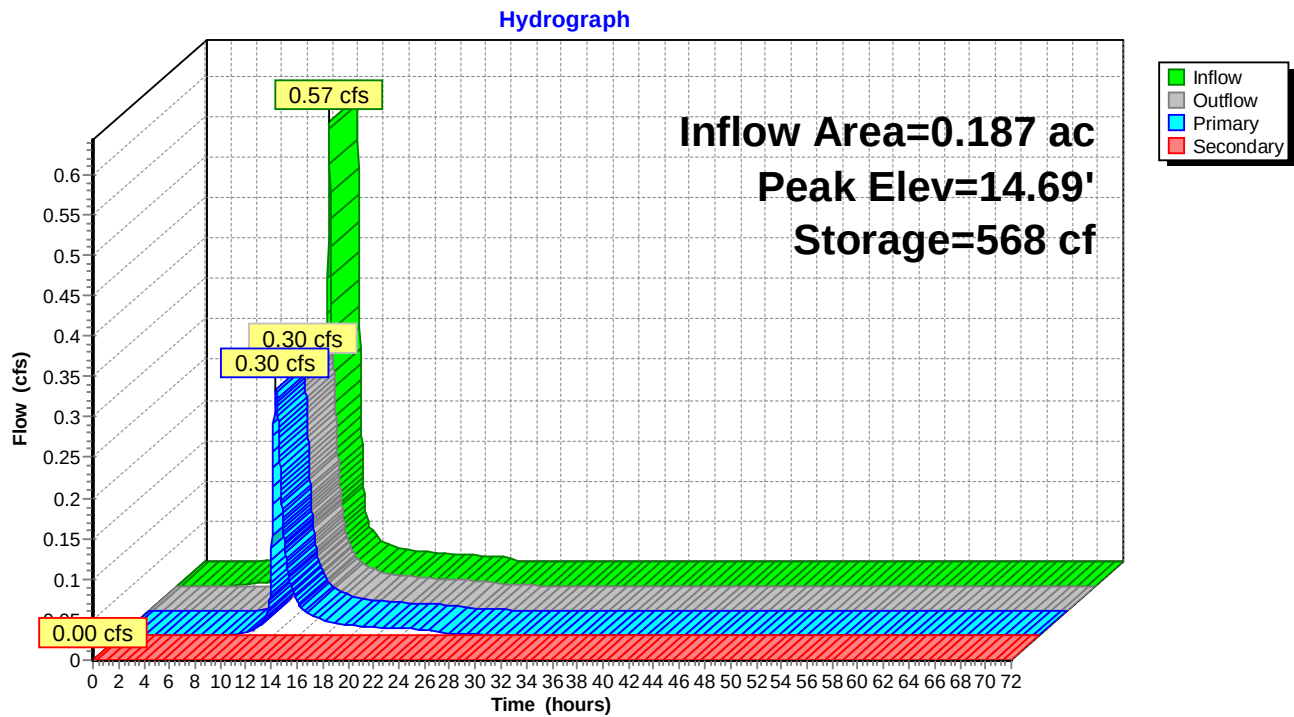
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Pond PA-5: Porous Asphalt #5



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

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Summary for Pond PA-6: Porous Asphalt #6

Inflow Area = 0.290 ac, 80.14% Impervious, Inflow Depth = 2.68" for 2-YR event
 Inflow = 0.98 cfs @ 11.93 hrs, Volume= 0.065 af
 Outflow = 0.39 cfs @ 12.02 hrs, Volume= 0.063 af, Atten= 60%, Lag= 5.6 min
 Primary = 0.39 cfs @ 12.02 hrs, Volume= 0.063 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Peak Elev= 15.32' @ 12.15 hrs Surf.Area= 3,085 sf Storage= 919 cf

Plug-Flow detention time= 96.0 min calculated for 0.063 af (98% of inflow)

Center-of-Mass det. time= 80.9 min (867.5 - 786.6)

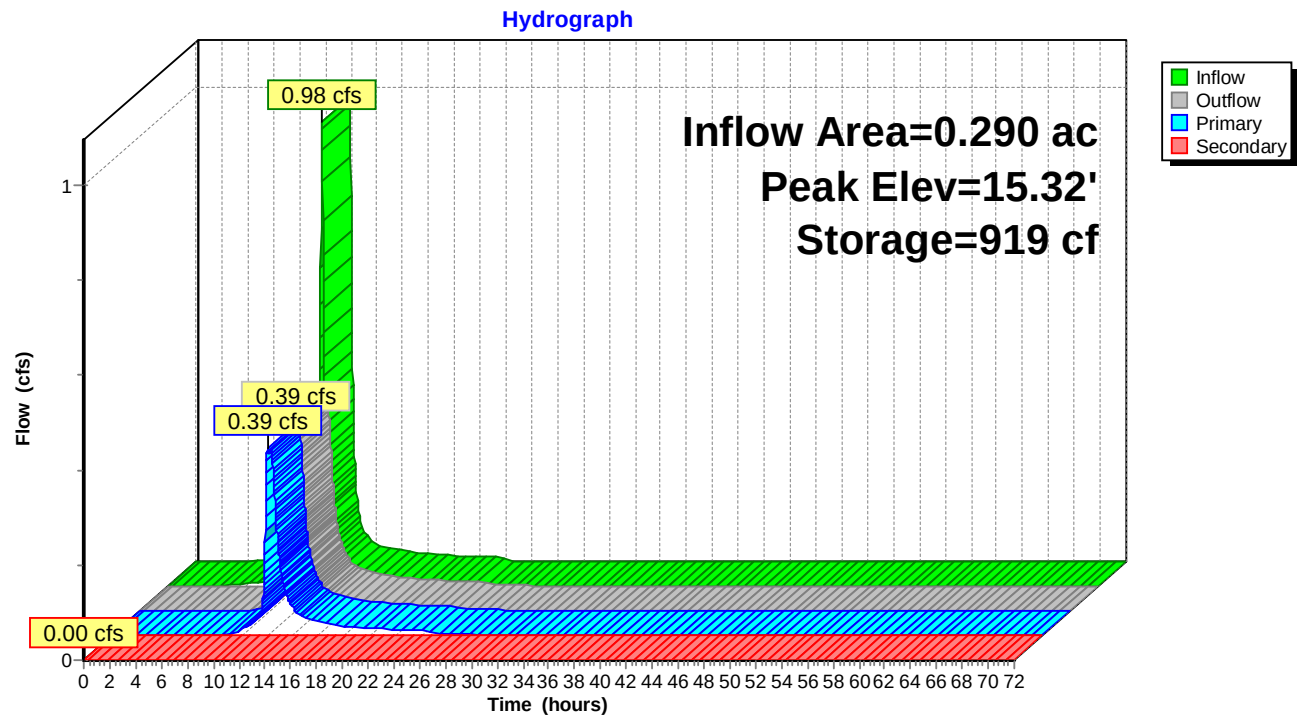
Volume	Invert	Avail.Storage	Storage Description
#1	14.58'	5,106 cf	Porous Asphalt Section (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
14.58	3,085	0.0	0	0
14.59	3,085	40.0	12	12
15.34	3,085	40.0	926	938
15.35	3,085	20.0	6	944
15.75	3,085	20.0	247	1,191
15.76	12,000	100.0	75	1,266
16.00	20,000	100.0	3,840	5,106

Device	Routing	Invert	Outlet Devices
#1	Primary	14.63'	6.0" Round Culvert L= 144.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.63' / 14.30' S= 0.0023 ' / S= 0.0023 ' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf
#2	Secondary	15.76'	144.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=0.39 cfs @ 12.02 hrs HW=15.27' TW=13.28' (Dynamic Tailwater)↑ **1=Culvert** (Barrel Controls 0.39 cfs @ 2.04 fps)**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=14.58' TW=15.78' (Dynamic Tailwater)↑ **2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond PA-6: Porous Asphalt #6



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

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Summary for Pond PA-7: Porous Asphalt #7

Inflow Area = 0.034 ac, 75.76% Impervious, Inflow Depth = 2.57" for 2-YR event
 Inflow = 0.11 cfs @ 11.93 hrs, Volume= 0.007 af
 Outflow = 0.09 cfs @ 12.01 hrs, Volume= 0.007 af, Atten= 13%, Lag= 4.3 min
 Primary = 0.09 cfs @ 12.01 hrs, Volume= 0.007 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Peak Elev= 16.58' @ 12.01 hrs Surf.Area= 387 sf Storage= 46 cf

Plug-Flow detention time= 47.3 min calculated for 0.007 af (98% of inflow)

Center-of-Mass det. time= 32.0 min (824.6 - 792.7)

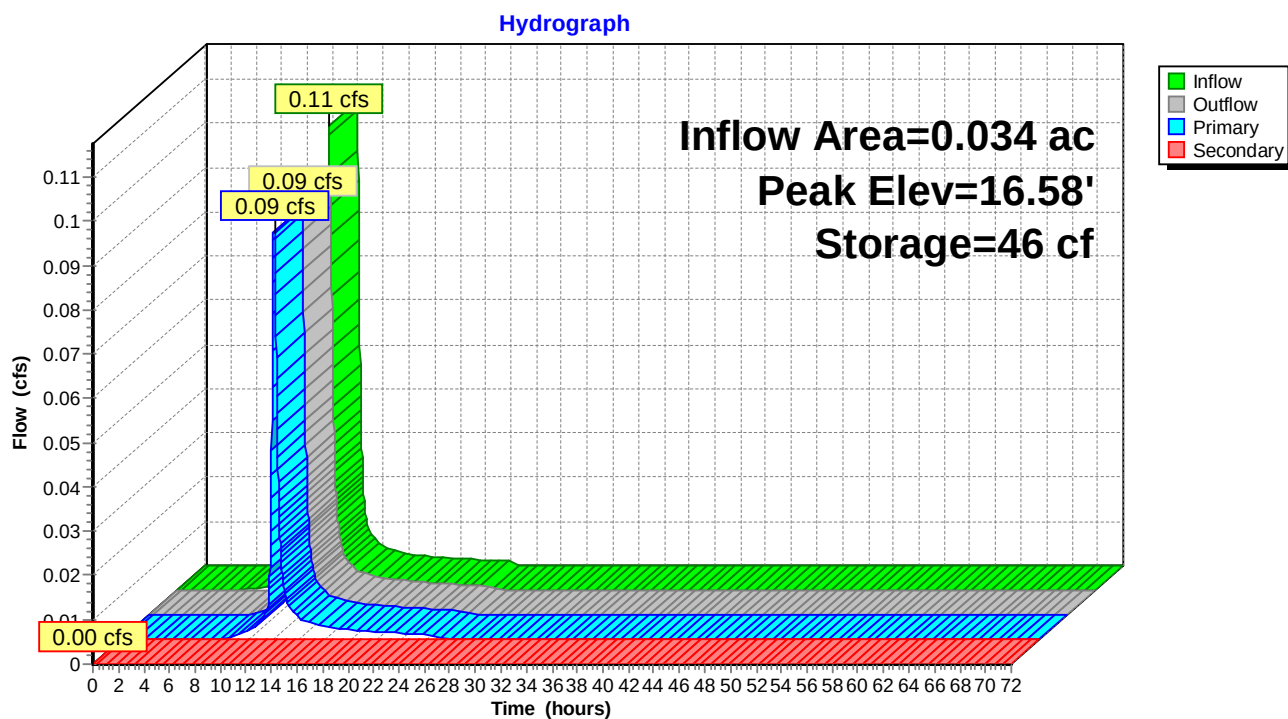
Volume	Invert	Avail.Storage	Storage Description
#1	16.28'	4,851 cf	Porous Asphalt Section (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
16.28	387	0.0	0	0
16.29	387	40.0	2	2
17.04	387	40.0	116	118
17.05	387	20.0	1	118
17.45	387	20.0	31	149
17.46	12,000	100.0	62	211
17.75	20,000	100.0	4,640	4,851

Device	Routing	Invert	Outlet Devices
#1	Primary	16.33'	4.0" Round Culvert L= 18.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 16.33' / 16.20' S= 0.0072 ' / Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf
#2	Secondary	17.46'	18.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=0.09 cfs @ 12.01 hrs HW=16.58' TW=13.29' (Dynamic Tailwater)↑ **1=Culvert** (Inlet Controls 0.09 cfs @ 1.33 fps)**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=16.28' TW=17.34' (Dynamic Tailwater)↑ **2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond PA-7: Porous Asphalt #7



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

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Summary for Pond SDMH-1: Proposed SDMH West of Bldgs

Inflow Area = 1.512 ac, 62.04% Impervious, Inflow Depth = 2.27" for 2-YR event
Inflow = 2.82 cfs @ 11.93 hrs, Volume= 0.287 af
Outflow = 2.82 cfs @ 11.93 hrs, Volume= 0.287 af, Atten= 0%, Lag= 0.0 min
Primary = 2.82 cfs @ 11.93 hrs, Volume= 0.287 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Peak Elev= 12.86' @ 11.93 hrs

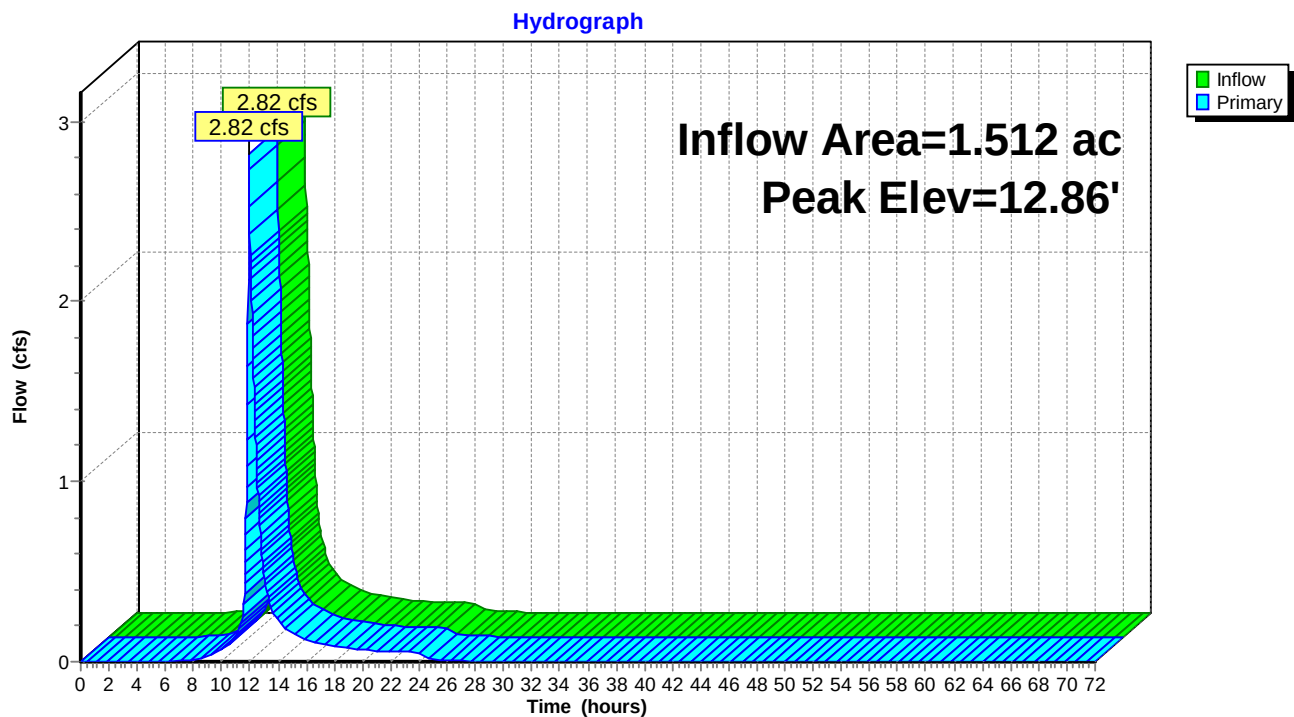
Device	Routing	Invert	Outlet Devices
#1	Primary	16.00'	2.0" x 2.0" Horiz. Orifice/Grate X 11.00 columns X 11 rows C= 0.600 in 24.0" x 24.0" Grate (84% open area) Limited to weir flow at low heads
#2	Primary	12.00'	15.0" Round Culvert L= 172.1' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 12.00' / 10.14' S= 0.0108 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.23 sf

Primary OutFlow Max=2.80 cfs @ 11.93 hrs HW=12.85' TW=0.00' (Dynamic Tailwater)

1=Orifice/Grate (Controls 0.00 cfs)

2=Culvert (Inlet Controls 2.80 cfs @ 3.14 fps)

Pond SDMH-1: Proposed SDMH West of Bldgs



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

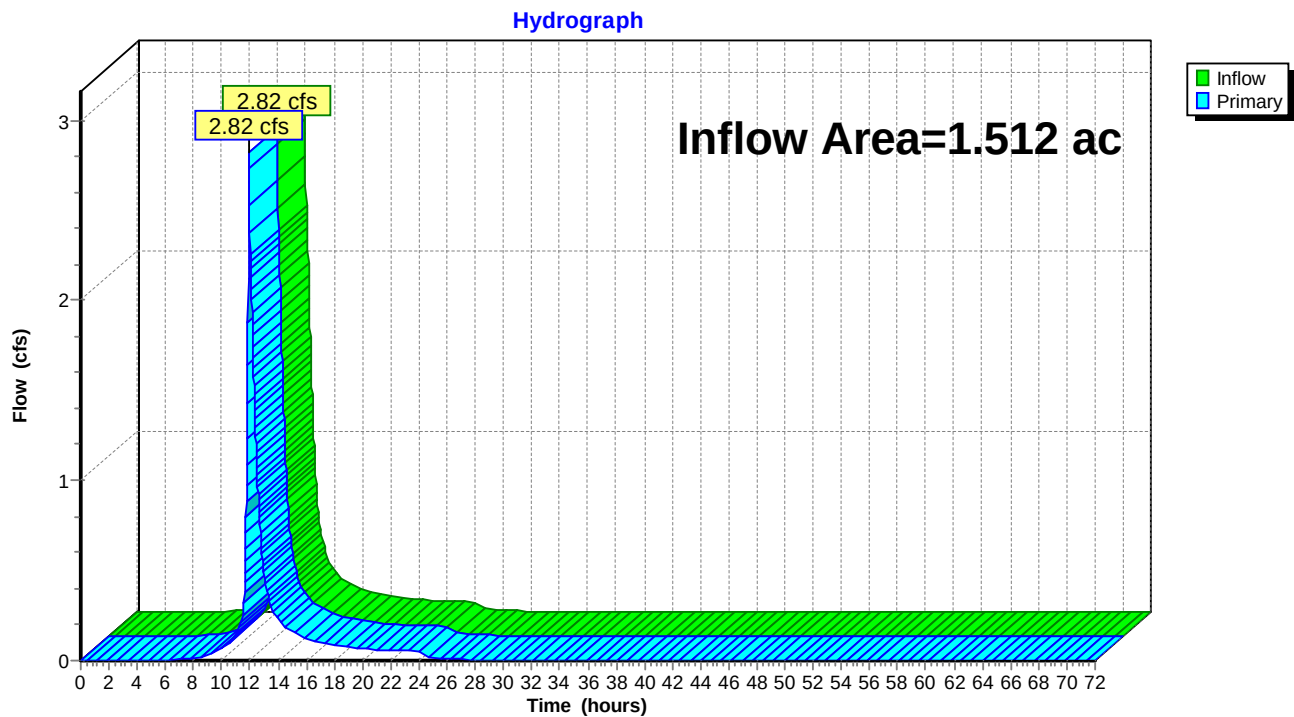
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Summary for Link SP-1: SDMH 20201 - At Intersection of Jowite and Moton

Inflow Area = 1.512 ac, 62.04% Impervious, Inflow Depth = 2.27" for 2-YR event
Inflow = 2.82 cfs @ 11.93 hrs, Volume= 0.287 af
Primary = 2.82 cfs @ 11.93 hrs, Volume= 0.287 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs

Link SP-1: SDMH 20201 - At Intersection of Jowite and Moton



Naima - Phase 2 - Proposed HydroCAD

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

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Time span=0.00-72.00 hrs, dt=0.02 hrs, 3601 points x 2
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 17S: Rooftop #18	Runoff Area=771 sf 96.11% Impervious Runoff Depth=4.95"
Flow Length=37' Slope=0.4167 '/' Tc=0.2 min CN=97	Runoff=0.15 cfs 0.007 af
Subcatchment 19: Rooftop #19	Runoff Area=796 sf 93.09% Impervious Runoff Depth=4.83"
Flow Length=37' Slope=0.4167 '/' Tc=0.2 min CN=96	Runoff=0.16 cfs 0.007 af
Subcatchment 20: Rooftop #20	Runoff Area=363 sf 91.74% Impervious Runoff Depth=4.83"
Flow Length=37' Slope=0.4167 '/' Tc=0.2 min CN=96	Runoff=0.07 cfs 0.003 af
Subcatchment 21: Rooftop #21	Runoff Area=219 sf 90.87% Impervious Runoff Depth=4.83"
Flow Length=37' Slope=0.4167 '/' Tc=0.2 min CN=96	Runoff=0.04 cfs 0.002 af
Subcatchment 22: Rooftop #22	Runoff Area=1,216 sf 93.42% Impervious Runoff Depth=4.83"
Flow Length=37' Slope=0.4167 '/' Tc=0.2 min CN=96	Runoff=0.24 cfs 0.011 af
Subcatchment 23: Rooftop #23	Runoff Area=698 sf 92.84% Impervious Runoff Depth=4.83"
Flow Length=37' Slope=0.4167 '/' Tc=0.2 min CN=96	Runoff=0.14 cfs 0.006 af
Subcatchment 24: Rooftop #24	Runoff Area=587 sf 93.19% Impervious Runoff Depth=4.83"
Flow Length=37' Slope=0.4167 '/' Tc=0.2 min CN=96	Runoff=0.12 cfs 0.005 af
Subcatchment 25: Rooftop #25	Runoff Area=590 sf 93.22% Impervious Runoff Depth=4.83"
Flow Length=37' Slope=0.4167 '/' Tc=0.2 min CN=96	Runoff=0.12 cfs 0.005 af
Subcatchment 26: Rooftop #26	Runoff Area=1,095 sf 93.61% Impervious Runoff Depth=4.83"
Flow Length=37' Slope=0.4167 '/' Tc=0.2 min CN=96	Runoff=0.22 cfs 0.010 af
Subcatchment 27: Rooftop #27	Runoff Area=352 sf 91.48% Impervious Runoff Depth=4.83"
Flow Length=37' Slope=0.4167 '/' Tc=0.2 min CN=96	Runoff=0.07 cfs 0.003 af
Subcatchment 28: Rooftop #28	Runoff Area=796 sf 93.09% Impervious Runoff Depth=4.83"
Flow Length=37' Slope=0.4167 '/' Tc=0.2 min CN=96	Runoff=0.16 cfs 0.007 af
Subcatchment 29: Rooftop #29	Runoff Area=363 sf 91.74% Impervious Runoff Depth=4.83"
Flow Length=37' Slope=0.4167 '/' Tc=0.2 min CN=96	Runoff=0.07 cfs 0.003 af
Subcatchment 30: Rooftop #30	Runoff Area=219 sf 90.87% Impervious Runoff Depth=4.83"
Flow Length=37' Slope=0.4167 '/' Tc=0.2 min CN=96	Runoff=0.04 cfs 0.002 af
Subcatchment 31: Rooftop #31	Runoff Area=1,216 sf 93.42% Impervious Runoff Depth=4.83"
Flow Length=37' Slope=0.4167 '/' Tc=0.2 min CN=96	Runoff=0.24 cfs 0.011 af
Subcatchment 32: Rooftop #32	Runoff Area=219 sf 90.87% Impervious Runoff Depth=4.83"
Flow Length=37' Slope=0.4167 '/' Tc=0.2 min CN=96	Runoff=0.04 cfs 0.002 af
Subcatchment 33: Rooftop #33	Runoff Area=1,216 sf 93.42% Impervious Runoff Depth=4.83"
Flow Length=37' Slope=0.4167 '/' Tc=0.2 min CN=96	Runoff=0.24 cfs 0.011 af

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

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Subcatchment 34: Rooftop #34	Runoff Area=796 sf 93.09% Impervious Runoff Depth=4.83"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.16 cfs 0.007 af
Subcatchment 35: Rooftop #35	Runoff Area=363 sf 91.74% Impervious Runoff Depth=4.83"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.07 cfs 0.003 af
Subcatchment 36: Rooftop #36	Runoff Area=698 sf 92.84% Impervious Runoff Depth=4.83"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.14 cfs 0.006 af
Subcatchment 37: Rooftop #37	Runoff Area=587 sf 93.19% Impervious Runoff Depth=4.83"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.12 cfs 0.005 af
Subcatchment 38: Rooftop #38	Runoff Area=590 sf 93.22% Impervious Runoff Depth=4.83"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.12 cfs 0.005 af
Subcatchment 39: Rooftop #39	Runoff Area=1,095 sf 93.61% Impervious Runoff Depth=4.83"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.22 cfs 0.010 af
Subcatchment 40: Rooftop #40	Runoff Area=352 sf 91.48% Impervious Runoff Depth=4.83"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.07 cfs 0.003 af
Subcatchment 41: Rooftop #41	Runoff Area=1,095 sf 93.61% Impervious Runoff Depth=4.83"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.22 cfs 0.010 af
Subcatchment 42: Rooftop #42	Runoff Area=352 sf 91.48% Impervious Runoff Depth=4.83"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.07 cfs 0.003 af
Subcatchment 43: Rooftop #43	Runoff Area=590 sf 93.22% Impervious Runoff Depth=4.83"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.12 cfs 0.005 af
Subcatchment 44: Rooftop #44	Runoff Area=698 sf 92.84% Impervious Runoff Depth=4.83"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.14 cfs 0.006 af
Subcatchment 45: Rooftop #45	Runoff Area=587 sf 93.19% Impervious Runoff Depth=4.83"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.12 cfs 0.005 af
Subcatchment 46: Rooftop #46	Runoff Area=219 sf 90.87% Impervious Runoff Depth=4.83"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.04 cfs 0.002 af
Subcatchment 47: Rooftop #47	Runoff Area=1,216 sf 93.42% Impervious Runoff Depth=4.83"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.24 cfs 0.011 af
Subcatchment 48: Rooftop #48	Runoff Area=796 sf 93.09% Impervious Runoff Depth=4.83"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.16 cfs 0.007 af
Subcatchment 49: Rooftop #49	Runoff Area=363 sf 91.74% Impervious Runoff Depth=4.83"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.07 cfs 0.003 af
Subcatchment 50: Rooftop #50	Runoff Area=698 sf 92.84% Impervious Runoff Depth=4.83"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.14 cfs 0.006 af

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

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Subcatchment 51: Rooftop #51	Runoff Area=587 sf 93.19% Impervious Runoff Depth=4.83"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.12 cfs 0.005 af
Subcatchment 52: Rooftop #52	Runoff Area=590 sf 93.22% Impervious Runoff Depth=4.83"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.12 cfs 0.005 af
Subcatchment 53: Rooftop #53	Runoff Area=1,095 sf 93.61% Impervious Runoff Depth=4.83"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.22 cfs 0.010 af
Subcatchment 54: Rooftop #54	Runoff Area=352 sf 91.48% Impervious Runoff Depth=4.83"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.07 cfs 0.003 af
Subcatchment 55: Non-RT DA to PA-2	Runoff Area=3,000 sf 75.57% Impervious Runoff Depth=4.38"
Flow Length=43'	Slope=0.0100 '/' Tc=6.4 min CN=92 Runoff=0.39 cfs 0.025 af
Subcatchment 56: Non-RT DA to PA-3	Runoff Area=4,390 sf 54.69% Impervious Runoff Depth=3.85"
Flow Length=55'	Slope=0.0100 '/' Tc=7.8 min CN=87 Runoff=0.48 cfs 0.032 af
Subcatchment 57: Non-RT DA to PA-4	Runoff Area=4,540 sf 57.29% Impervious Runoff Depth=3.95"
Flow Length=62'	Slope=0.0100 '/' Tc=8.6 min CN=88 Runoff=0.48 cfs 0.034 af
Subcatchment 58: Non-RT DA to PA-5	Runoff Area=6,269 sf 73.76% Impervious Runoff Depth=4.38"
Flow Length=52'	Slope=0.0100 '/' Tc=7.4 min CN=92 Runoff=0.77 cfs 0.053 af
Subcatchment 59: Non-RT DA to PA-6	Runoff Area=8,366 sf 73.55% Impervious Runoff Depth=4.38"
Flow Length=50'	Slope=0.0100 '/' Tc=7.2 min CN=92 Runoff=1.03 cfs 0.070 af
Subcatchment 60: Non-RT DA to PA-7	Runoff Area=1,133 sf 70.87% Impervious Runoff Depth=4.27"
Flow Length=48'	Slope=0.0100 '/' Tc=7.0 min CN=91 Runoff=0.14 cfs 0.009 af
Subcatchment 61: West DA to Jowite	Runoff Area=14,486 sf 0.00% Impervious Runoff Depth=2.61"
	Flow Length=721' Tc=13.9 min CN=74 Runoff=0.79 cfs 0.072 af
Reach VG-2: Valley Gutter 2	Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
	n=0.011 L=57.0' S=0.0061 '/' Capacity=0.14 cfs Outflow=0.00 cfs 0.000 af
Reach VG-3: Valley Gutter 3	Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
	n=0.011 L=66.0' S=0.0055 '/' Capacity=0.13 cfs Outflow=0.00 cfs 0.000 af
Reach VG-4: Valley Gutter 4	Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
	n=0.011 L=118.0' S=0.0057 '/' Capacity=0.14 cfs Outflow=0.00 cfs 0.000 af
Reach VG-5: Valley Gutter 5	Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
	n=0.011 L=152.0' S=0.0103 '/' Capacity=0.18 cfs Outflow=0.00 cfs 0.000 af
Pond EX-I-2: EX-I-2	Peak Elev=14.01' Inflow=2.69 cfs 0.334 af
	Outflow=2.69 cfs 0.334 af
Pond P19: Planter #19	Peak Elev=13.83' Storage=13 cf Inflow=0.16 cfs 0.007 af
	4.0" Round Culvert n=0.012 L=26.8' S=0.0131 '/' Outflow=0.15 cfs 0.007 af

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

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Pond P20: Planter #20	Peak Elev=16.01' Storage=33 cf Inflow=0.07 cfs 0.003 af 4.0" Round Culvert n=0.012 L=20.1' S=-0.1169 ' /' Outflow=0.07 cfs 0.003 af
Pond P21: Planter #21	Peak Elev=13.61' Storage=3 cf Inflow=0.04 cfs 0.002 af 4.0" Round Culvert n=0.012 L=30.2' S=0.0185 ' /' Outflow=0.04 cfs 0.002 af
Pond P22: Planter #22	Peak Elev=16.30' Storage=98 cf Inflow=0.24 cfs 0.011 af 4.0" Round Culvert n=0.012 L=59.7' S=-0.0350 ' /' Outflow=0.21 cfs 0.011 af
Pond P23: Planter #23	Peak Elev=13.35' Storage=12 cf Inflow=0.14 cfs 0.006 af 4.0" Round Culvert n=0.012 L=20.7' S=0.0068 ' /' Outflow=0.12 cfs 0.006 af
Pond P24: Planter #24	Peak Elev=15.73' Storage=48 cf Inflow=0.12 cfs 0.005 af 4.0" Round Culvert n=0.012 L=36.6' S=-0.0683 ' /' Outflow=0.11 cfs 0.005 af
Pond P25: Planter #25	Peak Elev=15.61' Storage=46 cf Inflow=0.12 cfs 0.005 af 4.0" Round Culvert n=0.012 L=28.9' S=-0.0820 ' /' Outflow=0.11 cfs 0.005 af
Pond P26: Planter #26	Peak Elev=13.55' Storage=23 cf Inflow=0.22 cfs 0.010 af 4.0" Round Culvert n=0.012 L=24.5' S=0.0159 ' /' Outflow=0.18 cfs 0.010 af
Pond P27: Planter #27	Peak Elev=15.29' Storage=31 cf Inflow=0.07 cfs 0.003 af 4.0" Round Culvert n=0.012 L=10.8' S=-0.1972 ' /' Outflow=0.07 cfs 0.003 af
Pond P28: Planter #28	Peak Elev=13.83' Storage=13 cf Inflow=0.16 cfs 0.007 af 4.0" Round Culvert n=0.012 L=14.3' S=0.0245 ' /' Outflow=0.15 cfs 0.007 af
Pond P29: Planter #29	Peak Elev=15.20' Storage=24 cf Inflow=0.07 cfs 0.003 af 4.0" Round Culvert n=0.012 L=32.3' S=-0.0477 ' /' Outflow=0.07 cfs 0.003 af
Pond P30: Planter #30	Peak Elev=13.61' Storage=3 cf Inflow=0.04 cfs 0.002 af 4.0" Round Culvert n=0.012 L=18.2' S=0.0088 ' /' Outflow=0.04 cfs 0.002 af
Pond P31: Planter #31	Peak Elev=16.05' Storage=90 cf Inflow=0.24 cfs 0.011 af 4.0" Round Culvert n=0.012 L=71.6' S=-0.0246 ' /' Outflow=0.20 cfs 0.011 af
Pond P32: Planter #32	Peak Elev=14.11' Storage=3 cf Inflow=0.04 cfs 0.002 af 4.0" Round Culvert n=0.012 L=29.6' S=0.0199 ' /' Outflow=0.04 cfs 0.002 af
Pond P33: Planter #33	Peak Elev=16.01' Storage=73 cf Inflow=0.24 cfs 0.011 af 4.0" Round Culvert n=0.012 L=61.0' S=-0.0211 ' /' Outflow=0.21 cfs 0.011 af
Pond P34: Planter #34	Peak Elev=14.33' Storage=13 cf Inflow=0.16 cfs 0.007 af 4.0" Round Culvert n=0.012 L=26.1' S=0.0149 ' /' Outflow=0.15 cfs 0.007 af
Pond P35: Planter #35	Peak Elev=15.94' Storage=26 cf Inflow=0.07 cfs 0.003 af 4.0" Round Culvert n=0.012 L=31.5' S=-0.0565 ' /' Outflow=0.07 cfs 0.003 af
Pond P36: Planter #36	Peak Elev=14.48' Storage=11 cf Inflow=0.14 cfs 0.006 af 4.0" Round Culvert n=0.012 L=20.2' S=0.0248 ' /' Outflow=0.13 cfs 0.006 af

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

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Pond P37: Planter #37	Peak Elev=16.01' Storage=33 cf Inflow=0.12 cfs 0.005 af 4.0" Round Culvert n=0.012 L=37.8' S=-0.0418 ' /' Outflow=0.11 cfs 0.005 af
Pond P38: Planter #38	Peak Elev=16.14' Storage=35 cf Inflow=0.12 cfs 0.005 af 4.0" Round Culvert n=0.012 L=28.9' S=-0.0588 ' /' Outflow=0.11 cfs 0.005 af
Pond P39: Planter #39	Peak Elev=14.69' Storage=21 cf Inflow=0.22 cfs 0.010 af 4.0" Round Culvert n=0.012 L=23.9' S=0.0113 ' /' Outflow=0.20 cfs 0.010 af
Pond P40: Planter #40	Peak Elev=16.20' Storage=27 cf Inflow=0.07 cfs 0.003 af 4.0" Round Culvert n=0.012 L=11.2' S=-0.1643 ' /' Outflow=0.07 cfs 0.003 af
Pond P41: Planter #41	Peak Elev=14.99' Storage=21 cf Inflow=0.22 cfs 0.010 af 4.0" Round Culvert n=0.012 L=23.8' S=0.0210 ' /' Outflow=0.20 cfs 0.010 af
Pond P42: Planter #42	Peak Elev=16.35' Storage=25 cf Inflow=0.07 cfs 0.003 af 4.0" Round Culvert n=0.012 L=19.8' S=-0.0854 ' /' Outflow=0.07 cfs 0.003 af
Pond P43: Planter #43	Peak Elev=16.60' Storage=38 cf Inflow=0.12 cfs 0.005 af 4.0" Round Culvert n=0.012 L=28.7' S=-0.0648 ' /' Outflow=0.11 cfs 0.005 af
Pond P44: Planter #44	Peak Elev=14.78' Storage=1 cf Inflow=0.14 cfs 0.006 af 4.0" Round Culvert n=0.012 L=19.9' S=0.0136 ' /' Outflow=0.13 cfs 0.006 af
Pond P45: Planter #45	Peak Elev=16.74' Storage=40 cf Inflow=0.12 cfs 0.005 af 4.0" Round Culvert n=0.012 L=36.4' S=-0.0552 ' /' Outflow=0.11 cfs 0.005 af
Pond P46: Planter #46	Peak Elev=15.11' Storage=3 cf Inflow=0.04 cfs 0.002 af 4.0" Round Culvert n=0.012 L=28.6' S=0.0248 ' /' Outflow=0.04 cfs 0.002 af
Pond P47: Planter #47	Peak Elev=17.36' Storage=84 cf Inflow=0.24 cfs 0.011 af 4.0" Round Culvert n=0.012 L=59.6' S=-0.0277 ' /' Outflow=0.21 cfs 0.011 af
Pond P48: Planter #48	Peak Elev=17.28' Storage=56 cf Inflow=0.16 cfs 0.007 af 4.0" Round Culvert n=0.012 L=24.8' S=-0.0992 ' /' Outflow=0.15 cfs 0.006 af
Pond P49: Planter #49	Peak Elev=17.33' Storage=31 cf Inflow=0.07 cfs 0.003 af 4.0" Round Culvert n=0.012 L=19.9' S=-0.1090 ' /' Outflow=0.07 cfs 0.003 af
Pond P50: Planter #50	Peak Elev=16.28' Storage=11 cf Inflow=0.14 cfs 0.006 af 4.0" Round Culvert n=0.012 L=19.4' S=0.0722 ' /' Outflow=0.13 cfs 0.006 af
Pond P51: Planter #51	Peak Elev=17.59' Storage=30 cf Inflow=0.12 cfs 0.005 af 4.0" Round Culvert n=0.012 L=36.8' S=-0.0370 ' /' Outflow=0.11 cfs 0.005 af
Pond P52: Planter #52	Peak Elev=17.83' Storage=33 cf Inflow=0.12 cfs 0.005 af 4.0" Round Culvert n=0.012 L=28.9' S=-0.0550 ' /' Outflow=0.11 cfs 0.005 af
Pond P53: Planter #53	Peak Elev=16.49' Storage=21 cf Inflow=0.22 cfs 0.010 af 4.0" Round Culvert n=0.012 L=22.8' S=0.0513 ' /' Outflow=0.20 cfs 0.010 af

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

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Pond P54: Planter #54Peak Elev=18.79' Storage=37 cf Inflow=0.07 cfs 0.003 af
4.0" Round Culvert n=0.012 L=13.0' S=-0.2023 ' / Outflow=0.07 cfs 0.003 af**Pond PA-2: Porous Asphalt #2**Peak Elev=14.70' Storage=309 cf Inflow=0.61 cfs 0.040 af
Primary=0.44 cfs 0.039 af Secondary=0.00 cfs 0.000 af Outflow=0.44 cfs 0.039 af**Pond PA-3: Porous Asphalt #3**Peak Elev=14.60' Storage=266 cf Inflow=0.64 cfs 0.046 af
Primary=0.49 cfs 0.046 af Secondary=0.00 cfs 0.000 af Outflow=0.49 cfs 0.046 af**Pond PA-4: Porous Asphalt #4**Peak Elev=14.89' Storage=398 cf Inflow=0.85 cfs 0.060 af
Primary=0.63 cfs 0.060 af Secondary=0.00 cfs 0.000 af Outflow=0.63 cfs 0.060 af**Pond PA-5: Porous Asphalt #5**Peak Elev=15.19' Storage=872 cf Inflow=0.95 cfs 0.070 af
Primary=0.49 cfs 0.069 af Secondary=0.00 cfs 0.000 af Outflow=0.49 cfs 0.069 af**Pond PA-6: Porous Asphalt #6**Peak Elev=15.78' Storage=1,519 cf Inflow=1.59 cfs 0.110 af
Primary=0.53 cfs 0.108 af Secondary=0.00 cfs 0.000 af Outflow=0.53 cfs 0.108 af**Pond PA-7: Porous Asphalt #7**Peak Elev=16.70' Storage=65 cf Inflow=0.18 cfs 0.013 af
Primary=0.15 cfs 0.012 af Secondary=0.00 cfs 0.000 af Outflow=0.15 cfs 0.012 af**Pond SDMH-1: Proposed SDMH West of Bldgs**Peak Elev=13.22' Inflow=4.59 cfs 0.508 af
Outflow=4.59 cfs 0.508 af**Link SP-1: SDMH 20201 - At Intersection of Jowite and Moton**Inflow=4.59 cfs 0.508 af
Primary=4.59 cfs 0.508 af**Total Runoff Area = 1.529 ac Runoff Volume = 0.522 af Average Runoff Depth = 4.10"**
37.56% Pervious = 0.574 ac 62.44% Impervious = 0.955 ac

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

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Summary for Subcatchment 17S: Rooftop #18

Runoff = 0.15 cfs @ 11.90 hrs, Volume= 0.007 af, Depth= 4.95"

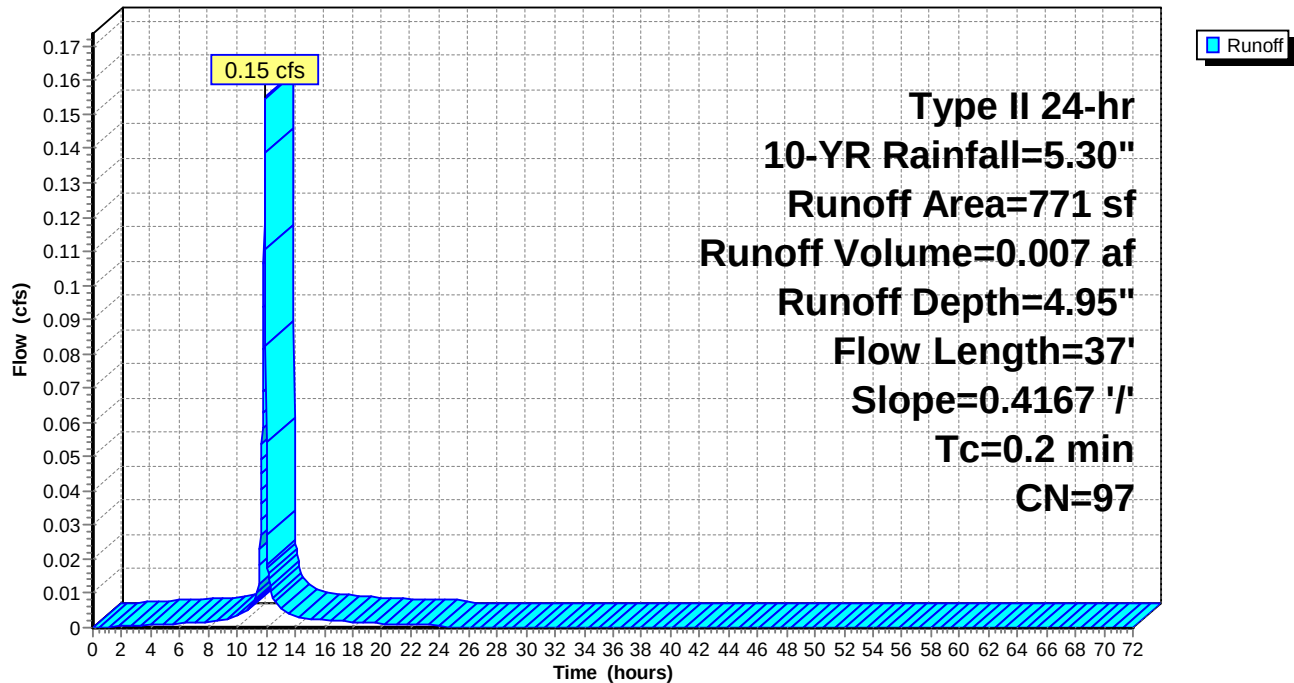
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10-YR Rainfall=5.30"

Area (sf)	CN	Description
741	98	Roofs, HSG C
30	74	>75% Grass cover, Good, HSG C
771	97	Weighted Average
30		3.89% Pervious Area
741		96.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 17S: Rooftop #18

Hydrograph



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

Printed 02/22/23

Summary for Subcatchment 19: Rooftop #19

Runoff = 0.16 cfs @ 11.90 hrs, Volume= 0.007 af, Depth= 4.83"

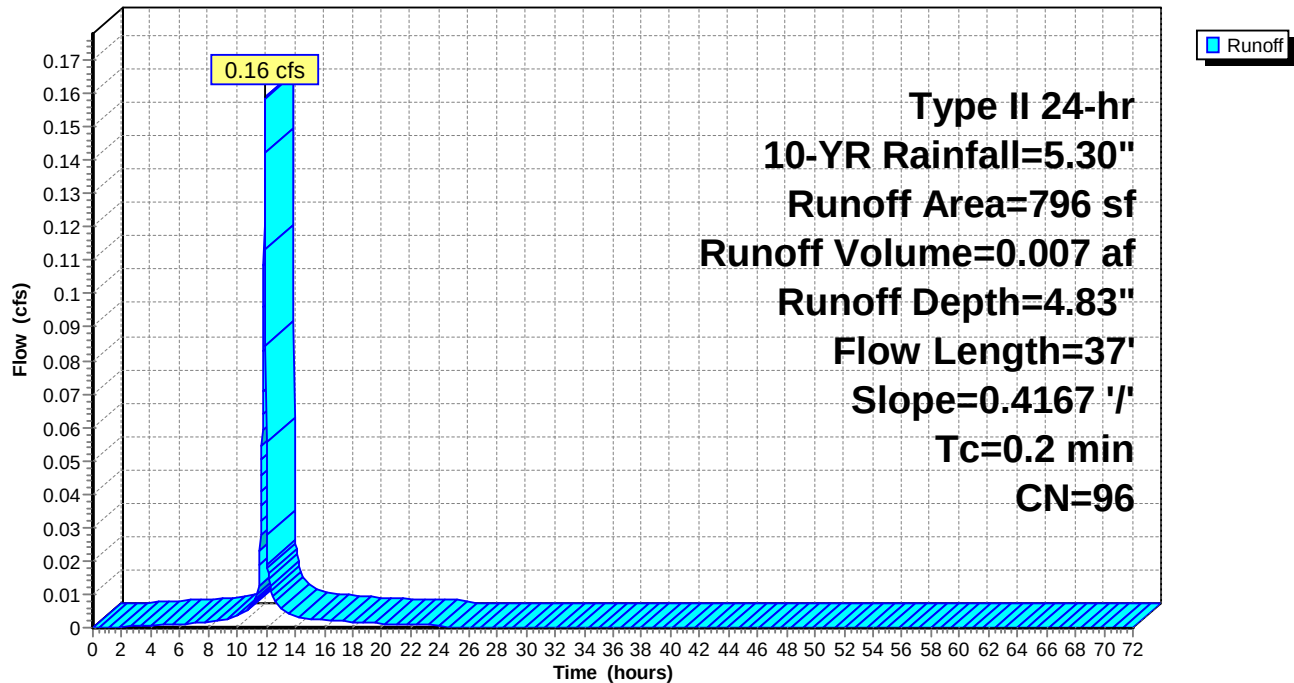
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10-YR Rainfall=5.30"

Area (sf)	CN	Description
741	98	Roofs, HSG C
55	74	>75% Grass cover, Good, HSG C
796	96	Weighted Average
55		6.91% Pervious Area
741		93.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 19: Rooftop #19

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

Prepared by RAUCH inc.

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

Printed 02/22/23

Summary for Subcatchment 20: Rooftop #20

Runoff = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af, Depth= 4.83"

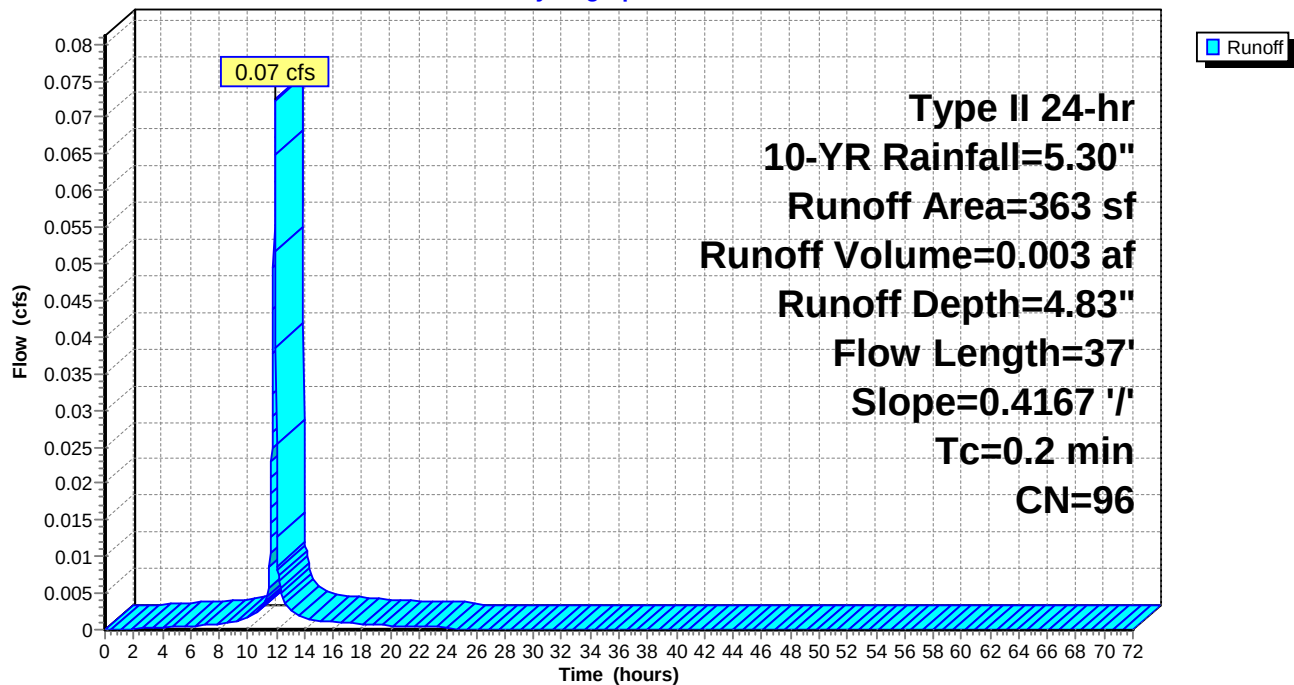
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10-YR Rainfall=5.30"

Area (sf)	CN	Description
333	98	Roofs, HSG C
30	74	>75% Grass cover, Good, HSG C
363	96	Weighted Average
30		8.26% Pervious Area
333		91.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 20: Rooftop #20

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

Prepared by RAUCH inc.

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

Printed 02/22/23

Summary for Subcatchment 21: Rooftop #21

Runoff = 0.04 cfs @ 11.90 hrs, Volume= 0.002 af, Depth= 4.83"

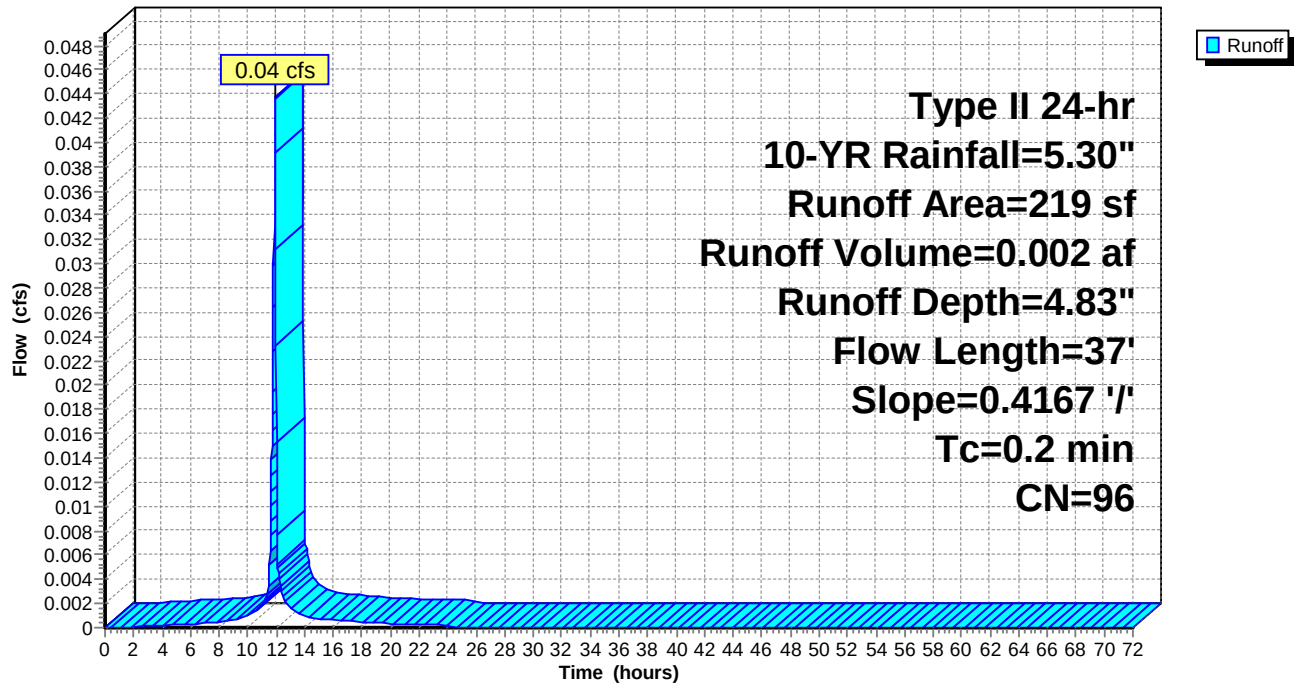
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10-YR Rainfall=5.30"

Area (sf)	CN	Description
199	98	Roofs, HSG C
20	74	>75% Grass cover, Good, HSG C
219	96	Weighted Average
20		9.13% Pervious Area
199		90.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
					Smooth surfaces n= 0.011 P2= 3.40"

Subcatchment 21: Rooftop #21

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

Printed 02/22/23

Summary for Subcatchment 22: Rooftop #22

Runoff = 0.24 cfs @ 11.90 hrs, Volume= 0.011 af, Depth= 4.83"

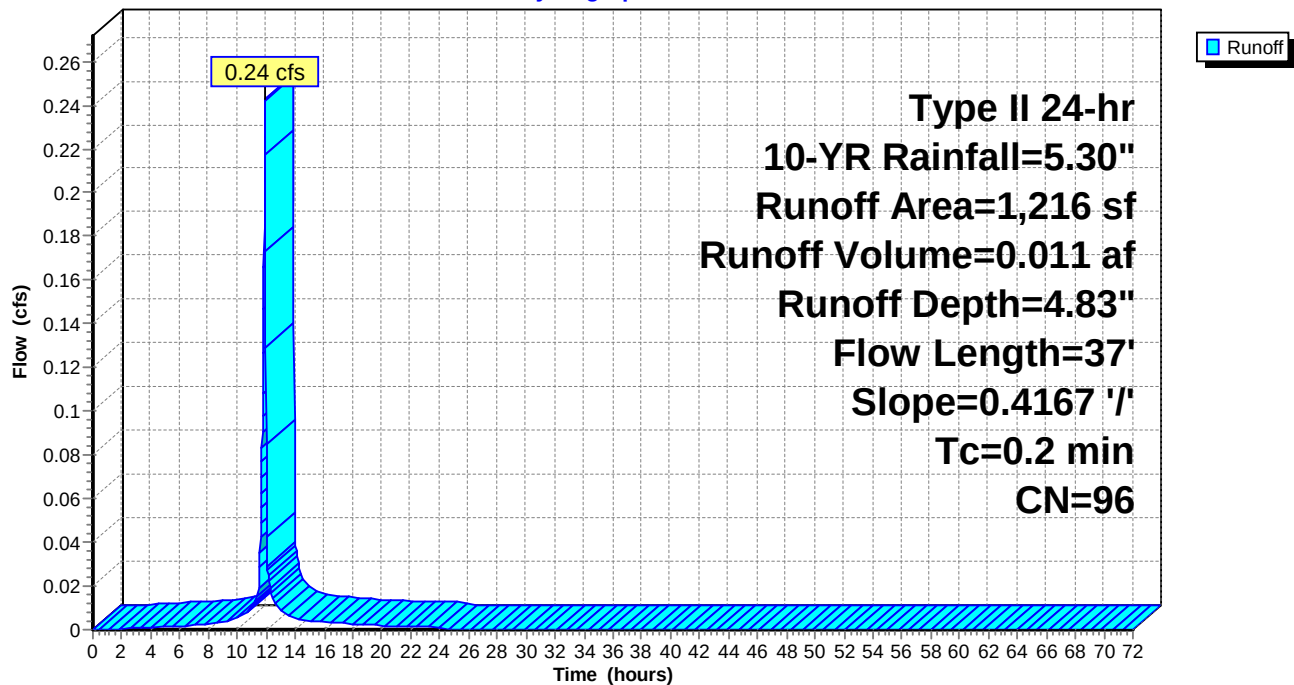
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10-YR Rainfall=5.30"

Area (sf)	CN	Description
1,136	98	Roofs, HSG C
80	74	>75% Grass cover, Good, HSG C
1,216	96	Weighted Average
80		6.58% Pervious Area
1,136		93.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 22: Rooftop #22

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

Prepared by RAUCH inc.

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

Printed 02/22/23

Summary for Subcatchment 23: Rooftop #23

Runoff = 0.14 cfs @ 11.90 hrs, Volume= 0.006 af, Depth= 4.83"

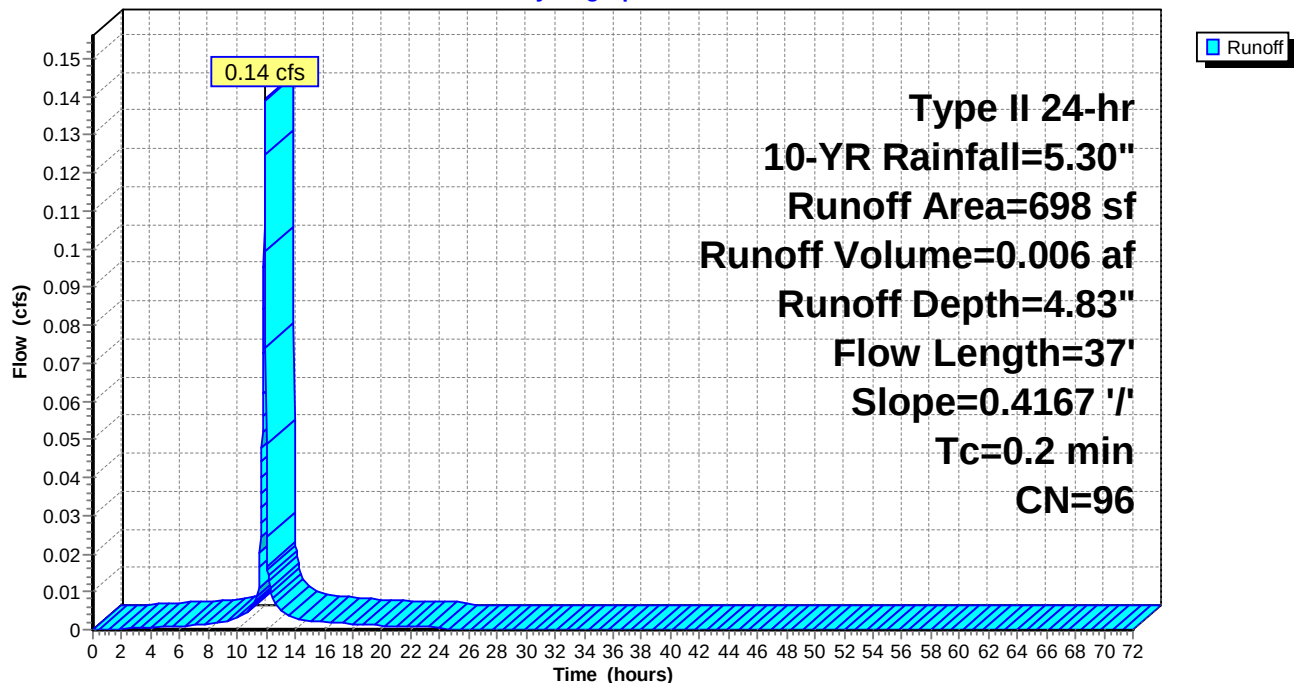
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10-YR Rainfall=5.30"

Area (sf)	CN	Description
648	98	Roofs, HSG C
50	74	>75% Grass cover, Good, HSG C
698	96	Weighted Average
50		7.16% Pervious Area
648		92.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 23: Rooftop #23

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

Prepared by RAUCH inc.

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

Printed 02/22/23

Summary for Subcatchment 24: Rooftop #24

Runoff = 0.12 cfs @ 11.90 hrs, Volume= 0.005 af, Depth= 4.83"

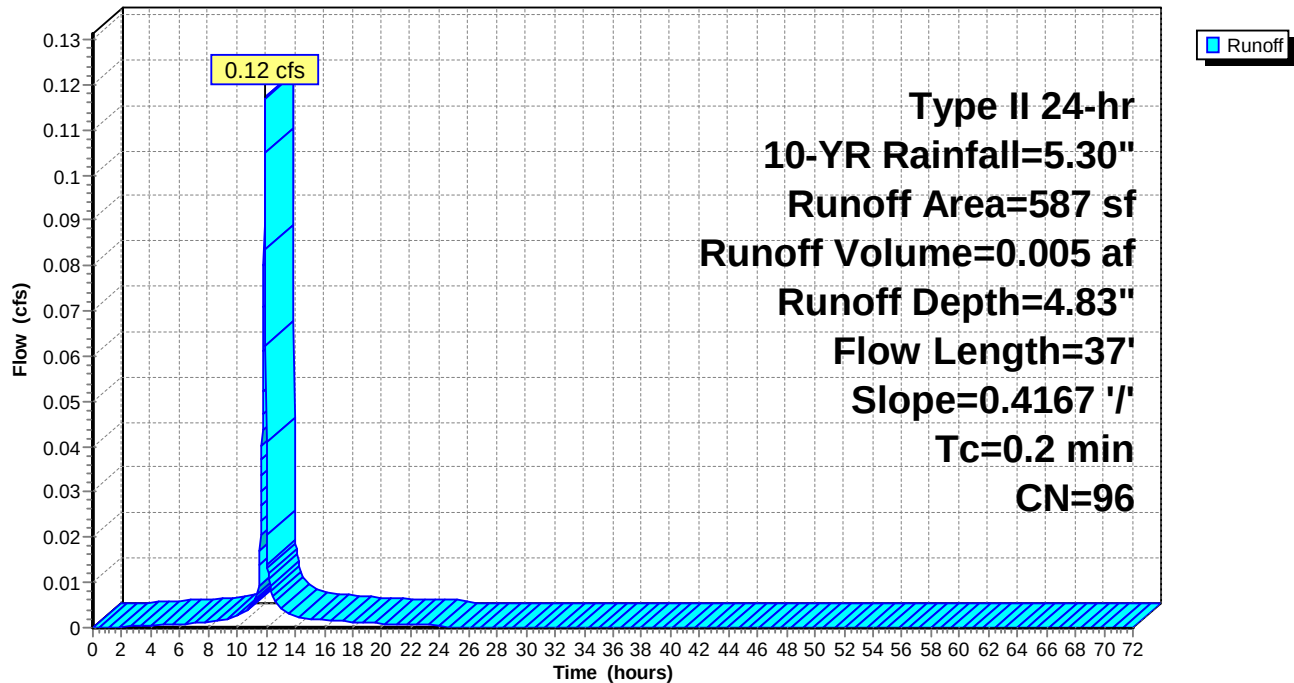
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10-YR Rainfall=5.30"

Area (sf)	CN	Description
547	98	Roofs, HSG C
40	74	>75% Grass cover, Good, HSG C
587	96	Weighted Average
40		6.81% Pervious Area
547		93.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 24: Rooftop #24

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Subcatchment 25: Rooftop #25

Runoff = 0.12 cfs @ 11.90 hrs, Volume= 0.005 af, Depth= 4.83"

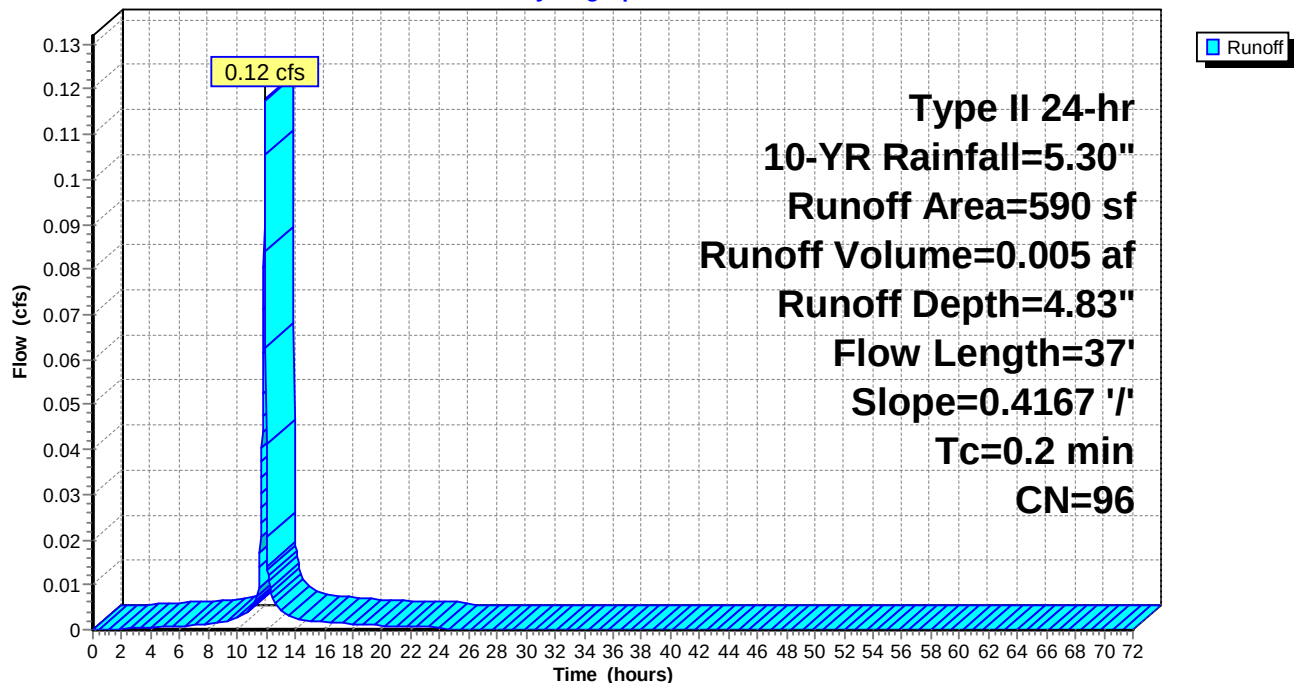
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10-YR Rainfall=5.30"

Area (sf)	CN	Description
550	98	Roofs, HSG C
40	74	>75% Grass cover, Good, HSG C
590	96	Weighted Average
40		6.78% Pervious Area
550		93.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 25: Rooftop #25

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Subcatchment 26: Rooftop #26

Runoff = 0.22 cfs @ 11.90 hrs, Volume= 0.010 af, Depth= 4.83"

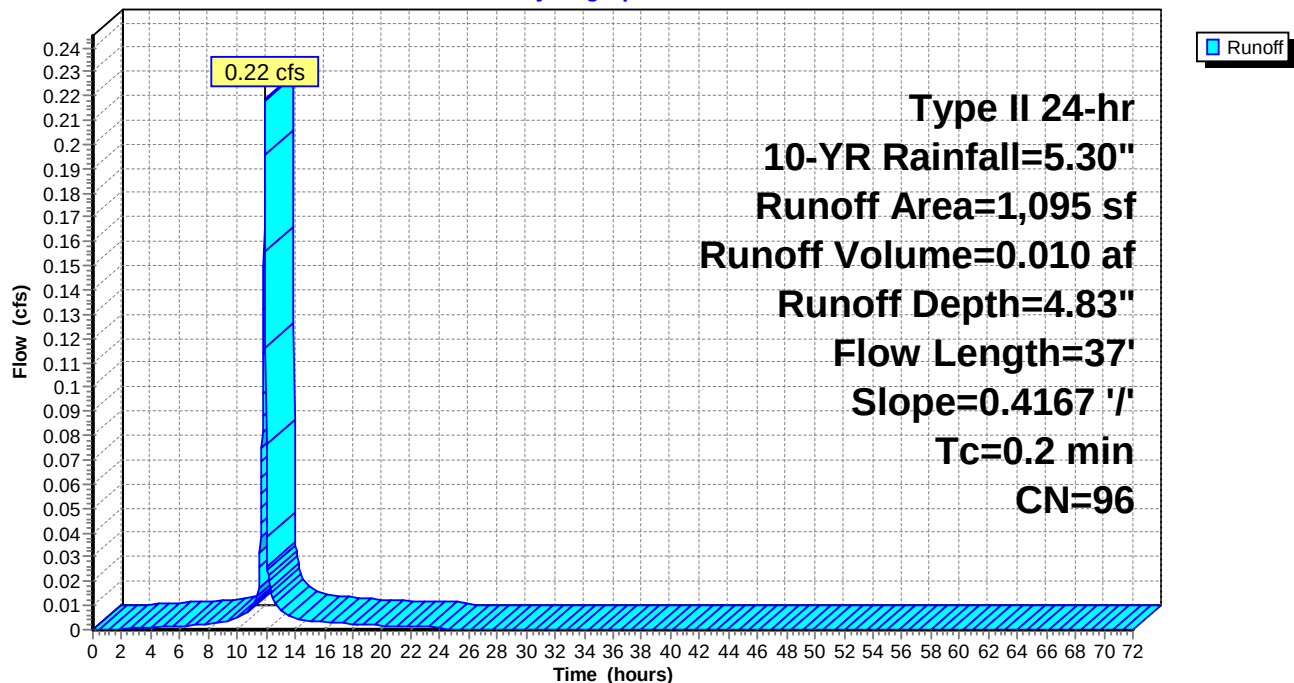
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10-YR Rainfall=5.30"

Area (sf)	CN	Description
1,025	98	Roofs, HSG C
70	74	>75% Grass cover, Good, HSG C
1,095	96	Weighted Average
70		6.39% Pervious Area
1,025		93.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 26: Rooftop #26

Hydrograph



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

Printed 02/22/23

Summary for Subcatchment 27: Rooftop #27

Runoff = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af, Depth= 4.83"

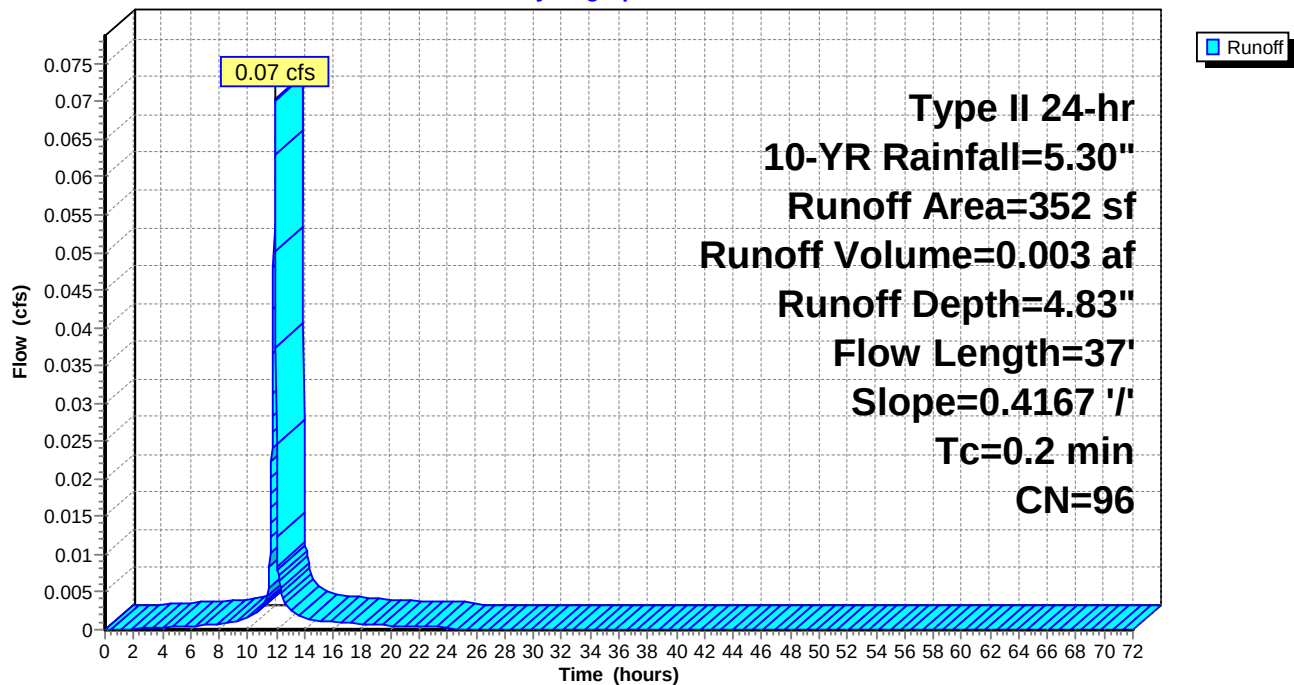
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10-YR Rainfall=5.30"

Area (sf)	CN	Description
322	98	Roofs, HSG C
30	74	>75% Grass cover, Good, HSG C
352	96	Weighted Average
30		8.52% Pervious Area
322		91.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 27: Rooftop #27

Hydrograph



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

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Summary for Subcatchment 28: Rooftop #28

Runoff = 0.16 cfs @ 11.90 hrs, Volume= 0.007 af, Depth= 4.83"

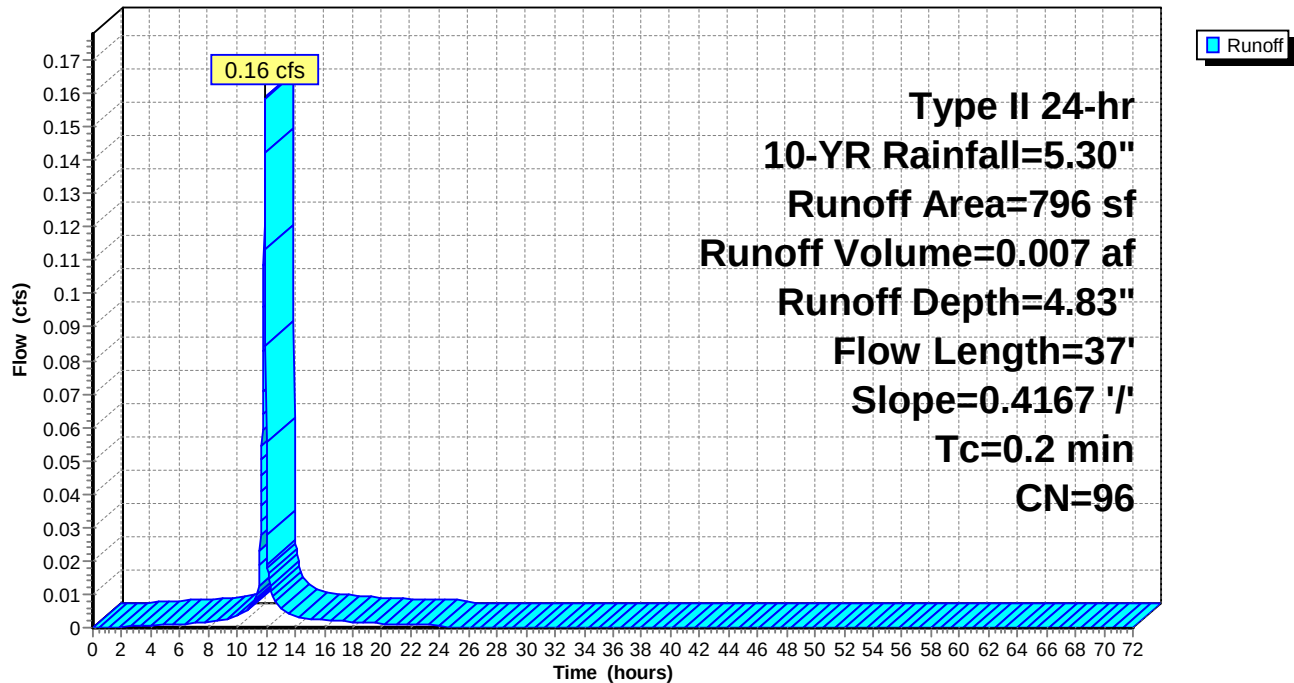
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10-YR Rainfall=5.30"

Area (sf)	CN	Description
741	98	Roofs, HSG C
55	74	>75% Grass cover, Good, HSG C
796	96	Weighted Average
55		6.91% Pervious Area
741		93.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
					Smooth surfaces n= 0.011 P2= 3.40"

Subcatchment 28: Rooftop #28

Hydrograph



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

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Summary for Subcatchment 29: Rooftop #29

Runoff = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af, Depth= 4.83"

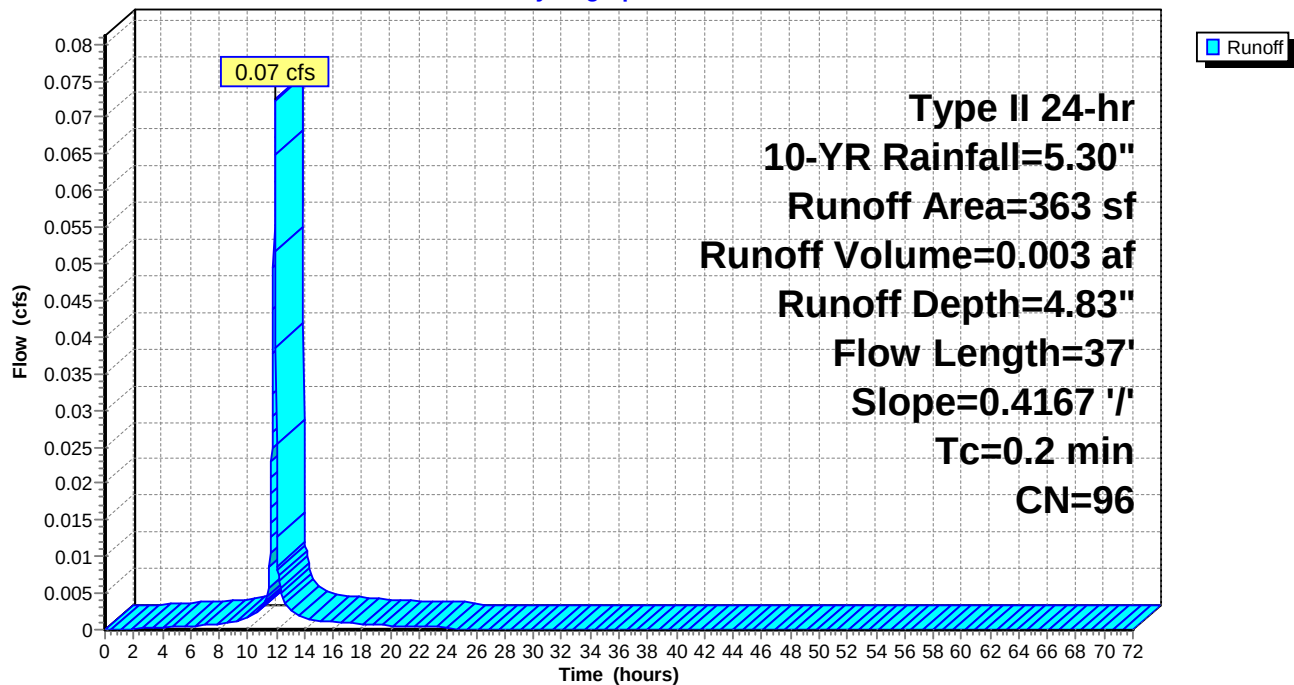
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10-YR Rainfall=5.30"

Area (sf)	CN	Description
333	98	Roofs, HSG C
30	74	>75% Grass cover, Good, HSG C
363	96	Weighted Average
30		8.26% Pervious Area
333		91.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
					Smooth surfaces n= 0.011 P2= 3.40"

Subcatchment 29: Rooftop #29

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

Printed 02/22/23

Summary for Subcatchment 30: Rooftop #30

Runoff = 0.04 cfs @ 11.90 hrs, Volume= 0.002 af, Depth= 4.83"

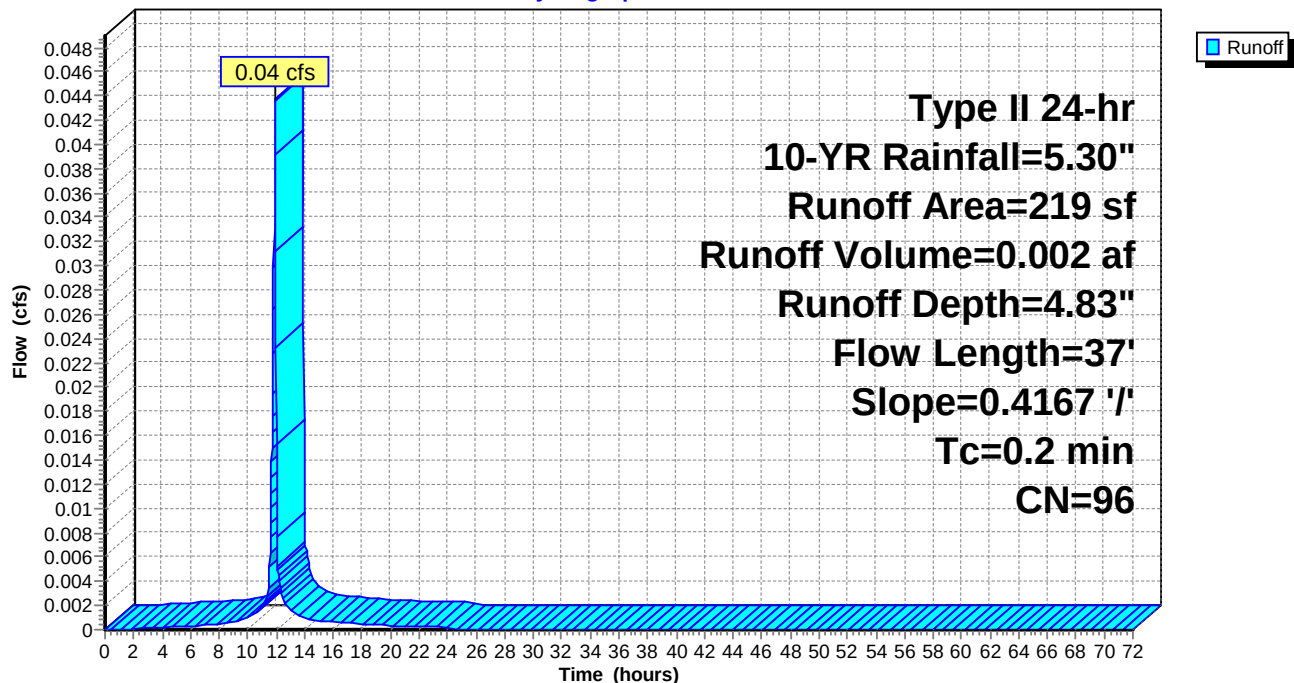
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10-YR Rainfall=5.30"

Area (sf)	CN	Description
199	98	Roofs, HSG C
20	74	>75% Grass cover, Good, HSG C
219	96	Weighted Average
20		9.13% Pervious Area
199		90.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 30: Rooftop #30

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Subcatchment 31: Rooftop #31

Runoff = 0.24 cfs @ 11.90 hrs, Volume= 0.011 af, Depth= 4.83"

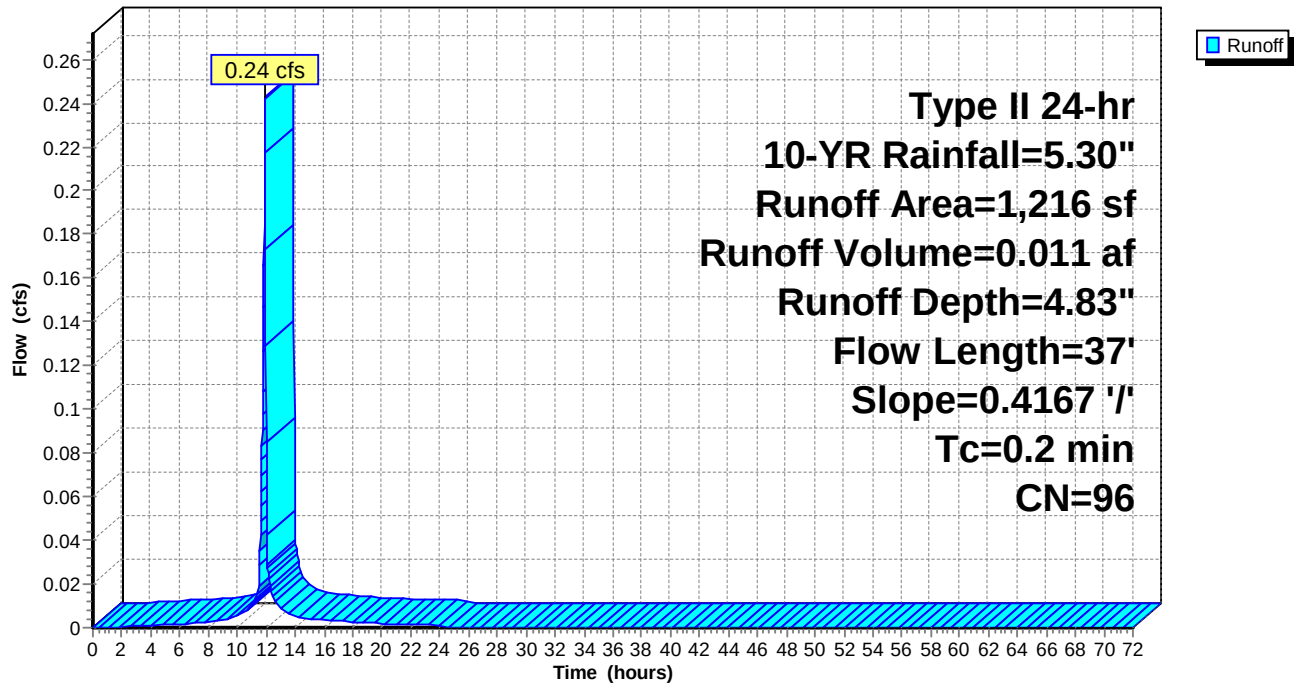
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10-YR Rainfall=5.30"

Area (sf)	CN	Description
1,136	98	Roofs, HSG C
80	74	>75% Grass cover, Good, HSG C
1,216	96	Weighted Average
80		6.58% Pervious Area
1,136		93.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 31: Rooftop #31

Hydrograph



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

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Summary for Subcatchment 32: Rooftop #32

Runoff = 0.04 cfs @ 11.90 hrs, Volume= 0.002 af, Depth= 4.83"

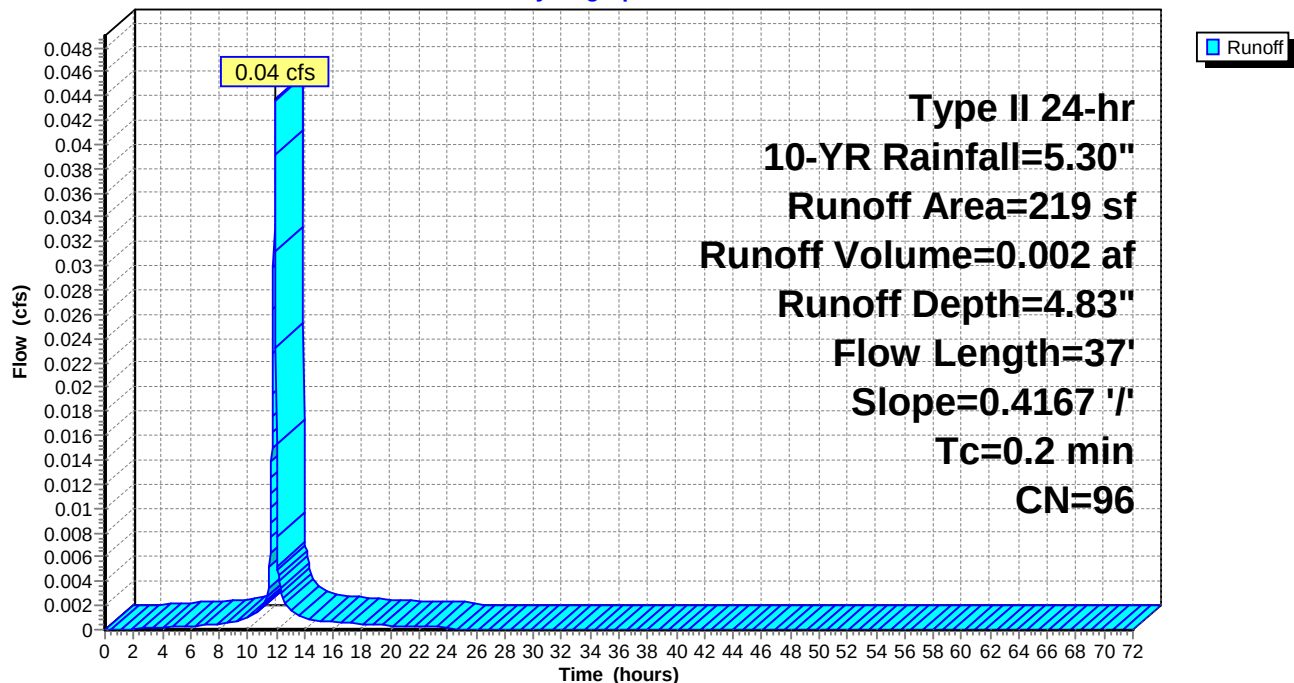
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10-YR Rainfall=5.30"

Area (sf)	CN	Description
199	98	Roofs, HSG C
20	74	>75% Grass cover, Good, HSG C
219	96	Weighted Average
20		9.13% Pervious Area
199		90.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 32: Rooftop #32

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

Printed 02/22/23

Summary for Subcatchment 33: Rooftop #33

Runoff = 0.24 cfs @ 11.90 hrs, Volume= 0.011 af, Depth= 4.83"

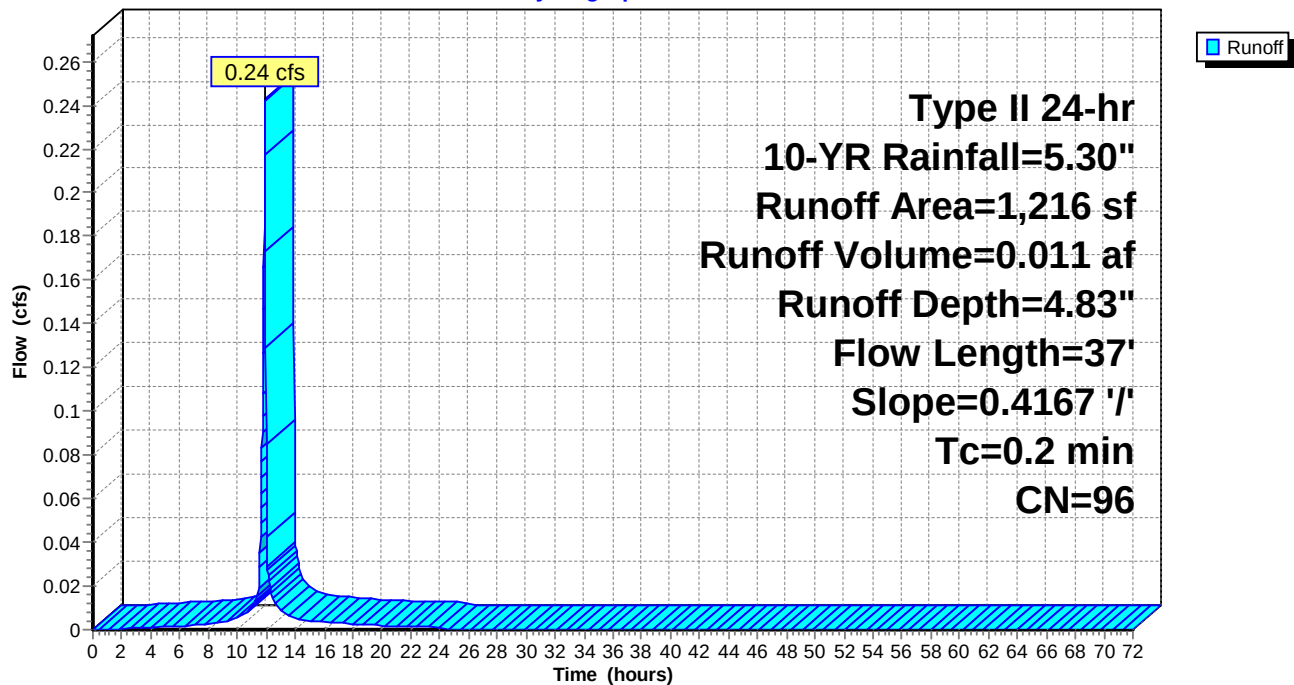
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10-YR Rainfall=5.30"

Area (sf)	CN	Description
1,136	98	Roofs, HSG C
80	74	>75% Grass cover, Good, HSG C
1,216	96	Weighted Average
80		6.58% Pervious Area
1,136		93.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 33: Rooftop #33

Hydrograph



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

Printed 02/22/23

Summary for Subcatchment 34: Rooftop #34

Runoff = 0.16 cfs @ 11.90 hrs, Volume= 0.007 af, Depth= 4.83"

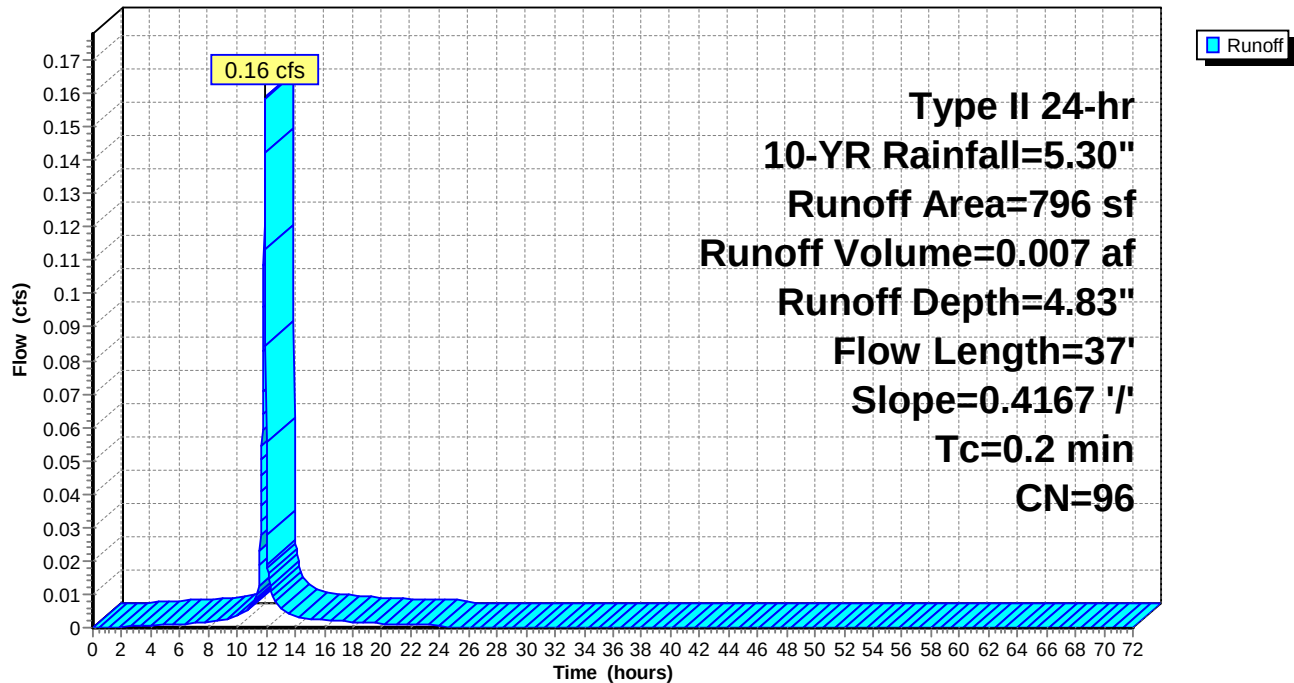
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10-YR Rainfall=5.30"

Area (sf)	CN	Description
741	98	Roofs, HSG C
55	74	>75% Grass cover, Good, HSG C
796	96	Weighted Average
55		6.91% Pervious Area
741		93.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 34: Rooftop #34

Hydrograph



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

Printed 02/22/23

Summary for Subcatchment 35: Rooftop #35

Runoff = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af, Depth= 4.83"

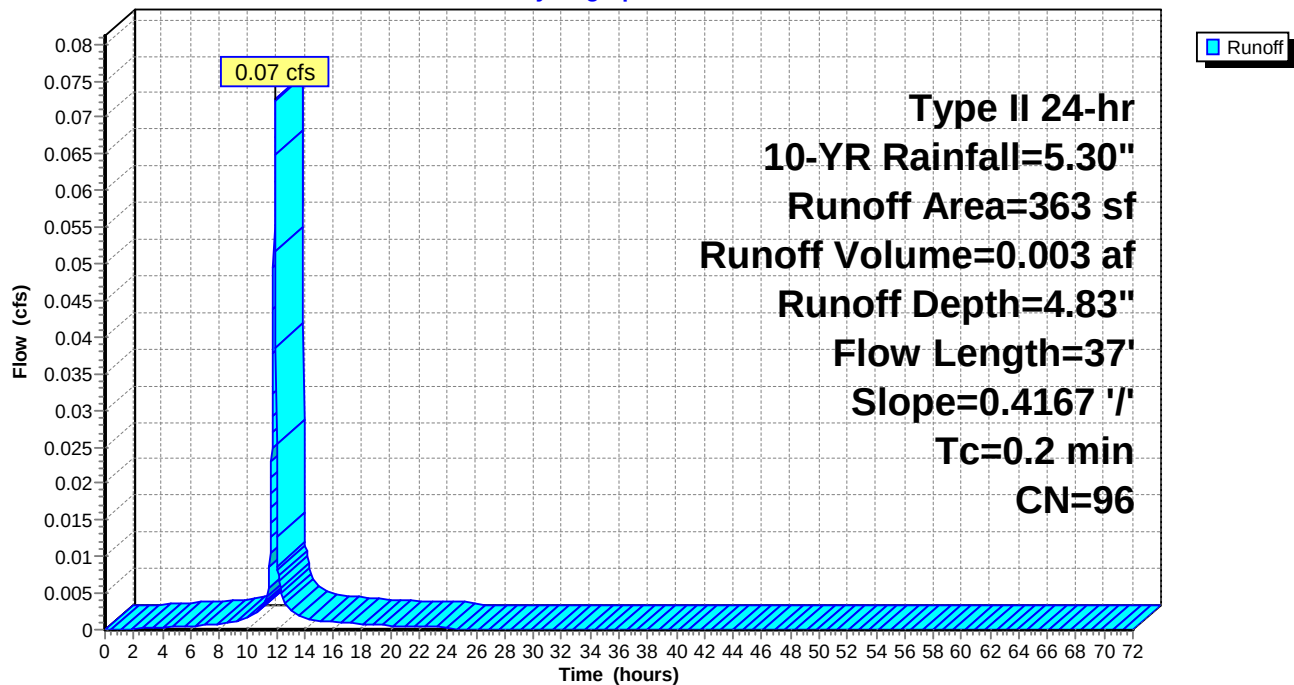
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10-YR Rainfall=5.30"

Area (sf)	CN	Description
333	98	Roofs, HSG C
30	74	>75% Grass cover, Good, HSG C
363	96	Weighted Average
30		8.26% Pervious Area
333		91.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 35: Rooftop #35

Hydrograph



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

Printed 02/22/23

Summary for Subcatchment 36: Rooftop #36

Runoff = 0.14 cfs @ 11.90 hrs, Volume= 0.006 af, Depth= 4.83"

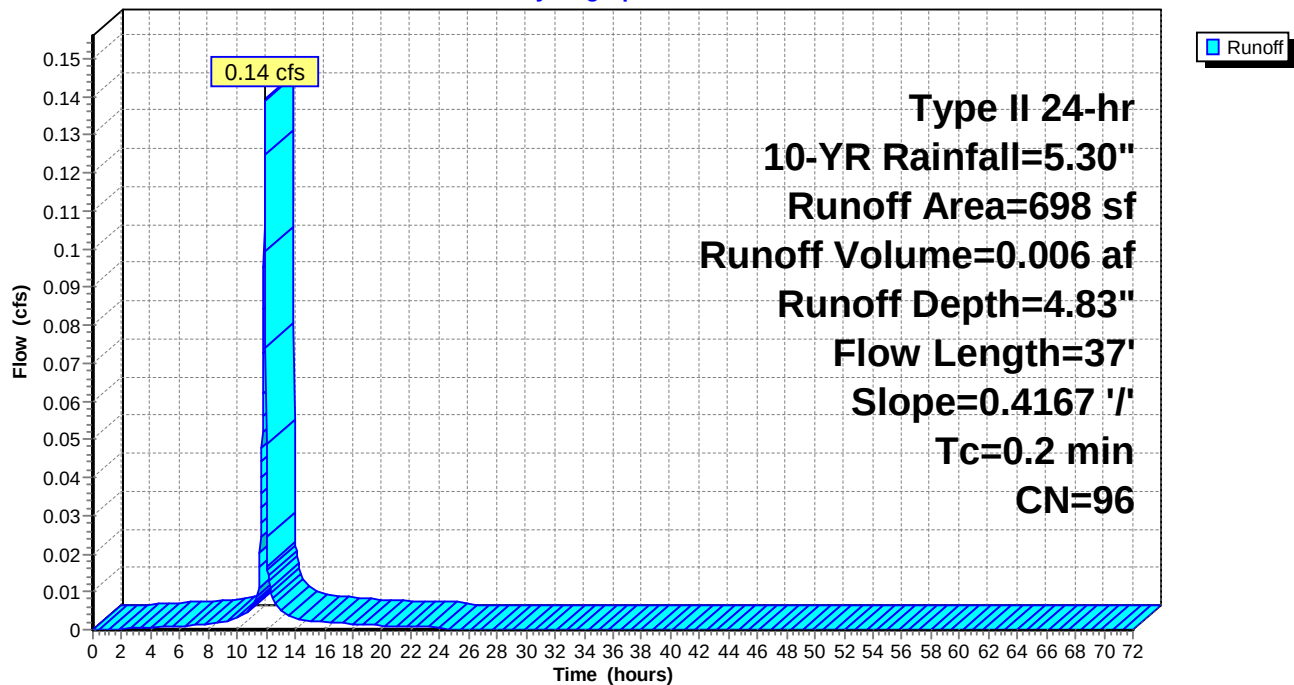
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10-YR Rainfall=5.30"

Area (sf)	CN	Description
648	98	Roofs, HSG C
50	74	>75% Grass cover, Good, HSG C
698	96	Weighted Average
50		7.16% Pervious Area
648		92.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 36: Rooftop #36

Hydrograph



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

Printed 02/22/23

Summary for Subcatchment 37: Rooftop #37

Runoff = 0.12 cfs @ 11.90 hrs, Volume= 0.005 af, Depth= 4.83"

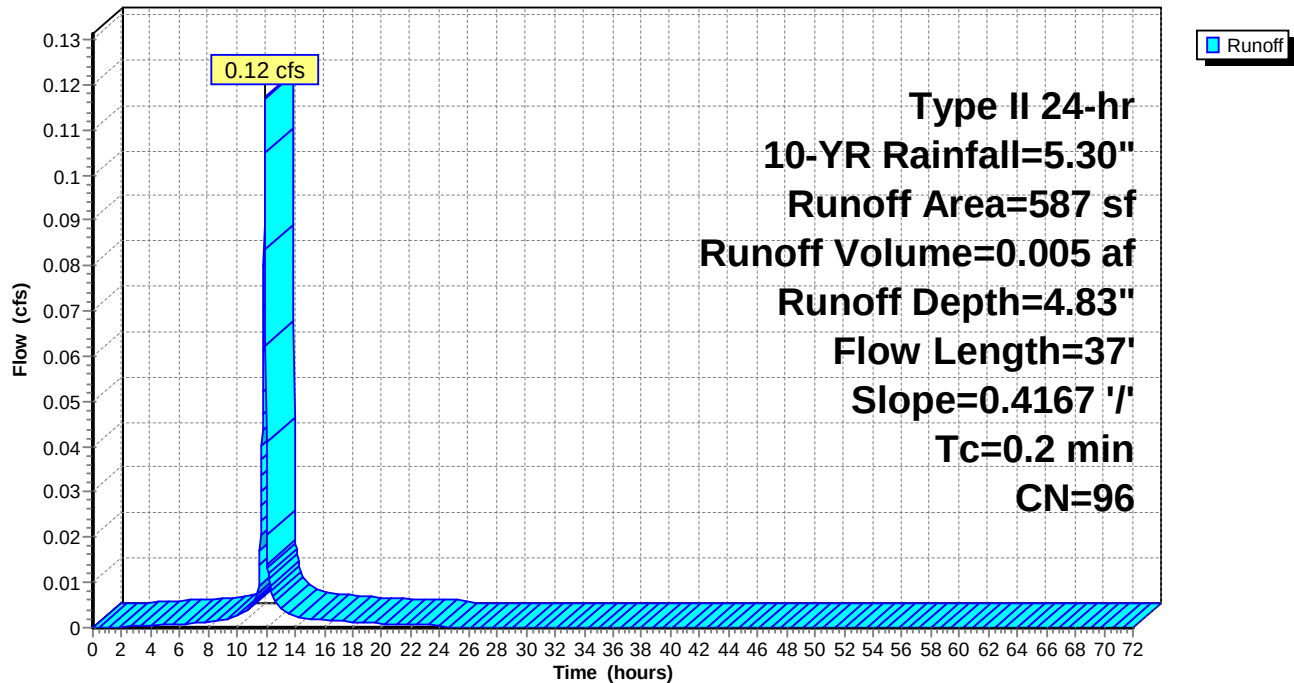
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10-YR Rainfall=5.30"

Area (sf)	CN	Description
547	98	Roofs, HSG C
40	74	>75% Grass cover, Good, HSG C
587	96	Weighted Average
40		6.81% Pervious Area
547		93.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 37: Rooftop #37

Hydrograph



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

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Summary for Subcatchment 38: Rooftop #38

Runoff = 0.12 cfs @ 11.90 hrs, Volume= 0.005 af, Depth= 4.83"

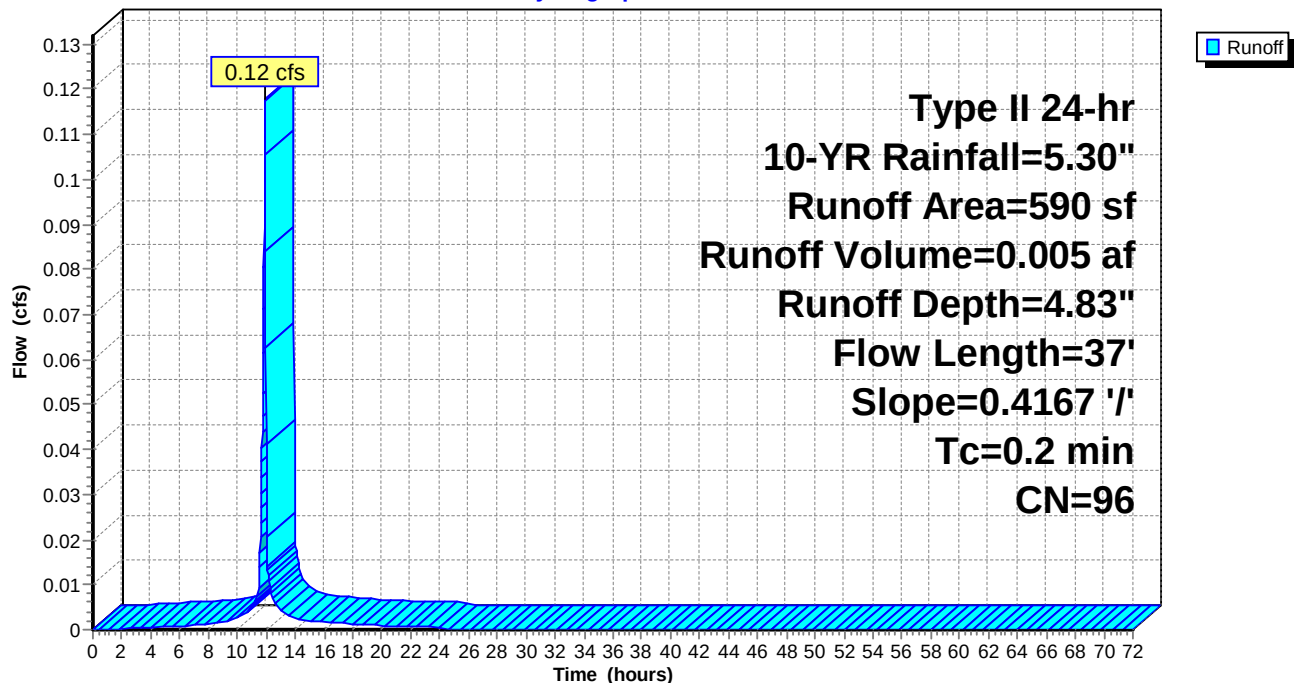
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10-YR Rainfall=5.30"

Area (sf)	CN	Description
550	98	Roofs, HSG C
40	74	>75% Grass cover, Good, HSG C
590	96	Weighted Average
40		6.78% Pervious Area
550		93.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 38: Rooftop #38

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

Prepared by RAUCH inc.

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

Printed 02/22/23

Summary for Subcatchment 39: Rooftop #39

Runoff = 0.22 cfs @ 11.90 hrs, Volume= 0.010 af, Depth= 4.83"

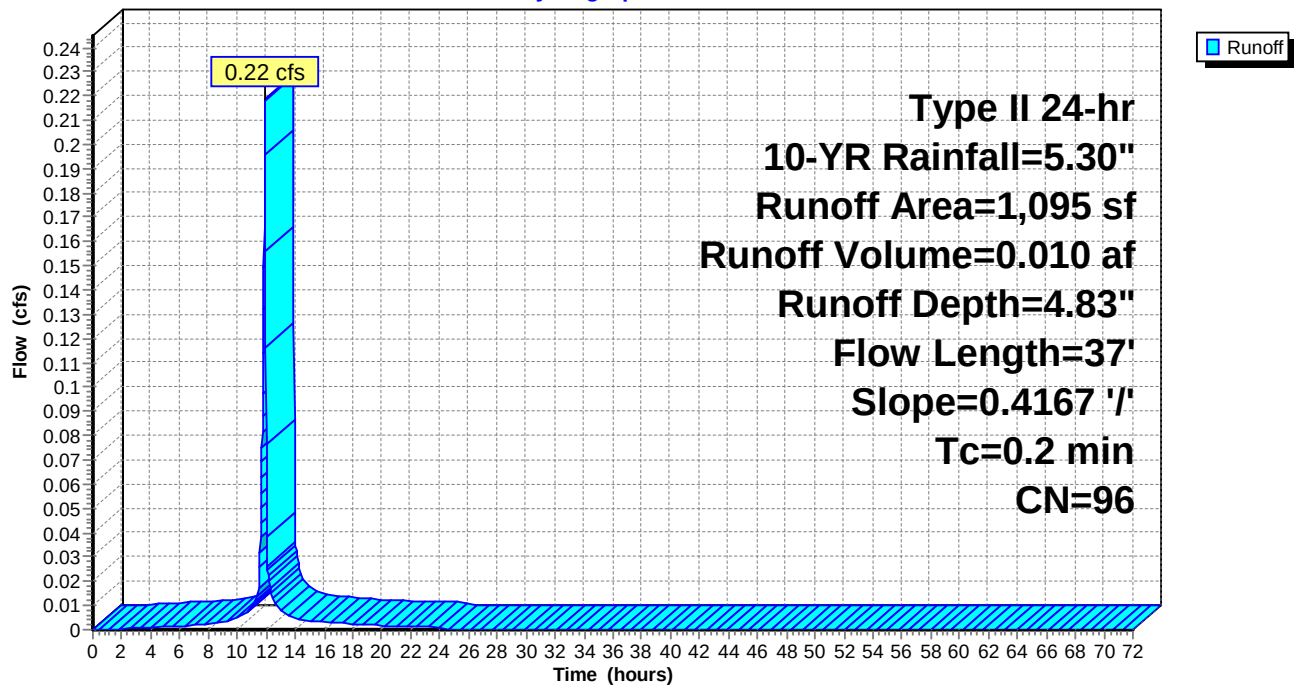
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10-YR Rainfall=5.30"

Area (sf)	CN	Description
1,025	98	Roofs, HSG C
70	74	>75% Grass cover, Good, HSG C
1,095	96	Weighted Average
70		6.39% Pervious Area
1,025		93.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 39: Rooftop #39

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

Printed 02/22/23

Summary for Subcatchment 40: Rooftop #40

Runoff = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af, Depth= 4.83"

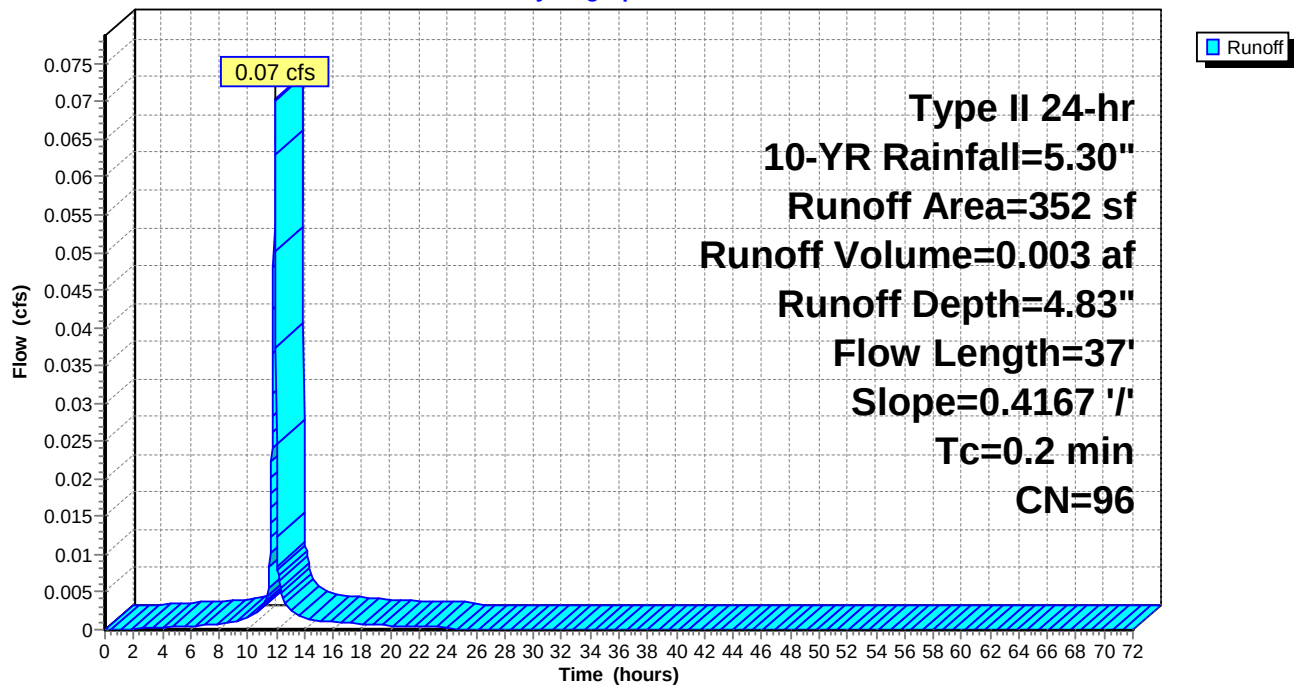
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10-YR Rainfall=5.30"

Area (sf)	CN	Description
322	98	Roofs, HSG C
30	74	>75% Grass cover, Good, HSG C
352	96	Weighted Average
30		8.52% Pervious Area
322		91.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 40: Rooftop #40

Hydrograph



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

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Summary for Subcatchment 41: Rooftop #41

Runoff = 0.22 cfs @ 11.90 hrs, Volume= 0.010 af, Depth= 4.83"

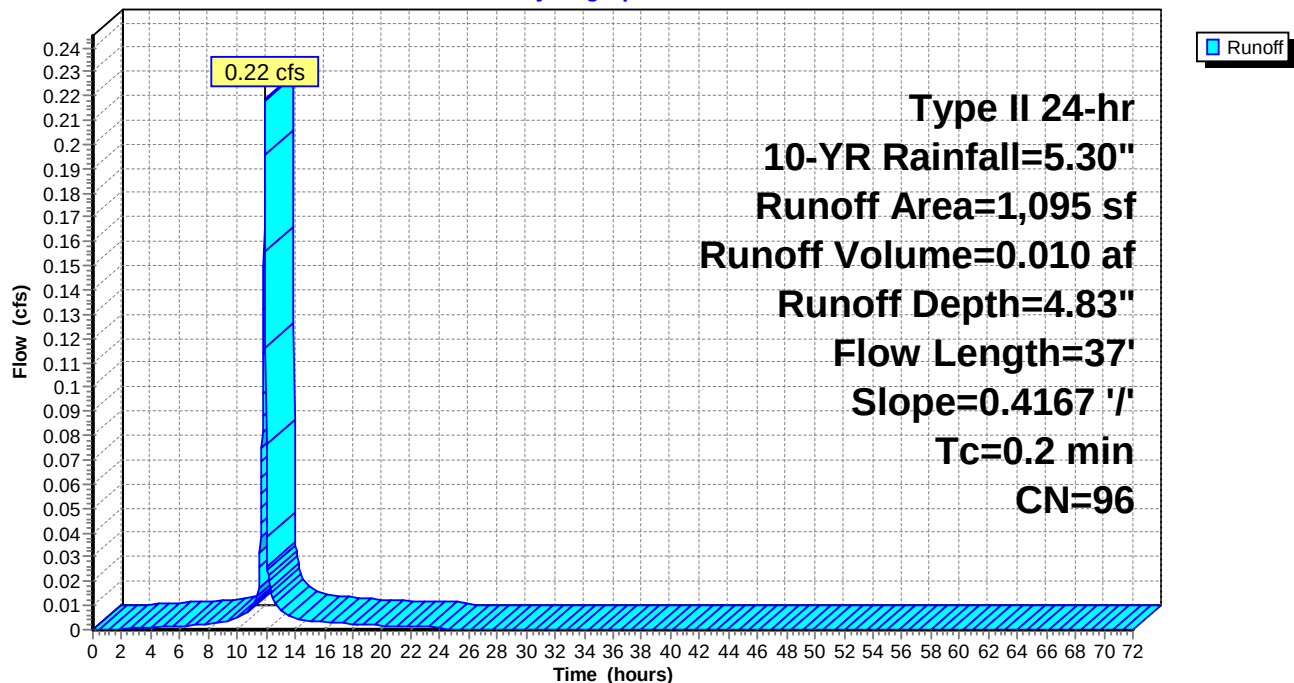
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10-YR Rainfall=5.30"

Area (sf)	CN	Description
1,025	98	Roofs, HSG C
70	74	>75% Grass cover, Good, HSG C
1,095	96	Weighted Average
70		6.39% Pervious Area
1,025		93.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 41: Rooftop #41

Hydrograph



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

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Summary for Subcatchment 42: Rooftop #42

Runoff = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af, Depth= 4.83"

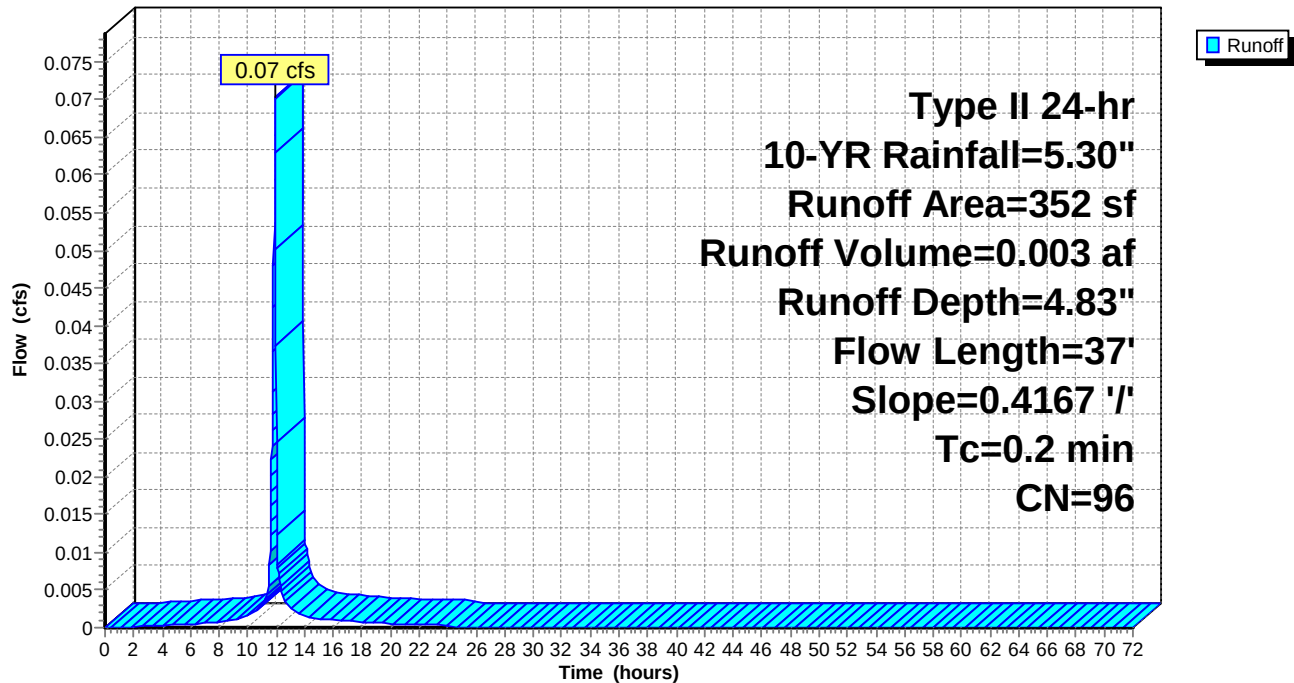
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10-YR Rainfall=5.30"

Area (sf)	CN	Description
322	98	Roofs, HSG C
30	74	>75% Grass cover, Good, HSG C
352	96	Weighted Average
30		8.52% Pervious Area
322		91.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 42: Rooftop #42

Hydrograph



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

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Summary for Subcatchment 43: Rooftop #43

Runoff = 0.12 cfs @ 11.90 hrs, Volume= 0.005 af, Depth= 4.83"

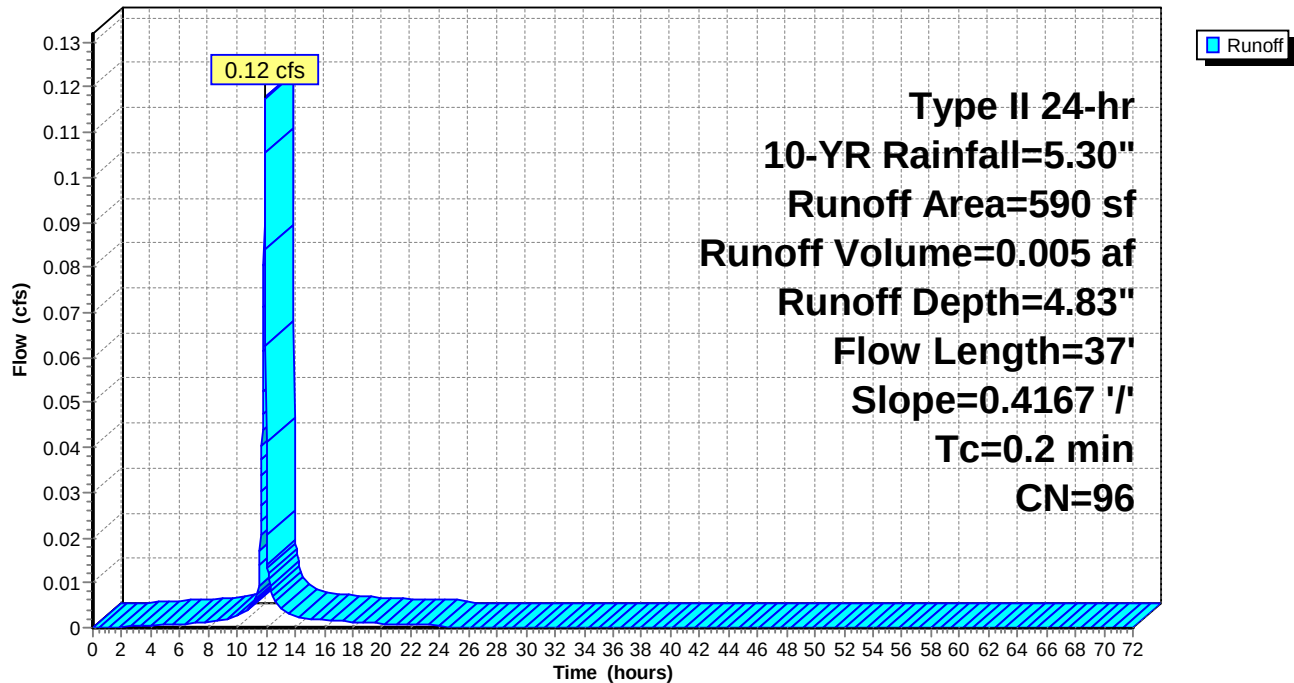
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10-YR Rainfall=5.30"

Area (sf)	CN	Description
550	98	Roofs, HSG C
40	74	>75% Grass cover, Good, HSG C
590	96	Weighted Average
40		6.78% Pervious Area
550		93.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 43: Rooftop #43

Hydrograph



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

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Summary for Subcatchment 44: Rooftop #44

Runoff = 0.14 cfs @ 11.90 hrs, Volume= 0.006 af, Depth= 4.83"

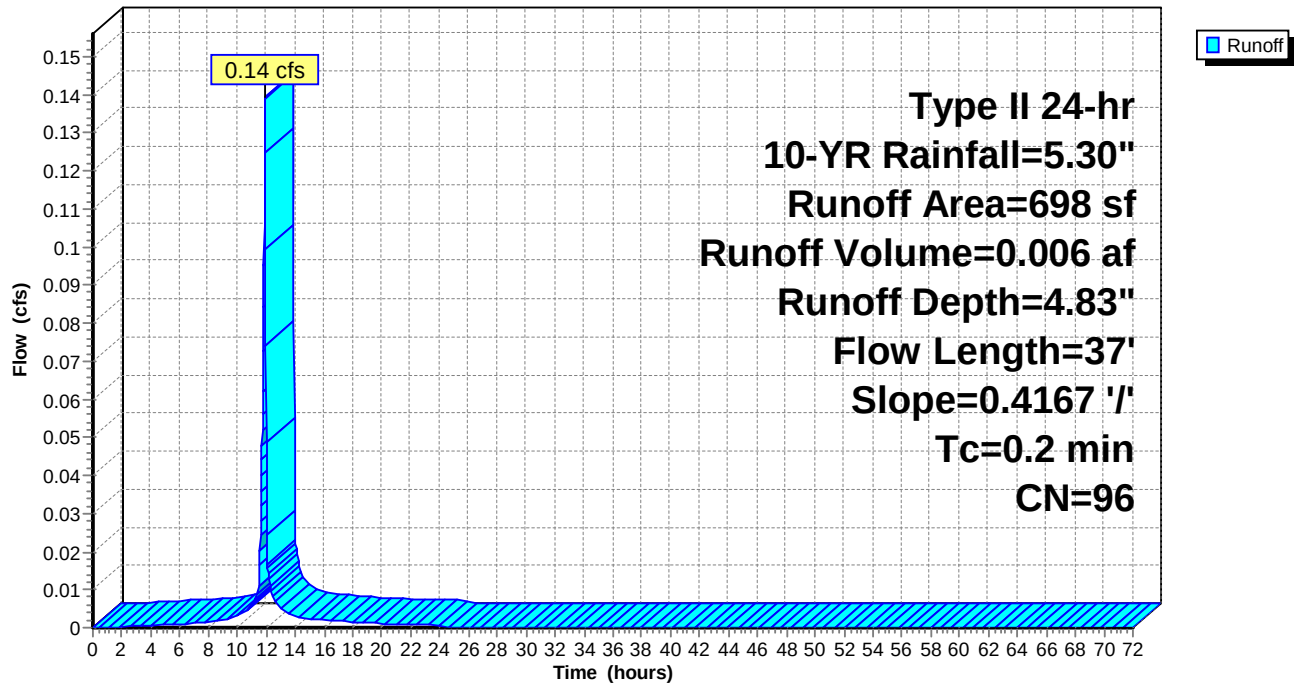
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10-YR Rainfall=5.30"

Area (sf)	CN	Description
648	98	Roofs, HSG C
50	74	>75% Grass cover, Good, HSG C
698	96	Weighted Average
50		7.16% Pervious Area
648		92.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 44: Rooftop #44

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Subcatchment 45: Rooftop #45

Runoff = 0.12 cfs @ 11.90 hrs, Volume= 0.005 af, Depth= 4.83"

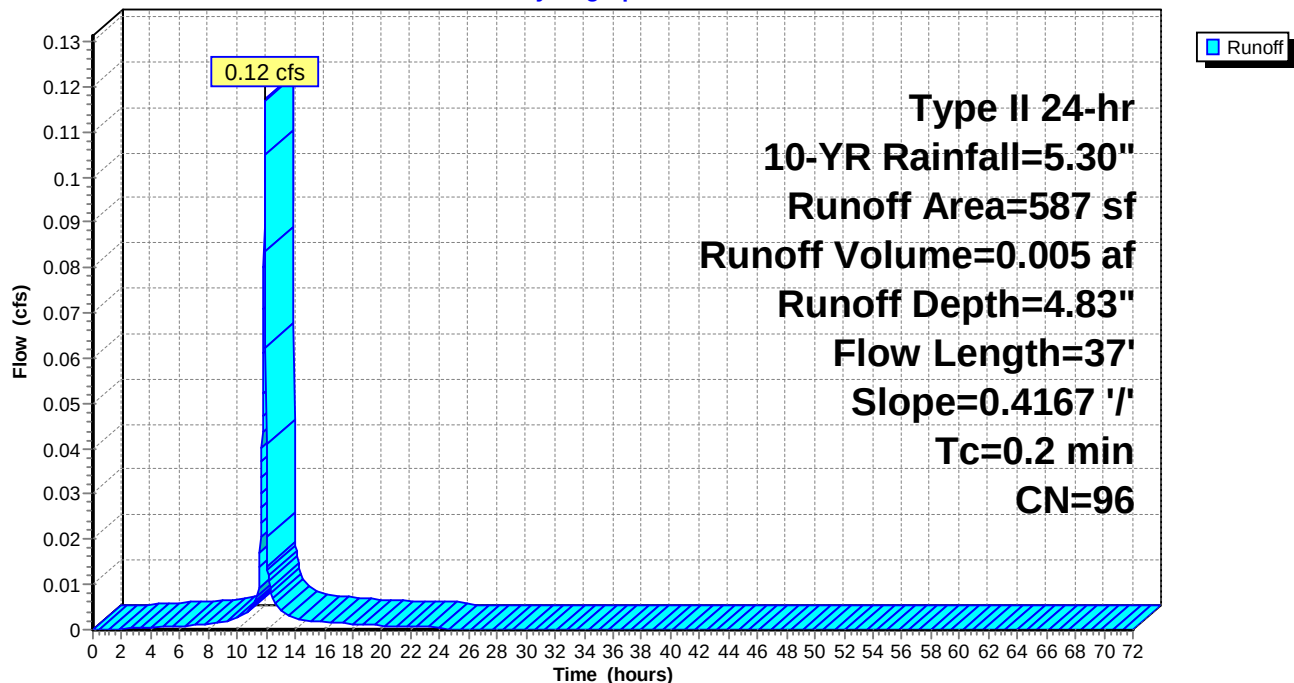
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10-YR Rainfall=5.30"

Area (sf)	CN	Description
547	98	Roofs, HSG C
40	74	>75% Grass cover, Good, HSG C
587	96	Weighted Average
40		6.81% Pervious Area
547		93.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
					Smooth surfaces n= 0.011 P2= 3.40"

Subcatchment 45: Rooftop #45

Hydrograph



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

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Summary for Subcatchment 46: Rooftop #46

Runoff = 0.04 cfs @ 11.90 hrs, Volume= 0.002 af, Depth= 4.83"

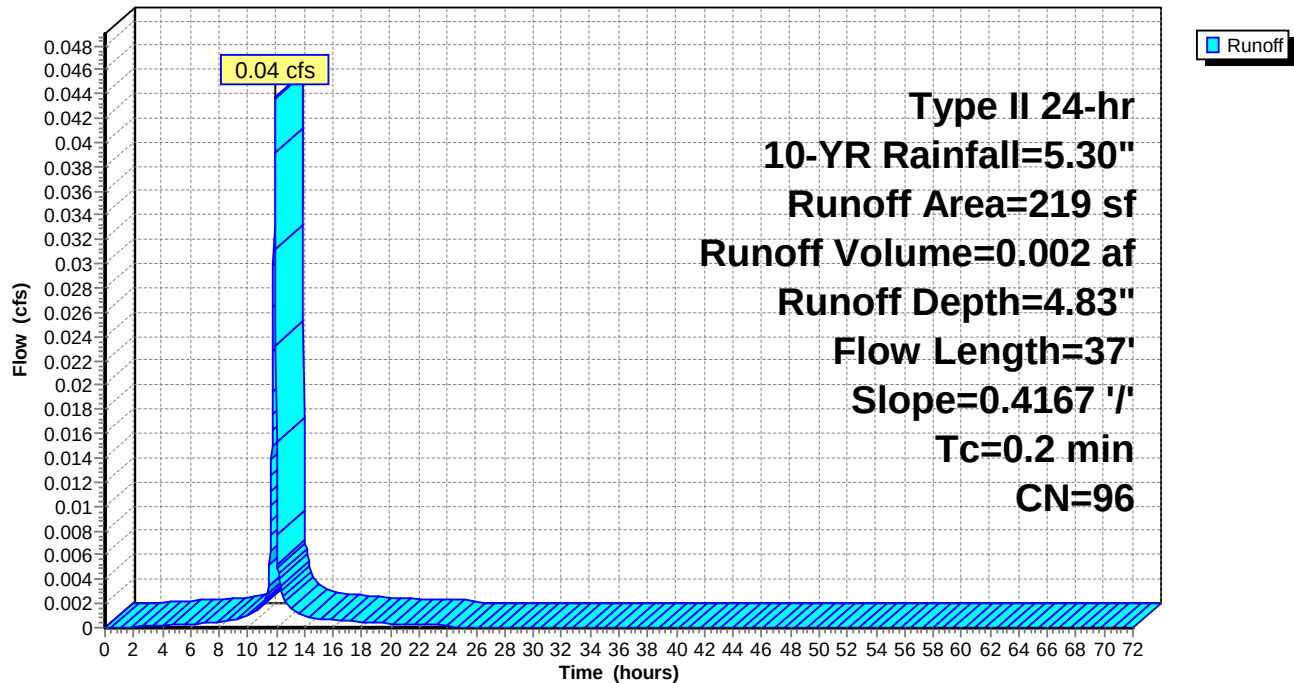
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10-YR Rainfall=5.30"

Area (sf)	CN	Description
199	98	Roofs, HSG C
20	74	>75% Grass cover, Good, HSG C
219	96	Weighted Average
20		9.13% Pervious Area
199		90.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 46: Rooftop #46

Hydrograph



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

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Summary for Subcatchment 47: Rooftop #47

Runoff = 0.24 cfs @ 11.90 hrs, Volume= 0.011 af, Depth= 4.83"

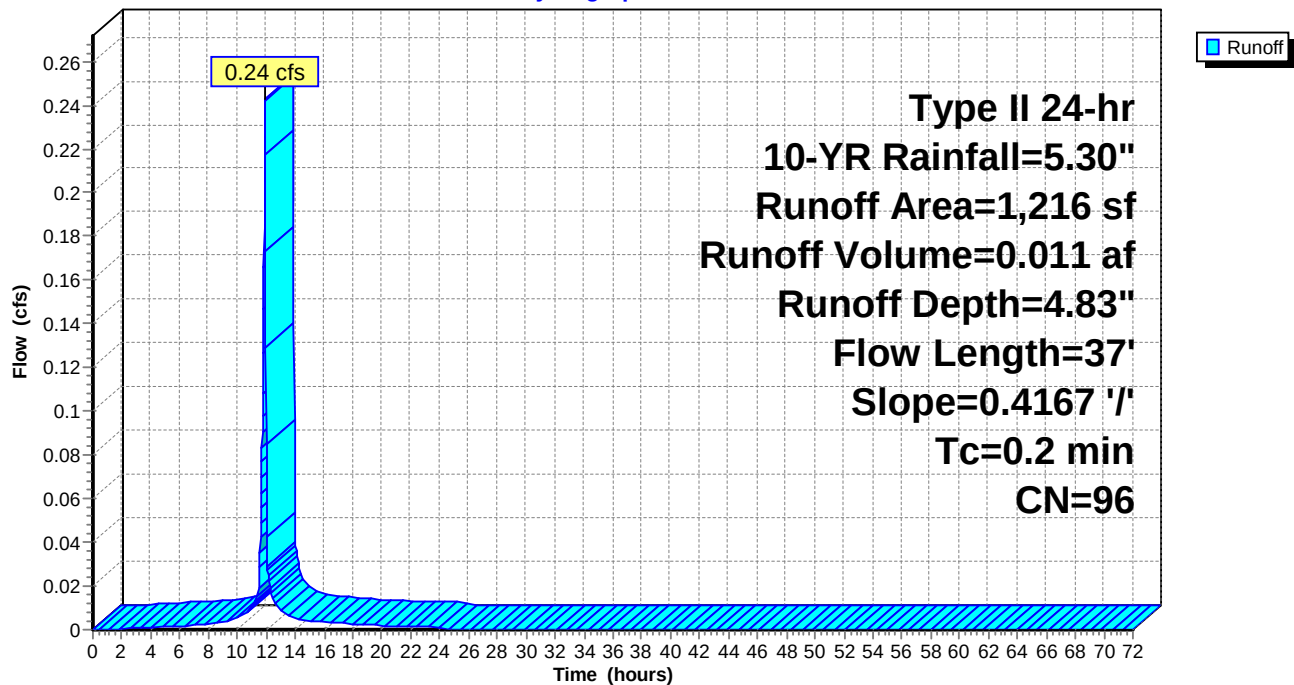
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10-YR Rainfall=5.30"

Area (sf)	CN	Description
1,136	98	Roofs, HSG C
80	74	>75% Grass cover, Good, HSG C
1,216	96	Weighted Average
80		6.58% Pervious Area
1,136		93.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 47: Rooftop #47

Hydrograph



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

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Summary for Subcatchment 48: Rooftop #48

Runoff = 0.16 cfs @ 11.90 hrs, Volume= 0.007 af, Depth= 4.83"

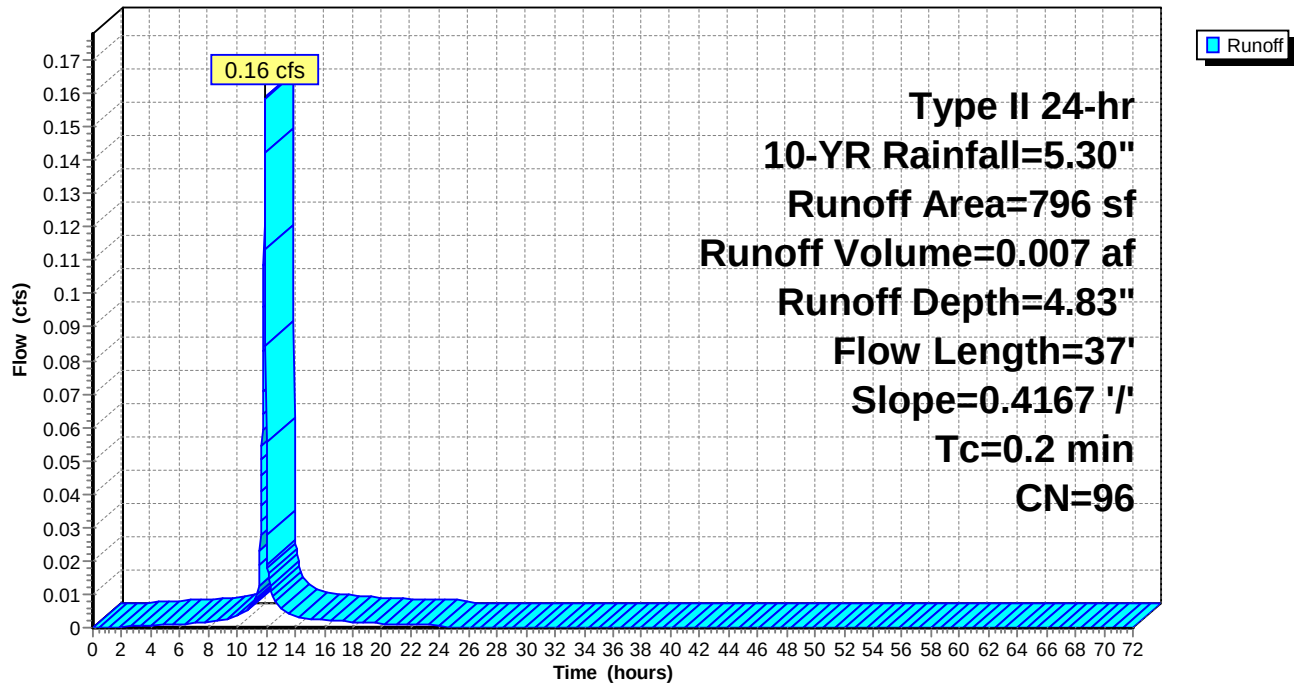
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10-YR Rainfall=5.30"

Area (sf)	CN	Description
741	98	Roofs, HSG C
55	74	>75% Grass cover, Good, HSG C
796	96	Weighted Average
55		6.91% Pervious Area
741		93.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 48: Rooftop #48

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

Printed 02/22/23

Summary for Subcatchment 49: Rooftop #49

Runoff = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af, Depth= 4.83"

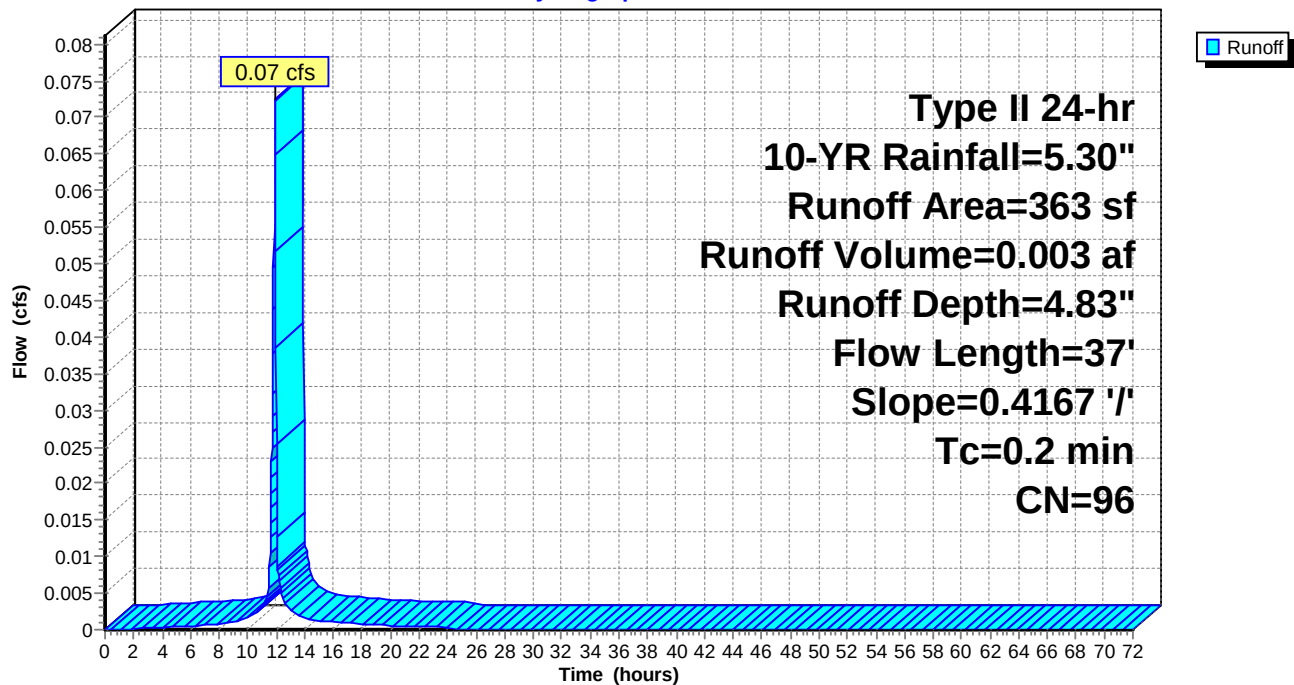
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10-YR Rainfall=5.30"

Area (sf)	CN	Description
333	98	Roofs, HSG C
30	74	>75% Grass cover, Good, HSG C
363	96	Weighted Average
30		8.26% Pervious Area
333		91.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 49: Rooftop #49

Hydrograph



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

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Summary for Subcatchment 50: Rooftop #50

Runoff = 0.14 cfs @ 11.90 hrs, Volume= 0.006 af, Depth= 4.83"

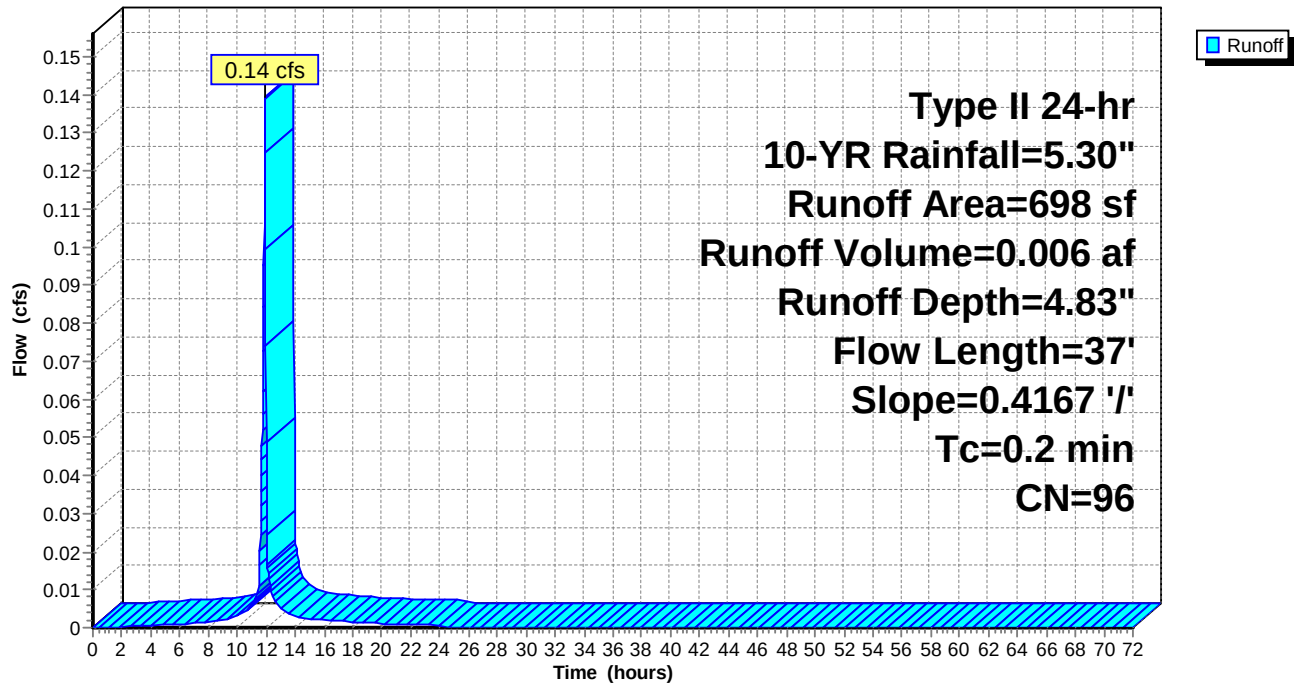
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10-YR Rainfall=5.30"

Area (sf)	CN	Description
648	98	Roofs, HSG C
50	74	>75% Grass cover, Good, HSG C
698	96	Weighted Average
50		7.16% Pervious Area
648		92.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 50: Rooftop #50

Hydrograph



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

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Summary for Subcatchment 51: Rooftop #51

Runoff = 0.12 cfs @ 11.90 hrs, Volume= 0.005 af, Depth= 4.83"

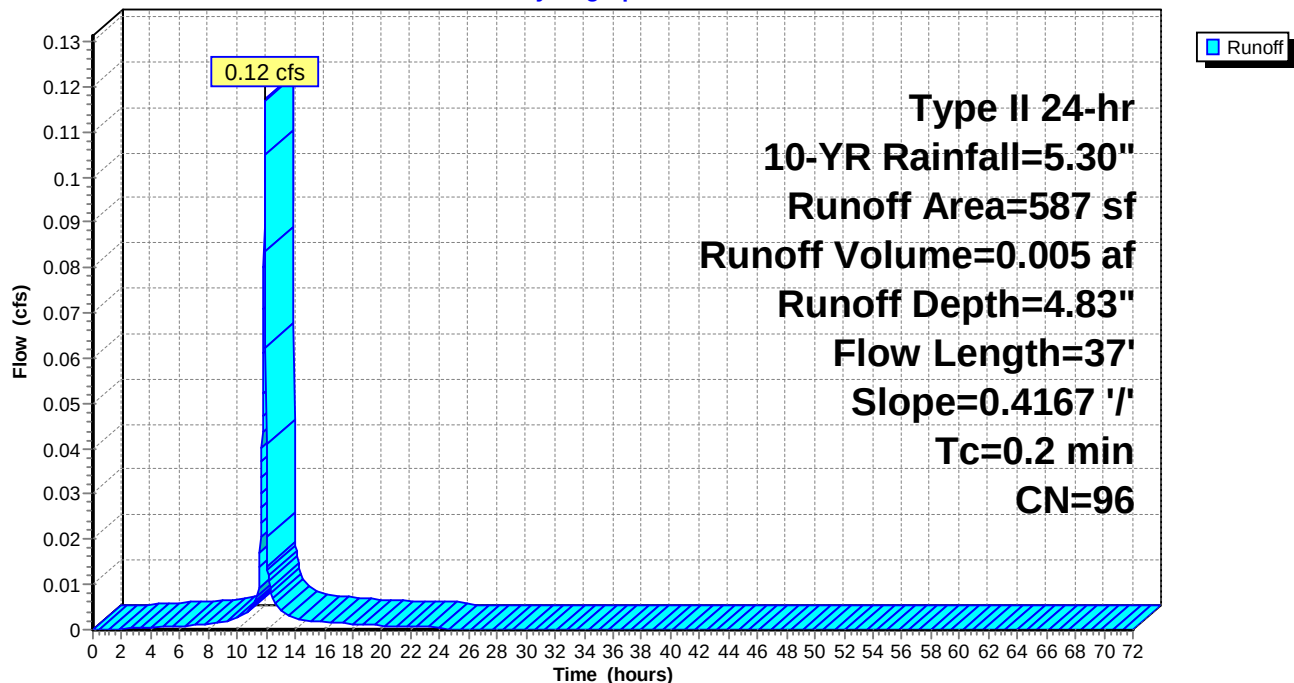
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10-YR Rainfall=5.30"

Area (sf)	CN	Description
547	98	Roofs, HSG C
40	74	>75% Grass cover, Good, HSG C
587	96	Weighted Average
40		6.81% Pervious Area
547		93.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 51: Rooftop #51

Hydrograph



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

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Summary for Subcatchment 52: Rooftop #52

Runoff = 0.12 cfs @ 11.90 hrs, Volume= 0.005 af, Depth= 4.83"

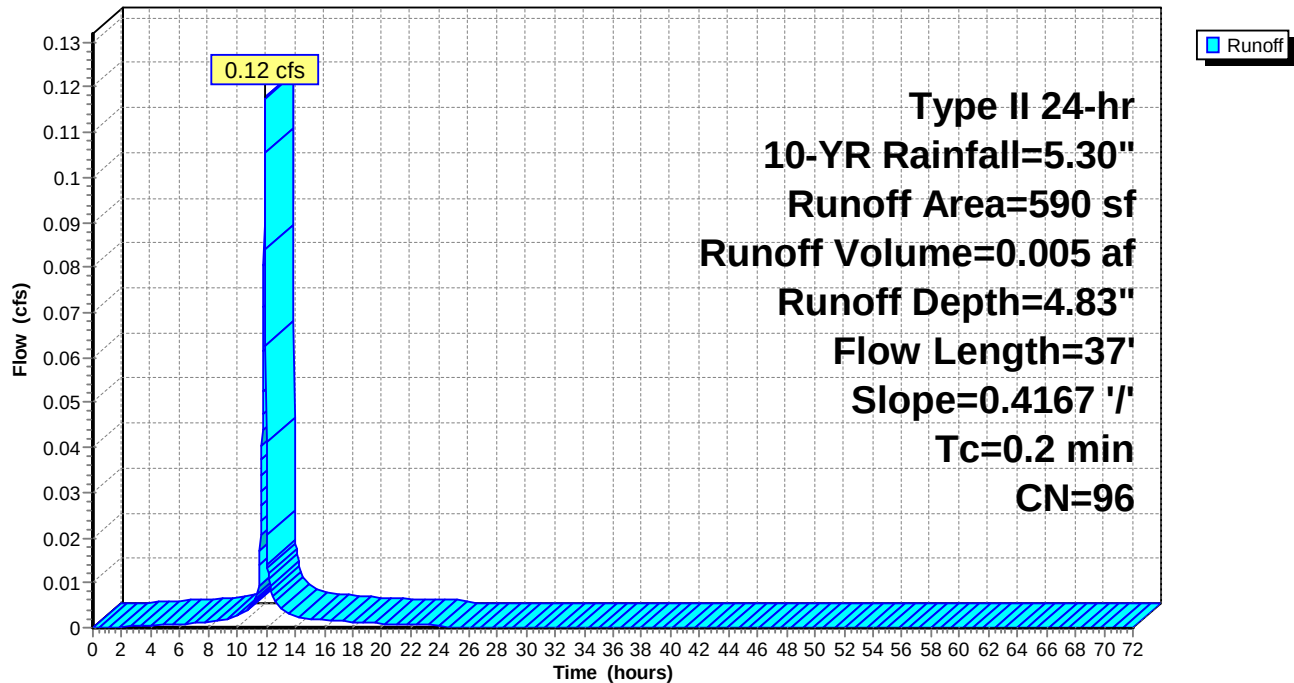
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10-YR Rainfall=5.30"

Area (sf)	CN	Description
550	98	Roofs, HSG C
40	74	>75% Grass cover, Good, HSG C
590	96	Weighted Average
40		6.78% Pervious Area
550		93.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 52: Rooftop #52

Hydrograph



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

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Summary for Subcatchment 53: Rooftop #53

Runoff = 0.22 cfs @ 11.90 hrs, Volume= 0.010 af, Depth= 4.83"

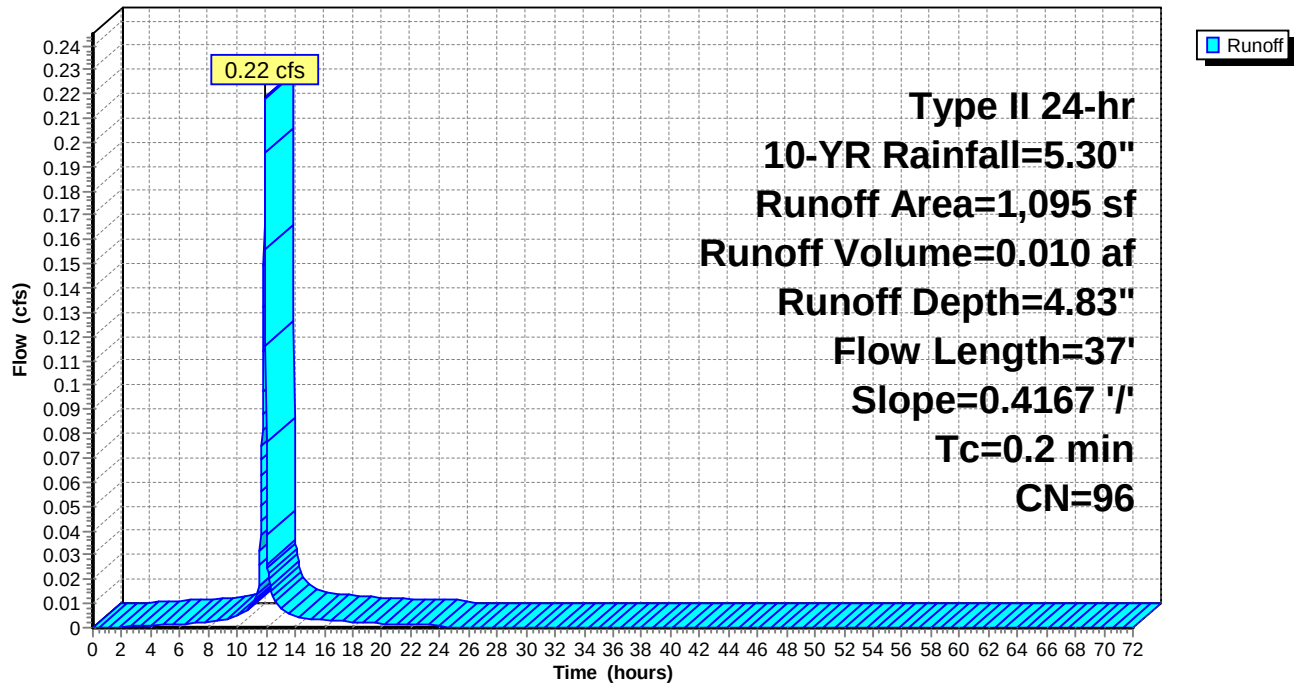
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10-YR Rainfall=5.30"

Area (sf)	CN	Description
1,025	98	Roofs, HSG C
70	74	>75% Grass cover, Good, HSG C
1,095	96	Weighted Average
70		6.39% Pervious Area
1,025		93.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 53: Rooftop #53

Hydrograph



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

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Summary for Subcatchment 54: Rooftop #54

Runoff = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af, Depth= 4.83"

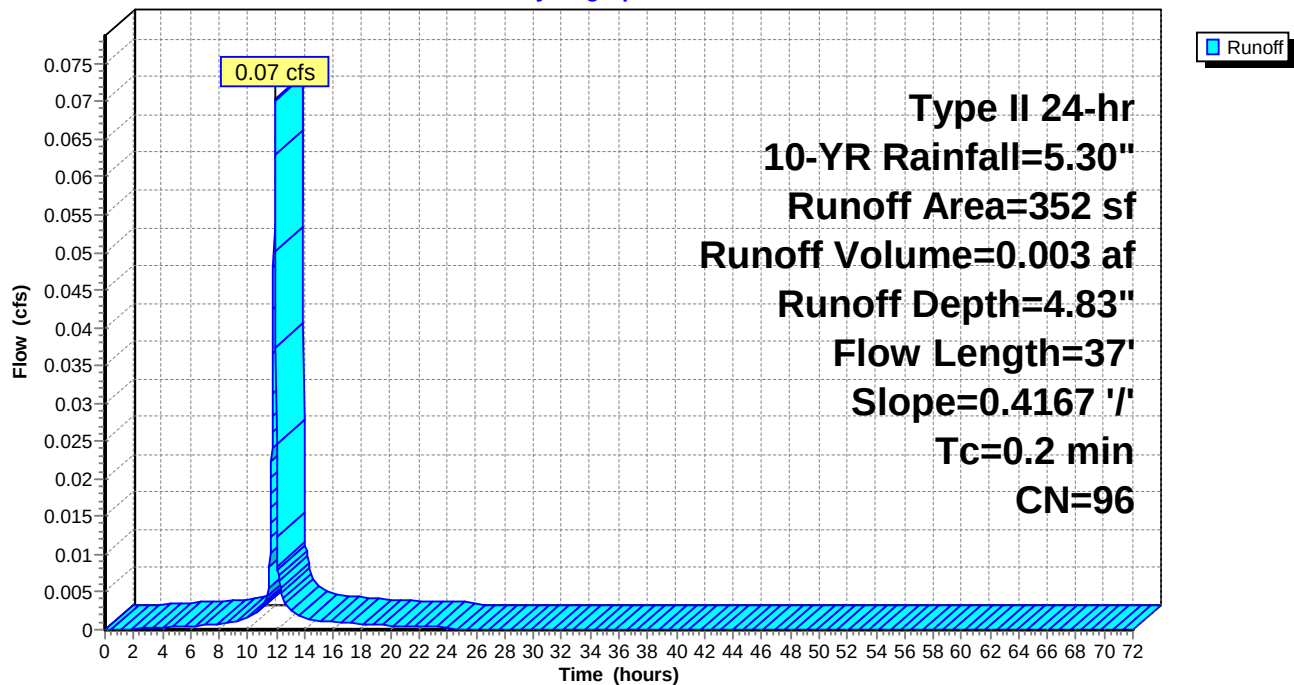
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10-YR Rainfall=5.30"

Area (sf)	CN	Description
322	98	Roofs, HSG C
30	74	>75% Grass cover, Good, HSG C
352	96	Weighted Average
30		8.52% Pervious Area
322		91.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 54: Rooftop #54

Hydrograph



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

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Summary for Subcatchment 55: Non-RT DA to PA-2

Runoff = 0.39 cfs @ 11.99 hrs, Volume= 0.025 af, Depth= 4.38"

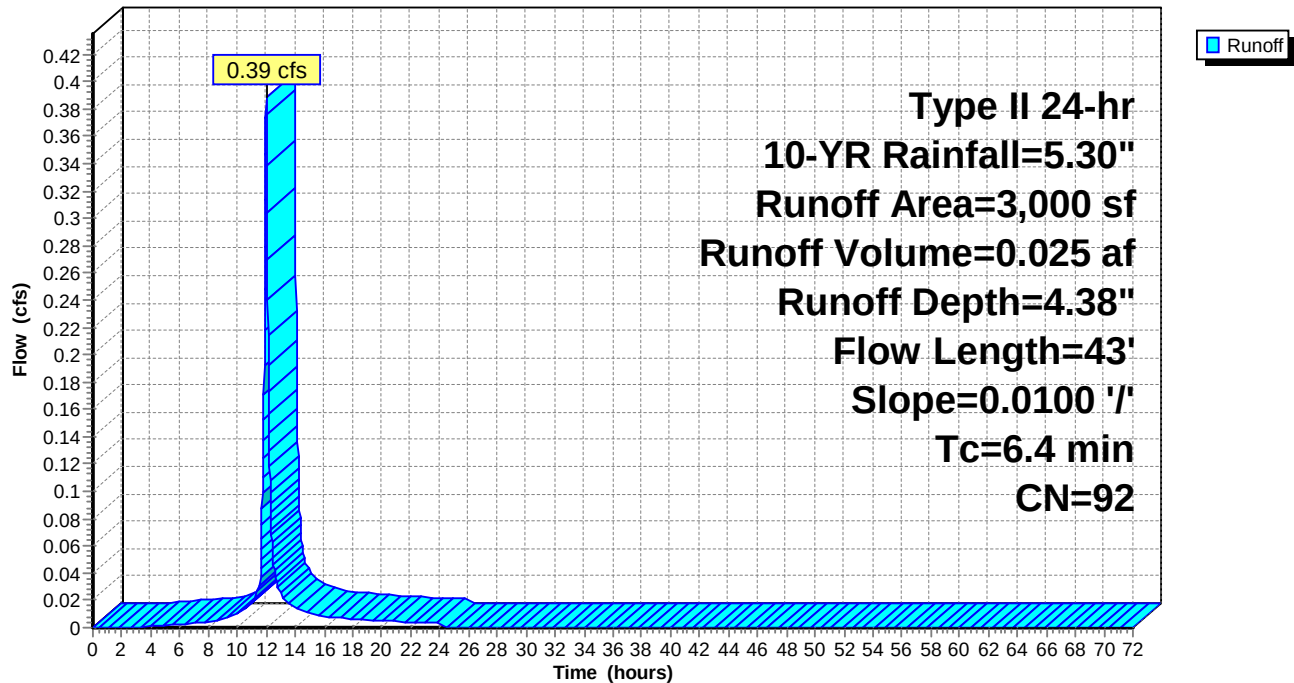
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10-YR Rainfall=5.30"

Area (sf)	CN	Description
733	74	>75% Grass cover, Good, HSG C
* 2,267	98	Impervious
3,000	92	Weighted Average
733		24.43% Pervious Area
2,267		75.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	43	0.0100	0.11		Sheet Flow, Sideyard
					Grass: Short n= 0.150 P2= 3.40"

Subcatchment 55: Non-RT DA to PA-2

Hydrograph



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

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Summary for Subcatchment 56: Non-RT DA to PA-3

Runoff = 0.48 cfs @ 12.00 hrs, Volume= 0.032 af, Depth= 3.85"

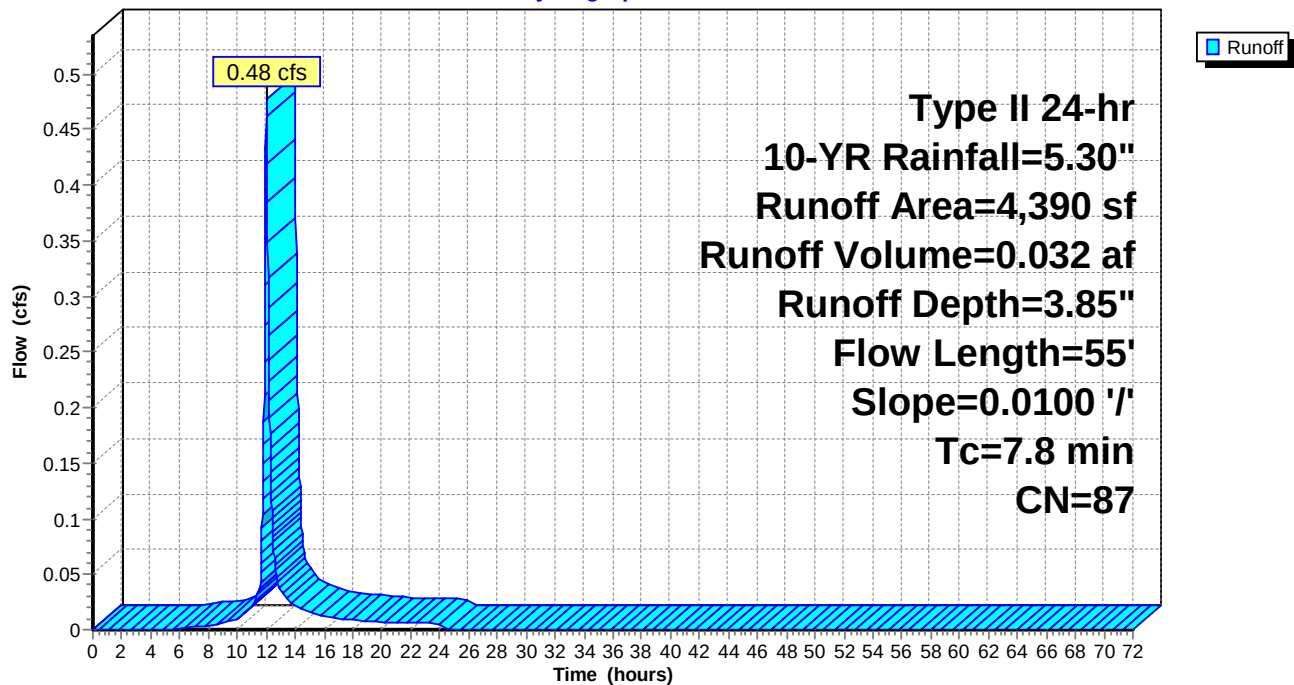
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10-YR Rainfall=5.30"

Area (sf)	CN	Description
1,989	74	>75% Grass cover, Good, HSG C
2,401	98	Paved parking, HSG C
4,390	87	Weighted Average
1,989		45.31% Pervious Area
2,401		54.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.8	55	0.0100	0.12		Sheet Flow, Sideyard
Grass: Short n= 0.150 P2= 3.40"					

Subcatchment 56: Non-RT DA to PA-3

Hydrograph



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

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Summary for Subcatchment 57: Non-RT DA to PA-4

Runoff = 0.48 cfs @ 12.01 hrs, Volume= 0.034 af, Depth= 3.95"

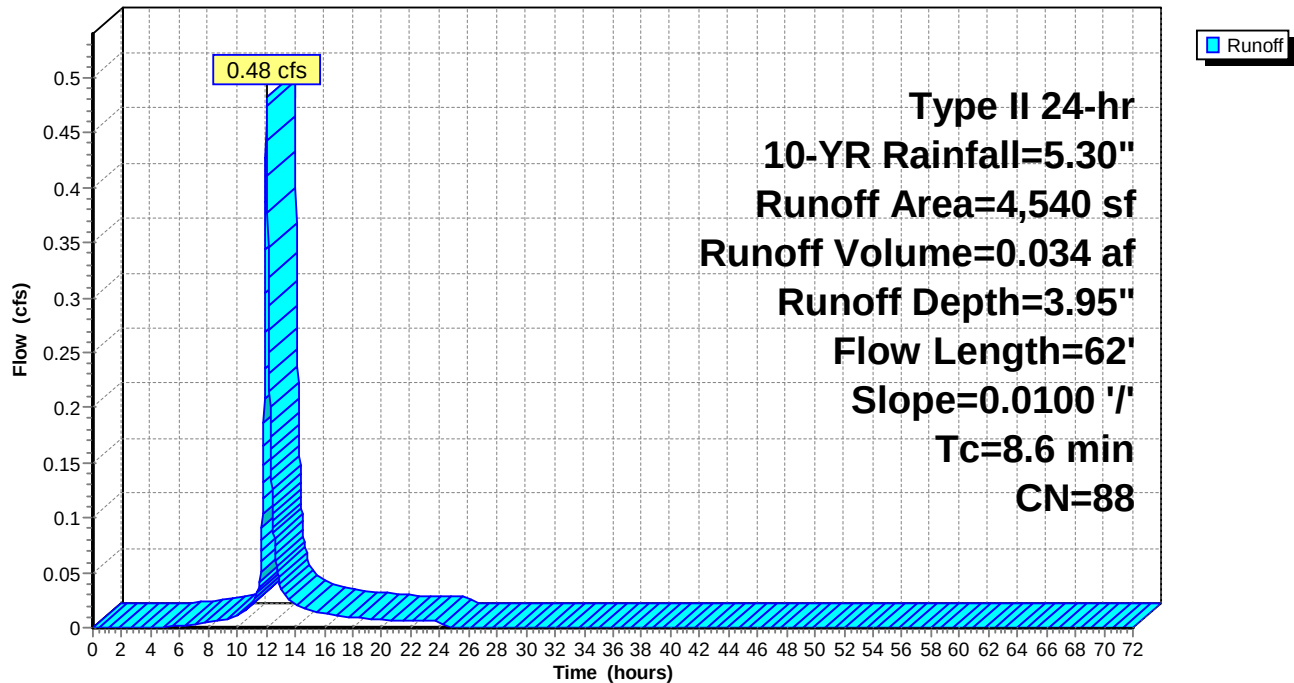
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10-YR Rainfall=5.30"

Area (sf)	CN	Description
1,939	74	>75% Grass cover, Good, HSG C
2,601	98	Paved parking, HSG C
4,540	88	Weighted Average
1,939		42.71% Pervious Area
2,601		57.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	62	0.0100	0.12		Sheet Flow, Sideyard
Grass: Short n= 0.150 P2= 3.40"					

Subcatchment 57: Non-RT DA to PA-4

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Subcatchment 58: Non-RT DA to PA-5

Runoff = 0.77 cfs @ 12.00 hrs, Volume= 0.053 af, Depth= 4.38"

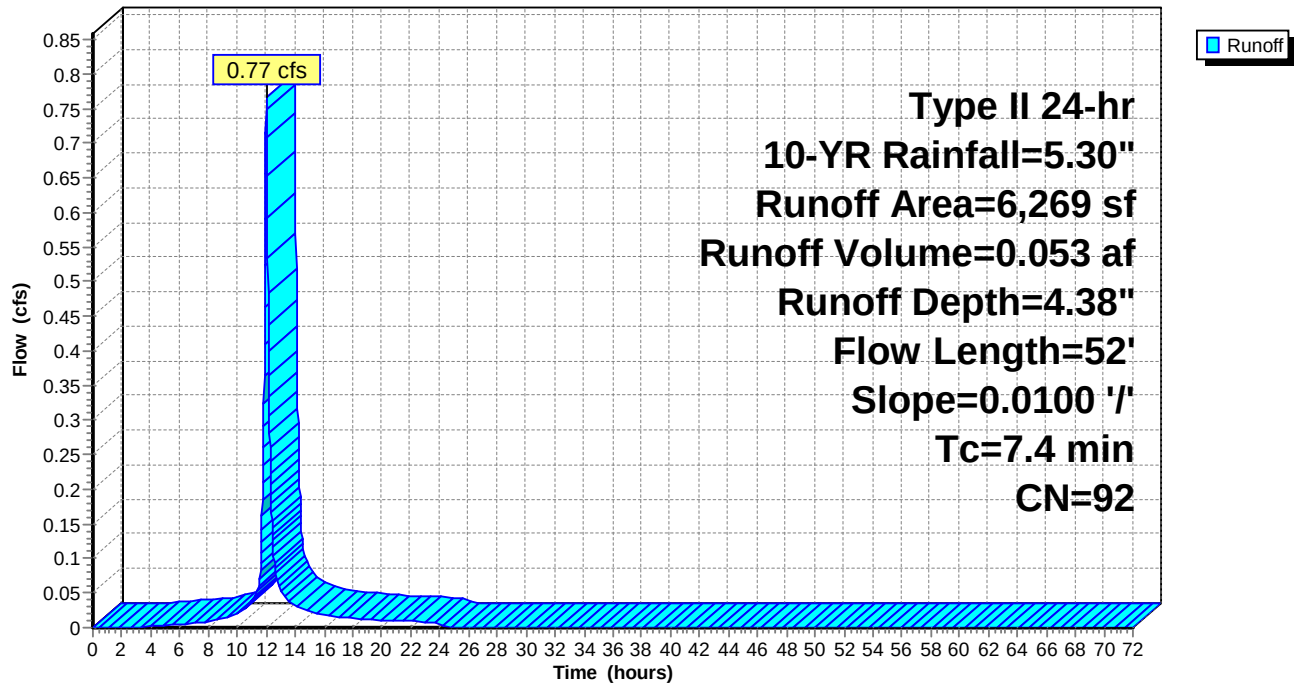
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10-YR Rainfall=5.30"

Area (sf)	CN	Description
1,645	74	>75% Grass cover, Good, HSG C
4,624	98	Paved parking, HSG C
6,269	92	Weighted Average
1,645		26.24% Pervious Area
4,624		73.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	52	0.0100	0.12		Sheet Flow, Sideyard
					Grass: Short n= 0.150 P2= 3.40"

Subcatchment 58: Non-RT DA to PA-5

Hydrograph



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

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Summary for Subcatchment 59: Non-RT DA to PA-6

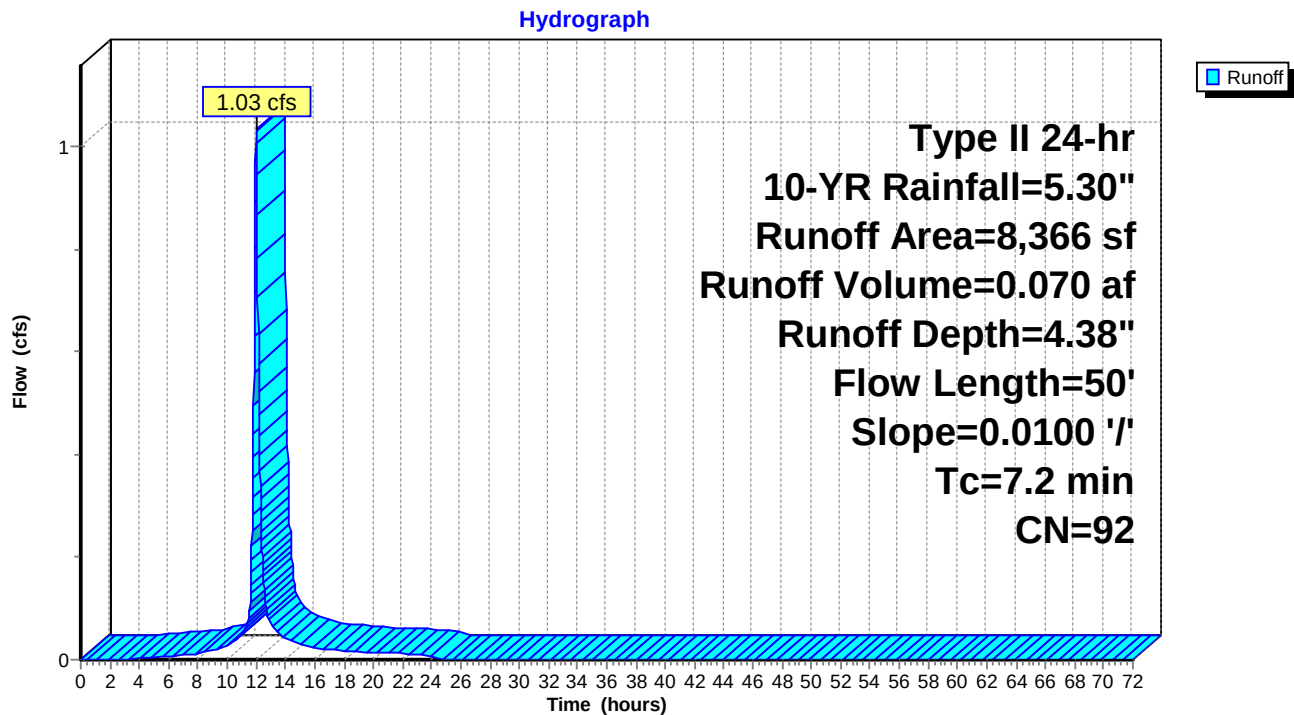
Runoff = 1.03 cfs @ 12.00 hrs, Volume= 0.070 af, Depth= 4.38"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10-YR Rainfall=5.30"

Area (sf)	CN	Description
2,213	74	>75% Grass cover, Good, HSG C
6,153	98	Paved parking, HSG C
8,366	92	Weighted Average
2,213		26.45% Pervious Area
6,153		73.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	50	0.0100	0.12		Sheet Flow, Sideyard
Grass: Short n= 0.150 P2= 3.40"					

Subcatchment 59: Non-RT DA to PA-6



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

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Summary for Subcatchment 60: Non-RT DA to PA-7

Runoff = 0.14 cfs @ 11.99 hrs, Volume= 0.009 af, Depth= 4.27"

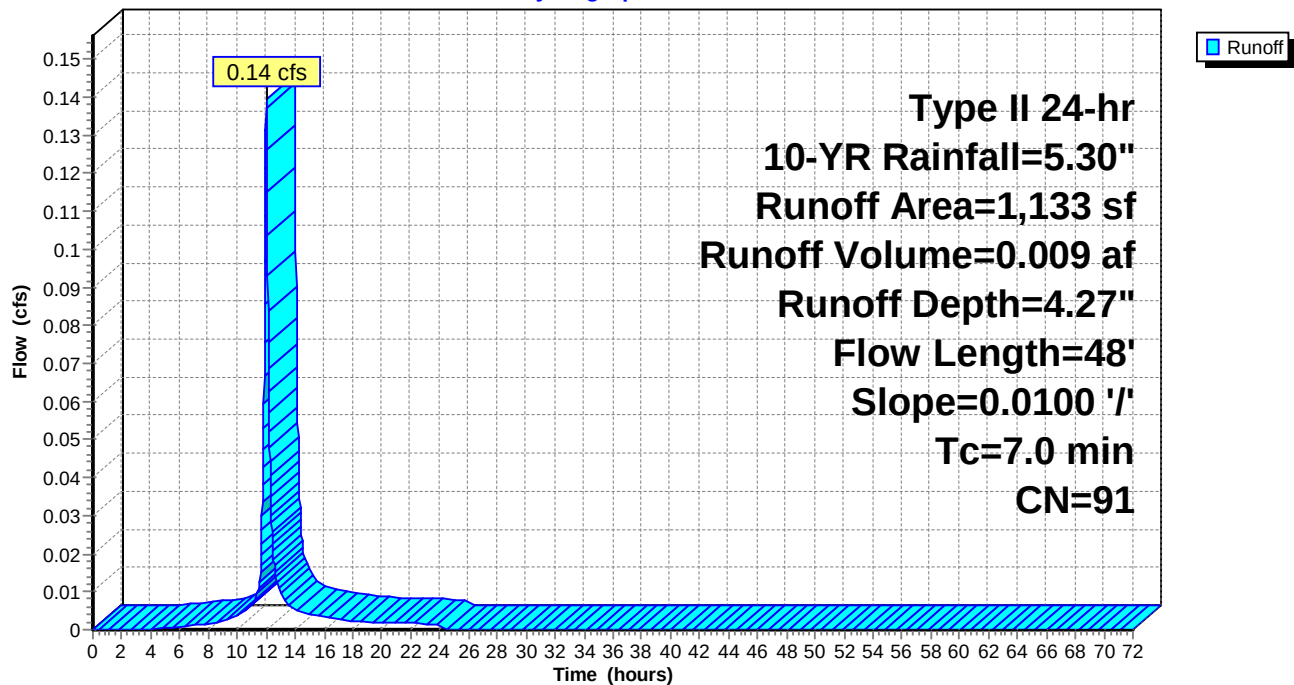
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10-YR Rainfall=5.30"

Area (sf)	CN	Description
330	74	>75% Grass cover, Good, HSG C
803	98	Paved parking, HSG C
1,133	91	Weighted Average
330		29.13% Pervious Area
803		70.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	48	0.0100	0.11		Sheet Flow, Sideyard
					Grass: Short n= 0.150 P2= 3.40"

Subcatchment 60: Non-RT DA to PA-7

Hydrograph



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

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Summary for Subcatchment 61: West DA to Jowite

Runoff = 0.79 cfs @ 12.08 hrs, Volume= 0.072 af, Depth= 2.61"

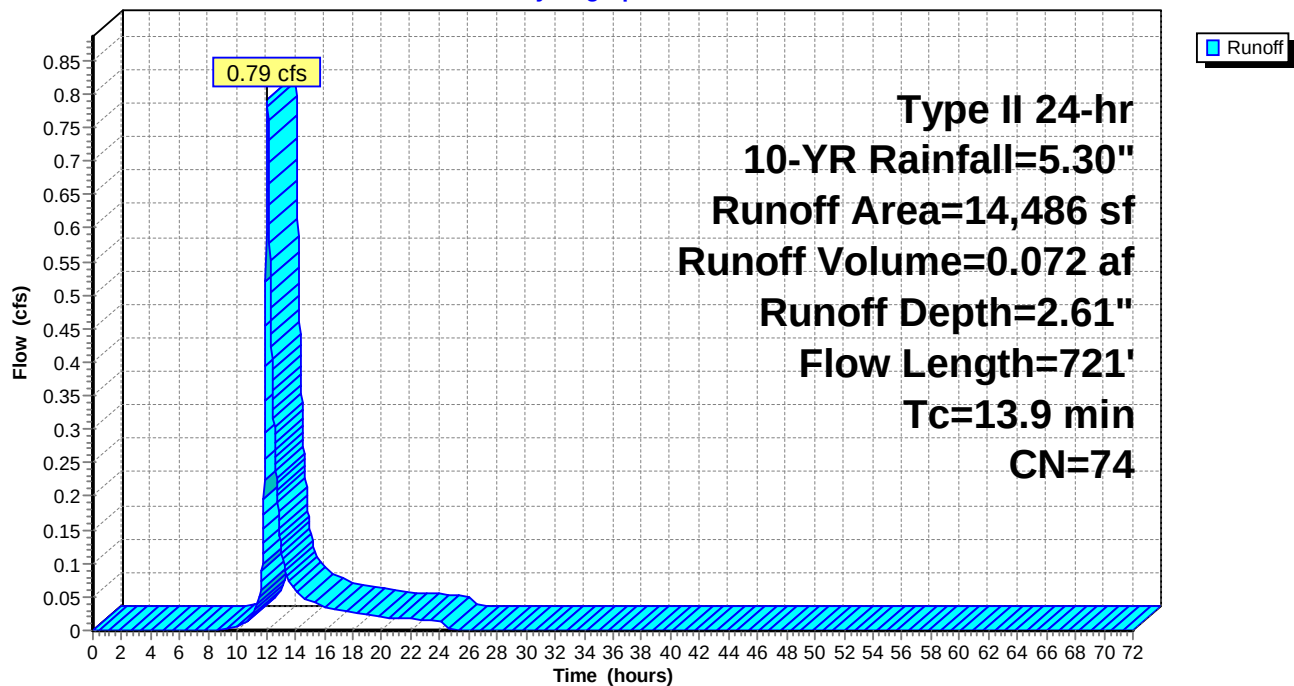
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 10-YR Rainfall=5.30"

Area (sf)	CN	Description
14,486	74	>75% Grass cover, Good, HSG C
14,486		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.8	55	0.0100	0.12		Sheet Flow, Sideyard Grass: Short n= 0.150 P2= 3.40"
5.6	496	0.0053	1.48		Shallow Concentrated Flow, Gutter Pan Paved Kv= 20.3 fps
0.5	170	0.0087	5.80	7.12	Pipe Channel, Pipe from CI on West Side of Jowite to SDMH-20201 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.011 Concrete pipe, straight & clean
13.9	721	Total			

Subcatchment 61: West DA to Jowite

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Reach VG-2: Valley Gutter 2

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

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min

Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs

Average Depth at Peak Storage= 0.00'

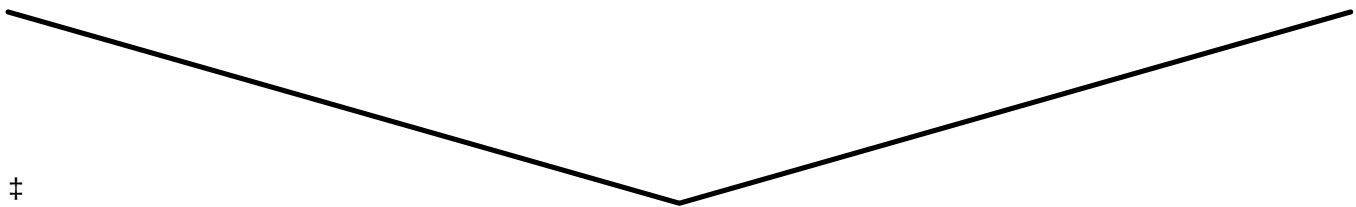
Bank-Full Depth= 0.08' Flow Area= 0.1 sf, Capacity= 0.14 cfs

0.00' x 0.08' deep channel, n= 0.011 Concrete pipe, straight & clean

Side Slope Z-value= 18.0 ' Top Width= 2.88'

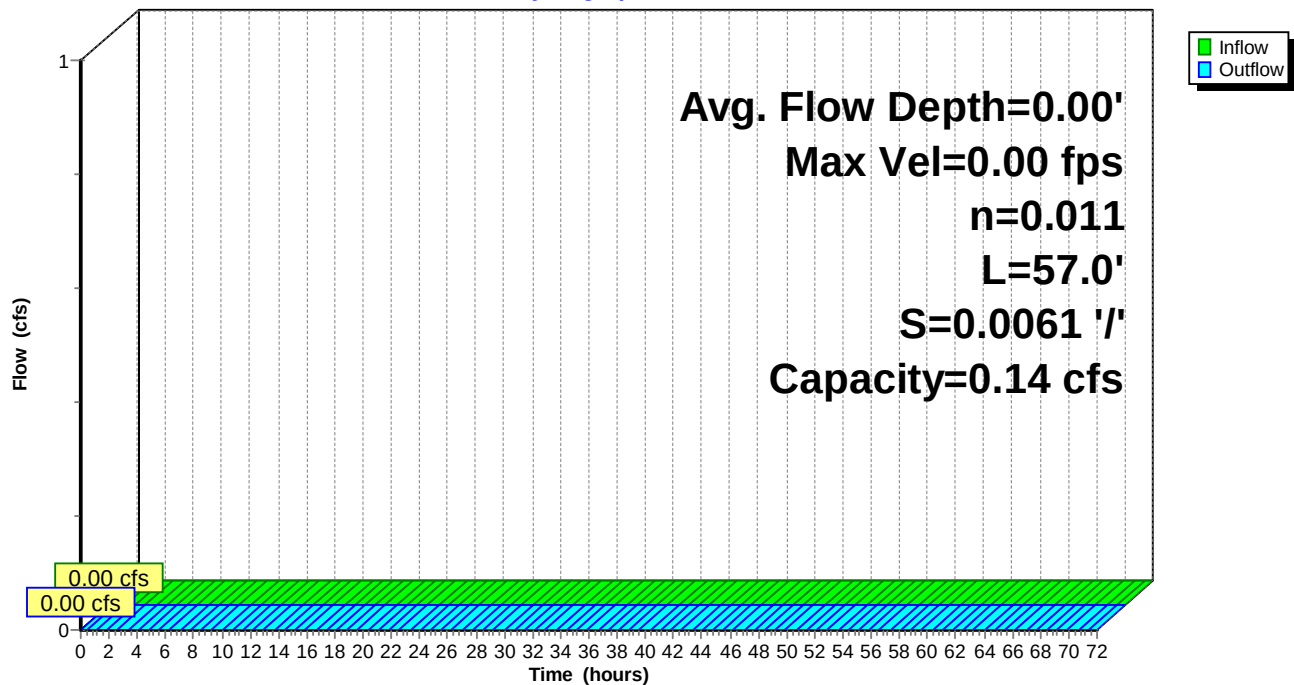
Length= 57.0' Slope= 0.0061 ' / '

Inlet Invert= 15.10', Outlet Invert= 14.75'



Reach VG-2: Valley Gutter 2

Hydrograph



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

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Summary for Reach VG-3: Valley Gutter 3

Inflow = 0.00 cfs @ 12.38 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 12.53 hrs, Volume= 0.000 af, Atten= 33%, Lag= 8.6 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min

Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 12.53 hrs

Average Depth at Peak Storage= 0.00'

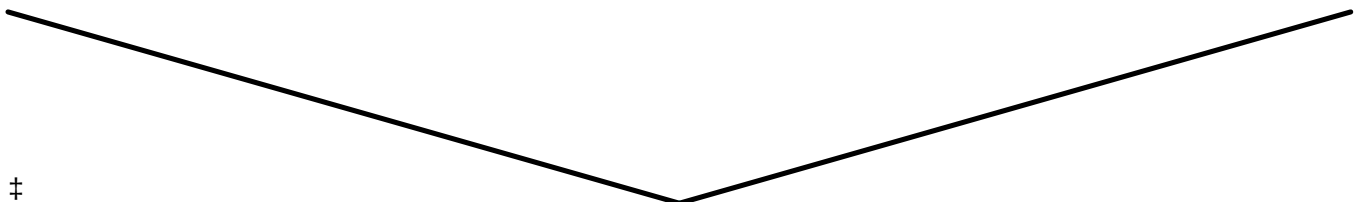
Bank-Full Depth= 0.08' Flow Area= 0.1 sf, Capacity= 0.13 cfs

0.00' x 0.08' deep channel, n= 0.011 Concrete pipe, straight & clean

Side Slope Z-value= 18.0 ' Top Width= 2.88'

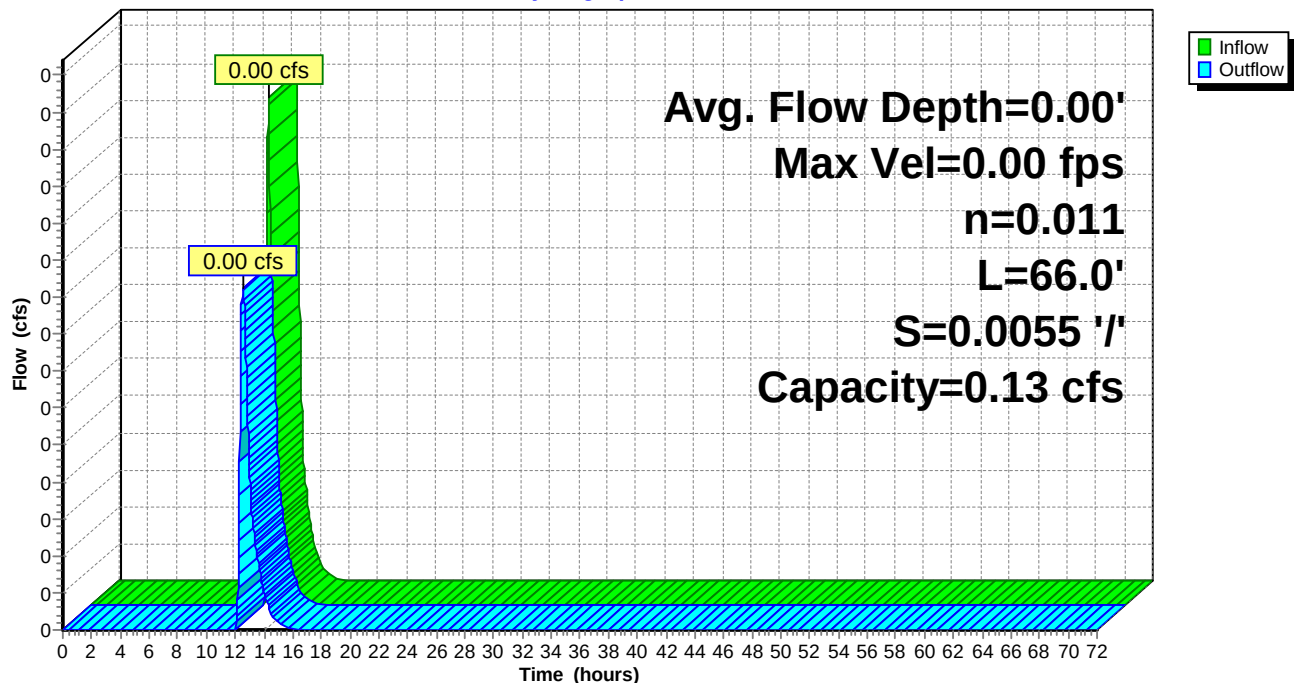
Length= 66.0' Slope= 0.0055 '/'

Inlet Invert= 15.11', Outlet Invert= 14.75'



Reach VG-3: Valley Gutter 3

Hydrograph



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

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Summary for Reach VG-4: Valley Gutter 4

Inflow = 0.00 cfs @ 12.18 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 12.38 hrs, Volume= 0.000 af, Atten= 67%, Lag= 12.5 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min

Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 12.38 hrs

Average Depth at Peak Storage= 0.00'

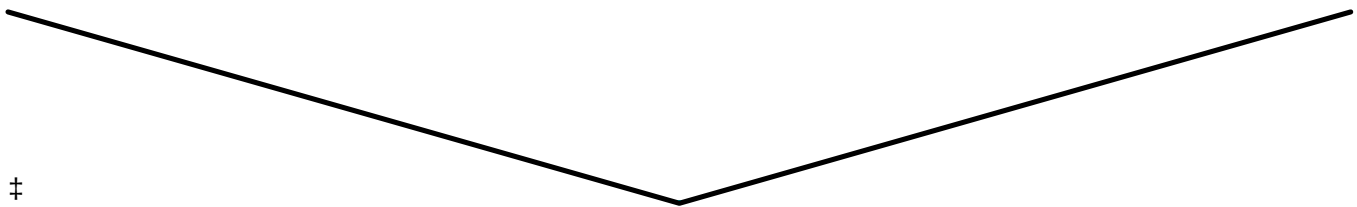
Bank-Full Depth= 0.08' Flow Area= 0.1 sf, Capacity= 0.14 cfs

0.00' x 0.08' deep channel, n= 0.011 Concrete pipe, straight & clean

Side Slope Z-value= 18.0 ' Top Width= 2.88'

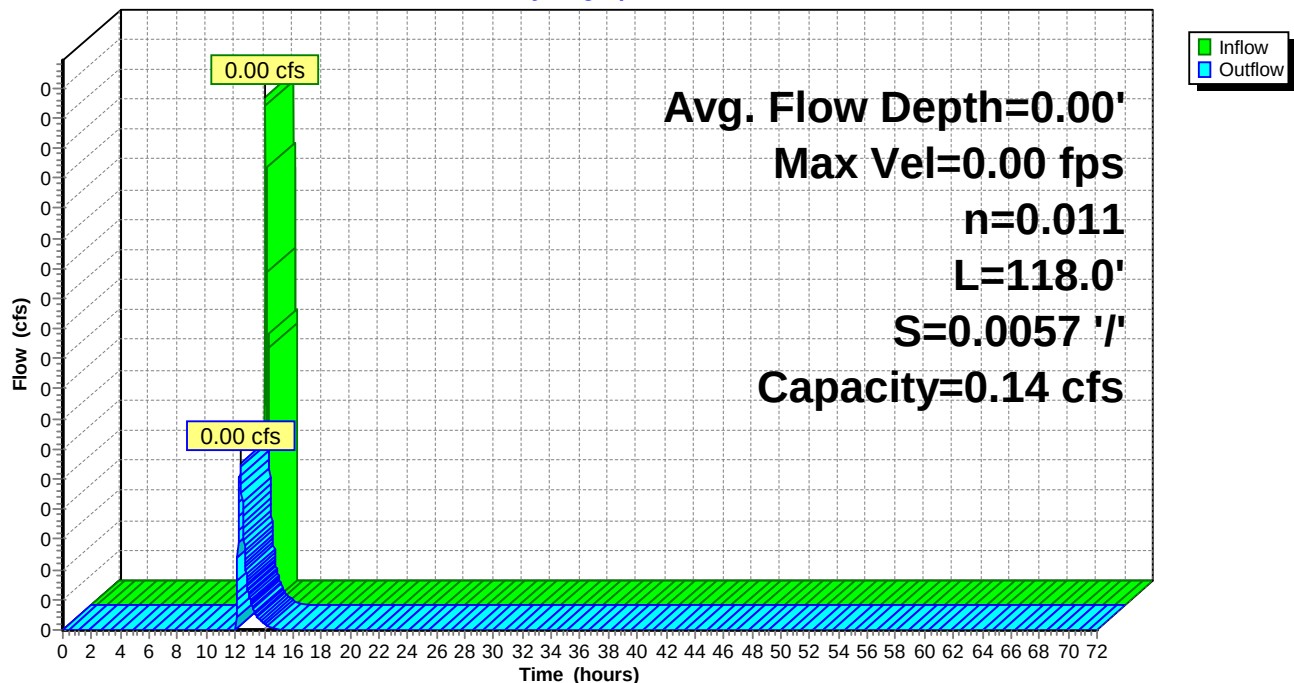
Length= 118.0' Slope= 0.0057 ' / '

Inlet Invert= 15.78', Outlet Invert= 15.11'



Reach VG-4: Valley Gutter 4

Hydrograph



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

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Summary for Reach VG-5: Valley Gutter 5

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

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min

Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs

Average Depth at Peak Storage= 0.00'

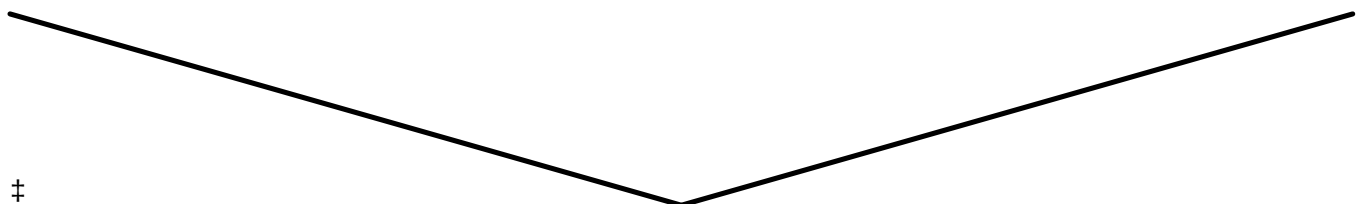
Bank-Full Depth= 0.08' Flow Area= 0.1 sf, Capacity= 0.18 cfs

0.00' x 0.08' deep channel, n= 0.011 Concrete pipe, straight & clean

Side Slope Z-value= 18.0 ' Top Width= 2.88'

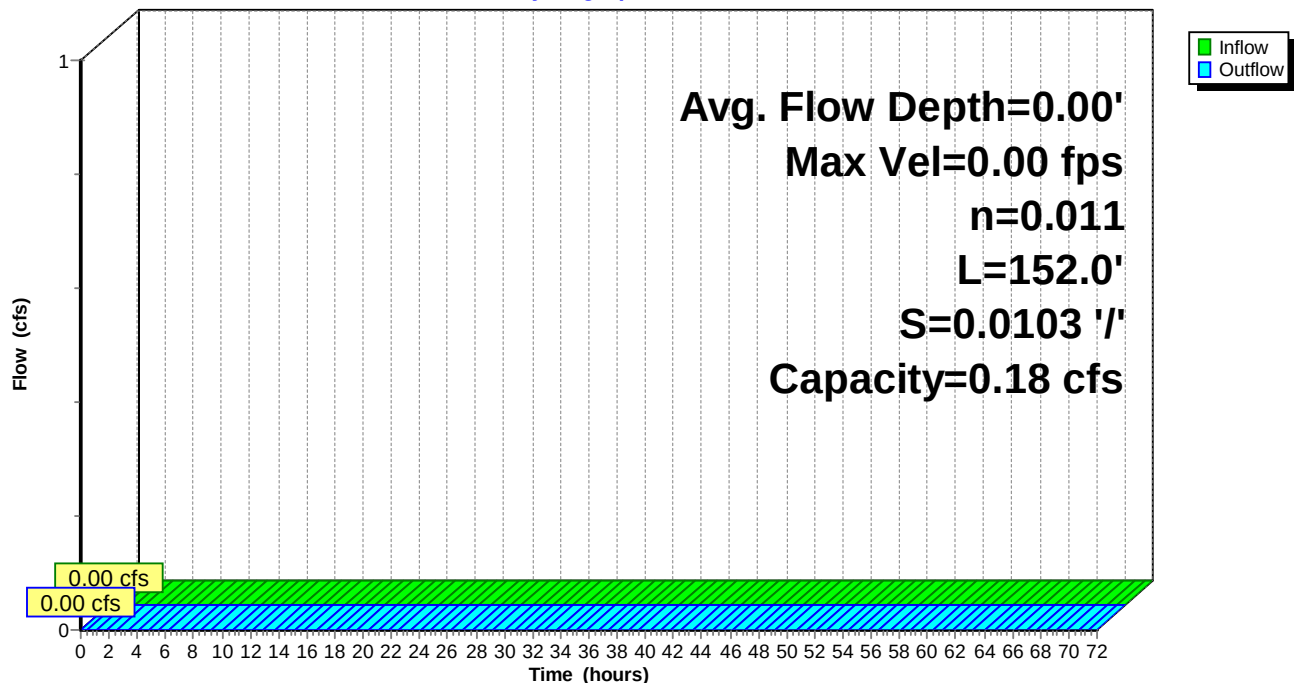
Length= 152.0' Slope= 0.0103 '/'

Inlet Invert= 17.34', Outlet Invert= 15.78'



Reach VG-5: Valley Gutter 5

Hydrograph



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

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Summary for Pond EX-I-2: EX-I-2

Inflow Area = 0.921 ac, 75.76% Impervious, Inflow Depth = 4.35" for 10-YR event
Inflow = 2.69 cfs @ 12.04 hrs, Volume= 0.334 af
Outflow = 2.69 cfs @ 12.04 hrs, Volume= 0.334 af, Atten= 0%, Lag= 0.0 min
Primary = 2.69 cfs @ 12.04 hrs, Volume= 0.334 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Peak Elev= 14.01' @ 12.03 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	14.50'	2.0" x 2.0" Horiz. Orifice/Grate X 11.00 columns X 11 rows C= 0.600 in 24.0" x 24.0" Grate (84% open area) Limited to weir flow at low heads
#2	Primary	12.30'	12.0" Round CMP_Round 12" L= 172.1' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 12.30' / 12.00' S= 0.0017 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf

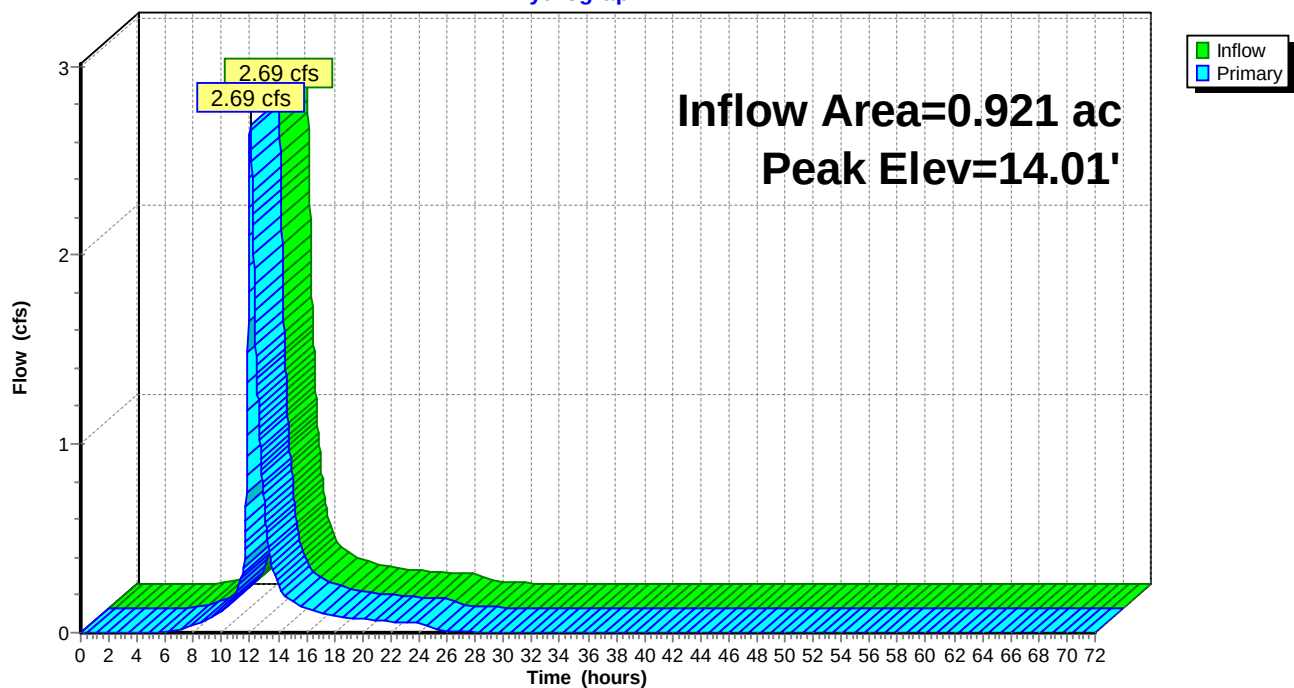
Primary OutFlow Max=2.69 cfs @ 12.04 hrs HW=14.01' TW=13.03' (Dynamic Tailwater)

1=Orifice/Grate (Controls 0.00 cfs)

2=CMP_Round 12" (Outlet Controls 2.69 cfs @ 3.43 fps)

Pond EX-I-2: EX-I-2

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Pond P19: Planter #19

Inflow Area = 0.018 ac, 93.09% Impervious, Inflow Depth = 4.83" for 10-YR event
 Inflow = 0.16 cfs @ 11.90 hrs, Volume= 0.007 af
 Outflow = 0.15 cfs @ 11.91 hrs, Volume= 0.007 af, Atten= 4%, Lag= 0.8 min
 Primary = 0.15 cfs @ 11.91 hrs, Volume= 0.007 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2
 Peak Elev= 13.83' @ 11.91 hrs Surf.Area= 55 sf Storage= 13 cf

Plug-Flow detention time= 21.1 min calculated for 0.007 af (99% of inflow)
 Center-of-Mass det. time= 11.2 min (763.2 - 752.0)

Volume	Invert	Avail.Storage	Storage Description	
#1	13.24'	143 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.24	55	0.0	0	0
13.25	55	40.0	0	0
16.99	55	40.0	82	82
17.00	55	100.0	1	83
18.00	55	100.0	55	138
18.01	1,000	100.0	5	143

Device	Routing	Invert	Outlet Devices
#1	Primary	13.45'	4.0" Round Culvert L= 26.8' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.45' / 13.10' S= 0.0131 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.15 cfs @ 11.91 hrs HW=13.82' TW=13.19' (Dynamic Tailwater)

↑ **1=Culvert** (Inlet Controls 0.15 cfs @ 1.72 fps)

Naima - Phase 2 - Proposed HydroCAD

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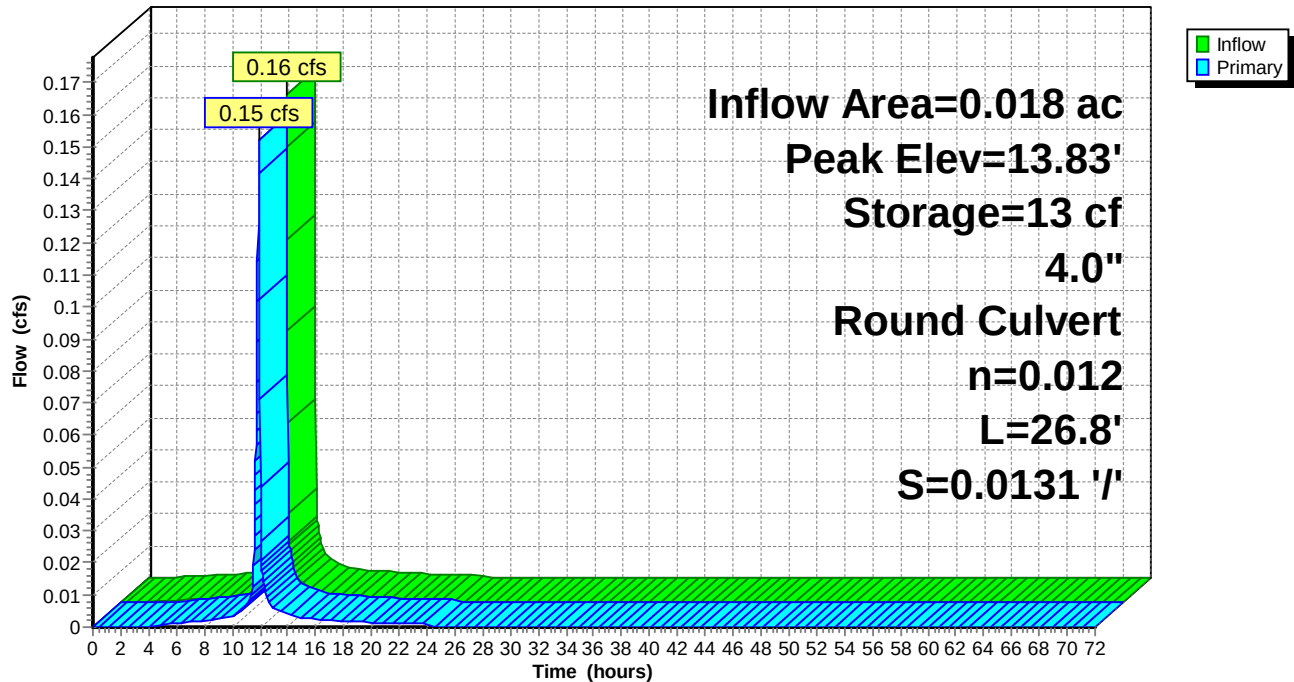
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Type II 24-hr 10-YR Rainfall=5.30"

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Pond P19: Planter #19

Hydrograph



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

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Summary for Pond P20: Planter #20

Inflow Area = 0.008 ac, 91.74% Impervious, Inflow Depth = 4.83" for 10-YR event
 Inflow = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af
 Outflow = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af, Atten= 2%, Lag= 0.3 min
 Primary = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 15.80' Surf.Area= 30 sf Storage= 31 cf

Peak Elev= 16.01' @ 11.90 hrs Surf.Area= 30 sf Storage= 33 cf (3 cf above start)

Plug-Flow detention time= 144.5 min calculated for 0.003 af (79% of inflow)

Center-of-Mass det. time= 2.6 min (754.6 - 752.0)

Volume	Invert	Avail.Storage	Storage Description
#1	13.24'	80 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.24	30	0.0	0	0
13.25	30	40.0	0	0
16.99	30	40.0	45	45
17.00	30	100.0	0	45
18.00	30	100.0	30	75
18.01	1,000	100.0	5	80

Device	Routing	Invert	Outlet Devices
#1	Primary	15.80'	4.0" Round Culvert L= 20.1' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.45' / 15.80' S= -0.1169 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.07 cfs @ 11.90 hrs HW=16.01' TW=14.55' (Dynamic Tailwater)↑**1=Culvert** (Inlet Controls 0.07 cfs @ 1.23 fps)

Naima - Phase 2 - Proposed HydroCAD

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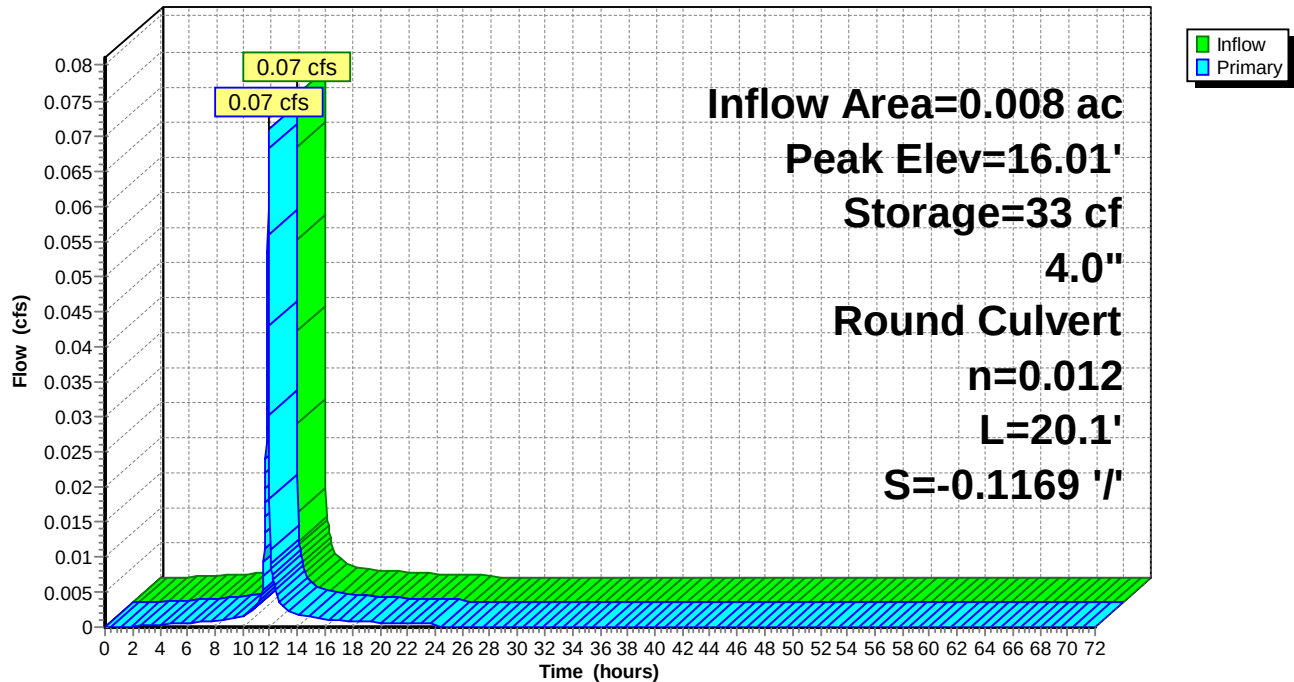
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Type II 24-hr 10-YR Rainfall=5.30"

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Pond P20: Planter #20

Hydrograph



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

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Summary for Pond P21: Planter #21

Inflow Area = 0.005 ac, 90.87% Impervious, Inflow Depth = 4.83" for 10-YR event
 Inflow = 0.04 cfs @ 11.90 hrs, Volume= 0.002 af
 Outflow = 0.04 cfs @ 11.90 hrs, Volume= 0.002 af, Atten= 2%, Lag= 0.2 min
 Primary = 0.04 cfs @ 11.90 hrs, Volume= 0.002 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Peak Elev= 13.61' @ 11.90 hrs Surf.Area= 20 sf Storage= 3 cf

Plug-Flow detention time= 25.2 min calculated for 0.002 af (98% of inflow)

Center-of-Mass det. time= 12.4 min (764.4 - 752.0)

Volume	Invert	Avail.Storage	Storage Description	
#1	13.24'	55 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.24	20	0.0	0	0
13.25	20	40.0	0	0
16.99	20	40.0	30	30
17.00	20	100.0	0	30
18.00	20	100.0	20	50
18.01	1,000	100.0	5	55

Device	Routing	Invert	Outlet Devices
#1	Primary	13.45'	4.0" Round Culvert L= 30.2' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.45' / 12.89' S= 0.0185 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.04 cfs @ 11.90 hrs HW=13.61' TW=13.17' (Dynamic Tailwater)↑ **1=Culvert** (Inlet Controls 0.04 cfs @ 1.06 fps)

Naima - Phase 2 - Proposed HydroCAD

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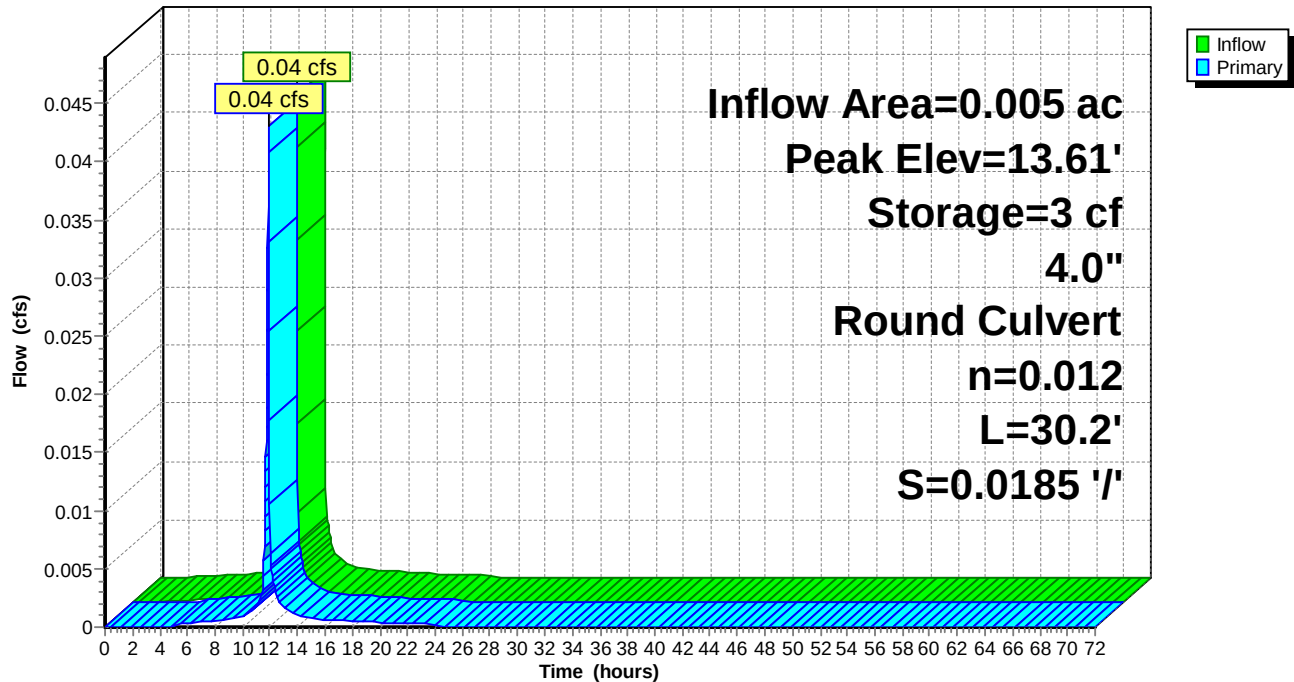
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Type II 24-hr 10-YR Rainfall=5.30"

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Pond P21: Planter #21

Hydrograph



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

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Summary for Pond P22: Planter #22

Inflow Area = 0.028 ac, 93.42% Impervious, Inflow Depth = 4.83" for 10-YR event
 Inflow = 0.24 cfs @ 11.90 hrs, Volume= 0.011 af
 Outflow = 0.21 cfs @ 11.93 hrs, Volume= 0.011 af, Atten= 15%, Lag= 1.6 min
 Primary = 0.21 cfs @ 11.93 hrs, Volume= 0.011 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 15.54' Surf.Area= 80 sf Storage= 74 cf

Peak Elev= 16.30' @ 11.93 hrs Surf.Area= 80 sf Storage= 98 cf (24 cf above start)

Plug-Flow detention time= 121.5 min calculated for 0.010 af (85% of inflow)

Center-of-Mass det. time= 4.1 min (756.1 - 752.0)

Volume	Invert	Avail.Storage	Storage Description
#1	13.24'	206 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.24	80	0.0	0	0
13.25	80	40.0	0	0
16.99	80	40.0	120	120
17.00	80	100.0	1	121
18.00	80	100.0	80	201
18.01	1,000	100.0	5	206

Device	Routing	Invert	Outlet Devices
#1	Primary	15.54'	4.0" Round Culvert L= 59.7' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.45' / 15.54' S= -0.0350 ' /' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.20 cfs @ 11.93 hrs HW=16.29' TW=14.59' (Dynamic Tailwater)↑ **1=Culvert** (Outlet Controls 0.20 cfs @ 2.35 fps)

Naima - Phase 2 - Proposed HydroCAD

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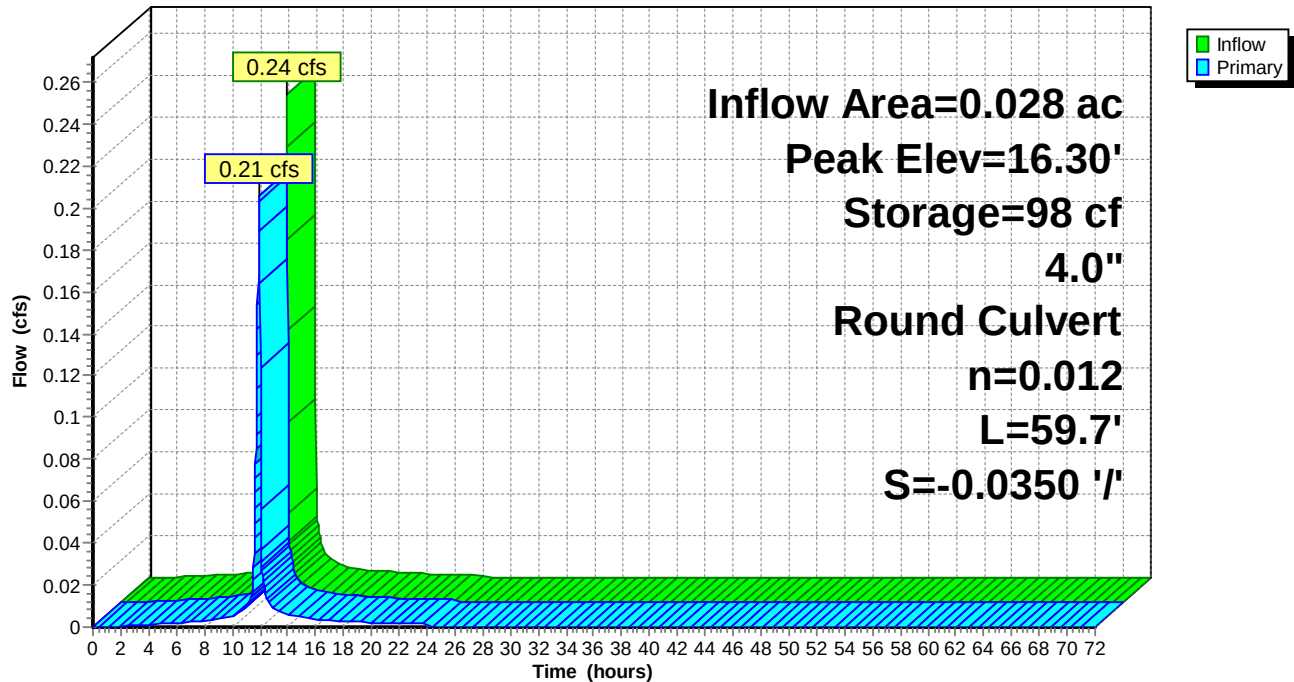
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Type II 24-hr 10-YR Rainfall=5.30"

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Pond P22: Planter #22

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Pond P23: Planter #23

Inflow Area = 0.016 ac, 92.84% Impervious, Inflow Depth = 4.83" for 10-YR event
 Inflow = 0.14 cfs @ 11.90 hrs, Volume= 0.006 af
 Outflow = 0.12 cfs @ 11.90 hrs, Volume= 0.006 af, Atten= 11%, Lag= 0.2 min
 Primary = 0.12 cfs @ 11.90 hrs, Volume= 0.006 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2
 Peak Elev= 13.35' @ 11.92 hrs Surf.Area= 50 sf Storage= 12 cf

Plug-Flow detention time= 21.4 min calculated for 0.006 af (98% of inflow)
 Center-of-Mass det. time= 11.6 min (763.6 - 752.0)

Volume	Invert	Avail.Storage	Storage Description	
#1	12.74'	131 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
12.74	50	0.0	0	0
12.75	50	40.0	0	0
16.49	50	40.0	75	75
16.50	50	100.0	1	76
17.50	50	100.0	50	126
17.51	1,000	100.0	5	131

Device	Routing	Invert	Outlet Devices
#1	Primary	12.95'	4.0" Round Culvert L= 20.7' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 12.95' / 12.81' S= 0.0068 '/' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.13 cfs @ 11.90 hrs HW=13.32' TW=13.16' (Dynamic Tailwater)

↑ **1=Culvert** (Outlet Controls 0.13 cfs @ 1.64 fps)

Naima - Phase 2 - Proposed HydroCAD

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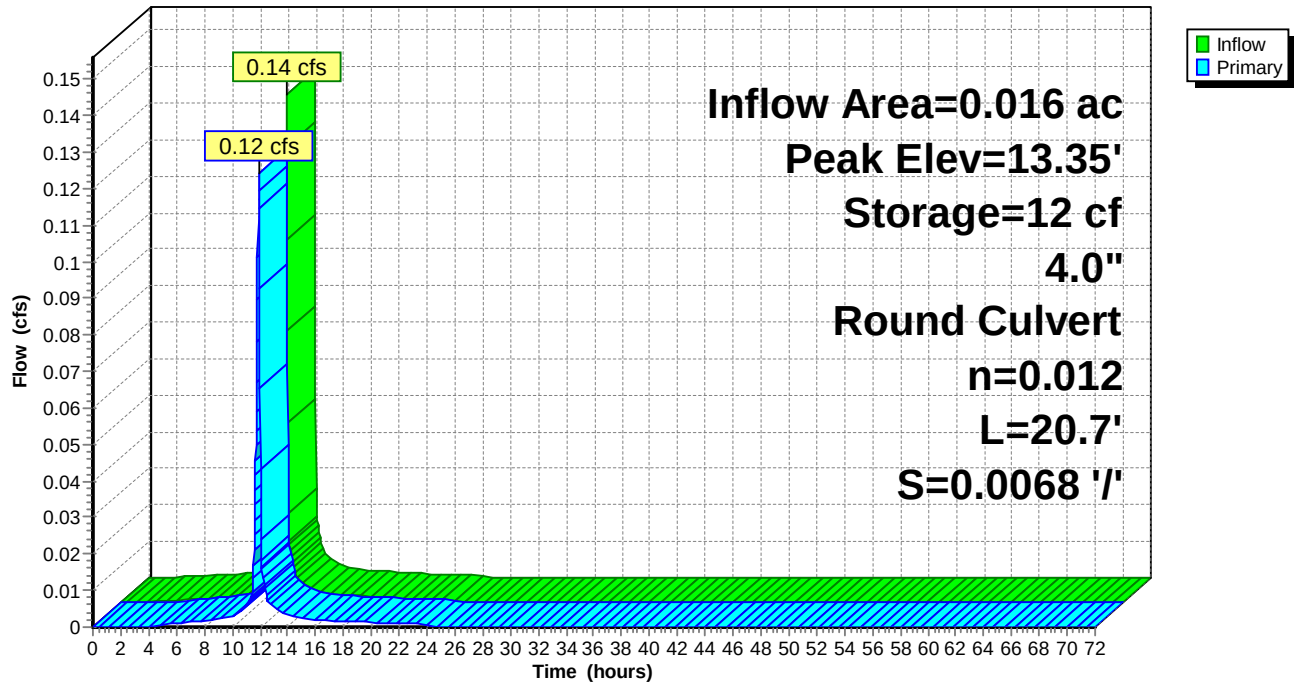
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Type II 24-hr 10-YR Rainfall=5.30"

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Pond P23: Planter #23

Hydrograph



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

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Summary for Pond P24: Planter #24

Inflow Area = 0.013 ac, 93.19% Impervious, Inflow Depth = 4.83" for 10-YR event
 Inflow = 0.12 cfs @ 11.90 hrs, Volume= 0.005 af
 Outflow = 0.11 cfs @ 11.90 hrs, Volume= 0.005 af, Atten= 3%, Lag= 0.4 min
 Primary = 0.11 cfs @ 11.90 hrs, Volume= 0.005 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 15.45' Surf.Area= 40 sf Storage= 43 cf

Peak Elev= 15.73' @ 11.90 hrs Surf.Area= 40 sf Storage= 48 cf (5 cf above start)

Plug-Flow detention time= 134.3 min calculated for 0.004 af (82% of inflow)

Center-of-Mass det. time= 2.8 min (754.8 - 752.0)

Volume	Invert	Avail.Storage	Storage Description
#1	12.74'	106 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
12.74	40	0.0	0	0
12.75	40	40.0	0	0
16.49	40	40.0	60	60
16.50	40	100.0	0	60
17.50	40	100.0	40	100
17.51	1,000	100.0	5	106

Device	Routing	Invert	Outlet Devices
#1	Primary	15.45'	4.0" Round Culvert L= 36.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 12.95' / 15.45' S= -0.0683 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.11 cfs @ 11.90 hrs HW=15.73' TW=14.42' (Dynamic Tailwater)↑ **1=Culvert** (Inlet Controls 0.11 cfs @ 1.43 fps)

Naima - Phase 2 - Proposed HydroCAD

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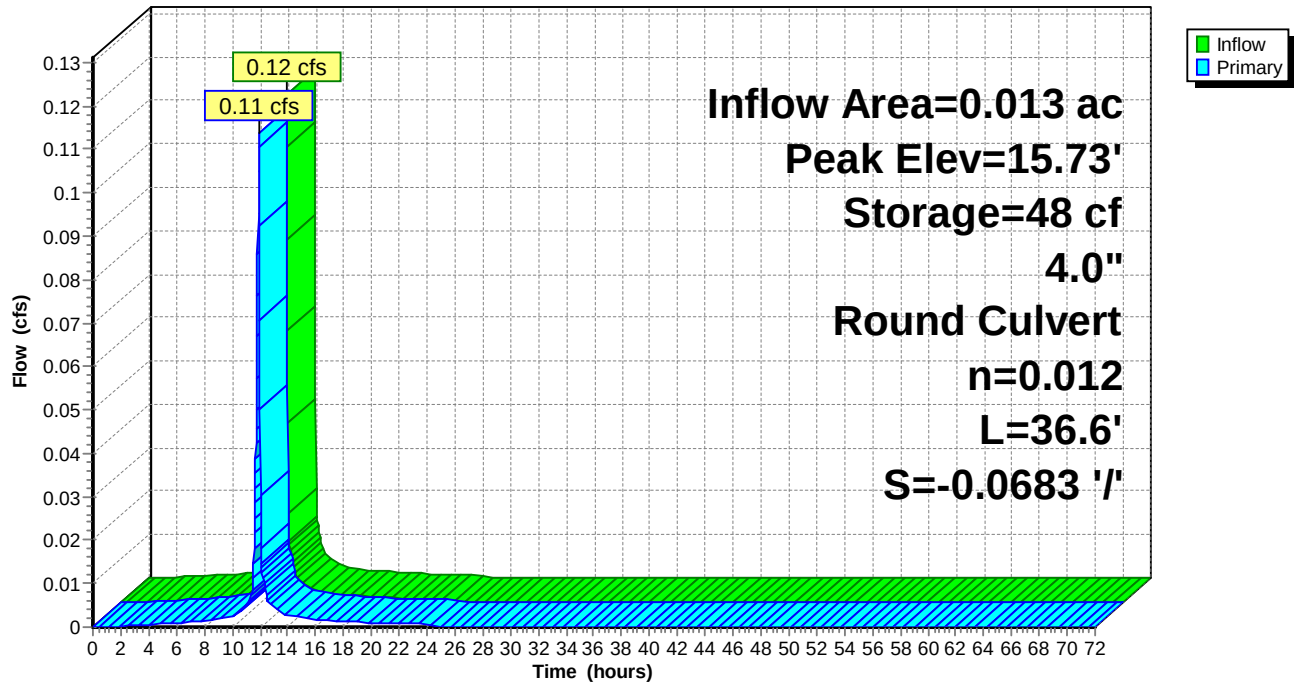
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Type II 24-hr 10-YR Rainfall=5.30"

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Pond P24: Planter #24

Hydrograph



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

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Summary for Pond P25: Planter #25

Inflow Area = 0.014 ac, 93.22% Impervious, Inflow Depth = 4.83" for 10-YR event
 Inflow = 0.12 cfs @ 11.90 hrs, Volume= 0.005 af
 Outflow = 0.11 cfs @ 11.90 hrs, Volume= 0.005 af, Atten= 3%, Lag= 0.4 min
 Primary = 0.11 cfs @ 11.90 hrs, Volume= 0.005 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 15.32' Surf.Area= 40 sf Storage= 41 cf

Peak Elev= 15.61' @ 11.90 hrs Surf.Area= 40 sf Storage= 46 cf (5 cf above start)

Plug-Flow detention time= 130.6 min calculated for 0.005 af (83% of inflow)

Center-of-Mass det. time= 2.8 min (754.8 - 752.0)

Volume	Invert	Avail.Storage	Storage Description	
#1	12.74'	106 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
12.74	40	0.0	0	0
12.75	40	40.0	0	0
16.49	40	40.0	60	60
16.50	40	100.0	0	60
17.50	40	100.0	40	100
17.51	1,000	100.0	5	106

Device	Routing	Invert	Outlet Devices	
#1	Primary	15.32'	4.0" Round Culvert L= 28.9' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 12.95' / 15.32' S= -0.0820 ' / Cc= 0.900 n= 0.012, Flow Area= 0.09 sf	

Primary OutFlow Max=0.11 cfs @ 11.90 hrs HW=15.60' TW=14.42' (Dynamic Tailwater)↑ **1=Culvert** (Inlet Controls 0.11 cfs @ 1.43 fps)

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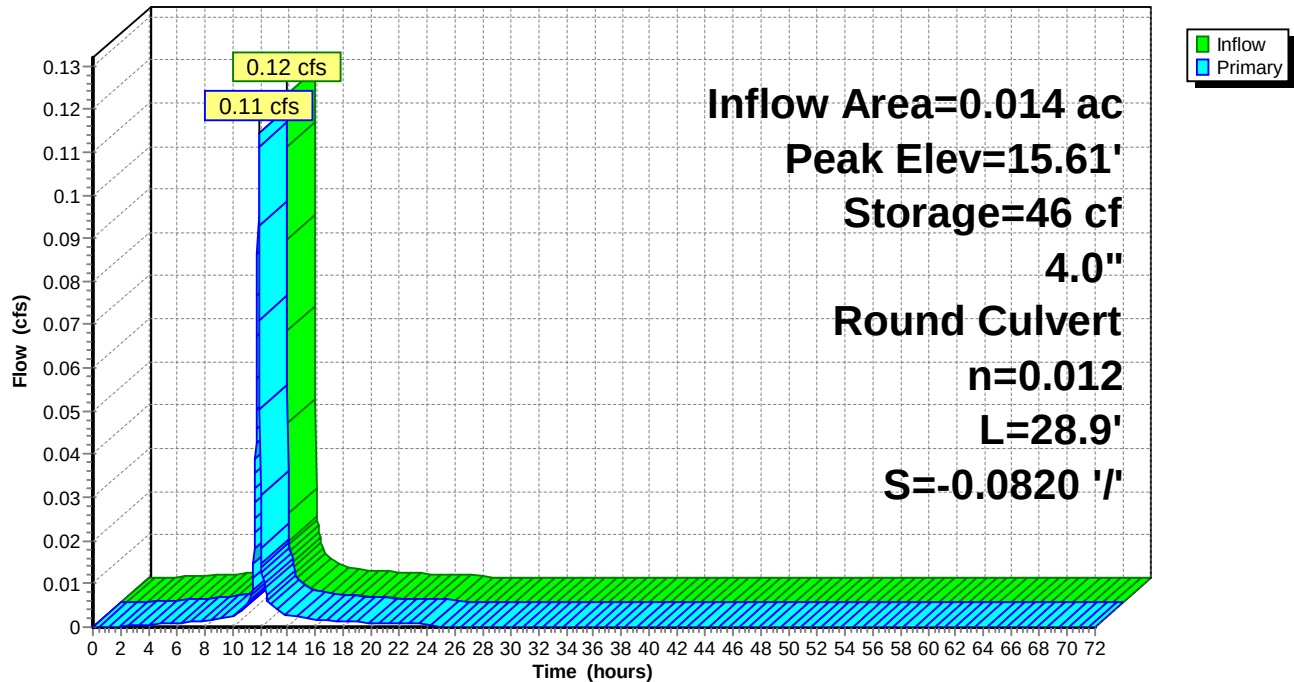
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Type II 24-hr 10-YR Rainfall=5.30"

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Pond P25: Planter #25

Hydrograph



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

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Summary for Pond P26: Planter #26

Inflow Area = 0.025 ac, 93.61% Impervious, Inflow Depth = 4.83" for 10-YR event
 Inflow = 0.22 cfs @ 11.90 hrs, Volume= 0.010 af
 Outflow = 0.18 cfs @ 11.91 hrs, Volume= 0.010 af, Atten= 16%, Lag= 0.9 min
 Primary = 0.18 cfs @ 11.91 hrs, Volume= 0.010 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2
 Peak Elev= 13.55' @ 11.93 hrs Surf.Area= 70 sf Storage= 23 cf

Plug-Flow detention time= 19.8 min calculated for 0.010 af (99% of inflow)
 Center-of-Mass det. time= 11.1 min (763.0 - 752.0)

Volume	Invert	Avail.Storage	Storage Description	
#1	12.74'	181 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
12.74	70	0.0	0	0
12.75	70	40.0	0	0
16.49	70	40.0	105	105
16.50	70	100.0	1	106
17.50	70	100.0	70	176
17.51	1,000	100.0	5	181

Device	Routing	Invert	Outlet Devices
#1	Primary	12.95'	4.0" Round Culvert L= 24.5' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 12.95' / 12.56' S= 0.0159 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.19 cfs @ 11.91 hrs HW=13.53' TW=13.20' (Dynamic Tailwater)

↑ **1=Culvert** (Outlet Controls 0.19 cfs @ 2.13 fps)

Naima - Phase 2 - Proposed HydroCAD

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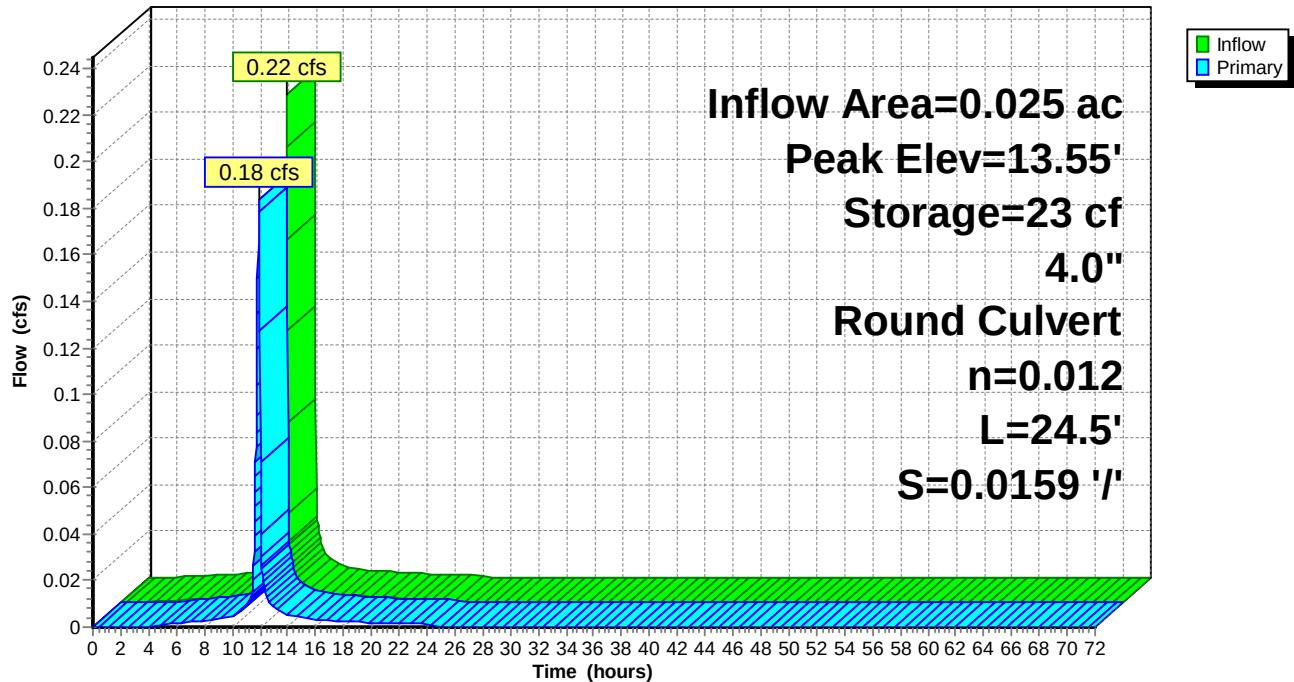
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Pond P26: Planter #26

Hydrograph



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

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Summary for Pond P27: Planter #27

Inflow Area = 0.008 ac, 91.48% Impervious, Inflow Depth = 4.83" for 10-YR event
 Inflow = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af
 Outflow = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af, Atten= 2%, Lag= 0.3 min
 Primary = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 15.08' Surf.Area= 30 sf Storage= 28 cf

Peak Elev= 15.29' @ 11.90 hrs Surf.Area= 30 sf Storage= 31 cf (2 cf above start)

Plug-Flow detention time= 140.1 min calculated for 0.003 af (80% of inflow)

Center-of-Mass det. time= 2.7 min (754.7 - 752.0)

Volume	Invert	Avail.Storage	Storage Description
#1	12.74'	80 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
12.74	30	0.0	0	0
12.75	30	40.0	0	0
16.49	30	40.0	45	45
16.50	30	100.0	0	45
17.50	30	100.0	30	75
17.51	1,000	100.0	5	80

Device	Routing	Invert	Outlet Devices
#1	Primary	15.08'	4.0" Round Culvert L= 10.8' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 12.95' / 15.08' S= -0.1972 ' / Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.07 cfs @ 11.90 hrs HW=15.28' TW=14.42' (Dynamic Tailwater)↑ **1=Culvert** (Inlet Controls 0.07 cfs @ 1.22 fps)

Naima - Phase 2 - Proposed HydroCAD

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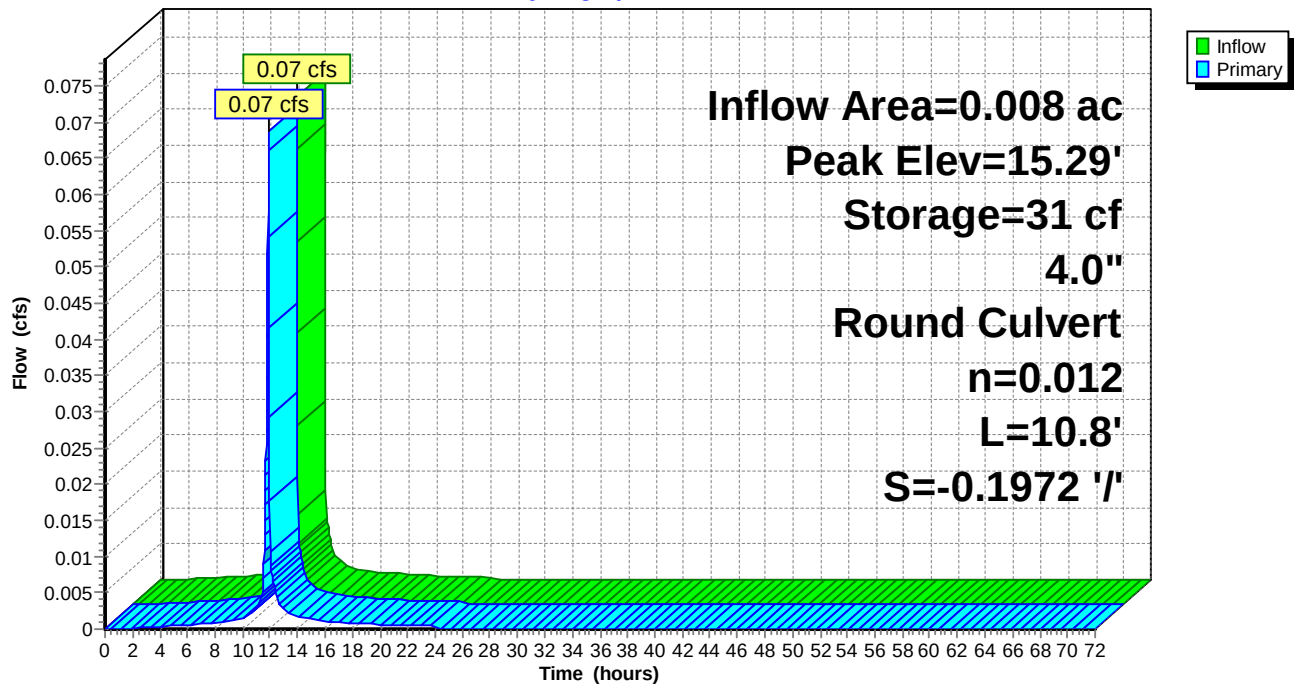
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Type II 24-hr 10-YR Rainfall=5.30"

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Pond P27: Planter #27

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

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Summary for Pond P28: Planter #28

Inflow Area = 0.018 ac, 93.09% Impervious, Inflow Depth = 4.83" for 10-YR event
 Inflow = 0.16 cfs @ 11.90 hrs, Volume= 0.007 af
 Outflow = 0.15 cfs @ 11.91 hrs, Volume= 0.007 af, Atten= 4%, Lag= 0.8 min
 Primary = 0.15 cfs @ 11.91 hrs, Volume= 0.007 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Peak Elev= 13.83' @ 11.91 hrs Surf.Area= 55 sf Storage= 13 cf

Plug-Flow detention time= 20.7 min calculated for 0.007 af (99% of inflow)

Center-of-Mass det. time= 11.2 min (763.2 - 752.0)

Volume	Invert	Avail.Storage	Storage Description	
#1	13.24'	143 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.24	55	0.0	0	0
13.25	55	40.0	0	0
16.99	55	40.0	82	82
17.00	55	100.0	1	83
18.00	55	100.0	55	138
18.01	1,000	100.0	5	143

Device	Routing	Invert	Outlet Devices
#1	Primary	13.45'	4.0" Round Culvert L= 14.3' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.45' / 13.10' S= 0.0245 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.15 cfs @ 11.91 hrs HW=13.82' TW=13.19' (Dynamic Tailwater)↑ **1=Culvert** (Inlet Controls 0.15 cfs @ 1.72 fps)

Naima - Phase 2 - Proposed HydroCAD

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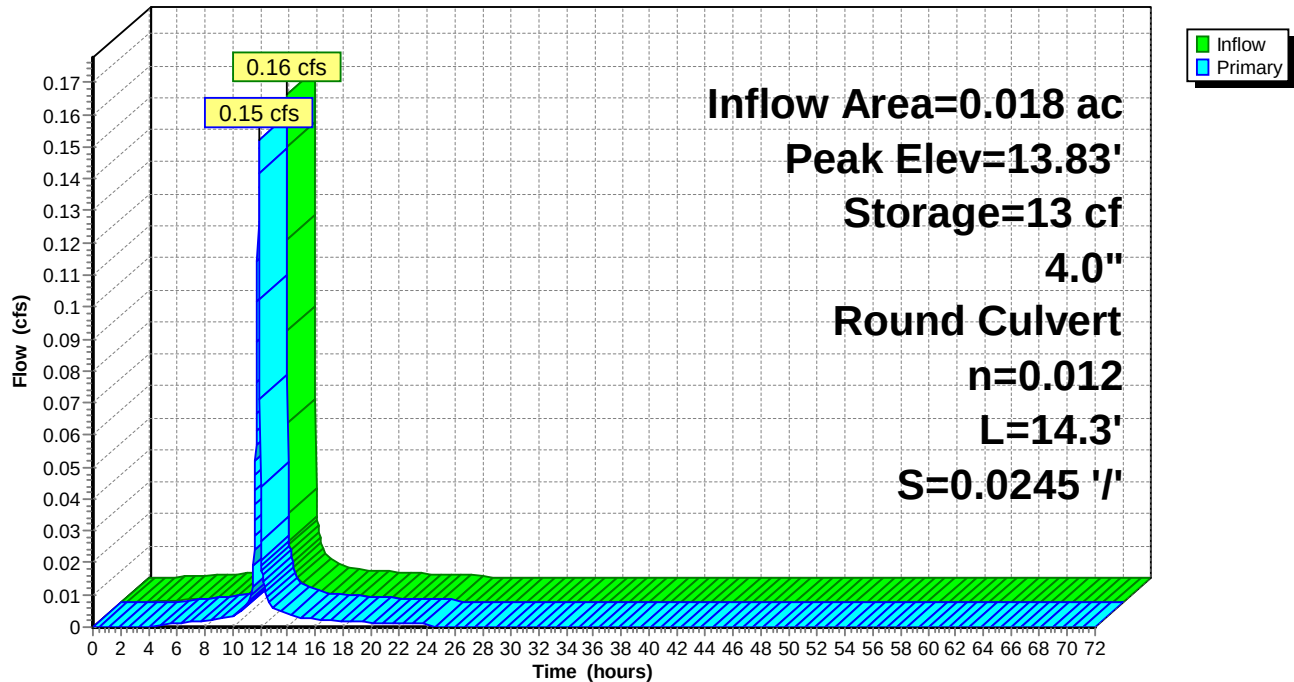
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Type II 24-hr 10-YR Rainfall=5.30"

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Pond P28: Planter #28

Hydrograph



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

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Summary for Pond P29: Planter #29

Inflow Area = 0.008 ac, 91.74% Impervious, Inflow Depth = 4.83" for 10-YR event
 Inflow = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af
 Outflow = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af, Atten= 2%, Lag= 0.3 min
 Primary = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 14.99' Surf.Area= 30 sf Storage= 21 cf

Peak Elev= 15.20' @ 11.90 hrs Surf.Area= 30 sf Storage= 24 cf (3 cf above start)

Plug-Flow detention time= 116.9 min calculated for 0.003 af (86% of inflow)

Center-of-Mass det. time= 2.6 min (754.6 - 752.0)

Volume	Invert	Avail.Storage	Storage Description
#1	13.24'	80 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.24	30	0.0	0	0
13.25	30	40.0	0	0
16.99	30	40.0	45	45
17.00	30	100.0	0	45
18.00	30	100.0	30	75
18.01	1,000	100.0	5	80

Device	Routing	Invert	Outlet Devices
#1	Primary	14.99'	4.0" Round Culvert L= 32.3' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.45' / 14.99' S= -0.0477 ' /' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.07 cfs @ 11.90 hrs HW=15.20' TW=14.50' (Dynamic Tailwater)↑**1=Culvert** (Inlet Controls 0.07 cfs @ 1.23 fps)

Naima - Phase 2 - Proposed HydroCAD

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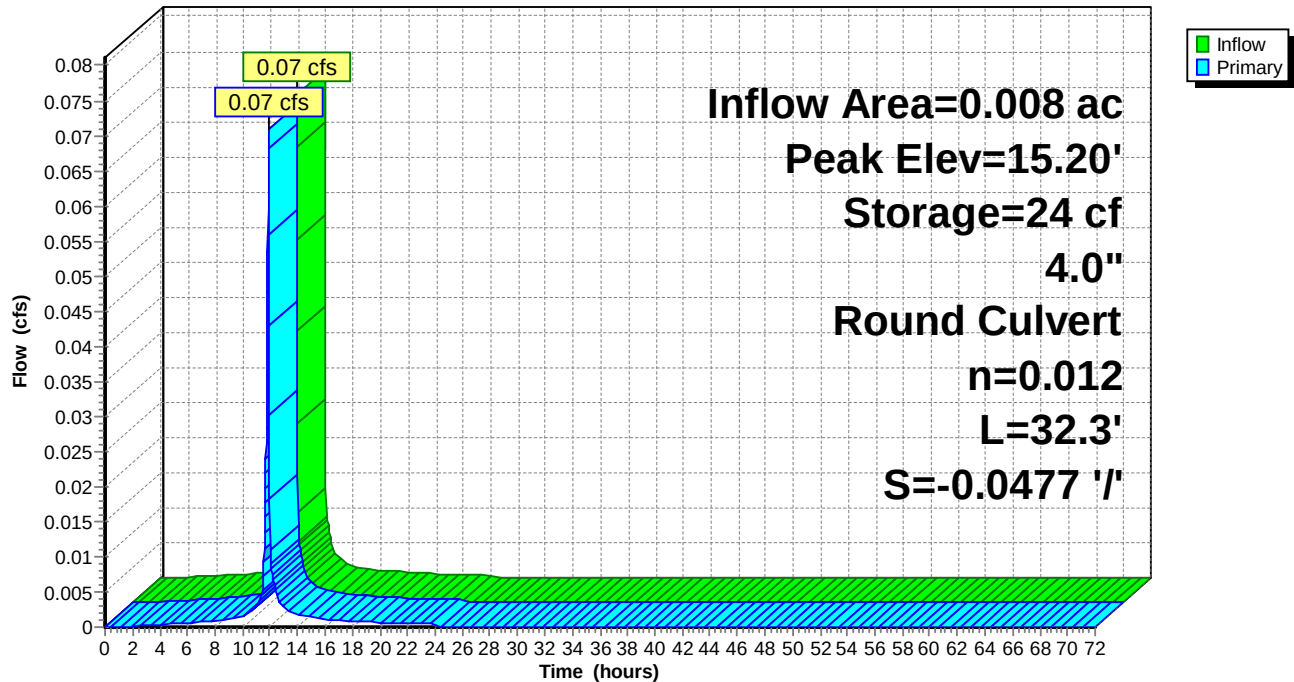
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Type II 24-hr 10-YR Rainfall=5.30"

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Pond P29: Planter #29

Hydrograph



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

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Summary for Pond P30: Planter #30

Inflow Area = 0.005 ac, 90.87% Impervious, Inflow Depth = 4.83" for 10-YR event
 Inflow = 0.04 cfs @ 11.90 hrs, Volume= 0.002 af
 Outflow = 0.04 cfs @ 11.90 hrs, Volume= 0.002 af, Atten= 2%, Lag= 0.2 min
 Primary = 0.04 cfs @ 11.90 hrs, Volume= 0.002 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Peak Elev= 13.61' @ 11.90 hrs Surf.Area= 20 sf Storage= 3 cf

Plug-Flow detention time= 24.9 min calculated for 0.002 af (98% of inflow)

Center-of-Mass det. time= 12.5 min (764.5 - 752.0)

Volume	Invert	Avail.Storage	Storage Description	
#1	13.24'	55 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.24	20	0.0	0	0
13.25	20	40.0	0	0
16.99	20	40.0	30	30
17.00	20	100.0	0	30
18.00	20	100.0	20	50
18.01	1,000	100.0	5	55

Device	Routing	Invert	Outlet Devices
#1	Primary	13.45'	4.0" Round Culvert L= 18.2' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.45' / 13.29' S= 0.0088 '/' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.04 cfs @ 11.90 hrs HW=13.61' TW=13.17' (Dynamic Tailwater)↑ **1=Culvert** (Inlet Controls 0.04 cfs @ 1.06 fps)

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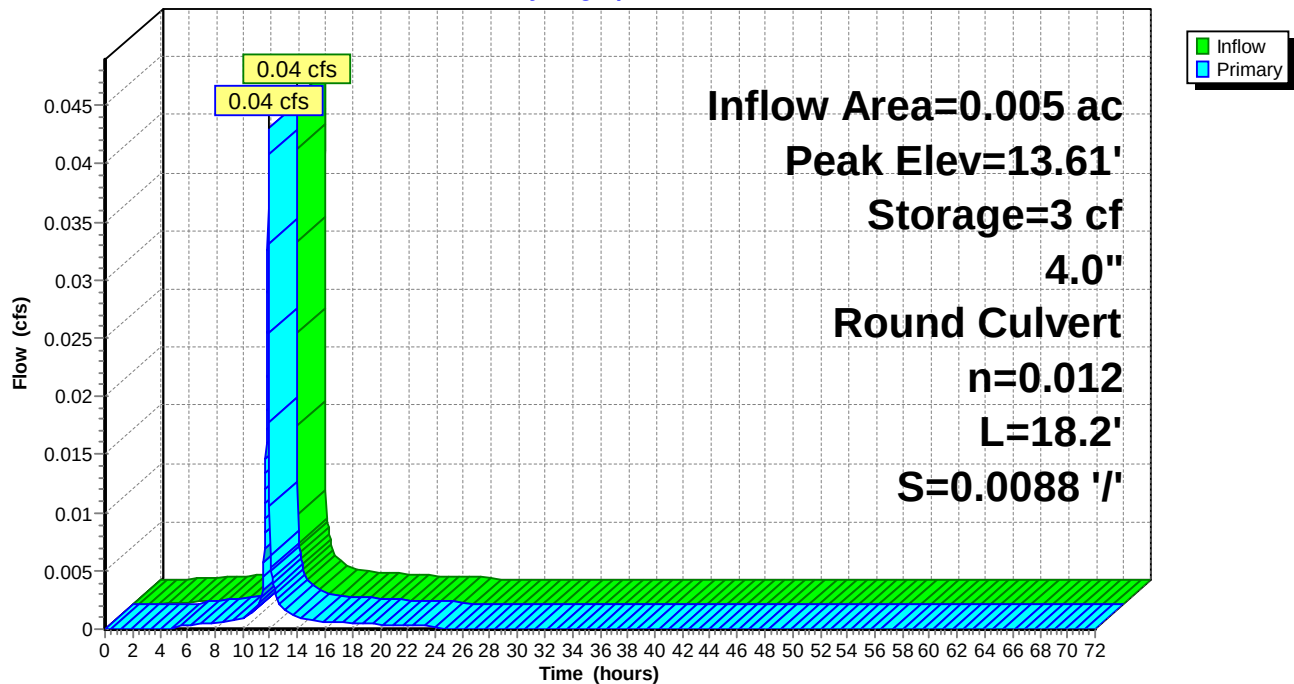
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Type II 24-hr 10-YR Rainfall=5.30"

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Pond P30: Planter #30

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

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Summary for Pond P31: Planter #31

Inflow Area = 0.028 ac, 93.42% Impervious, Inflow Depth = 4.83" for 10-YR event
 Inflow = 0.24 cfs @ 11.90 hrs, Volume= 0.011 af
 Outflow = 0.20 cfs @ 11.93 hrs, Volume= 0.011 af, Atten= 17%, Lag= 1.8 min
 Primary = 0.20 cfs @ 11.93 hrs, Volume= 0.011 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 15.21' Surf.Area= 80 sf Storage= 63 cf

Peak Elev= 16.05' @ 11.93 hrs Surf.Area= 80 sf Storage= 90 cf (27 cf above start)

Plug-Flow detention time= 110.8 min calculated for 0.010 af (87% of inflow)

Center-of-Mass det. time= 4.2 min (756.1 - 752.0)

Volume	Invert	Avail.Storage	Storage Description
#1	13.24'	206 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.24	80	0.0	0	0
13.25	80	40.0	0	0
16.99	80	40.0	120	120
17.00	80	100.0	1	121
18.00	80	100.0	80	201
18.01	1,000	100.0	5	206

Device	Routing	Invert	Outlet Devices
#1	Primary	15.21'	4.0" Round Culvert L= 71.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.45' / 15.21' S= -0.0246 ' /' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.20 cfs @ 11.93 hrs HW=16.04' TW=14.57' (Dynamic Tailwater)↑ **1=Culvert** (Outlet Controls 0.20 cfs @ 2.29 fps)

Naima - Phase 2 - Proposed HydroCAD

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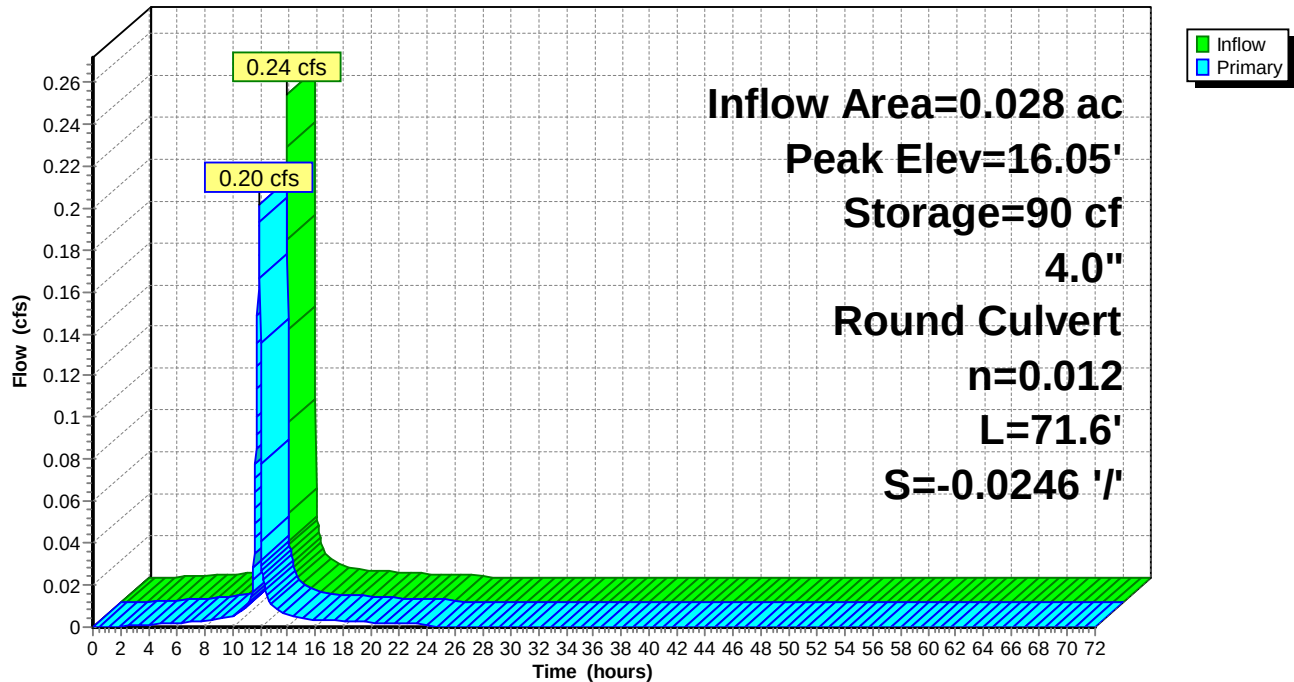
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Pond P31: Planter #31

Hydrograph



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

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Summary for Pond P32: Planter #32

Inflow Area = 0.005 ac, 90.87% Impervious, Inflow Depth = 4.83" for 10-YR event
 Inflow = 0.04 cfs @ 11.90 hrs, Volume= 0.002 af
 Outflow = 0.04 cfs @ 11.90 hrs, Volume= 0.002 af, Atten= 2%, Lag= 0.2 min
 Primary = 0.04 cfs @ 11.90 hrs, Volume= 0.002 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Peak Elev= 14.11' @ 11.90 hrs Surf.Area= 20 sf Storage= 3 cf

Plug-Flow detention time= 24.8 min calculated for 0.002 af (98% of inflow)

Center-of-Mass det. time= 12.4 min (764.4 - 752.0)

Volume	Invert	Avail.Storage	Storage Description	
#1	13.74'	55 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.74	20	0.0	0	0
13.75	20	40.0	0	0
17.49	20	40.0	30	30
17.50	20	100.0	0	30
18.50	20	100.0	20	50
18.51	1,000	100.0	5	55

Device	Routing	Invert	Outlet Devices	
#1	Primary	13.95'	4.0" Round Culvert L= 29.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.95' / 13.36' S= 0.0199 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf	

Primary OutFlow Max=0.04 cfs @ 11.90 hrs HW=14.11' TW=13.17' (Dynamic Tailwater)↑ **1=Culvert** (Inlet Controls 0.04 cfs @ 1.06 fps)

Naima - Phase 2 - Proposed HydroCAD

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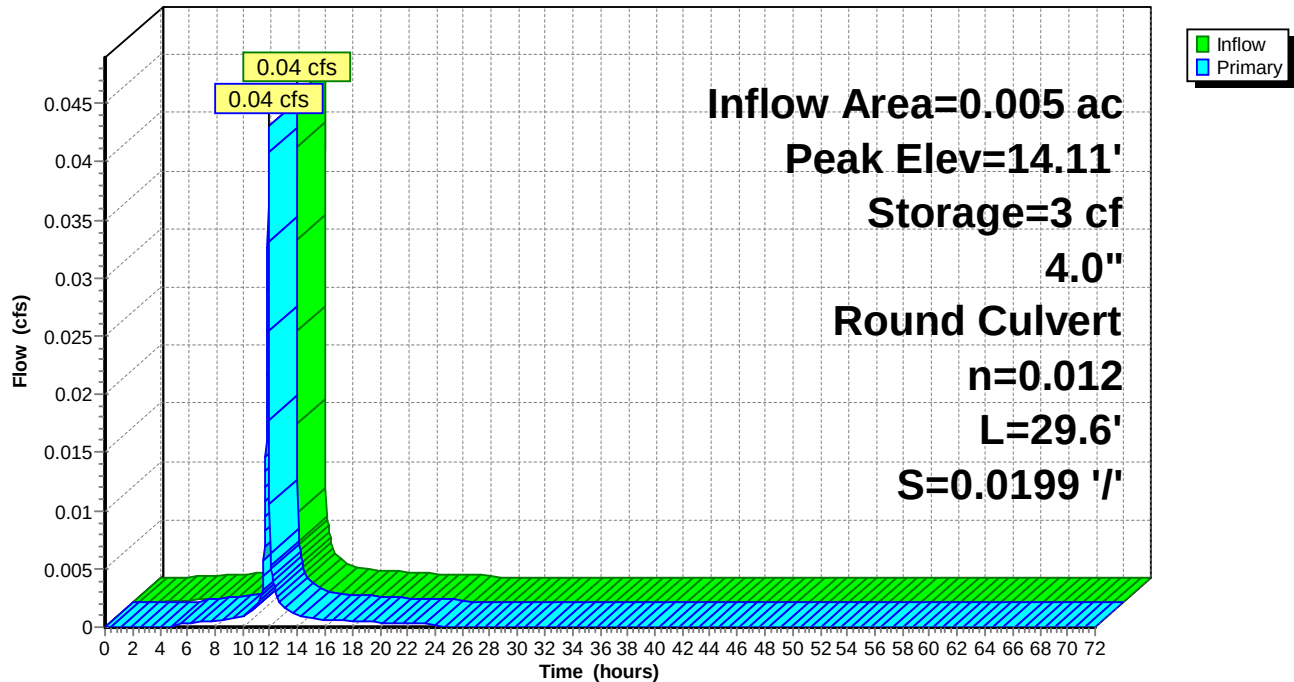
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Type II 24-hr 10-YR Rainfall=5.30"

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Pond P32: Planter #32

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Pond P33: Planter #33

Inflow Area = 0.028 ac, 93.42% Impervious, Inflow Depth = 4.83" for 10-YR event
 Inflow = 0.24 cfs @ 11.90 hrs, Volume= 0.011 af
 Outflow = 0.21 cfs @ 11.93 hrs, Volume= 0.011 af, Atten= 15%, Lag= 1.6 min
 Primary = 0.21 cfs @ 11.93 hrs, Volume= 0.011 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 15.24' Surf.Area= 80 sf Storage= 48 cf

Peak Elev= 16.01' @ 11.93 hrs Surf.Area= 80 sf Storage= 73 cf (25 cf above start)

Plug-Flow detention time= 92.5 min calculated for 0.010 af (90% of inflow)

Center-of-Mass det. time= 4.1 min (756.1 - 752.0)

Volume	Invert	Avail.Storage	Storage Description	
#1	13.74'	206 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.74	80	0.0	0	0
13.75	80	40.0	0	0
17.49	80	40.0	120	120
17.50	80	100.0	1	121
18.50	80	100.0	80	201
18.51	1,000	100.0	5	206

Device	Routing	Invert	Outlet Devices
#1	Primary	15.24'	4.0" Round Culvert L= 61.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.95' / 15.24' S= -0.0211 ' /' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.20 cfs @ 11.93 hrs HW=16.00' TW=14.57' (Dynamic Tailwater)↑ **1=Culvert** (Outlet Controls 0.20 cfs @ 2.34 fps)

Naima - Phase 2 - Proposed HydroCAD

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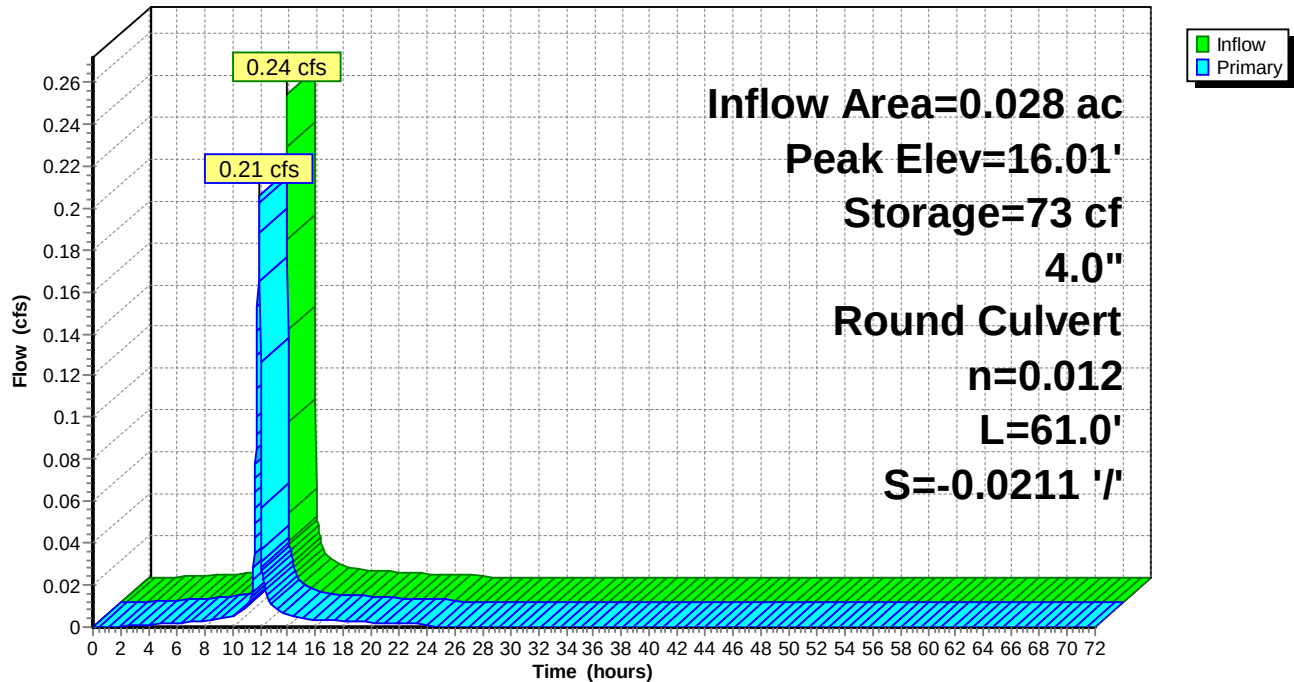
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Type II 24-hr 10-YR Rainfall=5.30"

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Pond P33: Planter #33

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Pond P34: Planter #34

Inflow Area = 0.018 ac, 93.09% Impervious, Inflow Depth = 4.83" for 10-YR event
 Inflow = 0.16 cfs @ 11.90 hrs, Volume= 0.007 af
 Outflow = 0.15 cfs @ 11.91 hrs, Volume= 0.007 af, Atten= 4%, Lag= 0.8 min
 Primary = 0.15 cfs @ 11.91 hrs, Volume= 0.007 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Peak Elev= 14.33' @ 11.91 hrs Surf.Area= 55 sf Storage= 13 cf

Plug-Flow detention time= 21.1 min calculated for 0.007 af (99% of inflow)

Center-of-Mass det. time= 11.2 min (763.2 - 752.0)

Volume	Invert	Avail.Storage	Storage Description	
#1	13.74'	143 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.74	55	0.0	0	0
13.75	55	40.0	0	0
17.49	55	40.0	82	82
17.50	55	100.0	1	83
18.50	55	100.0	55	138
18.51	1,000	100.0	5	143

Device	Routing	Invert	Outlet Devices
#1	Primary	13.95'	4.0" Round Culvert L= 26.1' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.95' / 13.56' S= 0.0149 '/' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.15 cfs @ 11.91 hrs HW=14.32' TW=13.19' (Dynamic Tailwater)↑**1=Culvert** (Inlet Controls 0.15 cfs @ 1.72 fps)

Naima - Phase 2 - Proposed HydroCAD

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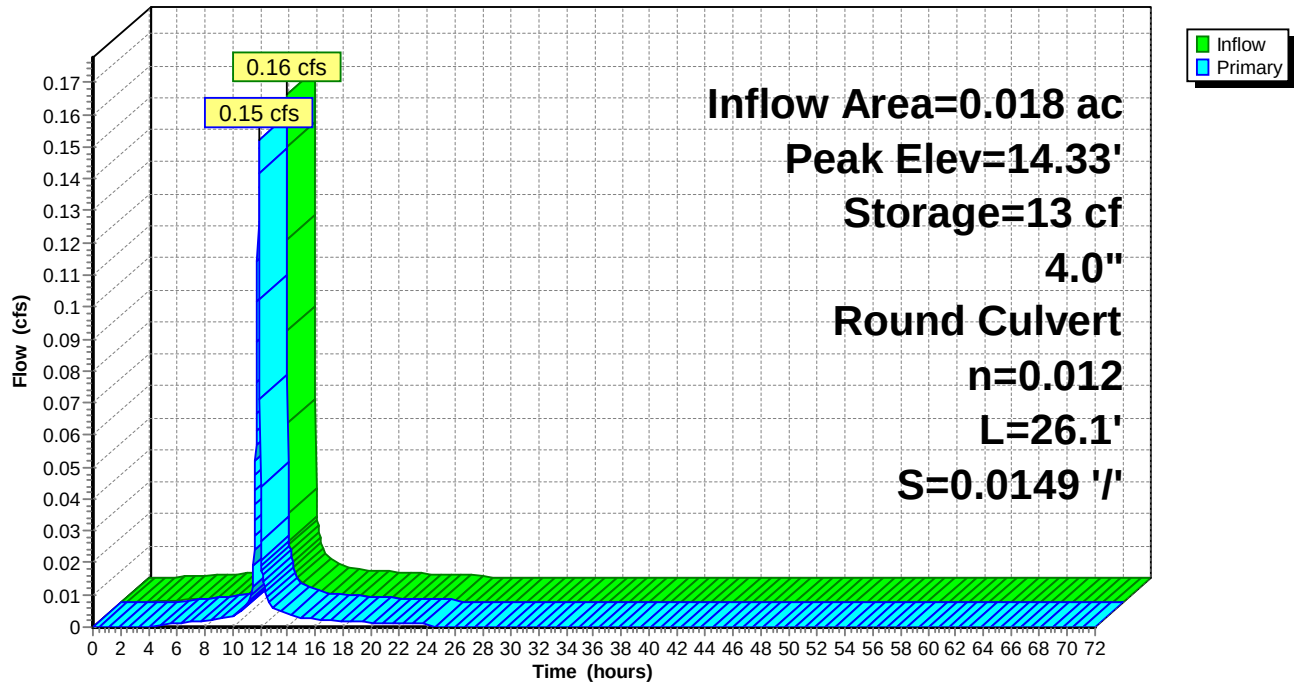
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Type II 24-hr 10-YR Rainfall=5.30"

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Pond P34: Planter #34

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Pond P35: Planter #35

Inflow Area = 0.008 ac, 91.74% Impervious, Inflow Depth = 4.83" for 10-YR event
 Inflow = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af
 Outflow = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af, Atten= 2%, Lag= 0.3 min
 Primary = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 15.73' Surf.Area= 30 sf Storage= 24 cf

Peak Elev= 15.94' @ 11.90 hrs Surf.Area= 30 sf Storage= 26 cf (3 cf above start)

Plug-Flow detention time= 126.0 min calculated for 0.003 af (84% of inflow)

Center-of-Mass det. time= 2.6 min (754.6 - 752.0)

Volume	Invert	Avail.Storage	Storage Description
#1	13.74'	80 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.74	30	0.0	0	0
13.75	30	40.0	0	0
17.49	30	40.0	45	45
17.50	30	100.0	0	45
18.50	30	100.0	30	75
18.51	1,000	100.0	5	80

Device	Routing	Invert	Outlet Devices
#1	Primary	15.73'	4.0" Round Culvert L= 31.5' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.95' / 15.73' S= -0.0565 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.07 cfs @ 11.90 hrs HW=15.94' TW=14.69' (Dynamic Tailwater)↑**1=Culvert** (Inlet Controls 0.07 cfs @ 1.23 fps)

Naima - Phase 2 - Proposed HydroCAD

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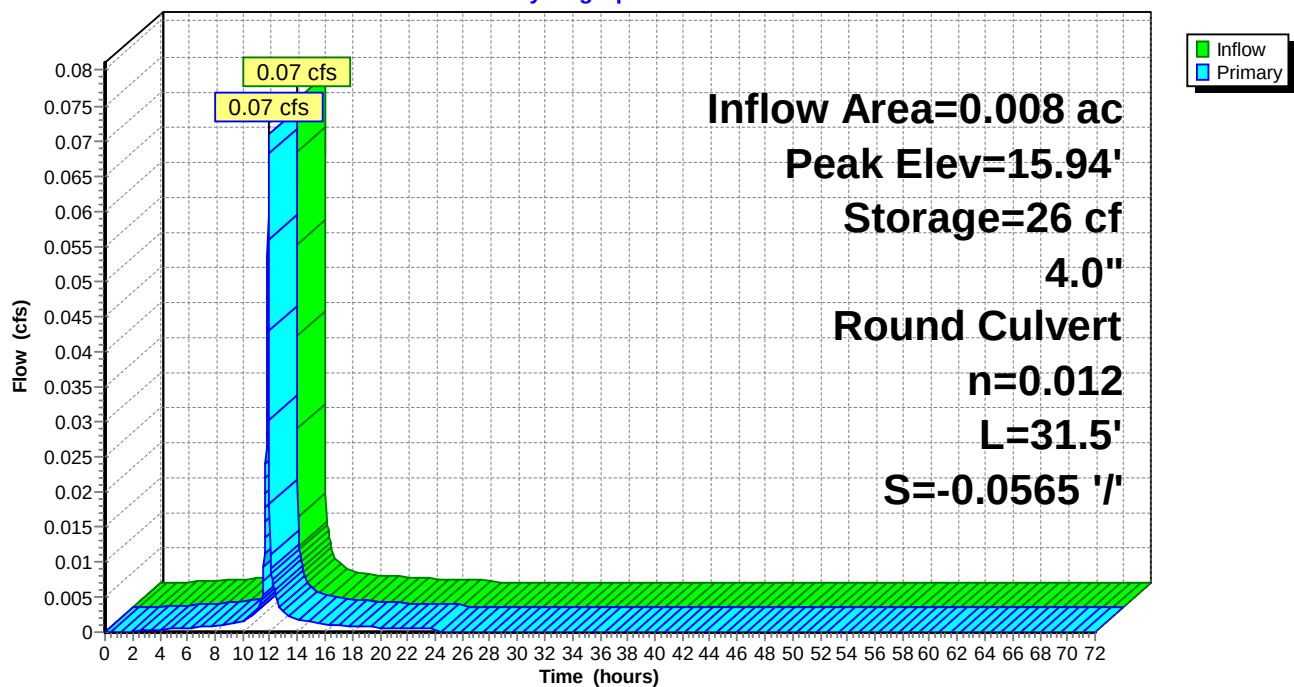
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Type II 24-hr 10-YR Rainfall=5.30"

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Pond P35: Planter #35

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Pond P36: Planter #36

Inflow Area = 0.016 ac, 92.84% Impervious, Inflow Depth = 4.83" for 10-YR event
 Inflow = 0.14 cfs @ 11.90 hrs, Volume= 0.006 af
 Outflow = 0.13 cfs @ 11.91 hrs, Volume= 0.006 af, Atten= 4%, Lag= 0.6 min
 Primary = 0.13 cfs @ 11.91 hrs, Volume= 0.006 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2
 Peak Elev= 14.48' @ 11.91 hrs Surf.Area= 50 sf Storage= 11 cf

Plug-Flow detention time= 21.6 min calculated for 0.006 af (99% of inflow)
 Center-of-Mass det. time= 11.3 min (763.3 - 752.0)

Volume	Invert	Avail.Storage	Storage Description	
#1	13.94'	131 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.94	50	0.0	0	0
13.95	50	40.0	0	0
17.69	50	40.0	75	75
17.70	50	100.0	0	75
18.70	50	100.0	50	125
18.71	1,000	100.0	5	131

Device	Routing	Invert	Outlet Devices
#1	Primary	14.15'	4.0" Round Culvert L= 20.2' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.15' / 13.65' S= 0.0248 ' S= 0.0248 ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.13 cfs @ 11.91 hrs HW=14.47' TW=13.18' (Dynamic Tailwater)

↑ **1=Culvert** (Inlet Controls 0.13 cfs @ 1.53 fps)

Naima - Phase 2 - Proposed HydroCAD

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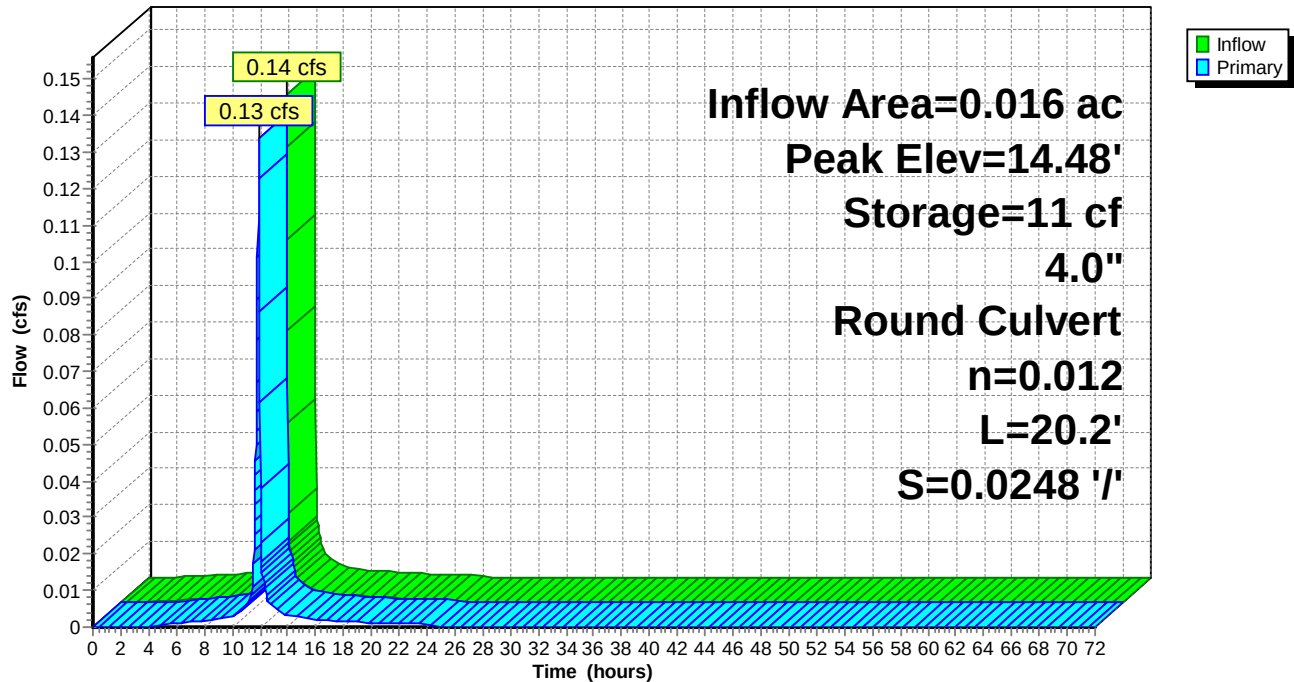
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Pond P36: Planter #36

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

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Summary for Pond P37: Planter #37

Inflow Area = 0.013 ac, 93.19% Impervious, Inflow Depth = 4.83" for 10-YR event
 Inflow = 0.12 cfs @ 11.90 hrs, Volume= 0.005 af
 Outflow = 0.11 cfs @ 11.90 hrs, Volume= 0.005 af, Atten= 3%, Lag= 0.4 min
 Primary = 0.11 cfs @ 11.90 hrs, Volume= 0.005 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 15.73' Surf.Area= 40 sf Storage= 29 cf

Peak Elev= 16.01' @ 11.90 hrs Surf.Area= 40 sf Storage= 33 cf (5 cf above start)

Plug-Flow detention time= 105.1 min calculated for 0.005 af (88% of inflow)

Center-of-Mass det. time= 2.8 min (754.8 - 752.0)

Volume	Invert	Avail.Storage	Storage Description
#1	13.94'	106 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.94	40	0.0	0	0
13.95	40	40.0	0	0
17.69	40	40.0	60	60
17.70	40	100.0	0	60
18.70	40	100.0	40	100
18.71	1,000	100.0	5	106

Device	Routing	Invert	Outlet Devices
#1	Primary	15.73'	4.0" Round Culvert L= 37.8' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.15' / 15.73' S= -0.0418 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.11 cfs @ 11.90 hrs HW=16.01' TW=14.70' (Dynamic Tailwater)↑**1=Culvert** (Inlet Controls 0.11 cfs @ 1.43 fps)

Naima - Phase 2 - Proposed HydroCAD

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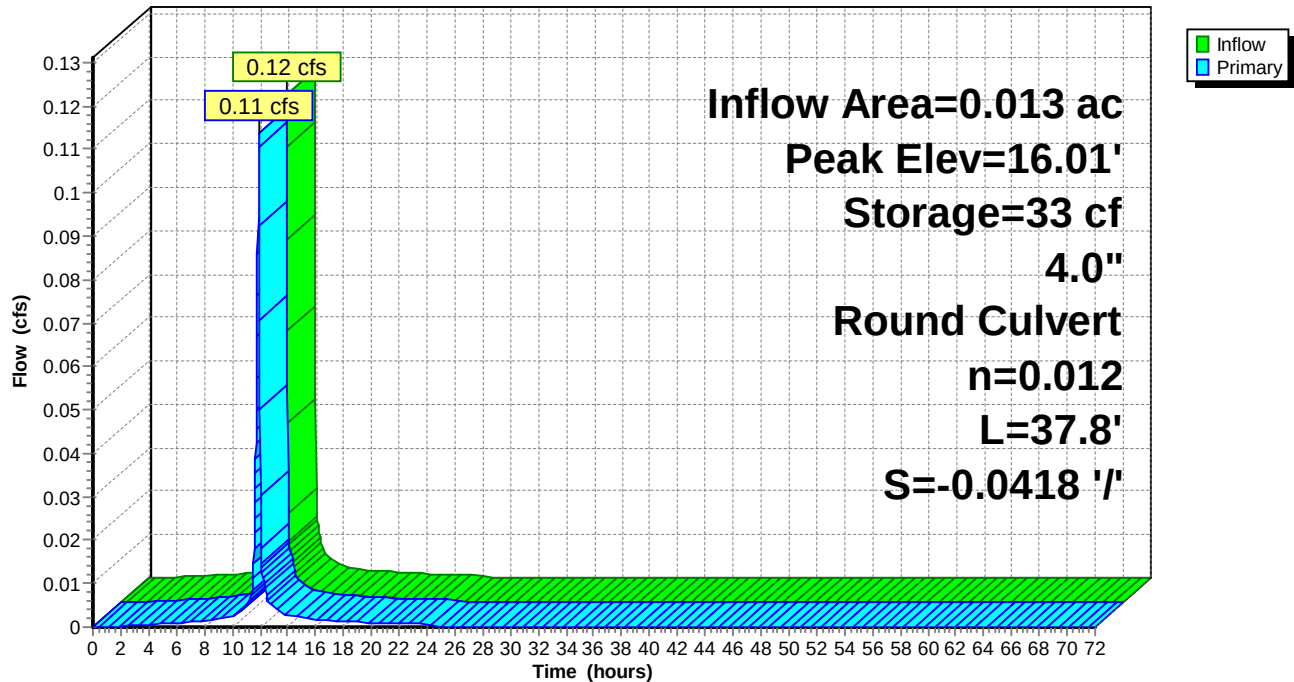
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Pond P37: Planter #37

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

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Summary for Pond P38: Planter #38

Inflow Area = 0.014 ac, 93.22% Impervious, Inflow Depth = 4.83" for 10-YR event
 Inflow = 0.12 cfs @ 11.90 hrs, Volume= 0.005 af
 Outflow = 0.11 cfs @ 11.90 hrs, Volume= 0.005 af, Atten= 3%, Lag= 0.4 min
 Primary = 0.11 cfs @ 11.90 hrs, Volume= 0.005 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 15.85' Surf.Area= 40 sf Storage= 31 cf

Peak Elev= 16.14' @ 11.90 hrs Surf.Area= 40 sf Storage= 35 cf (5 cf above start)

Plug-Flow detention time= 109.1 min calculated for 0.005 af (87% of inflow)

Center-of-Mass det. time= 2.8 min (754.8 - 752.0)

Volume	Invert	Avail.Storage	Storage Description
#1	13.94'	106 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.94	40	0.0	0	0
13.95	40	40.0	0	0
17.69	40	40.0	60	60
17.70	40	100.0	0	60
18.70	40	100.0	40	100
18.71	1,000	100.0	5	106

Device	Routing	Invert	Outlet Devices
#1	Primary	15.85'	4.0" Round Culvert L= 28.9' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.15' / 15.85' S= -0.0588 ' / Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.11 cfs @ 11.90 hrs HW=16.13' TW=14.70' (Dynamic Tailwater)↑**1=Culvert** (Inlet Controls 0.11 cfs @ 1.43 fps)

Naima - Phase 2 - Proposed HydroCAD

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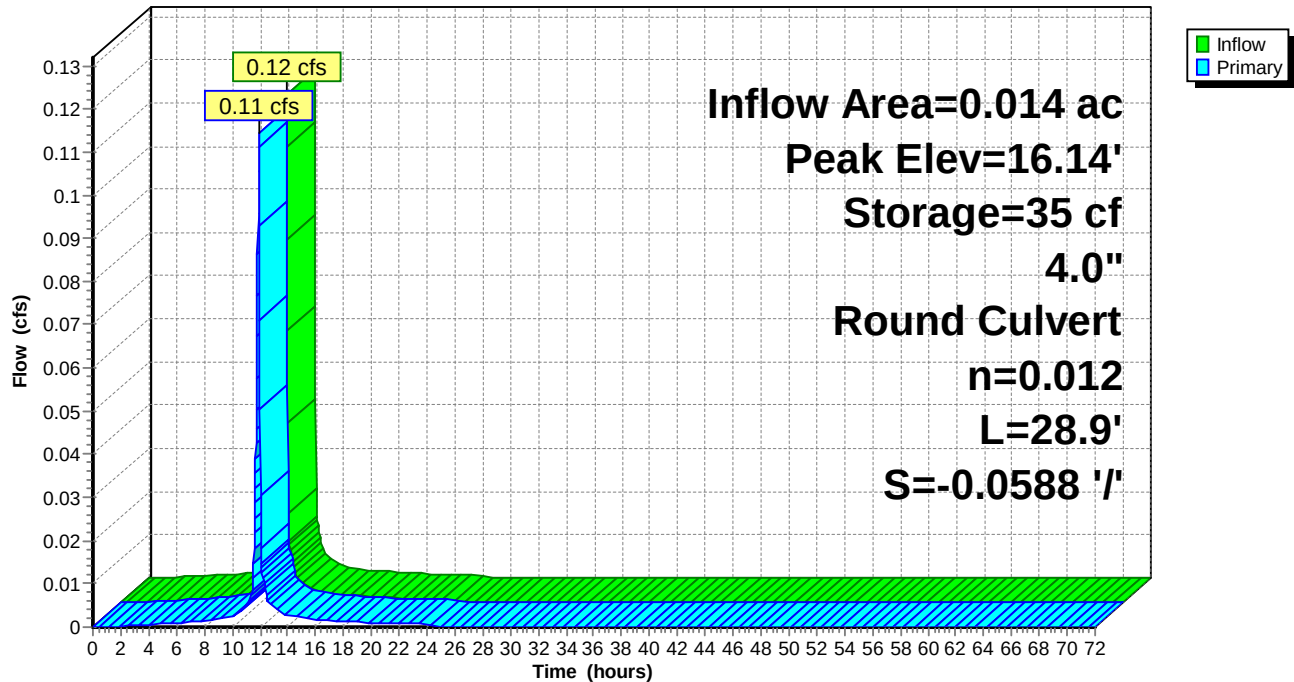
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Pond P38: Planter #38

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

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Summary for Pond P39: Planter #39

Inflow Area = 0.025 ac, 93.61% Impervious, Inflow Depth = 4.83" for 10-YR event
 Inflow = 0.22 cfs @ 11.90 hrs, Volume= 0.010 af
 Outflow = 0.20 cfs @ 11.92 hrs, Volume= 0.010 af, Atten= 7%, Lag= 1.0 min
 Primary = 0.20 cfs @ 11.92 hrs, Volume= 0.010 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2
 Peak Elev= 14.69' @ 11.92 hrs Surf.Area= 70 sf Storage= 21 cf

Plug-Flow detention time= 20.2 min calculated for 0.010 af (99% of inflow)
 Center-of-Mass det. time= 11.0 min (763.0 - 752.0)

Volume	Invert	Avail.Storage	Storage Description	
#1	13.94'	181 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.94	70	0.0	0	0
13.95	70	40.0	0	0
17.69	70	40.0	105	105
17.70	70	100.0	1	106
18.70	70	100.0	70	176
18.71	1,000	100.0	5	181

Device	Routing	Invert	Outlet Devices
#1	Primary	14.15'	4.0" Round Culvert L= 23.9' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.15' / 13.88' S= 0.0113 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.20 cfs @ 11.92 hrs HW=14.68' TW=13.20' (Dynamic Tailwater)

↑ **1=Culvert** (Inlet Controls 0.20 cfs @ 2.31 fps)

Naima - Phase 2 - Proposed HydroCAD

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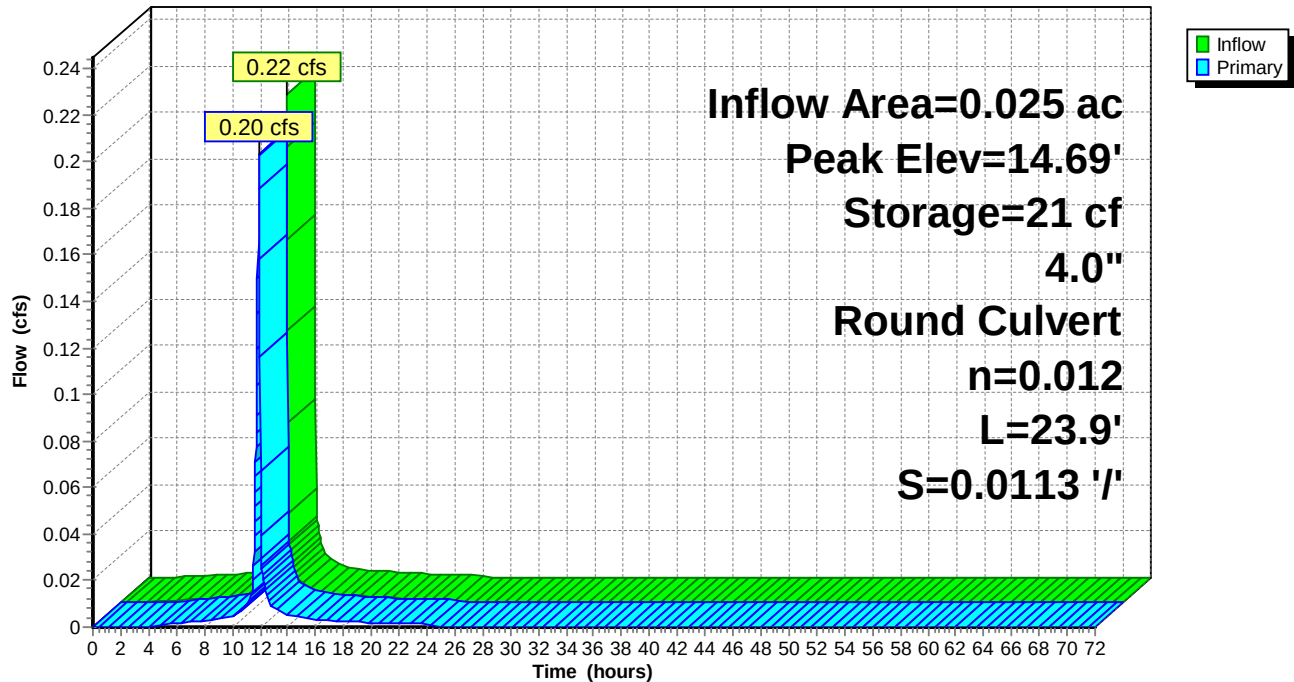
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Pond P39: Planter #39

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

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Summary for Pond P40: Planter #40

Inflow Area = 0.008 ac, 91.48% Impervious, Inflow Depth = 4.83" for 10-YR event
 Inflow = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af
 Outflow = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af, Atten= 2%, Lag= 0.3 min
 Primary = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 15.99' Surf.Area= 30 sf Storage= 25 cf

Peak Elev= 16.20' @ 11.90 hrs Surf.Area= 30 sf Storage= 27 cf (2 cf above start)

Plug-Flow detention time= 130.1 min calculated for 0.003 af (83% of inflow)

Center-of-Mass det. time= 2.7 min (754.7 - 752.0)

Volume	Invert	Avail.Storage	Storage Description
#1	13.94'	80 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.94	30	0.0	0	0
13.95	30	40.0	0	0
17.69	30	40.0	45	45
17.70	30	100.0	0	45
18.70	30	100.0	30	75
18.71	1,000	100.0	5	80

Device	Routing	Invert	Outlet Devices
#1	Primary	15.99'	4.0" Round Culvert L= 11.2' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.15' / 15.99' S= -0.1643 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.07 cfs @ 11.90 hrs HW=16.19' TW=14.69' (Dynamic Tailwater)↑**1=Culvert** (Inlet Controls 0.07 cfs @ 1.22 fps)

Naima - Phase 2 - Proposed HydroCAD

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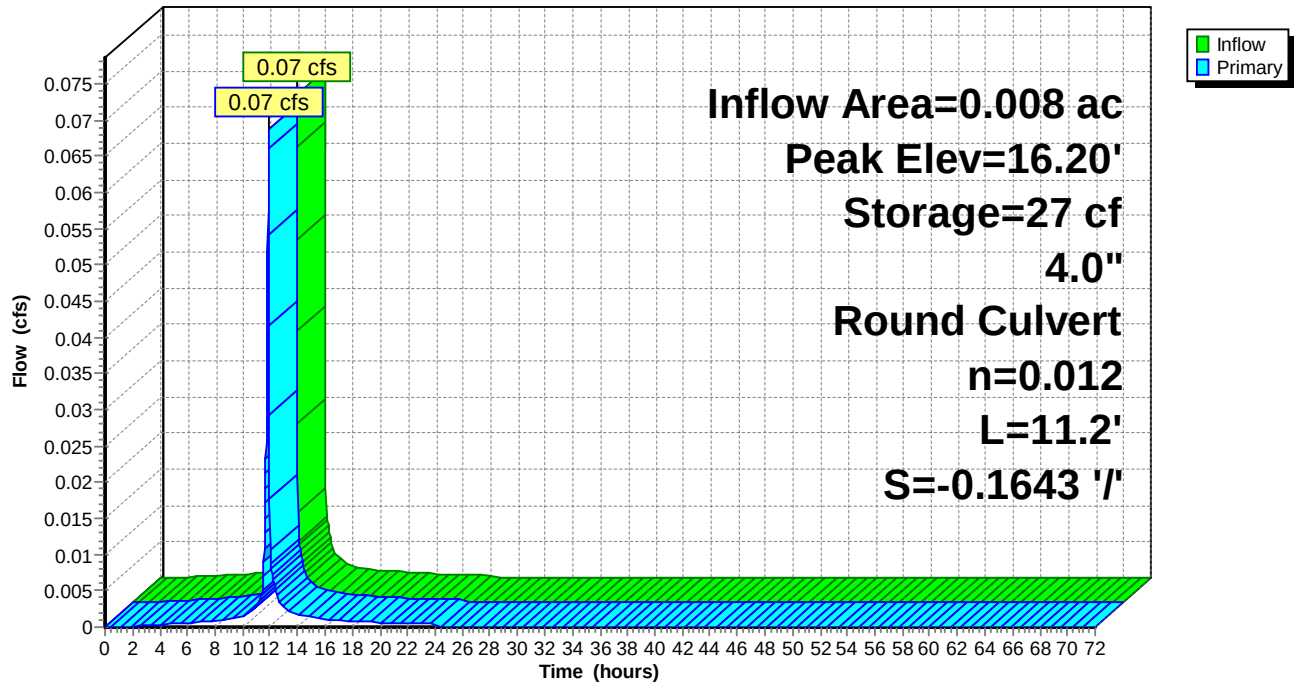
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Pond P40: Planter #40

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

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Summary for Pond P41: Planter #41

Inflow Area = 0.025 ac, 93.61% Impervious, Inflow Depth = 4.83" for 10-YR event
 Inflow = 0.22 cfs @ 11.90 hrs, Volume= 0.010 af
 Outflow = 0.20 cfs @ 11.92 hrs, Volume= 0.010 af, Atten= 7%, Lag= 1.0 min
 Primary = 0.20 cfs @ 11.92 hrs, Volume= 0.010 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Peak Elev= 14.99' @ 11.92 hrs Surf.Area= 70 sf Storage= 21 cf

Plug-Flow detention time= 19.8 min calculated for 0.010 af (99% of inflow)

Center-of-Mass det. time= 11.0 min (763.0 - 752.0)

Volume	Invert	Avail.Storage	Storage Description	
#1	14.24'	181 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
14.24	70	0.0	0	0
14.25	70	40.0	0	0
17.99	70	40.0	105	105
18.00	70	100.0	1	106
19.00	70	100.0	70	176
19.01	1,000	100.0	5	181

Device	Routing	Invert	Outlet Devices	
#1	Primary	14.45'	4.0" Round Culvert L= 23.8' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.45' / 13.95' S= 0.0210 '/' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf	

Primary OutFlow Max=0.20 cfs @ 11.92 hrs HW=14.98' TW=13.20' (Dynamic Tailwater)↑**1=Culvert** (Inlet Controls 0.20 cfs @ 2.31 fps)

Naima - Phase 2 - Proposed HydroCAD

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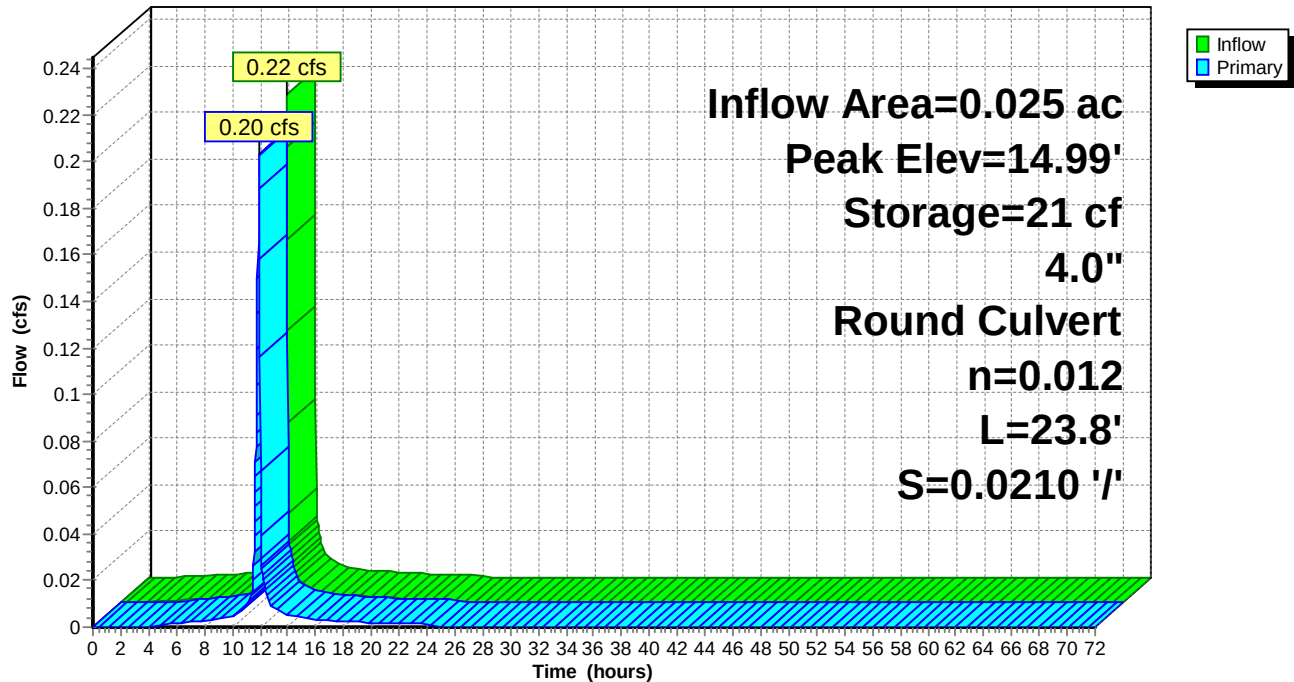
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Pond P41: Planter #41

Hydrograph



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

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Summary for Pond P42: Planter #42

Inflow Area = 0.008 ac, 91.48% Impervious, Inflow Depth = 4.83" for 10-YR event
 Inflow = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af
 Outflow = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af, Atten= 2%, Lag= 0.3 min
 Primary = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 16.14' Surf.Area= 30 sf Storage= 23 cf

Peak Elev= 16.35' @ 11.90 hrs Surf.Area= 30 sf Storage= 25 cf (2 cf above start)

Plug-Flow detention time= 124.7 min calculated for 0.003 af (84% of inflow)

Center-of-Mass det. time= 2.7 min (754.7 - 752.0)

Volume	Invert	Avail.Storage	Storage Description	
#1	14.24'	80 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
14.24	30	0.0	0	0
14.25	30	40.0	0	0
17.99	30	40.0	45	45
18.00	30	100.0	0	45
19.00	30	100.0	30	75
19.01	1,000	100.0	5	80

Device	Routing	Invert	Outlet Devices	
#1	Primary	16.14'	4.0" Round Culvert L= 19.8' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.45' / 16.14' S= -0.0854 ' /' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf	

Primary OutFlow Max=0.07 cfs @ 11.90 hrs HW=16.34' TW=15.35' (Dynamic Tailwater)↑ **1=Culvert** (Inlet Controls 0.07 cfs @ 1.22 fps)

Naima - Phase 2 - Proposed HydroCAD

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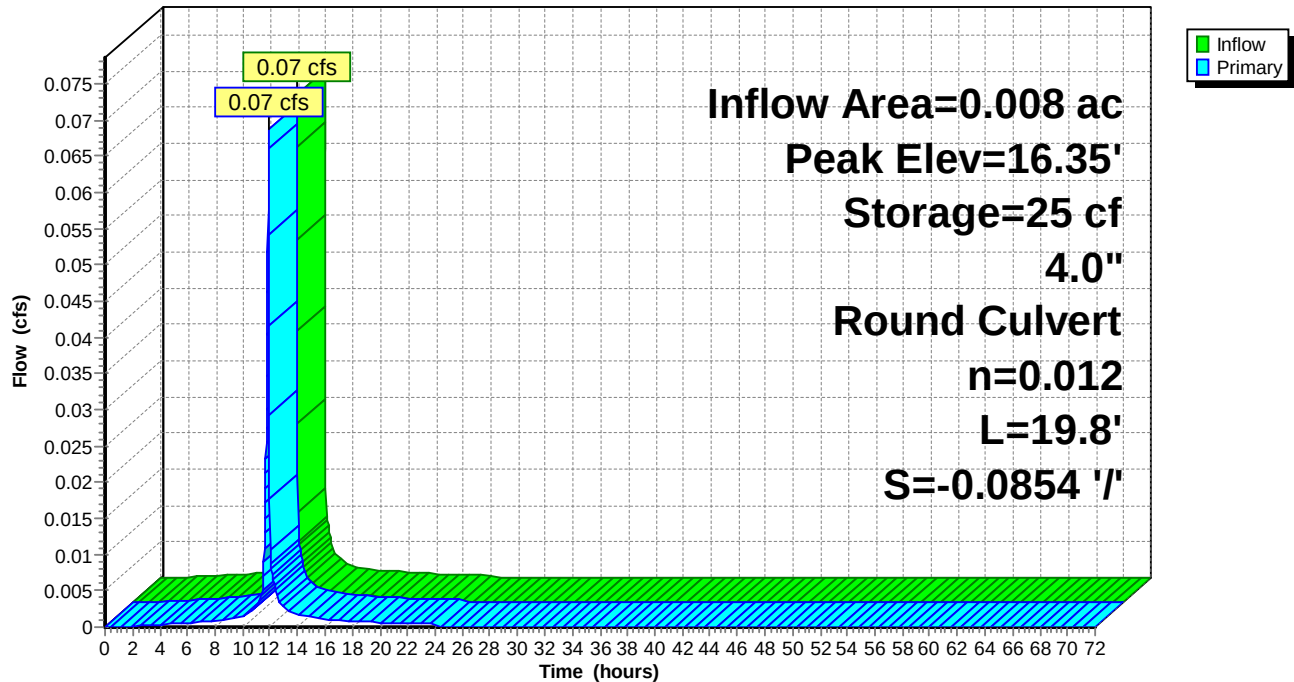
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Type II 24-hr 10-YR Rainfall=5.30"

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Pond P42: Planter #42

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Pond P43: Planter #43

Inflow Area = 0.014 ac, 93.22% Impervious, Inflow Depth = 4.83" for 10-YR event
 Inflow = 0.12 cfs @ 11.90 hrs, Volume= 0.005 af
 Outflow = 0.11 cfs @ 11.90 hrs, Volume= 0.005 af, Atten= 3%, Lag= 0.4 min
 Primary = 0.11 cfs @ 11.90 hrs, Volume= 0.005 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 16.31' Surf.Area= 40 sf Storage= 33 cf

Peak Elev= 16.60' @ 11.90 hrs Surf.Area= 40 sf Storage= 38 cf (5 cf above start)

Plug-Flow detention time= 114.6 min calculated for 0.005 af (86% of inflow)

Center-of-Mass det. time= 2.8 min (754.8 - 752.0)

Volume	Invert	Avail.Storage	Storage Description
#1	14.24'	106 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
14.24	40	0.0	0	0
14.25	40	40.0	0	0
17.99	40	40.0	60	60
18.00	40	100.0	0	60
19.00	40	100.0	40	100
19.01	1,000	100.0	5	106

Device	Routing	Invert	Outlet Devices
#1	Primary	16.31'	4.0" Round Culvert L= 28.7' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.45' / 16.31' S= -0.0648 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.11 cfs @ 11.90 hrs HW=16.59' TW=15.36' (Dynamic Tailwater)↑**1=Culvert** (Inlet Controls 0.11 cfs @ 1.43 fps)

Naima - Phase 2 - Proposed HydroCAD

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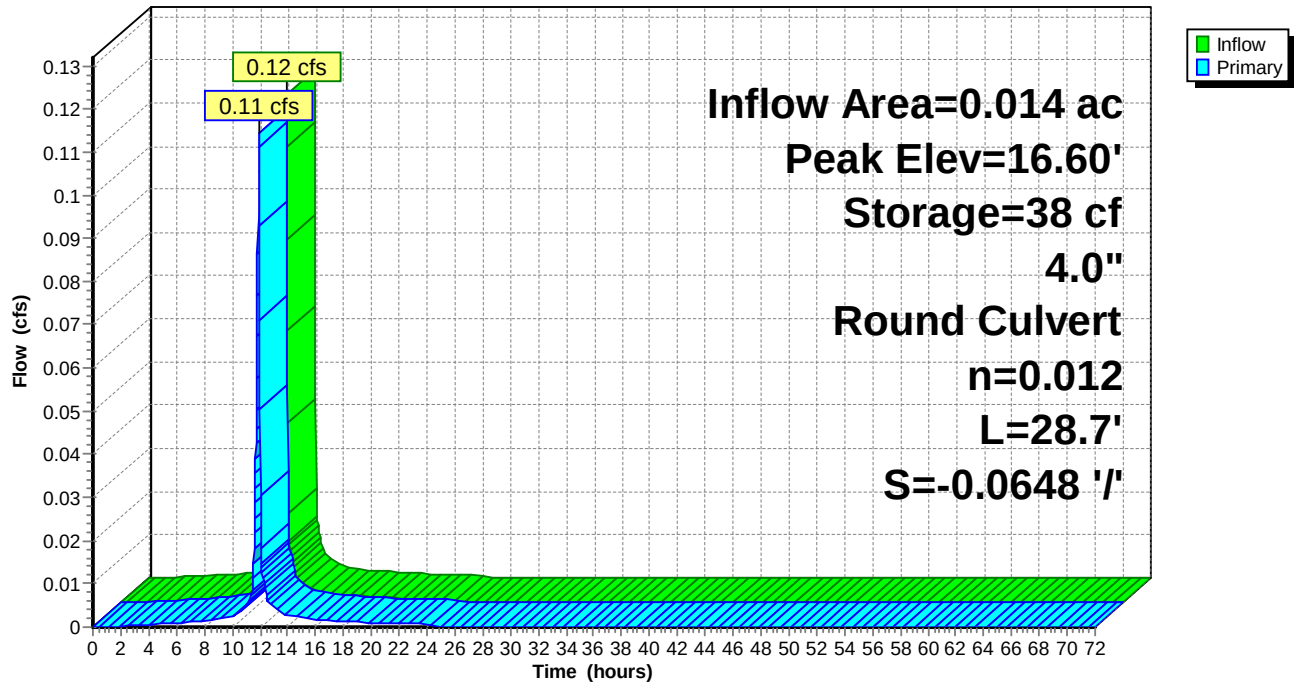
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Type II 24-hr 10-YR Rainfall=5.30"

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Pond P43: Planter #43

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Pond P44: Planter #44

Inflow Area = 0.016 ac, 92.84% Impervious, Inflow Depth = 4.83" for 10-YR event
 Inflow = 0.14 cfs @ 11.90 hrs, Volume= 0.006 af
 Outflow = 0.13 cfs @ 11.91 hrs, Volume= 0.006 af, Atten= 4%, Lag= 0.6 min
 Primary = 0.13 cfs @ 11.91 hrs, Volume= 0.006 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Peak Elev= 14.78' @ 11.91 hrs Surf.Area= 50 sf Storage= 1 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)

Center-of-Mass det. time= 0.2 min (752.2 - 752.0)

Volume	Invert	Avail.Storage	Storage Description	
#1	14.74'	121 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
14.74	50	0.0	0	0
14.75	50	40.0	0	0
17.99	50	40.0	65	65
18.00	50	100.0	1	66
19.00	50	100.0	50	116
19.01	1,000	100.0	5	121

Device	Routing	Invert	Outlet Devices
#1	Primary	14.45'	4.0" Round Culvert L= 19.9' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.45' / 14.18' S= 0.0136 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.13 cfs @ 11.91 hrs HW=14.77' TW=13.18' (Dynamic Tailwater)↑**1=Culvert** (Inlet Controls 0.13 cfs @ 1.53 fps)

Naima - Phase 2 - Proposed HydroCAD

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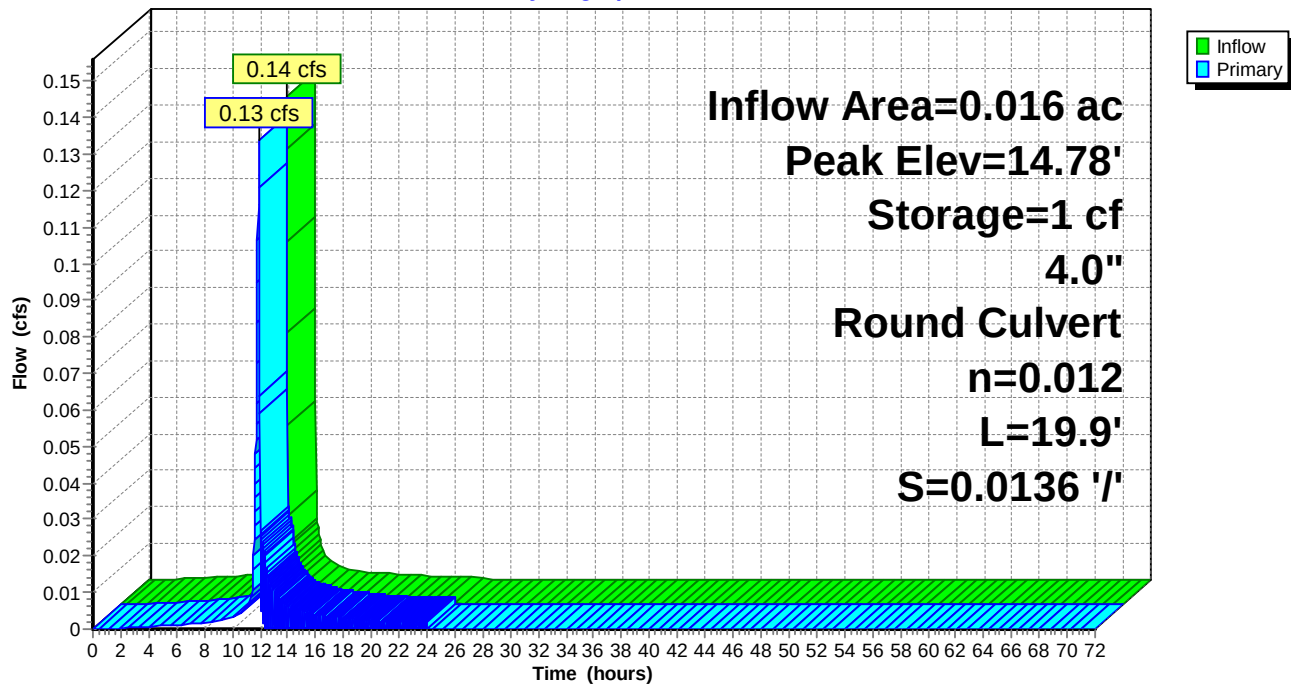
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Type II 24-hr 10-YR Rainfall=5.30"

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Pond P44: Planter #44

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Pond P45: Planter #45

Inflow Area = 0.013 ac, 93.19% Impervious, Inflow Depth = 4.83" for 10-YR event
 Inflow = 0.12 cfs @ 11.90 hrs, Volume= 0.005 af
 Outflow = 0.11 cfs @ 11.90 hrs, Volume= 0.005 af, Atten= 3%, Lag= 0.4 min
 Primary = 0.11 cfs @ 11.90 hrs, Volume= 0.005 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 16.46' Surf.Area= 40 sf Storage= 36 cf

Peak Elev= 16.74' @ 11.90 hrs Surf.Area= 40 sf Storage= 40 cf (5 cf above start)

Plug-Flow detention time= 119.9 min calculated for 0.005 af (85% of inflow)

Center-of-Mass det. time= 2.8 min (754.8 - 752.0)

Volume	Invert	Avail.Storage	Storage Description
#1	14.24'	106 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
14.24	40	0.0	0	0
14.25	40	40.0	0	0
17.99	40	40.0	60	60
18.00	40	100.0	0	60
19.00	40	100.0	40	100
19.01	1,000	100.0	5	106

Device	Routing	Invert	Outlet Devices
#1	Primary	16.46'	4.0" Round Culvert L= 36.4' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.45' / 16.46' S= -0.0552 ' / Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.11 cfs @ 11.90 hrs HW=16.74' TW=15.36' (Dynamic Tailwater)↑**1=Culvert** (Inlet Controls 0.11 cfs @ 1.43 fps)

Naima - Phase 2 - Proposed HydroCAD

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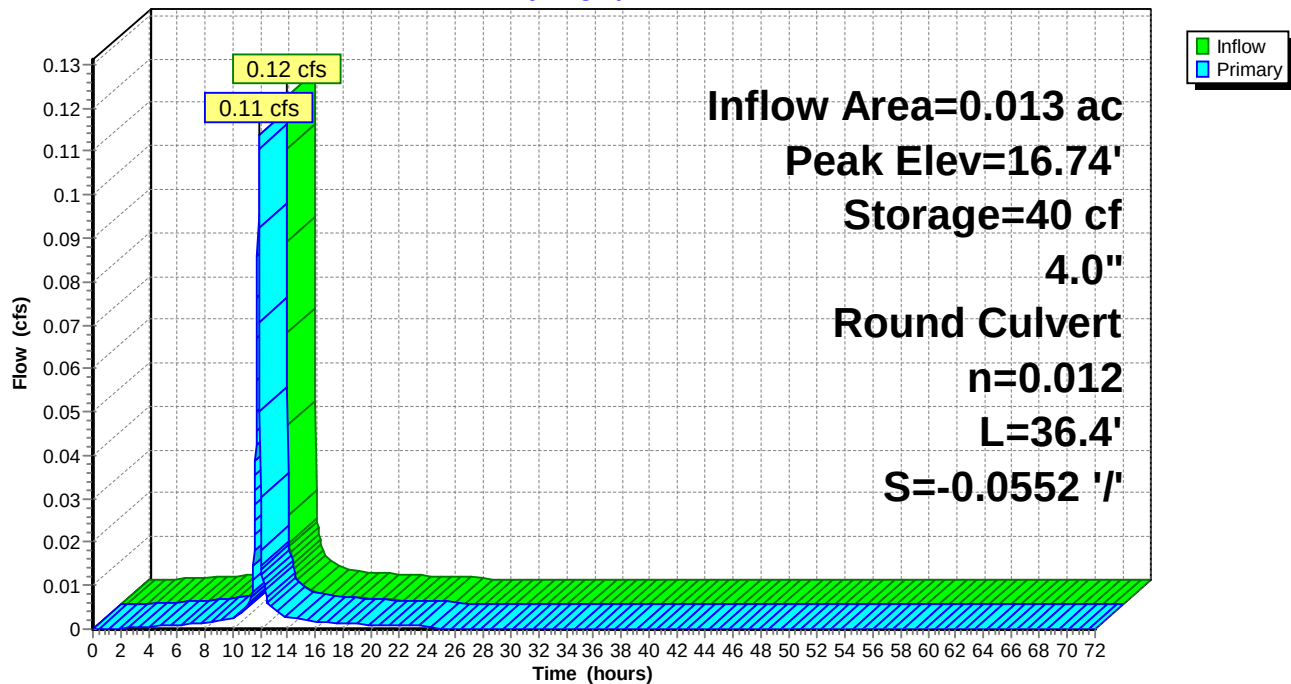
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Type II 24-hr 10-YR Rainfall=5.30"

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Pond P45: Planter #45

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Pond P46: Planter #46

Inflow Area = 0.005 ac, 90.87% Impervious, Inflow Depth = 4.83" for 10-YR event
 Inflow = 0.04 cfs @ 11.90 hrs, Volume= 0.002 af
 Outflow = 0.04 cfs @ 11.90 hrs, Volume= 0.002 af, Atten= 2%, Lag= 0.2 min
 Primary = 0.04 cfs @ 11.90 hrs, Volume= 0.002 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Peak Elev= 15.11' @ 11.90 hrs Surf.Area= 20 sf Storage= 3 cf

Plug-Flow detention time= 24.8 min calculated for 0.002 af (98% of inflow)

Center-of-Mass det. time= 12.4 min (764.4 - 752.0)

Volume	Invert	Avail.Storage	Storage Description	
#1	14.74'	55 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
14.74	20	0.0	0	0
14.75	20	40.0	0	0
18.49	20	40.0	30	30
18.50	20	100.0	0	30
19.50	20	100.0	20	50
19.51	1,000	100.0	5	55

Device	Routing	Invert	Outlet Devices
#1	Primary	14.95'	4.0" Round Culvert L= 28.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.95' / 14.24' S= 0.0248 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.04 cfs @ 11.90 hrs HW=15.11' TW=13.17' (Dynamic Tailwater)↑ **1=Culvert** (Inlet Controls 0.04 cfs @ 1.06 fps)

Naima - Phase 2 - Proposed HydroCAD

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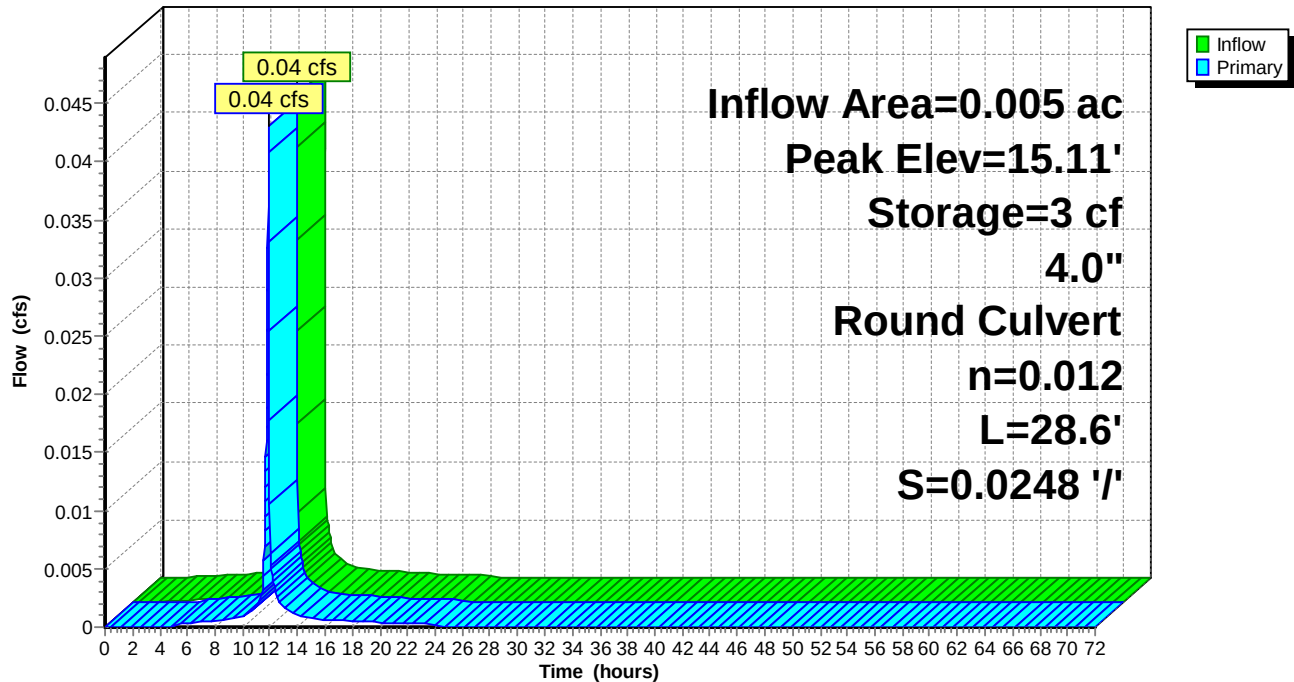
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Type II 24-hr 10-YR Rainfall=5.30"

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Pond P46: Planter #46

Hydrograph



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

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Summary for Pond P47: Planter #47

Inflow Area = 0.028 ac, 93.42% Impervious, Inflow Depth = 4.83" for 10-YR event
 Inflow = 0.24 cfs @ 11.90 hrs, Volume= 0.011 af
 Outflow = 0.21 cfs @ 11.93 hrs, Volume= 0.011 af, Atten= 15%, Lag= 1.6 min
 Primary = 0.21 cfs @ 11.93 hrs, Volume= 0.011 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 16.60' Surf.Area= 80 sf Storage= 60 cf

Peak Elev= 17.36' @ 11.93 hrs Surf.Area= 80 sf Storage= 84 cf (24 cf above start)

Plug-Flow detention time= 106.4 min calculated for 0.010 af (88% of inflow)

Center-of-Mass det. time= 4.1 min (756.1 - 752.0)

Volume	Invert	Avail.Storage	Storage Description
#1	14.74'	206 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
14.74	80	0.0	0	0
14.75	80	40.0	0	0
18.49	80	40.0	120	120
18.50	80	100.0	1	121
19.50	80	100.0	80	201
19.51	1,000	100.0	5	206

Device	Routing	Invert	Outlet Devices
#1	Primary	16.60'	4.0" Round Culvert L= 59.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.95' / 16.60' S= -0.0277 ' /' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.20 cfs @ 11.93 hrs HW=17.35' TW=15.49' (Dynamic Tailwater)↑ **1=Culvert** (Outlet Controls 0.20 cfs @ 2.35 fps)

Naima - Phase 2 - Proposed HydroCAD

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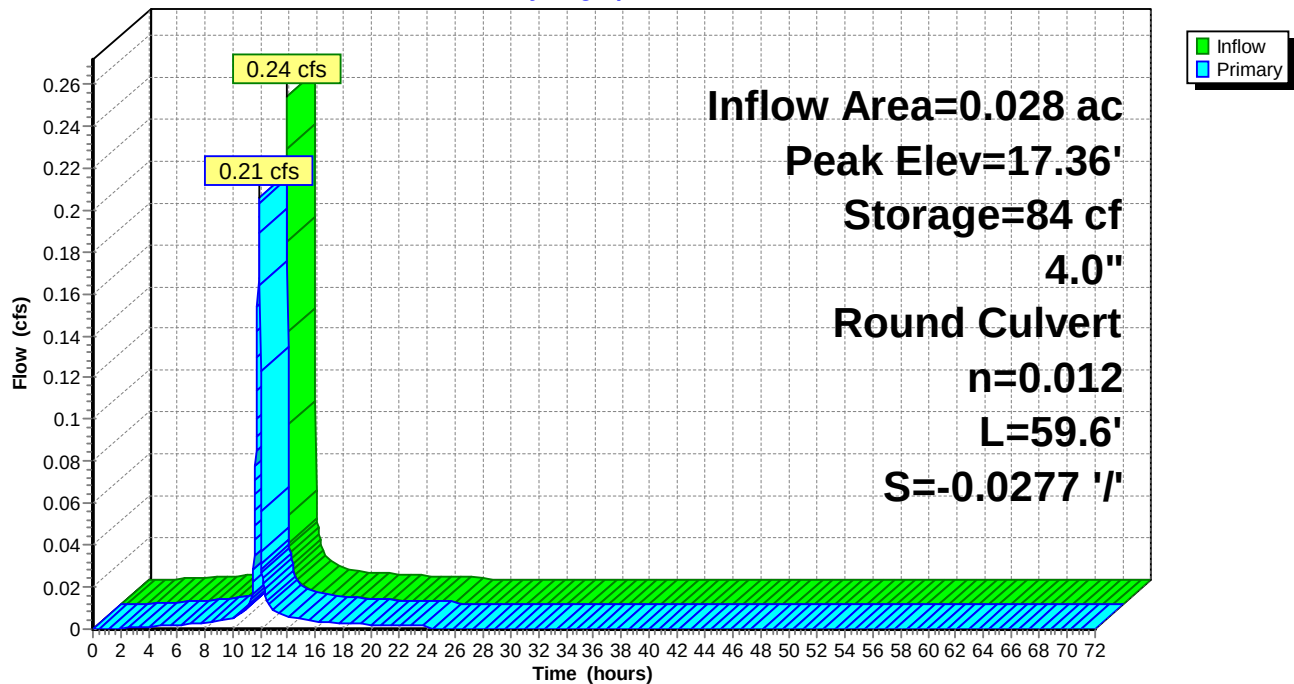
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Type II 24-hr 10-YR Rainfall=5.30"

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Pond P47: Planter #47

Hydrograph



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

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Summary for Pond P48: Planter #48

Inflow Area = 0.018 ac, 93.09% Impervious, Inflow Depth = 4.83" for 10-YR event
 Inflow = 0.16 cfs @ 11.90 hrs, Volume= 0.007 af
 Outflow = 0.15 cfs @ 11.91 hrs, Volume= 0.006 af, Atten= 4%, Lag= 0.8 min
 Primary = 0.15 cfs @ 11.91 hrs, Volume= 0.006 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2
 Peak Elev= 17.28' @ 11.91 hrs Surf.Area= 55 sf Storage= 56 cf

Plug-Flow detention time= 119.7 min calculated for 0.006 af (85% of inflow)
 Center-of-Mass det. time= 51.7 min (803.7 - 752.0)

Volume	Invert	Avail.Storage	Storage Description	
#1	14.74'	143 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
14.74	55	0.0	0	0
14.75	55	40.0	0	0
18.49	55	40.0	82	82
18.50	55	100.0	1	83
19.50	55	100.0	55	138
19.51	1,000	100.0	5	143

Device	Routing	Invert	Outlet Devices
#1	Primary	16.90'	4.0" Round Culvert L= 24.8' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.44' / 16.90' S= -0.0992 ' / Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.15 cfs @ 11.91 hrs HW=17.27' TW=13.19' (Dynamic Tailwater)

↑ **1=Culvert** (Inlet Controls 0.15 cfs @ 1.72 fps)

Naima - Phase 2 - Proposed HydroCAD

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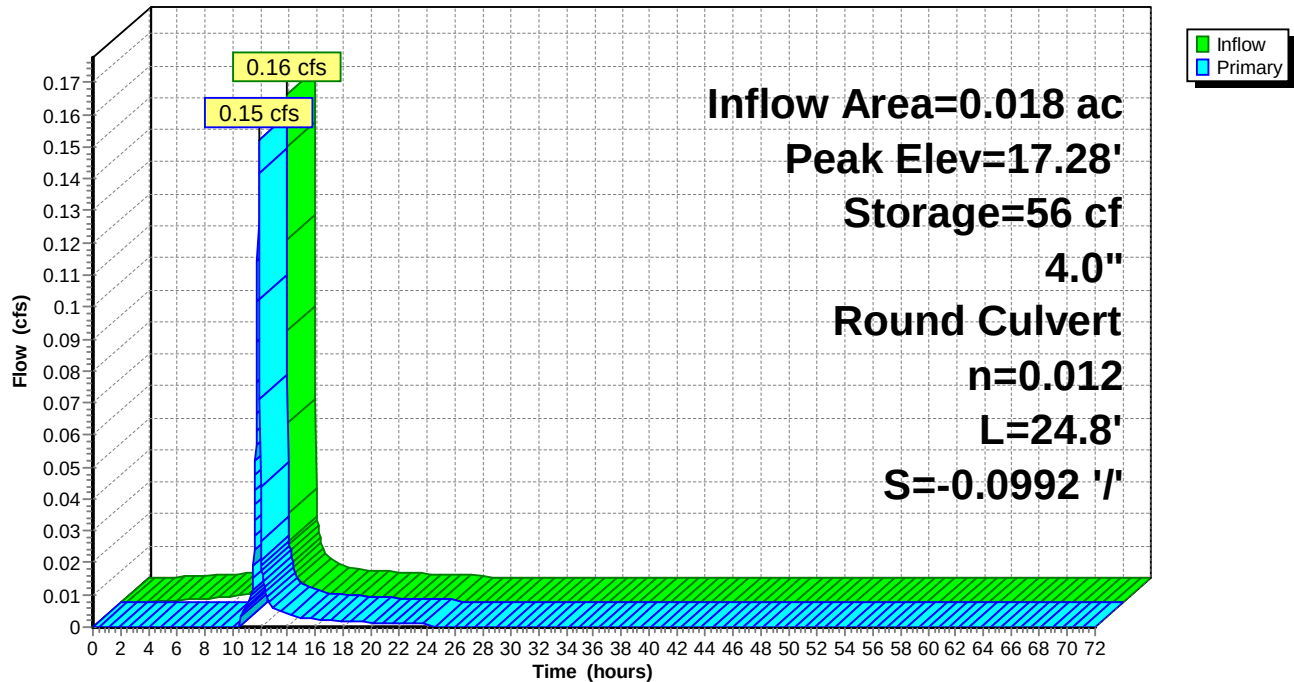
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Type II 24-hr 10-YR Rainfall=5.30"

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Pond P48: Planter #48

Hydrograph



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

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Summary for Pond P49: Planter #49

Inflow Area = 0.008 ac, 91.74% Impervious, Inflow Depth = 4.83" for 10-YR event
 Inflow = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af
 Outflow = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af, Atten= 2%, Lag= 0.3 min
 Primary = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 17.12' Surf.Area= 30 sf Storage= 29 cf

Peak Elev= 17.33' @ 11.90 hrs Surf.Area= 30 sf Storage= 31 cf (3 cf above start)

Plug-Flow detention time= 138.8 min calculated for 0.003 af (80% of inflow)

Center-of-Mass det. time= 2.6 min (754.6 - 752.0)

Volume	Invert	Avail.Storage	Storage Description
#1	14.74'	80 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
14.74	30	0.0	0	0
14.75	30	40.0	0	0
18.49	30	40.0	45	45
18.50	30	100.0	0	45
19.50	30	100.0	30	75
19.51	1,000	100.0	5	80

Device	Routing	Invert	Outlet Devices
#1	Primary	17.12'	4.0" Round Culvert L= 19.9' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.95' / 17.12' S= -0.1090 ' / Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.07 cfs @ 11.90 hrs HW=17.33' TW=15.35' (Dynamic Tailwater)↑ **1=Culvert** (Inlet Controls 0.07 cfs @ 1.23 fps)

Naima - Phase 2 - Proposed HydroCAD

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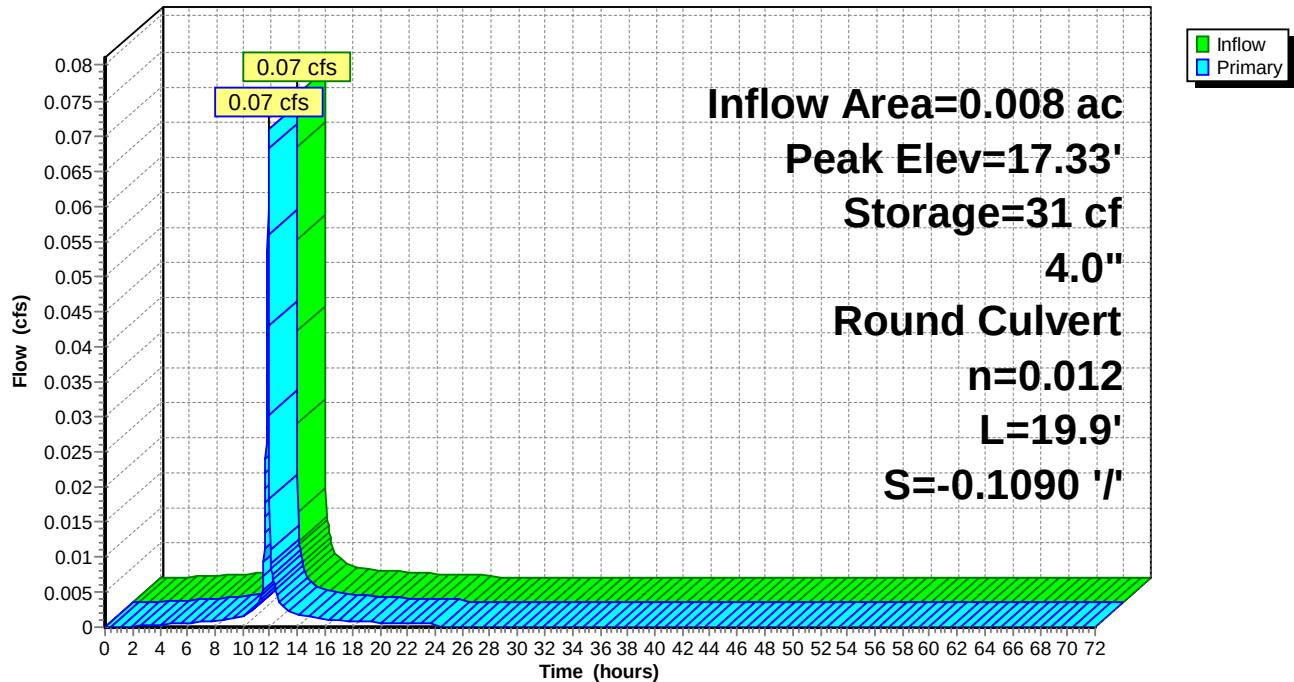
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Type II 24-hr 10-YR Rainfall=5.30"

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Pond P49: Planter #49

Hydrograph



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

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Summary for Pond P50: Planter #50

Inflow Area = 0.016 ac, 92.84% Impervious, Inflow Depth = 4.83" for 10-YR event
 Inflow = 0.14 cfs @ 11.90 hrs, Volume= 0.006 af
 Outflow = 0.13 cfs @ 11.91 hrs, Volume= 0.006 af, Atten= 4%, Lag= 0.6 min
 Primary = 0.13 cfs @ 11.91 hrs, Volume= 0.006 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Peak Elev= 16.28' @ 11.91 hrs Surf.Area= 50 sf Storage= 11 cf

Plug-Flow detention time= 21.6 min calculated for 0.006 af (99% of inflow)

Center-of-Mass det. time= 11.3 min (763.3 - 752.0)

Volume	Invert	Avail.Storage	Storage Description	
#1	15.74'	131 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
15.74	50	0.0	0	0
15.75	50	40.0	0	0
19.49	50	40.0	75	75
19.50	50	100.0	1	76
20.50	50	100.0	50	126
20.51	1,000	100.0	5	131

Device	Routing	Invert	Outlet Devices
#1	Primary	15.95'	4.0" Round Culvert L= 19.4' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.95' / 14.55' S= 0.0722 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.13 cfs @ 11.91 hrs HW=16.27' TW=13.18' (Dynamic Tailwater)↑ **1=Culvert** (Inlet Controls 0.13 cfs @ 1.53 fps)

Naima - Phase 2 - Proposed HydroCAD

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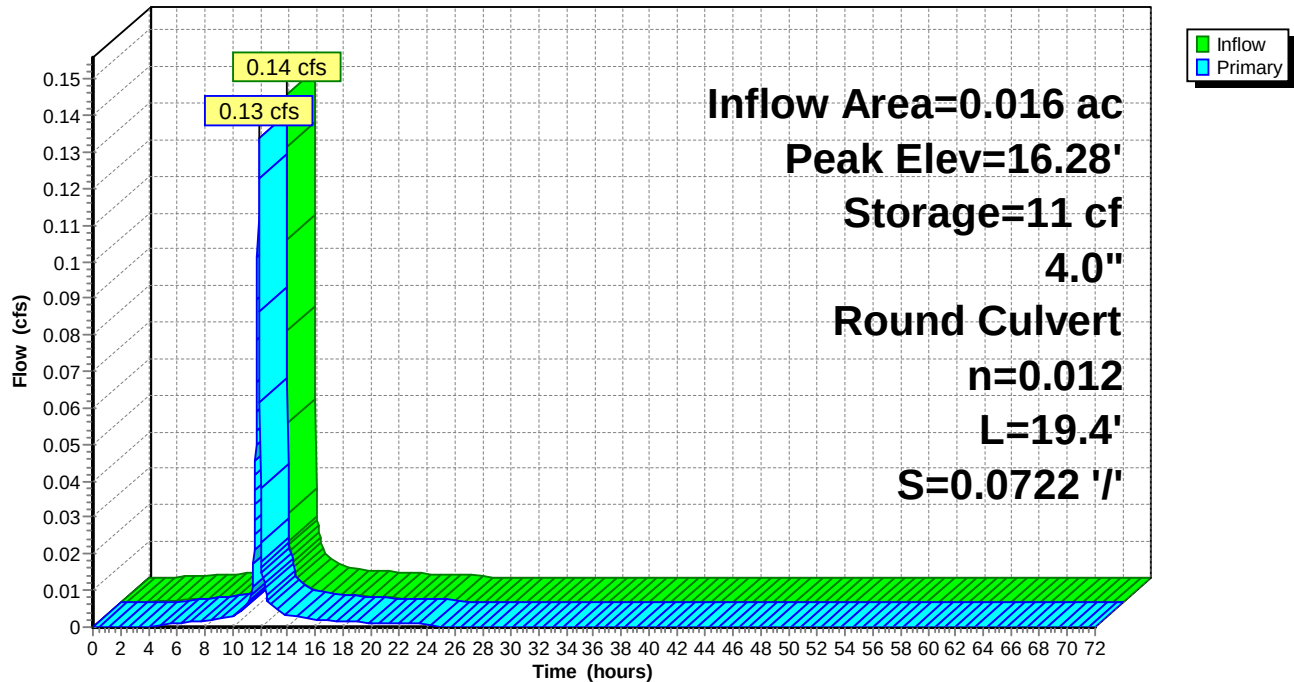
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Type II 24-hr 10-YR Rainfall=5.30"

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Pond P50: Planter #50

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Summary for Pond P51: Planter #51

Inflow Area = 0.013 ac, 93.19% Impervious, Inflow Depth = 4.83" for 10-YR event
 Inflow = 0.12 cfs @ 11.90 hrs, Volume= 0.005 af
 Outflow = 0.11 cfs @ 11.90 hrs, Volume= 0.005 af, Atten= 3%, Lag= 0.4 min
 Primary = 0.11 cfs @ 11.90 hrs, Volume= 0.005 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 17.31' Surf.Area= 40 sf Storage= 25 cf

Peak Elev= 17.59' @ 11.90 hrs Surf.Area= 40 sf Storage= 30 cf (5 cf above start)

Plug-Flow detention time= 96.9 min calculated for 0.005 af (89% of inflow)

Center-of-Mass det. time= 2.8 min (754.8 - 752.0)

Volume	Invert	Avail.Storage	Storage Description
#1	15.74'	106 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
15.74	40	0.0	0	0
15.75	40	40.0	0	0
19.49	40	40.0	60	60
19.50	40	100.0	0	60
20.50	40	100.0	40	100
20.51	1,000	100.0	5	106

Device	Routing	Invert	Outlet Devices
#1	Primary	17.31'	4.0" Round Culvert L= 36.8' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.95' / 17.31' S= -0.0370 ' /' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.11 cfs @ 11.90 hrs HW=17.59' TW=15.36' (Dynamic Tailwater)↑**1=Culvert** (Inlet Controls 0.11 cfs @ 1.43 fps)

Naima - Phase 2 - Proposed HydroCAD

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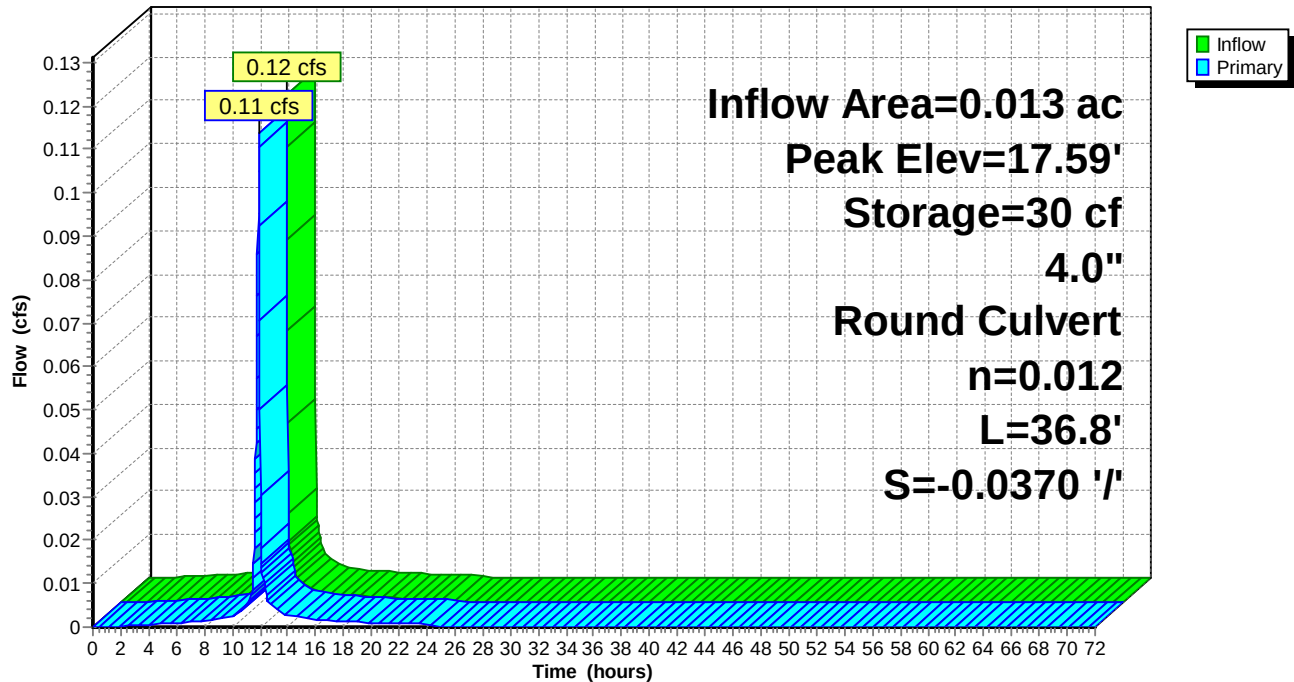
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Pond P51: Planter #51

Hydrograph



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

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Summary for Pond P52: Planter #52

Inflow Area = 0.014 ac, 93.22% Impervious, Inflow Depth = 4.83" for 10-YR event
 Inflow = 0.12 cfs @ 11.90 hrs, Volume= 0.005 af
 Outflow = 0.11 cfs @ 11.90 hrs, Volume= 0.005 af, Atten= 3%, Lag= 0.4 min
 Primary = 0.11 cfs @ 11.90 hrs, Volume= 0.005 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 17.54' Surf.Area= 40 sf Storage= 29 cf

Peak Elev= 17.83' @ 11.90 hrs Surf.Area= 40 sf Storage= 33 cf (5 cf above start)

Plug-Flow detention time= 105.4 min calculated for 0.005 af (88% of inflow)

Center-of-Mass det. time= 2.8 min (754.8 - 752.0)

Volume	Invert	Avail.Storage	Storage Description
#1	15.74'	106 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
15.74	40	0.0	0	0
15.75	40	40.0	0	0
19.49	40	40.0	60	60
19.50	40	100.0	0	60
20.50	40	100.0	40	100
20.51	1,000	100.0	5	106

Device	Routing	Invert	Outlet Devices
#1	Primary	17.54'	4.0" Round Culvert L= 28.9' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.95' / 17.54' S= -0.0550 ' / Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.11 cfs @ 11.90 hrs HW=17.82' TW=15.36' (Dynamic Tailwater)↑**1=Culvert** (Inlet Controls 0.11 cfs @ 1.43 fps)

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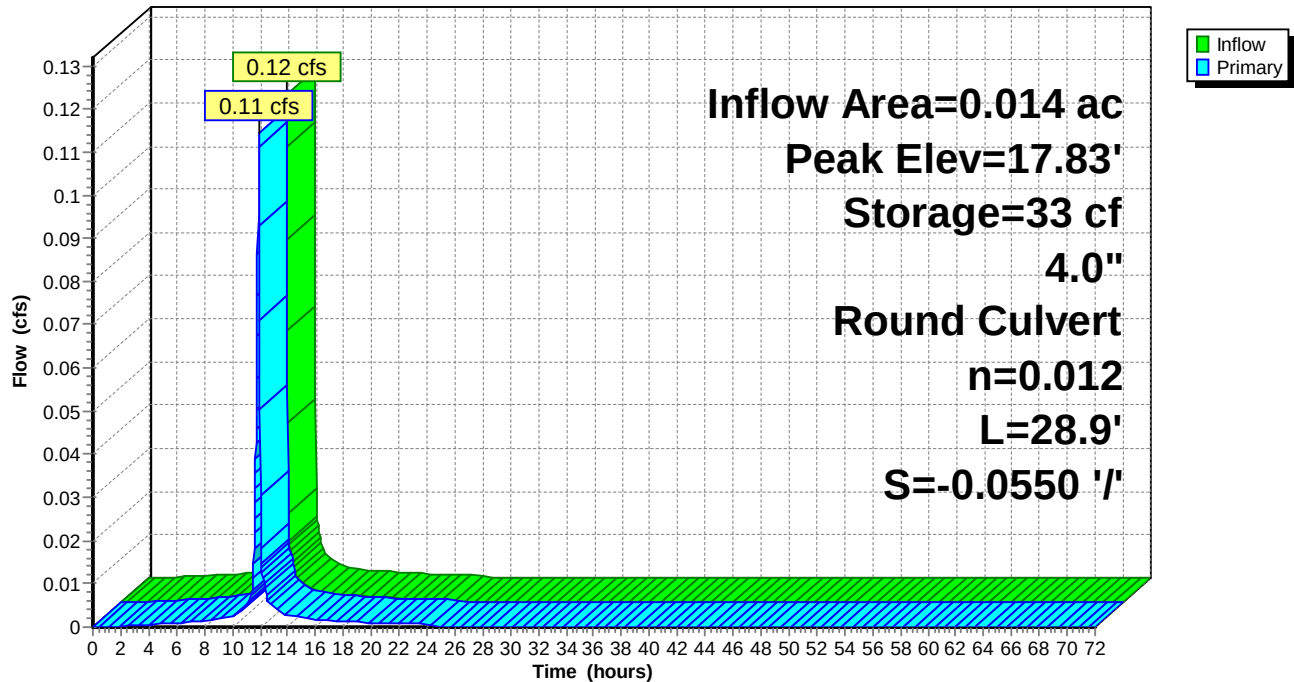
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Type II 24-hr 10-YR Rainfall=5.30"

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Pond P52: Planter #52

Hydrograph



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

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Summary for Pond P53: Planter #53

Inflow Area = 0.025 ac, 93.61% Impervious, Inflow Depth = 4.83" for 10-YR event
 Inflow = 0.22 cfs @ 11.90 hrs, Volume= 0.010 af
 Outflow = 0.20 cfs @ 11.92 hrs, Volume= 0.010 af, Atten= 7%, Lag= 1.0 min
 Primary = 0.20 cfs @ 11.92 hrs, Volume= 0.010 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2
 Peak Elev= 16.49' @ 11.92 hrs Surf.Area= 70 sf Storage= 21 cf

Plug-Flow detention time= 19.8 min calculated for 0.010 af (99% of inflow)
 Center-of-Mass det. time= 11.0 min (763.0 - 752.0)

Volume	Invert	Avail.Storage	Storage Description	
#1	15.74'	181 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
15.74	70	0.0	0	0
15.75	70	40.0	0	0
19.49	70	40.0	105	105
19.50	70	100.0	1	106
20.50	70	100.0	70	176
20.51	1,000	100.0	5	181

Device	Routing	Invert	Outlet Devices
#1	Primary	15.95'	4.0" Round Culvert L= 22.8' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.95' / 14.78' S= 0.0513 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.20 cfs @ 11.92 hrs HW=16.48' TW=13.20' (Dynamic Tailwater)

↑ **1=Culvert** (Inlet Controls 0.20 cfs @ 2.31 fps)

Naima - Phase 2 - Proposed HydroCAD

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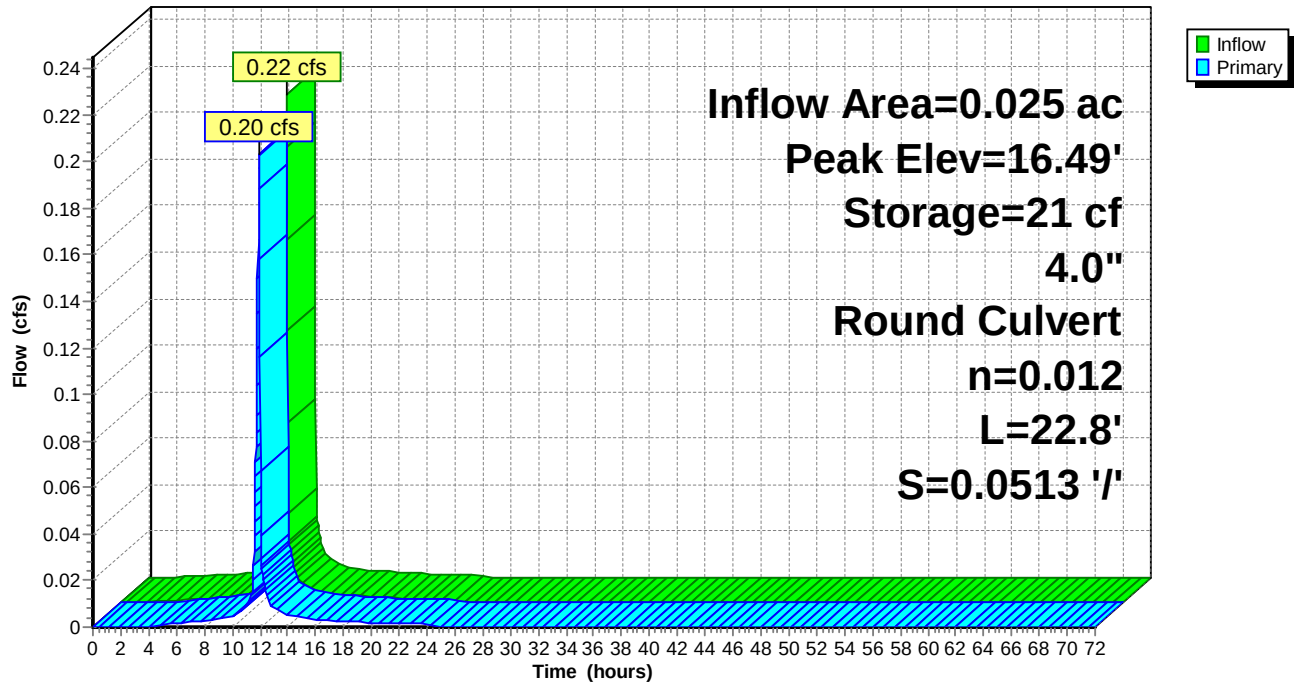
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Pond P53: Planter #53

Hydrograph



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

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Summary for Pond P54: Planter #54

Inflow Area = 0.008 ac, 91.48% Impervious, Inflow Depth = 4.83" for 10-YR event
 Inflow = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af
 Outflow = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af, Atten= 2%, Lag= 0.3 min
 Primary = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 18.58' Surf.Area= 30 sf Storage= 34 cf

Peak Elev= 18.79' @ 11.90 hrs Surf.Area= 30 sf Storage= 37 cf (2 cf above start)

Plug-Flow detention time= 154.8 min calculated for 0.002 af (76% of inflow)

Center-of-Mass det. time= 2.7 min (754.7 - 752.0)

Volume	Invert	Avail.Storage	Storage Description
#1	15.74'	80 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
15.74	30	0.0	0	0
15.75	30	40.0	0	0
19.49	30	40.0	45	45
19.50	30	100.0	0	45
20.50	30	100.0	30	75
20.51	1,000	100.0	5	80

Device	Routing	Invert	Outlet Devices
#1	Primary	18.58'	4.0" Round Culvert L= 13.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.95' / 18.58' S= -0.2023 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.07 cfs @ 11.90 hrs HW=18.78' TW=16.62' (Dynamic Tailwater)↑ **1=Culvert** (Inlet Controls 0.07 cfs @ 1.22 fps)

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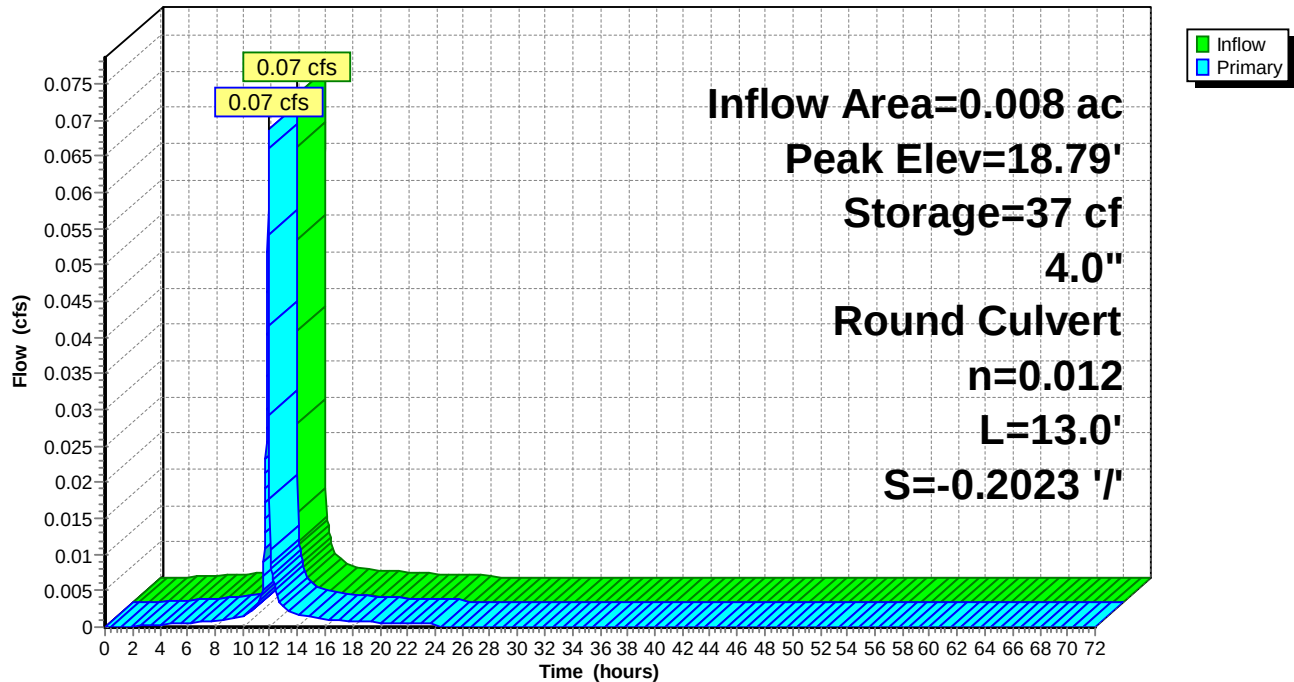
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Type II 24-hr 10-YR Rainfall=5.30"

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Pond P54: Planter #54

Hydrograph



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

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Summary for Pond PA-2: Porous Asphalt #2

Inflow Area = 0.105 ac, 81.59% Impervious, Inflow Depth = 4.54" for 10-YR event
 Inflow = 0.61 cfs @ 11.95 hrs, Volume= 0.040 af
 Outflow = 0.44 cfs @ 12.02 hrs, Volume= 0.039 af, Atten= 27%, Lag= 4.3 min
 Primary = 0.44 cfs @ 12.02 hrs, Volume= 0.039 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Peak Elev= 14.70' @ 12.02 hrs Surf.Area= 1,172 sf Storage= 309 cf

Plug-Flow detention time= 46.5 min calculated for 0.039 af (99% of inflow)

Center-of-Mass det. time= 37.9 min (810.2 - 772.2)

Volume	Invert	Avail.Storage	Storage Description
#1	14.04'	4,998 cf	Porous Asphalt Section (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
14.04	1,172	0.0	0	0
14.05	1,172	40.0	5	5
14.80	1,172	40.0	352	356
14.81	1,172	20.0	2	359
15.21	1,172	20.0	94	452
15.22	12,000	100.0	66	518
15.50	20,000	100.0	4,480	4,998

Device	Routing	Invert	Outlet Devices
#1	Primary	14.09'	6.0" Round Culvert L= 55.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.09' / 13.90' S= 0.0035 ' / ' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf
#2	Secondary	15.36'	55.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=0.44 cfs @ 12.02 hrs HW=14.70' TW=14.01' (Dynamic Tailwater)↑ **1=Culvert** (Barrel Controls 0.44 cfs @ 2.36 fps)**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=14.04' TW=15.10' (Dynamic Tailwater)↑ **2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Naima - Phase 2 - Proposed HydroCAD

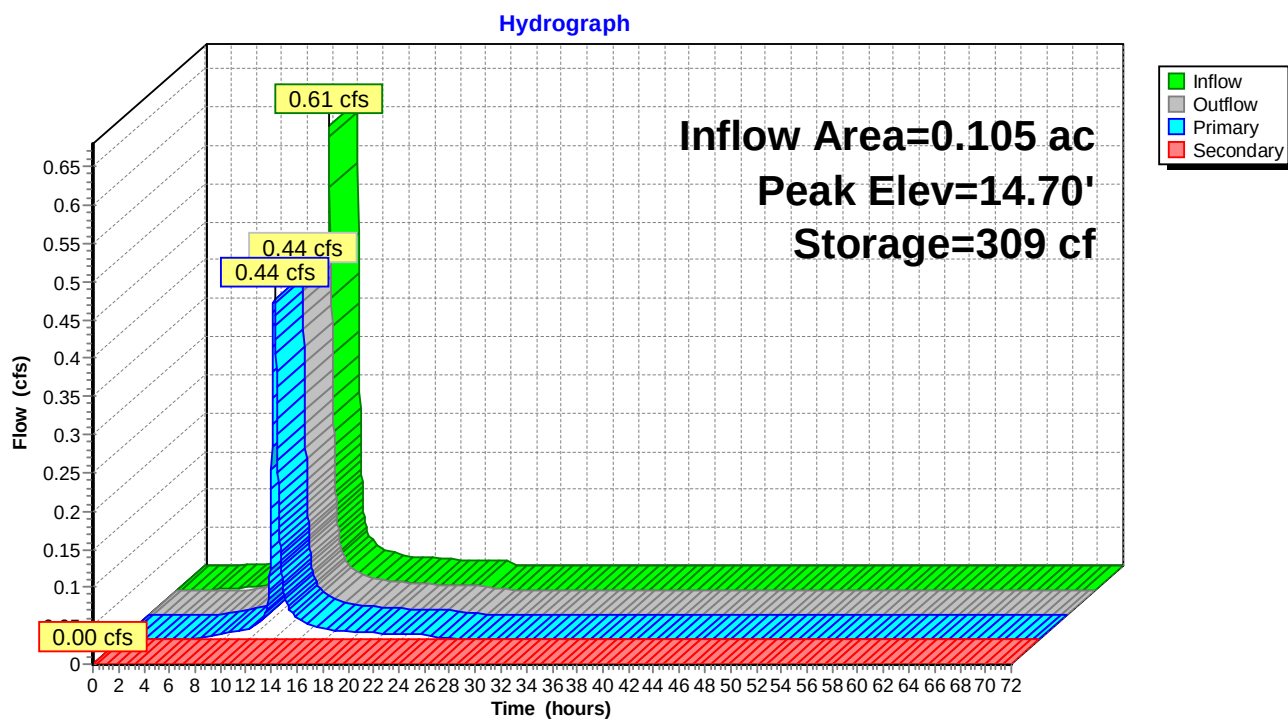
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Pond PA-2: Porous Asphalt #2



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

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Summary for Pond PA-3: Porous Asphalt #3

Inflow Area = 0.136 ac, 64.54% Impervious, Inflow Depth = 4.10" for 10-YR event
 Inflow = 0.64 cfs @ 11.93 hrs, Volume= 0.046 af
 Outflow = 0.49 cfs @ 12.04 hrs, Volume= 0.046 af, Atten= 23%, Lag= 6.6 min
 Primary = 0.49 cfs @ 12.04 hrs, Volume= 0.046 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Peak Elev= 14.60' @ 12.04 hrs Surf.Area= 903 sf Storage= 266 cf

Plug-Flow detention time= 31.0 min calculated for 0.046 af (99% of inflow)

Center-of-Mass det. time= 25.0 min (812.8 - 787.9)

Volume	Invert	Avail.Storage	Storage Description
#1	13.86'	7,773 cf	Porous Asphalt Section (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.86	903	0.0	0	0
13.87	903	40.0	4	4
14.62	903	40.0	271	275
14.63	903	20.0	2	276
15.03	903	20.0	72	349
15.04	12,000	100.0	65	413
15.50	20,000	100.0	7,360	7,773

Device	Routing	Invert	Outlet Devices
#1	Primary	13.91'	6.0" Round Culvert L= 43.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.91' / 13.70' S= 0.0049 ' / ' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf
#2	Secondary	15.04'	43.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=0.49 cfs @ 12.04 hrs HW=14.60' TW=14.01' (Dynamic Tailwater)↑ **1=Culvert** (Inlet Controls 0.49 cfs @ 2.51 fps)**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=13.86' TW=12.30' (Dynamic Tailwater)↑ **2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Naima - Phase 2 - Proposed HydroCAD

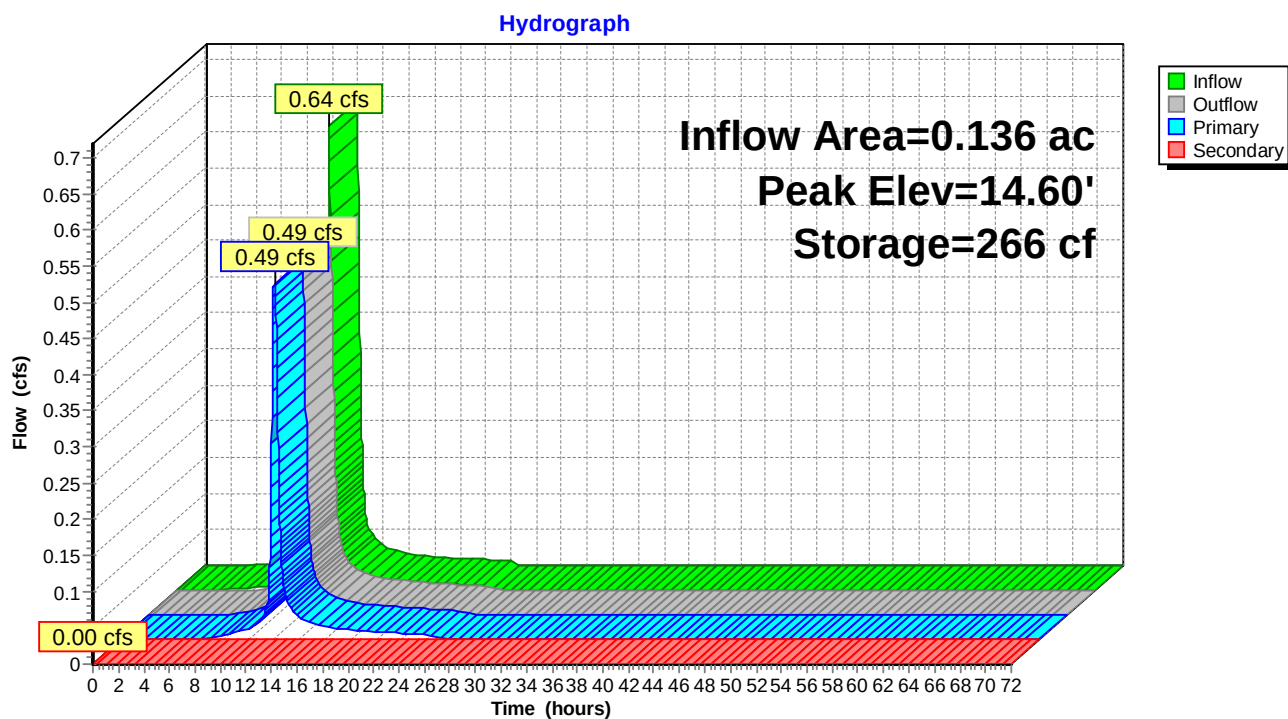
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Pond PA-3: Porous Asphalt #3



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

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Summary for Pond PA-4: Porous Asphalt #4

Inflow Area = 0.168 ac, 70.97% Impervious, Inflow Depth = 4.29" for 10-YR event
 Inflow = 0.85 cfs @ 11.95 hrs, Volume= 0.060 af
 Outflow = 0.63 cfs @ 12.02 hrs, Volume= 0.060 af, Atten= 26%, Lag= 4.3 min
 Primary = 0.63 cfs @ 12.02 hrs, Volume= 0.060 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Peak Elev= 14.89' @ 12.02 hrs Surf.Area= 1,097 sf Storage= 398 cf

Plug-Flow detention time= 34.0 min calculated for 0.060 af (99% of inflow)

Center-of-Mass det. time= 28.3 min (809.5 - 781.2)

Volume	Invert	Avail.Storage	Storage Description
#1	13.84'	8,169 cf	Porous Asphalt Section (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.84	1,097	0.0	0	0
13.85	1,097	40.0	4	4
14.60	1,097	40.0	329	333
14.61	1,097	20.0	2	336
15.01	1,097	20.0	88	423
15.02	12,000	100.0	65	489
15.50	20,000	100.0	7,680	8,169

Device	Routing	Invert	Outlet Devices
#1	Primary	13.89'	6.0" Round Culvert L= 52.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.89' / 13.70' S= 0.0037 ' / S= 0.0037 ' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf
#2	Secondary	15.02'	52.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=0.63 cfs @ 12.02 hrs HW=14.89' TW=14.01' (Dynamic Tailwater)↑ **1=Culvert** (Barrel Controls 0.63 cfs @ 3.20 fps)**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=13.84' TW=12.30' (Dynamic Tailwater)↑ **2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Naima - Phase 2 - Proposed HydroCAD

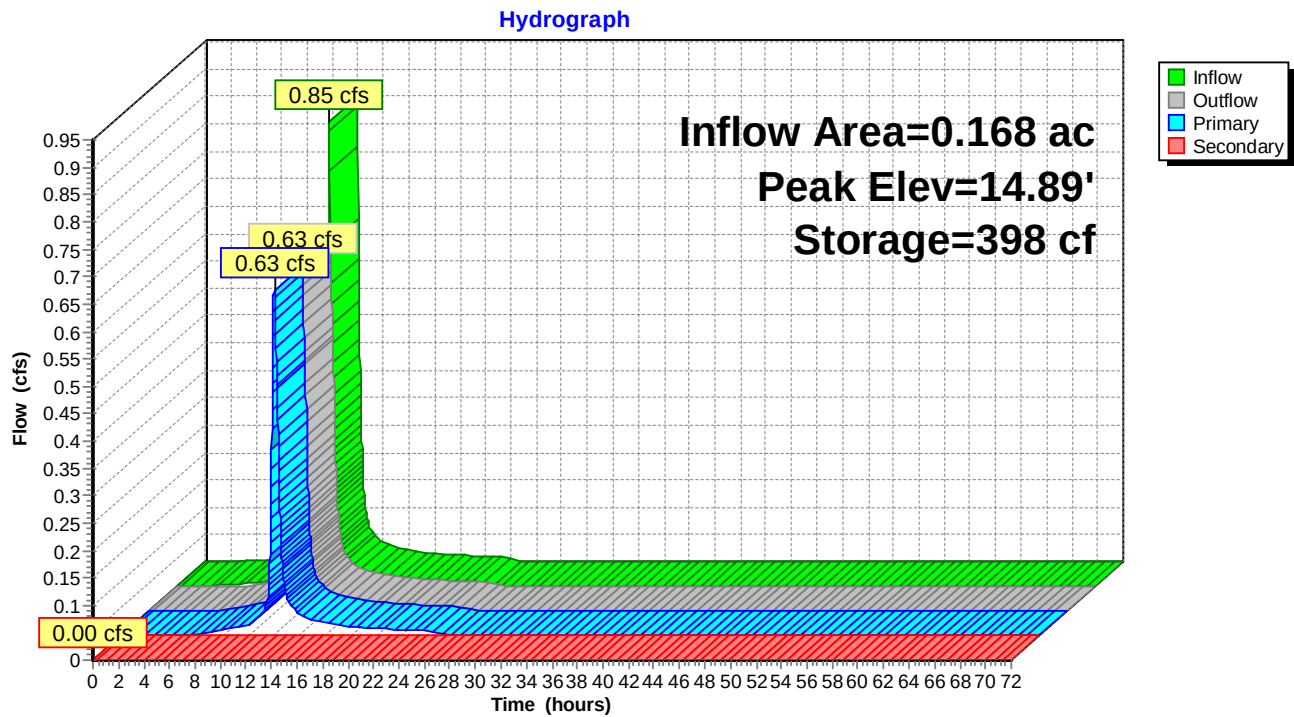
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Pond PA-4: Porous Asphalt #4



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

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Summary for Pond PA-5: Porous Asphalt #5

Inflow Area = 0.187 ac, 78.13% Impervious, Inflow Depth = 4.49" for 10-YR event
 Inflow = 0.95 cfs @ 11.94 hrs, Volume= 0.070 af
 Outflow = 0.49 cfs @ 12.13 hrs, Volume= 0.069 af, Atten= 48%, Lag= 11.8 min
 Primary = 0.49 cfs @ 12.13 hrs, Volume= 0.069 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Peak Elev= 15.19' @ 12.13 hrs Surf.Area= 2,333 sf Storage= 872 cf

Plug-Flow detention time= 79.7 min calculated for 0.069 af (98% of inflow)

Center-of-Mass det. time= 68.7 min (844.9 - 776.2)

Volume	Invert	Avail.Storage	Storage Description
#1	14.08'	4,812 cf	Porous Asphalt Section (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
14.08	2,333	0.0	0	0
14.09	2,333	40.0	9	9
14.84	2,333	40.0	700	709
14.85	2,333	20.0	5	714
15.25	2,333	20.0	187	901
15.26	12,000	100.0	72	972
15.50	20,000	100.0	3,840	4,812

Device	Routing	Invert	Outlet Devices
#1	Primary	14.13'	6.0" Round Culvert L= 109.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.13' / 14.00' S= 0.0012 ' / S= 0.0012 ' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf
#2	Secondary	15.26'	109.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=0.49 cfs @ 12.13 hrs HW=15.19' TW=13.85' (Dynamic Tailwater)↑ **1=Culvert** (Barrel Controls 0.49 cfs @ 2.52 fps)**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=14.08' TW=15.11' (Dynamic Tailwater)↑ **2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Naima - Phase 2 - Proposed HydroCAD

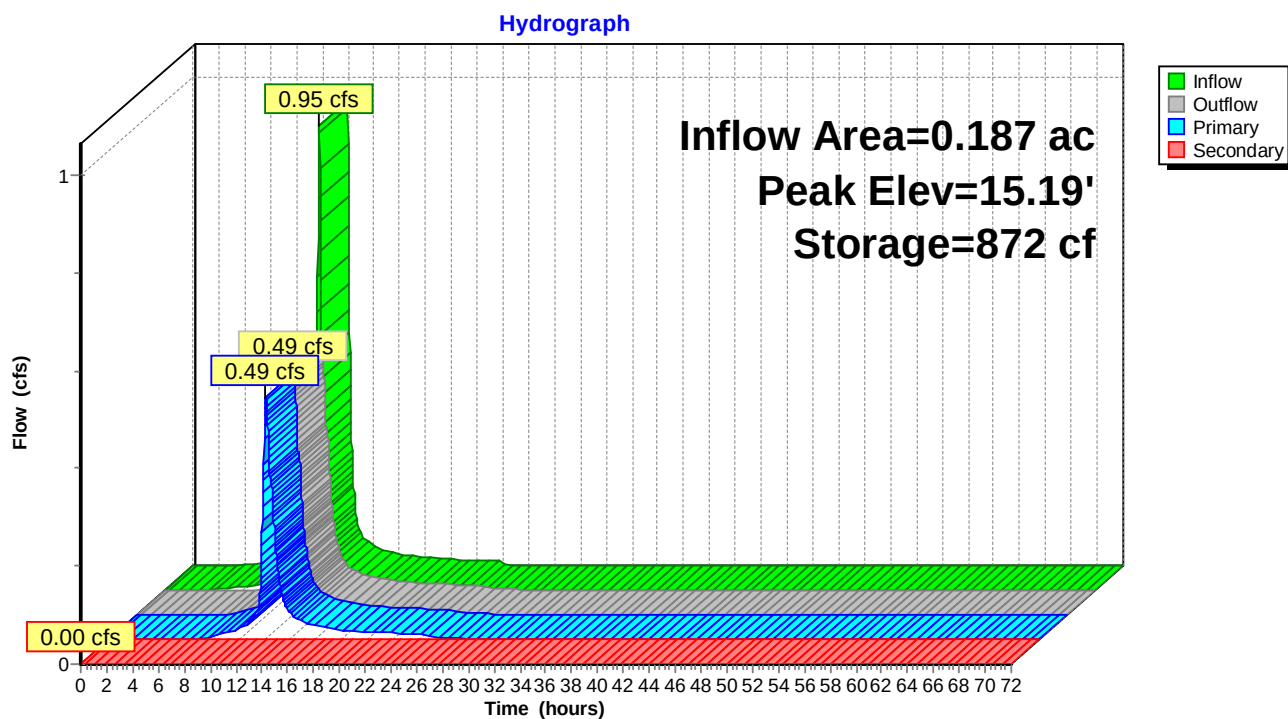
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Pond PA-5: Porous Asphalt #5



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

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Summary for Pond PA-6: Porous Asphalt #6

Inflow Area = 0.290 ac, 80.14% Impervious, Inflow Depth = 4.53" for 10-YR event
 Inflow = 1.59 cfs @ 11.93 hrs, Volume= 0.110 af
 Outflow = 0.53 cfs @ 12.19 hrs, Volume= 0.108 af, Atten= 67%, Lag= 16.0 min
 Primary = 0.53 cfs @ 12.20 hrs, Volume= 0.108 af
 Secondary = 0.00 cfs @ 12.18 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Peak Elev= 15.78' @ 12.20 hrs Surf.Area= 12,682 sf Storage= 1,519 cf

Plug-Flow detention time= 77.6 min calculated for 0.108 af (99% of inflow)

Center-of-Mass det. time= 68.3 min (841.3 - 773.0)

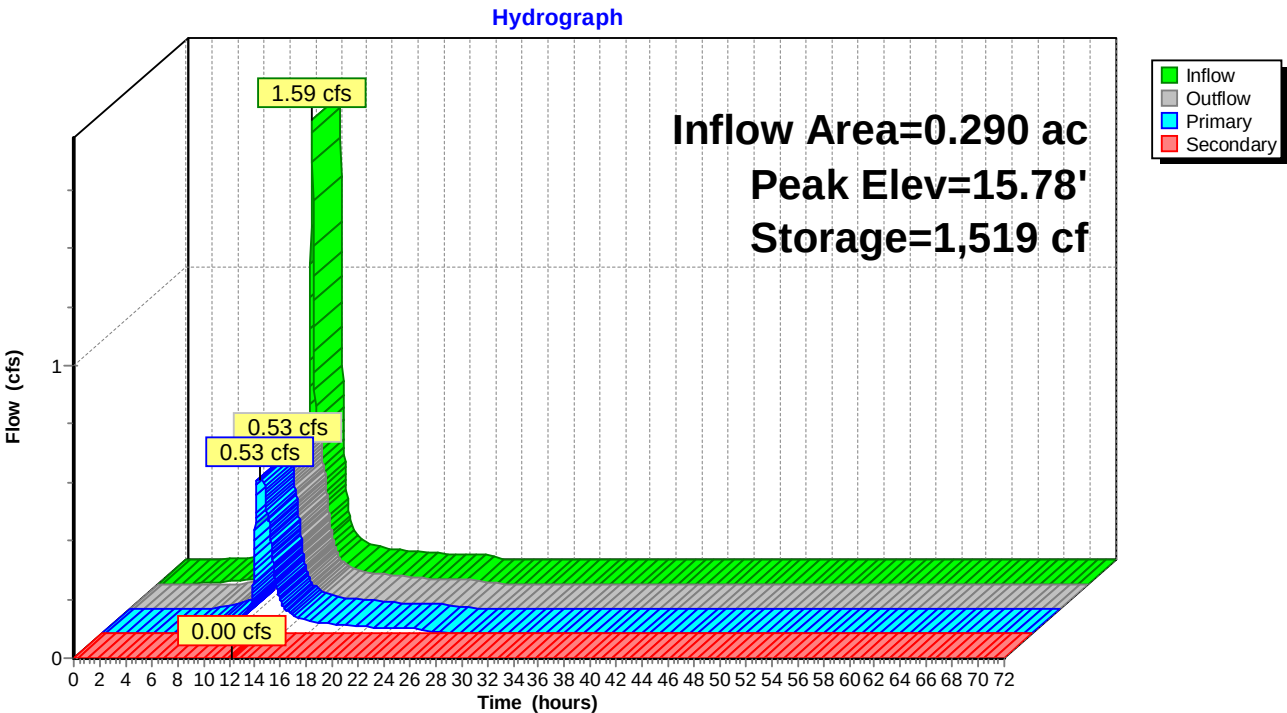
Volume	Invert	Avail.Storage	Storage Description
#1	14.58'	5,106 cf	Porous Asphalt Section (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
14.58	3,085	0.0	0	0
14.59	3,085	40.0	12	12
15.34	3,085	40.0	926	938
15.35	3,085	20.0	6	944
15.75	3,085	20.0	247	1,191
15.76	12,000	100.0	75	1,266
16.00	20,000	100.0	3,840	5,106

Device	Routing	Invert	Outlet Devices
#1	Primary	14.63'	6.0" Round Culvert L= 144.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.63' / 14.30' S= 0.0023 ' / S= 0.0023 ' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf
#2	Secondary	15.76'	144.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=0.53 cfs @ 12.20 hrs HW=15.78' TW=13.71' (Dynamic Tailwater)↑ **1=Culvert** (Barrel Controls 0.53 cfs @ 2.70 fps)**Secondary OutFlow** Max=0.00 cfs @ 12.18 hrs HW=15.78' TW=15.78' (Dynamic Tailwater)↑ **2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond PA-6: Porous Asphalt #6



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

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Summary for Pond PA-7: Porous Asphalt #7

Inflow Area = 0.034 ac, 75.76% Impervious, Inflow Depth = 4.41" for 10-YR event
 Inflow = 0.18 cfs @ 11.93 hrs, Volume= 0.013 af
 Outflow = 0.15 cfs @ 12.01 hrs, Volume= 0.012 af, Atten= 15%, Lag= 4.9 min
 Primary = 0.15 cfs @ 12.01 hrs, Volume= 0.012 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Peak Elev= 16.70' @ 12.01 hrs Surf.Area= 387 sf Storage= 65 cf

Plug-Flow detention time= 33.7 min calculated for 0.012 af (99% of inflow)

Center-of-Mass det. time= 24.9 min (803.4 - 778.5)

Volume	Invert	Avail.Storage	Storage Description
#1	16.28'	4,851 cf	Porous Asphalt Section (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
16.28	387	0.0	0	0
16.29	387	40.0	2	2
17.04	387	40.0	116	118
17.05	387	20.0	1	118
17.45	387	20.0	31	149
17.46	12,000	100.0	62	211
17.75	20,000	100.0	4,640	4,851

Device	Routing	Invert	Outlet Devices
#1	Primary	16.33'	4.0" Round Culvert L= 18.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 16.33' / 16.20' S= 0.0072 ' / S= 0.0072 ' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf
#2	Secondary	17.46'	18.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=0.15 cfs @ 12.01 hrs HW=16.70' TW=14.00' (Dynamic Tailwater)↑**1=Culvert** (Inlet Controls 0.15 cfs @ 1.70 fps)**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=16.28' TW=17.34' (Dynamic Tailwater)↑**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Naima - Phase 2 - Proposed HydroCAD

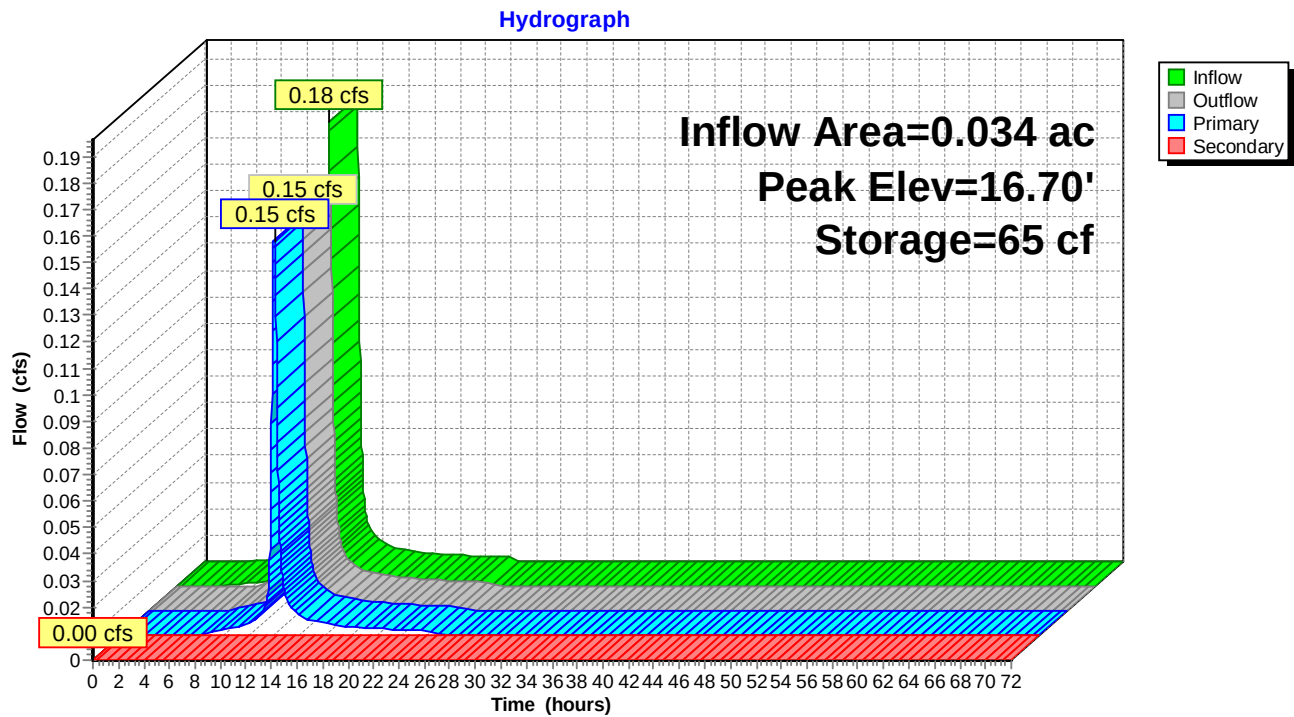
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Pond PA-7: Porous Asphalt #7



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

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Summary for Pond SDMH-1: Proposed SDMH West of Bldgs

Inflow Area = 1.512 ac, 62.04% Impervious, Inflow Depth = 4.03" for 10-YR event
Inflow = 4.59 cfs @ 11.93 hrs, Volume= 0.508 af
Outflow = 4.59 cfs @ 11.93 hrs, Volume= 0.508 af, Atten= 0%, Lag= 0.0 min
Primary = 4.59 cfs @ 11.93 hrs, Volume= 0.508 af

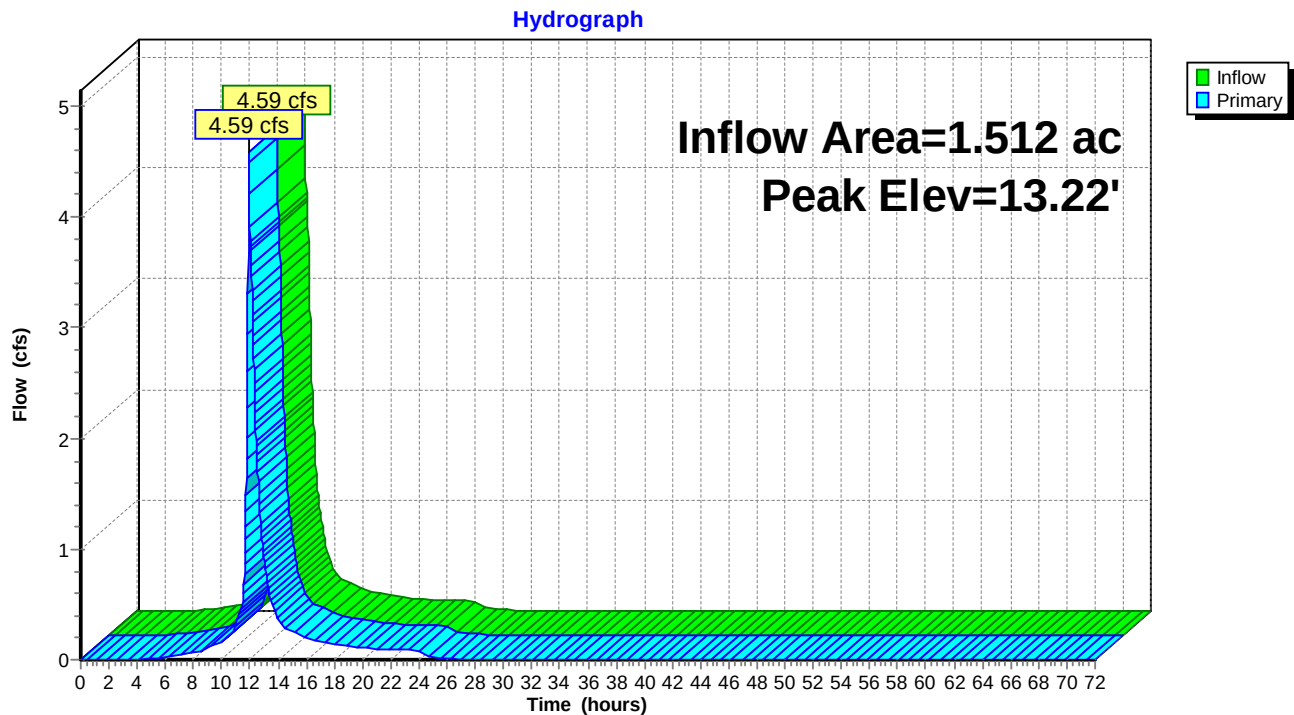
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 13.22' @ 11.93 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	16.00'	2.0" x 2.0" Horiz. Orifice/Grate X 11.00 columns X 11 rows C= 0.600 in 24.0" x 24.0" Grate (84% open area) Limited to weir flow at low heads
#2	Primary	12.00'	15.0" Round Culvert L= 172.1' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 12.00' / 10.14' S= 0.0108 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.23 sf

Primary OutFlow Max=4.57 cfs @ 11.93 hrs HW=13.22' TW=0.00' (Dynamic Tailwater)

1=Orifice/Grate (Controls 0.00 cfs)
2=Culvert (Inlet Controls 4.57 cfs @ 3.75 fps)

Pond SDMH-1: Proposed SDMH West of Bldgs



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

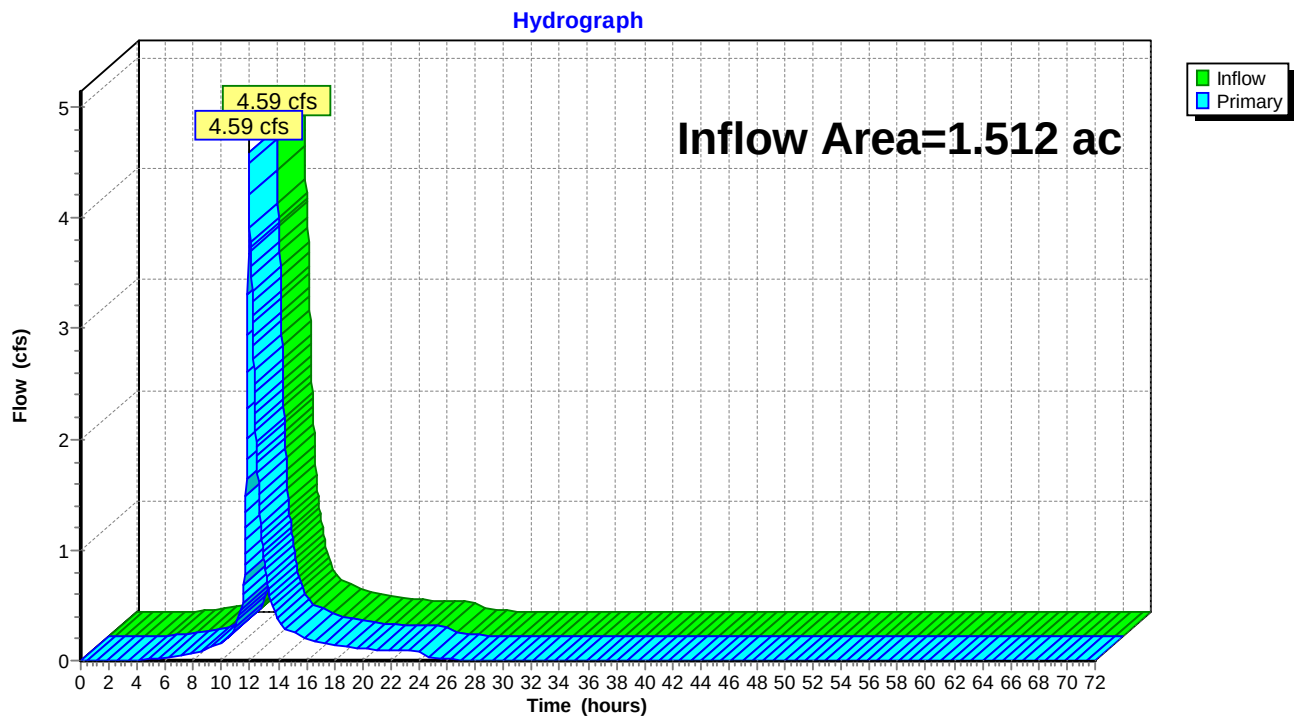
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Summary for Link SP-1: SDMH 20201 - At Intersection of Jowite and Moton

Inflow Area = 1.512 ac, 62.04% Impervious, Inflow Depth = 4.03" for 10-YR event
Inflow = 4.59 cfs @ 11.93 hrs, Volume= 0.508 af
Primary = 4.59 cfs @ 11.93 hrs, Volume= 0.508 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs

Link SP-1: SDMH 20201 - At Intersection of Jowite and Moton



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

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Time span=0.00-72.00 hrs, dt=0.02 hrs, 3601 points x 2
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 17S: Rooftop #18	Runoff Area=771 sf 96.11% Impervious Runoff Depth=7.24"
Flow Length=37' Slope=0.4167 'l' Tc=0.2 min CN=97	Runoff=0.22 cfs 0.011 af
Subcatchment 19: Rooftop #19	Runoff Area=796 sf 93.09% Impervious Runoff Depth=7.12"
Flow Length=37' Slope=0.4167 'l' Tc=0.2 min CN=96	Runoff=0.23 cfs 0.011 af
Subcatchment 20: Rooftop #20	Runoff Area=363 sf 91.74% Impervious Runoff Depth=7.12"
Flow Length=37' Slope=0.4167 'l' Tc=0.2 min CN=96	Runoff=0.10 cfs 0.005 af
Subcatchment 21: Rooftop #21	Runoff Area=219 sf 90.87% Impervious Runoff Depth=7.12"
Flow Length=37' Slope=0.4167 'l' Tc=0.2 min CN=96	Runoff=0.06 cfs 0.003 af
Subcatchment 22: Rooftop #22	Runoff Area=1,216 sf 93.42% Impervious Runoff Depth=7.12"
Flow Length=37' Slope=0.4167 'l' Tc=0.2 min CN=96	Runoff=0.35 cfs 0.017 af
Subcatchment 23: Rooftop #23	Runoff Area=698 sf 92.84% Impervious Runoff Depth=7.12"
Flow Length=37' Slope=0.4167 'l' Tc=0.2 min CN=96	Runoff=0.20 cfs 0.010 af
Subcatchment 24: Rooftop #24	Runoff Area=587 sf 93.19% Impervious Runoff Depth=7.12"
Flow Length=37' Slope=0.4167 'l' Tc=0.2 min CN=96	Runoff=0.17 cfs 0.008 af
Subcatchment 25: Rooftop #25	Runoff Area=590 sf 93.22% Impervious Runoff Depth=7.12"
Flow Length=37' Slope=0.4167 'l' Tc=0.2 min CN=96	Runoff=0.17 cfs 0.008 af
Subcatchment 26: Rooftop #26	Runoff Area=1,095 sf 93.61% Impervious Runoff Depth=7.12"
Flow Length=37' Slope=0.4167 'l' Tc=0.2 min CN=96	Runoff=0.32 cfs 0.015 af
Subcatchment 27: Rooftop #27	Runoff Area=352 sf 91.48% Impervious Runoff Depth=7.12"
Flow Length=37' Slope=0.4167 'l' Tc=0.2 min CN=96	Runoff=0.10 cfs 0.005 af
Subcatchment 28: Rooftop #28	Runoff Area=796 sf 93.09% Impervious Runoff Depth=7.12"
Flow Length=37' Slope=0.4167 'l' Tc=0.2 min CN=96	Runoff=0.23 cfs 0.011 af
Subcatchment 29: Rooftop #29	Runoff Area=363 sf 91.74% Impervious Runoff Depth=7.12"
Flow Length=37' Slope=0.4167 'l' Tc=0.2 min CN=96	Runoff=0.10 cfs 0.005 af
Subcatchment 30: Rooftop #30	Runoff Area=219 sf 90.87% Impervious Runoff Depth=7.12"
Flow Length=37' Slope=0.4167 'l' Tc=0.2 min CN=96	Runoff=0.06 cfs 0.003 af
Subcatchment 31: Rooftop #31	Runoff Area=1,216 sf 93.42% Impervious Runoff Depth=7.12"
Flow Length=37' Slope=0.4167 'l' Tc=0.2 min CN=96	Runoff=0.35 cfs 0.017 af
Subcatchment 32: Rooftop #32	Runoff Area=219 sf 90.87% Impervious Runoff Depth=7.12"
Flow Length=37' Slope=0.4167 'l' Tc=0.2 min CN=96	Runoff=0.06 cfs 0.003 af
Subcatchment 33: Rooftop #33	Runoff Area=1,216 sf 93.42% Impervious Runoff Depth=7.12"
Flow Length=37' Slope=0.4167 'l' Tc=0.2 min CN=96	Runoff=0.35 cfs 0.017 af

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Subcatchment 34: Rooftop #34	Runoff Area=796 sf 93.09% Impervious Runoff Depth=7.12"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.23 cfs 0.011 af
Subcatchment 35: Rooftop #35	Runoff Area=363 sf 91.74% Impervious Runoff Depth=7.12"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.10 cfs 0.005 af
Subcatchment 36: Rooftop #36	Runoff Area=698 sf 92.84% Impervious Runoff Depth=7.12"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.20 cfs 0.010 af
Subcatchment 37: Rooftop #37	Runoff Area=587 sf 93.19% Impervious Runoff Depth=7.12"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.17 cfs 0.008 af
Subcatchment 38: Rooftop #38	Runoff Area=590 sf 93.22% Impervious Runoff Depth=7.12"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.17 cfs 0.008 af
Subcatchment 39: Rooftop #39	Runoff Area=1,095 sf 93.61% Impervious Runoff Depth=7.12"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.32 cfs 0.015 af
Subcatchment 40: Rooftop #40	Runoff Area=352 sf 91.48% Impervious Runoff Depth=7.12"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.10 cfs 0.005 af
Subcatchment 41: Rooftop #41	Runoff Area=1,095 sf 93.61% Impervious Runoff Depth=7.12"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.32 cfs 0.015 af
Subcatchment 42: Rooftop #42	Runoff Area=352 sf 91.48% Impervious Runoff Depth=7.12"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.10 cfs 0.005 af
Subcatchment 43: Rooftop #43	Runoff Area=590 sf 93.22% Impervious Runoff Depth=7.12"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.17 cfs 0.008 af
Subcatchment 44: Rooftop #44	Runoff Area=698 sf 92.84% Impervious Runoff Depth=7.12"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.20 cfs 0.010 af
Subcatchment 45: Rooftop #45	Runoff Area=587 sf 93.19% Impervious Runoff Depth=7.12"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.17 cfs 0.008 af
Subcatchment 46: Rooftop #46	Runoff Area=219 sf 90.87% Impervious Runoff Depth=7.12"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.06 cfs 0.003 af
Subcatchment 47: Rooftop #47	Runoff Area=1,216 sf 93.42% Impervious Runoff Depth=7.12"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.35 cfs 0.017 af
Subcatchment 48: Rooftop #48	Runoff Area=796 sf 93.09% Impervious Runoff Depth=7.12"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.23 cfs 0.011 af
Subcatchment 49: Rooftop #49	Runoff Area=363 sf 91.74% Impervious Runoff Depth=7.12"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.10 cfs 0.005 af
Subcatchment 50: Rooftop #50	Runoff Area=698 sf 92.84% Impervious Runoff Depth=7.12"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.20 cfs 0.010 af

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

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Subcatchment 51: Rooftop #51	Runoff Area=587 sf 93.19% Impervious Runoff Depth=7.12"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.17 cfs 0.008 af
Subcatchment 52: Rooftop #52	Runoff Area=590 sf 93.22% Impervious Runoff Depth=7.12"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.17 cfs 0.008 af
Subcatchment 53: Rooftop #53	Runoff Area=1,095 sf 93.61% Impervious Runoff Depth=7.12"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.32 cfs 0.015 af
Subcatchment 54: Rooftop #54	Runoff Area=352 sf 91.48% Impervious Runoff Depth=7.12"
Flow Length=37'	Slope=0.4167 '/' Tc=0.2 min CN=96 Runoff=0.10 cfs 0.005 af
Subcatchment 55: Non-RT DA to PA-2	Runoff Area=3,000 sf 75.57% Impervious Runoff Depth=6.65"
Flow Length=43'	Slope=0.0100 '/' Tc=6.4 min CN=92 Runoff=0.58 cfs 0.038 af
Subcatchment 56: Non-RT DA to PA-3	Runoff Area=4,390 sf 54.69% Impervious Runoff Depth=6.06"
Flow Length=55'	Slope=0.0100 '/' Tc=7.8 min CN=87 Runoff=0.73 cfs 0.051 af
Subcatchment 57: Non-RT DA to PA-4	Runoff Area=4,540 sf 57.29% Impervious Runoff Depth=6.18"
Flow Length=62'	Slope=0.0100 '/' Tc=8.6 min CN=88 Runoff=0.74 cfs 0.054 af
Subcatchment 58: Non-RT DA to PA-5	Runoff Area=6,269 sf 73.76% Impervious Runoff Depth=6.65"
Flow Length=52'	Slope=0.0100 '/' Tc=7.4 min CN=92 Runoff=1.13 cfs 0.080 af
Subcatchment 59: Non-RT DA to PA-6	Runoff Area=8,366 sf 73.55% Impervious Runoff Depth=6.65"
Flow Length=50'	Slope=0.0100 '/' Tc=7.2 min CN=92 Runoff=1.53 cfs 0.106 af
Subcatchment 60: Non-RT DA to PA-7	Runoff Area=1,133 sf 70.87% Impervious Runoff Depth=6.53"
Flow Length=48'	Slope=0.0100 '/' Tc=7.0 min CN=91 Runoff=0.21 cfs 0.014 af
Subcatchment 61: West DA to Jowite	Runoff Area=14,486 sf 0.00% Impervious Runoff Depth=4.57"
	Flow Length=721' Tc=13.9 min CN=74 Runoff=1.40 cfs 0.127 af
Reach VG-2: Valley Gutter 2	Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
	n=0.011 L=57.0' S=0.0061 '/' Capacity=0.14 cfs Outflow=0.00 cfs 0.000 af
Reach VG-3: Valley Gutter 3	Avg. Flow Depth=0.39' Max Vel=1.51 fps Inflow=1.89 cfs 0.023 af
	n=0.011 L=66.0' S=0.0055 '/' Capacity=0.13 cfs Outflow=1.51 cfs 0.023 af
Reach VG-4: Valley Gutter 4	Avg. Flow Depth=0.35' Max Vel=1.53 fps Inflow=3.04 cfs 0.015 af
	n=0.011 L=118.0' S=0.0057 '/' Capacity=0.14 cfs Outflow=1.37 cfs 0.015 af
Reach VG-5: Valley Gutter 5	Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
	n=0.011 L=152.0' S=0.0103 '/' Capacity=0.18 cfs Outflow=0.00 cfs 0.000 af
Pond EX-I-2: EX-I-2	Peak Elev=14.66' Inflow=4.43 cfs 0.512 af
	Outflow=4.43 cfs 0.512 af
Pond P19: Planter #19	Peak Elev=14.14' Storage=20 cf Inflow=0.23 cfs 0.011 af
	4.0" Round Culvert n=0.012 L=26.8' S=0.0131 '/' Outflow=0.19 cfs 0.011 af

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

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Pond P20: Planter #20	Peak Elev=16.06' Storage=34 cf Inflow=0.10 cfs 0.005 af 4.0" Round Culvert n=0.012 L=20.1' S=-0.1169 ' /' Outflow=0.10 cfs 0.005 af
Pond P21: Planter #21	Peak Elev=13.81' Storage=5 cf Inflow=0.06 cfs 0.003 af 4.0" Round Culvert n=0.012 L=30.2' S=0.0185 ' /' Outflow=0.06 cfs 0.003 af
Pond P22: Planter #22	Peak Elev=16.96' Storage=119 cf Inflow=0.35 cfs 0.017 af 4.0" Round Culvert n=0.012 L=59.7' S=-0.0350 ' /' Outflow=0.28 cfs 0.017 af
Pond P23: Planter #23	Peak Elev=14.02' Storage=26 cf Inflow=0.20 cfs 0.010 af 4.0" Round Culvert n=0.012 L=20.7' S=0.0068 ' /' Outflow=0.17 cfs 0.009 af
Pond P24: Planter #24	Peak Elev=15.86' Storage=50 cf Inflow=0.17 cfs 0.008 af 4.0" Round Culvert n=0.012 L=36.6' S=-0.0683 ' /' Outflow=0.16 cfs 0.008 af
Pond P25: Planter #25	Peak Elev=15.73' Storage=48 cf Inflow=0.17 cfs 0.008 af 4.0" Round Culvert n=0.012 L=28.9' S=-0.0820 ' /' Outflow=0.16 cfs 0.008 af
Pond P26: Planter #26	Peak Elev=14.37' Storage=46 cf Inflow=0.32 cfs 0.015 af 4.0" Round Culvert n=0.012 L=24.5' S=0.0159 ' /' Outflow=0.25 cfs 0.015 af
Pond P27: Planter #27	Peak Elev=15.34' Storage=31 cf Inflow=0.10 cfs 0.005 af 4.0" Round Culvert n=0.012 L=10.8' S=-0.1972 ' /' Outflow=0.10 cfs 0.005 af
Pond P28: Planter #28	Peak Elev=14.11' Storage=19 cf Inflow=0.23 cfs 0.011 af 4.0" Round Culvert n=0.012 L=14.3' S=0.0245 ' /' Outflow=0.20 cfs 0.011 af
Pond P29: Planter #29	Peak Elev=15.25' Storage=24 cf Inflow=0.10 cfs 0.005 af 4.0" Round Culvert n=0.012 L=32.3' S=-0.0477 ' /' Outflow=0.10 cfs 0.005 af
Pond P30: Planter #30	Peak Elev=13.80' Storage=4 cf Inflow=0.06 cfs 0.003 af 4.0" Round Culvert n=0.012 L=18.2' S=0.0088 ' /' Outflow=0.05 cfs 0.003 af
Pond P31: Planter #31	Peak Elev=16.77' Storage=113 cf Inflow=0.35 cfs 0.017 af 4.0" Round Culvert n=0.012 L=71.6' S=-0.0246 ' /' Outflow=0.27 cfs 0.017 af
Pond P32: Planter #32	Peak Elev=14.14' Storage=3 cf Inflow=0.06 cfs 0.003 af 4.0" Round Culvert n=0.012 L=29.6' S=0.0199 ' /' Outflow=0.06 cfs 0.003 af
Pond P33: Planter #33	Peak Elev=16.67' Storage=94 cf Inflow=0.35 cfs 0.017 af 4.0" Round Culvert n=0.012 L=61.0' S=-0.0211 ' /' Outflow=0.28 cfs 0.017 af
Pond P34: Planter #34	Peak Elev=14.54' Storage=18 cf Inflow=0.23 cfs 0.011 af 4.0" Round Culvert n=0.012 L=26.1' S=0.0149 ' /' Outflow=0.22 cfs 0.011 af
Pond P35: Planter #35	Peak Elev=15.99' Storage=27 cf Inflow=0.10 cfs 0.005 af 4.0" Round Culvert n=0.012 L=31.5' S=-0.0565 ' /' Outflow=0.10 cfs 0.005 af
Pond P36: Planter #36	Peak Elev=14.65' Storage=14 cf Inflow=0.20 cfs 0.010 af 4.0" Round Culvert n=0.012 L=20.2' S=0.0248 ' /' Outflow=0.19 cfs 0.009 af

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Pond P37: Planter #37	Peak Elev=16.14' Storage=35 cf Inflow=0.17 cfs 0.008 af 4.0" Round Culvert n=0.012 L=37.8' S=-0.0418 ' /' Outflow=0.16 cfs 0.008 af
Pond P38: Planter #38	Peak Elev=16.26' Storage=37 cf Inflow=0.17 cfs 0.008 af 4.0" Round Culvert n=0.012 L=28.9' S=-0.0588 ' /' Outflow=0.16 cfs 0.008 af
Pond P39: Planter #39	Peak Elev=15.05' Storage=31 cf Inflow=0.32 cfs 0.015 af 4.0" Round Culvert n=0.012 L=23.9' S=0.0113 ' /' Outflow=0.28 cfs 0.015 af
Pond P40: Planter #40	Peak Elev=16.25' Storage=28 cf Inflow=0.10 cfs 0.005 af 4.0" Round Culvert n=0.012 L=11.2' S=-0.1643 ' /' Outflow=0.10 cfs 0.005 af
Pond P41: Planter #41	Peak Elev=15.35' Storage=31 cf Inflow=0.32 cfs 0.015 af 4.0" Round Culvert n=0.012 L=23.8' S=0.0210 ' /' Outflow=0.28 cfs 0.015 af
Pond P42: Planter #42	Peak Elev=16.40' Storage=26 cf Inflow=0.10 cfs 0.005 af 4.0" Round Culvert n=0.012 L=19.8' S=-0.0854 ' /' Outflow=0.10 cfs 0.005 af
Pond P43: Planter #43	Peak Elev=16.72' Storage=40 cf Inflow=0.17 cfs 0.008 af 4.0" Round Culvert n=0.012 L=28.7' S=-0.0648 ' /' Outflow=0.16 cfs 0.008 af
Pond P44: Planter #44	Peak Elev=14.95' Storage=4 cf Inflow=0.20 cfs 0.010 af 4.0" Round Culvert n=0.012 L=19.9' S=0.0136 ' /' Outflow=0.19 cfs 0.010 af
Pond P45: Planter #45	Peak Elev=16.87' Storage=42 cf Inflow=0.17 cfs 0.008 af 4.0" Round Culvert n=0.012 L=36.4' S=-0.0552 ' /' Outflow=0.16 cfs 0.008 af
Pond P46: Planter #46	Peak Elev=15.14' Storage=3 cf Inflow=0.06 cfs 0.003 af 4.0" Round Culvert n=0.012 L=28.6' S=0.0248 ' /' Outflow=0.06 cfs 0.003 af
Pond P47: Planter #47	Peak Elev=18.02' Storage=105 cf Inflow=0.35 cfs 0.017 af 4.0" Round Culvert n=0.012 L=59.6' S=-0.0277 ' /' Outflow=0.28 cfs 0.017 af
Pond P48: Planter #48	Peak Elev=17.49' Storage=61 cf Inflow=0.23 cfs 0.011 af 4.0" Round Culvert n=0.012 L=24.8' S=-0.0992 ' /' Outflow=0.22 cfs 0.010 af
Pond P49: Planter #49	Peak Elev=17.38' Storage=32 cf Inflow=0.10 cfs 0.005 af 4.0" Round Culvert n=0.012 L=19.9' S=-0.1090 ' /' Outflow=0.10 cfs 0.005 af
Pond P50: Planter #50	Peak Elev=16.45' Storage=14 cf Inflow=0.20 cfs 0.010 af 4.0" Round Culvert n=0.012 L=19.4' S=0.0722 ' /' Outflow=0.19 cfs 0.009 af
Pond P51: Planter #51	Peak Elev=17.72' Storage=32 cf Inflow=0.17 cfs 0.008 af 4.0" Round Culvert n=0.012 L=36.8' S=-0.0370 ' /' Outflow=0.16 cfs 0.008 af
Pond P52: Planter #52	Peak Elev=17.95' Storage=35 cf Inflow=0.17 cfs 0.008 af 4.0" Round Culvert n=0.012 L=28.9' S=-0.0550 ' /' Outflow=0.16 cfs 0.008 af
Pond P53: Planter #53	Peak Elev=16.85' Storage=31 cf Inflow=0.32 cfs 0.015 af 4.0" Round Culvert n=0.012 L=22.8' S=0.0513 ' /' Outflow=0.28 cfs 0.015 af

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

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Pond P54: Planter #54Peak Elev=18.84' Storage=37 cf Inflow=0.10 cfs 0.005 af
4.0" Round Culvert n=0.012 L=13.0' S=-0.2023 ' / Outflow=0.10 cfs 0.005 af**Pond PA-2: Porous Asphalt #2**Peak Elev=15.21' Storage=466 cf Inflow=0.88 cfs 0.060 af
Primary=0.59 cfs 0.059 af Secondary=0.00 cfs 0.000 af Outflow=0.59 cfs 0.059 af**Pond PA-3: Porous Asphalt #3**Peak Elev=15.05' Storage=501 cf Inflow=0.97 cfs 0.072 af
Primary=0.67 cfs 0.070 af Secondary=0.09 cfs 0.001 af Outflow=0.67 cfs 0.071 af**Pond PA-4: Porous Asphalt #4**Peak Elev=15.04' Storage=678 cf Inflow=1.25 cfs 0.092 af
Primary=0.68 cfs 0.086 af Secondary=0.33 cfs 0.006 af Outflow=0.82 cfs 0.091 af**Pond PA-5: Porous Asphalt #5**Peak Elev=15.28' Storage=1,186 cf Inflow=1.41 cfs 0.106 af
Primary=0.52 cfs 0.097 af Secondary=0.81 cfs 0.008 af Outflow=1.30 cfs 0.104 af**Pond PA-6: Porous Asphalt #6**Peak Elev=15.84' Storage=2,265 cf Inflow=2.33 cfs 0.165 af
Primary=0.55 cfs 0.152 af Secondary=3.04 cfs 0.015 af Outflow=3.58 cfs 0.163 af**Pond PA-7: Porous Asphalt #7**Peak Elev=16.89' Storage=94 cf Inflow=0.26 cfs 0.019 af
Primary=0.21 cfs 0.019 af Secondary=0.00 cfs 0.000 af Outflow=0.21 cfs 0.019 af**Pond SDMH-1: Proposed SDMH West of Bldgs**Peak Elev=13.74' Inflow=6.25 cfs 0.789 af
Outflow=6.25 cfs 0.789 af**Link SP-1: SDMH 20201 - At Intersection of Jowite and Moton**Inflow=6.25 cfs 0.789 af
Primary=6.25 cfs 0.789 af**Total Runoff Area = 1.529 ac Runoff Volume = 0.803 af Average Runoff Depth = 6.30"**
37.56% Pervious = 0.574 ac 62.44% Impervious = 0.955 ac

Naima - Phase 2 - Proposed HydroCAD

Prepared by RAUCH inc.

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

Printed 02/22/23

Summary for Subcatchment 17S: Rooftop #18

Runoff = 0.22 cfs @ 11.90 hrs, Volume= 0.011 af, Depth= 7.24"

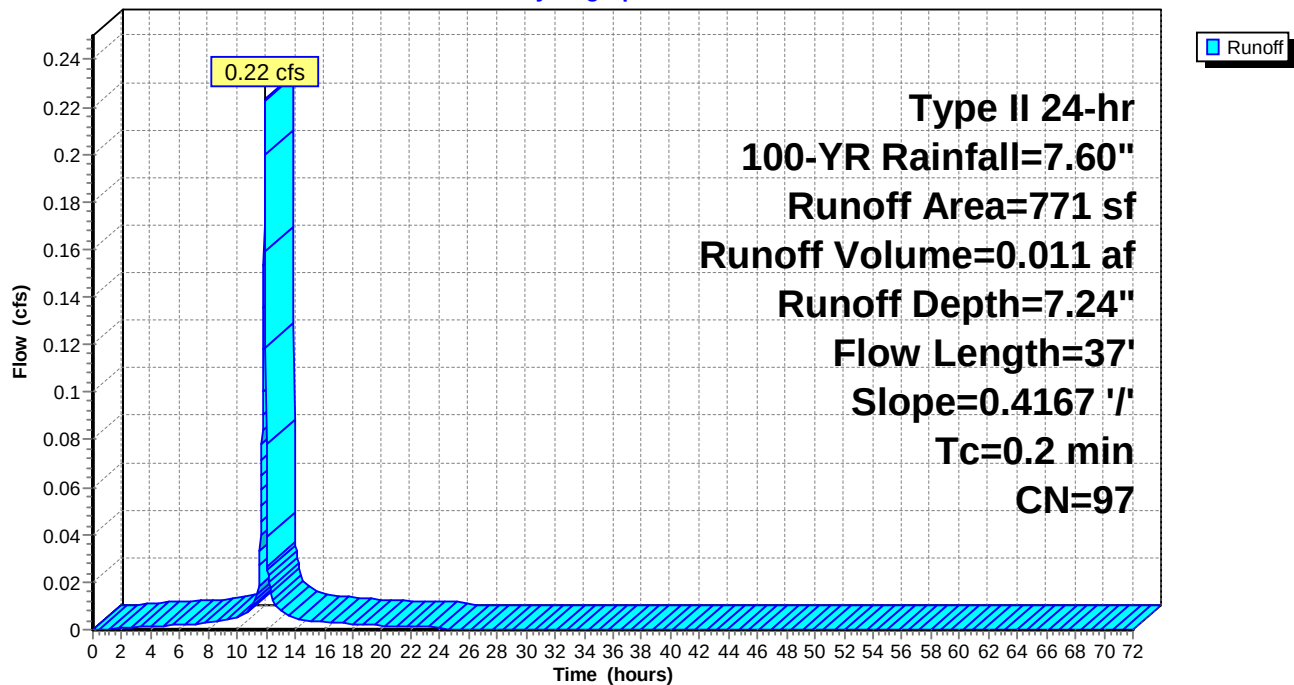
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-YR Rainfall=7.60"

Area (sf)	CN	Description
741	98	Roofs, HSG C
30	74	>75% Grass cover, Good, HSG C
771	97	Weighted Average
30		3.89% Pervious Area
741		96.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 17S: Rooftop #18

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

Prepared by RAUCH inc.

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

Printed 02/22/23

Summary for Subcatchment 19: Rooftop #19

Runoff = 0.23 cfs @ 11.90 hrs, Volume= 0.011 af, Depth= 7.12"

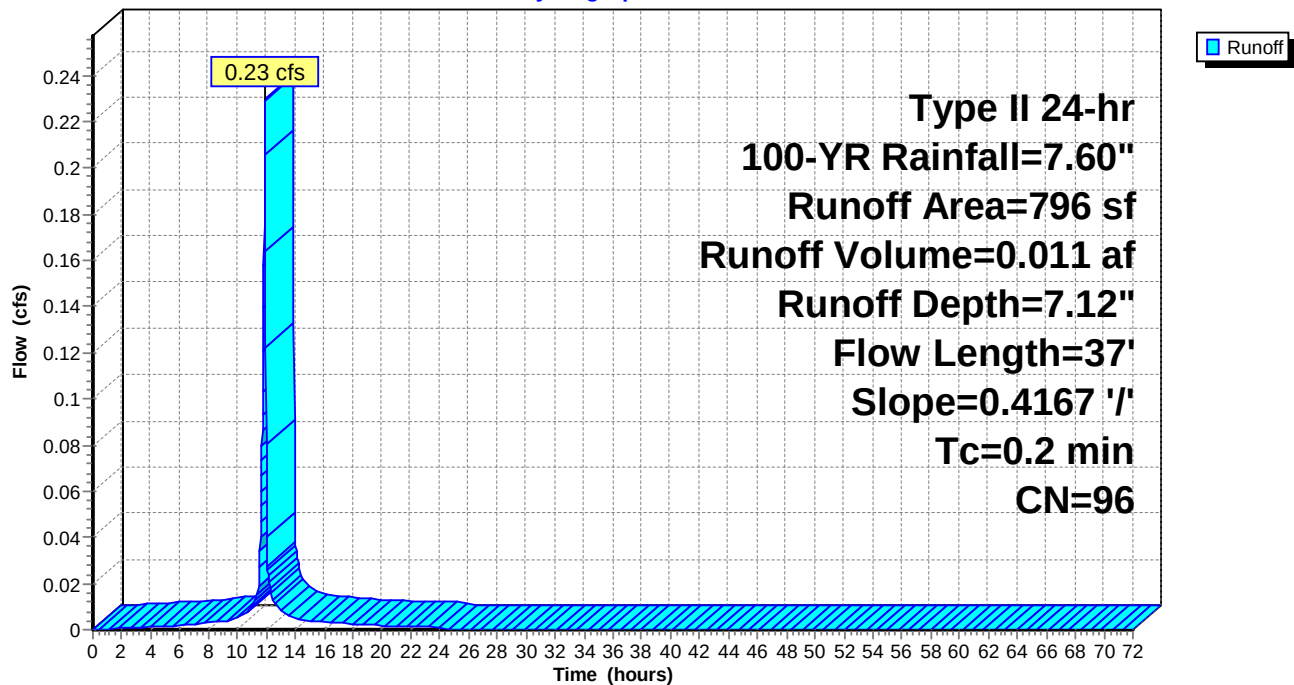
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-YR Rainfall=7.60"

Area (sf)	CN	Description
741	98	Roofs, HSG C
55	74	>75% Grass cover, Good, HSG C
796	96	Weighted Average
55		6.91% Pervious Area
741		93.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 19: Rooftop #19

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

Prepared by RAUCH inc.

HydroCAD® 10.00-26 s/n 02413 © 2020 HydroCAD Software Solutions LLC

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

Printed 02/22/23

Summary for Subcatchment 20: Rooftop #20

Runoff = 0.10 cfs @ 11.90 hrs, Volume= 0.005 af, Depth= 7.12"

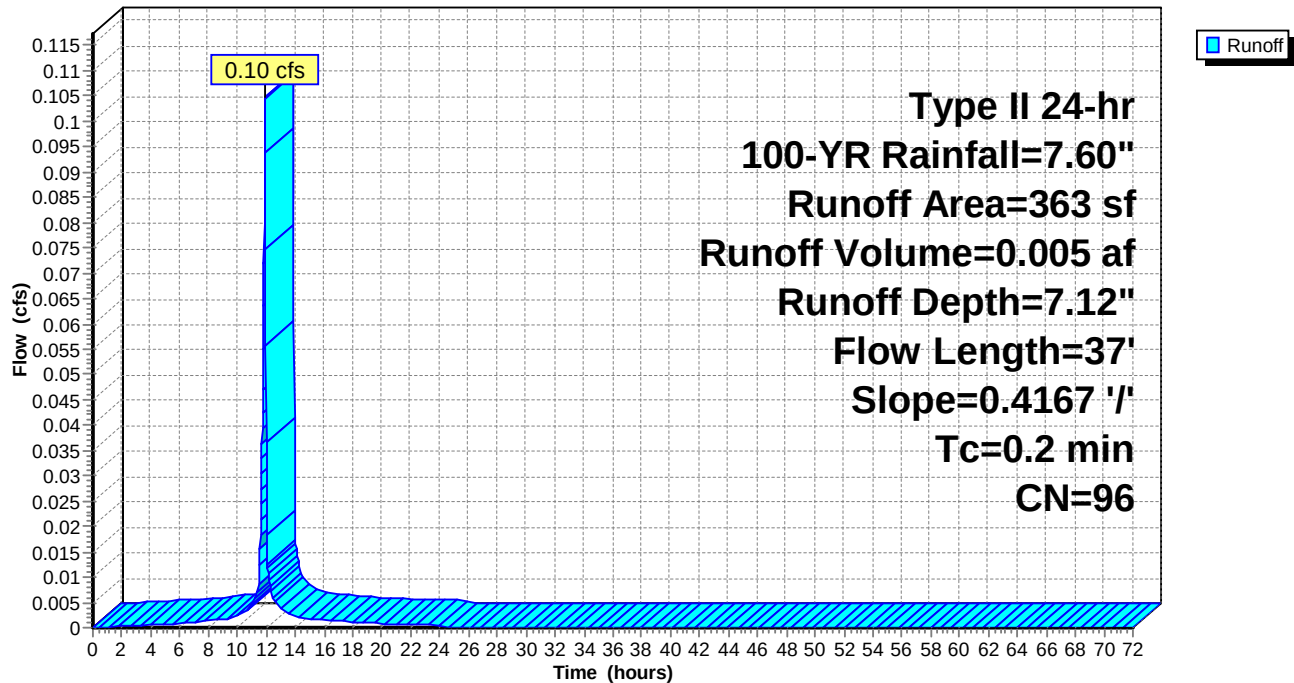
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-YR Rainfall=7.60"

Area (sf)	CN	Description
333	98	Roofs, HSG C
30	74	>75% Grass cover, Good, HSG C
363	96	Weighted Average
30		8.26% Pervious Area
333		91.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 20: Rooftop #20

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

Printed 02/22/23

Summary for Subcatchment 21: Rooftop #21

Runoff = 0.06 cfs @ 11.90 hrs, Volume= 0.003 af, Depth= 7.12"

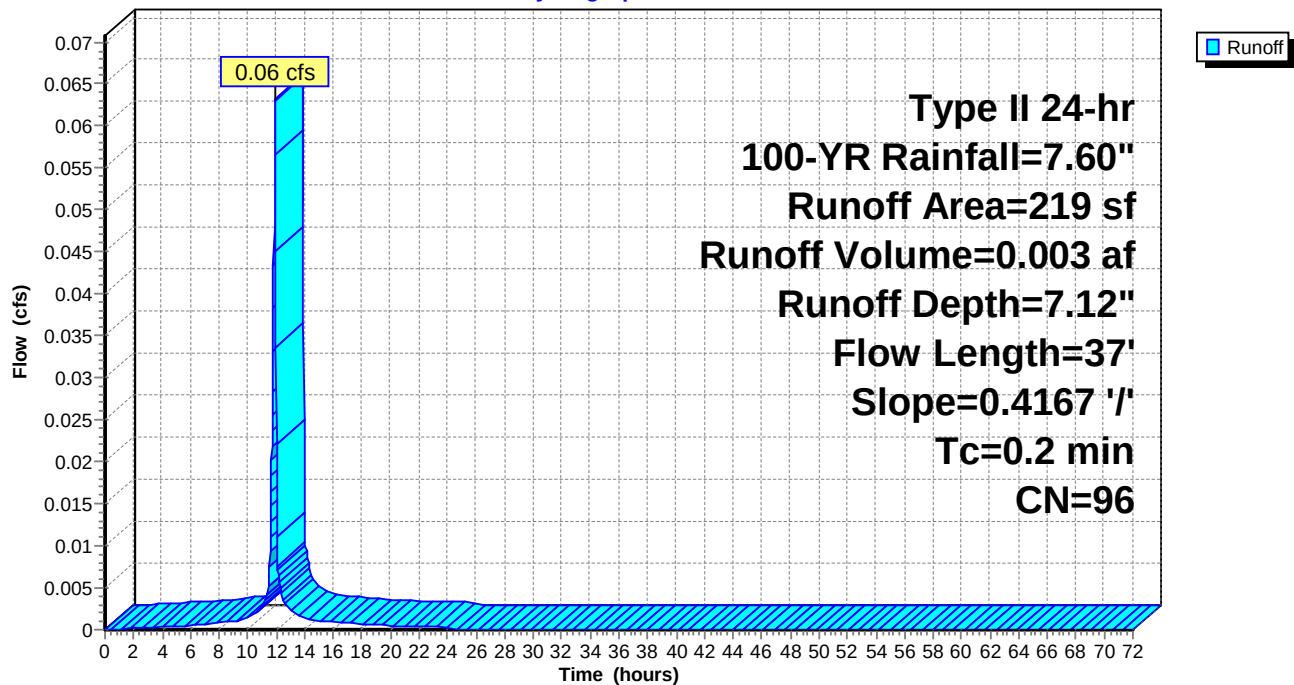
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-YR Rainfall=7.60"

Area (sf)	CN	Description
199	98	Roofs, HSG C
20	74	>75% Grass cover, Good, HSG C
219	96	Weighted Average
20		9.13% Pervious Area
199		90.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 21: Rooftop #21

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

Prepared by RAUCH inc.

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

Printed 02/22/23

Summary for Subcatchment 22: Rooftop #22

Runoff = 0.35 cfs @ 11.90 hrs, Volume= 0.017 af, Depth= 7.12"

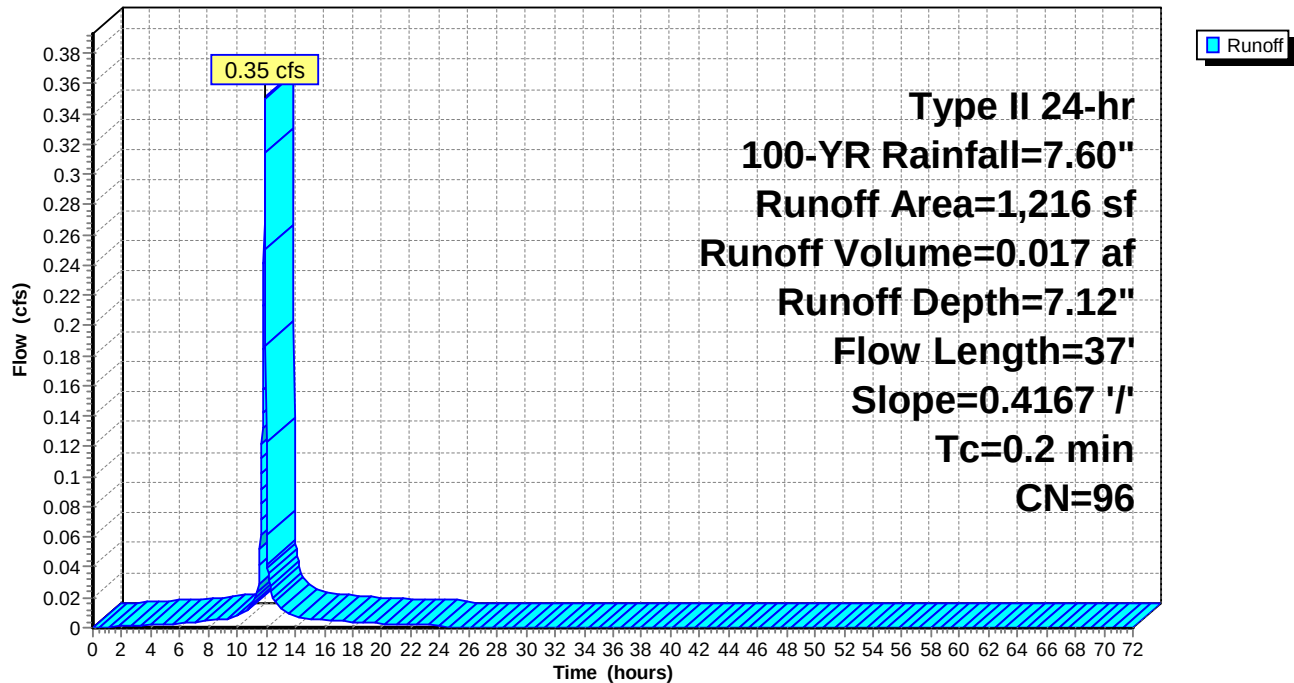
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-YR Rainfall=7.60"

Area (sf)	CN	Description
1,136	98	Roofs, HSG C
80	74	>75% Grass cover, Good, HSG C
1,216	96	Weighted Average
80		6.58% Pervious Area
1,136		93.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 22: Rooftop #22

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

Prepared by RAUCH inc.

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

Printed 02/22/23

Summary for Subcatchment 23: Rooftop #23

Runoff = 0.20 cfs @ 11.90 hrs, Volume= 0.010 af, Depth= 7.12"

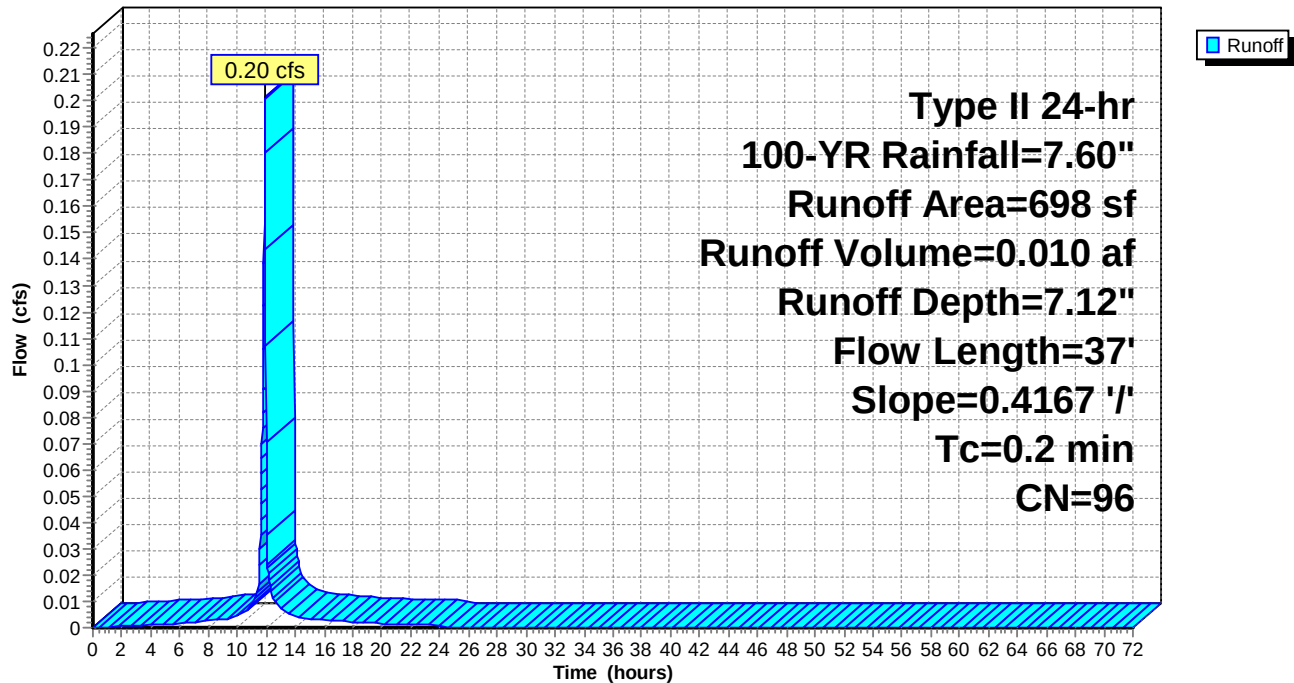
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-YR Rainfall=7.60"

Area (sf)	CN	Description
648	98	Roofs, HSG C
50	74	>75% Grass cover, Good, HSG C
698	96	Weighted Average
50		7.16% Pervious Area
648		92.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 23: Rooftop #23

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Subcatchment 24: Rooftop #24

Runoff = 0.17 cfs @ 11.90 hrs, Volume= 0.008 af, Depth= 7.12"

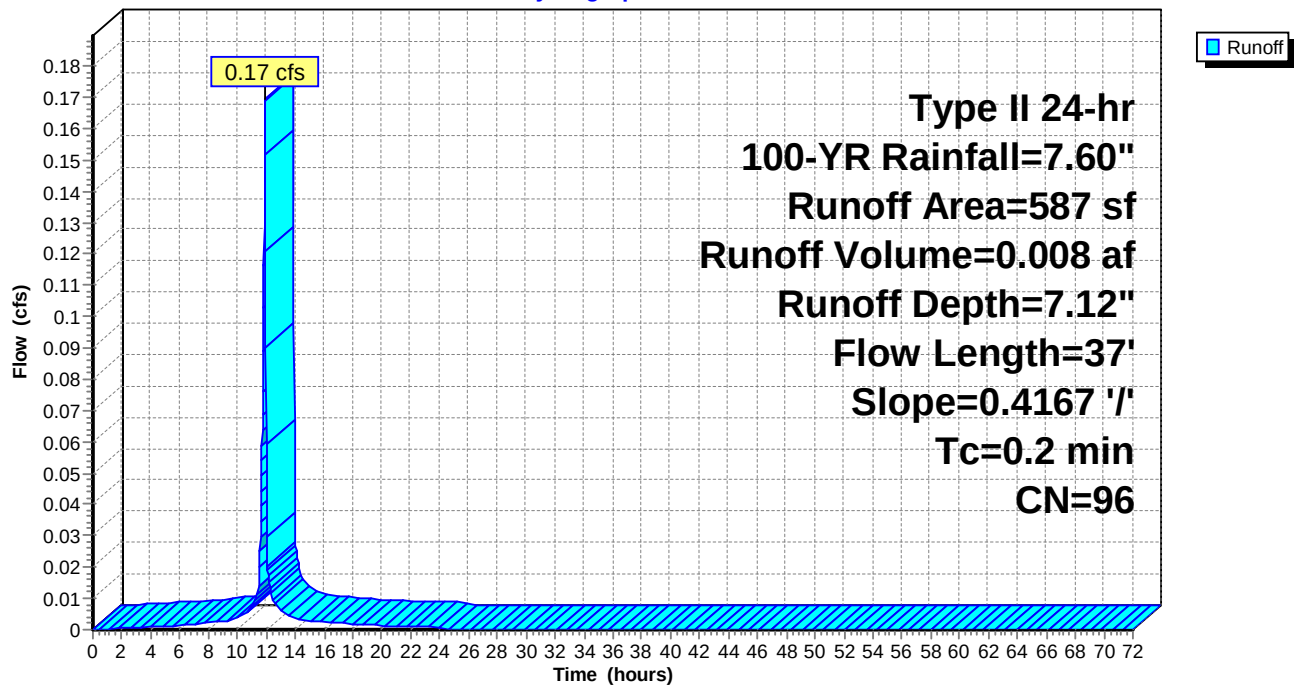
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-YR Rainfall=7.60"

Area (sf)	CN	Description
547	98	Roofs, HSG C
40	74	>75% Grass cover, Good, HSG C
587	96	Weighted Average
40		6.81% Pervious Area
547		93.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 24: Rooftop #24

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Subcatchment 25: Rooftop #25

Runoff = 0.17 cfs @ 11.90 hrs, Volume= 0.008 af, Depth= 7.12"

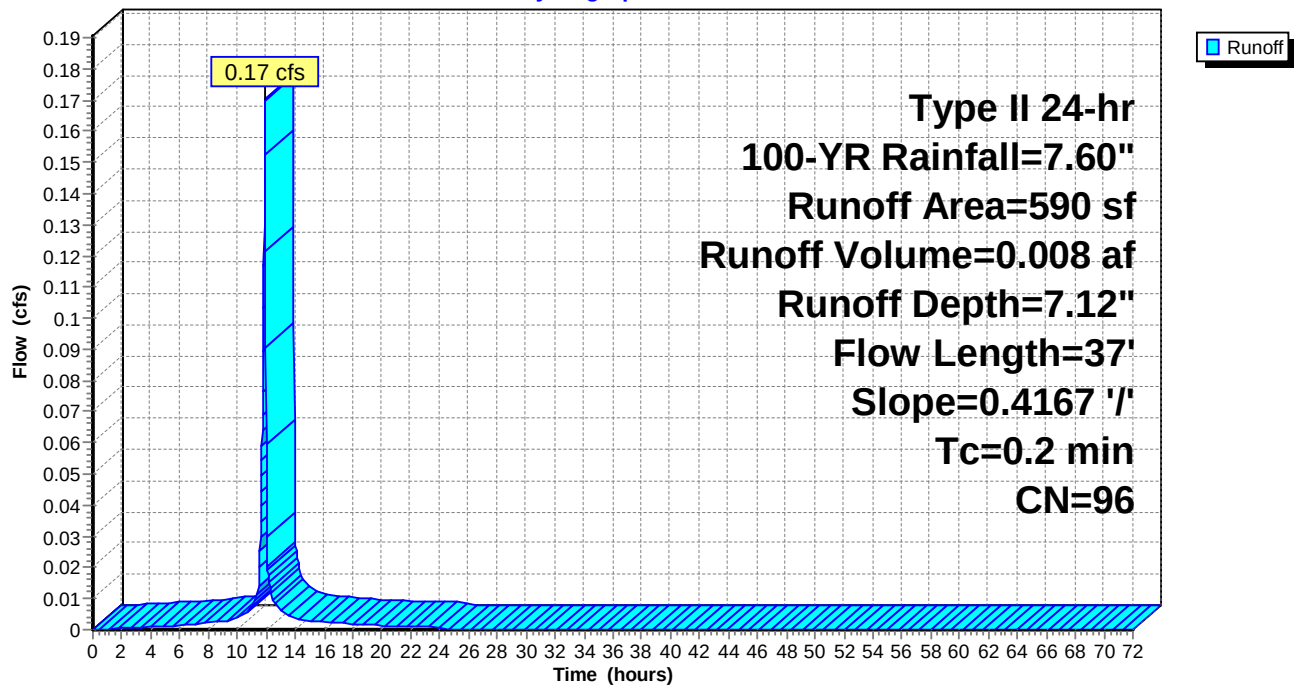
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-YR Rainfall=7.60"

Area (sf)	CN	Description
550	98	Roofs, HSG C
40	74	>75% Grass cover, Good, HSG C
590	96	Weighted Average
40		6.78% Pervious Area
550		93.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 25: Rooftop #25

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Subcatchment 26: Rooftop #26

Runoff = 0.32 cfs @ 11.90 hrs, Volume= 0.015 af, Depth= 7.12"

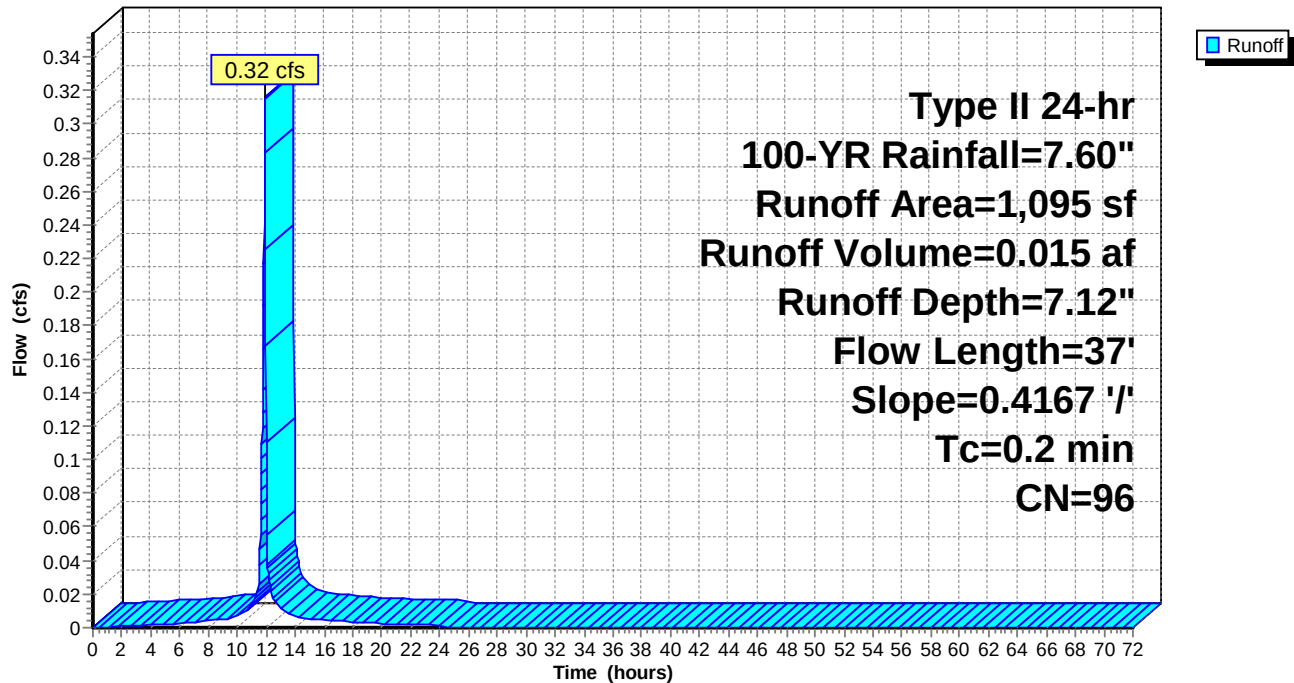
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-YR Rainfall=7.60"

Area (sf)	CN	Description
1,025	98	Roofs, HSG C
70	74	>75% Grass cover, Good, HSG C
1,095	96	Weighted Average
70		6.39% Pervious Area
1,025		93.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 26: Rooftop #26

Hydrograph



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

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Summary for Subcatchment 27: Rooftop #27

Runoff = 0.10 cfs @ 11.90 hrs, Volume= 0.005 af, Depth= 7.12"

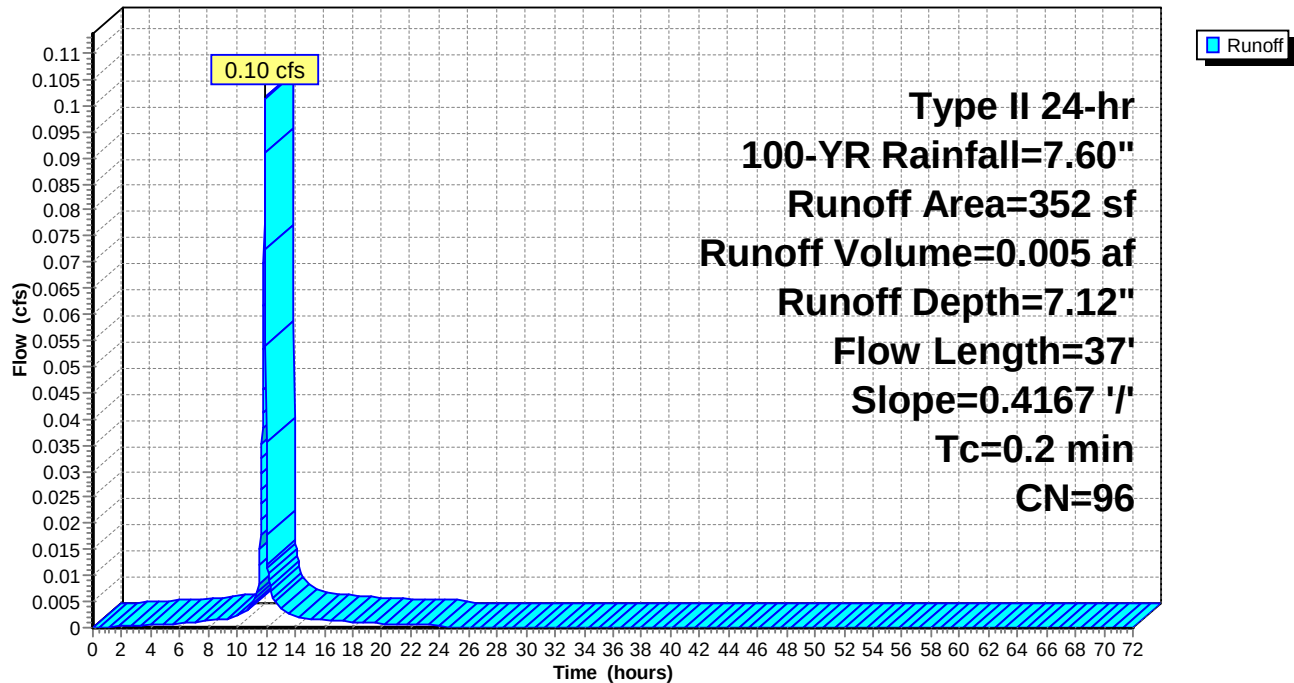
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-YR Rainfall=7.60"

Area (sf)	CN	Description
322	98	Roofs, HSG C
30	74	>75% Grass cover, Good, HSG C
352	96	Weighted Average
30		8.52% Pervious Area
322		91.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 27: Rooftop #27

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Subcatchment 28: Rooftop #28

Runoff = 0.23 cfs @ 11.90 hrs, Volume= 0.011 af, Depth= 7.12"

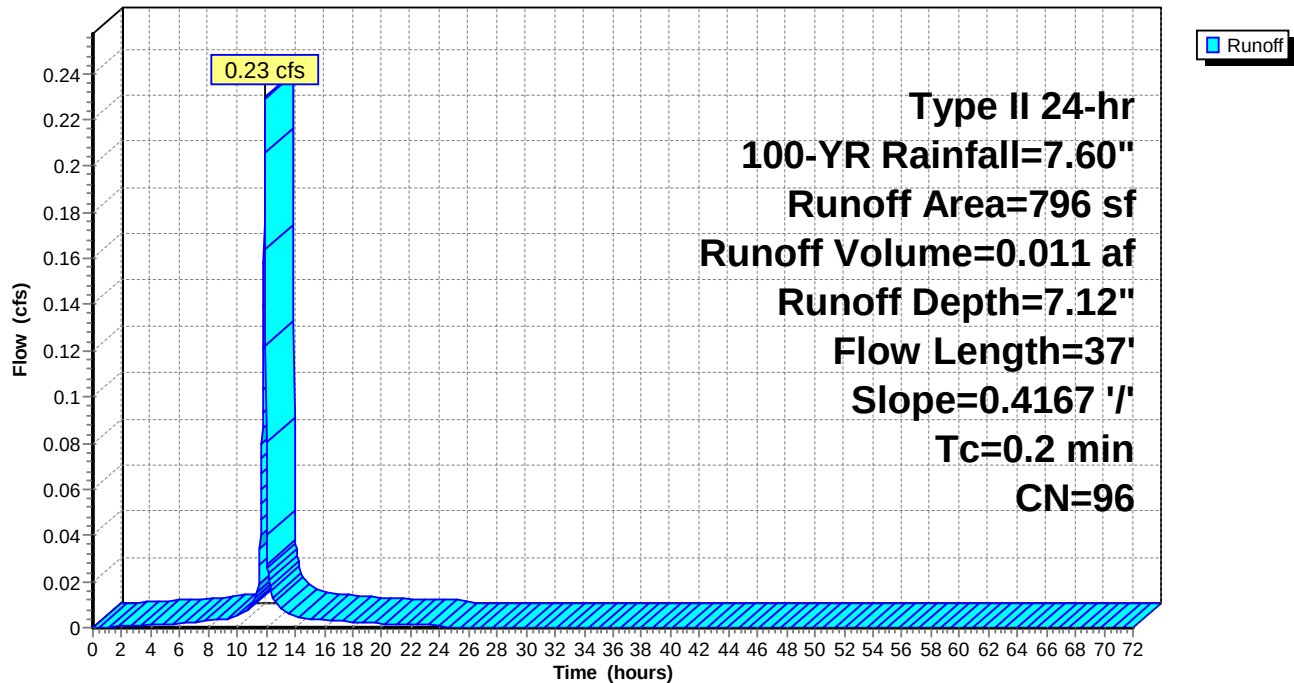
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-YR Rainfall=7.60"

Area (sf)	CN	Description
741	98	Roofs, HSG C
55	74	>75% Grass cover, Good, HSG C
796	96	Weighted Average
55		6.91% Pervious Area
741		93.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 28: Rooftop #28

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

Printed 02/22/23

Summary for Subcatchment 29: Rooftop #29

Runoff = 0.10 cfs @ 11.90 hrs, Volume= 0.005 af, Depth= 7.12"

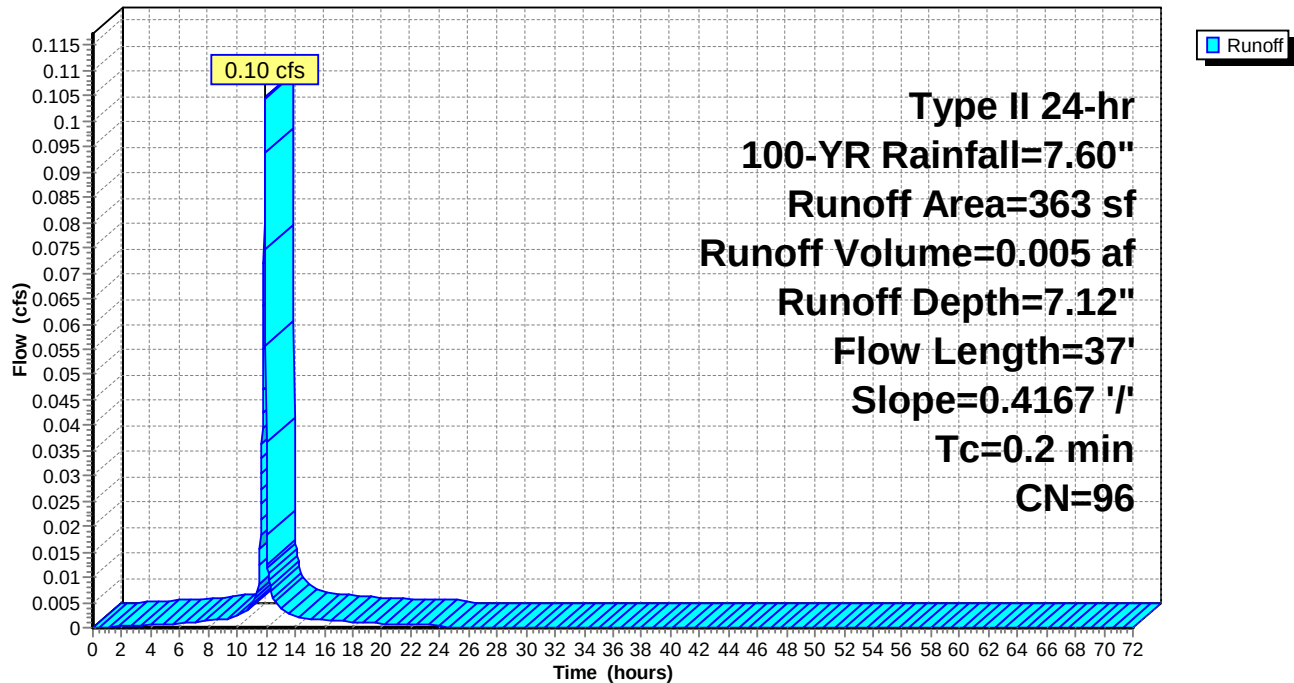
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-YR Rainfall=7.60"

Area (sf)	CN	Description
333	98	Roofs, HSG C
30	74	>75% Grass cover, Good, HSG C
363	96	Weighted Average
30		8.26% Pervious Area
333		91.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 29: Rooftop #29

Hydrograph



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

Printed 02/22/23

Summary for Subcatchment 30: Rooftop #30

Runoff = 0.06 cfs @ 11.90 hrs, Volume= 0.003 af, Depth= 7.12"

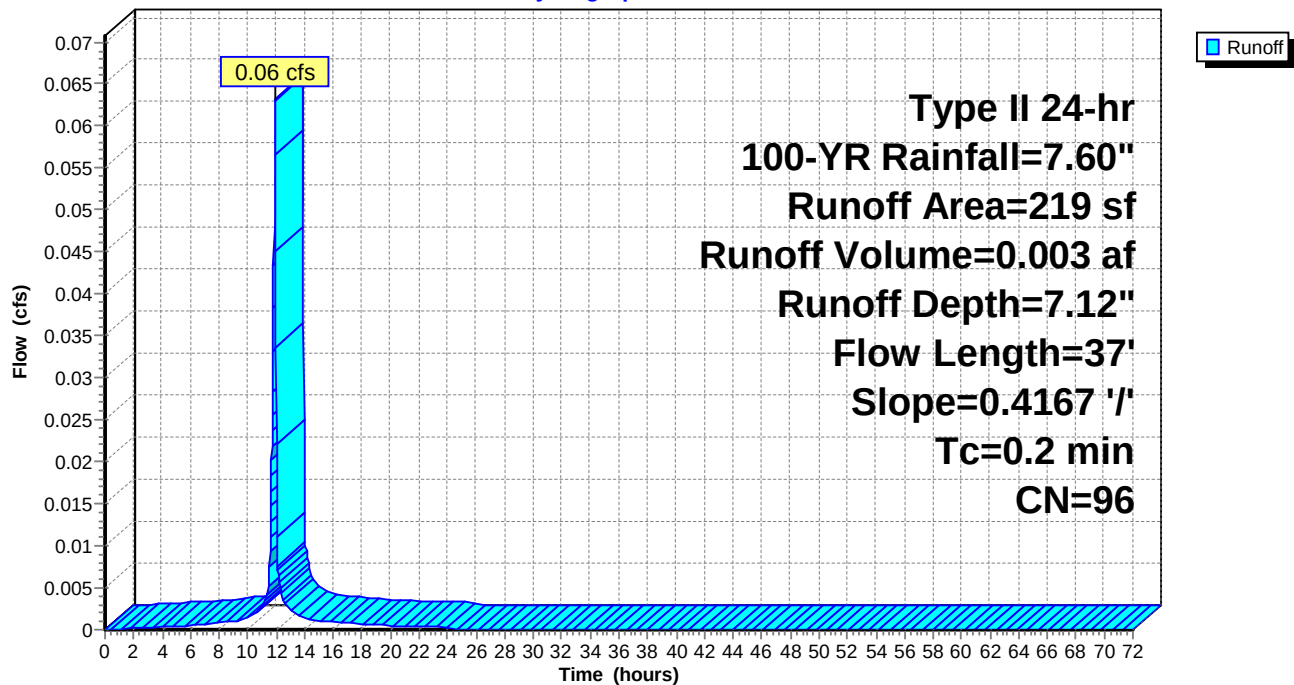
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-YR Rainfall=7.60"

Area (sf)	CN	Description
199	98	Roofs, HSG C
20	74	>75% Grass cover, Good, HSG C
219	96	Weighted Average
20		9.13% Pervious Area
199		90.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 30: Rooftop #30

Hydrograph



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

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Summary for Subcatchment 31: Rooftop #31

Runoff = 0.35 cfs @ 11.90 hrs, Volume= 0.017 af, Depth= 7.12"

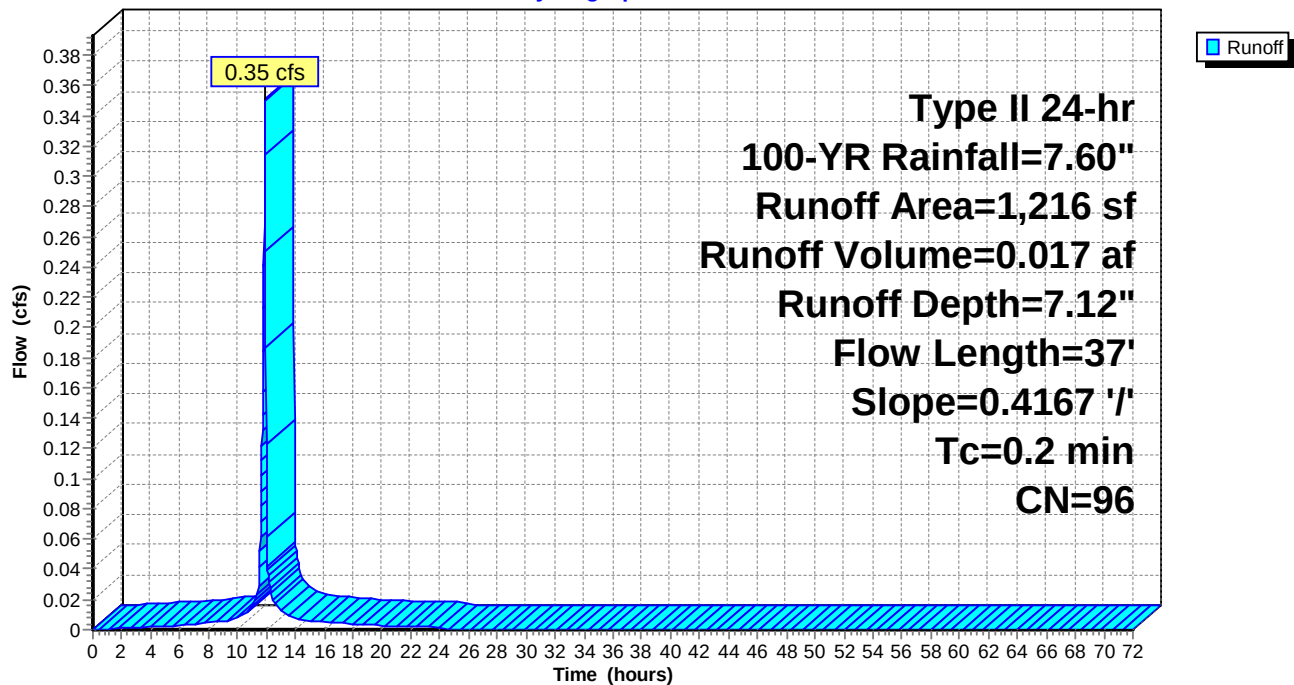
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-YR Rainfall=7.60"

Area (sf)	CN	Description
1,136	98	Roofs, HSG C
80	74	>75% Grass cover, Good, HSG C
1,216	96	Weighted Average
80		6.58% Pervious Area
1,136		93.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 31: Rooftop #31

Hydrograph



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

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Summary for Subcatchment 32: Rooftop #32

Runoff = 0.06 cfs @ 11.90 hrs, Volume= 0.003 af, Depth= 7.12"

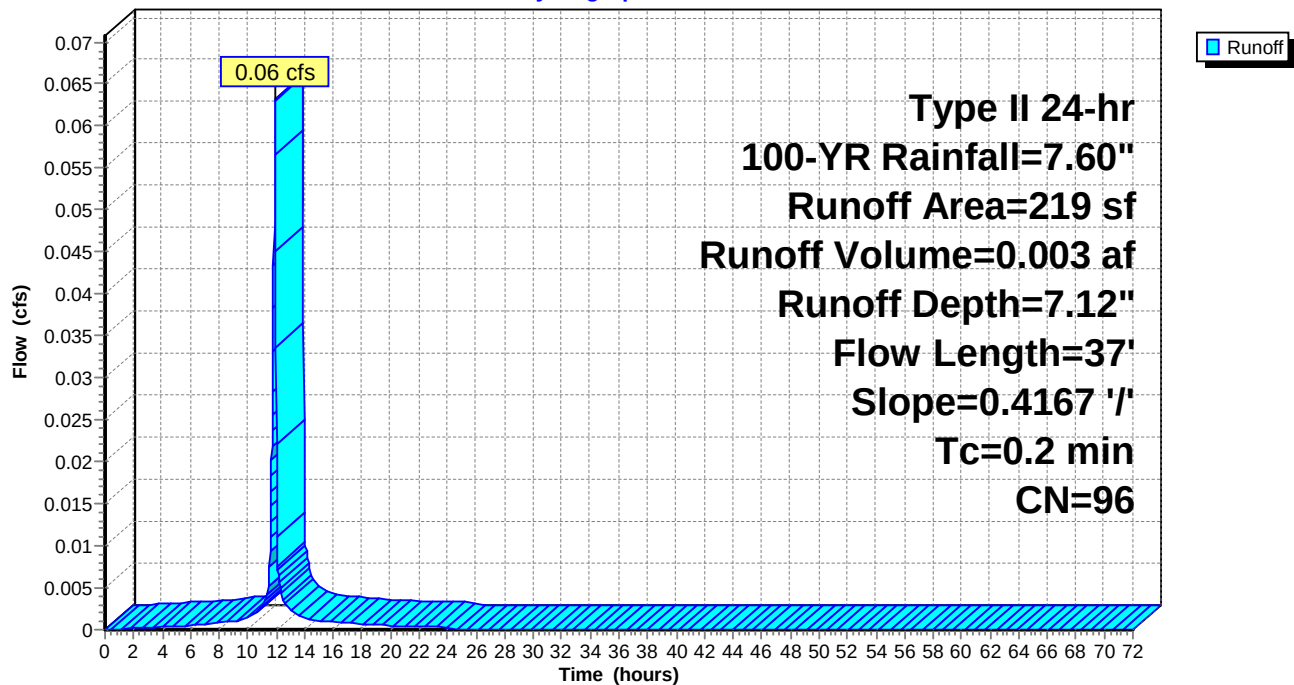
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-YR Rainfall=7.60"

Area (sf)	CN	Description
199	98	Roofs, HSG C
20	74	>75% Grass cover, Good, HSG C
219	96	Weighted Average
20		9.13% Pervious Area
199		90.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
					Smooth surfaces n= 0.011 P2= 3.40"

Subcatchment 32: Rooftop #32

Hydrograph



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

Printed 02/22/23

Summary for Subcatchment 33: Rooftop #33

Runoff = 0.35 cfs @ 11.90 hrs, Volume= 0.017 af, Depth= 7.12"

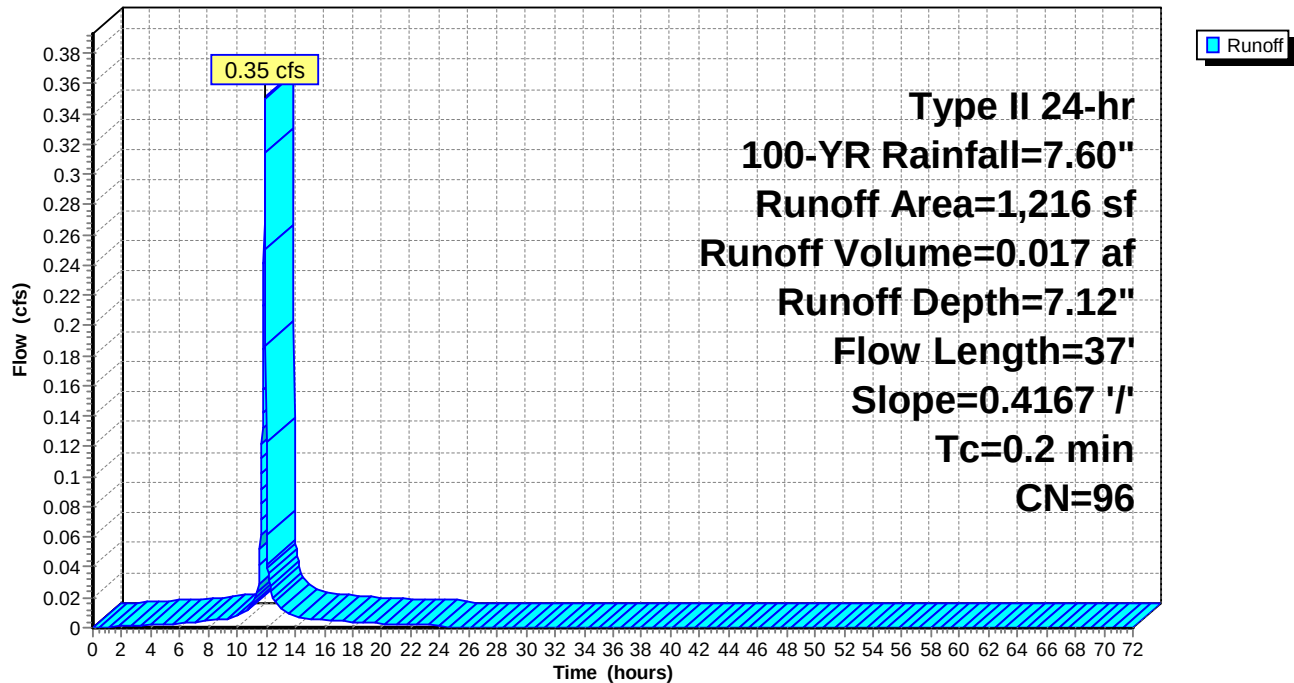
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-YR Rainfall=7.60"

Area (sf)	CN	Description
1,136	98	Roofs, HSG C
80	74	>75% Grass cover, Good, HSG C
1,216	96	Weighted Average
80		6.58% Pervious Area
1,136		93.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 33: Rooftop #33

Hydrograph



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

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Summary for Subcatchment 34: Rooftop #34

Runoff = 0.23 cfs @ 11.90 hrs, Volume= 0.011 af, Depth= 7.12"

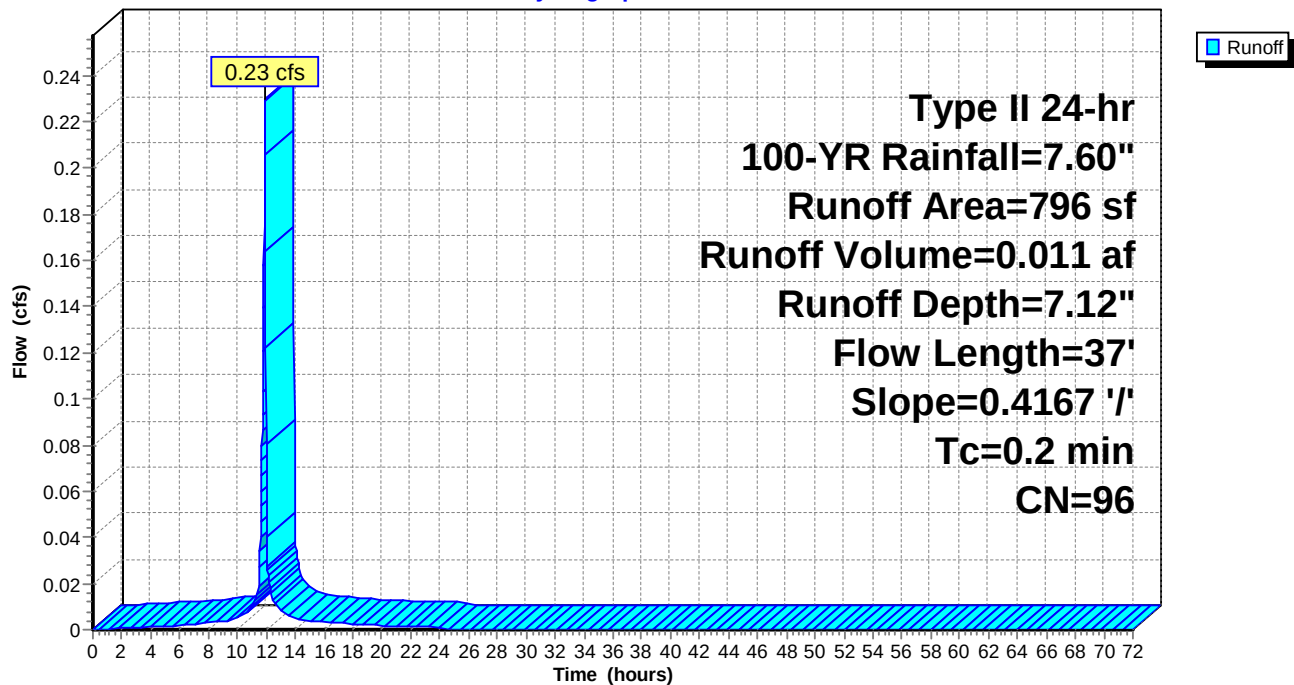
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-YR Rainfall=7.60"

Area (sf)	CN	Description
741	98	Roofs, HSG C
55	74	>75% Grass cover, Good, HSG C
796	96	Weighted Average
55		6.91% Pervious Area
741		93.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 34: Rooftop #34

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

Printed 02/22/23

Summary for Subcatchment 35: Rooftop #35

Runoff = 0.10 cfs @ 11.90 hrs, Volume= 0.005 af, Depth= 7.12"

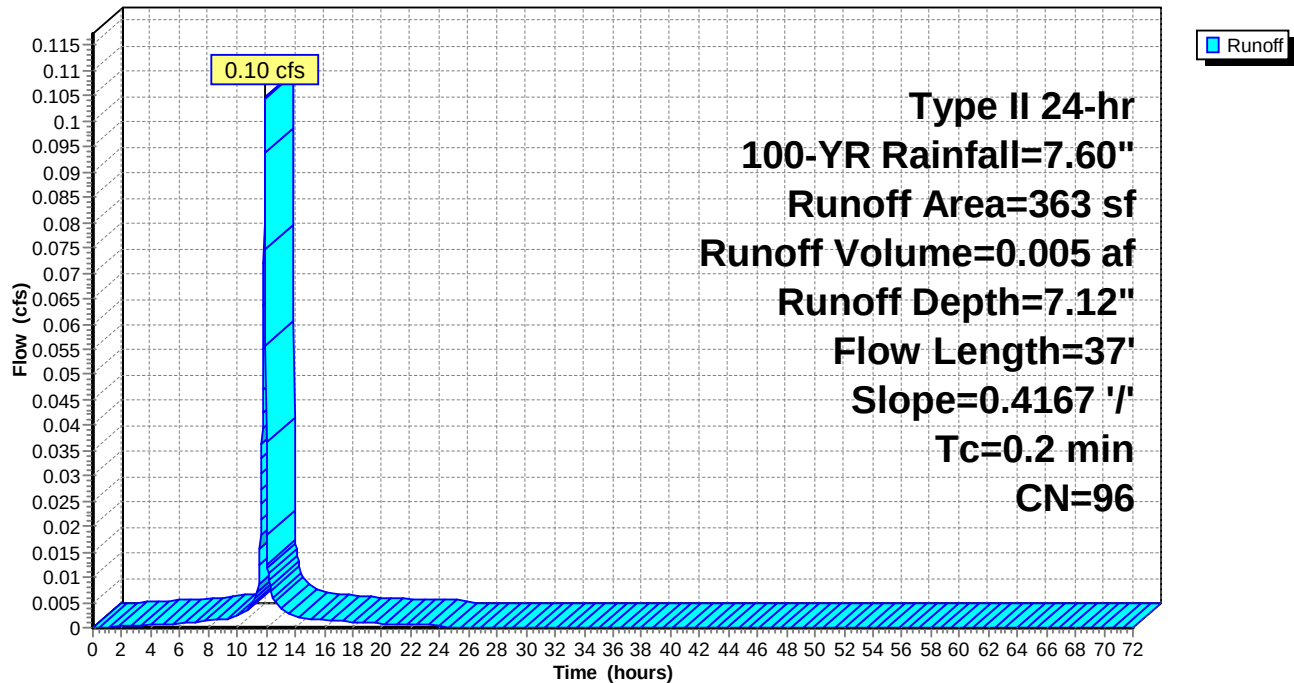
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-YR Rainfall=7.60"

Area (sf)	CN	Description
333	98	Roofs, HSG C
30	74	>75% Grass cover, Good, HSG C
363	96	Weighted Average
30		8.26% Pervious Area
333		91.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 35: Rooftop #35

Hydrograph



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

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Summary for Subcatchment 36: Rooftop #36

Runoff = 0.20 cfs @ 11.90 hrs, Volume= 0.010 af, Depth= 7.12"

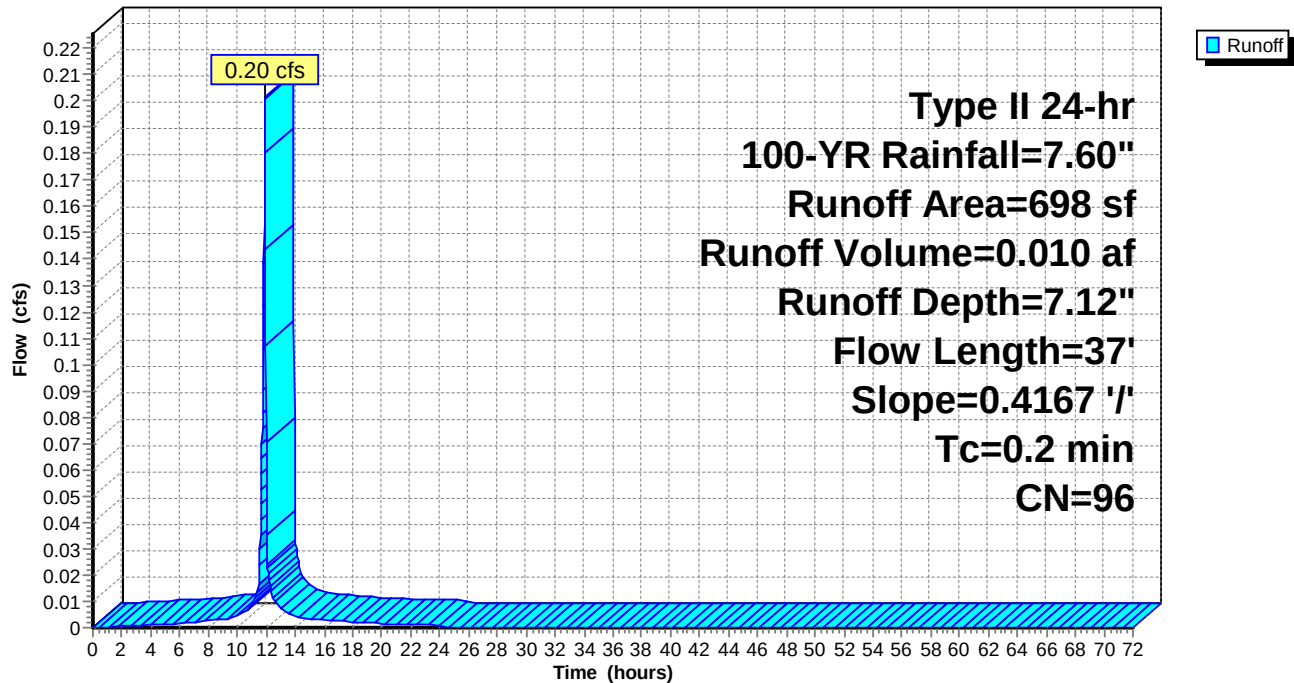
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-YR Rainfall=7.60"

Area (sf)	CN	Description
648	98	Roofs, HSG C
50	74	>75% Grass cover, Good, HSG C
698	96	Weighted Average
50		7.16% Pervious Area
648		92.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 36: Rooftop #36

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

Prepared by RAUCH inc.

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

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Summary for Subcatchment 37: Rooftop #37

Runoff = 0.17 cfs @ 11.90 hrs, Volume= 0.008 af, Depth= 7.12"

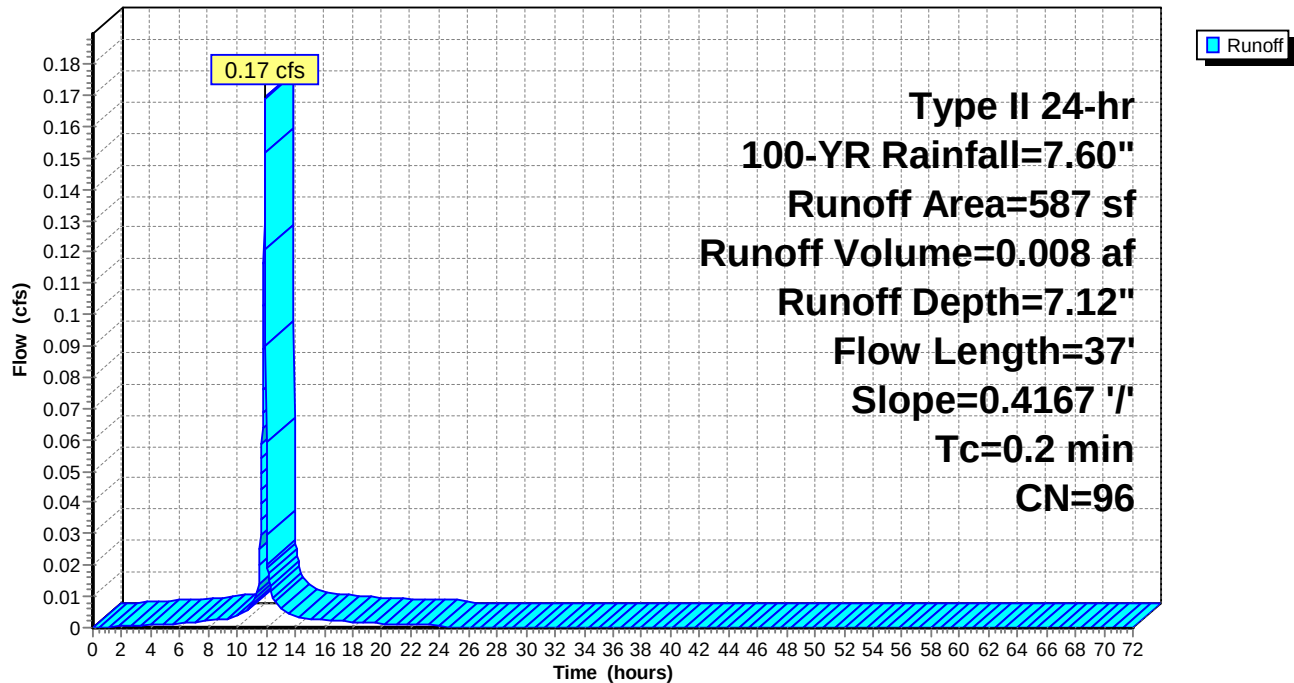
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-YR Rainfall=7.60"

Area (sf)	CN	Description
547	98	Roofs, HSG C
40	74	>75% Grass cover, Good, HSG C
587	96	Weighted Average
40		6.81% Pervious Area
547		93.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 37: Rooftop #37

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

Prepared by RAUCH inc.

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

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Summary for Subcatchment 38: Rooftop #38

Runoff = 0.17 cfs @ 11.90 hrs, Volume= 0.008 af, Depth= 7.12"

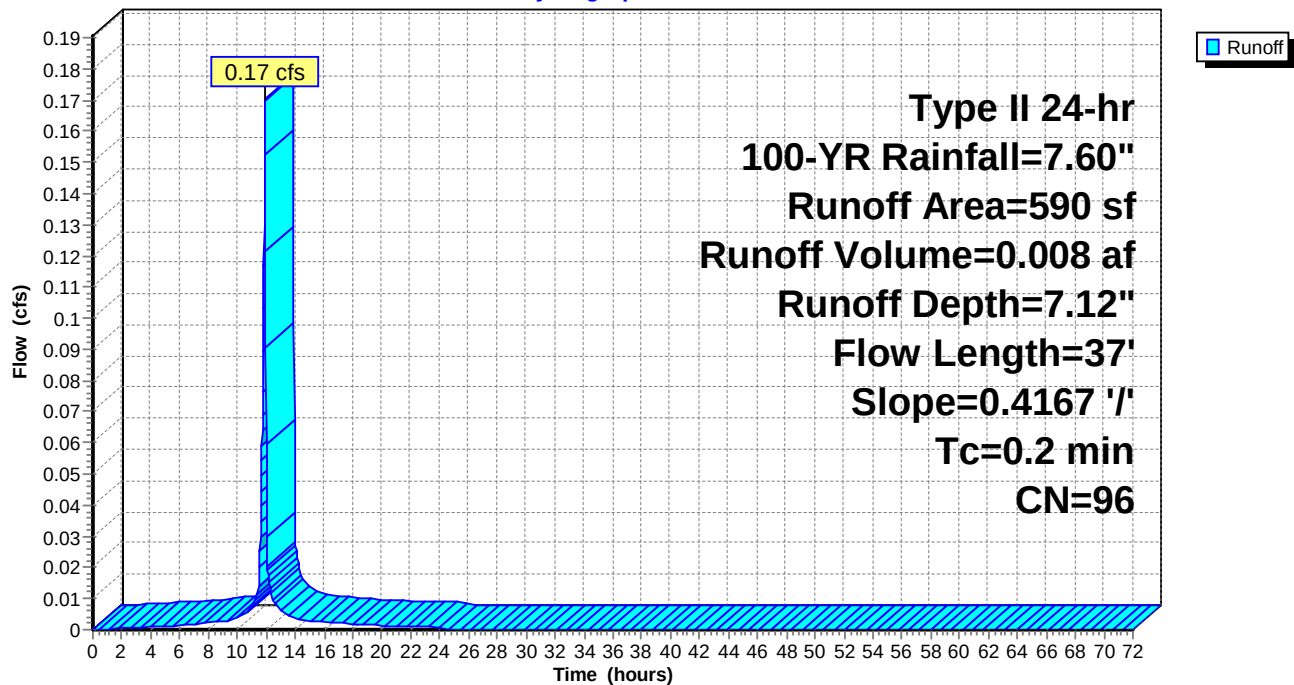
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-YR Rainfall=7.60"

Area (sf)	CN	Description
550	98	Roofs, HSG C
40	74	>75% Grass cover, Good, HSG C
590	96	Weighted Average
40		6.78% Pervious Area
550		93.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 38: Rooftop #38

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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HydroCAD® 10.00-26 s/n 02413 © 2020 HydroCAD Software Solutions LLC

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

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Summary for Subcatchment 39: Rooftop #39

Runoff = 0.32 cfs @ 11.90 hrs, Volume= 0.015 af, Depth= 7.12"

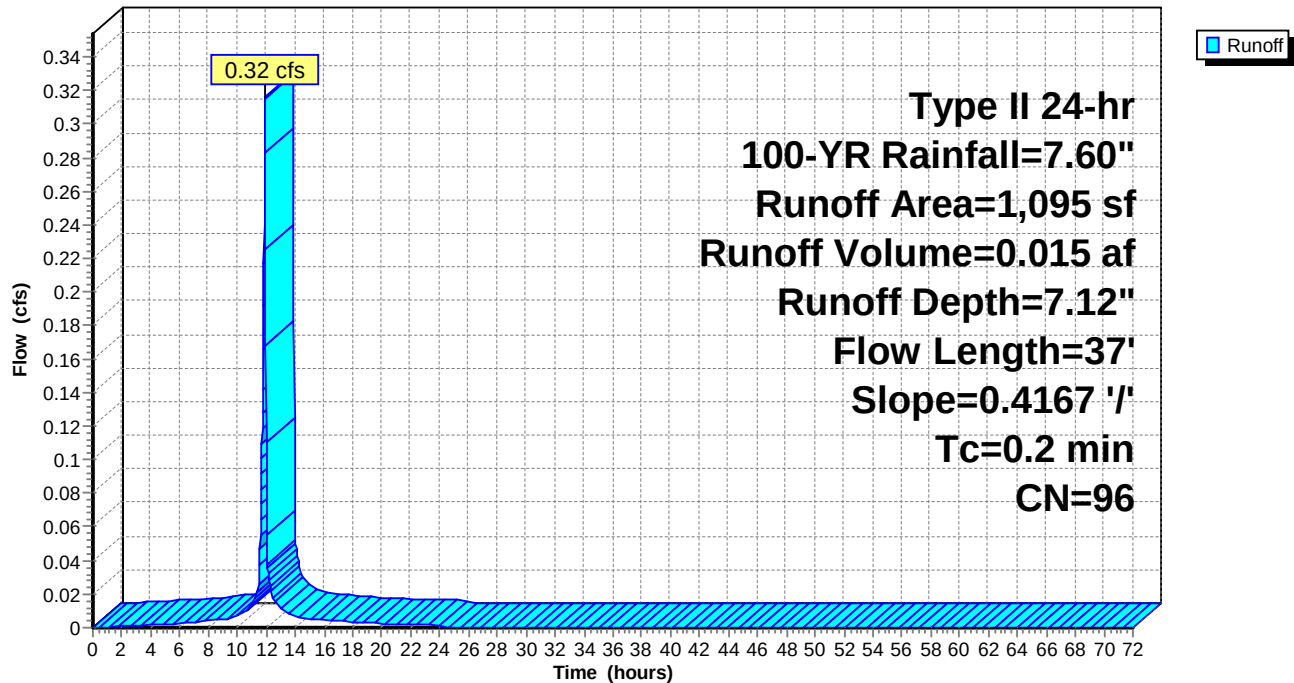
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-YR Rainfall=7.60"

Area (sf)	CN	Description
1,025	98	Roofs, HSG C
70	74	>75% Grass cover, Good, HSG C
1,095	96	Weighted Average
70		6.39% Pervious Area
1,025		93.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 39: Rooftop #39

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Subcatchment 40: Rooftop #40

Runoff = 0.10 cfs @ 11.90 hrs, Volume= 0.005 af, Depth= 7.12"

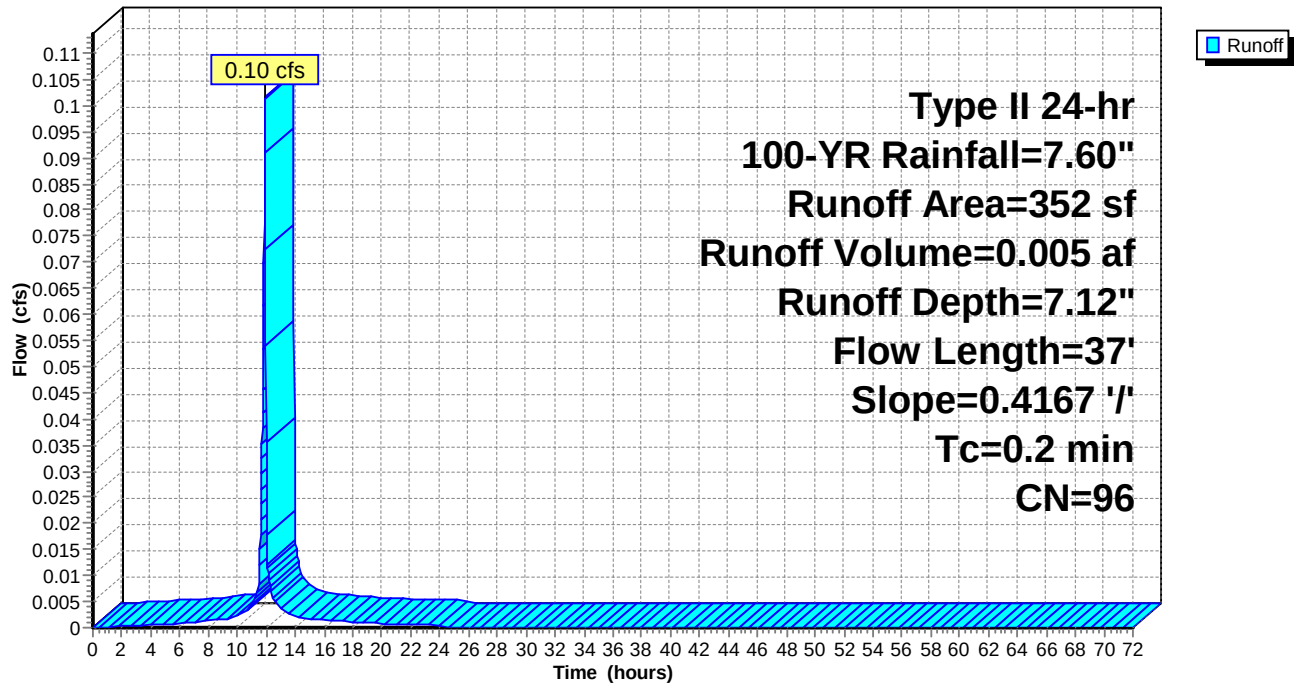
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-YR Rainfall=7.60"

Area (sf)	CN	Description
322	98	Roofs, HSG C
30	74	>75% Grass cover, Good, HSG C
352	96	Weighted Average
30		8.52% Pervious Area
322		91.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 40: Rooftop #40

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Subcatchment 41: Rooftop #41

Runoff = 0.32 cfs @ 11.90 hrs, Volume= 0.015 af, Depth= 7.12"

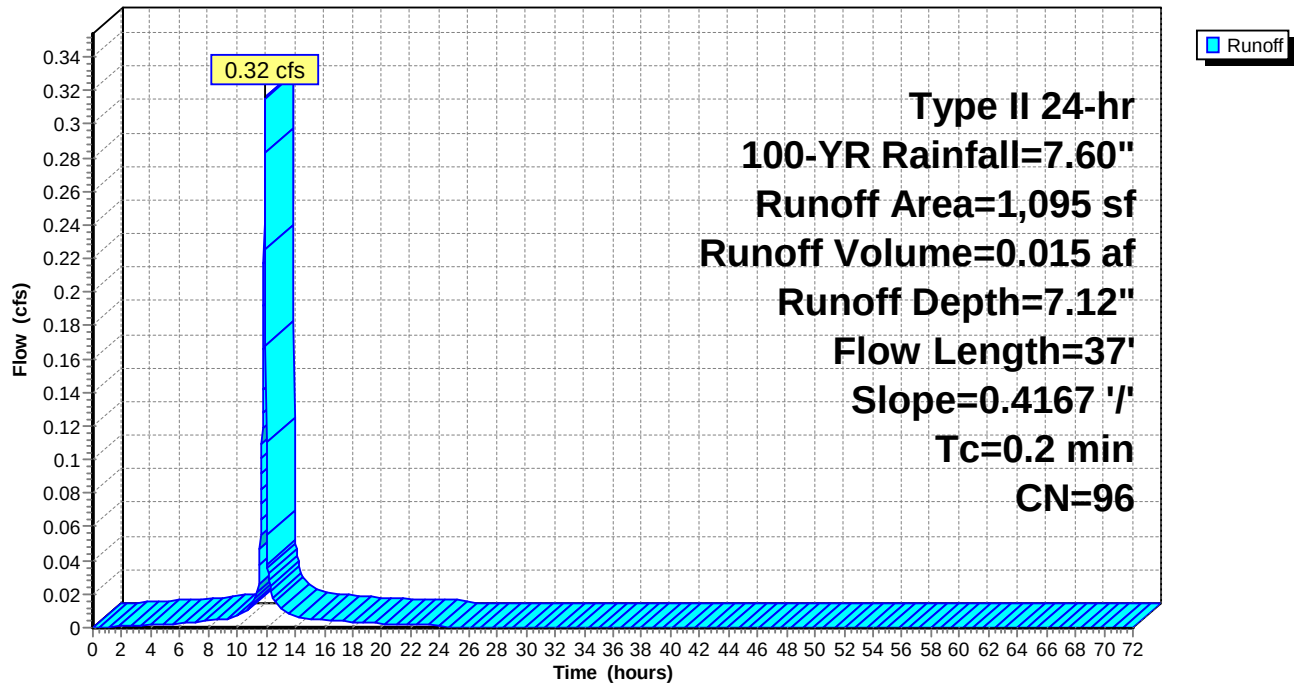
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-YR Rainfall=7.60"

Area (sf)	CN	Description
1,025	98	Roofs, HSG C
70	74	>75% Grass cover, Good, HSG C
1,095	96	Weighted Average
70		6.39% Pervious Area
1,025		93.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 41: Rooftop #41

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

Prepared by RAUCH inc.

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

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Summary for Subcatchment 42: Rooftop #42

Runoff = 0.10 cfs @ 11.90 hrs, Volume= 0.005 af, Depth= 7.12"

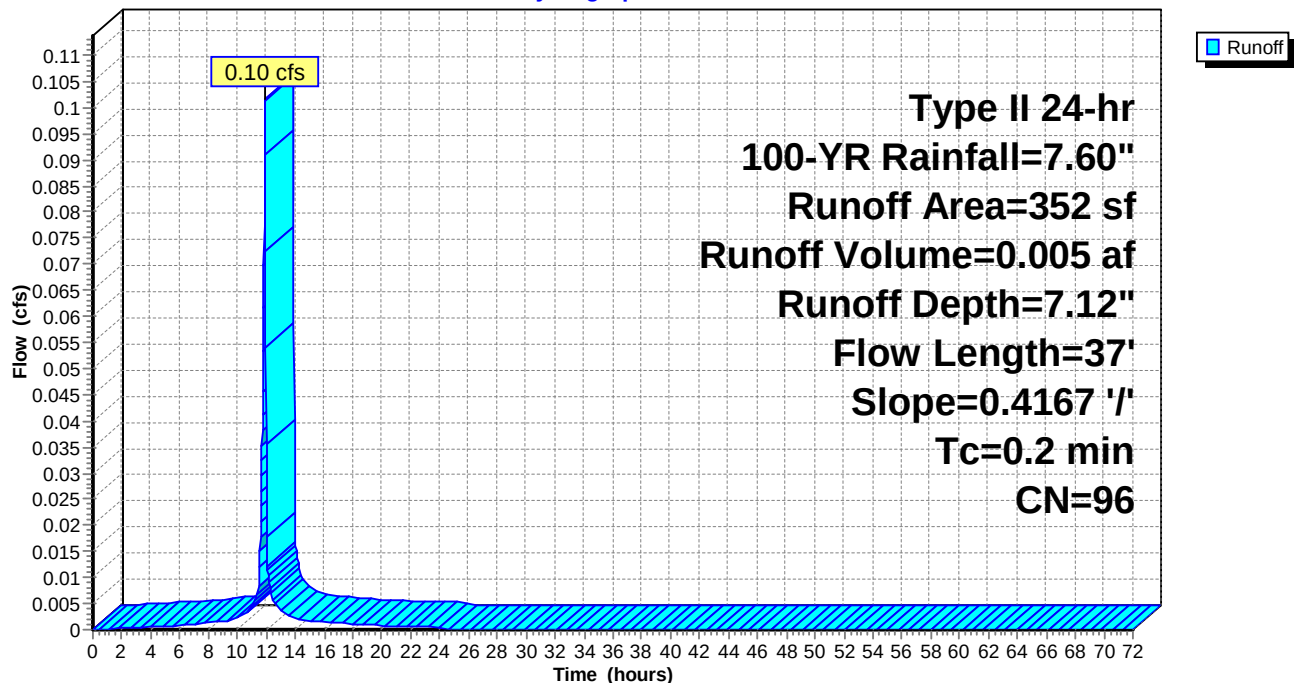
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-YR Rainfall=7.60"

Area (sf)	CN	Description
322	98	Roofs, HSG C
30	74	>75% Grass cover, Good, HSG C
352	96	Weighted Average
30		8.52% Pervious Area
322		91.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 42: Rooftop #42

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Subcatchment 43: Rooftop #43

Runoff = 0.17 cfs @ 11.90 hrs, Volume= 0.008 af, Depth= 7.12"

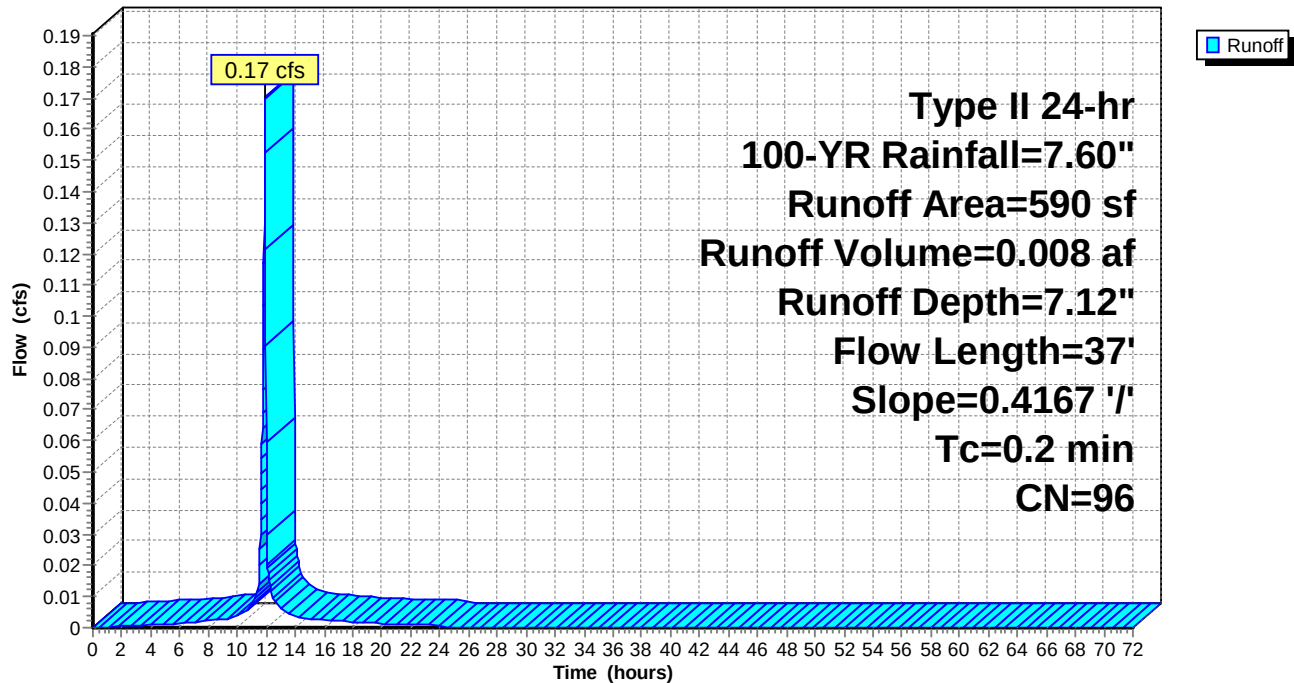
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-YR Rainfall=7.60"

Area (sf)	CN	Description
550	98	Roofs, HSG C
40	74	>75% Grass cover, Good, HSG C
590	96	Weighted Average
40		6.78% Pervious Area
550		93.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 43: Rooftop #43

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Subcatchment 44: Rooftop #44

Runoff = 0.20 cfs @ 11.90 hrs, Volume= 0.010 af, Depth= 7.12"

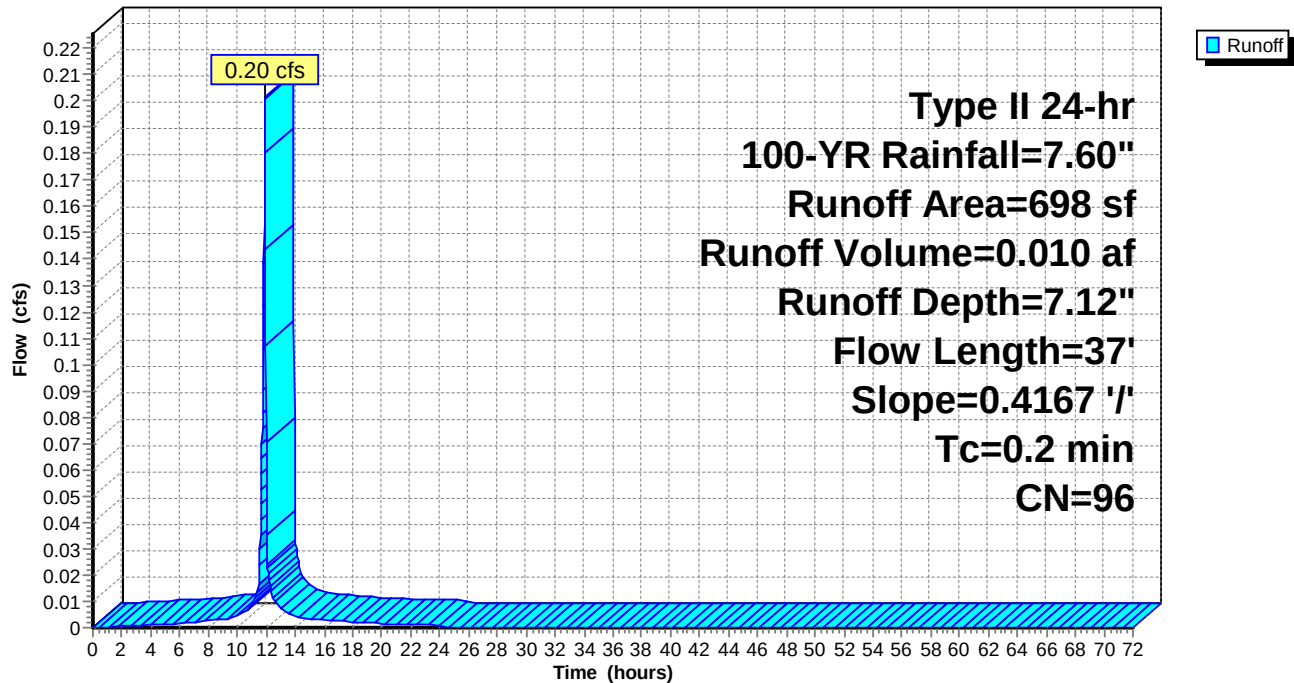
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-YR Rainfall=7.60"

Area (sf)	CN	Description
648	98	Roofs, HSG C
50	74	>75% Grass cover, Good, HSG C
698	96	Weighted Average
50		7.16% Pervious Area
648		92.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 44: Rooftop #44

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Subcatchment 45: Rooftop #45

Runoff = 0.17 cfs @ 11.90 hrs, Volume= 0.008 af, Depth= 7.12"

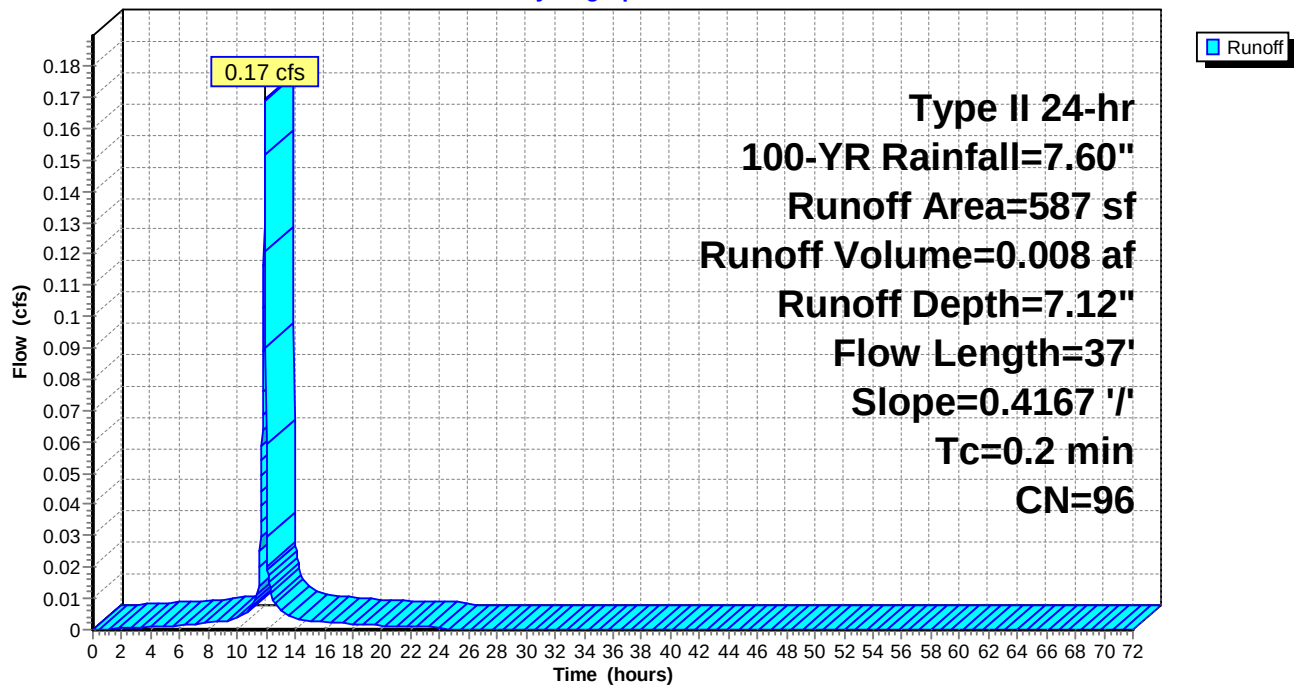
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-YR Rainfall=7.60"

Area (sf)	CN	Description
547	98	Roofs, HSG C
40	74	>75% Grass cover, Good, HSG C
587	96	Weighted Average
40		6.81% Pervious Area
547		93.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 45: Rooftop #45

Hydrograph



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

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Summary for Subcatchment 46: Rooftop #46

Runoff = 0.06 cfs @ 11.90 hrs, Volume= 0.003 af, Depth= 7.12"

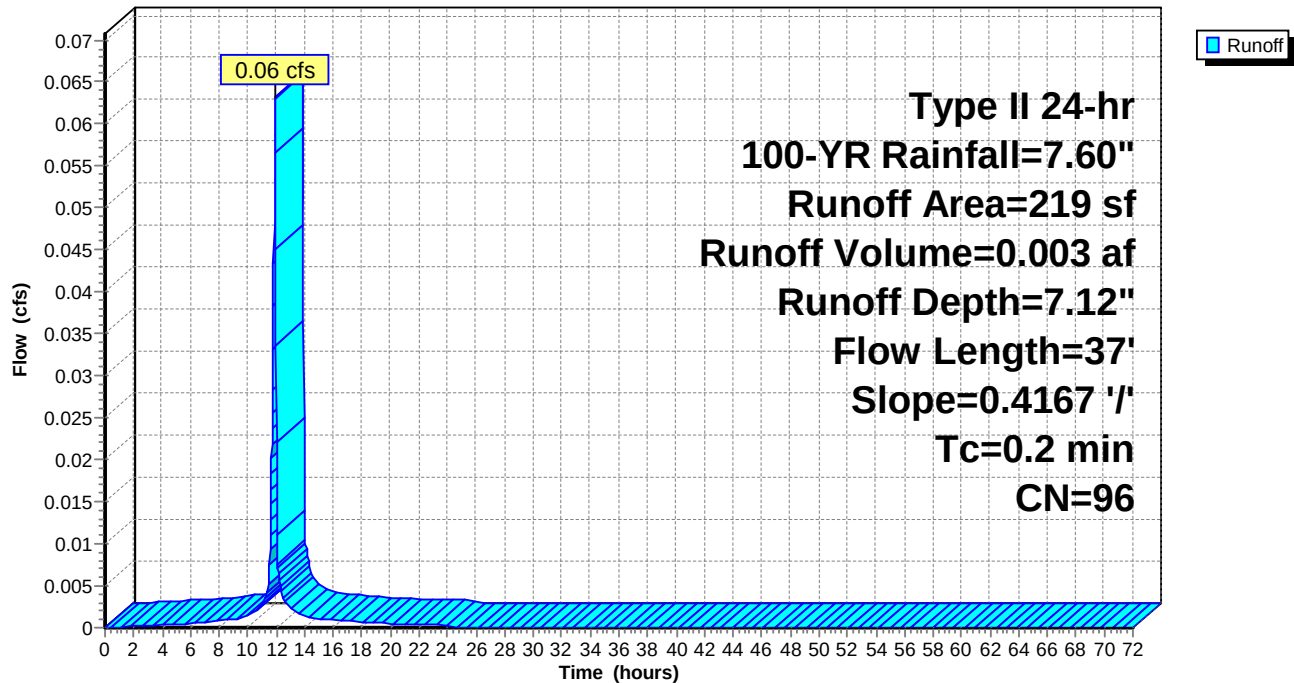
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-YR Rainfall=7.60"

Area (sf)	CN	Description
199	98	Roofs, HSG C
20	74	>75% Grass cover, Good, HSG C
219	96	Weighted Average
20		9.13% Pervious Area
199		90.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
					Smooth surfaces n= 0.011 P2= 3.40"

Subcatchment 46: Rooftop #46

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Subcatchment 47: Rooftop #47

Runoff = 0.35 cfs @ 11.90 hrs, Volume= 0.017 af, Depth= 7.12"

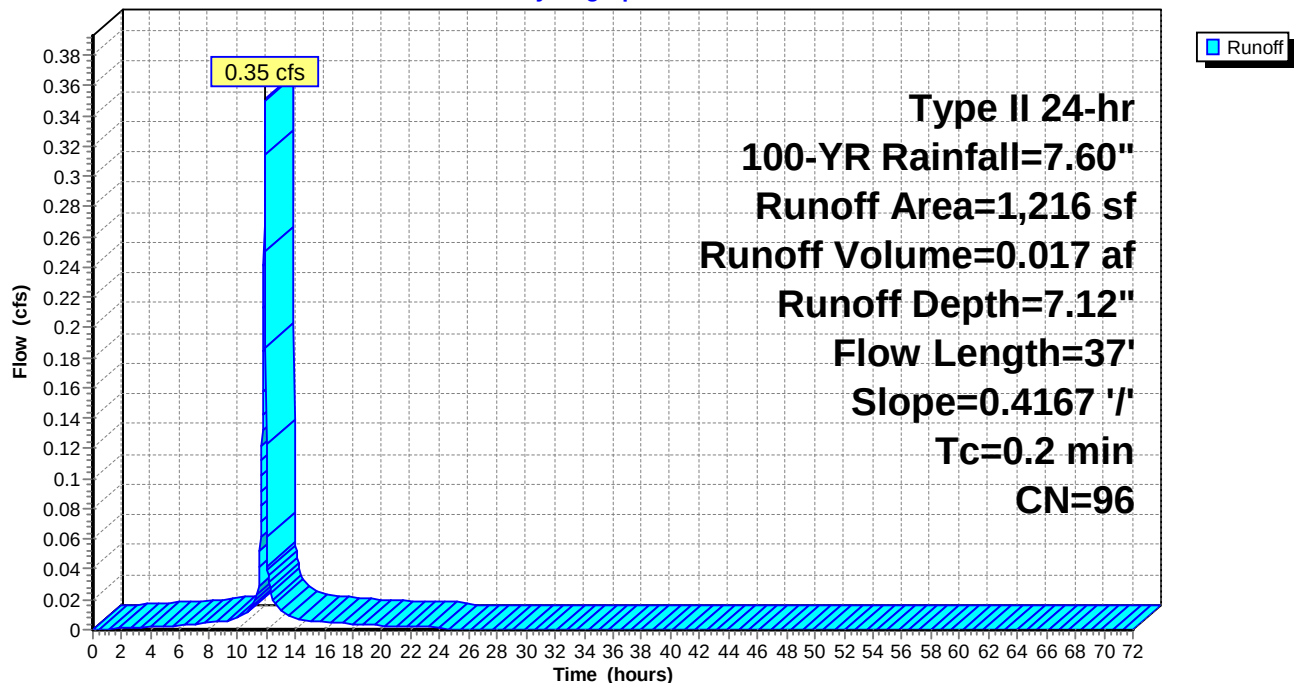
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-YR Rainfall=7.60"

Area (sf)	CN	Description
1,136	98	Roofs, HSG C
80	74	>75% Grass cover, Good, HSG C
1,216	96	Weighted Average
80		6.58% Pervious Area
1,136		93.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 47: Rooftop #47

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Subcatchment 48: Rooftop #48

Runoff = 0.23 cfs @ 11.90 hrs, Volume= 0.011 af, Depth= 7.12"

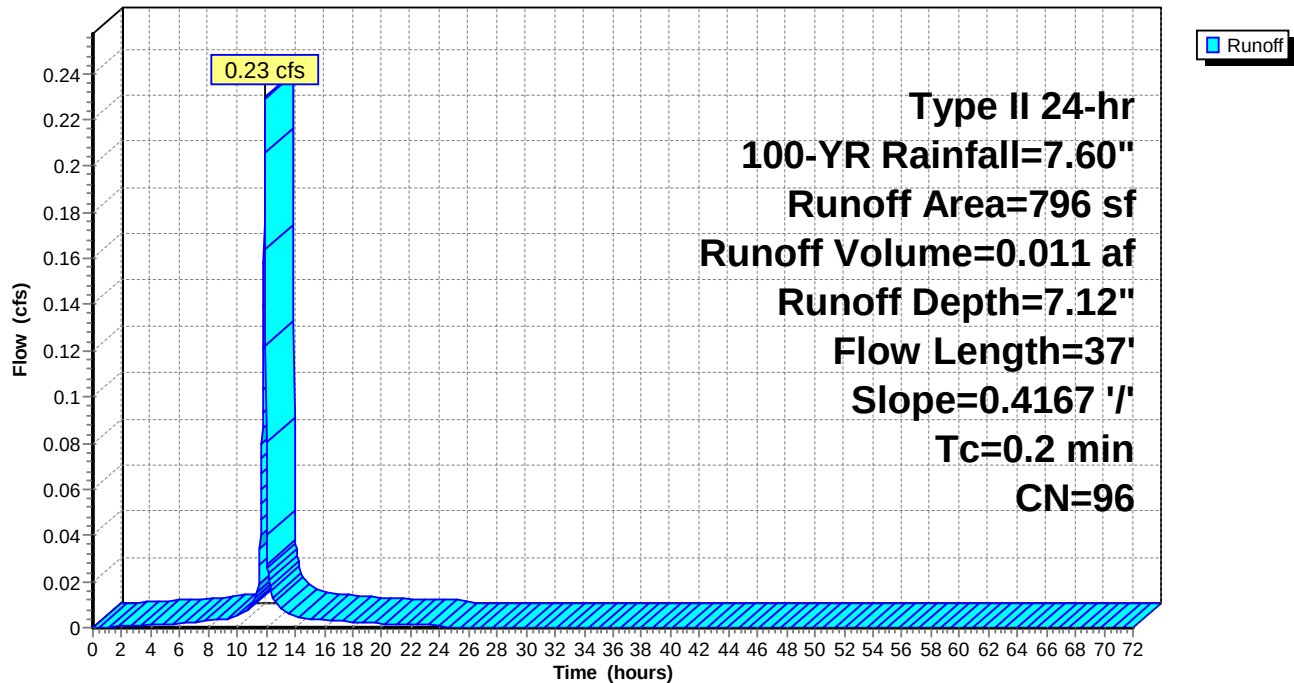
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-YR Rainfall=7.60"

Area (sf)	CN	Description
741	98	Roofs, HSG C
55	74	>75% Grass cover, Good, HSG C
796	96	Weighted Average
55		6.91% Pervious Area
741		93.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 48: Rooftop #48

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

Printed 02/22/23

Summary for Subcatchment 49: Rooftop #49

Runoff = 0.10 cfs @ 11.90 hrs, Volume= 0.005 af, Depth= 7.12"

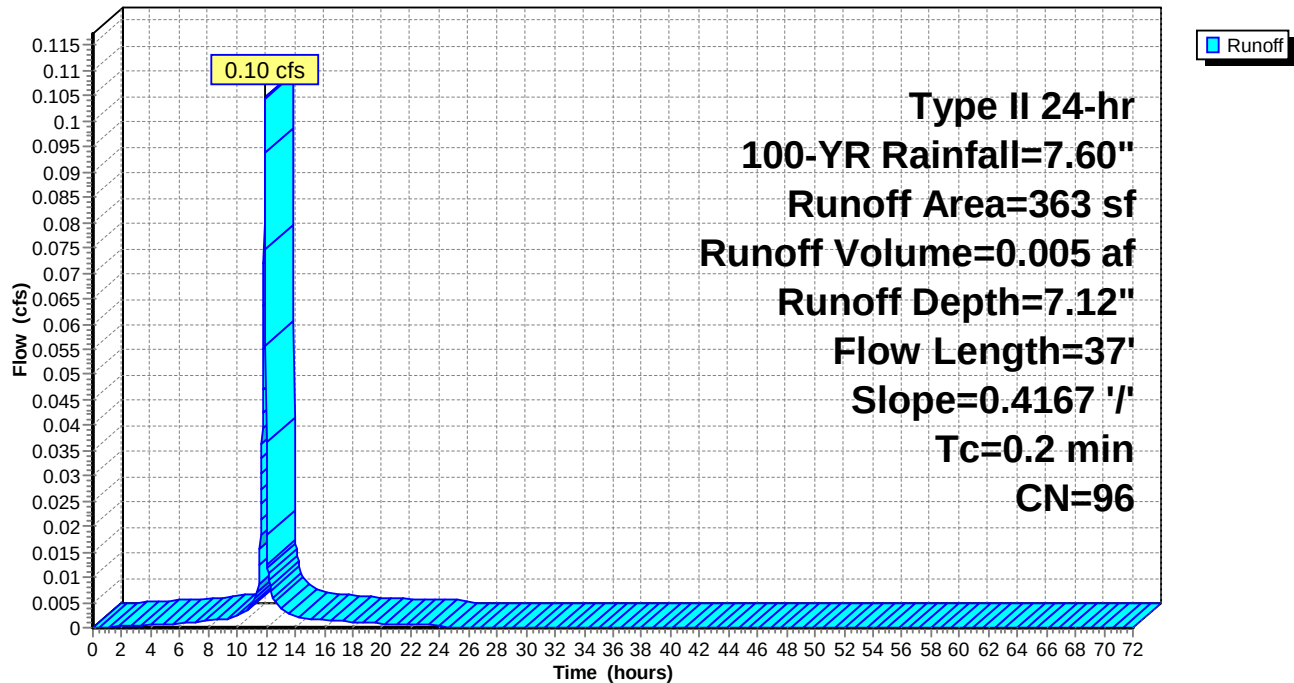
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-YR Rainfall=7.60"

Area (sf)	CN	Description
333	98	Roofs, HSG C
30	74	>75% Grass cover, Good, HSG C
363	96	Weighted Average
30		8.26% Pervious Area
333		91.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 49: Rooftop #49

Hydrograph



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

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Summary for Subcatchment 50: Rooftop #50

Runoff = 0.20 cfs @ 11.90 hrs, Volume= 0.010 af, Depth= 7.12"

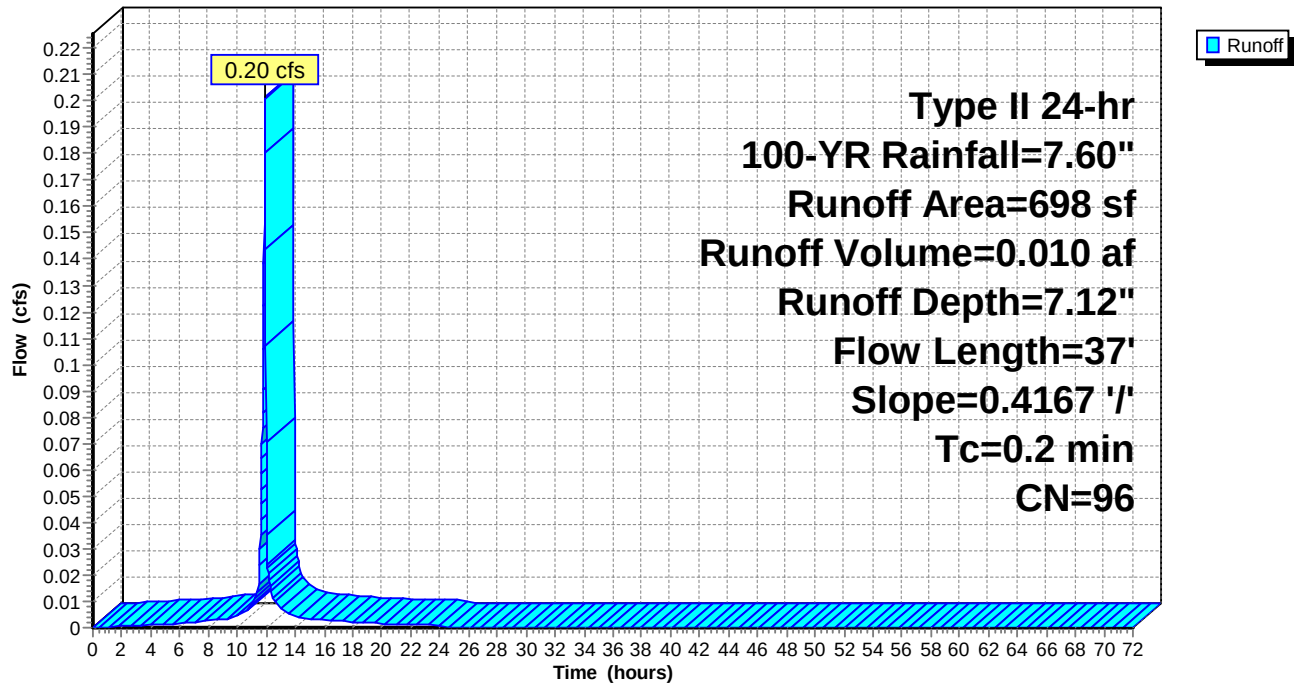
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-YR Rainfall=7.60"

Area (sf)	CN	Description
648	98	Roofs, HSG C
50	74	>75% Grass cover, Good, HSG C
698	96	Weighted Average
50		7.16% Pervious Area
648		92.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 50: Rooftop #50

Hydrograph



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

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Summary for Subcatchment 51: Rooftop #51

Runoff = 0.17 cfs @ 11.90 hrs, Volume= 0.008 af, Depth= 7.12"

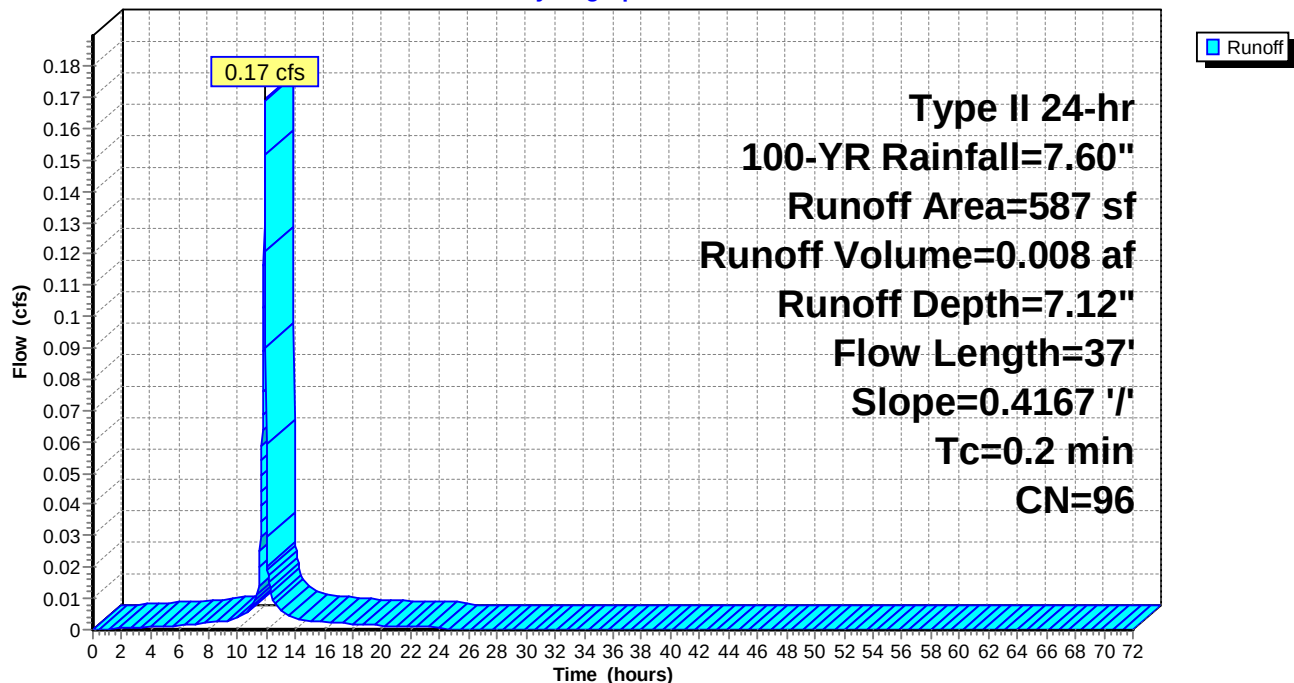
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-YR Rainfall=7.60"

Area (sf)	CN	Description
547	98	Roofs, HSG C
40	74	>75% Grass cover, Good, HSG C
587	96	Weighted Average
40		6.81% Pervious Area
547		93.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 51: Rooftop #51

Hydrograph



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

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Summary for Subcatchment 52: Rooftop #52

Runoff = 0.17 cfs @ 11.90 hrs, Volume= 0.008 af, Depth= 7.12"

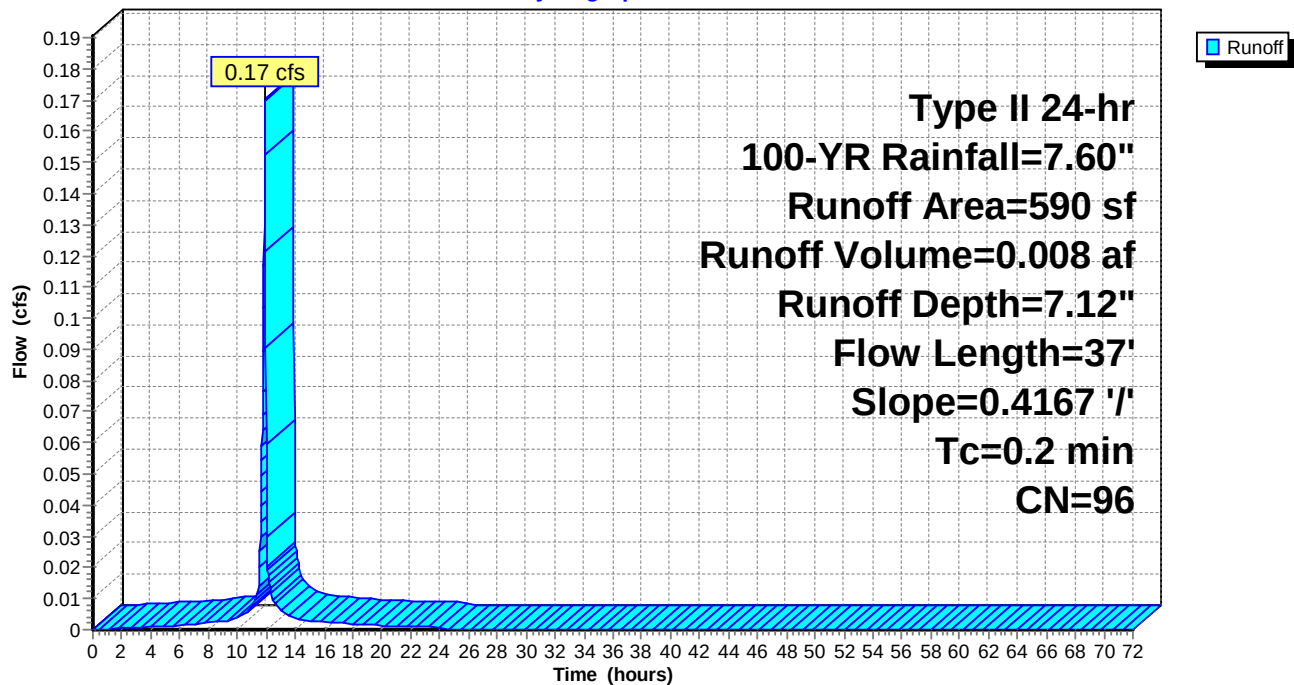
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-YR Rainfall=7.60"

Area (sf)	CN	Description
550	98	Roofs, HSG C
40	74	>75% Grass cover, Good, HSG C
590	96	Weighted Average
40		6.78% Pervious Area
550		93.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 52: Rooftop #52

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Subcatchment 53: Rooftop #53

Runoff = 0.32 cfs @ 11.90 hrs, Volume= 0.015 af, Depth= 7.12"

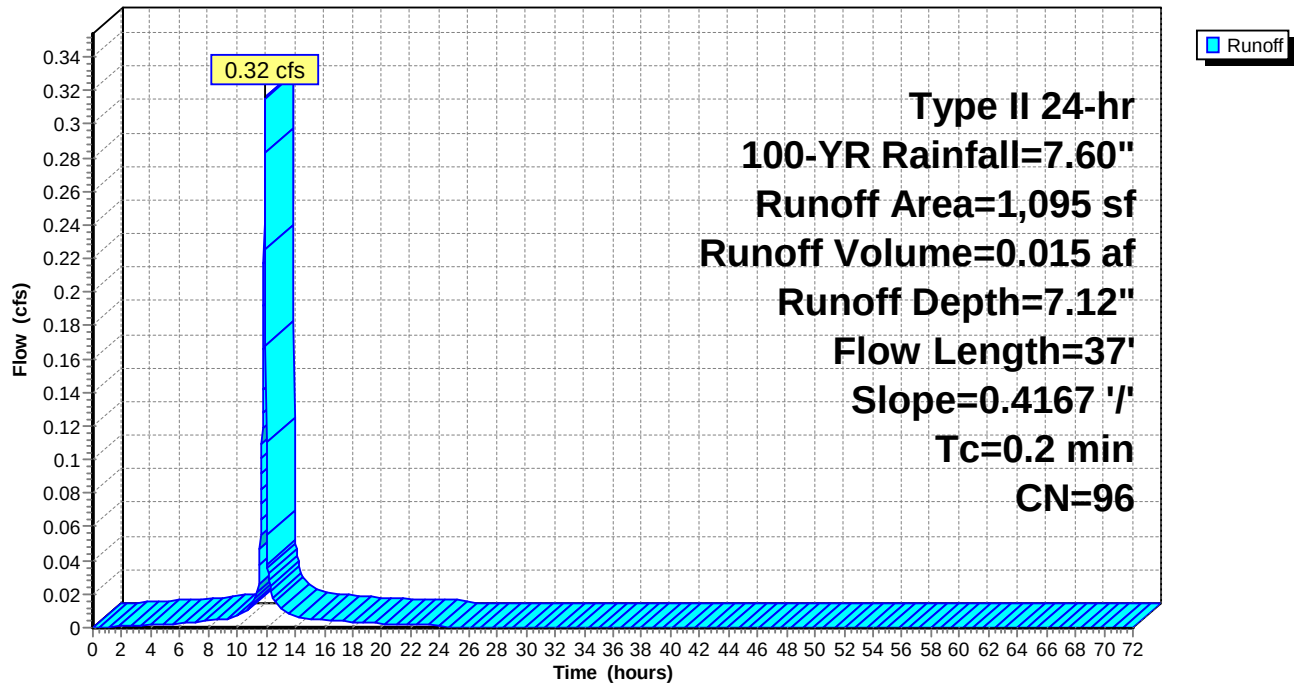
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-YR Rainfall=7.60"

Area (sf)	CN	Description
1,025	98	Roofs, HSG C
70	74	>75% Grass cover, Good, HSG C
1,095	96	Weighted Average
70		6.39% Pervious Area
1,025		93.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 53: Rooftop #53

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Subcatchment 54: Rooftop #54

Runoff = 0.10 cfs @ 11.90 hrs, Volume= 0.005 af, Depth= 7.12"

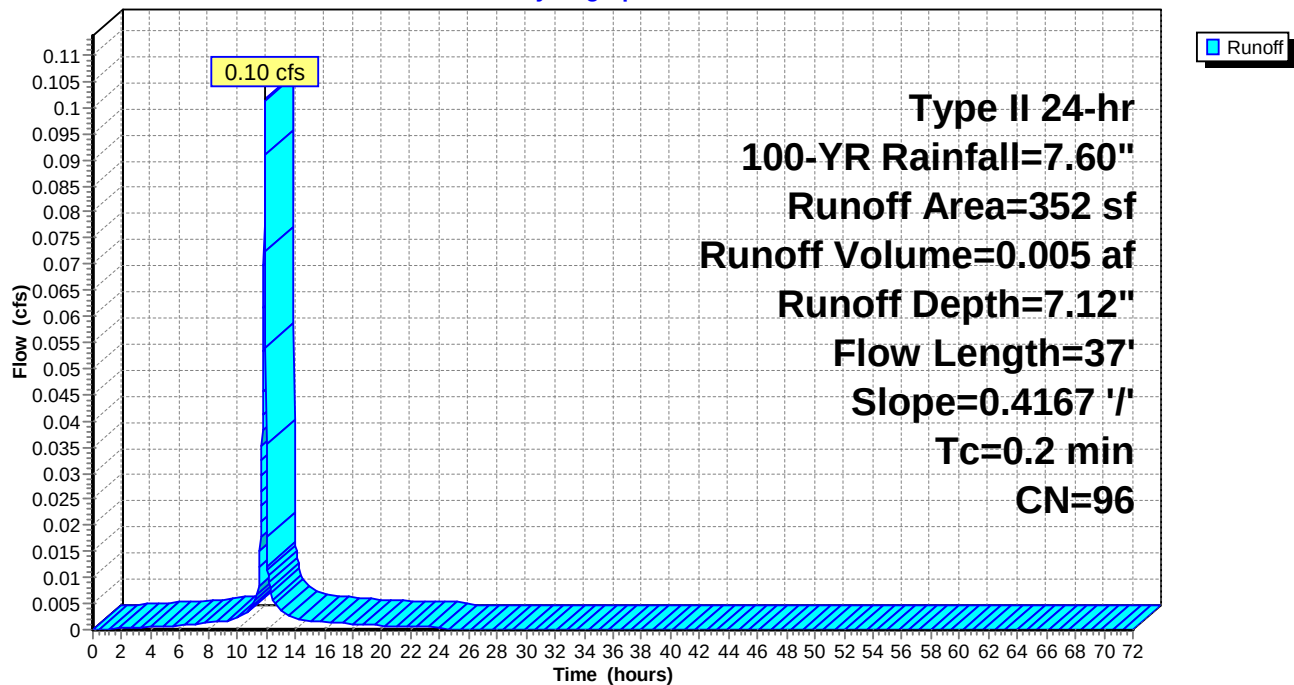
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-YR Rainfall=7.60"

Area (sf)	CN	Description
322	98	Roofs, HSG C
30	74	>75% Grass cover, Good, HSG C
352	96	Weighted Average
30		8.52% Pervious Area
322		91.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	37	0.4167	3.92		Sheet Flow, Roof
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment 54: Rooftop #54

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Subcatchment 55: Non-RT DA to PA-2

Runoff = 0.58 cfs @ 11.99 hrs, Volume= 0.038 af, Depth= 6.65"

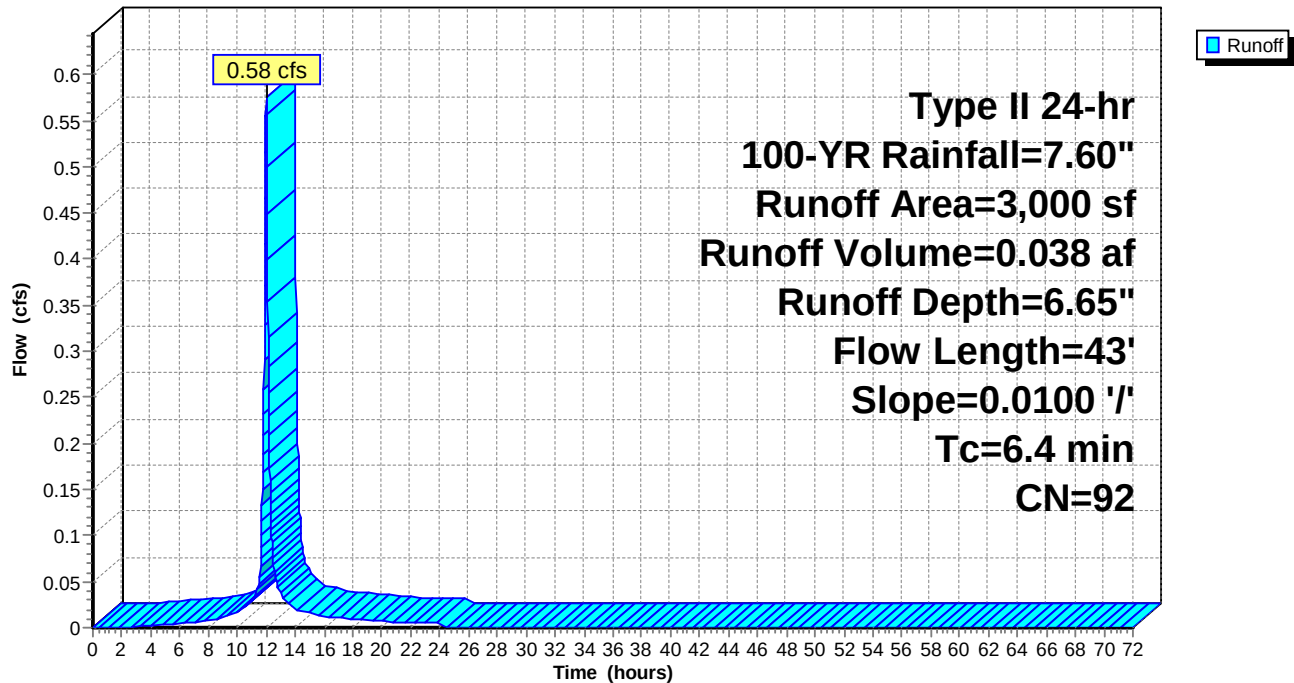
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-YR Rainfall=7.60"

Area (sf)	CN	Description
733	74	>75% Grass cover, Good, HSG C
* 2,267	98	Impervious
3,000	92	Weighted Average
733		24.43% Pervious Area
2,267		75.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	43	0.0100	0.11		Sheet Flow, Sideyard
					Grass: Short n= 0.150 P2= 3.40"

Subcatchment 55: Non-RT DA to PA-2

Hydrograph



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

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Summary for Subcatchment 56: Non-RT DA to PA-3

Runoff = 0.73 cfs @ 12.00 hrs, Volume= 0.051 af, Depth= 6.06"

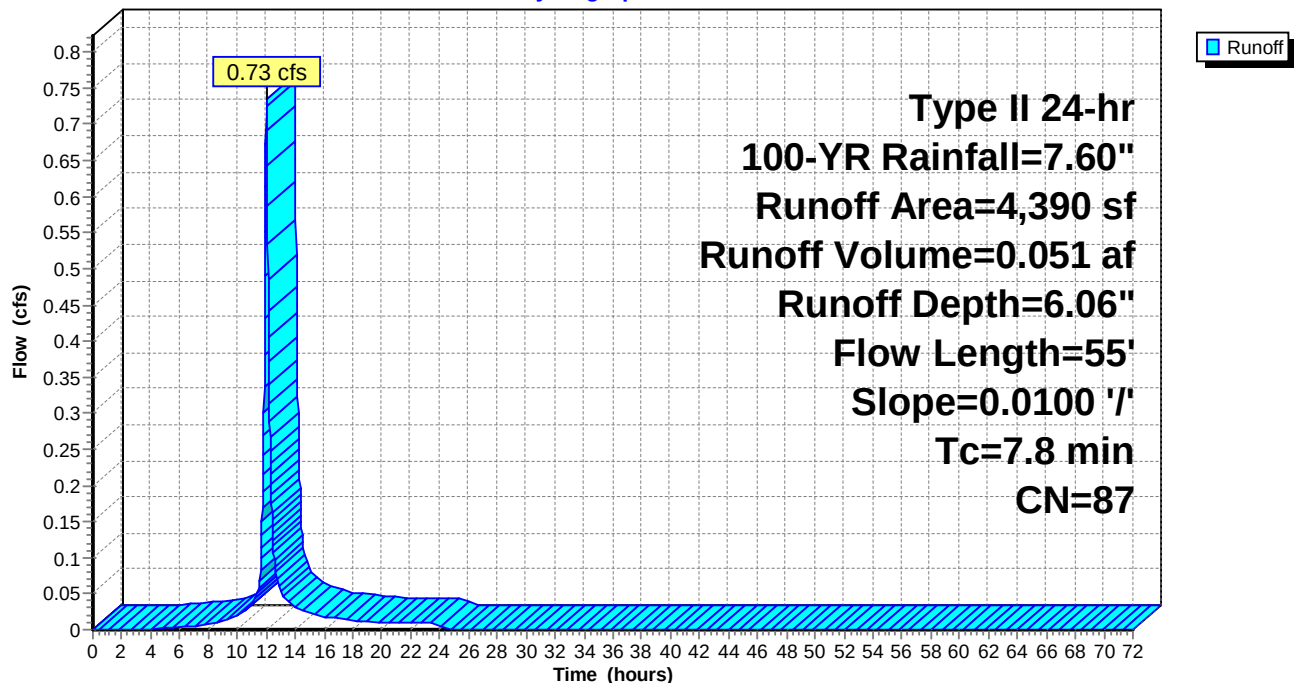
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-YR Rainfall=7.60"

Area (sf)	CN	Description
1,989	74	>75% Grass cover, Good, HSG C
2,401	98	Paved parking, HSG C
4,390	87	Weighted Average
1,989		45.31% Pervious Area
2,401		54.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.8	55	0.0100	0.12		Sheet Flow, Sideyard
					Grass: Short n= 0.150 P2= 3.40"

Subcatchment 56: Non-RT DA to PA-3

Hydrograph



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

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Summary for Subcatchment 57: Non-RT DA to PA-4

Runoff = 0.74 cfs @ 12.01 hrs, Volume= 0.054 af, Depth= 6.18"

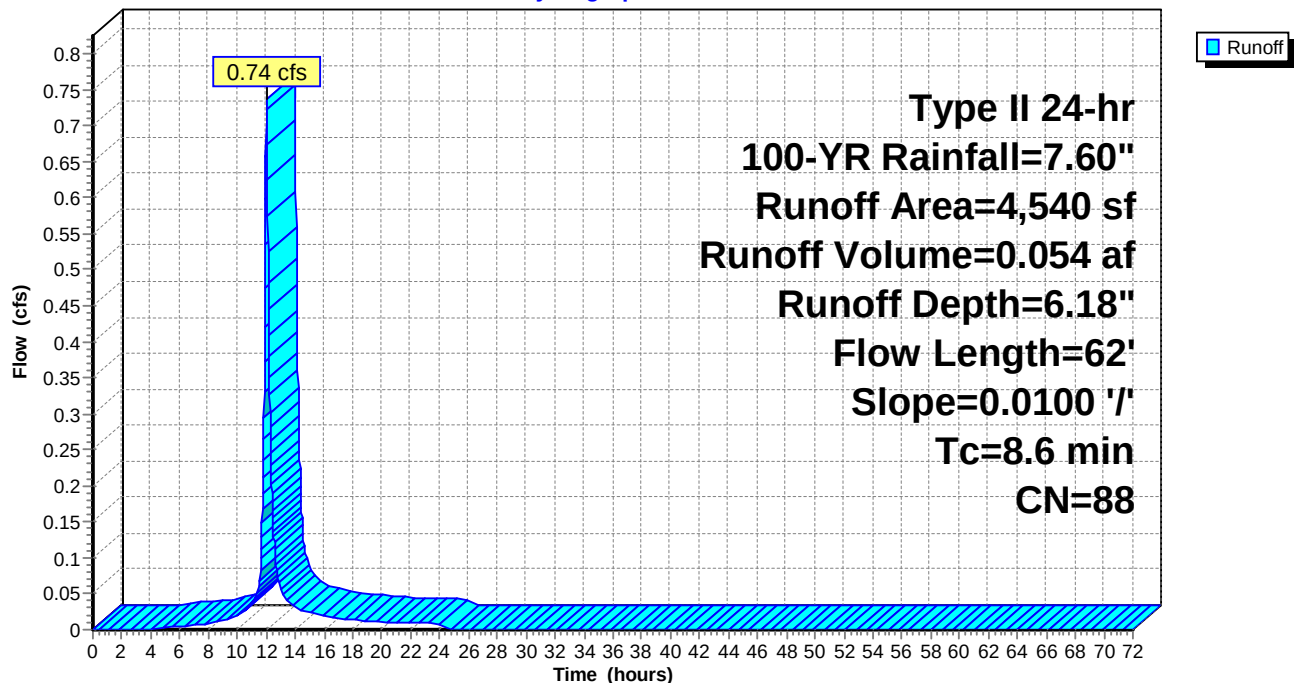
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-YR Rainfall=7.60"

Area (sf)	CN	Description
1,939	74	>75% Grass cover, Good, HSG C
2,601	98	Paved parking, HSG C
4,540	88	Weighted Average
1,939		42.71% Pervious Area
2,601		57.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	62	0.0100	0.12		Sheet Flow, Sideyard
					Grass: Short n= 0.150 P2= 3.40"

Subcatchment 57: Non-RT DA to PA-4

Hydrograph



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

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Summary for Subcatchment 58: Non-RT DA to PA-5

Runoff = 1.13 cfs @ 12.00 hrs, Volume= 0.080 af, Depth= 6.65"

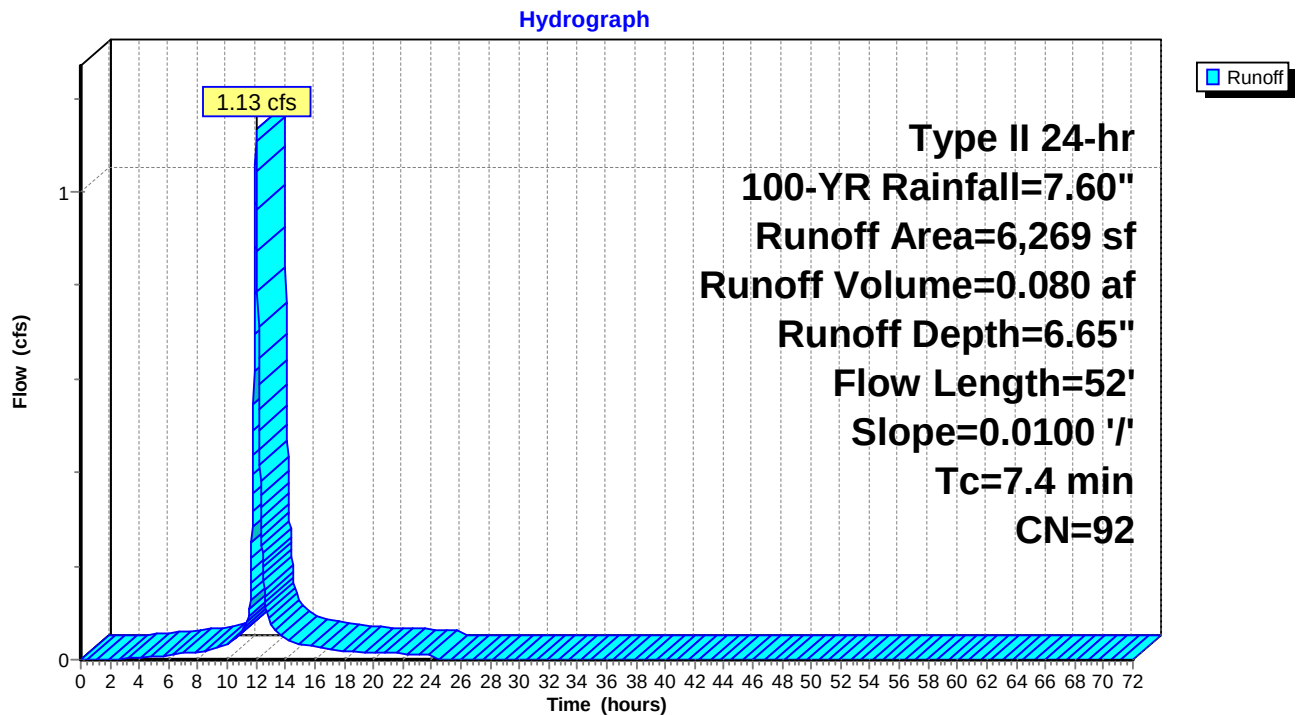
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs

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

Area (sf)	CN	Description
1,645	74	>75% Grass cover, Good, HSG C
4,624	98	Paved parking, HSG C
6,269	92	Weighted Average
1,645		26.24% Pervious Area
4,624		73.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	52	0.0100	0.12		Sheet Flow, Sideyard
					Grass: Short n= 0.150 P2= 3.40"

Subcatchment 58: Non-RT DA to PA-5



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

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Summary for Subcatchment 59: Non-RT DA to PA-6

Runoff = 1.53 cfs @ 12.00 hrs, Volume= 0.106 af, Depth= 6.65"

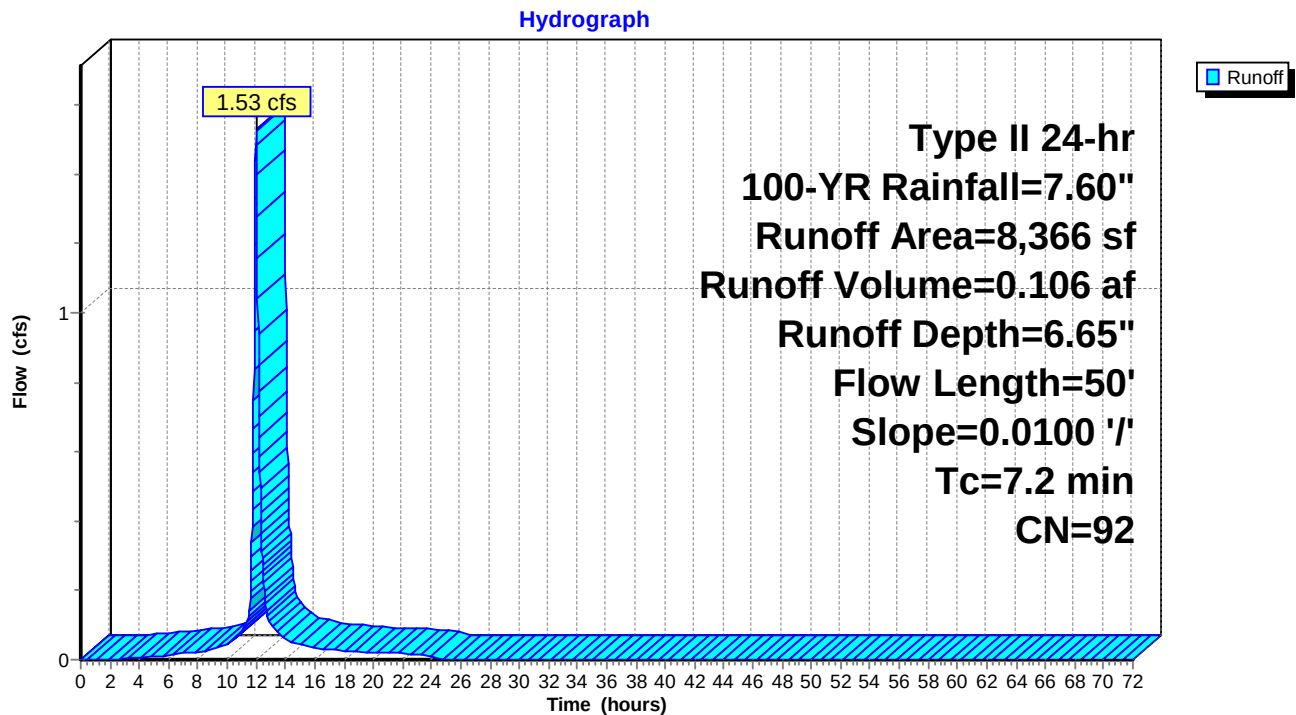
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs

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

Area (sf)	CN	Description
2,213	74	>75% Grass cover, Good, HSG C
6,153	98	Paved parking, HSG C
8,366	92	Weighted Average
2,213		26.45% Pervious Area
6,153		73.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	50	0.0100	0.12		Sheet Flow, Sideyard
Grass: Short n= 0.150 P2= 3.40"					

Subcatchment 59: Non-RT DA to PA-6



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

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Summary for Subcatchment 60: Non-RT DA to PA-7

Runoff = 0.21 cfs @ 11.99 hrs, Volume= 0.014 af, Depth= 6.53"

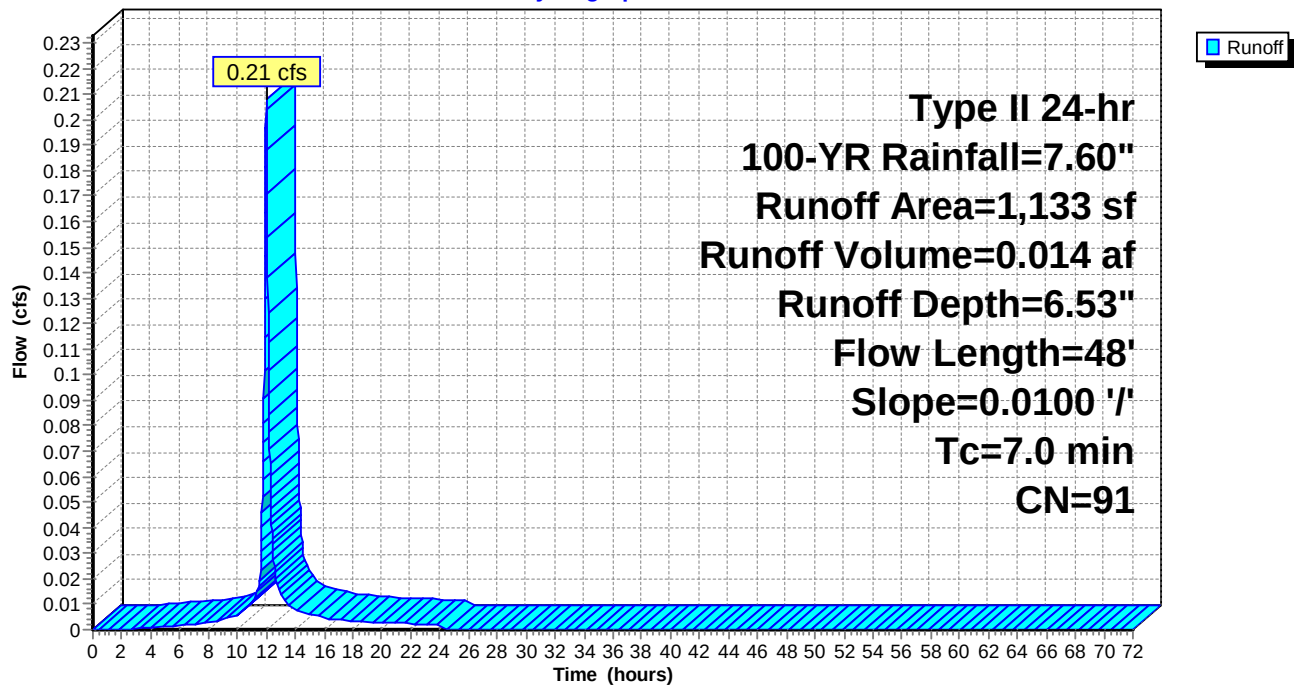
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-YR Rainfall=7.60"

Area (sf)	CN	Description
330	74	>75% Grass cover, Good, HSG C
803	98	Paved parking, HSG C
1,133	91	Weighted Average
330		29.13% Pervious Area
803		70.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	48	0.0100	0.11		Sheet Flow, Sideyard
					Grass: Short n= 0.150 P2= 3.40"

Subcatchment 60: Non-RT DA to PA-7

Hydrograph



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

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Summary for Subcatchment 61: West DA to Jowite

Runoff = 1.40 cfs @ 12.08 hrs, Volume= 0.127 af, Depth= 4.57"

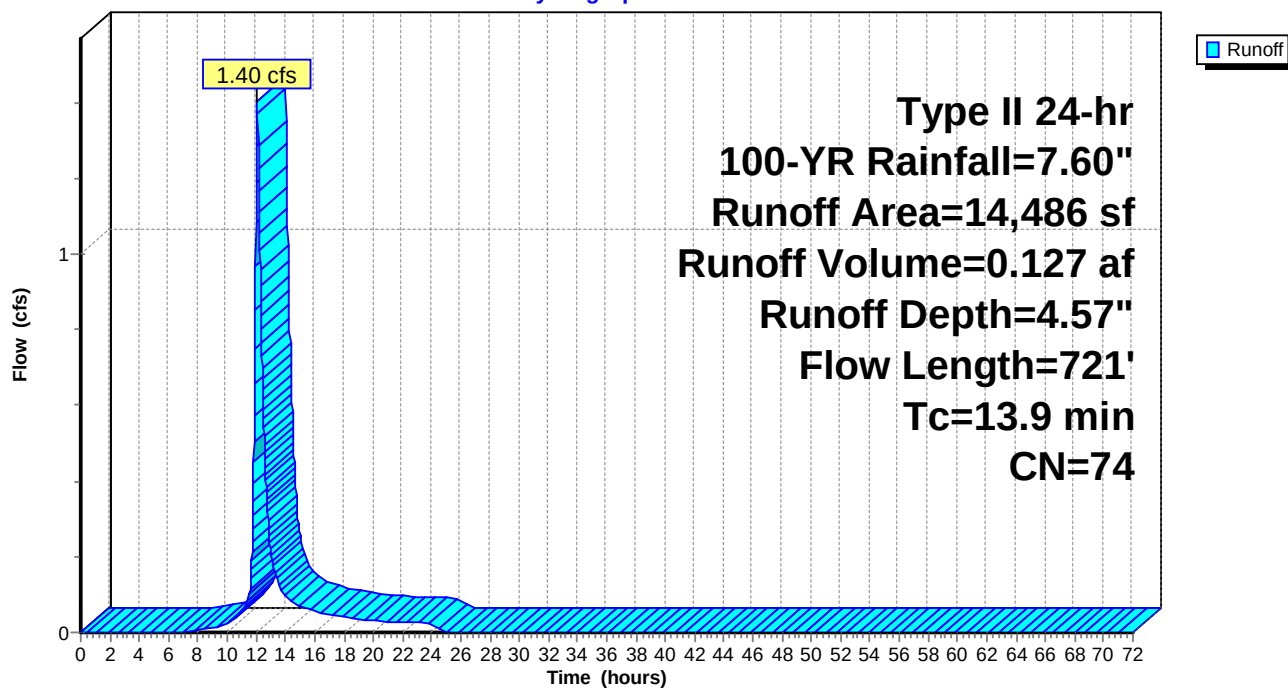
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-YR Rainfall=7.60"

Area (sf)	CN	Description
14,486	74	>75% Grass cover, Good, HSG C
14,486		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.8	55	0.0100	0.12		Sheet Flow, Sideyard Grass: Short n= 0.150 P2= 3.40"
5.6	496	0.0053	1.48		Shallow Concentrated Flow, Gutter Pan Paved Kv= 20.3 fps
0.5	170	0.0087	5.80	7.12	Pipe Channel, Pipe from CI on West Side of Jowite to SDMH-20201 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.011 Concrete pipe, straight & clean
13.9	721	Total			

Subcatchment 61: West DA to Jowite

Hydrograph



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

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Summary for Reach VG-2: Valley Gutter 2

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

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min

Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs

Average Depth at Peak Storage= 0.00'

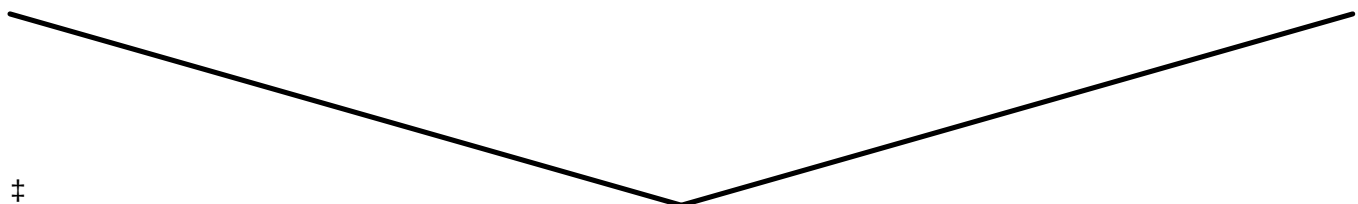
Bank-Full Depth= 0.08' Flow Area= 0.1 sf, Capacity= 0.14 cfs

0.00' x 0.08' deep channel, n= 0.011 Concrete pipe, straight & clean

Side Slope Z-value= 18.0 '/' Top Width= 2.88'

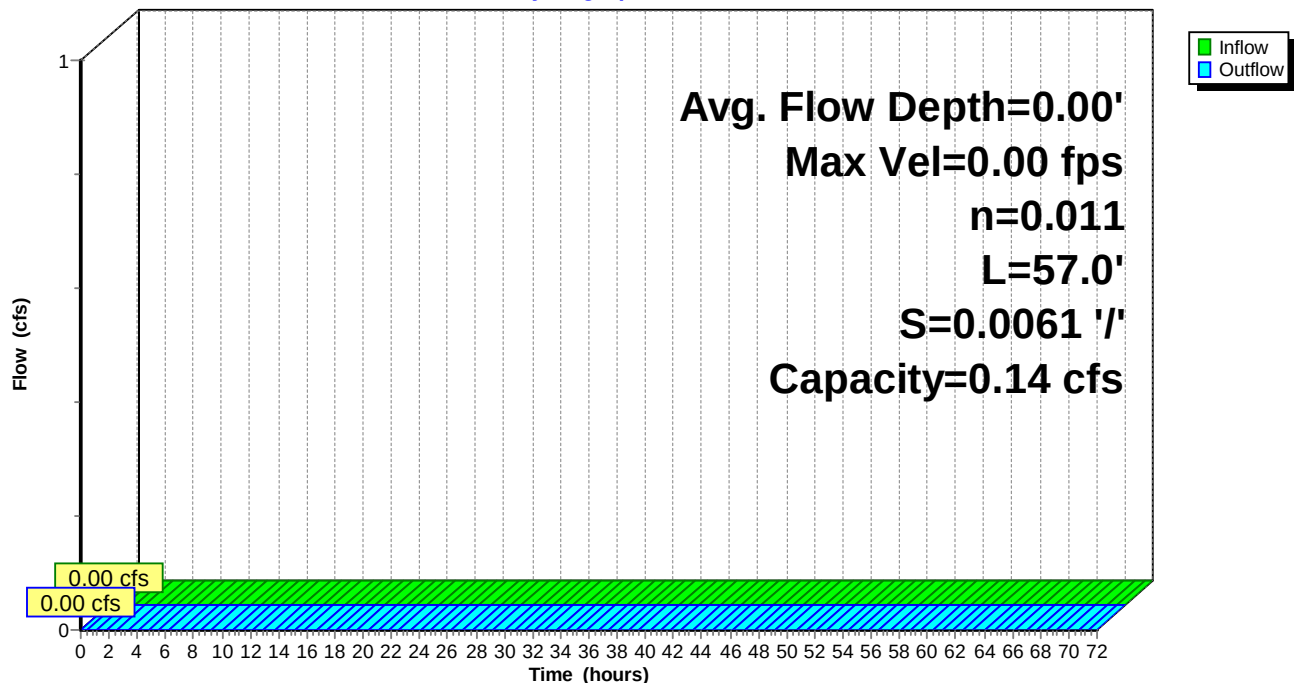
Length= 57.0' Slope= 0.0061 '/'

Inlet Invert= 15.10', Outlet Invert= 14.75'



Reach VG-2: Valley Gutter 2

Hydrograph



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

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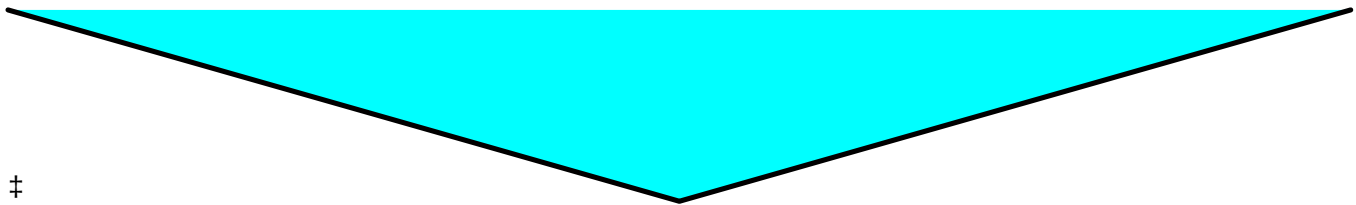
Summary for Reach VG-3: Valley Gutter 3

Inflow = 1.89 cfs @ 12.13 hrs, Volume= 0.023 af
Outflow = 1.51 cfs @ 12.14 hrs, Volume= 0.023 af, Atten= 20%, Lag= 0.9 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2
Max. Velocity= 1.51 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 0.69 fps, Avg. Travel Time= 1.6 min

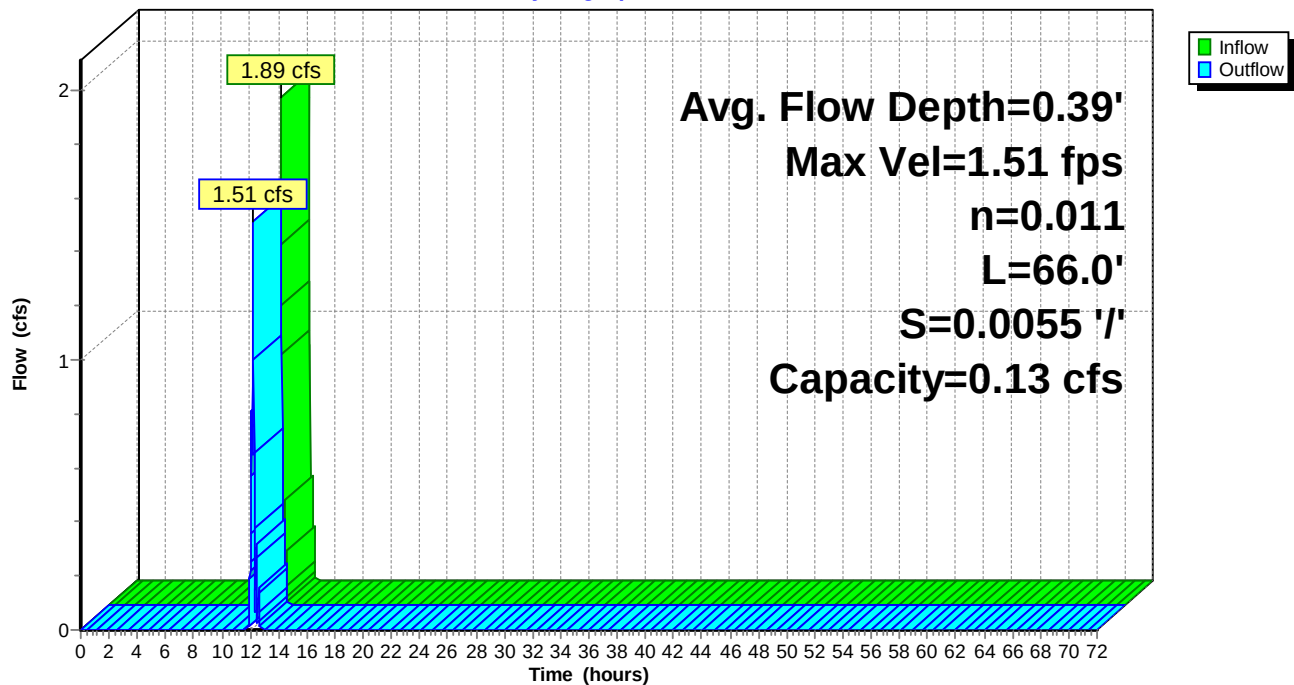
Peak Storage= 66 cf @ 12.14 hrs
Average Depth at Peak Storage= 0.39'
Bank-Full Depth= 0.08' Flow Area= 0.1 sf, Capacity= 0.13 cfs

0.00' x 0.08' deep channel, n= 0.011 Concrete pipe, straight & clean
Side Slope Z-value= 18.0 ' Top Width= 2.88'
Length= 66.0' Slope= 0.0055 '
Inlet Invert= 15.11', Outlet Invert= 14.75'



Reach VG-3: Valley Gutter 3

Hydrograph



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

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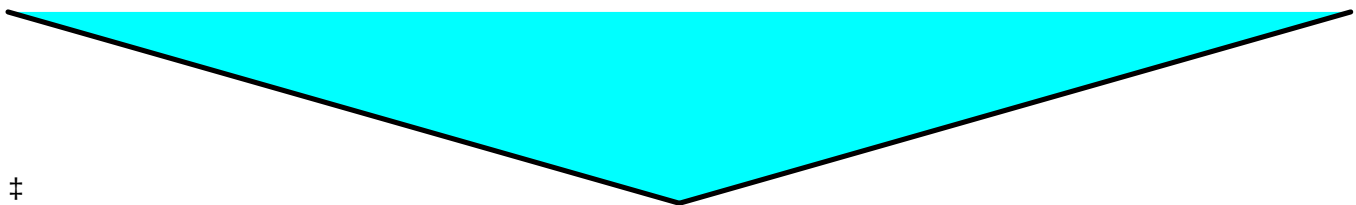
Summary for Reach VG-4: Valley Gutter 4

Inflow = 3.04 cfs @ 12.12 hrs, Volume= 0.015 af
Outflow = 1.37 cfs @ 12.14 hrs, Volume= 0.015 af, Atten= 55%, Lag= 0.9 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2
Max. Velocity= 1.53 fps, Min. Travel Time= 1.3 min
Avg. Velocity = 0.68 fps, Avg. Travel Time= 2.9 min

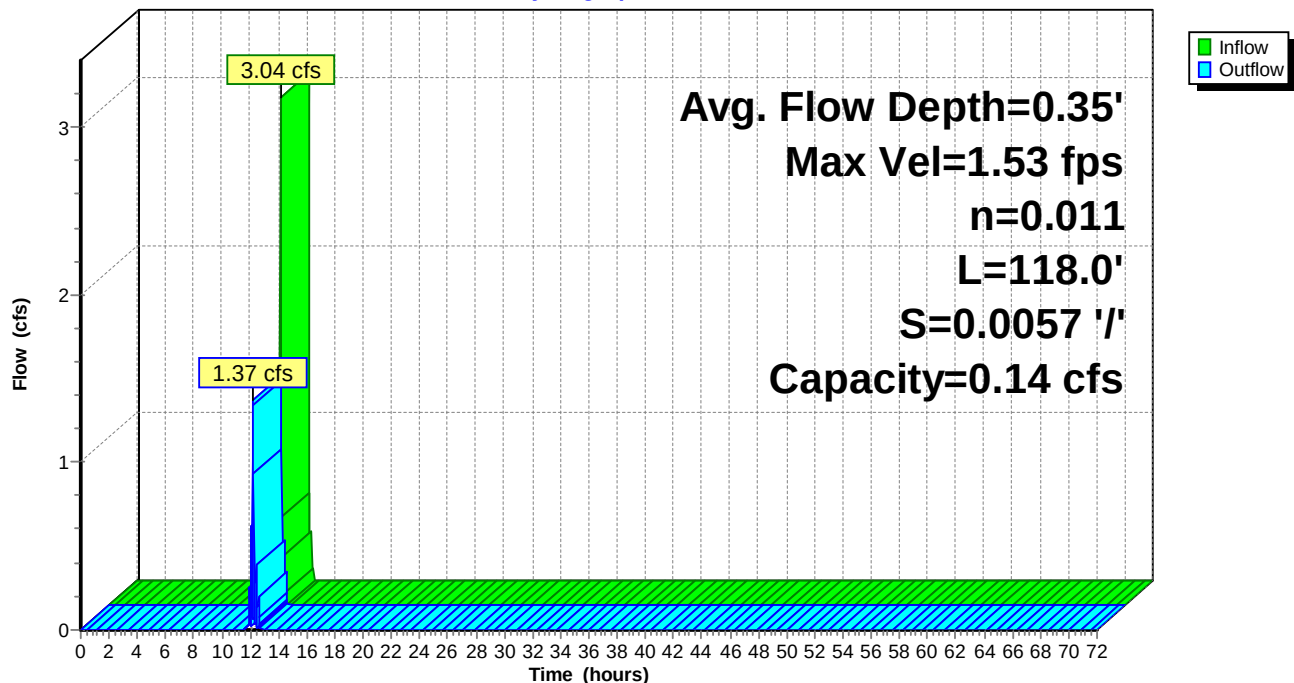
Peak Storage= 106 cf @ 12.14 hrs
Average Depth at Peak Storage= 0.35'
Bank-Full Depth= 0.08' Flow Area= 0.1 sf, Capacity= 0.14 cfs

0.00' x 0.08' deep channel, n= 0.011 Concrete pipe, straight & clean
Side Slope Z-value= 18.0 ' Top Width= 2.88'
Length= 118.0' Slope= 0.0057 '
Inlet Invert= 15.78', Outlet Invert= 15.11'



Reach VG-4: Valley Gutter 4

Hydrograph



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

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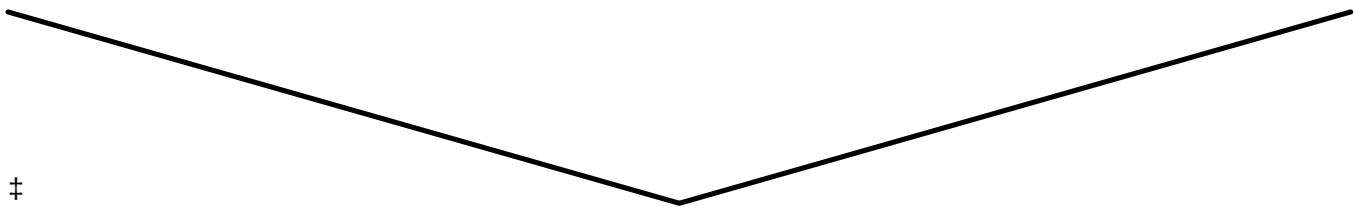
Summary for Reach VG-5: Valley Gutter 5

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

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

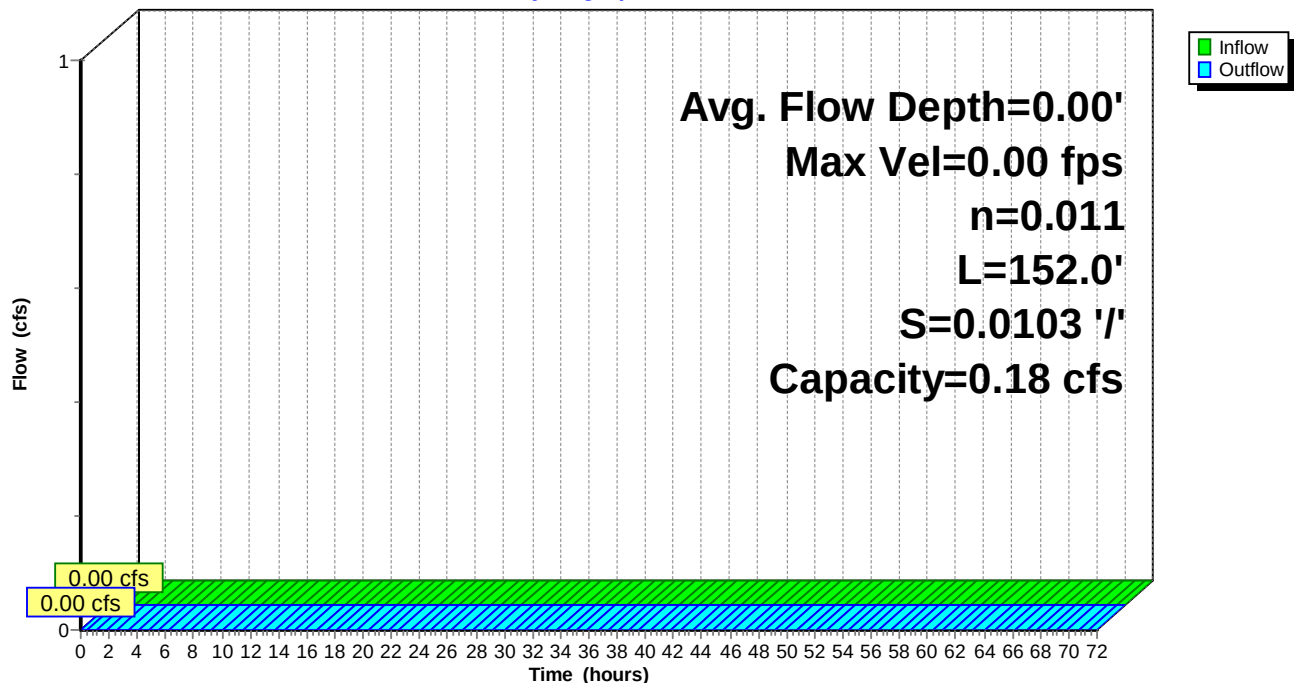
Peak Storage= 0 cf @ 0.00 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 0.08' Flow Area= 0.1 sf, Capacity= 0.18 cfs

0.00' x 0.08' deep channel, n= 0.011 Concrete pipe, straight & clean
Side Slope Z-value= 18.0 '/' Top Width= 2.88'
Length= 152.0' Slope= 0.0103 '/'
Inlet Invert= 17.34', Outlet Invert= 15.78'



Reach VG-5: Valley Gutter 5

Hydrograph



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

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Summary for Pond EX-I-2: EX-I-2

Inflow Area = 0.921 ac, 75.76% Impervious, Inflow Depth = 6.67" for 100-YR event
Inflow = 4.43 cfs @ 12.14 hrs, Volume= 0.512 af
Outflow = 4.43 cfs @ 12.14 hrs, Volume= 0.512 af, Atten= 0%, Lag= 0.0 min
Primary = 4.43 cfs @ 12.14 hrs, Volume= 0.512 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 14.66' @ 12.14 hrs

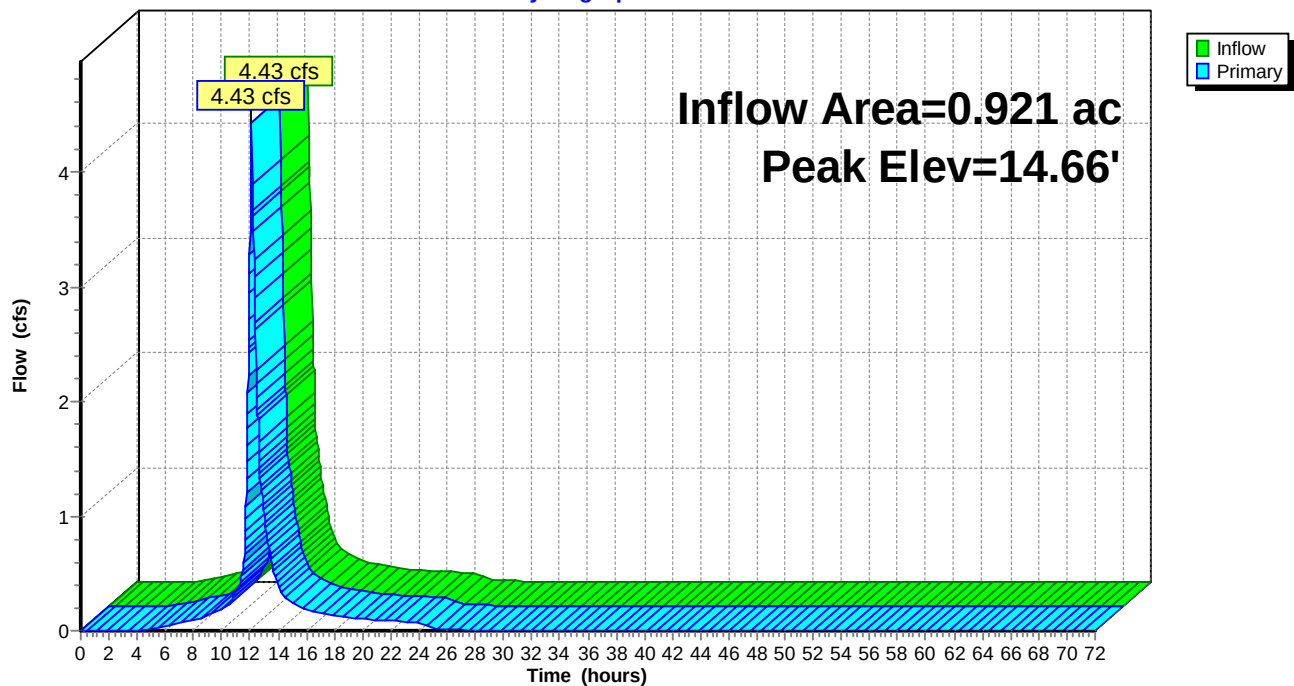
Device	Routing	Invert	Outlet Devices
#1	Primary	14.50'	2.0" x 2.0" Horiz. Orifice/Grate X 11.00 columns X 11 rows C= 0.600 in 24.0" x 24.0" Grate (84% open area) Limited to weir flow at low heads
#2	Primary	12.30'	12.0" Round CMP_Round 12" L= 172.1' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 12.30' / 12.00' S= 0.0017 ' ' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf

Primary OutFlow Max=4.37 cfs @ 12.14 hrs HW=14.66' TW=13.63' (Dynamic Tailwater)

1=Orifice/Grate (Weir Controls 1.62 cfs @ 1.29 fps)
2=CMP_Round 12" (Outlet Controls 2.75 cfs @ 3.51 fps)

Pond EX-I-2: EX-I-2

Hydrograph



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

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Summary for Pond P19: Planter #19

Inflow Area = 0.018 ac, 93.09% Impervious, Inflow Depth = 7.12" for 100-YR event
 Inflow = 0.23 cfs @ 11.90 hrs, Volume= 0.011 af
 Outflow = 0.19 cfs @ 11.88 hrs, Volume= 0.011 af, Atten= 15%, Lag= 0.0 min
 Primary = 0.19 cfs @ 11.88 hrs, Volume= 0.011 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2
 Peak Elev= 14.14' @ 11.93 hrs Surf.Area= 55 sf Storage= 20 cf

Plug-Flow detention time= 15.7 min calculated for 0.011 af (99% of inflow)
 Center-of-Mass det. time= 8.7 min (752.8 - 744.1)

Volume	Invert	Avail.Storage	Storage Description	
#1	13.24'	143 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.24	55	0.0	0	0
13.25	55	40.0	0	0
16.99	55	40.0	82	82
17.00	55	100.0	1	83
18.00	55	100.0	55	138
18.01	1,000	100.0	5	143

Device	Routing	Invert	Outlet Devices
#1	Primary	13.45'	4.0" Round Culvert L= 26.8' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.45' / 13.10' S= 0.0131 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.19 cfs @ 11.88 hrs HW=13.96' TW=13.53' (Dynamic Tailwater)

↑ **1=Culvert** (Inlet Controls 0.19 cfs @ 2.23 fps)

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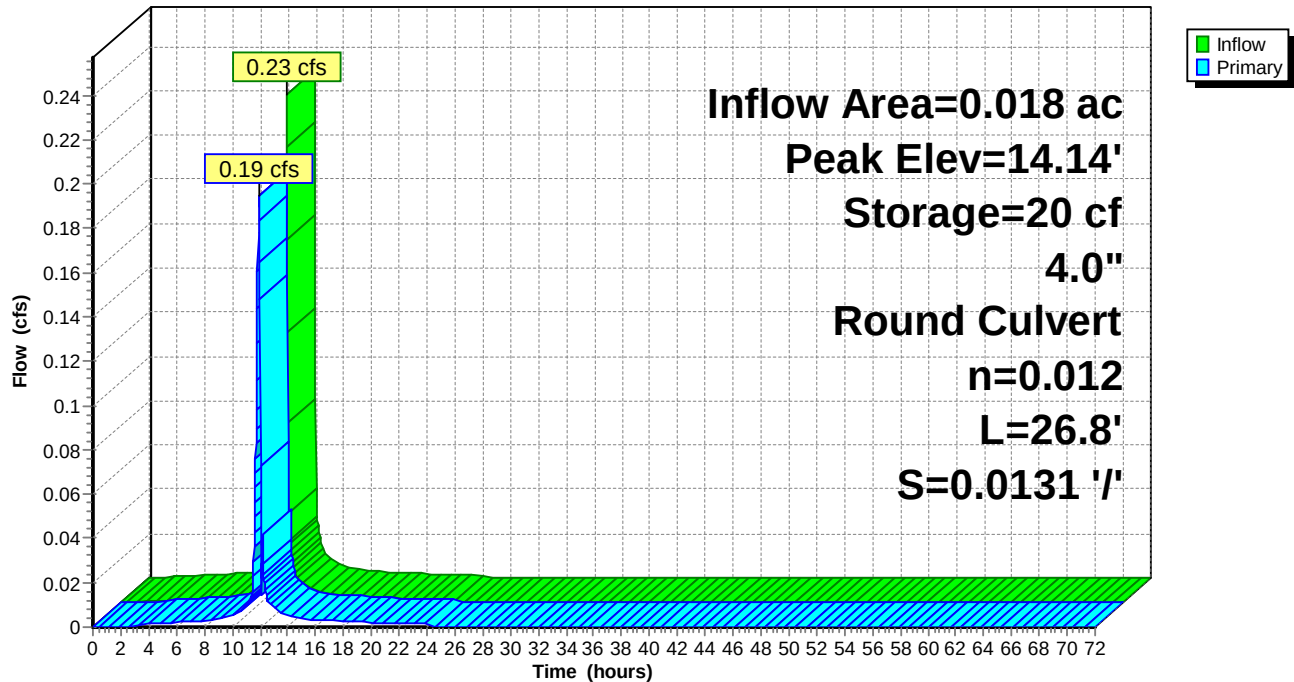
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Type II 24-hr 100-YR Rainfall=7.60"

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Pond P19: Planter #19

Hydrograph



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

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Summary for Pond P20: Planter #20

Inflow Area = 0.008 ac, 91.74% Impervious, Inflow Depth = 7.12" for 100-YR event
 Inflow = 0.10 cfs @ 11.90 hrs, Volume= 0.005 af
 Outflow = 0.10 cfs @ 11.90 hrs, Volume= 0.005 af, Atten= 2%, Lag= 0.3 min
 Primary = 0.10 cfs @ 11.90 hrs, Volume= 0.005 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 15.80' Surf.Area= 30 sf Storage= 31 cf

Peak Elev= 16.06' @ 11.90 hrs Surf.Area= 30 sf Storage= 34 cf (3 cf above start)

Plug-Flow detention time= 120.4 min calculated for 0.004 af (86% of inflow)

Center-of-Mass det. time= 2.2 min (746.3 - 744.1)

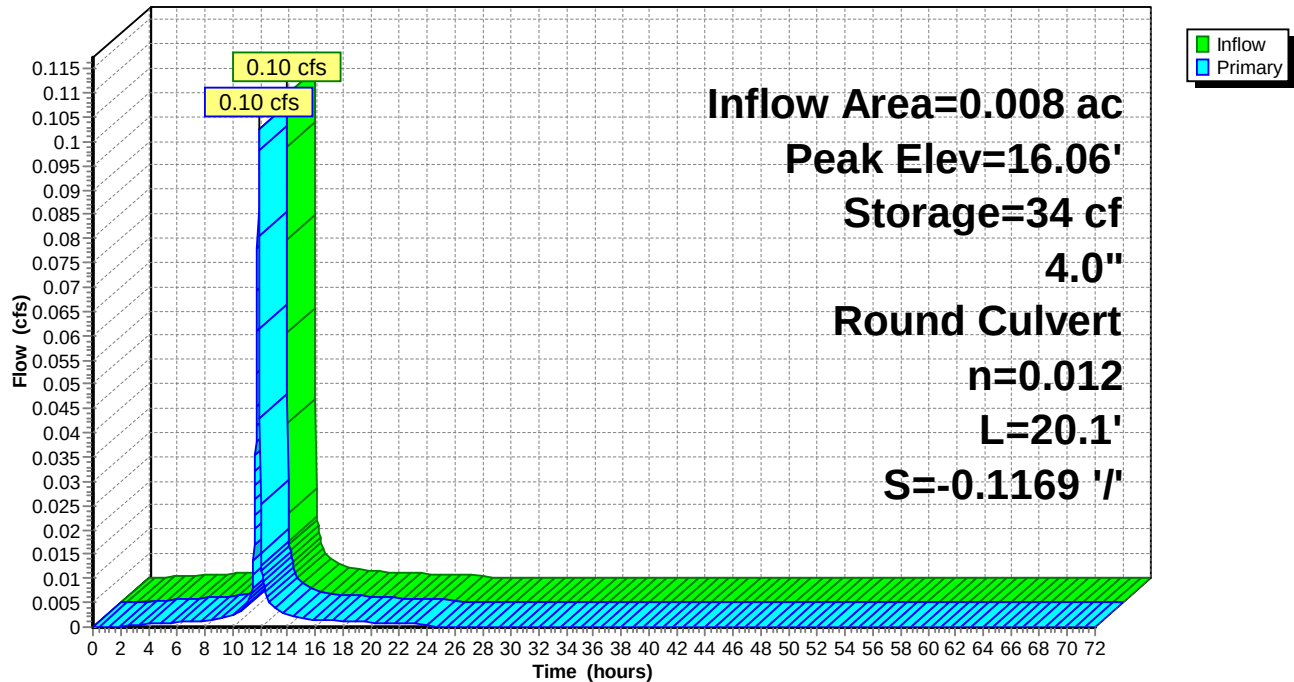
Volume	Invert	Avail.Storage	Storage Description	
#1	13.24'	80 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.24	30	0.0	0	0
13.25	30	40.0	0	0
16.99	30	40.0	45	45
17.00	30	100.0	0	45
18.00	30	100.0	30	75
18.01	1,000	100.0	5	80

Device	Routing	Invert	Outlet Devices	
#1	Primary	15.80'	4.0" Round Culvert L= 20.1' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.45' / 15.80' S= -0.1169 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf	

Primary OutFlow Max=0.10 cfs @ 11.90 hrs HW=16.06' TW=14.71' (Dynamic Tailwater)↑**1=Culvert** (Inlet Controls 0.10 cfs @ 1.38 fps)

Pond P20: Planter #20

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Pond P21: Planter #21

Inflow Area = 0.005 ac, 90.87% Impervious, Inflow Depth = 7.12" for 100-YR event
 Inflow = 0.06 cfs @ 11.90 hrs, Volume= 0.003 af
 Outflow = 0.06 cfs @ 11.91 hrs, Volume= 0.003 af, Atten= 12%, Lag= 0.5 min
 Primary = 0.06 cfs @ 11.91 hrs, Volume= 0.003 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Peak Elev= 13.81' @ 11.93 hrs Surf.Area= 20 sf Storage= 5 cf

Plug-Flow detention time= 18.5 min calculated for 0.003 af (99% of inflow)

Center-of-Mass det. time= 9.5 min (753.6 - 744.1)

Volume	Invert	Avail.Storage	Storage Description	
#1	13.24'	55 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.24	20	0.0	0	0
13.25	20	40.0	0	0
16.99	20	40.0	30	30
17.00	20	100.0	0	30
18.00	20	100.0	20	50
18.01	1,000	100.0	5	55

Device	Routing	Invert	Outlet Devices
#1	Primary	13.45'	4.0" Round Culvert L= 30.2' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.45' / 12.89' S= 0.0185 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.08 cfs @ 11.91 hrs HW=13.76' TW=13.66' (Dynamic Tailwater)↑ **1=Culvert** (Outlet Controls 0.08 cfs @ 1.16 fps)

Naima - Phase 2 - Proposed HydroCAD

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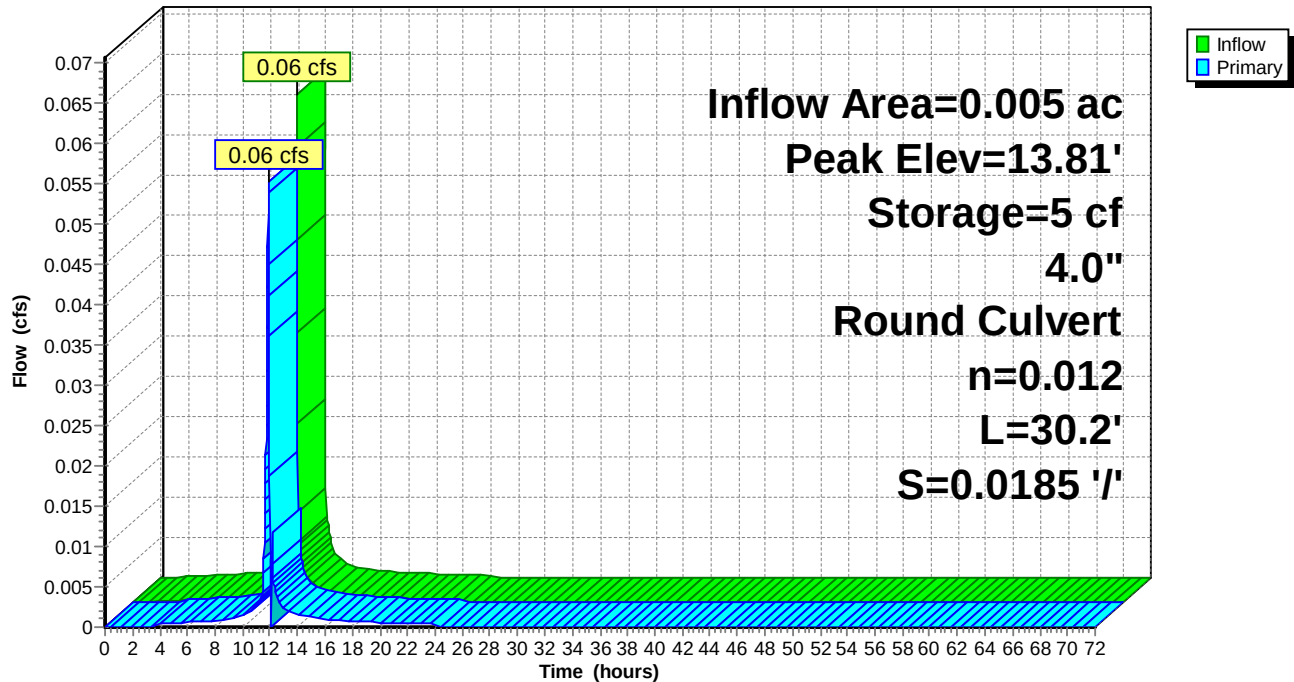
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Type II 24-hr 100-YR Rainfall=7.60"

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Pond P21: Planter #21

Hydrograph



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

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Summary for Pond P22: Planter #22

Inflow Area = 0.028 ac, 93.42% Impervious, Inflow Depth = 7.12" for 100-YR event
 Inflow = 0.35 cfs @ 11.90 hrs, Volume= 0.017 af
 Outflow = 0.28 cfs @ 11.93 hrs, Volume= 0.017 af, Atten= 20%, Lag= 2.0 min
 Primary = 0.28 cfs @ 11.93 hrs, Volume= 0.017 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 15.54' Surf.Area= 80 sf Storage= 74 cf

Peak Elev= 16.96' @ 11.93 hrs Surf.Area= 80 sf Storage= 119 cf (45 cf above start)

Plug-Flow detention time= 98.1 min calculated for 0.015 af (90% of inflow)

Center-of-Mass det. time= 3.7 min (747.8 - 744.1)

Volume	Invert	Avail.Storage	Storage Description	
#1	13.24'	206 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.24	80	0.0	0	0
13.25	80	40.0	0	0
16.99	80	40.0	120	120
17.00	80	100.0	1	121
18.00	80	100.0	80	201
18.01	1,000	100.0	5	206

Device	Routing	Invert	Outlet Devices
#1	Primary	15.54'	4.0" Round Culvert L= 59.7' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.45' / 15.54' S= -0.0350 ' /' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.28 cfs @ 11.93 hrs HW=16.94' TW=14.82' (Dynamic Tailwater)↑ **1=Culvert** (Outlet Controls 0.28 cfs @ 3.20 fps)

Naima - Phase 2 - Proposed HydroCAD

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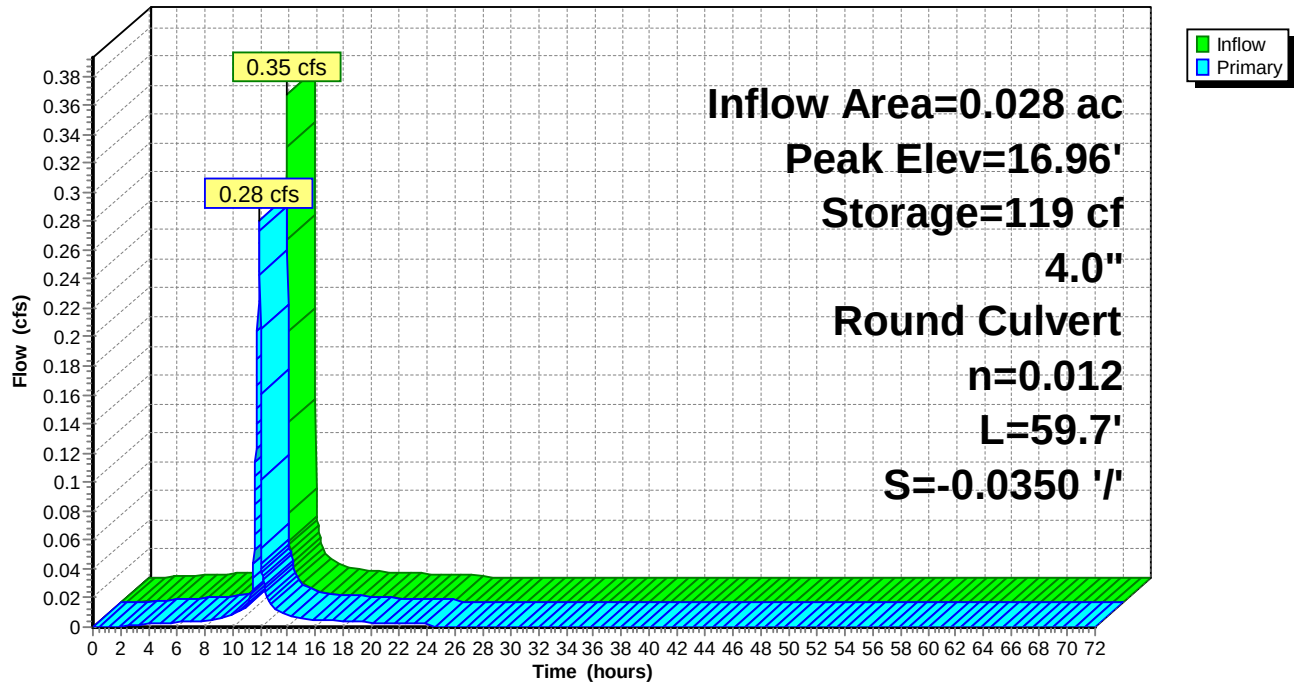
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Type II 24-hr 100-YR Rainfall=7.60"

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Pond P22: Planter #22

Hydrograph



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

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Summary for Pond P23: Planter #23

Inflow Area = 0.016 ac, 92.84% Impervious, Inflow Depth = 7.12" for 100-YR event
 Inflow = 0.20 cfs @ 11.90 hrs, Volume= 0.010 af
 Outflow = 0.17 cfs @ 11.92 hrs, Volume= 0.009 af, Atten= 16%, Lag= 1.4 min
 Primary = 0.17 cfs @ 11.92 hrs, Volume= 0.009 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2
 Peak Elev= 14.02' @ 11.93 hrs Surf.Area= 50 sf Storage= 26 cf

Plug-Flow detention time= 16.2 min calculated for 0.009 af (99% of inflow)
 Center-of-Mass det. time= 9.4 min (753.5 - 744.1)

Volume	Invert	Avail.Storage	Storage Description	
#1	12.74'	131 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
12.74	50	0.0	0	0
12.75	50	40.0	0	0
16.49	50	40.0	75	75
16.50	50	100.0	1	76
17.50	50	100.0	50	126
17.51	1,000	100.0	5	131

Device	Routing	Invert	Outlet Devices
#1	Primary	12.95'	4.0" Round Culvert L= 20.7' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 12.95' / 12.81' S= 0.0068 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.18 cfs @ 11.92 hrs HW=14.01' TW=13.72' (Dynamic Tailwater)

↑ **1=Culvert** (Inlet Controls 0.18 cfs @ 2.05 fps)

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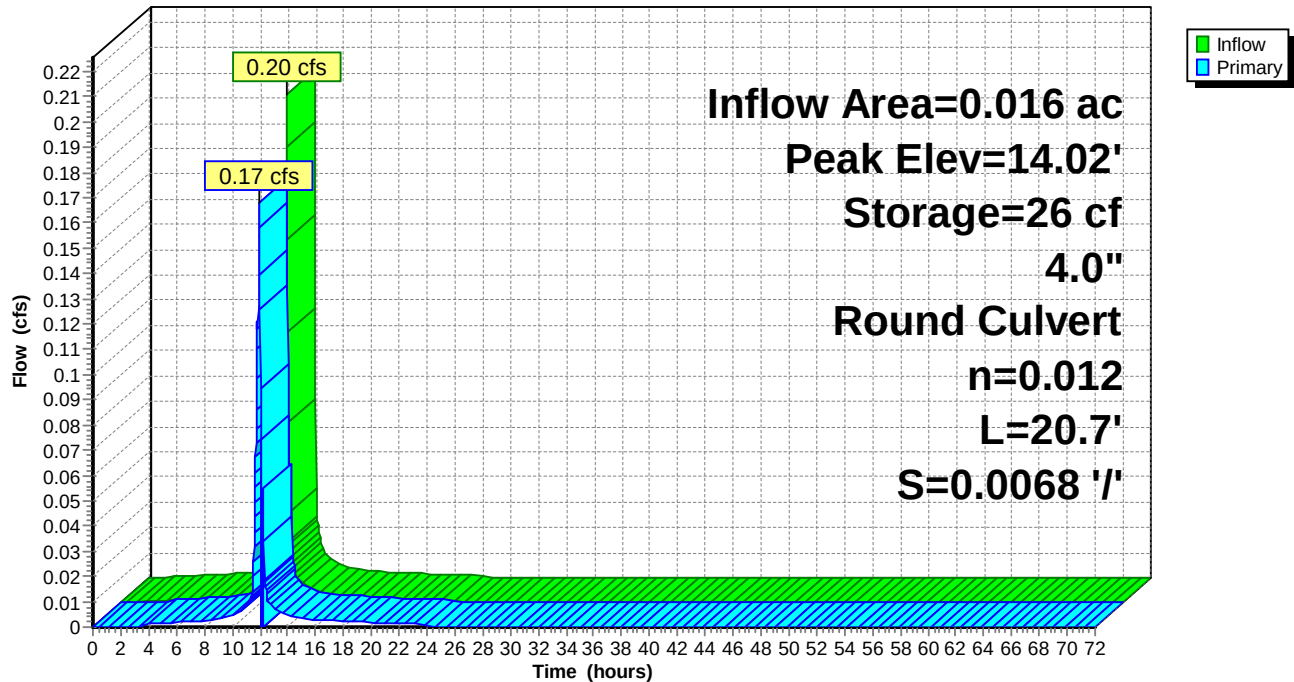
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Pond P23: Planter #23

Hydrograph



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

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Summary for Pond P24: Planter #24

Inflow Area = 0.013 ac, 93.19% Impervious, Inflow Depth = 7.12" for 100-YR event
 Inflow = 0.17 cfs @ 11.90 hrs, Volume= 0.008 af
 Outflow = 0.16 cfs @ 11.91 hrs, Volume= 0.008 af, Atten= 4%, Lag= 0.6 min
 Primary = 0.16 cfs @ 11.91 hrs, Volume= 0.008 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 15.45' Surf.Area= 40 sf Storage= 43 cf

Peak Elev= 15.86' @ 11.91 hrs Surf.Area= 40 sf Storage= 50 cf (7 cf above start)

Plug-Flow detention time= 110.5 min calculated for 0.007 af (88% of inflow)

Center-of-Mass det. time= 2.4 min (746.5 - 744.1)

Volume	Invert	Avail.Storage	Storage Description
#1	12.74'	106 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

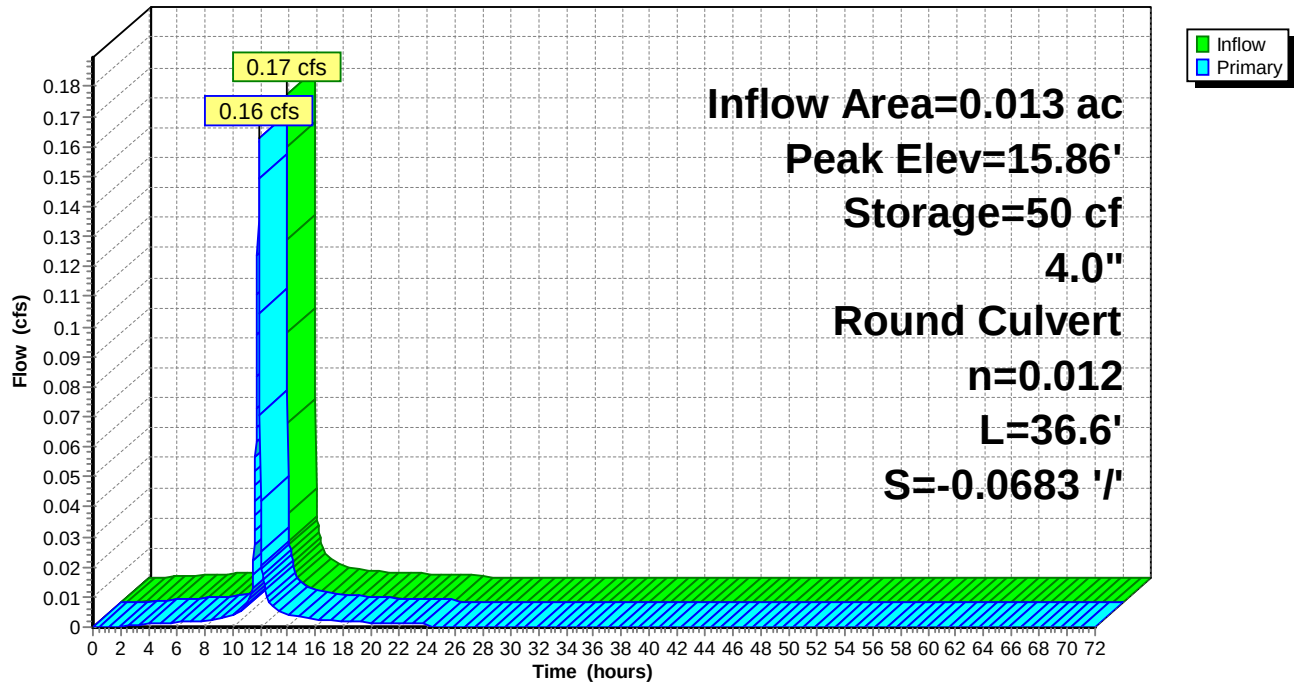
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
12.74	40	0.0	0	0
12.75	40	40.0	0	0
16.49	40	40.0	60	60
16.50	40	100.0	0	60
17.50	40	100.0	40	100
17.51	1,000	100.0	5	106

Device	Routing	Invert	Outlet Devices
#1	Primary	15.45'	4.0" Round Culvert L= 36.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 12.95' / 15.45' S= -0.0683 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.16 cfs @ 11.91 hrs HW=15.85' TW=14.77' (Dynamic Tailwater)↑**1=Culvert** (Inlet Controls 0.16 cfs @ 1.85 fps)

Pond P24: Planter #24

Hydrograph



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

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Summary for Pond P25: Planter #25

Inflow Area = 0.014 ac, 93.22% Impervious, Inflow Depth = 7.12" for 100-YR event
 Inflow = 0.17 cfs @ 11.90 hrs, Volume= 0.008 af
 Outflow = 0.16 cfs @ 11.91 hrs, Volume= 0.008 af, Atten= 4%, Lag= 0.6 min
 Primary = 0.16 cfs @ 11.91 hrs, Volume= 0.008 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 15.32' Surf.Area= 40 sf Storage= 41 cf

Peak Elev= 15.73' @ 11.91 hrs Surf.Area= 40 sf Storage= 48 cf (7 cf above start)

Plug-Flow detention time= 106.7 min calculated for 0.007 af (88% of inflow)

Center-of-Mass det. time= 2.4 min (746.5 - 744.1)

Volume	Invert	Avail.Storage	Storage Description
#1	12.74'	106 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
12.74	40	0.0	0	0
12.75	40	40.0	0	0
16.49	40	40.0	60	60
16.50	40	100.0	0	60
17.50	40	100.0	40	100
17.51	1,000	100.0	5	106

Device	Routing	Invert	Outlet Devices
#1	Primary	15.32'	4.0" Round Culvert L= 28.9' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 12.95' / 15.32' S= -0.0820 ' / Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.16 cfs @ 11.91 hrs HW=15.72' TW=14.77' (Dynamic Tailwater)↑ **1=Culvert** (Inlet Controls 0.16 cfs @ 1.85 fps)

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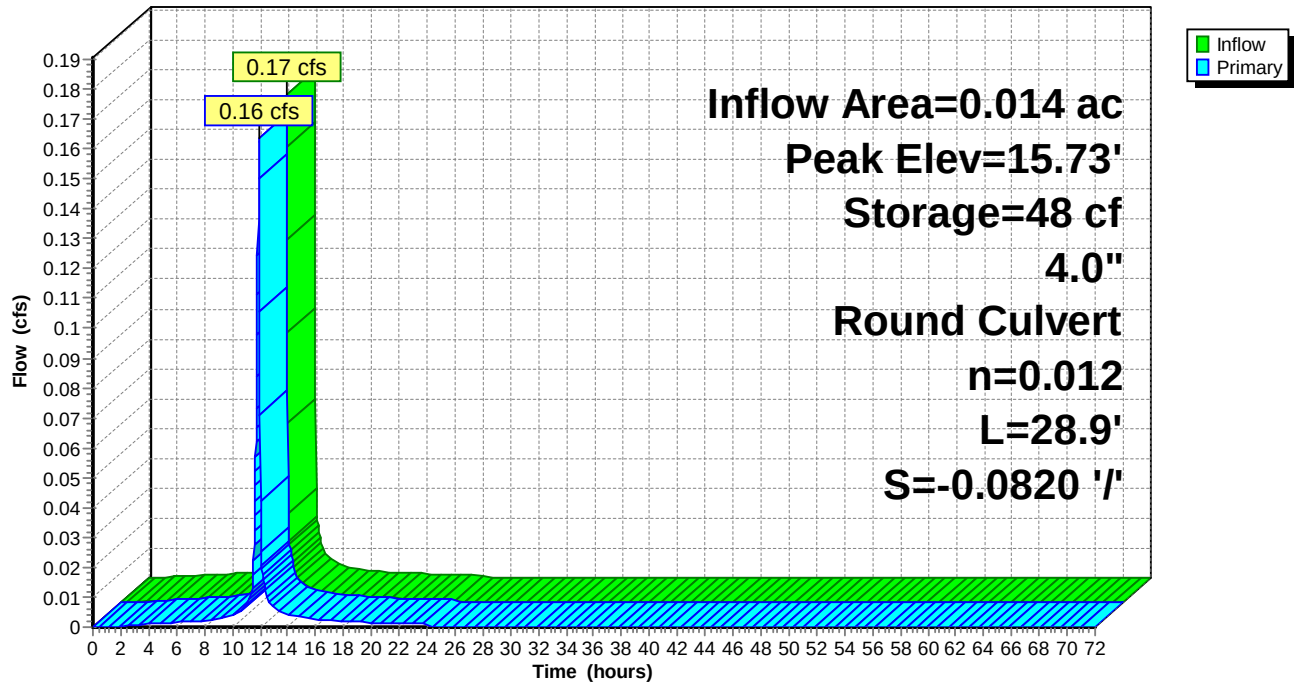
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Pond P25: Planter #25

Hydrograph



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

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Summary for Pond P26: Planter #26

Inflow Area = 0.025 ac, 93.61% Impervious, Inflow Depth = 7.12" for 100-YR event
 Inflow = 0.32 cfs @ 11.90 hrs, Volume= 0.015 af
 Outflow = 0.25 cfs @ 11.93 hrs, Volume= 0.015 af, Atten= 21%, Lag= 1.8 min
 Primary = 0.25 cfs @ 11.93 hrs, Volume= 0.015 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2
 Peak Elev= 14.37' @ 11.93 hrs Surf.Area= 70 sf Storage= 46 cf

Plug-Flow detention time= 15.1 min calculated for 0.015 af (99% of inflow)
 Center-of-Mass det. time= 9.0 min (753.1 - 744.1)

Volume	Invert	Avail.Storage	Storage Description	
#1	12.74'	181 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
12.74	70	0.0	0	0
12.75	70	40.0	0	0
16.49	70	40.0	105	105
16.50	70	100.0	1	106
17.50	70	100.0	70	176
17.51	1,000	100.0	5	181

Device	Routing	Invert	Outlet Devices
#1	Primary	12.95'	4.0" Round Culvert L= 24.5' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 12.95' / 12.56' S= 0.0159 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.25 cfs @ 11.93 hrs HW=14.35' TW=13.73' (Dynamic Tailwater)

↑ **1=Culvert** (Outlet Controls 0.25 cfs @ 2.92 fps)

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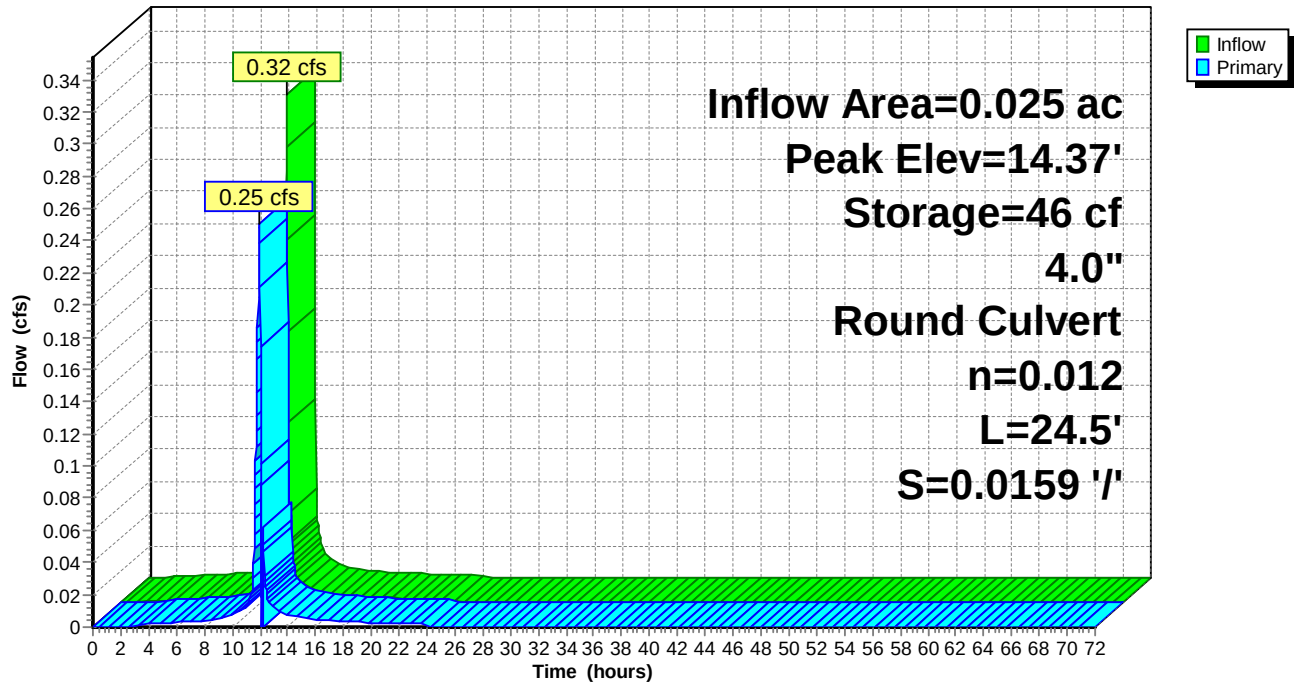
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Pond P26: Planter #26

Hydrograph



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

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Summary for Pond P27: Planter #27

Inflow Area = 0.008 ac, 91.48% Impervious, Inflow Depth = 7.12" for 100-YR event
 Inflow = 0.10 cfs @ 11.90 hrs, Volume= 0.005 af
 Outflow = 0.10 cfs @ 11.90 hrs, Volume= 0.005 af, Atten= 2%, Lag= 0.3 min
 Primary = 0.10 cfs @ 11.90 hrs, Volume= 0.005 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 15.08' Surf.Area= 30 sf Storage= 28 cf

Peak Elev= 15.34' @ 11.90 hrs Surf.Area= 30 sf Storage= 31 cf (3 cf above start)

Plug-Flow detention time= 116.1 min calculated for 0.004 af (87% of inflow)

Center-of-Mass det. time= 2.3 min (746.4 - 744.1)

Volume	Invert	Avail.Storage	Storage Description	
#1	12.74'	80 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
12.74	30	0.0	0	0
12.75	30	40.0	0	0
16.49	30	40.0	45	45
16.50	30	100.0	0	45
17.50	30	100.0	30	75
17.51	1,000	100.0	5	80

Device	Routing	Invert	Outlet Devices
#1	Primary	15.08'	4.0" Round Culvert L= 10.8' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 12.95' / 15.08' S= -0.1972 ' /' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.10 cfs @ 11.90 hrs HW=15.34' TW=14.72' (Dynamic Tailwater)↑**1=Culvert** (Inlet Controls 0.10 cfs @ 1.36 fps)

Naima - Phase 2 - Proposed HydroCAD

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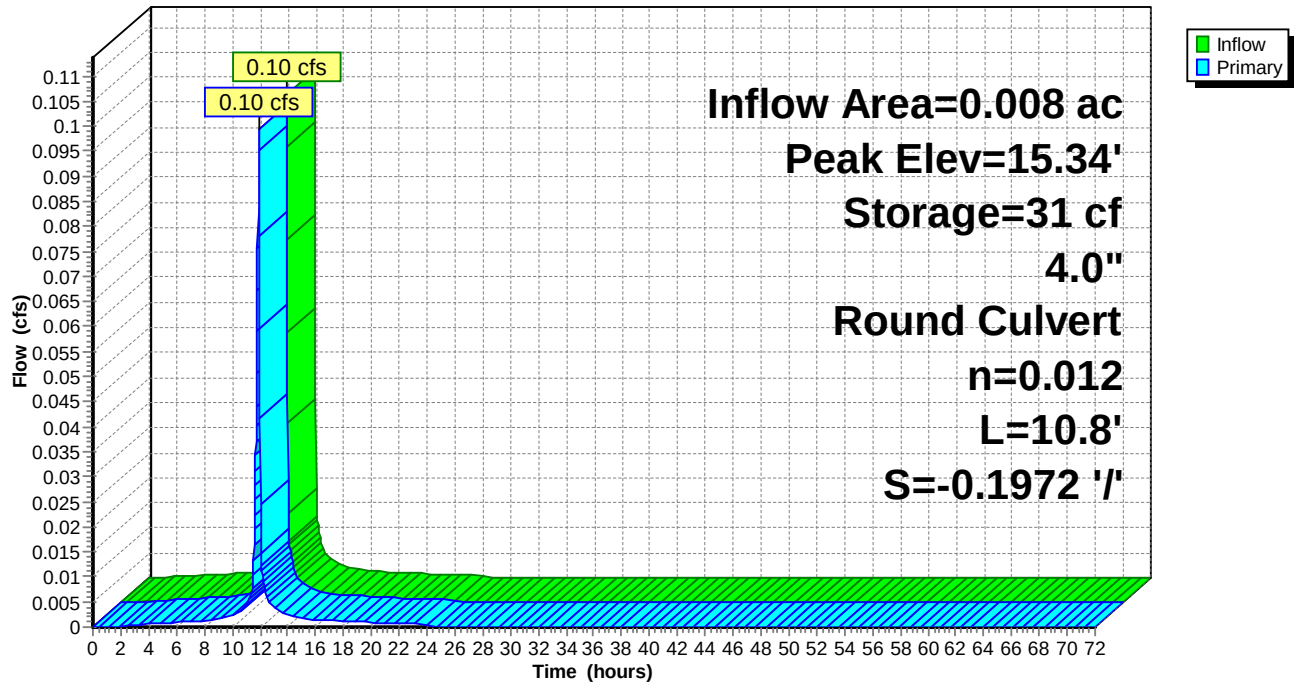
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Type II 24-hr 100-YR Rainfall=7.60"

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Pond P27: Planter #27

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Pond P28: Planter #28

Inflow Area = 0.018 ac, 93.09% Impervious, Inflow Depth = 7.12" for 100-YR event
 Inflow = 0.23 cfs @ 11.90 hrs, Volume= 0.011 af
 Outflow = 0.20 cfs @ 11.91 hrs, Volume= 0.011 af, Atten= 14%, Lag= 0.6 min
 Primary = 0.20 cfs @ 11.91 hrs, Volume= 0.011 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Peak Elev= 14.11' @ 11.93 hrs Surf.Area= 55 sf Storage= 19 cf

Plug-Flow detention time= 15.7 min calculated for 0.011 af (99% of inflow)

Center-of-Mass det. time= 8.7 min (752.8 - 744.1)

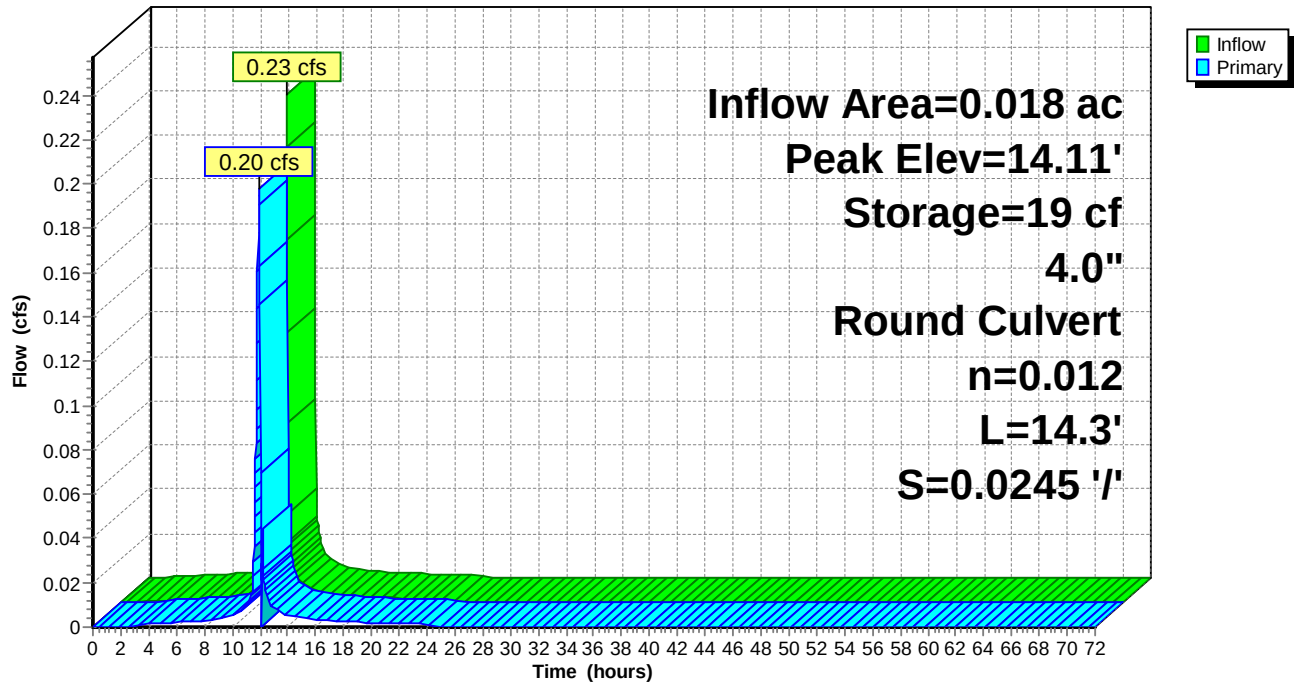
Volume	Invert	Avail.Storage	Storage Description	
#1	13.24'	143 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.24	55	0.0	0	0
13.25	55	40.0	0	0
16.99	55	40.0	82	82
17.00	55	100.0	1	83
18.00	55	100.0	55	138
18.01	1,000	100.0	5	143

Device	Routing	Invert	Outlet Devices
#1	Primary	13.45'	4.0" Round Culvert L= 14.3' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.45' / 13.10' S= 0.0245 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.21 cfs @ 11.91 hrs HW=14.07' TW=13.67' (Dynamic Tailwater)↑ **1=Culvert** (Inlet Controls 0.21 cfs @ 2.40 fps)

Pond P28: Planter #28

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Pond P29: Planter #29

Inflow Area = 0.008 ac, 91.74% Impervious, Inflow Depth = 7.12" for 100-YR event
 Inflow = 0.10 cfs @ 11.90 hrs, Volume= 0.005 af
 Outflow = 0.10 cfs @ 11.90 hrs, Volume= 0.005 af, Atten= 2%, Lag= 0.3 min
 Primary = 0.10 cfs @ 11.90 hrs, Volume= 0.005 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 14.99' Surf.Area= 30 sf Storage= 21 cf

Peak Elev= 15.25' @ 11.90 hrs Surf.Area= 30 sf Storage= 24 cf (3 cf above start)

Plug-Flow detention time= 93.8 min calculated for 0.004 af (90% of inflow)

Center-of-Mass det. time= 2.2 min (746.3 - 744.1)

Volume	Invert	Avail.Storage	Storage Description
#1	13.24'	80 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

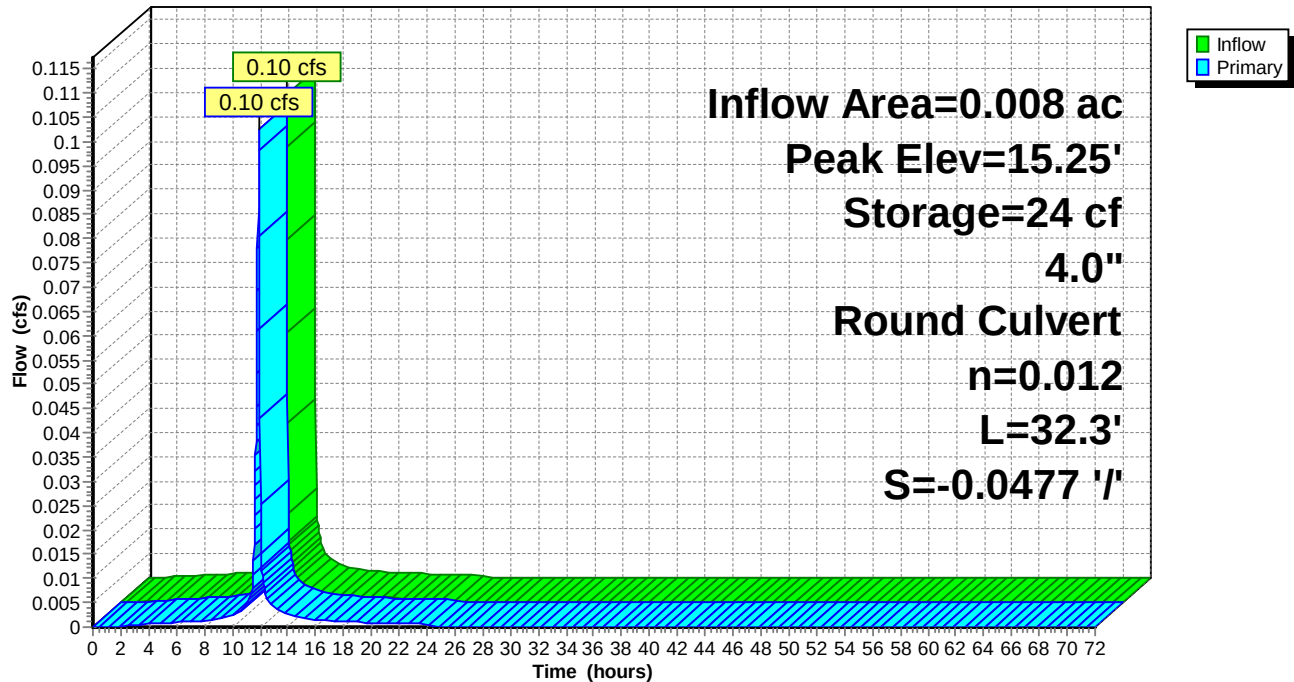
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.24	30	0.0	0	0
13.25	30	40.0	0	0
16.99	30	40.0	45	45
17.00	30	100.0	0	45
18.00	30	100.0	30	75
18.01	1,000	100.0	5	80

Device	Routing	Invert	Outlet Devices
#1	Primary	14.99'	4.0" Round Culvert L= 32.3' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.45' / 14.99' S= -0.0477 ' /' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.10 cfs @ 11.90 hrs HW=15.25' TW=14.91' (Dynamic Tailwater)↑ **1=Culvert** (Inlet Controls 0.10 cfs @ 1.38 fps)

Pond P29: Planter #29

Hydrograph



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

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Summary for Pond P30: Planter #30

Inflow Area = 0.005 ac, 90.87% Impervious, Inflow Depth = 7.12" for 100-YR event
 Inflow = 0.06 cfs @ 11.90 hrs, Volume= 0.003 af
 Outflow = 0.05 cfs @ 11.91 hrs, Volume= 0.003 af, Atten= 14%, Lag= 0.7 min
 Primary = 0.05 cfs @ 11.91 hrs, Volume= 0.003 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2
 Peak Elev= 13.80' @ 11.94 hrs Surf.Area= 20 sf Storage= 4 cf

Plug-Flow detention time= 18.2 min calculated for 0.003 af (99% of inflow)
 Center-of-Mass det. time= 9.6 min (753.7 - 744.1)

Volume	Invert	Avail.Storage	Storage Description	
#1	13.24'	55 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.24	20	0.0	0	0
13.25	20	40.0	0	0
16.99	20	40.0	30	30
17.00	20	100.0	0	30
18.00	20	100.0	20	50
18.01	1,000	100.0	5	55

Device	Routing	Invert	Outlet Devices
#1	Primary	13.45'	4.0" Round Culvert L= 18.2' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.45' / 13.29' S= 0.0088 ' S= 0.0088 ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.08 cfs @ 11.91 hrs HW=13.76' TW=13.68' (Dynamic Tailwater)

↑ **1=Culvert** (Outlet Controls 0.08 cfs @ 1.22 fps)

Naima - Phase 2 - Proposed HydroCAD

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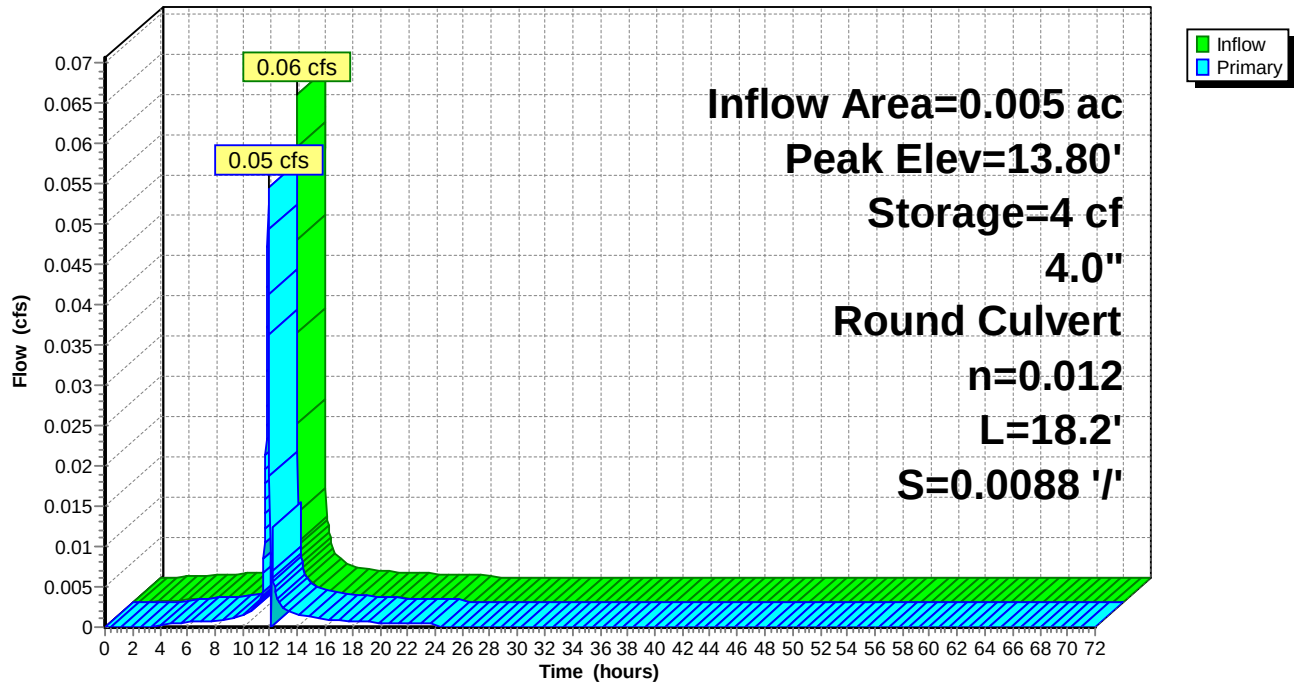
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Pond P30: Planter #30

Hydrograph



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

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Summary for Pond P31: Planter #31

Inflow Area = 0.028 ac, 93.42% Impervious, Inflow Depth = 7.12" for 100-YR event
 Inflow = 0.35 cfs @ 11.90 hrs, Volume= 0.017 af
 Outflow = 0.27 cfs @ 11.93 hrs, Volume= 0.017 af, Atten= 22%, Lag= 2.1 min
 Primary = 0.27 cfs @ 11.93 hrs, Volume= 0.017 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 15.21' Surf.Area= 80 sf Storage= 63 cf

Peak Elev= 16.77' @ 11.93 hrs Surf.Area= 80 sf Storage= 113 cf (50 cf above start)

Plug-Flow detention time= 88.3 min calculated for 0.015 af (91% of inflow)

Center-of-Mass det. time= 3.8 min (747.9 - 744.1)

Volume	Invert	Avail.Storage	Storage Description	
#1	13.24'	206 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.24	80	0.0	0	0
13.25	80	40.0	0	0
16.99	80	40.0	120	120
17.00	80	100.0	1	121
18.00	80	100.0	80	201
18.01	1,000	100.0	5	206

Device	Routing	Invert	Outlet Devices
#1	Primary	15.21'	4.0" Round Culvert L= 71.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.45' / 15.21' S= -0.0246 ' /' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.27 cfs @ 11.93 hrs HW=16.75' TW=15.02' (Dynamic Tailwater)↑ **1=Culvert** (Outlet Controls 0.27 cfs @ 3.12 fps)

Naima - Phase 2 - Proposed HydroCAD

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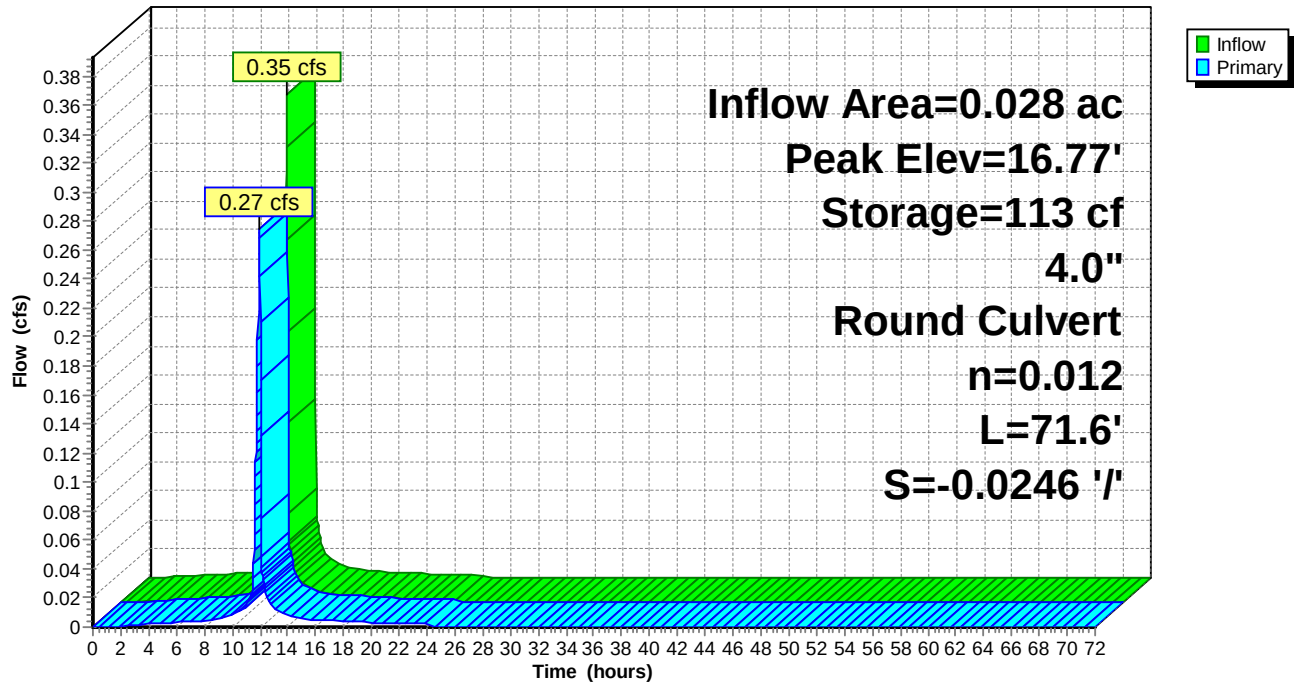
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Type II 24-hr 100-YR Rainfall=7.60"

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Pond P31: Planter #31

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Pond P32: Planter #32

Inflow Area = 0.005 ac, 90.87% Impervious, Inflow Depth = 7.12" for 100-YR event
 Inflow = 0.06 cfs @ 11.90 hrs, Volume= 0.003 af
 Outflow = 0.06 cfs @ 11.90 hrs, Volume= 0.003 af, Atten= 1%, Lag= 0.2 min
 Primary = 0.06 cfs @ 11.90 hrs, Volume= 0.003 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2
 Peak Elev= 14.14' @ 11.90 hrs Surf.Area= 20 sf Storage= 3 cf

Plug-Flow detention time= 18.1 min calculated for 0.003 af (99% of inflow)
 Center-of-Mass det. time= 9.4 min (753.5 - 744.1)

Volume	Invert	Avail.Storage	Storage Description	
#1	13.74'	55 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.74	20	0.0	0	0
13.75	20	40.0	0	0
17.49	20	40.0	30	30
17.50	20	100.0	0	30
18.50	20	100.0	20	50
18.51	1,000	100.0	5	55

Device	Routing	Invert	Outlet Devices
#1	Primary	13.95'	4.0" Round Culvert L= 29.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.95' / 13.36' S= 0.0199 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.06 cfs @ 11.90 hrs HW=14.14' TW=13.64' (Dynamic Tailwater)

↑ **1=Culvert** (Inlet Controls 0.06 cfs @ 1.18 fps)

Naima - Phase 2 - Proposed HydroCAD

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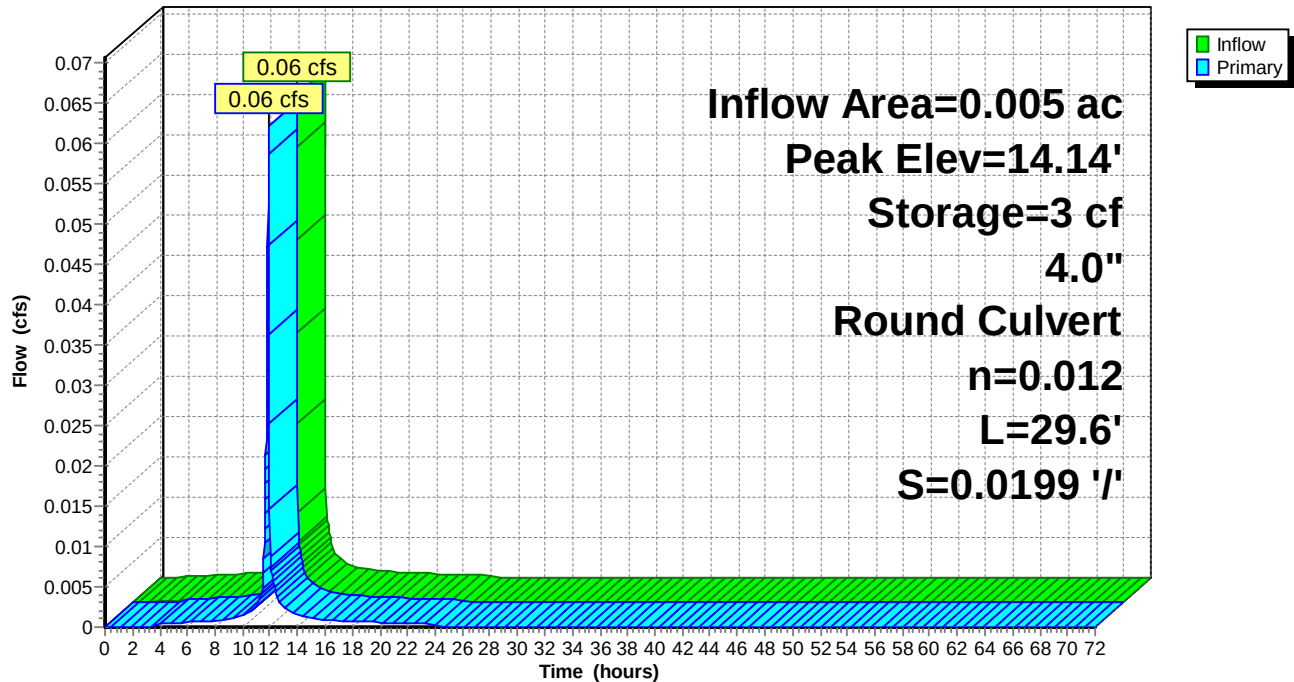
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Type II 24-hr 100-YR Rainfall=7.60"

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Pond P32: Planter #32

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Pond P33: Planter #33

Inflow Area = 0.028 ac, 93.42% Impervious, Inflow Depth = 7.12" for 100-YR event
 Inflow = 0.35 cfs @ 11.90 hrs, Volume= 0.017 af
 Outflow = 0.28 cfs @ 11.93 hrs, Volume= 0.017 af, Atten= 20%, Lag= 2.0 min
 Primary = 0.28 cfs @ 11.93 hrs, Volume= 0.017 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 15.24' Surf.Area= 80 sf Storage= 48 cf

Peak Elev= 16.67' @ 11.93 hrs Surf.Area= 80 sf Storage= 94 cf (46 cf above start)

Plug-Flow detention time= 72.8 min calculated for 0.015 af (93% of inflow)

Center-of-Mass det. time= 3.7 min (747.8 - 744.1)

Volume	Invert	Avail.Storage	Storage Description
#1	13.74'	206 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.74	80	0.0	0	0
13.75	80	40.0	0	0
17.49	80	40.0	120	120
17.50	80	100.0	1	121
18.50	80	100.0	80	201
18.51	1,000	100.0	5	206

Device	Routing	Invert	Outlet Devices
#1	Primary	15.24'	4.0" Round Culvert L= 61.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.95' / 15.24' S= -0.0211 ' /' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.28 cfs @ 11.93 hrs HW=16.66' TW=15.02' (Dynamic Tailwater)↑ **1=Culvert** (Outlet Controls 0.28 cfs @ 3.19 fps)

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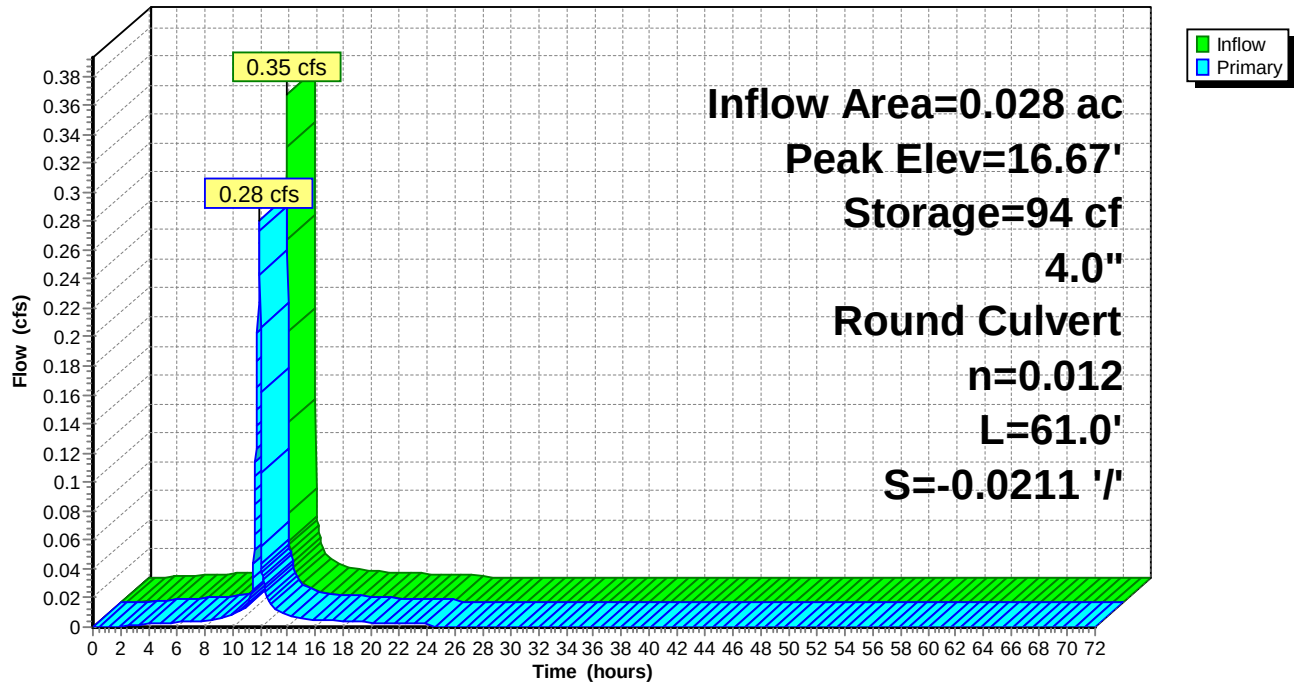
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Type II 24-hr 100-YR Rainfall=7.60"

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Pond P33: Planter #33

Hydrograph



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

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Summary for Pond P34: Planter #34

Inflow Area = 0.018 ac, 93.09% Impervious, Inflow Depth = 7.12" for 100-YR event
 Inflow = 0.23 cfs @ 11.90 hrs, Volume= 0.011 af
 Outflow = 0.22 cfs @ 11.91 hrs, Volume= 0.011 af, Atten= 6%, Lag= 0.9 min
 Primary = 0.22 cfs @ 11.91 hrs, Volume= 0.011 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2
 Peak Elev= 14.54' @ 11.91 hrs Surf.Area= 55 sf Storage= 18 cf

Plug-Flow detention time= 15.6 min calculated for 0.011 af (99% of inflow)
 Center-of-Mass det. time= 8.6 min (752.7 - 744.1)

Volume	Invert	Avail.Storage	Storage Description	
#1	13.74'	143 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.74	55	0.0	0	0
13.75	55	40.0	0	0
17.49	55	40.0	82	82
17.50	55	100.0	1	83
18.50	55	100.0	55	138
18.51	1,000	100.0	5	143

Device	Routing	Invert	Outlet Devices
#1	Primary	13.95'	4.0" Round Culvert L= 26.1' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.95' / 13.56' S= 0.0149 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.21 cfs @ 11.91 hrs HW=14.53' TW=13.69' (Dynamic Tailwater)

↑ **1=Culvert** (Inlet Controls 0.21 cfs @ 2.45 fps)

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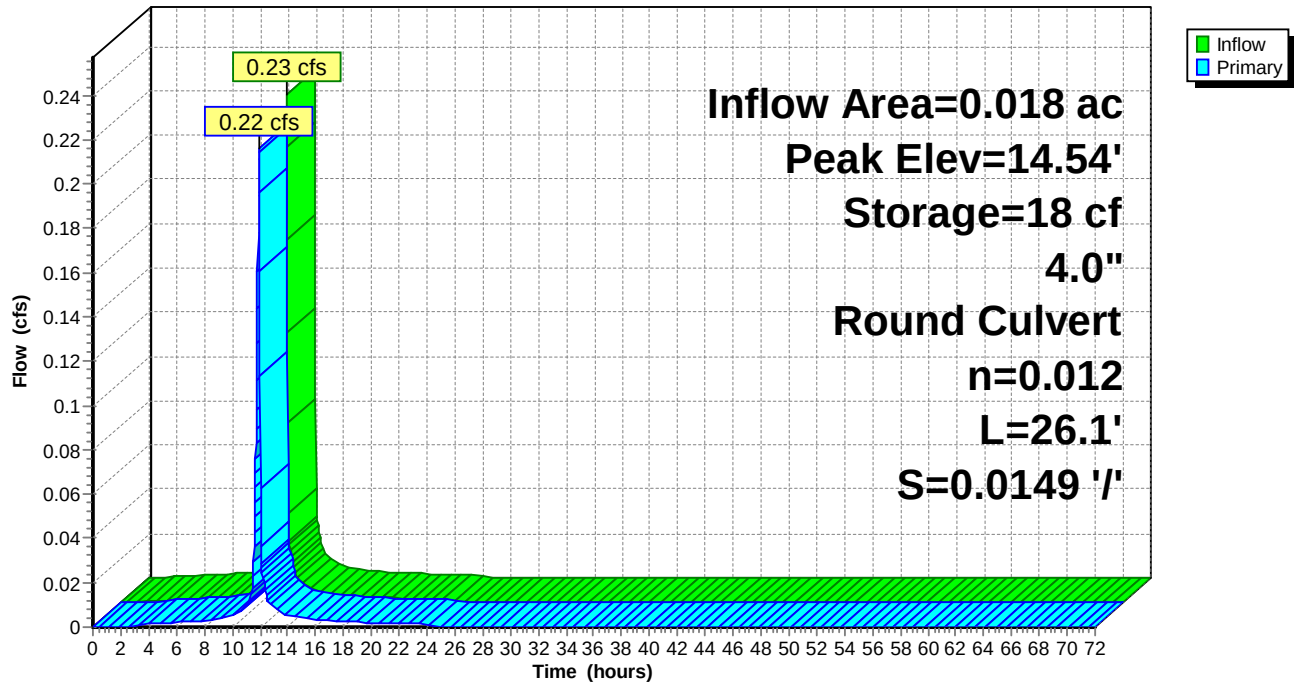
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Type II 24-hr 100-YR Rainfall=7.60"

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Pond P34: Planter #34

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Pond P35: Planter #35

Inflow Area = 0.008 ac, 91.74% Impervious, Inflow Depth = 7.12" for 100-YR event
 Inflow = 0.10 cfs @ 11.90 hrs, Volume= 0.005 af
 Outflow = 0.10 cfs @ 11.90 hrs, Volume= 0.005 af, Atten= 2%, Lag= 0.3 min
 Primary = 0.10 cfs @ 11.90 hrs, Volume= 0.005 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 15.73' Surf.Area= 30 sf Storage= 24 cf

Peak Elev= 15.99' @ 11.90 hrs Surf.Area= 30 sf Storage= 27 cf (3 cf above start)

Plug-Flow detention time= 102.6 min calculated for 0.004 af (89% of inflow)

Center-of-Mass det. time= 2.2 min (746.3 - 744.1)

Volume	Invert	Avail.Storage	Storage Description	
#1	13.74'	80 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.74	30	0.0	0	0
13.75	30	40.0	0	0
17.49	30	40.0	45	45
17.50	30	100.0	0	45
18.50	30	100.0	30	75
18.51	1,000	100.0	5	80

Device	Routing	Invert	Outlet Devices
#1	Primary	15.73'	4.0" Round Culvert L= 31.5' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.95' / 15.73' S= -0.0565 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.10 cfs @ 11.90 hrs HW=15.99' TW=15.00' (Dynamic Tailwater)↑ **1=Culvert** (Inlet Controls 0.10 cfs @ 1.38 fps)

Naima - Phase 2 - Proposed HydroCAD

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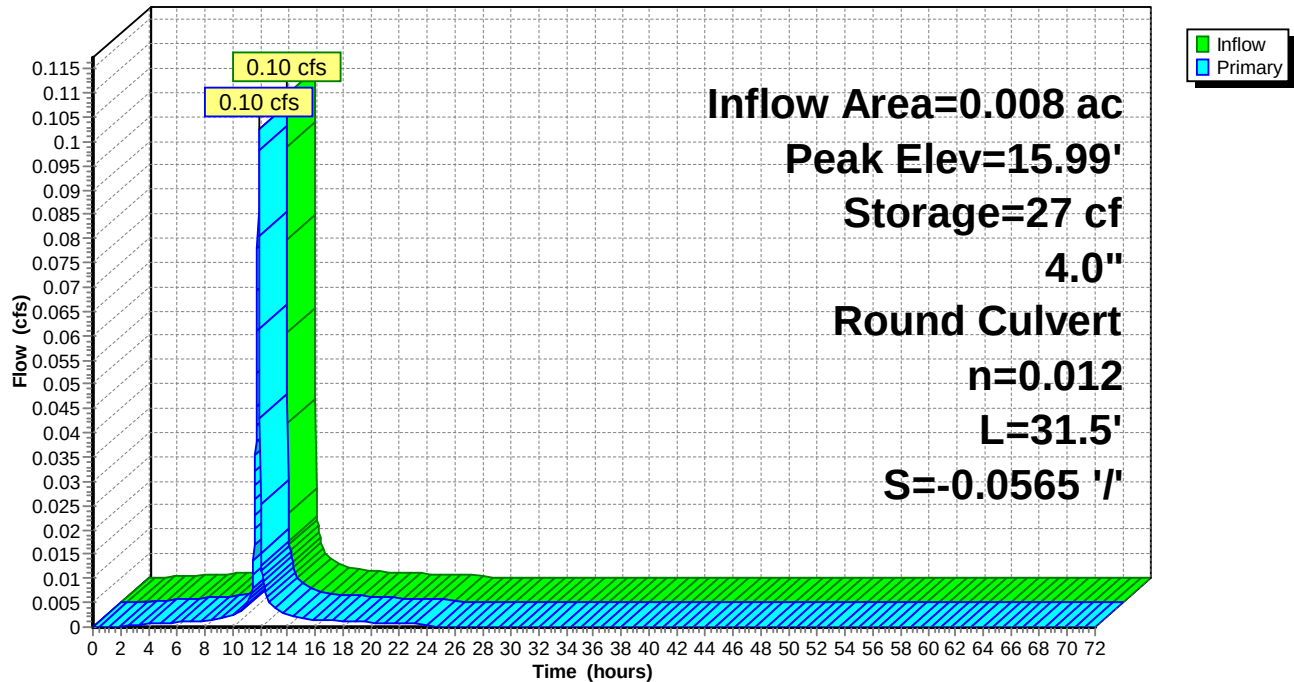
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Type II 24-hr 100-YR Rainfall=7.60"

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Pond P35: Planter #35

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Summary for Pond P36: Planter #36

Inflow Area = 0.016 ac, 92.84% Impervious, Inflow Depth = 7.12" for 100-YR event
 Inflow = 0.20 cfs @ 11.90 hrs, Volume= 0.010 af
 Outflow = 0.19 cfs @ 11.91 hrs, Volume= 0.009 af, Atten= 5%, Lag= 0.8 min
 Primary = 0.19 cfs @ 11.91 hrs, Volume= 0.009 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2
 Peak Elev= 14.65' @ 11.91 hrs Surf.Area= 50 sf Storage= 14 cf

Plug-Flow detention time= 15.5 min calculated for 0.009 af (99% of inflow)
 Center-of-Mass det. time= 8.7 min (752.8 - 744.1)

Volume	Invert	Avail.Storage	Storage Description	
#1	13.94'	131 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.94	50	0.0	0	0
13.95	50	40.0	0	0
17.69	50	40.0	75	75
17.70	50	100.0	0	75
18.70	50	100.0	50	125
18.71	1,000	100.0	5	131

Device	Routing	Invert	Outlet Devices
#1	Primary	14.15'	4.0" Round Culvert L= 20.2' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.15' / 13.65' S= 0.0248 ' S= 0.0248 ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.19 cfs @ 11.91 hrs HW=14.64' TW=13.68' (Dynamic Tailwater)

↑ **1=Culvert** (Inlet Controls 0.19 cfs @ 2.17 fps)

Naima - Phase 2 - Proposed HydroCAD

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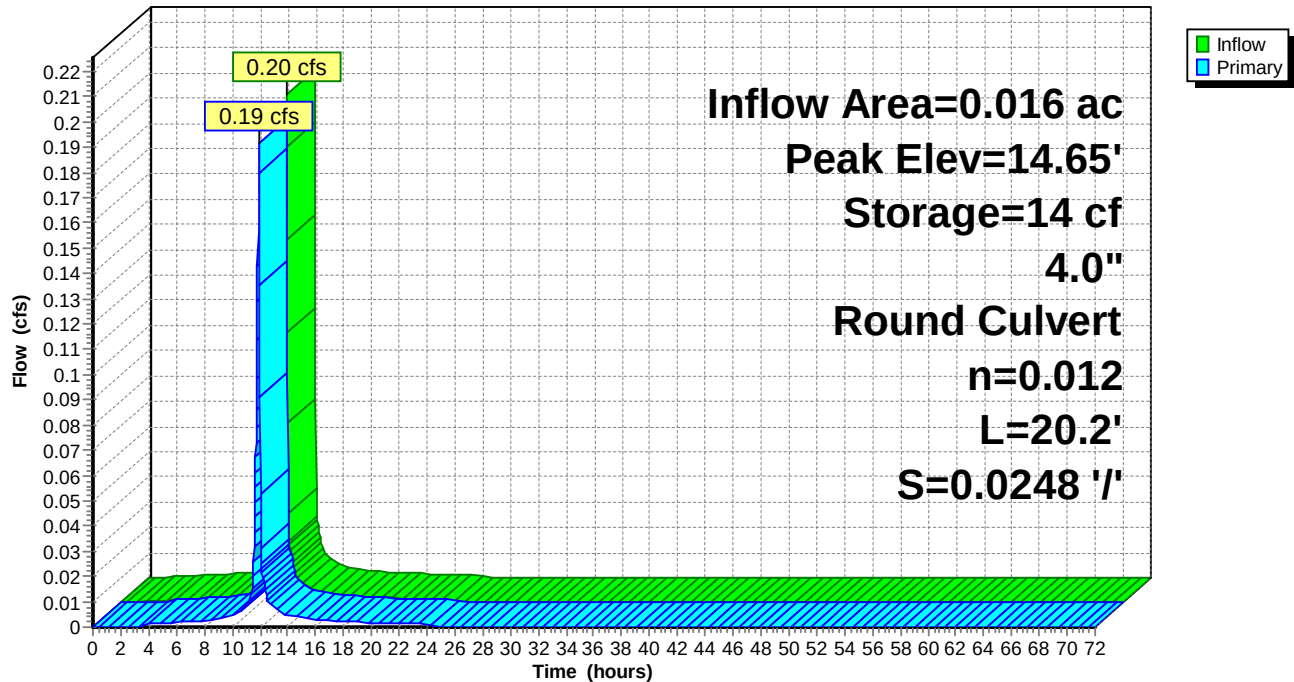
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Type II 24-hr 100-YR Rainfall=7.60"

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Pond P36: Planter #36

Hydrograph



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

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Summary for Pond P37: Planter #37

Inflow Area = 0.013 ac, 93.19% Impervious, Inflow Depth = 7.12" for 100-YR event
 Inflow = 0.17 cfs @ 11.90 hrs, Volume= 0.008 af
 Outflow = 0.16 cfs @ 11.91 hrs, Volume= 0.008 af, Atten= 4%, Lag= 0.6 min
 Primary = 0.16 cfs @ 11.91 hrs, Volume= 0.008 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 15.73' Surf.Area= 40 sf Storage= 29 cf

Peak Elev= 16.14' @ 11.91 hrs Surf.Area= 40 sf Storage= 35 cf (7 cf above start)

Plug-Flow detention time= 83.5 min calculated for 0.007 af (92% of inflow)

Center-of-Mass det. time= 2.4 min (746.5 - 744.1)

Volume	Invert	Avail.Storage	Storage Description
#1	13.94'	106 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.94	40	0.0	0	0
13.95	40	40.0	0	0
17.69	40	40.0	60	60
17.70	40	100.0	0	60
18.70	40	100.0	40	100
18.71	1,000	100.0	5	106

Device	Routing	Invert	Outlet Devices
#1	Primary	15.73'	4.0" Round Culvert L= 37.8' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.15' / 15.73' S= -0.0418 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.16 cfs @ 11.91 hrs HW=16.13' TW=15.04' (Dynamic Tailwater)↑**1=Culvert** (Inlet Controls 0.16 cfs @ 1.85 fps)

Naima - Phase 2 - Proposed HydroCAD

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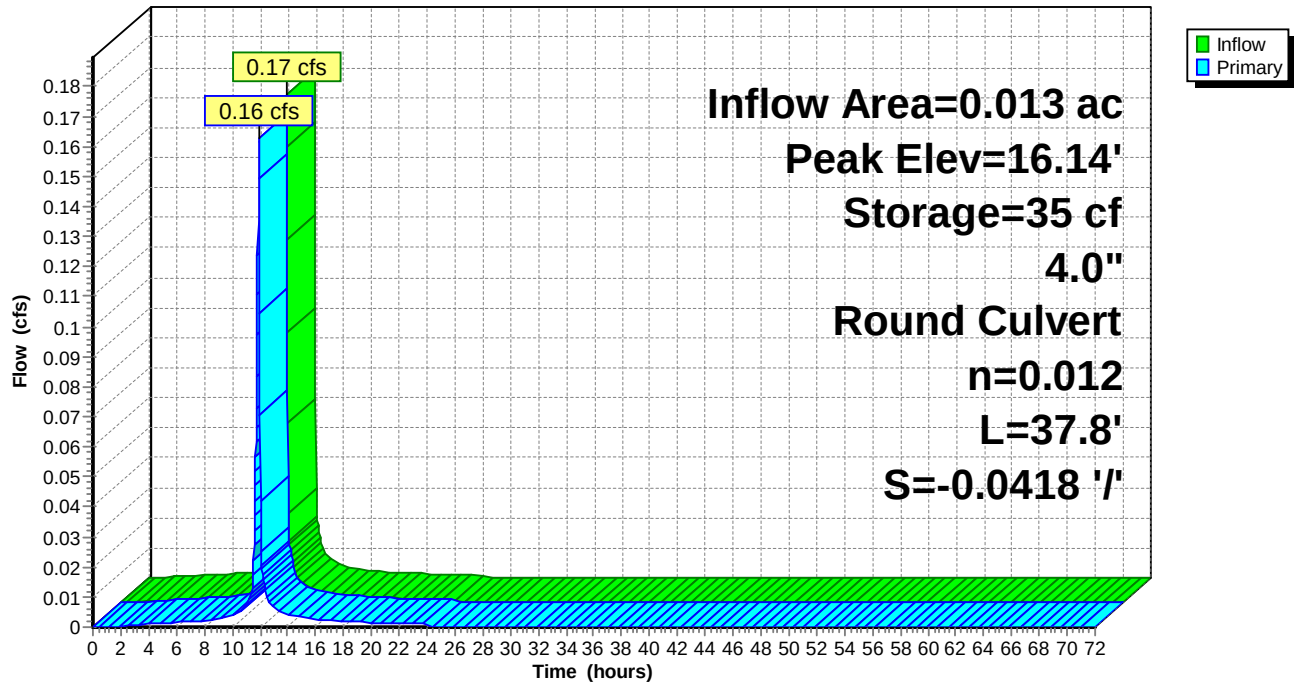
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Pond P37: Planter #37

Hydrograph



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

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Summary for Pond P38: Planter #38

Inflow Area = 0.014 ac, 93.22% Impervious, Inflow Depth = 7.12" for 100-YR event
 Inflow = 0.17 cfs @ 11.90 hrs, Volume= 0.008 af
 Outflow = 0.16 cfs @ 11.91 hrs, Volume= 0.008 af, Atten= 4%, Lag= 0.6 min
 Primary = 0.16 cfs @ 11.91 hrs, Volume= 0.008 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 15.85' Surf.Area= 40 sf Storage= 31 cf

Peak Elev= 16.26' @ 11.91 hrs Surf.Area= 40 sf Storage= 37 cf (7 cf above start)

Plug-Flow detention time= 86.9 min calculated for 0.007 af (91% of inflow)

Center-of-Mass det. time= 2.4 min (746.5 - 744.1)

Volume	Invert	Avail.Storage	Storage Description
#1	13.94'	106 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.94	40	0.0	0	0
13.95	40	40.0	0	0
17.69	40	40.0	60	60
17.70	40	100.0	0	60
18.70	40	100.0	40	100
18.71	1,000	100.0	5	106

Device	Routing	Invert	Outlet Devices
#1	Primary	15.85'	4.0" Round Culvert L= 28.9' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.15' / 15.85' S= -0.0588 ' / Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.16 cfs @ 11.91 hrs HW=16.25' TW=15.04' (Dynamic Tailwater)↑**1=Culvert** (Inlet Controls 0.16 cfs @ 1.85 fps)

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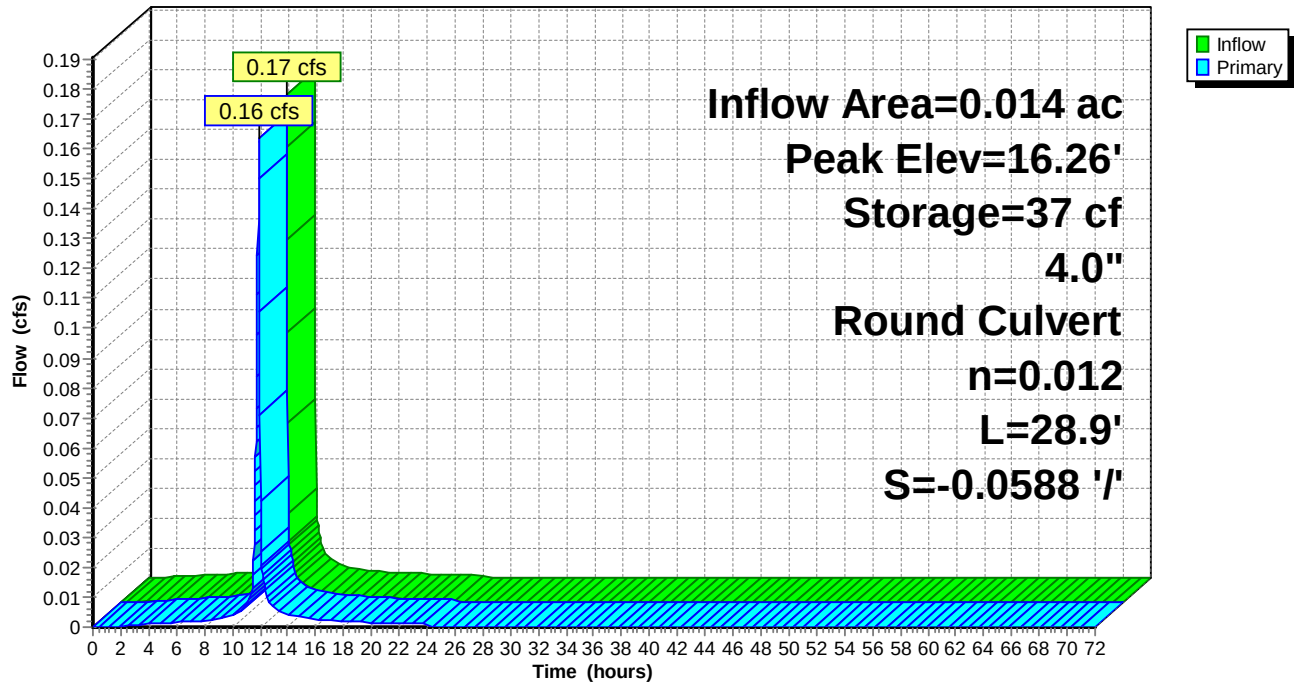
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Pond P38: Planter #38

Hydrograph



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

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Summary for Pond P39: Planter #39

Inflow Area = 0.025 ac, 93.61% Impervious, Inflow Depth = 7.12" for 100-YR event
 Inflow = 0.32 cfs @ 11.90 hrs, Volume= 0.015 af
 Outflow = 0.28 cfs @ 11.92 hrs, Volume= 0.015 af, Atten= 10%, Lag= 1.2 min
 Primary = 0.28 cfs @ 11.92 hrs, Volume= 0.015 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Peak Elev= 15.05' @ 11.92 hrs Surf.Area= 70 sf Storage= 31 cf

Plug-Flow detention time= 14.7 min calculated for 0.015 af (99% of inflow)

Center-of-Mass det. time= 8.6 min (752.7 - 744.1)

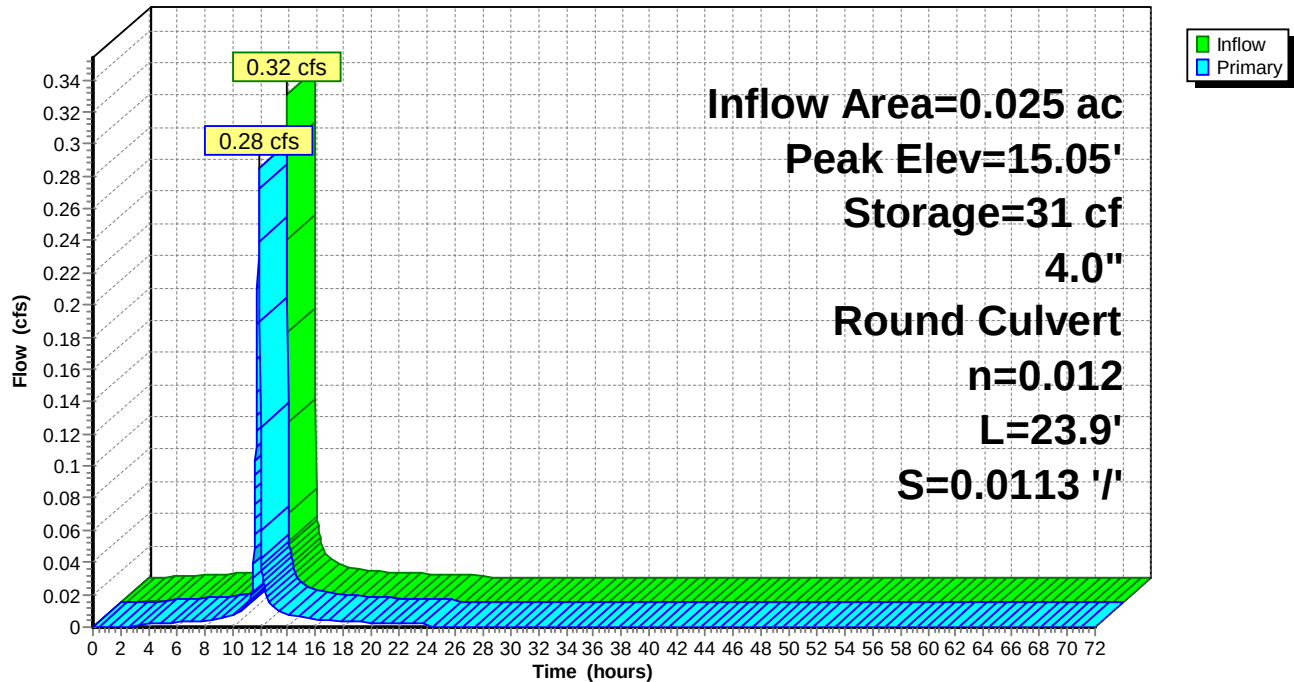
Volume	Invert	Avail.Storage	Storage Description	
#1	13.94'	181 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.94	70	0.0	0	0
13.95	70	40.0	0	0
17.69	70	40.0	105	105
17.70	70	100.0	1	106
18.70	70	100.0	70	176
18.71	1,000	100.0	5	181

Device	Routing	Invert	Outlet Devices
#1	Primary	14.15'	4.0" Round Culvert L= 23.9' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.15' / 13.88' S= 0.0113 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.28 cfs @ 11.92 hrs HW=15.05' TW=13.71' (Dynamic Tailwater)↑**1=Culvert** (Inlet Controls 0.28 cfs @ 3.25 fps)

Pond P39: Planter #39

Hydrograph



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

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Summary for Pond P40: Planter #40

Inflow Area = 0.008 ac, 91.48% Impervious, Inflow Depth = 7.12" for 100-YR event
 Inflow = 0.10 cfs @ 11.90 hrs, Volume= 0.005 af
 Outflow = 0.10 cfs @ 11.90 hrs, Volume= 0.005 af, Atten= 2%, Lag= 0.3 min
 Primary = 0.10 cfs @ 11.90 hrs, Volume= 0.005 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 15.99' Surf.Area= 30 sf Storage= 25 cf

Peak Elev= 16.25' @ 11.90 hrs Surf.Area= 30 sf Storage= 28 cf (3 cf above start)

Plug-Flow detention time= 106.5 min calculated for 0.004 af (88% of inflow)

Center-of-Mass det. time= 2.3 min (746.4 - 744.1)

Volume	Invert	Avail.Storage	Storage Description	
#1	13.94'	80 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.94	30	0.0	0	0
13.95	30	40.0	0	0
17.69	30	40.0	45	45
17.70	30	100.0	0	45
18.70	30	100.0	30	75
18.71	1,000	100.0	5	80

Device	Routing	Invert	Outlet Devices
#1	Primary	15.99'	4.0" Round Culvert L= 11.2' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.15' / 15.99' S= -0.1643 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.10 cfs @ 11.90 hrs HW=16.25' TW=15.00' (Dynamic Tailwater)↑ **1=Culvert** (Inlet Controls 0.10 cfs @ 1.36 fps)

Naima - Phase 2 - Proposed HydroCAD

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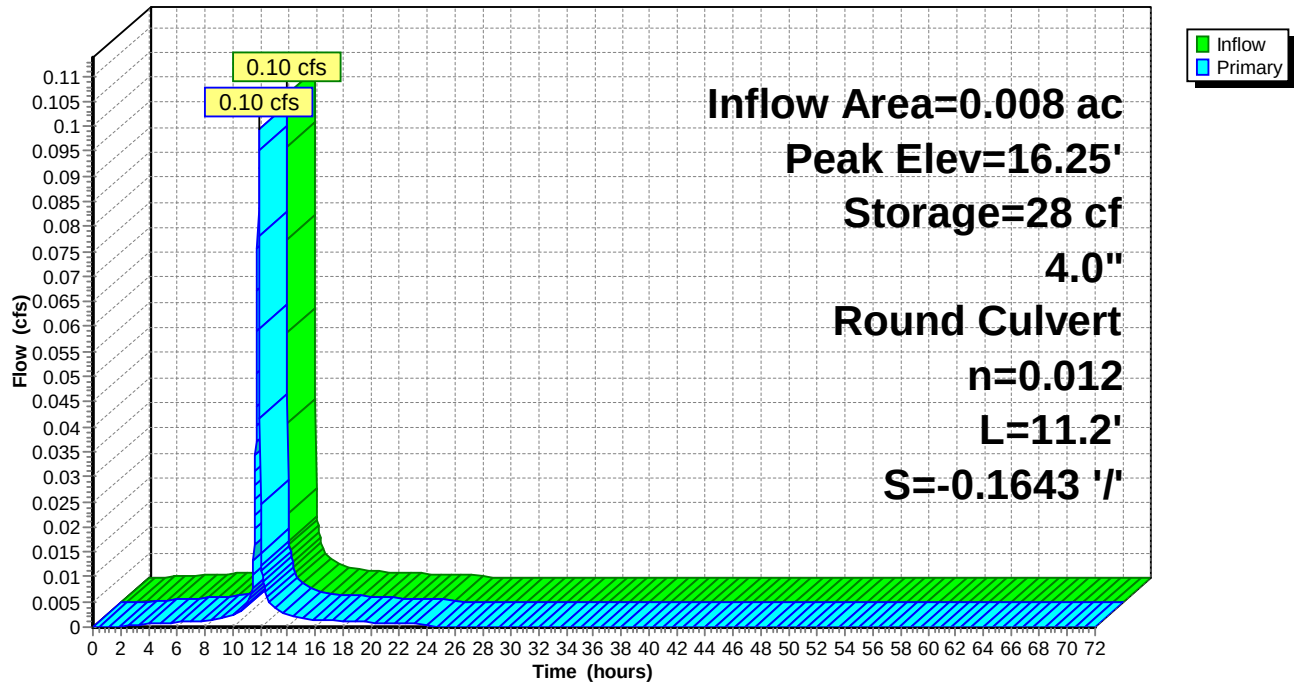
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Pond P40: Planter #40

Hydrograph



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

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Summary for Pond P41: Planter #41

Inflow Area = 0.025 ac, 93.61% Impervious, Inflow Depth = 7.12" for 100-YR event
 Inflow = 0.32 cfs @ 11.90 hrs, Volume= 0.015 af
 Outflow = 0.28 cfs @ 11.92 hrs, Volume= 0.015 af, Atten= 10%, Lag= 1.2 min
 Primary = 0.28 cfs @ 11.92 hrs, Volume= 0.015 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Peak Elev= 15.35' @ 11.92 hrs Surf.Area= 70 sf Storage= 31 cf

Plug-Flow detention time= 14.7 min calculated for 0.015 af (99% of inflow)

Center-of-Mass det. time= 8.6 min (752.7 - 744.1)

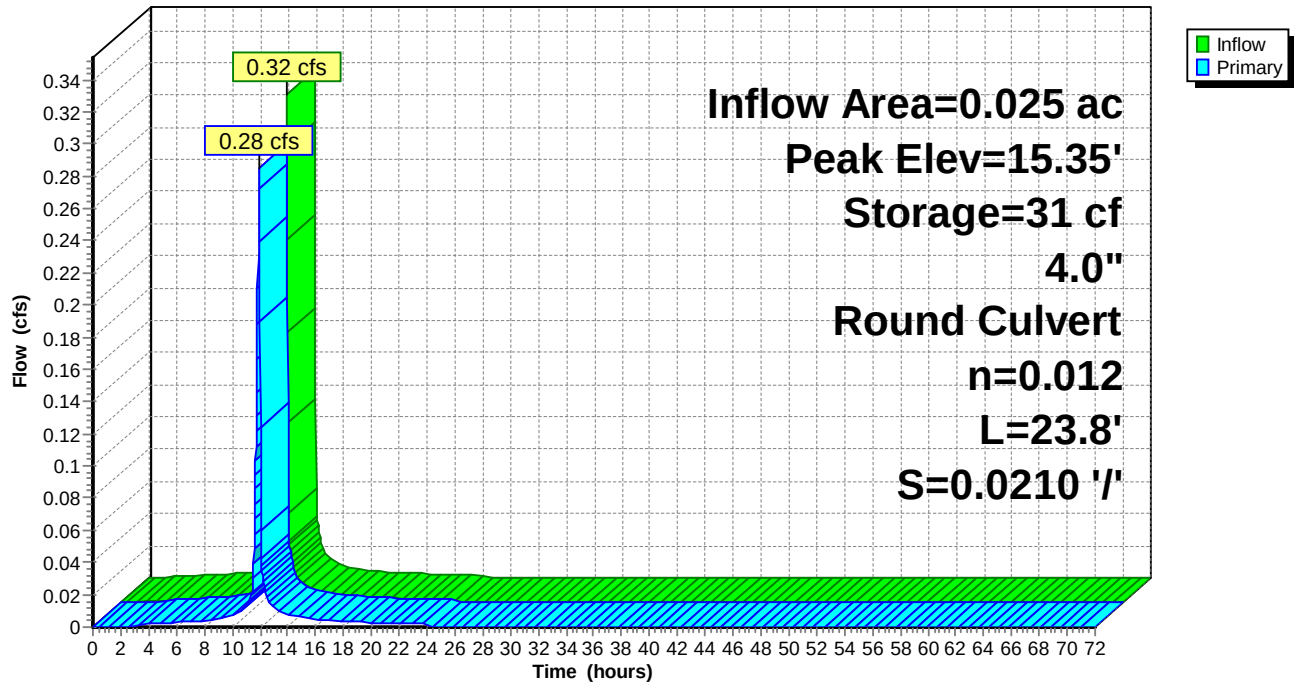
Volume	Invert	Avail.Storage	Storage Description	
#1	14.24'	181 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
14.24	70	0.0	0	0
14.25	70	40.0	0	0
17.99	70	40.0	105	105
18.00	70	100.0	1	106
19.00	70	100.0	70	176
19.01	1,000	100.0	5	181

Device	Routing	Invert	Outlet Devices
#1	Primary	14.45'	4.0" Round Culvert L= 23.8' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.45' / 13.95' S= 0.0210 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.28 cfs @ 11.92 hrs HW=15.35' TW=13.71' (Dynamic Tailwater)↑ **1=Culvert** (Inlet Controls 0.28 cfs @ 3.25 fps)

Pond P41: Planter #41

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Pond P42: Planter #42

Inflow Area = 0.008 ac, 91.48% Impervious, Inflow Depth = 7.12" for 100-YR event
 Inflow = 0.10 cfs @ 11.90 hrs, Volume= 0.005 af
 Outflow = 0.10 cfs @ 11.90 hrs, Volume= 0.005 af, Atten= 2%, Lag= 0.3 min
 Primary = 0.10 cfs @ 11.90 hrs, Volume= 0.005 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 16.14' Surf.Area= 30 sf Storage= 23 cf

Peak Elev= 16.40' @ 11.90 hrs Surf.Area= 30 sf Storage= 26 cf (3 cf above start)

Plug-Flow detention time= 101.6 min calculated for 0.004 af (89% of inflow)

Center-of-Mass det. time= 2.3 min (746.4 - 744.1)

Volume	Invert	Avail.Storage	Storage Description	
#1	14.24'	80 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
14.24	30	0.0	0	0
14.25	30	40.0	0	0
17.99	30	40.0	45	45
18.00	30	100.0	0	45
19.00	30	100.0	30	75
19.01	1,000	100.0	5	80

Device	Routing	Invert	Outlet Devices
#1	Primary	16.14'	4.0" Round Culvert L= 19.8' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.45' / 16.14' S= -0.0854 ' /' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.10 cfs @ 11.90 hrs HW=16.40' TW=15.76' (Dynamic Tailwater)↑**1=Culvert** (Inlet Controls 0.10 cfs @ 1.36 fps)

Naima - Phase 2 - Proposed HydroCAD

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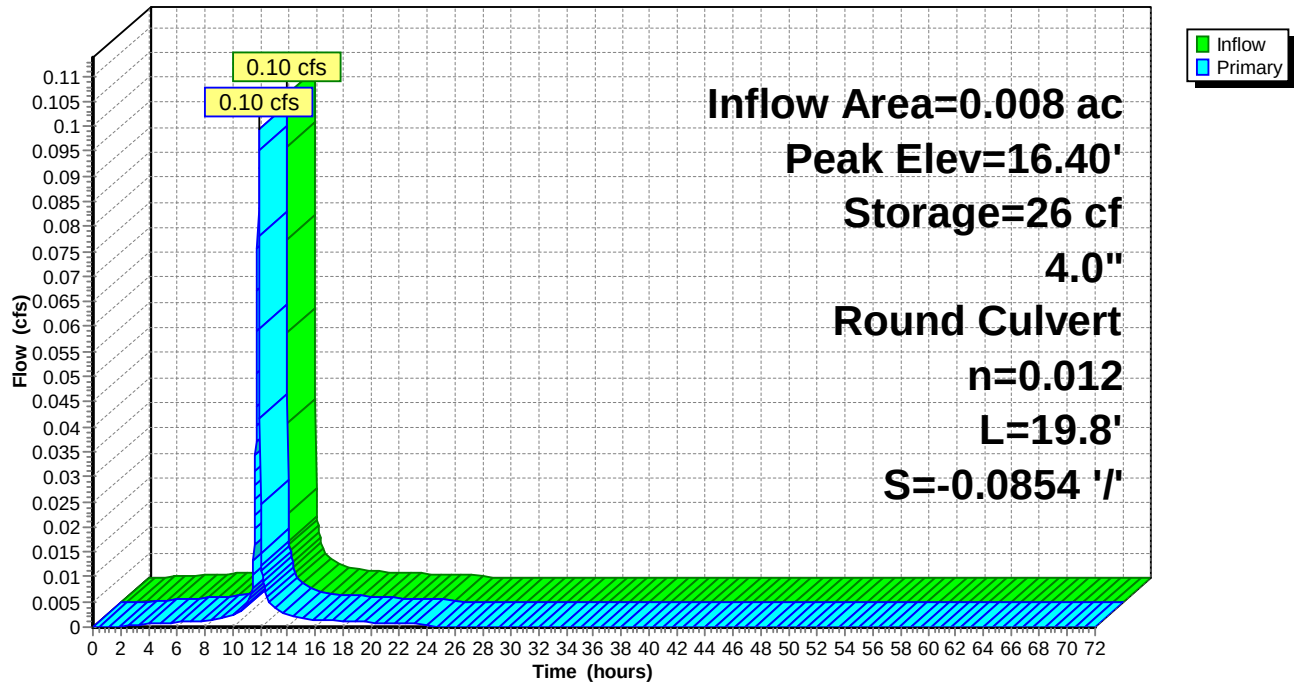
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Pond P42: Planter #42

Hydrograph



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

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Summary for Pond P43: Planter #43

Inflow Area = 0.014 ac, 93.22% Impervious, Inflow Depth = 7.12" for 100-YR event
 Inflow = 0.17 cfs @ 11.90 hrs, Volume= 0.008 af
 Outflow = 0.16 cfs @ 11.91 hrs, Volume= 0.008 af, Atten= 4%, Lag= 0.6 min
 Primary = 0.16 cfs @ 11.91 hrs, Volume= 0.008 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 16.31' Surf.Area= 40 sf Storage= 33 cf

Peak Elev= 16.72' @ 11.91 hrs Surf.Area= 40 sf Storage= 40 cf (7 cf above start)

Plug-Flow detention time= 92.0 min calculated for 0.007 af (91% of inflow)

Center-of-Mass det. time= 2.4 min (746.5 - 744.1)

Volume	Invert	Avail.Storage	Storage Description
#1	14.24'	106 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
14.24	40	0.0	0	0
14.25	40	40.0	0	0
17.99	40	40.0	60	60
18.00	40	100.0	0	60
19.00	40	100.0	40	100
19.01	1,000	100.0	5	106

Device	Routing	Invert	Outlet Devices
#1	Primary	16.31'	4.0" Round Culvert L= 28.7' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.45' / 16.31' S= -0.0648 ' / Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.16 cfs @ 11.91 hrs HW=16.71' TW=15.77' (Dynamic Tailwater)↑**1=Culvert** (Inlet Controls 0.16 cfs @ 1.85 fps)

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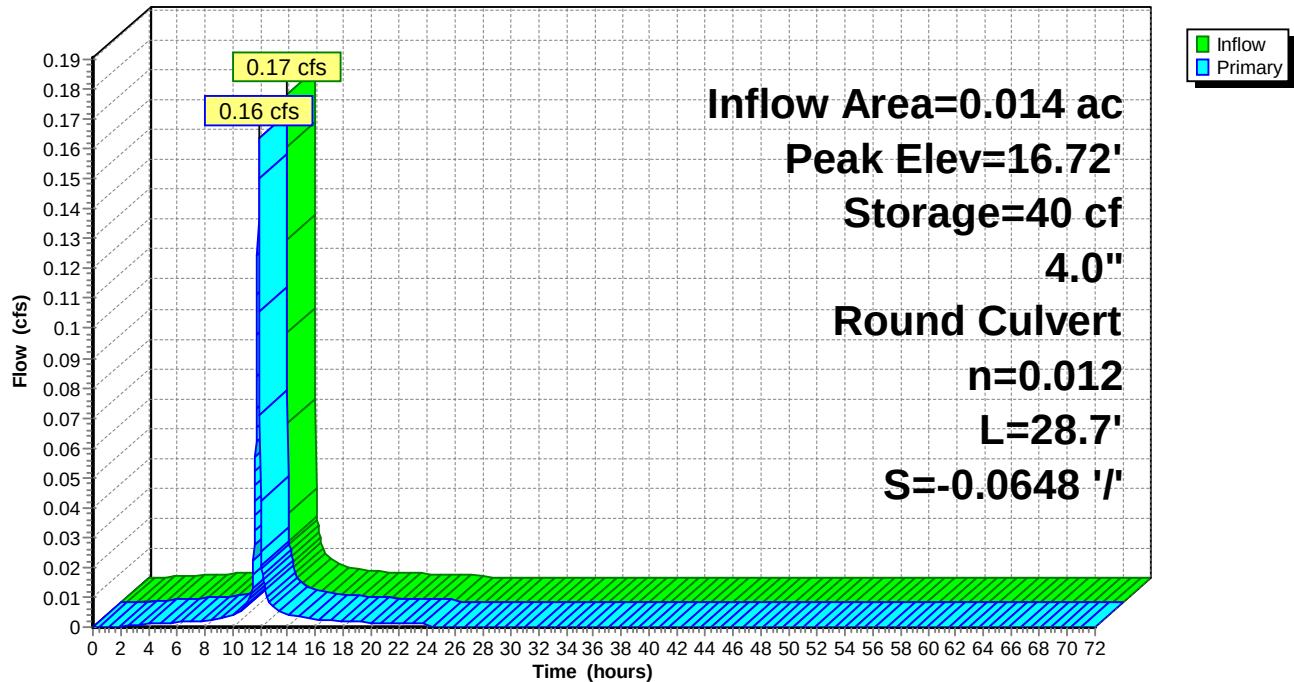
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Pond P43: Planter #43

Hydrograph



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

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Summary for Pond P44: Planter #44

Inflow Area = 0.016 ac, 92.84% Impervious, Inflow Depth = 7.12" for 100-YR event
 Inflow = 0.20 cfs @ 11.90 hrs, Volume= 0.010 af
 Outflow = 0.19 cfs @ 11.91 hrs, Volume= 0.010 af, Atten= 5%, Lag= 0.8 min
 Primary = 0.19 cfs @ 11.91 hrs, Volume= 0.010 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2
 Peak Elev= 14.95' @ 11.91 hrs Surf.Area= 50 sf Storage= 4 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 0.2 min (744.3 - 744.1)

Volume	Invert	Avail.Storage	Storage Description	
#1	14.74'	121 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
14.74	50	0.0	0	0
14.75	50	40.0	0	0
17.99	50	40.0	65	65
18.00	50	100.0	1	66
19.00	50	100.0	50	116
19.01	1,000	100.0	5	121

Device	Routing	Invert	Outlet Devices
#1	Primary	14.45'	4.0" Round Culvert L= 19.9' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.45' / 14.18' S= 0.0136 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.19 cfs @ 11.91 hrs HW=14.94' TW=13.68' (Dynamic Tailwater)

↑ **1=Culvert** (Inlet Controls 0.19 cfs @ 2.17 fps)

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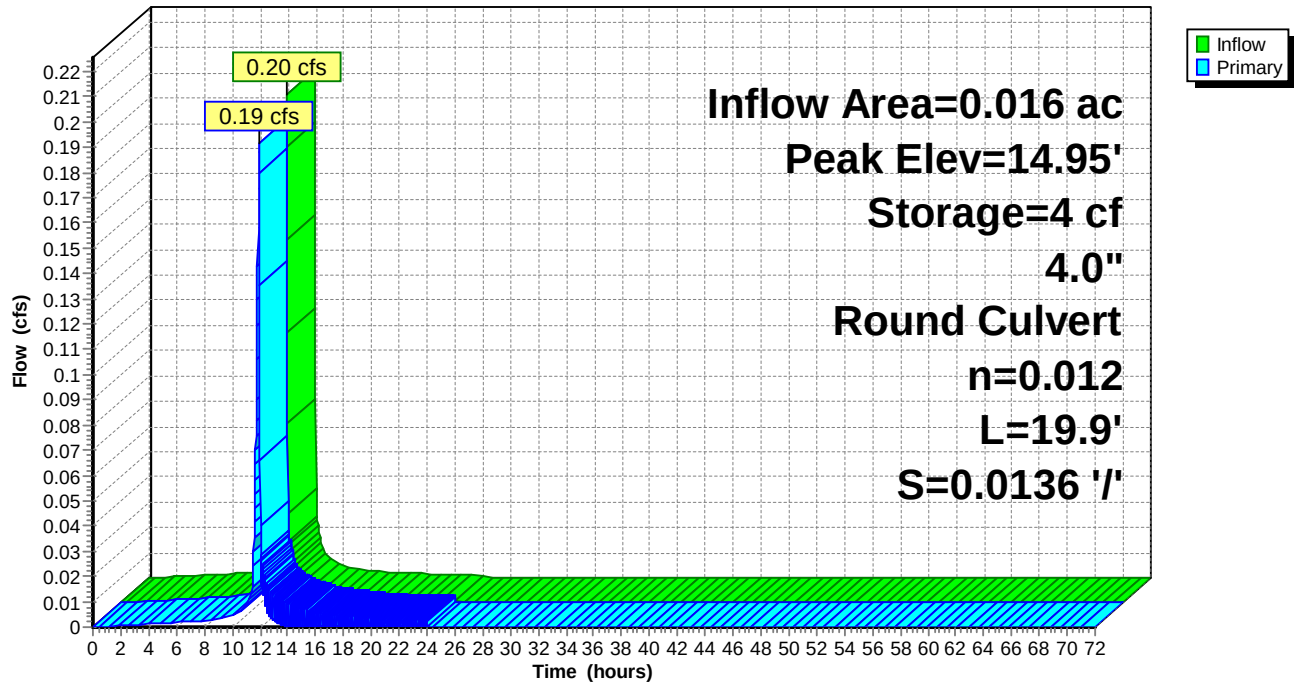
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Pond P44: Planter #44

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

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Summary for Pond P45: Planter #45

Inflow Area = 0.013 ac, 93.19% Impervious, Inflow Depth = 7.12" for 100-YR event
 Inflow = 0.17 cfs @ 11.90 hrs, Volume= 0.008 af
 Outflow = 0.16 cfs @ 11.91 hrs, Volume= 0.008 af, Atten= 4%, Lag= 0.6 min
 Primary = 0.16 cfs @ 11.91 hrs, Volume= 0.008 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 16.46' Surf.Area= 40 sf Storage= 36 cf

Peak Elev= 16.87' @ 11.91 hrs Surf.Area= 40 sf Storage= 42 cf (7 cf above start)

Plug-Flow detention time= 96.8 min calculated for 0.007 af (90% of inflow)

Center-of-Mass det. time= 2.4 min (746.5 - 744.1)

Volume	Invert	Avail.Storage	Storage Description
#1	14.24'	106 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
14.24	40	0.0	0	0
14.25	40	40.0	0	0
17.99	40	40.0	60	60
18.00	40	100.0	0	60
19.00	40	100.0	40	100
19.01	1,000	100.0	5	106

Device	Routing	Invert	Outlet Devices
#1	Primary	16.46'	4.0" Round Culvert L= 36.4' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.45' / 16.46' S= -0.0552 ' / Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.16 cfs @ 11.91 hrs HW=16.86' TW=15.77' (Dynamic Tailwater)↑**1=Culvert** (Inlet Controls 0.16 cfs @ 1.85 fps)

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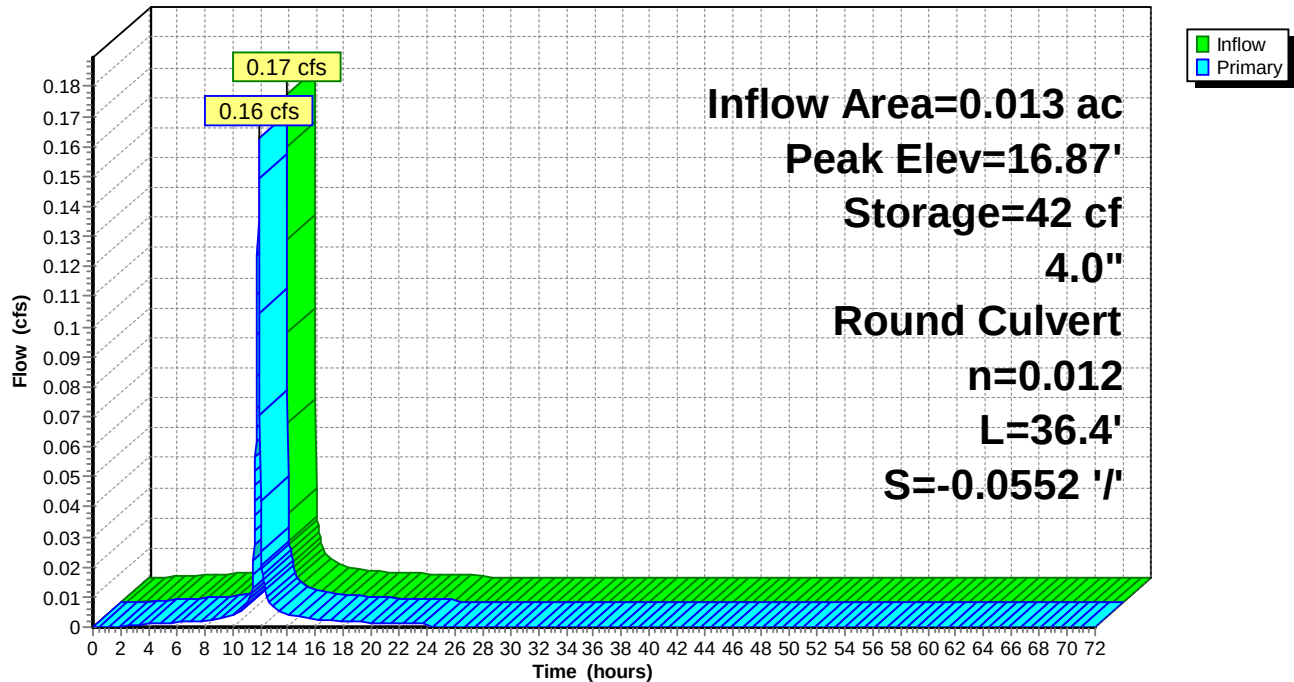
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Pond P45: Planter #45

Hydrograph



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

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Summary for Pond P46: Planter #46

Inflow Area = 0.005 ac, 90.87% Impervious, Inflow Depth = 7.12" for 100-YR event
 Inflow = 0.06 cfs @ 11.90 hrs, Volume= 0.003 af
 Outflow = 0.06 cfs @ 11.90 hrs, Volume= 0.003 af, Atten= 1%, Lag= 0.2 min
 Primary = 0.06 cfs @ 11.90 hrs, Volume= 0.003 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Peak Elev= 15.14' @ 11.90 hrs Surf.Area= 20 sf Storage= 3 cf

Plug-Flow detention time= 18.1 min calculated for 0.003 af (99% of inflow)

Center-of-Mass det. time= 9.4 min (753.5 - 744.1)

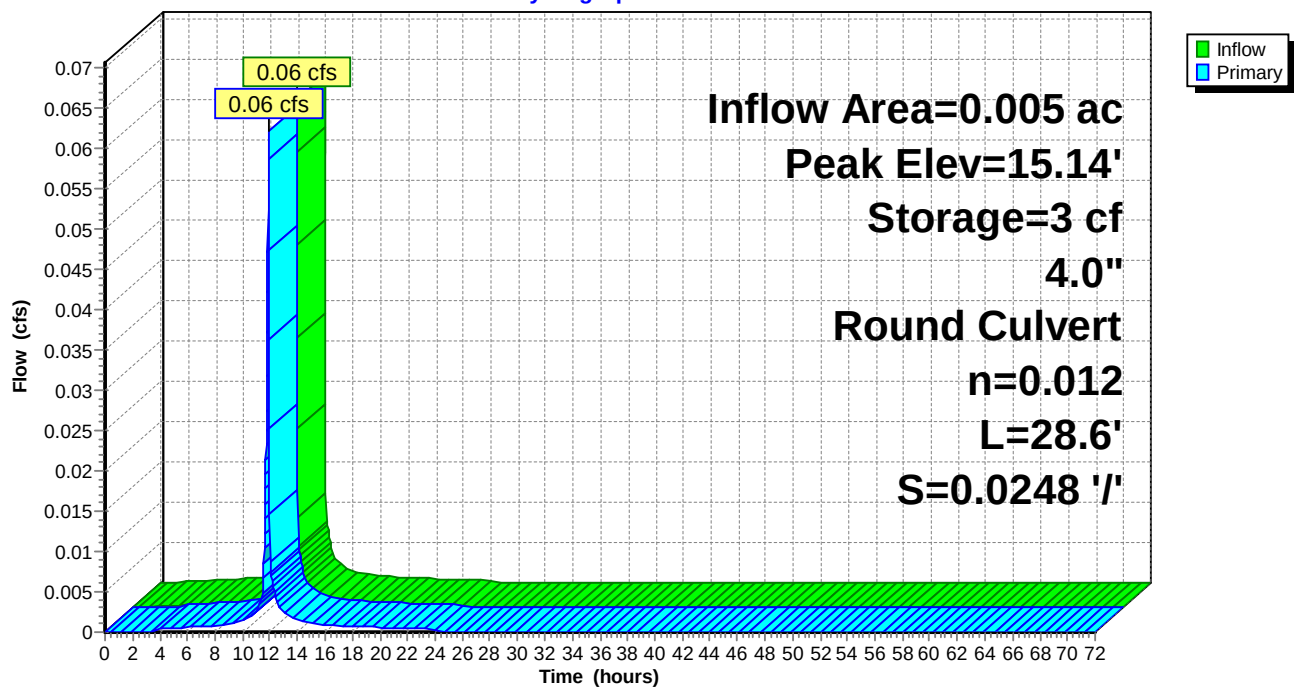
Volume	Invert	Avail.Storage	Storage Description	
#1	14.74'	55 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
14.74	20	0.0	0	0
14.75	20	40.0	0	0
18.49	20	40.0	30	30
18.50	20	100.0	0	30
19.50	20	100.0	20	50
19.51	1,000	100.0	5	55

Device	Routing	Invert	Outlet Devices
#1	Primary	14.95'	4.0" Round Culvert L= 28.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.95' / 14.24' S= 0.0248 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.06 cfs @ 11.90 hrs HW=15.14' TW=13.64' (Dynamic Tailwater)↑ **1=Culvert** (Inlet Controls 0.06 cfs @ 1.18 fps)

Pond P46: Planter #46

Hydrograph



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Summary for Pond P47: Planter #47

Inflow Area = 0.028 ac, 93.42% Impervious, Inflow Depth = 7.12" for 100-YR event
 Inflow = 0.35 cfs @ 11.90 hrs, Volume= 0.017 af
 Outflow = 0.28 cfs @ 11.93 hrs, Volume= 0.017 af, Atten= 20%, Lag= 2.0 min
 Primary = 0.28 cfs @ 11.93 hrs, Volume= 0.017 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 16.60' Surf.Area= 80 sf Storage= 60 cf

Peak Elev= 18.02' @ 11.93 hrs Surf.Area= 80 sf Storage= 105 cf (45 cf above start)

Plug-Flow detention time= 84.7 min calculated for 0.015 af (92% of inflow)

Center-of-Mass det. time= 3.7 min (747.8 - 744.1)

Volume	Invert	Avail.Storage	Storage Description	
#1	14.74'	206 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
14.74	80	0.0	0	0
14.75	80	40.0	0	0
18.49	80	40.0	120	120
18.50	80	100.0	1	121
19.50	80	100.0	80	201
19.51	1,000	100.0	5	206

Device	Routing	Invert	Outlet Devices
#1	Primary	16.60'	4.0" Round Culvert L= 59.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.95' / 16.60' S= -0.0277 ' /' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.28 cfs @ 11.93 hrs HW=18.00' TW=15.78' (Dynamic Tailwater)↑ **1=Culvert** (Outlet Controls 0.28 cfs @ 3.20 fps)

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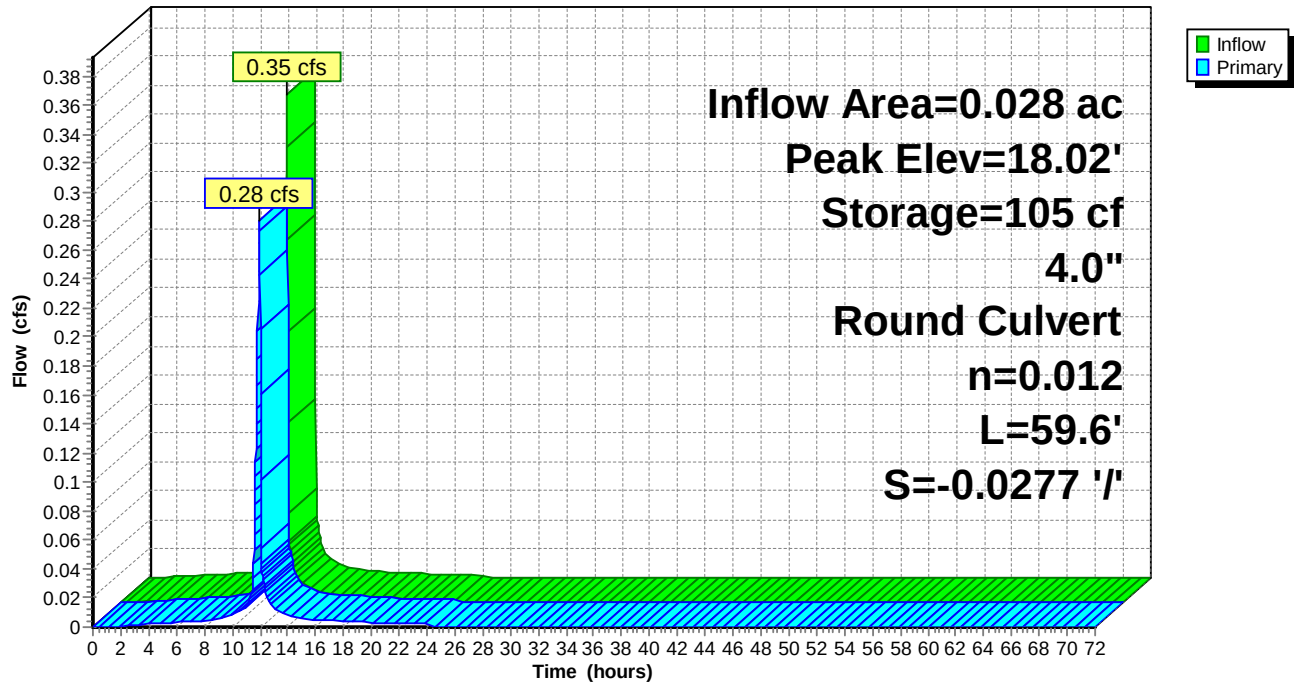
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Pond P47: Planter #47

Hydrograph



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Summary for Pond P48: Planter #48

Inflow Area = 0.018 ac, 93.09% Impervious, Inflow Depth = 7.12" for 100-YR event
 Inflow = 0.23 cfs @ 11.90 hrs, Volume= 0.011 af
 Outflow = 0.22 cfs @ 11.91 hrs, Volume= 0.010 af, Atten= 6%, Lag= 0.9 min
 Primary = 0.22 cfs @ 11.91 hrs, Volume= 0.010 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2
 Peak Elev= 17.49' @ 11.91 hrs Surf.Area= 55 sf Storage= 61 cf

Plug-Flow detention time= 96.6 min calculated for 0.010 af (90% of inflow)
 Center-of-Mass det. time= 43.8 min (787.9 - 744.1)

Volume	Invert	Avail.Storage	Storage Description	
#1	14.74'	143 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
14.74	55	0.0	0	0
14.75	55	40.0	0	0
18.49	55	40.0	82	82
18.50	55	100.0	1	83
19.50	55	100.0	55	138
19.51	1,000	100.0	5	143

Device	Routing	Invert	Outlet Devices
#1	Primary	16.90'	4.0" Round Culvert L= 24.8' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.44' / 16.90' S= -0.0992 ' / Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.21 cfs @ 11.91 hrs HW=17.48' TW=13.69' (Dynamic Tailwater)

↑ **1=Culvert** (Inlet Controls 0.21 cfs @ 2.45 fps)

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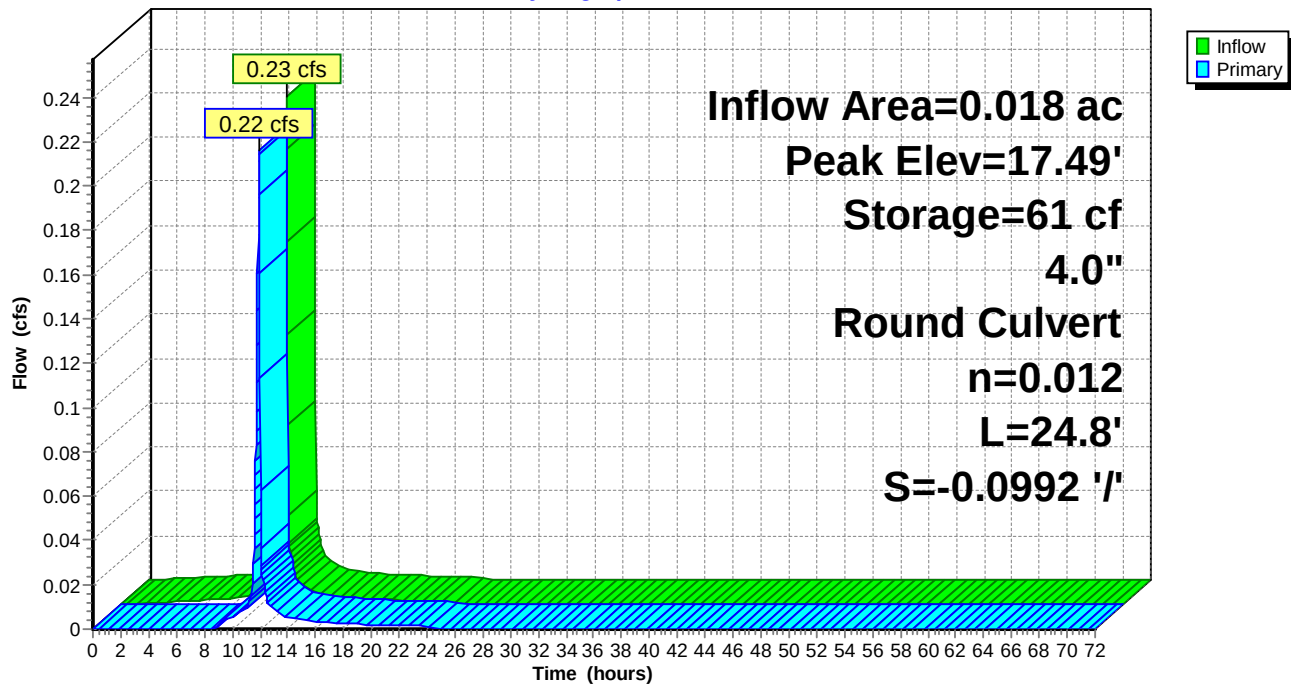
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Pond P48: Planter #48

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Summary for Pond P49: Planter #49

Inflow Area = 0.008 ac, 91.74% Impervious, Inflow Depth = 7.12" for 100-YR event
 Inflow = 0.10 cfs @ 11.90 hrs, Volume= 0.005 af
 Outflow = 0.10 cfs @ 11.90 hrs, Volume= 0.005 af, Atten= 2%, Lag= 0.3 min
 Primary = 0.10 cfs @ 11.90 hrs, Volume= 0.005 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 17.12' Surf.Area= 30 sf Storage= 29 cf

Peak Elev= 17.38' @ 11.90 hrs Surf.Area= 30 sf Storage= 32 cf (3 cf above start)

Plug-Flow detention time= 115.2 min calculated for 0.004 af (87% of inflow)

Center-of-Mass det. time= 2.2 min (746.3 - 744.1)

Volume	Invert	Avail.Storage	Storage Description	
#1	14.74'	80 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
14.74	30	0.0	0	0
14.75	30	40.0	0	0
18.49	30	40.0	45	45
18.50	30	100.0	0	45
19.50	30	100.0	30	75
19.51	1,000	100.0	5	80

Device	Routing	Invert	Outlet Devices	
#1	Primary	17.12'	4.0" Round Culvert L= 19.9' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.95' / 17.12' S= -0.1090 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf	

Primary OutFlow Max=0.10 cfs @ 11.90 hrs HW=17.38' TW=15.76' (Dynamic Tailwater)↑ **1=Culvert** (Inlet Controls 0.10 cfs @ 1.38 fps)

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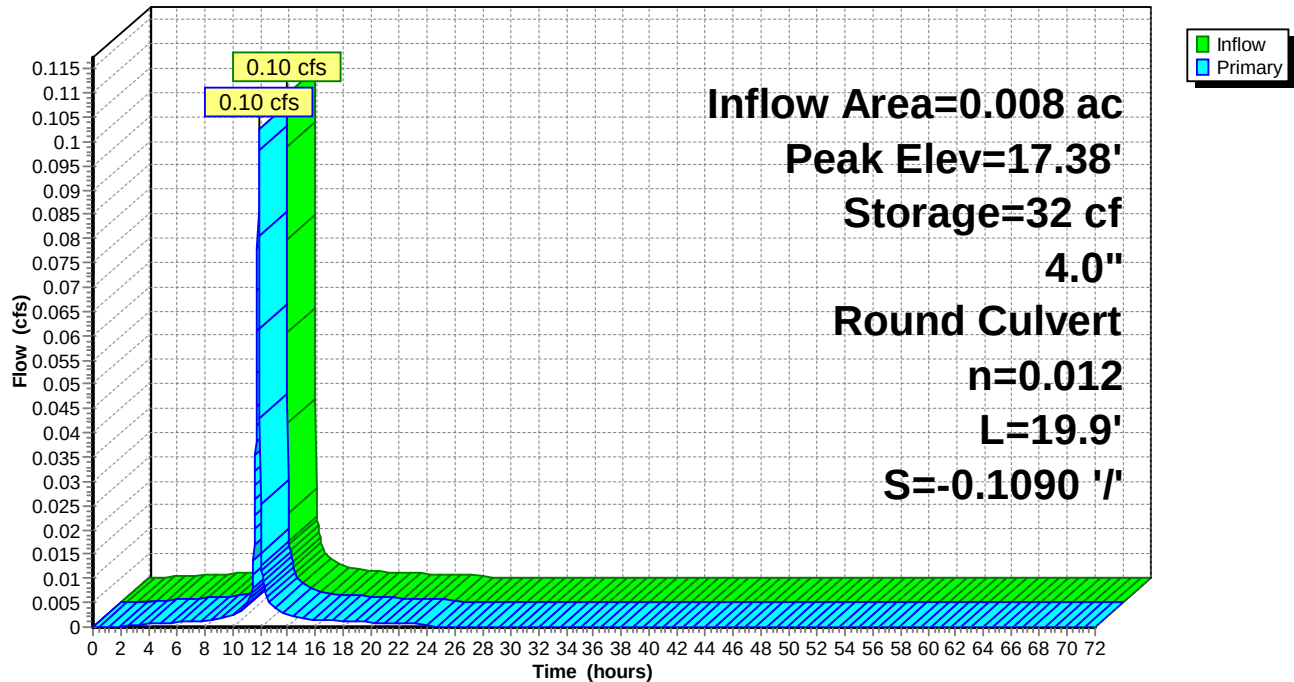
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Pond P49: Planter #49

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Summary for Pond P50: Planter #50

Inflow Area = 0.016 ac, 92.84% Impervious, Inflow Depth = 7.12" for 100-YR event
 Inflow = 0.20 cfs @ 11.90 hrs, Volume= 0.010 af
 Outflow = 0.19 cfs @ 11.91 hrs, Volume= 0.009 af, Atten= 5%, Lag= 0.8 min
 Primary = 0.19 cfs @ 11.91 hrs, Volume= 0.009 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2
 Peak Elev= 16.45' @ 11.91 hrs Surf.Area= 50 sf Storage= 14 cf

Plug-Flow detention time= 15.5 min calculated for 0.009 af (99% of inflow)
 Center-of-Mass det. time= 8.7 min (752.8 - 744.1)

Volume	Invert	Avail.Storage	Storage Description	
#1	15.74'	131 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
15.74	50	0.0	0	0
15.75	50	40.0	0	0
19.49	50	40.0	75	75
19.50	50	100.0	1	76
20.50	50	100.0	50	126
20.51	1,000	100.0	5	131

Device	Routing	Invert	Outlet Devices
#1	Primary	15.95'	4.0" Round Culvert L= 19.4' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.95' / 14.55' S= 0.0722 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.19 cfs @ 11.91 hrs HW=16.44' TW=13.68' (Dynamic Tailwater)

↑ **1=Culvert** (Inlet Controls 0.19 cfs @ 2.17 fps)

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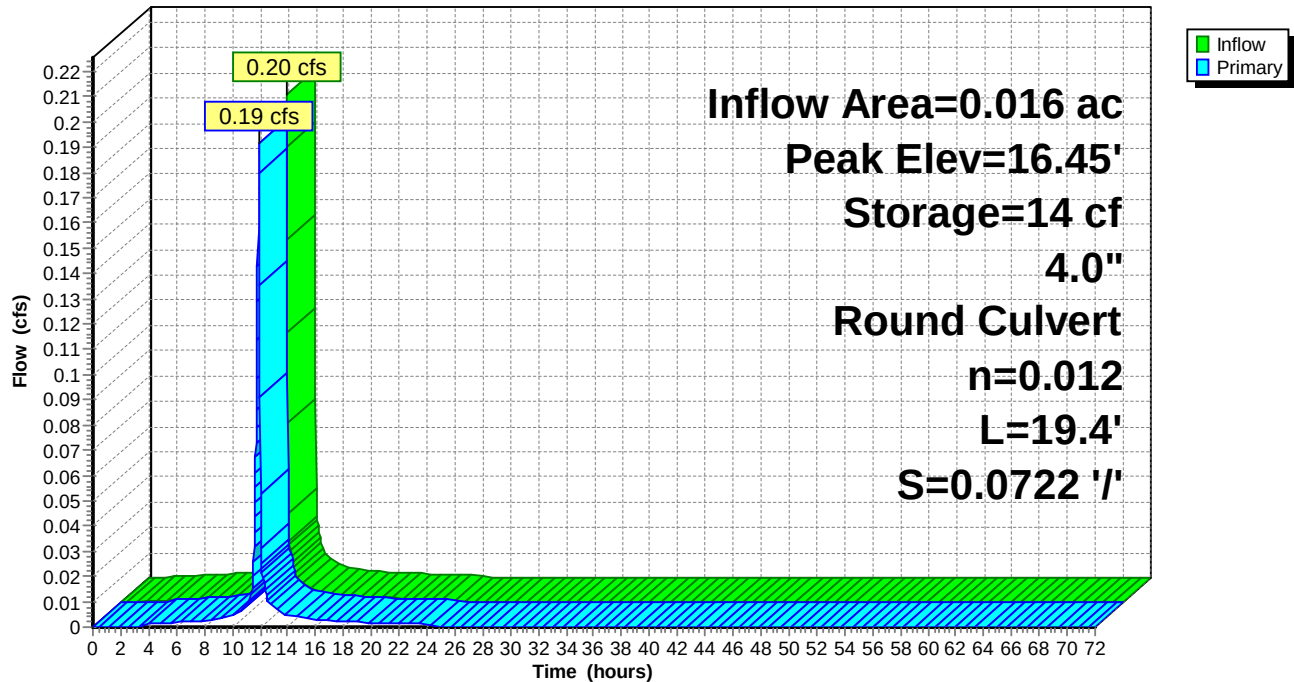
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Pond P50: Planter #50

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Summary for Pond P51: Planter #51

Inflow Area = 0.013 ac, 93.19% Impervious, Inflow Depth = 7.12" for 100-YR event
 Inflow = 0.17 cfs @ 11.90 hrs, Volume= 0.008 af
 Outflow = 0.16 cfs @ 11.91 hrs, Volume= 0.008 af, Atten= 4%, Lag= 0.6 min
 Primary = 0.16 cfs @ 11.91 hrs, Volume= 0.008 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 17.31' Surf.Area= 40 sf Storage= 25 cf

Peak Elev= 17.72' @ 11.91 hrs Surf.Area= 40 sf Storage= 32 cf (7 cf above start)

Plug-Flow detention time= 76.1 min calculated for 0.007 af (93% of inflow)

Center-of-Mass det. time= 2.4 min (746.5 - 744.1)

Volume	Invert	Avail.Storage	Storage Description
#1	15.74'	106 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
15.74	40	0.0	0	0
15.75	40	40.0	0	0
19.49	40	40.0	60	60
19.50	40	100.0	0	60
20.50	40	100.0	40	100
20.51	1,000	100.0	5	106

Device	Routing	Invert	Outlet Devices
#1	Primary	17.31'	4.0" Round Culvert L= 36.8' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.95' / 17.31' S= -0.0370 ' /' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.16 cfs @ 11.91 hrs HW=17.71' TW=15.77' (Dynamic Tailwater)↑**1=Culvert** (Inlet Controls 0.16 cfs @ 1.85 fps)

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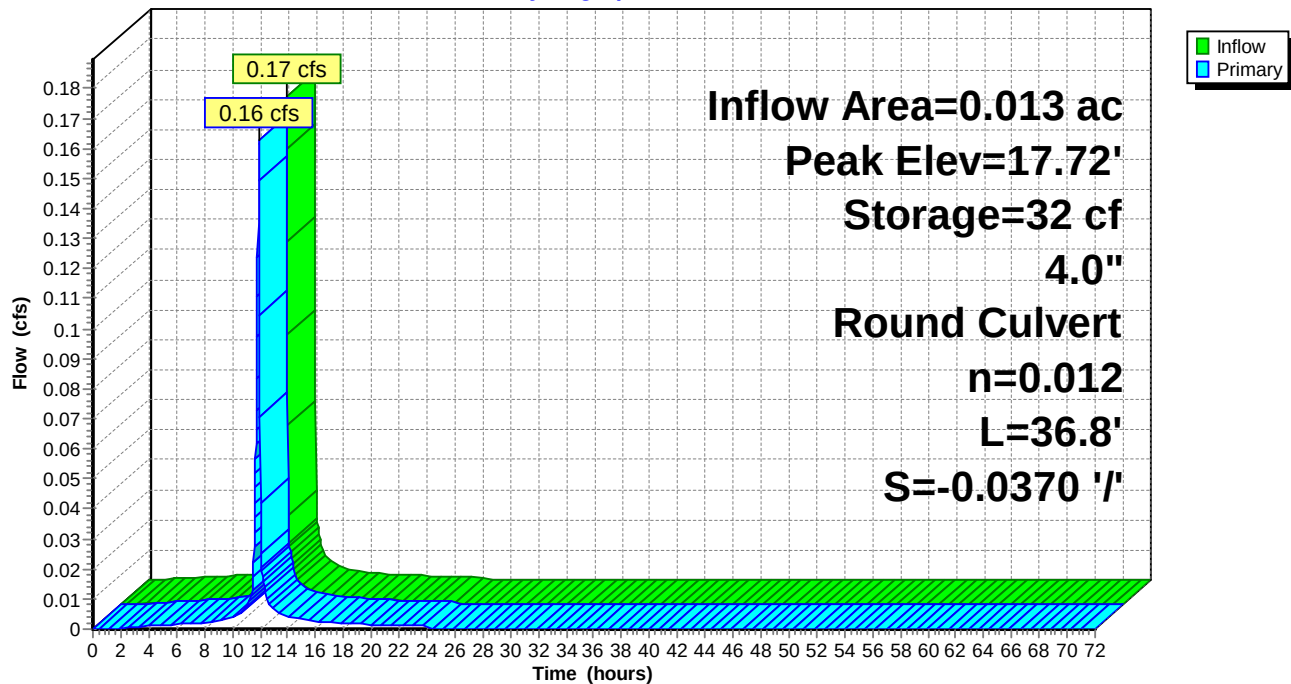
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Pond P51: Planter #51

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Pond P52: Planter #52

Inflow Area = 0.014 ac, 93.22% Impervious, Inflow Depth = 7.12" for 100-YR event
 Inflow = 0.17 cfs @ 11.90 hrs, Volume= 0.008 af
 Outflow = 0.16 cfs @ 11.91 hrs, Volume= 0.008 af, Atten= 4%, Lag= 0.6 min
 Primary = 0.16 cfs @ 11.91 hrs, Volume= 0.008 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 17.54' Surf.Area= 40 sf Storage= 29 cf

Peak Elev= 17.95' @ 11.91 hrs Surf.Area= 40 sf Storage= 35 cf (7 cf above start)

Plug-Flow detention time= 83.3 min calculated for 0.007 af (92% of inflow)

Center-of-Mass det. time= 2.4 min (746.5 - 744.1)

Volume	Invert	Avail.Storage	Storage Description
#1	15.74'	106 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
15.74	40	0.0	0	0
15.75	40	40.0	0	0
19.49	40	40.0	60	60
19.50	40	100.0	0	60
20.50	40	100.0	40	100
20.51	1,000	100.0	5	106

Device	Routing	Invert	Outlet Devices
#1	Primary	17.54'	4.0" Round Culvert L= 28.9' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.95' / 17.54' S= -0.0550 ' /' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.16 cfs @ 11.91 hrs HW=17.94' TW=15.77' (Dynamic Tailwater)↑**1=Culvert** (Inlet Controls 0.16 cfs @ 1.85 fps)

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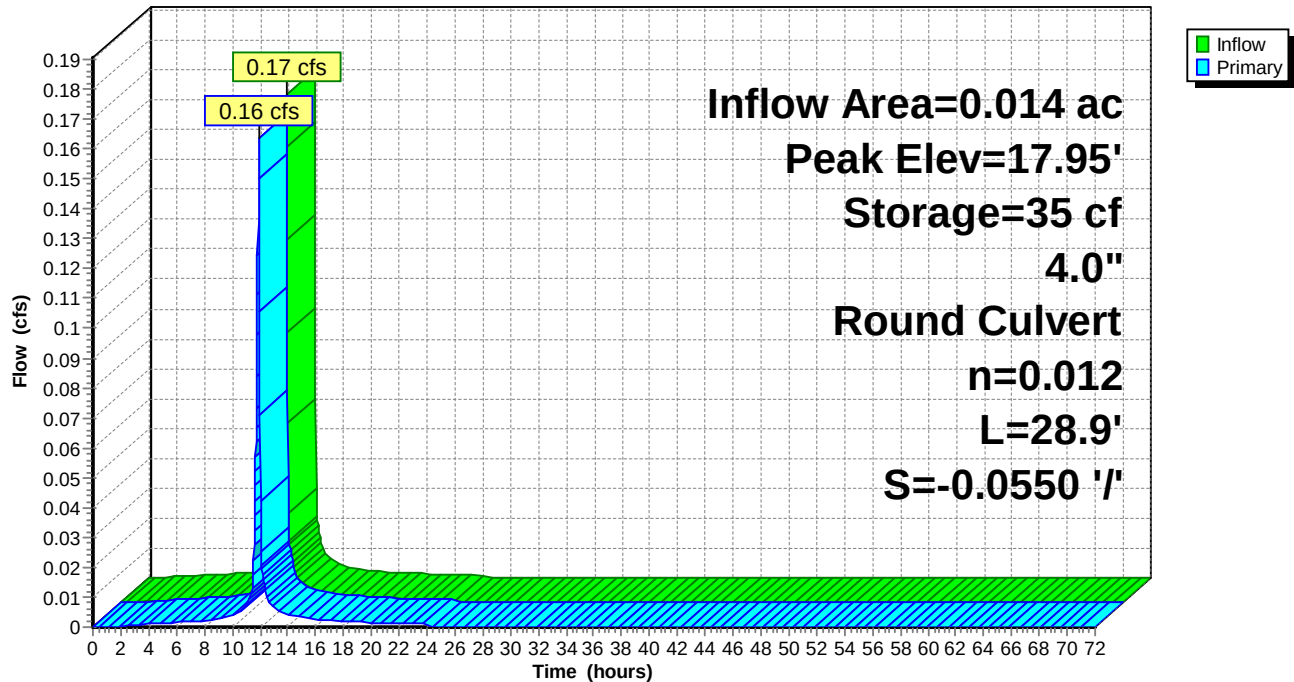
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Type II 24-hr 100-YR Rainfall=7.60"

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Pond P52: Planter #52

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Pond P53: Planter #53

Inflow Area = 0.025 ac, 93.61% Impervious, Inflow Depth = 7.12" for 100-YR event
 Inflow = 0.32 cfs @ 11.90 hrs, Volume= 0.015 af
 Outflow = 0.28 cfs @ 11.92 hrs, Volume= 0.015 af, Atten= 10%, Lag= 1.2 min
 Primary = 0.28 cfs @ 11.92 hrs, Volume= 0.015 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2
 Peak Elev= 16.85' @ 11.92 hrs Surf.Area= 70 sf Storage= 31 cf

Plug-Flow detention time= 15.1 min calculated for 0.015 af (99% of inflow)
 Center-of-Mass det. time= 8.6 min (752.7 - 744.1)

Volume	Invert	Avail.Storage	Storage Description	
#1	15.74'	181 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
15.74	70	0.0	0	0
15.75	70	40.0	0	0
19.49	70	40.0	105	105
19.50	70	100.0	1	106
20.50	70	100.0	70	176
20.51	1,000	100.0	5	181

Device	Routing	Invert	Outlet Devices
#1	Primary	15.95'	4.0" Round Culvert L= 22.8' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.95' / 14.78' S= 0.0513 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.28 cfs @ 11.92 hrs HW=16.85' TW=13.71' (Dynamic Tailwater)

↑ **1=Culvert** (Inlet Controls 0.28 cfs @ 3.25 fps)

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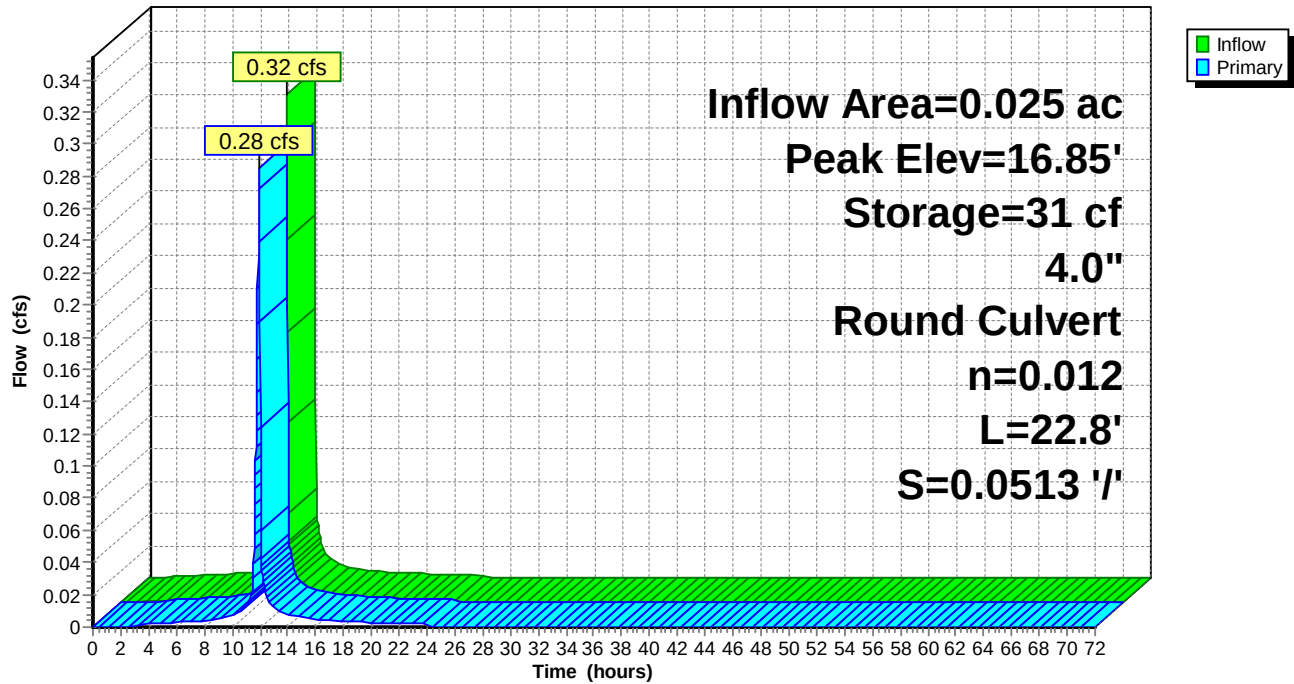
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Type II 24-hr 100-YR Rainfall=7.60"

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Pond P53: Planter #53

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Pond P54: Planter #54

Inflow Area = 0.008 ac, 91.48% Impervious, Inflow Depth = 7.12" for 100-YR event
 Inflow = 0.10 cfs @ 11.90 hrs, Volume= 0.005 af
 Outflow = 0.10 cfs @ 11.90 hrs, Volume= 0.005 af, Atten= 2%, Lag= 0.3 min
 Primary = 0.10 cfs @ 11.90 hrs, Volume= 0.005 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Starting Elev= 18.58' Surf.Area= 30 sf Storage= 34 cf

Peak Elev= 18.84' @ 11.90 hrs Surf.Area= 30 sf Storage= 37 cf (3 cf above start)

Plug-Flow detention time= 130.0 min calculated for 0.004 af (84% of inflow)

Center-of-Mass det. time= 2.3 min (746.4 - 744.1)

Volume	Invert	Avail.Storage	Storage Description
#1	15.74'	80 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

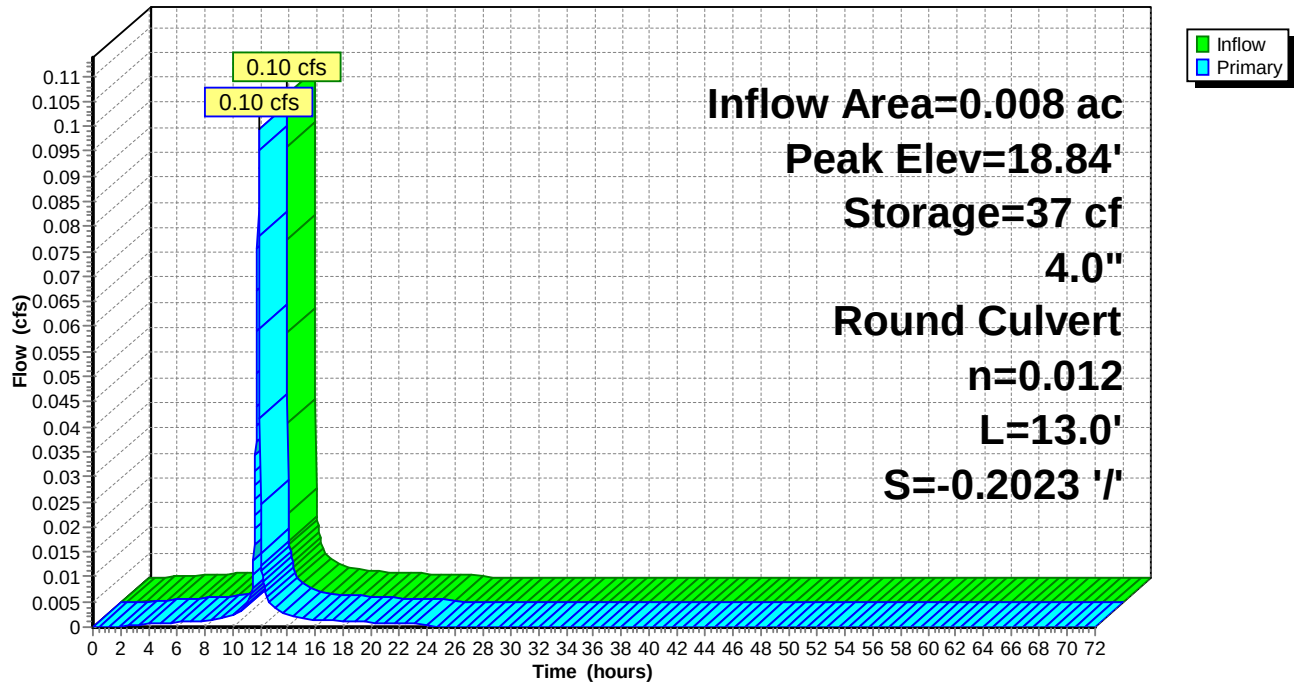
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
15.74	30	0.0	0	0
15.75	30	40.0	0	0
19.49	30	40.0	45	45
19.50	30	100.0	0	45
20.50	30	100.0	30	75
20.51	1,000	100.0	5	80

Device	Routing	Invert	Outlet Devices
#1	Primary	18.58'	4.0" Round Culvert L= 13.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.95' / 18.58' S= -0.2023 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf

Primary OutFlow Max=0.10 cfs @ 11.90 hrs HW=18.84' TW=16.73' (Dynamic Tailwater)↑**1=Culvert** (Inlet Controls 0.10 cfs @ 1.36 fps)

Pond P54: Planter #54

Hydrograph



Naima - Phase 2 - Proposed HydroCAD

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

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Summary for Pond PA-2: Porous Asphalt #2

Inflow Area = 0.105 ac, 81.59% Impervious, Inflow Depth = 6.81" for 100-YR event
 Inflow = 0.88 cfs @ 11.95 hrs, Volume= 0.060 af
 Outflow = 0.59 cfs @ 12.02 hrs, Volume= 0.059 af, Atten= 34%, Lag= 4.0 min
 Primary = 0.59 cfs @ 12.02 hrs, Volume= 0.059 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Peak Elev= 15.21' @ 12.05 hrs Surf.Area= 5,642 sf Storage= 466 cf

Plug-Flow detention time= 38.4 min calculated for 0.059 af (99% of inflow)

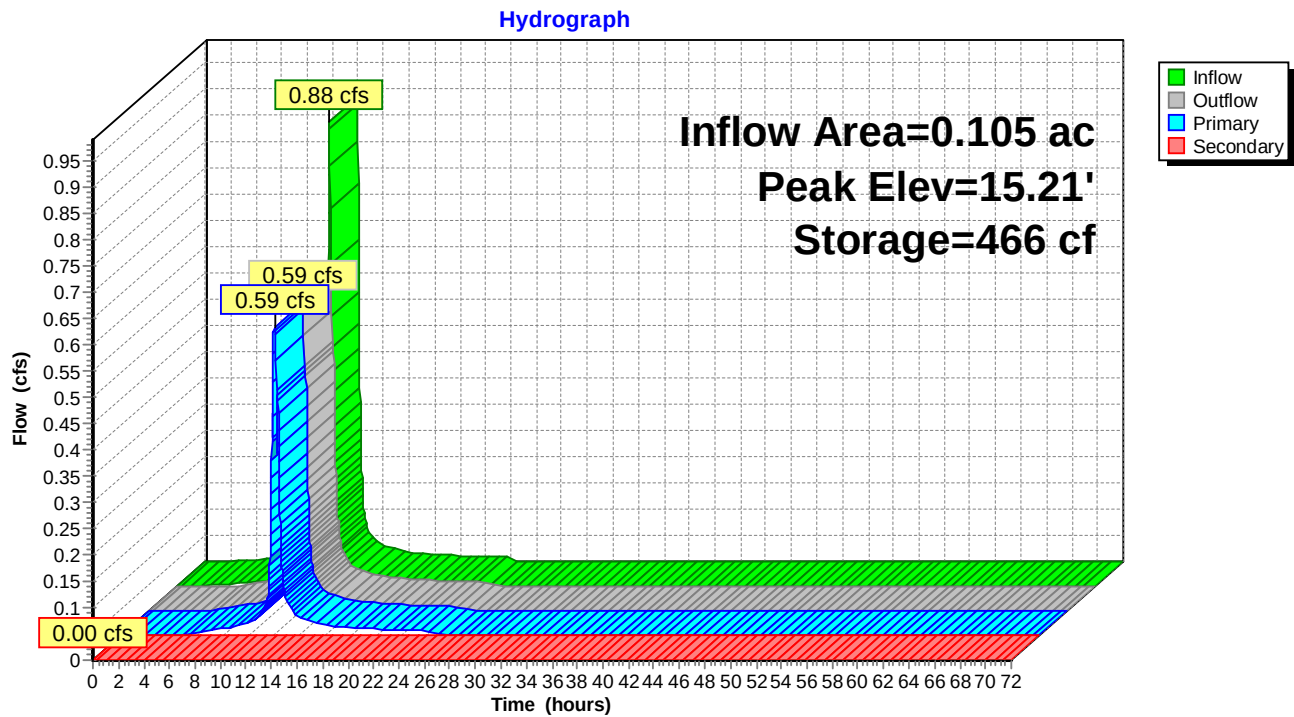
Center-of-Mass det. time= 32.0 min (794.7 - 762.6)

Volume	Invert	Avail.Storage	Storage Description	
#1	14.04'	4,998 cf	Porous Asphalt Section (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
14.04	1,172	0.0	0	0
14.05	1,172	40.0	5	5
14.80	1,172	40.0	352	356
14.81	1,172	20.0	2	359
15.21	1,172	20.0	94	452
15.22	12,000	100.0	66	518
15.50	20,000	100.0	4,480	4,998

Device	Routing	Invert	Outlet Devices
#1	Primary	14.09'	6.0" Round Culvert L= 55.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.09' / 13.90' S= 0.0035 ' / S= 0.0035 ' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf
#2	Secondary	15.36'	55.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=0.59 cfs @ 12.02 hrs HW=15.21' TW=14.58' (Dynamic Tailwater)↑ **1=Culvert** (Outlet Controls 0.59 cfs @ 3.01 fps)**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=14.04' TW=15.10' (Dynamic Tailwater)↑ **2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond PA-2: Porous Asphalt #2



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

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Summary for Pond PA-3: Porous Asphalt #3

Inflow Area = 0.136 ac, 64.54% Impervious, Inflow Depth = 6.33" for 100-YR event
 Inflow = 0.97 cfs @ 11.93 hrs, Volume= 0.072 af
 Outflow = 0.67 cfs @ 12.32 hrs, Volume= 0.071 af, Atten= 31%, Lag= 23.2 min
 Primary = 0.67 cfs @ 12.32 hrs, Volume= 0.070 af
 Secondary = 0.09 cfs @ 12.10 hrs, Volume= 0.001 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Peak Elev= 15.05' @ 12.10 hrs Surf.Area= 12,127 sf Storage= 501 cf

Plug-Flow detention time= 25.3 min calculated for 0.071 af (99% of inflow)

Center-of-Mass det. time= 21.8 min (799.0 - 777.2)

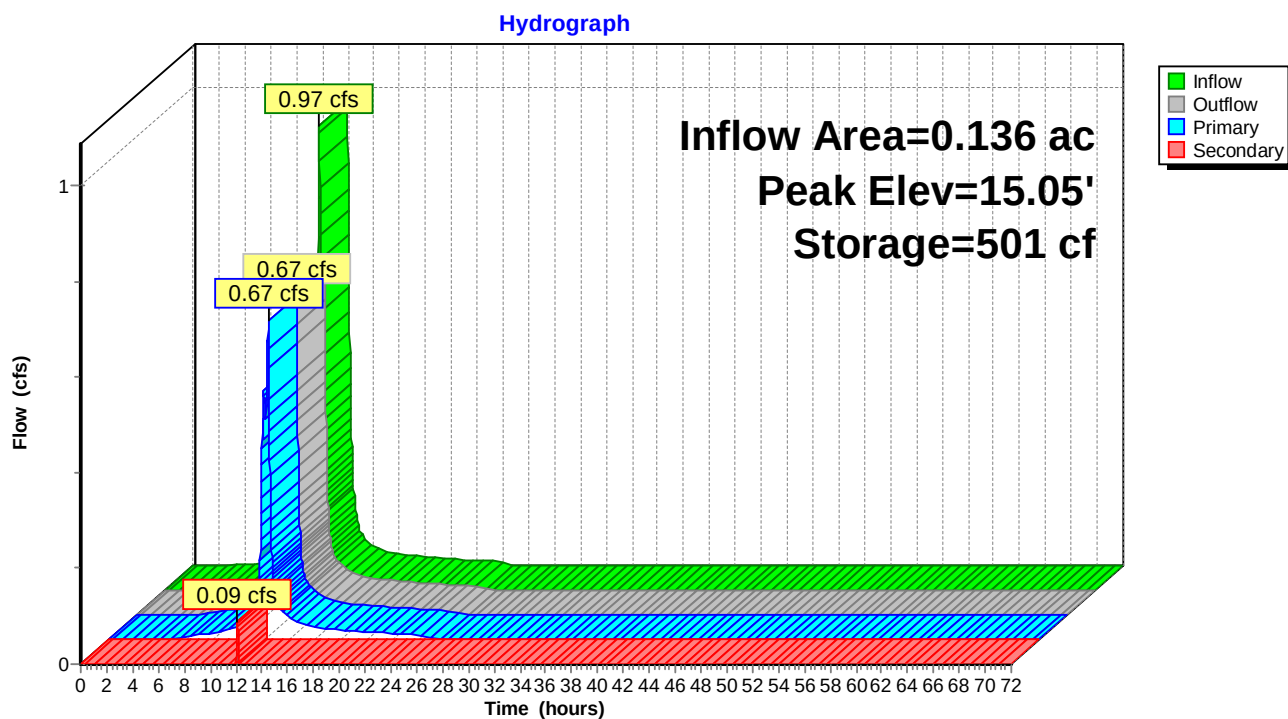
Volume	Invert	Avail.Storage	Storage Description
#1	13.86'	7,773 cf	Porous Asphalt Section (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.86	903	0.0	0	0
13.87	903	40.0	4	4
14.62	903	40.0	271	275
14.63	903	20.0	2	276
15.03	903	20.0	72	349
15.04	12,000	100.0	65	413
15.50	20,000	100.0	7,360	7,773

Device	Routing	Invert	Outlet Devices
#1	Primary	13.91'	6.0" Round Culvert L= 43.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.91' / 13.70' S= 0.0049 ' / ' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf
#2	Secondary	15.04'	43.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=0.60 cfs @ 12.32 hrs HW=15.03' TW=14.40' (Dynamic Tailwater)↑**1=Culvert** (Inlet Controls 0.60 cfs @ 3.03 fps)**Secondary OutFlow** Max=0.09 cfs @ 12.10 hrs HW=15.05' TW=14.60' (Dynamic Tailwater)↑**2=Sharp-Crested Rectangular Weir** (Weir Controls 0.09 cfs @ 0.28 fps)

Pond PA-3: Porous Asphalt #3



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

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Summary for Pond PA-4: Porous Asphalt #4

Inflow Area = 0.168 ac, 70.97% Impervious, Inflow Depth = 6.54" for 100-YR event
 Inflow = 1.25 cfs @ 11.96 hrs, Volume= 0.092 af
 Outflow = 0.82 cfs @ 12.07 hrs, Volume= 0.091 af, Atten= 34%, Lag= 6.7 min
 Primary = 0.68 cfs @ 12.36 hrs, Volume= 0.086 af
 Secondary = 0.33 cfs @ 12.06 hrs, Volume= 0.006 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Peak Elev= 15.04' @ 12.06 hrs Surf.Area= 12,260 sf Storage= 678 cf

Plug-Flow detention time= 28.5 min calculated for 0.091 af (99% of inflow)

Center-of-Mass det. time= 24.6 min (795.8 - 771.3)

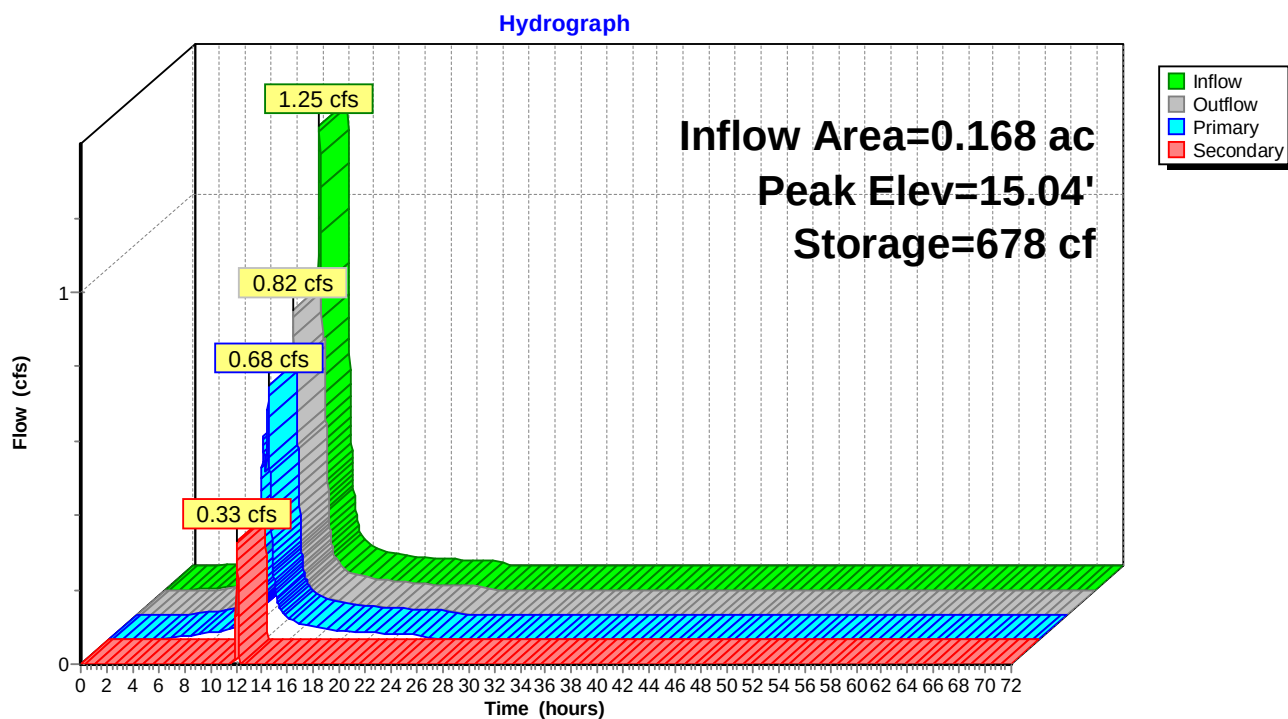
Volume	Invert	Avail.Storage	Storage Description
#1	13.84'	8,169 cf	Porous Asphalt Section (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.84	1,097	0.0	0	0
13.85	1,097	40.0	4	4
14.60	1,097	40.0	329	333
14.61	1,097	20.0	2	336
15.01	1,097	20.0	88	423
15.02	12,000	100.0	65	489
15.50	20,000	100.0	7,680	8,169

Device	Routing	Invert	Outlet Devices
#1	Primary	13.89'	6.0" Round Culvert L= 52.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.89' / 13.70' S= 0.0037 ' / S= 0.0037 ' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf
#2	Secondary	15.02'	52.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=0.68 cfs @ 12.36 hrs HW=15.01' TW=14.19' (Dynamic Tailwater)↑**1=Culvert** (Inlet Controls 0.68 cfs @ 3.45 fps)**Secondary OutFlow** Max=0.33 cfs @ 12.06 hrs HW=15.04' TW=14.62' (Dynamic Tailwater)↑**2=Sharp-Crested Rectangular Weir** (Weir Controls 0.33 cfs @ 0.41 fps)

Pond PA-4: Porous Asphalt #4



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

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Summary for Pond PA-5: Porous Asphalt #5

Inflow Area = 0.187 ac, 78.13% Impervious, Inflow Depth = 6.76" for 100-YR event
 Inflow = 1.41 cfs @ 11.94 hrs, Volume= 0.106 af
 Outflow = 1.30 cfs @ 12.08 hrs, Volume= 0.104 af, Atten= 8%, Lag= 8.4 min
 Primary = 0.52 cfs @ 12.28 hrs, Volume= 0.097 af
 Secondary = 0.81 cfs @ 12.08 hrs, Volume= 0.008 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Peak Elev= 15.28' @ 12.09 hrs Surf.Area= 12,579 sf Storage= 1,186 cf

Plug-Flow detention time= 64.3 min calculated for 0.104 af (99% of inflow)

Center-of-Mass det. time= 57.6 min (823.8 - 766.3)

Volume	Invert	Avail.Storage	Storage Description	
#1	14.08'	4,812 cf	Porous Asphalt Section (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
14.08	2,333	0.0	0	0
14.09	2,333	40.0	9	9
14.84	2,333	40.0	700	709
14.85	2,333	20.0	5	714
15.25	2,333	20.0	187	901
15.26	12,000	100.0	72	972
15.50	20,000	100.0	3,840	4,812

Device	Routing	Invert	Outlet Devices
#1	Primary	14.13'	6.0" Round Culvert L= 109.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.13' / 14.00' S= 0.0012 ' / S= 0.0012 ' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf
#2	Secondary	15.26'	109.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=0.52 cfs @ 12.28 hrs HW=15.27' TW=14.51' (Dynamic Tailwater)↑ **1=Culvert** (Outlet Controls 0.52 cfs @ 2.63 fps)**Secondary OutFlow** Max=0.00 cfs @ 12.08 hrs HW=15.28' TW=15.34' (Dynamic Tailwater)↑ **2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

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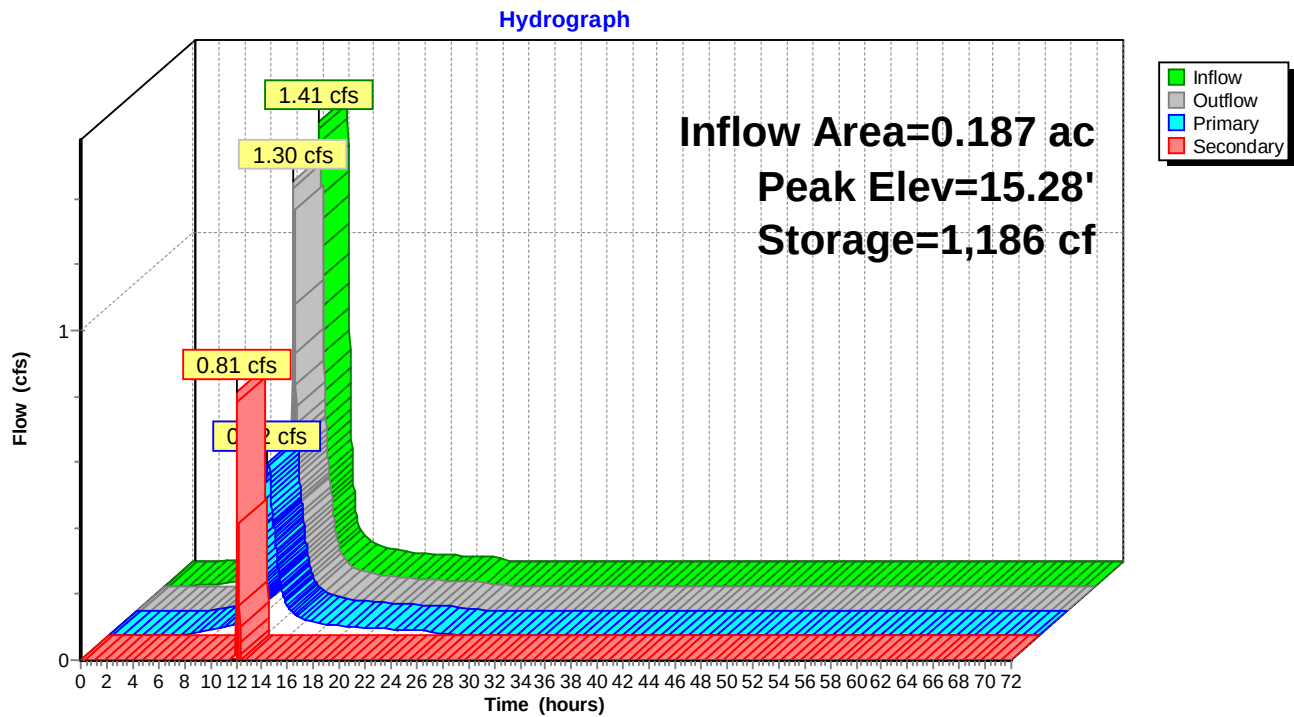
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Pond PA-5: Porous Asphalt #5



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

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Summary for Pond PA-6: Porous Asphalt #6

Inflow Area = 0.290 ac, 80.14% Impervious, Inflow Depth = 6.81" for 100-YR event
 Inflow = 2.33 cfs @ 11.93 hrs, Volume= 0.165 af
 Outflow = 3.58 cfs @ 12.12 hrs, Volume= 0.163 af, Atten= 0%, Lag= 11.3 min
 Primary = 0.55 cfs @ 12.10 hrs, Volume= 0.152 af
 Secondary = 3.04 cfs @ 12.12 hrs, Volume= 0.015 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Peak Elev= 15.84' @ 12.10 hrs Surf.Area= 14,511 sf Storage= 2,265 cf

Plug-Flow detention time= 66.6 min calculated for 0.163 af (99% of inflow)

Center-of-Mass det. time= 60.9 min (824.2 - 763.3)

Volume	Invert	Avail.Storage	Storage Description
#1	14.58'	5,106 cf	Porous Asphalt Section (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
14.58	3,085	0.0	0	0
14.59	3,085	40.0	12	12
15.34	3,085	40.0	926	938
15.35	3,085	20.0	6	944
15.75	3,085	20.0	247	1,191
15.76	12,000	100.0	75	1,266
16.00	20,000	100.0	3,840	5,106

Device	Routing	Invert	Outlet Devices
#1	Primary	14.63'	6.0" Round Culvert L= 144.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.63' / 14.30' S= 0.0023 ' / ' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf
#2	Secondary	15.76'	144.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=0.55 cfs @ 12.10 hrs HW=15.84' TW=14.60' (Dynamic Tailwater)↑ **1=Culvert** (Barrel Controls 0.55 cfs @ 2.78 fps)**Secondary OutFlow** Max=0.00 cfs @ 12.12 hrs HW=15.83' TW=16.05' (Dynamic Tailwater)↑ **2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Naima - Phase 2 - Proposed HydroCAD

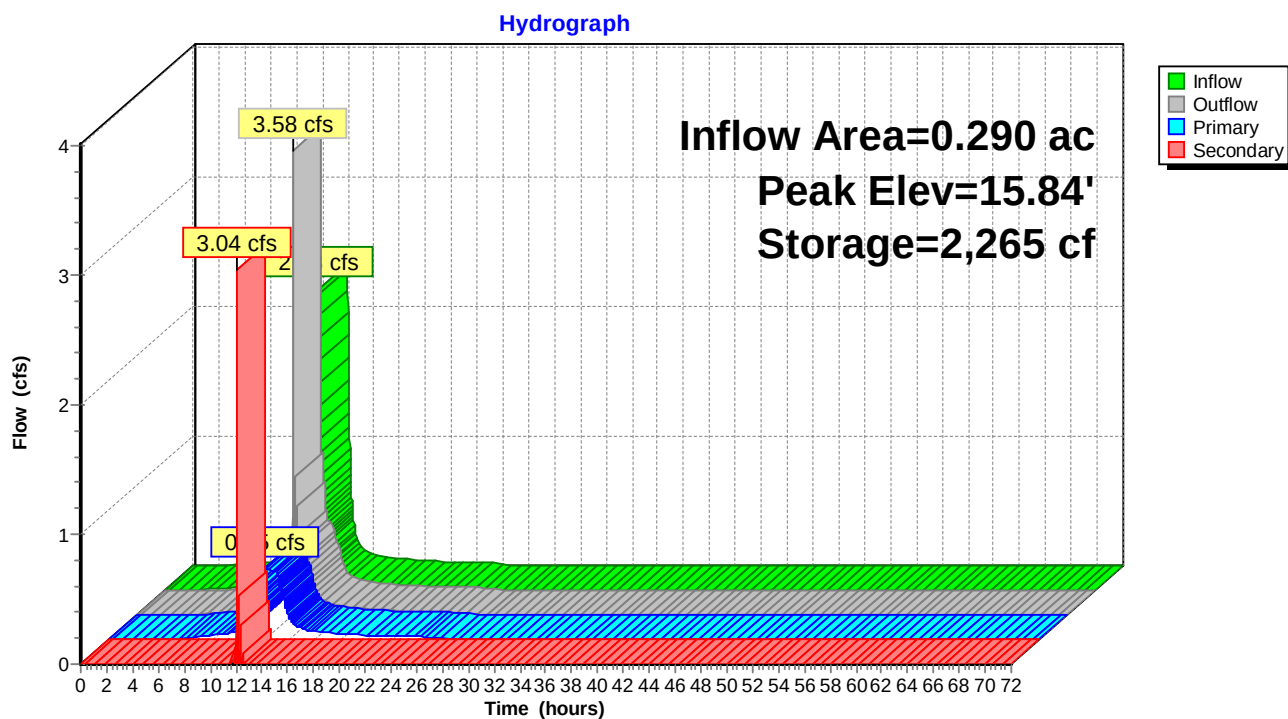
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Pond PA-6: Porous Asphalt #6



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

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Summary for Pond PA-7: Porous Asphalt #7

Inflow Area = 0.034 ac, 75.76% Impervious, Inflow Depth = 6.67" for 100-YR event
 Inflow = 0.26 cfs @ 11.93 hrs, Volume= 0.019 af
 Outflow = 0.21 cfs @ 12.03 hrs, Volume= 0.019 af, Atten= 20%, Lag= 5.9 min
 Primary = 0.21 cfs @ 12.03 hrs, Volume= 0.019 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2

Peak Elev= 16.89' @ 12.03 hrs Surf.Area= 387 sf Storage= 94 cf

Plug-Flow detention time= 26.5 min calculated for 0.019 af (99% of inflow)

Center-of-Mass det. time= 20.6 min (788.9 - 768.3)

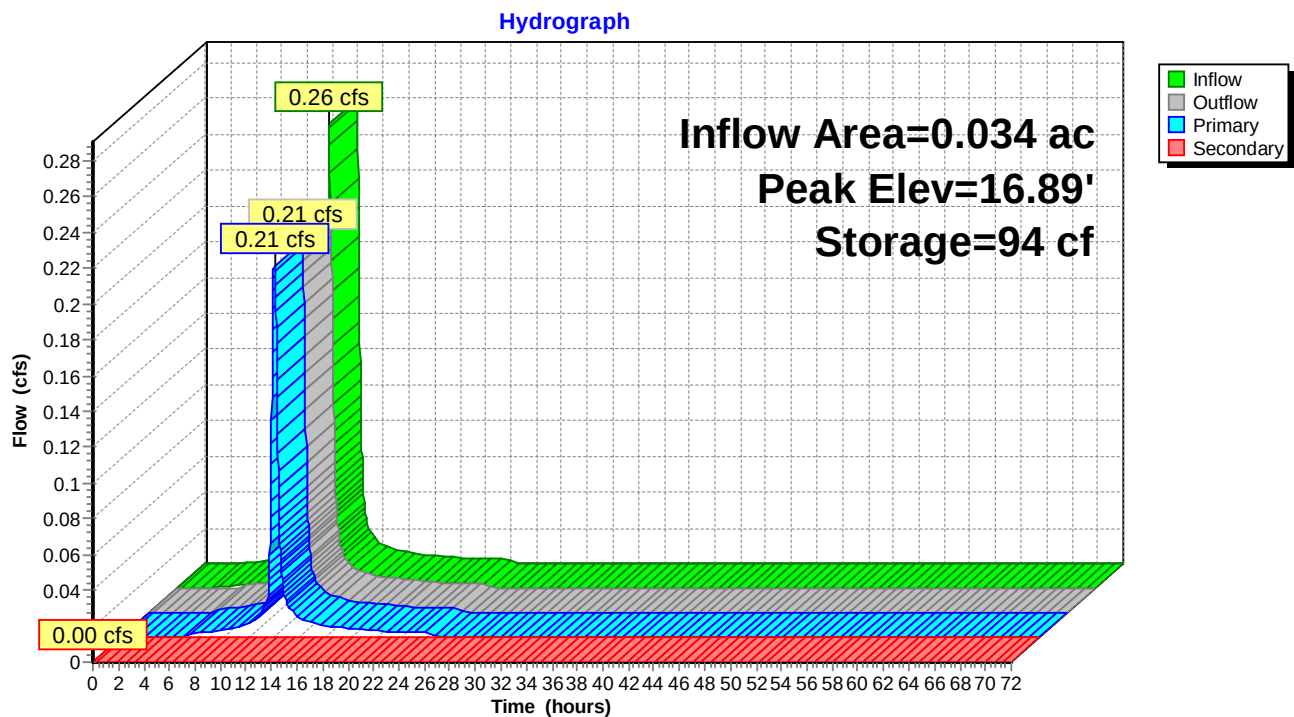
Volume	Invert	Avail.Storage	Storage Description
#1	16.28'	4,851 cf	Porous Asphalt Section (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
16.28	387	0.0	0	0
16.29	387	40.0	2	2
17.04	387	40.0	116	118
17.05	387	20.0	1	118
17.45	387	20.0	31	149
17.46	12,000	100.0	62	211
17.75	20,000	100.0	4,640	4,851

Device	Routing	Invert	Outlet Devices
#1	Primary	16.33'	4.0" Round Culvert L= 18.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 16.33' / 16.20' S= 0.0072 ' / S= 0.0072 ' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf
#2	Secondary	17.46'	18.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=0.21 cfs @ 12.03 hrs HW=16.89' TW=14.60' (Dynamic Tailwater)↑**1=Culvert** (Inlet Controls 0.21 cfs @ 2.38 fps)**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=16.28' TW=17.34' (Dynamic Tailwater)↑**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond PA-7: Porous Asphalt #7



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

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Summary for Pond SDMH-1: Proposed SDMH West of Bldgs

Inflow Area = 1.512 ac, 62.04% Impervious, Inflow Depth = 6.27" for 100-YR event
Inflow = 6.25 cfs @ 11.94 hrs, Volume= 0.789 af
Outflow = 6.25 cfs @ 11.94 hrs, Volume= 0.789 af, Atten= 0%, Lag= 0.0 min
Primary = 6.25 cfs @ 11.94 hrs, Volume= 0.789 af

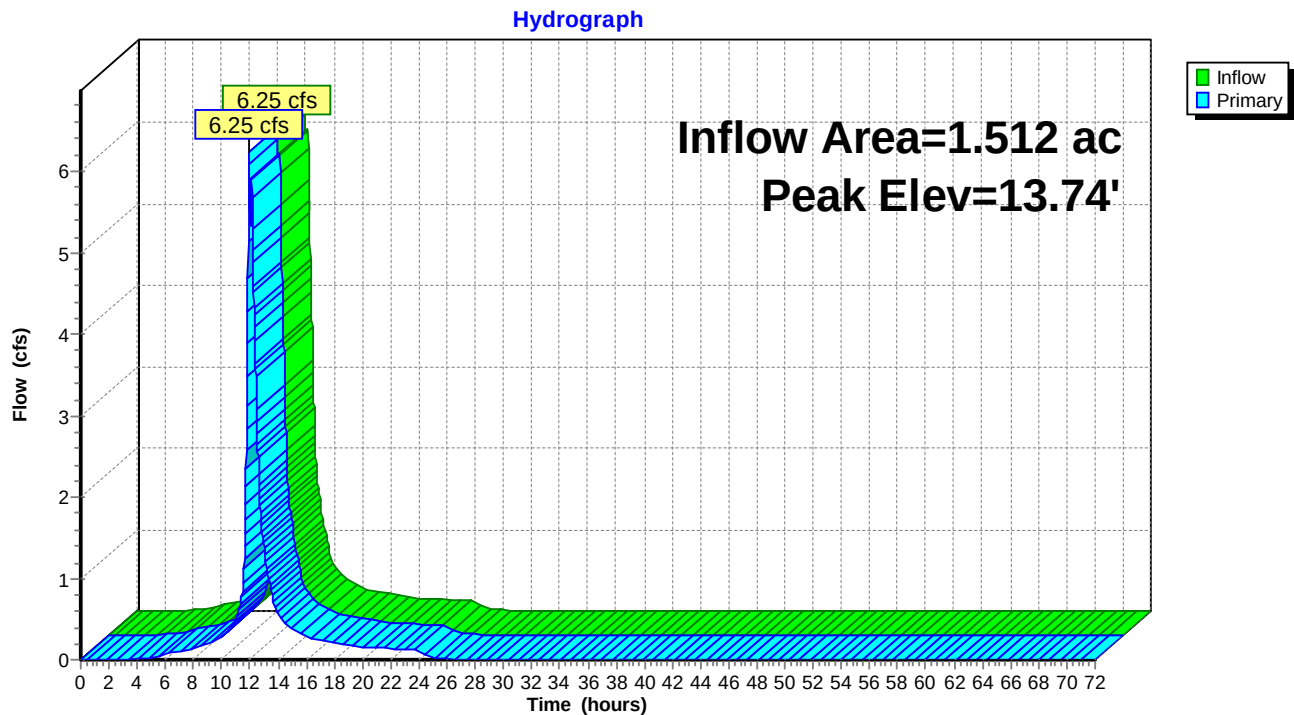
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 13.74' @ 11.94 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	16.00'	2.0" x 2.0" Horiz. Orifice/Grate X 11.00 columns X 11 rows C= 0.600 in 24.0" x 24.0" Grate (84% open area) Limited to weir flow at low heads
#2	Primary	12.00'	15.0" Round Culvert L= 172.1' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 12.00' / 10.14' S= 0.0108 ' ' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.23 sf

Primary OutFlow Max=6.24 cfs @ 11.94 hrs HW=13.74' TW=0.00' (Dynamic Tailwater)

- 1=Orifice/Grate (Controls 0.00 cfs)
- 2=Culvert (Inlet Controls 6.24 cfs @ 5.09 fps)

Pond SDMH-1: Proposed SDMH West of Bldgs



Naima - Phase 2 - Proposed HydroCAD

Prepared by RAUCH inc.

HydroCAD® 10.00-26 s/n 02413 © 2020 HydroCAD Software Solutions LLC

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

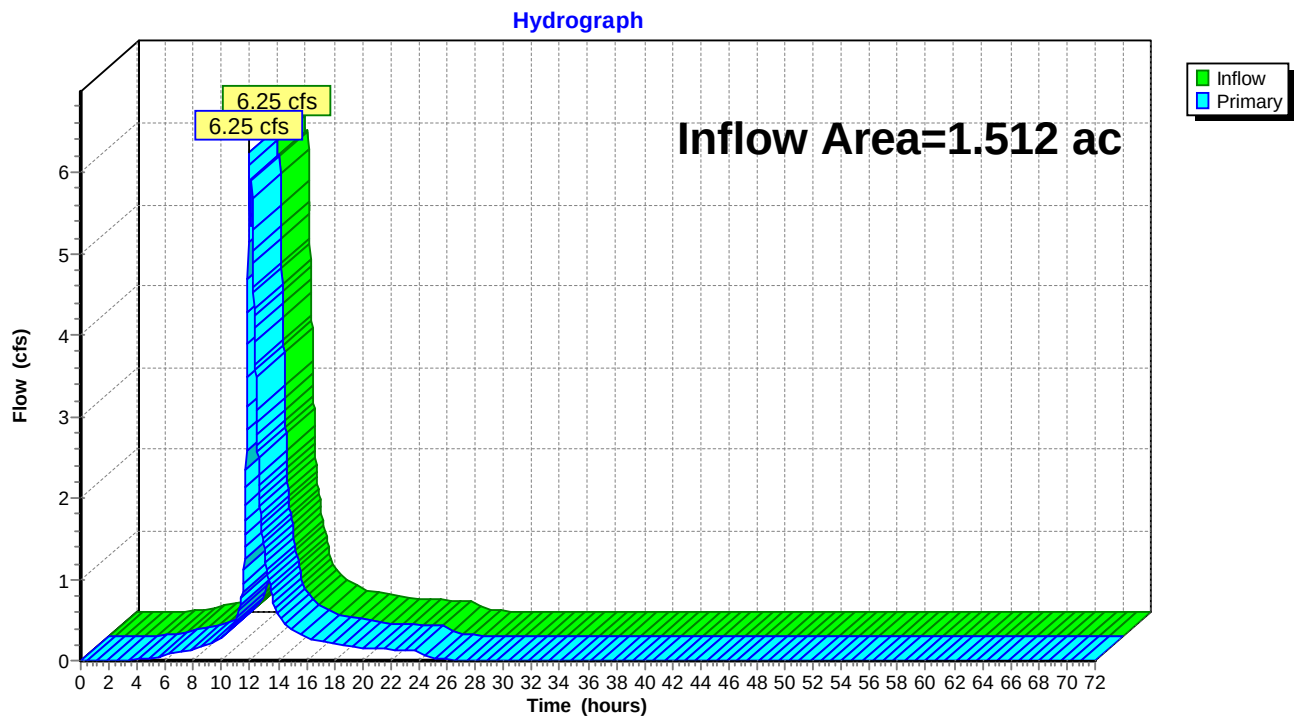
Printed 02/22/23

Summary for Link SP-1: SDMH 20201 - At Intersection of Jowite and Moton

Inflow Area = 1.512 ac, 62.04% Impervious, Inflow Depth = 6.27" for 100-YR event
Inflow = 6.25 cfs @ 11.94 hrs, Volume= 0.789 af
Primary = 6.25 cfs @ 11.94 hrs, Volume= 0.789 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs

Link SP-1: SDMH 20201 - At Intersection of Jowite and Moton





Section 5 – Web Soil Survey Report



United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for

NAIMA



Preface

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

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

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

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

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

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

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Contents

Preface	2
How Soil Surveys Are Made	5
Soil Map	8
Soil Map.....	9
Legend.....	10
Map Unit Legend.....	11
Map Unit Descriptions.....	11
Talbot County, Maryland.....	13
MtcA—Mattapex silt loam, 0 to 2 percent slopes, Mid-Atlantic Coastal Plain.....	13
OtA—Othello silt loams, 0 to 2 percent slopes, Mid-Atlantic Coastal Plain.....	14
UbB—Udorthents, borrow area, 0 to 5 percent slopes.....	16
References	19

How Soil Surveys Are Made

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

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

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

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

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

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

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

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

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

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

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

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

Custom Soil Resource Report

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

Soil Map

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

Custom Soil Resource Report Soil Map



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

 Blowout

 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water

 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot

 Sinkhole

 Slide or Slip

 Sodic Spot

 Spoil Area

 Stony Spot

 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

Water Features

 Streams and Canals

Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Talbot County, Maryland
Survey Area Data: Version 17, Jun 11, 2020

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

Date(s) aerial images were photographed: Jun 16, 2014—Oct 20, 2017

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
MtcA	Mattapex silt loam, 0 to 2 percent slopes, Mid-Atlantic Coastal Plain	9.7	56.3%
OtA	Othello silt loams, 0 to 2 percent slopes, Mid-Atlantic Coastal Plain	6.0	34.9%
UbB	Udorthents, borrow area, 0 to 5 percent slopes	1.5	8.8%
Totals for Area of Interest		17.3	100.0%

Map Unit Descriptions

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

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

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

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate

pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

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

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

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

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

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

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

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

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

Talbot County, Maryland

MtcA—Mattapex silt loam, 0 to 2 percent slopes, Mid-Atlantic Coastal Plain

Map Unit Setting

National map unit symbol: 2thwt
Elevation: 0 to 90 feet
Mean annual precipitation: 42 to 46 inches
Mean annual air temperature: 55 to 59 degrees F
Frost-free period: 190 to 260 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Mattapex and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mattapex

Setting

Landform: Swales, flats, depressions
Landform position (three-dimensional): Dip, talf
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Parent material: Silty eolian deposits over fluviomarine sediments

Typical profile

Ap - 0 to 11 inches: silt loam
BE - 11 to 15 inches: silt loam
Bt - 15 to 36 inches: silt loam
2C1 - 36 to 60 inches: fine sandy loam
2C2 - 60 to 80 inches: loamy sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: About 20 to 40 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water capacity: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): 2w
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Nassawango

Percent of map unit: 10 percent

Custom Soil Resource Report

Landform: Flats, terraces
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Othello, drained

Percent of map unit: 5 percent
Landform: Depressions, swales, flats
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Hydric soil rating: Yes

Crosiadore

Percent of map unit: 5 percent
Landform: Depressions, flats
Landform position (three-dimensional): Dip
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Hydric soil rating: No

OtA—Othello silt loams, 0 to 2 percent slopes, Mid-Atlantic Coastal Plain

Map Unit Setting

National map unit symbol: 2thwn
Elevation: 0 to 100 feet
Mean annual precipitation: 40 to 50 inches
Mean annual air temperature: 46 to 68 degrees F
Frost-free period: 210 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Othello, drained, and similar soils: 48 percent
Othello, undrained, and similar soils: 28 percent
Minor components: 24 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Othello, Drained

Setting

Landform: Flats, depressions, swales
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Talf, dip
Down-slope shape: Linear, concave
Across-slope shape: Linear, concave
Parent material: Silty eolian deposits over fluviomarine deposits

Typical profile

Ap - 0 to 9 inches: silt loam
Btg - 9 to 29 inches: silt loam
2BCg - 29 to 34 inches: sandy loam
2Cg - 34 to 80 inches: loamy sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: About 10 to 20 inches
Frequency of flooding: None
Frequency of ponding: Rare
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water capacity: Moderate (about 8.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C/D
Hydric soil rating: Yes

Description of Othello, Undrained

Setting

Landform: Swales, drainageways, flats, depressions
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Dip, talf
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Parent material: Silty eolian deposits over fluviomarine deposits

Typical profile

Oe - 0 to 2 inches: peat
A - 2 to 4 inches: silt loam
Eg - 4 to 10 inches: silt loam
Btg - 10 to 29 inches: silt loam
2BCg - 29 to 35 inches: sandy loam
2Cg - 35 to 80 inches: loamy sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: About 0 to 10 inches
Frequency of flooding: None
Frequency of ponding: Occasional
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water capacity: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w

Custom Soil Resource Report

Hydrologic Soil Group: C/D

Hydric soil rating: Yes

Minor Components

Crosiadore

Percent of map unit: 7 percent

Landform: Fluvio-marine terraces, depressions, flats

Landform position (two-dimensional): Summit, footslope

Landform position (three-dimensional): Tread, dip, talf

Down-slope shape: Linear, concave

Across-slope shape: Linear, concave

Hydric soil rating: No

Mattapex

Percent of map unit: 7 percent

Landform: Broad interstream divides, flats, depressions, swales

Landform position (two-dimensional): Summit, footslope

Landform position (three-dimensional): Talf, dip

Down-slope shape: Linear, concave

Across-slope shape: Linear, concave

Hydric soil rating: No

Fallsington, undrained

Percent of map unit: 5 percent

Landform: Flats, depressions, swales, drainageways

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Talf, dip

Down-slope shape: Linear, concave

Across-slope shape: Linear, concave

Hydric soil rating: Yes

Kentuck, undrained

Percent of map unit: 5 percent

Landform: Flats, depressions, swales

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Talf, dip

Down-slope shape: Linear, concave

Across-slope shape: Linear, concave

Hydric soil rating: Yes

UbB—Udorthents, borrow area, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: 1vh0s

Elevation: 0 to 150 feet

Mean annual precipitation: 42 to 48 inches

Mean annual air temperature: 52 to 58 degrees F

Frost-free period: 180 to 220 days

Farmland classification: Not prime farmland

Map Unit Composition

Udorthents, borrow area, and similar soils: 75 percent

Minor components: 25 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udorthents, Borrow Area

Setting

Landform: Flats, knolls

Down-slope shape: Linear, convex

Across-slope shape: Linear, convex

Parent material: Fluvio-marine sediments fluvio-marine deposits

Typical profile

AC - 0 to 2 inches: loam

C - 2 to 80 inches: sandy loam

Properties and qualities

Slope: 0 to 5 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to very high (0.06 to 19.98 in/hr)

Depth to water table: About 20 to 40 inches

Frequency of flooding: None

Frequency of ponding: None

Available water capacity: Moderate (about 7.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: C

Hydric soil rating: No

Minor Components

Udorthents, loamy

Percent of map unit: 10 percent

Landform: Broad interstream divides

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: No

Askecksy, drained

Percent of map unit: 5 percent

Landform: Swales, flats, depressions

Landform position (three-dimensional): Talf

Down-slope shape: Concave, linear

Across-slope shape: Linear, concave

Hydric soil rating: Yes

Klej

Percent of map unit: 5 percent

Landform: Flats, depressions

Down-slope shape: Linear, concave

Across-slope shape: Linear, concave

Custom Soil Resource Report

Hydric soil rating: No

Water

Percent of map unit: 5 percent

Hydric soil rating: No

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TOWN OF EASTON

14 South Harrison Street
Easton, Maryland 21601

April 3, 2023

Dear Resident,

The Easton Planning Commission will hold a public meeting on **Thursday, April 20, 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 an application for 22, 30, 36 & 44 Jowite Street has been filed to request Sketch Site Plan approval to redevelop Tax Map 104, Parcels 1369, 1370, 1371 and 1372; and Sketch Stormwater Management approval for the construction of new residential structures.

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
410-822-1943 ssmith@eastonMD.gov

Phone: Fax:
<http://www.chespub.com>

Cust. AcctID:	Creation Date: 04/03/23
	Ad Date: 04/05/23
	Class: 10
Name: Joanne Drummer	Ad ID: 3018322
Company: TOWN OF EASTON (L)	Ad Taker: AHALL
Address: PO Box 520	Sales Person: 503
EASTON, MD 21601	Words: 373
	Lines: 70
Telephone: (410) 822-2525	Agate Lines: 324
Email:	Depth: 9.0
Description: Planning Comm Meeting	Inserts: 2
	Blind Box:

Other Charges:	\$0.00	Total:	\$472.50
Discount:	\$0.00		
Surcharge:	\$0.00	Paid Amount:	- \$0.00
Credits:	\$0.00		
Bill Depth:	9.0	Amount Due:	\$472.50

CREDIT CARD DETAILS

PT	CT	CN	Number	Exp.	Amnt.

Publication	Start	Stop	Inserts	Cost
The Star Democrat	04/05/23	04/05/23	1	\$472.50



Ad Note: Sign posted on April 4, 2023

Customer Note:

Planning Commission MEETING AGENDA Thursday, April 20, 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 March 16, 2023 meeting.
b.	Approval of the Draft Comprehensive Plan and Zoning Code Workshop Summary from February 2, 2023.
c.	Approval of the Draft Zoning Code Amendment Workshop Summary from March 2, 2023.
3.	Old Business
a.	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 OEA, Parcel 0990 R-7A Zoning District: R-7A Nature of Request: Amendment to a previously approved Temporary Use Permit to include temporary approval for the addition of a kitchen facility.
4.	New Business
a.	Applicant: Benjamin and Patricia Philips File No.: 2023-0908 Location: 715 Lomas Street Tax Map 103, Grid OEA, Parcel 0866, Lot 85 Zoning District: R-10A Nature of Request: Supplemental Waiver Request of one (1) parking space for a proposed handicap ramp to be located over a portion of the existing driveway.
b.	Applicant: Catherine Joyce File No.: 2023-0903 Location: 220 S. Harrison Street Tax Map 105, Grid OEA, Parcel 2107 Zoning District: R-10A Nature of Request: Site Plan approval to request a parking space waiver.
c.	Applicant: Callahan Signs File No.: 2023-0912 Agent: John Callahan Location: 28464 Marlboro Avenue Tax Map 034, Grid 003, Parcel 0020, Lot 5 Zoning District: PUD Nature of Request: Signage permit approval to allow a business wall sign to occupy one building with a common entrance.
d.	Applicant: Easton Utilities Commission File No.: 2023-0982 Agent: Madeline Selick Barabance Location: 8870 Commerce Drive Tax Map 101, Grid 002, Parcel 004, Lot 9 Zoning District: BC Nature of Request: Sketch Plan and Sketch Stormwater Management approval for a new Water Treatment Plant.
e.	Applicant: Nanna Ventures, LLC File No.: 2023-0983 Agent: Kendrick Daly Location: 22, 30, 38 & 44 Jowle Street Tax Map 104, Grid OEA, Parcels 1369, 1370, 1371, 1372 R-7A, with PRO overlay Zoning District: R-7A Request: Site Plan approval to redevelop parcels 1369, 1370, 1371 and 1372, and Sketch Stormwater Management approval for the construction of new residential structures.
6.	Discussion Item
6.	Adjournment.
3018322.SD 4/5/2023	

We Appreciate Your Business!
Thank You Joanne Drummer!