



Planning Commission MEETING AGENDA

Thursday, March 21, 2024 - 1:00 PM
Council Chambers, Easton Town Office
14 S Harrison Street

1. **Call to Order**

2. **Approval of Minutes.**

- a. Approval of the Decision Summary from the February 15, 2024 meeting.

3. **Old Business**

4. **New Business**

- a. **Applicant:** John and Kimberly Wooters
File No.: 2024 - 1137
Location: 7365 Brett Road
Tax Map 108, Grid 000, Parcel 2777E, Lot 23
Zoning District: R-10A
Nature of Request: Conceptual approval for the construction of a 24' x 30' pole building with a 2' x 12' concrete apron, and a 4' x 4' service pad. In addition, the applicant is requesting a Supplemental Waiver for a portion of the garage which will reside inside the 100' perennial stream buffer zone.
- b. **Applicant:** 128 S. West Street LLC
File No.: 2024 - 1148
Location: 128 S. West Street
Tax Map 104, Grid 0EA, Parcel 1990
Zoning District: CB
Nature of Request: The request to allow the use of a portable on demand storage (POD) to remain at 128 S. West Street on a long term basis has been withdrawn from the March 21, 2024 Planning Commission agenda.
- c. **Applicant:** Blue Crab Self Storage LLC

File No.: 2022 - 780
Location: 28860 Fausley Wood Court
Tax Map 025, Grid 016, Parcel 0138,
Lot 6C
Zoning District: I
Nature of Request: Sketch Site Plan approval to construct a warehouse and climate-controlled self-storage building with associated stormwater management, parking, and landscaping.

d. **Applicant:** Lane Engineering, LLC
File No.: 2024 - 1129
Location: 7872 Ocean Gateway
Tax Map 105, Grid 000, Parcel 2990
Zoning District: CG
Nature of Request: Sketch Site Plan approval for the redevelopment of a two-story medical clinic, and a one-story retail store with overhead office space. The applicant is also seeking a minor subdivision to create two (2) lots.

5. Discussion Item

- a. Draft review of the Inclusionary Zoning Ordinance.
- b. Potential Revisions to the Zoning and Subdivision Text Amendments.
- c. Continued discussion of New Town Design Guidelines.

6. Adjournment.



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

Thursday, February 15, 2024 at 1:00 p.m.
Town Hall Chamber 2
14 S. Harrison Street, Easton, Maryland

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
Tom Klein
William Ryall
Michael Ports, Alternate

Absent:

Commission Members:

Victoria McAndrews

Staff:

Miguel Salinas, Planning and Zoning Director
Lynn B. Thomas, Town Planner - Long Range
Nicholas Johnson, Town Planner - Current
Sharon VanEmburch *Esq.*, Town Attorney
Rick VanEmburch, Town Engineer
Samantha Smith, Administrative Specialist

Staff:

Joseph Mayer, Plan Reviewer

1. Call to Order — Chairperson Dindinger called the meeting to order at 1:00 pm.

2. Decision Summary Review —

a. January 18, 2024 - The Commission noted the following correction to the draft decision summary:

i. Line 155: Strike: “...review draft findings of a park board study”; Add:
“draft language for the Parks and Recreation 2024 Annual Plan”.

Vice Chairperson Toussaint moved to approve the January 18, 2024 Decision Summary with amendments. Commissioner Ryall seconded the motion.

Vote 5 - 0 - 1

FOR: 5 - Dindinger, Toussaint, Klein, Ports, Ryall

AGAINST: 0

ABSTAIN: 0

ABSENT: 1 - McAndrews

57
58
59 **3. Old Business**
60

- 61 **a. Applicant:** **Shoregate of Cannery Commercial LLC**
62 **File No.:** **2023 - 996**
63 **Location:** 503 North Street, Easton, MD 21601
64 Tax Map 103, Grid 0EA, Parcel 0756, Lots 3 & 4
65 **Zoning:** BC
66 **Request:** The applicant is seeking architectural approval of three (3)
67 multifamily residential buildings and an amenity building. This application
68 received sketch site plan approval by the Commission for the construction of the
69 residential buildings and amenity building at their December 21, 2023 meeting
70 subject to the following conditions:
71

- 72 1. The applicant shall return to the Planning Commission for architectural
73 approval, and to address all concerns regarding the architectural design.
74 2. The applicant shall examine the feasibility to provide a playground or tot
75 lot within the Stormwater area.
76 3. The applicant shall explore all options for a pedestrian crosswalk at North
77 Street/Elizabeth Street with the Town Engineer and Commissioner Klein.
78

79 **Staff Presentation:**

80 Miguel Salinas, Director of Planning and Zoning
81 Lynn B. Thomas, Town Planner - Long Range
82

83 **Applicant Presentation:**

84 Brett Ewing, Lane Engineering
85 Lauren White, Fisher Architecture
86

87 **Public Comment:**

88 Tom Ledvina, Talbot Preservation Association
89

90 **Public Comment Written:**

91 Catherine Liebl, 412 Salmon Avenue
92

93 **Vice Chairperson Toussaint moved to approve the architecture as submitted.**
94 **Commissioner Ryall seconded the motion.**
95

96 Vote 5 - 0 - 1
97 FOR: 5 - Dindinger, Toussaint, Klein, Ports, Ryall
98 AGAINST: 0
99 ABSTAIN: 0
100 ABSENT: 1 - McAndrews
101

b. Applicant: **Habitat for Humanity**
File No.: **2022 - 722 / 2024 - 1109**
Location: 310 South Street, Easton, MD 21601
Tax Map 104, Grid 0EA, Parcel 1864, Lot 10
Zoning: R-7A
Request: The applicant is seeking an amendment to a previously approved Planned Redevelopment (PR) Overlay for a reduced side-yard setback. In July of 2022, the applicant received site plan approval for the development of five (5) single family detached units on the property located at 35, 40, 108 and 119 South Locust Lane and 310 South Street, and is now seeking a reduction of the western building restriction line from 6' to the proposed 5' building setback at 310 South Street. On April 11, 2022 the applicant received a Certificate of Appropriateness from the Historic District Commission (HDC) for a new single family dwelling at 310 South Street. The Certificate of Appropriateness has lapsed six (6) months after issuance of the certificate, and the applicant is anticipated to return to the HDC at their February 12, 2024 for the approval of a two-story single-family structure. The scope of work remains unchanged from what was originally approved by the Commission in July, 2022.

Staff recommends the following condition:

1. The applicant shall obtain a Certificate of Appropriateness from the Historic District Commission, and address all outstanding ESDR review comments.

Staff Presentation:

Miguel Salinas, Director of Planning and Zoning
Lynn B. Thomas, Town Planner - Long Range

Applicant Presentation:

William B. Stagg

Public Comment — None

**Commissioner Ports moved to approve the amended application as submitted.
Commissioner Klein seconded the motion.**

Vote	<u>5 - 0 - 1</u>
FOR:	5 - Dindinger, Toussaint, Klein, Ports, Ryall
AGAINST:	0
ABSTAIN:	0
ABSENT:	1 - McAndrews

c. Applicant: **Armistead, Lee, Rust & Wright, P.A.**
File No.: **2021 - 473**
Location: 29659 Matthewstown Road, Easton, MD 21601

148 Tax Map 026, Grid 0020, Parcel 0045
149 **Zoning:** PUD with a base zoning district of A-1
150 **Request:** The applicant is seeking an extension of a previously approved
151 Planned Unit Development (PUD) that entitles the development of the Gannon
152 Range mixed-use subdivision through December 31, 2024. The project was
153 approved by the Town Council pursuant to Ordinance No. 773 with an effective
154 date of March 13, 2022. On December 20, 2023 the Improvement Plans for
155 Gannon Range were approved.

156
157 **Update:** On February 5, 2024, the Town Council approved Ordinance 803,
158 amending the language of PUD approvals for multi-phased projects in Chapter 28
159 of the Town Zoning Code. Under the new Ordinance, a multi-phased PUD
160 approval will lapse at three (3) years rather than the current two (2) years.
161 Considering that Town Ordinances are effective 20 days after the Mayor's
162 signature, Ordinance 803 will not be effective until February 25, 2024 at the
163 earliest. Although it may be unnecessary, it would be proactive for the
164 Commission to consider and act upon this request prior to the March 13, 2024
165 expiration.

166
167 **Staff Presentation:**
168 Miguel Salinas, Director of Planning and Zoning
169 Lynn B. Thomas, Town Planner - Long Range
170

171 **Applicant Presentation:**
172 Zachary A. Smith *Esq.*
173

174 **Public Comment** — None
175

176 **Commissioner Ryall moved to grant the PUD extension request through December**
177 **31, 2024. Commissioner Klein seconded the motion.**
178

179

Vote	5 - 0 - 1
FOR:	5 - Dindinger, Toussaint, Klein, Ports, Ryall
AGAINST:	0
ABSTAIN:	0
ABSENT:	1 - McAndrews

184
185

186 **4. New Business**
187

188 **a. Applicant:** Rise Up Dover Road LLC
189 **File No.:** 2024 - 1079
190 **Location:** 618 Dover Road, Easton, MD 21601
191 Tax Map 105, Grid 0EA, Parcel 1021
192 **Zoning:** CB

Request: The applicant is seeking sketch site plan and architectural approval to construct a one-story addition comprising 928.2 square feet (SF) of gross floor area (GFA) to the rear of the existing building located within the Planned Redevelopment (PR) Overlay District at 618 Dover Road.

Staff recommends the following condition:

1. The applicant shall address all outstanding ESDR review comments, and obtain all applicable permits from the Town’s Building Inspection Division and Talbot County Health Department.

Staff Presentation:
Miguel Salinas, Director of Planning and Zoning
Lynn B. Thomas, Town Planner - Long Range

Applicant Presentation:
Zachary A Smith *Esq.*
Ozzie Jimenez, Rise Up Coffee Roasters LLC

Public Comment:
Kendrick Daly

Vice Chairperson Toussaint moved to approve the site plan and architecture subject to the condition that the applicant shall address all outstanding Easton Staff Development Review (ESDR) comments, and that the applicant shall obtain all applicable permits from the Town’s Building Inspection Division and Talbot County Health Department. Commissioner Ports seconded the motion.

<u>Vote</u>	<u>5 - 0 - 1</u>
FOR:	5 - Dindinger, Toussaint, Klein, Ports, Ryall
AGAINST:	0
ABSTAIN:	0
ABSENT:	1 - McAndrews

- b. Applicant:** GLMV Architecture LLC
File No.: 2024 - 1120
Location: 8091 Ocean Gateway, Easton, MD 21601
Tax Map 105, Grid 000, Parcel 2844, Lot 2
Zoning: CG
Request: The applicant is seeking architectural approval for reconstruction to the exterior of the property located at 8091 Ocean Gateway for a standalone Taco Bell restaurant destroyed by a structure fire in October of 2023. The proposed reconstruction includes new signage, updated lighting and drive-thru equipment, and new furnishings in the dining area.

Staff recommends the following condition:

- 239
240 1. The applicant shall obtain all applicable permits from the Town’s Building
241 Inspection Division and Talbot County Health Department.
242

243 **Staff Presentation:**

244 Lynn Thomas, Town Planner

245 Miguel Salinas, Director of Planning and Zoning
246

247 **Applicant Presentation:**

248 Rosa Paddock, GLMV Architecture LLC

249 Dan Pellissier, Southpaw
250

251 **Public Comment** — None
252

253 **Commissioner Klein moved to approve the architecture subject to the condition that**
254 **the applicant shall obtain all applicable permits. Vice Chairperson Toussaint**
255 **seconded the motion.**
256

257	<u>Vote</u>	<u>5 - 0 - 1</u>
258	FOR:	5 - Dindinger, Toussaint, Klein, Ports, Ryall
259	AGAINST:	0
260	ABSTAIN:	0
261	ABSENT:	1 - McAndrews

262
263

264 **5. Discussion Items**
265

- 266 a. Draft review of the Inclusionary Zoning Ordinance — Mr. Miguel Salinas
267 introduced the most recent draft of the Inclusionary Zoning Ordinance and
268 provided additional background information on its components. Pursuant to § 3-
269 114 of the Annotated Code of Maryland’s requirement for local jurisdictions to
270 address an affordable housing element within their Comprehensive Plan, § 7-401
271 of the Annotated Code gives local legislative bodies the authority to enact local
272 laws that impose inclusionary zoning, and awards density bonuses to create
273 affordable housing units; and restricts the use, cost, and resale of housing to
274 ensure that the objectives of addressing affordable housing are imposed.
275

276 A draft of this Ordinance was first written in 2005 before it was tabled and
277 subsequently updated and discussed before the Council in 2023 as part of three
278 Housing Task Force workshops. Attachments to the draft ordinance include an
279 analysis and examples of median family income and income limits for Easton and
280 Talbot County, and a comparison of several jurisdictions within and outside of the
281 State of Maryland that have similar ordinances. The Commission will begin more
282 detailed discussion on this draft of the Inclusionary Zoning Ordinance at a future
283 meeting or meetings, and is anticipated to forward a recommendation to the Town

Council prior to the introduction of new legislation.

- b. Attainable Housing Task Force — Subsequent to a Housing Task Force workshop in July of 2023, the Council advocated for the formation of a Housing Work Group to review and revise the current draft of the Inclusionary Zoning Ordinance. This work group included Council Members Maureen Curry and Rev. Elmer Davis; Mayor Megan Cook; Town Manager Don Richardson; Town Attorney Sharon VanEmburch; Planning and Zoning Director Miguel Salinas; Long Range Town Planner Lynn Thomas; Holly Dekarske from the Easton Economic Development Corporation; and Jim Bent from the Affordable Housing Board. Subsequent to a joint Council and Commission workshop primarily focused on missing middle housing, the Council supported the formation of an Attainable Housing Task Force that is larger and broader than the work group. This task force intends to meet over the course of four months with the objective of providing the Council a comprehensive set of strategies that furthers attainable housing in Easton. The Commission discussed potential members on the task force.

Chairperson Dindinger called for a brief recess at 2:25 p.m. The meeting was called to Order at 2:30 p.m.

- c. Continued discussion of New Town Design Guidelines — Vice Chairperson Toussaint initiated the discussion with a word association exercise using the popular New York Times word puzzle “Connections”. Using the list of words inspired by the Three Principles of Architecture at their January meeting, the Commission developed common themes and associated categories for the words including: Community & Space; Sustainability & Investment; Functionality, Interface, Engagement & Use; Context; and Emotional Reaction, Interactive & Sensory. Vice Chairperson Toussaint and the Commission will continue to further develop this language to be easily interpreted within the Comprehensive Plan and that will bridge inconsistencies to be found between the Zoning Ordinance and the Comprehensive Plan.

- 6. **Adjournment** — Chairperson Dindinger moved to adjourn. Commissioner Klein seconded the motion. The meeting was adjourned at 3:33 p.m.



TOWN OF
EASTON
ENGINEERING DEPARTMENT

DATE: February 26th, 2024
TO: John Wooters – Applicant
Cc: Rick Van Emburgh – Town Engineer
Aaron Goller – EUC
Miguel Salinas - Planning and Zoning
FROM: Sierra Clem – Engineering Department
SUBJECT: 7365 Brett Road - Stream Buffer Review

Our office has reviewed the revised Application for the Subject project received on 2/21/2024.

Section 28-1015 of the Town of Easton Zoning Ordinance indicates that "The Planning and Zoning Commission may consider and approve alternative measures to a 100' (or 50') grass stream buffer. Such alternate Buffers must achieve the same Stormwater Management and Nutrient Removal levels as the required 100 (or 50) foot buffer."

The Engineering Department finds that the proposed stormwater management approach to pipe rooftop runoff to popup emitters located outside the 100' buffer will provide the overland flow path equivalent to the intended Buffer and effectively provide the same nutrient removal levels as the stream buffer.

I recommend the Planning and Zoning Commission approve the alternative measures.

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



Easton Utilities Commission

Plan Review Comments

Date: Wednesday, January 31, 2024

To: Joe Mayer; Nicholas Johnson; Sierra Clem

From: Kia Gibbs on behalf of Aaron Goller, PE

No. of Pages: 1

Regarding: 7365 Brett Road

Phase: Sketch Site Plan

SUBM: 1

Status: **Approved as Noted**

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

ITEM:	DRAWING /	
	PAGE	COMMENTS:
1	General	What is the proposed usage of the structure? Garage? In-law suite? Etc.



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

Date of Hearing: March 21, 2024

4a

**PLANNING COMMISSION
PUBLIC HEARING
STAFF REPORT**

SUBJECT: 7365 Brett Road

ELECTION WARD: Ward 3

CRITICAL ACTION DATE: At the pleasure of the Commission

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

APPLICANT: John Wooters & Kimberly Wooters

DOCUMENT CREATED ON: March 13, 2024

PURPOSE: The applicant is seeking a Supplemental Waiver Request approval to construct a 720 square foot (SF) one-story pole building garage that has a portion of the structure within the 100' Perennial Stream Buffer Zone.

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

APPLICATION INFORMATION:	
APPLICANT: John Wooters & Kimberly Wooters	REPRESENTATIVE: John Wooters & Kimberly Wooters
PARCELS/ACREAGE:	
Parcel Information	Acreage
Map 108, Grid 00EA, Parcel 2777E, Lot 23	0.407
ACCEPTANCE DATE: March 4, 2024	
LOCATION: 7365 Brett Road, Lot 23	
EXISTING ZONING R-10A	EXISTING LAND USE: Single Family Dwelling.
HISTORIC DISTRICT: Not Applicable	FUTURE LAND USE MAP: Residential

CONTEXT:

Location/Site Access – The subject property is located on the Southside of Brett Road.

Existing Conditions – The subject property is currently a single family dwelling.

Surrounding Properties

- 7368 Brett Road – R10A
- 7367 Brett Road – R10A
- 7279 Shirley Drive - R10A
- 7291 Shirley Drive - R10A
- 29368 4th Street - R10A
- 29366 4th Street - R10A

Figure 1: Vicinity Map



PROPOSAL: The applicant is proposing a 24'x 30' pole building garage. The applicant is seeking approval to allow a portion of the structure to be within the 100' Perennial Stream Buffer. The proposed alternative buffer would measure 86.4'.

BACKGROUND: The applicant has submitted a Building Application #23-18413 to the Easton Building Inspection Division on July 18, 2023 for review of the proposed garage. On February 26, 2024, the Engineering Department recommended the Planning Commission approve the alternative measures. Approval is pending the outcome of the Planning Commission Meeting.

OUTSTANDING ISSUES: None

ZONING ANALYSIS:

SECTION 28 – 1015 SETBACKS FROM STREAMS

No structure or impervious surface shall be located within 100 feet of any perennial stream or 50 feet of any intermittent stream. For the purposes of this Section, the terms perennial and intermittent stream shall refer to any feature identified as such on the most recent United States Geologic Survey's 7.5-minute quadrangle of the area, or as confirmed by field verification and at the discretion of the Town Planner. In cases where a greater setback may be required by other rules or regulations (e.g. Critical Area Law) the greater setback shall be required.

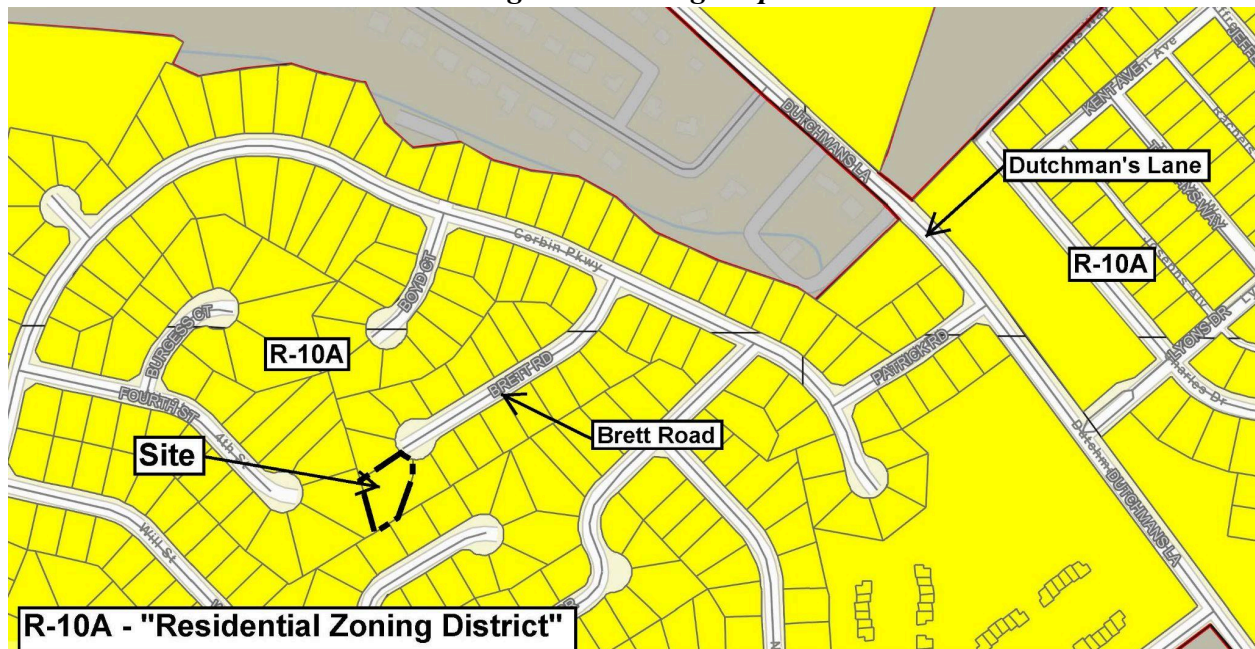
The Planning and Zoning Commission may consider and approve alternative measures to a 100' (or 50') grass stream buffer. Such alternate Buffers must achieve the same Stormwater

Management and Nutrient Removal levels as the required 100 (or 50) foot buffer.

Analysis- Per the Section of the Zoning Code cited above, the Commission is charged with reviewing and approving alternative measures to a 100' grass stream buffer. The proposed alternate 86.4' Buffer achieves the same Stormwater Management and Nutrient Removal levels as the required 100-foot buffer.

POLICY ANALYSIS:

Figure 2: Zoning Map



RECOMMENDED CONDITION:

Staff recommends the applicant obtain building permit approval for the installation of the garage.

DRAFT MOTIONS:

1. I move that the Planning Commission approve the waiver request and the applicant complete the building permit process for the installation of the garage.

OR

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

OR

3. I move an alternate motion.

ATTACHMENTS:

1. 2024-01-18 TOE P&Z Review 7365 Brett Road, paper copy & PDF
2. 2024-01-31 7365 Brett Road - EUC Comments, paper copy & PDF
3. 2024-02-22 - PC Concept Use and Design Application, paper copy & PDF
4. 2024-02-22 - Supplemental Waiver Request Application, paper copy & PDF
5. 2024-02-29 ReviewLetter-Engineering Department, paper copy & PDF



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

RECEIVED
FEB 21 2024
TOWN OF EASTON

Planning Commission Concept, Use, and Design Application

Site Information

Structure's Floor Area	720 ft ²	Structure's Square Feet	720
Area of Disturbance	7160 ft ²	Number of Dwelling Units	1
Property Size	Acres	Square Feet	
Address	7365 Brett Rd Easton MD 21601		
Tax Map	0108	Grid	0000
Zoning District	R-10A	Parcel	2777E
Other Information		Lot	23
Existing Use		Historic District	Y ☐ N ☒
		PRD	Y ☐ N ☐

Owner

Name	John & Kimberly Wooters		
Mailing Address	7365 Brett Rd Easton, MD 21601		
Telephone No.	410-310-4464	Email	jwooters521@goeaston.net

Applicant / Agent

Name	John & Kimberly Wooters		
Mailing Address	7365 Brett Rd Easton, MD 21601		
Telephone No.	410-310-4464	Email	jwooters521@goeaston.net

General Information:

Construction of a 24' x 30' pole building w 2" x 12" concrete apron and a 4' x 4' service pad. All floor area, pad and apron will be 4" thick concrete.

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

John Wooters	Kimberly Wooters
2-19-24	2-19-24
John Wooters	Kimberly Wooters

For Office Use Only

Planned Commission Meeting Date	03/21/2024	2024 - 1137
Review Fee Amount	\$250.00	
Review Fee Paid Date	02/22/2024	
ESDR Y / N	Date	

Revised 02-2019



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

RECEIVED
FEB 21 2024
TOWN OF EASTON

Supplemental Waiver Request Application

Waiver Request Type

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

Project Information

Address 7365 Brett Rd Easton MD 21601
Tax Map 0108 Grid 0000 Parcel 2777E Lot 23
Zoning District R-10A PC Meeting Date _____ Historic District Yes ☐ No ☒
Owner or Agent John & Kimberly Wooters
Mailing Address 7365 Brett Rd Easton MD 21601
Telephone No. 410-310-4404 Email jwooters521@geaston.net

Request Details

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

Construction of a 24' x 30' pole building garage, a portion of which will reside inside the 100' perennial stream buffer zone. Town engineering has approved a method of directing roof rain runoff outside the 100' buffer zone that sufficiently provides nutrient removal.

☐ Ordinance Section Supporting Waiver Request.

28-1015

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

John Wooters Kimberly Wooters
2-19-24 2-19-24
John Wooters Kimberly Wooters

For Office Use Only

Planned Commission Meeting Date	<u>03/21/2024</u>
Review Fee Amount	<u>\$50.00</u>
Review Fee Paid Date	<u>02/21/2024</u>
ESDR Y / N Date	<u>-</u>

2024 - 1137 / W 24-01
Revised 02-2019

PLAT INFORMATION OBTAINED FROM PLATS:
63/43 AND 60/05

BRETT ROAD
(60' RIGHT-OF-WAY)



EXISTING GRAVEL DRIVEWAY LOCATED
PAST PROPOSED GRAVEL DRIVEWAY
EDGE AND UNDER PROPOSED POLE
BUILDING TO BE REMOVED AND
REPLACED WITH APPROVED FILL
PER T.O.E. SPECIFICATIONS

EXISTING PROPERTY LINE
EXISTING 5' UTILITY EASEMENT
EXISTING 8' SETBACK

PROP. GRAVEL DRIVEWAY EDGE
PROP. 16'X2' CONCRETE APRON

PROP. 4'X4' CONCRETE
PAD LANDING AREA

PROPOSED 24'X30'
POLE BUILDING

BUILDING RIDGE

EXISTING PATIO

EXISTING 6'X6'
HOT TUB

APPROX. 188 SQ. FT. OF PROPOSED
BUILDING LOCATED IN PERENIAL
STREAM BUFFER

4" PVC FROM FRONT AND REAR
DOWN SPOUTS TO POP-UP EMITTER
(SEE SHEET 3 FOR DETAILS)

POP-UP EMITTER W/
12' SEPARATION PER
T.O.E. SPECIFICATIONS

EXISTING 15'X30'
ABOVE GROUND POOL

****ALL PROPOSED POLE BUILDING ROOFTOP RUNOFF
WILL BE CONVEYED TO THE PROPOSED POP-UP EMITTERS,****

Item #	Description	Imper. Area Existing (sq. ft.)	Imper. Area Removed (sq. ft.)	Imper. Area Proposed (sq. ft.)	Imper. Area Total (sq. ft.)	Imperv. Net Incr. Total (sq. ft.)
1	Ex. Driveway (West)	2,118	-660		1,458	
2	Ex. Driveway (East)	288			288	
3	Ex. Dwelling	1,880			1,880	
4	Ex. Patio	154			154	
5	Ex. Hot Tub	36			36	
6	Ex. Above Ground Pool	432			432	
7	Prop. Pole Building			720	720	
8	Prop. Conc. Landing Pad			16	16	
9	Prop. Conc. Build. Apron			32	32	
Totals (sq. ft.)		4,908	-660	885	5,016	108

7365 BRETT ROAD JOHN WOOTERS AND KIMBERLY WOOTERS MAP 0108 / GRID 0000 / PARCEL 2777E			
PROPOSED POLE BUILDING			
DSND:	N / A	SCALE: 1 inch = 20 feet	DWG. NO.: N / A
DWN:	N / A	DATE: DECEMBER 2023	
CHKD:	N / A	FILE NO.: N / A	SHEET: 1 OF 3
APPD:	N / A	APP DATE: N / A	



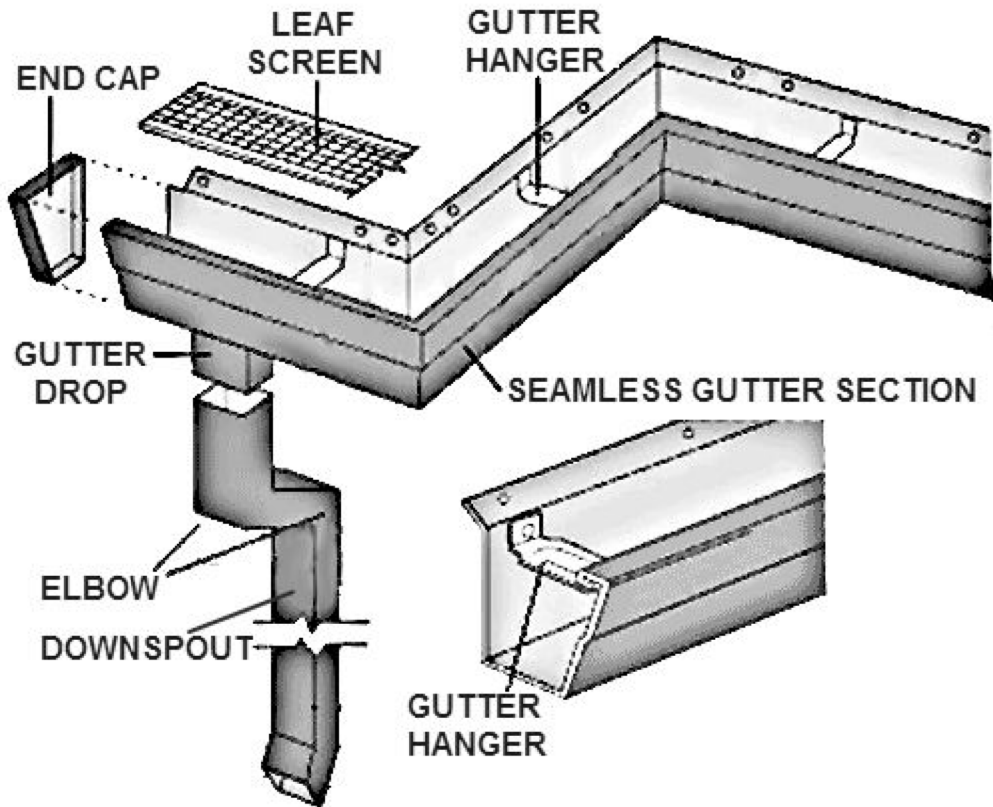
**PVC PIPING TO POP-UP EMITTER DETAIL
(NOT TO SCALE)**



**POP-UP EMITTER DETAIL
(NOT TO SCALE)**



**DOWN SPOUT CONNECTOR
(NOT TO SCALE)**



**GUTTER DETAIL
(NOT TO SCALE)**

7365 BRETT ROAD JOHN WOOTERS AND KIMBERLY WOOTERS MAP 0108 / GRID 0000 / PARCEL 2777E			
DETAILS AND NOTES			
DSND:	N / A	SCALE:	
DWN:	N / A	DATE:	DECEMBER 2023
CHKD:	N / A	FILE NO.:	N / A
APPD:	N / A	APP DATE:	N / A
		N / A	
		3 OF 3	



TOWN OF EASTON

14 South Harrison Street
Easton, Maryland 21601

March 6, 2024

Dear Resident,

The Easton Planning Commission (Commission) will hold a public meeting on **Thursday, March 21, 2024 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 application 2024 - 1137 has been filed on behalf of John and Kimberly Wooters to request conceptual approval for the construction of a 24' x 30' pole building with a 2' x 12' concrete apron, and a 4' x 4' service pad on the property located at 7365 Brett Road, also known as Tax Map 108, Grid 000, Parcel 2777E, Lot 23. In addition, the applicant is requesting a supplemental waiver to permit a portion of the garage to be constructed inside the 100' perennial stream buffer zone.

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 will be available for review one week prior to the scheduled meeting 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 email at ssmith@eastonMD.gov.

Samantha N. Smith

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

APG Media of Chesapeake, LLC

29088 Airpark Drive
Easton, MD 21601

Phone: Fax:

INVOICE
03/04/24

Cust. AcctID:	Creation Date: 03/04/24
	Ad Date: 03/06/24
	Class: 10
Name: Joanne Drummer	Ad ID:
Company: TOWN OF EASTON (L)	Words: 339
Address: PO Box 520	Lines: 54
EASTON, MD 21601	Agate Lines: 261
	Depth: 7.25
	Inserts: 2
	Blind Box:
Telephone: (410) 822-2525	
Description: Planning Comm Meeting	

Other Charges:

Total:

Discount:

Paid Amount:

Surcharge:

Credits:

Amount Due:

Bill Depth:

CREDIT CARD DETAILS

PT	CT	CN	Number	Exp.	Amnt.

Publication	Start	Stop	Inserts
The Star Democrat	03/06/24	03/06/24	

Ad Note:

Sign posted on March 4, 2024

Customer Note:

We Appreciate Your Business!
Thank You Joanne Drummer!

Planning Commission
MEETING AGENDA
Thursday, March 21, 2024 - 1:00 PM
Council Chambers, Easton Town Office
14 S Harrison Street

Please continue to check our website at:
<https://eastonmd.gov/129/Agendas-Minutes>
for agenda updates

- Call to Order
- Approval of Minutes.
 - Approval of the Decision Summary from the February 15, 2024 meeting.
- Old Business
- New Business
 - Applicant: John and Kimberly Wooders
File No.: 2024 - 1137
Location: 7365 Brent Road
Tax Map 108, Grid 000, Parcel 2777E, Lot 23
Zoning District: R-10A
Nature of Request: Conditional approval for the construction of a 24' x 30' pole building with a 2' x 12' concrete apron, and a 4' x 4' service pad. In addition, the applicant is requesting a Supplemental Waiver for a portion of the garage which will reside inside the 100' potential stream buffer zone.
 - Applicant: 128 S. West Street LLC
File No.: 2024 - 1148
Location: 128 S. West Street
Tax Map 104, Grid 0EA, Parcel 1990
Zoning District: CR
Nature of Request: Request to allow the use of a portable on demand storage (POD) to remain at 128 S. West Street on a long term basis.
 - Applicant: Blue Crab Self Storage LLC
File No.: 2022 - 780
Location: 28091 Fairway Wood Court
Tax Map 025, Grid 016, Parcel 0138, Lot 6C
Zoning District: Sketch Site Plan approval to construct a warehouse and climate-controlled self storage building with associated stormwater management, parking, and landscaping.
 - Applicant: Lane Engineering
File No.: LLC 2024 - 1129
Location: 7877 Ocean Gateway
Tax Map 106, Grid 000, Parcel 2990 CG
Nature of Request: Sketch Site Plan approval for the redevelopment of a two-story medical clinic, and a one-story retail store with overhead office space. The applicant is also seeking a minor subdivision to create two (2) lots.
- Discussion Item
 - Draft review of the Inclusionary Zoning Ordinance.
 - Potential Revisions to the Zoning and Subdivision Text Amendments.
 - Continued discussion of New Town Design Guidelines.
- Adjournment

3048003 SD 3/6/2024





TOWN OF EASTON

14 South Harrison Street
Easton, Maryland 21601

March 6, 2024

Dear Resident,

The Easton Planning Commission (Commission) will hold a public meeting on **Thursday, March 21, 2024 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 application 2024 - 1148 has been filed on behalf of 128 S. West Street LLC to request conceptual approval to allow the temporary use of a Portable On Demand Storage (PODS) structure to remain long term (more than 60 days) on the property located at 128 S. West Street, also known as Tax Map 104, Grid 0EA, Parcel 1990.

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 will be available for review one week prior to the scheduled meeting 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 email at ssmith@eastonMD.gov.

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Phone: Fax:

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Planning Commission
MEETING AGENDA
Thursday, March 21, 2024 - 1:00 PM
Council Chambers, Easton Town Office
14 S Harrison Street

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 - Applicant: 128 S. West Street LLC
File No.: 2024 - 1148
Location: 128 S. West Street
Tax Map 104, Grid 0EA, Parcel 1990
Zoning District: CR
Nature of Request: Request to allow the use of a portable on demand storage (POSD) to remain at 128 S. West Street on a long term basis.
 - Applicant: Blue Crab Self Storage LLC
File No.: 2022 - 780
Location: 28691 Fairway Wood Court
Tax Map 025, Grid 016, Parcel 0138, Lot 6C
Zoning District: Sketch Site Plan approval to construct a warehouse and climate-controlled self storage building, with associated stormwater management, parking, and landscaping.
 - Applicant: Lane Engineering
File No.: LLC 2024 - 1129
Location: 7972 Ocean Gateway
Tax Map 106, Grid 000, Parcel 2980 CG
Zoning District: Sketch Site Plan approval for the redevelopment of a two-story medical clinic, and a one-story retail store with overhead office space. The applicant is also seeking a minor subdivision to create two (2) lots.
- Discussion Item
 - Draft review of the Inclusionary Zoning Ordinance.
 - Potential Revisions to the Zoning and Subdivision Text Amendments.
 - Continued discussion of New Town Design Guidelines.
- Adjournment

3048003 SD 3/6/2024



We Appreciate Your Business!
Thank You Joanne Drummer!



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

Date of Hearing: March 21, 2024

4c

**PLANNING COMMISSION
PUBLIC HEARING
STAFF REPORT**

SUBJECT: 28860 Fausley Wood Court – Blue Crab

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: Blue Crab Self Storage, LLC

DOCUMENT CREATED ON: March 11, 2024

PURPOSE: The applicant is seeking site plan approval from the Planning Commission to construct a 4,400 square foot (SF) one-story climate-controlled storage building and a 4,400 square foot (SF) one-story office and storage building with associated improvements.

RECOMMENDATION: Staff supports Planning Commission approval of the proposed site plan subject to a staff-recommended condition (see below).

APPLICATION INFORMATION:	
APPLICANT: Blue Crab Self Storage, LLC	REPRESENTATIVE: Blue Crab Self Storage, LLC Christine M. Dayton, Architect % Josh Startt
PARCELS/ACREAGE:	
Parcel Information	Acreage
Map 025, Grid 0016, Parcel 0138, Lot 6C	1.559
ACCEPTANCE DATE: March 4, 2024	LOCATION: 28860 Fausley Wood Court
EXISTING ZONING I	EXISTING LAND USE: Vacant parcel within the Mistletoe Hall Commerce Business Park.
HISTORIC DISTRICT: Not Applicable	FUTURE LAND USE MAP: Industrial

CONTEXT:

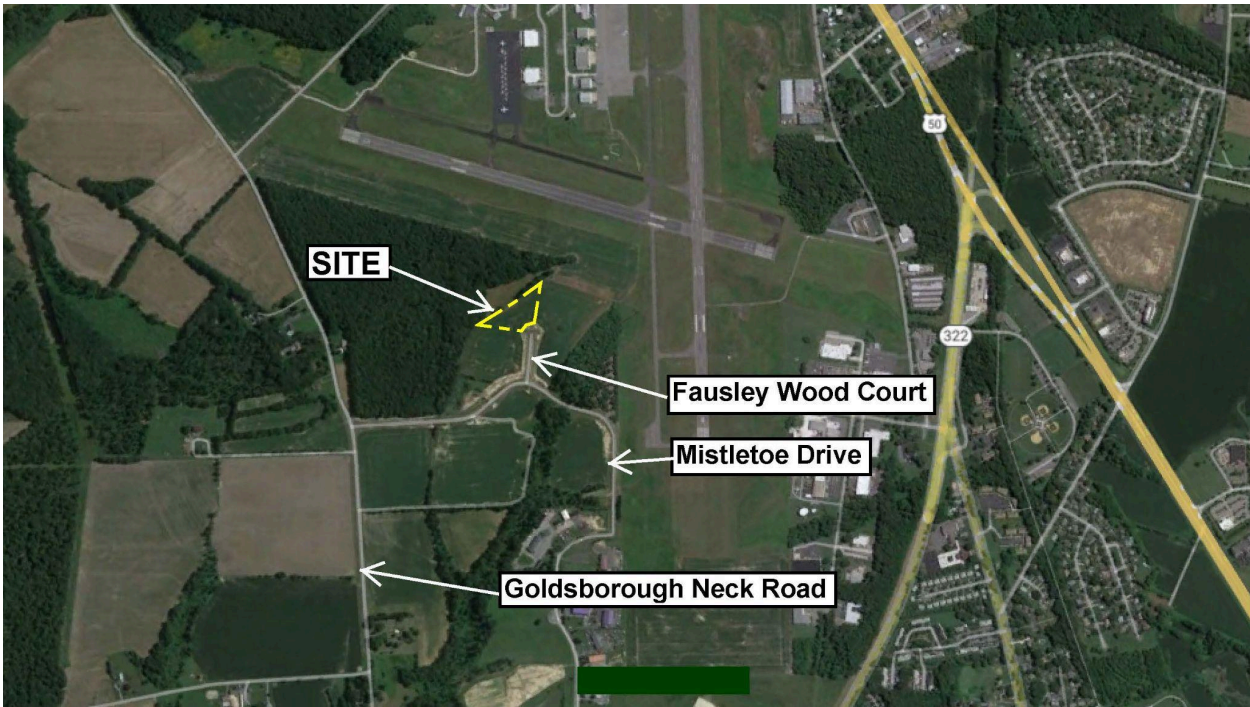
Location/Site Access – The subject property is located within the “Mistletoe Hall Commerce Business Park” along Fausley Wood Court, fronting on the Northwest side of the cul-de-sac.

Existing Conditions – The subject property is currently unimproved.

Surrounding Properties

- 29137 Newnam Road – Talbot County, MD
- 28857 Fausley Wood Court – I
- 28852 Fausley Wood Court – I
- Parcel 138, Goldsborough Neck Road – I

Figure 1: Vicinity Map



PROPOSAL: The applicant is proposing to construct a one-story climate-controlled storage building (Building #1) and a one-story office and storage building (Building #2) with associated improvements.

BACKGROUND: The applicant submitted an application to the Easton Staff Development Review Committee on February 28, 2024.

ZONING ANALYSIS:

A. Permissible Land Uses

28-201 table 2.1 (5) 506

I												
506	Contractor’s Office w/ outside storage	--	--	--	--	–	SE	–	P	P		

28-201 Table 2.1 (5) 515

I												
515	Climate-controll ed self storage*	SE	--	--	--	SE	P	P	P	P		

Analysis –The proposed project is presented and described by the Applicant as a one-story climate-controlled storage building and a one-story office building with associated storage. The project is categorized as a “*Climate-controlled self storage*” (Building #1) and as a “*Contractor’s Office with outside storage*” (Building #2). The proposed uses are permitted by-right 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
--	--------------	------------------------	------------------------	------------------------	-------

	Industrial Buildings				
31	Light industrial structures and facilities (not enumerated below)	1 per 2,000 sf GFA	1 space per 300 sf GFA	--	

	Industrial Buildings				
39	Mini-warehouse or self storages	4 spaces plus 2 for manager’s quarters.	--	--	

Total Site Parking Required:

Building 1

Mini-warehouses or self storage: 4 spaces plus 2 for manager’s quarters required- Minimum
 No requirements - Maximum
Total spaces provided: 7

Building 2

Light Industrial Structures: 1 Space /2,000 SF GFA; 3 Spaces Required- Minimum
 1 Space /300 SF GFA; 15 Spaces Required- Maximum
Total spaces provided: 5

Total overall spaces provided: 12

Analysis- The applicant has provided twelve (12) off-street parking spaces. The owner does not foresee a demand for more parking spaces in the future, due to the nature of their business operations. A manager’s quarters has been proposed in Building #2 to accommodate Building #1 for climate-controlled storage.

C. Industrial District Development Standards

Table 1. Development Standards		
I Zoning District	Standard	Proposed
Setbacks	Front = 25 feet Side = 10 feet Side = 25 feet if adjacent to residentially zoned properties. Rear = 30 feet Rear = 25 feet if adjacent to residentially zoned properties.	Front = 40 feet Side = 10 feet Side – Not applicable. Rear = 30 feet
Lot Size (min.)	40,000 square feet	67,910 square feet
Lot Frontage (min.)	100 feet	101 feet
Building Envelope (min.)	30 feet x 80 feet	260 feet X 299 feet
Lot Coverage (max.)	50% (Lot Area)	30.96% (Lot Area)
Height (max.)	40 feet	18.75 Feet (Building #1) 27 feet (Building #2)
Bufferyard	Per the provisions of Section 28-1014 of the Zoning Ordinance.	Natural Bufferyard provided via Forest Conservation areas adjacent to the rear property lines. Bufferyards required on the side setbacks.

§ 309.2 of the Zoning Ordinance states that development within the Industrial District shall also meet these additional requirements:

- ***Off-street parking shall be provided in accordance with the provisions of Section 28 – 1001.***
- ***All storage areas shall be adequately screened and landscaped in accordance with provisions of Section 28 – 1014 of this Ordinance.***
- ***All on-site lighting unless approved otherwise by the Planning and Zoning Commission shall be low cut-off shielded luminaries at 18’ height and light shall not shine off-site at levels greater than 1-foot candle.***
- ***All off-street loading and unloading areas shall be screened from view by permanent decorative screens or natural planting, either of which shall be a minimum of eight (8) feet***

in height, in accordance with the provisions of Section 28 – 1014 of this Ordinance.

- *All areas not devoted to buildings or parking areas shall be landscaped and maintained in a suitable manner, in accordance with the provisions of Section 28 – 1014 of this Ordinance.*
- *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 falls under the I - Industrial District Area and meets the 28-309 Development Standards. In addition to the Development Standards, the Applicant is required to adhere to the November 5, 2021 Declaration of Covenants for Mistletoe Hall Commerce-Business Park-Book: 2916, Page: 104. **Compliance with these covenants is summarized and analyzed below.**

D. Forest Conservation

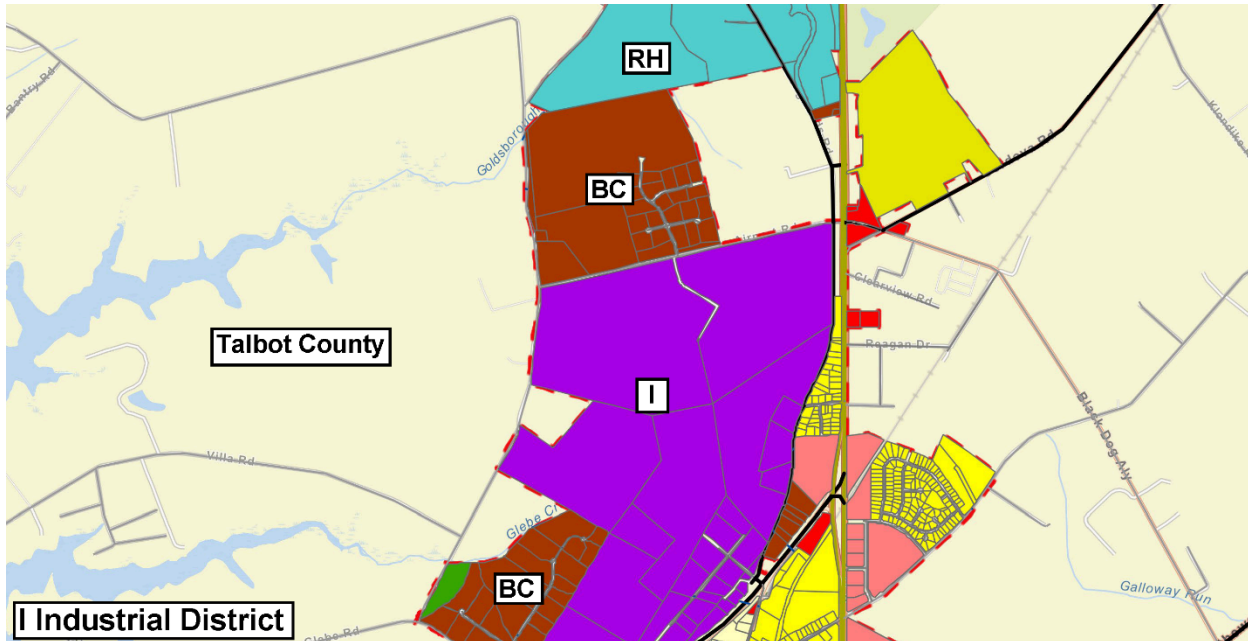
Easton Forest Conservation Ordinance #718, Article III, § 31-3.1 Relevance

A. Any person making an application for a subdivision, project plan, grading, or sediment and erosion control approval on units of land 40,000 square feet or greater after the effective date of this Ordinance.

Analysis - The site is located within the Mistletoe Hall Commerce-Business Park. Forest Conservation was approved at the original Subdivision Plat (Plat KMD 87/124).

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 development proposal provides additional shop space and warehouse in a mixed business park.*

Staff notes that the proposed development fits within the industrial nature of this business park.

(Principle #2) Natural features should determine design – Applicant's response: *There are no compelling natural features; site layout is oriented to take advantage of natural drainage patterns and to orient the building's relative to the street.*

Staff notes that there are no compelling natural features on site. Forest Conservation was approved at the original Subdivision Plat (Plat KMD 87/124).

(Principle #3) Automobiles should not determine design – *Applicant's response: Parking for the shop, warehouse and customers are provided for convenience, with all parking to be on the sides of both buildings.*

Staff notes that the applicant has provided adequate off-street parking.

(Principle #4) Ample Open Space should be provided within & around neighborhoods – *Applicant's response: At the rear of the proposed buildings is a buffer of open space that has been provided.*

Staff notes that open space is provided within the business park and was approved at the original Subdivision Plat (Plat KMD 87/124).

(Principle #5) Architecture should respect Easton's Historical Development – *Applicant's response: This application proposes architecture compatible with Easton and the Mistletoe Hall Commerce-Business Park's architectural Palette.*

(Principle #6) Signs should inform but not dominate – *Applicant's response: Not proposed.*

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: This is not applicable to this application.*

(Principle #8) Residential neighborhoods should be interesting places – *Applicant's response: This is not applicable to this application.*

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

Staff notes that although this Principle is primarily directed towards residential subdivisions, Mistletoe Hall Commerce-Business Park is connected to the Talbot Commerce Business Park to the south and has two means of access (via Glebe Road and Goldsborough Neck Road).

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 project would provide an office and a construction related warehouse and a climate-controlled self storage building 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 - The proposed use and activity will not increase traffic hazards in the surrounding area. Adequate off-street parking is provided.

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 located within an industrially zoned commerce park. Proposed use would provide an office building with an associated warehouse and a climate-controlled self storage building with 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.

DECLARATION OF COVENANTS FOR MISTLETOE HALL COMMERCE-BUSINESS PARK ANALYSIS:

MISTLETOE HALL COMMERCE-BUSINESS PARK COVENANTS

Checklist of Submission Requirements-March 21, 2024

Project Name: Blue Crab, Lot 6C

Allowable Uses	As permitted in the Zoning Code	☒	Climate-Controlled Self-Storage* and Contractor's Office without no Outside Storage are permitted by-right in the I zoning district
Prohibited Uses	<u>Prohibited Uses</u>		

	Uses and the manufacturing, processing, and storage of materials and products which cause an undue fire or health hazard to adjoining lots, or which constitute a nuisance or cause an emission of noxious odors, gasses or smoke	☒	
	<u>Prohibited Operation or Use</u>		
	No operation or uses which causes or produces the following effects outside any lot or portion of lots subject to the covenants: • Smoke • Noxious, toxic, or corrosive fumes or gasses • Obnoxious odors • Dust, dirt, or fly ash • Unusual fire or explosive hazard • Intense glare or heat • Intense vibration • Excavation, with the exception of excavation for the construction of improvements with proper protection of adjacent lots and, upon completion, shall be backfilled and disturbed ground shall be graded and stabilized	☒	
Development Standards	<u>Site Design</u>		
	Massing, scale, color, and circulation relates to adjacent buildings and to the total development	☒	
	<u>Architectural Standards</u>		
	Massing and scale of larger buildings are broken down into smaller and varied volumes	N/A	
	Buildings exceeding 20 feet in height: • Base capped with a molding or reveal placed between 2 ft. and 4 ft. in height with a depth of at least 2 inches and a	☒	

	height of at least 4 inches • Middle may include multiple stories, windows, doors, and balconies capped with a molding or reveal which shall have a depth of at least 2 inches and a height of at least 4 inches • Cap includes the area from the middle to the roof and includes a cornice, eave, parapet, or overhang		
	Major architectural expressions employed such as corner massing, oversized windows-entrances and roof form to demarcate and anchor key locations	☒	
	Solid walls to not exceed 60 feet in length without a minimum 10 foot facade return, offset, or change in plane	☒	The proposed entry porticos have been enclosed to match the building facade.
	<u>Exterior Materials</u>		
	Building finish applied to all publicly-visible sides and neighboring lots and streets	☒	
	Traditional, durable, and environmentally sustainable materials. Examples include: • Brick or or tile burned clay with color and texture to be approved • Concrete masonry units with no plain concrete block on the front of any building, no exposed gray concrete block on any elevation, and gray cement color to be coated • Poured in place or tilt-up concrete walls with a finish of stone, a texture or coating • Coated precast concrete units which are not uniform in color • Concrete finishes for front elevations shall have a wainscot treatment with returns at least 4 feet on the adjacent side elevation • Concrete textured finishes	☒	The stone veneer included on the front facade elevations at the drive aisles.

	• Cementitious-type or an epoxy-type concrete coating with a life expectancy of a minimum 10 years • Steel panels with a wainscot using dissimilar approved materials at least 4 feet in height when used for a front building elevation and a 4-foot return on adjacent side walls • Wood or wood products • Vinyl • Glass or glass block		
	Roofs		
	Minimum pitch of 5:12 unless 4:12 pitch or less and surrounded by a parapet wall	☒	
	Roof mounted equipment screened by a parapet wall integrated into the architecture	☒	
	Colors		
	Shall be approved by the Town Mayor	☐	Colors are white metal siding and ocean blue metal roof.
	Temporary Improvements		
	Temporary buildings and other temporary improvements are prohibited	☒	
Automobile Parking	Off-Site Parking		
	Number of spaces in accordance with the ZO without overbuilding	☒	
	Employee and company vehicles designated in the side and back of the property and located as to not compete with patron parking	☒	
	Patron parking generally located in the front of the property	☒	
	Off-Site Parking		
	No parking within the street ROW within the property	☒	

	<u>Parking Area Standards</u>		
	Paved with asphalt, concrete, or pervious pavers	☒	
	Front ends of parking spaces shall consist of concrete curbs or curb stops	☒	
	Concrete curbing provided at the radius of all parking access entries off public roads	☒	
	Exposed edge of all curbs, parking areas, or walkways installed with grass, ground cover, or mulch	☒	
	Special paving materials may be used to accent special entrance areas or walkways	☒	Optional. None proposed.
	Landscaped islands intermittently spaced in the front and side of buildings where paved parking occurs	☒	
	No more than 7 consecutive, single-loaded spaces provided without a landscaped island measuring at least 6 feet in width	☒	
	Parking spaces lined or striped in accordance with the Town's required parking space size	☒	
	<u>Screening</u>		
	Parking screened from view as much as possible by depressing grades, landscaping, and/or berms	☒	
Truck Loading and Parking	Loading docks located in the rear and side of buildings	☒	
	Loading docks screened from view so that trucks using docks are not readily visible from public streets	☒	
	Loading docks screened from view by the building, landscaping, walls, or decorative fencing	☒	
	No overnight parking of trucks and	☒	

	commercial vehicles parked outside the building overnight except in the rear or in suitably screened areas		
	Loading areas shall not encroach into setback areas unless approved by the Declarant in writing	☐	The loading area does encroach in the rear setback area. However, the rear of the lot is adjacent to the Forest Conservation Area.
	Loading areas located in side yards shall be set back and screened to minimize the effect from the street and from neighboring lots	☒	
	Loading doors and docks shall not be closer than 100 feet to the street property line, unless specifically approved by the Declarant in writing	☒	
	Loading areas are prohibited on the front of any building	☒	
Storage	No materials, supplies, or equipment stored for more than 24 hours in any area except inside a closed building or behind a visual barrier completely screened from view of adjoining lots or public streets (if screened from view by landscaping, buffer must be opaque within 5 years of installation)	☒	
	Garbage and refuse containers completely concealed from view by a screening wall constructed of material compatible with the building, landscaping materials or decorative fencing with screening located in a side or rear yards of the lot	☒	
Outdoor Work Areas	No work areas permitted on any lot except inside a closed building or behind a visual barrier completely screened from view of adjoining lots and public streets	☒	
Storage Tanks	Prohibited unless approved by the Declarant in writing	☒	
Trailers	Except for a temporary period during construction, prohibited when used for storage purposes	☒	

Landscaping	All open areas not occupied by buildings and paved areas and open areas between each lot's property boundaries and the edge of paving along the street frontage shall be suitably graded and drained and landscaped with lawns, trees, shrubs, and flower beds	☒	
	Each lot - landscaped areas no less than 12.5%	☒	
	Natural vegetation retained to the greatest extent possible	☒	
	Copy of the landscape plan showing preservation of natural areas; planting of trees, shrubs, flower beds, grass; and installation of earth berms, screens, and underground sprinkling systems (if applicable) submitted to the Declarant for approval in conjunction with the site plan	☒	Landscape Plan provided.
	Landscape plan showing components reflecting seasonal changes in the plans	☒	
	Plant material in conformance with the American Standard for Nursery Stock, latest edition	☒	
	Landscape Plan prepared by a registered landscape architect, certified by the State of Maryland	☒	
	Landscaping installed within the next planting season of occupancy or within 6 months of substantial completion (date on which the exterior walls and roofs have been installed) of any Building, whichever occurs first, provided that an extension may be granted by the Declarant	☒	
Tree Removal	No healthy tree with a diameter exceeding 4 inches may be approved without written approval from the Declarant unless removal is necessary in connection with the location of a building, loading area, driveway or other improvement	☒	

Exterior Lighting	Compatible and harmonious throughout the property	☒	
	Lighting sources screened from view or directed downward and shielded	☒	
	Automobile and truck parking areas, if illuminated, shall be directed downward and screened to reduce visible glare from the street	☒	
Signs	Permanent signs for identification only and may not be an advertising device	☒	Signage not proposed with the application
	Text limited to company name or logo	☒	Signage not proposed with the application
	No permanent, painted signs permitted	☒	Signage not proposed with the application
Fencing	Natural areas are preferred for enclosing and screening	☒	
	Black or dark brown vinyl clad chain link fencing, CMU, concrete, brick, and stone walls permitted	☒	

RECOMMENDED CONDITION:

Staff recommends the Planning Commission approve the sketch site plan with the following condition:

- The Applicant is required to adhere to the November 5, 2021 Declaration of Covenants for Mistletoe Hall Commerce-Business Park-Book: 2916, Page: 104, as approved by the Declarant.

DRAFT MOTIONS:

1. I move that the Planning Commission approve the sketch site plan subject to staff's Conditions of Approval.

OR

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

OR

3. I move an alternate motion.

ATTACHMENTS:

1. 2024-03-05 Blue Crab - ESDR Determination Letter & Application, paper copy & PDF
2. 2024-03-05 Blue Crab - Improvement Plans, paper copy & PDF
3. 2024-03-05 Blue Crab - Mitigation Report, paper copy & PDF
4. 2024-03-05 Blue Crab - PC 400' Notice Letter, paper copy & PDF
5. 2024-03-05 Blue Crab - Revised Landscape Plan, paper copy & PDF
6. 2024-03-05 Blue Crab - Star Democrat Notice & Sign Posting
7. 2024-03-05 Blue Crab - SWM Plans, paper copy & PDF
8. 2024-03-05 Blue Crab - SWM Report, paper copy & PDF



TOWN OF EASTON

Planning & Zoning Department

14 South Harrison Street

P.O. Box 520

Easton, Maryland 21601

Easton Staff Development Review Worksheet

Date: February 29, 2024

Project: Blue Crab Storage

To: Mr. Daniel Larian, Blue Crab Self Storage, LLC.

CC: Mr. Josh Startt, Christine M. Dayton Architect, P.A.

CC: Mr. Thomas Hall, Charles P. Johnson & Associates, Inc.

The Easton Staff Development Review (ESDR) Committee meeting was held on February 28th at 11:00 am. Staff reviewed the Site Sketch Plan for the proposed contractor building and climate controlled storage facility on the property located at 28860 Fausley Wood Court, also known as Tax Map 25, Parcel 138, Lot 6C.

The Committee determined that the project will need to address all agency comments as specified in the attached review letters and at ESDR. In addition, Article VI in the Declaration of Covenants for Mistletoe Hall Commerce-Business Park (Declaration) requires the applicant to submit Plans to the Town of Easton. Plans to include : 1) a master plan for full development of the site, 2) a site plan and schematic design of the area proposed for immediate development including all items required for approval of a site plan, and 3) architectural plans and construction drawings. The Town then reviews the Plans to determine whether they are in accordance with the Declaration.

Section D of Article VI requires the Town to approve, disapprove, or request additions or supplemental information relating to the Plans within thirty (30) days from the date of submission. The Plans were submitted to the Town on October 4, 2023. Staff asked for additions or supplemental information in the form of revisions to the Plans based on the attached Declaration Checklist of Submission Requirements and from the discussion at the ESDR Committee meeting.

The Committee determined that the application may be scheduled for Planning Commission review. Please submit all revised documents.

Further, please address and submit under separate cover the requested additions and supplemental information with a detailed narrative and response to the staff comments and “unchecked” items in the Declaration Checklist pertaining to the aforementioned covenants for further review.

The next Planning Commission meeting is scheduled for **Thursday, March 21, 2024 at 1:00 pm**. **Submit all documentation to the Planning and Zoning Department no later than Monday, March 4th at 1:00 pm**. Files for presentation at the Planning Commission need to be provided on a flash drive. In addition, provide a digital submittal (via email) of all supporting documents necessary for the Planning Commissions review, including **six paper copies**.

Please contact the Planning & Zoning Department at 410 822-1943 with any questions.

Sincerely,

A handwritten signature in blue ink, appearing to read "Joseph A. Mayer". The signature is fluid and cursive, with a prominent initial "J".

Joseph A. Mayer
Plan Reviewer



TOWN OF EASTON PLANNING & ZONING DEPARTMENT

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

DATE: February 22, 2024
TO: Daniel Lerian – Blue Crab Self Storage, LLC
Cc: Miguel Salinas – Director, Planning & Zoning Department
Rick Van Emburgh – Town Engineer, Department of Engineering

FROM: Joseph A. Mayer - Plan Reviewer, Planning & Zoning Department
SUBJECT: 28860 Fausley Court – Blue Crab Storage

We reviewed the **February 7, 2024** Sketch Plan Submittal for the Subject Project and have the following comments:

PLANNING & ZONING COMMENTS

Sketch Site Plan

1. Per Chapter 28-1007.A.3.I.1 thru 5 of the Zoning Code, provide an impact statement onto the site plan. Please address items 1 through 5 with a brief statement and add to the Site Plan.
2. Add note to Site Plan to read: *"No overnight parking of trucks and commercial vehicles parked outside the building overnight except in the rear or in suitably screened areas."*
3. Please revise the Landscape Plan and Tabulations on sheet A100. to replace Green Giant Arborvitae with an native plant species such as American Arborvitae.
4. Revise Landscape Tabulations on sheet A100 to include components reflecting seasonal changes in the plans.
5. Add notes to General Notes on sheet 1 to read: *"Lighting sources screened from view or directed downward and shielded"* and *"Automobile and truck parking areas, if illuminated, shall be directed downward and screened to reduce visible glare from the street."*

Plan Review Status

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

Forest Stand Delineation & Forest Conservation Plan		
☐ Required ☐ Submitted ☒ Approved		The development of this site has already been mitigated for Forest Conservation under the 2020 Forest Conservation Plan, recorded at the original Subdivision Plat (Plat KMD 87/124)
Other		
☒ Required ☐ Submitted ☐ Approved		<u>IMPACT FEES</u> Please note, there will be a required Impact Fee for all proposed buildings. The Town's Impact Fees and Inspection Fees are to be paid upon the time you pick up your Building Permit. Please provide building square footage with appropriate impact fee use category for calculation of Impact Fee. Talbot County Impact Fees are due prior to obtaining your Building Permit. Please provide receipt of payment to the Town's Building Inspection Division.

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

MISTLETOE HALL COMMERCE-BUSINESS PARK COVENANTS

Checklist of Submission Requirements

Project Name: Blue Crab Storage, Lot 6C

Allowable Uses	As permitted in the Zoning Code	☒	Climate-Controlled Self-Storage* and Contractor's Office without no Outside Storage are permitted by-right in the I zoning district
Prohibited Uses	<u>Prohibited Uses</u>		
	Uses and the manufacturing, processing, and storage of materials and products which cause an undue fire or health hazard to adjoining lots, or which constitute a nuisance or cause an emission of noxious odors, gasses or smoke	☒	
	<u>Prohibited Operation or Use</u>		
	No operation or uses which causes or produces the following effects outside any lot or portion of lots subject to the covenants: • Smoke • Noxious, toxic, or corrosive fumes or gasses • Obnoxious odors • Dust, dirt, or fly ash • Unusual fire or explosive hazard • Intense glare or heat • Intense vibration • Excavation, with the exception of excavation for the construction of improvements with proper protection of adjacent lots and, upon completion, shall be backfilled and disturbed ground shall be graded and stabilized	☒	
Development Standards	<u>Site Design</u>		

	Massing, scale, color, and circulation relates to adjacent buildings and to the total development	☒	
	Architectural Standards		
	Massing and scale of larger buildings are broken down into smaller and varied volumes	N/A	
	Buildings exceeding 20 feet in height: • Base capped with a molding or reveal placed between 2 ft. and 4 ft. in height with a depth of at least 2 inches and a height of at least 4 inches • Middle may include multiple stories, windows, doors, and balconies capped with a molding or reveal which shall have a depth of at least 2 inches and a height of at least 4 inches • Cap includes the area from the middle to the roof and includes a cornice, eave, parapet, or overhang	☒	
	Major architectural expressions employed such as corner massing, oversized windows-entrances and roof form to demarcate and anchor key locations	☒	
	Solid walls to not exceed 60 feet in length without a minimum 10 foot facade return, offset, or change in plane	☒	The proposed entry porticos have been enclosed to match the building facade.
	Exterior Materials		
	Building finish applied to all publicly-visible sides and neighboring lots and streets	☒	
	Traditional, durable, and environmentally sustainable materials. Examples include: • Brick or or tile burned clay with color and texture to be approved • Concrete masonry units with no plain concrete block on the front of any building, no	☒	The stone veneer included on the front facade elevations at the drive aisles.

	exposed gray concrete block on any elevation, and gray cement color to be coated • Poured in place or tilt-up concrete walls with a finish of stone, a texture or coating • Coated precast concrete units which are not uniform in color • Concrete finishes for front elevations shall have a wainscot treatment with returns at least 4 feet on the adjacent side elevation • Concrete textured finishes • Cementitious-type or an epoxy-type concrete coating with a life expectancy of a minimum 10 years • Steel panels with a wainscot using dissimilar approved materials at least 4 feet in height when used for a front building elevation and a 4-foot return on adjacent side walls • Wood or wood products • Vinyl • Glass or glass block		
	<u>Roofs</u>		
	Minimum pitch of 5:12 unless 4:12 pitch or less and surrounded by a parapet wall	☒	
	Roof mounted equipment screened by a parapet wall integrated into the architecture	☒	
	<u>Colors</u>		
	Shall be approved by the Town Mayor	☐	Colors are white metal siding and ocean blue metal roof.
	<u>Temporary Improvements</u>		
	Temporary buildings and other temporary improvements are prohibited	☒	
Automobile Parking	<u>Off-Site Parking</u>		
	Number of spaces in accordance with the ZO without overbuilding	☒	
	Employee and company vehicles	☒	

	designated in the side and back of the property and located as to not compete with patron parking		
	Patron parking generally located in the front of the property	☒	
	<u>Off-Site Parking</u>		
	No parking within the street ROW within the property	☒	
	<u>Parking Area Standards</u>		
	Paved with asphalt, concrete, or pervious pavers	☒	
	Front ends of parking spaces shall consist of concrete curbs or curb stops	☒	
	Concrete curbing provided at the radius of all parking access entries off public roads	☒	
	Exposed edge of all curbs, parking areas, or walkways installed with grass, ground cover, or mulch	☒	
	Special paving materials may be used to accent special entrance areas or walkways	☒	Optional. None proposed.
	Landscaped islands intermittently spaced in the front and side of buildings where paved parking occurs	☒	
	No more than 7 consecutive, single-loaded spaces provided without a landscaped island measuring at least 6 feet in width	☒	
	Parking spaces lined or striped in accordance with the Town's required parking space size	☒	
	<u>Screening</u>		
	Parking screened from view as much as possible by depressing grades, landscaping, and/or berms	☐	The Applicant is required to use Native Plant Species.
Truck Loading and Parking	Loading docks located in the rear and side of buildings	☒	

	Loading docks screened from view so that trucks using docks are not readily visible from public streets	☒	
	Loading docks screened from view by the building, landscaping, walls, or decorative fencing	☒	
	No overnight parking of trucks and commercial vehicles parked outside the building overnight except in the rear or in suitably screened areas	☐	Note this on the Site Plan.
	Loading areas shall not encroach into setback areas unless approved by the Declarant in writing	☐	The loading area does encroach in the rear setback area. However, the rear of the lot is adjacent to the Forest Conservation Area.
	Loading areas located in side yards shall be set back and screened to minimize the effect from the street and from neighboring lots	☒	
	Loading doors and docks shall not be closer than 100 feet to the street property line, unless specifically approved by the Declarant in writing	☒	
	Loading areas are prohibited on the front of any building	☒	
Storage	No materials, supplies, or equipment stored for more than 24 hours in any area except inside a closed building or behind a visual barrier completely screened from view of adjoining lots or public streets (if screened from view by landscaping, buffer must be opaque within 5 years of installation)	☒	
	Garbage and refuse containers completely concealed from view by a screening wall constructed of material compatible with the building, landscaping materials or decorative fencing with screening located in a side or rear yards of the lot	☒	
Outdoor Work Areas	No work areas permitted on any lot except inside a closed building or behind a visual barrier completely screened from view of adjoining lots and public streets	☒	

Storage Tanks	Prohibited unless approved by the Declarant in writing	☒	
Trailers	Except for a temporary period during construction, prohibited when used for storage purposes	☒	
Landscaping	All open areas not occupied by buildings and paved areas and open areas between each lot's property boundaries and the edge of paving along the street frontage shall be suitably graded and drained and landscaped with lawns, trees, shrubs, and flower beds	☒	
	Each lot - landscaped areas no less than 12.5%	☒	
	Natural vegetation retained to the greatest extent possible	☒	
	Copy of the landscape plan showing preservation of natural areas; planting of trees, shrubs, flower beds, grass; and installation of earth berms, screens, and underground sprinkling systems (if applicable) submitted to the Declarant for approval in conjunction with the site plan	☒	Landscape Plan provided.
	Landscape plan showing components reflecting seasonal changes in the plans	☐	Revise Landscape Tabulation to seasonal changes.
	Plant material in conformance with the American Standard for Nursery Stock, latest edition	☒	
	Landscape Plan prepared by a registered landscape architect, certified by the State of Maryland	☒	
	Landscaping installed within the next planting season of occupancy or within 6 months of substantial completion (date on which the exterior walls and roofs have been installed) of any Building, whichever occurs first, provided that an extension may be granted by the Declarant	☒	
Tree Removal	No healthy tree with a diameter exceeding 4 inches may be approved without written approval from the	☒	

	Declarant unless removal is necessary in connection with the location of a building, loading area, driveway or other improvement		
Exterior Lighting	Compatible and harmonious throughout the property	☒	
	Lighting sources screened from view or directed downward and shielded	☐	Add to General Notes.
	Automobile and truck parking areas, if illuminated, shall be directed downward and screened to reduce visible glare from the street	☐	Add to General Notes.
Signs	Permanent signs for identification only and may not be an advertising device	☒	Signage not proposed with the application
	Text limited to company name or logo	☒	Signage not proposed with the application
	No permanent, painted signs permitted	☒	Signage not proposed with the application
Fencing	Natural areas are preferred for enclosing and screening	☒	
	Black or dark brown vinyl clad chain link fencing, CMU, concrete, brick, and stone walls permitted	☒	



TOWN OF
EASTON
ENGINEERING DEPARTMENT

DATE: February 1st, 2024
TO: Daniel Lerian – Owner
Cc: Rick Van Emburgh – Town Engineer
Aaron Goller – EUC
Lynn Thomas - Planning and Zoning
FROM: Sierra Clem – Engineering Department
SUBJECT: Blue Crab Self Storage LLC
Sketch Site Plan Review

Our office has reviewed the Application for the Subject project received on 1/22/2024.

Sketch Site Plan

The Sketch Site Plan is **Acceptable** to the Engineering Department.

Stormwater Management

The Sketch Stormwater Management plan is **Approved**.

Please submit a Preliminary Site Plan and 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: February 27, 2024

Project; Daniel Lerian – Blue Crab Self Storage, LLC
28860 Fausley Court – Blue Crab Storage

A Town of Easton Building Permit is required for all new construction that involves alteration to an approved existing building. Please contact this Department and verify current Building Codes including the Town of Easton's modifications prior to preparation of Building plans. Town Building Codes will be updated at the end of May 2024.

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

- Construction Documents (3 sets) for any new construction will be required. Documents must be prepared by a 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.
- The Town of Easton, in accordance with the International Building Code Chapter 17, establishes a building inspections procedure that utilizes qualified, third-party professionals in addition to the Town's Building Inspectors. The purpose of this document is to establish the policy and guidelines for the construction process in accordance with the Building Code requirements and to:
 - Define the responsibility of all parties.
 - Standardize code application.
 - Provide for an orderly and systematic approach for updating standards that apply to the Special Inspections.
 - Set forth a guideline for Special Inspections.A copy of this can be found on the 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 (ADA)**, and other safety requirements for public access.

- All mechanical, electrical, and plumbing permits as required must include construction documents signed and sealed by a professional engineer and by a responsible party for the contractor receiving the permit. Be sure the Town of Easton modifications are included. Section 6-16 of the Town Code.
 - Pursuant to Town of Easton Ordinance 477, Chapter 9 Fire Protection, Article VII Security Key Lock Boxes, a lockbox shall be provided on the exterior of the building and shall be located as required by the chief of the Easton Volunteer Fire Department, Inc. (410-822-4848).
 - An appointment may be set up with this department to review your permit application materials prior to permit application submission.
- **State Fire Marshal**, (410-822-7609) plan review and inspections are required. It is your responsibility to contact them and make application.
 - **Talbot County Health Department**, (410-770-6886) Check for any special requirements.



Easton Utilities Commission

Plan Review Comments

Date: Wednesday, January 31, 2024

To: Joe Mayer; Nicholas Johnson; Sierra Clem

From: Kia Gibbs on behalf of Aaron Goller, PE

No. of Pages: 1

Regarding: 28860 Fausley Wood Court Lot 6C

Phase: Sketch Site Plan

SUBM: 4

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	Contact EUC for electric design
2	General	Capital charges will be assessed at building permit phase

**Town of Easton**

Engineering, Planning and Zoning

14 South Harrison Street, Easton, MD 21601

Site Plan, PUD, Planned Healthcare Application**Application Type**Planned Unit Development ☐Amendment ☐Health Care (HC) ☐Site Plan ☒**Subdivision Information**

Name MISTLETOE HALL FARM
Original Property Size Acres 1.559 Square Feet
Telephone No. 410-822-7777 Email DANLERIAN@YAHOO.COM

Site Plan Information

Property Size Acres 1.559 Square Feet 67,910
Structure's Floor Area 8,800 Structure's Square Feet 8,800
Area of Disturbance 17,390 Number of Dwelling Units 2

Property Information

Address 28860 FAUSLEY WOOD ROAD EASTON, MD 21601
Tax Map 25 Grid 16 Parcel 138 Lot 6C
Deed Reference: Liber Folio
Plat Reference: Liber Folio
Base Zoning District I Historic Y ☐ N ☒ Planned Redevelopment Y ☐ N ☐
Source of Electricity TOWN

Owner

Name BLUE CRAB SELF STORAGE, LLC
Mailing Address 8693 BROOKS DRIVE, EASTON, MD 21601
Telephone No. 410-822-7777 Email DANLERIAN@YAHOO.COM

Applicant or Agent

Name DANIEL M. LERIAN
Mailing Address 10555 LAKE ROAD EASTON, MD 21601
Telephone No. 410-822-7777 Email DANLERIAN@YAHOO.COM

Surveyor / Engineer

Name ATIN: CHARLES P. JOHNSON & ASSOCIATES INC Expiration Date
Mailing Address THOMAS HALL License No.
Telephone No. 15 OLD SOLOMONS ISLAND ROAD, SUITE 204 ANNAPOLIS, MD 21401
410-266-5599 x512 Email THALL@CPJA.COM

Any modifications during review shall warrant an updated application.

I hereby certify that I have reviewed and satisfied the Town of Easton Development Standards 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

D/M/L

2/5/2023

DANIEL M. LERIAN

For Office Use Only

Planning Commission Required	Y ☒ N ☐	
Planning Commission Meeting Date		
Sketch Approval Date	Project No.	ESDR 2023-09
Prelim/Dev. Approval Date	Application No.	2022-782
Final Approval Date	Sketch Fee Paid	10/03/2022
Recordation Date	Develop. Fee Paid	

Revised 02-2019



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

ESDR 2023-09

Easton Staff Development Review

Property Information

Address 28860 FAUSLEYWOOD COURT
Tax Map 25 Grid 16 Parcel 138 Lot 6C
Deed Reference: Liber Folio
Plat Reference: Liber Folio
Base Zoning District Historic District Y ☐ N ☒ Planning Redevelopment Y ☐ N ☐
Purpose of Application / Description of Work:

CONSTRUCT 50' X 88' X 16' MARINE CONTRACTOR BUILDING
40' X 100' X 12' CLIMATE STORAGE BUILDING
19000 SF OF DISTURBANCE

Owner

Name BLUE CRAB SELF STORAGE LLC
Mailing Address 8693 BROOKS DR, EASTON, MD 21601
Telephone No. 410-822-7777 Email DAN.LERIAN@YAHOO.COM

Applicant / Agent

Name DANIEL M. LERIAN
Mailing Address 8693 BROOKS DR EASTON, MD 21601
Telephone No. 410-822-7777 Email DAN.LERIAN@YAHOO.COM

Surveyor / Engineer

Name STEVEN W. WHITEN License No. 21326 Expiration Date 1/8/2023
Mailing Address 113 E. DOVER ST. UNIT C EASTON, MD 21601
Telephone No. 410-822-8484 Email ELIZABETH.FINK
EFINK@FINKWHITEN.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

9/30/2022

Printed Name of Applicant or Agent

DANIEL M. LERIAN

For Office Use Only

Easton Staff Development Review Meeting Required

Y ☒ N ☐

RECEIVED

Easton Staff Development Review Meeting Date

02/22/2023

OCT 03 2022

Completeness Check Date

ESDR 2023-09

Revisions/Resubmissions Required

Y ☐ N ☐

TOWN OF EASTON

Resubmission Date

Documents Received Y ☐ N ☐

Staff Determination

Planning Commission Required Y ☐ N ☐

BOZA Required Y ☐ N ☐

Historic District Commission Required Y ☐ N ☐

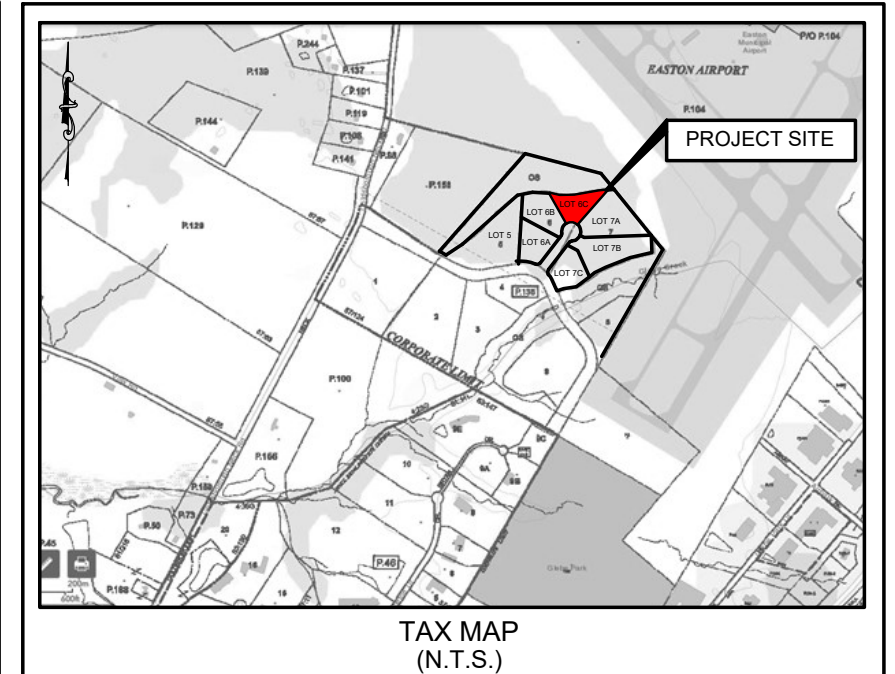
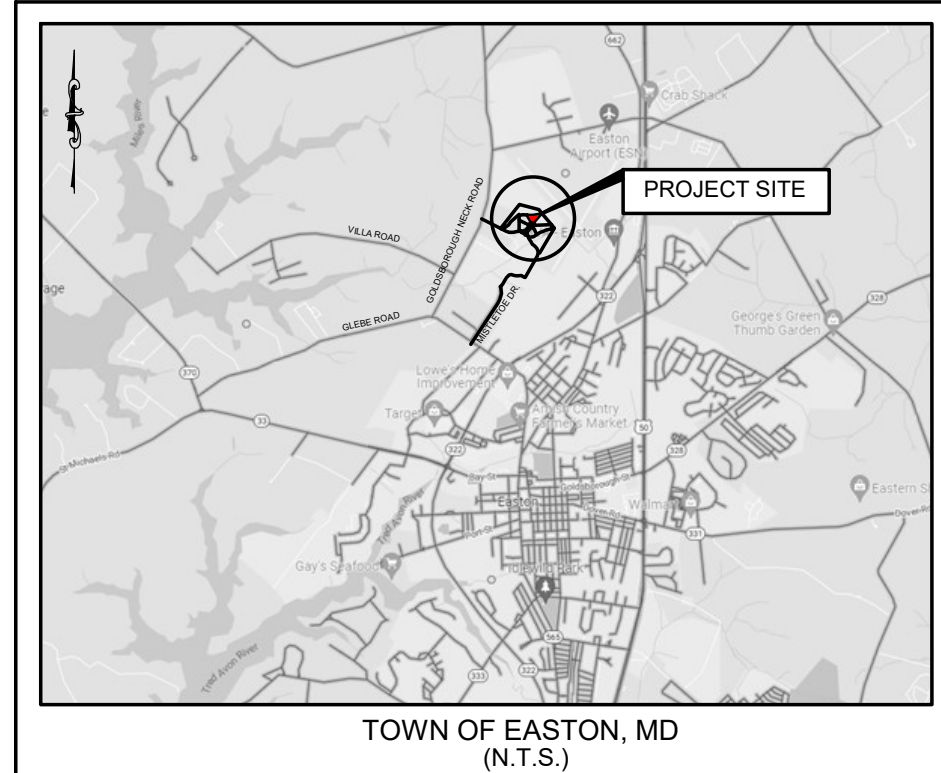
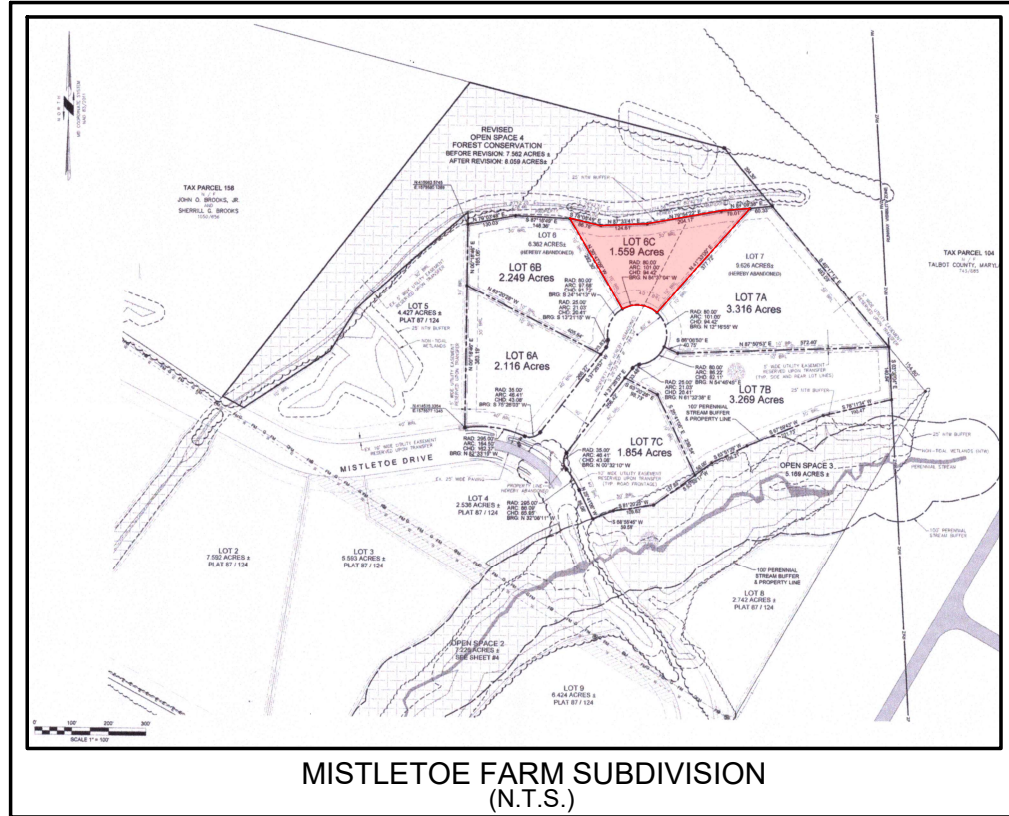
Resubmission for ESDR Required Y ☐ N ☐

Staff Signature

Date

Revised 02-2019

MISTLETOE HALL FARM SUBDIVISION
LOT 6C IMPROVEMENTS
28860 FAUSLEY WOOD COURT
TOWN OF EASTON, MARYLAND



STANDARD SYMBOLS*		STANDARD SYMBOLS*		STANDARD SYMBOLS*		STANDARD SYMBOLS*	
PLUNGE POOL	 PP	STONE/RIPRAP OUTLET SEDIMENT TRAP ST II	 ST-II	FILTER LOG	 FL-18 DESIGNATION FL-18 REFERS TO 18 IN PIPE SLOPE FILTER LOG	VERTICAL DRAW-DOWN DEVICE	 VDD
PORTABLE SEDIMENT TANK	 PST	SUBSURFACE DRAINS	 SSD	GABION INFLOW PROTECTION	 GIP	WASH RACK OPTION	 WR
REMOVABLE PUMPING STATION	 RPS	SUMP PIT	 SP	GABION INLET PROTECTION	 GIP	GENERAL NOTES:	
RIPRAP INFLOW PROTECTION	 RRP	SUPER SILT FENCE	 SSF	HORIZONTAL DRAW-DOWN DEVICE	 HDD	1. OWNER: BLUE GRAB SELF STORAGE, LLC 8693 BROOKS DR, EASTON, MD 21601	
RIPRAP OUTLET SEDIMENT TRAP ST III	 ST-III	TEMPORARY ACCESS BRIDGE	 TAB	LIMIT OF DISTURBANCE	 LOD	2. ZONING: I	
ROCK OUTLET PROTECTION I	 ROP I	TEMPORARY ACCESS CULVERT	 TAC	MEDIAN INLET PROTECTION	 MIP	3. BUILDING SETBACKS: 40' FRONT 10' SIDES 30' REAR	
ROCK OUTLET PROTECTION II	 ROP II	TEMPORARY ASPHALT BERM	 TAB	MEDIAN SUMP INLET PROTECTION	 MSIP	4. THE PROPERTY SHOWN HEREON IS NOT LOCATED WITHIN THE COASTAL PLAIN AS SHOWN ON THE FLOOD INSURANCE RATE MAPS COMMUNICATED FOR TALBOT COUNTY, MARYLAND	
ROCK OUTLET PROTECTION III	 ROP III	TEMPORARY BARRIER DIVERSION	 TBD	MOUNTABLE BERM	 MB	5. WATER SUPPLY & SEWAGE DISPOSAL: TOWN OF EASTON	
SILT FENCE	 SF	TEMPORARY GABION OUTLET STRUCTURE	 TOS	PERIMETER DIKE/SWALE	 PDS-1	6. CONTOURS SHOWN HEREON ARE REFERENCED TO NAVD 1988	
SILT FENCE ON PAVEMENT	 SFOP	TEMPORARY SOIL STABILIZATION MATTING CHANNEL	 TSMC (INCLUDE SHEAR STRESS)	PERMANENT SOIL STABILIZATION MATTING CHANNEL	 PSMC (INCLUDE SHEAR STRESS)	7. TAX MAP 25 PARCEL 138 LOT 6C	
STABILIZED CONSTRUCTION ENTRANCE	 SCE	TEMPORARY SOIL STABILIZATION MATTING SLOPE	 TSMC (INCLUDE SHEAR STRESS)	PERMANENT SOIL STABILIZATION MATTING SLOPE	 PSMC (INCLUDE SHEAR STRESS)	8. DEED REF: BOOK 00743, PAGE 00703	
STANDARD INLET PROTECTION	 SIP	TEMPORARY STONE OUTLET STRUCTURE	 TOS	PIPE OUTLET SEDIMENT TRAP ST I	 ST-I	9. WARD DISTRICT 1	
STONE CHECK DAM	 SC	TEMPORARY SWALE	 A-1	PIPE SLOPE DRAIN	 PSD-12 DESIGNATION PSD-12 REFERS TO 12 IN PIPE SLOPE DRAIN	10. BUILDING 1, STORAGE: MIN. 4 SPACES AND 2 FOR MANAGER	
						11. BUILDING 2, LIGHT INDUSTRIAL: MIN. 1 SPACE PER 2,000 SF GFA, MAX. 10' CLEARANCE	
						12. LIGHTING SOURCES SCREENED FROM VIEW OR DIRECTED DOWNWARD	
						13. AUTOMOBILE AND TRUCK PARKING AREAS, IF ILLUMINATED, SHALL BE SCREENED TO REDUCE VISIBLE GLARE FROM THE STREET.	

PROFESSIONAL CERTIFICATE OF QUALITY
 I, THE UNDERSIGNED, A PROFESSIONAL ENGINEER, HAVE PREPARED THE PROFESSIONAL ENGINEERING DESIGN FOR THE PROJECT SHOWN ON THE ATTACHED PLANS. I AM A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, LICENSE NO. 10000000000000000000.

<u>INDEX OF SHEETS</u>	<u>SHEET NO.</u>
TITLE SHEET / LOCATION MAPS	1
EXISTING SITE PLAN	2
SOIL TYPES	3
PROPOSED SITE PLAN	4
STORM WATER MANAGEMENT	5
DETAILS	6
DETAILS	7
EXISTING AND PROPOSED CONTOURS	8
UTILITY LOCATIONS	9
SEALED TOPO SURVEY	10
ELECTRIC	11
PROPOSED BLDG. 1 ELEVATIONS	12
PROPOSED BLDG. 2 ELEVATIONS	13
ISOMETRIC VIEW BLDG. 1	14
ISOMETRIC VIEW BLDG. 2	15
BLDG. 1 WALL DETAILS	16
BLDG. 2 WALL DETAILS	17
ADA BATHROOM	18
SEALED TRUSS DRAWINGS	19
CPI AND ASSOCIATES	
STORM WATER MANAGEMENT PLANS	1,2,3

REVIEWED FOR THE TALBOT COUNTY SOIL CONSERVATION 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 PREVISIONS OF THIS PLAN IN THE EVENT ADDITIONAL PROTECTION BECOMES NECESSARY.	
<u>DEVELOPERS CERTIFICATION</u>	
I, HEREBY CERTIFY THAT ALL THE DEVELOPMENT AND/OR CONSTRUCTION SHALL BE DONE ACCORDING TO THIS PLAN OF EROSION AND SEDIMENT CONTROL.	
SIGNATURE	DATE
1. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR OR SUBCONTRACTOR TO NOTIFY THE ENGINEER OF ANY DEVIATION FROM THIS PLAN, ANY CHANGE MADE TO THIS PLAN WITHOUT WRITTEN AUTHORIZATION FROM THE ENGINEER WILL PLACE RESPONSIBILITY FOR SAID SHANGE ON THE CONTRACTOR OR SUBCONTRACTOR.	
2. ANY RESPONSIBLE PERSONNEL INVOLVED IN THE 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.	

REV. 3-1-2024

 ENGINEERING DEPARTMENT 14 S. HARRISON ST. P.O. BOX 10 EASTON, MD 21601	APPROVED: _____ TOWN OF EASTON - PLANNING & ZONING DATE _____	APPROVED: _____ EASTON UTILITIES - ENGINEER DATE _____	OWNER / DEVELOPER / APPLICANT BLUE CRAB SELF STORAGE, LLC 8693 BROOKS DR. EASTON, MD 21601 410-822-7777	DES. BY: DML DRN BY: FMB CHK BY: _____ DATE: _____	FMB _____ _____ _____ BY NO. REVISION DATE:	ORIGINAL DRAWING DATE 12/1/23 _____ _____ _____ _____	SEAL _____ _____ _____ _____	TITLE SHEET	MISTLETOE HALL FARM SUBDIVISION 28860 FAUSLEY WOOD COURT WARD DISTRICT #1, EASTON, MD	SCALE AS SHOWN SHEET NO. 1
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DANIEL M. LERIAN
BLUE CRAB SELF STORAGE LLC
10555 Lake Road
Easton, MD 21601
danlerian@yahoo.com

MHIC# 101234
MARINE CONTRACTOR LICENSE # 020E
MARYLAND HOME BUILDER LICENSE # 7169
MARYLAND STATE ELEVATOR LICENSE # 1485

March 27, 2023
Joseph A. Mayer, Plan Reviewer Town of Easton
14 South Harrison Street
Easton, MD 21601 410-822-1943
jmayer@eastonmd.gov

COMPREHENSIVE PLAN DESIGN PRINCIPLES RESPONSE NARRATIVE

Principle #1 - INTEGRATED USES ARE DESIRABLE
This development proposal provides additional shop space and warehouse in a mixed business park

Principle #2 - NATURAL FEATURES SHOULD DETERMINE DESIGN
There are no compelling natural features; site layout is oriented to take advantage of natural drainage patterns and to orient the building's foot print relative to the street.

Principle #3 - AUTOMOBILES SHOULD NOT DETERMINE DESIGN
Parking for shop, warehouse and customers are provided for convenience, with all parking to be on the sides of both buildings.

Principle #4 - AMPLE OPEN SPACE SHOULD BE PROVIDED WITHIN AND AROUND NEIGHBORHOODS
At the rear of the proposed buildings is a buffer of open space that has been provided

Principle #5 - ARCHITECTURE SHOULD RESPECT EASTON'S HISTORICAL DEVELOPMENT
This application proposes architecture that is compatible with Easton and the Commerce Park's architecture palette.

Principle #7 - NEIGHBORHOODS SHOULD CONTAIN A DIVERSITY OF HOUSING TYPES
This is not applicable to this application.

Principle #8 - RESIDENTIAL NEIGHBORHOODS SHOULD BE INTERESTING PLACES
This is not applicable to this application.

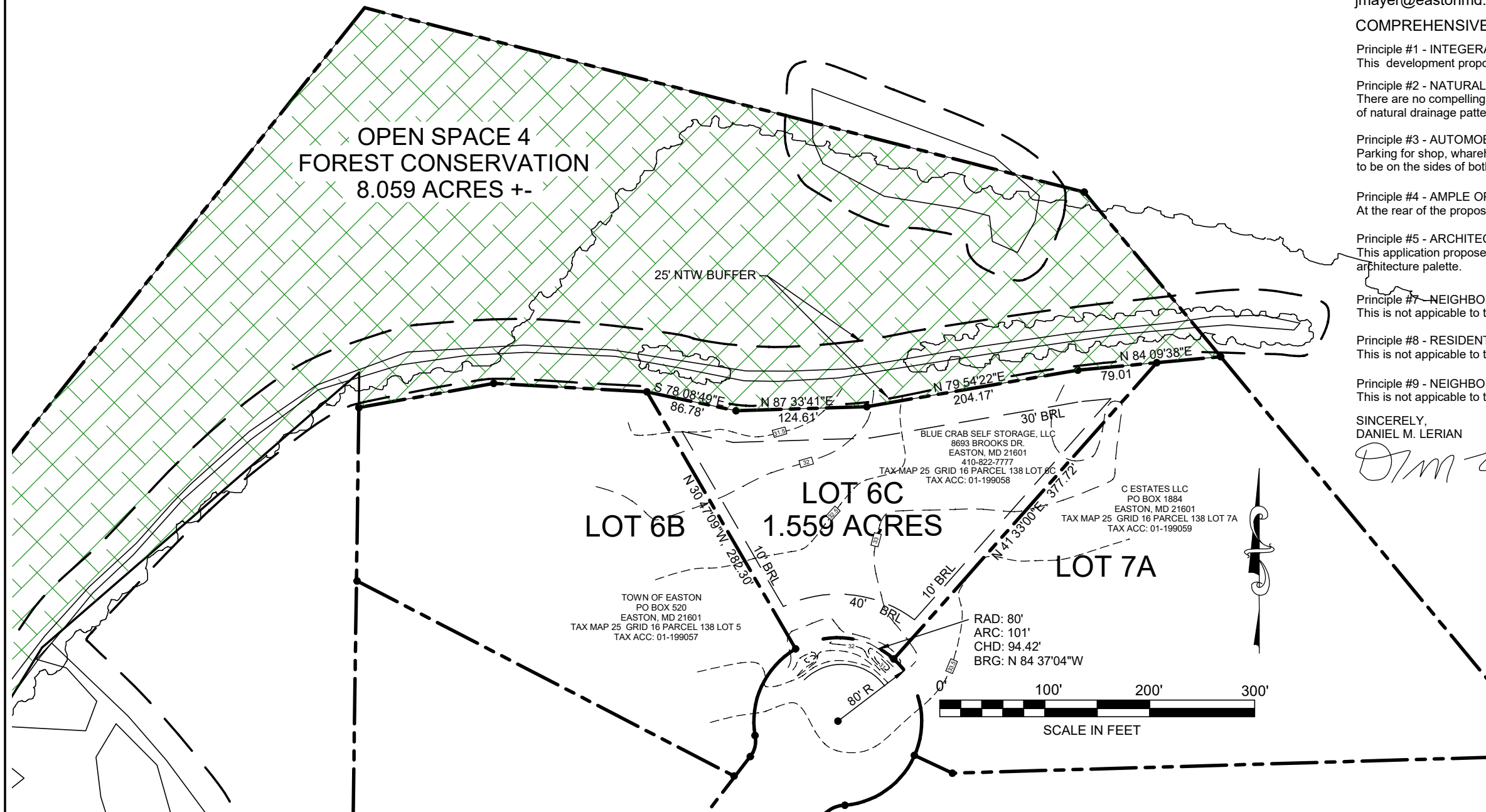
Principle #9 - NEIGHBORHOODS SHOULD CONNECT
This is not applicable to this application.

SINCERELY,
DANIEL M. LERIAN

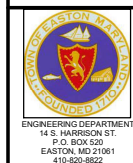
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ADDITIONAL NOTES:
THE SITE WILL HAVE LIMITED VEHICLE ACTIVITY
The contractor building 3 vehicles in and out per day
The storage building 4 vehicles in and out per day
Deliveries 1 per week

PROPOSED USE:
One building is for contractor use and the other building is a climate controlled self storage building.
Daily contractor will pick up materials in the morning and return at the end of the work day to store excess materials.
1 vehicle.
The self storage building will have up to 4 vehicles per day in and out to pick up and deliver goods. Once a week a large truck will make deliveries to the contractor building.



PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. _____, EXPIRATION DATE: _____



APPROVED:	DATE:
TOWN OF EASTON - PLANNING & ZONING	
APPROVED:	DATE:
TOWN OF EASTON - TOWN ENGINEER	

APPROVED:	DATE:
EASTON UTILITIES - ENGINEER	

OWNER / DEVELOPER / APPLICANT
BLUE CRAB SELF STORAGE, LLC
8693 BROOKS DR.
EASTON, MD 21601
410-822-7777

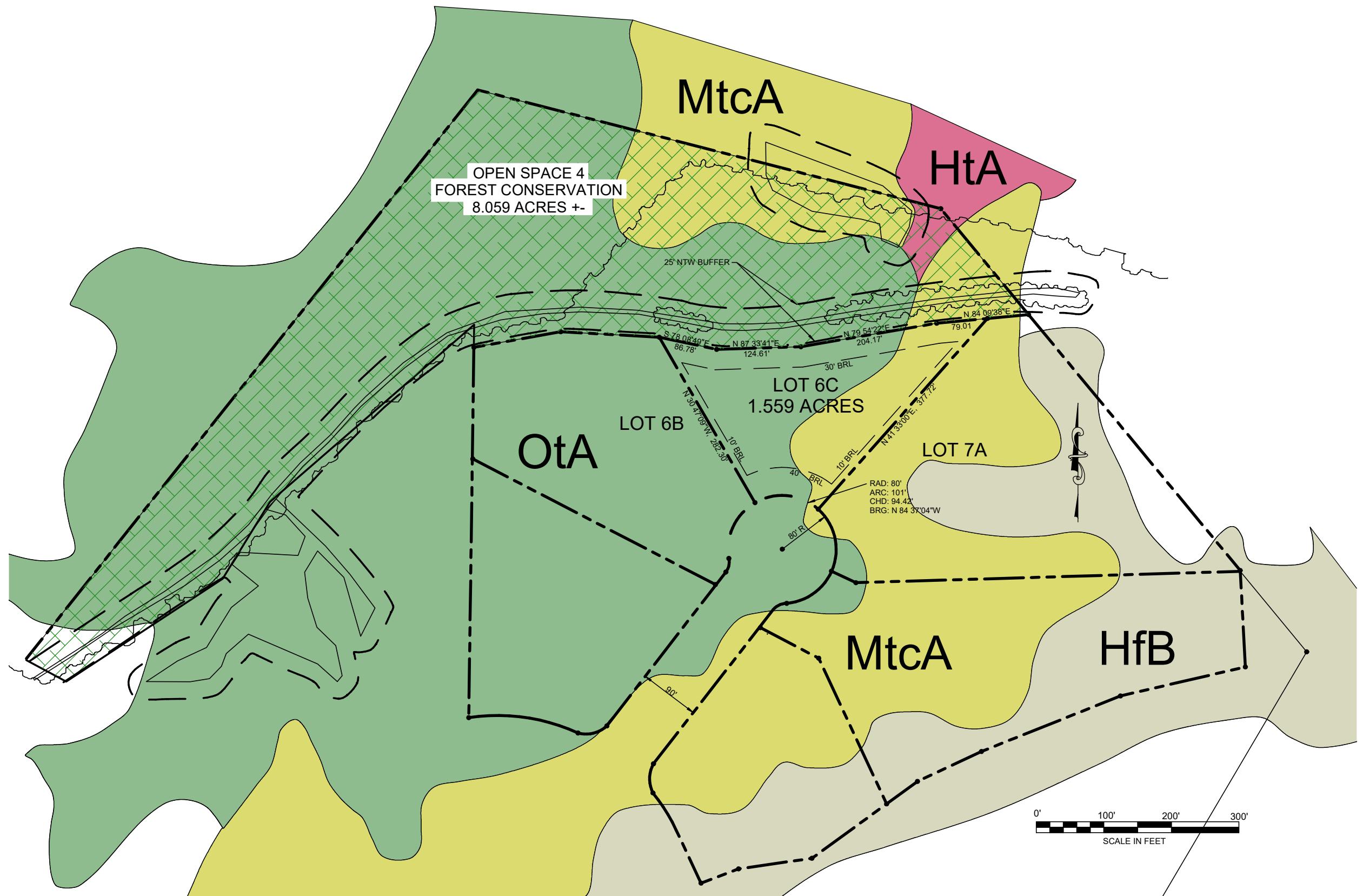
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DES. BY: DML	FMB	ORIGINAL DRAWING DATE	12/1/23
DRN BY: FMB			
CHK BY:			
DATE:			
BY	NO.	REVISION	DATE

EXISTING SITE
PLAN

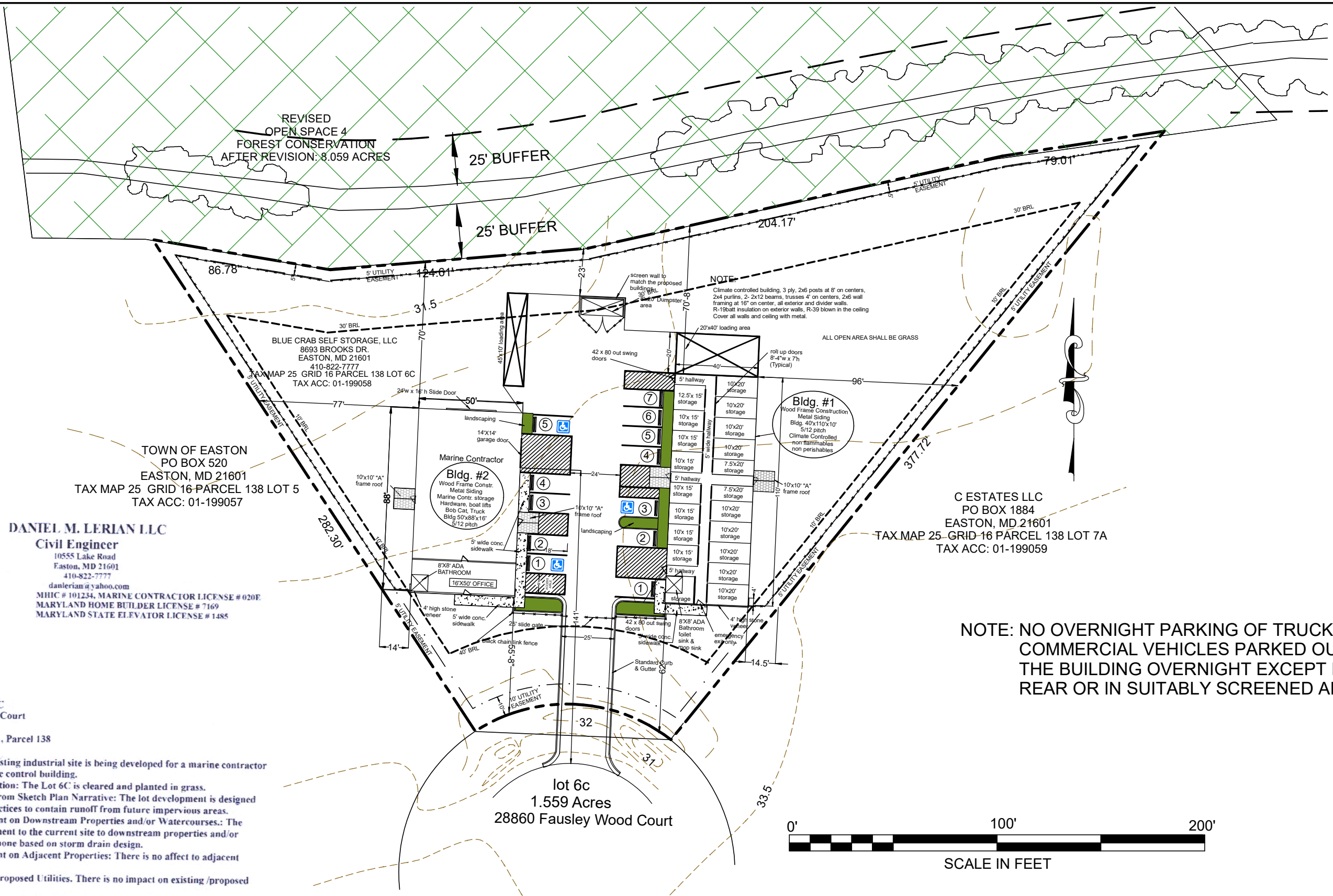
MISTLETOE HALL FARM
SUBDIVISION
28860 FAUSLEY WOOD COURT
WARD DISTRICT #1, EASTON, MD

SCALE
AS SHOWN
SHEET NO.
2



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 ENGINEERING DEPARTMENT 14 S. HARRISON ST. P.O. BOX 505 EASTON, MD 21601 410-822-8522	APPROVED:	APPROVED:	OWNER / DEVELOPER / APPLICANT BLUE CRAB SELF STORAGE, LLC 8693 BROOKS DR. EASTON, MD 21601 410-822-7777	SEAL	DES. BY: DML	FMB	ORIGINAL DRAWING DATE	12/1/23	SOIL TYPES	MISTLETOE HALL FARM SUBDIVISION 28860 FAUSLEY WOOD COURT WARD DISTRICT #1, EASTON, MD	SCALE AS SHOWN		
	TOWN OF EASTON - PLANNING & ZONING	DATE			EASTON UTILITIES - ENGINEER	DATE	DRN BY: FMB						SHEET NO. 3
	APPROVED:												
	TOWN OF EASTON - TOWN ENGINEER	DATE											
					BY	NO.	REVISION	DATE					



DANIEL M. LERIAN LLC
Civil Engineer

10555 Lake Road
Easton, MD 21601
410-822-7777
danlerian@yahoo.com
MHIC # 101234, MARINE CONTRACTOR LICENSE # 020F
MARYLAND HOME BUILDER LICENSE # 7169
MARYLAND STATE ELEVATOR LICENSE # 1485

March 1, 2024

Narrative

Mistletoe Hall, Lot 6C
28860 Fausley Wood Court
Easton, MD 21601
Tax Map 25, Grid 16, Parcel 138

Introduction: The existing industrial site is being developed for a marine contractor building and a climate control building.
General Site Information: The Lot 6C is cleared and planted in grass.
Narrative Elements from Sketch Plan Narrative: The lot development is designed with storm water practices to contain runoff from future impervious areas.
Affects of Development on Downstream Properties and/or Watercourses: The affects from development to the current site to downstream properties and/or watercourses will be none based on storm drain design.
Affects of Development on Adjacent Properties: There is no affect to adjacent properties.
Impacts on Existing/proposed Utilities: There is no impact on existing /proposed utilities.
Conclusion and recommendations: The development to the existing site will have no impact to the utilities or adjacent properties.
The conclusion is that with the storm water design and landscaping planting greatly improves the existing site.

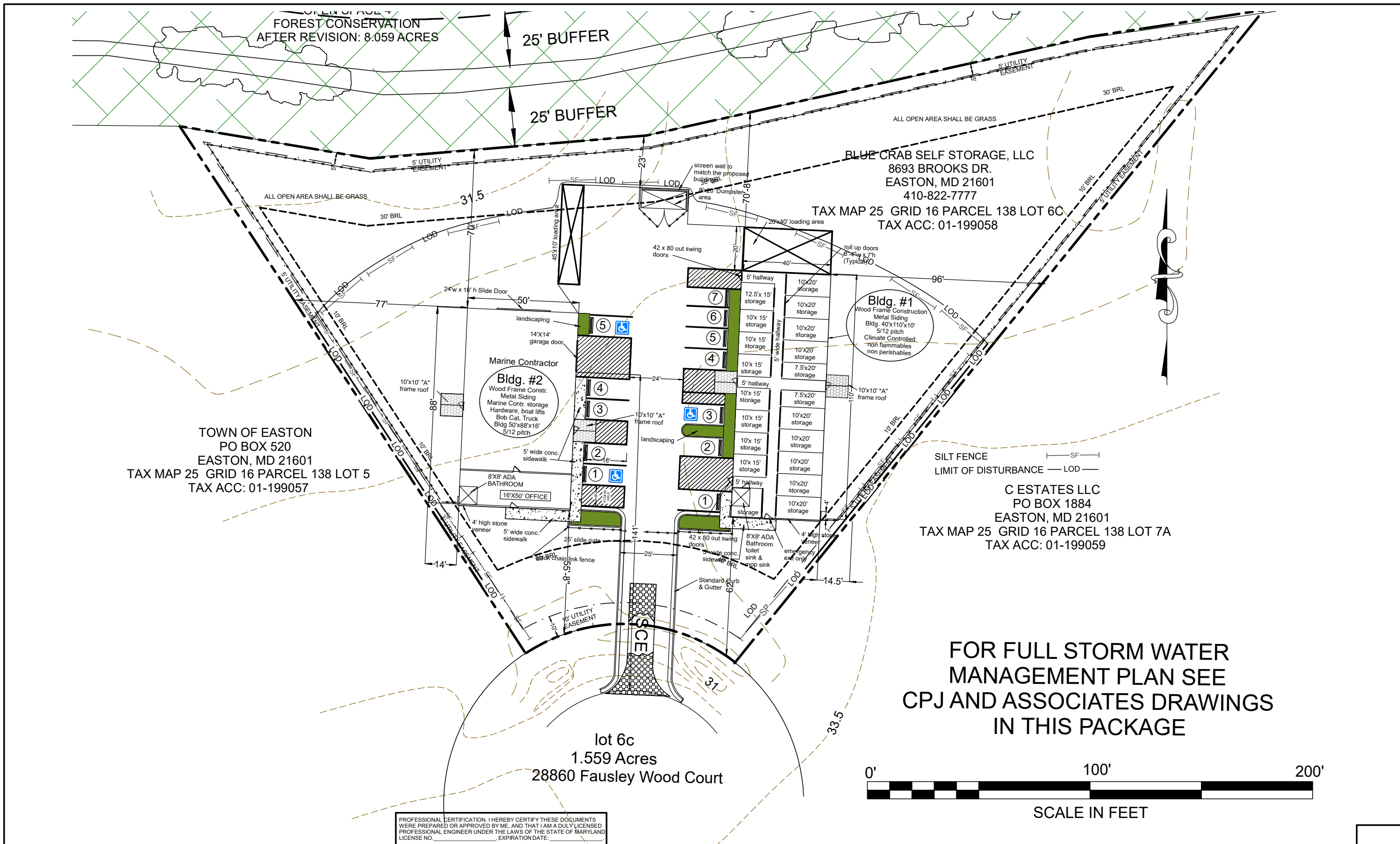
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LICENSE NO. _____, EXPIRATION DATE: _____

NOTE: NO OVERNIGHT PARKING OF TRUCKS AND COMMERCIAL VEHICLES PARKED OUTSIDE THE BUILDING OVERNIGHT EXCEPT IN THE REAR OR IN SUITABLY SCREENED AREAS.

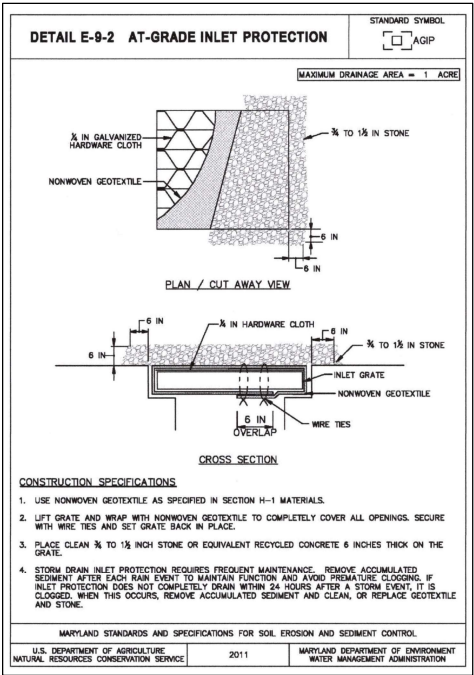


	APPROVED: _____ TOWN OF EASTON - PLANNING & ZONING DATE _____	APPROVED: _____ EASTON UTILITIES - ENGINEER DATE _____	OWNER / DEVELOPER / APPLICANT BLUE CRAB SELF STORAGE, LLC 8693 BROOKS DR. EASTON, MD 21601 410-822-7777	SEAL	DES. BY: DML	FMB	ORIGINAL DRAWING DATE	12/1/23	PROPOSED SITE PLAN	MISTLETOE HALL FARM SUBDIVISION 28860 FAUSLEY WOOD COURT WARD DISTRICT #1, EASTON, MD	SCALE AS SHOWN SHEET NO. 4
	APPROVED: _____ TOWN OF EASTON - TOWN ENGINEER DATE _____				DRN BY: FMB						
					CHK BY:						
					DATE:	BY	NO	REVISION			

REV. 3-1-2024



 ENGINEERING DEPARTMENT 14 S. HARRISON ST. P.O. BOX 520 EASTON, MD 21601 410-822-8822	APPROVED: TOWN OF EASTON - PLANNING & ZONING DATE: _____	APPROVED: EASTON UTILITIES - ENGINEER DATE: _____	OWNER / DEVELOPER / APPLICANT BLUE CRAB SELF STORAGE, LLC 8693 BROOKS DR. EASTON, MD 21601 410-822-7777	SEAL	DES. BY: DML	FMB	ORIGINAL DRAWING DATE	12/1/23	STORM WATER MANAGEMENT	MISTLETOE HALL FARM SUBDIVISION 28860 FAUSLEY WOOD COURT WARD DISTRICT #1, EASTON, MD	SCALE AS SHOWN SHEET NO. 5
	APPROVED: TOWN OF EASTON - TOWN ENGINEER DATE: _____				DRN BY: FMB						
					CHK BY:						
					DATE:						
					BY:	NO.	REVISION	DATE:			



EROSION AND SEDIMENT CONTROL STANDARDS & SPECIFICATIONS FOR VEGETATIVE STABILIZATION

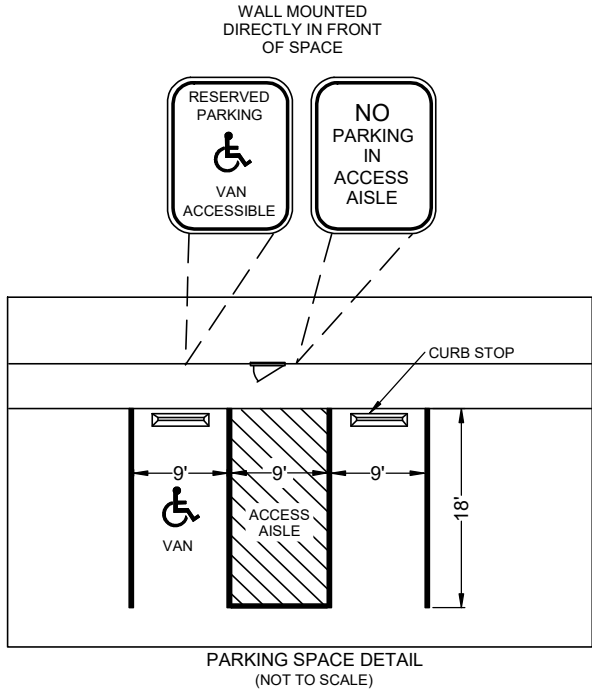
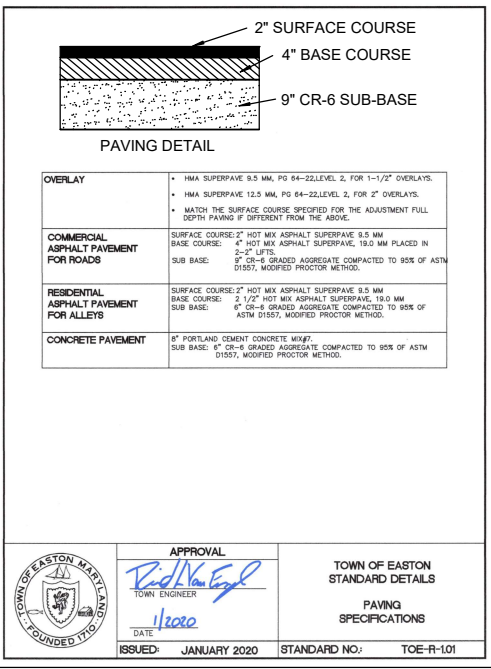
- 1) Contractor shall install soil erosion and sediment control devices prior to any grading. Following initial disturbance or re-disturbance, permanent or temporary stabilization shall be completed within three (3) calendar days as to the surface of all perimeter controls, dikes, swales, ditches, perimeter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

Seed Mixture (For Hardiness Zone 7a) (From Table B.1)				Fertilizer Rate (10-20-20)	Lime Rate
Species	Appl. Rate (lbs. / ac.)	Seeding Dates	Seeding Depths		
ANNUAL RYEGRASS	50#	2/15 - 4/30 8/15 - 11/30	1/2"	436 lbs. / ac. 10 lbs. / 1000 sf	2 tons / ac. 90 lbs. / 1000 sf
BARLEY	96#	2/15 - 4/30; 8/15 - 11/30	1"		
OATS	72#	2/15 - 4/30; 8/15 - 11/30	1"		
WHEAT	120#	2/15 - 4/30; 8/15 - 11/30	1"		
CEREAL RYE	112#	2/15 - 4/30; 8/15 - 12/15	1"		
FOXTAIL MILLET	30#	5/1 - 8/14	1/2"		
PEARL MILLET	20#	5/1 - 8/14	1/2"		

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

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

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



PHASE OF CONSTRUCTION

1. CONTACT THE MARYLAND DEPARTMENT OF THE ENVIRONMENT, PHONE (410) 901-4020 A MINIMUM OF TWO (2) WEEKS PRIOR TO THE START OF CONSTRUCTION TO SCHEDULE A PRE CONSTRUCTION MEETING TO REVIEW PLANS AND BECOME FAMILIAR WITH ALL PERMITS.
2. CONTRACTOR SHALL HAVE ALL SITE UTILITIES MARKED A MINIMUM OF 48 HOURS PRIOR TO ANY EXCAVATION.
3. INSTALL TEMPORARY SEDIMENT CONTROL MEASURES / PERIMETER CONTROLS. MAINTAIN THROUGHOUT PROJECT.
4. REMOVE A MINIMUM OF 6" OF TOPSOIL AS NEEDED AND DISPOSE OF EXCESS TOPSOIL OFFSITE AT AN APPROVED LANDFILL.
5. ROUGH GRADE SITE.
6. BEGIN BUILDING CONSTRUCTION.
7. MAINTAIN ALL SEDIMENT CONTROLS THROUGHOUT CONSTRUCTION.
8. ONCE BUILDING CONSTRUCTION IS TO SUFFICIENT POINT, INSTALL ENTRANCE, SITE PAVEMENT (PER SECTION) AND SIDEWALKS.
9. ONCE DRAINAGE AREAS ARE ADEQUATELY STABILIZED (PAVEMENT SUBBASE INSTALLED AT A MINIMUM) AFTER NOTIFYING THE TOWN OF EASTON STORMWATER MANAGEMENT INSPECTOR, INSTALL STORMWATER MANAGEMENT BIORETENTION PONDS AND QUANTITY CONTROL AREA. CONNECT ROOF LEADERS TO STORMWATER MANAGEMENT AREAS.
10. INSTALL SITE LANDSCAPING, FOREST CONSERVATION PLANTINGS AND STORMWATER MANAGEMENT PLANTINGS.
11. SEED AND MULCH PER SPECIFICATIONS, PROVIDE STABILIZATION MATTING WHERE APPLICABLE. PROVIDE PERMANENT STABILIZATION TO WHOLE SITE.
12. ONCE THE SITE IS FULLY STABILIZED AND THROUGH COORDINATION AND APPROVAL OF THE MDE & TOWN OF EASTON INSPECTORS. REMOVE SEDIMENT CONTROL MEASURES.

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).

1. UTILIZATION OF ENVIRONMENTAL SITE DESIGN
2. MAINTENANCE OF LIMITS OF DISTURBANCE TO PROTECT NATURAL AREAS
3. CONTROL OF CONSTRUCTION EQUIPMENT AND VEHICLES
4. EVALUATION AND APPROPRIATE LIMITATION OF SITE CLEARING
5. EVALUATION AND DESIGNATION OF SITE AREA FOR PHASING OR SEQUENCING
6. IDENTIFICATION OF SOILS AT HIGH RISK FOR EROSION AND ADVANCED STABILIZATION TECHNIQUES TO BE USED
7. IDENTIFICATION OF STEEP SLOPES AND DESIGNATION OF LIMITATIONS ON CLEARING THEM
8. EVALUATION AND DESIGNATION OF STABILIZATION REQUIREMENTS AND THE LIMITS AND PROTECTION MEASURES FOR DISCHARGES TO THE CHESAPEAKE BAY, IMPARED WATERS OR WATERS WITH AN ESTABLISHED TOTAL MAXIMUM DAILY LOAD (TMDL)

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 REFERED TO HERIN.

THIS DRAWING SHOWS INFORMATION OBTAINED FROM AVAILABE 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 OWNER AND ENGINEER DISCLAIM ANY RESPONSIBILITIES FOR THE ACCURACY OR COMPLETENESS OF SAID INFORMATION BEING SHOWN ONLY FOR THE CONVIENCE OF THE CONTRACTOR WHO MUST VERIFY THE INFORMATION TO HIS OWN SATIFICATION. IF THE CONTRACTOR RELIES ON SAID INFORMATION, HE DOES SO AT HIS OWN RISK. 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 PHASES WITH THEM:

MDE _____ 410-901-4020
TALBOT COUNTY _____ 410-770-8030
MISS UTILITY _____ 800-441-8355

SHOULD ANY DAMAGE OCCUR TO AN UTILITIES, THEY SHALL BE REPAIRD SOLELY AT THE CONTRACTOR'S EXPENSE.

ALL LANDSCAPING SHALL BE PREFORMED BY QUALIFIED PROFESSIONALS. ALL PLANT MATERIALS SHALL BE FROM CERTIFIED NURSERYMEN AND BE GUARNTTEED FOR ONE (1) YEAR FROM THE DATE OF PLANTING.

ANY PROPERTY MONUMENTS DISTURBED DURING CONSTRUCTION SHALL BE REPLACED SOLELY AT THE CONTRACTOR'S EXPENSE.

OWNER/DEVELOPER:
NAME: DAN LERINAN
STREET: 10555 LAKE ROAD
TOWN: EASTON, MD 21601

TOTAL LOT AREA = 67,910 SF
BUILDING #1 = 4,400 SF
BUILDING #2 = 4,400 SF
PAVING AREA = 10,900 SF
TOTAL DISTURBANCE = 19,700 SF

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE NO. _____, EXPIRATION DATE: _____



APPROVED: _____
TOWN OF EASTON - PLANNING & ZONING DATE _____

APPROVED: _____
TOWN OF EASTON - TOWN ENGINEER DATE _____

APPROVED: _____
EASTON UTILITIES - ENGINEER DATE _____

OWNER / DEVELOPER / APPLICANT
BLUE CRAB SELF STORAGE, LLC
8693 BROOKS DR.
EASTON, MD 21601
410-822-7777

SEAL

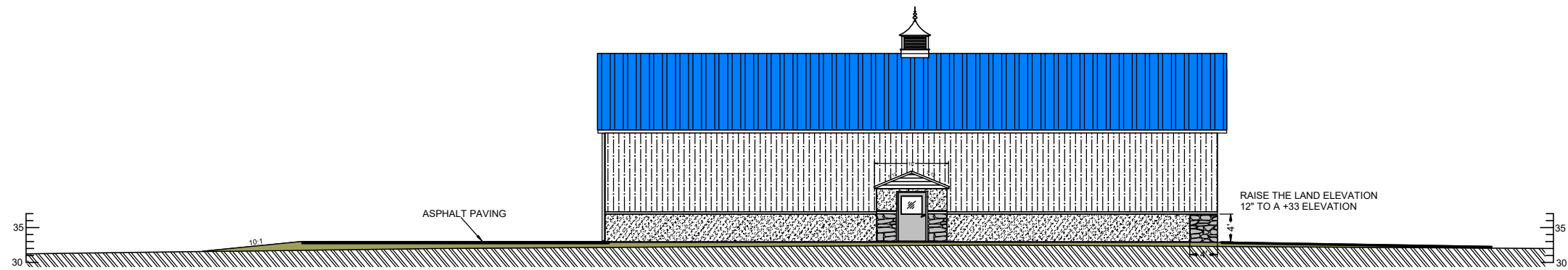
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DRN BY: FMB			
CHK BY:			
DATE:			
BY	NO.	REVISION	DATE:

DETAILS

**MISTLETOE HALL FARM
SUBDIVISION
28860 FAUSLEY WOOD COURT
WARD DISTRICT #1, EASTON, MD**

SCALE
AS SHOWN

SHEET NO.
7

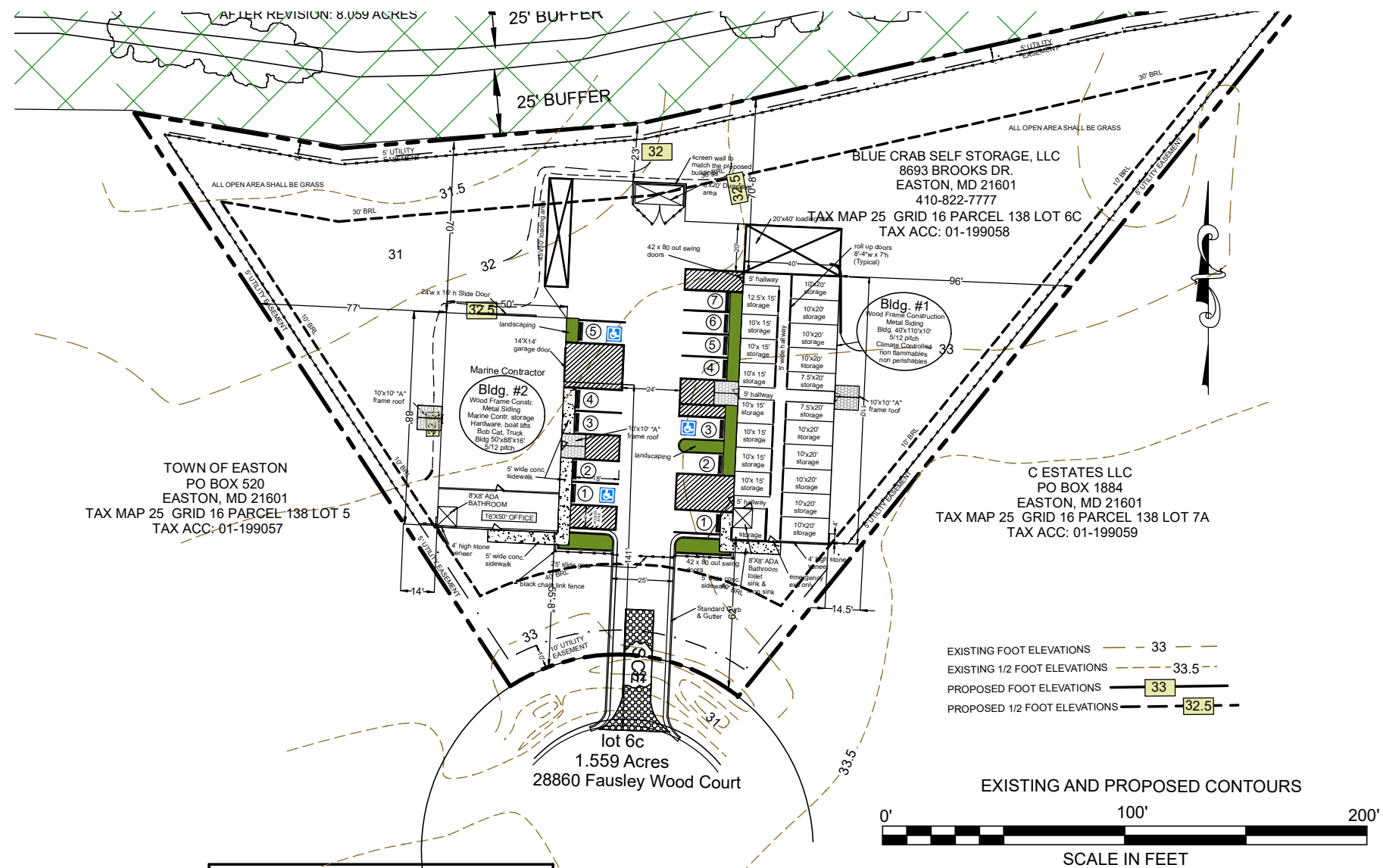


PROPOSED GRADE CHANGE TO +33 ELEVATION

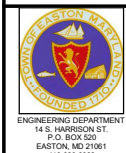
GROUND RAISED 12"



SCALE IN FEET



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APPROVED:	
TOWN OF EASTON - PLANNING & ZONING	DATE
APPROVED:	
TOWN OF EASTON - TOWN ENGINEER	DATE

APPROVED:	
EASTON UTILITIES - ENGINEER	DATE

OWNER / DEVELOPER / APPLICANT
BLUE CRAB SELF STORAGE, LLC
8693 BROOKS DR.
EASTON, MD 21601
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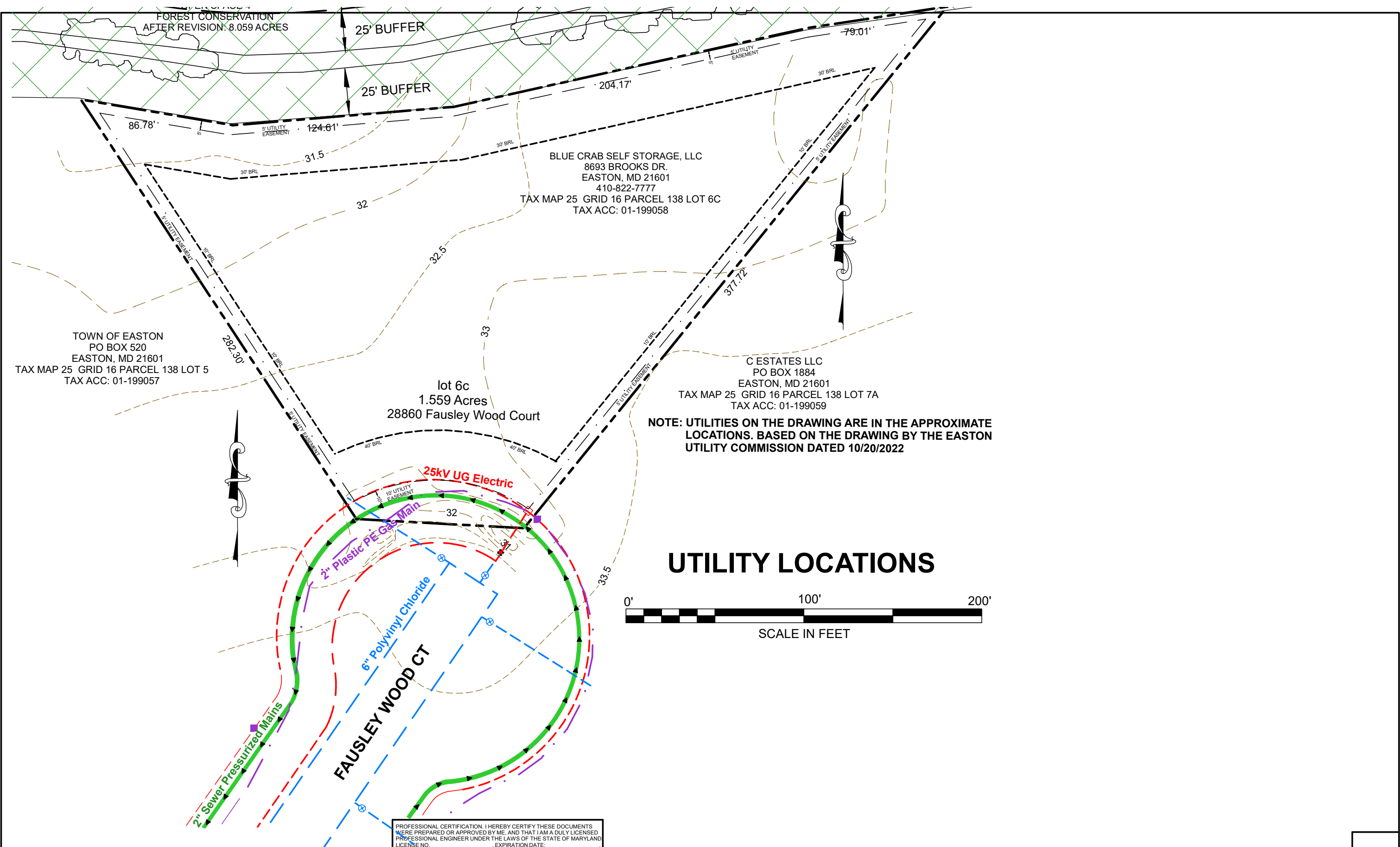
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CHK BY:			
DATE:			

EXISTING AND
PROPOSED
CONTOURS

MISTLETOE HALL FARM SUBDIVISION
28860 FAUSLEY WOOD COURT
WARD DISTRICT #1 EASTON MD

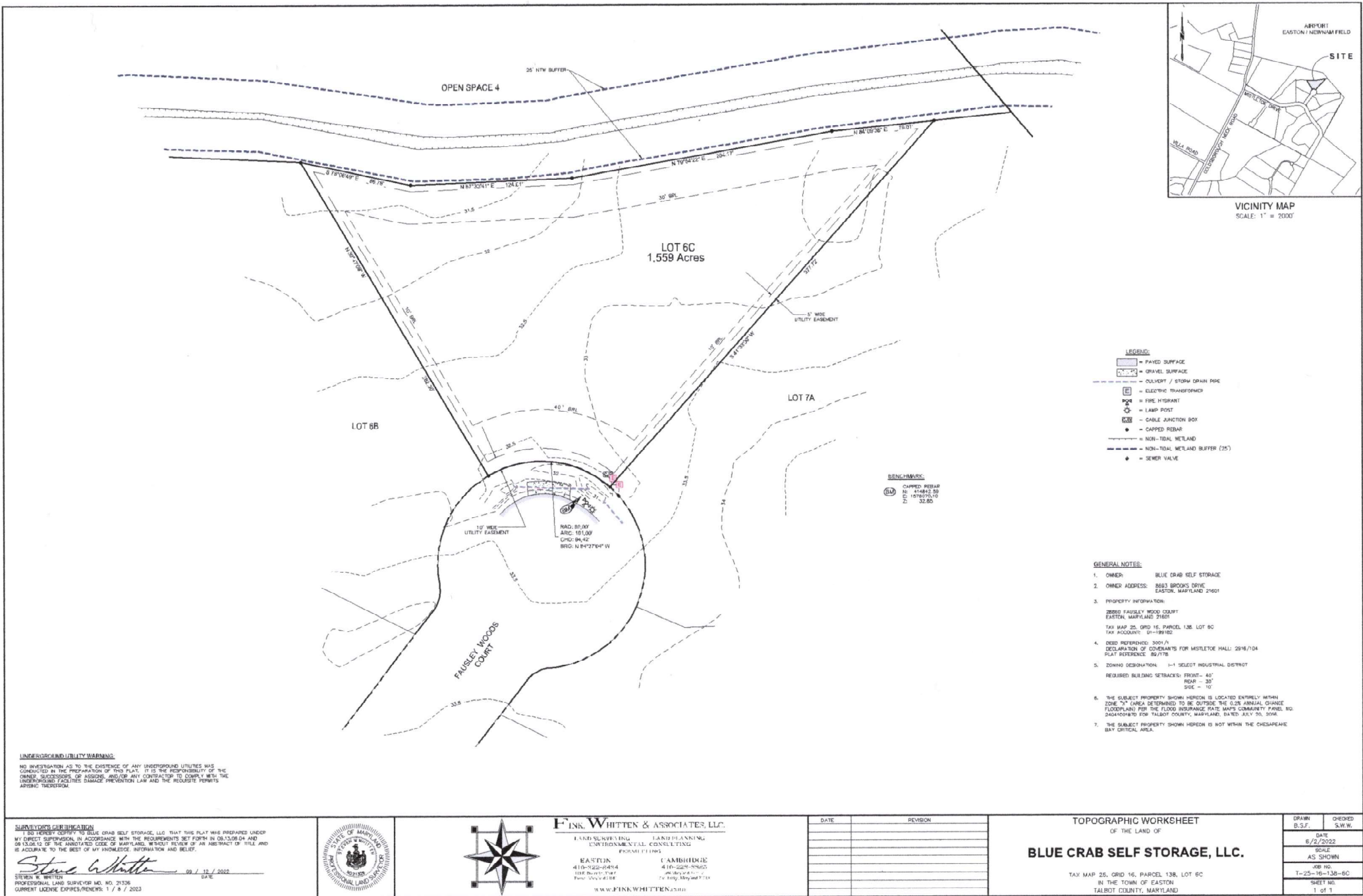
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SHEET NO. 8



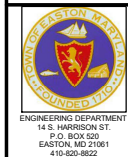
UTILITY LOCATIONS



 ENGINEERING DEPARTMENT 14 S. HARRISON ST. P.O. BOX 520 EASTON, MD 21601 410-822-8622	APPROVED: _____ TOWN OF EASTON - PLANNING & ZONING DATE: _____	APPROVED: _____ EASTON UTILITIES - ENGINEER DATE: _____	OWNER / DEVELOPER / APPLICANT BLUE CRAB SELF STORAGE, LLC 8693 BROOKS DR. EASTON, MD 21601 410-822-7777	SEAL	DES. BY: DML FMB ORIGINAL DRAWING DATE 12/1/23	UTILITY LOCATIONS	MISTLETOE HALL FARM SUBDIVISION 28860 FAUSLEY WOOD COURT WARD DISTRICT #1, EASTON, MD	SCALE AS SHOWN
	APPROVED: _____ TOWN OF EASTON - TOWN ENGINEER DATE: _____			DRN BY: FMB				SHEET NO. 9
				CHK BY:				
				DATE:	BY: NO. REVISION DATE			



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WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED
PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND
LICENSE NO. _____ EXPIRATION DATE: _____



APPROVED: _____
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APPROVED: _____
TOWN OF EASTON - TOWN ENGINEER DATE: _____

APPROVED: _____
EASTON UTILITIES - ENGINEER DATE: _____

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8693 BROOKS DR.
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SEAL

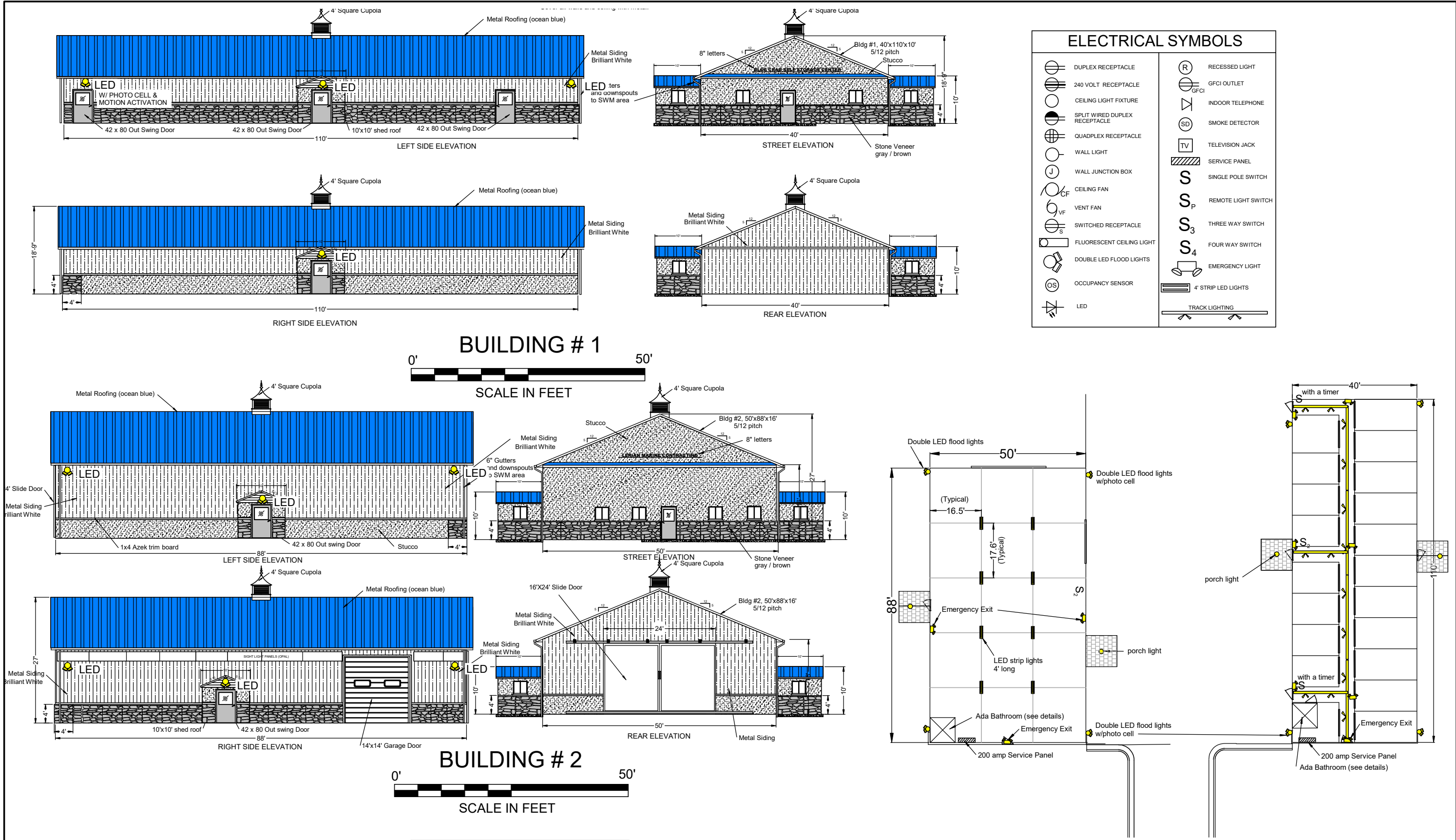
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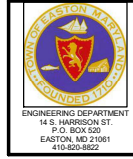
SEALED
PROPERTY
SURVEY

MISTLETOE HALL FARM
SUBDIVISION
28860 FAUSLEY WOOD COURT
WARD DISTRICT #1, EASTON, MD

SCALE
AS SHOWN

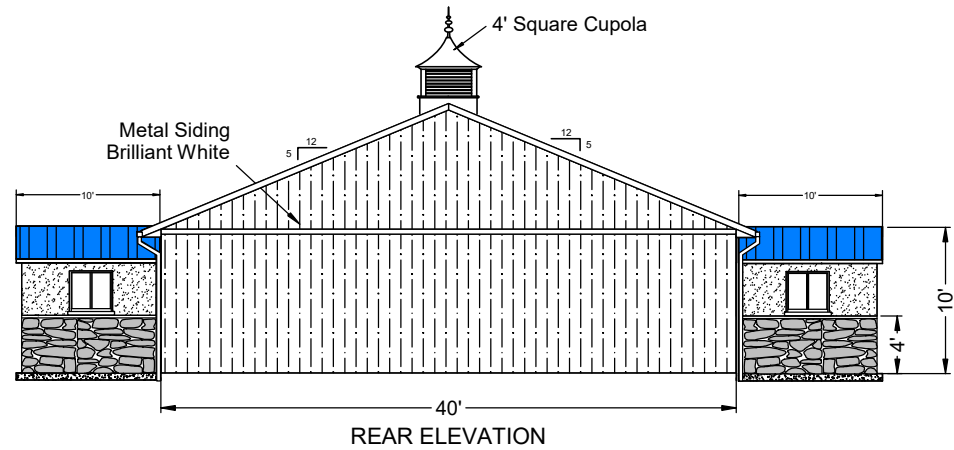
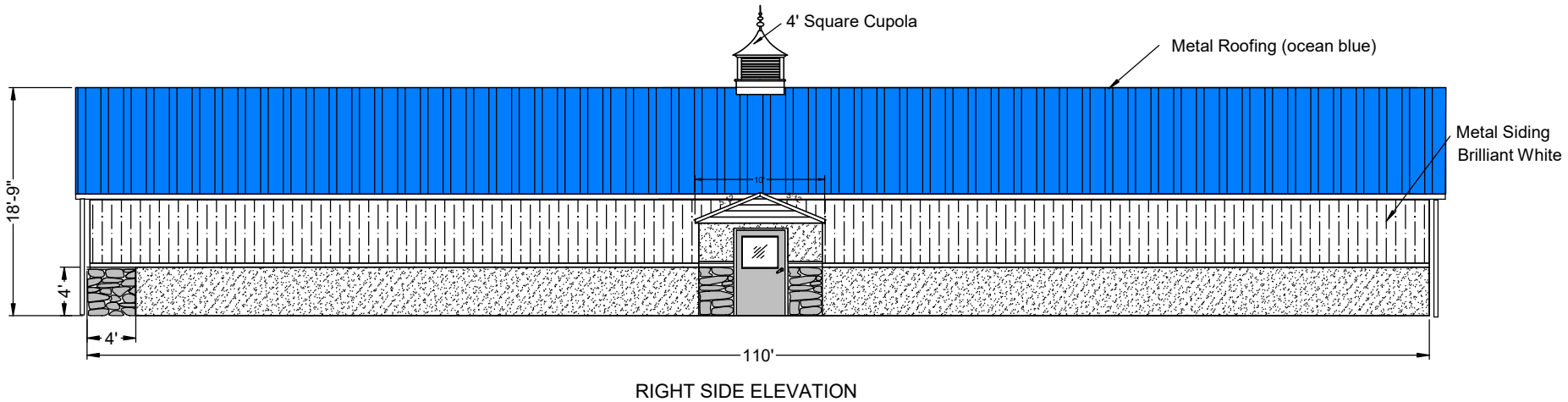
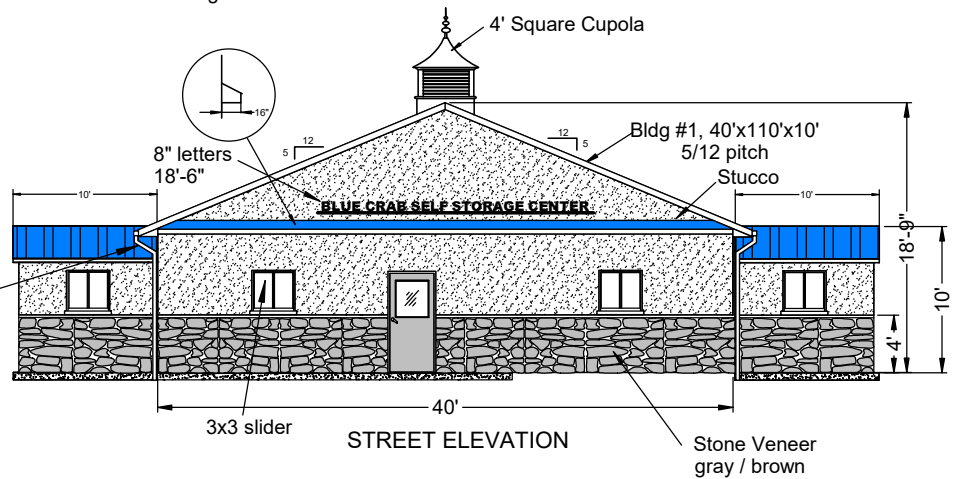
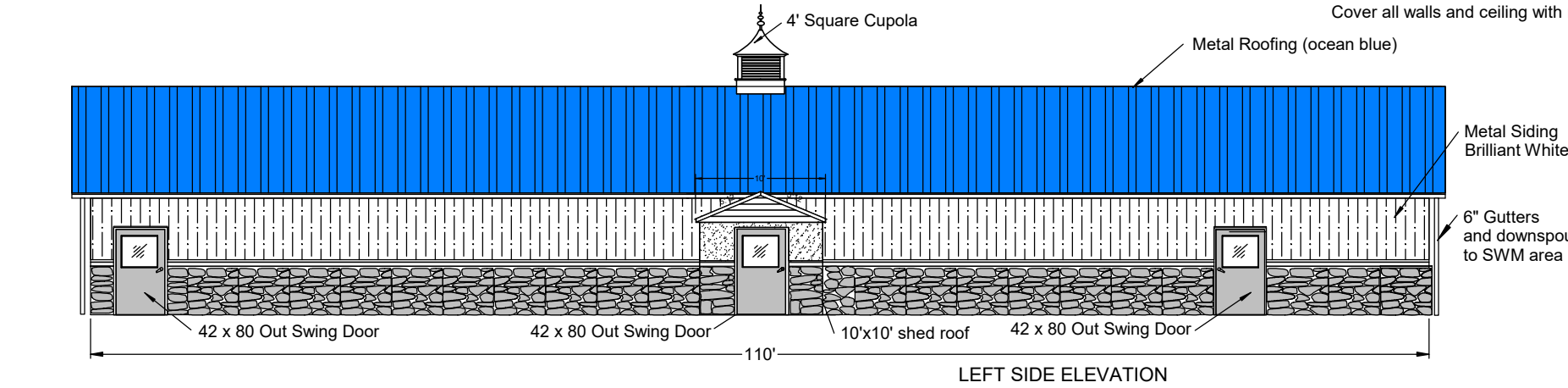
SHEET NO.
10



	APPROVED:	APPROVED:	OWNER / DEVELOPER / APPLICANT BLUE CRAB SELF STORAGE, LLC 8693 BROOKS DR. EASTON, MD 21601 410-822-7777	SEAL	DES. BY: DML	FMB	ORIGINAL DRAWING DATE	12/1/23	ELECTRIC	MISTLETOE HALL FARM SUBDIVISION 28860 FAUSLEY WOOD COURT WARD DISTRICT #1, EASTON, MD	SCALE AS SHOWN SHEET NO. 11		
	TOWN OF EASTON - PLANNING & ZONING	DATE:			EASTON UTILITIES - ENGINEER	DATE:	DRN BY: FMB						
	TOWN OF EASTON - TOWN ENGINEER	DATE:					CHK BY:						
							DATE:	BY				NO.	REVISION

NOTE:

Climate controlled building, 3 ply, 2x6 posts at 8' on centers, 2x4 purlins, 2- 2x12 beams, trusses 4' on centers, 2x6 wall framing at 16" on center, all exterior and divider walls. R-19 batt insulation on exterior walls, R-39 blown in the ceiling. Cover all walls and ceiling with metal.



BUILDING # 1



SCALE IN FEET

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. _____ EXPIRATION DATE: _____



APPROVED:	
TOWN OF EASTON - PLANNING & ZONING	DATE
APPROVED:	
TOWN OF EASTON - TOWN ENGINEER	DATE

APPROVED:	
EASTON UTILITIES - ENGINEER	DATE

OWNER / DEVELOPER / APPLICANT
BLUE CRAB SELF STORAGE, LLC
8693 BROOKS DR.
EASTON, MD 21601
410-822-7777

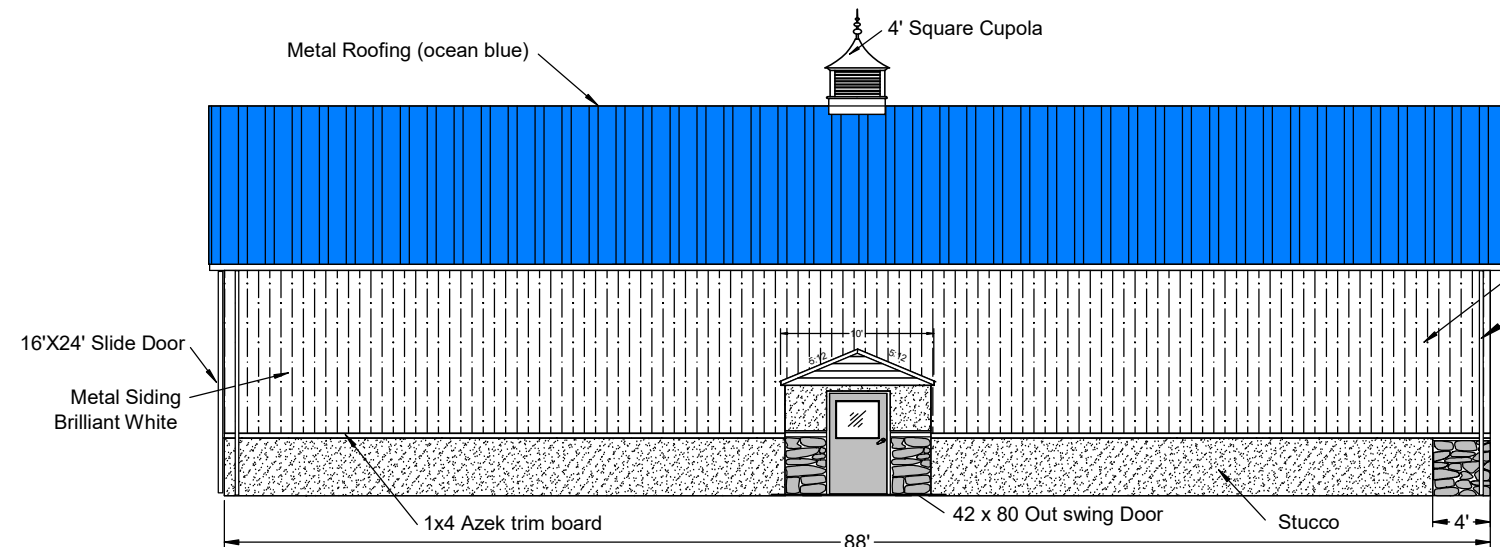
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DRN BY: FMB			
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DATE:			
BY	NO.	REVISION	DATE

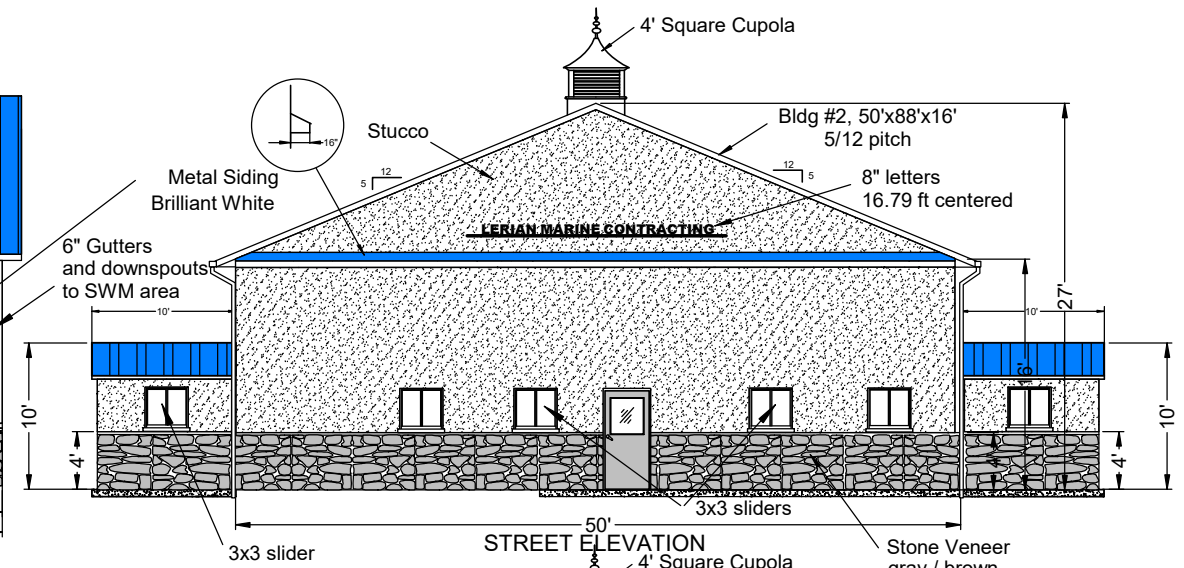
PROPOSED
BUILDING #1

MISTLETOE HALL FARM
SUBDIVISION
28860 FAUSLEY WOOD COURT
WARD DISTRICT #1, EASTON, MD

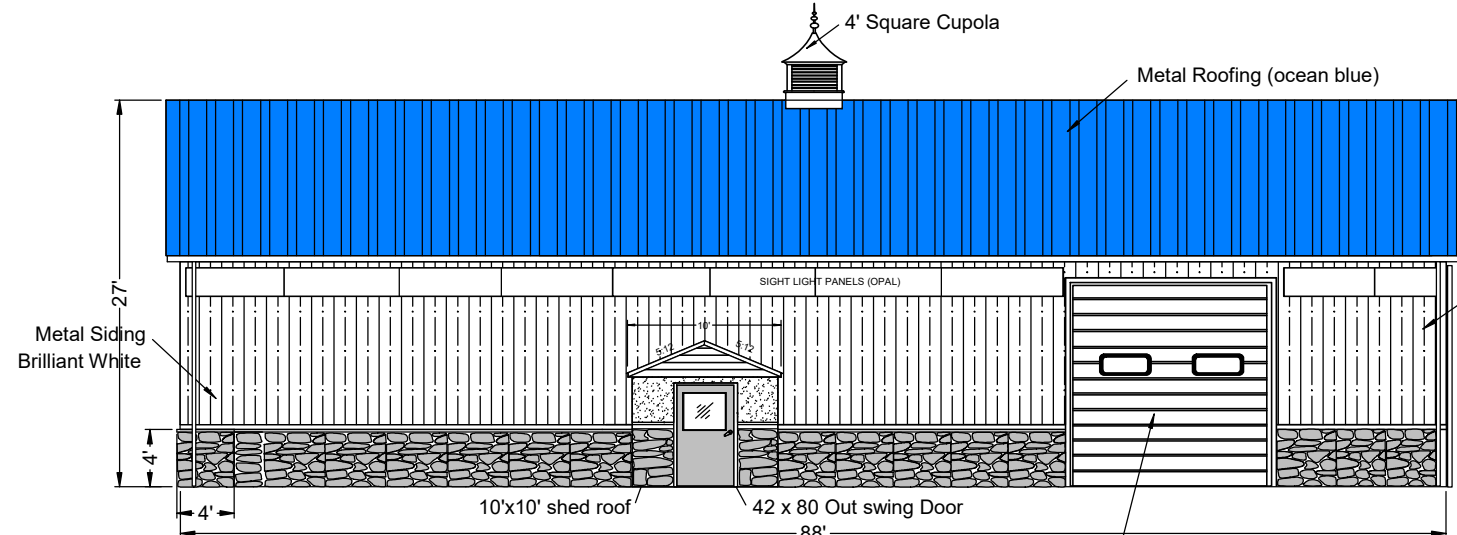
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AS SHOWN
SHEET NO.
12



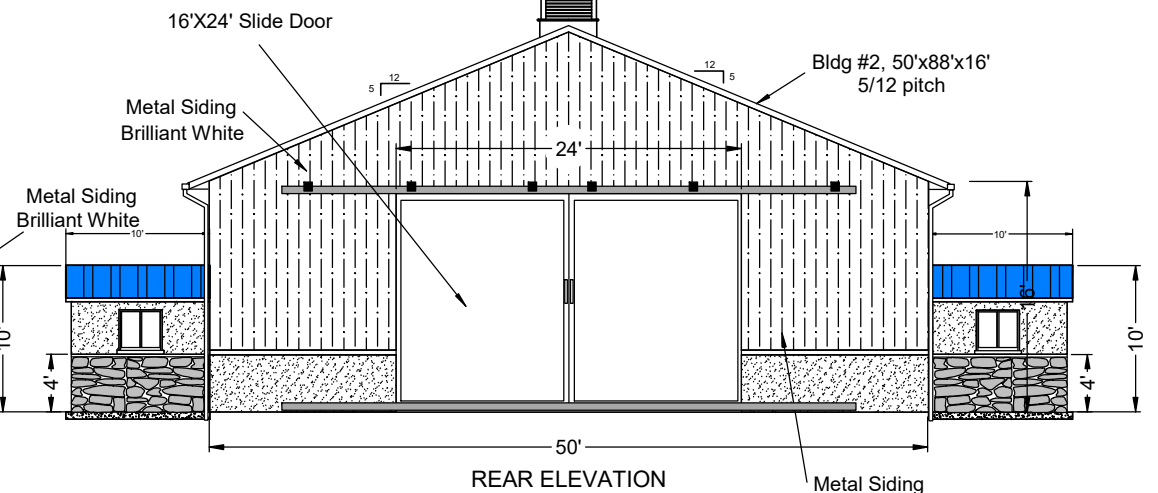
LEFT SIDE ELEVATION



STREET ELEVATION



RIGHT SIDE ELEVATION



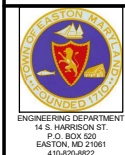
REAR ELEVATION

BUILDING # 2



SCALE IN FEET

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APPROVED:	DATE:
TOWN OF EASTON - PLANNING & ZONING	
APPROVED:	DATE:
TOWN OF EASTON - TOWN ENGINEER	

APPROVED:	DATE:
EASTON UTILITIES - ENGINEER	

OWNER / DEVELOPER / APPLICANT
BLUE CRAB SELF STORAGE, LLC
8693 BROOKS DR.
EASTON, MD 21601
410-822-7777

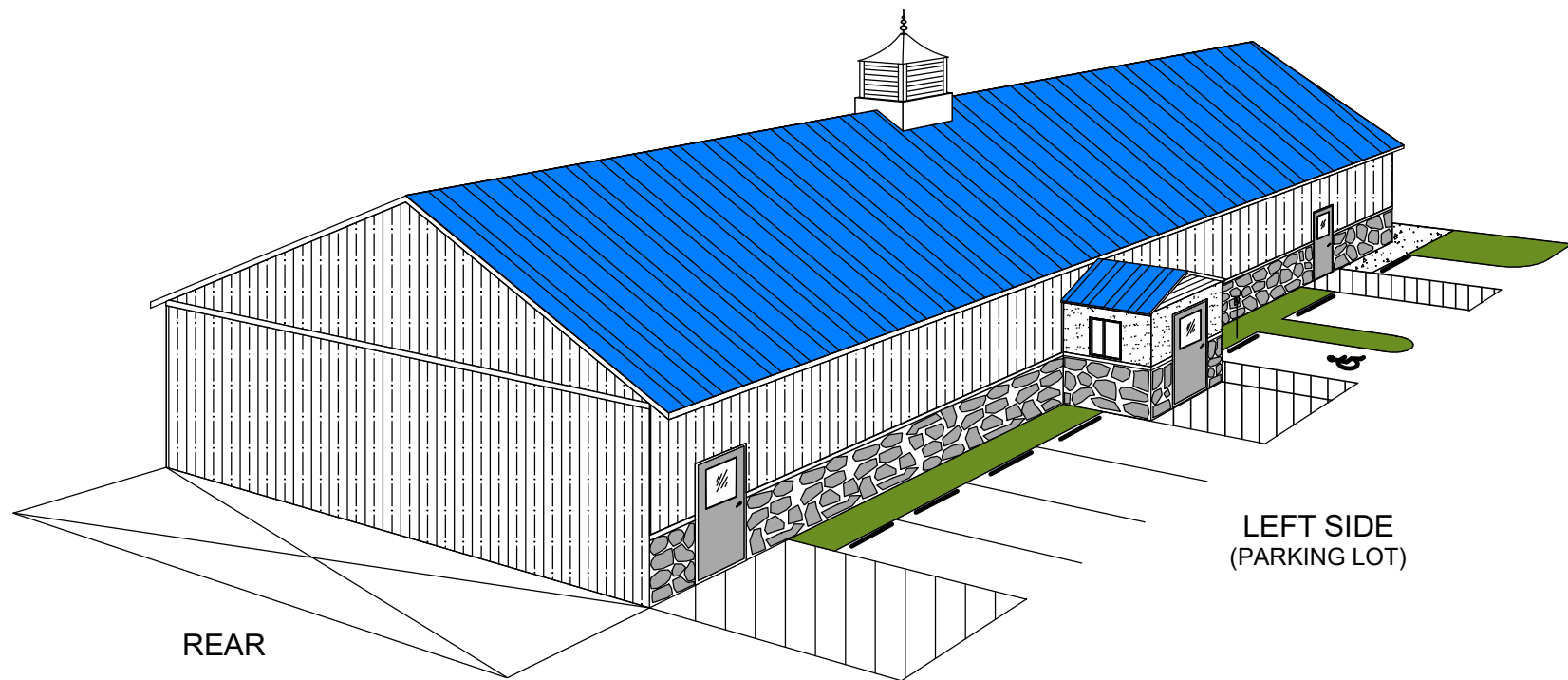
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DES. BY: DML	FMB	ORIGINAL DRAWING DATE	12/1/23
DRN BY: FMB			
CHK BY:			
DATE:			
BY	NO.	REVISION	DATE

**PROPOSED
BUILDING #2**

MISTLETOE HALL FARM
SUBDIVISION
28860 FAUSLEY WOOD COURT
WARD DISTRICT #1, EASTON, MD

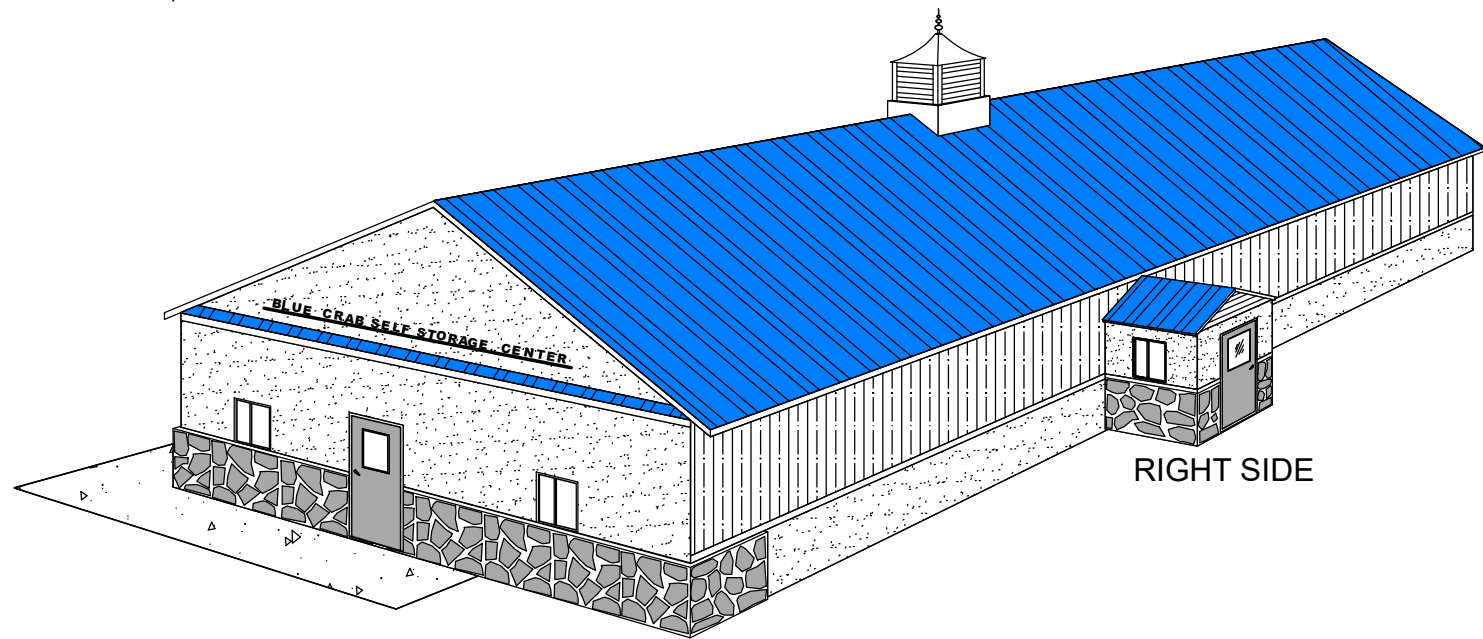
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SHEET NO. 13



REAR

LEFT SIDE
(PARKING LOT)

BUILDING #1

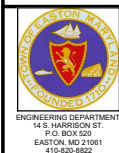


RIGHT SIDE

STREET SIDE

BUILDING #1

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. _____, EXPIRATION DATE: _____



APPROVED:	DATE:
TOWN OF EASTON - PLANNING & ZONING	DATE
APPROVED:	DATE:
TOWN OF EASTON - TOWN ENGINEER	DATE

APPROVED:	DATE:
EASTON UTILITIES - ENGINEER	DATE

OWNER / DEVELOPER / APPLICANT
BLUE CRAB SELF STORAGE, LLC
8693 BROOKS DR.
EASTON, MD 21601
410-822-7777

SEAL

DES. BY: DML	FMB	ORIGINAL DRAWING DATE	12/1/23
DRN BY: FMB			
CHK BY:			
DATE:	BY	NO.	REVISION

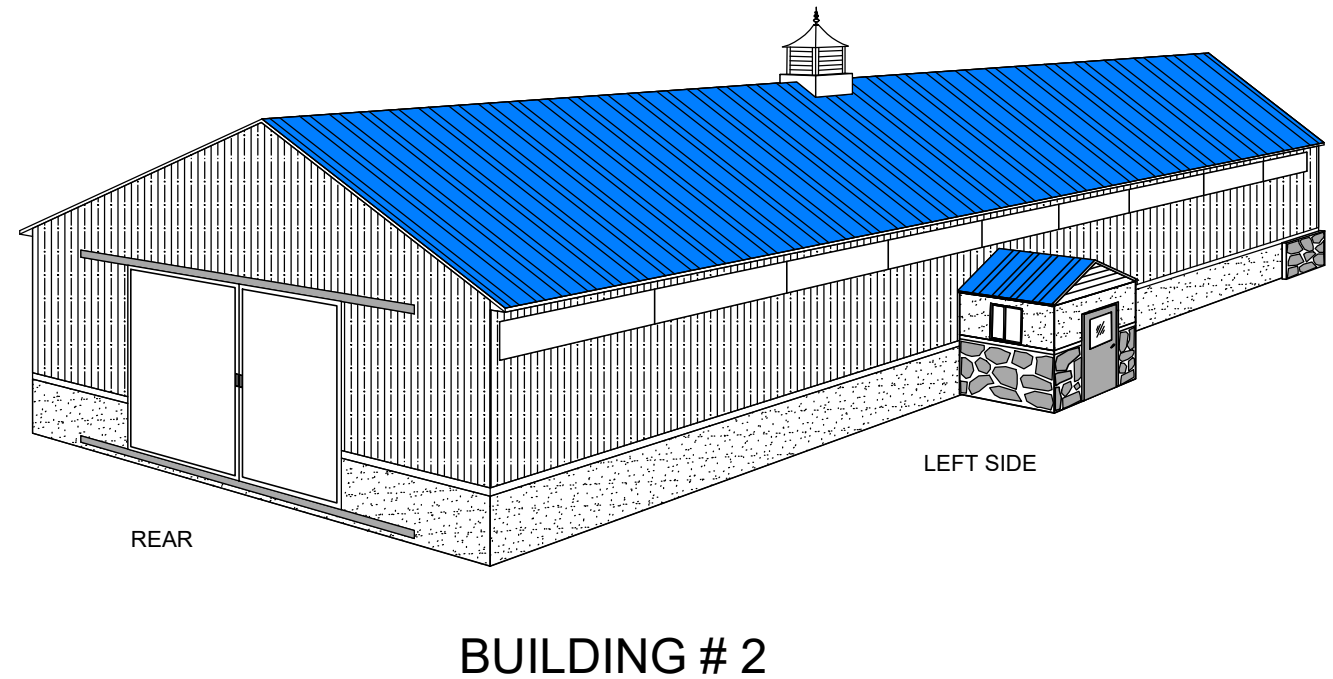
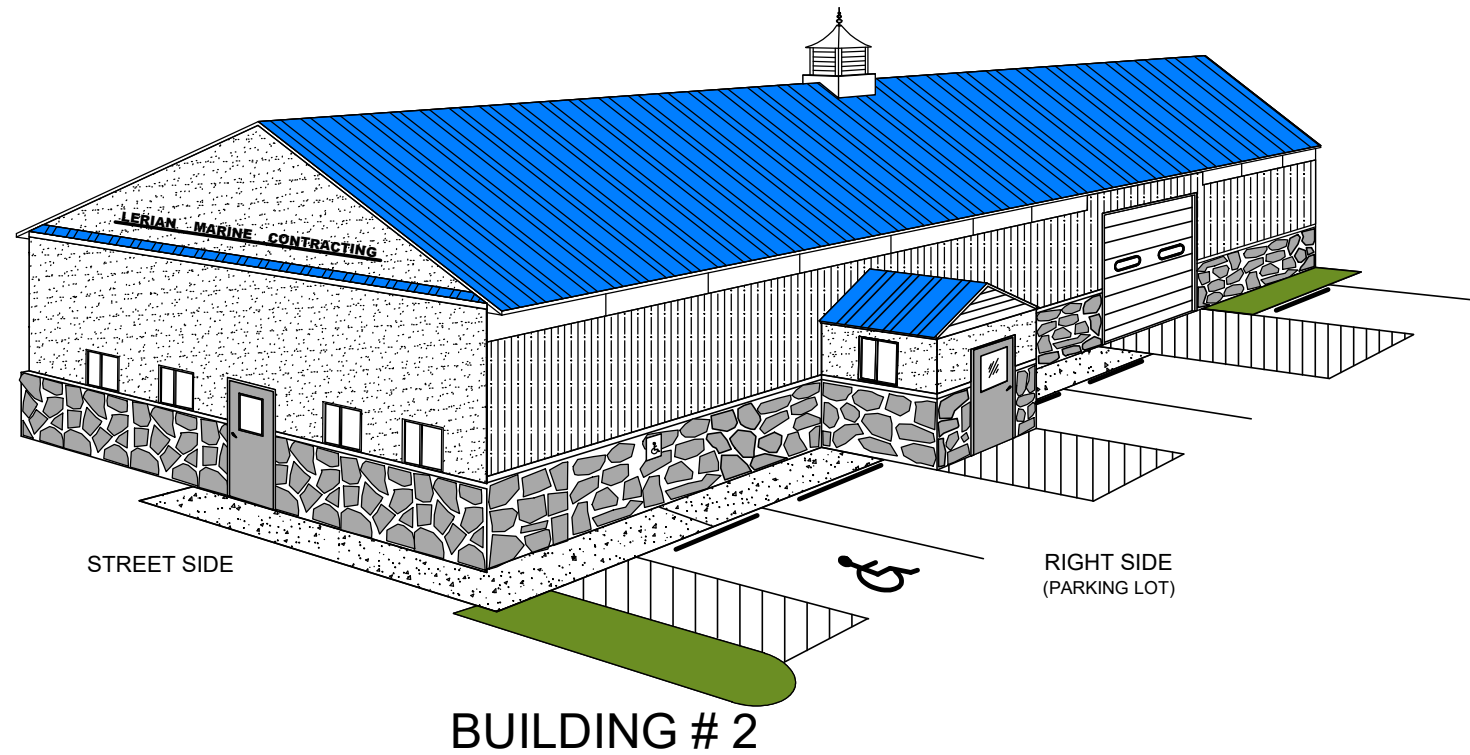
**ISOMETRIC
BUILDING #1**

MISTLETOE HALL FARM SUBDIVISION
28860 FAUSLEY WOOD COURT
WARD DISTRICT #1, EASTON, MD

14

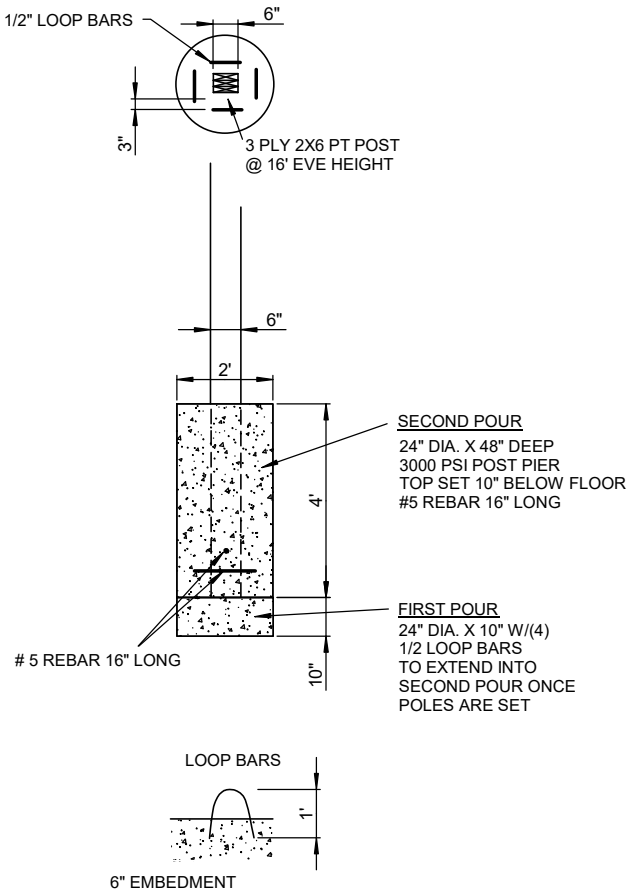
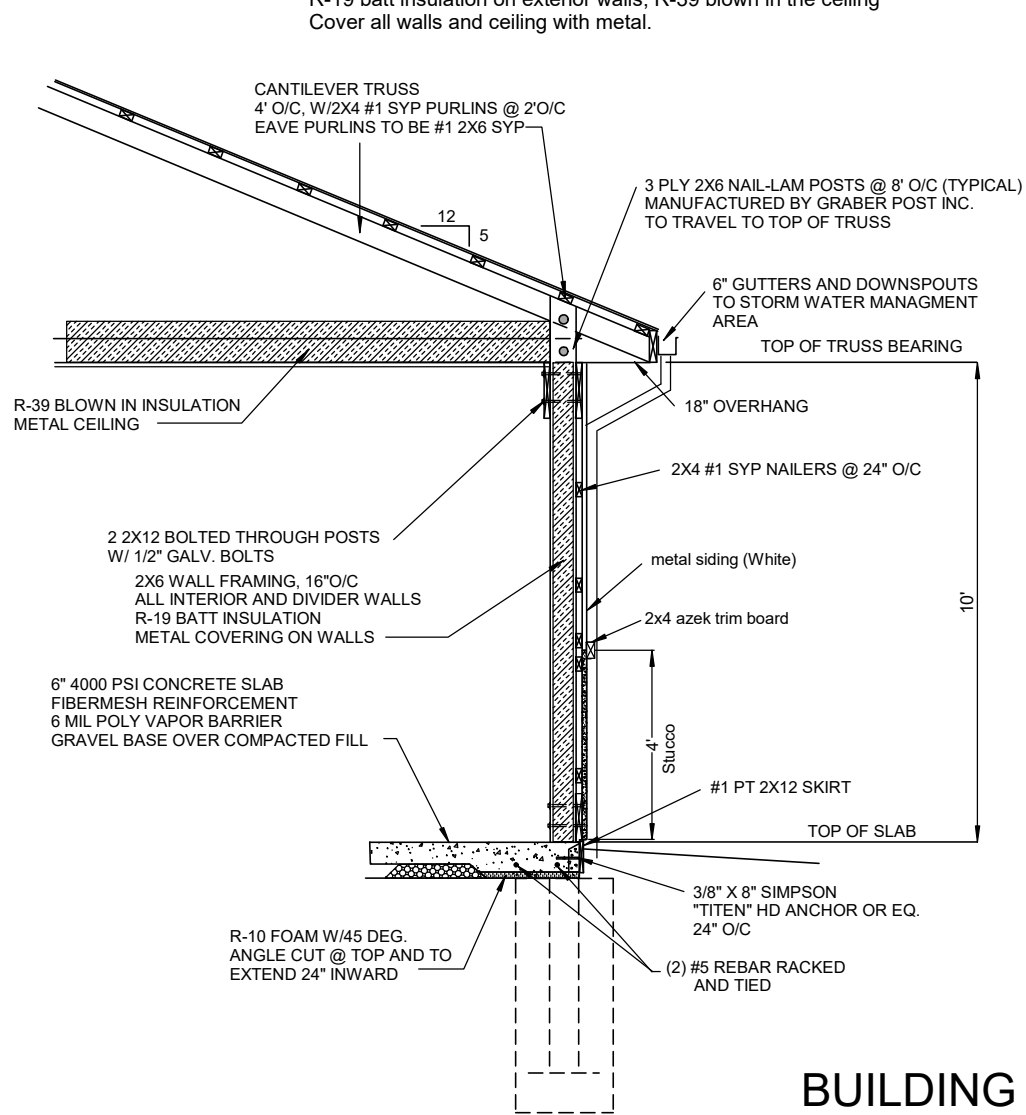
SCALE
AS SHOWN

SHEET NO.
14



 ENGINEERING DEPARTMENT 14 S. HARRISON ST. P.O. BOX 520 EASTON, MD 21601 410-822-8622		APPROVED: _____ TOWN OF EASTON - PLANNING & ZONING DATE: _____ APPROVED: _____ TOWN OF EASTON - TOWN ENGINEER DATE: _____		APPROVED: _____ EASTON UTILITIES - ENGINEER DATE: _____		PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. _____ EXPIRATION DATE: _____		OWNER / DEVELOPER / APPLICANT BLUE CRAB SELF STORAGE, LLC 8693 BROOKS DR. EASTON, MD 21601 410-822-7777		DES. BY: DML DRN BY: FMB CHK BY: DATE:		FMB ORIGINAL DRAWING DATE 12/1/23		ISOMETRIC BUILDING #2		MISTLETOE HALL FARM SUBDIVISION 28860 FAUSLEY WOOD COURT WARD DISTRICT #1, EASTON, MD		15 SCALE AS SHOWN SHEET NO. 15	
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Climate controlled building, 3 ply, 2x6 posts at 8' on centers, 2x4 purlins, 2- 2x12 beams, trusses 4' on centers, 2x6 wall framing at 16" on center, all exterior and divider walls. R-19 batt insulation on exterior walls, R-39 blown in the ceiling. Cover all walls and ceiling with metal.



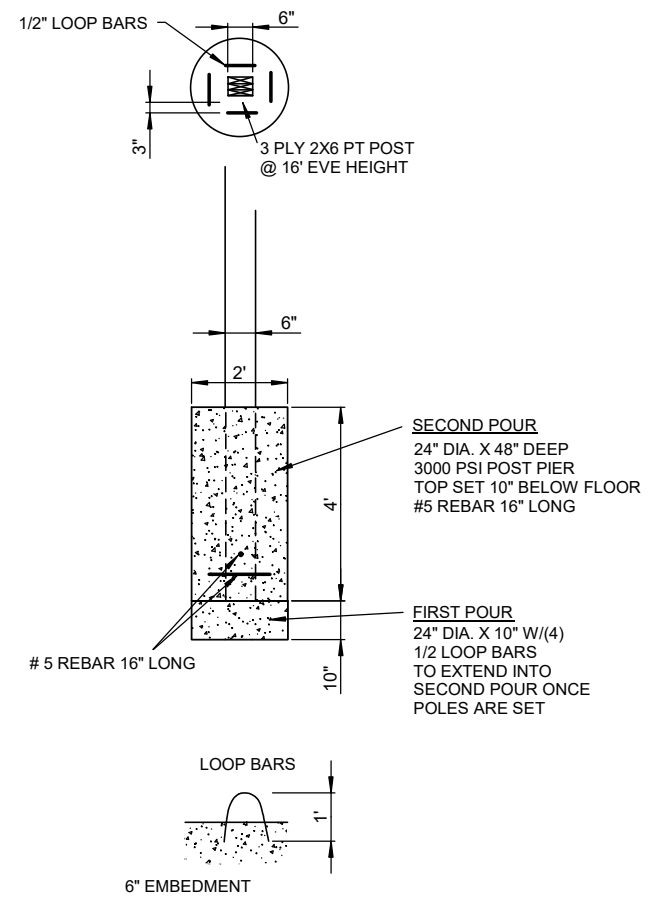
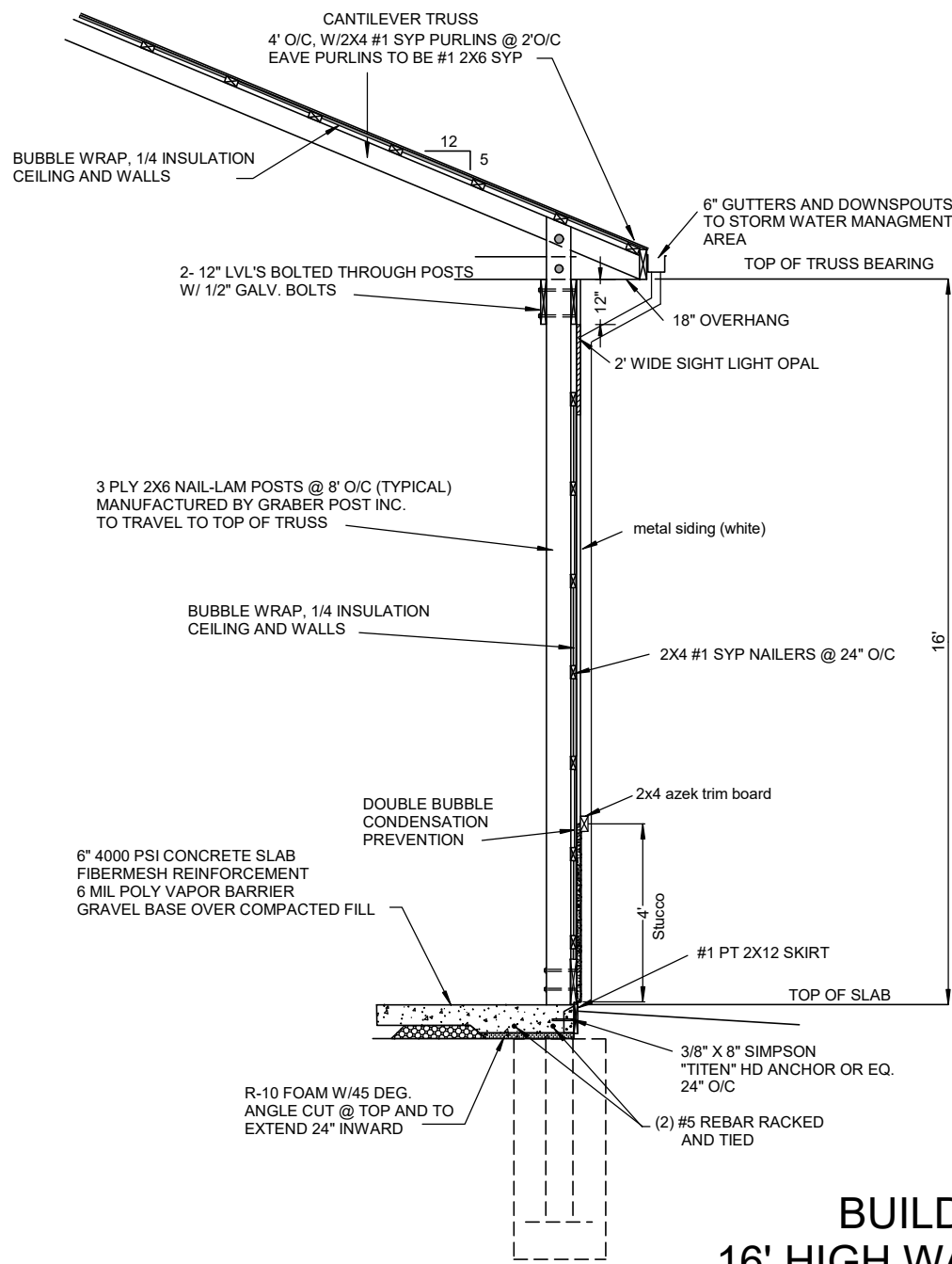
BUILDING #1
10' HIGH WALL SECTION

0' 5' 10'

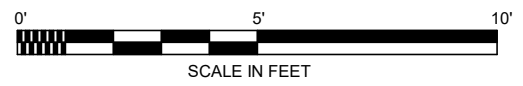
SCALE IN FEET

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. _____, EXPIRATION DATE: _____

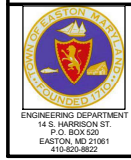
 ENGINEERING DEPARTMENT 14 S. HARRISON ST. EASTON, MD 21601 410-820-8822	APPROVED: TOWN OF EASTON - PLANNING & ZONING DATE	APPROVED: EASTON UTILITIES - ENGINEER DATE	OWNER / DEVELOPER / APPLICANT BLUE CRAB SELF STORAGE, LLC 8693 BROOKS DR. EASTON, MD 21601 410-822-7777	SEAL	DES. BY: DML FMB ORIGINAL DRAWING DATE 12/1/23	BUILDING #1 WALL DETAILS	MISTLETOE HALL FARM SUBDIVISION 28860 FAUSLEY WOOD COURT WARD DISTRICT #1, EASTON, MD	SCALE AS SHOWN	
	APPROVED: TOWN OF EASTON - TOWN ENGINEER DATE			DRN BY: FMB					SHEET NO. 16
				CHK BY:					
				DATE:	BY: NO.			REVISION	DATE:



BUILDING #2 16' HIGH WALL SECTION



PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. _____, EXPIRATION DATE: _____.



APPROVED: TOWN OF EASTON - PLANNING & ZONING DATE _____	APPROVED: EASTON UTILITIES - ENGINEER DATE _____
APPROVED: TOWN OF EASTON - TOWN ENGINEER DATE _____	

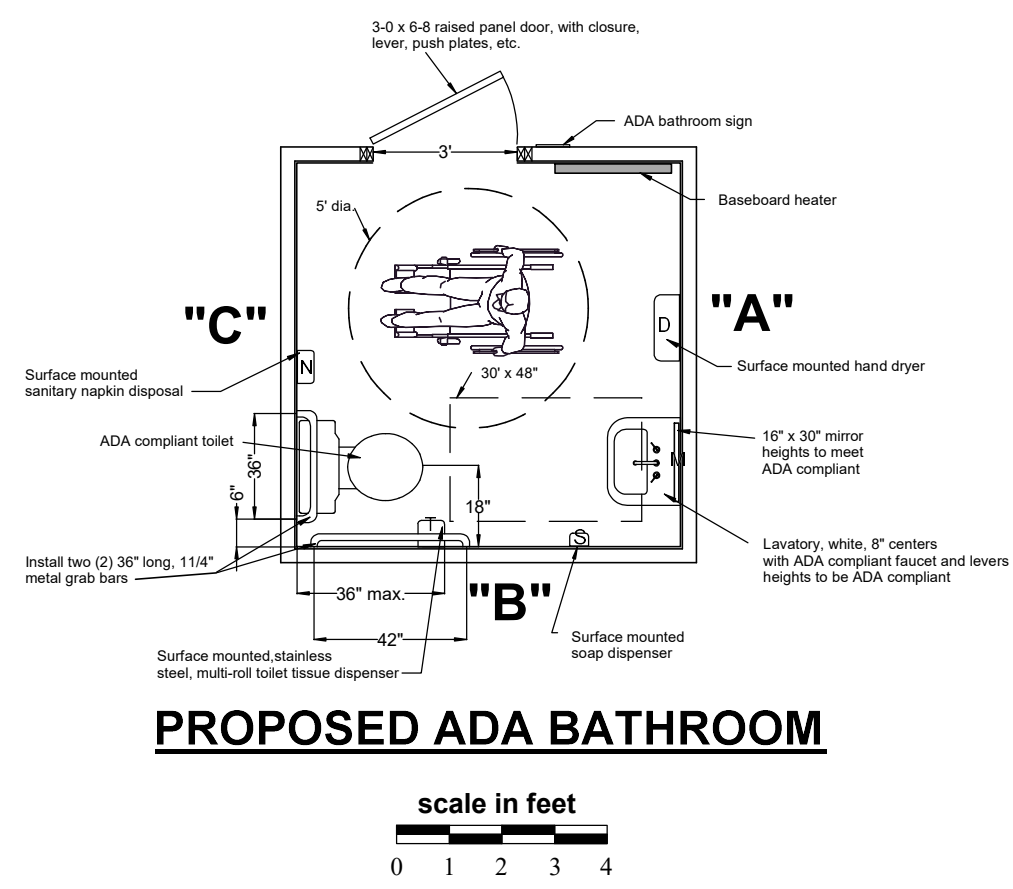
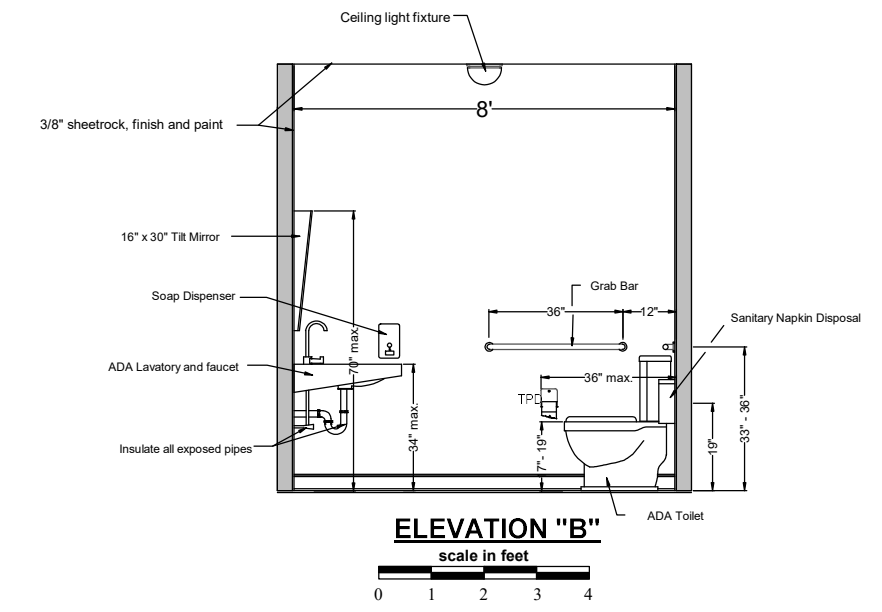
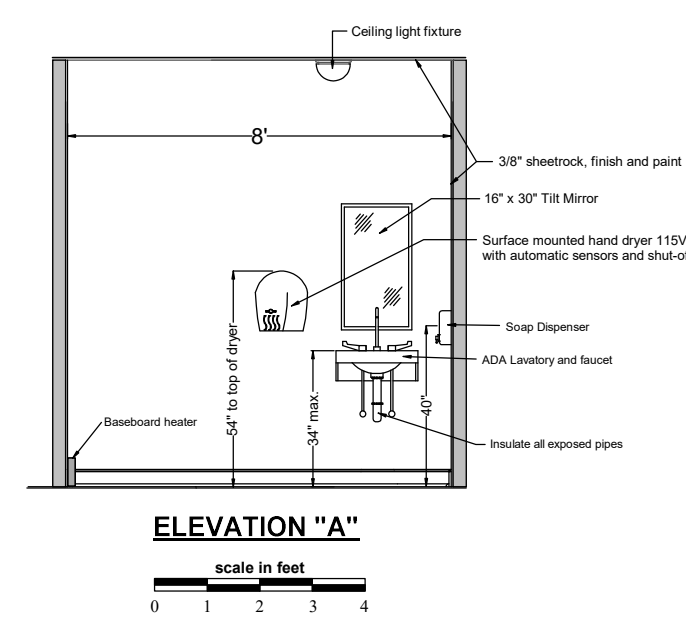
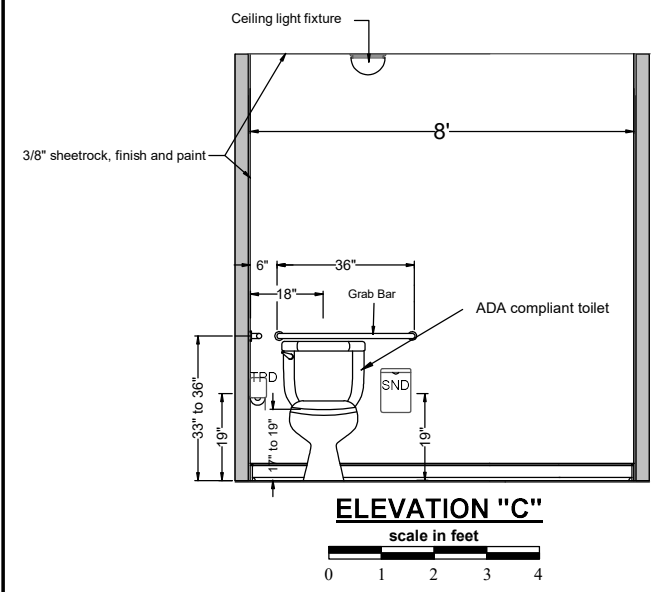
OWNER / DEVELOPER / APPLICANT BLUE CRAB SELF STORAGE, LLC 8693 BROOKS DR. EASTON, MD 21601 410-822-7777	SEAL
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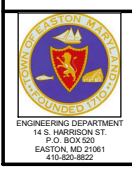
BUILDING #2 WALL DETAILS

MISTLETOE HALL FARM
SUBDIVISION
28860 FAUSLEY WOOD COURT
WARD DISTRICT #1, EASTON, MD

SCALE AS SHOWN	SHEET NO. 17
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PROPOSED ADA BATHROOM



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

OWNER / DEVELOPER / APPLICANT
BLUE CRAB SELF STORAGE, LLC
8693 BROOKS DR.
EASTON, MD 21601
410-822-7777

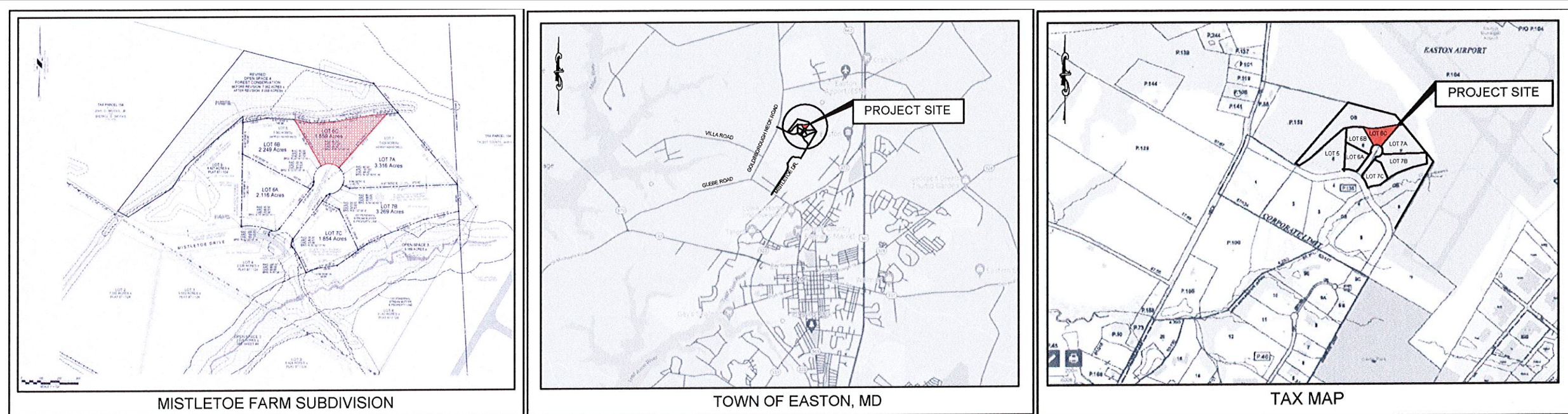
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DES. BY: DML	FMB	ORIGINAL DRAWING DATE	12/1/23
DRN BY: FMB			
CHK BY:			
DATE:			
BY	NO.	REVISION	DATE

ADA
BATHROOMS

MISTLETOE HALL FARM
SUBDIVISION
28860 FAUSLEY WOOD COURT
WARD DISTRICT #1, EASTON, MD

SCALE AS SHOWN
SHEET NO. 18

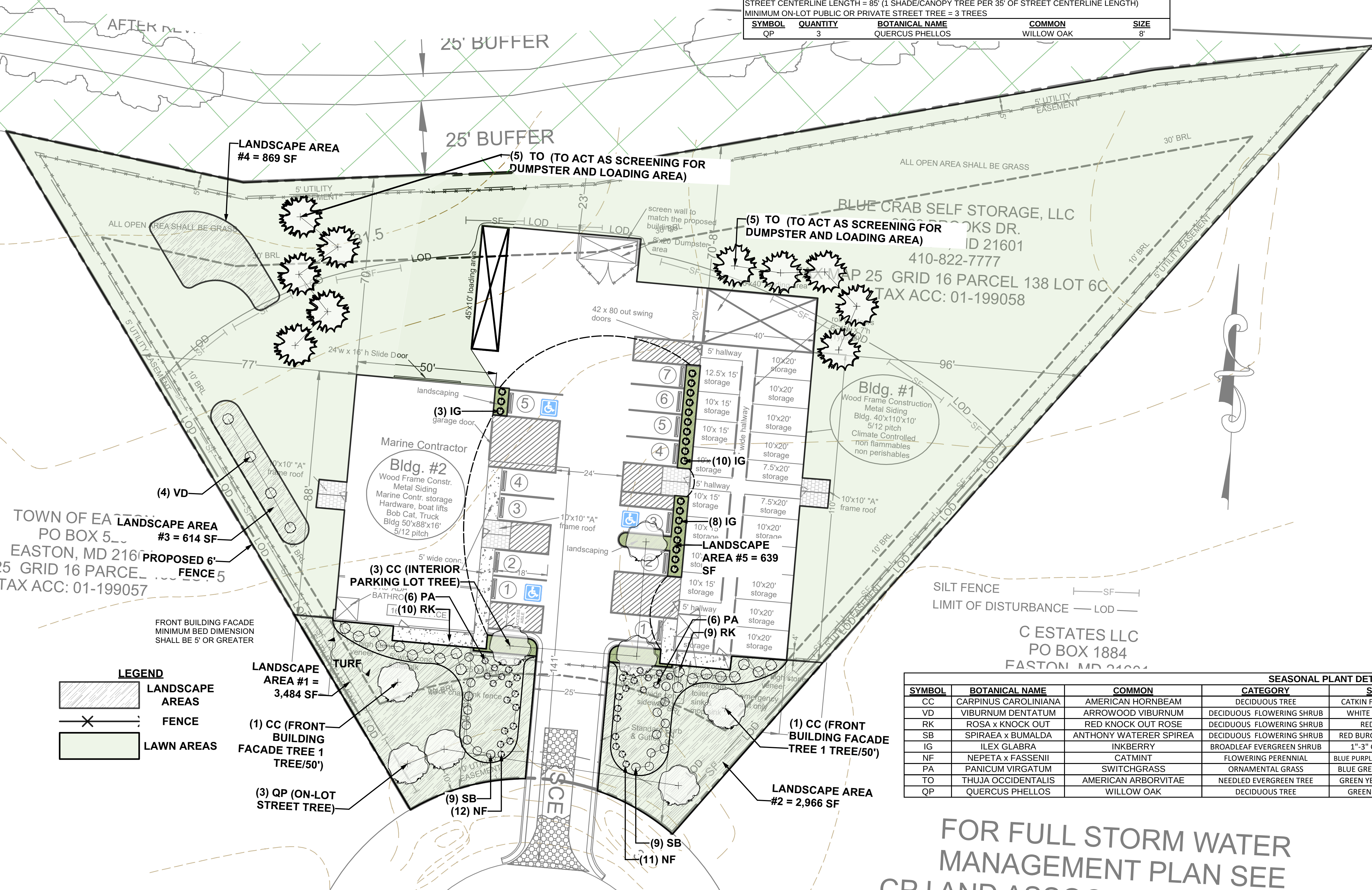


LANDSCAPE TABULATIONS

LANDSCAPE PLANT LIST				
SYMBOL	QUANTITY	BOTANICAL NAME	COMMON	SIZE
CC	5	CARPINUS CAROLINIANA	AMERICAN HORNBEAM	8'
VD	3	VIBURNUM DENTATUM	ARROWOOD VIBURNUM	3 GAL.
RK	21	ROSA x KNOCK OUT	RED KNOCK OUT ROSE	3 GAL.
SB	18	SPIRAEA x BUMALDA	ANTHONY WATERER SPIREA	3 GAL.
IG	21	ILEX GLABRA	INKBERRY	3 GAL.
NF	23	NEPETA x FASSENII	CATMINT	1 GAL.
PA	12	PANICUM VIRGATUM	SWITCHGRASS	1 GAL.
LANDSCAPE AREA TAB				
TOTAL LOT AREA = 67,910 SF				
TOTAL LANDSCAPE AREA REQUIRED = 8,498 SF OF 12.5% OF TOTAL LOT AREA				
		LANDSCAPE AREA #1		3,484 SF
		LANDSCAPE AREA #2		2,966 SF
		LANDSCAPE AREA #3		614 SF
		LANDSCAPE AREA #4		869 SF
		LANDSCAPE AREA #5		639 SF
TOTAL LANDSCAPE AREA				8,572 SF

OVERALL MINIMUM TREE PLANTINGS				
TOTAL AREA DISTURBED = 19,700 SF (DISTURBED AREA 11,001 TO 100,000 SF = 1 TREE/1,500 SF)				
MINIMUM TREE PLANTINGS REQUIRED = 14 TREES				
SYMBOL	QUANTITY	BOTANICAL NAME	COMMON	SIZE
CC	2	CARPINUS CAROLINIANA	AMERICAN HORNBEAM	8'
TO	10	THUJA OCCIDENTALIS	AMERICAN ARBORVITAE	8'
QP	3	QUERCUS PHELLOS	WILLOW OAK	8'

ON-LOT PUBLIC OR PRIVATE STREET TREE				
STREET CENTERLINE LENGTH = 85' (1 SHADE/CANOPY TREE PER 35' OF STREET CENTERLINE LENGTH)				
MINIMUM ON-LOT PUBLIC OR PRIVATE STREET TREE = 3 TREES				
SYMBOL	QUANTITY	BOTANICAL NAME	COMMON	SIZE
QP	3	QUERCUS PHELLOS	WILLOW OAK	8'



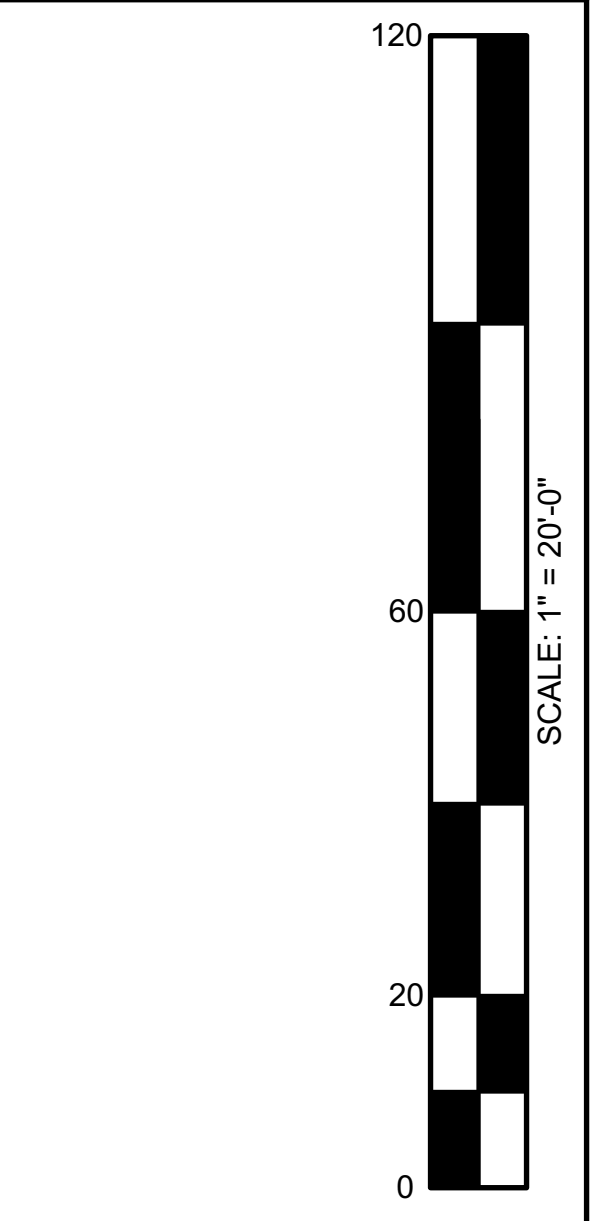
SEASONAL PLANT DETAILS							
SYMBOL	BOTANICAL NAME	COMMON	CATEGORY	SPRING	SUMMER	FALL	WINTER
CC	CARPINUS CAROLINIANA	AMERICAN HORNBEAM	DECIDUOUS TREE	CATKIN FLOWER 1"-2.5"	GREEN YELLOW LEAF	ORANGE RED LEAF	UPRIGHT TREE STRUCTURE
VD	VIBURNUM DENTATUM	ARROWOOD VIBURNUM	DECIDUOUS FLOWERING SHRUB	WHITE BELL FLOWER	GREEN GLOSSY LEAF	PURPLE RED LEAF	WOODY SHRUB STRUCTURE
RK	ROSA x KNOCK OUT	RED KNOCK OUT ROSE	DECIDUOUS FLOWERING SHRUB	RED FLOWER	RED FLOWER	RED FLOWER	WOODY SHRUB STRUCTURE
SB	SPIRAEA x BUMALDA	ANTHONY WATERER SPIREA	DECIDUOUS FLOWERING SHRUB	RED BURGUNDY FLOWER	RED BURGUNDY FLOWER	RED BURGUNDY LEAF	WOODY SHRUB STRUCTURE
IG	ILEX GLABRA	INKBERRY	BROADLEAF EVERGREEN SHRUB	1"-3" GLOSSY LEAF	1"-3" GLOSSY LEAF	BLACK PEASIZE FRUIT	1"-3" GLOSSY LEAF
NF	NEPETA x FASSENII	CATMINT	FLOWERING PERENNIAL	BLUE PURPLE RACEME FLOWER	BLUE PURPLE RACEME FLOWER	BLUE PURPLE RACEME FLOWER	NA
PA	PANICUM VIRGATUM	SWITCHGRASS	ORNAMENTAL GRASS	BLUE GREEN GLOSSY LEAF	PINK PANICLE FLOWER	PINK PANICLE FLOWER	BLUE GREEN GLOSSY LEAF
TO	THUJA OCCIDENTALIS	AMERICAN ARBORVITAE	NEEDED EVERGREEN TREE	GREEN YELLOW NEEDLES	GREEN YELLOW NEEDLES	GREEN YELLOW NEEDLES	GREEN YELLOW NEEDLES
QP	QUERCUS PHELLOS	WILLOW OAK	DECIDUOUS TREE	GREEN SHOWY LEAF	GREEN SHOWY LEAF	YELLOW ORANGE RED LEAF	WOODY TREE STRUCTURE

FOR FULL STORM WATER
MANAGEMENT PLAN SEE
CPJ AND ASSOCIATES DRAWINGS
IN THIS PACKAGE

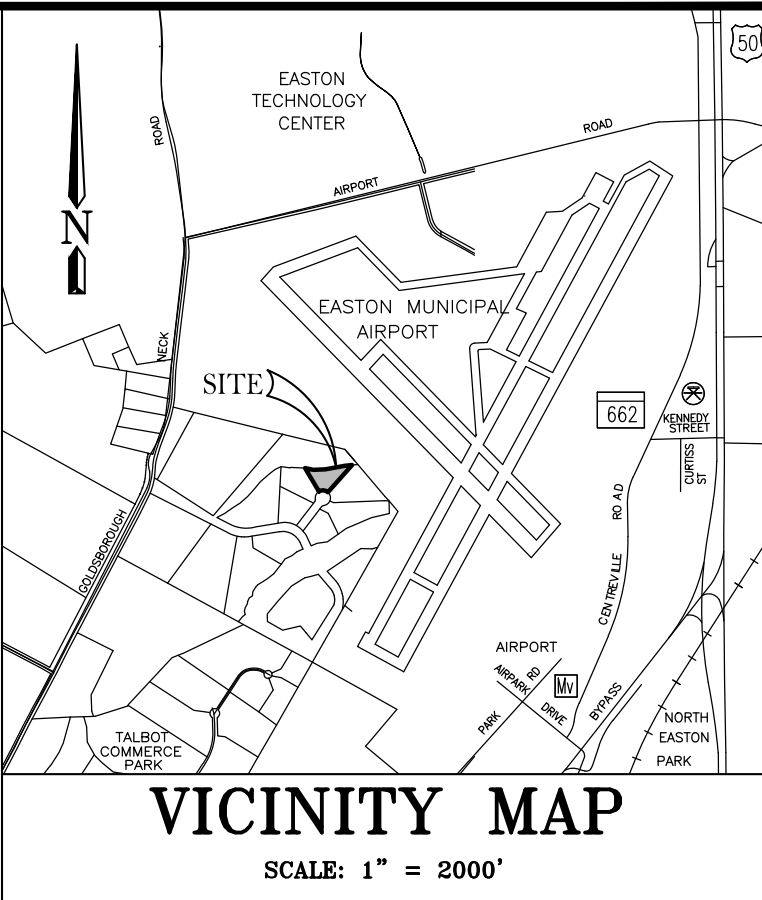
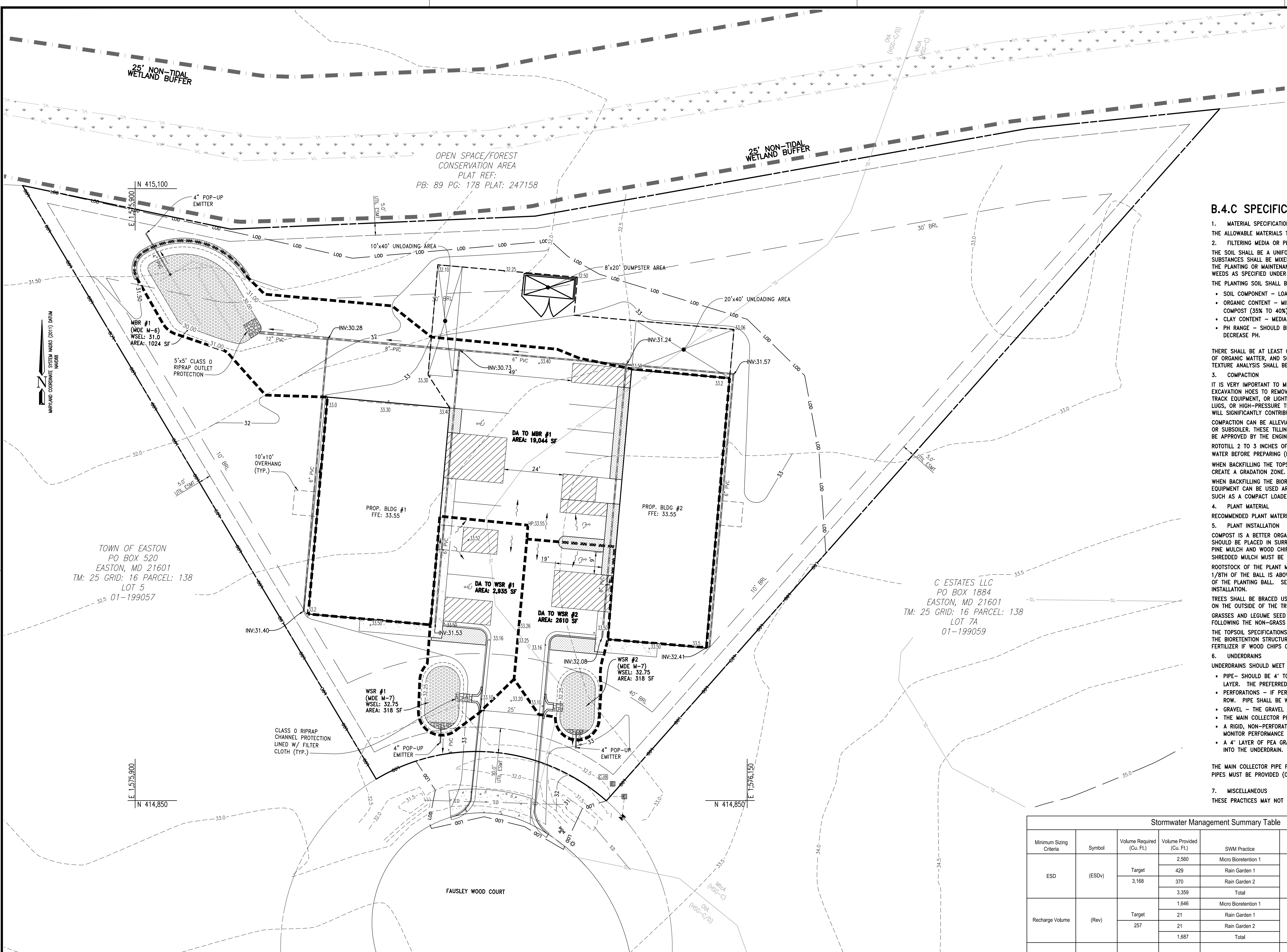


28860 FAUSLEY WOOD COURT
TAX MAP 25, GRID 16, TAX
PARCEL 138
MISTLETOE HALL, LOT 6C
EASTON
TALBOT COUNTY, MARYLAND

LANDSCAPE PLAN



DATE: 02-08-23
DRAWN BY: [] CHECKED BY: []
REVISION DATES:
07/21/23 [] [] []
09/27/23 [] [] []
01/05/24 [] [] []
03/01/24 [] [] []
SHEET NUMBER: []
JOB NUMBER: []
DRAWING NUMBER:
A100



B.4.C SPECIFICATIONS FOR MICRO-BIORETENTION.

- MATERIAL SPECIFICATIONS**
THE ALLOWABLE MATERIALS TO BE USED IN THESE PRACTICES ARE DETAILED IN TABLE B.4.1.
- FILTERING MEDIA OR PLANTING SOIL**
THE SOIL SHALL BE A UNIFORM MIX, FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTANCES SHALL BE MIXED OR DUMPED WITHIN THE MICROBIORETENTION PRACTICE THAT MAY BE HARMFUL TO PLANT GROWTH, OR PROVE A HINDRANCE TO THE PLANTING OR MAINTENANCE OPERATIONS. THE PLANTING SOIL SHALL BE FREE OF BERMUDA GRASS, QUACKGRASS, JOHNSON GRASS, OR OTHER NOXIOUS WEEDS AS SPECIFIED UNDER COMAR 15.08.01.05.
THE PLANTING SOIL SHALL BE TESTED AND SHALL MEET THE FOLLOWING CRITERIA:
 - SOIL COMPONENT - LOAMY SAND OR SANDY LOAM (USDA SOIL TEXTURAL CLASSIFICATION)
 - ORGANIC CONTENT - MINIMUM 10% BY DRY WEIGHT (ASTM D 2974). IN GENERAL, THIS CAN BE MET WITH A MIXTURE OF LOAMY SAND (60%-65%) AND COMPOST (35% TO 40%) OR SANDY LOAM (30%), COARSE SAND (30%), AND COMPOST (40%).
 - CLAY CONTENT - MEDIA SHALL HAVE A CLAY CONTENT OF LESS THAN 5%.
 - PH RANGE - SHOULD BE BETWEEN 5.5 - 7.0. AMENDMENTS (E.G., LIME, IRON SULFATE PLUS SULFUR) MAY BE MIXED INTO THE SOIL TO INCREASE OR DECREASE PH.

THERE SHALL BE AT LEAST ONE SOIL TEST PER PROJECT. EACH TEST SHALL CONSIST OF BOTH THE STANDARD SOIL TEST FOR PH, AND ADDITIONAL TESTS OF ORGANIC MATTER, AND SOLUBLE SALTS. A TEXTURAL ANALYSIS IS REQUIRED FROM THE SITE STOCKPILED TOPSOIL. IF TOPSOIL IS IMPORTED, THEN A TEXTURE ANALYSIS SHALL BE PERFORMED FOR EACH LOCATION WHERE THE TOPSOIL WAS EXCAVATED.

- COMPACTION**
IT IS VERY IMPORTANT TO MINIMIZE COMPACTION OF BOTH THE BASE OF BIORETENTION PRACTICES AND THE REQUIRED BACKFILL. WHEN POSSIBLE, USE EXCAVATION HOES TO REMOVE ORIGINAL SOIL. IF PRACTICES ARE EXCAVATED USING A LOADER, THE CONTRACTOR SHOULD USE WIDE TRACK OR MARSH TRACK EQUIPMENT, OR LIGHT EQUIPMENT WITH TURF TYPE TIRES. USE OF EQUIPMENT WITH NARROW TRACKS OR NARROW TIRES, RUBBER TIRES WITH LARGE LUGS, OR HIGH-PRESSURE TIRES WILL CAUSE EXCESSIVE COMPACTION RESULTING IN REDUCED INFILTRATION RATES AND IS NOT ACCEPTABLE. COMPACTION WILL SIGNIFICANTLY CONTRIBUTE TO DESIGN FAILURE.
COMPACTION CAN BE ALLEVATED AT THE BASE OF THE BIORETENTION FACILITY BY USING A PRIMARY TILLING OPERATION SUCH AS A CHISEL PLOW, RIPPER, OR SUBSOILER. THESE TILLING OPERATIONS ARE TO REFRACTURE THE SOIL PROFILE THROUGH THE 12 INCH COMPACTION ZONE. SUBSTITUTE METHODS MUST BE APPROVED BY THE ENGINEER. ROTOTILLERS TYPICALLY DO NOT TILL DEEP ENOUGH TO REDUCE THE EFFECTS OF COMPACTION FROM HEAVY EQUIPMENT. ROTOTILL 2 TO 3 INCHES OF SAND INTO THE BASE OF THE BIORETENTION FACILITY BEFORE BACKFILLING THE OPTIONAL SAND LAYER. PUMP ANY PONDING WATER BEFORE PREPARING (ROTOTILLING) BASE.

WHEN BACKFILLING THE TOPSOIL OVER THE SAND LAYER, FIRST PLACE 3 TO 4 INCHES OF TOPSOIL OVER THE SAND, THEN ROTOTILL THE SAND/TOPSOIL TO CREATE A GRADATION ZONE. BACKFILL THE REMAINDER OF THE TOPSOIL TO FINAL GRADE.
WHEN BACKFILLING THE BIORETENTION FACILITY, PLACE SOIL IN LIFTS 12" TO 18". DO NOT USE HEAVY EQUIPMENT WITHIN THE BIORETENTION BASIN. HEAVY EQUIPMENT CAN BE USED AROUND THE PERIMETER OF THE BASIN TO SUPPLY SOILS AND SAND. GRADE BIORETENTION MATERIALS WITH LIGHT EQUIPMENT SUCH AS A COMPACT LOADER OR A DOZER/LOADER WITH MARSH TRACKS.

- PLANT MATERIAL**
RECOMMENDED PLANT MATERIAL FOR MICRO-BIORETENTION PRACTICES CAN BE FOUND IN APPENDIX A, SECTION A.2.3.
- PLANT INSTALLATION**
COMPOST IS A BETTER ORGANIC MATERIAL SOURCE, IS LESS LIKELY TO FLOAT, AND SHOULD BE PLACED IN THE INVERT AND OTHER LOW AREAS. MULCH SHOULD BE PLACED IN SURROUNDING TO A UNIFORM THICKNESS OF 2" TO 3". SHREDDED OR CHIPPED HARDWOOD MULCH IS THE ONLY ACCEPTED MULCH. PINE MULCH AND WOOD CHIPS WILL FLOAT AND MOVE TO THE PERIMETER OF THE BIORETENTION AREA DURING A STORM EVENT AND ARE NOT ACCEPTABLE. SHREDDED MULCH MUST BE WELL AGED (6 TO 12 MONTHS) FOR ACCEPTANCE.
ROOTSTOCK OF THE PLANT MATERIAL SHALL BE KEPT MOIST DURING TRANSPORT AND ON-SITE STORAGE. THE PLANT ROOT BALL SHOULD BE PLANTED SO 1/8TH OF THE BALL IS ABOVE FINAL GRADE SURFACE. THE DIAMETER OF THE PLANTING PIT SHALL BE AT LEAST SIX INCHES LARGER THAN THE DIAMETER OF THE PLANTING BALL. SET AND MAINTAIN THE PLANT STRAIGHT DURING THE ENTIRE PLANTING PROCESS. THOROUGHLY WATER GROUND BED COVER AFTER INSTALLATION.

TREES SHALL BE BRACED USING 2" BY 2" STAKES ONLY AS NECESSARY AND FOR THE FIRST GROWING SEASON ONLY. STAKES ARE TO BE EQUALLY SPACED ON THE OUTSIDE OF THE TREE BALL.
GRASSES AND LEGUME SEED SHOULD BE DRILLED INTO THE SOIL TO A DEPTH OF AT LEAST ONE INCH. GRASS AND LEGUME PLUGS SHALL BE PLANTED FOLLOWING THE NON-GRASS GROUND COVER PLANTING SPECIFICATIONS.

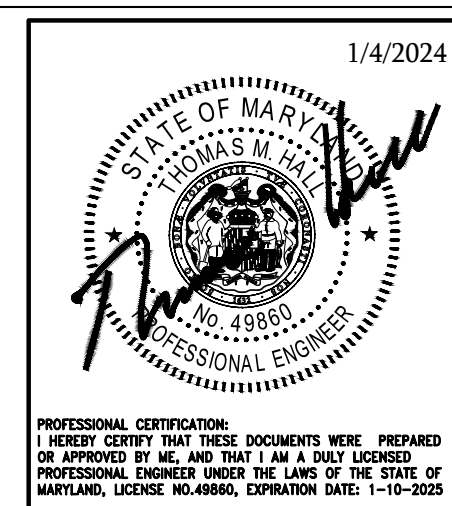
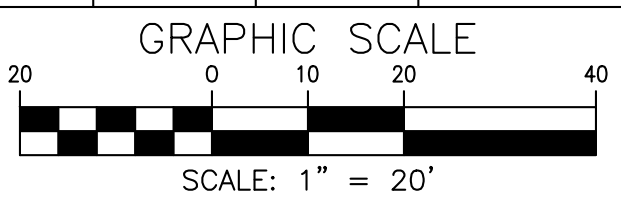
THE TOPSOIL SPECIFICATIONS PROVIDE ENOUGH ORGANIC MATERIAL TO ADEQUATELY SUPPLY NUTRIENTS FROM NATURAL CYCLING. THE PRIMARY FUNCTION OF THE BIORETENTION STRUCTURE IS TO IMPROVE WATER QUALITY. ADDING FERTILIZERS DEFEATS, OR AT A MINIMUM, IMPEDES THIS GOAL. ONLY ADD FERTILIZER IF WOOD CHIPS OR MULCH ARE USED TO AMEND THE SOIL. ROTOTILL UREA FERTILIZER AT A RATE OF 2 POUNDS PER 1000 SQUARE FEET.

- UNDERDRAINS**
UNDERDRAINS SHOULD MEET THE FOLLOWING CRITERIA:
 - PIPE - SHOULD BE 4" TO 6" DIAMETER, SLOTTED OR PERFORATED RIGID PLASTIC PIPE (ASTM F758, TYPE PS 28, OR AASHTO-M-278) IN A GRAVEL LAYER. THE PREFERRED MATERIAL IS SLOTTED, 4" RIGID PIPE (E.G., PVC OR HDPE).
 - PERFORATIONS - IF PERFORATED PIPE IS USED, PERFORATIONS SHOULD BE 3/4" DIAMETER LOCATED 6" ON CENTER WITH A MINIMUM OF FOUR HOLES PER ROW. PIPE SHALL BE WRAPPED WITH A 1/4" (NO. 4 OR 4X4) GALVANIZED HARDWARE CLOTH.
 - GRAVEL - THE GRAVEL LAYER (NO. 57 STONE PREFERRED) SHALL BE AT LEAST 3" THICK ABOVE AND BELOW THE UNDERDRAIN.
 - THE MAIN COLLECTOR PIPE SHALL BE AT A MINIMUM 0.5% SLOPE.
 - A RIGID, NON-PERFORATED OBSERVATION WELL MUST BE PROVIDED (ONE PER EVERY 1,000 SQUARE FEET) TO PROVIDE A CLEAN-OUT PORT AND MONITOR PERFORMANCE OF THE FILTER.
 - A 4" LAYER OF PEA GRAVEL (1/4" TO 3/8" STONE) SHALL BE LOCATED BETWEEN THE FILTER MEDIA AND UNDERDRAIN TO PREVENT MIGRATION OF FINES INTO THE UNDERDRAIN. THIS LAYER MAY BE CONSIDERED PART OF THE FILTER BED WHEN BED THICKNESS EXCEEDS 24".

THE MAIN COLLECTOR PIPE FOR UNDERDRAIN SYSTEMS SHALL BE CONSTRUCTED AT A MINIMUM SLOPE OF 0.5%. OBSERVATION WELLS AND/OR CLEAN-OUT PIPES MUST BE PROVIDED (ONE MINIMUM PER EVERY 1000 SQUARE FEET OF SURFACE AREA).

- MISCELLANEOUS**
THESE PRACTICES MAY NOT BE CONSTRUCTED UNTIL ALL CONTRIBUTING DRAINAGE AREAS HAVE BEEN STABILIZED.

Stormwater Management Summary Table				
Minimum Sizing Criteria	Symbol	Volume Required (Cu. Ft.)	Volume Provided (Cu. Ft.)	SWM Practice
ESD	(ESDv)	Target	2,560	Micro Bioretention 1
			429	Rain Garden 1
			370	Rain Garden 2
			3,359	Total
Recharge Volume	(Rev)	Target	1,648	Micro Bioretention 1
			21	Rain Garden 1
			21	Rain Garden 2
			1,687	Total
Channel Protection Storage Volume	(Cpv)	N/A	N/A	N/A
Overbank Flood Protection	(Qp10)	N/A	N/A	N/A
Extreme Flood Volume	(QF)	N/A	N/A	N/A
CPV not required for this site				
Site discharges to FCE, controlling downstream development				
No historical flooding or floodplain downstream of site				



FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:
1) THREE (3) CALENDAR DAYS FOR THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND 1.5) SEVEN (7) CALENDAR DAYS FOR ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

LEGEND

- PROPERTY LINE
- ADJOINING PROPERTY LINE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- ROOF DRAIN SPOUT
- LDD - LIMITS OF DISTURBANCE
- SD - SOILS DELINEATION
- SD - EXISTING STORM DRAIN PIPE
- INV. - INVERT
- N/F - NOW OR FORMERLY
- L. F. - LIBER ; FOLIO
- B.R.L. - BUILDING RESTRICTION LINE
- UTILITY BOX
- POWER TRANSFORMER
- FIRE HYDRANT
- LIGHT POLE
- NON TIDAL WETLANDS
- PROPOSED SWM FACILITY
- PROPOSED STORMDRAIN PIPES
- PROPOSED STRUCTURE
- DRAINAGE AREA
- MICRO-BIORETENTION WEIR
- PROPOSED CONTOURS

PROPOSED STORMWATER MANAGEMENT PLAN
SCALE: 1"=20'

SITE DATA:
TOTAL SITE AREA: 1.56 AC.
EXISTING IMPERVIOUS: 0.0 AC.
PROPOSED IMPERVIOUS: 0.51 AC.

PARKING NOTES:
PARKING REQUIRED: 11 SPACES
USE: MINI-WAREHOUSE OR SELF-STORAGE
4 SPACES + 2 FOR MANAGER'S QUARTERS
6 SPACES
USE: CONSTRUCTION-RELATED BUSINESSES
1 SPACE / 1,000SF GFA MINIMUM
1 SPACE / 200SF GFA MAXIMUM
4,400 / 1,000 = 4.4 SPACES MINIMUM
4,400 / 200 = 22 SPACES MAXIMUM
5 SPACES MIN., 22 SPACES MAX.

PROPOSED PARKING: 12 SPACES

SOILS TABLE				
MAP UNIT SYMBOL	MAP UNIT NAME	HSG TYPE	K FACTOR, WHOLE SOIL	HYDRIC
MtCa	Mattapex silt loam, 0 to 2 percent slopes, Mid-Atlantic Coastal Plain	C	0.49	5%
OtA	Othello silt loams, 0 to 2 percent slopes, Mid-Atlantic Coastal Plain	C/D	0.43	*86%

*SOILS THAT CONTAIN POTENTIALLY HYDRIC COMPONENTS

NOTES:

- CONTRACTOR IS SOLELY RESPONSIBLE TO LOCATE ALL UTILITIES TO DETERMINE EXACT LOCATIONS, AND TO RELOCATE/RECONNECT AS REQUIRED.
- EXISTING CONDITIONS PROVIDED TO CPJA BY DAN LERIAN

UPDATES/REVISIONS:

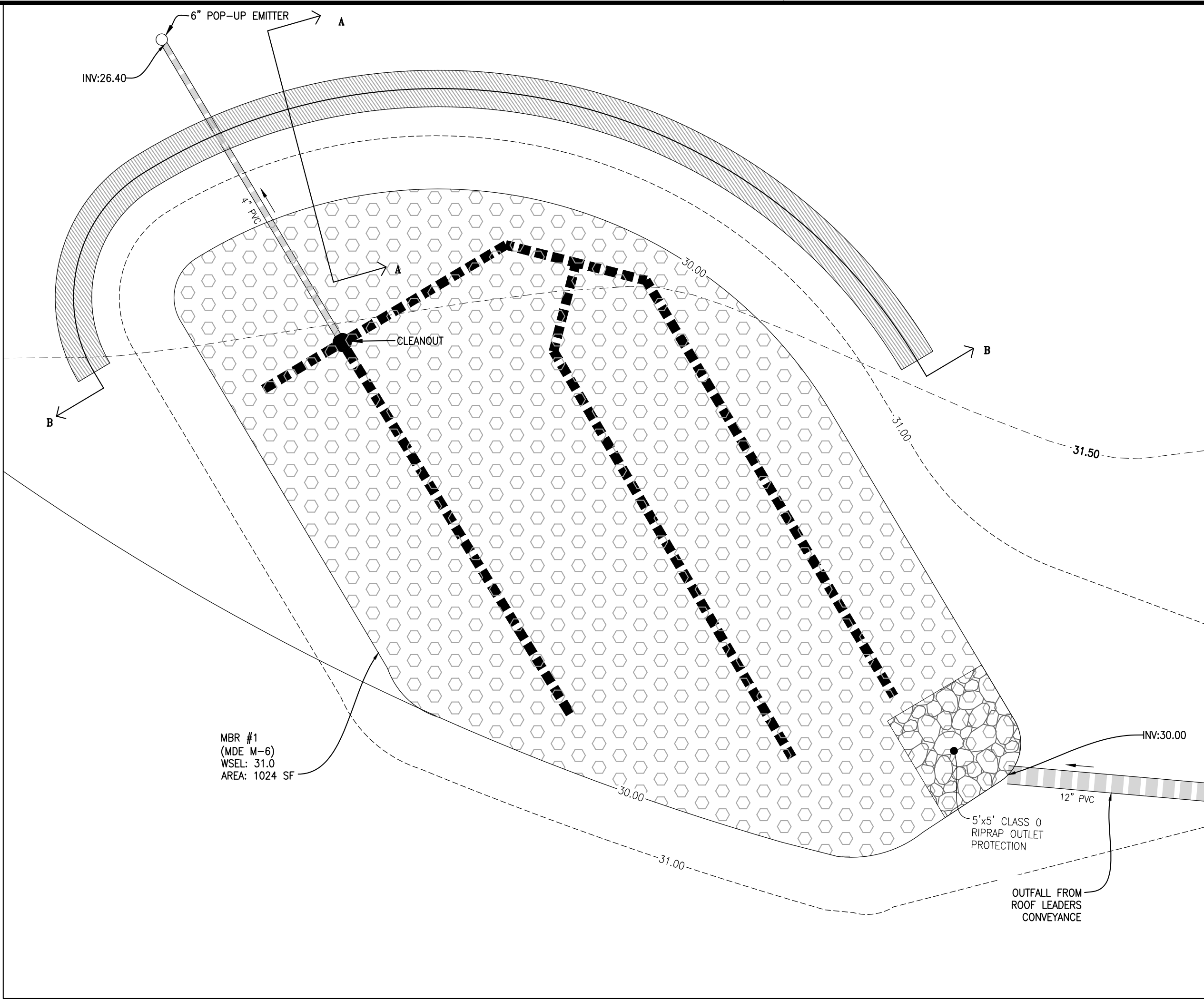
STORMWATER MANAGEMENT PLAN
28860 FAUSLEY WOOD COURT
TAX MAP 25, GRID 16, TAX PARCEL 138

MISTLETOE HALL, LOT 6C
EASTON
TALBOT COUNTY, MARYLAND

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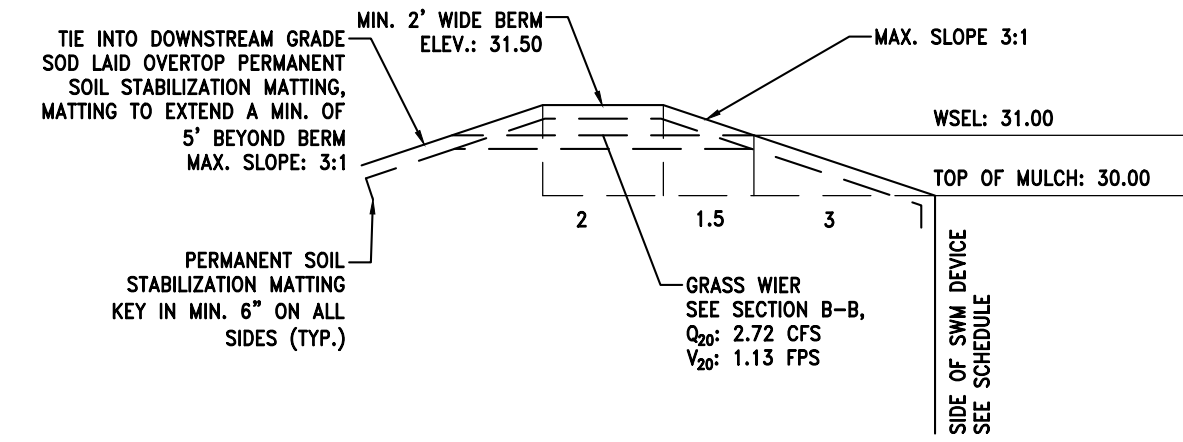
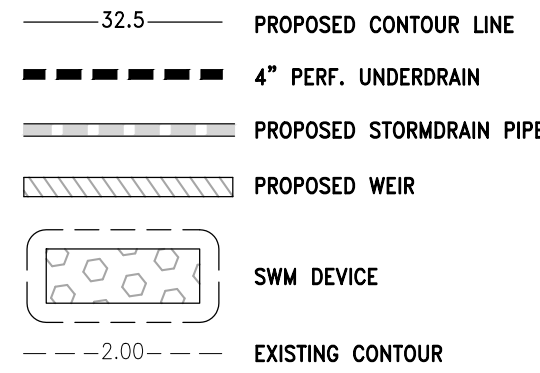
CLIENT:	BLUE CRAB SELF STORAGE, LLC 8693 BROOKS DRIVE EASTON, MD 21601 (410) 822-7777 DANLERIAN@YAHOO.COM	TAX ACCOUNT NO. 01-09982	STANDARD GRADING PLAN NO.
DESIGN	JWW	SHEET	OF
DRAFT	SC	01	03
DATE	12/04/2023	FILE NO.	
SCALE	AS SHOWN	2022-5067-24-01	

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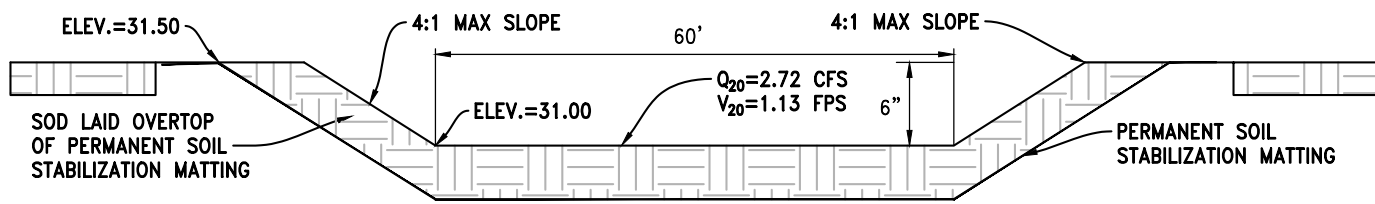


MICRO-BIORETENTION #1 INSET
SCALE: 1"=5'

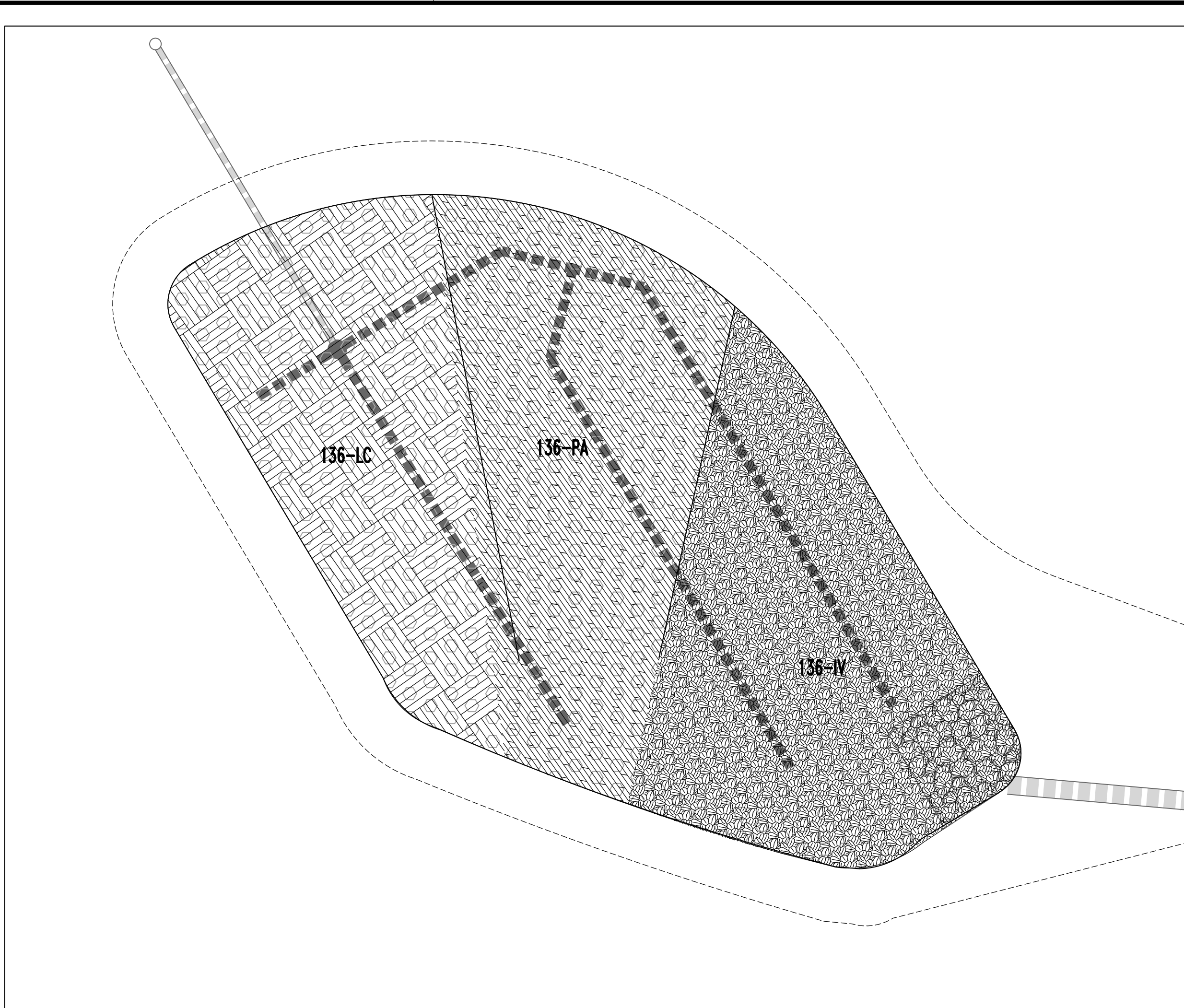
LEGEND



WEIR CREST SECTION A-A
SCALE: N.T.S



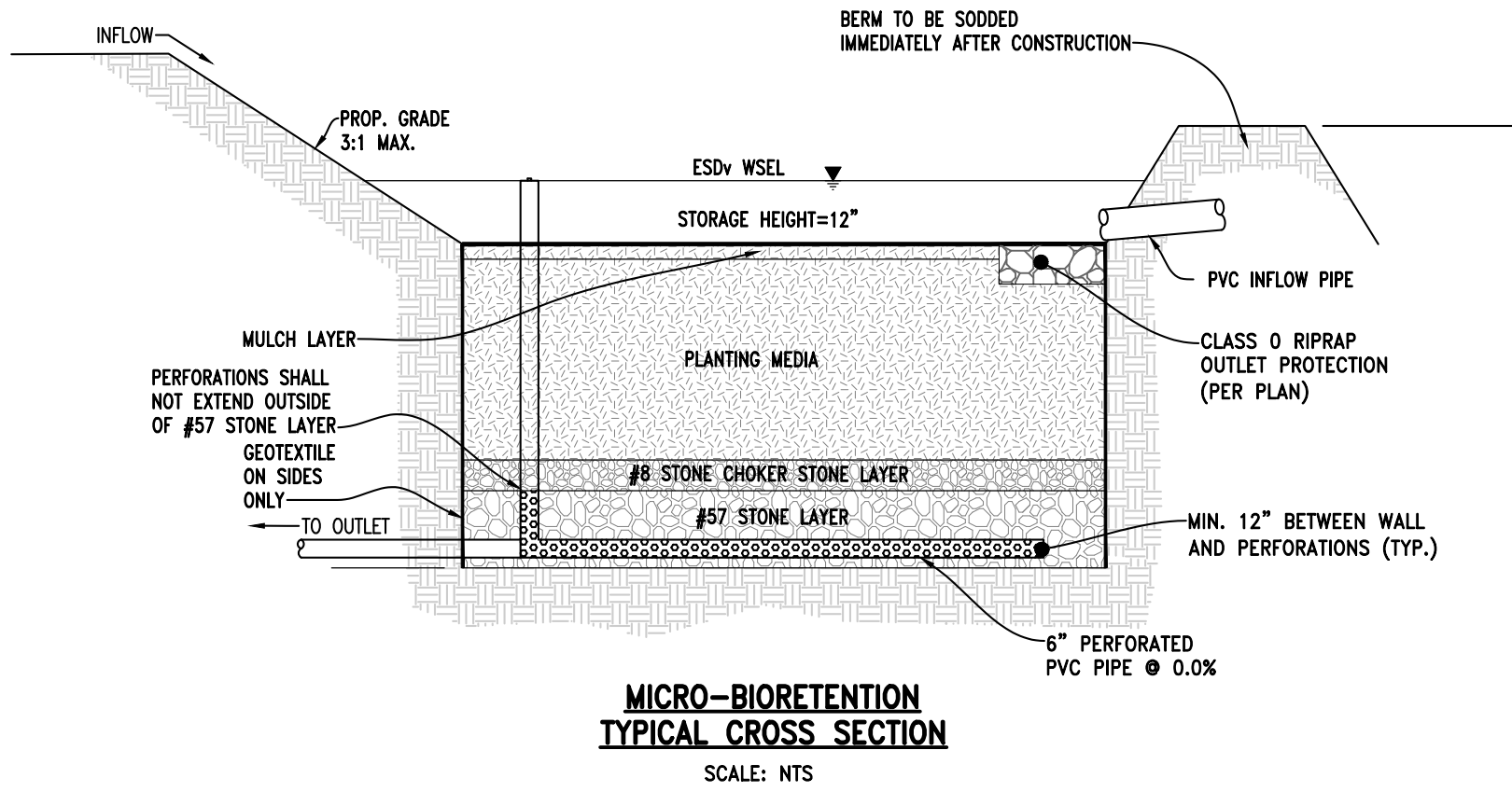
WEIR CREST SECTION B-B
SCALE: N.T.S



MICRO-BIORETENTION #1 PLANTINGS INSET
SCALE: 1"=5'

Table B.4.1 Materials Specifications for Micro-Bioretentment, Rain Gardens & Landscape Infiltration-			
Material	Specification	Size	Notes
Plantings	see Appendix A, Table A.4	n/a	plantings are site-specific
planting soil [2' to 4' deep]	loamy sand (60-65%) & compost (35-40%) or sandy loam (30%), coarse sand (30%) & compost (40%)	n/a	USDA soil types loamy sand or sandy loam; clay content <5%
Organic content	Min. 10% by dry weight (ASTM D 2974)		
Mulch	shredded hardwood		aged 6 months, minimum; no pine or wood chips
Pea gravel diaphragm	pea gravel: ASTM-D-448	NO. 8 OR NO. 9 (1/8" TO 3/8")	
Curtain drain	ornamental stone; washed cobbles	stone: 2" to 5"	
Geotextile		n/a	PE Type 1 nonwoven
Gravel (underdrains and infiltration berms)	AASHTO M-43	NO. 57 OR NO. 6 AGGREGATE (3/8" to 3/4")	
Underdrain piping	F 758, Type PS 28 or AASHTO M-278	4" to 6" rigid schedule 40 PVC or SDR35	Slotted or perforated pipe; 3/8" perf. @ 6" on center, 4 holes per row; minimum of 3" of gravel over pipes; not necessary underneath pipes. Perforated pipe shall be wrapped with 1/4-inch galvanized hardware cloth
Poured in place concrete (if required)	MSHA Mix No. 3; f _c =3500 psi @28 days, normal weight, air-entrained; reinforcing to meet ASTM-615-60	n/a	on-site testing of poured-in-place concrete required: 28 day strength and slump test; all concrete design (cast-in-place or pre-cast) <i>not using previously approved State or local standards</i> ; requires design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland - design to include meeting ACI Code 350.R/89; vertical loading [H-10 or H-20]; allowable horizontal loading (based on soil pressures); and analysis of potential cracking
Sand	AASHTO-M-6 or ASTM-C-33	0.02" to 0.04"	Sand substitutions such as Diabase and Graystone(AASHTO) #10 are not acceptable. No calcium carbonated or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand

MICRO-BIORETENTION SCHEDULE	
	MBR
WATER SURFACE ELEVATION	31.00
FILTER BED ELEVATION	30.00
BOTTOM OF MULCH ELEVATION	29.75
PLANTING SOIL DEPTH	2.00
BOTTOM OF PLANTING SOIL ELEVATION	27.75
BOTTOM OF CHOKER LAYER	27.25
UNDERDRAIN INVERT	26.50
BOTTOM OF GRAVEL JACKET	26.25
SURFACE AREA (SF)	1024



MICRO-BIORETENTION
TYPICAL CROSS SECTION
SCALE: NTS

UPDATES/REVISIONS:

STORMWATER MANAGEMENT DETAILS 1 of 2
28860 FAUSLEY WOOD COURT
TAX MAP 25, GRID 16, TAX PARCEL 138

MISTLETOE HALL, LOT 6C
EASTON
TALBOT COUNTY, MARYLAND

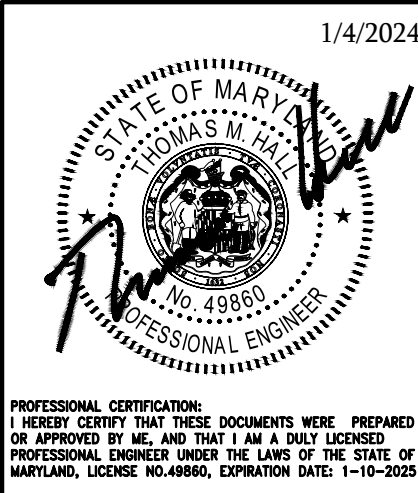
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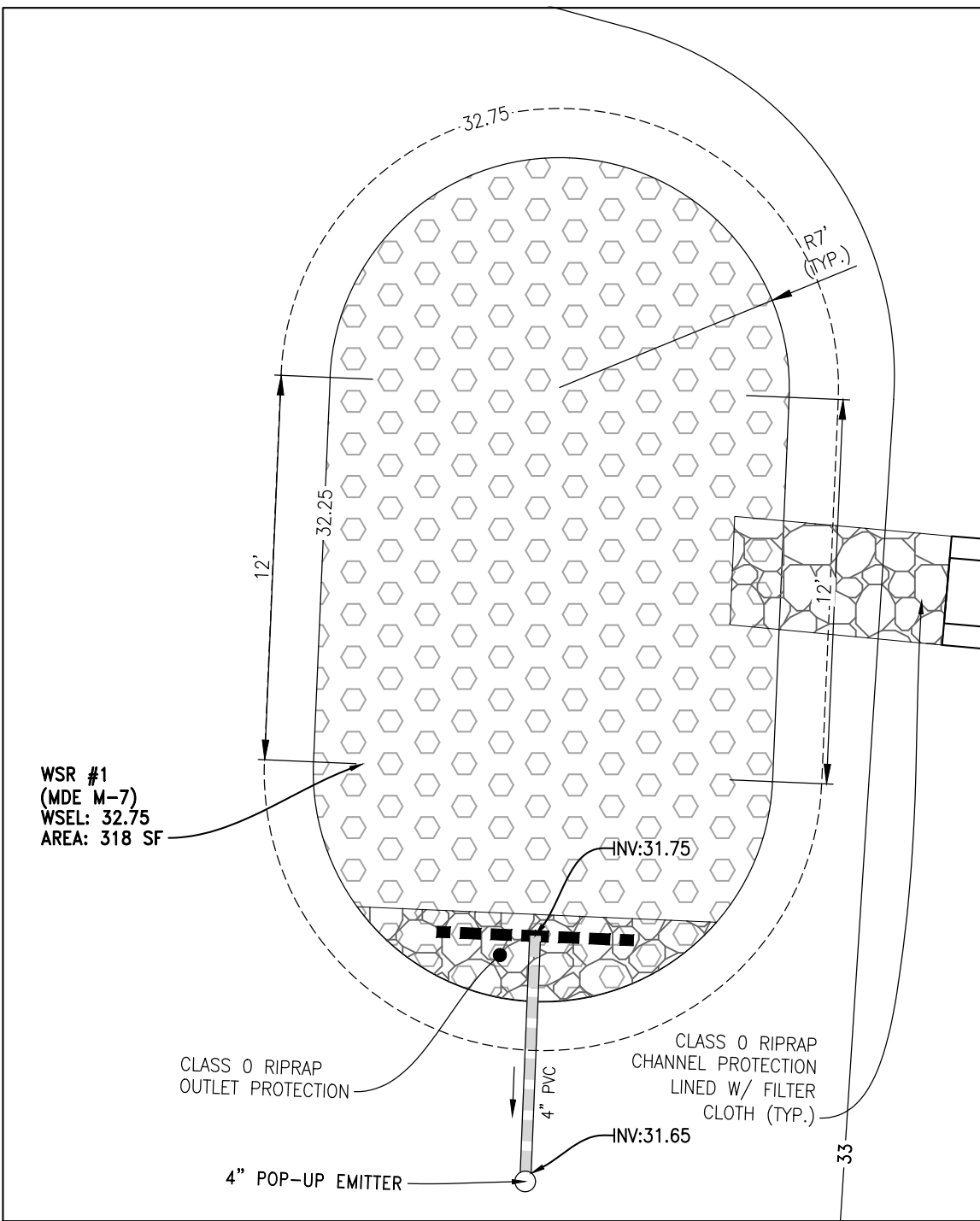
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EASTON, MD 21601
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TAX ACCOUNT NO. 01-09962
DESIGN JWW
DRAFT SC
DATE 12/04/2023
SCALE AS SHOWN

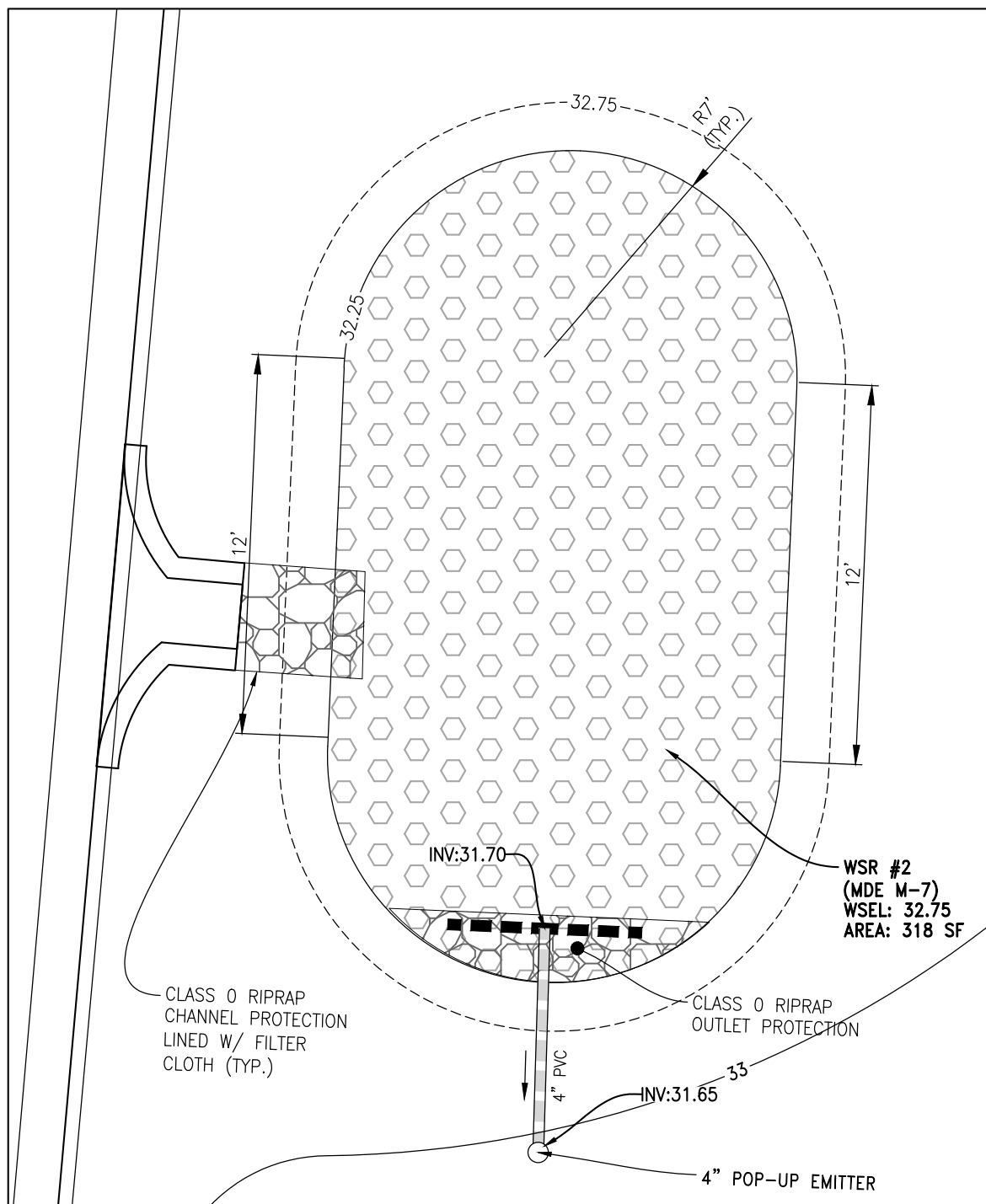
STANDARD GRADING PLAN NO. SHEET 02 OF 03
FILE NO: 2022-5067-24-02

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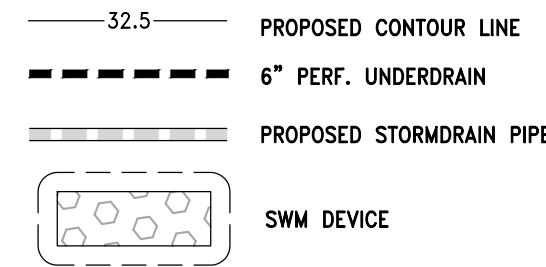


WET SOIL RAIN GARDEN #1 INSET
SCALE: 1"=5'



WET SOIL RAIN GARDEN #2 INSET
SCALE: 1"=5'

LEGEND



WET SOIL RAIN GARDEN SCHEDULE		
DESCRIPTION	1	2
WATER SURFACE ELEVATION	32.75	32.75
FILTER BED ELEVATION	32.25	32.25
BOTTOM OF MULCH ELEVATION	32.00	32.00
BOTTOM OF PLANTING SOIL ELEVATION	30.50	30.50
BOTTOM OF STONE	30.00	30.00
SURFACE AREA	318	318

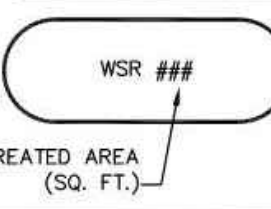
ESD SUMMARY CHART													
DRAINAGE AREA	TYPE OF ESD PRACTICE	NAME OF ESD PRACTICE (STRUCTURE NAME)	ON-SITE OR OFF-SITE STRUCTURE	RUNOFF CURVE NUMBER (RCN) WEIGHTED	MARYLAND GRID COORDINATE NAD 83 METERS NORTHING	MARYLAND GRID COORDINATE NAD 83 METERS EASTING	ESD PRACTICE TOTAL DRAINAGE AREA (ACRES)	ESD PRACTICE IMPERVIOUS DRAINAGE AREA (ACRES)	SURFACE AREA OF ESD PRACTICE (ACRES)	TARGET PE (IN.)	ACTUAL PE (IN.)	TARGET ESDv (FT)	ACTUAL ESDv (FT)
1	MICRO-BIORETENTION	MICRO-BIORETENTION #1	ON	92	415,059	1,575,929	0.44	0.32	0.02	0.81	2.24	926	2,560
2	WET SOIL RAIN GARDEN	WSR #1	ON	89	414,892	1,576,025	0.07	0.05	0.01	1.08	2.70	172	429
3	WET SOIL RAIN GARDEN	WSR #2	ON	89	414,890	1,576,078	0.06	0.04	0.01	1.22	2.70	167	370
TOTAL AVERAGE				90			0.58	0.40	0.04	0.80	1.65	1,265	2,801

QUANTITY SUMMARY CHART										
PRACTICE	DA (ACRES)	IMPERVIOUS (ACRES)	RCN	Tc (HOURS)	PRE 2 YEARS	POST 2 YEARS	W.S.E	PRE 10 YEARS	POST 10 YEARS	W.S.E
MICRO-BIORETENTION #1	0.44	0.32	92	0.10	0.87	0.60	31.00	1.97	1.10	31.00
WSR #1	0.07	0.05	89	0.10	0.13	0.13	32.75	0.30	0.26	32.75
WSR #2	0.06	0.04	89	0.10	0.12	0.09	32.75	0.27	0.24	32.75

CONSTRUCTION INSPECTIONS

- CALL THE TOWN OF EASTON ENGINEERING DEPARTMENT AT 410-820-8822 PRIOR TO CONSTRUCTION AND IMMEDIATELY FOLLOWING EACH OF THE FOLLOWING PHASES:
- EXCAVATION TO SUB-GRADE AND BEFORE PLACEMENT OF SOIL.
- FINE GRADING AND PERMANENT STABILIZATION OF ADJACENT SOILS.

SITE PLAN SYMBOL

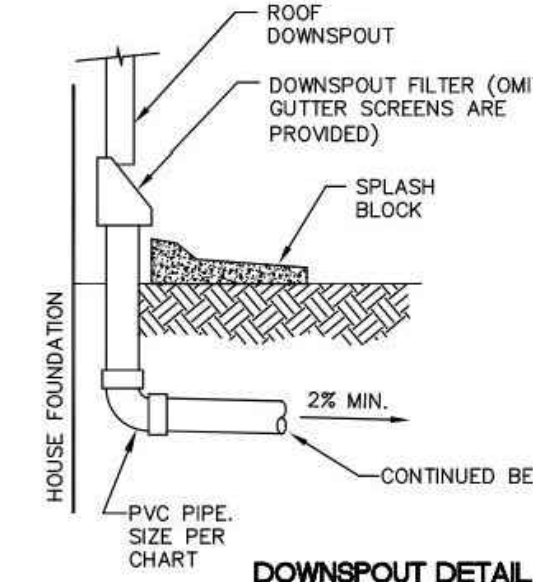


SIZING CHART

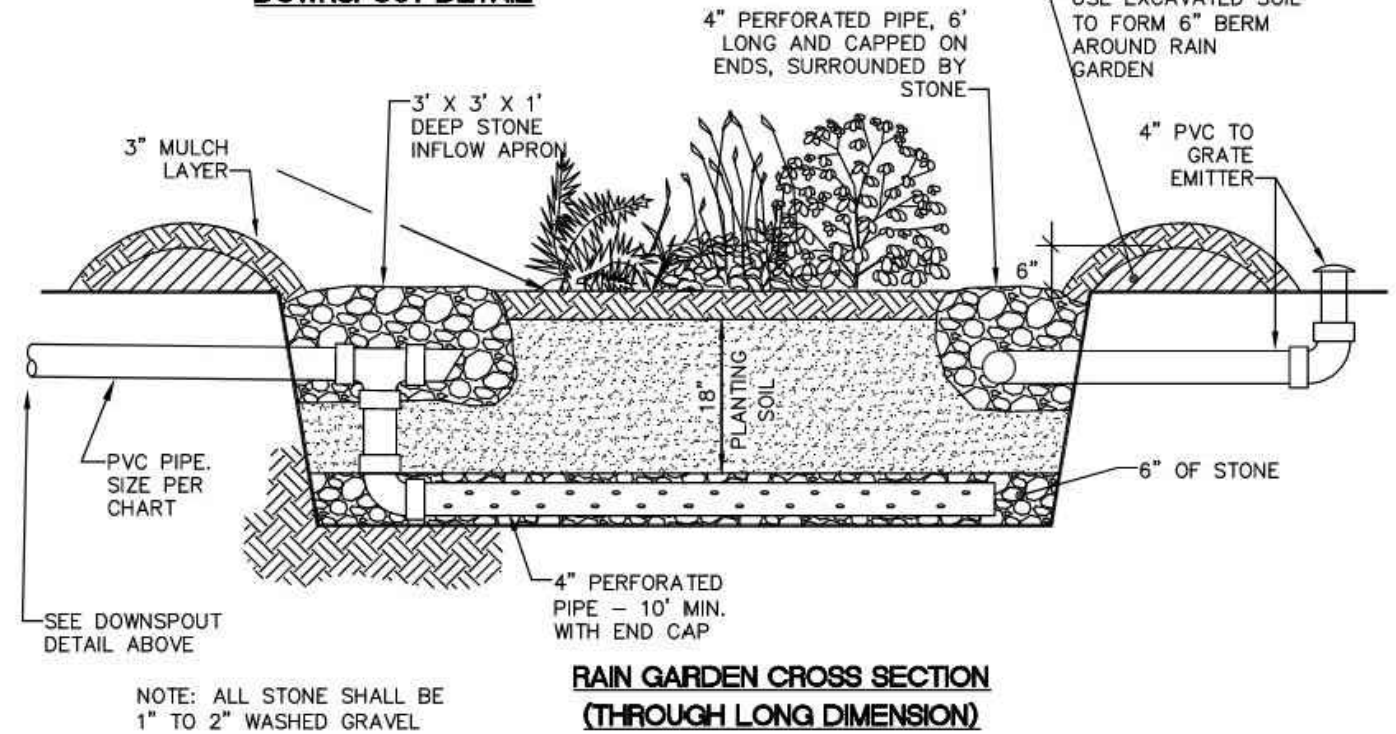
TREATED AREA (SQ. FT.)	RAIN GARDEN AREA (SQ. FT.)	PVC SIZE	SUGGESTED DIMENSIONS
500	70	4"	14' x 6'
1000	140	6"	20' x 8'
1500	210	6"	24' x 10'
2000	280	8"	30' x 11'

MINIMUM SETBACKS

- 10 FEET FROM A BUILDING OR PROPERTY LINE



DOWNSPOUT DETAIL



RAIN GARDEN CROSS SECTION (THROUGH LONG DIMENSION)

NOTE: ALL STONE SHALL BE 1" TO 2" WASHED GRAVEL



APPROVAL
Rid Van Engle
TOWN ENGINEER
DATE
1/2020

TOWN OF EASTON
STANDARD DETAILS
WET SOIL RAIN GARDEN
CONSTRUCTION DETAIL

ISSUED: JANUARY 2020 STANDARD NO.: TOE-SWM-6.01-3

CONSTRUCTION NOTES

- RAIN GARDENS SHALL BE CONSTRUCTED AFTER ALL UPSTREAM AREAS HAVE BEEN STABILIZED WITH EITHER IMPERVIOUS SURFACES OR TOPSOIL AND VEGETATION.
- RAIN GARDEN EXCAVATION SHALL BE ROUGH AND UNCOMPACTED. IF SMEARING OF BOTTOM OR WALLS OCCURS, SCRATCH WITH A RAKE AS NECESSARY TO EXPOSE ROUGH EARTH.
- LANDSCAPING MATERIALS SHOULD BE INSTALLED DURING THE SPRING OR FALL IF POSSIBLE.
- OVERFLOW FROM RAIN GARDEN SHALL BE DIRECTED OVER A 3" DEEP BY 10' WIDE DEPRESSION IN THE PERIMETER BERM AND SHALL NOT BE A SOURCE OF DOWNSTREAM EROSION.
- THE OWNER IS ENCOURAGED TO ENHANCE THE VISUAL APPEAL OF THE RAIN GARDEN BY USING STONE OR TIMBER RETAINING WALLS INSTEAD OF USING EXCAVATED SOIL. EPDM LINER MAY BE NEEDED TO MAKE A WATERTIGHT WALL.

SOIL SPECIFICATIONS

- THE RAIN GARDEN PLANTING SOIL SHALL HAVE A COMPOSITION OF 50% SAND, 20% WOOD CHIPS LEAVES, AND 30% TOPSOIL.
- SOIL SHALL BE OF UNIFORM COMPOSITION, FREE OF STONES, DEBRIS, STUMPS, ROOTS OR SIMILAR OBJECTS LARGER THAN ONE INCH.
- SOIL SHALL BE FREE OF PLANTS (OR PLANT PARTS) OF BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, MUWORT, NUTSEDGE, POISON IVY, OR CANADIAN THISTLE.
- PLANTING SOIL SHALL BE OVERFILLED BY 2-3" TO ALLOW FOR SETTLING. DO NOT COMPACT.

MAINTENANCE CRITERIA:

- WATER PLANTS LIBERALLY THE FIRST GROWING SEASON AND DURING PERIODS OF DROUGHT THEREAFTER.
- REMOVE ACCUMULATED TRASH AND VEGETATIVE DEBRIS EVERY FEW MONTHS AND ENSURE THAT INFLOW PIPE(S) FLOW FREELY.
- PRUNE AND REMOVE DEAD VEGETATION PERIODICALLY, AS WITH ANY LANDSCAPE BED. IF SPECIFIC PLANTS ARE NOT SURVIVING, REPLACE WITH A DIFFERENT SPECIES. WATERING MAY BE REQUIRED DURING PROLONGED DRY PERIODS.
- SILTS AND SEDIMENT SHOULD BE REMOVED FROM THE SURFACE OF THE FILTER BED WHEN ACCUMULATION EXCEEDS ONE INCH. THE TOP FEW INCHES OF FILTER MEDIA SHOULD BE REMOVED AND REPLACED WHEN WATER POND FOR MORE THAN 48 HOURS.
- REFRESH MULCH WITH AN ADDITIONAL THIN LAYER ANNUALLY. REMOVE ALL MULCH AND REPLACE WITH A NEW THREE-INCH LAYER EVERY 3-5 YEARS.



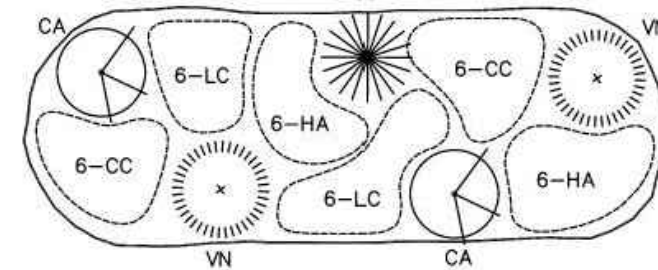
APPROVAL
Rid Van Engle
TOWN ENGINEER
DATE
1/2020

TOWN OF EASTON
STANDARD DETAILS
WET SOIL RAIN GARDEN
NOTES

ISSUED: JANUARY 2020 STANDARD NO.: TOE-SWM-6.01-4

WET SOIL RAIN GARDEN PLANTING SCHEDULE

BOTANICAL NAME	COMMON NAME	SYMB.	SIZE	RAIN GARDEN SIZE (SQ. FT.)			
				70	140	210	280
				QTY.	QTY.	QTY.	QTY.
SHRUBS:							
CLETHRA ALNIFOLIA	SWEET PEPPERBUSH	CA	2 GAL.	1	2	3	3
ITEA VIRGINICA	VIRGINIA SWEETSPHIRE	IV	2 GAL.	1	1	2	3
VIBURNUM NUDUM	SMOOTH WITHEROD	VN	2 GAL.	1	2	2	3
GROUND COVER:							
CALAMAGROSIS CANADENSIS	BLUE JOINT GRASS	CC	PLUG	6	12	18	24
HELENIUM AUTUMNALE	YELLOW SNEEZEWEED	HA	PLUG	6	12	18	24
LOBELIA CARDINALIS	CARDINAL FLOWER	LC	PLUG	6	12	18	24



PLANTING EXAMPLE
FOR 140 SQ. FT. RAIN GARDEN

PLANT SELECTION

- THE OWNER IS ENCOURAGED TO WORK WITH A REGISTERED LANDSCAPE ARCHITECT OR NURSERY TO CREATE AN ATTRACTIVE AND FUNCTIONAL MIX OF NATIVE PLANT SPECIES THAT ARE TOLERANT OF BOTH SATURATED AND DRY CONDITIONS.
- INFORMATION ON APPROPRIATE SPECIES IS AVAILABLE BY TYPING "BAYSAPES NATIVE PLANTS" INTO YOUR FAVORITE SEARCH ENGINE.
- THE SCHEDULE AND TYPICAL DETAIL BELOW CAN BE USED AS A BASIS FOR PLANT SELECTION AND GROUPINGS, IF DESIRED.



APPROVAL
Rid Van Engle
TOWN ENGINEER
DATE
1/2020

TOWN OF EASTON
STANDARD DETAILS
WET SOIL RAIN GARDEN
PLANTING NOTES AND SCHEDULE

ISSUED: JANUARY 2020 STANDARD NO.: TOE-SWM-6.01-5

APPROVED:

TOWN OF EASTON - PLANNING & ZONING DATE

APPROVED:

TOWN OF EASTON - TOWN ENGINEER DATE

APPROVED:

EASTON UTILITIES - ENGINEER DATE

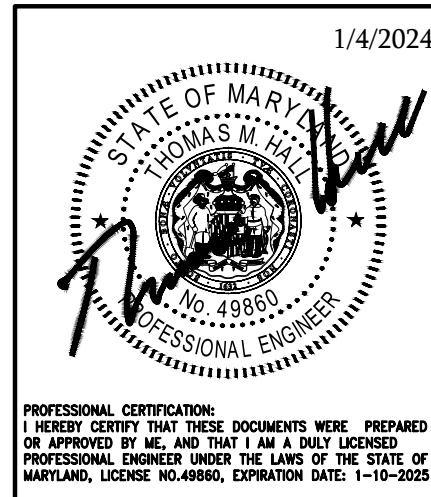
UPDATES/REVISIONS:

STORMWATER MANAGEMENT DETAILS 2 of 2
28860 FAUSLEY WOOD COURT
TAX MAP 25, GRID 16, TAX PARCEL 138

MISTLETOE HALL, LOT 6C
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CLIENT: BLUE CRAB SELF STORAGE, LLC 8695 BROOKS DRIVE EASTON, MD 21601 (410) 822-7777 DANLEIAN@YAHOO.COM	TAX ACCOUNT NO. 01-19982	STANDARD GRADING PLAN NO.	
	DESIGN JWW	SHEET	OF
	DRAFT SC	03	03
	DATE 12/04/2023	FILE NO:	
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TOWN OF
EASTON
ENGINEERING DEPARTMENT

DATE: October 25, 2023
TO: Daniel Lerian - Owner
cc: Sierra Clem - Town of Easton Engineering Department
FROM: Rick Van Emburgh, P.E. – Town Engineer
SUBJECT: Blue Crab Self Storage LLC
Sketch Site Plan Review

I reviewed the revised application for the subject project received on October 5, 2023.

Sketch Site Plan

The Sketch Site Plan is **Acceptable** to the Engineering Department.

Stormwater Management

The Sketch Stormwater Management Plan must be revised to address the following comments:

1. **SHEET 3 OF 3** - Quantity Summary Chart - Both Summary Charts are labeled "ESD SUMMARY CHART". The chart with quantity management information should be labeled "QUANTITY SUMMARY CHART". **Comment acknowledged. The table title has been changed**
2. **SHEET 3 OF 3** - It appears there is an increase in flow. The 2-year and 10-year storms must be managed. **See response below**

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

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

Dear Sierra,

We have provided a response (attached) to Comment #2, above. We are demonstrating in the attached report and calculations that there will be no increase in flow for the 2-year and 10-year storms.

Please let us know if you have any questions, and reply to the parties below.

Thanks,

Thomas Hall
THall@cpja.com

John Wortmann
JWortmann@cpja.com

Stefan Costner
SCostner@cpja.com

Daniel Lerian (owner)
danlerian@yahoo.com

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

December 7, 2023: Response to Comment # 2 from previous sheet

Summary

This stormwater analysis is written in response to comments received from Rick Van Emburgh, the Town of Easton, MD engineer in our office dated October 25, 2023, for the project that is for the commercial development of Mistletoe Hall, Lot 6 C (aka Blue Crab Self Storage, LLC), located at 28860 Fausley Wood Court, Easton, MD. The project consists of construction of two new buildings, one of which is approximately 4,460 square feet (sf), and the other which is approximately 4,445 sf. Development will also include a paved parking area with 12 spaces, loading areas, sidewalks, and landscaped areas and an entry driveway. The proposal adds 22,302 sf of impervious surfaces, which includes the aforementioned paved areas, as well as the building roofs. The site is currently undeveloped and consists of grassy lawn areas.

Comment #2 commented on what was shown on the plans (sheet 3 of 3) as an increase between the pre- and post-development flow for each of the three drainage areas that are to drain to the three practices proposed for stormwater management (SWM). The three proposed practices consist of a micro bioretention area (MBR), along the north boundary of the project area, and two (2) wet-soil rain gardens (WSR#1 and WSR#2) along the southern limits of the project area.

Stormwater Drainage Areas Analysis

The drainage area (DA) to the microbioretention area was analyzed under pre-construction (current) conditions, and under the proposed conditions. The DA has an overall area of 0.45 acres (ac) of which 0.32 ac are impervious. Much of the proposed development of the site will drain to this practice, including much of the north part of the parking area and the roofs of the two buildings. The surface of the parking lot will drain via sheet flow to the practice, while the two building roofs will drain via downspouts to a subsurface conveyance system consisting of differing sizes of PVC pipe that will drain to the MBR. The ultimate outfall to the MBR will be a 12" pipe.

Using TR-20 methodology with a conservative time of concentration (T_c) of 6 minutes (0.1 hour) and analyzing for Type II rainfall, for Talbot County, it was found that the runoff for this drainage area pre-construction is 0.87 cubic feet per second (cfs), for the two-year storm event of 3.33 inches of rainfall in 24 hours, and 1.97 cfs for the 10-year storm event of 5.20 inches of rainfall for the same duration. The post construction study included analyzing the increase in runoff due to the increase in imperviousness, while analyzing the impact of storage in the MBR at the practice outfall. The practice has three (3) outfalls: a 4" pipe that drains from the base of the MBR, draining the 6" underdrain, a 6" PVC outfall that is designed to help control and convey the 10-year storm, and a broad crested weir designed to handle higher flows and as an emergency spillway. The MBR has a surface area of 1,024 sf, a media depth of 3.75 feet and at the ponding depth of one foot. Analyzing the system, it was found that the two-year storm post construction when mitigated through the practice, would have a flow of 0.60 cfs through the 4" pipe, which is less than the 0.87 cfs preconstruction noted above. The 10-year storm showed a runoff through both the 4" and 6" pipes of 1.10 cfs, which is less than the 1.97 cfs under preconstruction conditions noted above.

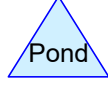
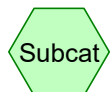
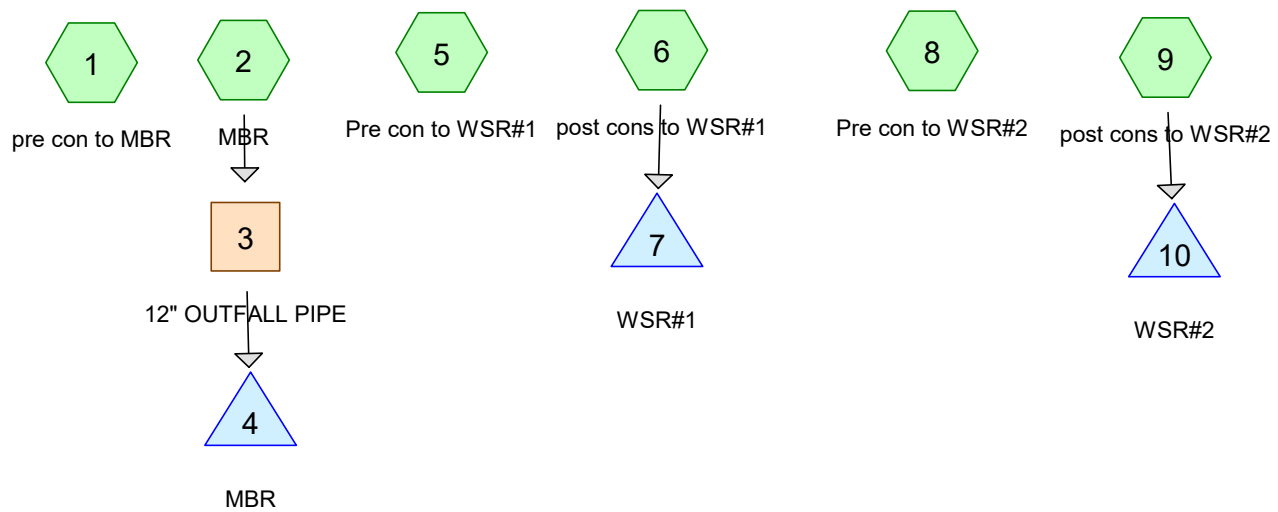
The DA to WSR#1 contains 0.07 ac of which 0.04 is impervious. WSR#1 has a surface area of 318 sf, a media depth of 2.25 feet and a ponding depth of one-half foot. The practice has one 4" outfall. The

runoff for this drainage area pre-construction is 0.13 cubic feet per second (cfs), for the two-year storm event of 3.33 inches of rainfall in 24 hours, and 0.30 cfs for the 10-year storm event of 5.20 inches of rainfall for the same duration. The post construction study included analyzing the increase in runoff due to the increase in imperviousness, while analyzing the impact of storage in the WSR#1 at the practice outfall. Analyzing the system, it was found that the two-year storm post construction when mitigated through the practice, would have a flow of 0.13 cfs through the 4" pipe, which is the same as the 0.13 cfs preconstruction noted above (no increase). The 10-year storm showed a runoff through the 4" of 0.26 cfs, which is less than the 0.30 cfs under preconstruction conditions noted above.

The DA to WSR#2 contains 0.06 ac of which 0.04 is impervious. WSR#2 has a surface area of 318 sf, a media depth of 2.25 feet and a ponding depth of one-half foot. The practice has one 4" outfall. The runoff for this drainage area pre-construction is 0.12 cubic feet per second (cfs), for the two-year storm event of 3.33 inches of rainfall in 24 hours, and 0.27 cfs for the 10-year storm event of 5.20 inches of rainfall for the same duration. The post construction study included analyzing the increase in runoff due to the increase in imperviousness, while analyzing the impact of storage in the WSR#2 at the practice outfall. Analyzing the system, it was found that the two-year storm post construction when mitigated through the practice, would have a flow of 0.09 cfs through the 4" pipe, which is less than the 0.12 cfs preconstruction noted above. The 10-year storm showed a runoff through the 4" of 0.24 cfs, which is less than the 0.30 cfs under preconstruction conditions noted above.

Conclusion

In summary, it can be seen that the practices as designed serve to mitigate the runoff from their drainage areas to volumes that in each of the three practices DA does not increase runoff to exceed that for before the site is developed.



Routing Diagram for Mitigation analysis

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Mitigation analysis

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Page 2

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-YR	Type II 24-hr		Default	24.00	1	3.33	2
2	10-YR	Type II 24-hr		Default	24.00	1	5.20	2

Mitigation analysis

Type II 24-hr 2-YR Rainfall=3.33"

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Page 3

Summary for Subcatchment 1: pre con to MBR

Runoff = 0.87 cfs @ 11.98 hrs, Volume= 0.041 af, Depth> 1.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-YR Rainfall=3.33"

Area (sf)	CN	Description
19,044	74	>75% Grass cover, Good, HSG C
19,044		100.00% Pervious Area

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

Mitigation analysis

Type II 24-hr 2-YR Rainfall=3.33"

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Summary for Subcatchment 2: MBR

Runoff = 1.82 cfs @ 11.97 hrs, Volume= 0.090 af, Depth> 2.47"
Routed to Reach 3 : 12" OUTFALL PIPE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-YR Rainfall=3.33"

Area (sf)	CN	Description
4,935	74	>75% Grass cover, Good, HSG C
14,109	98	Paved parking, HSG C
19,044	92	Weighted Average
4,935		25.91% Pervious Area
14,109		74.09% Impervious Area

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

Mitigation analysis

Type II 24-hr 2-YR Rainfall=3.33"

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Page 5

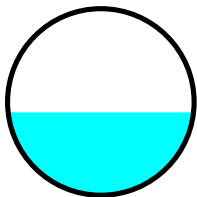
Summary for Reach 3: 12" OUTFALL PIPE

Inflow Area = 0.437 ac, 74.09% Impervious, Inflow Depth > 2.47" for 2-YR event
Inflow = 1.82 cfs @ 11.97 hrs, Volume= 0.090 af
Outflow = 1.82 cfs @ 11.97 hrs, Volume= 0.090 af, Atten= 0%, Lag= 0.2 min
Routed to Pond 4 : MBR

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 5.41 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 1.59 fps, Avg. Travel Time= 0.3 min

Peak Storage= 10 cf @ 11.97 hrs
Average Depth at Peak Storage= 0.44' , Surface Width= 0.99'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 4.47 cfs

12.0" Round Pipe
n= 0.010 PVC, smooth interior
Length= 30.0' Slope= 0.0093 '/'
Inlet Invert= 30.28', Outlet Invert= 30.00'



Mitigation analysis

Type II 24-hr 2-YR Rainfall=3.33"

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Summary for Pond 4: MBR

Inflow Area = 0.437 ac, 74.09% Impervious, Inflow Depth > 2.47" for 2-YR event
Inflow = 1.82 cfs @ 11.97 hrs, Volume= 0.090 af
Outflow = 0.60 cfs @ 12.09 hrs, Volume= 0.087 af, Atten= 67%, Lag= 7.1 min
Primary = 0.60 cfs @ 12.09 hrs, Volume= 0.087 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 29.29' @ 12.09 hrs Surf.Area= 1,024 sf Storage= 1,246 cf
Flood Elev= 31.00' Surf.Area= 2,674 sf Storage= 2,861 cf

Plug-Flow detention time= 50.5 min calculated for 0.087 af (96% of inflow)
Center-of-Mass det. time= 29.2 min (821.8 - 792.6)

Volume	Invert	Avail.Storage	Storage Description
#1	26.25'	1,536 cf	Custom Stage Data (Irregular) Listed below (Recalc) 3,840 cf Overall x 40.0% Voids
#2	30.00'	1,325 cf	Custom Stage Data (Irregular) Listed below (Recalc)
		2,861 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
26.25	1,024	127.0	0	0	1,024
30.00	1,024	127.0	3,840	3,840	1,500

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
30.00	1,024	127.0	0	0	1,024
31.00	1,650	179.0	1,325	1,325	2,299

Device	Routing	Invert	Outlet Devices
#1	Primary	26.50'	4.0" Round Culvert L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 26.50' / 26.40' S= 0.0050 ' S= 0.0050 ' Cc= 0.900 n= 0.011, Flow Area= 0.09 sf
#2	Primary	31.00'	64.0' long + 1.0 ' SideZ x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=0.60 cfs @ 12.09 hrs HW=29.29' (Free Discharge)

1=Culvert (Barrel Controls 0.60 cfs @ 6.92 fps)

2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Mitigation analysis

Type II 24-hr 2-YR Rainfall=3.33"

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Summary for Subcatchment 5: Pre con to WSR#1

Runoff = 0.13 cfs @ 11.98 hrs, Volume= 0.006 af, Depth> 1.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-YR Rainfall=3.33"

Area (sf)	CN	Description
2,935	74	>75% Grass cover, Good, HSG C
2,935		100.00% Pervious Area

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

Mitigation analysis

Type II 24-hr 2-YR Rainfall=3.33"

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Page 9

Summary for Subcatchment 6: post cons to WSR#1

Runoff = 0.27 cfs @ 11.97 hrs, Volume= 0.013 af, Depth> 2.29"
Routed to Pond 7 : WSR#1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-YR Rainfall=3.33"

Area (sf)	CN	Description
956	74	>75% Grass cover, Good, HSG C
1,979	98	Paved parking, HSG C
2,935	90	Weighted Average
956		32.57% Pervious Area
1,979		67.43% Impervious Area

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

Mitigation analysis

Type II 24-hr 2-YR Rainfall=3.33"

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Summary for Pond 7: WSR#1

Inflow Area = 0.067 ac, 67.43% Impervious, Inflow Depth > 2.29" for 2-YR event
 Inflow = 0.27 cfs @ 11.97 hrs, Volume= 0.013 af
 Outflow = 0.13 cfs @ 12.06 hrs, Volume= 0.008 af, Atten= 49%, Lag= 5.3 min
 Primary = 0.13 cfs @ 12.06 hrs, Volume= 0.008 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
 Peak Elev= 32.08' @ 12.06 hrs Surf.Area= 318 sf Storage= 265 cf

Plug-Flow detention time= 193.9 min calculated for 0.008 af (59% of inflow)
 Center-of-Mass det. time= 87.7 min (889.1 - 801.4)

Volume	Invert	Avail.Storage	Storage Description
#1	30.00'	286 cf	Custom Stage Data (Irregular) Listed below (Recalc) 716 cf Overall x 40.0% Voids
#2	32.25'	185 cf	Custom Stage Data (Irregular) Listed below (Recalc)
		472 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
30.00	318	67.0	0	0	318
32.25	318	67.0	716	716	469

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
32.25	318	67.0	0	0	318
32.75	426	77.0	185	185	438

Device	Routing	Invert	Outlet Devices
#1	Primary	31.75'	4.0" Round Culvert L= 7.5' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 31.75' / 31.65' S= 0.0133 ' / S= 0.0133 ' Cc= 0.900 n= 0.011, Flow Area= 0.09 sf

Primary OutFlow Max=0.13 cfs @ 12.06 hrs HW=32.08' (Free Discharge)
 ↑1=Culvert (Inlet Controls 0.13 cfs @ 1.55 fps)

Mitigation analysis

Type II 24-hr 2-YR Rainfall=3.33"

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Summary for Subcatchment 8: Pre con to WSR#2

Runoff = 0.12 cfs @ 11.98 hrs, Volume= 0.006 af, Depth> 1.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-YR Rainfall=3.33"

Area (sf)	CN	Description
2,610	74	>75% Grass cover, Good, HSG C
2,610		100.00% Pervious Area

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

Mitigation analysis

Type II 24-hr 2-YR Rainfall=3.33"

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Summary for Subcatchment 9: post cons to WSR#2

Runoff = 0.23 cfs @ 11.97 hrs, Volume= 0.011 af, Depth> 2.20"
Routed to Pond 10 : WSR#2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-YR Rainfall=3.33"

Area (sf)	CN	Description
938	74	>75% Grass cover, Good, HSG C
1,672	98	Paved parking, HSG C
2,610	89	Weighted Average
938		35.94% Pervious Area
1,672		64.06% Impervious Area

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

Mitigation analysis

Type II 24-hr 2-YR Rainfall=3.33"

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Summary for Pond 10: WSR#2

Inflow Area = 0.060 ac, 64.06% Impervious, Inflow Depth > 2.20" for 2-YR event
Inflow = 0.23 cfs @ 11.97 hrs, Volume= 0.011 af
Outflow = 0.07 cfs @ 12.09 hrs, Volume= 0.006 af, Atten= 69%, Lag= 7.3 min
Primary = 0.07 cfs @ 12.09 hrs, Volume= 0.006 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 31.91' @ 12.09 hrs Surf.Area= 318 sf Storage= 243 cf

Plug-Flow detention time= 215.4 min calculated for 0.006 af (54% of inflow)
Center-of-Mass det. time= 104.9 min (910.4 - 805.6)

Volume	Invert	Avail.Storage	Storage Description
#1	30.00'	286 cf	Custom Stage Data (Irregular) Listed below (Recalc) 716 cf Overall x 40.0% Voids
#2	32.25'	185 cf	Custom Stage Data (Irregular) Listed below (Recalc)
		472 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
30.00	318	67.0	0	0	318
32.25	318	67.0	716	716	469

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
32.25	318	67.0	0	0	318
32.75	426	77.0	185	185	438

Device	Routing	Invert	Outlet Devices
#1	Primary	31.70'	4.0" Round Culvert L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 31.70' / 31.60' S= 0.0100 ' / Cc= 0.900 n= 0.011, Flow Area= 0.09 sf

Primary OutFlow Max=0.07 cfs @ 12.09 hrs HW=31.91' (Free Discharge)

↑**1=Culvert** (Inlet Controls 0.07 cfs @ 1.23 fps)

Mitigation analysis

Type II 24-hr 10-YR Rainfall=5.20"

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Page 14

Summary for Subcatchment 1: pre con to MBR

Runoff = 1.97 cfs @ 11.97 hrs, Volume= 0.092 af, Depth> 2.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-YR Rainfall=5.20"

Area (sf)	CN	Description
19,044	74	>75% Grass cover, Good, HSG C
19,044		100.00% Pervious Area

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

Mitigation analysis

Type II 24-hr 10-YR Rainfall=5.20"

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Page 15

Summary for Subcatchment 2: MBR

Runoff = 3.05 cfs @ 11.97 hrs, Volume= 0.156 af, Depth> 4.28"
Routed to Reach 3 : 12" OUTFALL PIPE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-YR Rainfall=5.20"

Area (sf)	CN	Description
4,935	74	>75% Grass cover, Good, HSG C
14,109	98	Paved parking, HSG C
19,044	92	Weighted Average
4,935		25.91% Pervious Area
14,109		74.09% Impervious Area

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

Mitigation analysis

Type II 24-hr 10-YR Rainfall=5.20"

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Page 16

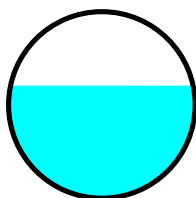
Summary for Reach 3: 12" OUTFALL PIPE

Inflow Area = 0.437 ac, 74.09% Impervious, Inflow Depth > 4.28" for 10-YR event
Inflow = 3.05 cfs @ 11.97 hrs, Volume= 0.156 af
Outflow = 3.04 cfs @ 11.97 hrs, Volume= 0.156 af, Atten= 0%, Lag= 0.1 min
Routed to Pond 4 : MBR

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 6.13 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 1.84 fps, Avg. Travel Time= 0.3 min

Peak Storage= 15 cf @ 11.97 hrs
Average Depth at Peak Storage= 0.61' , Surface Width= 0.98'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 4.47 cfs

12.0" Round Pipe
n= 0.010 PVC, smooth interior
Length= 30.0' Slope= 0.0093 '/'
Inlet Invert= 30.28', Outlet Invert= 30.00'



Mitigation analysis

Type II 24-hr 10-YR Rainfall=5.20"

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Page 4

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Summary for Pond 4: MBR

Inflow Area = 0.437 ac, 74.09% Impervious, Inflow Depth > 4.28" for 10-YR event
Inflow = 3.04 cfs @ 11.97 hrs, Volume= 0.156 af
Outflow = 0.74 cfs @ 12.11 hrs, Volume= 0.152 af, Atten= 76%, Lag= 8.6 min
Primary = 0.74 cfs @ 12.11 hrs, Volume= 0.152 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 30.59' @ 12.11 hrs Surf.Area= 2,398 sf Storage= 2,239 cf
Flood Elev= 31.00' Surf.Area= 2,674 sf Storage= 2,861 cf

Plug-Flow detention time= 45.6 min calculated for 0.152 af (98% of inflow)
Center-of-Mass det. time= 31.7 min (809.2 - 777.6)

Volume	Invert	Avail.Storage	Storage Description
#1	26.25'	1,536 cf	Custom Stage Data (Irregular) Listed below (Recalc) 3,840 cf Overall x 40.0% Voids
#2	30.00'	1,325 cf	Custom Stage Data (Irregular) Listed below (Recalc)
		2,861 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
26.25	1,024	127.0	0	0	1,024
30.00	1,024	127.0	3,840	3,840	1,500

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
30.00	1,024	127.0	0	0	1,024
31.00	1,650	179.0	1,325	1,325	2,299

Device	Routing	Invert	Outlet Devices
#1	Primary	26.50'	4.0" Round Culvert L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 26.50' / 26.40' S= 0.0050 ' / Cc= 0.900 n= 0.011, Flow Area= 0.09 sf
#2	Primary	31.00'	64.0' long + 1.0 ' / SideZ x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=0.74 cfs @ 12.11 hrs HW=30.59' (Free Discharge)

↑1=Culvert (Barrel Controls 0.74 cfs @ 8.49 fps)
↑2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Mitigation analysis

Type II 24-hr 10-YR Rainfall=5.20"

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Page 19

Summary for Subcatchment 5: Pre con to WSR#1

Runoff = 0.30 cfs @ 11.97 hrs, Volume= 0.014 af, Depth> 2.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-YR Rainfall=5.20"

Area (sf)	CN	Description
2,935	74	>75% Grass cover, Good, HSG C
2,935		100.00% Pervious Area

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

Mitigation analysis

Type II 24-hr 10-YR Rainfall=5.20"

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Page 20

Summary for Subcatchment 6: post cons to WSR#1

Runoff = 0.45 cfs @ 11.97 hrs, Volume= 0.023 af, Depth> 4.06"
Routed to Pond 7 : WSR#1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-YR Rainfall=5.20"

Area (sf)	CN	Description
956	74	>75% Grass cover, Good, HSG C
1,979	98	Paved parking, HSG C
2,935	90	Weighted Average
956		32.57% Pervious Area
1,979		67.43% Impervious Area

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

Mitigation analysis

Type II 24-hr 10-YR Rainfall=5.20"

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Page 21

Summary for Pond 7: WSR#1

Inflow Area = 0.067 ac, 67.43% Impervious, Inflow Depth > 4.06" for 10-YR event
Inflow = 0.45 cfs @ 11.97 hrs, Volume= 0.023 af
Outflow = 0.26 cfs @ 12.05 hrs, Volume= 0.018 af, Atten= 44%, Lag= 4.9 min
Primary = 0.26 cfs @ 12.05 hrs, Volume= 0.018 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 32.51' @ 12.05 hrs Surf.Area= 690 sf Storage= 376 cf

Plug-Flow detention time= 139.3 min calculated for 0.018 af (77% of inflow)
Center-of-Mass det. time= 54.4 min (839.7 - 785.4)

Volume	Invert	Avail.Storage	Storage Description
#1	30.00'	286 cf	Custom Stage Data (Irregular) Listed below (Recalc) 716 cf Overall x 40.0% Voids
#2	32.25'	185 cf	Custom Stage Data (Irregular) Listed below (Recalc)
		472 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
30.00	318	67.0	0	0	318
32.25	318	67.0	716	716	469

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
32.25	318	67.0	0	0	318
32.75	426	77.0	185	185	438

Device	Routing	Invert	Outlet Devices
#1	Primary	31.75'	4.0" Round Culvert L= 7.5' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 31.75' / 31.65' S= 0.0133 ' / S= 0.0133 ' Cc= 0.900 n= 0.011, Flow Area= 0.09 sf

Primary OutFlow Max=0.26 cfs @ 12.05 hrs HW=32.51' (Free Discharge)
↑**1=Culvert** (Inlet Controls 0.26 cfs @ 2.93 fps)

Mitigation analysis

Type II 24-hr 10-YR Rainfall=5.20"

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Page 4

Summary for Subcatchment 8: Pre con to WSR#2

Runoff = 0.27 cfs @ 11.97 hrs, Volume= 0.013 af, Depth> 2.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-YR Rainfall=5.20"

Area (sf)	CN	Description
2,610	74	>75% Grass cover, Good, HSG C
2,610		100.00% Pervious Area

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

Mitigation analysis

Type II 24-hr 10-YR Rainfall=5.20"

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Page 4

Summary for Subcatchment 9: post cons to WSR#2

Runoff = 0.40 cfs @ 11.97 hrs, Volume= 0.020 af, Depth> 3.96"
Routed to Pond 10 : WSR#2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-YR Rainfall=5.20"

Area (sf)	CN	Description
938	74	>75% Grass cover, Good, HSG C
1,672	98	Paved parking, HSG C
2,610	89	Weighted Average
938		35.94% Pervious Area
1,672		64.06% Impervious Area

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

Mitigation analysis

Type II 24-hr 10-YR Rainfall=5.20"

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Page 4

Summary for Pond 10: WSR#2

Inflow Area = 0.060 ac, 64.06% Impervious, Inflow Depth > 3.96" for 10-YR event
Inflow = 0.40 cfs @ 11.97 hrs, Volume= 0.020 af
Outflow = 0.24 cfs @ 12.04 hrs, Volume= 0.015 af, Atten= 40%, Lag= 4.5 min
Primary = 0.24 cfs @ 12.04 hrs, Volume= 0.015 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 32.39' @ 12.04 hrs Surf.Area= 665 sf Storage= 333 cf

Plug-Flow detention time= 146.9 min calculated for 0.015 af (74% of inflow)
Center-of-Mass det. time= 57.4 min (846.4 - 789.0)

Volume	Invert	Avail.Storage	Storage Description
#1	30.00'	286 cf	Custom Stage Data (Irregular) Listed below (Recalc) 716 cf Overall x 40.0% Voids
#2	32.25'	185 cf	Custom Stage Data (Irregular) Listed below (Recalc)
		472 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
30.00	318	67.0	0	0	318
32.25	318	67.0	716	716	469

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
32.25	318	67.0	0	0	318
32.75	426	77.0	185	185	438

Device	Routing	Invert	Outlet Devices
#1	Primary	31.70'	4.0" Round Culvert L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 31.70' / 31.60' S= 0.0100 ' / S= 0.0100 ' Cc= 0.900 n= 0.011, Flow Area= 0.09 sf

Primary OutFlow Max=0.24 cfs @ 12.04 hrs HW=32.39' (Free Discharge)
↑**1=Culvert** (Inlet Controls 0.24 cfs @ 2.75 fps)

Mistletoe Hall, Lot 6C

SWM Computations and Report

December 2023

Prepared for:
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Contents

I - Narrative	2
Existing Conditions	2
Resource Mapping	2
Stormwater Management Concept.....	3
Proposed Conditions	4
II - Environmental Site Design – ESDv	4
III – Minimum Control Requirements (SWM Ordinance 4.1)	5
Attachments	7

I - Narrative

Existing Conditions

This project, known as Mistletoe Hall, Lot 6C, is located at 28860 Fausley Wood Court in Easton. The project site is located on a parcel totaling approximately 1.56 acres. The site is zoned I-1 – Select Industrial District.

The site, in existing conditions, is unimproved. The site is stabilized with turf lawn. There are no steep slopes or other environmental features located onsite, though wetlands are located immediately to the North of the property. These wetlands are encompassed by a Forest Conservation Easement, dedicated to the Town of Easton during the original subdivision process. In existing conditions runoff from the site discharges to both the South and North of the property. The Northern discharge point discharges to the wetland and Forest Conservation Easement, while the Southern discharge point discharges to the public right-of-way of Mistletoe Drive.

There are two soil types located onsite, see Table 1-1 for the summary of the soils. There are no visible signs of erosion location onsite.

Table 1-1

Map Unit Symbol	Map Unit Name	Hydric	Hydrologic Soil Group	K-Factor (Whole Soil)
OtA	<i>Othello silt loams, 0 to 2 percent slopes, Mid-Atlantic Coastal Plain</i>	<i>Y*</i>	<i>C/D</i>	<i>0.43</i>
MtcA	<i>Mattapex silt loam, 0 to 2 percent slopes, Mid-Atlantic Coastal Plain</i>	<i>Y*</i>	<i>C</i>	<i>0.49</i>

**Soil contains potentially hydric components*

Resource Mapping

a. Primary Environmental Features identified onsite:

1. **Streams** – There are no streams located onsite.
2. **Stream Order** – N/A
3. **Stream Buffers** – N/A
4. **Wetlands and Wetland Buffers** – There are no wetlands or wetland buffers located onsite. Wetlands are located immediately to the North, however the buffer does not encroach on the subject property.
5. **Floodplain** – The site lies within Flood Zone ‘X’ – Area of Minimal Flooding as shown on the FEMA flood insurance rate maps for Talbot County, Maryland. Map No. 24041C0187D, effective July 20, 2016.
6. **Steep Slopes** – Steep slopes do not exist on the subject property.

b. Secondary Environmental Features identified onsite:

1. **Critical Area** – This site is not located within the Chesapeake Bay Critical Area Overlay.
2. **Soils** – There are two soil types located onsite, see Table 1-1 for a summary.

3. **Forests** – There are no forests located onsite. An existing Forest Conservation Easement is located immediately to the North of the property.
4. **Cultural Resources** – This site is not located within a Historic District and there are no other known Cultural Resources located onsite.
5. **Miscellaneous** – No additional secondary environmental features are known to exist onsite.

Stormwater Management Concept

a. Alternative Surfaces

1. **Greens Roofs** shall not be utilized as green roofs are not included in the architectural design.
2. **Pervious Pavements** shall not be utilized as this device typically works best in sandy soils and the areas available for this practice are being treated in other devices.
3. **Reinforced Turf** shall not be utilized as this device typically works best in sandy soils and the areas available for this practice are being treated in other devices.

b. Non-Structural Practices

1. **Rooftop Disconnects** shall not be utilized as this practice works best in sandy soils, and the rooftop is being treated in other devices.
2. **Non-rooftop Disconnects** will not be utilized as this practice works best in sandy soils, and the areas available for this practice are being treated in other devices.
3. **Sheet flow to Conservation Areas** will not be used as part of this development as the areas available for this practice are being treated in alternative, more efficient, practices.

c. Micro-Scale Practices

1. **Rainwater Harvesting** will not be used as there are no plans for greywater reuse, rendering this practice impractical.
2. **Submerged Gravel Wetlands** will not be used as the areas available for use in this practice are not large enough to maintain submerged flow conditions, which is vital to the functionality of this practice.
3. **Landscape Infiltration** will not be utilized as the areas available for this practice are being treated in more efficient practices.
4. **Infiltration Berms** will not be utilized as this practice works best in high infiltration rate soil and infiltration berms have limited capacity to meet ESDv requirements as a stand-alone practice, typically being use for pre-treatment for other devices.
5. **Drywells** shall not be utilized as the in-situ soils are HSG-C and are not conducive to infiltration.
6. **Micro-Bioretenction** shall be utilized as this device will promote filtration of stormwater runoff. This device has not been designed with an underdrain system as the elevation of the site will not allow proper discharge. The device has been designed with an overflow weir to safely convey the larger 10-year storms.

7. **Rain Gardens** will be used as the areas available to drain to this practice are of allowable area. The Town of Easton Standard Detail for a Wet Soil Rain Garden (Std. Dtl. TOE-SWM-6.01-3) will be used in order to promote dewatering of the device.
8. **Swales** will not be used in this development as this practice is suitable for linear applications only.
9. **Enhanced Filters** will not be used as part of this development as the state minimums are being met with other devices.

Proposed Conditions

The owner of this property wishes to construct two buildings, along with a supporting parking lot. The property is currently undeveloped and will require no demolition prior to construction.

This development will provide stormwater management onsite, and a stable outfall for the drainage that leaves the site. Grading will only be performed where required to construct the buildings, parking lot, stormwater management, and to establish the drainage areas as shown on the development plans.

The existing site flow patterns will remain largely unchanged, while using minor grading and piping to support the use of the stormwater management. ESD measures will be implemented to the maximum extent practicable in order to meet the stormwater management requirements.

II - Environmental Site Design – ESDv

This site is being designed per the MDE 2000 Maryland Stormwater Management Manual. ESD devices are being proposed to the MEP and will adhere to the MDE Manual.

Per the Town of Easton Stormwater Management Ordinance (‘*The Ordinance*’) planning techniques were implemented during the design process to ensure compliance with the applicable minimum control requirements. The discussion below outlines the various ways ESD was accomplished to the MEP.

- a) Preserving and protecting natural resources
There are no sensitive environmental features located onsite.
- b) Conserving natural drainage patterns.
Overall natural drainage patterns are largely left intact in the final development of this project. The Site Outfall locations will remain largely the same, and discharge conditions will not change as part of this development.
- c) Minimizing impervious area
The proposed development is located near the front of the property in order to limit the amount of impervious required for the drive aisle and parking.
- d) Reducing Runoff Volume

The entirety of the impervious surfaces will enter a stormwater management facility, reducing runoff leaving the site.

- e) Using ESD practices to maintain 100 percent of the annual average predevelopment groundwater recharge volume
The proposed ESD practices meet and exceed the minimum recharge volume, required to maintain the groundwater recharge volume of the site.
- f) Using green roofs, permeable pavement, reinforced turf, and other alternative surfaces
Green roofs are not included in the architectural design, and other alternative surface function best within sandy soils. The in-situ soils are HSG-C and do not lend themselves to the use of alternative surfaces.
- g) Limiting soil disturbance, mass grading, and compaction
The proposed development is located near the front of the property, limiting the amount of disturbance and grading.
- h) Clustering development
The proposed development is located near the front of the property, limiting the amount of impervious located onsite.
- i) Any practices approved by the Administration
The proposed development will be treated using devices from Chapter 5 of the MDE Stormwater Design Manual.

Soils in the development areas have a type 'C' HSG classification; therefore, the target RCN for woods in good condition is **70**. The proposed imperviousness for the site is **33%**. Using Table 5.3 from the MDE Manual yields a target rainfall depth (P_E) of **1.60** inches and a target runoff depth (Q_E) of **0.56** inches. From the initial computations, the minimum and target ESD volume is **3,168** cf, of which **257** cf needs to be recharge volume.

Stormwater management will be achieved using a combination of the practices discussed above.

III – Minimum Control Requirements (SWM Ordinance 4.1)

Per the Town of Easton Stormwater Management Ordinance Section 4.1 planning techniques, nonstructural practices, and design methods specified in the Design Manual shall be used to implement ESD to the MEP. Stormwater Management plans for development projects subject to the ordinance shall be designed using ESD sizing criteria, recharge volume, water quality volume, and channel protection storage volume criteria according to the Design Manual and that the MEP standard is met when channel stability is maintained, predevelopment groundwater discharge is replicated, nonpoint source pollution is minimized, and structural stormwater management practices are used only if determined to be absolutely necessary.

ESD Sizing Criteria (ESD_v)

The proposed stormwater management exceeds the minimum ESD_v for the site.

Recharge Volume (Re_v)

The proposed stormwater management will maintain the predeveloped groundwater recharge for the site.

Water Quality Volume (WQ_v)

The proposed stormwater management exceeds the required WQ_v as it also exceeds the required ESD_v for the site.

Channel Protection Volume (Cp_v)

Per Chapter 2 of the MDE Stormwater Management Manual this development is not subject to the Channel Protection Volume requirement.

Overbank Flood Protection Volume (Q_p)

While not required, the Overbank Flood Protection Volume was considered during the design phase of this project. The proposed stormwater management will aid in the reduction of runoff from the proposed development, allowing stormwater to be temporarily stored in the devices.

Attachments

Designer: TMH	Date: December 1, 2023	Checked By:	Date:
Title: Mistletoe Hall, Lot 6C	Job No.: 2022-5067		
Subject: Stormwater Management Computations	Sheet No. of		

Site Tabulations:

Location: 28860 Fausley Wood Ct					
Site Area:	67,891 sf	or	1.56 Ac.		
Soils: HSG 'A' =	0 sf	or	0.00 Ac.	or	0 % of Site
HSG 'B' =	0 sf	or	0.00 Ac.	or	0 % of Site
HSG 'C' =	67,891 sf	or	1.56 Ac.	or	100 % of Site
HSG 'D' =	0 sf	or	0.00 Ac.	or	0 % of Site

Impervious Surface Tabulations:

Proposed Impervious:	22,303 sf	or	0.51 Ac.
Alternative Surfaces:	0 sf	or	0.00 Ac.
Prop. Impervious:	22,303 sf	or	0.51 Ac.

Step 1: Determine SWM Requirements:

A. Determine Pre-Developed Conditions:

Soil Conditions and RCNs for "woods in good condition"

HSG	RCN*	Area	Percent
A	38	0.00 Ac.	0.00
B	55	0.00 Ac.	0.00
C	70	1.56 Ac.	100.00
D	77	0.00 Ac.	0.00

* RCN for "woods in good condition" (AACo, Appx F)

** Actual RCN is less than 30, use RCN = 38

Composite RCN for "woods in good condition"

$$RCN_{woods} = [(38 \times 0.00ac) + (55 \times 0.00ac) + (70 \times 1.56ac) + (77 \times 0.00ac)] / 1.56ac$$

$$RCN_{woods} = 70$$

Target RCN for "woods in good condition" = **70**

B. Determine Target P_E Using Table 5.3

P_E = Rainfall used to size ESD practices

Proposed imperviousness (%I)

Impervious Area (from above): 22,303 sf

$$\%I = \text{Imperv. Coverage} / \text{Site Area} = 22,303sf / 67,891sf = 32.85 \% = \mathbf{33 \%}$$

- Determine P_E from Table

Hydrologic Soil Group 'A'										
%I	RCN*	P _E = 1"	1.2"	1.4"	1.6"	1.8"	2.0"	2.2"	2.4"	2.6"
0%	40									
5%	43									
10%	46									
15%	48	38								
20%	51	40	38	38						
25%	54	41	40	39						
30%	57	42	41	39	38					
35%	60	44	42	40	39					
40%	61	44	42	40	39					
45%	66	48	46	41	40					
50%	69	51	48	42	41	38				
55%	72	54	50	42	41	39				
60%	74	57	52	44	42	40	38			
65%	77	61	55	47	44	42	40			
70%	80	66	61	55	50	45	40			
75%	84	71	67	62	56	48	40	38		
80%	86	73	70	65	60	52	44	40		
85%	89	77	74	70	65	58	49	42	38	
90%	92	81	78	74	70	65	58	48	42	38
95%	95	85	82	78	75	70	65	57	50	39
100%	98	89	86	83	80	76	72	66	59	40

Use P_E = 0 inches of rainfall as the target for ESD implementation

Hydrologic Soil Group 'B'										
%I	RCN*	P _E = 1"	1.2"	1.4"	1.6"	1.8"	2.0"	2.2"	2.4"	2.6"
0%	61									
5%	63									
10%	65									
15%	67	55								
20%	68	60	55	55						
25%	70	64	61	58						
30%	72	65	62	59	55					
35%	74	66	63	60	56					
40%	75	66	63	60	56					
45%	78	68	66	62	58					
50%	80	70	67	64	60					
55%	81	71	68	65	61	55				
60%	83	73	70	67	63	58				
65%	85	75	72	69	65	60	55			
70%	87	77	74	71	67	62	57			
75%	89	79	76	73	69	65	59			
80%	91	81	78	75	71	66	61			
85%	92	82	79	76	72	67	62	55		
90%	94	84	81	78	74	70	65	59	55	
95%	96	87	84	81	77	73	69	63	57	
100%	98	89	86	83	80	76	72	66	59	55

Use P_E = 0 inches of rainfall as the target for ESD implementation

Hydrologic Soil Group 'C'										
%I	RCN*	P _E = 1"	1.2"	1.4"	1.6"	1.8"	2.0"	2.2"	2.4"	2.6"
0%	74				↑					
5%	75									
10%	76									
15%	78									
20%	79	70								
25%	80	72	70	70						
30%	81	73	72	71						
35%	82	74	73	72	70					
40%	84	77	75	73	71					
45%	85	78	76	74	71					
50%	86	78	76	74	71					
55%	86	78	76	74	71	70				
60%	88	80	78	76	73	71				
65%	90	82	80	77	75	72				
70%	91	82	80	78	75	72				
75%	92	83	81	79	75	72				
80%	93	84	82	79	76	72				
85%	94	85	82	79	76	72				
90%	95	86	83	80	77	73	70			
95%	97	88	85	82	79	75	71			
100%	98	89	86	83	80	76	72	70		

Use P_E = 1.6 inches of rainfall as the target for ESD implementation

Hydrologic Soil Group 'D'										
%I	RCN*	P _E = 1"	1.2"	1.4"	1.6"	1.8"	2.0"	2.2"	2.4"	2.6"
0%	80									
5%	81									
10%	82									
15%	83									
20%	84	77								
25%	85	78								
30%	85	78	77	77						
35%	86	79	78	78						
40%	87	82	81	79	77					
45%	88	82	81	79	78					
50%	89	83	82	80	78					
55%	90	84	82	80	78					
60%	91	85	83	81	78					
65%	92	85	83	81	78					
70%	93	86	84	81	78					
75%	94	86	84	81	78					
80%	94	86	84	92	79					
85%	95	86	84	82	79					
90%	96	87	84	82	79	77				
95%	97	88	85	82	80	78				
100%	98	89	86	83	80	78	77			

Use P_E = 0 inches of rainfall as the target for ESD implementation

Composite P_E

HSG	Area	P _E	
A	0 sf	0 in	0sf x 0.00in / 67,891sf = 0 in
B	0 sf	0 in	0sf x 0.00in / 67,891sf = 0 in
C	67,891 sf	1.6 in	67,891sf x 1.60in / 67,891sf = 1.6 in
D	0 sf	0 in	0sf x 0.00in / 67,891sf = 0 in
			Composite P_E = 1.6 in

C. Compute Q_E:

Q_E = Runoff depth used to size ESD practices

Q_E = P_E * R_v, where:

P_E = 1.6 in (Composite P_E from above)

R_v = 0.05 + (0.009)(I); I = 32.9 %

= 0.05 + 0.009 x (32.9)

= 0.35

Q_E = 1.6 " x 0.35

= 0.56 inches

ESD Target for the Project

P_E = **1.60 Inches**

Q_E = **0.56 Inches**

D. Compute Minimum ESD_v & Re_v for Site:

Required Minimum ESD_v for Site:

$$ESD_v = [(P_E) \times (R_v) \times (A)] / 12$$

Where: P_E = **1.60 in.** (WQ_v)

R_v = 0.05 + (0.009 x %I)

= 0.05 + (0.009 x 33%)

= **0.35**

Site Area: = **67,891 sf** or 1.56 ac

Target ESD_v = [(1.60 in.) x (0.35) x (67,891sf)] / 12 =

= **3,168 cf**

Required Minimum Recharge Volume (Re_v) for Site:

$$Re_v = [(S) \times (R_v) \times (A)] / 12$$

Where:

HSG	Area	Recharge Factor		Net 'S'
A	0.00 Ac	0.38	0.00 ac x 0.38 / 1.56 ac	0.00
B	0.00 Ac	0.26	0.00 ac x 0.26 / 1.56 ac	0.00
C	1.56 Ac	0.13	1.56 ac x 0.13 / 1.56 ac	0.13
D	0.00 Ac	0.07	0.00 ac x 0.07 / 1.56 ac	0.00

Composite 'S' = 0.13

R_v = 0.05 + (0.009 x %I)

= 0.05 + (0.009 x 32.85%)

= **0.35**

Target Re_v = [(0.13) x (0.35) x (67,891sf)] / 12

= **257 cf**

MDE Section 5.4.3 - Micro-Scale Practices

DA-A1: ESD Practice (M-6) - Micro Bioretention 1

Contributing Drainage Area	=	19,044	sf	or	0.44	Ac.
Impervious Surfaces in DA	=	14,109	sf	or	0.32	Ac.
Percent Imperviousness (%I)	=	74	%	=	14,109 sf / 19,044 sf	
Minimum Surface Area (A _r)	=	381	sf	MINIMUM; 2% of Contributing DA		
Provided Surface Area (A _r)	=	1,024	sf	≥	381 sf	O.K.

Concept Design Computations:

$$\begin{aligned}
 ESD_v &= (P_E \times R_v \times DA) / 12 \\
 \text{where: } P_E &= 15 \text{ in} \times (A_r / DA) \quad (MDE \text{ Eqn } 5.2) \\
 &= 15 \text{ in} \times (1,024 \text{ sf} / 19,044 \text{ sf}) \\
 P_E &= 0.81 \text{ in.} \quad (Concept \text{ Design Estimate}) \\
 R_v &= 0.05 + (0.009 \times \%I) \\
 &= 0.05 + (0.009 \times 74\%) \\
 &= 0.72 \\
 ESD_v &= (0.81 \text{ in.} \times 0.72 \times 19,044 \text{ sf}) / 12 \\
 &= 926 \text{ cf} \quad (Concept \text{ Design Estimate}) \\
 Re_v &= [(S) \times (R_v) \times (A)] / 12 \\
 &= [(0.13) \times (0.72) \times (19,044 \text{ sf})] / 12 \\
 &= 110 \text{ cf}
 \end{aligned}$$

Final Design Computations:

Media Storage:	Surface Area x Depth x Void Ratio	
Mulch	=	0.25 ft Shredded Hardwood
Filter Media	=	2 ft Bioretention Soil
Choker Layer	=	0.5 ft #8 Stone
Gravel Jacket	=	1 ft #57 Stone
Enhanced Filter	=	0 ft #57 Stone Below Underdrain
Total Depth	=	3.75 ft
Media Storage/ESD _v	=	1,024 sf x 3.75 ft x 0.40
Media Storage/ESD _v	=	1,536 cf

Ponding Storage:	Average of Water & Device Surface Area x Ponding Depth	
Device Surface Area	=	1,024 sf
Ponding Water Surface Area	=	1,495 sf
Ponding Depth	=	1.00 ft
Ponding Storage	=	(1,024 sf + 1,495 sf) / 2 x 1.00 ft
	=	1,260 cf
Ponding ESD _v	=	Device Surface Area x Ponding Depth
	=	(1,024 sf x 1.00 ft)
	=	1,024 cf

$$\begin{aligned}
 \text{Total Storage} &= 2,796 \text{ cf} \quad \text{Total ESD}_v = 2,560 \text{ cf} \quad \text{Total } Re_v = 1646 \text{ cf} \\
 P_E \text{ Provided} &= (12 \times ESD_v) / (R_v \times DA) \\
 &= (12 \times 2,560 \text{ cf}) / (0.72 \times 19,044 \text{ sf}) \\
 &= 2.24 \text{ in.} \\
 ESD_v \text{ Max} &= (P_E \times R_v \times DA) / 12 \\
 &= (2.7 \times 0.72 \times 19,044 \text{ sf}) / 12 \\
 &= 3,085 \text{ cf}
 \end{aligned}$$

TOTAL ESD_v PROVIDED OK!

MDE Section 5.4.3 - Micro-Scale Practices

DA-B1: ESD Practice (M-7) - Rain Garden 1

Contributing Drainage Area	=	2,935	sf	or	0.07	Ac.
Impervious Surfaces in DA	=	1,979	sf	or	0.05	Ac.
Percent Imperviousness (%I)	=	67	%	=	1,979 sf / 2,935 sf	
Minimum Surface Area (A _r)	=	59	sf	MINIMUM; 2% of Contributing DA		
Provided Surface Area (A _r)	=	318	sf	≥	59 sf	O.K.

Concept Design Computations:

$$\begin{aligned}
 ESD_v &= (P_E \times R_v \times DA) / 12 \\
 \text{where: } P_E &= 10 \text{ in} \times (A_r / DA) \quad (MDE \text{ Eqn } 5.2) \\
 &= 10 \text{ in} \times (318 \text{ sf} / 2,935 \text{ sf}) \\
 P_E &= 1.08 \text{ in.} \quad (Concept \text{ Design Estimate}) \\
 R_v &= 0.05 + (0.009 \times \%I) \\
 &= 0.05 + (0.009 \times 67\%) \\
 &= 0.65 \\
 ESD_v &= (1.08 \text{ in.} \times 0.65 \times 2,935 \text{ sf}) / 12 \\
 &= 172 \text{ cf} \quad (Concept \text{ Design Estimate}) \\
 Re_v &= [(S) \times (R_v) \times (A)] / 12 \\
 &= [(0.13) \times (0.65) \times (2,935 \text{ sf})] / 12 \\
 &= 21 \text{ cf}
 \end{aligned}$$

Final Design Computations:

Media Storage:	Surface Area x Depth x Void Ratio
Mulch Layer	= 0.25 ft <i>Mulch</i>
Filter Media	= 1.5 ft <i>Bioretention Soil</i>
Choker Layer	= 0 ft <i>Pea Gravel</i>
Gravel Jacket	= 0.5 ft <i>#57 Stone</i>
Total Depth	= 2.25 ft
Media Storage/ESD _v	= 318 sf x 2.25 ft x 0.40
Media Storage/ESD _v	= 286 cf

Ponding Storage:	Average of Water & Device Surface Area x Ponding Depth
Device Surface Area	= 318 sf
Ponding Water Surface Area	= 426 sf
Ponding Depth	= 0.50 ft
Ponding Storage	= (318 sf + 426 sf) / 2 x 0.50 ft
	= 186 cf
Ponding ESD _v	= Device Surface Area x Ponding Depth
	= (318 sf x 0.50 ft)
	= 159 cf

Total Storage	=	472 cf	Total ESD _v	=	445 cf	Total Re _v	=	21 cf
$ \begin{aligned} P_E \text{ Provided} &= (12 \times ESD_v) / (R_v \times DA) \\ &= (12 \times 445 \text{ cf}) / (0.65 \times 2,935 \text{ sf}) \\ &= 2.8 \text{ in.} \end{aligned} $								

$$\begin{aligned}
 ESD_v \text{ Max} &= (P_E \times R_v \times DA) / 12 \\
 &= (2.7 \times 0.65 \times 2,935 \text{ sf}) / 12 \\
 &= 429 \text{ cf}
 \end{aligned}$$

TOTAL ESD_v PROVIDED EXCEEDS ALLOWABLE TREATMENT. USE PE=2.7" FOR ESD_v CALCS

MDE Section 5.4.3 - Micro-Scale Practices

DA-B2: ESD Practice (M-7) - Rain Garden 2

Contributing Drainage Area	=	2,610	sf	or	0.06	Ac.
Impervious Surfaces in DA	=	1,672	sf	or	0.04	Ac.
Percent Imperviousness (%I)	=	64	%	=	1,672 sf / 2,610 sf	
Minimum Surface Area (A_t)	=	52	sf	MINIMUM; 2% of Contributing DA		
Provided Surface Area (A_t)	=	318	sf	≥	52 sf	O.K.

Concept Design Computations:

$$\begin{aligned}
 ESD_v &= (P_E \times R_v \times DA) / 12 \\
 \text{where: } P_E &= 10 \text{ in} \times (A_t / DA) \quad (\text{MDE Eqn 5.2}) \\
 &= 10 \text{ in} \times (318 \text{ sf} / 2,610 \text{ sf}) \\
 P_E &= 1.22 \text{ in.} \quad (\text{Concept Design Estimate}) \\
 R_v &= 0.05 + (0.009 \times \%I) \\
 &= 0.05 + (0.009 \times 64\%) \\
 &= 0.63 \\
 ESD_v &= (1.22 \text{ in.} \times 0.63 \times 2,610 \text{ sf}) / 12 \\
 &= 167 \text{ cf} \quad (\text{Concept Design Estimate}) \\
 Re_v &= [(S) \times (R_v) \times (A)] / 12 \\
 &= [(0.13) \times (0.63) \times (2,610 \text{ sf})] / 12 \\
 &= 21 \text{ cf}
 \end{aligned}$$

Final Design Computations:

Media Storage:	Surface Area x Depth x Void Ratio
Mulch Layer	= 0.25 ft <i>Mulch</i>
Filter Media	= 1.5 ft <i>Bioretention Soil</i>
Choker Layer	= 0 ft <i>Pea Gravel</i>
Gravel Jacket	= 0.5 ft <i>#57 Stone</i>
Total Depth	= 2.25 ft
Media Storage/ESD _v	= 318 sf x 2.25 ft x 0.40
Media Storage/ESD _v	= 286 cf

Ponding Storage:	Average of Water & Device Surface Area x Ponding Depth
Device Surface Area	= 318 sf
Ponding Water Surface Area	= 426 sf
Ponding Depth	= 0.50 ft
Ponding Storage	= (318 sf + 426 sf) / 2 x 0.50 ft
	= 186 cf
Ponding ESD _v	= Device Surface Area x Ponding Depth
	= (318 sf x 0.50 ft)
	= 159 cf

Total Storage	=	472 cf	Total ESD _v	=	445 cf	Total Re _v	=	21 cf
P_E Provided	=	$(12 \times ESD_v) / (R_v \times DA)$ $= (12 \times 445 \text{ cf}) / (0.63 \times 2,610 \text{ sf})$ $= 3.25 \text{ in.}$						

$$\begin{aligned}
 ESD_v \text{ Max} &= (P_E \times R_v \times DA) / 12 \\
 &= (2.7 \times 0.63 \times 2,610 \text{ sf}) / 12 \\
 &= 370 \text{ cf}
 \end{aligned}$$

TOTAL ESD_v PROVIDED EXCEEDS ALLOWABLE TREATMENT. USE PE=2.7" FOR ESD_v CALCS

P_E Value Calculations:

SWM Summary Chart							
DA #	ESD Practice	DA	Storage Provided	ESD _V	Re _V	P _E Value	Net P _E Value
DA-A1:	Micro Bioretention 1	19,044 sf	2,796 cf	2,560 cf	1,646 cf	2.24 in.	2.24" x 19,044 sf / 67,891 sf = 0.63 in.
DA-B1:	Rain Garden 1	2,935 sf	472 cf	429 cf	21 cf	2.70 in.	2.70" x 2,935 sf / 67,891 sf = 0.12 in.
DA-B2:	Rain Garden 2	2,610 sf	472 cf	370 cf	21 cf	2.70 in.	2.70" x 2,610 sf / 67,891 sf = 0.10 in.
		sf	cf	cf	cf	in.	in.
Totals:				3,359 cf	1,687 cf	Total Net P _E Value = 0.85 in.	
Target ESD _V :				3,168 cf	257 cf	Target P _E = 1.60 in.	
				P _E Provided: (12 x 3,359cf) / (0.35 x 67,891sf) = 1.70 in.			



TOWN OF EASTON

14 South Harrison Street
Easton, Maryland 21601

March 6, 2024

Dear Resident,

The Easton Planning Commission (Commission) will hold a public meeting on **Thursday, March 21, 2024 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 application 2022 - 780 has been filed on behalf of Blue Crab Storage LLC to request Sketch Site Plan approval to construct a contractor warehouse and climate controlled self-storage facility with associated stormwater management, parking, and landscaping on the property located at 28860 Fausley Wood Court, also known as Tax Map 0025, Grid 0016, Parcel 0138, Lot 6C.

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 will be available for review one week prior to the scheduled meeting 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 email at ssmith@eastonMD.gov.

Samantha N. Smith

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

APG Media of Chesapeake, LLC

29088 Airpark Drive
Easton, MD 21601

Phone: Fax:

INVOICE
03/04/24

Cust. AcctID:	Creation Date: 03/04/24
	Ad Date: 03/06/24
	Class: 10
Name: Joanne Drummer	Ad ID:
Company: TOWN OF EASTON (L)	Words: 339
Address: PO Box 520	Lines: 54
EASTON, MD 21601	Agate Lines: 261
	Depth: 7.25
	Inserts: 2
	Blind Box:
Telephone: (410) 822-2525	
Description: Planning Comm Meeting	

Other Charges:

Total:

Discount:

Paid Amount:

Surcharge:

Amount Due:

Credits:

Bill Depth:

CREDIT CARD DETAILS

PT	CT	CN	Number	Exp.	Amnt.

Publication	Start	Stop	Inserts
The Star Democrat	03/06/24	03/06/24	

Ad Note:

Sign posted on March 4, 2024

Customer Note:

We Appreciate Your Business!
Thank You Joanne Drummer!



Planning Commission
MEETING AGENDA
Thursday, March 21, 2024 - 1:00 PM
Council Chambers, Easton Town Office
14 S Harrison Street



Please continue to check our website at:
<https://eastonmd.gov/129/Agendas-Minutes>
for agenda updates

- Call to Order
- Approval of Minutes.
 - Approval of the Decision Summary from the February 15, 2024 meeting.
- Old Business
- New Business
 - Applicant: John and Kimberly Wooters
File No.: 2024 - 1137
Location: 7365 Brent Road
Tax Map 108, Grid 000, Parcel 2777E, Lot 23
Zoning District: R-10A
Nature of Request: Contractual approval for the construction of a 24' x 30' pole building with a 2' x 12' concrete apron, and a 4' x 4' service pad. In addition, the applicant is requesting a Supplemental Waiver for a portion of the garage which will reside inside the 100' potential stream buffer zone.
 - Applicant: 128 S. West Street LLC
File No.: 2024 - 1148
Location: 128 S. West Street
Tax Map 104, Grid 0EA, Parcel 1990
Zoning District: CR
Nature of Request: Request to allow the use of a portable on demand storage (POSD) to remain at 128 S. West Street on a long term basis.
 - Applicant: Blue Crab Self Storage LLC
File No.: 2022 - 780
Location: 28697 Fairley Wood Court
Tax Map 025, Grid 016, Parcel 0138, Lot 6C
Zoning District: Sketch Site Plan approval to construct a warehouse and climate-controlled self storage building with associated stormwater management, parking, and landscaping.
 - Applicant: Lane Engineering
File No.: LLC 2024 - 1129
Location: 7872 Ocean Gateway
Tax Map 106, Grid 000, Parcel 2980 CG
Zoning District: Sketch Site Plan approval for the redevelopment of a two-story medical clinic, and a one-story retail store with overhead office space. The applicant is also seeking a minor subdivision to create two (2) lots.
- Discussion Item
 - Draft review of the Inclusionary Zoning Ordinance.
 - Potential Revisions to the Zoning and Subdivision Text Amendments.
 - Continued discussion of New Town Design Guidelines.
- Adjournment

3048003 SD 3/6/2024





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

Date of Hearing: March 21, 2024

4d

**PLANNING COMMISSION
PUBLIC HEARING
STAFF REPORT**

SUBJECT: 7872 Ocean Gateway - In Town Properties

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: In Town Properties, LLC

DOCUMENT CREATED ON: March 12, 2024

PURPOSE: The applicant is seeking a site plan approval from the Planning Commission to construct two lots; redevelop the site to include a 24,000 square foot (SF) two-story medical clinic on Lot 1 and a 19,250 square foot (SF) retail store with a 2,999 square foot (SF) mezzanine office space on Lot 2 with associated improvements.

RECOMMENDATION: Staff supports Planning Commission approval of the proposed site plan subject to staff's recommended conditions (see below).

APPLICATION INFORMATION:	
APPLICANT: Lane Engineering, LLC.: Brett Ewing	REPRESENTATIVE: Lane Engineering, LLC.: Brett Ewing In Town Properties, LLC.: Steve Hershey
PARCELS/ACREAGE:	
Parcel Information	Acreage
Map 105, Grid 0000, Parcel 2990	4.043
ACCEPTANCE DATE: March 4, 2024	
LOCATION: 7872 Ocean Gateway, Map 105, Parcel 2990	
EXISTING ZONING CG	EXISTING LAND USE: An unused commercial property that previously hosted a farm supply company (Southern States).
HISTORIC DISTRICT: Not Applicable	FUTURE LAND USE MAP: Commercial

CONTEXT:

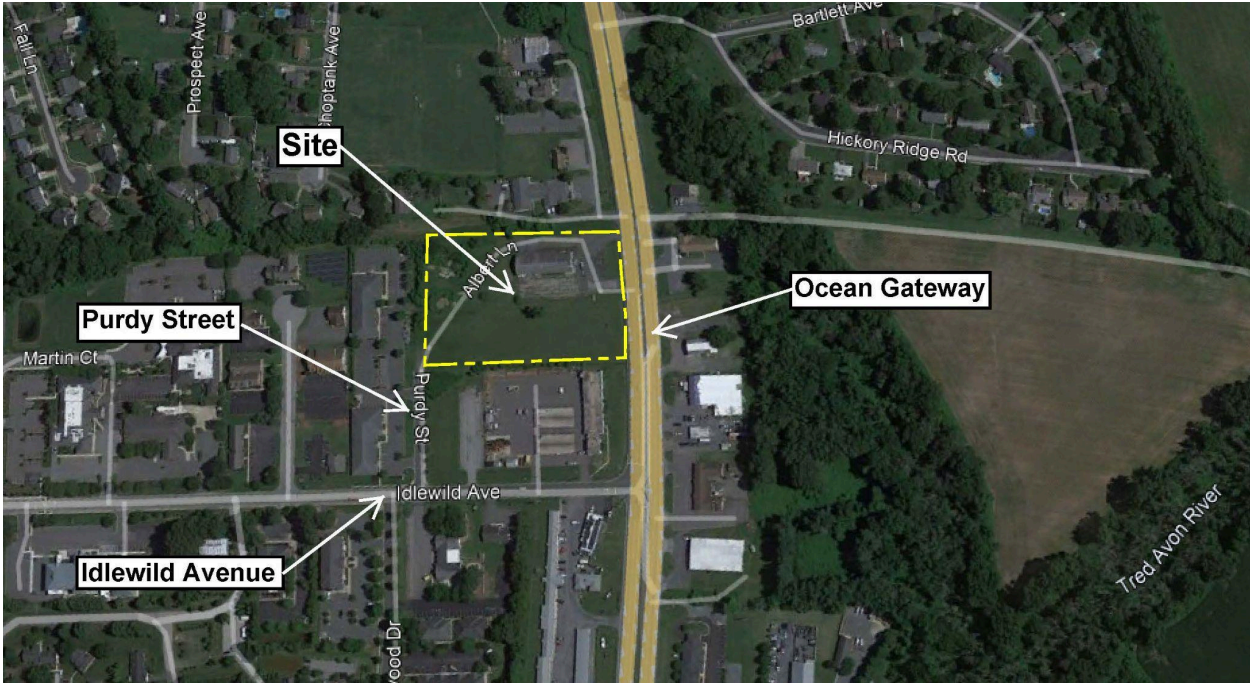
Location/Site Access – The subject property is located along Ocean Gateway, fronting on the east side of the road.

Existing Conditions – The subject property is currently an unused commercial property that previously hosted a farm supply company (Southern States).

Surrounding Properties

- 401 Purdy Street - CG
- 403 Purdy Street - CG
- 7894 Ocean Gateway - CG
- 7891 Ocean Gateway - R-10A
- 7871 Ocean Gateway - CG
- 7857 Ocean Gateway - CG
- 7847 Ocean Gateway - CG
- 7837 Ocean Gateway - CG
- 781 Idlewild Avenue - CG

Figure 1: Vicinity Map



PROPOSAL: The applicant is proposing to construct two lots; redevelop the site to include a two-story medical clinic on Lot 1 and a retail store with a mezzanine office space on Lot 2 with associated parking, stormwater management facilities and landscaping.

The site is located on a previously developed area covered by impervious surface; existing walks, parking areas, drive aisles and a commercial structure. 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 previous area covered by impervious surface and located in the priority funding area.*

BACKGROUND: The applicant submitted an application to the Easton Staff Development Review Committee on April 28, 2022 and February 28, 2024.

ZONING ANALYSIS:

A. Permissible Land Uses

28-201 Table 2.1

CG

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

28-201 Table 2.1

CG

238	Medical Services	--	--	--	--	P	P	P	P	--	--	
-----	------------------	----	----	----	----	---	---	---	---	----	----	--

28-201 Table 2.1

CG

256	Any Retail Sales/Rental not listed above	--	--	--	--	P	P	SE	--	--	--	
-----	--	----	----	----	----	---	---	----	----	----	----	--

Analysis – The proposed project is presented and described by the Applicant as a proposed minor-subdivision to create two lots; redevelop the site to include a medical clinic on Lot 1 and a retail store with a mezzanine office space on Lot 2. The project is categorized as “*Medical Services*” , “*Any Retail Sales/retail not listed above*” and “*Office*”. The proposed use is permitted by-right within Table 2.1 Table of Permissible Uses.

B. Off-Street Parking

28-1001.3 Parking Requirements

	Use/Activity	Minimum Vehicle Spaces	Maximum Vehicle Spaces	Minimum Bicycle Spaces	Notes
Commercial Buildings					
14	Office or Bank without Drive-Thru	1 per 250 sf GFA	1 per 140 sf GFA	1 per 10 vehicle spaces	
15	Standalone Retail Store	1 per 300 sf GFA	1 per 200 sf GFA	1 per 10 vehicle spaces	
Institutional or Community Facilities					
52	Medical Clinic	1 per 400 sf GFA	1 per 100 sf GFA	1 per 20 vehicle spaces	

Total Site Parking Required:

Office: 1 Space /250 SF GFA; 12 Spaces Required- Minimum
 1 Space /140 SF GFA; 21 Spaces Required- Maximum

Standalone Retail Store: 1 Space /300 SF GFA; 64 Spaces Required- Minimum
 1 Space /200 SF GFA; 96 Spaces Required- Maximum

Medical Clinic : 1 Space /300 SF GFA; 60 Spaces Required- Minimum
 1 Space /200 SF GFA; 240 Spaces Required- Maximum

Total spaces Required- Minimum: 136

Total spaces Required- Maximum: 357

Total spaces provided: 155

Bike Racks Required: Medical - 1 Bike Space/20 Vehicle Spaces; 3 Bike Space Required
Retail - 1 Bike Space/10 Vehicle Spaces; 6 Bike Space Required
Mezzanine w/ Office Space - 1 Bike Space/10 Vehicle Spaces; 1 Bike Space Required

Analysis- The applicant has provided one-hundred & fifty-five (155) off-street parking spaces. The owner does not foresee a demand for more parking spaces in the future, due to the nature of their business operations.

C. Commercial General District Development Standards

Table 1. Development Standards		
CG Zoning District	Standard	Proposed
Setbacks	Front = 25 feet, 40' State Highway Side = 10 feet Rear = 15 feet	Medical Clinic (Lot #1) Front = 161 feet Side = 11/49 feet Rear = 144 feet Retail (Lot #2) Front = 40.3 feet Side = 20/69 feet Rear = 270 feet
Lot Size (min.)	20,000 square feet	75,794.4 square feet (Lot #1) 100,188 square feet (Lot #2)
Lot Frontage (min.)	60 feet	162 feet (Lot #1) 203 feet (Lot #2)
Building Envelope (min.)	20 feet x 30 feet	142 feet X 432 feet (Lot #1) 183 feet X 432 feet (Lot #2)
Lot Coverage (max.)	50% (Lot Area)	16% (Lot #1 Area) 17.8% (Lot#2 Area)
Height (max.)	50 feet	34' +/- (Lot #1 Area) 35.58' +/- (Lot#2 Area)
Bufferyard	Per the provisions of Section 28-1014 of the Zoning Ordinance.	Provided.

§ 306.2 of the Zoning Ordinance states that development within the Commercial General District shall also meet these additional requirements:

- **Off-Street Parking shall be provided for all uses in accordance with the standards of Section 28 – 1001.**
- **All on-site lighting unless approved otherwise by the Planning and Zoning Commission shall be low cut-off shielded luminaries at 18' height and light shall not shine off-site at levels greater than 1-foot candle.**

- *All off-street loading and unloading areas shall be screened from view by permanent decorative screens or natural planting, either of which shall be a minimum of eight (8) feet in height.*
- *All areas not devoted to buildings or parking areas shall be landscaped and maintained in a suitable manner, in accordance with the provisions of Section 28 – 1014 of this Ordinance.*

Analysis - The site falls under the CG - Commercial General District Area and meets the 28-306 Development Standards. Any comments or concerns from the ESDR review letters will be addressed during the Development Site Plan review.

D. Forest Conservation

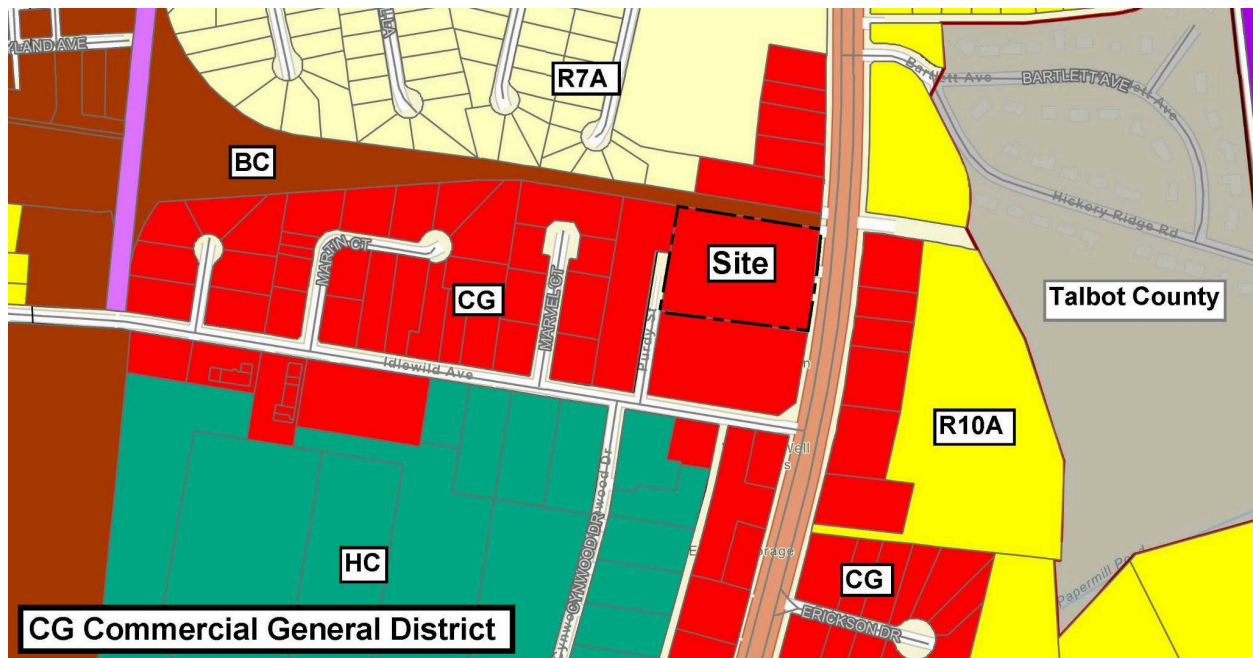
Easton Forest Conservation Ordinance #718, Article III, § 31-3.2 Exemptions

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 utilities. The overall site area is 4.043 acres with a proposed 2-Story Medical Clinic and a 1-Story Retail Building along with associated parking, stormwater management and landscaping. Required Forest Conservation would be 0.606 acres or 26,417 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 forty (40) deciduous-shade/canopy trees, twenty-six (26) understory trees and thirty-eight (38) 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 development proposal provides a medical clinic and a retail store on a commercially zoned property in the Route 50 corridor.*

Staff notes that the proposed development fits within the general commercial nature of Ocean Gateway.

(Principle #2) Natural features should determine design – *Applicant's response: There are no compelling natural features; site layout oriented to take advantage of natural drainage patterns.*

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

(Principle #3) Automobiles should not determine design – *Applicant's response: Parking for medical clinic & retail users provided, building orientation to compliment existing site is the primary design for this layout. Parking is located mainly to the rear of the retail.*

Staff notes that the applicant has provided 155 off-street parking spaces.

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

Staff notes that open space is not applicable.

(Principle #5) Architecture should respect Easton's Historical Development – *Applicant's response: This application proposes architecture compatible with the Town of Easton's architectural palette and consistent with commercial buildings in the Route 50 corridor.*

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

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

(Principle #7) Neighborhoods should contain a diversity of housing types – *Applicant's response: Not applicable to this application.*

(Principle #8) Residential neighborhoods should be interesting places – *Applicant's response: Not applicable to this application.*

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

Staff notes that although this Principle is primarily directed towards residential subdivisions, Purdy Street provides connectivity for the surrounding businesses to access Idlewood Avenue.

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 project would provide a medical clinic and a retail store with a mezzanine office space, including 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 - The proposed use and activity will not increase traffic hazards in the surrounding area. Adequate off-street parking is provided and access to the proposed site is via a State Highway Administration's Access Permit. The overall location to the entrance is consistent with the existing entrance and will be updated to accommodate the proposed site.

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 located within a commercial general zoned area. Proposed uses would provide a medical clinic and a retail store with a mezzanine office space, including improved amenities; adequate parking, stormwater management facilities and landscaping.

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:

Staff recommends the Planning Commission approve the sketch site plan with the following conditions:

- The Applicant is required to address the Engineering Department's conditions:
 1. Provide a sidewalk from the existing sidewalk on the east side of Purdy Street along the entire length of the west property line, within the existing Utility Easement, to connect to the proposed future Rail Trail on the Town of Easton parcel to the north (per Section 28-1016.C of the Town Zoning Code). This would be consistent with the Town of Easton Comprehensive Plan's Transportation section.
 2. A protective feature such as curb or bollards will need to be installed between stormwater management features and adjacent parking stalls.

DRAFT MOTIONS:

1. I move that the Planning Commission approve the sketch site plan subject to staff's Conditions of Approval.

OR

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

OR

3. I move an alternate motion.

ATTACHMENTS:

1. 2024-02-06 - Medical Clinic Rendering, paper copy & PDF
2. 2024-02-06 - Retail Space Rendering, paper copy & PDF
3. 2024-02-06 - Retail Store_Elevations, paper copy & PDF
4. 2024-02-07 - Concept SWM report, paper copy & PDF
5. 2024-02-07 - Medical Clinic_Elevations, paper copy & PDF
6. 2024-03-01 ESDFR Determination Letter & Applications, paper copy & PDF
7. 2024-03-04 - IllustrativePlan, paper copy & PDF
8. 2024-03-04 - SketchSitePlan, paper copy & PDF
9. 2024-03-12 - ReviewLetter-2-SketchESDR, paper copy & PDF



TOWN OF
EASTON
ENGINEERING DEPARTMENT

DATE: March 12th, 2024
TO: Brett Ewing – Lane Engineering, LLC
cc: Rick Van Emburgh – Town Engineer
Lynn Thomas – Town Planner
Aaron Goller – EUC
FROM: Sierra Clem – Engineering Department
SUBJECT: 7872 Ocean Gateway – Sketch Site Plan Review for ESDR

Our office has reviewed the Application for the Subject project received on 2/7/2024 which is scheduled for the 2/28/2024 ESDR meeting. This project was last reviewed at the 4/28/2022 ESDR meeting. The application submitted proposes a minor subdivision of the existing parcel into two lots, the construction of a two-story medical clinic and a one-story retail store.

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

1. Provide sidewalk from the existing sidewalk on the east side of Purdy Street along the entire length of the west property line, within the existing Utility Easement, to connect to the proposed future Rail Trail on the Town of Easton parcel to the north (per Section 28-1016.C of the Town Zoning Code). This would be consistent with the Town of Easton Comprehensive Plan's Transportation section.
2. A protective feature such as curb or bollards will need to be installed between stormwater management features and adjacent parking stalls.

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

The US-50 entrance will be reviewed and permitted by SHA.

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

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



TOWN OF EASTON

Planning & Zoning Department

14 South Harrison Street

P.O. Box 520

Easton, Maryland 21601

Easton Staff Development Review Worksheet

Date: March 4, 2024

Project: 7872 Ocean Gateway

To: Mr. Brett Ewing & Mr. Alec Chosta, Lane Engineering, LLC (Agent)

CC: Mr. Steve Hershey, In Town Properties (Owner)

CC: Mr. Wayde Barnhart, Lane Engineering, LLC (Agent)

The Easton Staff Development Review (ESDR) Committee meeting was held on February 28th at 11:00 am. Staff reviewed the Site Sketch Plan for the proposed two-story medical clinic and one-story retail store on the property located at 7872 Ocean Gateway, also known as Tax Map 105, Parcel 2990.

The project will need to address all agency comments as specified in the attached review letters and at ESDR. Review comments from the Engineering Department will be forwarded under a separate item. The Committee determined that the application may be scheduled for Planning Commission review. Please submit all revised documents.

The next Planning Commission meeting is scheduled for **Thursday, March 21, 2024 at 1:00 pm**. **Submit all documentation to the Planning and Zoning Department no later than Tuesday, March 5th at 1:00 pm.** Files for presentation at the Planning Commission need to be provided on a flash drive. In addition, provide a digital submittal (via email) of all supporting documents necessary for the Planning Commissions review, including **six paper copies**.

Please contact the Planning & Zoning Department at 410 822-1943 with any questions.

Sincerely,

Joseph A. Mayer

Plan Reviewer



TOWN OF EASTON PLANNING & ZONING DEPARTMENT

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

DATE: February 26, 2024

TO: Brett Ewing – Lane Engineering, LLC (Agent)
Steve Hershey - In Town Properties, LLC (Owner)

Cc: Miguel Salinas – Director, Planning & Zoning Department
Rick VanEmburch – Town Engineer, Department of Engineering

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

SUBJECT: 7872 Ocean Gateway - Redevelopment

We reviewed the **February 6, 2024** Sketch Plan Submittal for the Subject Project and have the following comments:

PLANNING & ZONING COMMENTS

Sketch Site Plan Review #1

1. Add the dimensions between buildings and all property lines.
2. Indicate the use of curb & gutter and/or curb stops within the parking lots.
3. Provide an access route from the medical clinic to Purdy Street.

Plan Review Status

Sketch Site Plan Review			Comments
Plans Approved	☐ Y	☒ N	Please review the comments above. Revise and resubmit.

Forest Stand Delineation & Forest Conservation Plan	
☐ Required ☐ Submitted ☐ Approved	Exempt from Forest Conservation per Article III, § 31-3.2 O. The proposed activity is on a previously developed area covered by impervious surface and is located within the priority funding area. As noted on the Sketch Site Plans, sheet 1 of 2. Analysis - The site is within the priority funding area and is an existing developed area covered by impervious surface; existing utilities. The overall site area is 4.043 acres with 2-Story Medical Clinic and a 1-Story Retail Building and associated parking, stormwater management and landscaping. Required Forest Conservation would be 0.606 acres or 26,417 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 forty (40) deciduous-shade/canopy trees, twenty-six (26) understory trees and thirty-eight (38) 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.
Other	
☒ Required ☐ Submitted ☐ Approved	<u>IMPACT FEES</u> Please note, there will be a required Impact Fee for all proposed buildings. The Town's Impact Fees and Inspection Fees are to be paid upon the time you pick up your Building Permit. Please provide building square footage with appropriate use for calculation of Impact Fee. Talbot County Impact Fees are due prior to obtaining your Building Permit. Please provide receipt of payment to the Town's Building Inspection Division. Please add estimated Town Impact Fee calculations to cover sheet and add note below calculations; <i>"Note: The Impact Fee indicated in this notation shall not be construed as vested and until submission of the building application."</i> <u>Minor Subdivision Plat</u> To be submitted for review upon Sketch Plan approval. <u>State Highway Administration</u>

	Coordinate with SHA for Access Permit within the right-of-way of Rte. 50.
--	--

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



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



ESDR- Building Inspection and Permit Department Comments

Date: February 27, 2024

Project;

**In Town Properties, LLC c/o Steve Hershey
7872 Ocean Gateway, Easton, MD 21601**

A Town of Easton Building Permit is required for all new construction that involves alteration to an approved existing building. Please contact this Department and verify current Building Codes including the Town of Easton's modifications prior to preparation of Building plans. Town Building Codes will be updated at the end of May 2024.

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

- Indicate the type of construction, new (shell only or Tenant fit out). The Town will not issue a Use and Occupancy on a shell permit.
- Construction Documents (3 sets) for any new construction will be required. Documents must be prepared by a 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.
- The Town of Easton, in accordance with the International Building Code Chapter 17, establishes a building inspections procedure that utilizes qualified, third-party professionals in addition to the Town's Building Inspectors. The purpose of this document is to establish the policy and guidelines for the construction process in accordance with the Building Code requirements and to:
 - Define the responsibility of all parties.
 - Standardize code application.
 - Provide for an orderly and systematic approach for updating standards that apply to the Special Inspections.
 - Set forth a guideline for Special Inspections.

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

- Items that must be addressed by the construction documents will be structural strength, means of egress (include travel distance), facilities, stability, sanitation, light and ventilation, energy conservation and safety to life and property from fire and other

hazards attributed to the built environment, **Accessibility (ADA)**, and other safety requirements for public access.

- All mechanical, electrical, and plumbing permits as required must include construction documents signed and sealed by a professional engineer and by a responsible party for the contractor receiving the permit. Be sure the Town of Easton modifications are included. Section 6-16 of the Town Code.
 - Pursuant to Town of Easton Ordinance 477, Chapter 9 Fire Protection, Article VII Security Key Lock Boxes, a lockbox shall be provided on the exterior of the building and shall be located as required by the chief of the Easton Volunteer Fire Department, Inc. (410-822-4848).
- 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: Friday, February 23, 2024

To: Joe Mayer; Nicholas Johnson; Sierra Clem

From: Kia Gibbs on behalf of Aaron Goller, PE

No. of Pages: 2

Regarding: 7872 Ocean Gateway

Phase: Sketch Site Plan

SUBM: 2

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	2	Easements required for property addition
2	2	Water service shall be on Dutchman's side of valve.
3	2	Water meters to be at property line.
4	2	Stormwater mangement shall not be in easements
5	2	Camera existing sewer lateral prior to connection
6	2	Trees not permitted in utility easements
7	General	Contact Easton Utilities for new electric design
8	General	Gas is availaable in the area
9	General	How many electric services?
10	General	How many water services?

1. 2" CALIPER MINIMUM CANOPY OR STREET TREES (OAK, ELM, MAPLE, ZELKOVA)

2. 1.25" CALIPER OR 7' HEIGHT MINIMUM FLOWERING TREES (CHERRY, MAGNOLIA, RED BUD)

3. 7' HEIGHT MINIMUM EVERGREEN TREES (WHITE PINE, SPRUCE, HOLLY, AMERICAN ARBORVITAE)

4. LANDSCAPING MASS-PERENNIAL MIX WITH SHRUBS, GRASSES

5. STORMWATER MANAGEMENT ESD LANDSCAPING MASS - PERENNIAL MIX WITH SHRUBS, GRASSES

SWM QUANTITY SUMMARY CHART													
POI	DA (ACRES)	POST DEVELOPMENT IMPERVIOUS (ACRES)	RCN	Tc (MINUTES)	PRE 2 YEAR	POST 2 YEAR	WSE	PRE 10 YEAR	POST 10 YEAR	WSE	PRE 100 YEAR	POST 100 YEAR	WSE
1	11.89	7.68	---	---	12.41	11.04	---	24.74	21.99	---	51.88	42.53	

ESD SUMMARY CHART													
DRAINAGE AREA	TYPE OF ESD PRACTICE	TYPE OF ESD PRACTICE (STRUCTURE NAME)	ON-SITE OR OFF-SITE STRUCTURE	RUNOFF CURVE NUMBER (RCN) WEIGHTED	MARYLAND GRID COORDINATE NAD 83 METERS NORTHING	MARYLAND GRID COORDINATE NAD 83 METERS EASTING	ESD PRACTICE TOTAL DRAINAGE AREA (ACRES)	ESD PRACTICE IMPERVIOUS DRAINAGE AREA (ACRES)	SURFACE AREA OF ESD PRACTICE (ACRES)	TARGET PE (IN)	ACTUAL PE (IN)	TARGET ESDv (FT')	ACTUAL ESDv (FT')
GREEN (SOW#1)	M-2	SUBMERGED GRAVEL WETLAND	ON-SITE	94	401492.7738'	1580118.8427'	2.33	1.73	0.17	2	2	12157	12536
BLUE (SOW#2)	M-2	SUBMERGED GRAVEL WETLAND	ON-SITE	94	401537.4268'	1579725.9363'	0.93	0.47	0.04	2	2	3425	4334
YELLOW (MIR#1)	M-6	MICRO-BIORETENTION	ON-SITE	94	401368.0797'	1579697.1745'	0.45	0.30	0.03	2	2	2151	2911
TOTAL	---	---	ON-SITE	94	---	---	3.71	2.51	0.24	2	2	17854	19780

PLANS ARE NOT
APPROVED FOR
CONSTRUCTION

[illegible]

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

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Lane Engineering, LLC

Established 1986
Civil Engineers • Land Planning • Land Surveyors



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

PROFESSIONAL CERTIFICATION: I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 23152. Expiration Date: 7/5/2025.



IN TOWN PROPERTIES, LLC
7872 OCEAN GATEWAY

IN THE TOWN OF EASTON, ELECTION WARD
TALBOT COUNTY, MARYLAND
TAX MAP 105 GRID 17 PARCEL 2990

ISSUED/REVISED FOR:	DATE:
ESDR SUBMITTAL	2/7/2024 B

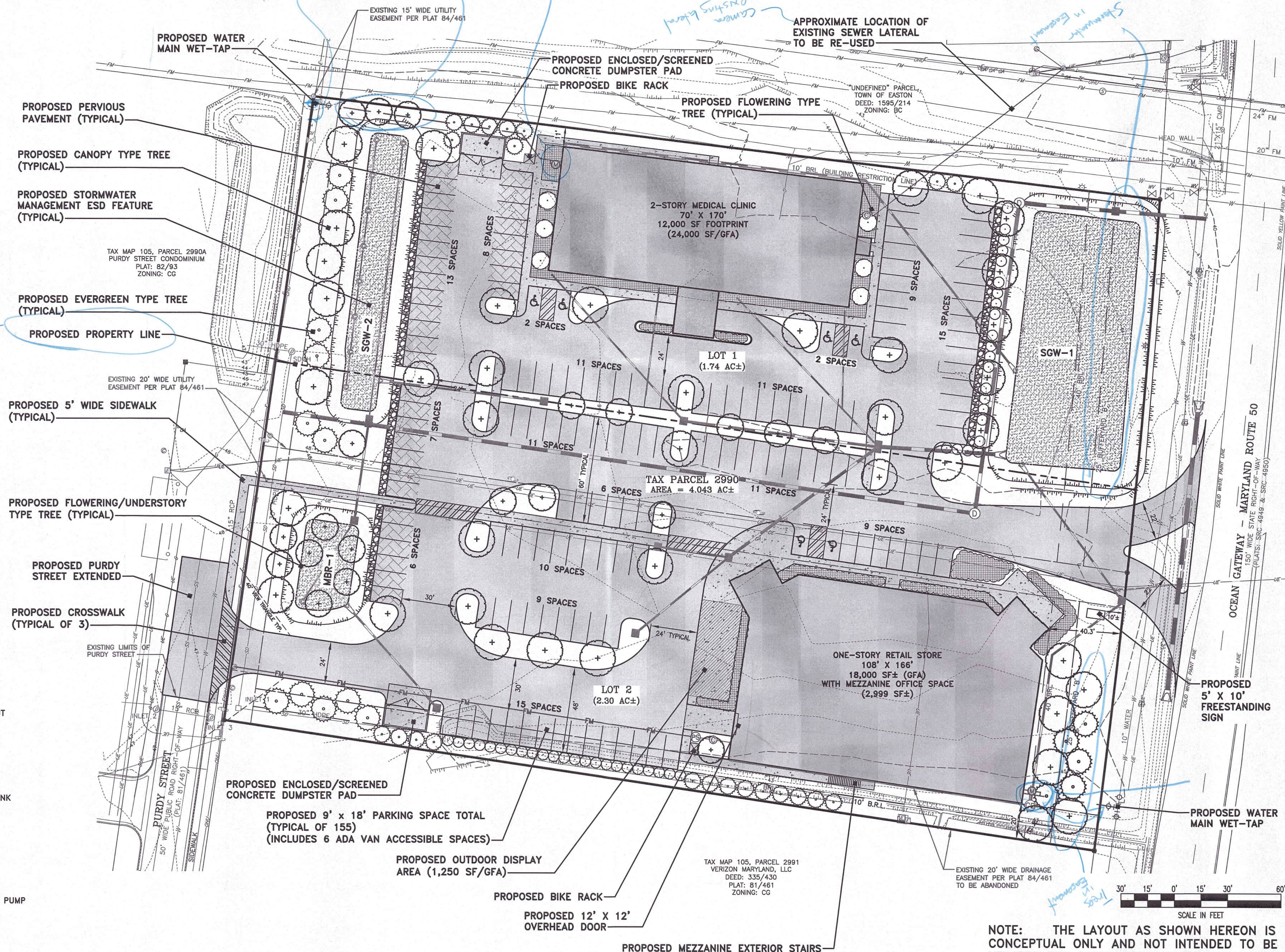
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SHEET No. _____

2 OF 2

SCALE: AS NOTED	FILE No. 1026
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Page 145 of 60



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

Date: 02/07/2024 - 11:20am User: wbornhart Project Manager: BCE
Drawing Path: \\2024\0000\240020\240020.Dwg Plots P&T-S-240020.dwg | 2-Sketch Site Plan
Greeting Email: NSF-BASE-240020\MID-BASE-240020\MID-BASE-240020\NSF-BASE-
Drawing File: NSF-BASE-240020\MID-BASE-240020\MID-BASE-240020\NSF-BASE-240020

TALBOT COUNTY, MARYLAND

2" CALIPER MINIMUM CANOPY OR STREET TREES (OAK, ELM, MAPLE, ZELKOVA)

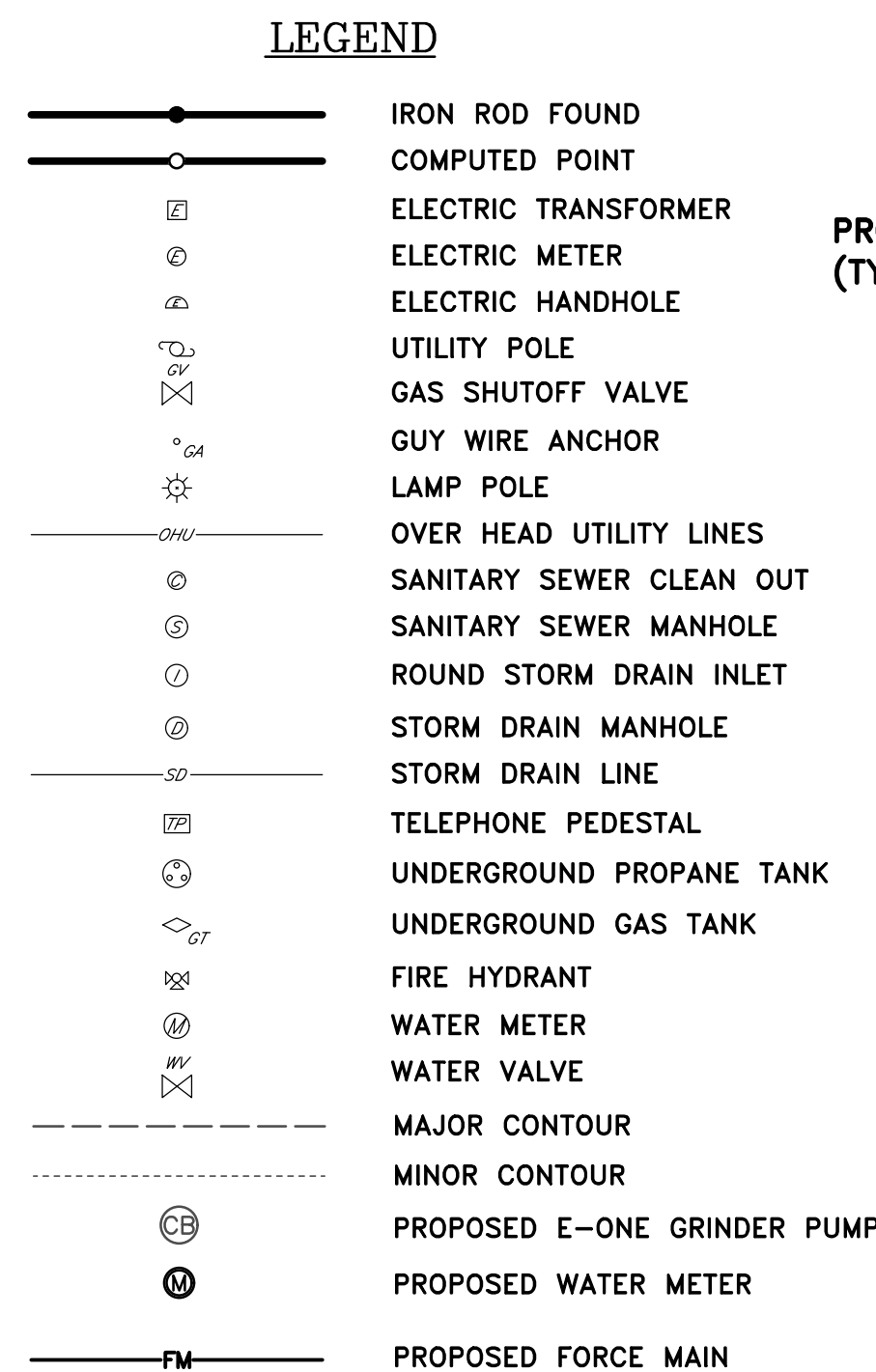
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7' HEIGHT MINIMUM EVERGREEN TREES (WHITE PINE, SPRUCE, HOLLY, AMERICAN ARBORVITAE)

LANDSCAPING MASS - PERENNIAL MIX WITH SHRUBS, GRASSES

STORMWATER MANAGEMENT ESD LANDSCAPING MASS - PERENNIAL MIX WITH SHRUBS, GRASSES

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TOTAL	--	--	ON-SITE	94	--	--	3.71	2.51	0.24	2	2	17854	19780



SCALE:	JOB No.
AS NOTED	240020
	FILE No.
	1026

Page 147 of 608

2" CALIPER MINIMUM CANOPY OR STREET TREES (OAK, ELM, MAPLE, ZELKOVA)

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STORMWATER MANAGEMENT ESD
LANDSCAPING MASS - PERENNIAL MIX WITH SHRUBS, GRASSES

	IRON ROD FOUND
	COMPUTED POINT
	ELECTRIC TRANSFORMER
	ELECTRIC METER
	ELECTRIC HANDHOLE
	UTILITY POLE
	GAS SHUTOFF VALVE
	GUY WIRE ANCHOR
	LAMP POLE
	OVER HEAD UTILITY LINES
	SANITARY SEWER CLEAN OUT
	SANITARY SEWER MANHOLE
	ROUND STORM DRAIN INLET
	STORM DRAIN MANHOLE
	STORM DRAIN LINE
	TELEPHONE PEDESTAL
	UNDERGROUND PROPANE TANK
	UNDERGROUND GAS TANK
	FIRE HYDRANT
	WATER METER
	WATER VALVE
	MAJOR CONTOUR
	MINOR CONTOUR



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

SEAL

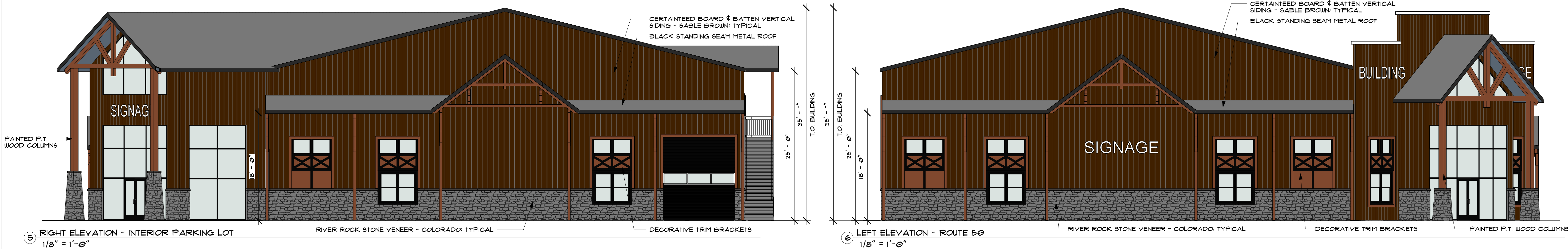
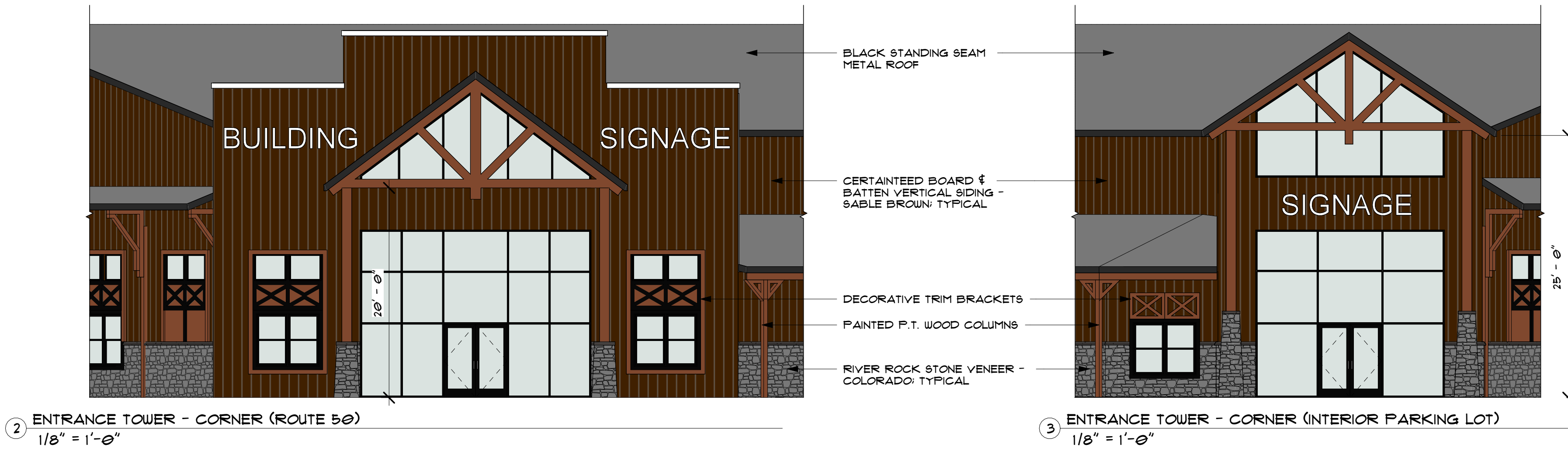
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IN THE TOWN OF EASTON, ELECTION WARD 1
TALBOT COUNTY, MARYLAND
TAX MAP 105 GRID 17 PARCEL 2990

ISSUED/REVISED FOR:	DATE:	BY:
ESDR SUBMITTAL	2/7/2024	BCE
PLANNING COMMISSION SUBMITTAL	3/4/2024	BCE

SHEET No. 1 OF 1

1 OF 1	JOB No. 240020
SCALE: AS NOTED	FILE No. 1026



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

LICENSE NO.: 0013955
EXPIRATION NO.: 09-23-2024

THE DOCUMENTS PREPARED BY FISHER
ARCHITECTURE, LLC, ARE SOLELY FOR
THE PURPOSES OF THE SPECIFIED
PROJECT. THEY ARE NOT INTENDED OR
AUTHORIZED FOR USE ON ANY OTHER
PROJECT. FISHER ARCHITECTURE, LLC
MAKES NO REPRESENTATION AS TO
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OF THE PROJECT. THESE DOCUMENTS
ARE, AND SHALL REMAIN, THE PROPERTY
OF FISHER ARCHITECTURE, LLC.

CONSULTANTS:

RETAIL STORE
EASTON, MD

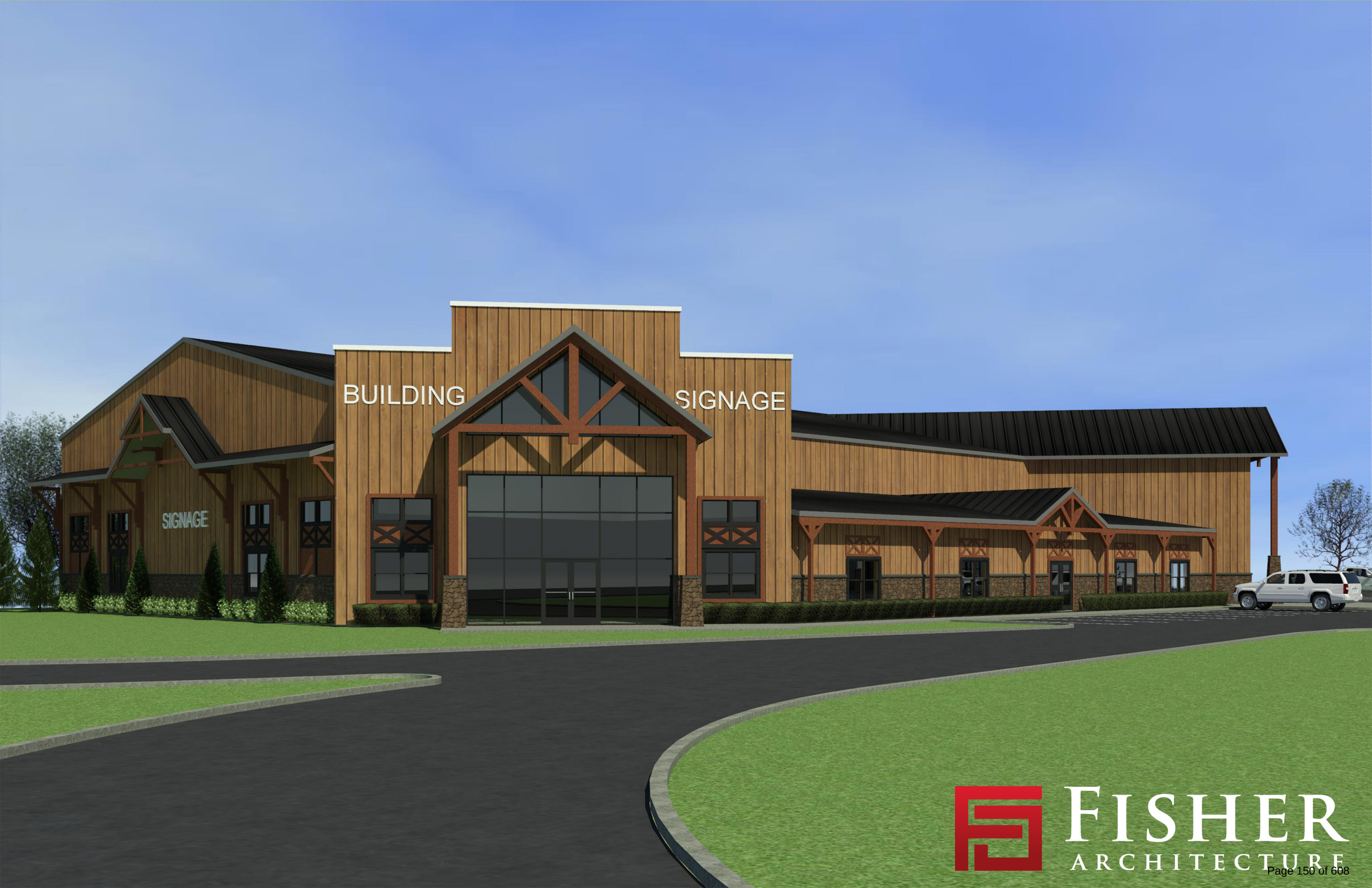
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ELEVATIONS

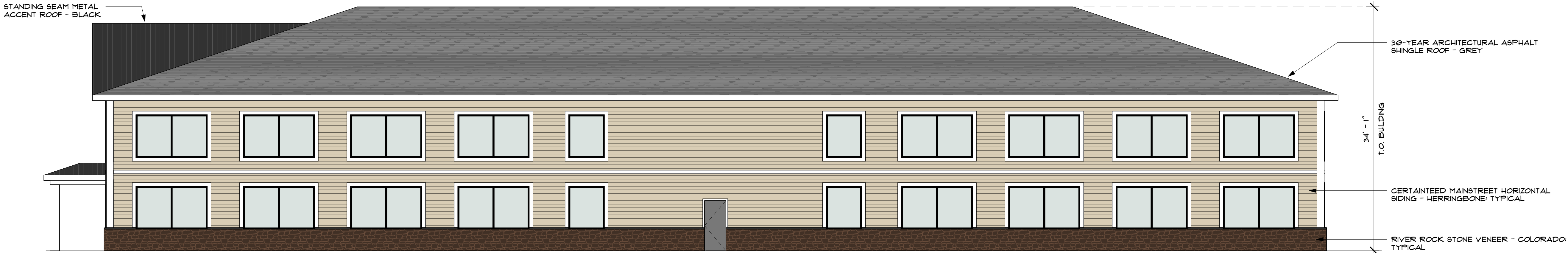
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2	2022.XX.XX	PROJECT NO.: 2022XXXX
3	2022.XX.XX	SCALE: 1/8" = 1'-0"
4	2022.XX.XX	FROM MGR: Designer
5	2022.XX.XX	DRAWN BY: Author

SHEET NUMBER:

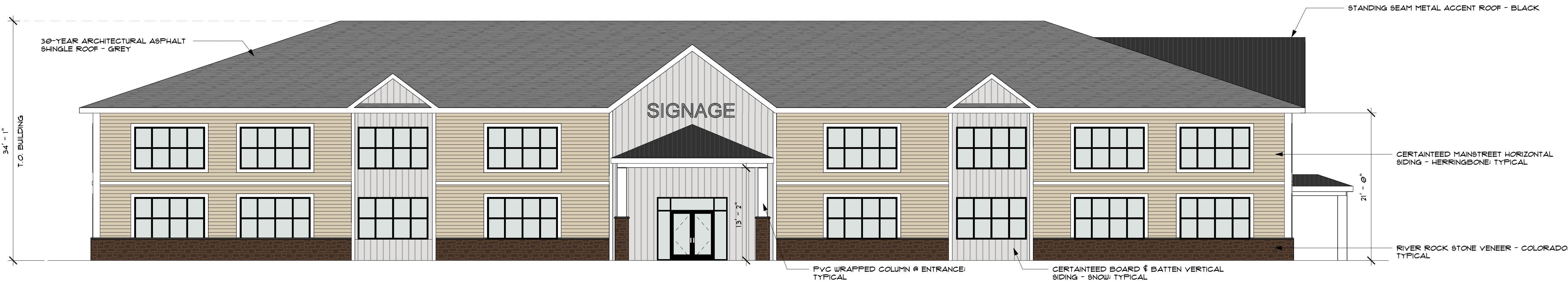
A-201



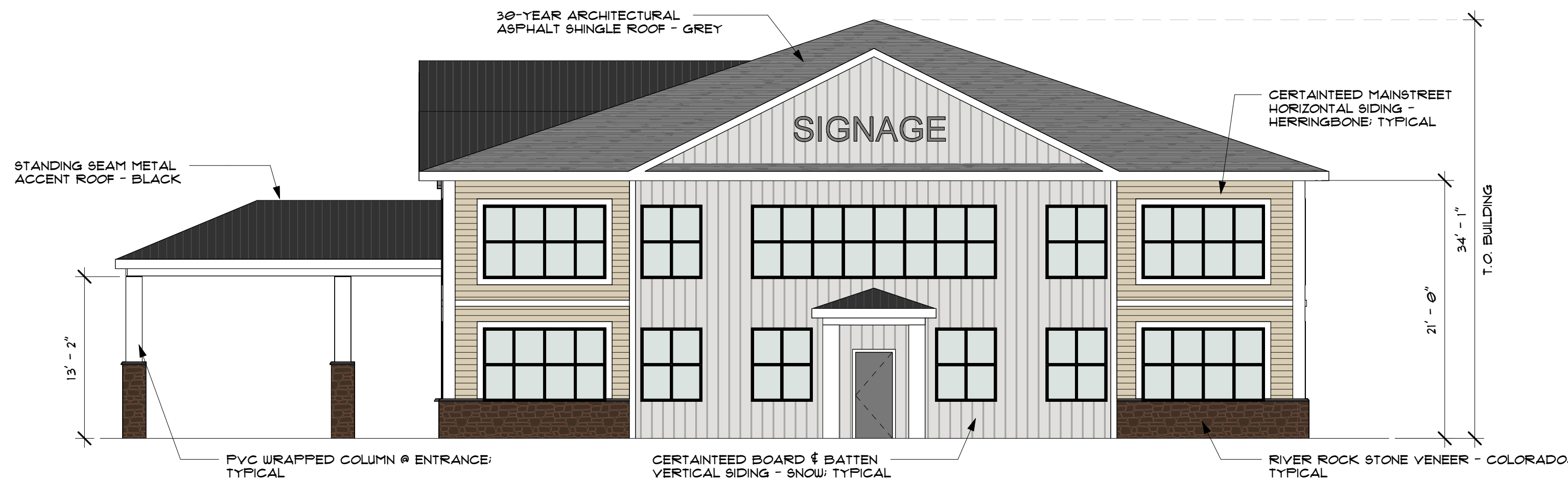
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1 REAR/NORTH ELEVATION
1/8" = 1'-0"



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



3 RIGHT ELEVATION - ROUTE 50
1/8" = 1'-0"



4 LEFT ELEVATION - INTERIOR PARKING LOT
1/8" = 1'-0"

SEAL:

FOR REVIEW
ONLY NOT FOR
CONSTRUCTION

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A LICENSED ARCHITECT UNDER THE LAWS
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CONSULTANTS:

MEDICAL CLINIC
EASTON, MD

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REV	REV DATE	DESCRIPTION
1	2022.XX.XX	DATE: 2022.XX.XX
2	2022.XX.XX	PROJECT NO. 2022015
3	2022.XX.XX	SCALE: 1/8" = 1'-0"
4	2022.XX.XX	PROJ MGR: Designer
5	2022.XX.XX	DRAWN BY: Author
6	2022.XX.XX	SHEET NUMBER:

A-201



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CONCEPT STORMWATER MANAGEMENT REPORT

For

**7872 Ocean Gateway
Easton, Maryland**

Developer

In Town Propties, LLC
c/o Steve Hershey
8845 Mistletoe Drive
Easton, MD 21601

Design Professional

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

Date Prepared

February 7, 2024

Date Revised

N/A

Prepared by

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

Timothy W. Glass, P.E.



PROFESSIONAL CERTIFICATION: I hereby certify that this document was prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 23152, Expiration Date: 7/5/25

TABLE OF CONTENTS

SECTIONS LIST

1. Introduction
2. General Site Information
3. Proposed Project
4. Environmental Site Design (ESD)
 - 4.1 Quantity
 - 4.2 Quality
 - 4.2.1 ESD Practices
5. Conclusion

APPENDIX LIST

- APPENDIX A – Maryland Environmental Site Design (ESD) Calculations
- APPENDIX B – HydroCAD Quantity Analysis
- APPENDIX C – Drainage Area Maps
- APPENDIX D – Existing G-2 & Purdy St. Improvement Plans & Drainage Maps

ATTACHMENT LIST

- Stormwater Management Submittal Checklist

7872 Ocean Gateway STORMWATER MANAGEMENT REPORT

1. INTRODUCTION

This report addresses stormwater management for development of the vacant property at 7872 Ocean Gateway. The stormwater management plan incorporates the requirements of the *2000 Maryland Stormwater Design Manual Volumes I and II* (Manual) as currently updated. Stormwater projects are required to be reviewed during the concept, preliminary site development and final design stages. This narrative addresses the requirements pertaining to the concept design stage and meets the intent of the guidelines and methodologies presented in the MDE document *Environmental Site Design (ESD) Process & Computations* dated July 2010.

2. GENERAL SITE INFORMATION

The vacant lot predominantly consists of a derelict building, formerly housing Southern States, surrounded by grassed lawn interspersed with the remains of prior buildings, works yards, and other debris. The property is entirely outside the Critical Area with no environmental features of note.



Onsite drainage patterns split between a small portion discharging to an existing, neighboring, stormwater pond, two drainage areas that span the property before discharging to an SHA swale adjacent US 50 and a portion of the property draining to a lot-side swale adjacent to a Verizon service yard. The lot-side swale between the current project and Verizon also serves as a discharge point for the existing stormwater pond on neighboring property.

The existing stormwater pond treats and attenuates the neighboring G2 & Associates site runoff as well as the Town-owned Purdy Street runoff. This project was also designed by Lane Engineering in 2005 with construction taking place between 2007 and 2008. A copy of the original design drawings and associated stormwater documentation is included in Appendix D. Items of note from the prior project include SHA approval of the discharge from the stormwater pond ultimately entering their ditch system (under Hydraulics File No. 04-AP-TA-004), the sizing of the pond anticipated full buildout of Purdy Street (including portions yet to be constructed), and the nature of the stormwater feature that was a combination of a wet pond used in conjunction with underground storage under the 2000 design manual.

According to the USDA soil maps, site soils are predominantly mapped as Hambrook-Sassafras complex – acting as a Hydrologic Group “B” soil. There is a small portion of Woodstown loam in the northeast corner of the project that will act as a Hydrologic Group “C” soil. As the more conservative condition and to simplify calculations, it is assumed that the entirety of the site acts as Group “B” soil as an existing condition.

As of the writing of this report various utility test pitting across the site has also indicated that soils are granular in nature and may allow for stormwater infiltration practices pending additional geotechnical investigation. As such, the sketch site plan depicts locations where such practices may be implemented (i.e. permeable pavers in parking spaces), however, pavers are not required to meet quantity or quality targets and are not quantified in this report at this time.

3. PROPOSED PROJECT

The property is to be redeveloped into a blend of commercial & retail use with a proposed Medical/Office building sharing the property with an incoming retailer.

Development of the parcel will require design and management of three different sources of runoff: those created onsite, those draining from the adjacent stormwater pond from Purdy Street/G2 Associates, and runoff from the Verizon yard also using the lot-side swale to drain. Evaluation and accommodation of State Highway drainage conditions will also occur as a result of entrance improvements.

4. ENVIRONMENTAL SITE DESIGN (ESD)

ESD requirements must be addressed for the project’s on-lot limits of disturbance (LOD), which is assumed to consist of the entire property (176,186 SF).

Any additional ESD targets imposed for MDOT SHA improvements are anticipated to be addressed to the Maximum Extent Practicable standard (MEP) balancing functionality and safety with water quality. The removal of the two existing SHA entrances and the creation of a new right-in-right-out entrance results in a decrease in impervious coverage in the SHA right of way (2,237 SF versus 2,048 SF post development). As a result, it is anticipated that non-rooftop disconnection in conjunction with potential swale improvements can satisfy any water quality targets in future submittals to SHA.

The proposed buildings, parking, and loading area result in approximately 109,239 SF (2.51 acres) of impervious cover (62%). Utilizing table 5.3 and onsite soil conditions, a target P_E of 2.0" results in an ESD target volume of **17,854 cf**.

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

- Micro-BioRetention (MBR)
- Submerged Gravel Wetlands (SGW)

See Appendix A for calculations.

4.1 STORMWATER QUANTITY

The existing site, now vacant and previously hosting industrial activities, breaks into four separate onsite drainage areas and one study point adjacent to US 50. In addition, there is a lot-side swale on the southern property boundary that conveys water from the Purdy Street stormwater outfall while also picking up sheetflow runoff from Verizon to the south. This offsite water will be re-routed through a new stormdrain system to be built onsite, combined with onsite discharges from proposed stormwater features, and ultimately discharged into State Highway drainage channels.

Analysis verifies that management of the 2 and 10-year storms for onsite runoff is achieved in the proposed stormwater features. These consist of a combination of a micro-bioretenention and two Submerged Gravel Wetlands. Furthermore, in anticipation of SHA requirements, even the 100-year storm discharge is a reduction post development.

	2 Year Storm (cfs)		10 Year Storm (cfs)		100 Year Storm (cfs)	
	Pre	Post	Pre	Post	Pre	Post
Study Point 1	12.41	11.04	24.74	21.99	51.88	42.53
NET REDUCTION	1.37		2.75		9.35	

Please see Appendix B for HydroCAD calculations and Appendix C for Drainage Area Maps.

4.2 STORMWATER QUALITY

The project is broken into 3 primary drainage areas (color-coded yellow, blue, and green on drainage maps and in the ESD calculations) to be treated with downstream ESD practices and several residual drainage areas but with minimal impervious surface, therefore no individual drainage area ESD targets are assessed in these locations. See appendix A for ESD calculations and Appendix B for HydroCAD diagram and analysis.

Due to the size of the drainage areas created by onsite impervious and grading requirements, two submerged gravel wetlands are to be created. SGW #1 (Green Drainage Areas) will be constructed adjacent to US 50 at an elevation low enough to maintain saturated conditions based on contributing drainage and proximity to ground water.

SGW #2 (Blue Drainage Area) will likely require a liner as onsite soils appear to indicate granular materials more suited to infiltration practices – but due to the MDE restrictions on allowable drainage area to infiltration-based practices, only a submerged gravel wetland is permissible for the 40,553 SF drainage area under current regulations.

Finally, a micro-bioretenion (MBR #1) is feasible for the yellow drainage area because onsite soils appear to support the practice, an underdrain can be provided, and the contributing drainage area to the feature is compliant with the MDE restriction of 20,000 sf.

Should the State and/or Town Engineer elect to modify drainage area restrictions for infiltration practices, such features would be better suited to facilitate groundwater discharge while minimizing runoff from this site. While the current scheme of stormwater features fully meets quantity and quality targets, such practices do not as readily exploit soils conditions apparent onsite. Pending additional infiltration testing and geotechnical reports, implementing such practices may become an item of further discussion as the project develops.

4.2.1 ESD PRACTICES

ESD practices were evaluated for applicability to the site:

Alternative Surfaces

- Green Rooftops – the project economics do not readily allow for the use of green roofs; green roofs on multi-story structures may prove more difficult to access and maintain.
- Permeable Pavements – Alternative surfaces are ideal for in-town redevelopment scenarios or similar projects; however, at an industry quoted \$25 per square foot of install, they do not represent the most cost-effective form of treatment for projects where there is sufficient room to construct other practices. Pending additional geotechnical infiltration testing, there may be opportunity to implement this practice to reduce the footprint of other stormwater facilities.
- Reinforced Turf - Reinforced turf areas are commonly used for emergency equipment access or for areas that receive minimal vehicular use. Emergency equipment can service the building using the paved surfaces designed for the site needs, and additional access areas are not necessary.

Nonstructural practices

- Disconnection of Rooftop Runoff – Due to the spatial limitations of the property, disconnection of rooftop runoff is not feasible.
- Disconnection of Non-Rooftop Runoff – As an in-town property with relatively high density, there is limited opportunity and space to implement this practice.
- Sheetflow to Conservation Area – There are no open space or conservation areas adjacent to the site outside of various buffer yards that do not meet the necessary criteria.

Micro-scale practices

- Rainwater Harvesting – Opportunities for on-site reuse of harvested rainwater is limited. Irrigation is not proposed for the site. Operations and maintenance, especially during cold-weather periods, is also a concern.
- **Submerged Gravel Wetlands** – This practice is best suited for sites with a high groundwater table and large drainage areas. Depending on future soil testing, a liner may be required.

The submerged gravel wetland adjacent to US 50 should be low enough to intercept local groundwater table.

- Landscape Infiltration – the soils on-site are predominantly mapped as group B at the surface level. Conceptual discussions with the Town Engineer indicated that a Chapter 3 landscape infiltration practice in conjunction with permeable pavers could be entertained if soil testing confirms suitable soils.
- Infiltration Berms – onsite soils may support the use of this practice, however, the opportunity for successful implementation is limited due to the proposed density of the project.
- Dry Wells – the proposed drainage areas exceed the 1,000 sf limit for dry wells.
- **Micro Bio-Retention** – This practice can be easily configured to fit the spatial constraints of the site, provides excellent water quality treatment, and quantity reduction.
- Rain Gardens – Given the extensive impervious surfaces, this practice's drainage area restrictions (10,000 sf max) prevent effective implementation.
- Grass & Bio-Swales – Given the density of the proposed project, the opportunity to implement such practices is limited.

A combination of practices centered around the dominant use of Submerged Gravel Wetlands and a Micro-Bioretenention required for this site. The total ESD volume provided is **19,780 CF**.

5. CONCLUSION

This stormwater management analysis indicates that the proposed design will successfully meet stormwater quality and quantity requirements. Referring to the attached water quality calculations, the computed ESDv provided is greater than the ESDv required. Planning and design analysis indicates that stormwater quality and quantity management can be accomplished as described.

APPENDIX A

MARYLAND ENVIRONMENTAL SITE DESIGN (ESD) CALCULATIONS

Maryland Environmental Site Design (ESD) Computations

Project	7872 Medical & Retail	By	AFC	Job #	210666
Location	7872 Ocean Gateway	Date	1/12/2024	File #	1026

Determine if the Project is subject to Redevelopment Requirements:

Site Area = 4.0 ac
 Net Site Area = 4.0 ac
 Existing Imp. Area = 1.27 ac
 Percent Impervious (I) = 31.64 %
 I < 40%. Project Not subject to Redevelopment requirements.

Step 1 - Determine Stormwater Management Requirements

Initial Site Assessment (Site Data):

Existing Conditions

Total Disturbance Area: 176,186 sf
Soil Types:

HSG	A	B	C	D
Area		176,186		
Percent		100.0		

Proposed Layout

Impervious Cover: 109,239 sf
Percent Impervious (I) 62 %

Determine RCNs for Wooded Conditions:

HSG	A	B	C	D
Area		176,186		
Percent		100.0		
RCN	38	55	70	77

Weighted RCN: 55

Determine ESD Targets:

$$R_v = 0.05 + 0.009(I) \\ = 0.61$$

From Table 5.3 and
%I = 62

HSG	A	B	C	D
Area		176,186		
Target P_E		2.0		

Composite Target P_E (in.): **2.00**

$$ESD_v = \frac{(P_E)(R_v)(A)}{12} \\ = 17,854 \quad \text{cf}$$

Step 2 - Preliminary ESD Options

Please refer to the Stormwater Management Report

Step 3 - ESD Design

Evaluation of specific ESD treatment practices for the project on the following sheets.

Yellow Drainage Area MBR-1

Total Area	19,689 sf	Target ESDv = $\frac{(P_e)(R_v)(A)}{12}$
Impervious Area	13,245 sf	
Percent Impervious (I)	67 %	= 2,151 cf
$R_v = 0.05 + 0.009(I)$	0.66	75% of target= 1,613 cf

Site Development Design - Micro-Bioretenention (M-6)

Based on the Cpv storm (2.8 in.): Max allowable ESDv that can be used:

$$V = \frac{(P)(R_v)(A)}{12} = 3,011 \text{ cf}$$

The computed ESDv provided is:

$$\text{ESDv} = (\text{Ponding storage}) + (\text{Storage in media}) \\ = 2,911 \text{ cf}$$

Surface Area=	1,437 sf	Media Depth=	2 ft
Ponding Area=	2,085 sf		
Ponding depth=	1 ft	Porosity=	0.4

Therefore, when assessing compliance with the MEP standard, the volume of runoff treated by this micro-bioretenention practice is **2,911 cf.**

Now check for compliance with design criteria:

Micro-Bioretenention Design Criteria:	Provided
Runoff shall enter, flowthrough, and exit in safe and non-erosive manner	✓
Drainage area to any individual practice shall be approximately 20,000 sf	✓
Micro-Bioretenention practices shall capture and store at least 75% of the ESDv.	135%
The surface area of the practice shall be at least 2% of the contributing drainage area	7.3%
Filter beds shall be between 24 and 48 inches deep	24"
Filter beds shall not intercept groundwater	✓
Planting soil, mulch and underdrain systems shall conform to specs in Manual Appendix B.4	✓
Locate at least 30' from water supply wells and 25' from septic systems	✓
Any trees planted in practice shall be located to avoid future problems with overhead lines	✓
Size and locate practices to meet minimum local requirements for clearance from utilities	✓

Blue Drainage Area SGW #2

Total Area	40,567 sf	Target ESDv = $\frac{(P_e)(R_v)(A)}{12}$
Impervious Area	20,581 sf	
Percent Impervious (I)	51 %	= 3,425 cf
$R_v = 0.05 + 0.009(I)$	0.51	75% of target= 2,569 cf

Site Development Design - Submerged Gravel Wetland (M-2)

Based on the Cpv storm (2.8 in.): Max allowable ESDv that can be used:

$$V = \frac{(P)(R_v)(A)}{12} = 4,795 \text{ cf}$$

The computed ESDv provided is:

$$\text{ESDv} = (\text{Ponding storage}) + (\text{Storage in media}) \\ = 4,334 \text{ cf}$$

Surface Area=	1,891 sf	Media Depth=	0 ft
Ponding Area=	3,888 sf		
Ponding depth=	1.5 ft	Porosity=	0.4

Therefore, when assessing compliance with the MEP standard, the volume of runoff treated by this submerged gravel wetland practice is **4,334 cf.**

Green Drainage Area SGW #1

Total Area	101,375 sf	Target ESDv = $\frac{(P_e)(R_v)(A)}{12}$
Impervious Area	75,413 sf	
Percent Impervious (I)	74 %	= 12,157 cf
$R_v = 0.05 + 0.009(I)$	0.72	75% of target= 9,118 cf

Site Development Design - Submerged Gravel Wetland (M-2)

Based on the Cpv storm (2.8 in.): Max allowable ESDv that can be used:

$$V = \frac{(P)(R_v)(A)}{12} = 17,019 \text{ cf}$$

The computed ESDv provided is:

$$\begin{aligned} \text{ESDv} &= (\text{Ponding storage}) + (\text{Storage in media}) \\ &= 12,536 \text{ cf} \end{aligned}$$

Surface Area=	7,196 sf	Media Depth=	0 ft
Ponding Area=	9,518 sf		
Ponding depth=	1.5 ft	Porosity=	0.4

Therefore, when assessing compliance with the MEP standard, the volume of runoff treated by this submerged gravel wetland practice is **12,536 cf.**

Feature #	Drainage Area (DA)	DA Target	DA Provided	Exceeded by
1	Yellow Drainage Area MBR-1	2,151	2911	760
2	Blue Drainage Area SGW #2	3,425	4334	909
3	Green Drainage Area SGW #1	12,157	12536	379
Total Provided			19,780	
Site Target			17,854	

drainage area	impervious		surface		
19689	0.45	13245	0.30	1437	0.03
40567	0.93	20581	0.47	1891	0.04
101374.6	2.33	75412.54	1.73	7196	0.17
	3.71		2.51		0.24

APPENDIX B

HydroCAD Quantity Analysis

240020-Southern States Parcel

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240020 - Southern States Redevelopment

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

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Page 2

Summary for Subcatchment EX-1: NORTH OF SITE

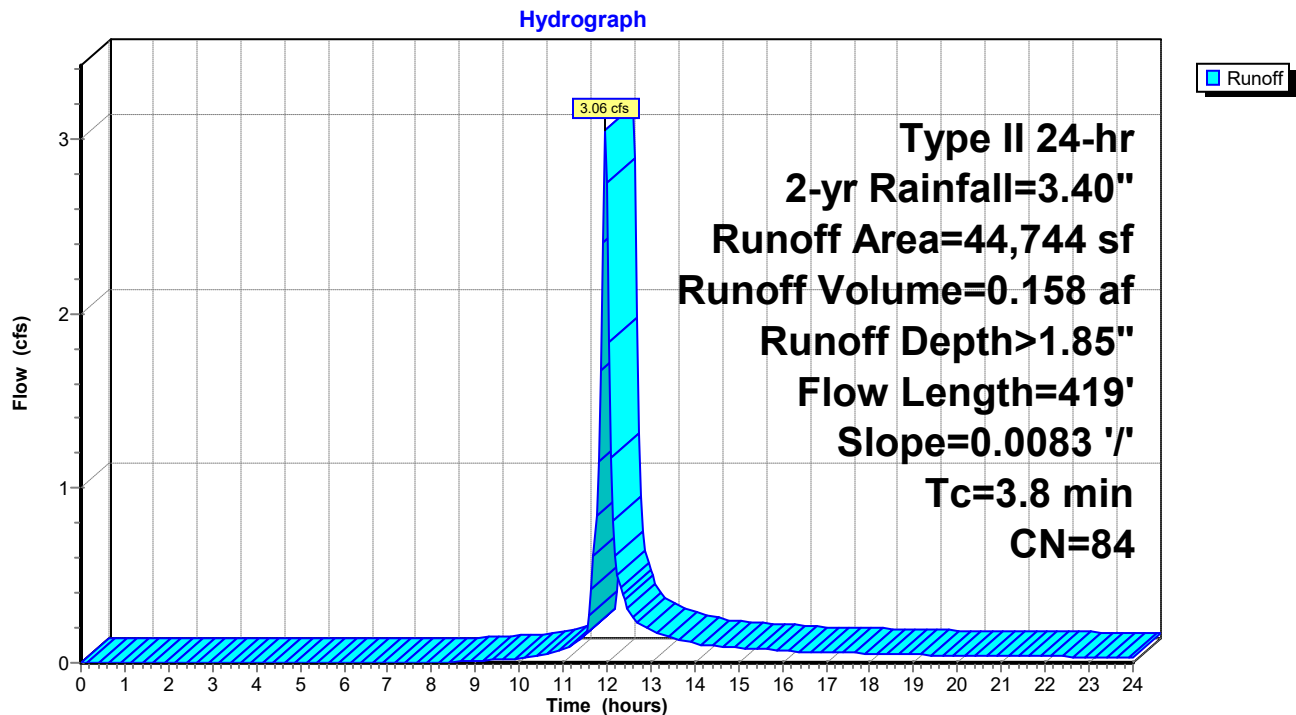
Runoff = 3.06 cfs @ 11.96 hrs, Volume= 0.158 af, Depth> 1.85"

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

	Area (sf)	CN	Description
*	19,542	98	Gravel Driveway; Bldg; Old foundations
	25,202	74	>75% Grass cover, Good, HSG C
	44,744	84	Weighted Average
	25,202		56.32% Pervious Area
	19,542		43.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	419	0.0083	1.85		Shallow Concentrated Flow, Compacted Gravel Driveway Paved Kv= 20.3 fps

Subcatchment EX-1: NORTH OF SITE



240020-Southern States Parcel

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

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Page 3

Summary for Subcatchment EX-2: MIDDLE OF SITE

Runoff = 1.28 cfs @ 12.38 hrs, Volume= 0.240 af, Depth> 1.21"

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

	Area (sf)	CN	Description
*	40,056	98	Ex Bldg; Front Parking; US 50
	64,086	61	>75% Grass cover, Good, HSG B
	104,142	75	Weighted Average
	64,086		61.54% Pervious Area
	40,056		38.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
34.4	150	0.0018	0.07		Sheet Flow, Vacant Grassed Lot Grass: Short n= 0.150 P2= 3.40"
1.1	137	0.0189	2.06		Shallow Concentrated Flow, Grassed Lot Grassed Waterway Kv= 15.0 fps
0.1	31	0.0070	4.49	3.52	Pipe Channel, 12" RCP 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.011 Concrete pipe, straight & clean
0.6	10	0.0001	0.28	0.02	Pipe Channel, 4" PVC Culverts 4.0" Round Area= 0.1 sf Perim= 1.0' r= 0.08' n= 0.010 PVC, smooth interior
0.3	70	0.0800	4.24		Shallow Concentrated Flow, Grassed Lot Grassed Waterway Kv= 15.0 fps
36.5	398	Total			

240020-Southern States Parcel

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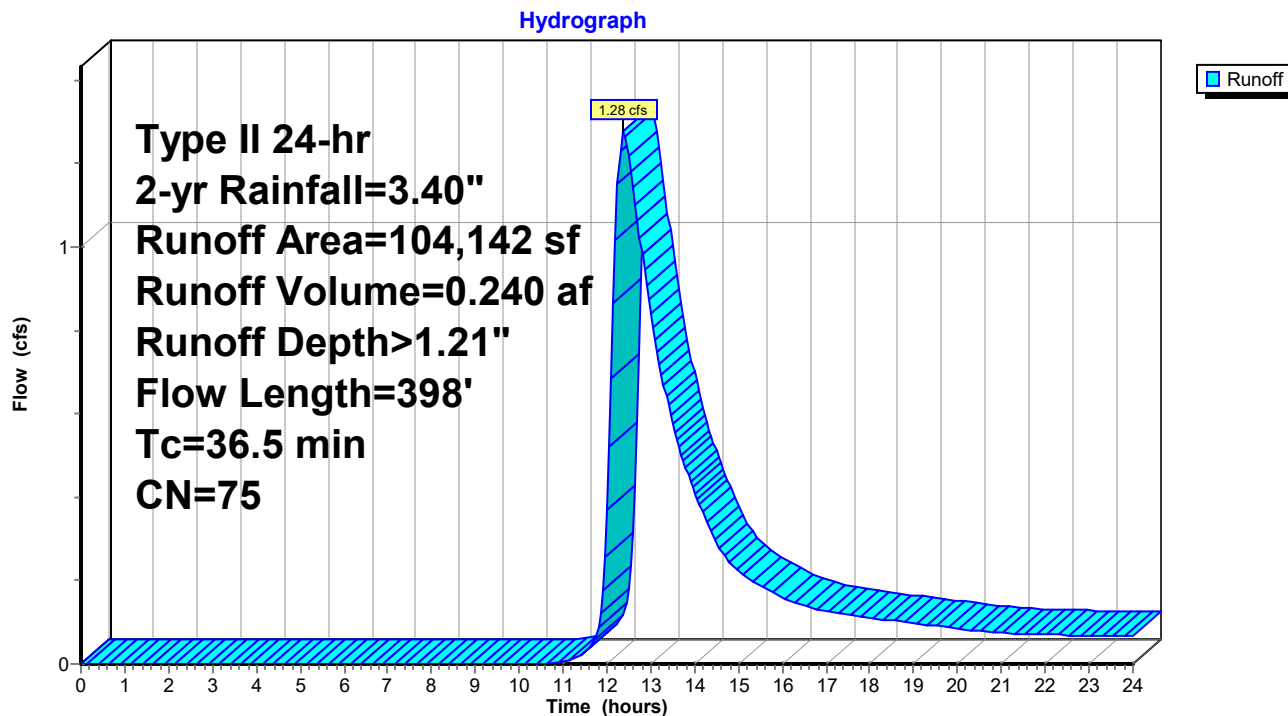
240020 - Southern States Redevelopment

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

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Page 4

Subcatchment EX-2: MIDDLE OF SITE



240020-Southern States Parcel

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240020 - Southern States Redevelopment

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

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Page 5

Summary for Subcatchment EX-3: SOUTHERN SITE + US50

Runoff = 0.81 cfs @ 12.01 hrs, Volume= 0.056 af, Depth> 0.70"

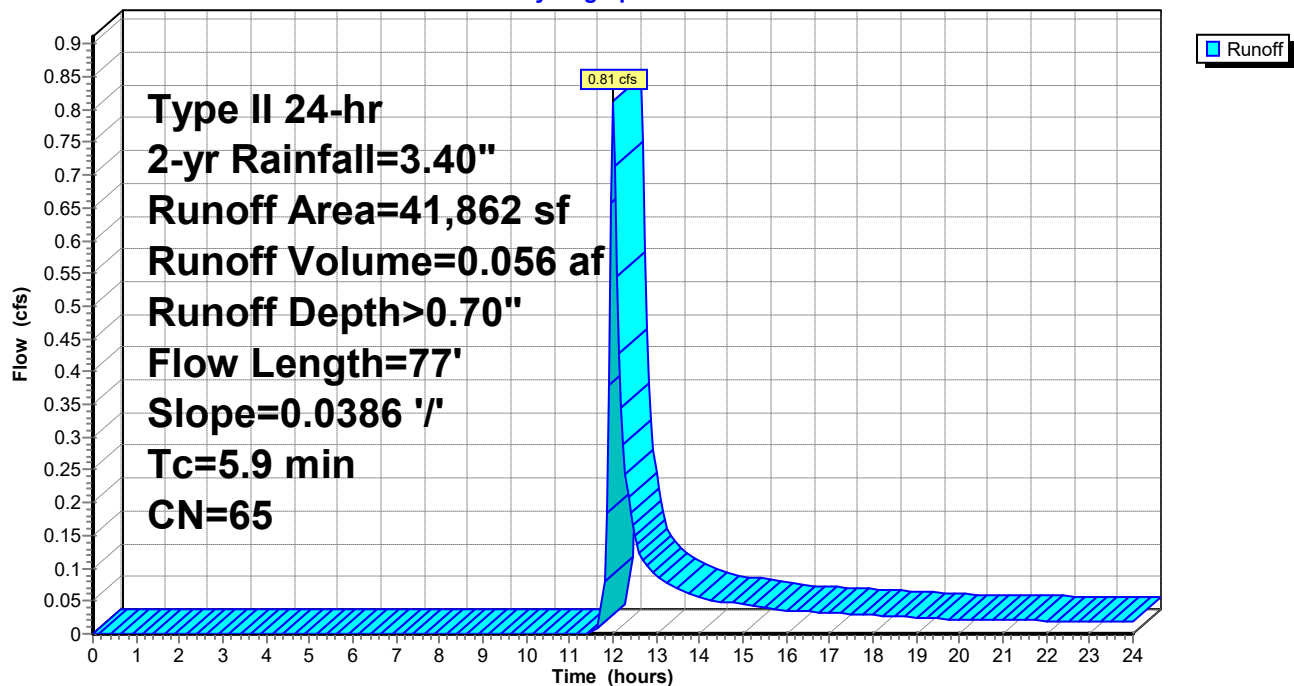
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.40"

Area (sf)	CN	Description
37,243	61	>75% Grass cover, Good, HSG B
* 4,619	98	SHA/Route 50
41,862	65	Weighted Average
37,243		88.97% Pervious Area
4,619		11.03% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.9	77	0.0386	0.22		Sheet Flow, Vacant Grassed Lot Grass: Short n= 0.150 P2= 3.40"

Subcatchment EX-3: SOUTHERN SITE + US50

Hydrograph



240020-Southern States Parcel

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240020 - Southern States Redevelopment

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

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Page 6

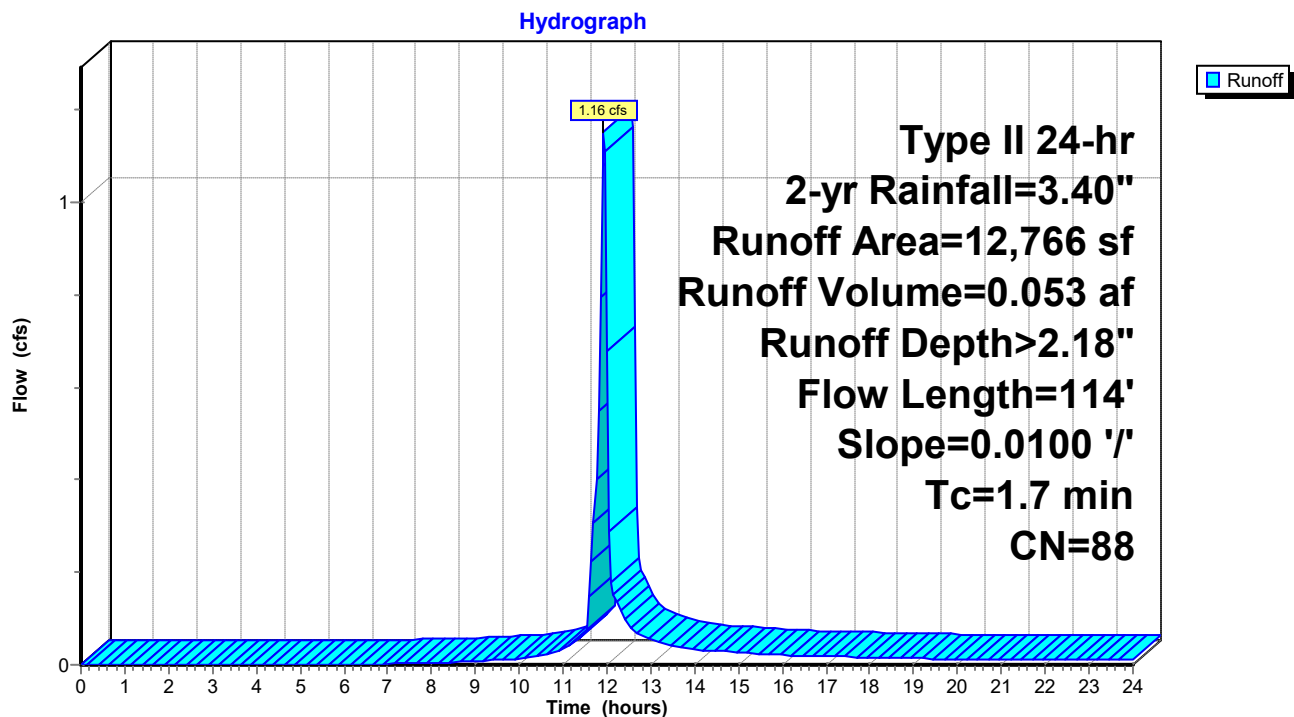
Summary for Subcatchment EX-4: ADJ to Ex SWM Pond

Runoff = 1.16 cfs @ 11.93 hrs, Volume= 0.053 af, Depth> 2.18"

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

	Area (sf)	CN	Description
*	7,479	98	Old foundations
	5,287	74	>75% Grass cover, Good, HSG C
	12,766	88	Weighted Average
	5,287		41.41% Pervious Area
	7,479		58.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	114	0.0100	1.10		Sheet Flow, Concrete Foundation Smooth surfaces n= 0.011 P2= 3.40"

Subcatchment EX-4: ADJ to Ex SWM Pond

240020-Southern States Parcel

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240020 - Southern States Redevelopment

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

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Page 7

Summary for Subcatchment G2-A: Commerce Street/G2 Associates

Runoff = 6.76 cfs @ 12.03 hrs, Volume= 0.507 af, Depth> 2.09"

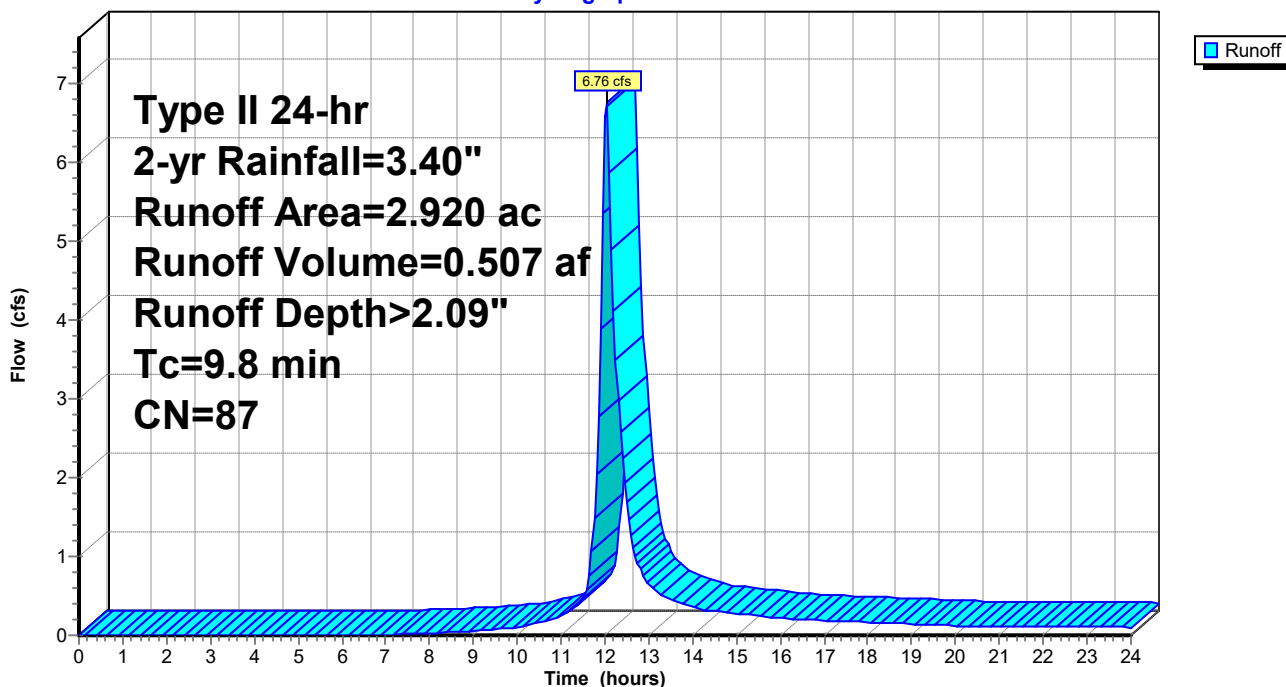
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.40"

Area (ac)	CN	Description
* 2.080	98	G2 Development circa 2005
* 0.840	61	>75% Grass cover, Good, HSG C
2.920	87	Weighted Average
0.840		28.77% Pervious Area
2.080		71.23% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8					Direct Entry, Tcon from TR-55 Report circa 2005

Subcatchment G2-A: Commerce Street/G2 Associates

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

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Page 8

Summary for Subcatchment G2-AA: Commerce Street/G2 Associates

Runoff = 6.76 cfs @ 12.03 hrs, Volume= 0.507 af, Depth> 2.09"

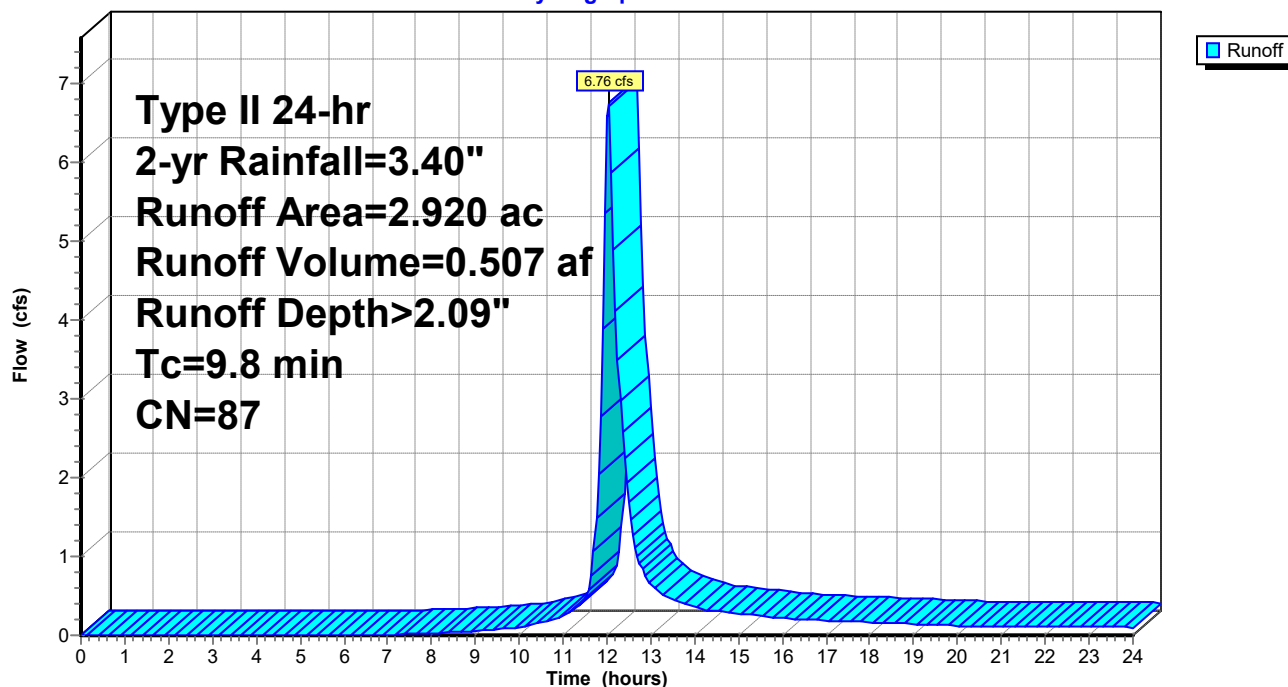
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.40"

Area (ac)	CN	Description
* 2.080	98	G2 Development circa 2005
* 0.840	61	>75% Grass cover, Good, HSG C
2.920	87	Weighted Average
0.840		28.77% Pervious Area
2.080		71.23% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8					Direct Entry, Tcon from TR-55 Report circa 2005

Subcatchment G2-AA: Commerce Street/G2 Associates

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

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Page 9

Summary for Subcatchment MB-1: 1/4 Medical Roof

Runoff = 0.35 cfs @ 11.90 hrs, Volume= 0.018 af, Depth> 3.17"

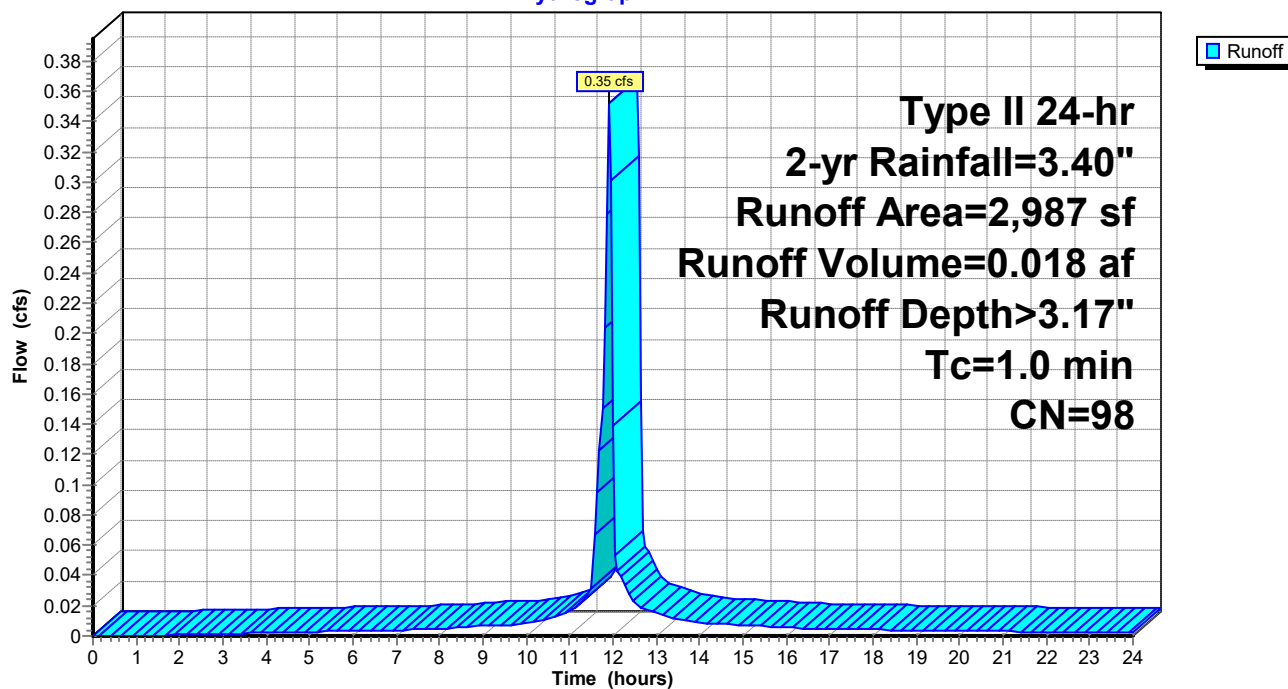
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	2,987	98	Rear Med. Building Roof
	2,987		100.00% Impervious Area

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

Subcatchment MB-1: 1/4 Medical Roof

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

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Page 10

Summary for Subcatchment MB-2: 1/4 Medical Roof

Runoff = 0.37 cfs @ 11.90 hrs, Volume= 0.019 af, Depth> 3.17"

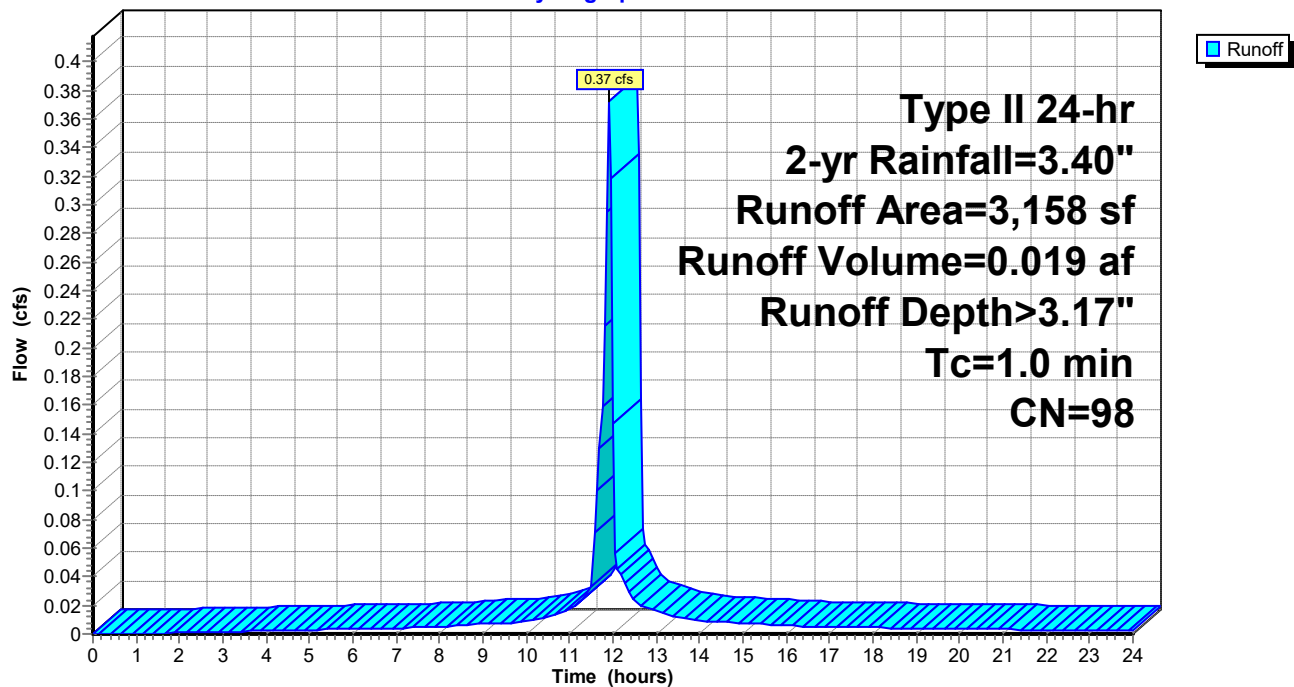
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	3,158	98	Rear Med. Building Roof
	3,158		100.00% Impervious Area

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

Subcatchment MB-2: 1/4 Medical Roof

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

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Page 11

Summary for Subcatchment MB-3: 1/4 Medical Roof

Runoff = 0.37 cfs @ 11.90 hrs, Volume= 0.019 af, Depth> 3.17"

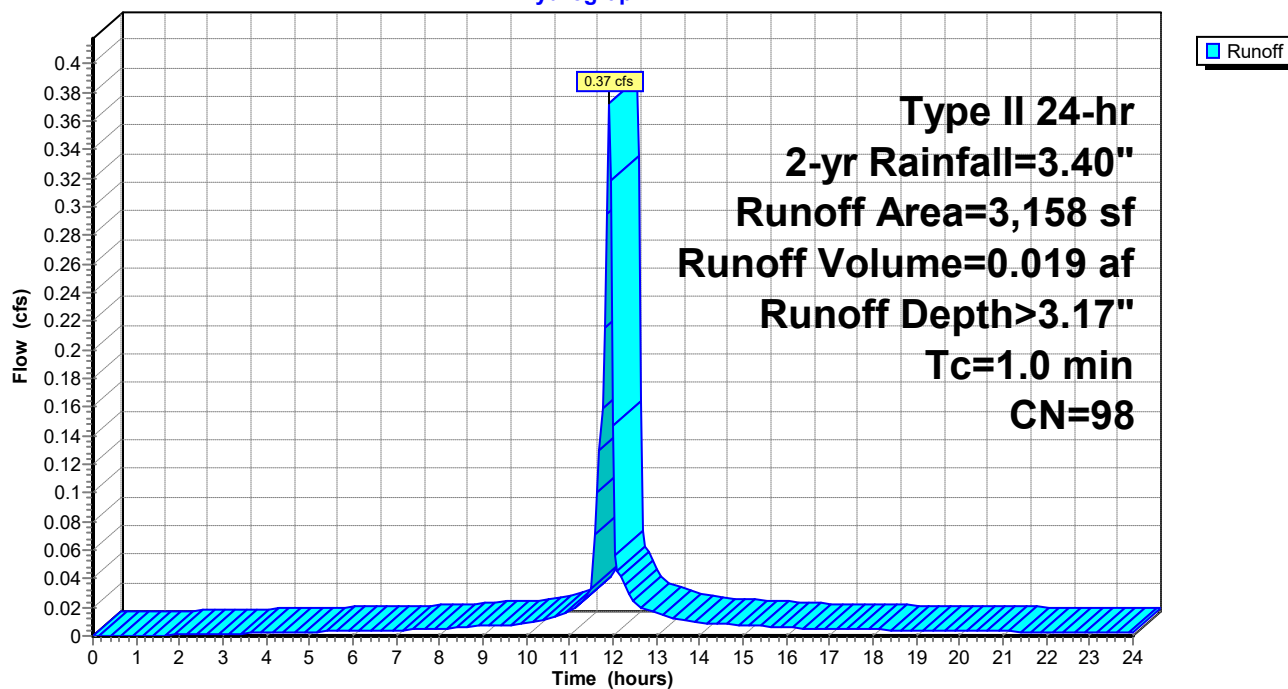
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	3,158	98	Rear Med. Building Roof
	3,158		100.00% Impervious Area

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

Subcatchment MB-3: 1/4 Medical Roof

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

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Page 12

Summary for Subcatchment MB-4: 1/4 Medical Roof

Runoff = 0.35 cfs @ 11.90 hrs, Volume= 0.018 af, Depth> 3.17"

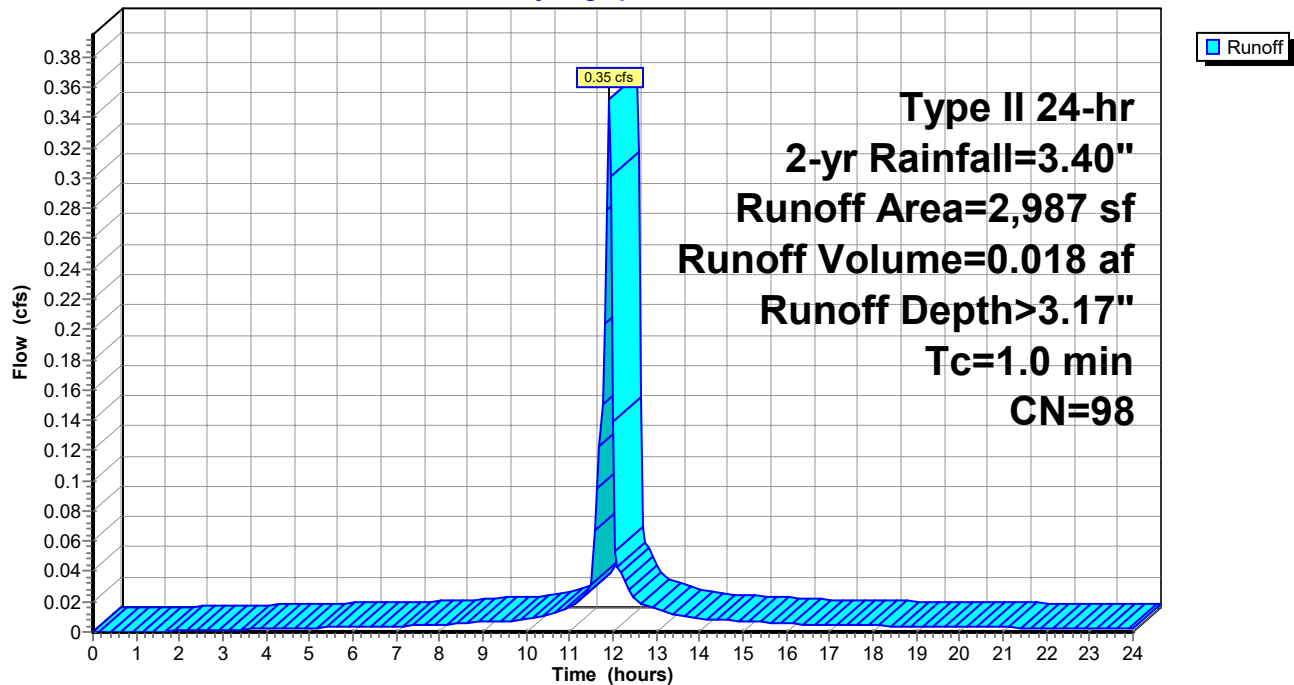
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	2,987	98	Rear Med. Building Roof
	2,987		100.00% Impervious Area

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

Subcatchment MB-4: 1/4 Medical Roof

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

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Page 13

Summary for Subcatchment MY-1: 1/4 Retail Roof

Runoff = 0.52 cfs @ 11.90 hrs, Volume= 0.027 af, Depth> 3.17"

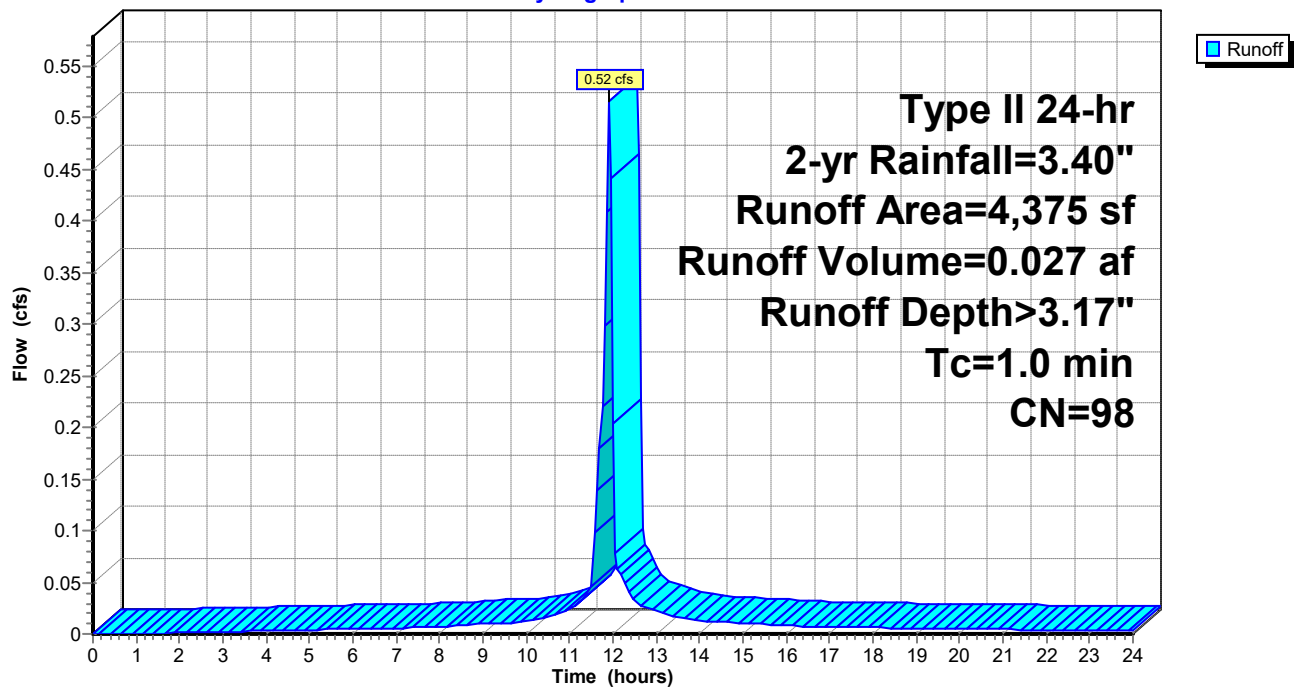
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	4,375	98	Building Roof
	4,375		100.00% Impervious Area

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

Subcatchment MY-1: 1/4 Retail Roof

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

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Page 14

Summary for Subcatchment MY-2: 1/4 Retail Roof

Runoff = 0.53 cfs @ 11.90 hrs, Volume= 0.027 af, Depth> 3.17"

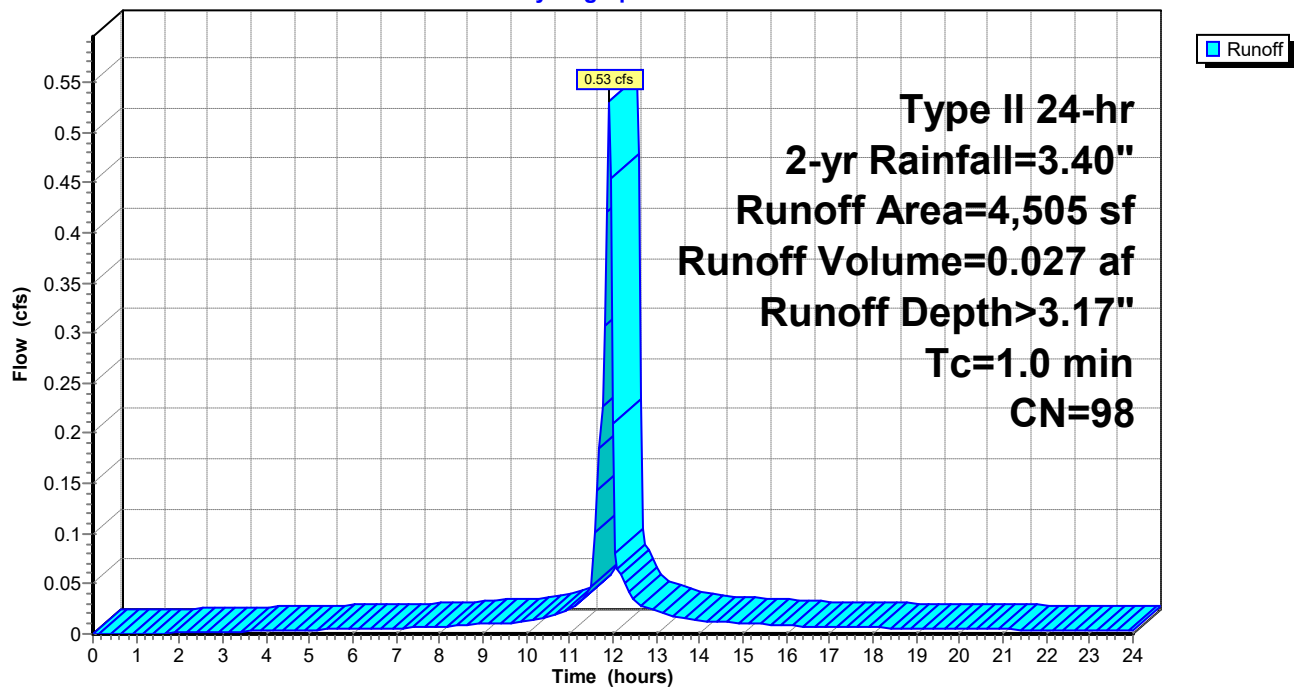
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	4,505	98	Rear Building Roof
	4,505		100.00% Impervious Area

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

Subcatchment MY-2: 1/4 Retail Roof

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

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Page 15

Summary for Subcatchment MY-3: 1/4 Retail Roof

Runoff = 0.53 cfs @ 11.90 hrs, Volume= 0.027 af, Depth> 3.17"

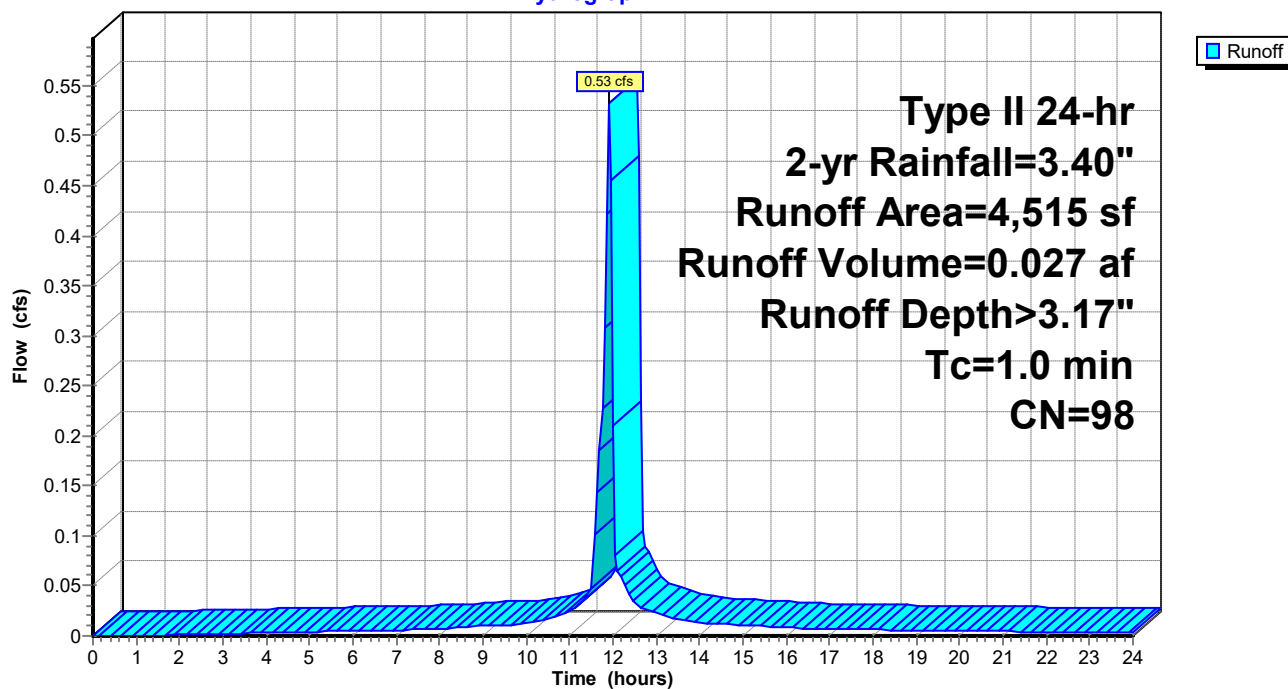
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	4,515	98	Rear Building Roof
	4,515		100.00% Impervious Area

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

Subcatchment MY-3: 1/4 Retail Roof

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

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Page 16

Summary for Subcatchment MY-4: 1/4 Retail Roof

Runoff = 0.55 cfs @ 11.90 hrs, Volume= 0.028 af, Depth> 3.17"

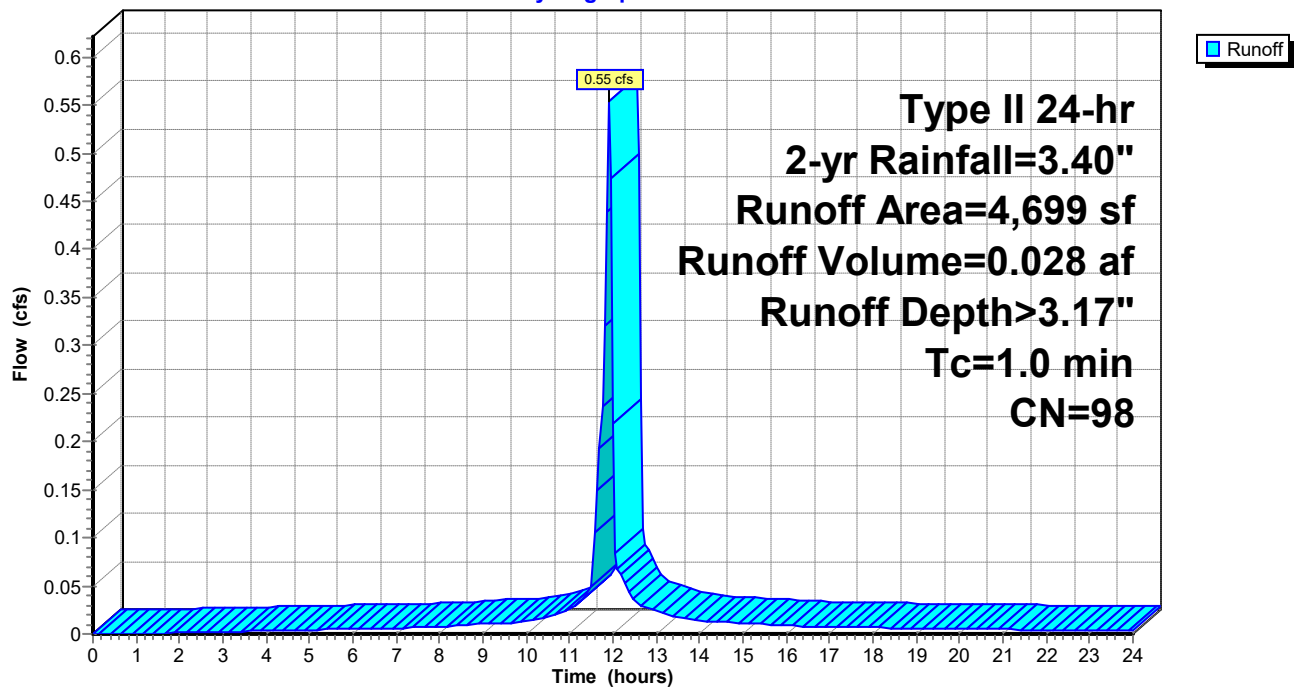
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	4,699	98	Building Roof
	4,699		100.00% Impervious Area

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

Subcatchment MY-4: 1/4 Retail Roof

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

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Page 17

Summary for Subcatchment PK-1: Parking

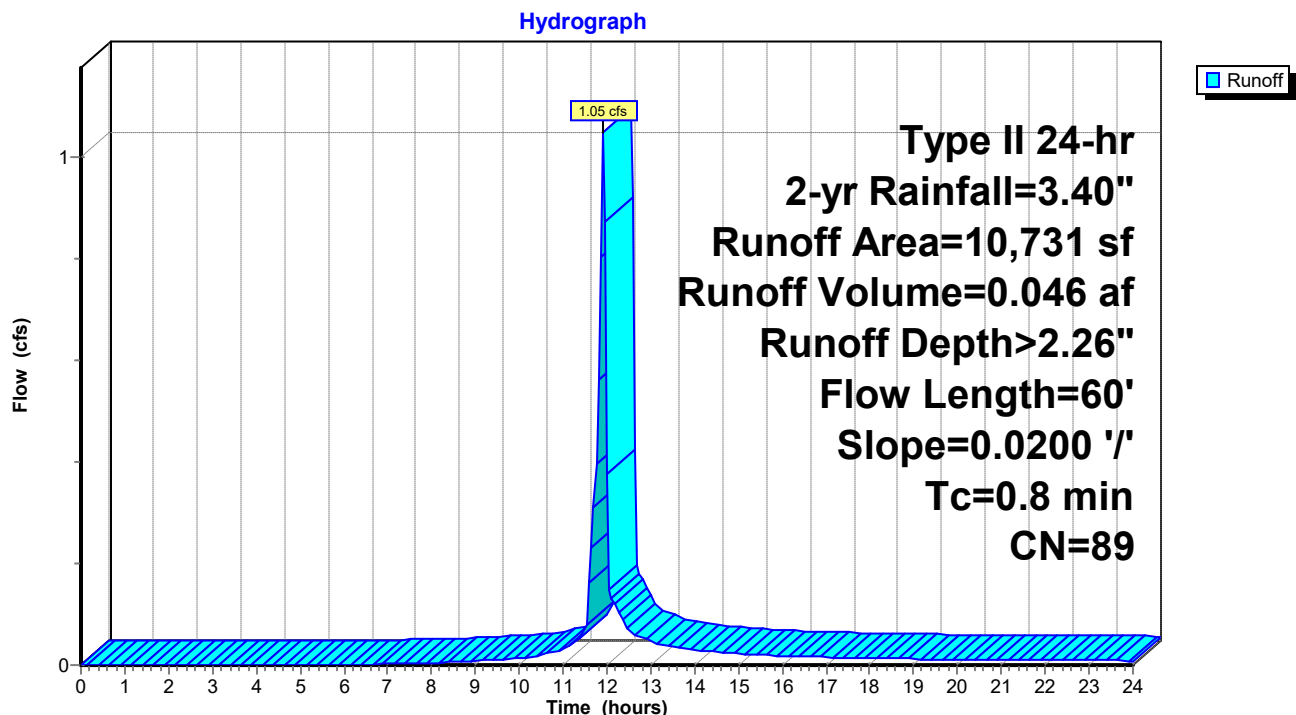
Runoff = 1.05 cfs @ 11.90 hrs, Volume= 0.046 af, Depth> 2.26"

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

	Area (sf)	CN	Description
*	4,140	98	Parking Area
	2,703	61	>75% Grass cover, Good, HSG B
*	3,888	98	Parking Spaces
	10,731	89	Weighted Average
	2,703		25.19% Pervious Area
	8,028		74.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	60	0.0200	1.28		Sheet Flow, Parking Lot
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment PK-1: Parking



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

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Page 18

Summary for Subcatchment PK-10: Parking

Runoff = 1.59 cfs @ 11.91 hrs, Volume= 0.068 af, Depth> 1.23"

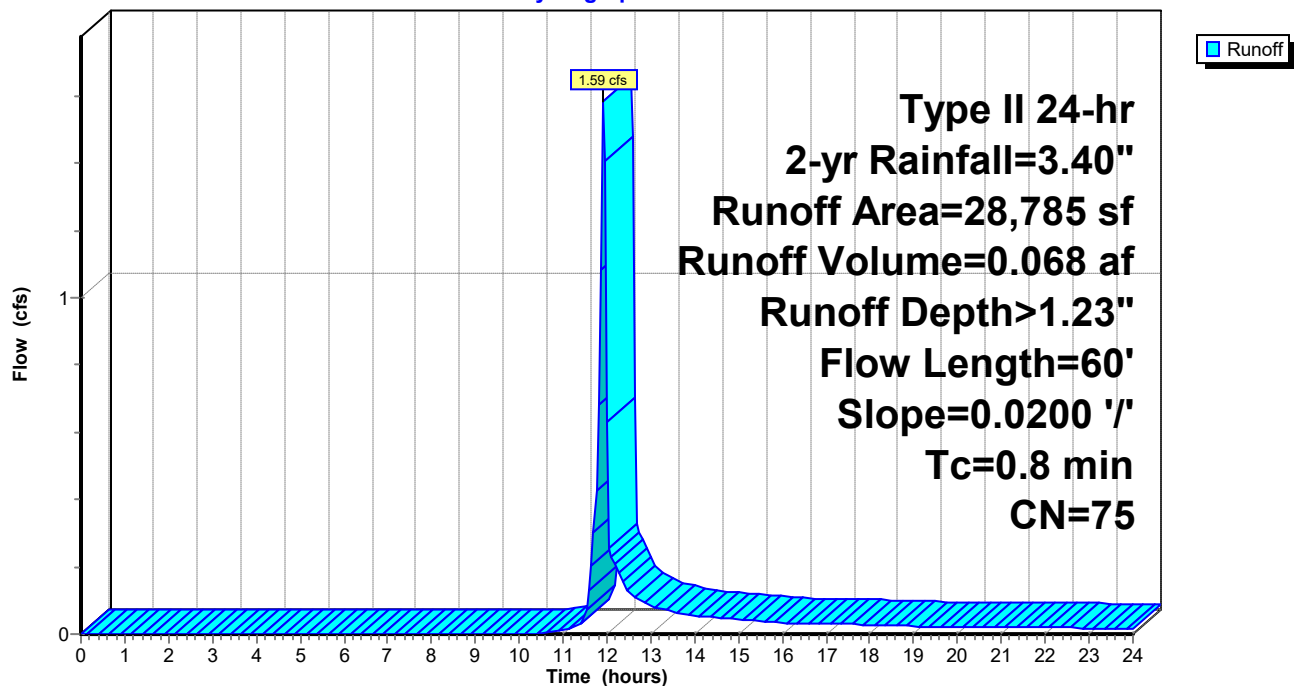
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	6,254	98	Asphalt
	18,135	61	>75% Grass cover, Good, HSG B
*	4,396	98	Parking Spaces
	28,785	75	Weighted Average
	18,135		63.00% Pervious Area
	10,650		37.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	60	0.0200	1.28		Sheet Flow, Parking Lot
					Smooth surfaces n= 0.011 P2= 3.40"

Subcatchment PK-10: Parking

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

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Page 19

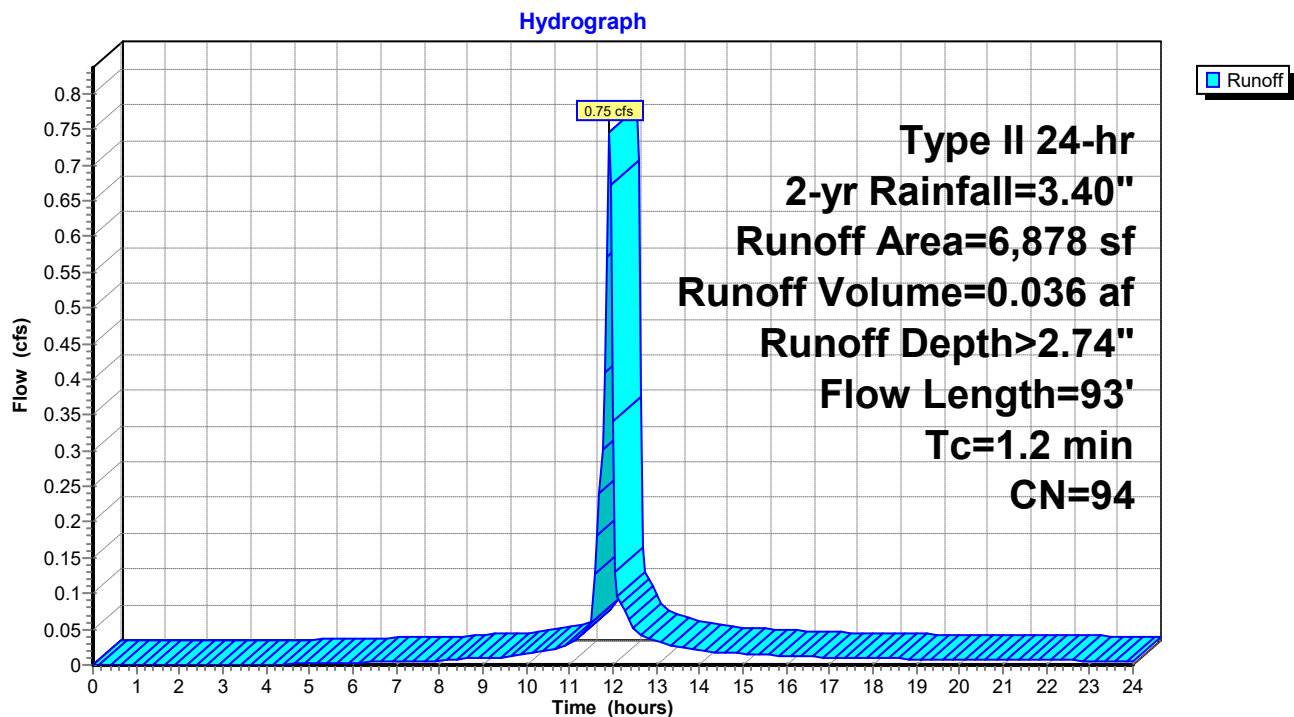
Summary for Subcatchment PK-2: Parking

Runoff = 0.75 cfs @ 11.91 hrs, Volume= 0.036 af, Depth> 2.74"

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

	Area (sf)	CN	Description
*	4,272	98	Parking Area
	801	61	>75% Grass cover, Good, HSG B
*	1,805	98	Parking Spaces
	6,878	94	Weighted Average
	801		11.65% Pervious Area
	6,077		88.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	60	0.0200	1.28		Sheet Flow, Parking lot Smooth surfaces n= 0.011 P2= 3.40"
0.4	33	0.0050	1.44		Shallow Concentrated Flow, Curb Paved Kv= 20.3 fps
1.2	93	Total			

Subcatchment PK-2: Parking

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

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Page 20

Summary for Subcatchment PK-3: Parking

Runoff = 0.80 cfs @ 11.92 hrs, Volume= 0.040 af, Depth> 2.84"

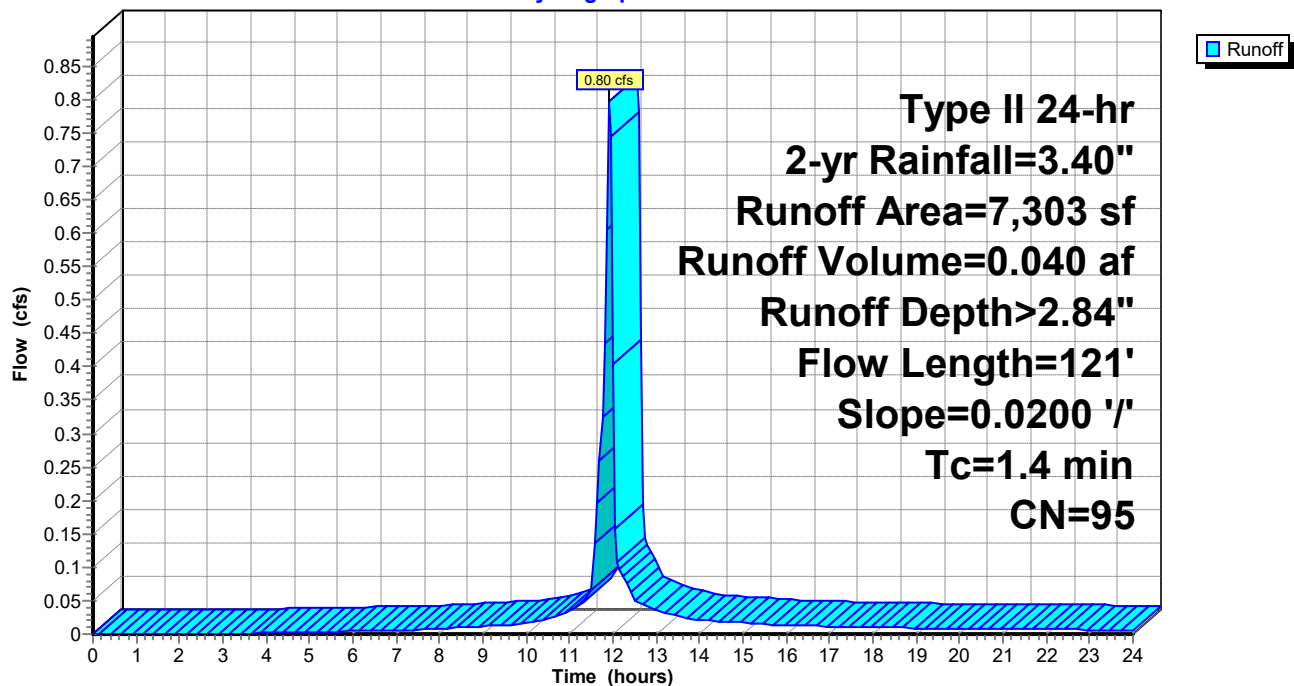
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	4,424	98	Parking Area
	559	61	>75% Grass cover, Good, HSG B
*	2,320	98	Parking Spaces
	7,303	95	Weighted Average
	559		7.65% Pervious Area
	6,744		92.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	121	0.0200	1.47		Sheet Flow, Parking Lot
					Smooth surfaces n= 0.011 P2= 3.40"

Subcatchment PK-3: Parking

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

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Page 21

Summary for Subcatchment PK-4: Parking

Runoff = 0.47 cfs @ 11.90 hrs, Volume= 0.022 af, Depth> 2.84"

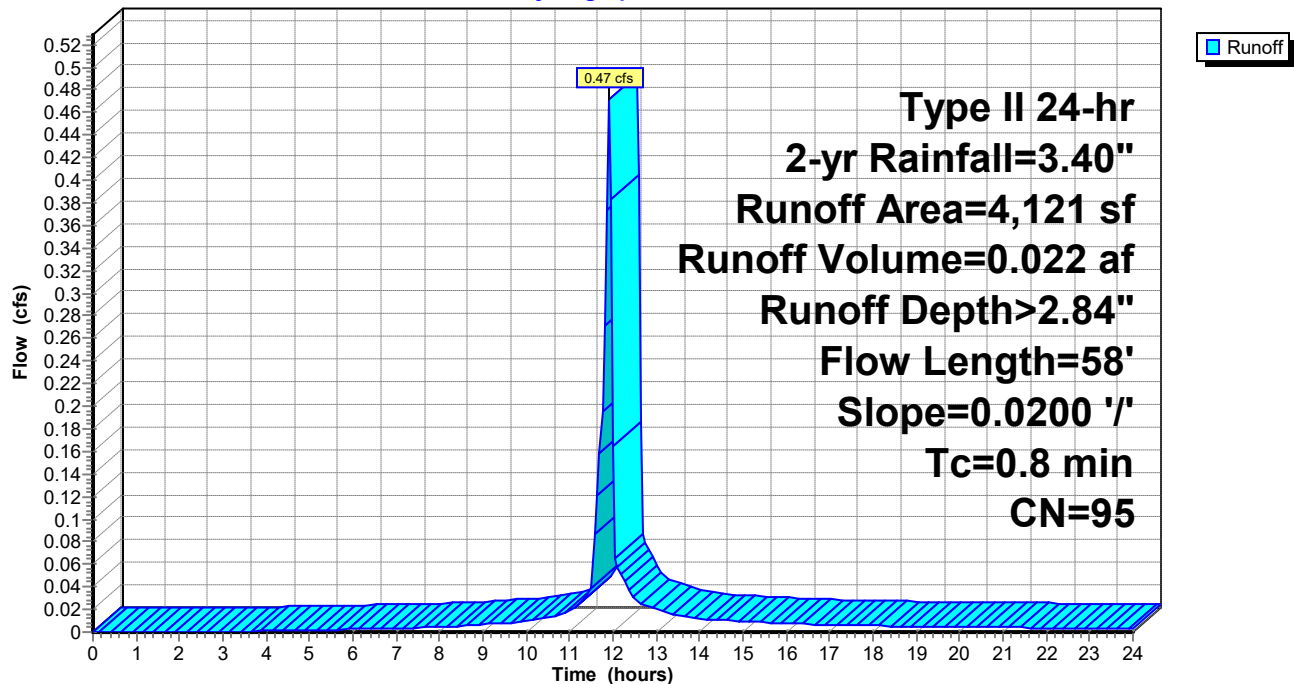
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	2,405	98	Asphalt
	337	61	>75% Grass cover, Good, HSG B
*	1,379	98	Parking Spaces
	4,121	95	Weighted Average
	337		8.18% Pervious Area
	3,784		91.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	58	0.0200	1.27		Sheet Flow, Parking Lot
					Smooth surfaces n= 0.011 P2= 3.40"

Subcatchment PK-4: Parking

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Page 22

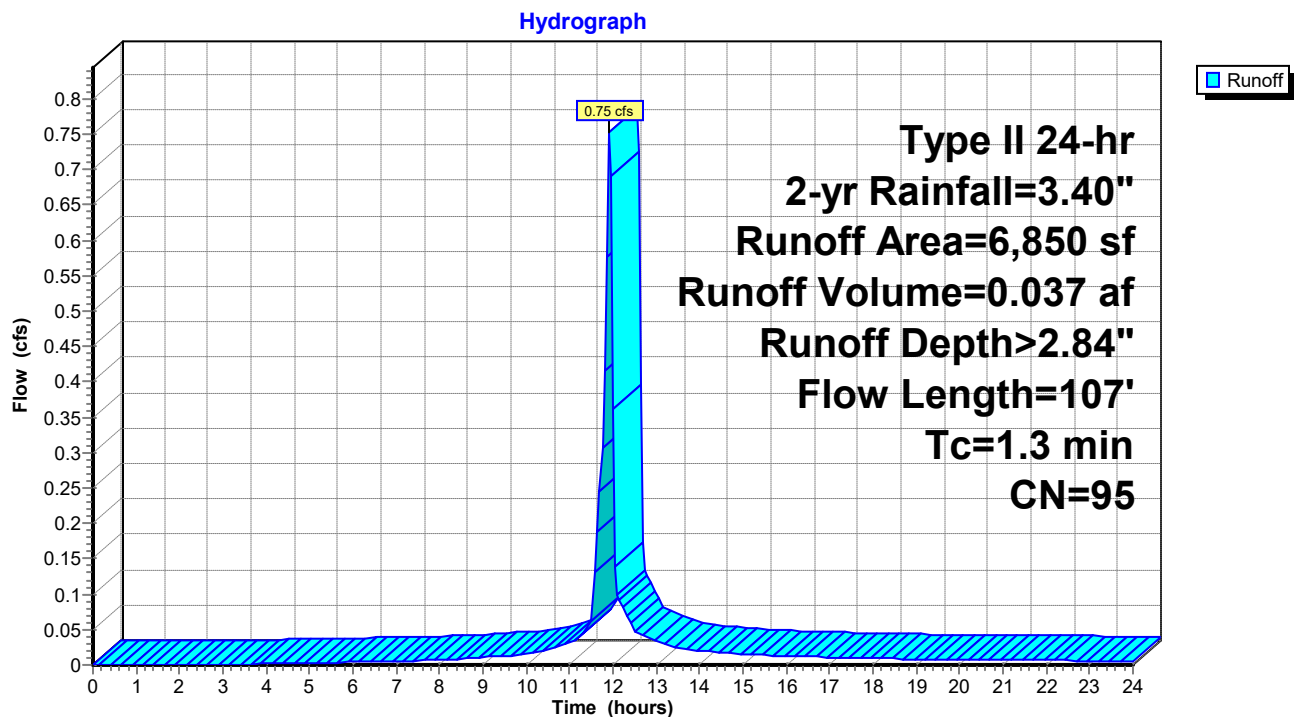
Summary for Subcatchment PK-5: Parking

Runoff = 0.75 cfs @ 11.91 hrs, Volume= 0.037 af, Depth> 2.84"

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

	Area (sf)	CN	Description
*	4,714	98	Asphalt
	516	61	>75% Grass cover, Good, HSG B
*	1,620	98	Parking Spaces
	6,850	95	Weighted Average
	516		7.53% Pervious Area
	6,334		92.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	18	0.0200	1.01		Sheet Flow, Parking Lot
					Smooth surfaces n= 0.011 P2= 3.40"
1.0	89	0.0050	1.44		Shallow Concentrated Flow, Gutter
					Paved Kv= 20.3 fps
1.3	107	Total			

Subcatchment PK-5: Parking

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Page 23

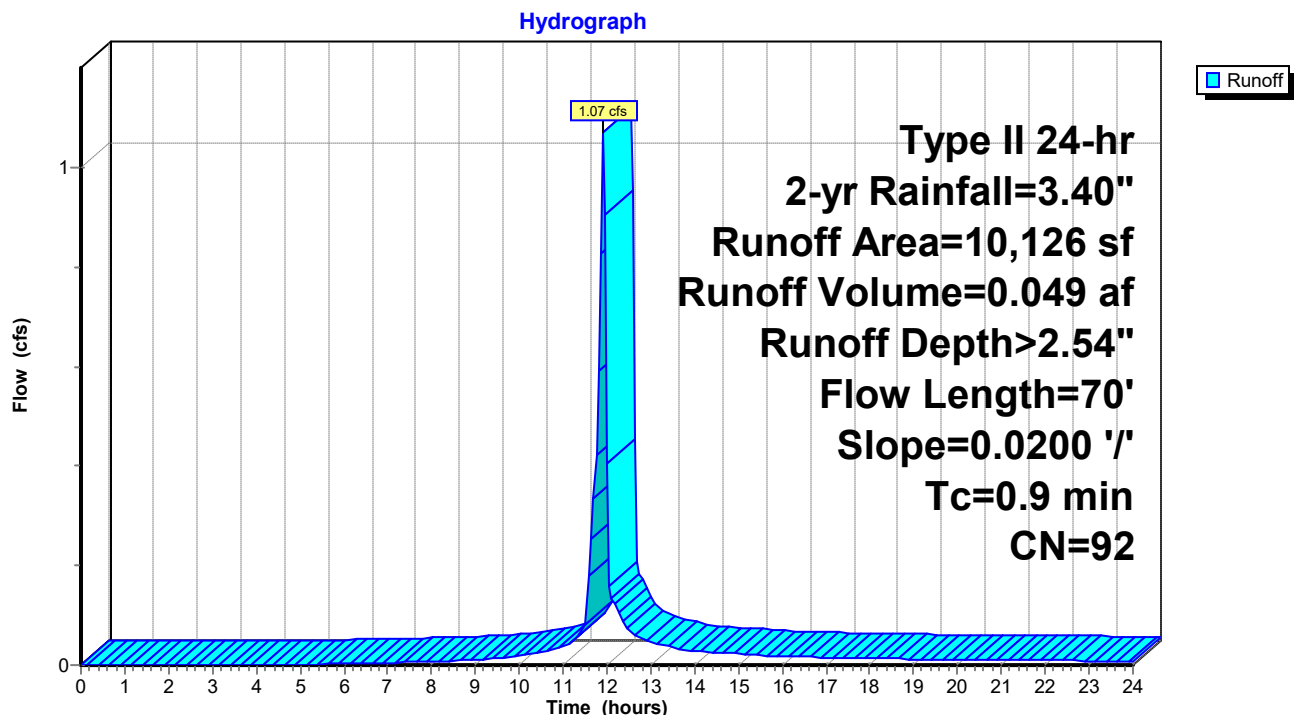
Summary for Subcatchment PK-6: Parking

Runoff = 1.07 cfs @ 11.90 hrs, Volume= 0.049 af, Depth> 2.54"

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

	Area (sf)	CN	Description
*	6,357	98	Asphalt
	1,534	61	>75% Grass cover, Good, HSG B
*	2,235	98	Parking Spaces
	10,126	92	Weighted Average
	1,534		15.15% Pervious Area
	8,592		84.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	70	0.0200	1.32		Sheet Flow, Parking Lot
					Smooth surfaces n= 0.011 P2= 3.40"

Subcatchment PK-6: Parking

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

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Page 24

Summary for Subcatchment PK-7: Parking

Runoff = 0.52 cfs @ 11.91 hrs, Volume= 0.024 af, Depth> 2.45"

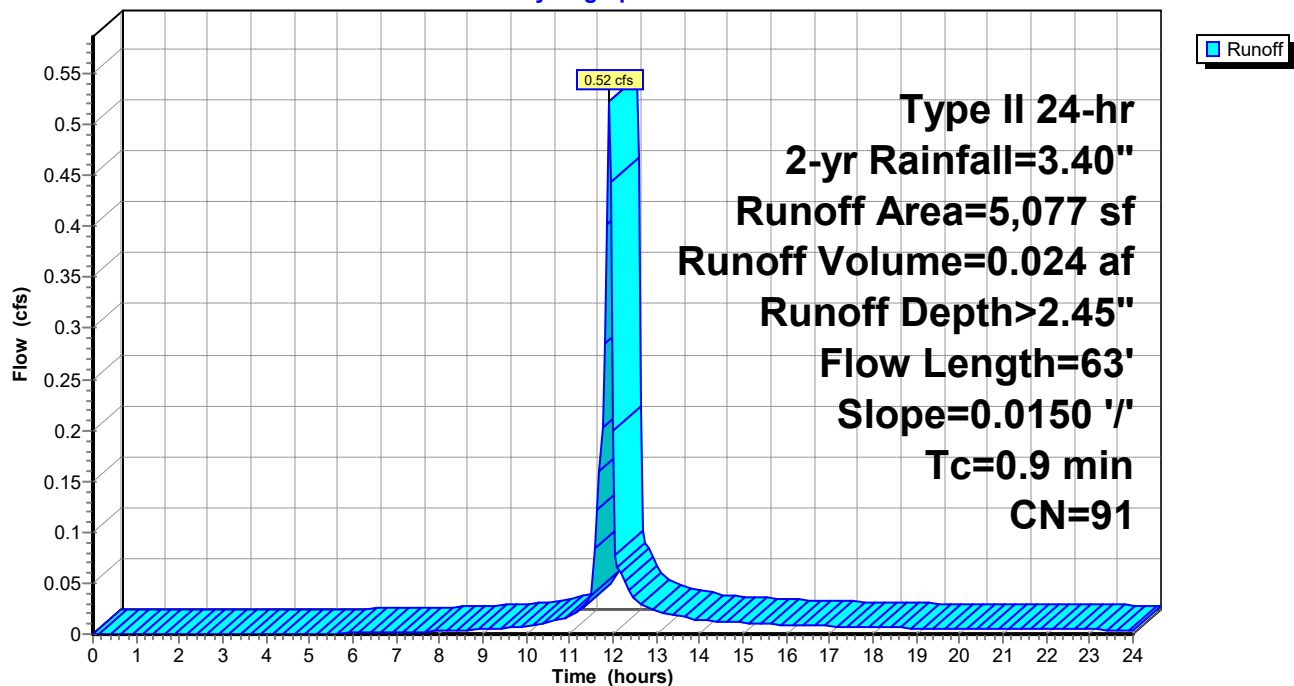
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	3,258	98	Asphalt
	896	61	>75% Grass cover, Good, HSG B
*	923	98	Parking Spaces
	5,077	91	Weighted Average
	896		17.65% Pervious Area
	4,181		82.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	63	0.0150	1.15		Sheet Flow, Pavement Smooth surfaces n= 0.011 P2= 3.40"

Subcatchment PK-7: Parking

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

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Page 25

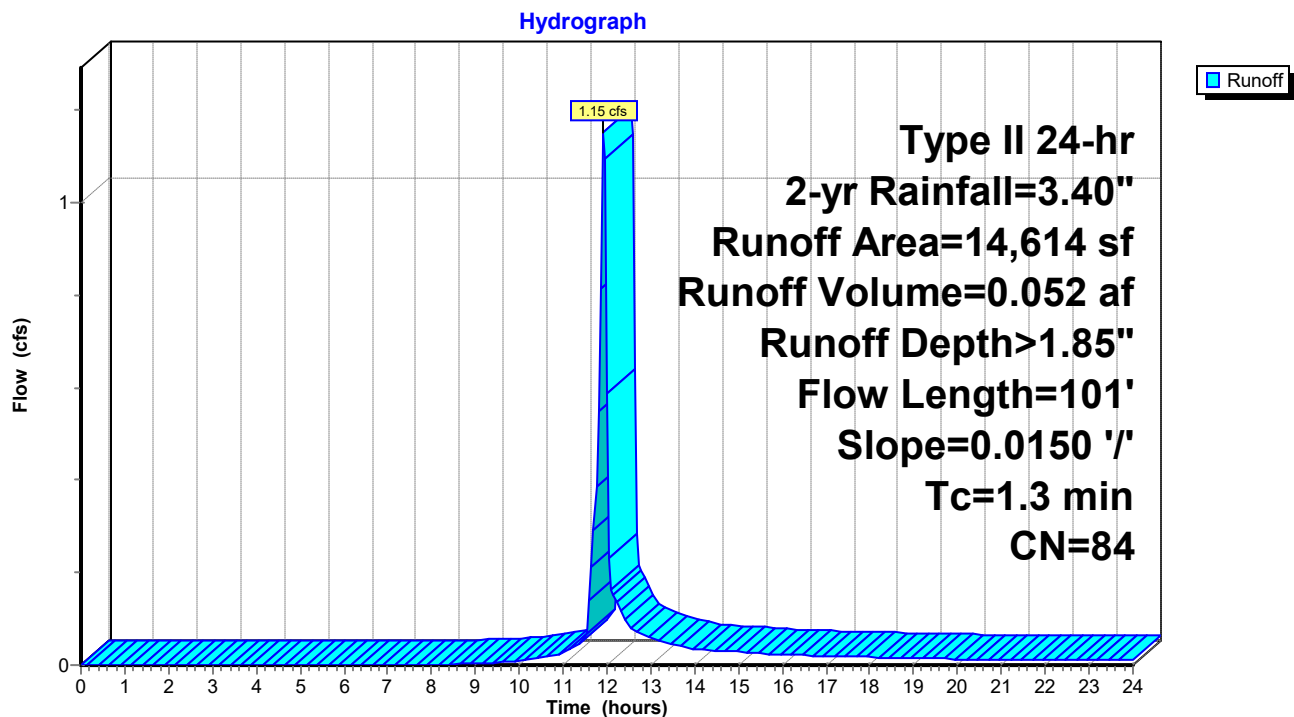
Summary for Subcatchment PK-8: Parking

Runoff = 1.15 cfs @ 11.92 hrs, Volume= 0.052 af, Depth> 1.85"

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

	Area (sf)	CN	Description
*	6,414	98	Asphalt Drive Aisles & Sidewalk
*	2,660	98	Parking Spaces
	5,540	61	>75% Grass cover, Good, HSG B
	14,614	84	Weighted Average
	5,540		37.91% Pervious Area
	9,074		62.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	101	0.0150	1.27		Sheet Flow, Asphalt Smooth surfaces n= 0.011 P2= 3.40"

Subcatchment PK-8: Parking

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

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Page 26

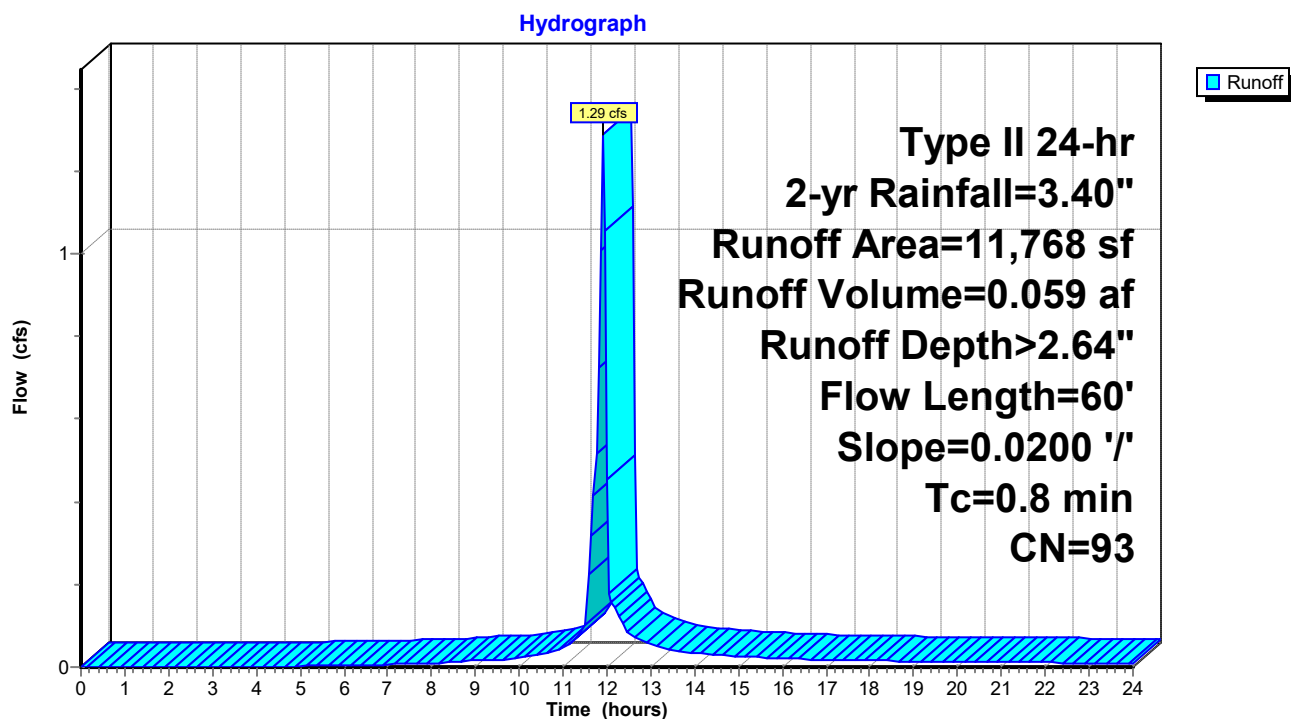
Summary for Subcatchment PK-9: Parking

Runoff = 1.29 cfs @ 11.90 hrs, Volume= 0.059 af, Depth> 2.64"

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

	Area (sf)	CN	Description
*	7,036	98	Asphalt
	1,729	61	>75% Grass cover, Good, HSG B
*	3,003	98	Parking Spaces
	11,768	93	Weighted Average
	1,729		14.69% Pervious Area
	10,039		85.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	60	0.0200	1.28		Sheet Flow, Parking Lot
					Smooth surfaces n= 0.011 P2= 3.40"

Subcatchment PK-9: Parking

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

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Page 27

Summary for Subcatchment RD: Onsite Residue

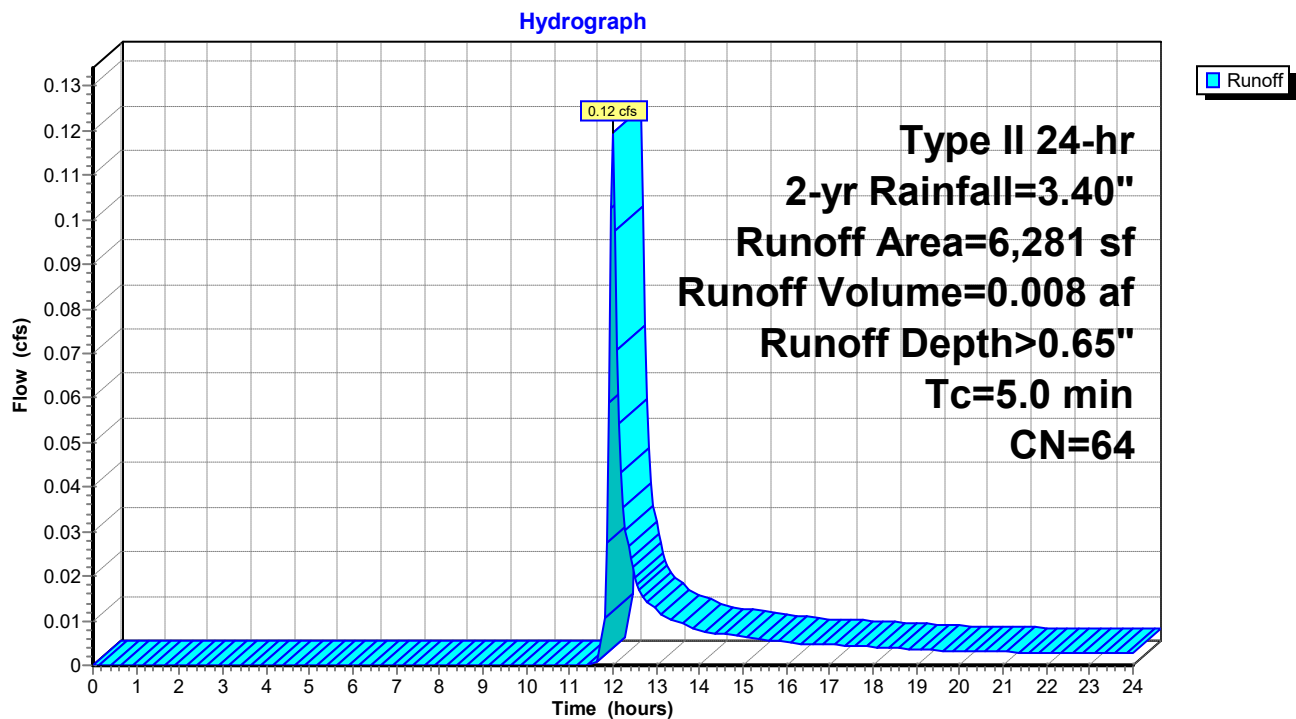
Runoff = 0.12 cfs @ 12.00 hrs, Volume= 0.008 af, Depth> 0.65"

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

Area (sf)	CN	Description
5,797	61	>75% Grass cover, Good, HSG B
* 484	98	Sidewalk & Portion Entrance
6,281	64	Weighted Average
5,797		92.29% Pervious Area
484		7.71% Impervious Area

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

Subcatchment RD: Onsite Residue



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

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Page 28

Summary for Subcatchment SHA-1: Onsite SHA

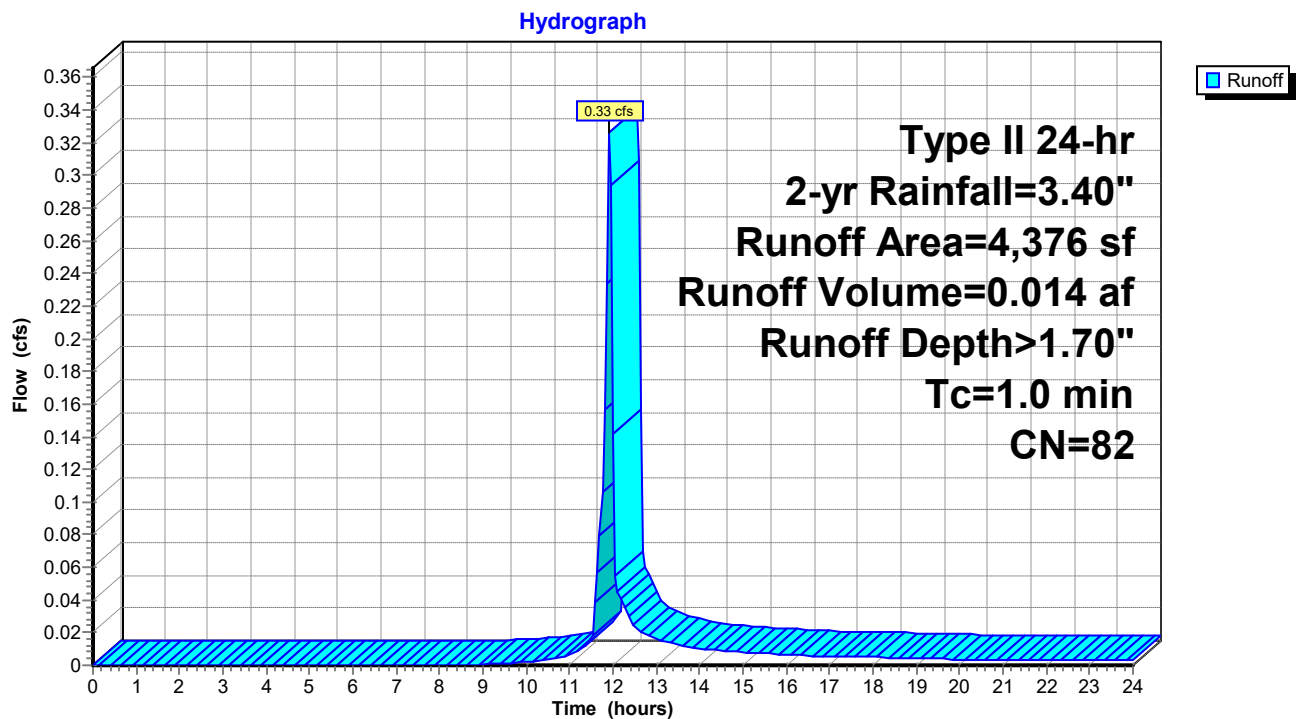
Runoff = 0.33 cfs @ 11.91 hrs, Volume= 0.014 af, Depth> 1.70"

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

	Area (sf)	CN	Description
	1,908	61	>75% Grass cover, Good, HSG B
*	2,468	98	Pavement & Sidewalk
	4,376	82	Weighted Average
	1,908		43.60% Pervious Area
	2,468		56.40% Impervious Area

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

Subcatchment SHA-1: Onsite SHA



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Page 29

Summary for Subcatchment SHA-2: Area of SGW #1 & Onsite SHA

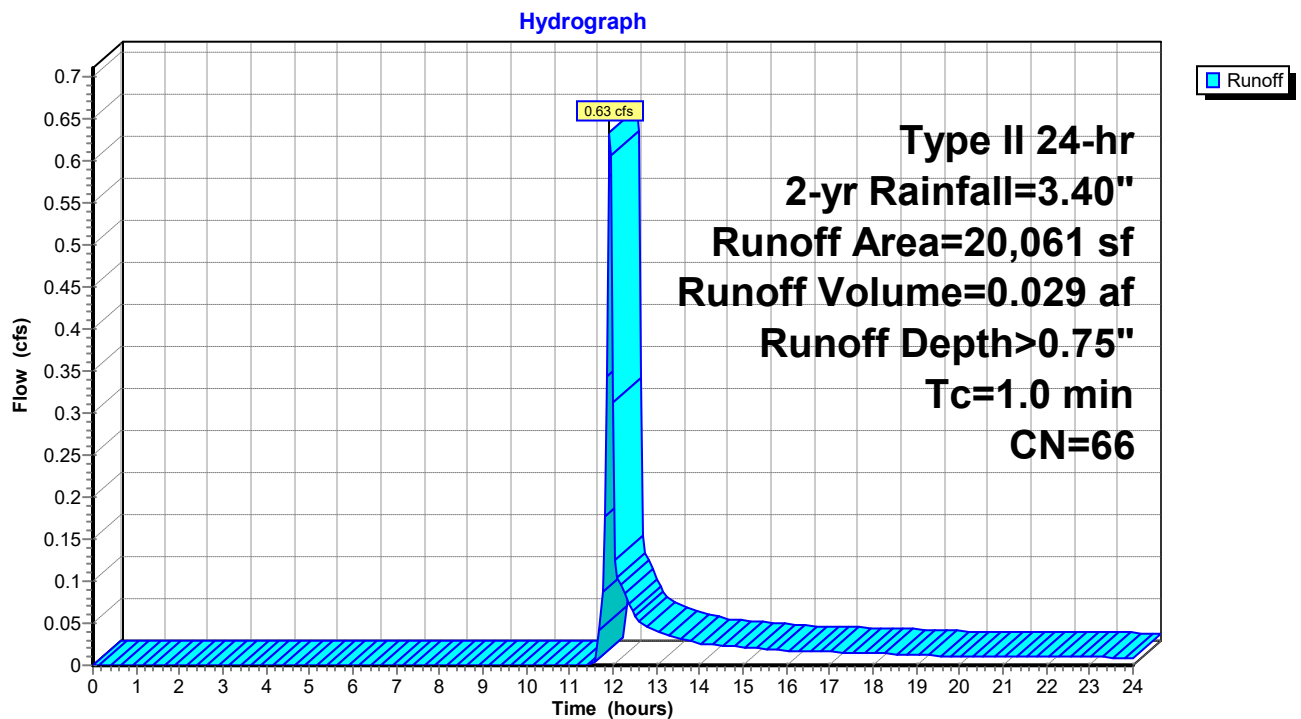
Runoff = 0.63 cfs @ 11.93 hrs, Volume= 0.029 af, Depth> 0.75"

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

Area (sf)	CN	Description
17,507	61	>75% Grass cover, Good, HSG B
* 2,554	98	SHA Entrance Pavement
20,061	66	Weighted Average
17,507		87.27% Pervious Area
2,554		12.73% Impervious Area

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

Subcatchment SHA-2: Area of SGW #1 & Onsite SHA



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Page 30

Summary for Subcatchment SHA-3: SHA Improvements (North)

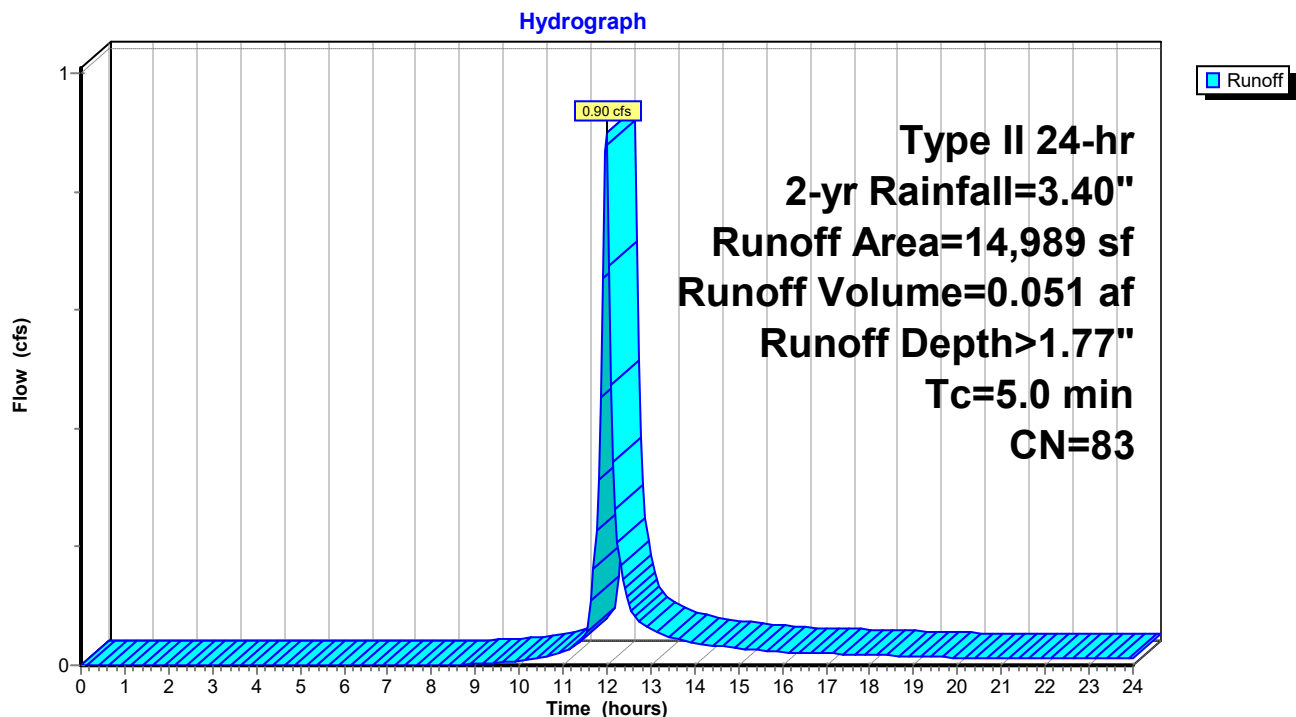
Runoff = 0.90 cfs @ 11.98 hrs, Volume= 0.051 af, Depth> 1.77"

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

	Area (sf)	CN	Description
*	8,750	98	SHA Pavement & Entrance
	6,239	61	>75% Grass cover, Good, HSG B
	14,989	83	Weighted Average
	6,239		41.62% Pervious Area
	8,750		58.38% Impervious Area

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

Subcatchment SHA-3: SHA Improvements (North)



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Page 31

Summary for Subcatchment SHA-4: SHA Improvements (South)

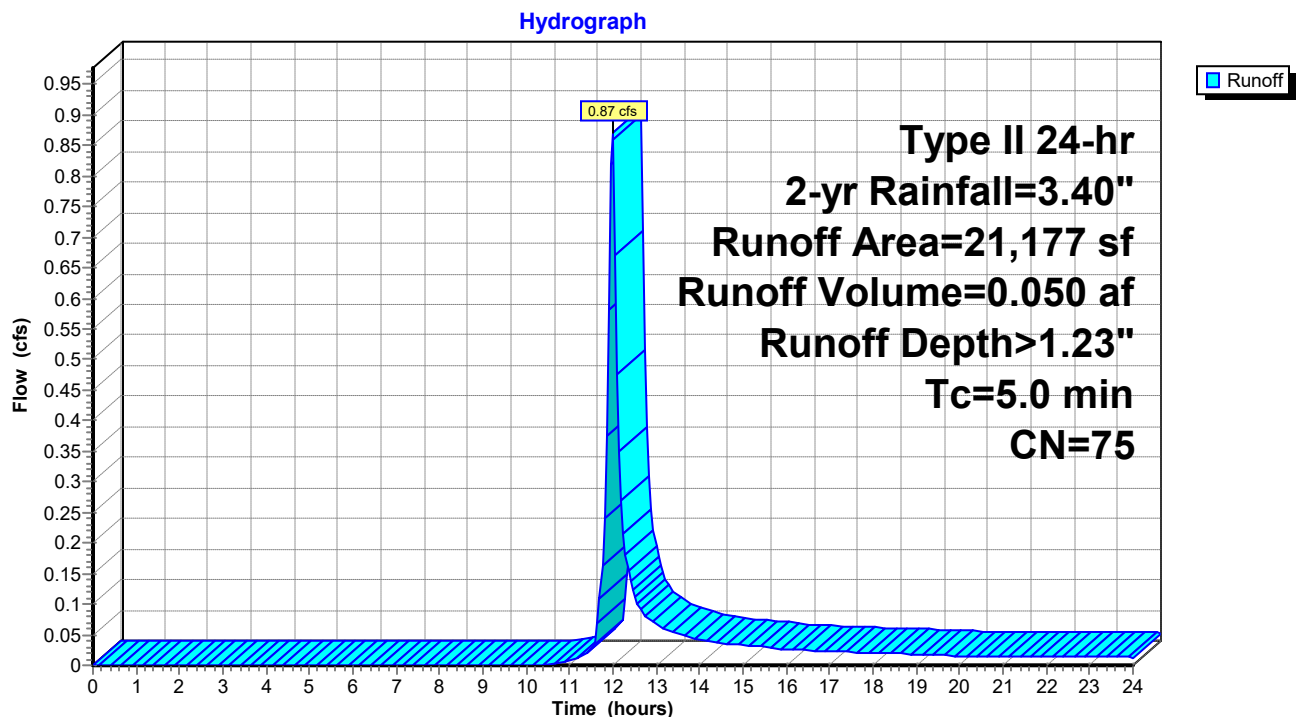
Runoff = 0.87 cfs @ 11.98 hrs, Volume= 0.050 af, Depth> 1.23"

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

	Area (sf)	CN	Description
*	8,053	98	US 50 & SHA Entrance
	13,124	61	>75% Grass cover, Good, HSG B
	21,177	75	Weighted Average
	13,124		61.97% Pervious Area
	8,053		38.03% Impervious Area

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

Subcatchment SHA-4: SHA Improvements (South)



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

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Page 32

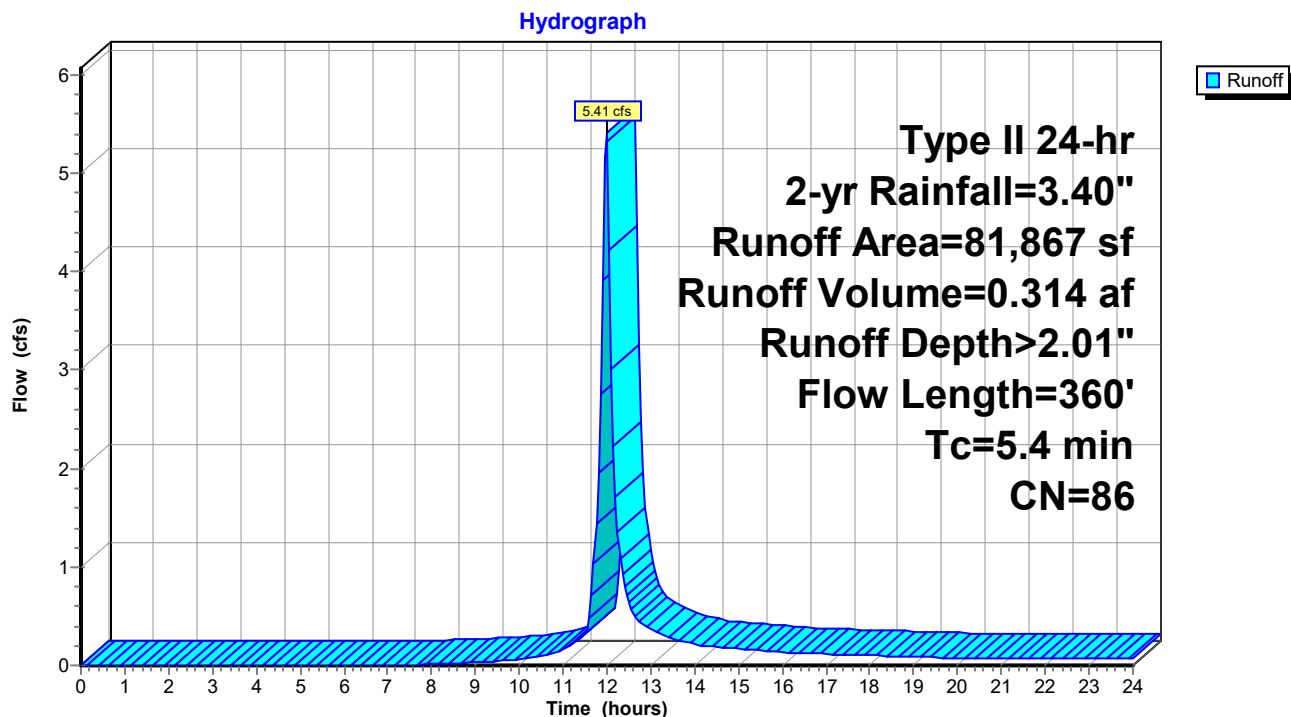
Summary for Subcatchment VZ-A: Verizon (Offsite)

Runoff = 5.41 cfs @ 11.98 hrs, Volume= 0.314 af, Depth> 2.01"

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

	Area (sf)	CN	Description
*	56,382	98	Verizon Storage Yard
	25,485	61	>75% Grass cover, Good, HSG B
	81,867	86	Weighted Average
	25,485		31.13% Pervious Area
	56,382		68.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	80	0.0100	1.03		Sheet Flow, Pavement Smooth surfaces n= 0.011 P2= 3.40"
4.1	280	0.0050	1.14		Shallow Concentrated Flow, Shallow Grass Channel Unpaved Kv= 16.1 fps
5.4	360	Total			

Subcatchment VZ-A: Verizon (Offsite)

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Page 33

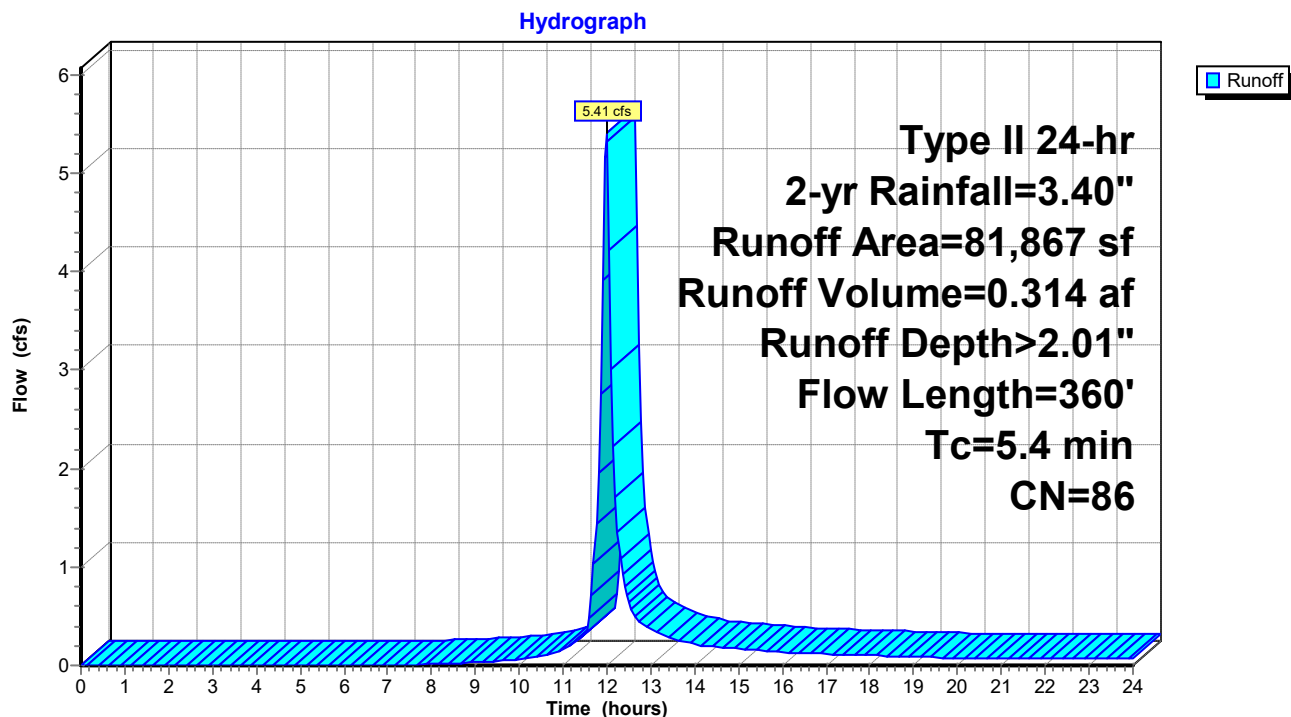
Summary for Subcatchment VZ-AA: Verizon (Offsite)

Runoff = 5.41 cfs @ 11.98 hrs, Volume= 0.314 af, Depth> 2.01"

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

	Area (sf)	CN	Description
*	56,382	98	Verizon Storage Yard
	25,485	61	>75% Grass cover, Good, HSG B
	81,867	86	Weighted Average
	25,485		31.13% Pervious Area
	56,382		68.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	80	0.0100	1.03		Sheet Flow, Pavement Smooth surfaces n= 0.011 P2= 3.40"
4.1	280	0.0050	1.14		Shallow Concentrated Flow, Shallow Grass Channel Unpaved Kv= 16.1 fps
5.4	360	Total			

Subcatchment VZ-AA: Verizon (Offsite)

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

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Page 34

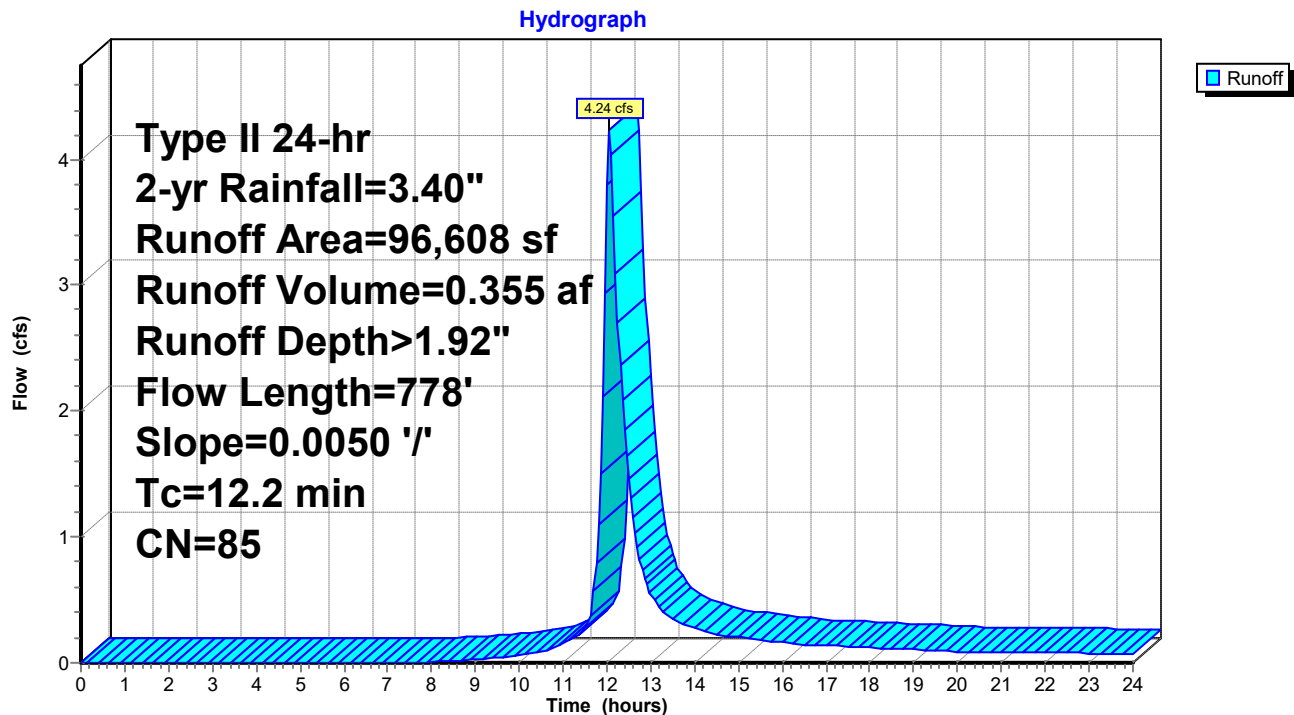
Summary for Subcatchment VZ-B: Verizon & US 50/Idlewild Intersection

Runoff = 4.24 cfs @ 12.06 hrs, Volume= 0.355 af, Depth> 1.92"

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

	Area (sf)	CN	Description
	35,081	61	>75% Grass cover, Good, HSG B
*	61,527	98	Roads & Verizon Yard
	96,608	85	Weighted Average
	35,081		36.31% Pervious Area
	61,527		63.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.2	778	0.0050	1.06		Shallow Concentrated Flow, Road Adjacent Swale Grassed Waterway Kv= 15.0 fps

Subcatchment VZ-B: Verizon & US 50/Idlewild Intersection

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Page 35

Summary for Subcatchment VZ-BB: Verizon & US 50/Idlewild Intersection

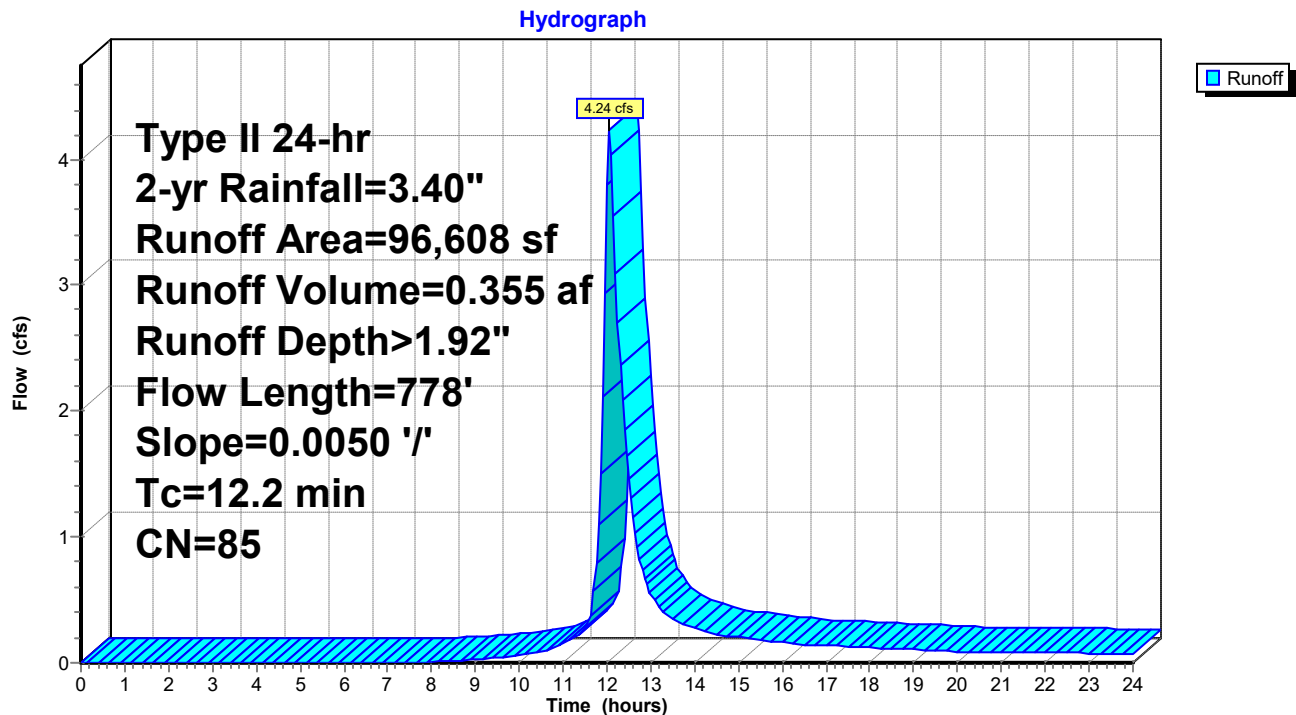
Runoff = 4.24 cfs @ 12.06 hrs, Volume= 0.355 af, Depth> 1.92"

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

	Area (sf)	CN	Description
	35,081	61	>75% Grass cover, Good, HSG B
*	61,527	98	Roads & Verizon Yard
	96,608	85	Weighted Average
	35,081		36.31% Pervious Area
	61,527		63.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.2	778	0.0050	1.06		Shallow Concentrated Flow, Road Adjacent Swale Grassed Waterway Kv= 15.0 fps

Subcatchment VZ-BB: Verizon & US 50/Idlewild Intersection



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Page 36

Summary for Reach 10R: Ex. Lotside Swale

Inflow Area = 6.053 ac, 60.33% Impervious, Inflow Depth > 1.74" for 2-yr event
Inflow = 6.53 cfs @ 11.99 hrs, Volume= 0.880 af
Outflow = 5.87 cfs @ 12.03 hrs, Volume= 0.876 af, Atten= 10%, Lag= 2.7 min

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

Max. Velocity= 1.65 fps, Min. Travel Time= 4.0 min

Avg. Velocity= 0.81 fps, Avg. Travel Time= 8.1 min

Peak Storage= 1,400 cf @ 12.03 hrs

Average Depth at Peak Storage= 1.44'

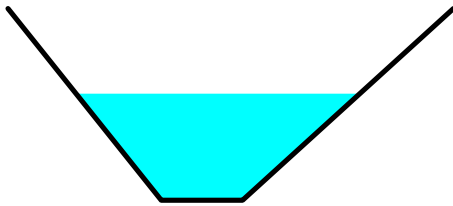
Bank-Full Depth= 2.59' Flow Area= 9.2 sf, Capacity= 20.81 cfs

1.10' x 2.59' deep channel, n= 0.022 Earth, clean & straight

Side Slope Z-value= 0.8 1.1 '/' Top Width= 6.02'

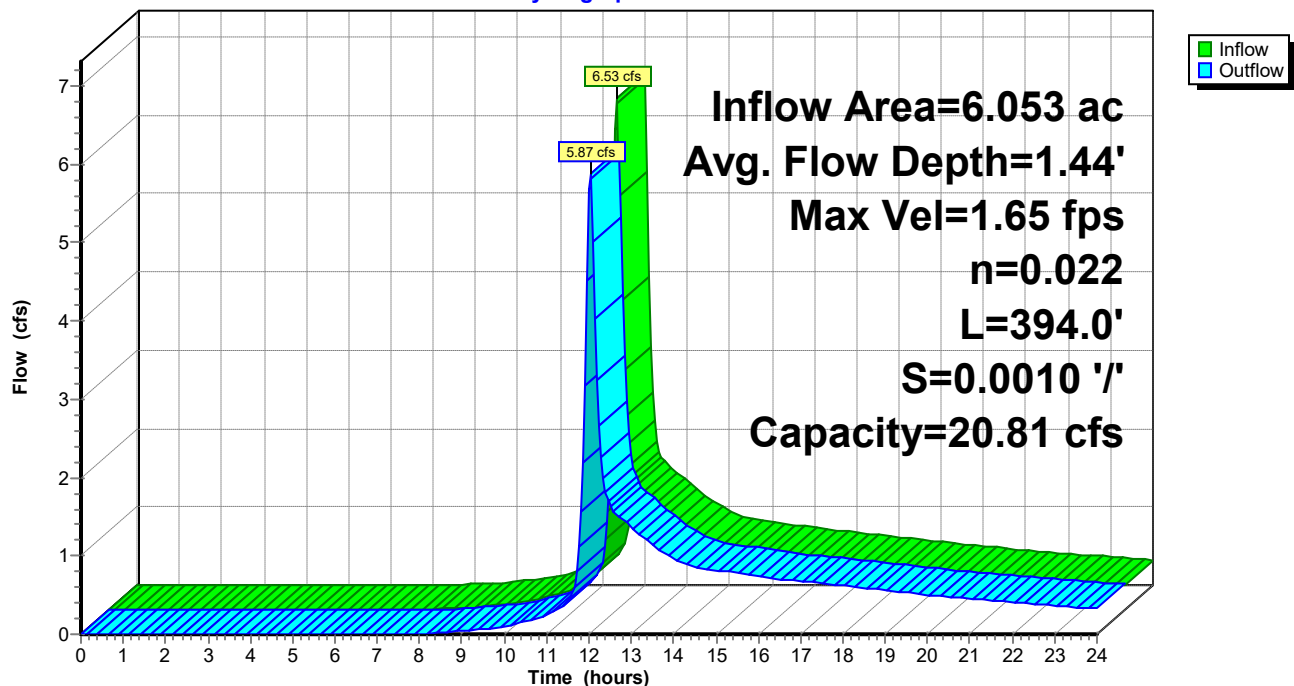
Length= 394.0' Slope= 0.0010 '/'

Inlet Invert= 42.00', Outlet Invert= 41.62'



Reach 10R: Ex. Lotside Swale

Hydrograph



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

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Page 37

Stage-Area-Storage for Reach 10R: Ex. Lotside Swale

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)	Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
42.00	0.0	0	44.55	9.0	3,539
42.05	0.1	23			
42.10	0.1	47			
42.15	0.2	73			
42.20	0.3	102			
42.25	0.3	132			
42.30	0.4	164			
42.35	0.5	198			
42.40	0.6	233			
42.45	0.7	271			
42.50	0.8	310			
42.55	0.9	352			
42.60	1.0	395			
42.65	1.1	440			
42.70	1.2	487			
42.75	1.4	536			
42.80	1.5	586			
42.85	1.6	639			
42.90	1.8	693			
42.95	1.9	750			
43.00	2.1	808			
43.05	2.2	868			
43.10	2.4	930			
43.15	2.5	993			
43.20	2.7	1,059			
43.25	2.9	1,127			
43.30	3.0	1,196			
43.35	3.2	1,267			
43.40	3.4	1,340			
43.45	3.6	1,415			
43.50	3.8	1,492			
43.55	4.0	1,571			
43.60	4.2	1,652			
43.65	4.4	1,734			
43.70	4.6	1,819			
43.75	4.8	1,905			
43.80	5.1	1,993			
43.85	5.3	2,083			
43.90	5.5	2,175			
43.95	5.8	2,268			
44.00	6.0	2,364			
44.05	6.2	2,461			
44.10	6.5	2,561			
44.15	6.8	2,662			
44.20	7.0	2,765			
44.25	7.3	2,870			
44.30	7.6	2,977			
44.35	7.8	3,086			
44.40	8.1	3,196			
44.45	8.4	3,309			
44.50	8.7	3,423			

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

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Page 38

Summary for Reach SP1: Ex Swale Adj US 50 (North)

Inflow Area = 3.048 ac, 58.99% Impervious, Inflow Depth > 1.79" for 2-yr event
Inflow = 5.59 cfs @ 12.03 hrs, Volume= 0.455 af
Outflow = 5.59 cfs @ 12.04 hrs, Volume= 0.455 af, Atten= 0%, Lag= 0.5 min

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

Max. Velocity= 3.48 fps, Min. Travel Time= 0.6 min

Avg. Velocity= 1.29 fps, Avg. Travel Time= 1.6 min

Peak Storage= 199 cf @ 12.04 hrs

Average Depth at Peak Storage= 0.68'

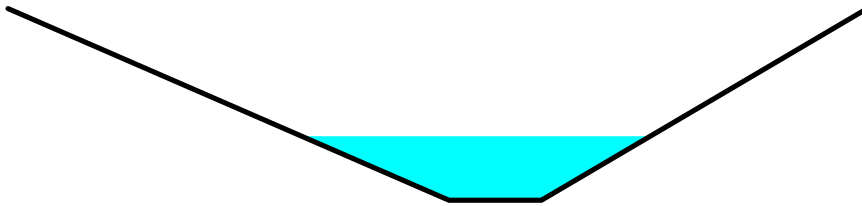
Bank-Full Depth= 2.05' Flow Area= 10.4 sf, Capacity= 68.26 cfs

0.99' x 2.05' deep channel, n= 0.022 Earth, clean & straight

Side Slope Z-value= 2.3 1.7'/' Top Width= 9.19'

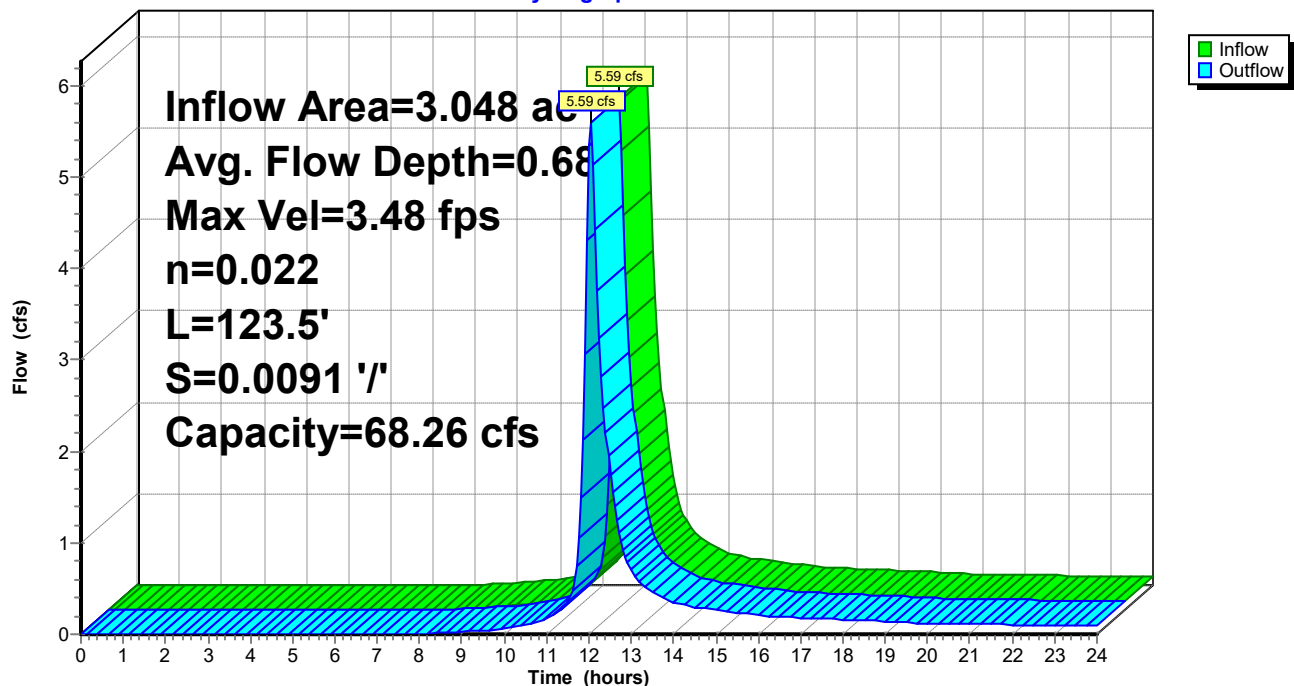
Length= 123.5' Slope= 0.0091'/'

Inlet Invert= 38.72', Outlet Invert= 37.60'



Reach SP1: Ex Swale Adj US 50 (North)

Hydrograph



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

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Page 39

Stage-Area-Storage for Reach SP1: Ex Swale Adj US 50 (North)

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
38.72	0.0	0
38.77	0.1	7
38.82	0.1	15
38.87	0.2	24
38.92	0.3	34
38.97	0.4	46
39.02	0.5	59
39.07	0.6	73
39.12	0.7	88
39.17	0.9	105
39.22	1.0	123
39.27	1.1	142
39.32	1.3	162
39.37	1.5	184
39.42	1.7	207
39.47	1.9	231
39.52	2.1	256
39.57	2.3	282
39.62	2.5	310
39.67	2.7	339
39.72	3.0	369
39.77	3.2	401
39.82	3.5	433
39.87	3.8	467
39.92	4.1	502
39.97	4.4	539
40.02	4.7	576
40.07	5.0	615
40.12	5.3	655
40.17	5.6	697
40.22	6.0	739
40.27	6.3	783
40.32	6.7	828
40.37	7.1	874
40.42	7.5	922
40.47	7.9	970
40.52	8.3	1,020
40.57	8.7	1,072
40.62	9.1	1,124
40.67	9.5	1,178
40.72	10.0	1,233
40.77	10.4	1,289

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

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Page 40

Summary for Reach SP2: Ex. Swale Adj US 50 (South)

Inflow Area = 2.218 ac, 63.69% Impervious, Inflow Depth > 1.92" for 2-yr event
Inflow = 4.24 cfs @ 12.06 hrs, Volume= 0.355 af
Outflow = 4.23 cfs @ 12.06 hrs, Volume= 0.355 af, Atten= 0%, Lag= 0.3 min

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

Max. Velocity= 3.48 fps, Min. Travel Time= 0.4 min

Avg. Velocity= 1.19 fps, Avg. Travel Time= 1.3 min

Peak Storage= 112 cf @ 12.06 hrs

Average Depth at Peak Storage= 0.49'

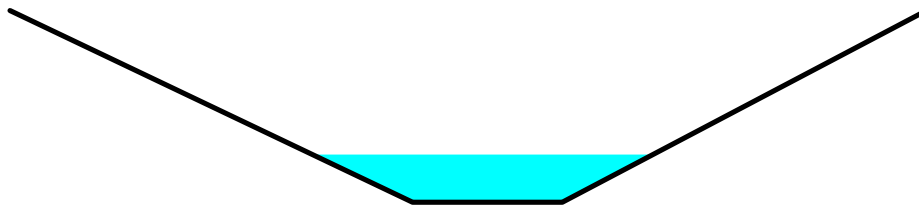
Bank-Full Depth= 1.96' Flow Area= 10.7 sf, Capacity= 80.11 cfs

1.53' x 1.96' deep channel, n= 0.022 Earth, clean & straight

Side Slope Z-value= 2.1 1.9 '/' Top Width= 9.37'

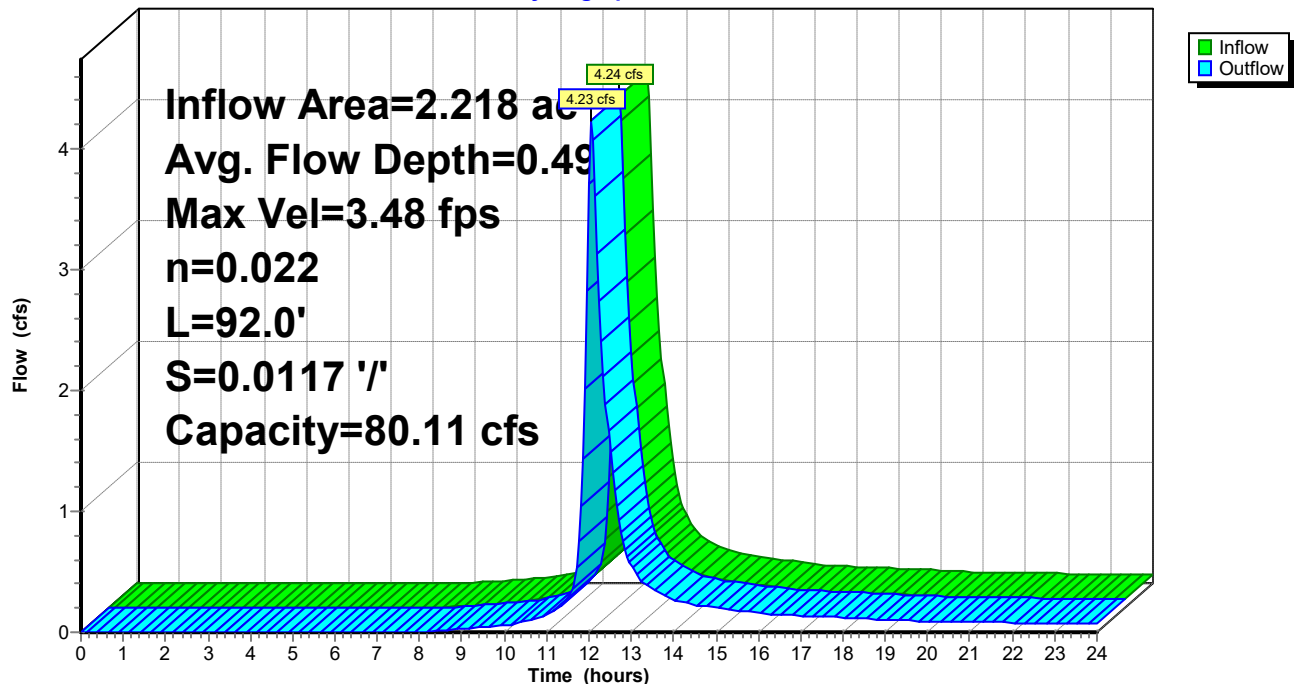
Length= 92.0' Slope= 0.0117 '/'

Inlet Invert= 41.58', Outlet Invert= 40.50'



Reach SP2: Ex. Swale Adj US 50 (South)

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

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Page 41

Stage-Area-Storage for Reach SP2: Ex. Swale Adj US 50 (South)

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)	Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
41.58	0.0	0	42.60	3.6	335
41.60	0.0	3	42.62	3.8	345
41.62	0.1	6	42.64	3.9	356
41.64	0.1	9	42.66	4.0	367
41.66	0.1	12	42.68	4.1	377
41.68	0.2	16	42.70	4.2	388
41.70	0.2	20	42.72	4.3	400
41.72	0.3	23	42.74	4.5	411
41.74	0.3	27	42.76	4.6	422
41.76	0.3	31	42.78	4.7	434
41.78	0.4	36	42.80	4.8	446
41.80	0.4	40	42.82	5.0	457
41.82	0.5	44	42.84	5.1	469
41.84	0.5	49	42.86	5.2	482
41.86	0.6	54	42.88	5.4	494
41.88	0.6	59	42.90	5.5	506
41.90	0.7	64	42.92	5.6	519
41.92	0.8	69	42.94	5.8	532
41.94	0.8	75	42.96	5.9	545
41.96	0.9	80	42.98	6.1	558
41.98	0.9	86	43.00	6.2	571
42.00	1.0	92	43.02	6.4	584
42.02	1.1	98	43.04	6.5	598
42.04	1.1	104	43.06	6.6	611
42.06	1.2	110	43.08	6.8	625
42.08	1.3	116	43.10	6.9	639
42.10	1.3	123	43.12	7.1	653
42.12	1.4	130	43.14	7.3	667
42.14	1.5	137	43.16	7.4	682
42.16	1.6	144	43.18	7.6	696
42.18	1.6	151	43.20	7.7	711
42.20	1.7	158	43.22	7.9	726
42.22	1.8	165	43.24	8.1	741
42.24	1.9	173	43.26	8.2	756
42.26	2.0	181	43.28	8.4	771
42.28	2.1	189	43.30	8.5	786
42.30	2.1	197	43.32	8.7	802
42.32	2.2	205	43.34	8.9	818
42.34	2.3	213	43.36	9.1	834
42.36	2.4	222	43.38	9.2	850
42.38	2.5	230	43.40	9.4	866
42.40	2.6	239	43.42	9.6	882
42.42	2.7	248	43.44	9.8	898
42.44	2.8	257	43.46	9.9	915
42.46	2.9	266	43.48	10.1	932
42.48	3.0	276	43.50	10.3	949
42.50	3.1	285	43.52	10.5	966
42.52	3.2	295	43.54	10.7	983
42.54	3.3	305			
42.56	3.4	315			
42.58	3.5	325			

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

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Page 42

Summary for Reach SW1: Ex Swale Adj US 50 (North)

Inflow Area = 10.662 ac, 56.13% Impervious, Inflow Depth > 1.65" for 2-yr event
Inflow = 10.59 cfs @ 12.06 hrs, Volume= 1.470 af
Outflow = 10.58 cfs @ 12.06 hrs, Volume= 1.470 af, Atten= 0%, Lag= 0.3 min

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

Max. Velocity= 2.88 fps, Min. Travel Time= 0.5 min

Avg. Velocity= 1.37 fps, Avg. Travel Time= 1.0 min

Peak Storage= 288 cf @ 12.06 hrs

Average Depth at Peak Storage= 1.13'

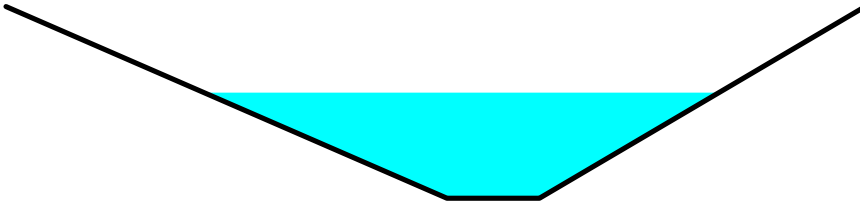
Bank-Full Depth= 2.05' Flow Area= 10.4 sf, Capacity= 42.81 cfs

0.99' x 2.05' deep channel, n= 0.022 Earth, clean & straight

Side Slope Z-value= 2.3 1.7 '/' Top Width= 9.19'

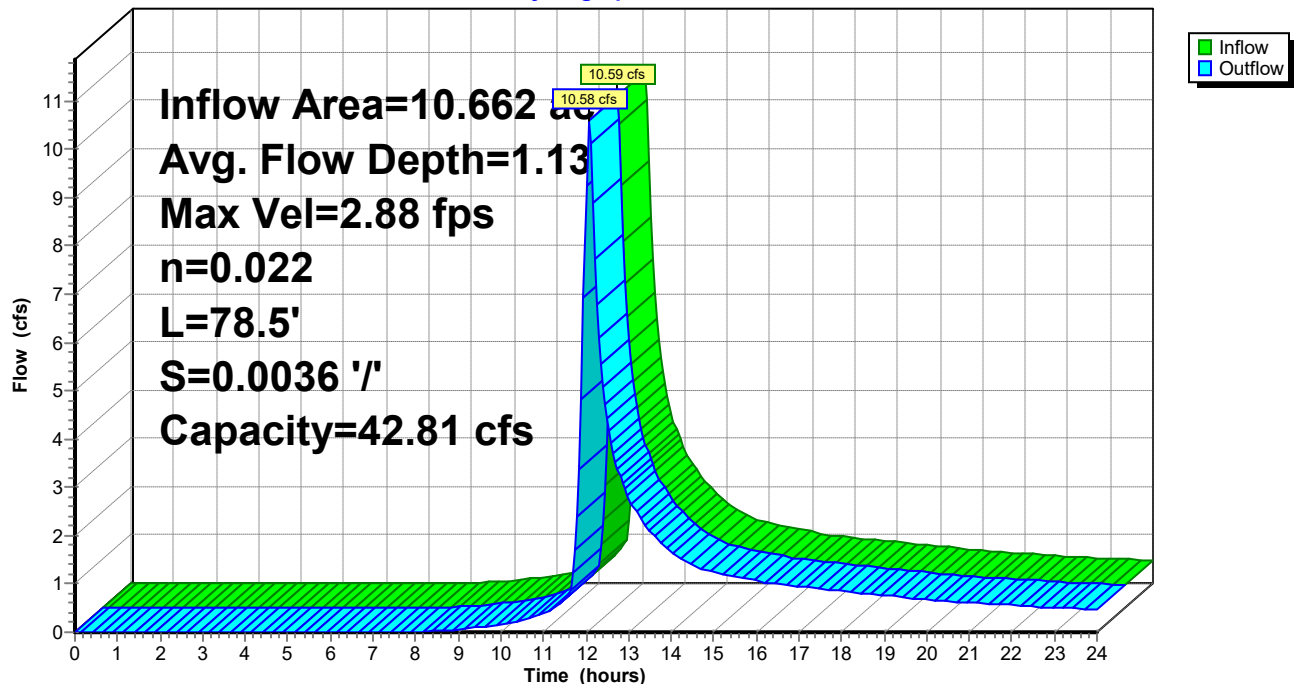
Length= 78.5' Slope= 0.0036 '/'

Inlet Invert= 38.72', Outlet Invert= 38.44'



Reach SW1: Ex Swale Adj US 50 (North)

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Page 43

Stage-Area-Storage for Reach SW1: Ex Swale Adj US 50 (North)

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
38.72	0.0	0
38.77	0.1	4
38.82	0.1	9
38.87	0.2	15
38.92	0.3	22
38.97	0.4	29
39.02	0.5	37
39.07	0.6	46
39.12	0.7	56
39.17	0.9	67
39.22	1.0	78
39.27	1.1	90
39.32	1.3	103
39.37	1.5	117
39.42	1.7	131
39.47	1.9	147
39.52	2.1	163
39.57	2.3	180
39.62	2.5	197
39.67	2.7	216
39.72	3.0	235
39.77	3.2	255
39.82	3.5	275
39.87	3.8	297
39.92	4.1	319
39.97	4.4	342
40.02	4.7	366
40.07	5.0	391
40.12	5.3	417
40.17	5.6	443
40.22	6.0	470
40.27	6.3	498
40.32	6.7	526
40.37	7.1	556
40.42	7.5	586
40.47	7.9	617
40.52	8.3	649
40.57	8.7	681
40.62	9.1	714
40.67	9.5	749
40.72	10.0	783
40.77	10.4	819

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Page 44

Summary for Reach SW2: Ex. Swale Adj US 50 (South)

Inflow Area = 8.271 ac, 61.23% Impervious, Inflow Depth > 1.79" for 2-yr event
Inflow = 10.05 cfs @ 12.04 hrs, Volume= 1.231 af
Outflow = 10.05 cfs @ 12.05 hrs, Volume= 1.230 af, Atten= 0%, Lag= 0.6 min

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

Max. Velocity= 4.38 fps, Min. Travel Time= 0.7 min

Avg. Velocity= 1.89 fps, Avg. Travel Time= 1.7 min

Peak Storage= 444 cf @ 12.05 hrs

Average Depth at Peak Storage= 0.75'

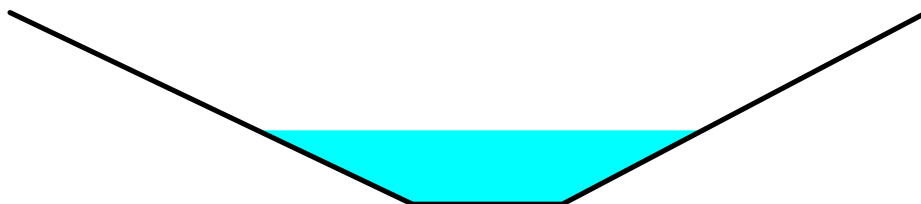
Bank-Full Depth= 1.96' Flow Area= 10.7 sf, Capacity= 79.53 cfs

1.53' x 1.96' deep channel, n= 0.022 Earth, clean & straight

Side Slope Z-value= 2.1 1.9 '/' Top Width= 9.37'

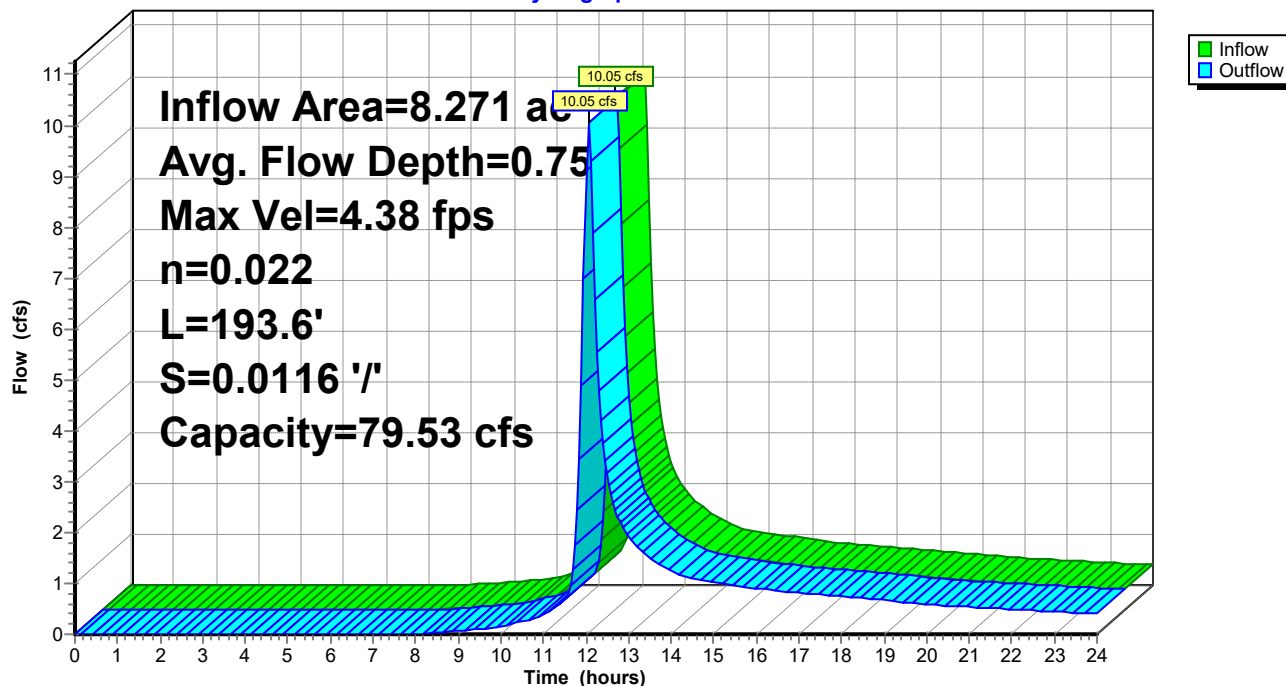
Length= 193.6' Slope= 0.0116 '/'

Inlet Invert= 41.58', Outlet Invert= 39.34'



Reach SW2: Ex. Swale Adj US 50 (South)

Hydrograph



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Page 45

Stage-Area-Storage for Reach SW2: Ex. Swale Adj US 50 (South)

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)	Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
41.58	0.0	0	42.60	3.6	705
41.60	0.0	6	42.62	3.8	727
41.62	0.1	12	42.64	3.9	749
41.64	0.1	19	42.66	4.0	772
41.66	0.1	26	42.68	4.1	794
41.68	0.2	34	42.70	4.2	817
41.70	0.2	41	42.72	4.3	841
41.72	0.3	49	42.74	4.5	865
41.74	0.3	57	42.76	4.6	889
41.76	0.3	66	42.78	4.7	913
41.78	0.4	75	42.80	4.8	938
41.80	0.4	84	42.82	5.0	963
41.82	0.5	93	42.84	5.1	988
41.84	0.5	103	42.86	5.2	1,014
41.86	0.6	113	42.88	5.4	1,039
41.88	0.6	124	42.90	5.5	1,066
41.90	0.7	134	42.92	5.6	1,092
41.92	0.8	146	42.94	5.8	1,119
41.94	0.8	157	42.96	5.9	1,146
41.96	0.9	169	42.98	6.1	1,174
41.98	0.9	180	43.00	6.2	1,201
42.00	1.0	193	43.02	6.4	1,229
42.02	1.1	205	43.04	6.5	1,258
42.04	1.1	218	43.06	6.6	1,287
42.06	1.2	231	43.08	6.8	1,316
42.08	1.3	245	43.10	6.9	1,345
42.10	1.3	259	43.12	7.1	1,374
42.12	1.4	273	43.14	7.3	1,404
42.14	1.5	287	43.16	7.4	1,435
42.16	1.6	302	43.18	7.6	1,465
42.18	1.6	317	43.20	7.7	1,496
42.20	1.7	333	43.22	7.9	1,527
42.22	1.8	348	43.24	8.1	1,559
42.24	1.9	364	43.26	8.2	1,590
42.26	2.0	380	43.28	8.4	1,623
42.28	2.1	397	43.30	8.5	1,655
42.30	2.1	414	43.32	8.7	1,688
42.32	2.2	431	43.34	8.9	1,721
42.34	2.3	449	43.36	9.1	1,754
42.36	2.4	467	43.38	9.2	1,788
42.38	2.5	485	43.40	9.4	1,822
42.40	2.6	503	43.42	9.6	1,856
42.42	2.7	522	43.44	9.8	1,891
42.44	2.8	541	43.46	9.9	1,925
42.46	2.9	561	43.48	10.1	1,961
42.48	3.0	580	43.50	10.3	1,996
42.50	3.1	600	43.52	10.5	2,032
42.52	3.2	621	43.54	10.7	2,068
42.54	3.3	641			
42.56	3.4	662			
42.58	3.5	683			

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Page 46

Summary for Pond 1P: SDI-1

Inflow Area = 1.063 ac, 91.91% Impervious, Inflow Depth > 2.84" for 2-yr event
Inflow = 5.14 cfs @ 11.91 hrs, Volume= 0.251 af
Outflow = 5.14 cfs @ 11.91 hrs, Volume= 0.251 af, Atten= 0%, Lag= 0.0 min
Primary = 5.14 cfs @ 11.91 hrs, Volume= 0.251 af

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

Peak Elev= 41.86' @ 11.91 hrs

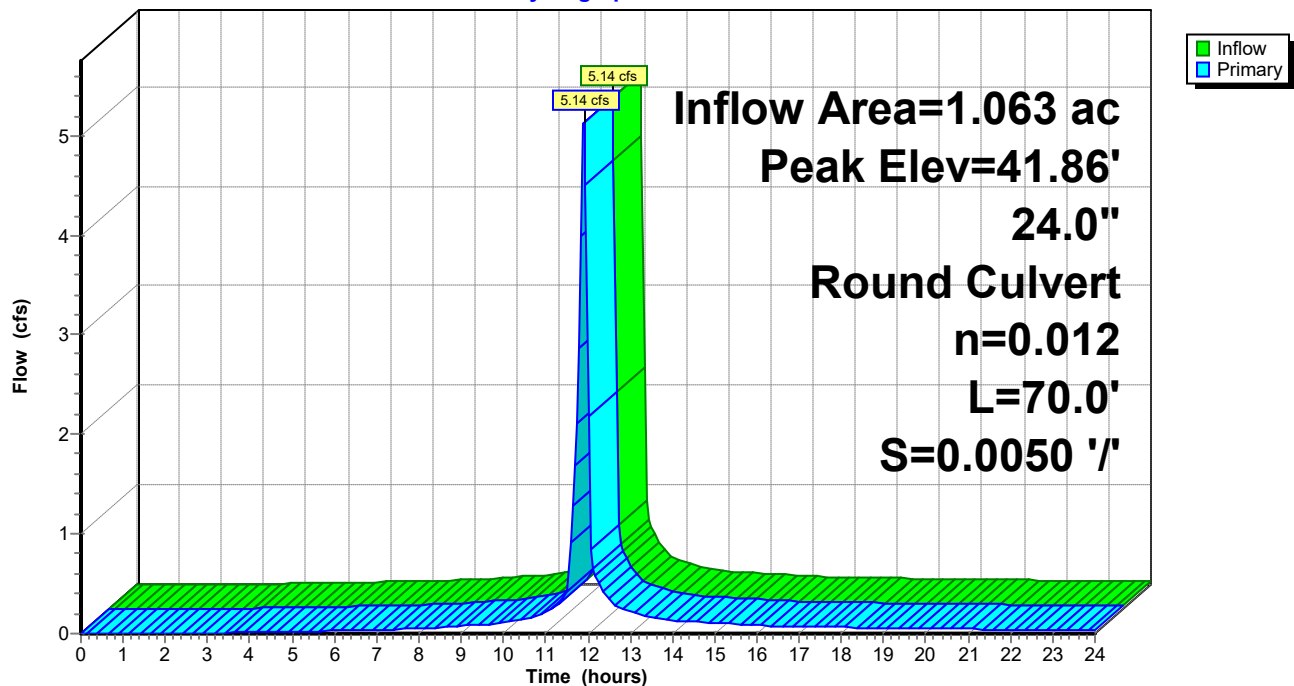
Flood Elev= 45.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	40.75'	24.0" Round 24" HDPE L= 70.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 40.75' / 40.40' S= 0.0050 '/ Cc= 0.900 n= 0.012, Flow Area= 3.14 sf

Primary OutFlow Max=5.02 cfs @ 11.91 hrs HW=41.85' TW=40.50' (Dynamic Tailwater)
↑ **1=24" HDPE** (Barrel Controls 5.02 cfs @ 4.11 fps)

Pond 1P: SDI-1

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Page 47

Stage-Area-Storage for Pond 1P: SDI-1

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
40.75	0	42.79	0	44.83	0
40.79	0	42.83	0	44.87	0
40.83	0	42.87	0	44.91	0
40.87	0	42.91	0	44.95	0
40.91	0	42.95	0	44.99	0
40.95	0	42.99	0	45.03	0
40.99	0	43.03	0	45.07	0
41.03	0	43.07	0	45.11	0
41.07	0	43.11	0	45.15	0
41.11	0	43.15	0	45.19	0
41.15	0	43.19	0	45.23	0
41.19	0	43.23	0	45.27	0
41.23	0	43.27	0	45.31	0
41.27	0	43.31	0	45.35	0
41.31	0	43.35	0	45.39	0
41.35	0	43.39	0	45.43	0
41.39	0	43.43	0	45.47	0
41.43	0	43.47	0	45.51	0
41.47	0	43.51	0	45.55	0
41.51	0	43.55	0	45.59	0
41.55	0	43.59	0	45.63	0
41.59	0	43.63	0	45.67	0
41.63	0	43.67	0	45.71	0
41.67	0	43.71	0	45.75	0
41.71	0	43.75	0	45.79	0
41.75	0	43.79	0	45.83	0
41.79	0	43.83	0	45.87	0
41.83	0	43.87	0		
41.87	0	43.91	0		
41.91	0	43.95	0		
41.95	0	43.99	0		
41.99	0	44.03	0		
42.03	0	44.07	0		
42.07	0	44.11	0		
42.11	0	44.15	0		
42.15	0	44.19	0		
42.19	0	44.23	0		
42.23	0	44.27	0		
42.27	0	44.31	0		
42.31	0	44.35	0		
42.35	0	44.39	0		
42.39	0	44.43	0		
42.43	0	44.47	0		
42.47	0	44.51	0		
42.51	0	44.55	0		
42.55	0	44.59	0		
42.59	0	44.63	0		
42.63	0	44.67	0		
42.67	0	44.71	0		
42.71	0	44.75	0		
42.75	0	44.79	0		

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Page 48

Summary for Pond 2P: RL-1

Inflow Area = 0.137 ac, 100.00% Impervious, Inflow Depth > 3.17" for 2-yr event
Inflow = 0.71 cfs @ 11.90 hrs, Volume= 0.036 af
Outflow = 0.71 cfs @ 11.90 hrs, Volume= 0.036 af, Atten= 0%, Lag= 0.0 min
Primary = 0.71 cfs @ 11.90 hrs, Volume= 0.036 af

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

Peak Elev= 41.57' @ 11.90 hrs

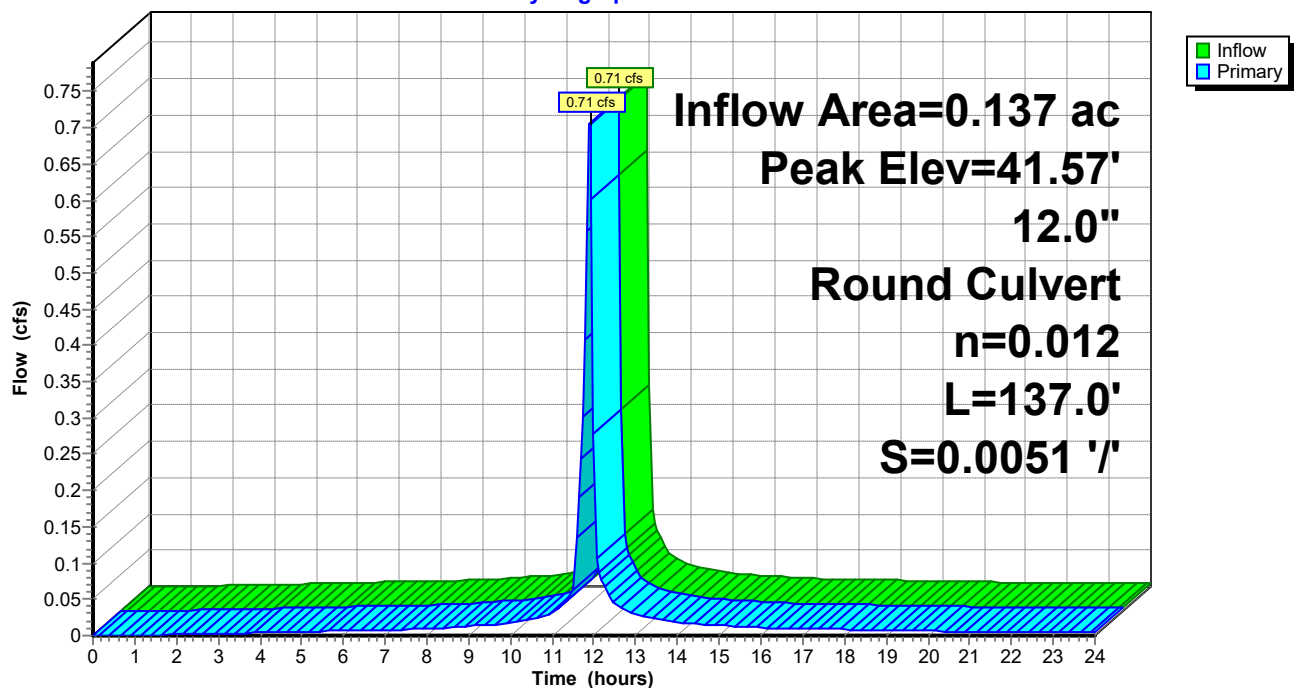
Flood Elev= 46.35'

Device	Routing	Invert	Outlet Devices
#1	Primary	41.10'	12.0" Round 12" HDPE L= 137.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 41.10' / 40.40' S= 0.0051 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.69 cfs @ 11.90 hrs HW=41.57' TW=40.49' (Dynamic Tailwater)
↑ **1=12" HDPE** (Barrel Controls 0.69 cfs @ 2.82 fps)

Pond 2P: RL-1

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Page 49

Stage-Area-Storage for Pond 2P: RL-1

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
41.10	0	43.14	0	45.18	0
41.14	0	43.18	0	45.22	0
41.18	0	43.22	0	45.26	0
41.22	0	43.26	0	45.30	0
41.26	0	43.30	0	45.34	0
41.30	0	43.34	0	45.38	0
41.34	0	43.38	0	45.42	0
41.38	0	43.42	0	45.46	0
41.42	0	43.46	0	45.50	0
41.46	0	43.50	0	45.54	0
41.50	0	43.54	0	45.58	0
41.54	0	43.58	0	45.62	0
41.58	0	43.62	0	45.66	0
41.62	0	43.66	0	45.70	0
41.66	0	43.70	0	45.74	0
41.70	0	43.74	0	45.78	0
41.74	0	43.78	0	45.82	0
41.78	0	43.82	0	45.86	0
41.82	0	43.86	0	45.90	0
41.86	0	43.90	0	45.94	0
41.90	0	43.94	0	45.98	0
41.94	0	43.98	0	46.02	0
41.98	0	44.02	0	46.06	0
42.02	0	44.06	0	46.10	0
42.06	0	44.10	0	46.14	0
42.10	0	44.14	0	46.18	0
42.14	0	44.18	0	46.22	0
42.18	0	44.22	0	46.26	0
42.22	0	44.26	0	46.30	0
42.26	0	44.30	0	46.34	0
42.30	0	44.34	0		
42.34	0	44.38	0		
42.38	0	44.42	0		
42.42	0	44.46	0		
42.46	0	44.50	0		
42.50	0	44.54	0		
42.54	0	44.58	0		
42.58	0	44.62	0		
42.62	0	44.66	0		
42.66	0	44.70	0		
42.70	0	44.74	0		
42.74	0	44.78	0		
42.78	0	44.82	0		
42.82	0	44.86	0		
42.86	0	44.90	0		
42.90	0	44.94	0		
42.94	0	44.98	0		
42.98	0	45.02	0		
43.02	0	45.06	0		
43.06	0	45.10	0		
43.10	0	45.14	0		

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Page 50

Summary for Pond 3P: RL-2

Inflow Area = 0.069 ac, 100.00% Impervious, Inflow Depth > 3.17" for 2-yr event
Inflow = 0.35 cfs @ 11.90 hrs, Volume= 0.018 af
Outflow = 0.35 cfs @ 11.90 hrs, Volume= 0.018 af, Atten= 0%, Lag= 0.0 min
Primary = 0.35 cfs @ 11.90 hrs, Volume= 0.018 af

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

Peak Elev= 43.09' @ 11.90 hrs

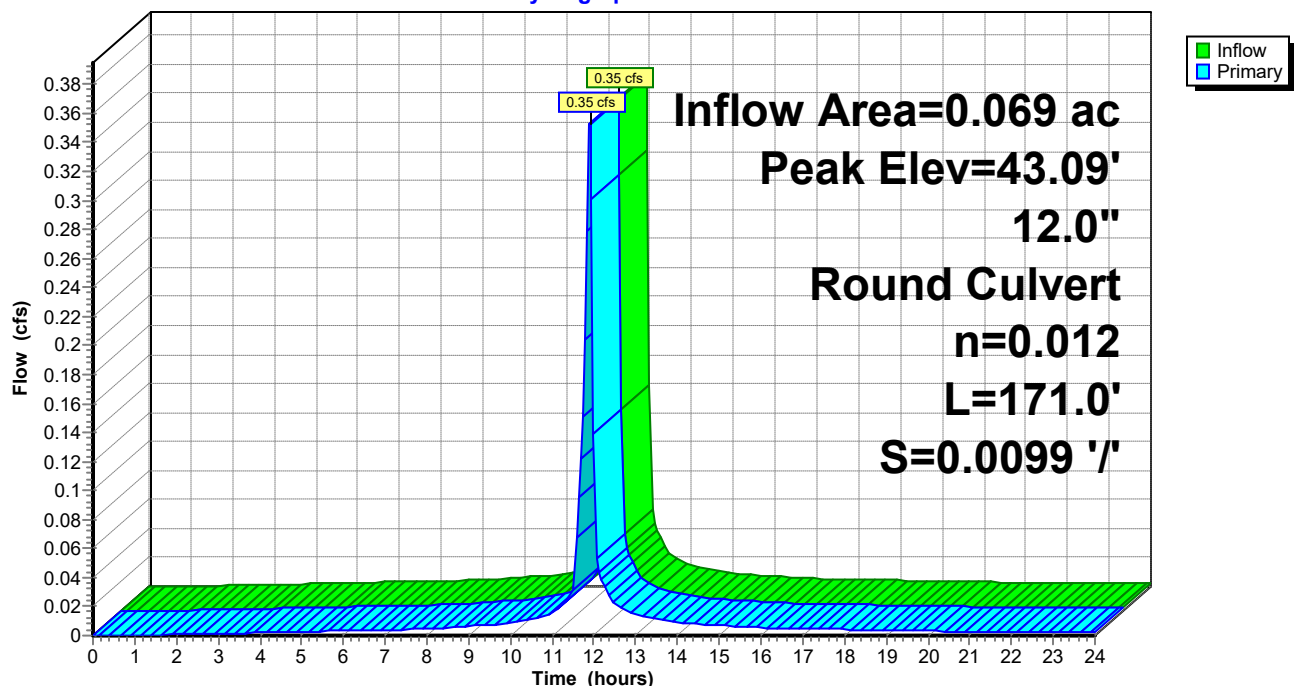
Flood Elev= 46.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	42.80'	12.0" Round 12" HPDE L= 171.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 42.80' / 41.10' S= 0.0099 '/ Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.35 cfs @ 11.90 hrs HW=43.09' TW=41.57' (Dynamic Tailwater)
↑ **1=12" HPDE** (Inlet Controls 0.35 cfs @ 1.83 fps)

Pond 3P: RL-2

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Page 51

Stage-Area-Storage for Pond 3P: RL-2

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
42.80	0	45.35	0
42.85	0	45.40	0
42.90	0	45.45	0
42.95	0	45.50	0
43.00	0	45.55	0
43.05	0	45.60	0
43.10	0	45.65	0
43.15	0	45.70	0
43.20	0	45.75	0
43.25	0	45.80	0
43.30	0	45.85	0
43.35	0	45.90	0
43.40	0	45.95	0
43.45	0	46.00	0
43.50	0	46.05	0
43.55	0	46.10	0
43.60	0	46.15	0
43.65	0	46.20	0
43.70	0	46.25	0
43.75	0	46.30	0
43.80	0	46.35	0
43.85	0	46.40	0
43.90	0	46.45	0
43.95	0	46.50	0
44.00	0	46.55	0
44.05	0	46.60	0
44.10	0	46.65	0
44.15	0	46.70	0
44.20	0	46.75	0
44.25	0	46.80	0
44.30	0	46.85	0
44.35	0	46.90	0
44.40	0		
44.45	0		
44.50	0		
44.55	0		
44.60	0		
44.65	0		
44.70	0		
44.75	0		
44.80	0		
44.85	0		
44.90	0		
44.95	0		
45.00	0		
45.05	0		
45.10	0		
45.15	0		
45.20	0		
45.25	0		
45.30	0		

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

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Page 52

Summary for Pond 4P: RL-3

Inflow Area = 0.072 ac, 100.00% Impervious, Inflow Depth > 3.17" for 2-yr event
Inflow = 0.37 cfs @ 11.90 hrs, Volume= 0.019 af
Outflow = 0.37 cfs @ 11.90 hrs, Volume= 0.019 af, Atten= 0%, Lag= 0.0 min
Primary = 0.37 cfs @ 11.90 hrs, Volume= 0.019 af

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

Peak Elev= 42.02' @ 11.94 hrs

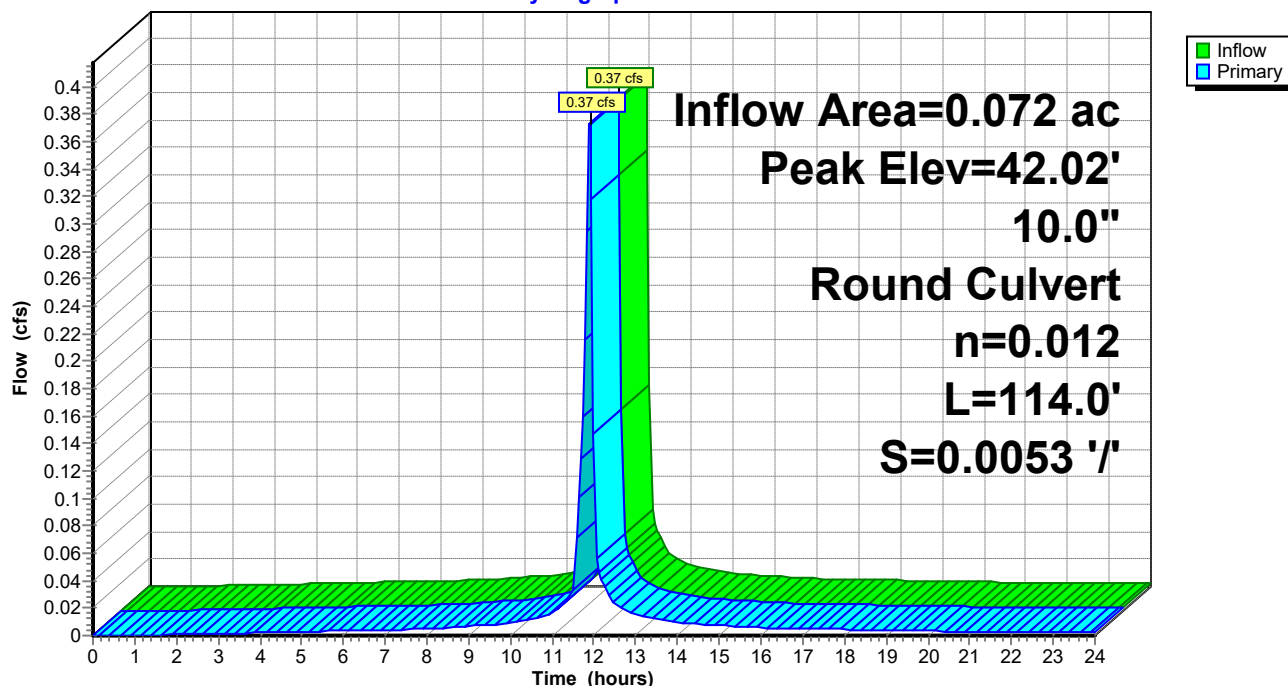
Flood Elev= 47.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	41.50'	10.0" Round 10" HDPE L= 114.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 41.50' / 40.90' S= 0.0053 '/ Cc= 0.900 n= 0.012, Flow Area= 0.55 sf

Primary OutFlow Max=0.26 cfs @ 11.90 hrs HW=41.98' TW=41.86' (Dynamic Tailwater)
↑ **1=10" HDPE** (Outlet Controls 0.26 cfs @ 1.15 fps)

Pond 4P: RL-3

Hydrograph



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

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Page 53

Stage-Area-Storage for Pond 4P: RL-3

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
41.50	0	43.54	0	45.58	0
41.54	0	43.58	0	45.62	0
41.58	0	43.62	0	45.66	0
41.62	0	43.66	0	45.70	0
41.66	0	43.70	0	45.74	0
41.70	0	43.74	0	45.78	0
41.74	0	43.78	0	45.82	0
41.78	0	43.82	0	45.86	0
41.82	0	43.86	0	45.90	0
41.86	0	43.90	0	45.94	0
41.90	0	43.94	0	45.98	0
41.94	0	43.98	0	46.02	0
41.98	0	44.02	0	46.06	0
42.02	0	44.06	0	46.10	0
42.06	0	44.10	0	46.14	0
42.10	0	44.14	0	46.18	0
42.14	0	44.18	0	46.22	0
42.18	0	44.22	0	46.26	0
42.22	0	44.26	0	46.30	0
42.26	0	44.30	0	46.34	0
42.30	0	44.34	0	46.38	0
42.34	0	44.38	0	46.42	0
42.38	0	44.42	0	46.46	0
42.42	0	44.46	0	46.50	0
42.46	0	44.50	0	46.54	0
42.50	0	44.54	0	46.58	0
42.54	0	44.58	0	46.62	0
42.58	0	44.62	0	46.66	0
42.62	0	44.66	0	46.70	0
42.66	0	44.70	0	46.74	0
42.70	0	44.74	0	46.78	0
42.74	0	44.78	0	46.82	0
42.78	0	44.82	0	46.86	0
42.82	0	44.86	0	46.90	0
42.86	0	44.90	0	46.94	0
42.90	0	44.94	0	46.98	0
42.94	0	44.98	0	47.02	0
42.98	0	45.02	0	47.06	0
43.02	0	45.06	0	47.10	0
43.06	0	45.10	0	47.14	0
43.10	0	45.14	0	47.18	0
43.14	0	45.18	0	47.22	0
43.18	0	45.22	0		
43.22	0	45.26	0		
43.26	0	45.30	0		
43.30	0	45.34	0		
43.34	0	45.38	0		
43.38	0	45.42	0		
43.42	0	45.46	0		
43.46	0	45.50	0		
43.50	0	45.54	0		

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

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Page 54

Summary for Pond 5P: SDI-5

Inflow Area = 0.240 ac, 94.66% Impervious, Inflow Depth > 2.94" for 2-yr event
Inflow = 1.17 cfs @ 11.91 hrs, Volume= 0.059 af
Outflow = 1.17 cfs @ 11.91 hrs, Volume= 0.059 af, Atten= 0%, Lag= 0.0 min
Primary = 1.17 cfs @ 11.91 hrs, Volume= 0.059 af

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

Peak Elev= 42.16' @ 11.93 hrs

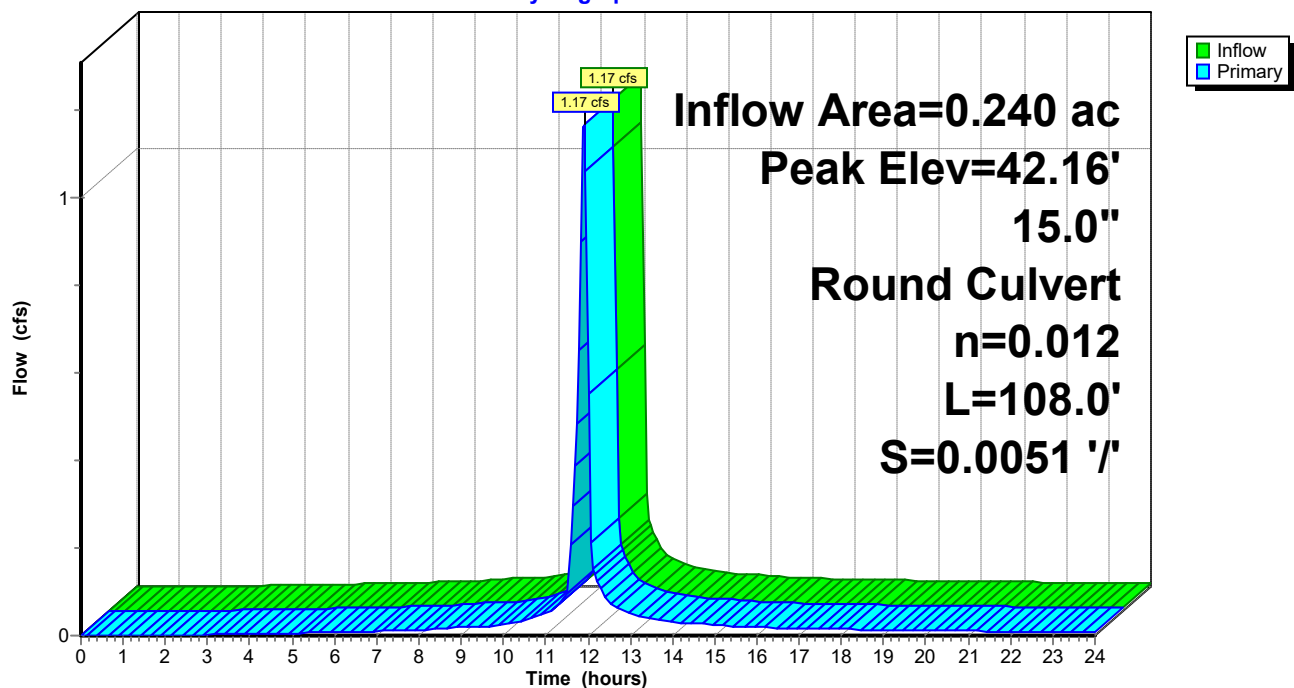
Flood Elev= 46.75'

Device	Routing	Invert	Outlet Devices
#1	Primary	41.45'	15.0" Round 15" HDPE L= 108.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 41.45' / 40.90' S= 0.0051 '/ Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=0.99 cfs @ 11.91 hrs HW=42.13' TW=41.84' (Dynamic Tailwater)
1=15" HDPE (Outlet Controls 0.99 cfs @ 2.11 fps)

Pond 5P: SDI-5

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Page 55

Stage-Area-Storage for Pond 5P: SDI-5

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
41.45	0	43.49	0	45.53	0
41.49	0	43.53	0	45.57	0
41.53	0	43.57	0	45.61	0
41.57	0	43.61	0	45.65	0
41.61	0	43.65	0	45.69	0
41.65	0	43.69	0	45.73	0
41.69	0	43.73	0	45.77	0
41.73	0	43.77	0	45.81	0
41.77	0	43.81	0	45.85	0
41.81	0	43.85	0	45.89	0
41.85	0	43.89	0	45.93	0
41.89	0	43.93	0	45.97	0
41.93	0	43.97	0	46.01	0
41.97	0	44.01	0	46.05	0
42.01	0	44.05	0	46.09	0
42.05	0	44.09	0	46.13	0
42.09	0	44.13	0	46.17	0
42.13	0	44.17	0	46.21	0
42.17	0	44.21	0	46.25	0
42.21	0	44.25	0	46.29	0
42.25	0	44.29	0	46.33	0
42.29	0	44.33	0	46.37	0
42.33	0	44.37	0	46.41	0
42.37	0	44.41	0	46.45	0
42.41	0	44.45	0	46.49	0
42.45	0	44.49	0	46.53	0
42.49	0	44.53	0	46.57	0
42.53	0	44.57	0	46.61	0
42.57	0	44.61	0	46.65	0
42.61	0	44.65	0	46.69	0
42.65	0	44.69	0	46.73	0
42.69	0	44.73	0		
42.73	0	44.77	0		
42.77	0	44.81	0		
42.81	0	44.85	0		
42.85	0	44.89	0		
42.89	0	44.93	0		
42.93	0	44.97	0		
42.97	0	45.01	0		
43.01	0	45.05	0		
43.05	0	45.09	0		
43.09	0	45.13	0		
43.13	0	45.17	0		
43.17	0	45.21	0		
43.21	0	45.25	0		
43.25	0	45.29	0		
43.29	0	45.33	0		
43.33	0	45.37	0		
43.37	0	45.41	0		
43.41	0	45.45	0		
43.45	0	45.49	0		

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Page 56

Summary for Pond 6P: RL-4

Inflow Area = 0.072 ac, 100.00% Impervious, Inflow Depth > 3.17" for 2-yr event
Inflow = 0.37 cfs @ 11.90 hrs, Volume= 0.019 af
Outflow = 0.37 cfs @ 11.90 hrs, Volume= 0.019 af, Atten= 0%, Lag= 0.0 min
Primary = 0.37 cfs @ 11.90 hrs, Volume= 0.019 af

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

Peak Elev= 43.09' @ 11.90 hrs

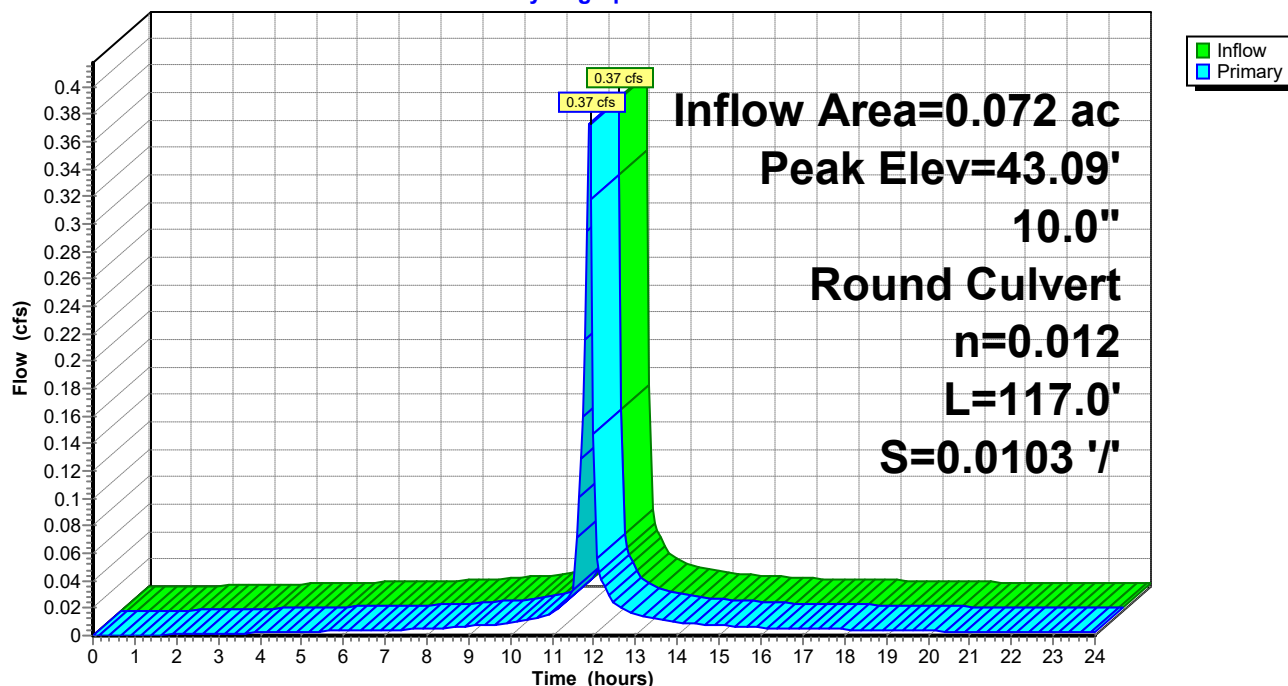
Flood Elev= 47.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	42.75'	10.0" Round 10" HDPE L= 117.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 42.75' / 41.55' S= 0.0103 '/' Cc= 0.900 n= 0.012, Flow Area= 0.55 sf

Primary OutFlow Max=0.37 cfs @ 11.90 hrs HW=43.09' TW=42.12' (Dynamic Tailwater)
↑ **1=10" HDPE** (Inlet Controls 0.37 cfs @ 1.75 fps)

Pond 6P: RL-4

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Page 57

Stage-Area-Storage for Pond 6P: RL-4

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
42.75	0	45.30	0
42.80	0	45.35	0
42.85	0	45.40	0
42.90	0	45.45	0
42.95	0	45.50	0
43.00	0	45.55	0
43.05	0	45.60	0
43.10	0	45.65	0
43.15	0	45.70	0
43.20	0	45.75	0
43.25	0	45.80	0
43.30	0	45.85	0
43.35	0	45.90	0
43.40	0	45.95	0
43.45	0	46.00	0
43.50	0	46.05	0
43.55	0	46.10	0
43.60	0	46.15	0
43.65	0	46.20	0
43.70	0	46.25	0
43.75	0	46.30	0
43.80	0	46.35	0
43.85	0	46.40	0
43.90	0	46.45	0
43.95	0	46.50	0
44.00	0	46.55	0
44.05	0	46.60	0
44.10	0	46.65	0
44.15	0	46.70	0
44.20	0	46.75	0
44.25	0	46.80	0
44.30	0	46.85	0
44.35	0	46.90	0
44.40	0	46.95	0
44.45	0	47.00	0
44.50	0	47.05	0
44.55	0	47.10	0
44.60	0	47.15	0
44.65	0	47.20	0
44.70	0		
44.75	0		
44.80	0		
44.85	0		
44.90	0		
44.95	0		
45.00	0		
45.05	0		
45.10	0		
45.15	0		
45.20	0		
45.25	0		

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Page 58

Summary for Pond 7P: SDI-6

Inflow Area = 0.270 ac, 85.31% Impervious, Inflow Depth > 2.64" for 2-yr event
Inflow = 1.29 cfs @ 11.90 hrs, Volume= 0.059 af
Outflow = 1.29 cfs @ 11.90 hrs, Volume= 0.059 af, Atten= 0%, Lag= 0.0 min
Primary = 1.29 cfs @ 11.90 hrs, Volume= 0.059 af

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

Peak Elev= 44.60' @ 11.90 hrs

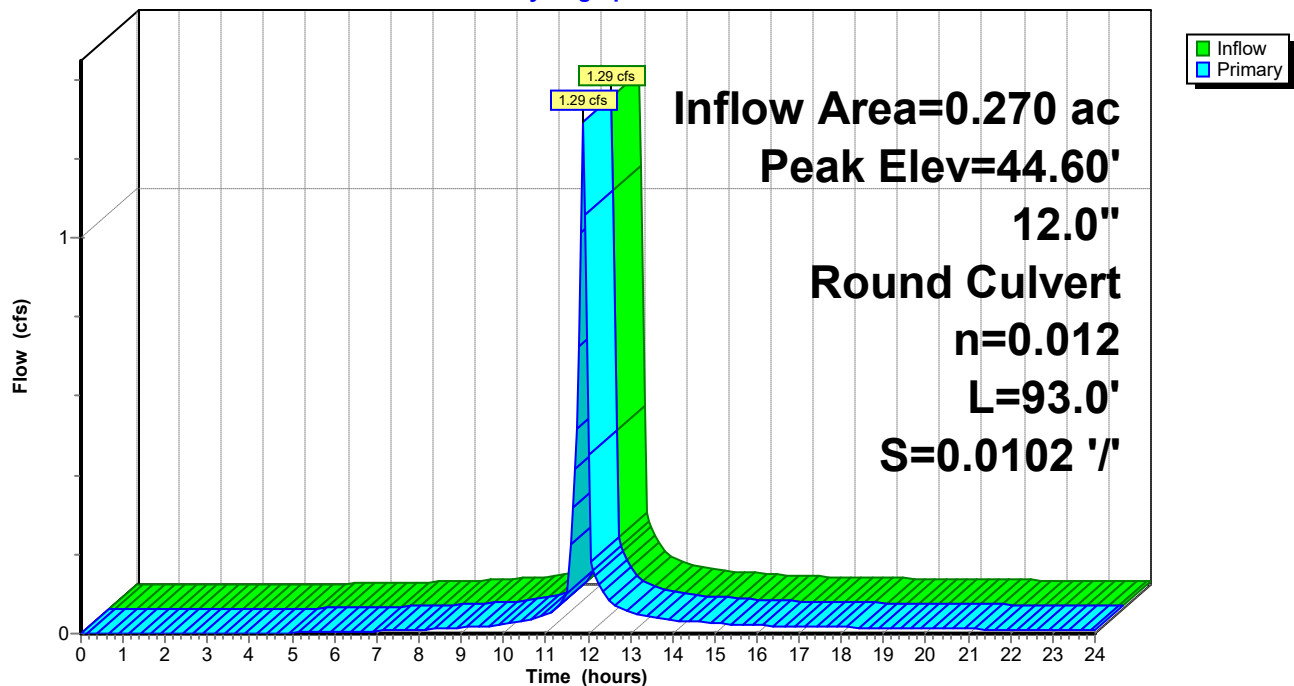
Flood Elev= 46.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	44.00'	12.0" Round Culvert L= 93.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 44.00' / 43.05' S= 0.0102 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.28 cfs @ 11.90 hrs HW=44.59' TW=42.78' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 1.28 cfs @ 2.63 fps)

Pond 7P: SDI-6

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Page 59

Stage-Area-Storage for Pond 7P: SDI-6

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
44.00	0	45.02	0	46.04	0
44.02	0	45.04	0	46.06	0
44.04	0	45.06	0	46.08	0
44.06	0	45.08	0	46.10	0
44.08	0	45.10	0	46.12	0
44.10	0	45.12	0	46.14	0
44.12	0	45.14	0	46.16	0
44.14	0	45.16	0	46.18	0
44.16	0	45.18	0	46.20	0
44.18	0	45.20	0	46.22	0
44.20	0	45.22	0	46.24	0
44.22	0	45.24	0	46.26	0
44.24	0	45.26	0	46.28	0
44.26	0	45.28	0	46.30	0
44.28	0	45.30	0	46.32	0
44.30	0	45.32	0	46.34	0
44.32	0	45.34	0	46.36	0
44.34	0	45.36	0	46.38	0
44.36	0	45.38	0	46.40	0
44.38	0	45.40	0		
44.40	0	45.42	0		
44.42	0	45.44	0		
44.44	0	45.46	0		
44.46	0	45.48	0		
44.48	0	45.50	0		
44.50	0	45.52	0		
44.52	0	45.54	0		
44.54	0	45.56	0		
44.56	0	45.58	0		
44.58	0	45.60	0		
44.60	0	45.62	0		
44.62	0	45.64	0		
44.64	0	45.66	0		
44.66	0	45.68	0		
44.68	0	45.70	0		
44.70	0	45.72	0		
44.72	0	45.74	0		
44.74	0	45.76	0		
44.76	0	45.78	0		
44.78	0	45.80	0		
44.80	0	45.82	0		
44.82	0	45.84	0		
44.84	0	45.86	0		
44.86	0	45.88	0		
44.88	0	45.90	0		
44.90	0	45.92	0		
44.92	0	45.94	0		
44.94	0	45.96	0		
44.96	0	45.98	0		
44.98	0	46.00	0		
45.00	0	46.02	0		

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Page 60

Summary for Pond 8P: SDI-2

Inflow Area = 0.592 ac, 90.75% Impervious, Inflow Depth > 2.78" for 2-yr event
Inflow = 2.85 cfs @ 11.91 hrs, Volume= 0.137 af
Outflow = 2.85 cfs @ 11.91 hrs, Volume= 0.137 af, Atten= 0%, Lag= 0.0 min
Primary = 2.85 cfs @ 11.91 hrs, Volume= 0.137 af

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

Peak Elev= 42.35' @ 11.92 hrs

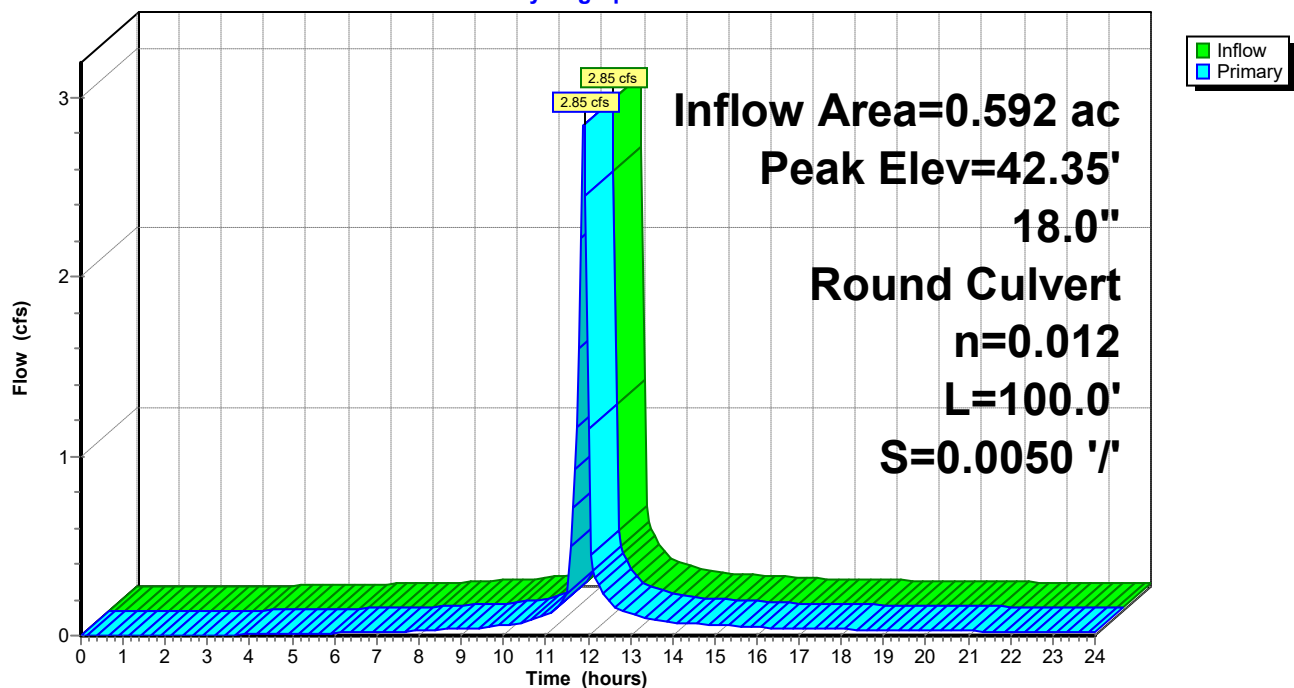
Flood Elev= 46.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	41.40'	18.0" Round 18" HDPE L= 100.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 41.40' / 40.90' S= 0.0050 '/ Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=2.50 cfs @ 11.91 hrs HW=42.33' TW=41.85' (Dynamic Tailwater)
↑ **1=18" HDPE** (Outlet Controls 2.50 cfs @ 3.11 fps)

Pond 8P: SDI-2

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Page 61

Stage-Area-Storage for Pond 8P: SDI-2

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
41.40	0	43.44	0	45.48	0
41.44	0	43.48	0	45.52	0
41.48	0	43.52	0	45.56	0
41.52	0	43.56	0	45.60	0
41.56	0	43.60	0	45.64	0
41.60	0	43.64	0	45.68	0
41.64	0	43.68	0	45.72	0
41.68	0	43.72	0	45.76	0
41.72	0	43.76	0	45.80	0
41.76	0	43.80	0	45.84	0
41.80	0	43.84	0	45.88	0
41.84	0	43.88	0	45.92	0
41.88	0	43.92	0	45.96	0
41.92	0	43.96	0	46.00	0
41.96	0	44.00	0	46.04	0
42.00	0	44.04	0	46.08	0
42.04	0	44.08	0	46.12	0
42.08	0	44.12	0	46.16	0
42.12	0	44.16	0	46.20	0
42.16	0	44.20	0	46.24	0
42.20	0	44.24	0	46.28	0
42.24	0	44.28	0	46.32	0
42.28	0	44.32	0	46.36	0
42.32	0	44.36	0	46.40	0
42.36	0	44.40	0	46.44	0
42.40	0	44.44	0	46.48	0
42.44	0	44.48	0	46.52	0
42.48	0	44.52	0	46.56	0
42.52	0	44.56	0	46.60	0
42.56	0	44.60	0		
42.60	0	44.64	0		
42.64	0	44.68	0		
42.68	0	44.72	0		
42.72	0	44.76	0		
42.76	0	44.80	0		
42.80	0	44.84	0		
42.84	0	44.88	0		
42.88	0	44.92	0		
42.92	0	44.96	0		
42.96	0	45.00	0		
43.00	0	45.04	0		
43.04	0	45.08	0		
43.08	0	45.12	0		
43.12	0	45.16	0		
43.16	0	45.20	0		
43.20	0	45.24	0		
43.24	0	45.28	0		
43.28	0	45.32	0		
43.32	0	45.36	0		
43.36	0	45.40	0		
43.40	0	45.44	0		

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Page 62

Summary for Pond 9P: SDI-3

Inflow Area = 0.095 ac, 91.82% Impervious, Inflow Depth > 2.84" for 2-yr event
Inflow = 0.47 cfs @ 11.90 hrs, Volume= 0.022 af
Outflow = 0.47 cfs @ 11.90 hrs, Volume= 0.022 af, Atten= 0%, Lag= 0.0 min
Primary = 0.47 cfs @ 11.90 hrs, Volume= 0.022 af

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

Peak Elev= 42.65' @ 11.92 hrs

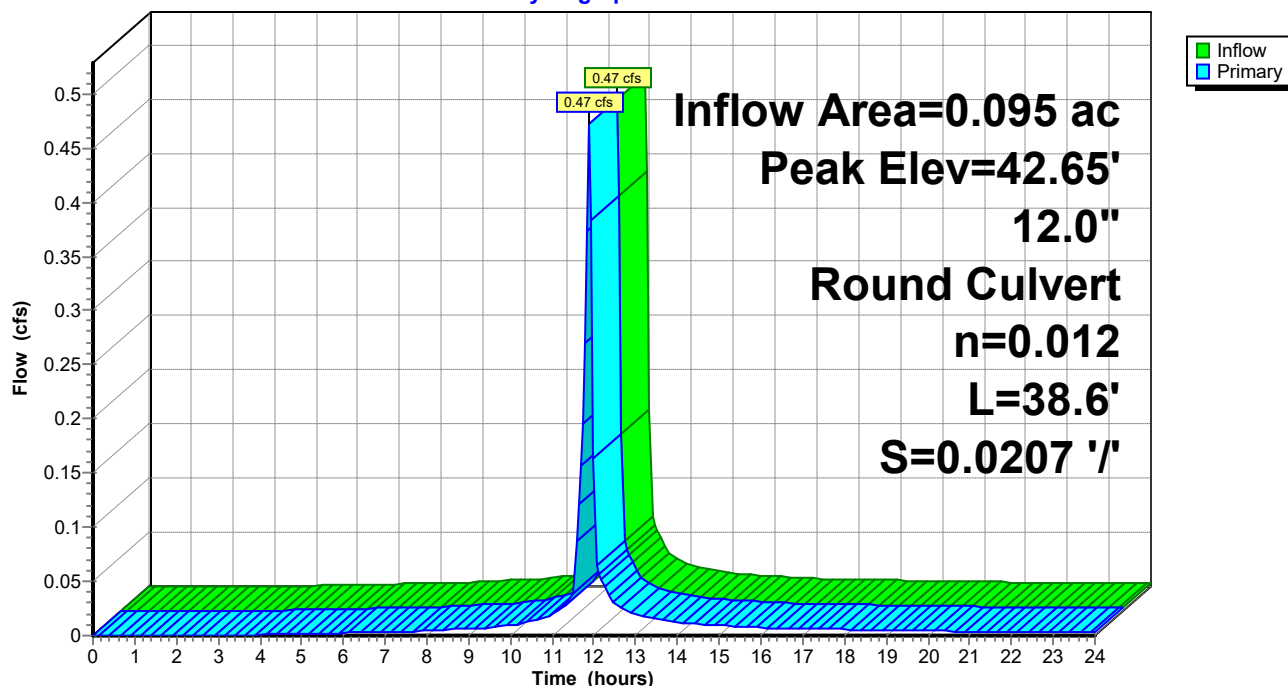
Flood Elev= 46.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	42.30'	12.0" Round 12" HDPE L= 38.6' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 42.30' / 41.50' S= 0.0207 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.39 cfs @ 11.90 hrs HW=42.65' TW=42.33' (Dynamic Tailwater)
↑ **1=12" HDPE** (Outlet Controls 0.39 cfs @ 2.42 fps)

Pond 9P: SDI-3

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Page 63

Stage-Area-Storage for Pond 9P: SDI-3

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
42.30	0	44.85	0
42.35	0	44.90	0
42.40	0	44.95	0
42.45	0	45.00	0
42.50	0	45.05	0
42.55	0	45.10	0
42.60	0	45.15	0
42.65	0	45.20	0
42.70	0	45.25	0
42.75	0	45.30	0
42.80	0	45.35	0
42.85	0	45.40	0
42.90	0	45.45	0
42.95	0	45.50	0
43.00	0	45.55	0
43.05	0	45.60	0
43.10	0	45.65	0
43.15	0	45.70	0
43.20	0	45.75	0
43.25	0	45.80	0
43.30	0	45.85	0
43.35	0	45.90	0
43.40	0	45.95	0
43.45	0	46.00	0
43.50	0	46.05	0
43.55	0	46.10	0
43.60	0	46.15	0
43.65	0	46.20	0
43.70	0	46.25	0
43.75	0		
43.80	0		
43.85	0		
43.90	0		
43.95	0		
44.00	0		
44.05	0		
44.10	0		
44.15	0		
44.20	0		
44.25	0		
44.30	0		
44.35	0		
44.40	0		
44.45	0		
44.50	0		
44.55	0		
44.60	0		
44.65	0		
44.70	0		
44.75	0		
44.80	0		

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

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Page 64

Summary for Pond 10P: SDI-4

Inflow Area = 0.232 ac, 84.85% Impervious, Inflow Depth > 2.54" for 2-yr event
Inflow = 1.07 cfs @ 11.90 hrs, Volume= 0.049 af
Outflow = 1.07 cfs @ 11.90 hrs, Volume= 0.049 af, Atten= 0%, Lag= 0.0 min
Primary = 1.07 cfs @ 11.90 hrs, Volume= 0.049 af

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

Peak Elev= 43.54' @ 11.90 hrs

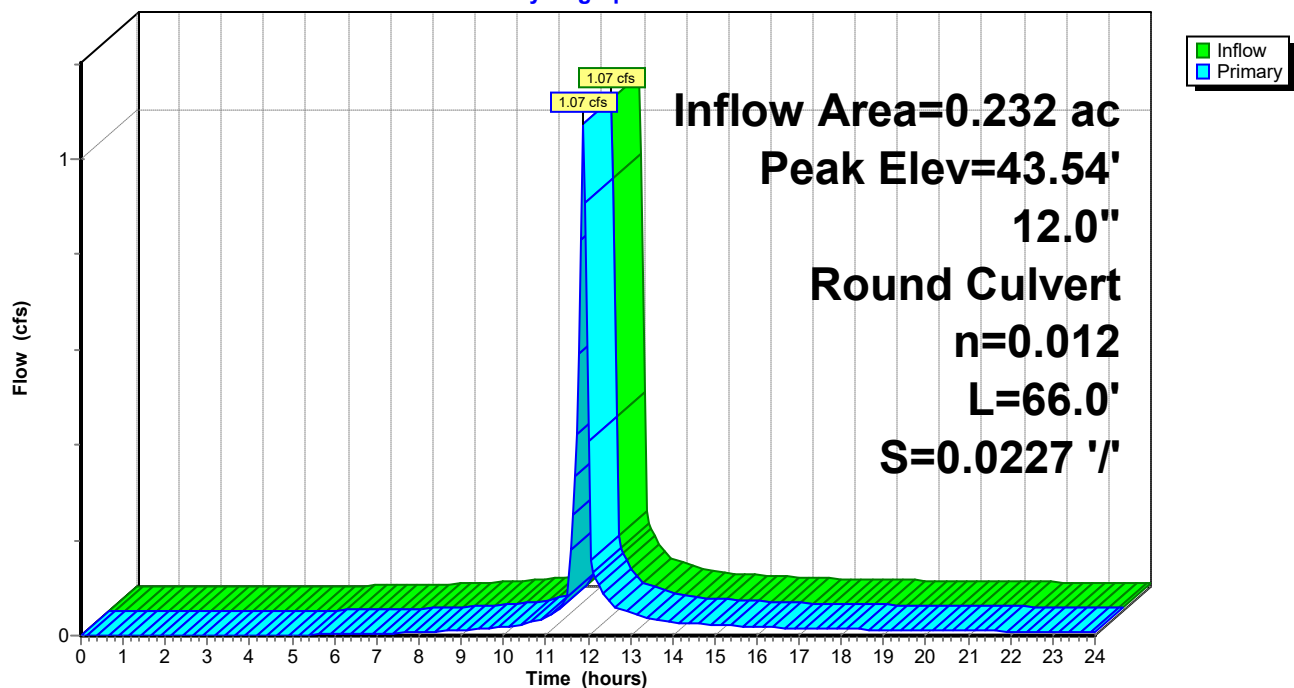
Flood Elev= 45.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	43.00'	12.0" Round 12" HDPE L= 66.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 43.00' / 41.50' S= 0.0227 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.05 cfs @ 11.90 hrs HW=43.53' TW=42.33' (Dynamic Tailwater)
↑ **1=12" HDPE** (Inlet Controls 1.05 cfs @ 2.48 fps)

Pond 10P: SDI-4

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Page 65

Stage-Area-Storage for Pond 10P: SDI-4

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
43.00	0	44.02	0	45.04	0
43.02	0	44.04	0	45.06	0
43.04	0	44.06	0	45.08	0
43.06	0	44.08	0	45.10	0
43.08	0	44.10	0	45.12	0
43.10	0	44.12	0	45.14	0
43.12	0	44.14	0	45.16	0
43.14	0	44.16	0	45.18	0
43.16	0	44.18	0	45.20	0
43.18	0	44.20	0	45.22	0
43.20	0	44.22	0	45.24	0
43.22	0	44.24	0	45.26	0
43.24	0	44.26	0	45.28	0
43.26	0	44.28	0	45.30	0
43.28	0	44.30	0	45.32	0
43.30	0	44.32	0	45.34	0
43.32	0	44.34	0	45.36	0
43.34	0	44.36	0	45.38	0
43.36	0	44.38	0	45.40	0
43.38	0	44.40	0	45.42	0
43.40	0	44.42	0	45.44	0
43.42	0	44.44	0	45.46	0
43.44	0	44.46	0	45.48	0
43.46	0	44.48	0	45.50	0
43.48	0	44.50	0	45.52	0
43.50	0	44.52	0	45.54	0
43.52	0	44.54	0	45.56	0
43.54	0	44.56	0	45.58	0
43.56	0	44.58	0	45.60	0
43.58	0	44.60	0	45.62	0
43.60	0	44.62	0	45.64	0
43.62	0	44.64	0	45.66	0
43.64	0	44.66	0	45.68	0
43.66	0	44.68	0	45.70	0
43.68	0	44.70	0	45.72	0
43.70	0	44.72	0	45.74	0
43.72	0	44.74	0	45.76	0
43.74	0	44.76	0	45.78	0
43.76	0	44.78	0	45.80	0
43.78	0	44.80	0	45.82	0
43.80	0	44.82	0	45.84	0
43.82	0	44.84	0	45.86	0
43.84	0	44.86	0	45.88	0
43.86	0	44.88	0	45.90	0
43.88	0	44.90	0		
43.90	0	44.92	0		
43.92	0	44.94	0		
43.94	0	44.96	0		
43.96	0	44.98	0		
43.98	0	45.00	0		
44.00	0	45.02	0		

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Page 66

Summary for Pond 11P: SDI-8

Inflow Area = 0.117 ac, 82.35% Impervious, Inflow Depth > 2.45" for 2-yr event
Inflow = 0.52 cfs @ 11.91 hrs, Volume= 0.024 af
Outflow = 0.52 cfs @ 11.91 hrs, Volume= 0.024 af, Atten= 0%, Lag= 0.0 min
Primary = 0.52 cfs @ 11.91 hrs, Volume= 0.024 af

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

Peak Elev= 44.83' @ 20.17 hrs

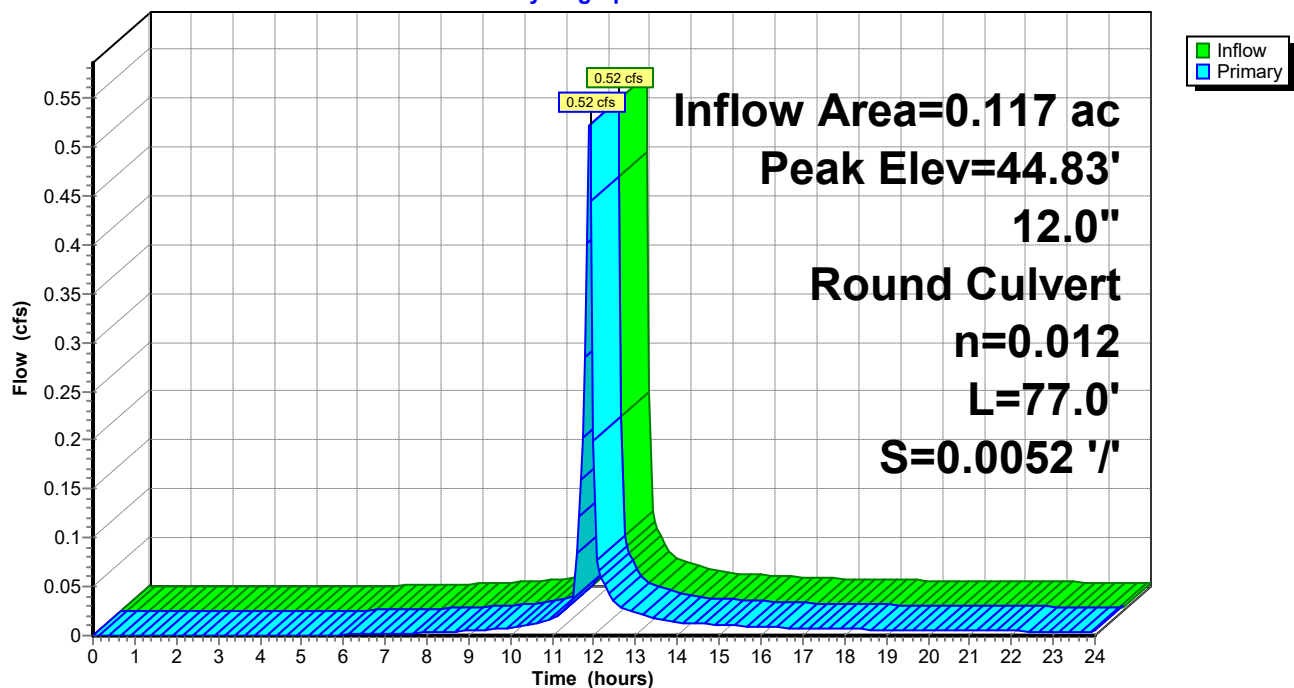
Flood Elev= 45.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	44.20'	12.0" Round 12" HDPE L= 77.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 44.20' / 43.80' S= 0.0052 '/ Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.51 cfs @ 11.91 hrs HW=44.60' TW=43.79' (Dynamic Tailwater)
↑ **1=12" HDPE** (Barrel Controls 0.51 cfs @ 2.57 fps)

Pond 11P: SDI-8

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

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Page 67

Stage-Area-Storage for Pond 11P: SDI-8

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
44.20	0	44.71	0	45.22	0
44.21	0	44.72	0	45.23	0
44.22	0	44.73	0	45.24	0
44.23	0	44.74	0	45.25	0
44.24	0	44.75	0		
44.25	0	44.76	0		
44.26	0	44.77	0		
44.27	0	44.78	0		
44.28	0	44.79	0		
44.29	0	44.80	0		
44.30	0	44.81	0		
44.31	0	44.82	0		
44.32	0	44.83	0		
44.33	0	44.84	0		
44.34	0	44.85	0		
44.35	0	44.86	0		
44.36	0	44.87	0		
44.37	0	44.88	0		
44.38	0	44.89	0		
44.39	0	44.90	0		
44.40	0	44.91	0		
44.41	0	44.92	0		
44.42	0	44.93	0		
44.43	0	44.94	0		
44.44	0	44.95	0		
44.45	0	44.96	0		
44.46	0	44.97	0		
44.47	0	44.98	0		
44.48	0	44.99	0		
44.49	0	45.00	0		
44.50	0	45.01	0		
44.51	0	45.02	0		
44.52	0	45.03	0		
44.53	0	45.04	0		
44.54	0	45.05	0		
44.55	0	45.06	0		
44.56	0	45.07	0		
44.57	0	45.08	0		
44.58	0	45.09	0		
44.59	0	45.10	0		
44.60	0	45.11	0		
44.61	0	45.12	0		
44.62	0	45.13	0		
44.63	0	45.14	0		
44.64	0	45.15	0		
44.65	0	45.16	0		
44.66	0	45.17	0		
44.67	0	45.18	0		
44.68	0	45.19	0		
44.69	0	45.20	0		
44.70	0	45.21	0		

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

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Page 68

Summary for Pond 13P: SDI-9

Inflow Area = 0.408 ac, 89.26% Impervious, Inflow Depth > 2.81" for 2-yr event
Inflow = 1.91 cfs @ 11.91 hrs, Volume= 0.095 af
Outflow = 1.91 cfs @ 11.91 hrs, Volume= 0.095 af, Atten= 0%, Lag= 0.0 min
Primary = 1.91 cfs @ 11.91 hrs, Volume= 0.095 af

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

Peak Elev= 41.65' @ 11.91 hrs

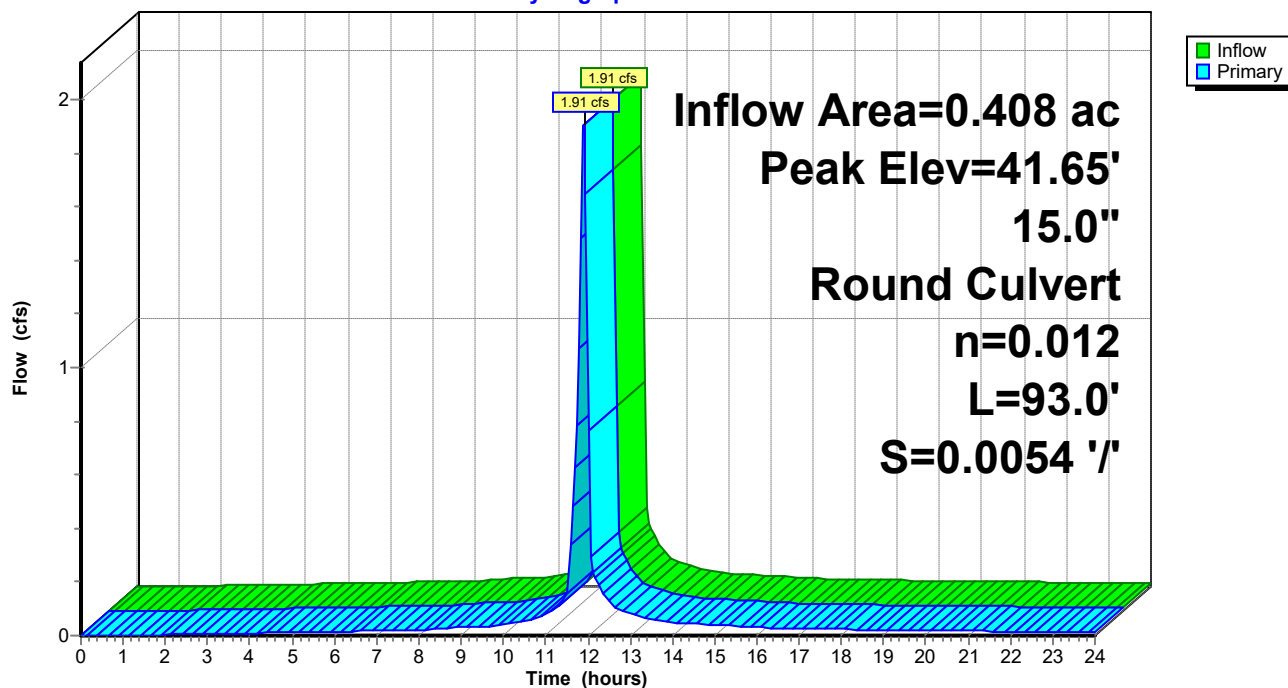
Flood Elev= 43.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	40.90'	15.0" Round 15" HDPE L= 93.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 40.90' / 40.40' S= 0.0054 '/ Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=1.87 cfs @ 11.91 hrs HW=41.64' TW=40.50' (Dynamic Tailwater)
↑ **1=15" HDPE** (Barrel Controls 1.87 cfs @ 3.53 fps)

Pond 13P: SDI-9

Hydrograph



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

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Page 69

Stage-Area-Storage for Pond 13P: SDI-9

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
40.90	0	41.92	0	42.94	0
40.92	0	41.94	0	42.96	0
40.94	0	41.96	0	42.98	0
40.96	0	41.98	0	43.00	0
40.98	0	42.00	0		
41.00	0	42.02	0		
41.02	0	42.04	0		
41.04	0	42.06	0		
41.06	0	42.08	0		
41.08	0	42.10	0		
41.10	0	42.12	0		
41.12	0	42.14	0		
41.14	0	42.16	0		
41.16	0	42.18	0		
41.18	0	42.20	0		
41.20	0	42.22	0		
41.22	0	42.24	0		
41.24	0	42.26	0		
41.26	0	42.28	0		
41.28	0	42.30	0		
41.30	0	42.32	0		
41.32	0	42.34	0		
41.34	0	42.36	0		
41.36	0	42.38	0		
41.38	0	42.40	0		
41.40	0	42.42	0		
41.42	0	42.44	0		
41.44	0	42.46	0		
41.46	0	42.48	0		
41.48	0	42.50	0		
41.50	0	42.52	0		
41.52	0	42.54	0		
41.54	0	42.56	0		
41.56	0	42.58	0		
41.58	0	42.60	0		
41.60	0	42.62	0		
41.62	0	42.64	0		
41.64	0	42.66	0		
41.66	0	42.68	0		
41.68	0	42.70	0		
41.70	0	42.72	0		
41.72	0	42.74	0		
41.74	0	42.76	0		
41.76	0	42.78	0		
41.78	0	42.80	0		
41.80	0	42.82	0		
41.82	0	42.84	0		
41.84	0	42.86	0		
41.86	0	42.88	0		
41.88	0	42.90	0		
41.90	0	42.92	0		

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

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Page 70

Summary for Pond 14P: RL-5

Inflow Area = 0.308 ac, 100.00% Impervious, Inflow Depth > 3.17" for 2-yr event
Inflow = 1.58 cfs @ 11.90 hrs, Volume= 0.081 af
Outflow = 1.58 cfs @ 11.90 hrs, Volume= 0.081 af, Atten= 0%, Lag= 0.0 min
Primary = 1.58 cfs @ 11.90 hrs, Volume= 0.081 af

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

Peak Elev= 42.04' @ 11.91 hrs

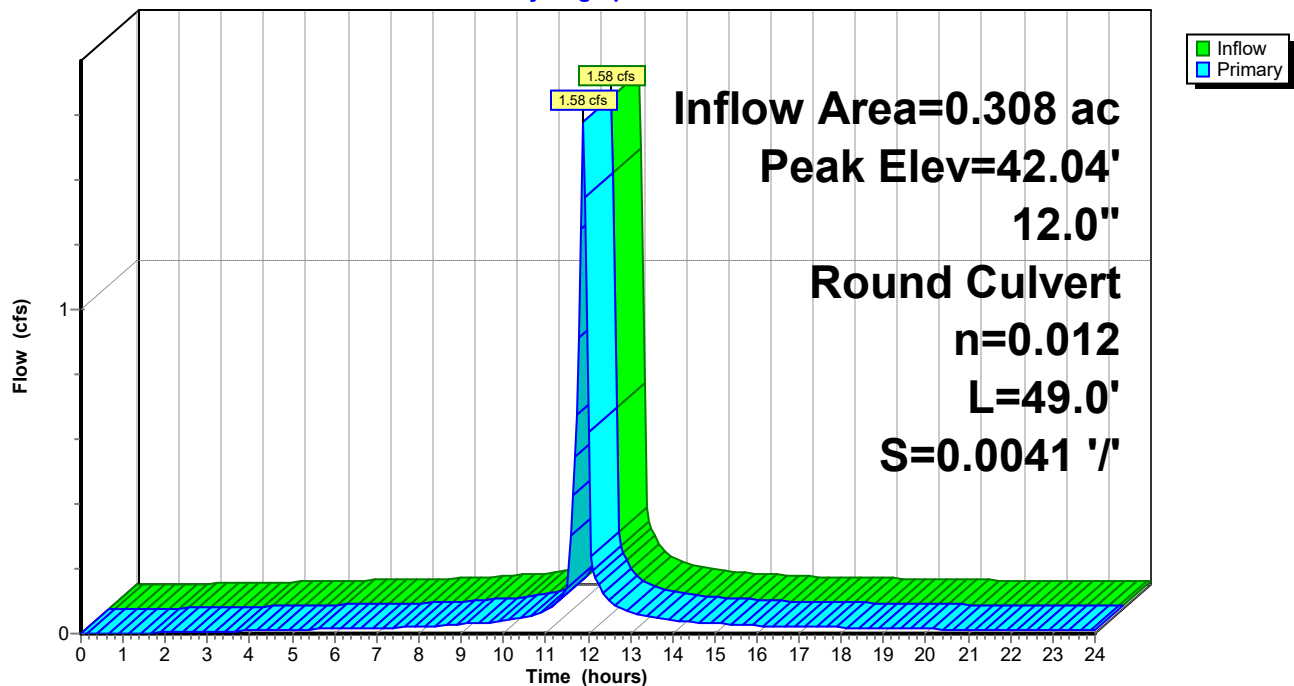
Flood Elev= 46.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	41.20'	12.0" Round 12" HDPE L= 49.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 41.20' / 41.00' S= 0.0041 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.52 cfs @ 11.90 hrs HW=42.03' TW=41.65' (Dynamic Tailwater)
↑ **12" HDPE** (Outlet Controls 1.52 cfs @ 2.96 fps)

Pond 14P: RL-5

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

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Page 71

Stage-Area-Storage for Pond 14P: RL-5

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
41.20	0	43.24	0	45.28	0
41.24	0	43.28	0	45.32	0
41.28	0	43.32	0	45.36	0
41.32	0	43.36	0	45.40	0
41.36	0	43.40	0	45.44	0
41.40	0	43.44	0	45.48	0
41.44	0	43.48	0	45.52	0
41.48	0	43.52	0	45.56	0
41.52	0	43.56	0	45.60	0
41.56	0	43.60	0	45.64	0
41.60	0	43.64	0	45.68	0
41.64	0	43.68	0	45.72	0
41.68	0	43.72	0	45.76	0
41.72	0	43.76	0	45.80	0
41.76	0	43.80	0	45.84	0
41.80	0	43.84	0	45.88	0
41.84	0	43.88	0	45.92	0
41.88	0	43.92	0	45.96	0
41.92	0	43.96	0	46.00	0
41.96	0	44.00	0	46.04	0
42.00	0	44.04	0	46.08	0
42.04	0	44.08	0	46.12	0
42.08	0	44.12	0	46.16	0
42.12	0	44.16	0	46.20	0
42.16	0	44.20	0	46.24	0
42.20	0	44.24	0	46.28	0
42.24	0	44.28	0	46.32	0
42.28	0	44.32	0	46.36	0
42.32	0	44.36	0	46.40	0
42.36	0	44.40	0	46.44	0
42.40	0	44.44	0	46.48	0
42.44	0	44.48	0		
42.48	0	44.52	0		
42.52	0	44.56	0		
42.56	0	44.60	0		
42.60	0	44.64	0		
42.64	0	44.68	0		
42.68	0	44.72	0		
42.72	0	44.76	0		
42.76	0	44.80	0		
42.80	0	44.84	0		
42.84	0	44.88	0		
42.88	0	44.92	0		
42.92	0	44.96	0		
42.96	0	45.00	0		
43.00	0	45.04	0		
43.04	0	45.08	0		
43.08	0	45.12	0		
43.12	0	45.16	0		
43.16	0	45.20	0		
43.20	0	45.24	0		

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

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Page 72

Summary for Pond 15P: 30x19 RCP

Inflow Area = 2.704 ac, 59.07% Impervious, Inflow Depth > 1.80" for 2-yr event
Inflow = 4.88 cfs @ 12.05 hrs, Volume= 0.404 af
Outflow = 4.88 cfs @ 12.05 hrs, Volume= 0.404 af, Atten= 0%, Lag= 0.0 min
Primary = 4.88 cfs @ 12.05 hrs, Volume= 0.404 af

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

Peak Elev= 41.34' @ 12.05 hrs

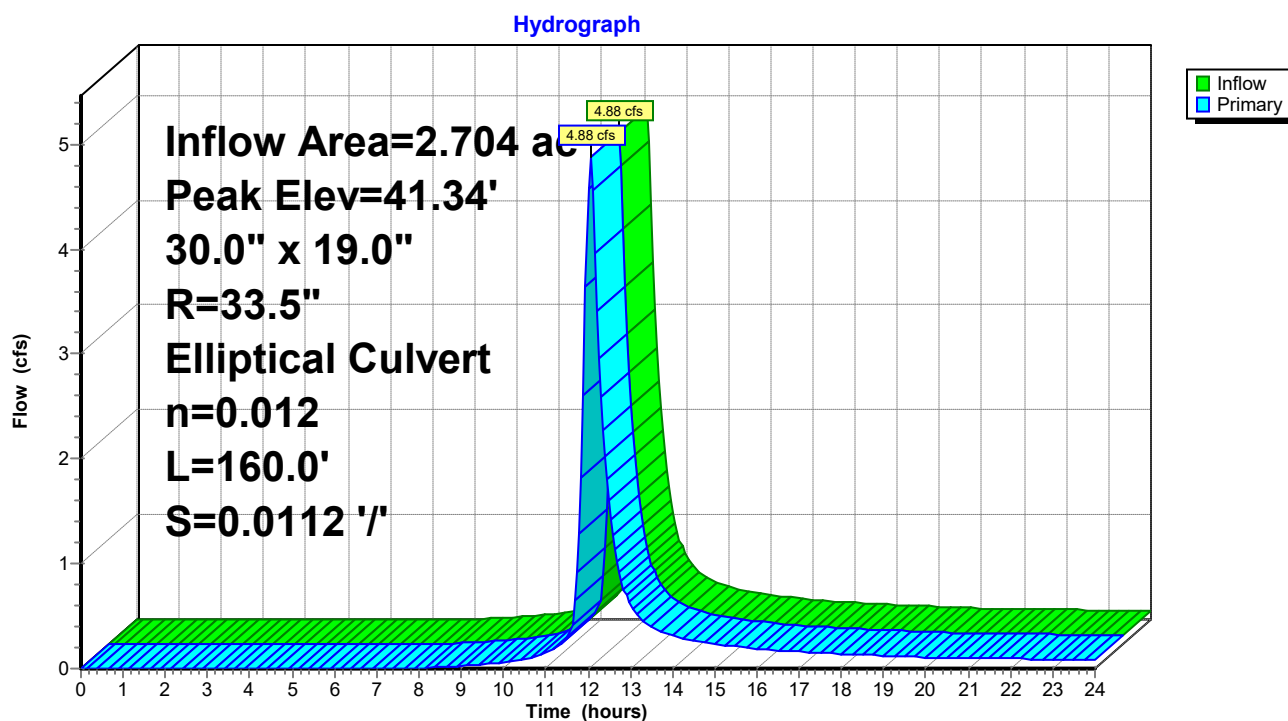
Flood Elev= 42.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	40.50'	30.0" W x 19.0" H, R=33.5" Elliptical RCP_Elliptical 30x19 L= 160.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 40.50' / 38.70' S= 0.0112 '/' Cc= 0.900 n= 0.012, Flow Area= 3.28 sf

Primary OutFlow Max=4.87 cfs @ 12.05 hrs HW=41.34' TW=39.40' (Dynamic Tailwater)

↑1=RCP_Elliptical 30x19 (Inlet Controls 4.87 cfs @ 2.76 fps)

Pond 15P: 30x19 RCP



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

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Page 73

Stage-Area-Storage for Pond 15P: 30x19 RCP

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
40.50	0	41.52	0
40.52	0	41.54	0
40.54	0	41.56	0
40.56	0	41.58	0
40.58	0	41.60	0
40.60	0	41.62	0
40.62	0	41.64	0
40.64	0	41.66	0
40.66	0	41.68	0
40.68	0	41.70	0
40.70	0	41.72	0
40.72	0	41.74	0
40.74	0	41.76	0
40.76	0	41.78	0
40.78	0	41.80	0
40.80	0	41.82	0
40.82	0	41.84	0
40.84	0	41.86	0
40.86	0	41.88	0
40.88	0	41.90	0
40.90	0	41.92	0
40.92	0	41.94	0
40.94	0	41.96	0
40.96	0	41.98	0
40.98	0	42.00	0
41.00	0	42.02	0
41.02	0	42.04	0
41.04	0	42.06	0
41.06	0	42.08	0
41.08	0		
41.10	0		
41.12	0		
41.14	0		
41.16	0		
41.18	0		
41.20	0		
41.22	0		
41.24	0		
41.26	0		
41.28	0		
41.30	0		
41.32	0		
41.34	0		
41.36	0		
41.38	0		
41.40	0		
41.42	0		
41.44	0		
41.46	0		
41.48	0		
41.50	0		

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

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Page 74

Summary for Pond 16P: RL-6

Inflow Area = 0.207 ac, 100.00% Impervious, Inflow Depth > 3.17" for 2-yr event
Inflow = 1.06 cfs @ 11.90 hrs, Volume= 0.055 af
Outflow = 1.06 cfs @ 11.90 hrs, Volume= 0.055 af, Atten= 0%, Lag= 0.0 min
Primary = 1.06 cfs @ 11.90 hrs, Volume= 0.055 af

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

Peak Elev= 42.39' @ 11.92 hrs

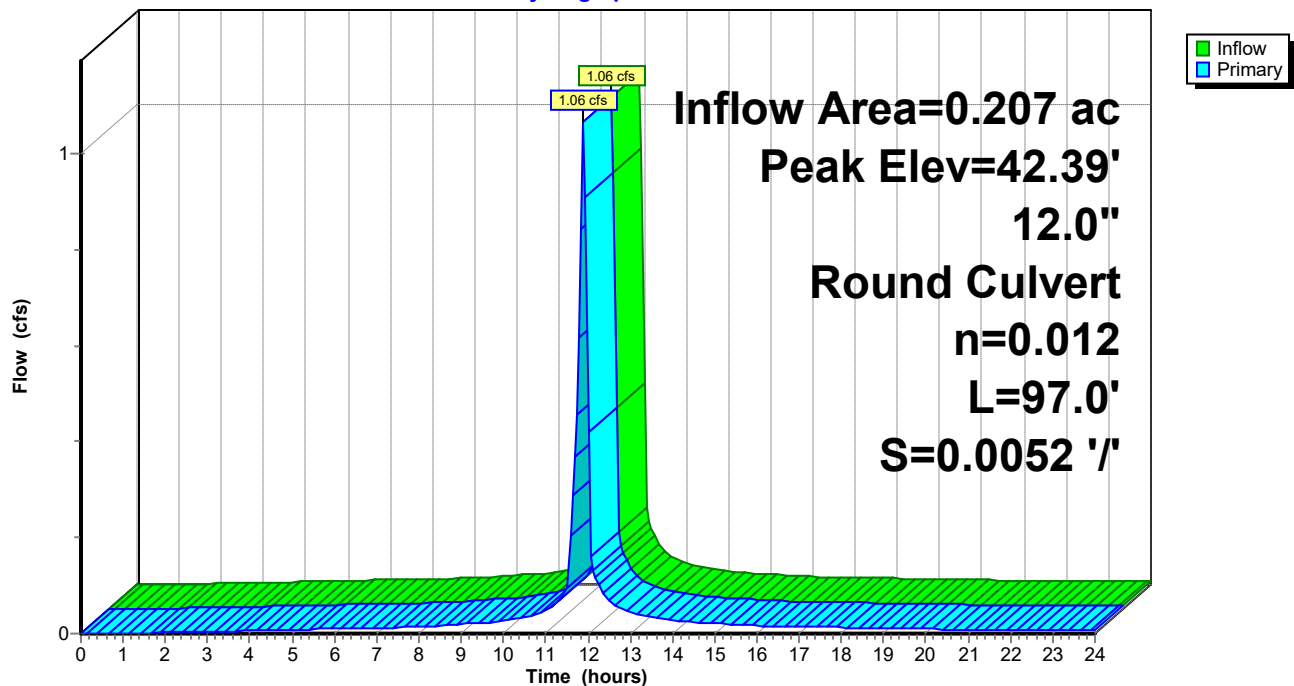
Flood Elev= 46.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	41.70'	12.0" Round 12" HDPE L= 97.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 41.70' / 41.20' S= 0.0052 '/ Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.93 cfs @ 11.90 hrs HW=42.38' TW=42.03' (Dynamic Tailwater)
1=12" HDPE (Outlet Controls 0.93 cfs @ 2.30 fps)

Pond 16P: RL-6

Hydrograph



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

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Page 75

Stage-Area-Storage for Pond 16P: RL-6

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
41.70	0	44.25	0
41.75	0	44.30	0
41.80	0	44.35	0
41.85	0	44.40	0
41.90	0	44.45	0
41.95	0	44.50	0
42.00	0	44.55	0
42.05	0	44.60	0
42.10	0	44.65	0
42.15	0	44.70	0
42.20	0	44.75	0
42.25	0	44.80	0
42.30	0	44.85	0
42.35	0	44.90	0
42.40	0	44.95	0
42.45	0	45.00	0
42.50	0	45.05	0
42.55	0	45.10	0
42.60	0	45.15	0
42.65	0	45.20	0
42.70	0	45.25	0
42.75	0	45.30	0
42.80	0	45.35	0
42.85	0	45.40	0
42.90	0	45.45	0
42.95	0	45.50	0
43.00	0	45.55	0
43.05	0	45.60	0
43.10	0	45.65	0
43.15	0	45.70	0
43.20	0	45.75	0
43.25	0	45.80	0
43.30	0	45.85	0
43.35	0	45.90	0
43.40	0	45.95	0
43.45	0	46.00	0
43.50	0	46.05	0
43.55	0	46.10	0
43.60	0	46.15	0
43.65	0	46.20	0
43.70	0	46.25	0
43.75	0	46.30	0
43.80	0	46.35	0
43.85	0	46.40	0
43.90	0	46.45	0
43.95	0	46.50	0
44.00	0		
44.05	0		
44.10	0		
44.15	0		
44.20	0		

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

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Page 76

Summary for Pond 20P: RL-8

Inflow Area = 0.104 ac, 100.00% Impervious, Inflow Depth > 3.17" for 2-yr event
Inflow = 0.53 cfs @ 11.90 hrs, Volume= 0.027 af
Outflow = 0.53 cfs @ 11.90 hrs, Volume= 0.027 af, Atten= 0%, Lag= 0.0 min
Primary = 0.53 cfs @ 11.90 hrs, Volume= 0.027 af

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

Peak Elev= 42.75' @ 11.92 hrs

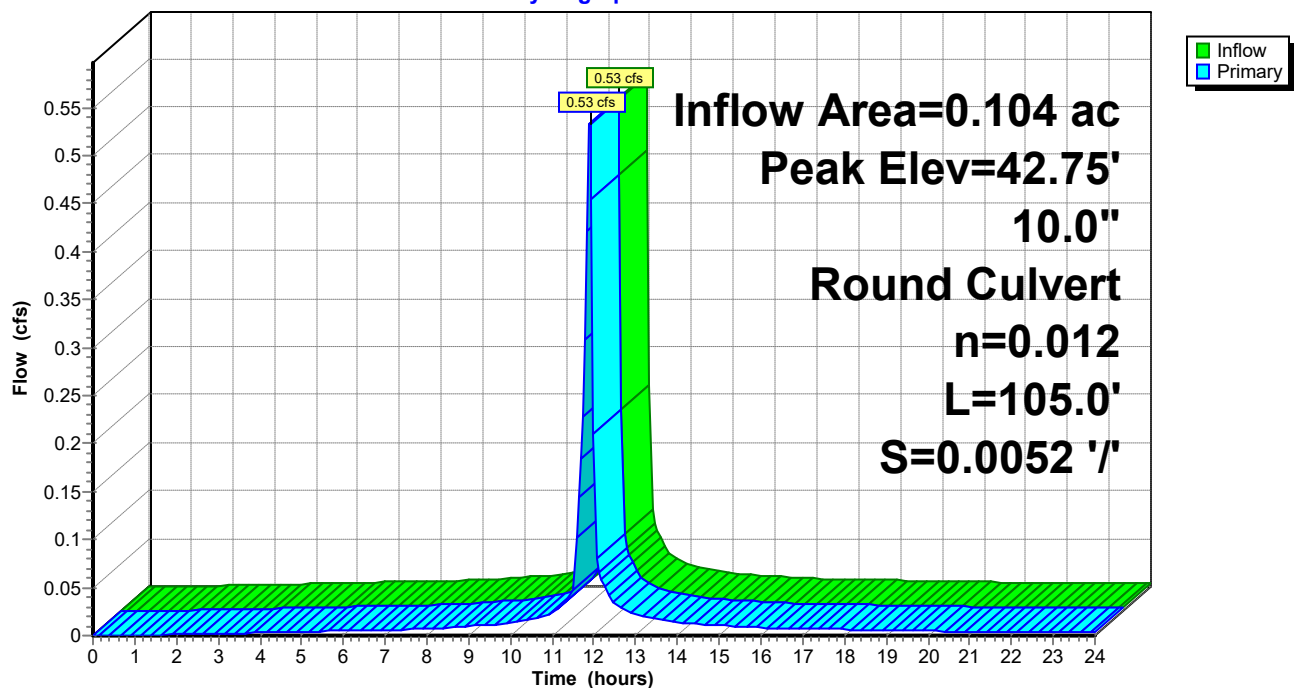
Flood Elev= 45.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	42.25'	10.0" Round 10" HDPE L= 105.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 42.25' / 41.70' S= 0.0052 '/ Cc= 0.900 n= 0.012, Flow Area= 0.55 sf

Primary OutFlow Max=0.47 cfs @ 11.90 hrs HW=42.74' TW=42.38' (Dynamic Tailwater)
↑ **1=10" HDPE** (Outlet Controls 0.47 cfs @ 2.02 fps)

Pond 20P: RL-8

Hydrograph



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

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Page 77

Stage-Area-Storage for Pond 20P: RL-8

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
42.25	0	43.27	0	44.29	0
42.27	0	43.29	0	44.31	0
42.29	0	43.31	0	44.33	0
42.31	0	43.33	0	44.35	0
42.33	0	43.35	0	44.37	0
42.35	0	43.37	0	44.39	0
42.37	0	43.39	0	44.41	0
42.39	0	43.41	0	44.43	0
42.41	0	43.43	0	44.45	0
42.43	0	43.45	0	44.47	0
42.45	0	43.47	0	44.49	0
42.47	0	43.49	0	44.51	0
42.49	0	43.51	0	44.53	0
42.51	0	43.53	0	44.55	0
42.53	0	43.55	0	44.57	0
42.55	0	43.57	0	44.59	0
42.57	0	43.59	0	44.61	0
42.59	0	43.61	0	44.63	0
42.61	0	43.63	0	44.65	0
42.63	0	43.65	0	44.67	0
42.65	0	43.67	0	44.69	0
42.67	0	43.69	0	44.71	0
42.69	0	43.71	0	44.73	0
42.71	0	43.73	0	44.75	0
42.73	0	43.75	0	44.77	0
42.75	0	43.77	0	44.79	0
42.77	0	43.79	0	44.81	0
42.79	0	43.81	0	44.83	0
42.81	0	43.83	0	44.85	0
42.83	0	43.85	0	44.87	0
42.85	0	43.87	0	44.89	0
42.87	0	43.89	0	44.91	0
42.89	0	43.91	0	44.93	0
42.91	0	43.93	0	44.95	0
42.93	0	43.95	0	44.97	0
42.95	0	43.97	0	44.99	0
42.97	0	43.99	0	45.01	0
42.99	0	44.01	0	45.03	0
43.01	0	44.03	0	45.05	0
43.03	0	44.05	0	45.07	0
43.05	0	44.07	0	45.09	0
43.07	0	44.09	0	45.11	0
43.09	0	44.11	0	45.13	0
43.11	0	44.13	0	45.15	0
43.13	0	44.15	0	45.17	0
43.15	0	44.17	0	45.19	0
43.17	0	44.19	0	45.21	0
43.19	0	44.21	0	45.23	0
43.21	0	44.23	0	45.25	0
43.23	0	44.25	0		
43.25	0	44.27	0		

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Page 78

Summary for Pond 25P: SDI-1

Inflow Area = 2.024 ac, 64.51% Impervious, Inflow Depth > 1.91" for 2-yr event
Inflow = 5.53 cfs @ 11.98 hrs, Volume= 0.322 af
Outflow = 5.53 cfs @ 11.98 hrs, Volume= 0.322 af, Atten= 0%, Lag= 0.0 min
Primary = 5.53 cfs @ 11.98 hrs, Volume= 0.322 af

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

Peak Elev= 43.20' @ 12.02 hrs

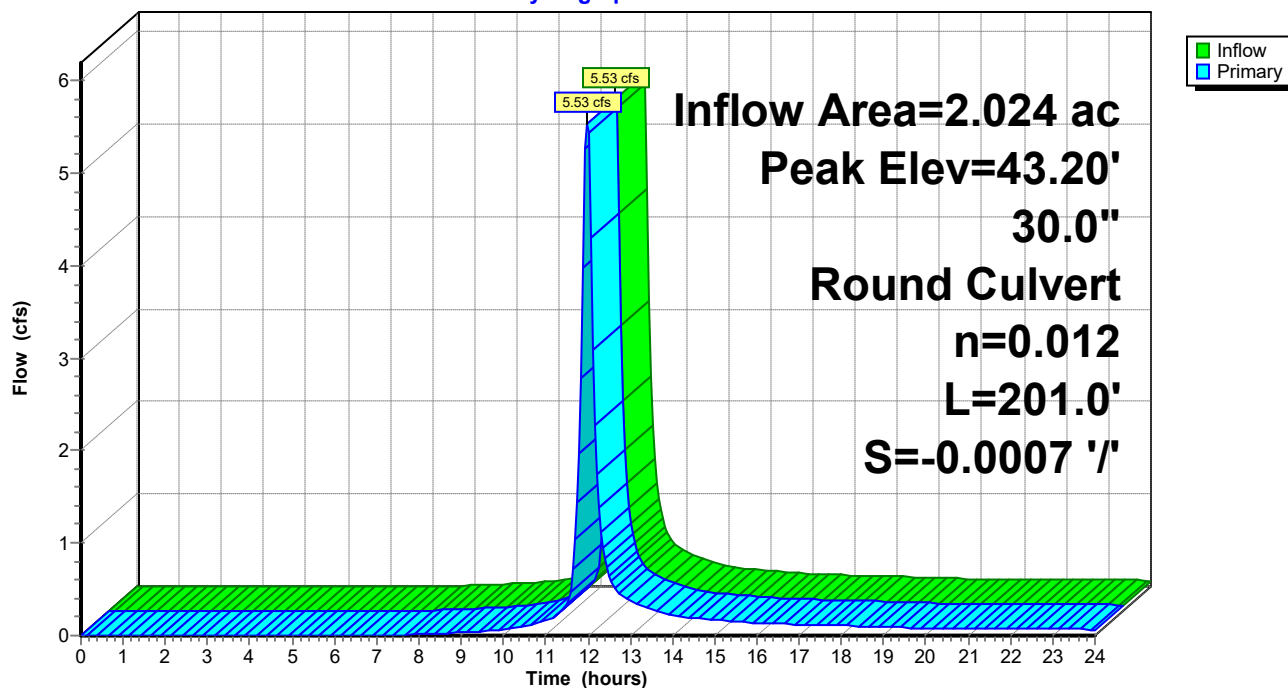
Flood Elev= 46.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	41.84'	30.0" Round 30" PERF. HDPE L= 201.0' Box, headwall w/3 rounded edges, Ke= 0.200 Inlet / Outlet Invert= 41.69' / 41.84' S= -0.0007 '/' Cc= 0.900 n= 0.012, Flow Area= 4.91 sf

Primary OutFlow Max=4.34 cfs @ 11.98 hrs HW=43.15' TW=42.95' (Dynamic Tailwater)
↑1=30" PERF. HDPE (Outlet Controls 4.34 cfs @ 2.10 fps)

Pond 25P: SDI-1

Hydrograph



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

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Page 79

Stage-Area-Storage for Pond 25P: SDI-1

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
41.84	0	44.39	0
41.89	0	44.44	0
41.94	0	44.49	0
41.99	0	44.54	0
42.04	0	44.59	0
42.09	0	44.64	0
42.14	0	44.69	0
42.19	0	44.74	0
42.24	0	44.79	0
42.29	0	44.84	0
42.34	0	44.89	0
42.39	0	44.94	0
42.44	0	44.99	0
42.49	0	45.04	0
42.54	0	45.09	0
42.59	0	45.14	0
42.64	0	45.19	0
42.69	0	45.24	0
42.74	0	45.29	0
42.79	0	45.34	0
42.84	0	45.39	0
42.89	0	45.44	0
42.94	0	45.49	0
42.99	0	45.54	0
43.04	0	45.59	0
43.09	0	45.64	0
43.14	0	45.69	0
43.19	0	45.74	0
43.24	0	45.79	0
43.29	0	45.84	0
43.34	0	45.89	0
43.39	0	45.94	0
43.44	0	45.99	0
43.49	0		
43.54	0		
43.59	0		
43.64	0		
43.69	0		
43.74	0		
43.79	0		
43.84	0		
43.89	0		
43.94	0		
43.99	0		
44.04	0		
44.09	0		
44.14	0		
44.19	0		
44.24	0		
44.29	0		
44.34	0		

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Page 80

Summary for Pond 28P: Doghouse SDMH

Inflow Area = 4.944 ac, 68.48% Impervious, Inflow Depth > 1.96" for 2-yr event
Inflow = 5.76 cfs @ 11.98 hrs, Volume= 0.806 af
Outflow = 5.76 cfs @ 11.98 hrs, Volume= 0.806 af, Atten= 0%, Lag= 0.0 min
Primary = 5.76 cfs @ 11.98 hrs, Volume= 0.806 af

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

Peak Elev= 42.98' @ 12.00 hrs

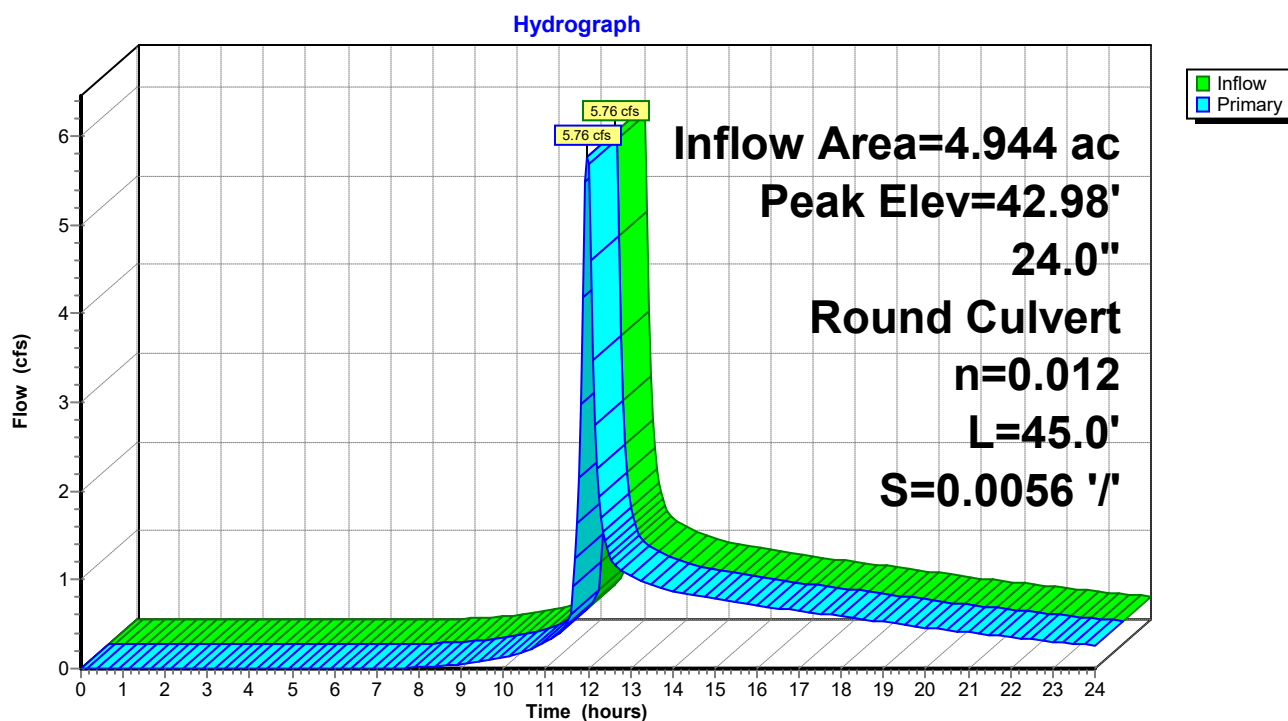
Flood Elev= 48.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	41.65'	24.0" Round Culvert L= 45.0' Box, headwall w/3 rounded edges, Ke= 0.200 Inlet / Outlet Invert= 41.65' / 41.40' S= 0.0056 '/ Cc= 0.900 n= 0.012, Flow Area= 3.14 sf

Primary OutFlow Max=5.18 cfs @ 11.98 hrs HW=42.95' TW=42.64' (Dynamic Tailwater)

↑**1=Culvert** (Outlet Controls 5.18 cfs @ 3.41 fps)

Pond 28P: Doghouse SDMH



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

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Page 81

Stage-Area-Storage for Pond 28P: Doghouse SDMH

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
41.65	0	46.75	0
41.75	0	46.85	0
41.85	0	46.95	0
41.95	0	47.05	0
42.05	0	47.15	0
42.15	0	47.25	0
42.25	0	47.35	0
42.35	0	47.45	0
42.45	0	47.55	0
42.55	0	47.65	0
42.65	0	47.75	0
42.75	0	47.85	0
42.85	0	47.95	0
42.95	0		
43.05	0		
43.15	0		
43.25	0		
43.35	0		
43.45	0		
43.55	0		
43.65	0		
43.75	0		
43.85	0		
43.95	0		
44.05	0		
44.15	0		
44.25	0		
44.35	0		
44.45	0		
44.55	0		
44.65	0		
44.75	0		
44.85	0		
44.95	0		
45.05	0		
45.15	0		
45.25	0		
45.35	0		
45.45	0		
45.55	0		
45.65	0		
45.75	0		
45.85	0		
45.95	0		
46.05	0		
46.15	0		
46.25	0		
46.35	0		
46.45	0		
46.55	0		
46.65	0		

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Page 82

Summary for Pond EX-P: G2 Pond & Underground

Inflow Area = 3.213 ac, 70.08% Impervious, Inflow Depth > 2.09" for 2-yr event
 Inflow = 7.29 cfs @ 12.01 hrs, Volume= 0.561 af
 Outflow = 0.90 cfs @ 12.81 hrs, Volume= 0.510 af, Atten= 88%, Lag= 48.1 min
 Primary = 0.90 cfs @ 12.81 hrs, Volume= 0.510 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

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

Peak Elev= 45.01' @ 12.80 hrs Surf.Area= 0 sf Storage= 12,595 cf

Flood Elev= 47.00' Surf.Area= 0 sf Storage= 23,400 cf

Plug-Flow detention time= 227.1 min calculated for 0.509 af (91% of inflow)

Center-of-Mass det. time= 181.0 min (1,000.1 - 819.1)

Volume	Invert	Avail.Storage	Storage Description
#1	42.00'	23,400 cf	Custom Stage Data Listed below

Elevation (feet)	Cum.Store (cubic-feet)
42.00	0
42.25	523
42.50	1,508
42.75	2,524
43.00	3,566
43.25	4,630
43.50	5,712
43.75	6,809
44.00	7,911
44.25	9,006
44.50	10,072
45.00	12,544
46.00	17,789
47.00	23,400

Device	Routing	Invert	Outlet Devices
#1	Primary	42.00'	30.0" Round 30" PERF HDPE L= 12.0' Box, headwall w/3 rounded edges, Ke= 0.200 Inlet / Outlet Invert= 42.00' / 41.84' S= 0.0133 '/' Cc= 0.900 n= 0.012, Flow Area= 4.91 sf
#2	Device 1	42.00'	4.0" Vert. 4" hole in S-2 weir from 2005 G2 Plans C= 0.600
#3	Device 1	44.70'	6.0" W x 16.8" H Vert. 4" notched weir from G2 plans C= 0.600
#4	Device 1	46.10'	4.0' long Top of Weir in S-2 outlet box Cv= 2.62 (C= 3.28)
#5	Secondary	46.50'	60.0' long x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

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

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Page 83

Primary OutFlow Max=0.91 cfs @ 12.81 hrs HW=45.01' TW=42.77' (Dynamic Tailwater)

1=30" PERF HDPE (Passes 0.91 cfs of 31.66 cfs potential flow)

2=4" hole in S-2 weir from 2005 G2 Plans (Orifice Controls 0.63 cfs @ 7.21 fps)

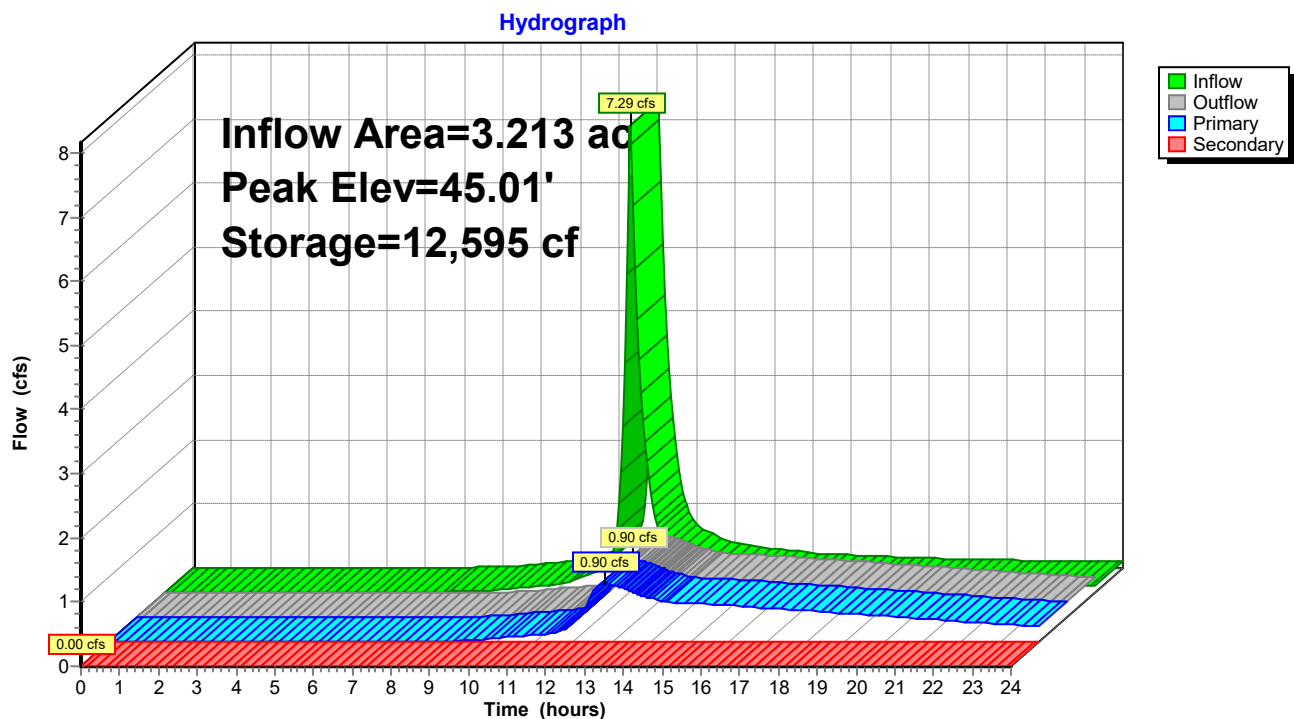
3=4" notched weir from G2 plans (Orifice Controls 0.28 cfs @ 1.79 fps)

4=Top of Weir in S-2 outlet box (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=42.00' TW=0.00' (Dynamic Tailwater)

5=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond EX-P: G2 Pond & Underground



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

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Page 84

Stage-Area-Storage for Pond EX-P: G2 Pond & Underground

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
42.00	0	44.55	10,319
42.05	105	44.60	10,566
42.10	209	44.65	10,814
42.15	314	44.70	11,061
42.20	418	44.75	11,308
42.25	523	44.80	11,555
42.30	720	44.85	11,802
42.35	917	44.90	12,050
42.40	1,114	44.95	12,297
42.45	1,311	45.00	12,544
42.50	1,508	45.05	12,806
42.55	1,711	45.10	13,069
42.60	1,914	45.15	13,331
42.65	2,118	45.20	13,593
42.70	2,321	45.25	13,855
42.75	2,524	45.30	14,117
42.80	2,732	45.35	14,380
42.85	2,941	45.40	14,642
42.90	3,149	45.45	14,904
42.95	3,358	45.50	15,167
43.00	3,566	45.55	15,429
43.05	3,779	45.60	15,691
43.10	3,992	45.65	15,953
43.15	4,204	45.70	16,216
43.20	4,417	45.75	16,478
43.25	4,630	45.80	16,740
43.30	4,846	45.85	17,002
43.35	5,063	45.90	17,264
43.40	5,279	45.95	17,527
43.45	5,496	46.00	17,789
43.50	5,712	46.05	18,070
43.55	5,931	46.10	18,350
43.60	6,151	46.15	18,631
43.65	6,370	46.20	18,911
43.70	6,590	46.25	19,192
43.75	6,809	46.30	19,472
43.80	7,029	46.35	19,753
43.85	7,250	46.40	20,033
43.90	7,470	46.45	20,314
43.95	7,691	46.50	20,595
44.00	7,911	46.55	20,875
44.05	8,130	46.60	21,156
44.10	8,349	46.65	21,436
44.15	8,568	46.70	21,717
44.20	8,787	46.75	21,997
44.25	9,006	46.80	22,278
44.30	9,219	46.85	22,558
44.35	9,432	46.90	22,839
44.40	9,646	46.95	23,119
44.45	9,859	47.00	23,400
44.50	10,072		

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

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Page 85

Summary for Pond EX-PP: G2 Pond & Underground

Inflow Area = 2.920 ac, 71.23% Impervious, Inflow Depth > 2.09" for 2-yr event
 Inflow = 6.76 cfs @ 12.03 hrs, Volume= 0.507 af
 Outflow = 0.67 cfs @ 13.00 hrs, Volume= 0.484 af, Atten= 90%, Lag= 57.9 min
 Primary = 0.67 cfs @ 13.00 hrs, Volume= 0.484 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

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

Peak Elev= 44.74' @ 12.97 hrs Surf.Area= 0 sf Storage= 11,235 cf

Flood Elev= 47.00' Surf.Area= 0 sf Storage= 23,400 cf

Plug-Flow detention time= 203.1 min calculated for 0.484 af (95% of inflow)

Center-of-Mass det. time= 177.2 min (997.6 - 820.5)

Volume	Invert	Avail.Storage	Storage Description
#1	42.00'	23,400 cf	Custom Stage Data Listed below

Elevation (feet)	Cum.Store (cubic-feet)
42.00	0
42.25	523
42.50	1,508
42.75	2,524
43.00	3,566
43.25	4,630
43.50	5,712
43.75	6,809
44.00	7,911
44.25	9,006
44.50	10,072
45.00	12,544
46.00	17,789
47.00	23,400

Device	Routing	Invert	Outlet Devices
#1	Primary	42.00'	30.0" Round 30" PERF HDPE L= 12.0' Box, headwall w/3 rounded edges, Ke= 0.200 Inlet / Outlet Invert= 42.00' / 41.84' S= 0.0133 '/' Cc= 0.900 n= 0.012, Flow Area= 4.91 sf
#2	Device 1	42.00'	4.0" Vert. 4" hole in S-2 weir from 2005 G2 Plans C= 0.600
#3	Device 1	44.70'	6.0" W x 16.8" H Vert. 4" notched weir from G2 plans C= 0.600
#4	Device 1	46.10'	4.0' long Top of Weir in S-2 outlet box Cv= 2.62 (C= 3.28)
#5	Secondary	46.50'	60.0' long x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

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

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Page 86

Primary OutFlow Max=0.67 cfs @ 13.00 hrs HW=44.74' TW=42.24' (Dynamic Tailwater)

1=30" PERF HDPE (Passes 0.67 cfs of 28.16 cfs potential flow)

2=4" hole in S-2 weir from 2005 G2 Plans (Orifice Controls 0.66 cfs @ 7.60 fps)

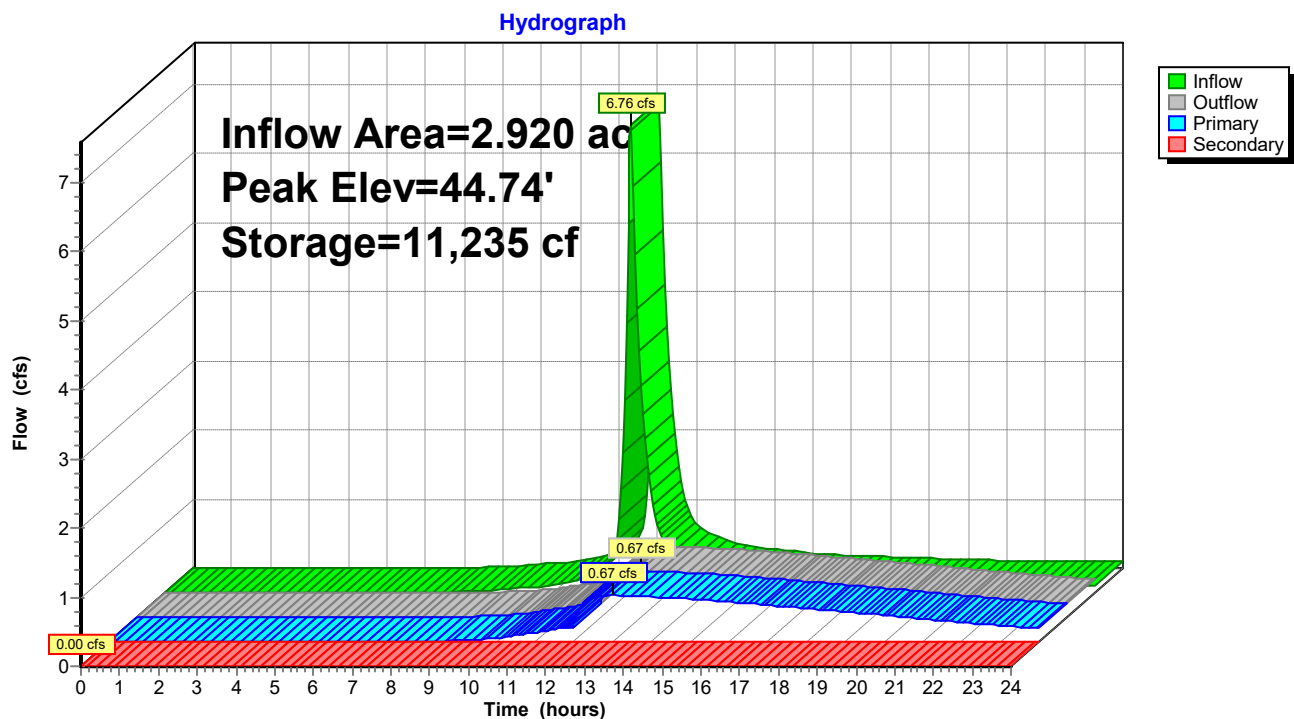
3=4" notched weir from G2 plans (Orifice Controls 0.01 cfs @ 0.60 fps)

4=Top of Weir in S-2 outlet box (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=42.00' TW=0.00' (Dynamic Tailwater)

5=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond EX-PP: G2 Pond & Underground



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

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Page 87

Stage-Area-Storage for Pond EX-PP: G2 Pond & Underground

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
42.00	0	44.55	10,319
42.05	105	44.60	10,566
42.10	209	44.65	10,814
42.15	314	44.70	11,061
42.20	418	44.75	11,308
42.25	523	44.80	11,555
42.30	720	44.85	11,802
42.35	917	44.90	12,050
42.40	1,114	44.95	12,297
42.45	1,311	45.00	12,544
42.50	1,508	45.05	12,806
42.55	1,711	45.10	13,069
42.60	1,914	45.15	13,331
42.65	2,118	45.20	13,593
42.70	2,321	45.25	13,855
42.75	2,524	45.30	14,117
42.80	2,732	45.35	14,380
42.85	2,941	45.40	14,642
42.90	3,149	45.45	14,904
42.95	3,358	45.50	15,167
43.00	3,566	45.55	15,429
43.05	3,779	45.60	15,691
43.10	3,992	45.65	15,953
43.15	4,204	45.70	16,216
43.20	4,417	45.75	16,478
43.25	4,630	45.80	16,740
43.30	4,846	45.85	17,002
43.35	5,063	45.90	17,264
43.40	5,279	45.95	17,527
43.45	5,496	46.00	17,789
43.50	5,712	46.05	18,070
43.55	5,931	46.10	18,350
43.60	6,151	46.15	18,631
43.65	6,370	46.20	18,911
43.70	6,590	46.25	19,192
43.75	6,809	46.30	19,472
43.80	7,029	46.35	19,753
43.85	7,250	46.40	20,033
43.90	7,470	46.45	20,314
43.95	7,691	46.50	20,595
44.00	7,911	46.55	20,875
44.05	8,130	46.60	21,156
44.10	8,349	46.65	21,436
44.15	8,568	46.70	21,717
44.20	8,787	46.75	21,997
44.25	9,006	46.80	22,278
44.30	9,219	46.85	22,558
44.35	9,432	46.90	22,839
44.40	9,646	46.95	23,119
44.45	9,859	47.00	23,400
44.50	10,072		

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

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Page 88

Summary for Pond EX1: Existing SDMH

Inflow Area = 3.213 ac, 70.08% Impervious, Inflow Depth > 1.90" for 2-yr event
Inflow = 0.90 cfs @ 12.81 hrs, Volume= 0.510 af
Outflow = 0.90 cfs @ 12.83 hrs, Volume= 0.510 af, Atten= 0%, Lag= 0.9 min
Primary = 0.90 cfs @ 12.83 hrs, Volume= 0.510 af

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

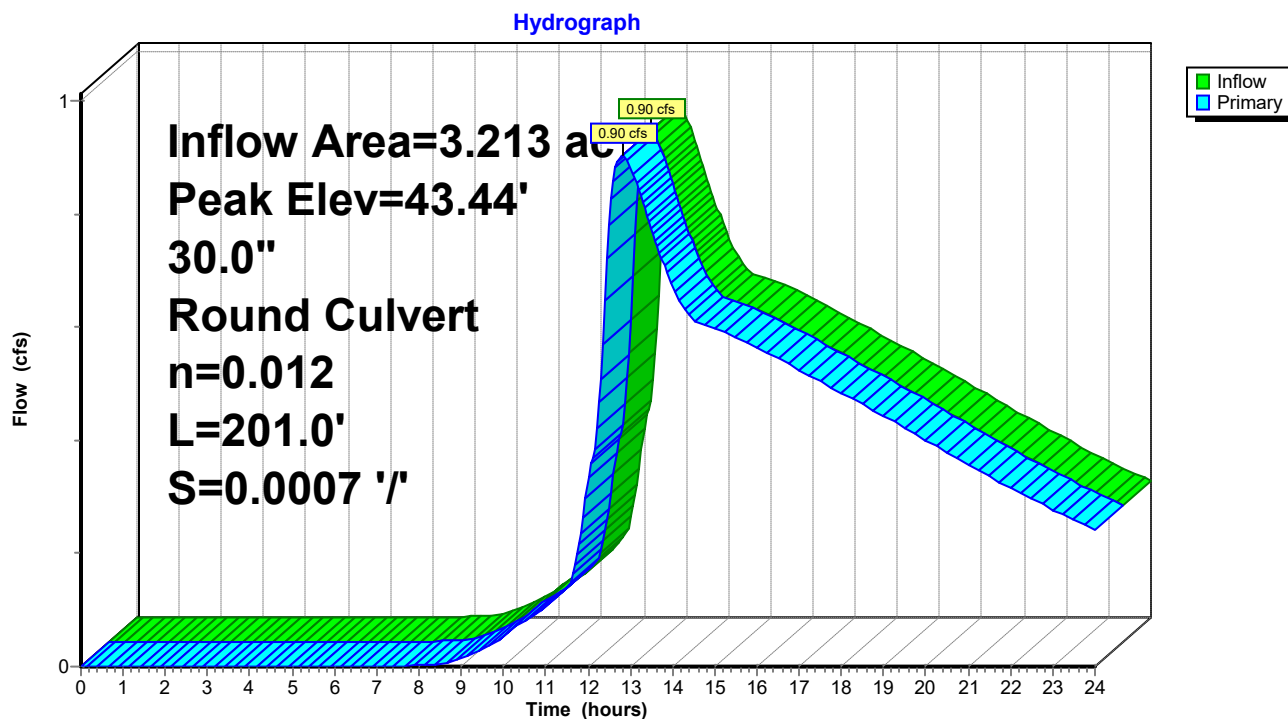
Peak Elev= 43.44' @ 12.13 hrs

Flood Elev= 48.04'

Device	Routing	Invert	Outlet Devices
#1	Primary	41.84'	30.0" Round 30" PERF. HDPE L= 201.0' Box, headwall w/3 rounded edges, Ke= 0.200 Inlet / Outlet Invert= 41.84' / 41.69' S= 0.0007 '/ Cc= 0.900 n= 0.012, Flow Area= 4.91 sf

Primary OutFlow Max=0.96 cfs @ 12.83 hrs HW=42.77' TW=42.72' (Dynamic Tailwater)
1=30" PERF. HDPE (Outlet Controls 0.96 cfs @ 0.86 fps)

Pond EX1: Existing SDMH



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Page 89

Stage-Area-Storage for Pond EX1: Existing SDMH

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
41.84	0	46.94	0
41.94	0	47.04	0
42.04	0	47.14	0
42.14	0	47.24	0
42.24	0	47.34	0
42.34	0	47.44	0
42.44	0	47.54	0
42.54	0	47.64	0
42.64	0	47.74	0
42.74	0	47.84	0
42.84	0	47.94	0
42.94	0	48.04	0
43.04	0		
43.14	0		
43.24	0		
43.34	0		
43.44	0		
43.54	0		
43.64	0		
43.74	0		
43.84	0		
43.94	0		
44.04	0		
44.14	0		
44.24	0		
44.34	0		
44.44	0		
44.54	0		
44.64	0		
44.74	0		
44.84	0		
44.94	0		
45.04	0		
45.14	0		
45.24	0		
45.34	0		
45.44	0		
45.54	0		
45.64	0		
45.74	0		
45.84	0		
45.94	0		
46.04	0		
46.14	0		
46.24	0		
46.34	0		
46.44	0		
46.54	0		
46.64	0		
46.74	0		
46.84	0		

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Page 90

Summary for Pond EX2: Existing SDI

Inflow Area = 3.213 ac, 70.08% Impervious, Inflow Depth > 1.90" for 2-yr event
Inflow = 0.90 cfs @ 12.83 hrs, Volume= 0.510 af
Outflow = 0.91 cfs @ 12.84 hrs, Volume= 0.510 af, Atten= 0%, Lag= 0.5 min
Primary = 0.91 cfs @ 12.84 hrs, Volume= 0.510 af

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

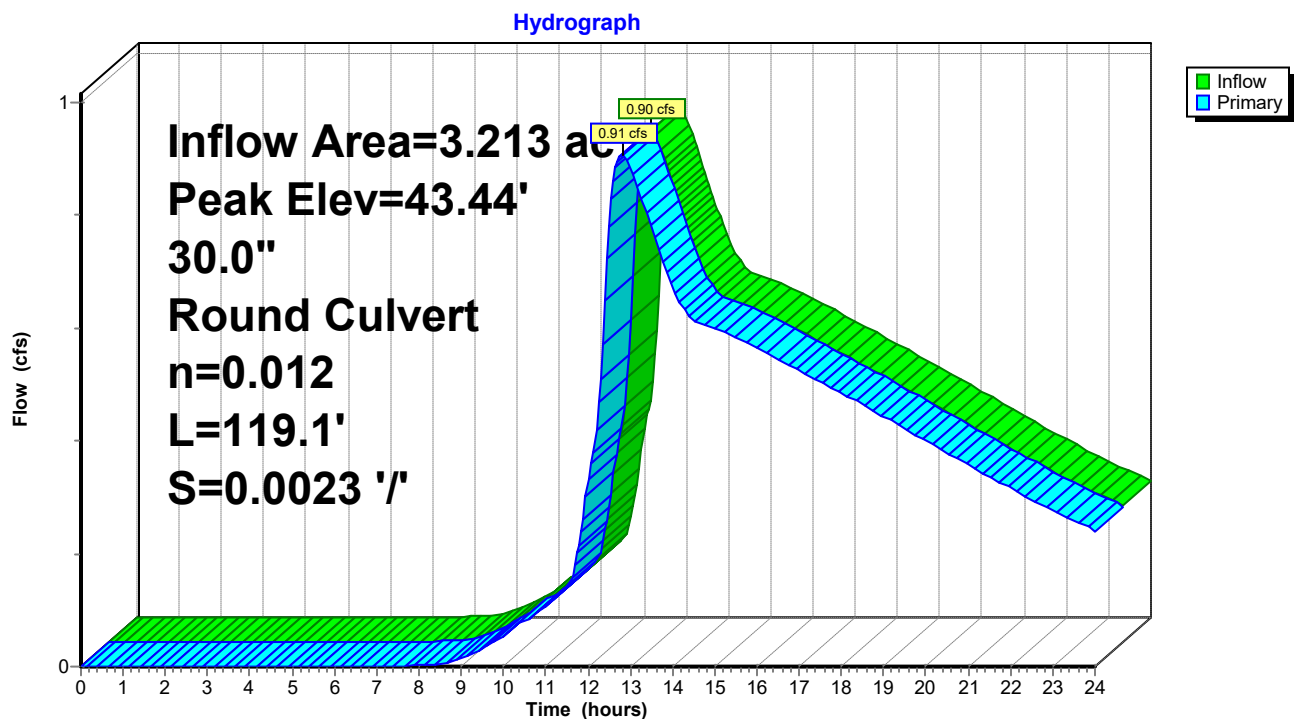
Peak Elev= 43.44' @ 12.08 hrs

Flood Elev= 47.05'

Device	Routing	Invert	Outlet Devices
#1	Primary	41.49'	30.0" Round 30" HDPE L= 119.1' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 41.49' / 41.22' S= 0.0023 '/' Cc= 0.900 n= 0.012, Flow Area= 4.91 sf

Primary OutFlow Max=1.07 cfs @ 12.84 hrs HW=42.72' TW=42.70' (Dynamic Tailwater)
1=30" HDPE (Outlet Controls 1.07 cfs @ 0.65 fps)

Pond EX2: Existing SDI



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

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Page 91

Stage-Area-Storage for Pond EX2: Existing SDI

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
41.49	0	43.53	0	45.57	0
41.53	0	43.57	0	45.61	0
41.57	0	43.61	0	45.65	0
41.61	0	43.65	0	45.69	0
41.65	0	43.69	0	45.73	0
41.69	0	43.73	0	45.77	0
41.73	0	43.77	0	45.81	0
41.77	0	43.81	0	45.85	0
41.81	0	43.85	0	45.89	0
41.85	0	43.89	0	45.93	0
41.89	0	43.93	0	45.97	0
41.93	0	43.97	0	46.01	0
41.97	0	44.01	0	46.05	0
42.01	0	44.05	0	46.09	0
42.05	0	44.09	0	46.13	0
42.09	0	44.13	0	46.17	0
42.13	0	44.17	0	46.21	0
42.17	0	44.21	0	46.25	0
42.21	0	44.25	0	46.29	0
42.25	0	44.29	0	46.33	0
42.29	0	44.33	0	46.37	0
42.33	0	44.37	0	46.41	0
42.37	0	44.41	0	46.45	0
42.41	0	44.45	0	46.49	0
42.45	0	44.49	0	46.53	0
42.49	0	44.53	0	46.57	0
42.53	0	44.57	0	46.61	0
42.57	0	44.61	0	46.65	0
42.61	0	44.65	0	46.69	0
42.65	0	44.69	0	46.73	0
42.69	0	44.73	0	46.77	0
42.73	0	44.77	0	46.81	0
42.77	0	44.81	0	46.85	0
42.81	0	44.85	0	46.89	0
42.85	0	44.89	0	46.93	0
42.89	0	44.93	0	46.97	0
42.93	0	44.97	0	47.01	0
42.97	0	45.01	0	47.05	0
43.01	0	45.05	0		
43.05	0	45.09	0		
43.09	0	45.13	0		
43.13	0	45.17	0		
43.17	0	45.21	0		
43.21	0	45.25	0		
43.25	0	45.29	0		
43.29	0	45.33	0		
43.33	0	45.37	0		
43.37	0	45.41	0		
43.41	0	45.45	0		
43.45	0	45.49	0		
43.49	0	45.53	0		

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

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Page 92

Summary for Pond EXCL1: Ex Northern Entrance Culvert

Inflow Area = 10.662 ac, 56.13% Impervious, Inflow Depth > 1.65" for 2-yr event
Inflow = 10.58 cfs @ 12.06 hrs, Volume= 1.470 af
Outflow = 10.58 cfs @ 12.06 hrs, Volume= 1.470 af, Atten= 0%, Lag= 0.0 min
Primary = 8.85 cfs @ 12.06 hrs, Volume= 1.448 af
Secondary = 1.73 cfs @ 12.06 hrs, Volume= 0.021 af

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

Peak Elev= 40.75' @ 12.06 hrs

Flood Elev= 40.05'

Device	Routing	Invert	Outlet Devices
#1	Primary	38.52'	21.0" W x 15.0" H, R=10.8"/33.1" Pipe Arch CMP_Arch_1/2 21x15 L= 44.7' CMP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 38.52' / 37.56' S= 0.0215 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 1.74 sf
#2	Secondary	40.00'	1.0' long x 42.0' breadth Over top of entrance pavement Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

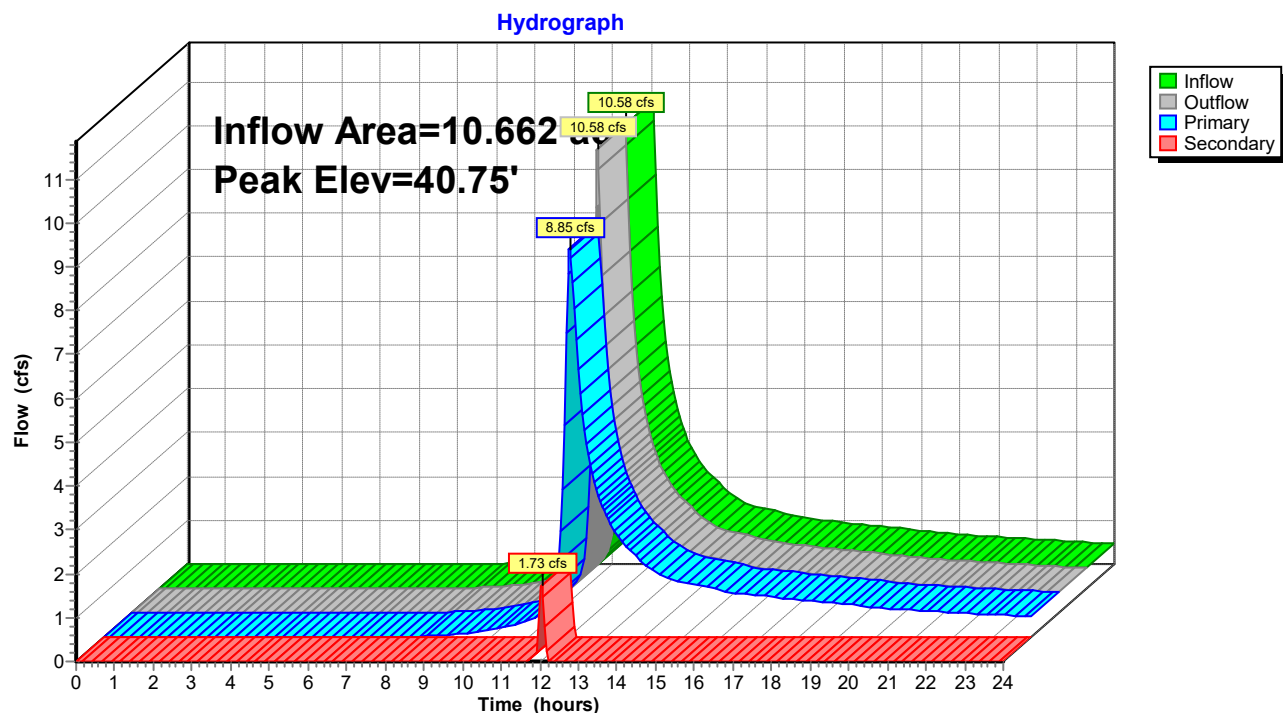
Primary OutFlow Max=8.78 cfs @ 12.06 hrs HW=40.72' TW=0.00' (Dynamic Tailwater)

↳ **1=CMP_Arch_1/2 21x15** (Barrel Controls 8.78 cfs @ 5.04 fps)

Secondary OutFlow Max=1.64 cfs @ 12.06 hrs HW=40.72' TW=0.00' (Dynamic Tailwater)

↳ **2=Over top of entrance pavement** (Weir Controls 1.64 cfs @ 2.27 fps)

Pond EXCL1: Ex Northern Entrance Culvert



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Page 93

Stage-Area-Storage for Pond EXCL1: Ex Northern Entrance Culvert

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
38.52	0	39.54	0	40.56	0
38.54	0	39.56	0	40.58	0
38.56	0	39.58	0	40.60	0
38.58	0	39.60	0	40.62	0
38.60	0	39.62	0	40.64	0
38.62	0	39.64	0	40.66	0
38.64	0	39.66	0	40.68	0
38.66	0	39.68	0	40.70	0
38.68	0	39.70	0	40.72	0
38.70	0	39.72	0	40.74	0
38.72	0	39.74	0		
38.74	0	39.76	0		
38.76	0	39.78	0		
38.78	0	39.80	0		
38.80	0	39.82	0		
38.82	0	39.84	0		
38.84	0	39.86	0		
38.86	0	39.88	0		
38.88	0	39.90	0		
38.90	0	39.92	0		
38.92	0	39.94	0		
38.94	0	39.96	0		
38.96	0	39.98	0		
38.98	0	40.00	0		
39.00	0	40.02	0		
39.02	0	40.04	0		
39.04	0	40.06	0		
39.06	0	40.08	0		
39.08	0	40.10	0		
39.10	0	40.12	0		
39.12	0	40.14	0		
39.14	0	40.16	0		
39.16	0	40.18	0		
39.18	0	40.20	0		
39.20	0	40.22	0		
39.22	0	40.24	0		
39.24	0	40.26	0		
39.26	0	40.28	0		
39.28	0	40.30	0		
39.30	0	40.32	0		
39.32	0	40.34	0		
39.34	0	40.36	0		
39.36	0	40.38	0		
39.38	0	40.40	0		
39.40	0	40.42	0		
39.42	0	40.44	0		
39.44	0	40.46	0		
39.46	0	40.48	0		
39.48	0	40.50	0		
39.50	0	40.52	0		
39.52	0	40.54	0		

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

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Page 94

Summary for Pond EXCL2: Ex Southern Entrance Culvert

Inflow Area = 8.271 ac, 61.23% Impervious, Inflow Depth > 1.78" for 2-yr event
Inflow = 10.05 cfs @ 12.05 hrs, Volume= 1.230 af
Outflow = 10.05 cfs @ 12.05 hrs, Volume= 1.230 af, Atten= 0%, Lag= 0.0 min
Primary = 8.78 cfs @ 12.05 hrs, Volume= 1.217 af
Secondary = 1.27 cfs @ 12.05 hrs, Volume= 0.013 af

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

Peak Elev= 41.80' @ 12.05 hrs

Flood Elev= 41.33'

Device	Routing	Invert	Outlet Devices
#1	Primary	38.94'	18.0" Round 18" CMP L= 46.0' CMP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 38.94' / 38.46' S= 0.0104 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 1.77 sf
#2	Secondary	41.20'	1.0' long x 45.0' breadth Over top of entrance pavement Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

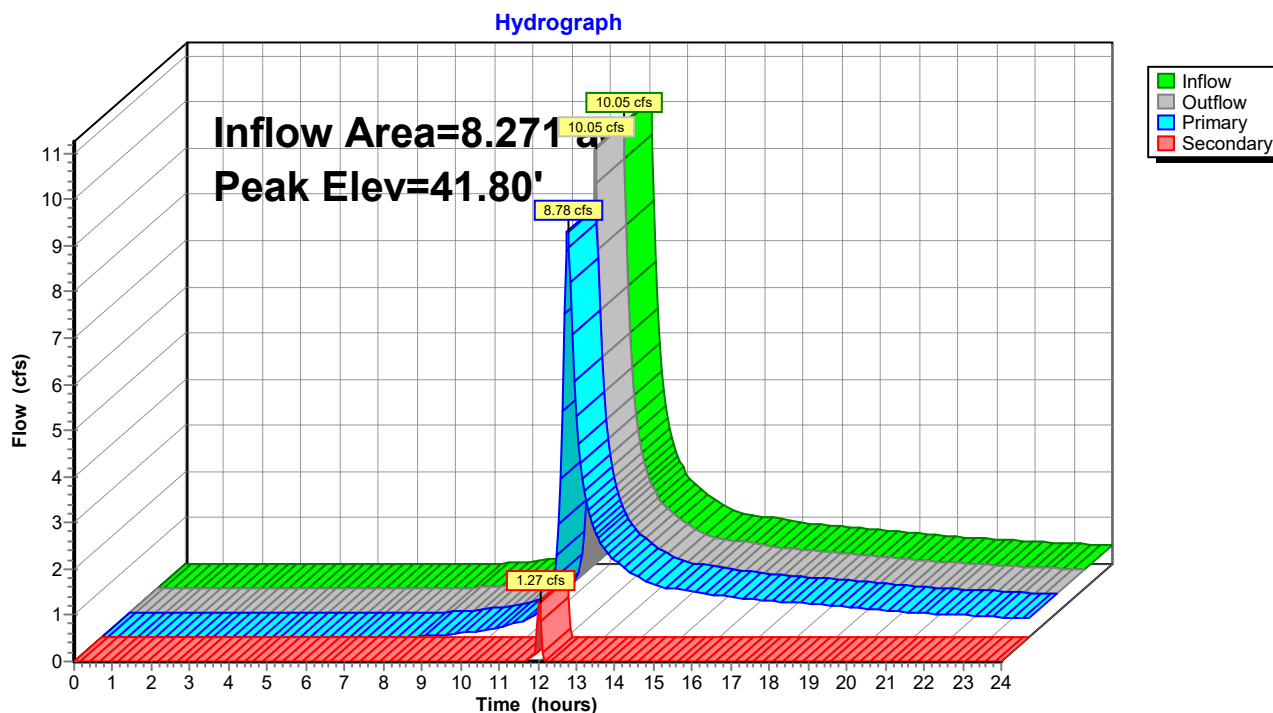
Primary OutFlow Max=8.76 cfs @ 12.05 hrs HW=41.80' TW=39.84' (Dynamic Tailwater)

↑**1=18" CMP** (Barrel Controls 8.76 cfs @ 4.96 fps)

Secondary OutFlow Max=1.25 cfs @ 12.05 hrs HW=41.80' TW=39.84' (Dynamic Tailwater)

↑**2=Over top of entrance pavement** (Weir Controls 1.25 cfs @ 2.09 fps)

Pond EXCL2: Ex Southern Entrance Culvert



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Page 95

Stage-Area-Storage for Pond EXCL2: Ex Southern Entrance Culvert

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
38.94	0	39.96	0	40.98	0
38.96	0	39.98	0	41.00	0
38.98	0	40.00	0	41.02	0
39.00	0	40.02	0	41.04	0
39.02	0	40.04	0	41.06	0
39.04	0	40.06	0	41.08	0
39.06	0	40.08	0	41.10	0
39.08	0	40.10	0	41.12	0
39.10	0	40.12	0	41.14	0
39.12	0	40.14	0	41.16	0
39.14	0	40.16	0	41.18	0
39.16	0	40.18	0	41.20	0
39.18	0	40.20	0	41.22	0
39.20	0	40.22	0	41.24	0
39.22	0	40.24	0	41.26	0
39.24	0	40.26	0	41.28	0
39.26	0	40.28	0	41.30	0
39.28	0	40.30	0	41.32	0
39.30	0	40.32	0	41.34	0
39.32	0	40.34	0	41.36	0
39.34	0	40.36	0	41.38	0
39.36	0	40.38	0	41.40	0
39.38	0	40.40	0	41.42	0
39.40	0	40.42	0	41.44	0
39.42	0	40.44	0	41.46	0
39.44	0	40.46	0	41.48	0
39.46	0	40.48	0	41.50	0
39.48	0	40.50	0	41.52	0
39.50	0	40.52	0	41.54	0
39.52	0	40.54	0	41.56	0
39.54	0	40.56	0	41.58	0
39.56	0	40.58	0	41.60	0
39.58	0	40.60	0	41.62	0
39.60	0	40.62	0	41.64	0
39.62	0	40.64	0	41.66	0
39.64	0	40.66	0	41.68	0
39.66	0	40.68	0	41.70	0
39.68	0	40.70	0	41.72	0
39.70	0	40.72	0	41.74	0
39.72	0	40.74	0	41.76	0
39.74	0	40.76	0	41.78	0
39.76	0	40.78	0	41.80	0
39.78	0	40.80	0		
39.80	0	40.82	0		
39.82	0	40.84	0		
39.84	0	40.86	0		
39.86	0	40.88	0		
39.88	0	40.90	0		
39.90	0	40.92	0		
39.92	0	40.94	0		
39.94	0	40.96	0		

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Page 96

Summary for Pond MBR#1: MBR#1

Inflow Area = 0.452 ac, 67.32% Impervious, Inflow Depth > 2.00" for 2-yr event
 Inflow = 1.67 cfs @ 11.91 hrs, Volume= 0.076 af
 Outflow = 0.02 cfs @ 20.12 hrs, Volume= 0.007 af, Atten= 99%, Lag= 492.1 min
 Primary = 0.02 cfs @ 20.12 hrs, Volume= 0.007 af

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

Peak Elev= 44.83' @ 20.12 hrs Surf.Area= 2,098 sf Storage= 2,975 cf

Plug-Flow detention time= 651.1 min calculated for 0.007 af (10% of inflow)

Center-of-Mass det. time= 466.8 min (1,278.3 - 811.5)

Volume	Invert	Avail.Storage	Storage Description			
#1	41.79'	5,356 cf	Custom Stage Data (Irregular) Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
41.79	1,437	149.0	0.0	0	0	1,437
41.80	1,437	149.0	40.0	6	6	1,438
43.79	1,437	149.0	40.0	1,144	1,150	1,735
43.80	1,437	149.0	100.0	14	1,164	1,736
45.80	2,833	200.0	100.0	4,192	5,356	3,195

Device	Routing	Invert	Outlet Devices
#1	Primary	41.79'	12.0" Round 12" HDPE L= 43.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 41.79' / 41.70' S= 0.0021 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	44.80'	12.0" W x 6.0" H Vert. 12" notch in box C= 0.600
#3	Device 1	45.30'	10.7' long Rim SHA 374.23 0 End Contraction(s)

Primary OutFlow Max=0.02 cfs @ 20.12 hrs HW=44.83' TW=41.97' (Dynamic Tailwater)

1=12" HDPE (Passes 0.02 cfs of 5.65 cfs potential flow)
 2=12" notch in box (Orifice Controls 0.02 cfs @ 0.56 fps)
 3=Rim SHA 374.23 (Controls 0.00 cfs)

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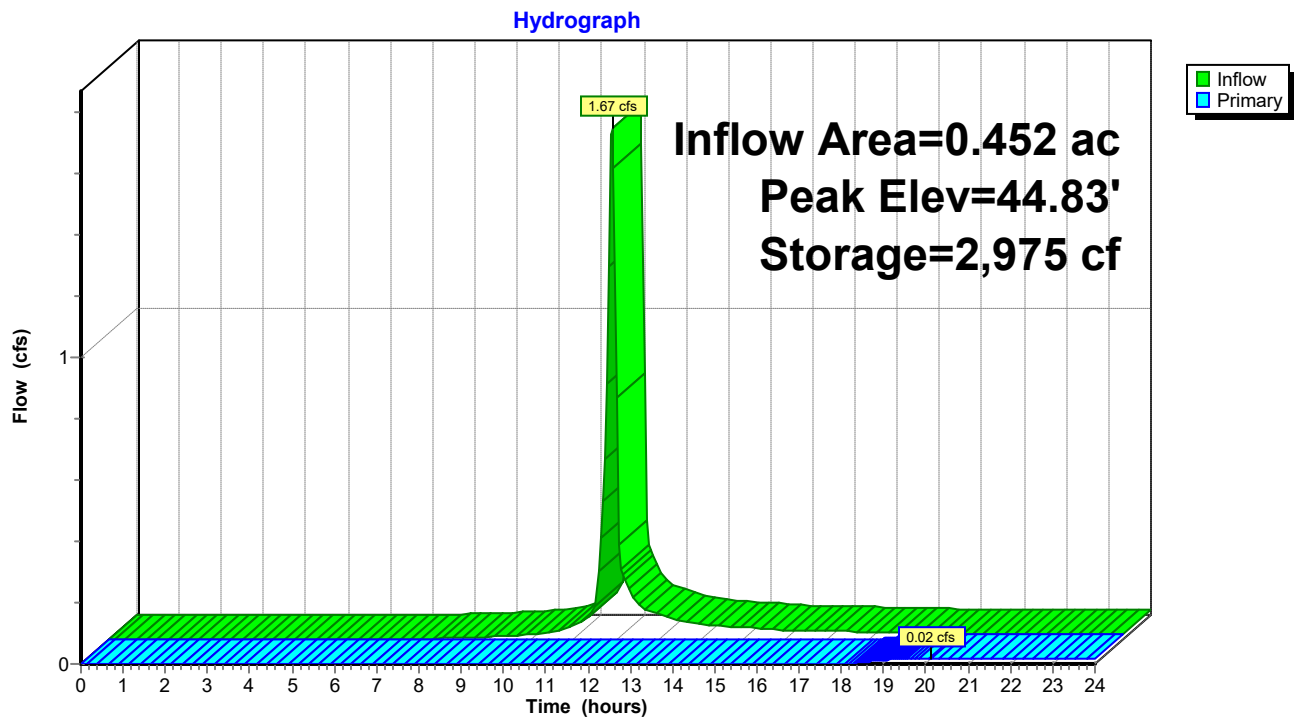
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Type II 24-hr 2-yr Rainfall=3.40"

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Page 97

Pond MBR#1: MBR#1



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

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Page 98

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

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
41.79	1,437	0	44.34	1,768	2,028
41.84	1,437	29	44.39	1,800	2,117
41.89	1,437	57	44.44	1,833	2,208
41.94	1,437	86	44.49	1,866	2,300
41.99	1,437	115	44.54	1,899	2,394
42.04	1,437	144	44.59	1,932	2,490
42.09	1,437	172	44.64	1,966	2,588
42.14	1,437	201	44.69	2,000	2,687
42.19	1,437	230	44.74	2,035	2,788
42.24	1,437	259	44.79	2,069	2,890
42.29	1,437	287	44.84	2,104	2,994
42.34	1,437	316	44.89	2,140	3,101
42.39	1,437	345	44.94	2,175	3,208
42.44	1,437	374	44.99	2,211	3,318
42.49	1,437	402	45.04	2,247	3,430
42.54	1,437	431	45.09	2,284	3,543
42.59	1,437	460	45.14	2,320	3,658
42.64	1,437	489	45.19	2,357	3,775
42.69	1,437	517	45.24	2,395	3,894
42.74	1,437	546	45.29	2,432	4,014
42.79	1,437	575	45.34	2,470	4,137
42.84	1,437	604	45.39	2,509	4,261
42.89	1,437	632	45.44	2,547	4,388
42.94	1,437	661	45.49	2,586	4,516
42.99	1,437	690	45.54	2,625	4,646
43.04	1,437	719	45.59	2,664	4,779
43.09	1,437	747	45.64	2,704	4,913
43.14	1,437	776	45.69	2,744	5,049
43.19	1,437	805	45.74	2,784	5,187
43.24	1,437	833	45.79	2,825	5,327
43.29	1,437	862			
43.34	1,437	891			
43.39	1,437	920			
43.44	1,437	948			
43.49	1,437	977			
43.54	1,437	1,006			
43.59	1,437	1,035			
43.64	1,437	1,063			
43.69	1,437	1,092			
43.74	1,437	1,121			
43.79	1,437	1,150			
43.84	1,460	1,222			
43.89	1,490	1,296			
43.94	1,519	1,371			
43.99	1,549	1,448			
44.04	1,580	1,526			
44.09	1,610	1,606			
44.14	1,641	1,687			
44.19	1,672	1,770			
44.24	1,704	1,854			
44.29	1,736	1,940			

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

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Page 99

Summary for Pond SGW#1: SGW#1

Inflow Area = 2.315 ac, 74.35% Impervious, Inflow Depth > 2.37" for 2-yr event
 Inflow = 9.40 cfs @ 11.91 hrs, Volume= 0.458 af
 Outflow = 0.16 cfs @ 15.89 hrs, Volume= 0.125 af, Atten= 98%, Lag= 239.0 min
 Primary = 0.16 cfs @ 15.89 hrs, Volume= 0.125 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 41.19' @ 15.89 hrs Surf.Area= 10,024 sf Storage= 15,344 cf

Plug-Flow detention time= 482.3 min calculated for 0.125 af (27% of inflow)
 Center-of-Mass det. time= 312.0 min (1,087.6 - 775.5)

Volume	Invert	Avail.Storage	Storage Description
#1	39.40'	35,078 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
39.40	7,196	368.0	0	0	7,196
40.40	8,760	400.0	7,965	7,965	9,189
42.90	13,074	463.0	27,113	35,078	13,648

Device	Routing	Invert	Outlet Devices
#1	Primary	38.00'	12.0" Round Culvert L= 52.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 38.00' / 37.70' S= 0.0058 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	40.90'	4.0" W x 6.0" H Vert. 4" Notch in 374.23 C= 0.600
#3	Device 1	41.40'	6.0" W x 12.0" H Vert. 6" Notch in 374.23 C= 0.600
#4	Device 1	42.40'	10.7' long Rim SHA 374.23 0 End Contraction(s)
#5	Secondary	42.70'	10.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=0.16 cfs @ 15.89 hrs HW=41.19' TW=38.24' (Dynamic Tailwater)

↑ **1=Culvert** (Passes 0.16 cfs of 5.84 cfs potential flow)
 ↑ **2=4" Notch in 374.23** (Orifice Controls 0.16 cfs @ 1.72 fps)
 ↑ **3=6" Notch in 374.23** (Controls 0.00 cfs)
 ↑ **4=Rim SHA 374.23** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=39.40' (Free Discharge)

↑ **5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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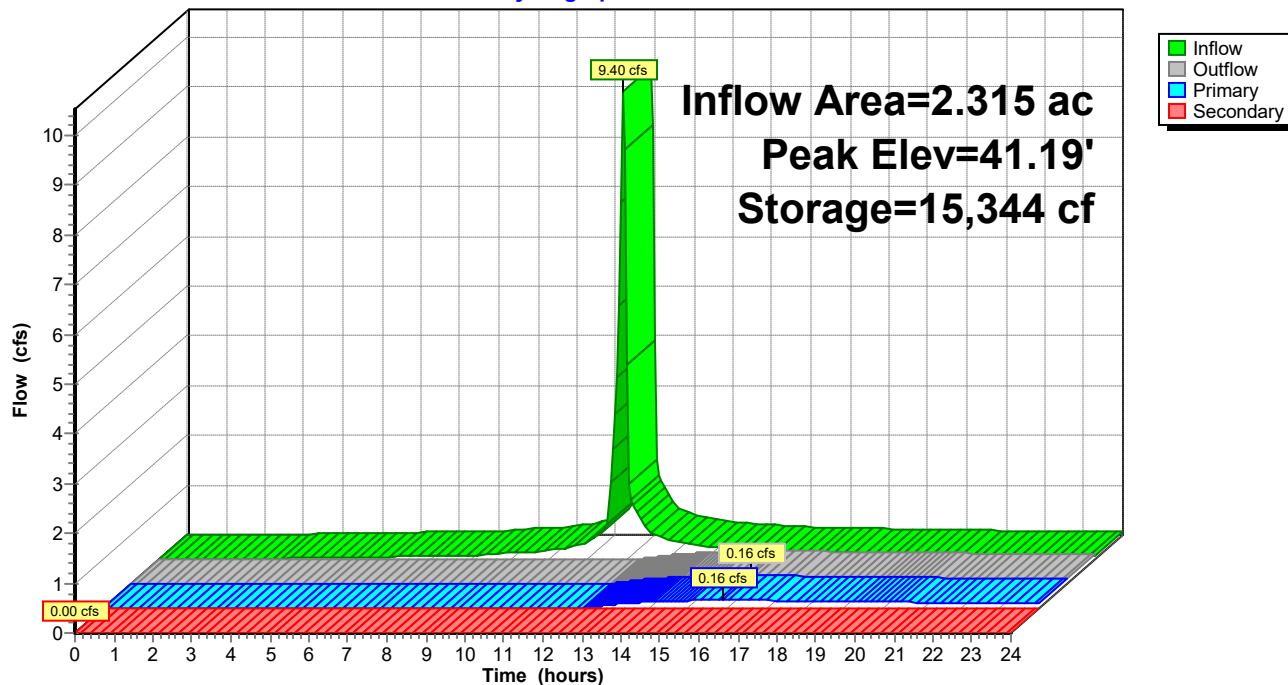
Type II 24-hr 2-yr Rainfall=3.40"

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Page 100

Pond SGW#1: SGW#1

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Page 101

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

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
39.40	7,196	0	41.95	11,333	23,495
39.45	7,271	362	42.00	11,422	24,064
39.50	7,345	727	42.05	11,511	24,637
39.55	7,421	1,096	42.10	11,600	25,215
39.60	7,497	1,469	42.15	11,689	25,797
39.65	7,573	1,846	42.20	11,779	26,384
39.70	7,649	2,226	42.25	11,870	26,975
39.75	7,726	2,611	42.30	11,960	27,571
39.80	7,803	2,999	42.35	12,051	28,171
39.85	7,881	3,391	42.40	12,142	28,776
39.90	7,959	3,787	42.45	12,234	29,385
39.95	8,037	4,187	42.50	12,326	29,999
40.00	8,116	4,591	42.55	12,418	30,618
40.05	8,195	4,999	42.60	12,511	31,241
40.10	8,275	5,410	42.65	12,604	31,869
40.15	8,355	5,826	42.70	12,697	32,501
40.20	8,435	6,246	42.75	12,791	33,139
40.25	8,516	6,670	42.80	12,885	33,780
40.30	8,597	7,097	42.85	12,979	34,427
40.35	8,678	7,529	42.90	13,074	35,078
40.40	8,760	7,965			
40.45	8,838	8,405			
40.50	8,916	8,849			
40.55	8,995	9,297			
40.60	9,073	9,748			
40.65	9,153	10,204			
40.70	9,232	10,664			
40.75	9,312	11,127			
40.80	9,392	11,595			
40.85	9,473	12,067			
40.90	9,554	12,542			
40.95	9,635	13,022			
41.00	9,717	13,506			
41.05	9,799	13,994			
41.10	9,881	14,486			
41.15	9,964	14,982			
41.20	10,047	15,482			
41.25	10,130	15,986			
41.30	10,214	16,495			
41.35	10,298	17,008			
41.40	10,382	17,525			
41.45	10,467	18,046			
41.50	10,552	18,572			
41.55	10,638	19,101			
41.60	10,723	19,635			
41.65	10,809	20,174			
41.70	10,896	20,716			
41.75	10,983	21,263			
41.80	11,070	21,815			
41.85	11,157	22,370			
41.90	11,245	22,930			

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Page 102

Summary for Pond SGW#2: SGW#2

Inflow Area = 0.931 ac, 51.02% Impervious, Inflow Depth > 1.64" for 2-yr event
 Inflow = 2.87 cfs @ 11.91 hrs, Volume= 0.127 af
 Outflow = 0.02 cfs @ 24.00 hrs, Volume= 0.004 af, Atten= 99%, Lag= 725.5 min
 Primary = 0.02 cfs @ 24.00 hrs, Volume= 0.004 af

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

Peak Elev= 43.65' @ 24.00 hrs Surf.Area= 4,528 sf Storage= 5,358 cf

Plug-Flow detention time= 830.0 min calculated for 0.004 af (3% of inflow)

Center-of-Mass det. time= 512.9 min (1,330.3 - 817.4)

Volume	Invert	Avail.Storage	Storage Description
#1	42.05'	12,835 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
42.05	1,891	314.0	0	0	1,891
43.05	3,888	346.0	2,830	2,830	3,604
45.05	6,207	396.0	10,005	12,835	6,648

Device	Routing	Invert	Outlet Devices
#1	Primary	43.55'	2.0" W x 12.0" H Vert. 2" Notch in box C= 0.600
#2	Primary	44.55'	16.3' long Rim SHA 374.70 0 End Contraction(s)

Primary OutFlow Max=0.02 cfs @ 24.00 hrs HW=43.65' TW=0.00' (Dynamic Tailwater)

1=2" Notch in box (Orifice Controls 0.02 cfs @ 1.02 fps)

2=Rim SHA 374.70 (Controls 0.00 cfs)

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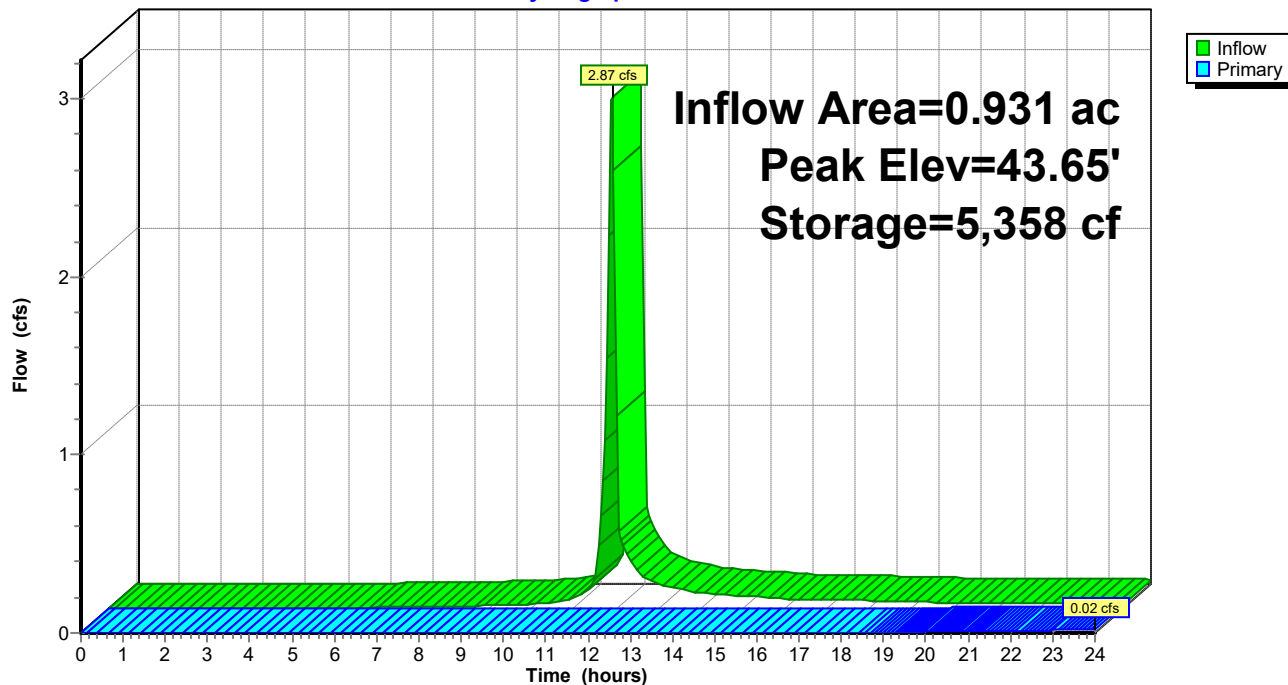
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Page 103

Pond SGW#2: SGW#2

Hydrograph



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Page 104

Stage-Area-Storage for Pond SGW#2: SGW#2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
42.05	1,891	0	44.60	5,638	10,171
42.10	1,974	97	44.65	5,700	10,454
42.15	2,059	197	44.70	5,762	10,741
42.20	2,145	303	44.75	5,825	11,031
42.25	2,233	412	44.80	5,888	11,324
42.30	2,323	526	44.85	5,951	11,619
42.35	2,415	644	44.90	6,014	11,919
42.40	2,509	767	44.95	6,078	12,221
42.45	2,604	895	45.00	6,142	12,526
42.50	2,702	1,028	45.05	6,207	12,835
42.55	2,800	1,165			
42.60	2,901	1,308			
42.65	3,004	1,456			
42.70	3,108	1,608			
42.75	3,214	1,766			
42.80	3,322	1,930			
42.85	3,432	2,099			
42.90	3,543	2,273			
42.95	3,656	2,453			
43.00	3,771	2,639			
43.05	3,888	2,830			
43.10	3,939	3,026			
43.15	3,991	3,224			
43.20	4,043	3,425			
43.25	4,096	3,628			
43.30	4,148	3,835			
43.35	4,201	4,043			
43.40	4,255	4,255			
43.45	4,309	4,469			
43.50	4,363	4,686			
43.55	4,417	4,905			
43.60	4,472	5,127			
43.65	4,527	5,352			
43.70	4,582	5,580			
43.75	4,638	5,810			
43.80	4,694	6,044			
43.85	4,751	6,280			
43.90	4,808	6,519			
43.95	4,865	6,761			
44.00	4,922	7,005			
44.05	4,980	7,253			
44.10	5,038	7,503			
44.15	5,097	7,757			
44.20	5,155	8,013			
44.25	5,215	8,272			
44.30	5,274	8,535			
44.35	5,334	8,800			
44.40	5,394	9,068			
44.45	5,455	9,339			
44.50	5,515	9,613			
44.55	5,577	9,891			

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

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Page 105

Summary for Pond TOE1: SDI/OS#1

Inflow Area = 8.641 ac, 68.11% Impervious, Inflow Depth > 1.31" for 2-yr event
Inflow = 5.76 cfs @ 11.98 hrs, Volume= 0.942 af
Outflow = 5.76 cfs @ 11.98 hrs, Volume= 0.942 af, Atten= 0%, Lag= 0.0 min
Primary = 5.76 cfs @ 11.98 hrs, Volume= 0.942 af

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

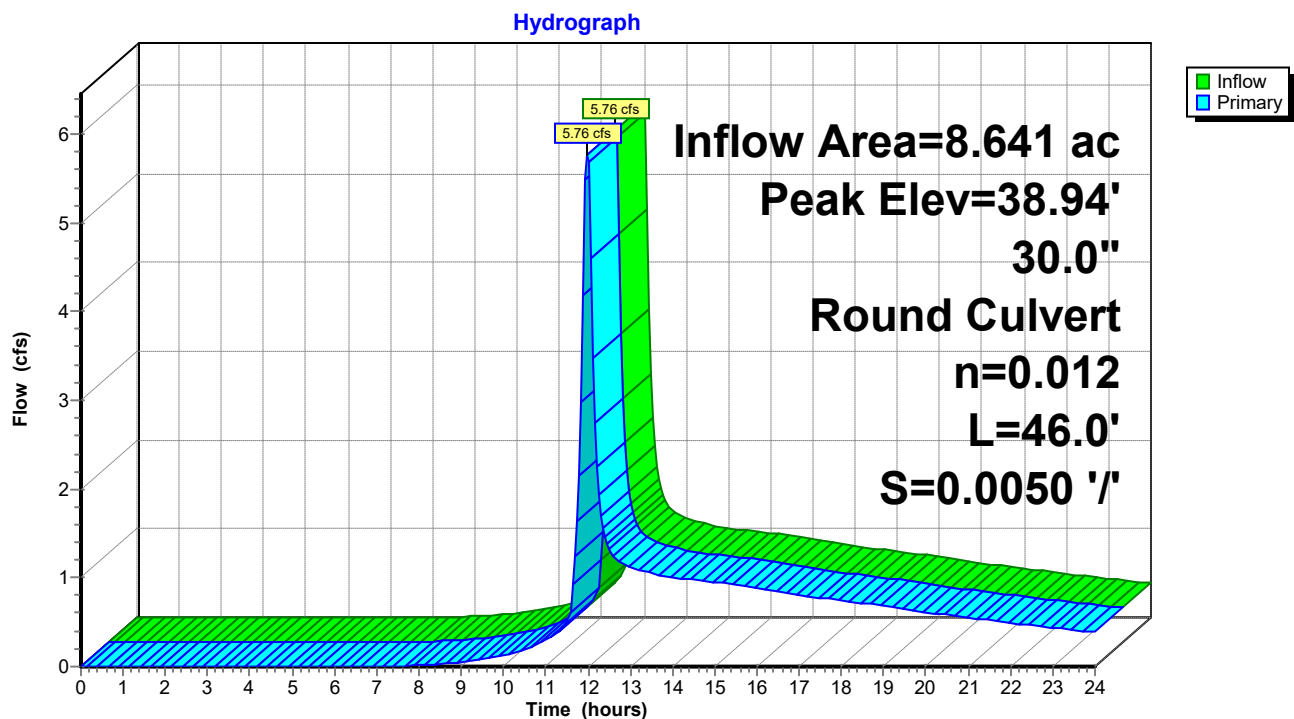
Peak Elev= 38.94' @ 11.98 hrs

Flood Elev= 42.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	37.83'	30.0" Round 30" HDPE L= 46.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 37.83' / 37.60' S= 0.0050 '/ Cc= 0.900 n= 0.012, Flow Area= 4.91 sf

Primary OutFlow Max=5.62 cfs @ 11.98 hrs HW=38.93' TW=0.00' (Dynamic Tailwater)
↑ **1=30" HDPE** (Barrel Controls 5.62 cfs @ 3.99 fps)

Pond TOE1: SDI/OS#1



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Page 106

Stage-Area-Storage for Pond TOE1: SDI/OS#1

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
37.83	0	40.38	0
37.88	0	40.43	0
37.93	0	40.48	0
37.98	0	40.53	0
38.03	0	40.58	0
38.08	0	40.63	0
38.13	0	40.68	0
38.18	0	40.73	0
38.23	0	40.78	0
38.28	0	40.83	0
38.33	0	40.88	0
38.38	0	40.93	0
38.43	0	40.98	0
38.48	0	41.03	0
38.53	0	41.08	0
38.58	0	41.13	0
38.63	0	41.18	0
38.68	0	41.23	0
38.73	0	41.28	0
38.78	0	41.33	0
38.83	0	41.38	0
38.88	0	41.43	0
38.93	0	41.48	0
38.98	0	41.53	0
39.03	0	41.58	0
39.08	0	41.63	0
39.13	0	41.68	0
39.18	0	41.73	0
39.23	0	41.78	0
39.28	0	41.83	0
39.33	0	41.88	0
39.38	0	41.93	0
39.43	0	41.98	0
39.48	0	42.03	0
39.53	0	42.08	0
39.58	0	42.13	0
39.63	0	42.18	0
39.68	0	42.23	0
39.73	0	42.28	0
39.78	0	42.33	0
39.83	0	42.38	0
39.88	0	42.43	0
39.93	0	42.48	0
39.98	0		
40.03	0		
40.08	0		
40.13	0		
40.18	0		
40.23	0		
40.28	0		
40.33	0		

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

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Page 107

Summary for Pond TOE2: SDMH

Inflow Area = 6.327 ac, 65.83% Impervious, Inflow Depth > 1.55" for 2-yr event
Inflow = 5.76 cfs @ 11.98 hrs, Volume= 0.818 af
Outflow = 5.76 cfs @ 11.98 hrs, Volume= 0.818 af, Atten= 0%, Lag= 0.0 min
Primary = 5.76 cfs @ 11.98 hrs, Volume= 0.818 af

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

Peak Elev= 39.37' @ 12.00 hrs

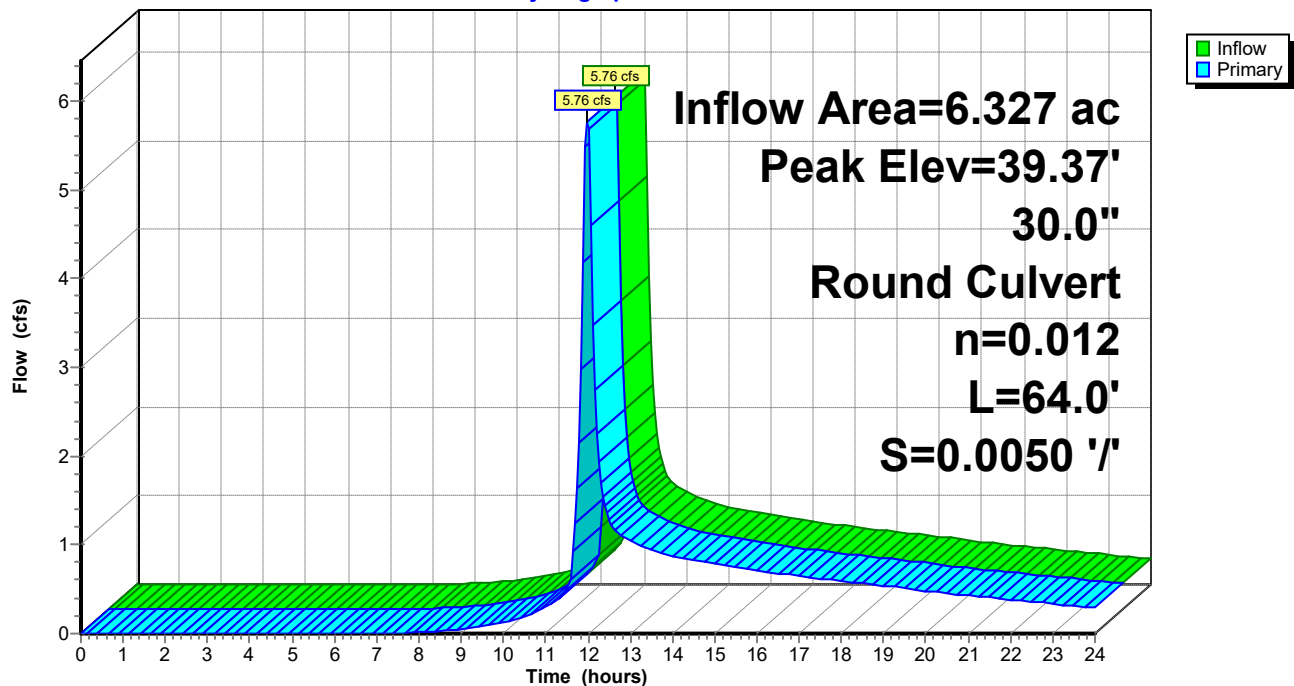
Flood Elev= 43.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	38.25'	30.0" Round 30" HDPE L= 64.0' Box, headwall w/3 rounded edges, Ke= 0.200 Inlet / Outlet Invert= 38.25' / 37.93' S= 0.0050 '/ Cc= 0.900 n= 0.012, Flow Area= 4.91 sf

Primary OutFlow Max=5.23 cfs @ 11.98 hrs HW=39.35' TW=38.93' (Dynamic Tailwater)
↑ **1=30" HDPE** (Outlet Controls 5.23 cfs @ 3.72 fps)

Pond TOE2: SDMH

Hydrograph



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Page 108

Stage-Area-Storage for Pond TOE2: SDMH

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
38.25	0	40.29	0	42.33	0
38.29	0	40.33	0	42.37	0
38.33	0	40.37	0	42.41	0
38.37	0	40.41	0	42.45	0
38.41	0	40.45	0	42.49	0
38.45	0	40.49	0	42.53	0
38.49	0	40.53	0	42.57	0
38.53	0	40.57	0	42.61	0
38.57	0	40.61	0	42.65	0
38.61	0	40.65	0	42.69	0
38.65	0	40.69	0	42.73	0
38.69	0	40.73	0	42.77	0
38.73	0	40.77	0	42.81	0
38.77	0	40.81	0	42.85	0
38.81	0	40.85	0	42.89	0
38.85	0	40.89	0	42.93	0
38.89	0	40.93	0	42.97	0
38.93	0	40.97	0	43.01	0
38.97	0	41.01	0	43.05	0
39.01	0	41.05	0	43.09	0
39.05	0	41.09	0	43.13	0
39.09	0	41.13	0	43.17	0
39.13	0	41.17	0	43.21	0
39.17	0	41.21	0	43.25	0
39.21	0	41.25	0	43.29	0
39.25	0	41.29	0		
39.29	0	41.33	0		
39.33	0	41.37	0		
39.37	0	41.41	0		
39.41	0	41.45	0		
39.45	0	41.49	0		
39.49	0	41.53	0		
39.53	0	41.57	0		
39.57	0	41.61	0		
39.61	0	41.65	0		
39.65	0	41.69	0		
39.69	0	41.73	0		
39.73	0	41.77	0		
39.77	0	41.81	0		
39.81	0	41.85	0		
39.85	0	41.89	0		
39.89	0	41.93	0		
39.93	0	41.97	0		
39.97	0	42.01	0		
40.01	0	42.05	0		
40.05	0	42.09	0		
40.09	0	42.13	0		
40.13	0	42.17	0		
40.17	0	42.21	0		
40.21	0	42.25	0		
40.25	0	42.29	0		

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

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Page 109

Summary for Pond TOE3: SDMH

Inflow Area = 6.327 ac, 65.83% Impervious, Inflow Depth > 1.55" for 2-yr event
Inflow = 5.76 cfs @ 11.98 hrs, Volume= 0.818 af
Outflow = 5.76 cfs @ 11.98 hrs, Volume= 0.818 af, Atten= 0%, Lag= 0.0 min
Primary = 5.76 cfs @ 11.98 hrs, Volume= 0.818 af

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

Peak Elev= 40.26' @ 12.00 hrs

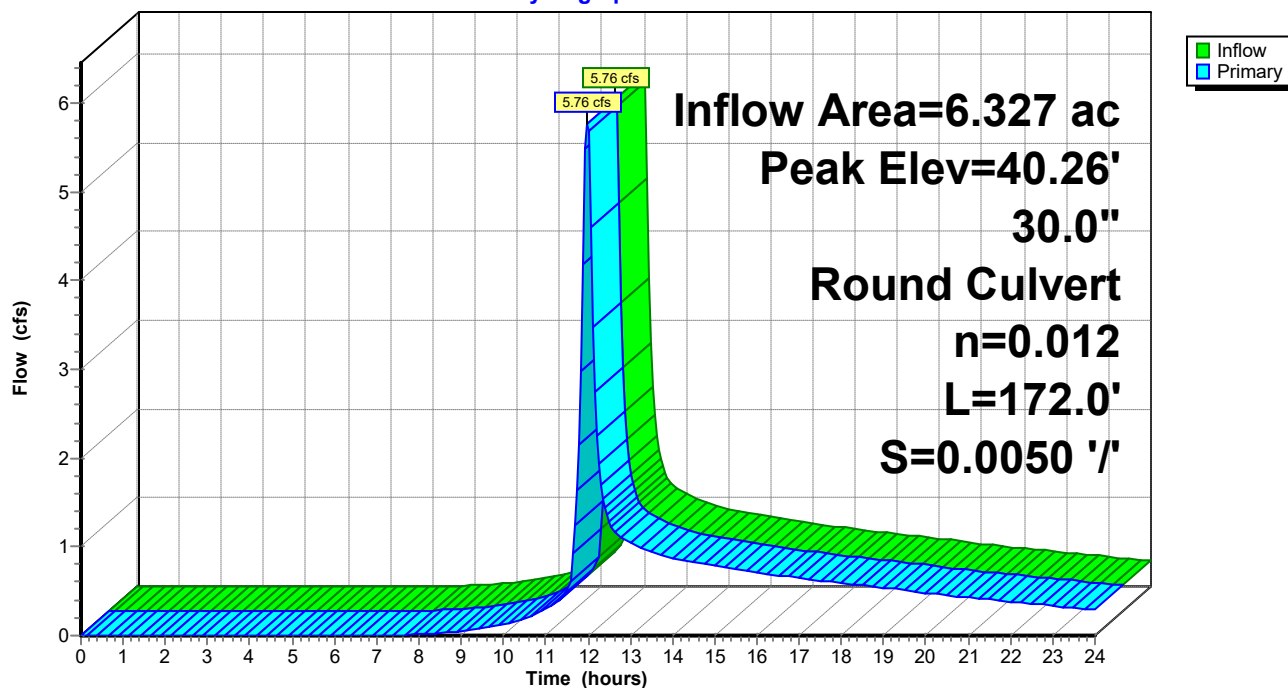
Flood Elev= 45.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	39.21'	30.0" Round 30" HDPE L= 172.0' Box, headwall w/3 rounded edges, Ke= 0.200 Inlet / Outlet Invert= 39.21' / 38.35' S= 0.0050 '/ Cc= 0.900 n= 0.012, Flow Area= 4.91 sf

Primary OutFlow Max=5.32 cfs @ 11.98 hrs HW=40.24' TW=39.35' (Dynamic Tailwater)
1=30" HDPE (Outlet Controls 5.32 cfs @ 4.12 fps)

Pond TOE3: SDMH

Hydrograph



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

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Page 110

Stage-Area-Storage for Pond TOE3: SDMH

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
39.21	0	44.31	0
39.31	0	44.41	0
39.41	0	44.51	0
39.51	0	44.61	0
39.61	0	44.71	0
39.71	0	44.81	0
39.81	0	44.91	0
39.91	0	45.01	0
40.01	0	45.11	0
40.11	0	45.21	0
40.21	0	45.31	0
40.31	0	45.41	0
40.41	0	45.51	0
40.51	0	45.61	0
40.61	0	45.71	0
40.71	0	45.81	0
40.81	0		
40.91	0		
41.01	0		
41.11	0		
41.21	0		
41.31	0		
41.41	0		
41.51	0		
41.61	0		
41.71	0		
41.81	0		
41.91	0		
42.01	0		
42.11	0		
42.21	0		
42.31	0		
42.41	0		
42.51	0		
42.61	0		
42.71	0		
42.81	0		
42.91	0		
43.01	0		
43.11	0		
43.21	0		
43.31	0		
43.41	0		
43.51	0		
43.61	0		
43.71	0		
43.81	0		
43.91	0		
44.01	0		
44.11	0		
44.21	0		

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

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Page 111

Summary for Pond TOE4: SDI/OS #2

Inflow Area = 6.327 ac, 65.83% Impervious, Inflow Depth > 1.55" for 2-yr event
Inflow = 5.76 cfs @ 11.98 hrs, Volume= 0.818 af
Outflow = 5.76 cfs @ 11.98 hrs, Volume= 0.818 af, Atten= 0%, Lag= 0.0 min
Primary = 5.76 cfs @ 11.98 hrs, Volume= 0.818 af

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

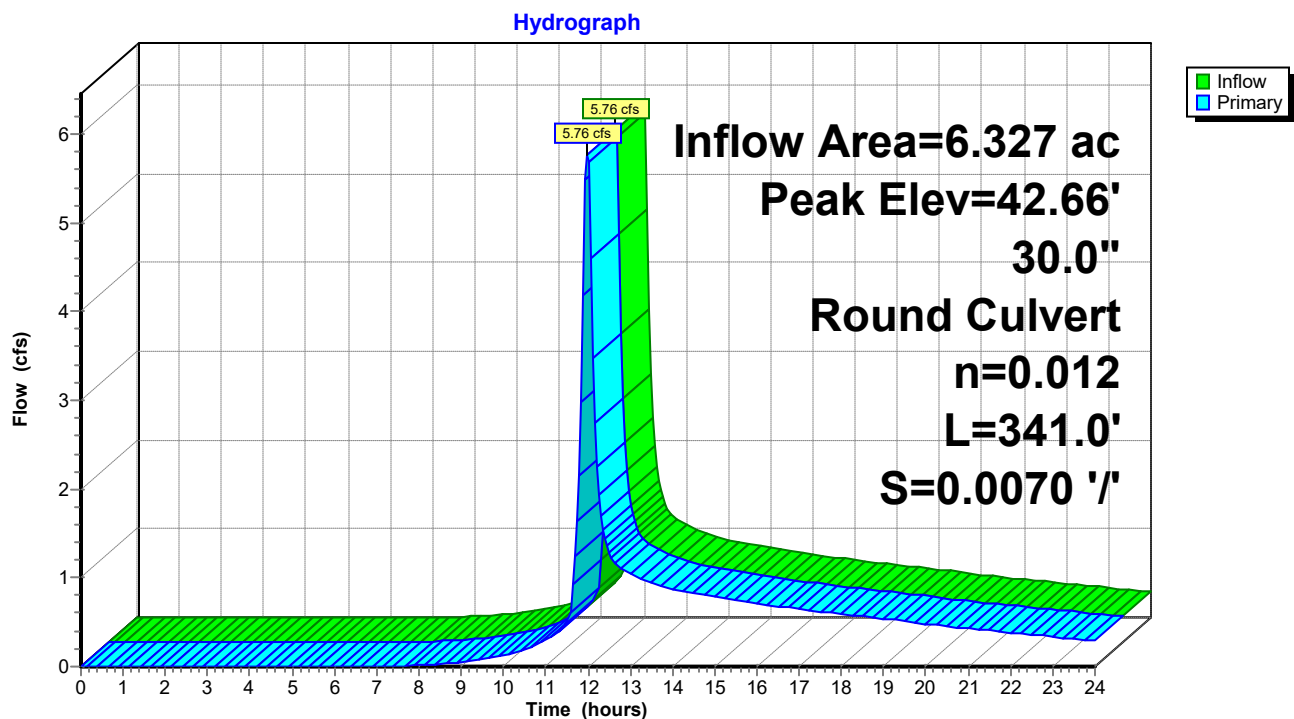
Peak Elev= 42.66' @ 11.98 hrs

Flood Elev= 45.05'

Device	Routing	Invert	Outlet Devices
#1	Primary	41.70'	30.0" Round 30" HPDE L= 341.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 41.70' / 39.31' S= 0.0070 '/ Cc= 0.900 n= 0.012, Flow Area= 4.91 sf

Primary OutFlow Max=5.62 cfs @ 11.98 hrs HW=42.64' TW=40.24' (Dynamic Tailwater)
↑1=30" HPDE (Inlet Controls 5.62 cfs @ 3.31 fps)

Pond TOE4: SDI/OS #2



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

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Page 112

Stage-Area-Storage for Pond TOE4: SDI/OS #2

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
41.70	0	44.25	0
41.75	0	44.30	0
41.80	0	44.35	0
41.85	0	44.40	0
41.90	0	44.45	0
41.95	0	44.50	0
42.00	0	44.55	0
42.05	0	44.60	0
42.10	0	44.65	0
42.15	0	44.70	0
42.20	0	44.75	0
42.25	0	44.80	0
42.30	0	44.85	0
42.35	0	44.90	0
42.40	0	44.95	0
42.45	0	45.00	0
42.50	0	45.05	0
42.55	0		
42.60	0		
42.65	0		
42.70	0		
42.75	0		
42.80	0		
42.85	0		
42.90	0		
42.95	0		
43.00	0		
43.05	0		
43.10	0		
43.15	0		
43.20	0		
43.25	0		
43.30	0		
43.35	0		
43.40	0		
43.45	0		
43.50	0		
43.55	0		
43.60	0		
43.65	0		
43.70	0		
43.75	0		
43.80	0		
43.85	0		
43.90	0		
43.95	0		
44.00	0		
44.05	0		
44.10	0		
44.15	0		
44.20	0		

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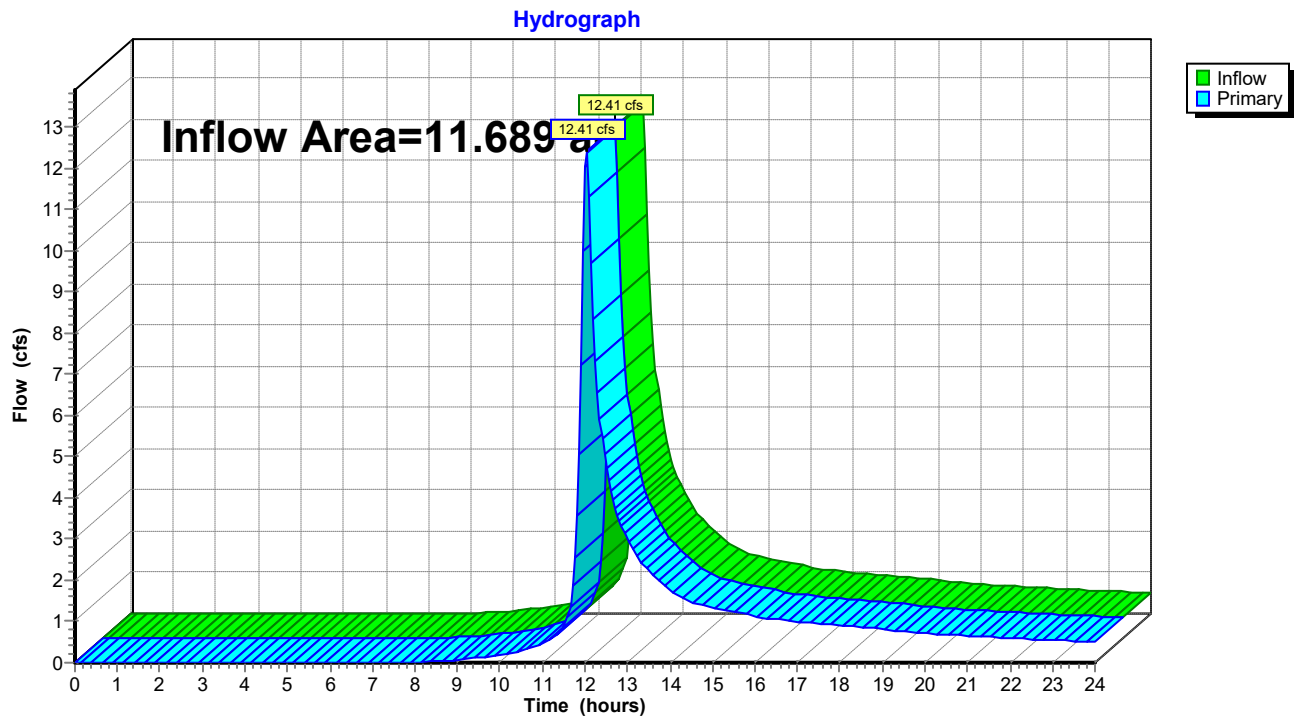
Page 113

Summary for Link PRE: PRE-DEVELOPMENT

Inflow Area = 11.689 ac, 55.03% Impervious, Inflow Depth > 1.67" for 2-yr event
Inflow = 12.41 cfs @ 12.04 hrs, Volume= 1.628 af
Primary = 12.41 cfs @ 12.04 hrs, Volume= 1.628 af, Atten= 0%, Lag= 0.0 min

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

Link PRE: PRE-DEVELOPMENT



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

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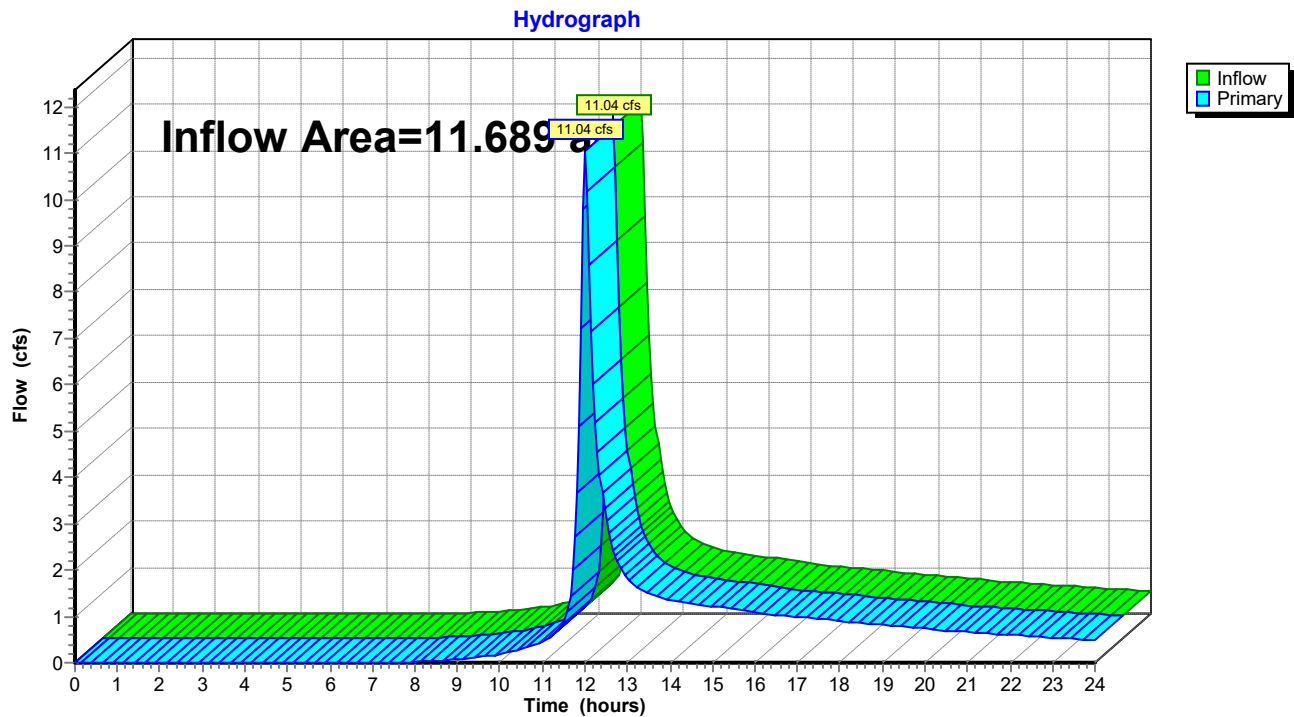
Page 114

Summary for Link PST: POST-DEVELOPMENT

Inflow Area = 11.689 ac, 65.73% Impervious, Inflow Depth > 1.43" for 2-yr event
Inflow = 11.04 cfs @ 12.00 hrs, Volume= 1.397 af
Primary = 11.04 cfs @ 12.00 hrs, Volume= 1.397 af, Atten= 0%, Lag= 0.0 min

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

Link PST: POST-DEVELOPMENT



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

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Page 115

Summary for Subcatchment EX-1: NORTH OF SITE

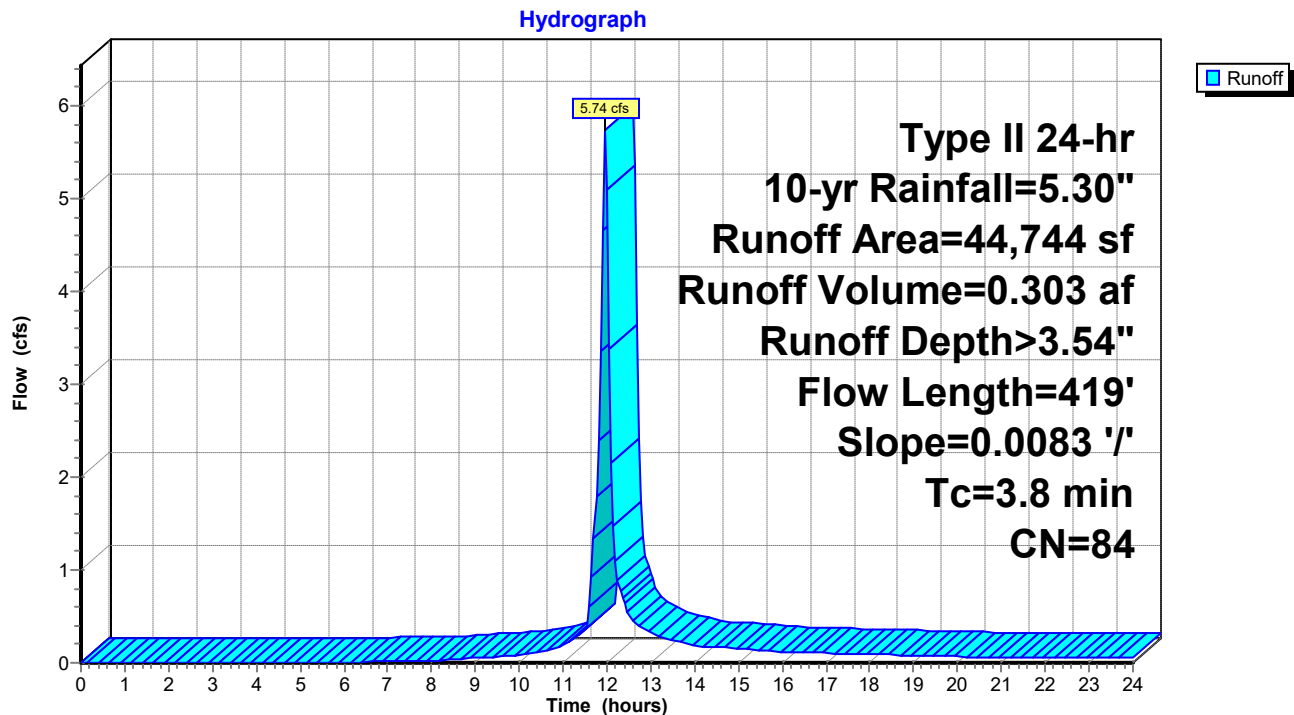
Runoff = 5.74 cfs @ 11.96 hrs, Volume= 0.303 af, Depth> 3.54"

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

	Area (sf)	CN	Description
*	19,542	98	Gravel Driveway; Bldg; Old foundations
	25,202	74	>75% Grass cover, Good, HSG C
	44,744	84	Weighted Average
	25,202		56.32% Pervious Area
	19,542		43.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	419	0.0083	1.85		Shallow Concentrated Flow, Compacted Gravel Driveway Paved Kv= 20.3 fps

Subcatchment EX-1: NORTH OF SITE



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

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Page 116

Summary for Subcatchment EX-2: MIDDLE OF SITE

Runoff = 3.00 cfs @ 12.36 hrs, Volume= 0.528 af, Depth> 2.65"

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

	Area (sf)	CN	Description
*	40,056	98	Ex Bldg; Front Parking; US 50
	64,086	61	>75% Grass cover, Good, HSG B
	104,142	75	Weighted Average
	64,086		61.54% Pervious Area
	40,056		38.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
34.4	150	0.0018	0.07		Sheet Flow, Vacant Grassed Lot Grass: Short n= 0.150 P2= 3.40"
1.1	137	0.0189	2.06		Shallow Concentrated Flow, Grassed Lot Grassed Waterway Kv= 15.0 fps
0.1	31	0.0070	4.49	3.52	Pipe Channel, 12" RCP 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.011 Concrete pipe, straight & clean
0.6	10	0.0001	0.28	0.02	Pipe Channel, 4" PVC Culverts 4.0" Round Area= 0.1 sf Perim= 1.0' r= 0.08' n= 0.010 PVC, smooth interior
0.3	70	0.0800	4.24		Shallow Concentrated Flow, Grassed Lot Grassed Waterway Kv= 15.0 fps
36.5	398	Total			

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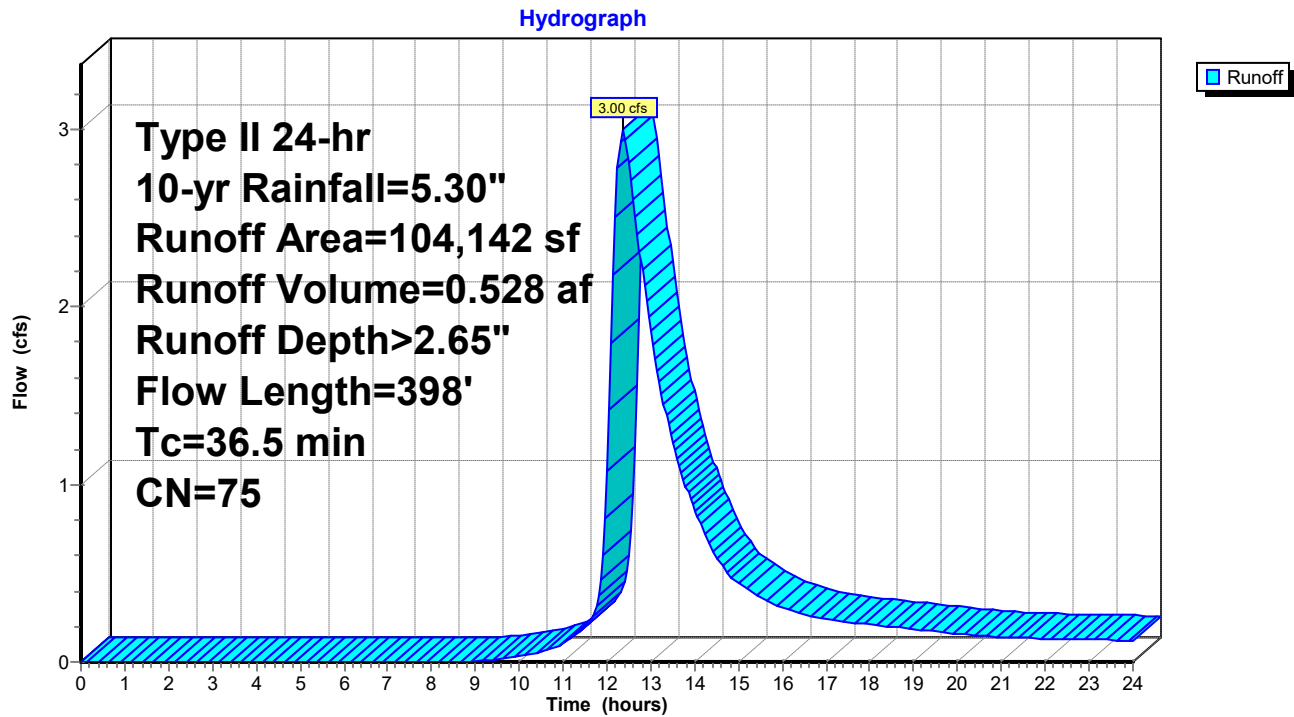
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Type II 24-hr 10-yr Rainfall=5.30"

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Page 117

Subcatchment EX-2: MIDDLE OF SITE



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Page 118

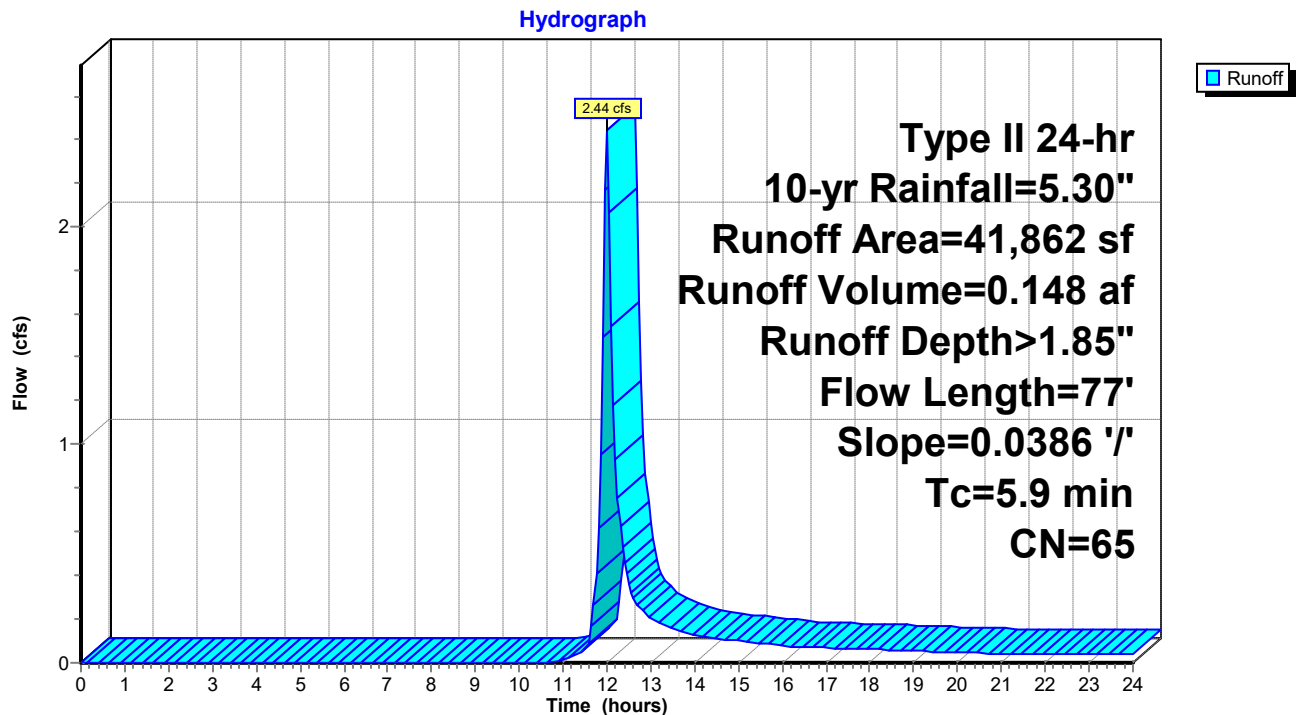
Summary for Subcatchment EX-3: SOUTHERN SITE + US50

Runoff = 2.44 cfs @ 12.00 hrs, Volume= 0.148 af, Depth> 1.85"

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

Area (sf)	CN	Description
37,243	61	>75% Grass cover, Good, HSG B
* 4,619	98	SHA/Route 50
41,862	65	Weighted Average
37,243		88.97% Pervious Area
4,619		11.03% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.9	77	0.0386	0.22		Sheet Flow, Vacant Grassed Lot Grass: Short n= 0.150 P2= 3.40"

Subcatchment EX-3: SOUTHERN SITE + US50

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

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Page 119

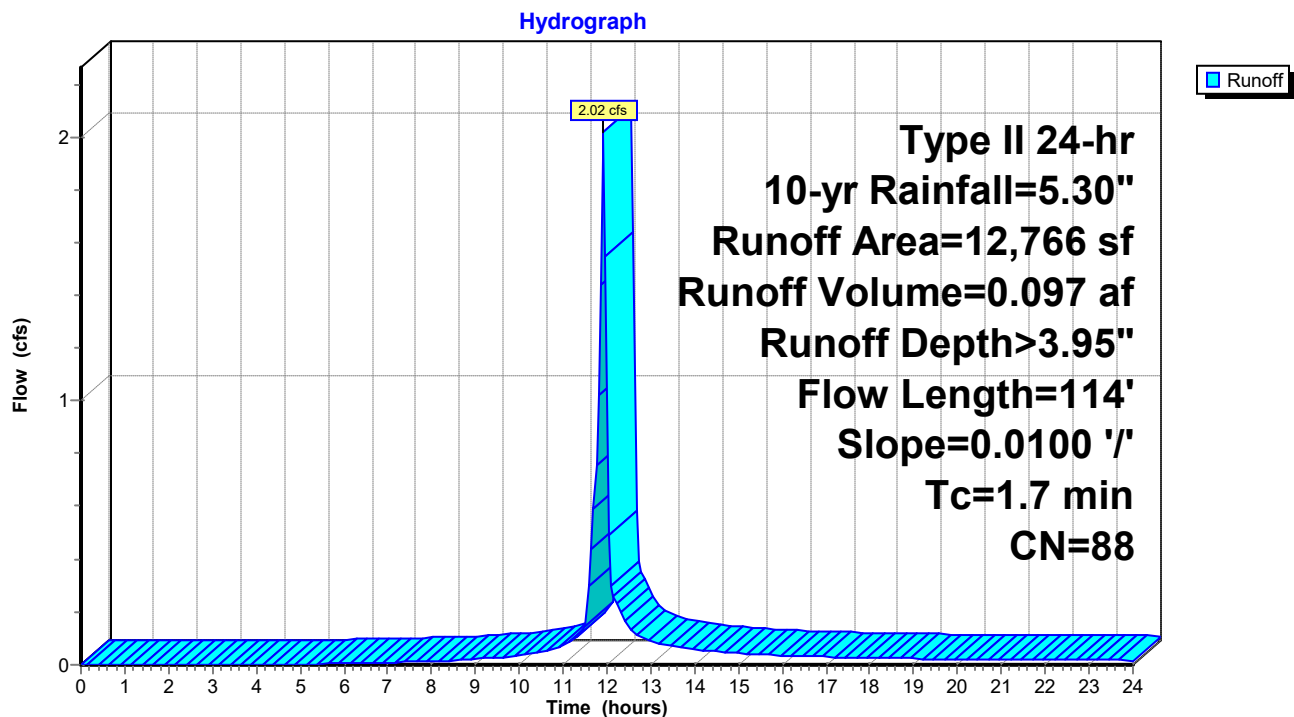
Summary for Subcatchment EX-4: ADJ to Ex SWM Pond

Runoff = 2.02 cfs @ 11.93 hrs, Volume= 0.097 af, Depth> 3.95"

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

	Area (sf)	CN	Description
*	7,479	98	Old foundations
	5,287	74	>75% Grass cover, Good, HSG C
	12,766	88	Weighted Average
	5,287		41.41% Pervious Area
	7,479		58.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	114	0.0100	1.10		Sheet Flow, Concrete Foundation Smooth surfaces n= 0.011 P2= 3.40"

Subcatchment EX-4: ADJ to Ex SWM Pond

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

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Page 120

Summary for Subcatchment G2-A: Commerce Street/G2 Associates

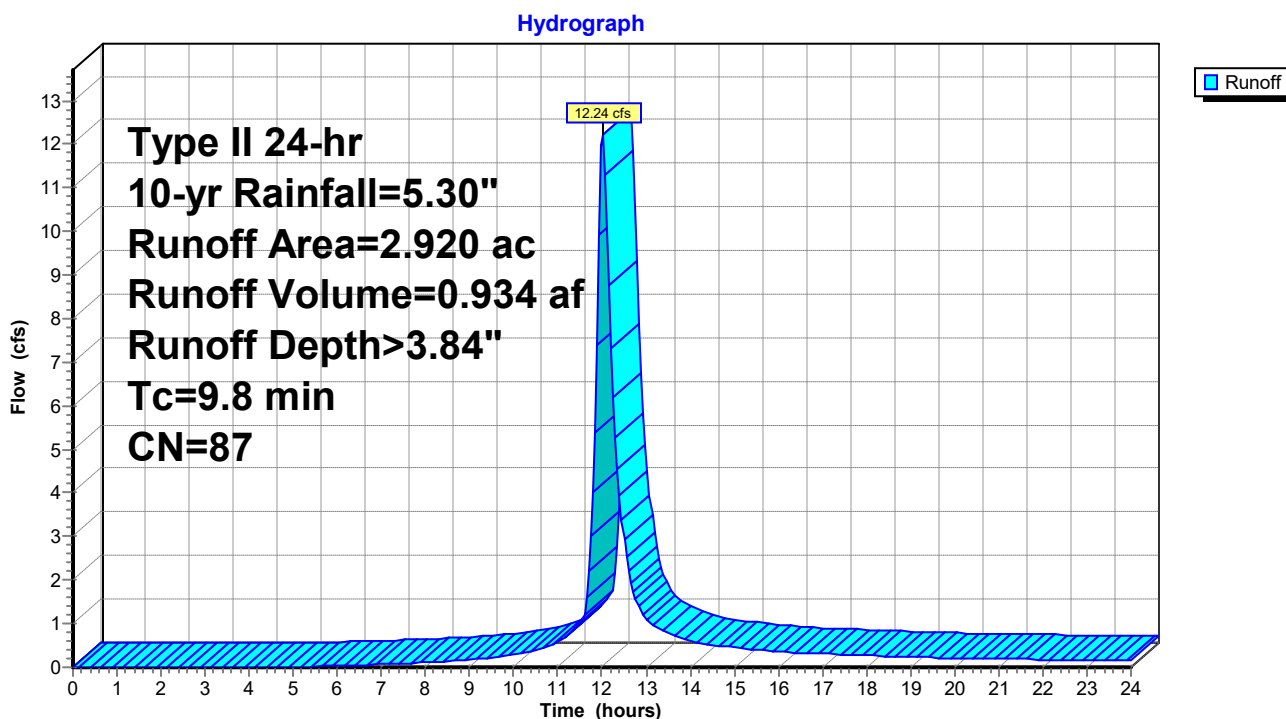
Runoff = 12.24 cfs @ 12.03 hrs, Volume= 0.934 af, Depth> 3.84"

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

Area (ac)	CN	Description
* 2.080	98	G2 Development circa 2005
* 0.840	61	>75% Grass cover, Good, HSG C
2.920	87	Weighted Average
0.840		28.77% Pervious Area
2.080		71.23% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8					Direct Entry, Tcon from TR-55 Report circa 2005

Subcatchment G2-A: Commerce Street/G2 Associates



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

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Page 121

Summary for Subcatchment G2-AA: Commerce Street/G2 Associates

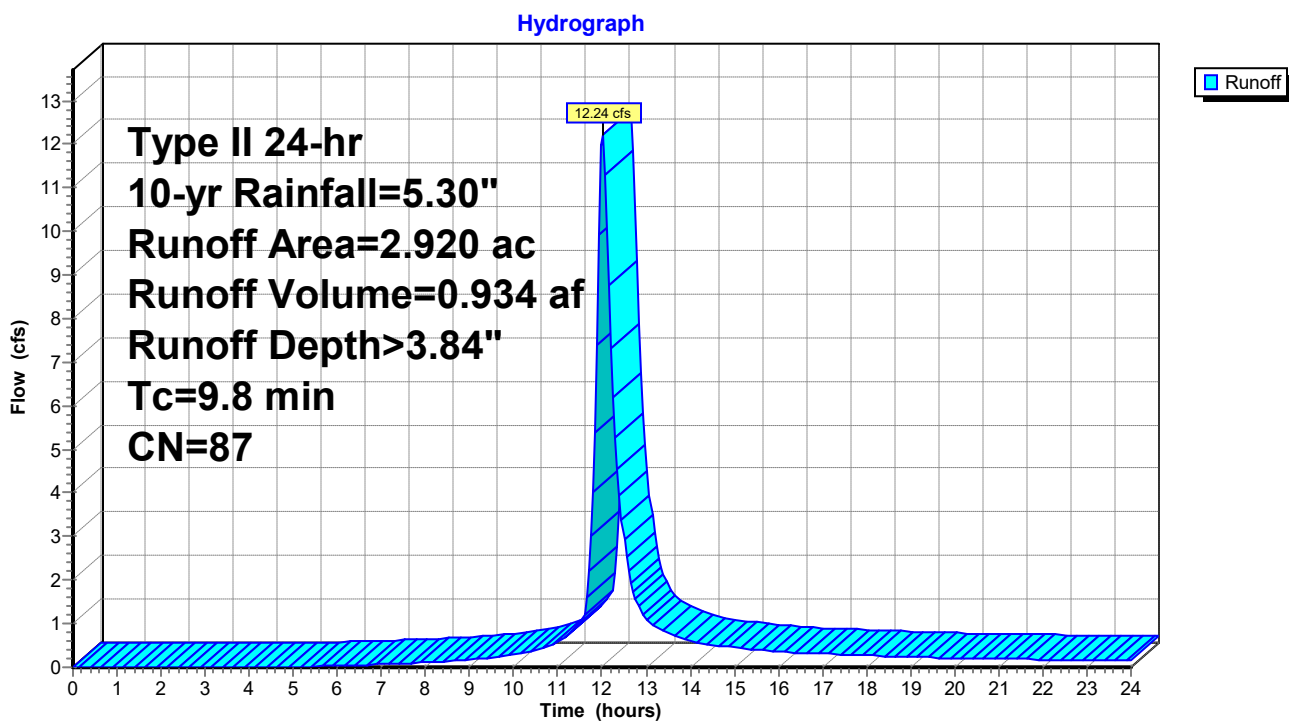
Runoff = 12.24 cfs @ 12.03 hrs, Volume= 0.934 af, Depth> 3.84"

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

	Area (ac)	CN	Description
*	2.080	98	G2 Development circa 2005
*	0.840	61	>75% Grass cover, Good, HSG C
	2.920	87	Weighted Average
	0.840		28.77% Pervious Area
	2.080		71.23% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8					Direct Entry, Tcon from TR-55 Report circa 2005

Subcatchment G2-AA: Commerce Street/G2 Associates



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

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Page 122

Summary for Subcatchment MB-1: 1/4 Medical Roof

Runoff = 0.55 cfs @ 11.90 hrs, Volume= 0.029 af, Depth> 5.06"

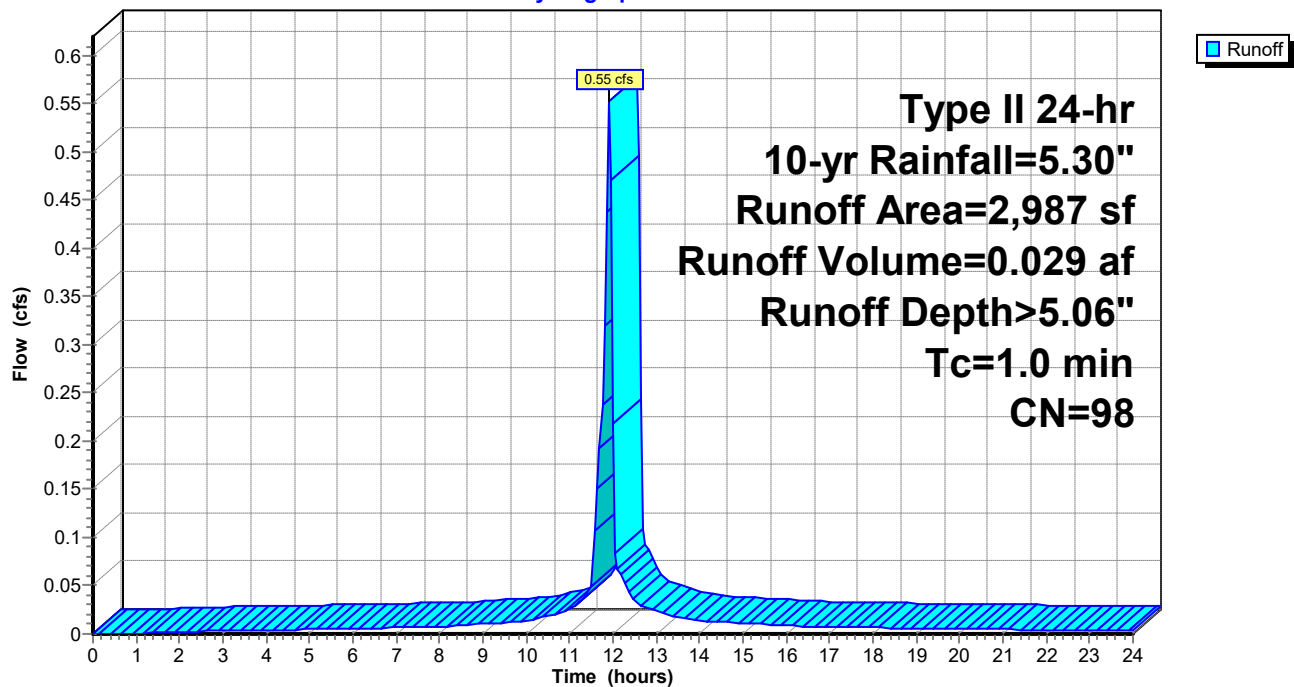
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.30"

	Area (sf)	CN	Description
*	2,987	98	Rear Med. Building Roof
	2,987		100.00% Impervious Area

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

Subcatchment MB-1: 1/4 Medical Roof

Hydrograph



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

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Page 123

Summary for Subcatchment MB-2: 1/4 Medical Roof

Runoff = 0.58 cfs @ 11.90 hrs, Volume= 0.031 af, Depth> 5.06"

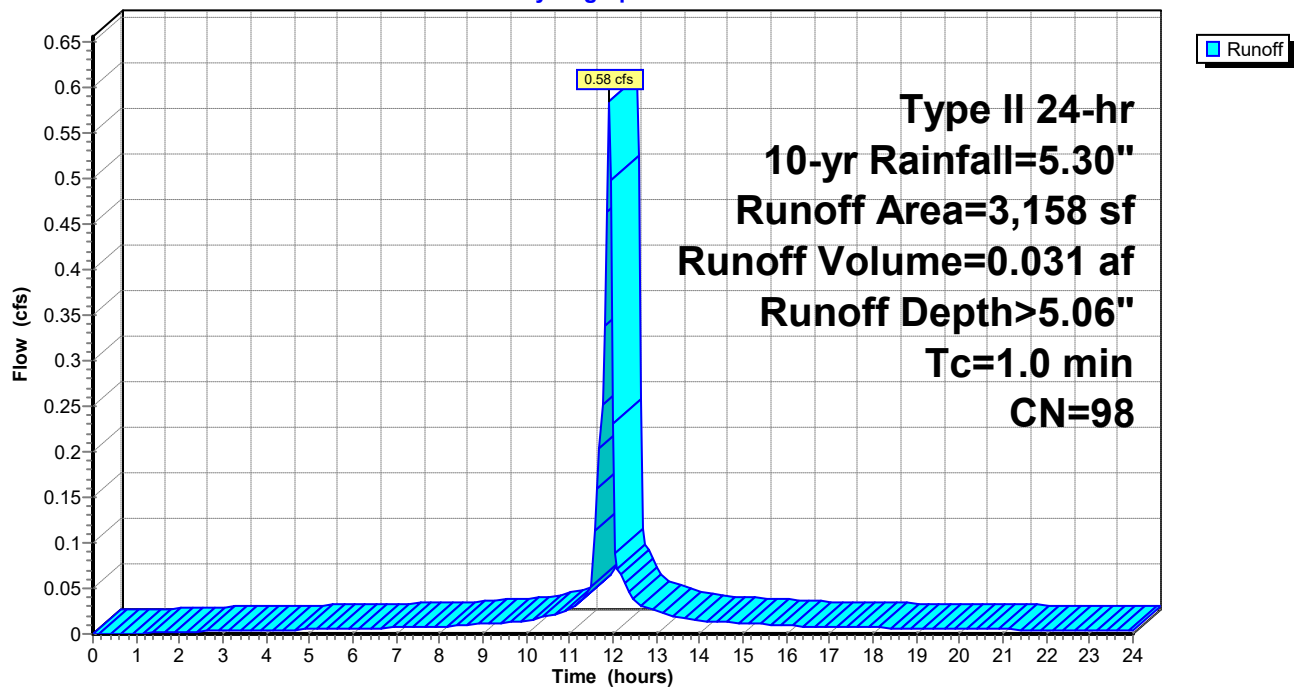
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.30"

	Area (sf)	CN	Description
*	3,158	98	Rear Med. Building Roof
	3,158		100.00% Impervious Area

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

Subcatchment MB-2: 1/4 Medical Roof

Hydrograph



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

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Page 124

Summary for Subcatchment MB-3: 1/4 Medical Roof

Runoff = 0.58 cfs @ 11.90 hrs, Volume= 0.031 af, Depth> 5.06"

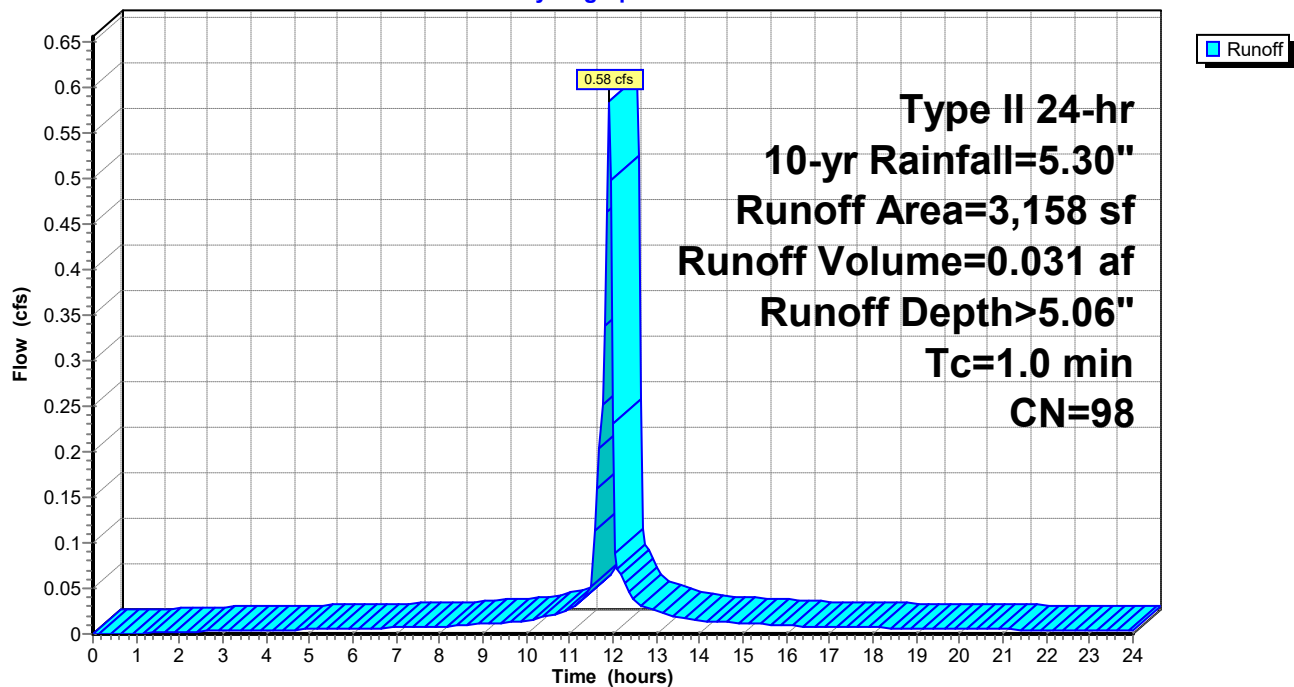
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.30"

	Area (sf)	CN	Description
*	3,158	98	Rear Med. Building Roof
	3,158		100.00% Impervious Area

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

Subcatchment MB-3: 1/4 Medical Roof

Hydrograph



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

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Page 125

Summary for Subcatchment MB-4: 1/4 Medical Roof

Runoff = 0.55 cfs @ 11.90 hrs, Volume= 0.029 af, Depth> 5.06"

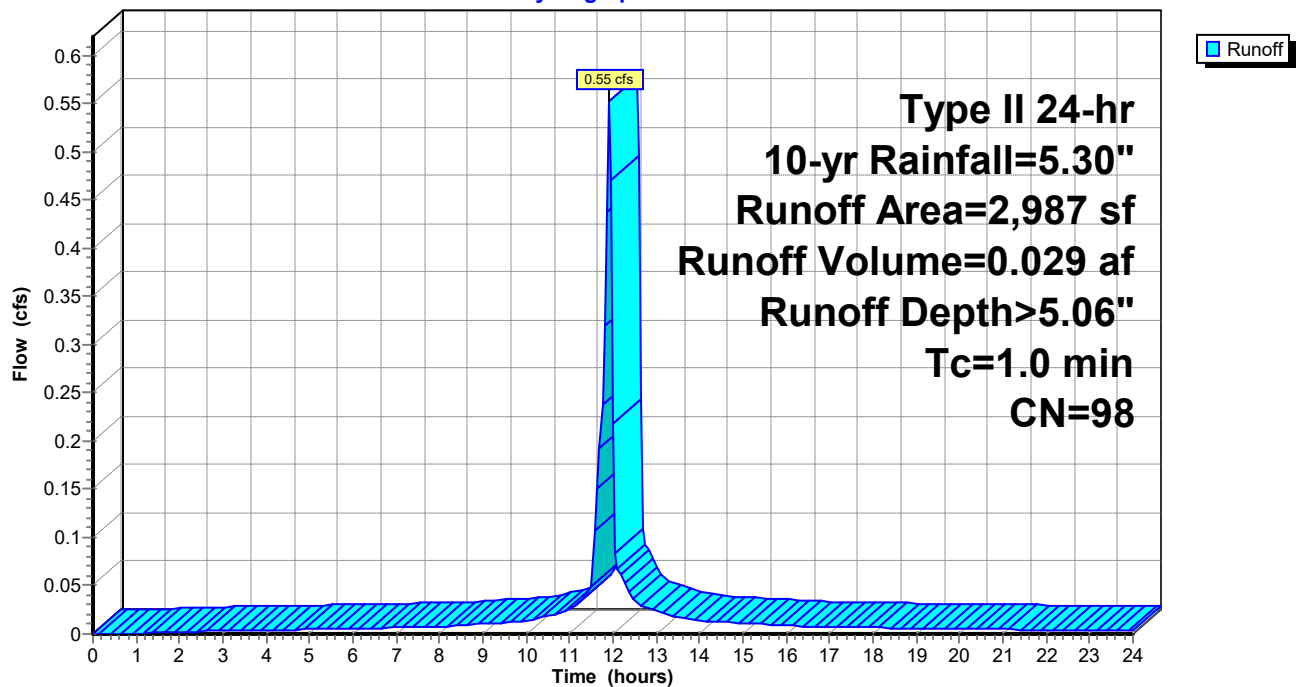
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.30"

	Area (sf)	CN	Description
*	2,987	98	Rear Med. Building Roof
	2,987		100.00% Impervious Area

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

Subcatchment MB-4: 1/4 Medical Roof

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

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Page 126

Summary for Subcatchment MY-1: 1/4 Retail Roof

Runoff = 0.81 cfs @ 11.90 hrs, Volume= 0.042 af, Depth> 5.06"

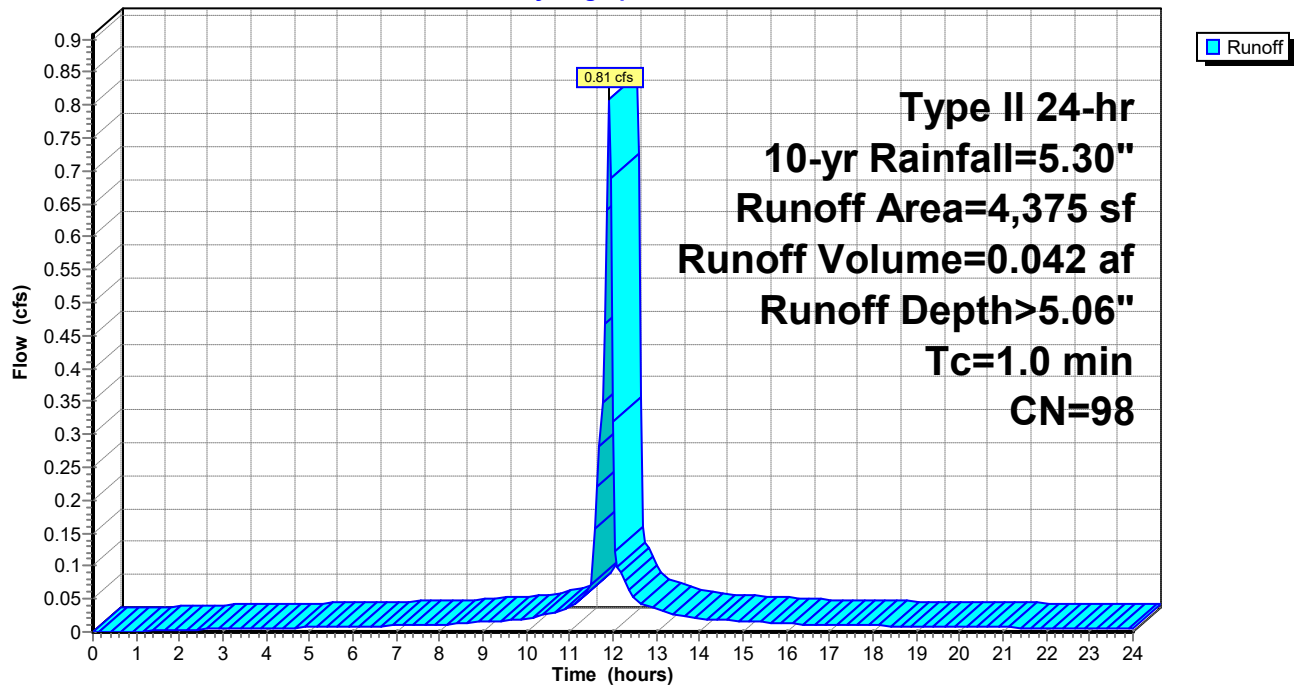
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.30"

	Area (sf)	CN	Description
*	4,375	98	Building Roof
	4,375		100.00% Impervious Area

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

Subcatchment MY-1: 1/4 Retail Roof

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

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Page 127

Summary for Subcatchment MY-2: 1/4 Retail Roof

Runoff = 0.83 cfs @ 11.90 hrs, Volume= 0.044 af, Depth> 5.06"

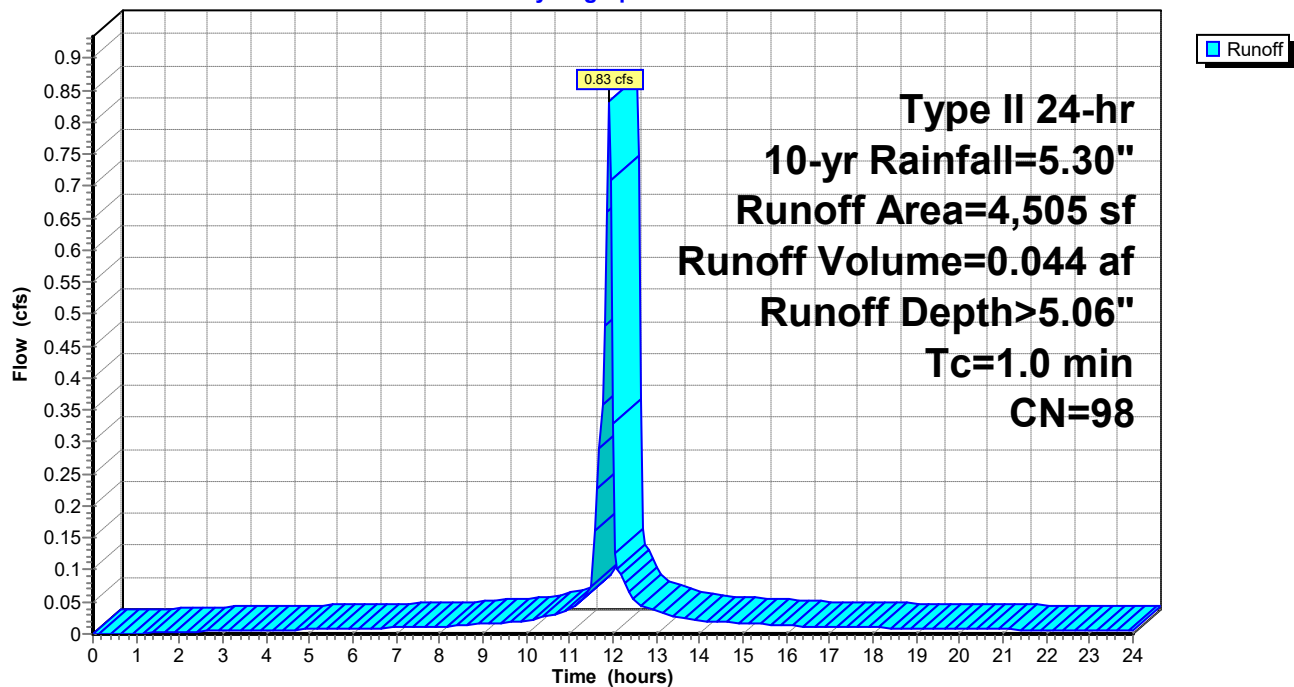
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.30"

	Area (sf)	CN	Description
*	4,505	98	Rear Building Roof
	4,505		100.00% Impervious Area

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

Subcatchment MY-2: 1/4 Retail Roof

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

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Page 128

Summary for Subcatchment MY-3: 1/4 Retail Roof

Runoff = 0.84 cfs @ 11.90 hrs, Volume= 0.044 af, Depth> 5.06"

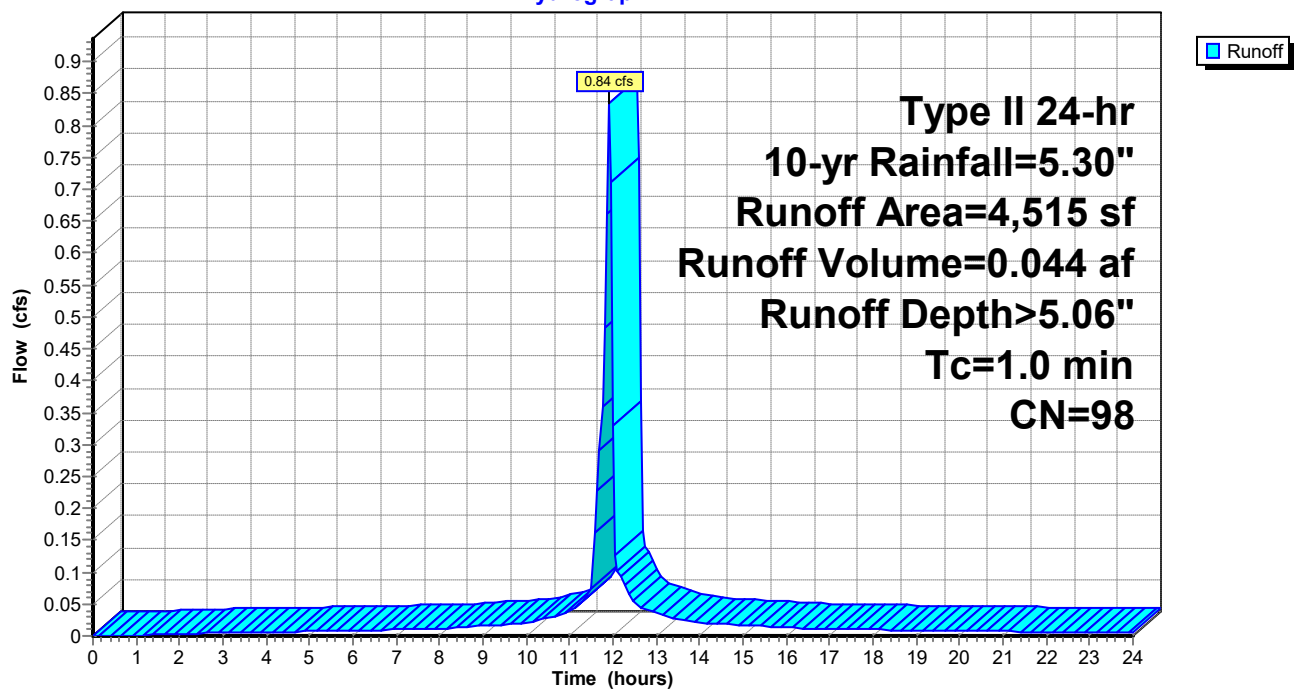
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.30"

	Area (sf)	CN	Description
*	4,515	98	Rear Building Roof
	4,515		100.00% Impervious Area

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

Subcatchment MY-3: 1/4 Retail Roof

Hydrograph



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

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Page 129

Summary for Subcatchment MY-4: 1/4 Retail Roof

Runoff = 0.87 cfs @ 11.90 hrs, Volume= 0.046 af, Depth> 5.06"

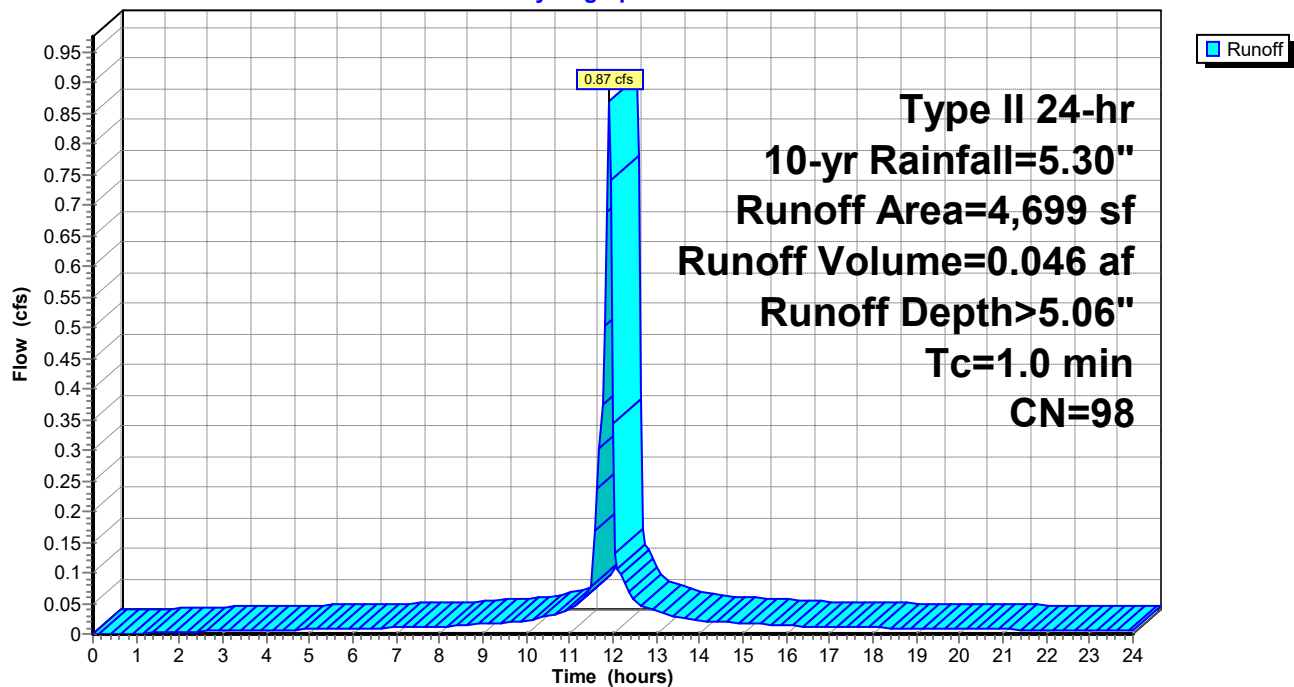
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.30"

	Area (sf)	CN	Description
*	4,699	98	Building Roof
	4,699		100.00% Impervious Area

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

Subcatchment MY-4: 1/4 Retail Roof

Hydrograph



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

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Page 130

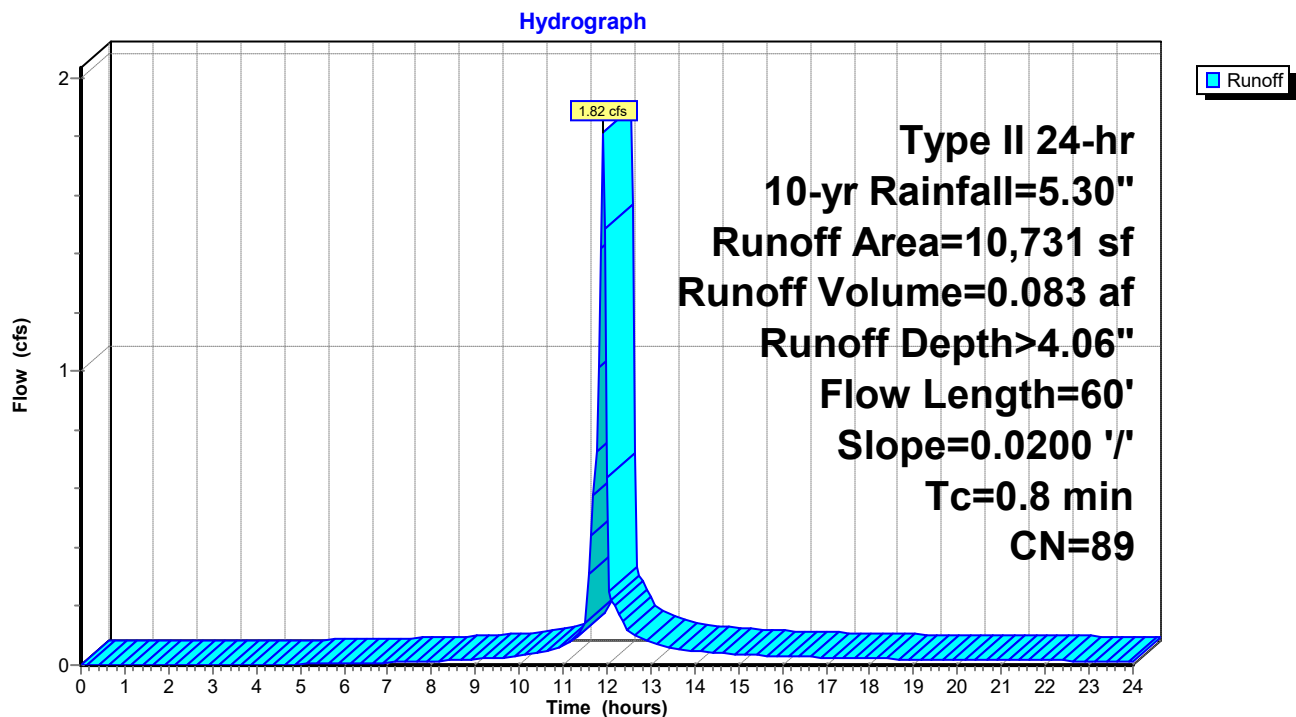
Summary for Subcatchment PK-1: Parking

Runoff = 1.82 cfs @ 11.90 hrs, Volume= 0.083 af, Depth> 4.06"

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

	Area (sf)	CN	Description
*	4,140	98	Parking Area
	2,703	61	>75% Grass cover, Good, HSG B
*	3,888	98	Parking Spaces
	10,731	89	Weighted Average
	2,703		25.19% Pervious Area
	8,028		74.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	60	0.0200	1.28		Sheet Flow, Parking Lot Smooth surfaces n= 0.011 P2= 3.40"

Subcatchment PK-1: Parking

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

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Page 131

Summary for Subcatchment PK-10: Parking

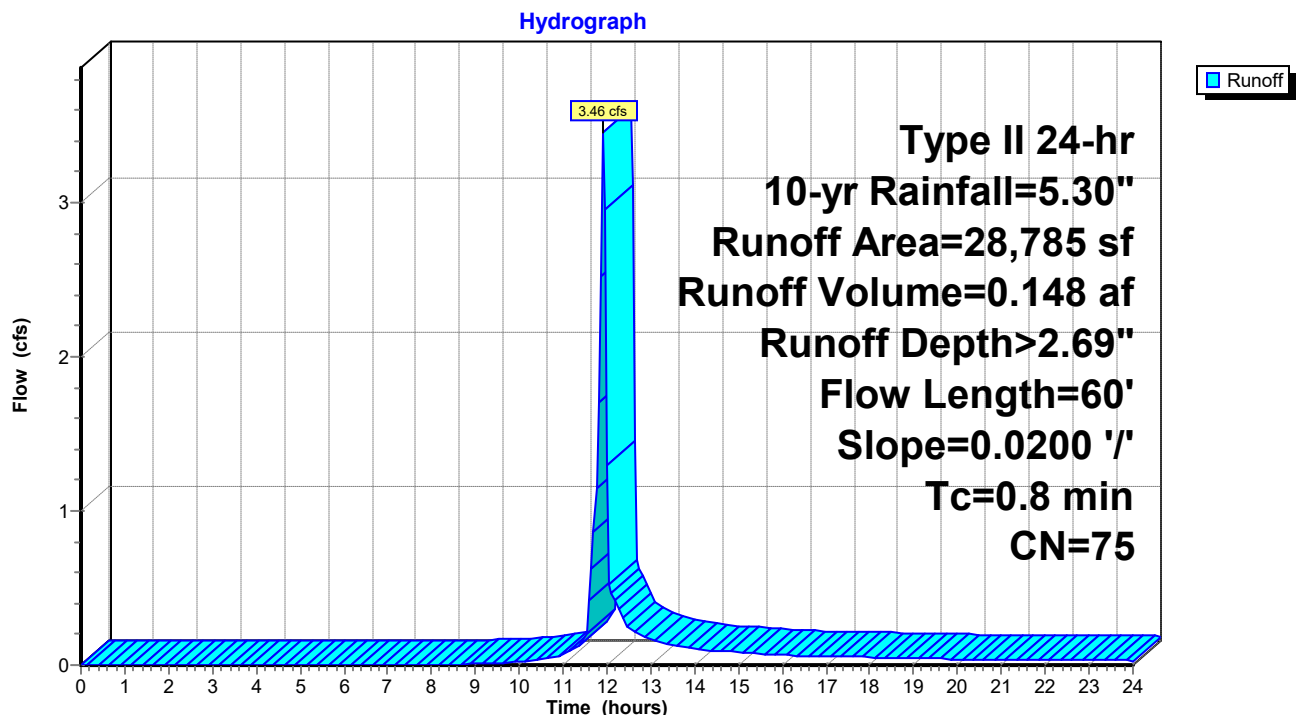
Runoff = 3.46 cfs @ 11.91 hrs, Volume= 0.148 af, Depth> 2.69"

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

	Area (sf)	CN	Description
*	6,254	98	Asphalt
	18,135	61	>75% Grass cover, Good, HSG B
*	4,396	98	Parking Spaces
	28,785	75	Weighted Average
	18,135		63.00% Pervious Area
	10,650		37.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	60	0.0200	1.28		Sheet Flow, Parking Lot
					Smooth surfaces n= 0.011 P2= 3.40"

Subcatchment PK-10: Parking



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

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Page 132

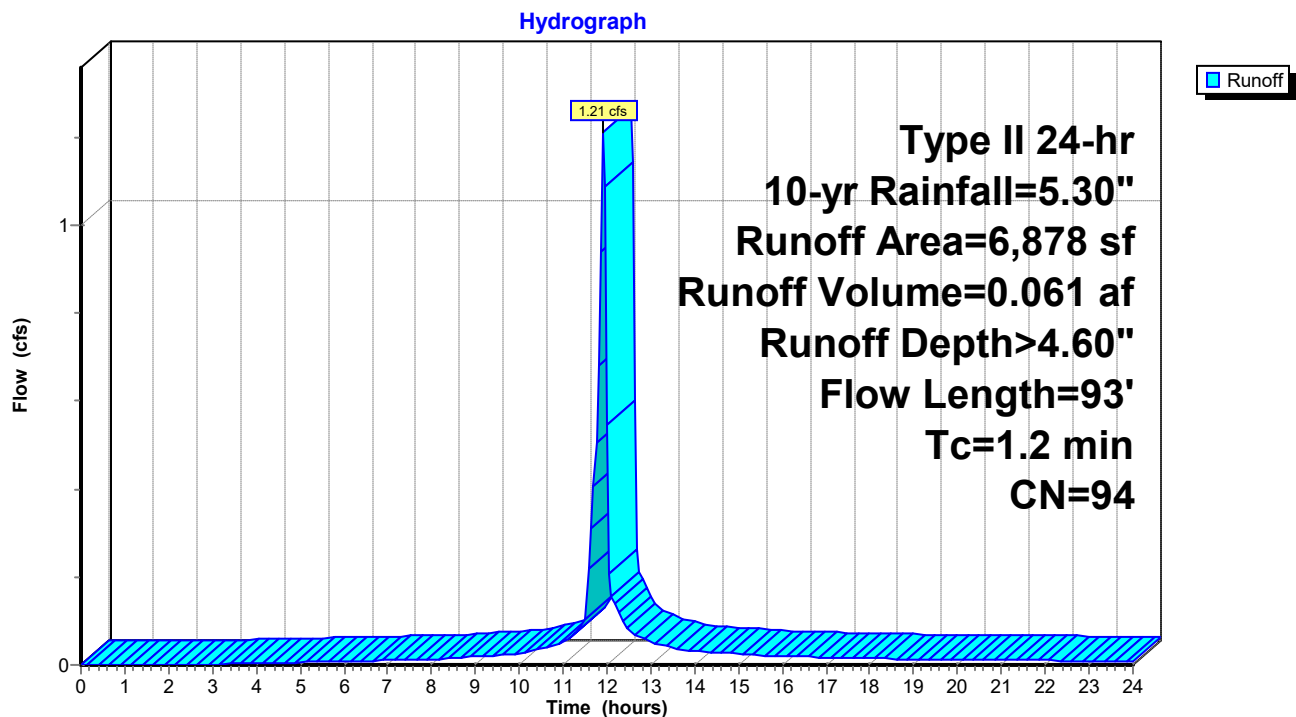
Summary for Subcatchment PK-2: Parking

Runoff = 1.21 cfs @ 11.91 hrs, Volume= 0.061 af, Depth> 4.60"

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

	Area (sf)	CN	Description
*	4,272	98	Parking Area
	801	61	>75% Grass cover, Good, HSG B
*	1,805	98	Parking Spaces
	6,878	94	Weighted Average
	801		11.65% Pervious Area
	6,077		88.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	60	0.0200	1.28		Sheet Flow, Parking lot
					Smooth surfaces n= 0.011 P2= 3.40"
0.4	33	0.0050	1.44		Shallow Concentrated Flow, Curb
					Paved Kv= 20.3 fps
1.2	93	Total			

Subcatchment PK-2: Parking

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

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Page 133

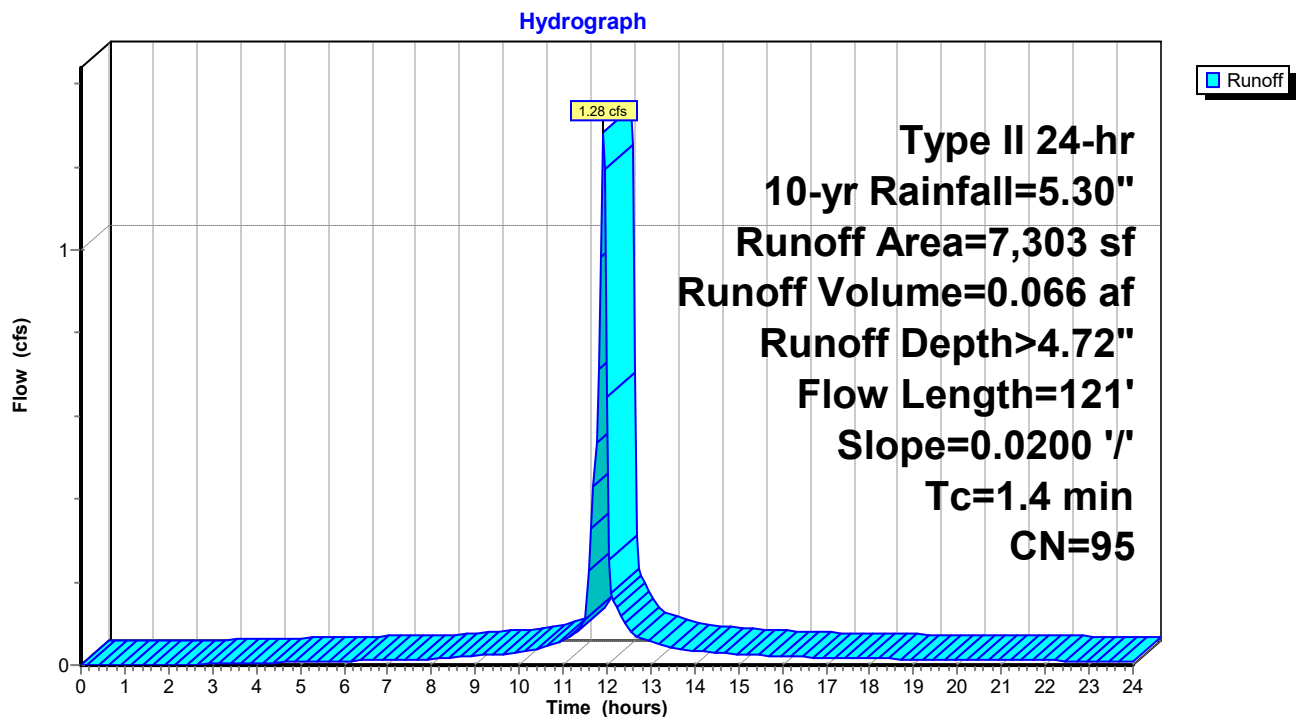
Summary for Subcatchment PK-3: Parking

Runoff = 1.28 cfs @ 11.91 hrs, Volume= 0.066 af, Depth> 4.72"

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

	Area (sf)	CN	Description
*	4,424	98	Parking Area
	559	61	>75% Grass cover, Good, HSG B
*	2,320	98	Parking Spaces
	7,303	95	Weighted Average
	559		7.65% Pervious Area
	6,744		92.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	121	0.0200	1.47		Sheet Flow, Parking Lot
					Smooth surfaces n= 0.011 P2= 3.40"

Subcatchment PK-3: Parking

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

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Page 134

Summary for Subcatchment PK-4: Parking

Runoff = 0.76 cfs @ 11.90 hrs, Volume= 0.037 af, Depth> 4.72"

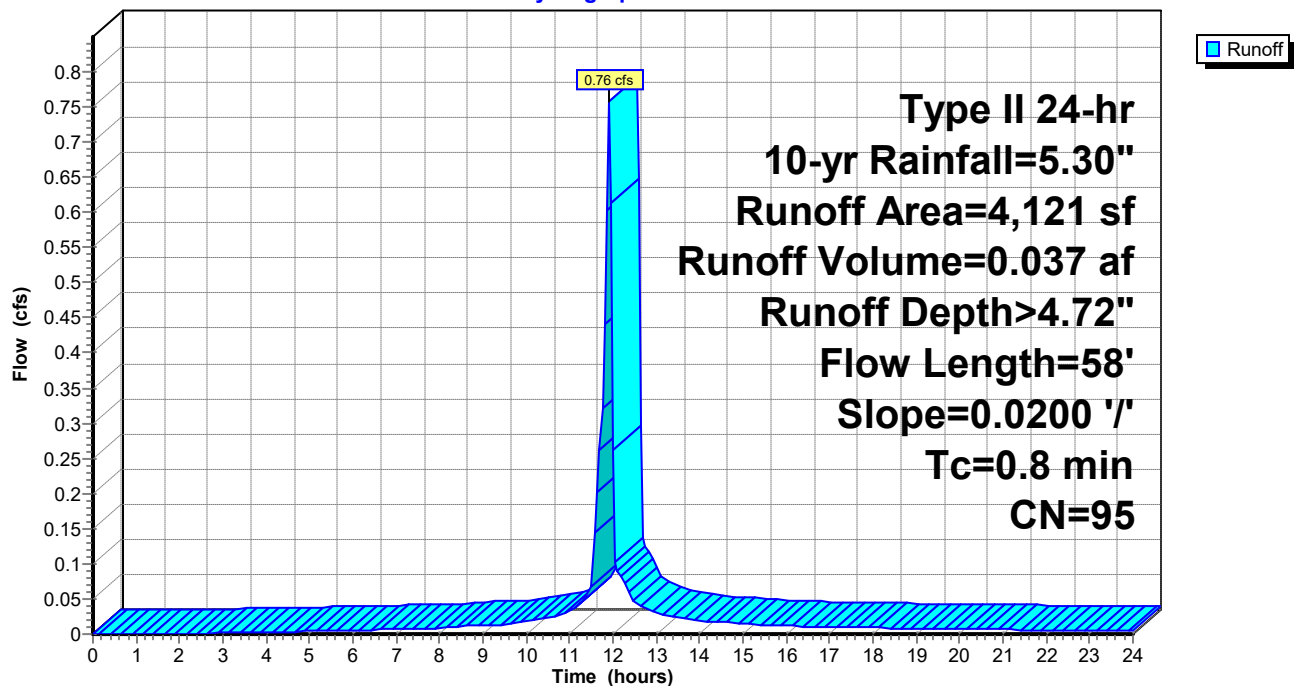
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.30"

	Area (sf)	CN	Description
*	2,405	98	Asphalt
	337	61	>75% Grass cover, Good, HSG B
*	1,379	98	Parking Spaces
	4,121	95	Weighted Average
	337		8.18% Pervious Area
	3,784		91.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	58	0.0200	1.27		Sheet Flow, Parking Lot Smooth surfaces n= 0.011 P2= 3.40"

Subcatchment PK-4: Parking

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Page 135

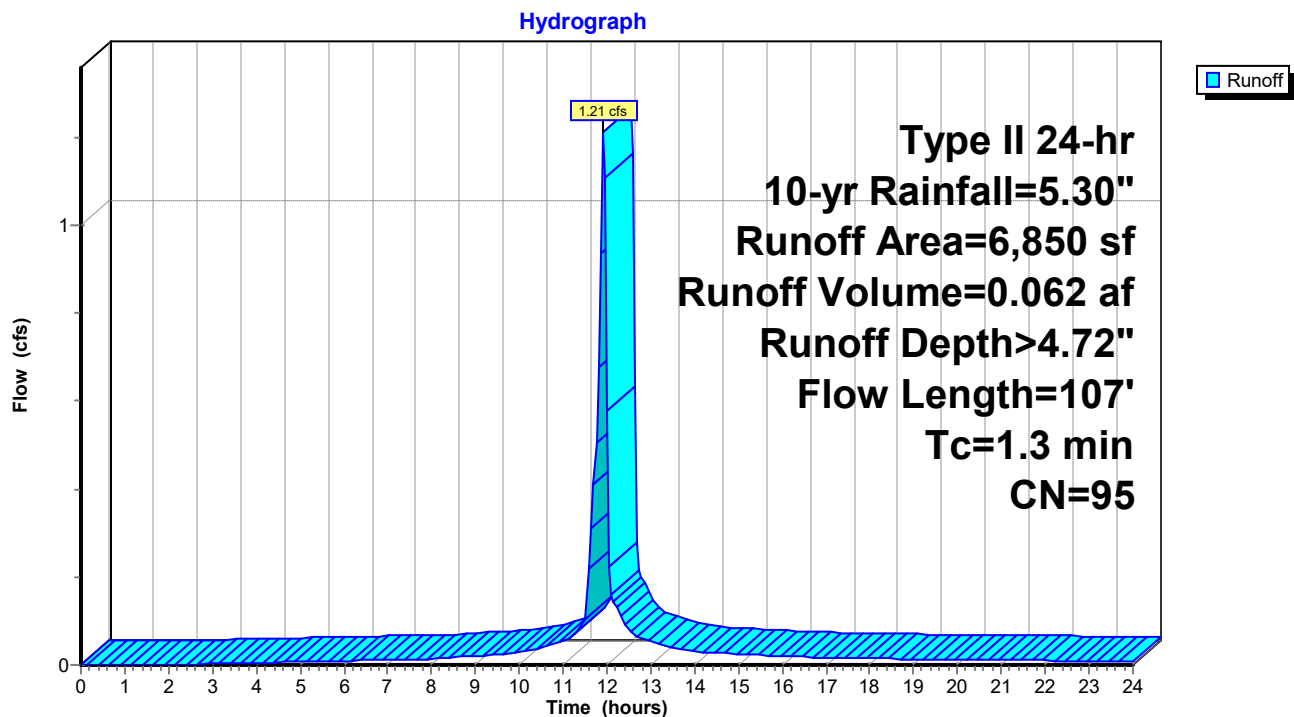
Summary for Subcatchment PK-5: Parking

Runoff = 1.21 cfs @ 11.91 hrs, Volume= 0.062 af, Depth> 4.72"

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

	Area (sf)	CN	Description
*	4,714	98	Asphalt
	516	61	>75% Grass cover, Good, HSG B
*	1,620	98	Parking Spaces
	6,850	95	Weighted Average
	516		7.53% Pervious Area
	6,334		92.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	18	0.0200	1.01		Sheet Flow, Parking Lot
					Smooth surfaces n= 0.011 P2= 3.40"
1.0	89	0.0050	1.44		Shallow Concentrated Flow, Gutter
					Paved Kv= 20.3 fps
1.3	107	Total			

Subcatchment PK-5: Parking

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Page 136

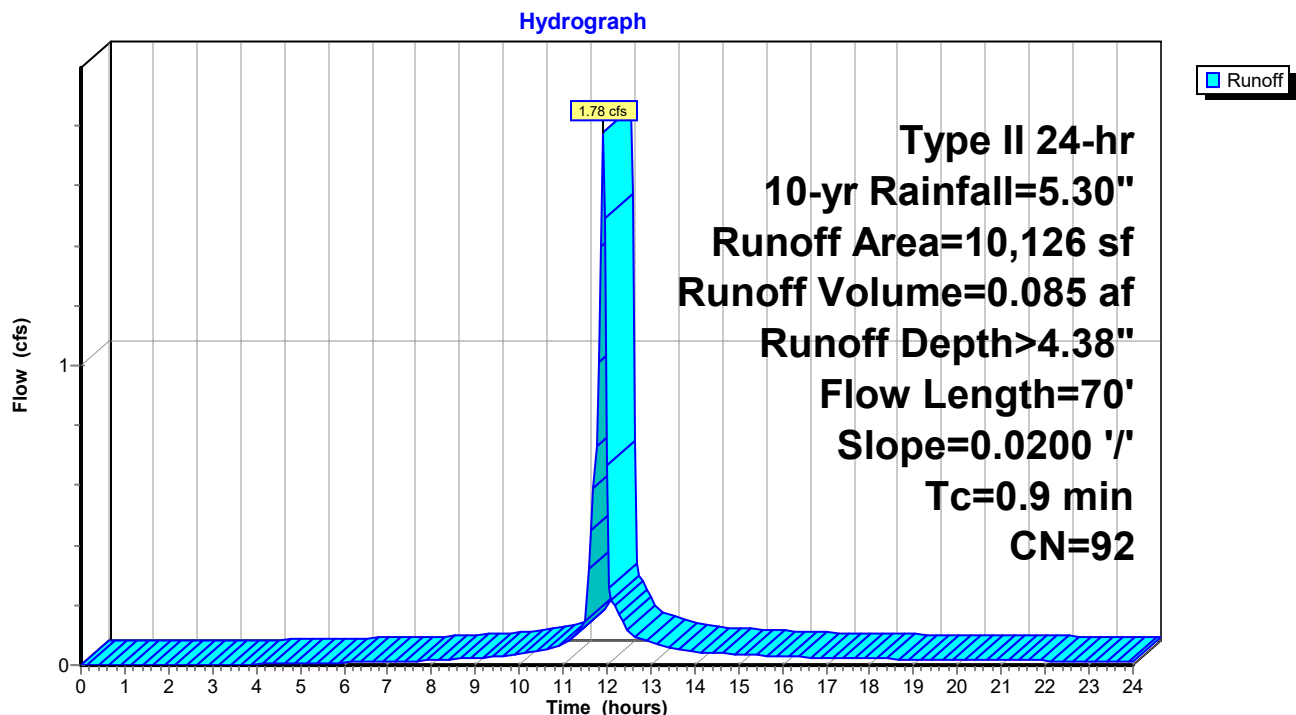
Summary for Subcatchment PK-6: Parking

Runoff = 1.78 cfs @ 11.90 hrs, Volume= 0.085 af, Depth> 4.38"

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

	Area (sf)	CN	Description
*	6,357	98	Asphalt
	1,534	61	>75% Grass cover, Good, HSG B
*	2,235	98	Parking Spaces
	10,126	92	Weighted Average
	1,534		15.15% Pervious Area
	8,592		84.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	70	0.0200	1.32		Sheet Flow, Parking Lot Smooth surfaces n= 0.011 P2= 3.40"

Subcatchment PK-6: Parking

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Page 137

Summary for Subcatchment PK-7: Parking

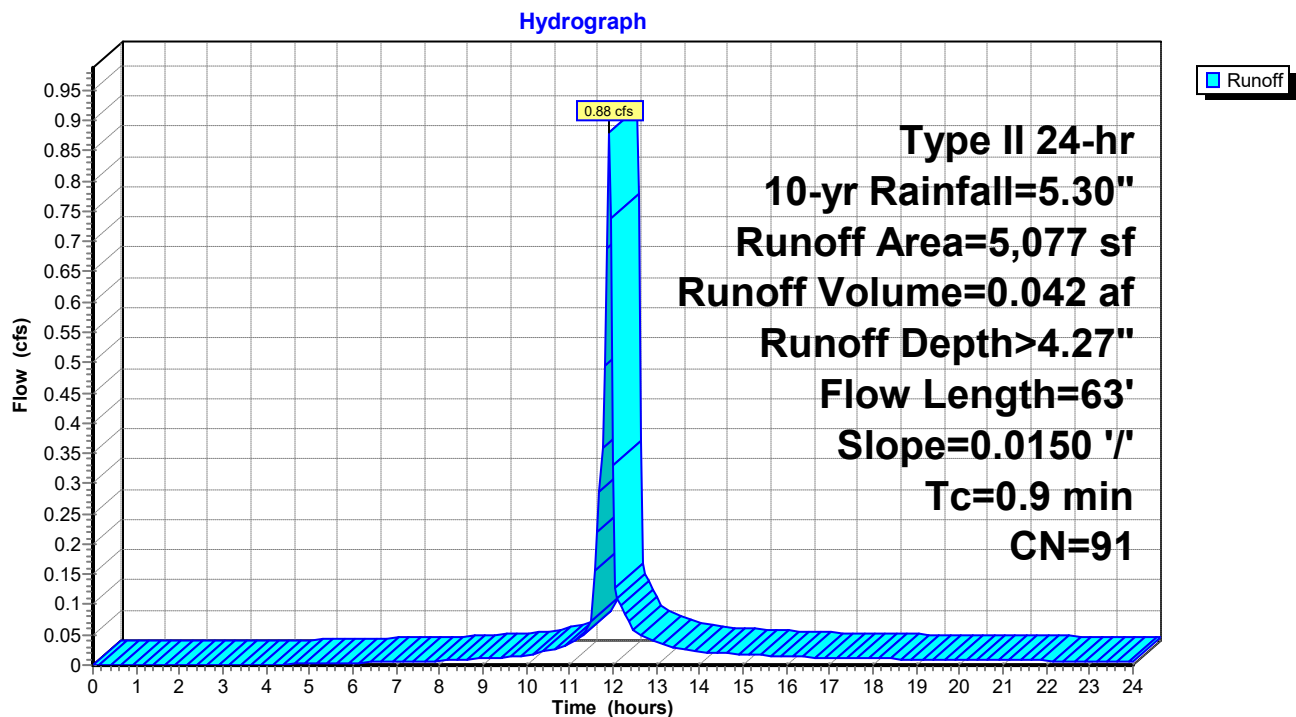
Runoff = 0.88 cfs @ 11.90 hrs, Volume= 0.042 af, Depth> 4.27"

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

	Area (sf)	CN	Description
*	3,258	98	Asphalt
	896	61	>75% Grass cover, Good, HSG B
*	923	98	Parking Spaces
	5,077	91	Weighted Average
	896		17.65% Pervious Area
	4,181		82.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	63	0.0150	1.15		Sheet Flow, Pavement Smooth surfaces n= 0.011 P2= 3.40"

Subcatchment PK-7: Parking



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

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Page 138

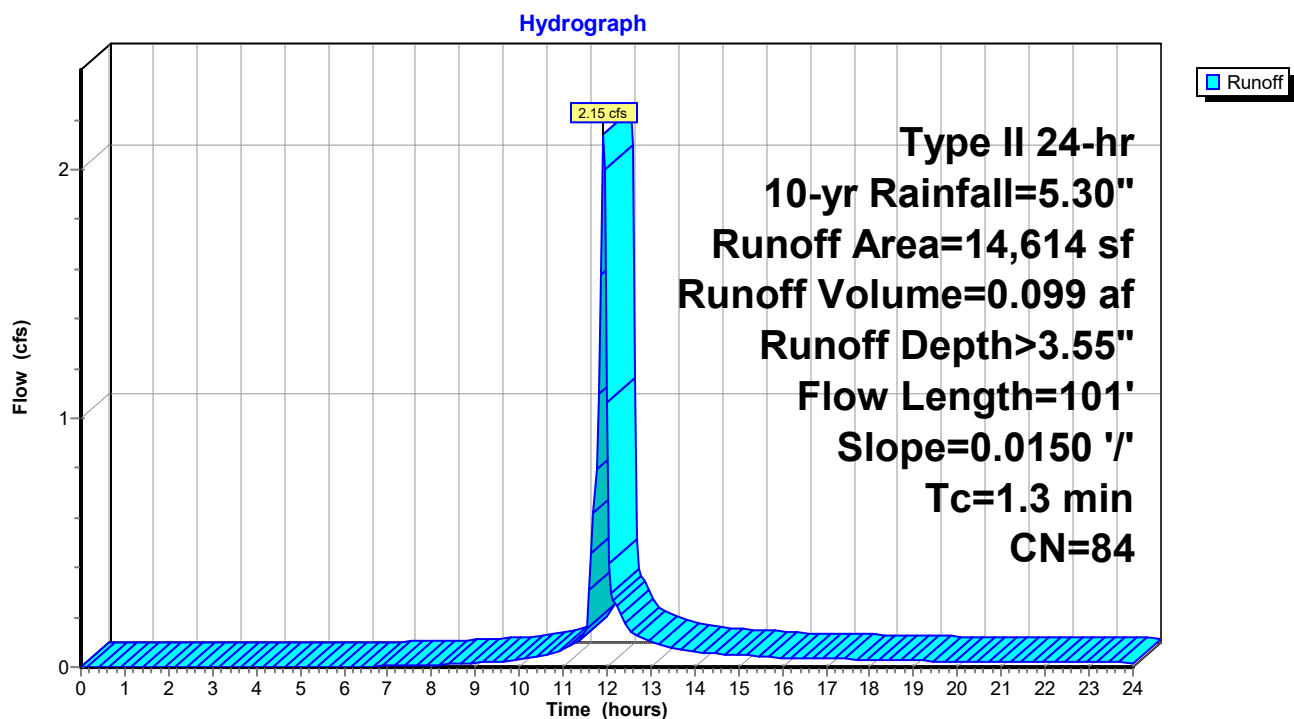
Summary for Subcatchment PK-8: Parking

Runoff = 2.15 cfs @ 11.92 hrs, Volume= 0.099 af, Depth> 3.55"

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

	Area (sf)	CN	Description
*	6,414	98	Asphalt Drive Aisles & Sidewalk
*	2,660	98	Parking Spaces
	5,540	61	>75% Grass cover, Good, HSG B
	14,614	84	Weighted Average
	5,540		37.91% Pervious Area
	9,074		62.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	101	0.0150	1.27		Sheet Flow, Asphalt Smooth surfaces n= 0.011 P2= 3.40"

Subcatchment PK-8: Parking

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

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Page 139

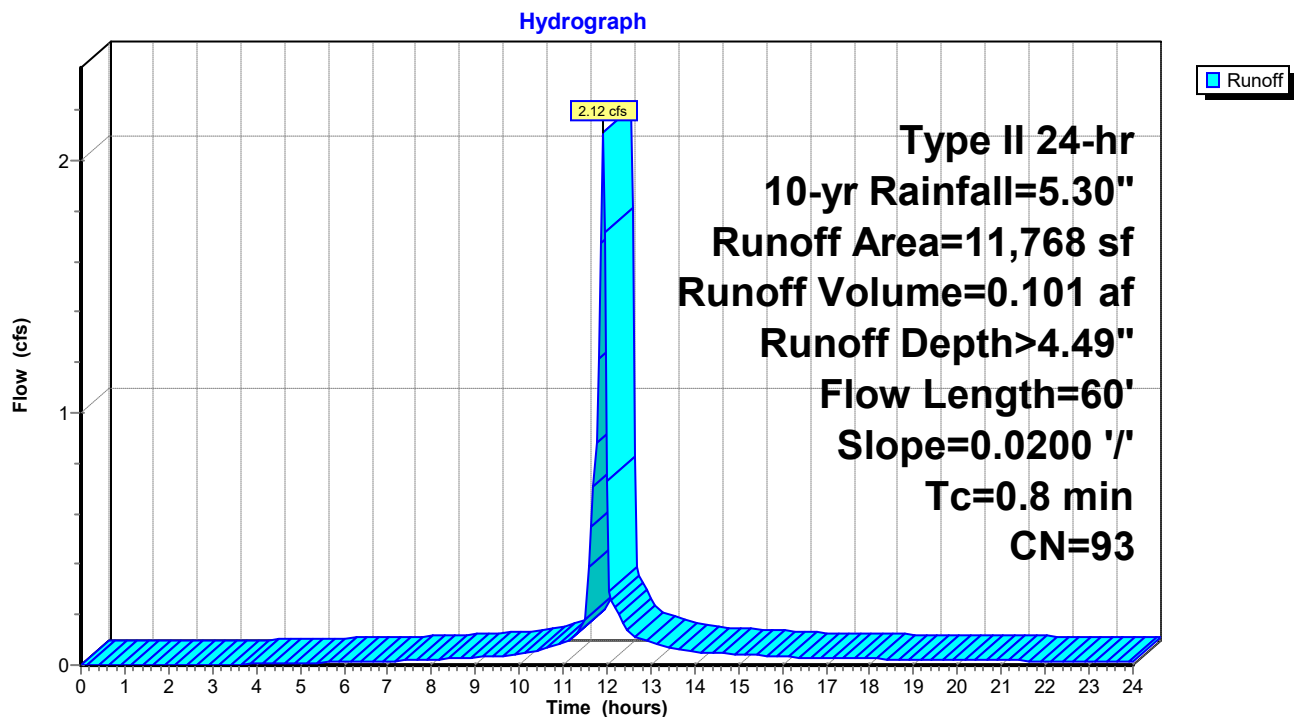
Summary for Subcatchment PK-9: Parking

Runoff = 2.12 cfs @ 11.90 hrs, Volume= 0.101 af, Depth> 4.49"

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

	Area (sf)	CN	Description
*	7,036	98	Asphalt
	1,729	61	>75% Grass cover, Good, HSG B
*	3,003	98	Parking Spaces
	11,768	93	Weighted Average
	1,729		14.69% Pervious Area
	10,039		85.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	60	0.0200	1.28		Sheet Flow, Parking Lot Smooth surfaces n= 0.011 P2= 3.40"

Subcatchment PK-9: Parking

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Page 140

Summary for Subcatchment RD: Onsite Residue

Runoff = 0.37 cfs @ 11.99 hrs, Volume= 0.021 af, Depth> 1.77"

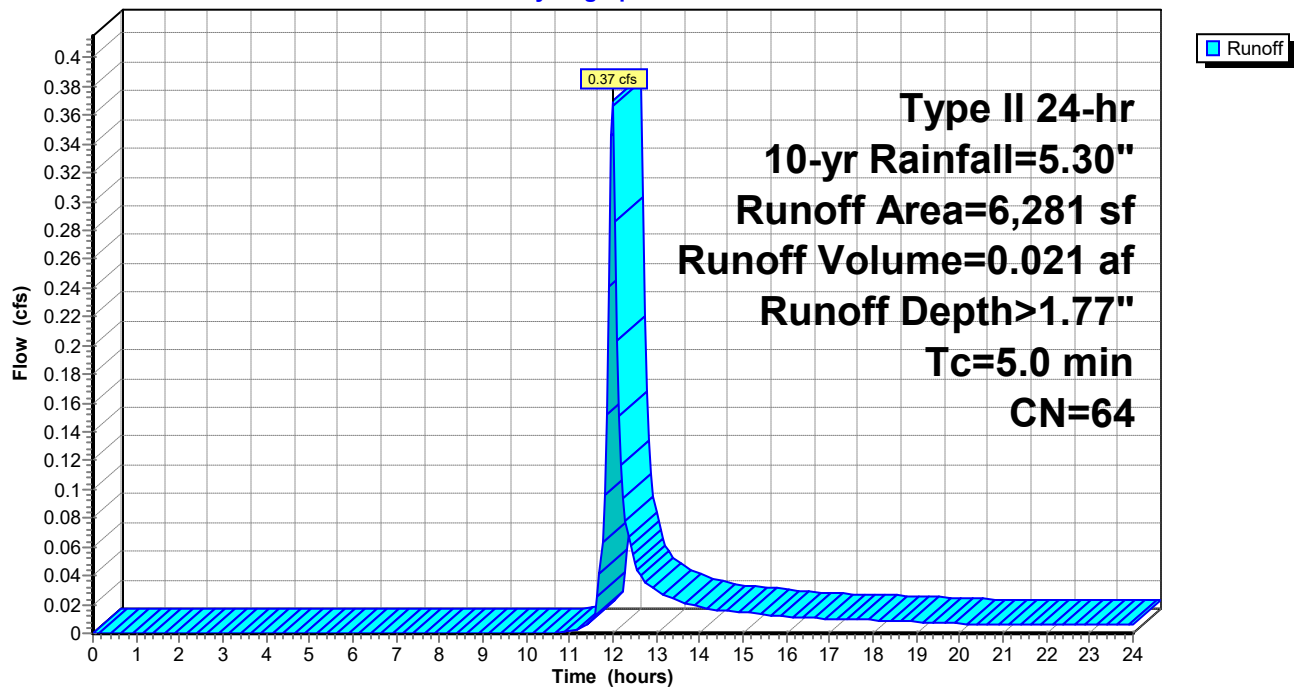
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.30"

	Area (sf)	CN	Description
	5,797	61	>75% Grass cover, Good, HSG B
*	484	98	Sidewalk & Portion Entrance
	6,281	64	Weighted Average
	5,797		92.29% Pervious Area
	484		7.71% Impervious Area

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

Subcatchment RD: Onsite Residue

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

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Page 141

Summary for Subcatchment SHA-1: Onsite SHA

Runoff = 0.63 cfs @ 11.91 hrs, Volume= 0.028 af, Depth> 3.35"

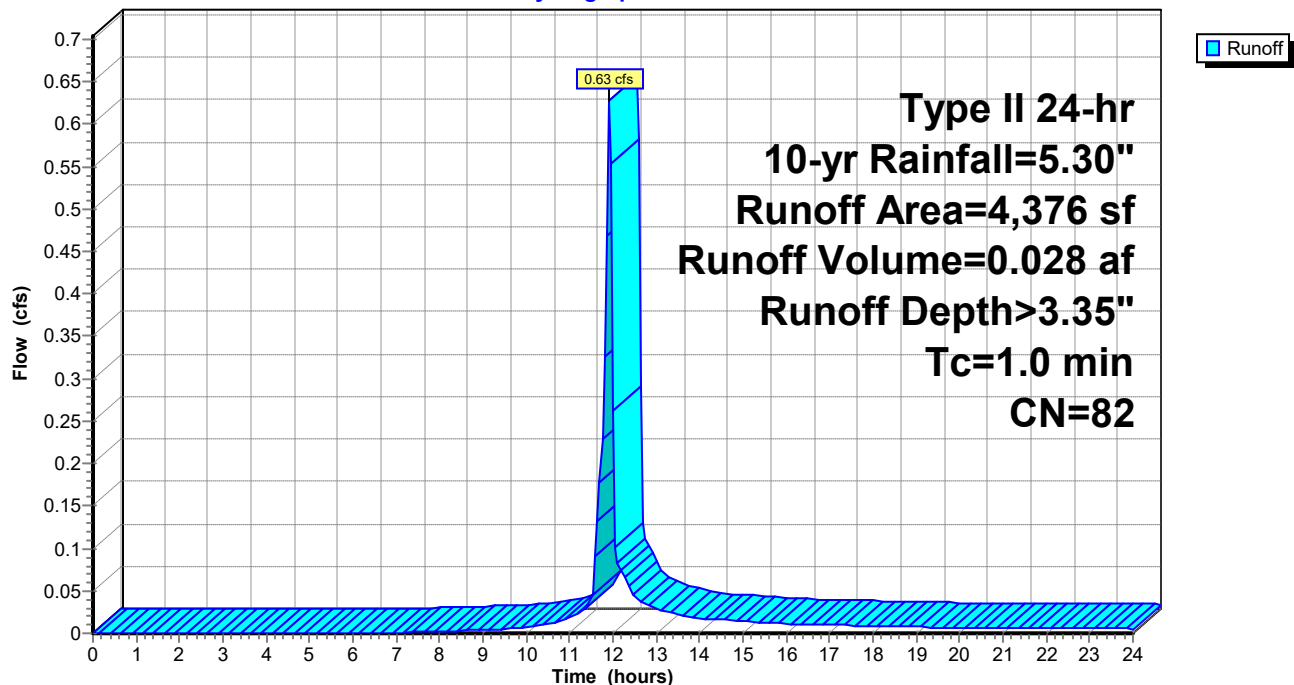
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.30"

	Area (sf)	CN	Description
	1,908	61	>75% Grass cover, Good, HSG B
*	2,468	98	Pavement & Sidewalk
	4,376	82	Weighted Average
	1,908		43.60% Pervious Area
	2,468		56.40% Impervious Area

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

Subcatchment SHA-1: Onsite SHA

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Page 142

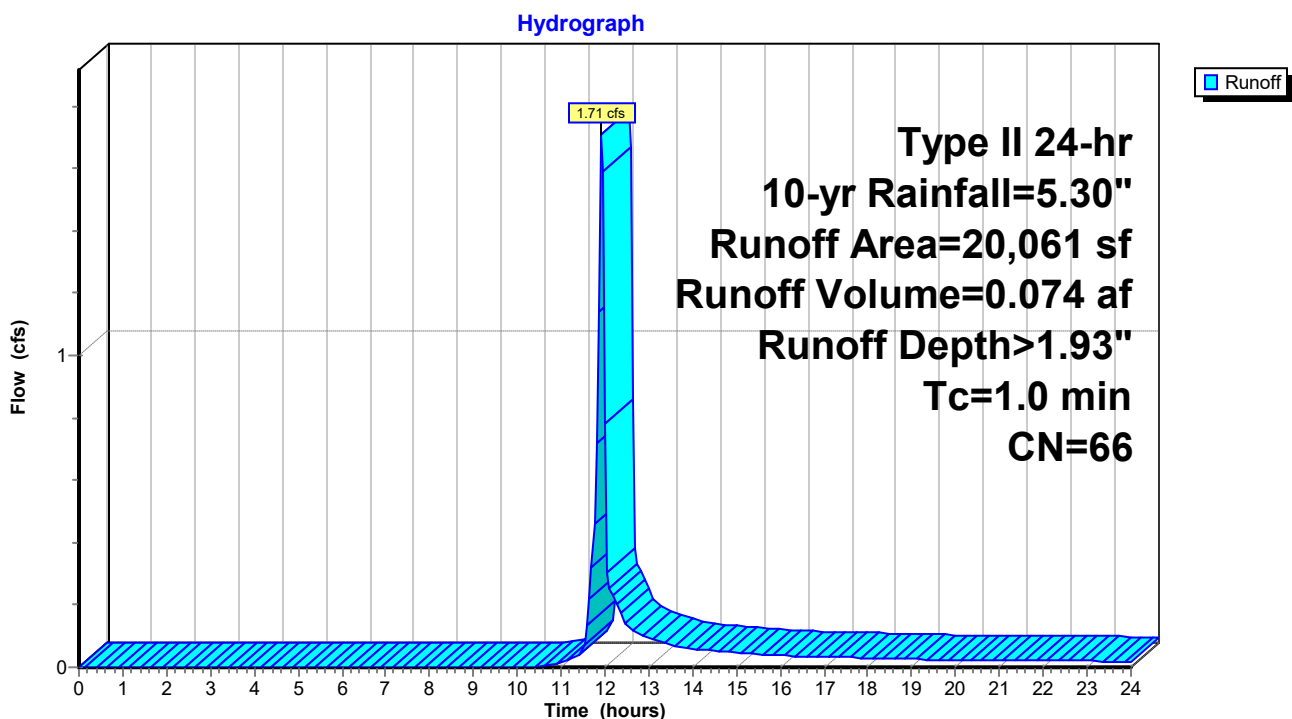
Summary for Subcatchment SHA-2: Area of SGW #1 & Onsite SHA

Runoff = 1.71 cfs @ 11.92 hrs, Volume= 0.074 af, Depth> 1.93"

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

Area (sf)	CN	Description
17,507	61	>75% Grass cover, Good, HSG B
* 2,554	98	SHA Entrance Pavement
20,061	66	Weighted Average
17,507		87.27% Pervious Area
2,554		12.73% Impervious Area

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

Subcatchment SHA-2: Area of SGW #1 & Onsite SHA

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

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Page 143

Summary for Subcatchment SHA-3: SHA Improvements (North)

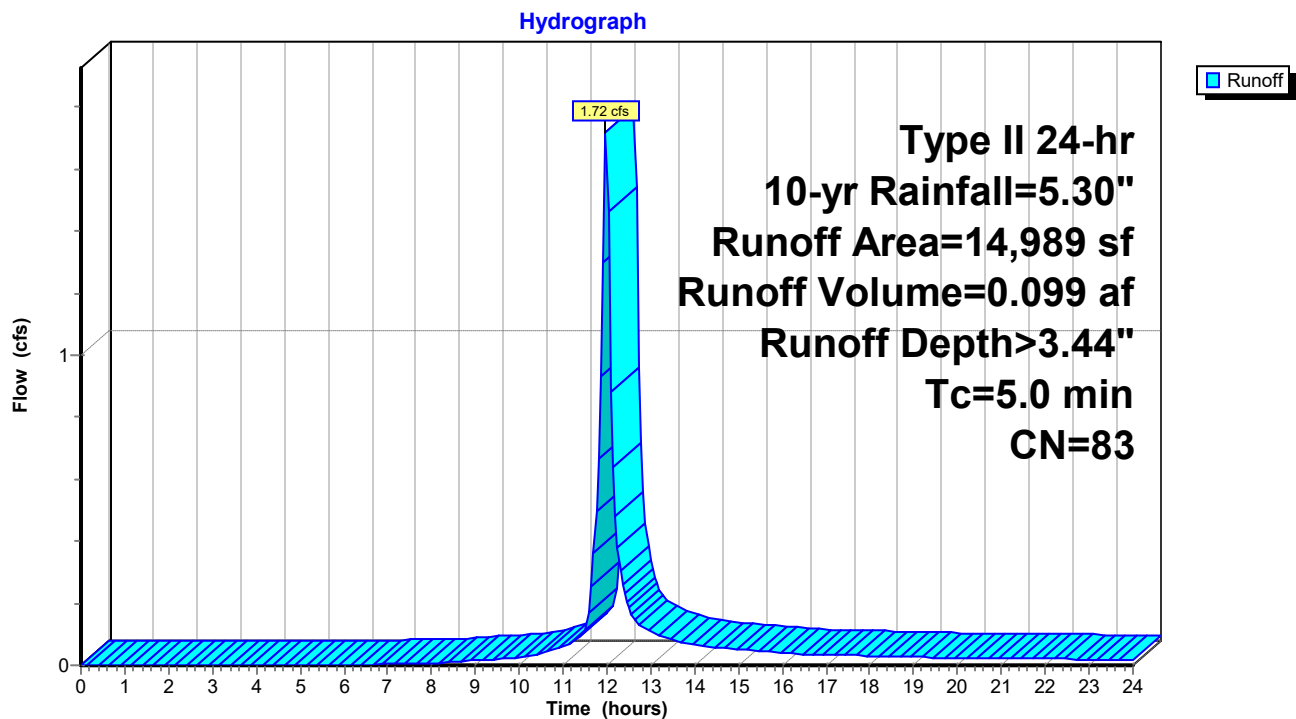
Runoff = 1.72 cfs @ 11.97 hrs, Volume= 0.099 af, Depth> 3.44"

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

	Area (sf)	CN	Description
*	8,750	98	SHA Pavement & Entrance
	6,239	61	>75% Grass cover, Good, HSG B
	14,989	83	Weighted Average
	6,239		41.62% Pervious Area
	8,750		58.38% Impervious Area

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

Subcatchment SHA-3: SHA Improvements (North)



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Page 144

Summary for Subcatchment SHA-4: SHA Improvements (South)

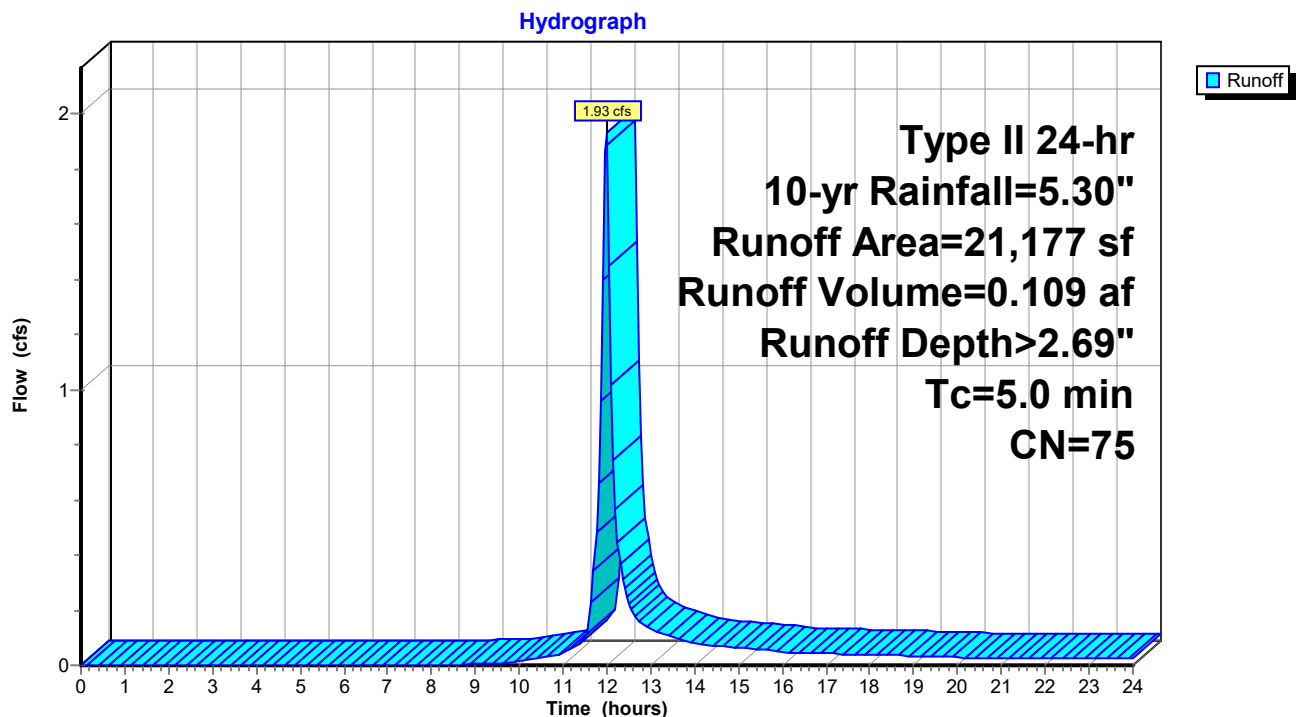
Runoff = 1.93 cfs @ 11.98 hrs, Volume= 0.109 af, Depth> 2.69"

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

	Area (sf)	CN	Description
*	8,053	98	US 50 & SHA Entrance
	13,124	61	>75% Grass cover, Good, HSG B
	21,177	75	Weighted Average
	13,124		61.97% Pervious Area
	8,053		38.03% Impervious Area

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

Subcatchment SHA-4: SHA Improvements (South)



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Page 145

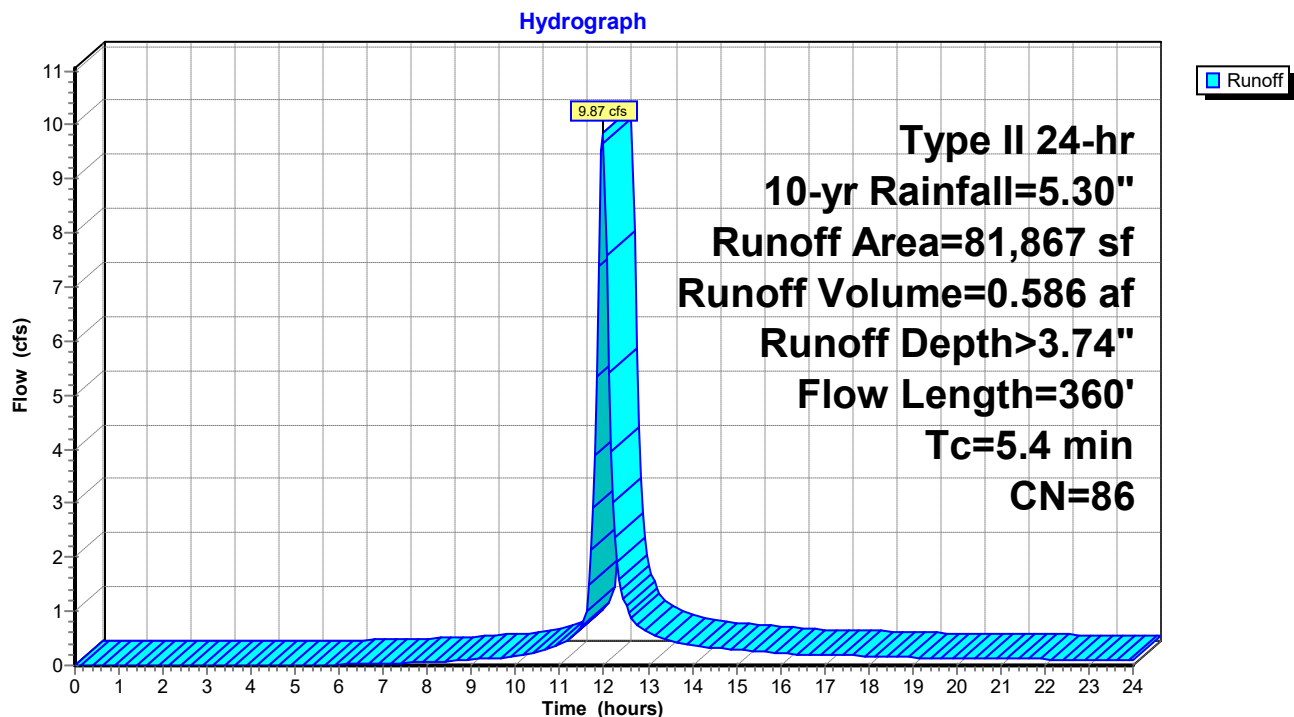
Summary for Subcatchment VZ-A: Verizon (Offsite)

Runoff = 9.87 cfs @ 11.98 hrs, Volume= 0.586 af, Depth> 3.74"

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

	Area (sf)	CN	Description
*	56,382	98	Verizon Storage Yard
	25,485	61	>75% Grass cover, Good, HSG B
	81,867	86	Weighted Average
	25,485		31.13% Pervious Area
	56,382		68.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	80	0.0100	1.03		Sheet Flow, Pavement Smooth surfaces n= 0.011 P2= 3.40"
4.1	280	0.0050	1.14		Shallow Concentrated Flow, Shallow Grass Channel Unpaved Kv= 16.1 fps
5.4	360	Total			

Subcatchment VZ-A: Verizon (Offsite)

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

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Page 146

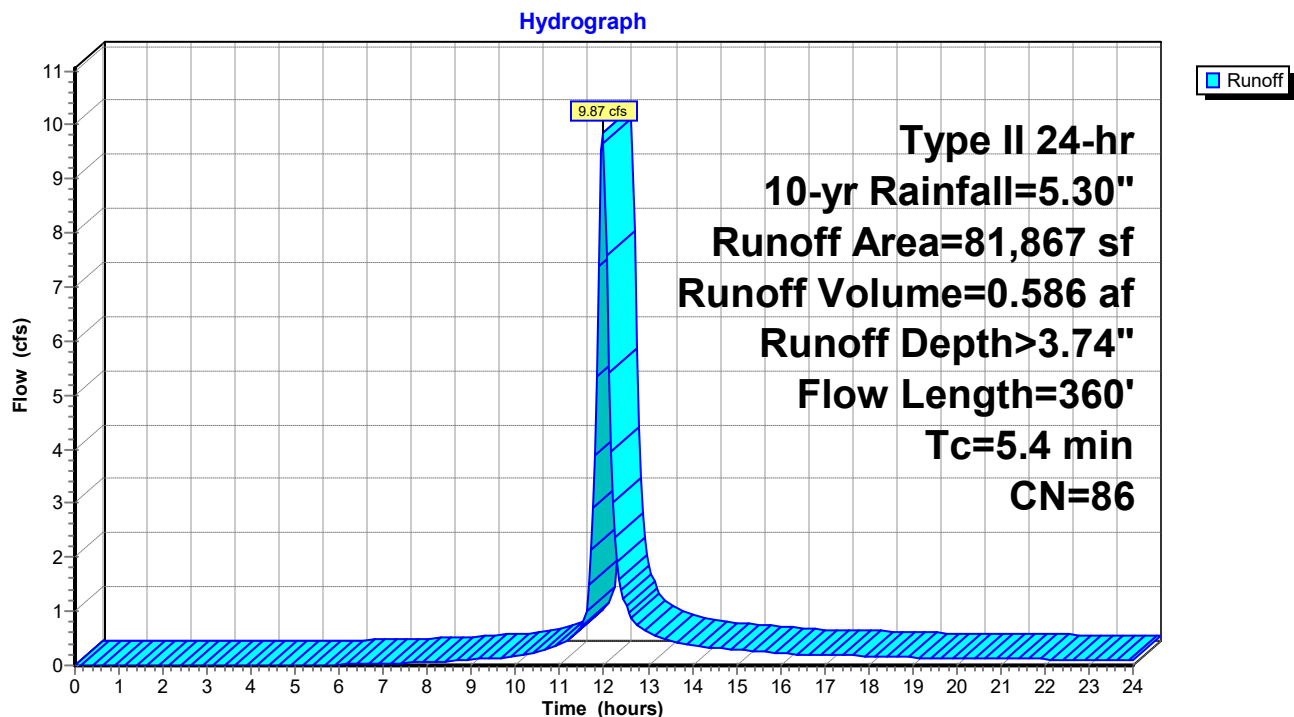
Summary for Subcatchment VZ-AA: Verizon (Offsite)

Runoff = 9.87 cfs @ 11.98 hrs, Volume= 0.586 af, Depth> 3.74"

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

	Area (sf)	CN	Description
*	56,382	98	Verizon Storage Yard
	25,485	61	>75% Grass cover, Good, HSG B
	81,867	86	Weighted Average
	25,485		31.13% Pervious Area
	56,382		68.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	80	0.0100	1.03		Sheet Flow, Pavement
					Smooth surfaces n= 0.011 P2= 3.40"
4.1	280	0.0050	1.14		Shallow Concentrated Flow, Shallow Grass Channel
					Unpaved Kv= 16.1 fps
5.4	360	Total			

Subcatchment VZ-AA: Verizon (Offsite)

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

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Page 147

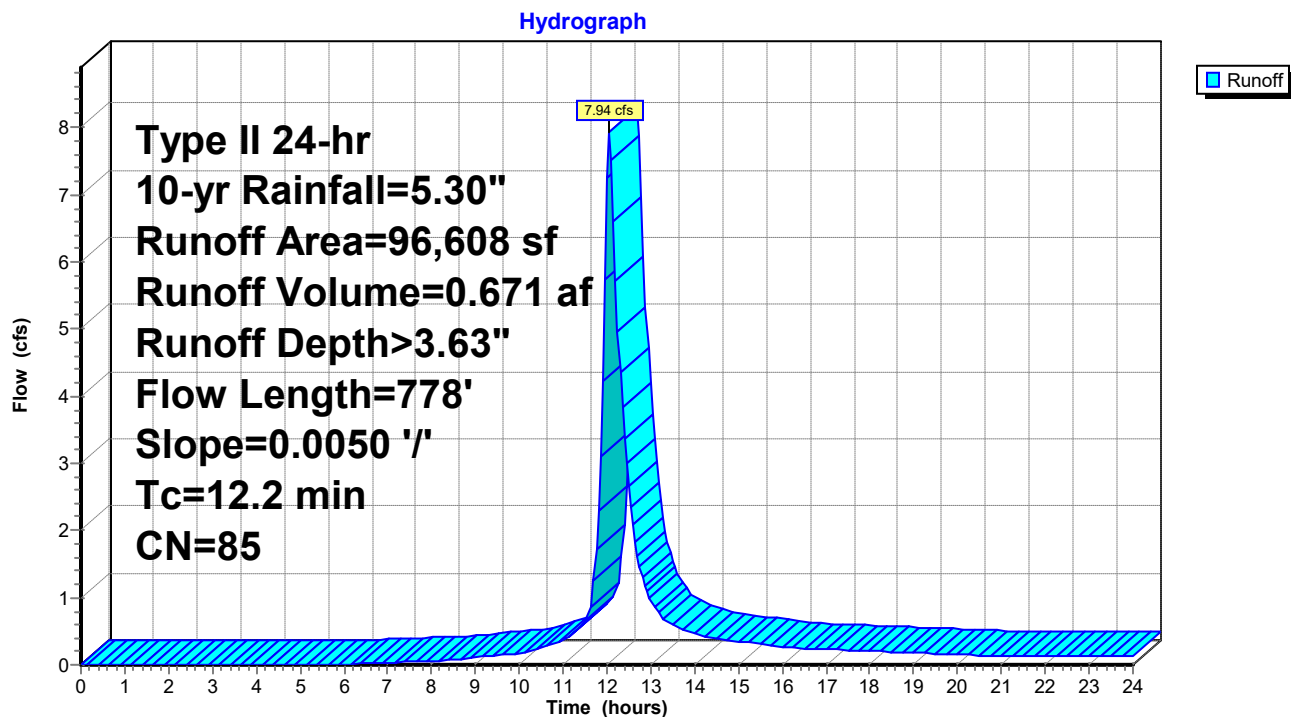
Summary for Subcatchment VZ-B: Verizon & US 50/Idlewild Intersection

Runoff = 7.94 cfs @ 12.06 hrs, Volume= 0.671 af, Depth> 3.63"

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

	Area (sf)	CN	Description
	35,081	61	>75% Grass cover, Good, HSG B
*	61,527	98	Roads & Verizon Yard
	96,608	85	Weighted Average
	35,081		36.31% Pervious Area
	61,527		63.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.2	778	0.0050	1.06		Shallow Concentrated Flow, Road Adjacent Swale Grassed Waterway Kv= 15.0 fps

Subcatchment VZ-B: Verizon & US 50/Idlewild Intersection

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

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Page 148

Summary for Subcatchment VZ-BB: Verizon & US 50/Idlewild Intersection

Runoff = 7.94 cfs @ 12.06 hrs, Volume= 0.671 af, Depth> 3.63"

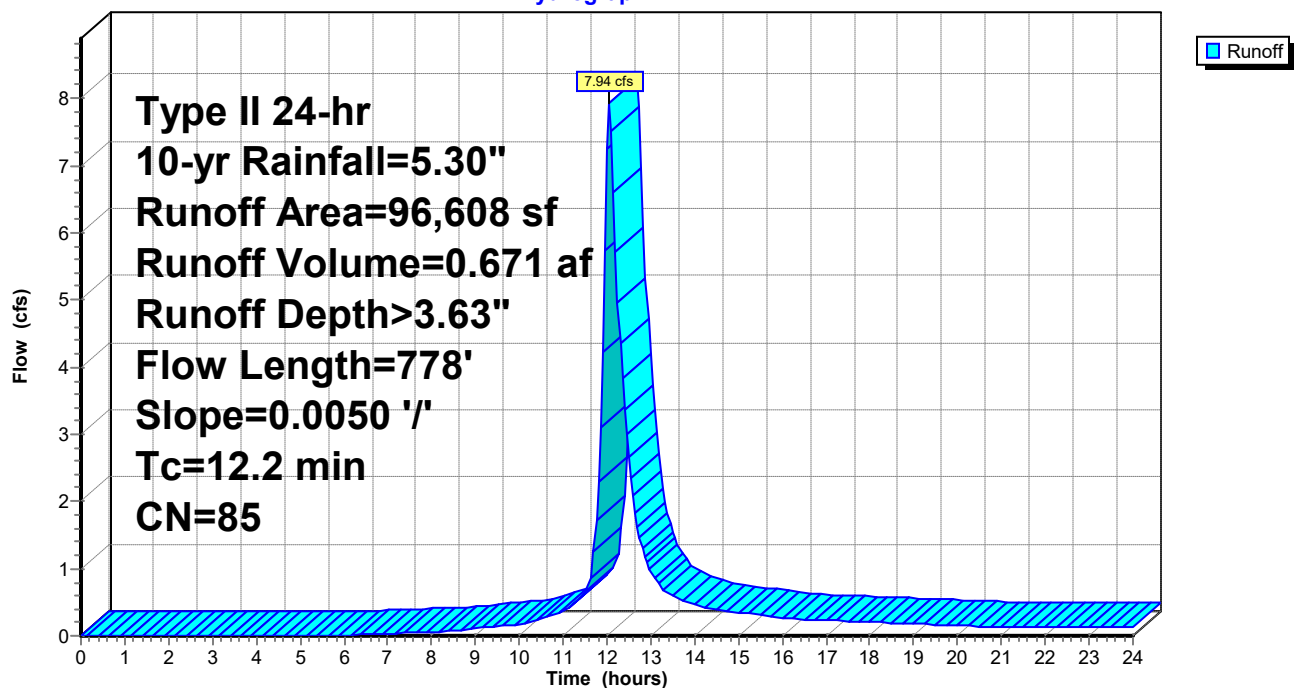
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.30"

	Area (sf)	CN	Description
	35,081	61	>75% Grass cover, Good, HSG B
*	61,527	98	Roads & Verizon Yard
	96,608	85	Weighted Average
	35,081		36.31% Pervious Area
	61,527		63.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.2	778	0.0050	1.06		Shallow Concentrated Flow, Road Adjacent Swale Grassed Waterway Kv= 15.0 fps

Subcatchment VZ-BB: Verizon & US 50/Idlewild Intersection

Hydrograph



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

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Page 149

Summary for Reach 10R: Ex. Lotside Swale

Inflow Area = 6.053 ac, 60.33% Impervious, Inflow Depth > 3.31" for 10-yr event
Inflow = 12.81 cfs @ 11.99 hrs, Volume= 1.668 af
Outflow = 11.93 cfs @ 12.03 hrs, Volume= 1.663 af, Atten= 7%, Lag= 2.5 min

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

Max. Velocity= 1.96 fps, Min. Travel Time= 3.3 min

Avg. Velocity= 0.90 fps, Avg. Travel Time= 7.3 min

Peak Storage= 2,389 cf @ 12.03 hrs

Average Depth at Peak Storage= 2.01'

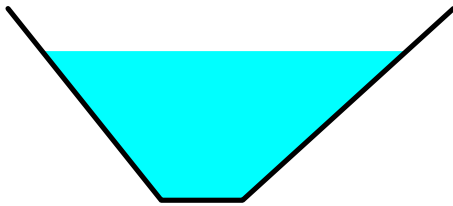
Bank-Full Depth= 2.59' Flow Area= 9.2 sf, Capacity= 20.81 cfs

1.10' x 2.59' deep channel, n= 0.022 Earth, clean & straight

Side Slope Z-value= 0.8 1.1 '/' Top Width= 6.02'

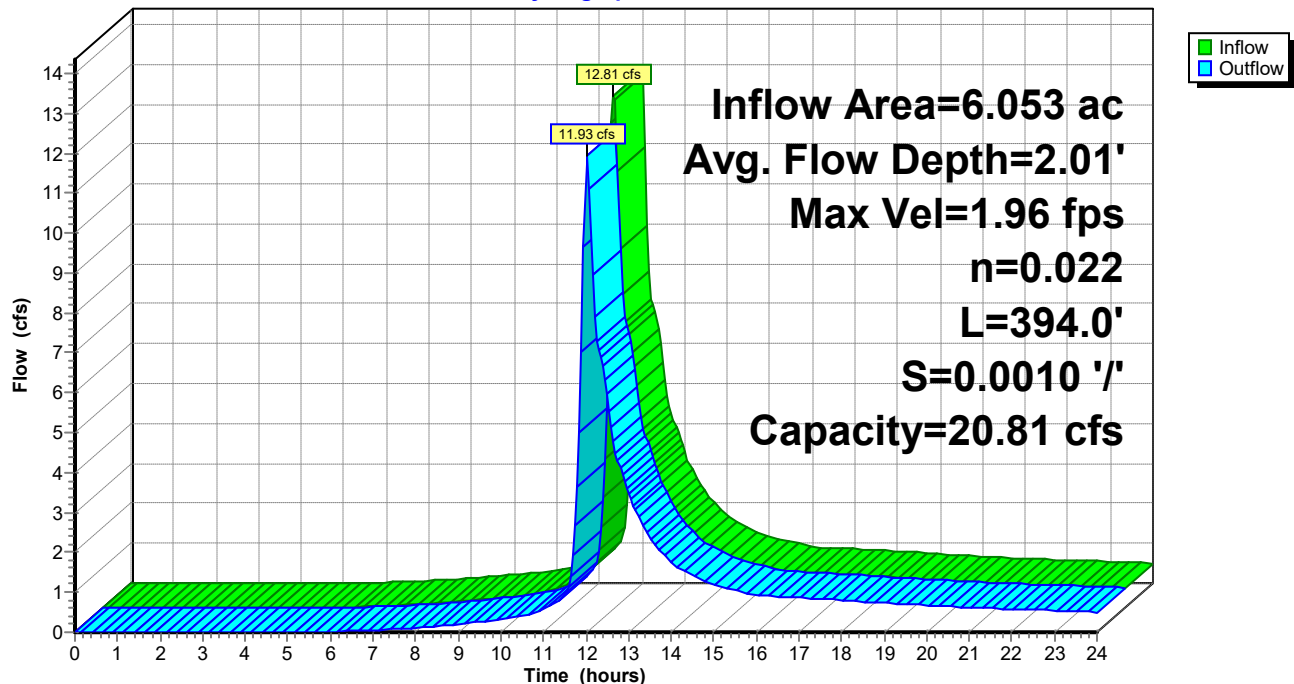
Length= 394.0' Slope= 0.0010 '/'

Inlet Invert= 42.00', Outlet Invert= 41.62'



Reach 10R: Ex. Lotside Swale

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

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Page 150

Stage-Area-Storage for Reach 10R: Ex. Lotside Swale

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)	Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
42.00	0.0	0	44.55	9.0	3,539
42.05	0.1	23			
42.10	0.1	47			
42.15	0.2	73			
42.20	0.3	102			
42.25	0.3	132			
42.30	0.4	164			
42.35	0.5	198			
42.40	0.6	233			
42.45	0.7	271			
42.50	0.8	310			
42.55	0.9	352			
42.60	1.0	395			
42.65	1.1	440			
42.70	1.2	487			
42.75	1.4	536			
42.80	1.5	586			
42.85	1.6	639			
42.90	1.8	693			
42.95	1.9	750			
43.00	2.1	808			
43.05	2.2	868			
43.10	2.4	930			
43.15	2.5	993			
43.20	2.7	1,059			
43.25	2.9	1,127			
43.30	3.0	1,196			
43.35	3.2	1,267			
43.40	3.4	1,340			
43.45	3.6	1,415			
43.50	3.8	1,492			
43.55	4.0	1,571			
43.60	4.2	1,652			
43.65	4.4	1,734			
43.70	4.6	1,819			
43.75	4.8	1,905			
43.80	5.1	1,993			
43.85	5.3	2,083			
43.90	5.5	2,175			
43.95	5.8	2,268			
44.00	6.0	2,364			
44.05	6.2	2,461			
44.10	6.5	2,561			
44.15	6.8	2,662			
44.20	7.0	2,765			
44.25	7.3	2,870			
44.30	7.6	2,977			
44.35	7.8	3,086			
44.40	8.1	3,196			
44.45	8.4	3,309			
44.50	8.7	3,423			

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

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Page 151

Summary for Reach SP1: Ex Swale Adj US 50 (North)

Inflow Area = 3.048 ac, 58.99% Impervious, Inflow Depth > 3.46" for 10-yr event
Inflow = 10.85 cfs @ 12.02 hrs, Volume= 0.878 af
Outflow = 10.80 cfs @ 12.03 hrs, Volume= 0.878 af, Atten= 1%, Lag= 0.5 min

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

Max. Velocity= 4.11 fps, Min. Travel Time= 0.5 min

Avg. Velocity= 1.50 fps, Avg. Travel Time= 1.4 min

Peak Storage= 324 cf @ 12.03 hrs

Average Depth at Peak Storage= 0.92'

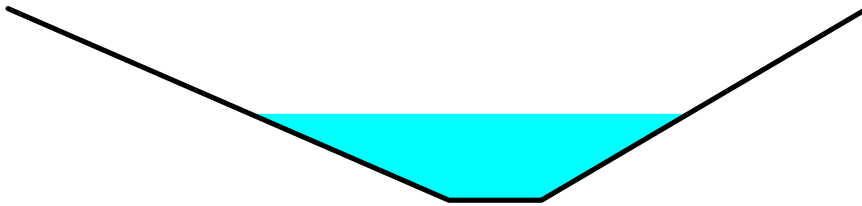
Bank-Full Depth= 2.05' Flow Area= 10.4 sf, Capacity= 68.26 cfs

0.99' x 2.05' deep channel, n= 0.022 Earth, clean & straight

Side Slope Z-value= 2.3 1.7 '/' Top Width= 9.19'

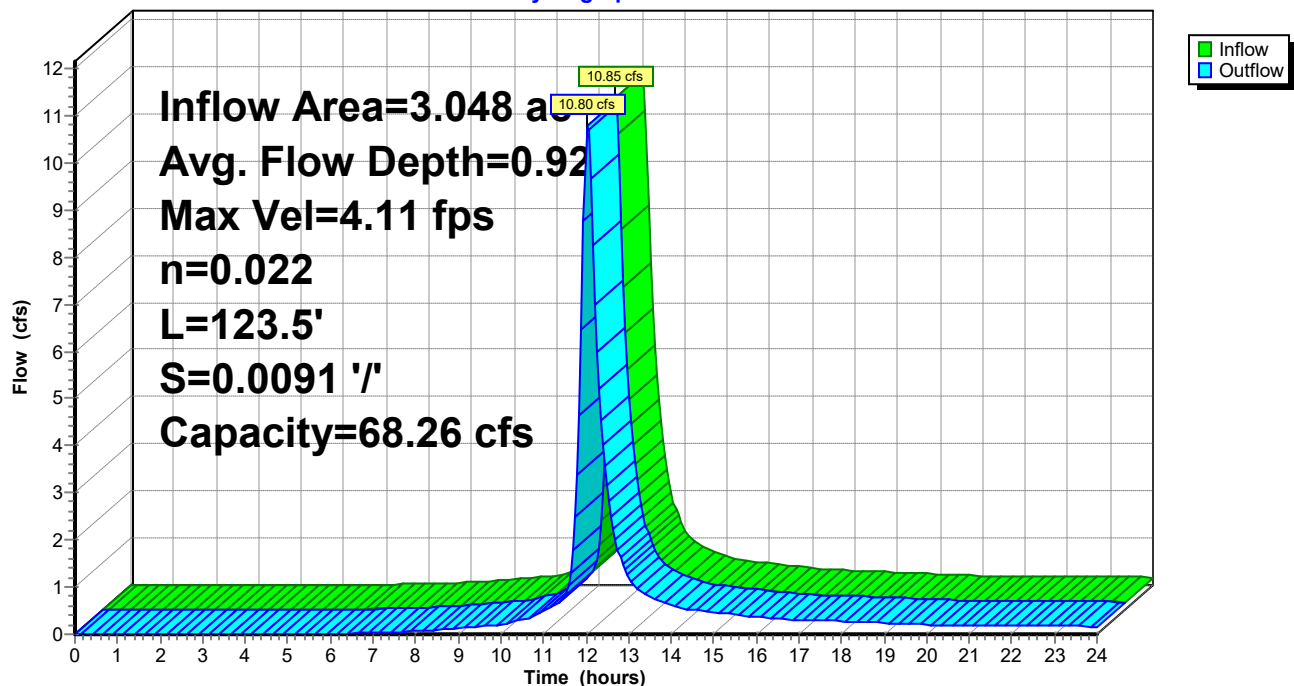
Length= 123.5' Slope= 0.0091 '/'

Inlet Invert= 38.72', Outlet Invert= 37.60'



Reach SP1: Ex Swale Adj US 50 (North)

Hydrograph



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

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Page 152

Stage-Area-Storage for Reach SP1: Ex Swale Adj US 50 (North)

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
38.72	0.0	0
38.77	0.1	7
38.82	0.1	15
38.87	0.2	24
38.92	0.3	34
38.97	0.4	46
39.02	0.5	59
39.07	0.6	73
39.12	0.7	88
39.17	0.9	105
39.22	1.0	123
39.27	1.1	142
39.32	1.3	162
39.37	1.5	184
39.42	1.7	207
39.47	1.9	231
39.52	2.1	256
39.57	2.3	282
39.62	2.5	310
39.67	2.7	339
39.72	3.0	369
39.77	3.2	401
39.82	3.5	433
39.87	3.8	467
39.92	4.1	502
39.97	4.4	539
40.02	4.7	576
40.07	5.0	615
40.12	5.3	655
40.17	5.6	697
40.22	6.0	739
40.27	6.3	783
40.32	6.7	828
40.37	7.1	874
40.42	7.5	922
40.47	7.9	970
40.52	8.3	1,020
40.57	8.7	1,072
40.62	9.1	1,124
40.67	9.5	1,178
40.72	10.0	1,233
40.77	10.4	1,289

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

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Page 153

Summary for Reach SP2: Ex. Swale Adj US 50 (South)

Inflow Area = 2.218 ac, 63.69% Impervious, Inflow Depth > 3.63" for 10-yr event
Inflow = 7.94 cfs @ 12.06 hrs, Volume= 0.671 af
Outflow = 7.94 cfs @ 12.06 hrs, Volume= 0.671 af, Atten= 0%, Lag= 0.3 min

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

Max. Velocity= 4.13 fps, Min. Travel Time= 0.4 min

Avg. Velocity= 1.39 fps, Avg. Travel Time= 1.1 min

Peak Storage= 177 cf @ 12.06 hrs

Average Depth at Peak Storage= 0.67'

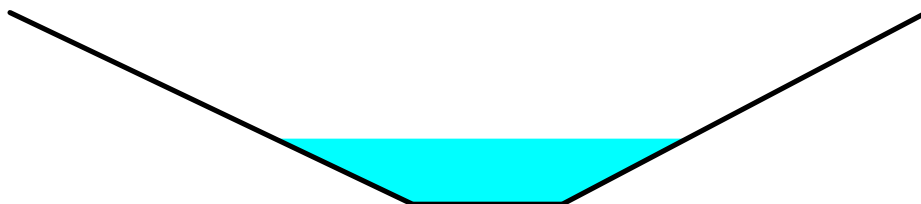
Bank-Full Depth= 1.96' Flow Area= 10.7 sf, Capacity= 80.11 cfs

1.53' x 1.96' deep channel, n= 0.022 Earth, clean & straight

Side Slope Z-value= 2.1 1.9 '/' Top Width= 9.37'

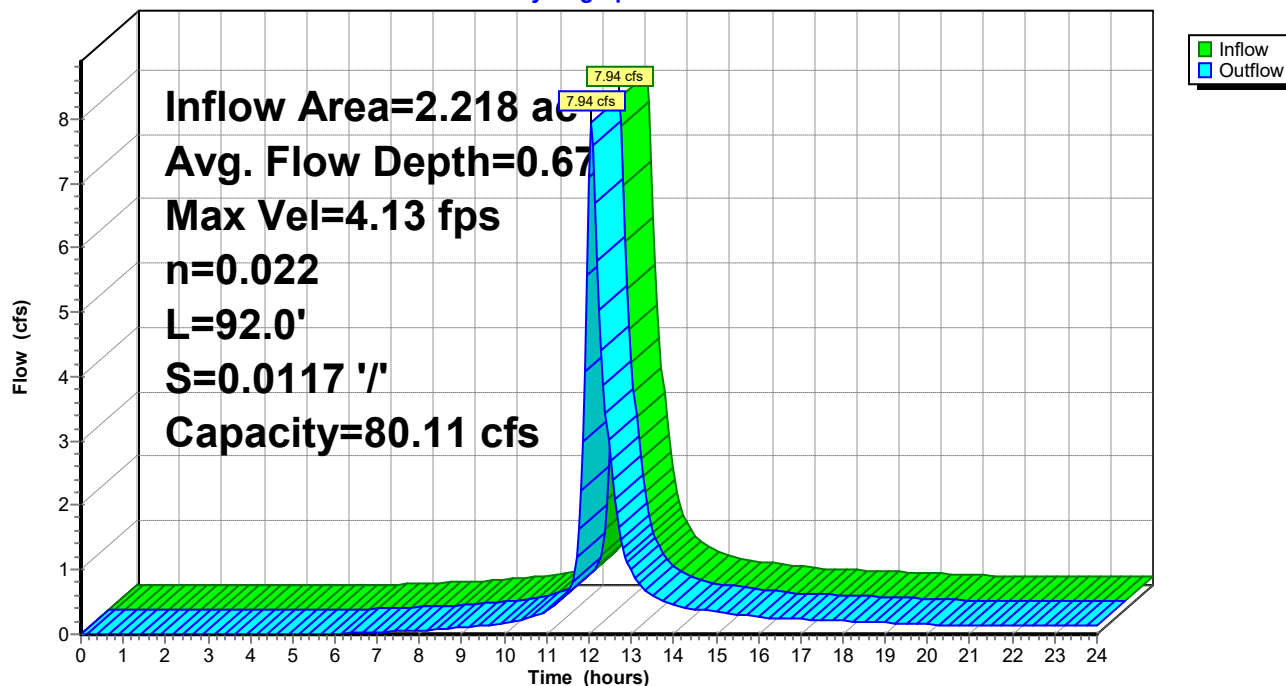
Length= 92.0' Slope= 0.0117 '/'

Inlet Invert= 41.58', Outlet Invert= 40.50'



Reach SP2: Ex. Swale Adj US 50 (South)

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

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Page 154

Stage-Area-Storage for Reach SP2: Ex. Swale Adj US 50 (South)

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)	Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
41.58	0.0	0	42.60	3.6	335
41.60	0.0	3	42.62	3.8	345
41.62	0.1	6	42.64	3.9	356
41.64	0.1	9	42.66	4.0	367
41.66	0.1	12	42.68	4.1	377
41.68	0.2	16	42.70	4.2	388
41.70	0.2	20	42.72	4.3	400
41.72	0.3	23	42.74	4.5	411
41.74	0.3	27	42.76	4.6	422
41.76	0.3	31	42.78	4.7	434
41.78	0.4	36	42.80	4.8	446
41.80	0.4	40	42.82	5.0	457
41.82	0.5	44	42.84	5.1	469
41.84	0.5	49	42.86	5.2	482
41.86	0.6	54	42.88	5.4	494
41.88	0.6	59	42.90	5.5	506
41.90	0.7	64	42.92	5.6	519
41.92	0.8	69	42.94	5.8	532
41.94	0.8	75	42.96	5.9	545
41.96	0.9	80	42.98	6.1	558
41.98	0.9	86	43.00	6.2	571
42.00	1.0	92	43.02	6.4	584
42.02	1.1	98	43.04	6.5	598
42.04	1.1	104	43.06	6.6	611
42.06	1.2	110	43.08	6.8	625
42.08	1.3	116	43.10	6.9	639
42.10	1.3	123	43.12	7.1	653
42.12	1.4	130	43.14	7.3	667
42.14	1.5	137	43.16	7.4	682
42.16	1.6	144	43.18	7.6	696
42.18	1.6	151	43.20	7.7	711
42.20	1.7	158	43.22	7.9	726
42.22	1.8	165	43.24	8.1	741
42.24	1.9	173	43.26	8.2	756
42.26	2.0	181	43.28	8.4	771
42.28	2.1	189	43.30	8.5	786
42.30	2.1	197	43.32	8.7	802
42.32	2.2	205	43.34	8.9	818
42.34	2.3	213	43.36	9.1	834
42.36	2.4	222	43.38	9.2	850
42.38	2.5	230	43.40	9.4	866
42.40	2.6	239	43.42	9.6	882
42.42	2.7	248	43.44	9.8	898
42.44	2.8	257	43.46	9.9	915
42.46	2.9	266	43.48	10.1	932
42.48	3.0	276	43.50	10.3	949
42.50	3.1	285	43.52	10.5	966
42.52	3.2	295	43.54	10.7	983
42.54	3.3	305			
42.56	3.4	315			
42.58	3.5	325			

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

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Page 155

Summary for Reach SW1: Ex Swale Adj US 50 (North)

Inflow Area = 10.662 ac, 56.13% Impervious, Inflow Depth > 3.22" for 10-yr event
Inflow = 21.24 cfs @ 12.06 hrs, Volume= 2.860 af
Outflow = 21.25 cfs @ 12.06 hrs, Volume= 2.859 af, Atten= 0%, Lag= 0.3 min

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

Max. Velocity= 3.44 fps, Min. Travel Time= 0.4 min

Avg. Velocity= 1.54 fps, Avg. Travel Time= 0.8 min

Peak Storage= 485 cf @ 12.06 hrs

Average Depth at Peak Storage= 1.53'

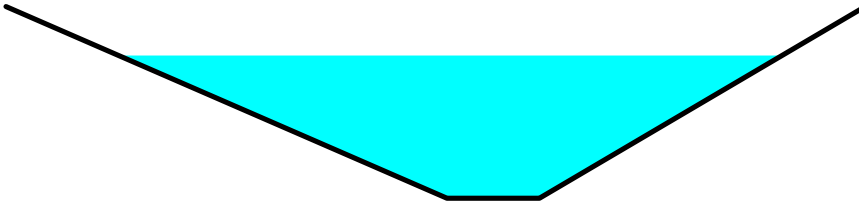
Bank-Full Depth= 2.05' Flow Area= 10.4 sf, Capacity= 42.81 cfs

0.99' x 2.05' deep channel, n= 0.022 Earth, clean & straight

Side Slope Z-value= 2.3 1.7 '/' Top Width= 9.19'

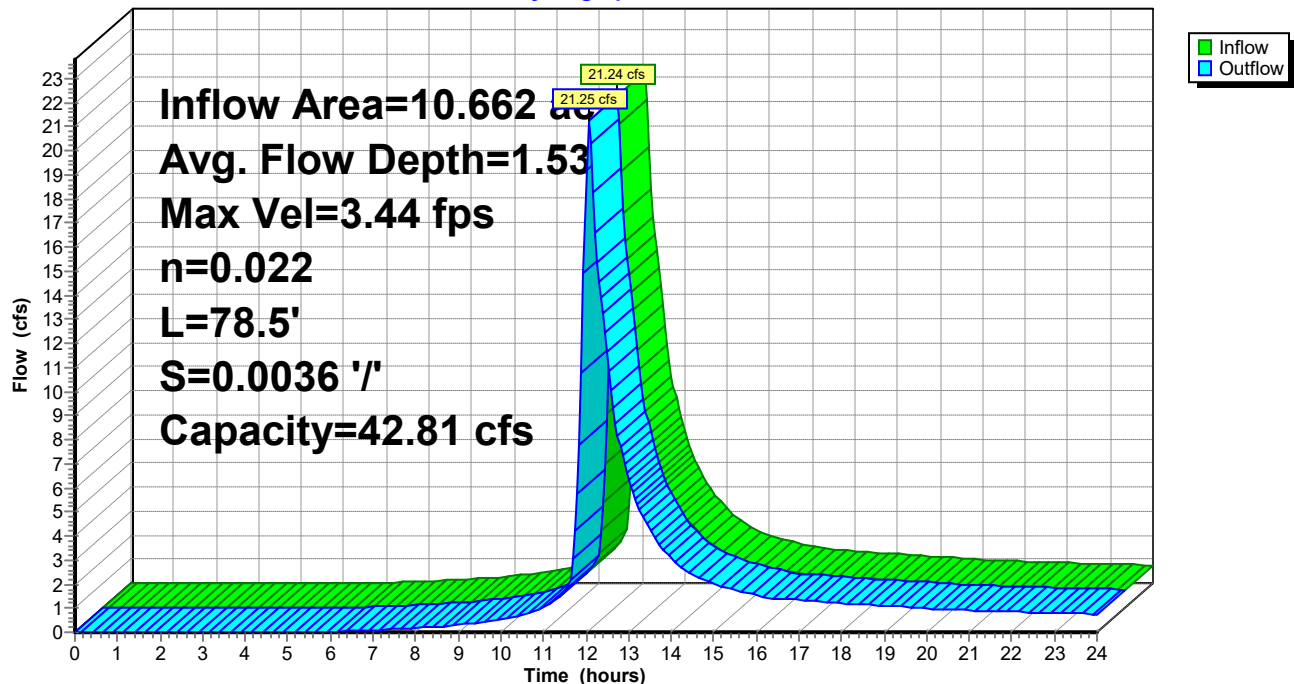
Length= 78.5' Slope= 0.0036 '/'

Inlet Invert= 38.72', Outlet Invert= 38.44'



Reach SW1: Ex Swale Adj US 50 (North)

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

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Page 156

Stage-Area-Storage for Reach SW1: Ex Swale Adj US 50 (North)

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
38.72	0.0	0
38.77	0.1	4
38.82	0.1	9
38.87	0.2	15
38.92	0.3	22
38.97	0.4	29
39.02	0.5	37
39.07	0.6	46
39.12	0.7	56
39.17	0.9	67
39.22	1.0	78
39.27	1.1	90
39.32	1.3	103
39.37	1.5	117
39.42	1.7	131
39.47	1.9	147
39.52	2.1	163
39.57	2.3	180
39.62	2.5	197
39.67	2.7	216
39.72	3.0	235
39.77	3.2	255
39.82	3.5	275
39.87	3.8	297
39.92	4.1	319
39.97	4.4	342
40.02	4.7	366
40.07	5.0	391
40.12	5.3	417
40.17	5.6	443
40.22	6.0	470
40.27	6.3	498
40.32	6.7	526
40.37	7.1	556
40.42	7.5	586
40.47	7.9	617
40.52	8.3	649
40.57	8.7	681
40.62	9.1	714
40.67	9.5	749
40.72	10.0	783
40.77	10.4	819

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Page 157

Summary for Reach SW2: Ex. Swale Adj US 50 (South)

Inflow Area = 8.271 ac, 61.23% Impervious, Inflow Depth > 3.39" for 10-yr event
Inflow = 19.78 cfs @ 12.04 hrs, Volume= 2.334 af
Outflow = 19.80 cfs @ 12.05 hrs, Volume= 2.332 af, Atten= 0%, Lag= 0.5 min

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

Max. Velocity= 5.23 fps, Min. Travel Time= 0.6 min

Avg. Velocity = 2.14 fps, Avg. Travel Time= 1.5 min

Peak Storage= 733 cf @ 12.05 hrs

Average Depth at Peak Storage= 1.05'

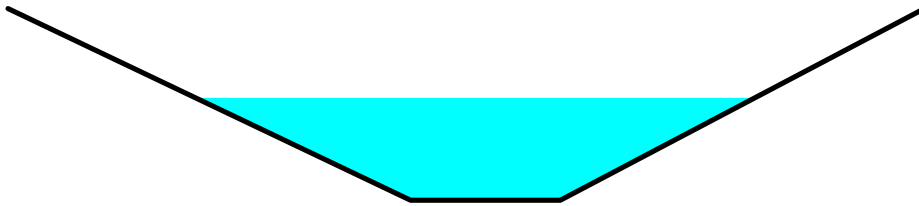
Bank-Full Depth= 1.96' Flow Area= 10.7 sf, Capacity= 79.53 cfs

1.53' x 1.96' deep channel, n= 0.022 Earth, clean & straight

Side Slope Z-value= 2.1 1.9 '/' Top Width= 9.37'

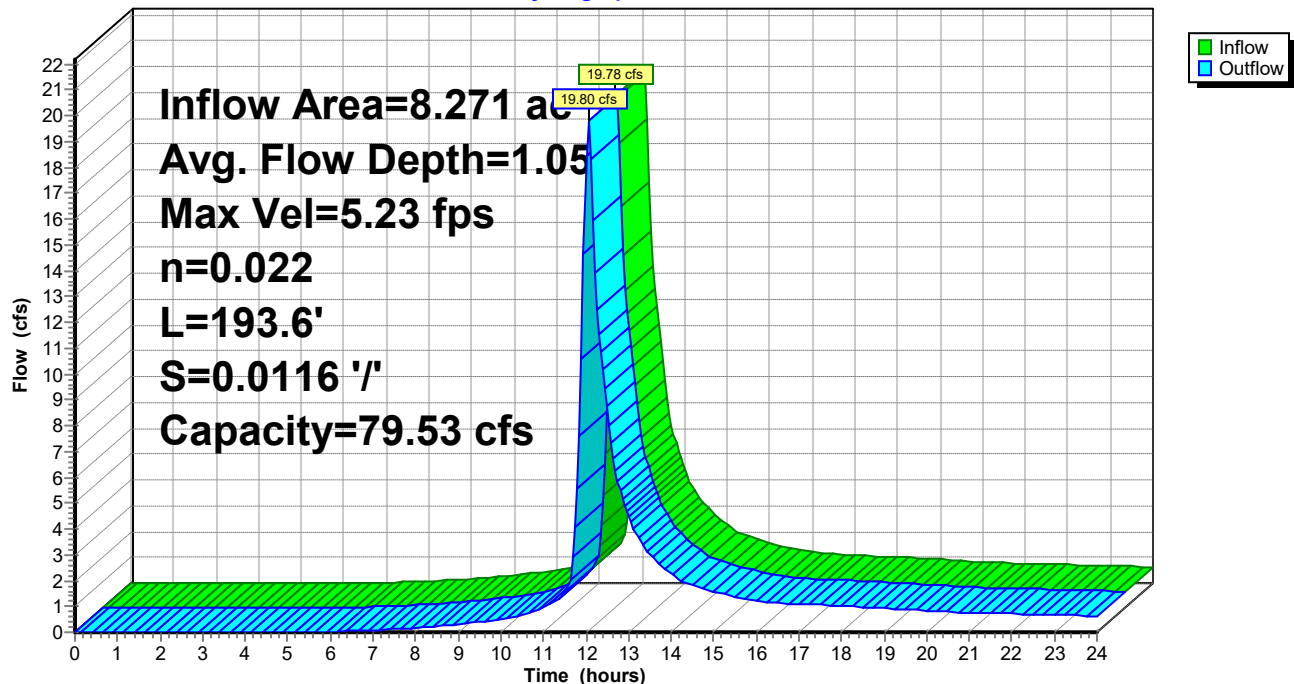
Length= 193.6' Slope= 0.0116 '/'

Inlet Invert= 41.58', Outlet Invert= 39.34'



Reach SW2: Ex. Swale Adj US 50 (South)

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

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Page 158

Stage-Area-Storage for Reach SW2: Ex. Swale Adj US 50 (South)

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)	Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
41.58	0.0	0	42.60	3.6	705
41.60	0.0	6	42.62	3.8	727
41.62	0.1	12	42.64	3.9	749
41.64	0.1	19	42.66	4.0	772
41.66	0.1	26	42.68	4.1	794
41.68	0.2	34	42.70	4.2	817
41.70	0.2	41	42.72	4.3	841
41.72	0.3	49	42.74	4.5	865
41.74	0.3	57	42.76	4.6	889
41.76	0.3	66	42.78	4.7	913
41.78	0.4	75	42.80	4.8	938
41.80	0.4	84	42.82	5.0	963
41.82	0.5	93	42.84	5.1	988
41.84	0.5	103	42.86	5.2	1,014
41.86	0.6	113	42.88	5.4	1,039
41.88	0.6	124	42.90	5.5	1,066
41.90	0.7	134	42.92	5.6	1,092
41.92	0.8	146	42.94	5.8	1,119
41.94	0.8	157	42.96	5.9	1,146
41.96	0.9	169	42.98	6.1	1,174
41.98	0.9	180	43.00	6.2	1,201
42.00	1.0	193	43.02	6.4	1,229
42.02	1.1	205	43.04	6.5	1,258
42.04	1.1	218	43.06	6.6	1,287
42.06	1.2	231	43.08	6.8	1,316
42.08	1.3	245	43.10	6.9	1,345
42.10	1.3	259	43.12	7.1	1,374
42.12	1.4	273	43.14	7.3	1,404
42.14	1.5	287	43.16	7.4	1,435
42.16	1.6	302	43.18	7.6	1,465
42.18	1.6	317	43.20	7.7	1,496
42.20	1.7	333	43.22	7.9	1,527
42.22	1.8	348	43.24	8.1	1,559
42.24	1.9	364	43.26	8.2	1,590
42.26	2.0	380	43.28	8.4	1,623
42.28	2.1	397	43.30	8.5	1,655
42.30	2.1	414	43.32	8.7	1,688
42.32	2.2	431	43.34	8.9	1,721
42.34	2.3	449	43.36	9.1	1,754
42.36	2.4	467	43.38	9.2	1,788
42.38	2.5	485	43.40	9.4	1,822
42.40	2.6	503	43.42	9.6	1,856
42.42	2.7	522	43.44	9.8	1,891
42.44	2.8	541	43.46	9.9	1,925
42.46	2.9	561	43.48	10.1	1,961
42.48	3.0	580	43.50	10.3	1,996
42.50	3.1	600	43.52	10.5	2,032
42.52	3.2	621	43.54	10.7	2,068
42.54	3.3	641			
42.56	3.4	662			
42.58	3.5	683			

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

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Page 159

Summary for Pond 1P: SDI-1

Inflow Area = 1.063 ac, 91.91% Impervious, Inflow Depth > 4.71" for 10-yr event
Inflow = 8.28 cfs @ 11.91 hrs, Volume= 0.417 af
Outflow = 8.28 cfs @ 11.91 hrs, Volume= 0.417 af, Atten= 0%, Lag= 0.0 min
Primary = 8.28 cfs @ 11.91 hrs, Volume= 0.417 af

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

Peak Elev= 42.23' @ 11.91 hrs

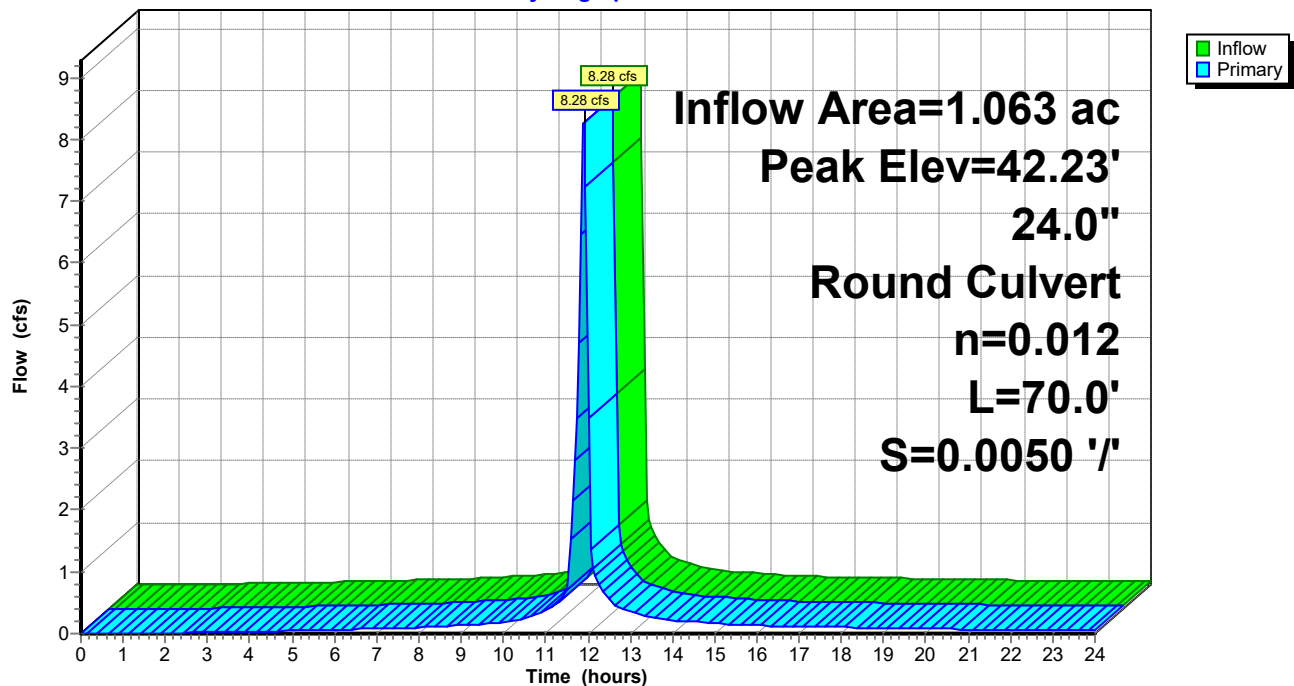
Flood Elev= 45.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	40.75'	24.0" Round 24" HDPE L= 70.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 40.75' / 40.40' S= 0.0050 '/ Cc= 0.900 n= 0.012, Flow Area= 3.14 sf

Primary OutFlow Max=8.11 cfs @ 11.91 hrs HW=42.21' TW=41.24' (Dynamic Tailwater)
↑ **1=24" HDPE** (Barrel Controls 8.11 cfs @ 4.59 fps)

Pond 1P: SDI-1

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

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Page 160

Stage-Area-Storage for Pond 1P: SDI-1

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
40.75	0	42.79	0	44.83	0
40.79	0	42.83	0	44.87	0
40.83	0	42.87	0	44.91	0
40.87	0	42.91	0	44.95	0
40.91	0	42.95	0	44.99	0
40.95	0	42.99	0	45.03	0
40.99	0	43.03	0	45.07	0
41.03	0	43.07	0	45.11	0
41.07	0	43.11	0	45.15	0
41.11	0	43.15	0	45.19	0
41.15	0	43.19	0	45.23	0
41.19	0	43.23	0	45.27	0
41.23	0	43.27	0	45.31	0
41.27	0	43.31	0	45.35	0
41.31	0	43.35	0	45.39	0
41.35	0	43.39	0	45.43	0
41.39	0	43.43	0	45.47	0
41.43	0	43.47	0	45.51	0
41.47	0	43.51	0	45.55	0
41.51	0	43.55	0	45.59	0
41.55	0	43.59	0	45.63	0
41.59	0	43.63	0	45.67	0
41.63	0	43.67	0	45.71	0
41.67	0	43.71	0	45.75	0
41.71	0	43.75	0	45.79	0
41.75	0	43.79	0	45.83	0
41.79	0	43.83	0	45.87	0
41.83	0	43.87	0		
41.87	0	43.91	0		
41.91	0	43.95	0		
41.95	0	43.99	0		
41.99	0	44.03	0		
42.03	0	44.07	0		
42.07	0	44.11	0		
42.11	0	44.15	0		
42.15	0	44.19	0		
42.19	0	44.23	0		
42.23	0	44.27	0		
42.27	0	44.31	0		
42.31	0	44.35	0		
42.35	0	44.39	0		
42.39	0	44.43	0		
42.43	0	44.47	0		
42.47	0	44.51	0		
42.51	0	44.55	0		
42.55	0	44.59	0		
42.59	0	44.63	0		
42.63	0	44.67	0		
42.67	0	44.71	0		
42.71	0	44.75	0		
42.75	0	44.79	0		

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

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Page 161

Summary for Pond 2P: RL-1

Inflow Area = 0.137 ac, 100.00% Impervious, Inflow Depth > 5.06" for 10-yr event
Inflow = 1.11 cfs @ 11.90 hrs, Volume= 0.058 af
Outflow = 1.11 cfs @ 11.90 hrs, Volume= 0.058 af, Atten= 0%, Lag= 0.0 min
Primary = 1.11 cfs @ 11.90 hrs, Volume= 0.058 af

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

Peak Elev= 41.79' @ 12.55 hrs

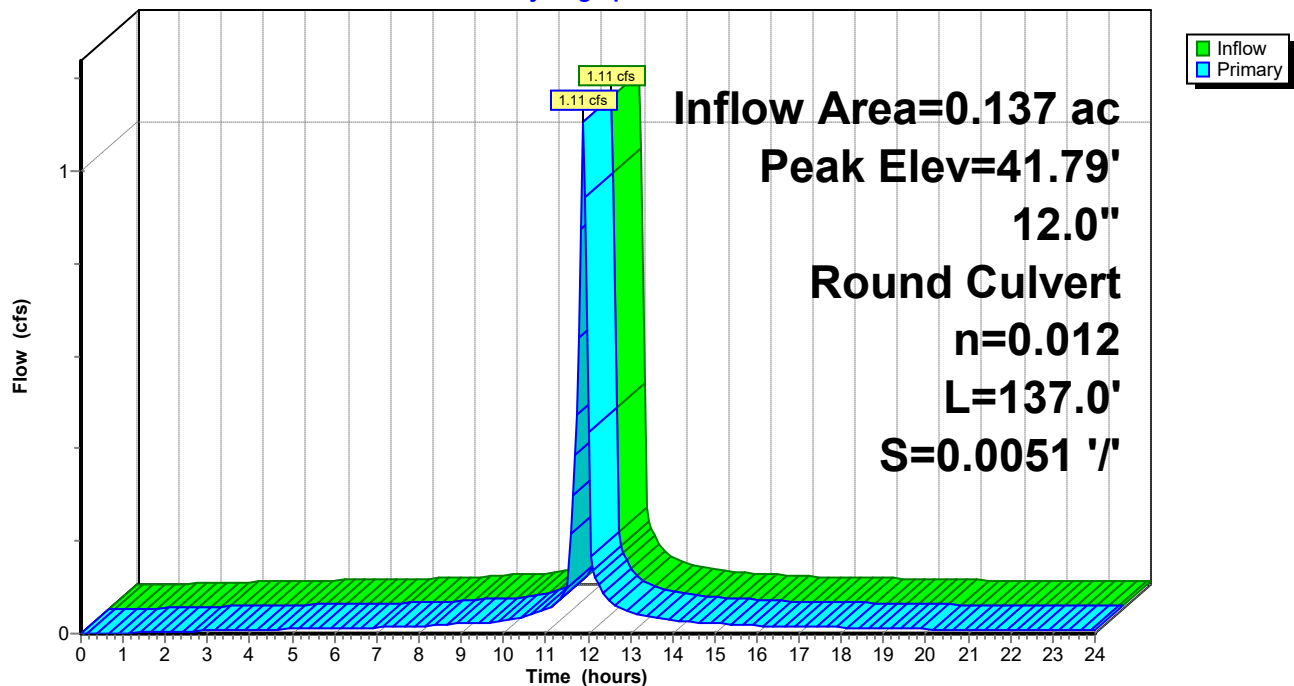
Flood Elev= 46.35'

Device	Routing	Invert	Outlet Devices
#1	Primary	41.10'	12.0" Round 12" HDPE L= 137.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 41.10' / 40.40' S= 0.0051 '/ Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.89 cfs @ 11.90 hrs HW=41.73' TW=41.23' (Dynamic Tailwater)
↑ **1=12" HDPE** (Outlet Controls 0.89 cfs @ 2.44 fps)

Pond 2P: RL-1

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

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Page 162

Stage-Area-Storage for Pond 2P: RL-1

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
41.10	0	43.14	0	45.18	0
41.14	0	43.18	0	45.22	0
41.18	0	43.22	0	45.26	0
41.22	0	43.26	0	45.30	0
41.26	0	43.30	0	45.34	0
41.30	0	43.34	0	45.38	0
41.34	0	43.38	0	45.42	0
41.38	0	43.42	0	45.46	0
41.42	0	43.46	0	45.50	0
41.46	0	43.50	0	45.54	0
41.50	0	43.54	0	45.58	0
41.54	0	43.58	0	45.62	0
41.58	0	43.62	0	45.66	0
41.62	0	43.66	0	45.70	0
41.66	0	43.70	0	45.74	0
41.70	0	43.74	0	45.78	0
41.74	0	43.78	0	45.82	0
41.78	0	43.82	0	45.86	0
41.82	0	43.86	0	45.90	0
41.86	0	43.90	0	45.94	0
41.90	0	43.94	0	45.98	0
41.94	0	43.98	0	46.02	0
41.98	0	44.02	0	46.06	0
42.02	0	44.06	0	46.10	0
42.06	0	44.10	0	46.14	0
42.10	0	44.14	0	46.18	0
42.14	0	44.18	0	46.22	0
42.18	0	44.22	0	46.26	0
42.22	0	44.26	0	46.30	0
42.26	0	44.30	0	46.34	0
42.30	0	44.34	0		
42.34	0	44.38	0		
42.38	0	44.42	0		
42.42	0	44.46	0		
42.46	0	44.50	0		
42.50	0	44.54	0		
42.54	0	44.58	0		
42.58	0	44.62	0		
42.62	0	44.66	0		
42.66	0	44.70	0		
42.70	0	44.74	0		
42.74	0	44.78	0		
42.78	0	44.82	0		
42.82	0	44.86	0		
42.86	0	44.90	0		
42.90	0	44.94	0		
42.94	0	44.98	0		
42.98	0	45.02	0		
43.02	0	45.06	0		
43.06	0	45.10	0		
43.10	0	45.14	0		

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

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Page 163

Summary for Pond 3P: RL-2

Inflow Area = 0.069 ac, 100.00% Impervious, Inflow Depth > 5.06" for 10-yr event
Inflow = 0.55 cfs @ 11.90 hrs, Volume= 0.029 af
Outflow = 0.55 cfs @ 11.90 hrs, Volume= 0.029 af, Atten= 0%, Lag= 0.0 min
Primary = 0.55 cfs @ 11.90 hrs, Volume= 0.029 af

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

Peak Elev= 43.17' @ 11.91 hrs

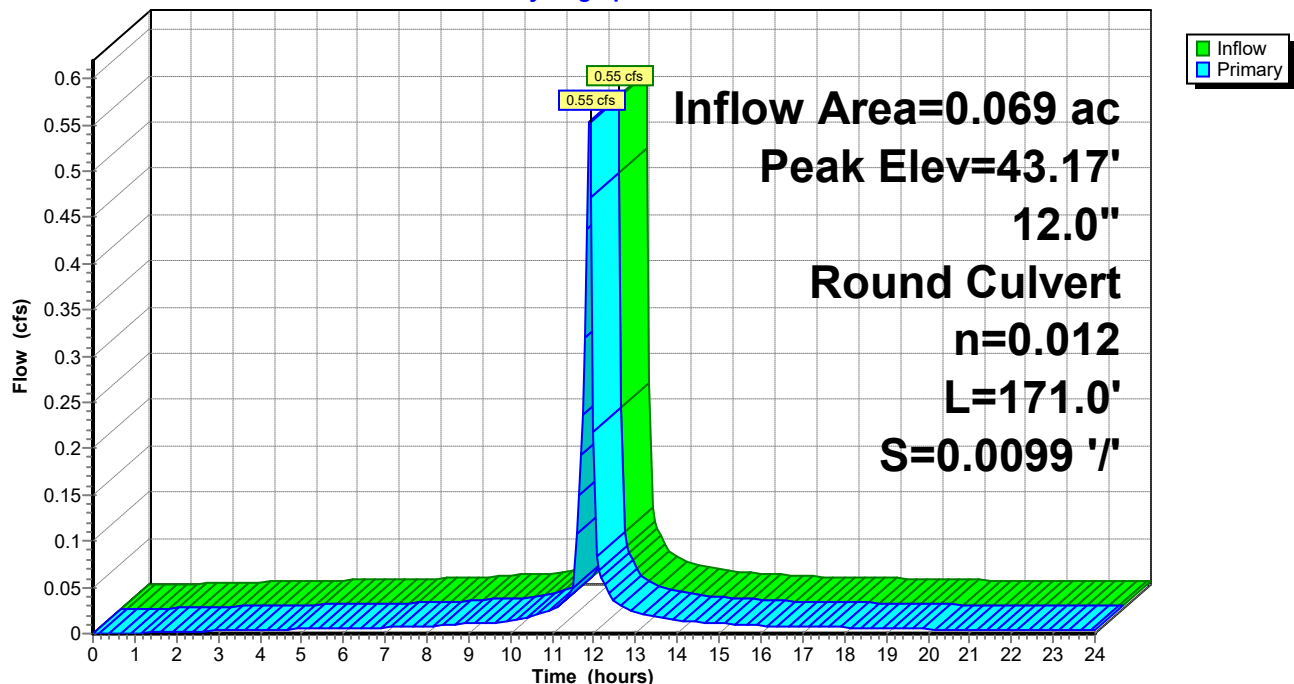
Flood Elev= 46.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	42.80'	12.0" Round 12" HPDE L= 171.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 42.80' / 41.10' S= 0.0099 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.55 cfs @ 11.90 hrs HW=43.17' TW=41.73' (Dynamic Tailwater)
↑ **1=12" HPDE** (Inlet Controls 0.55 cfs @ 2.07 fps)

Pond 3P: RL-2

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Page 164

Stage-Area-Storage for Pond 3P: RL-2

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
42.80	0	45.35	0
42.85	0	45.40	0
42.90	0	45.45	0
42.95	0	45.50	0
43.00	0	45.55	0
43.05	0	45.60	0
43.10	0	45.65	0
43.15	0	45.70	0
43.20	0	45.75	0
43.25	0	45.80	0
43.30	0	45.85	0
43.35	0	45.90	0
43.40	0	45.95	0
43.45	0	46.00	0
43.50	0	46.05	0
43.55	0	46.10	0
43.60	0	46.15	0
43.65	0	46.20	0
43.70	0	46.25	0
43.75	0	46.30	0
43.80	0	46.35	0
43.85	0	46.40	0
43.90	0	46.45	0
43.95	0	46.50	0
44.00	0	46.55	0
44.05	0	46.60	0
44.10	0	46.65	0
44.15	0	46.70	0
44.20	0	46.75	0
44.25	0	46.80	0
44.30	0	46.85	0
44.35	0	46.90	0
44.40	0		
44.45	0		
44.50	0		
44.55	0		
44.60	0		
44.65	0		
44.70	0		
44.75	0		
44.80	0		
44.85	0		
44.90	0		
44.95	0		
45.00	0		
45.05	0		
45.10	0		
45.15	0		
45.20	0		
45.25	0		
45.30	0		

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

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Page 165

Summary for Pond 4P: RL-3

Inflow Area = 0.072 ac, 100.00% Impervious, Inflow Depth > 5.06" for 10-yr event
Inflow = 0.58 cfs @ 11.90 hrs, Volume= 0.031 af
Outflow = 0.58 cfs @ 11.90 hrs, Volume= 0.031 af, Atten= 0%, Lag= 0.0 min
Primary = 0.58 cfs @ 11.90 hrs, Volume= 0.031 af

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

Peak Elev= 42.33' @ 11.94 hrs

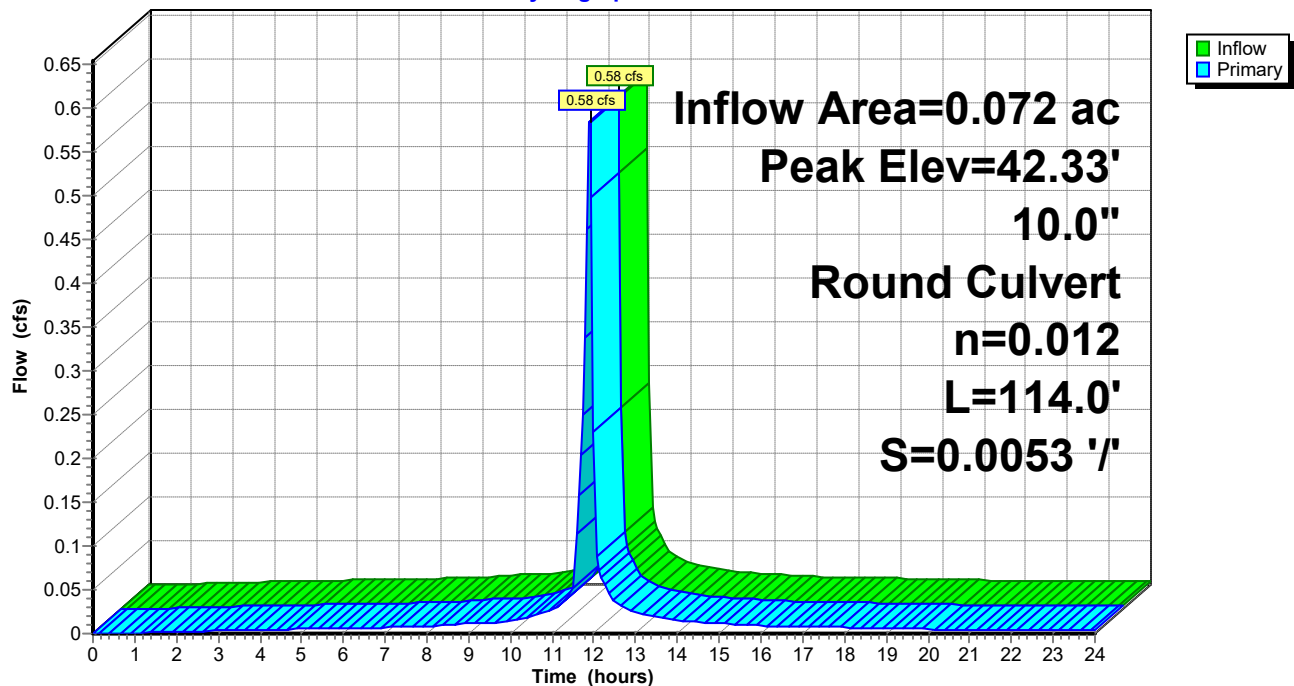
Flood Elev= 47.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	41.50'	10.0" Round 10" HDPE L= 114.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 41.50' / 40.90' S= 0.0053 '/ Cc= 0.900 n= 0.012, Flow Area= 0.55 sf

Primary OutFlow Max=0.10 cfs @ 11.90 hrs HW=42.23' TW=42.22' (Dynamic Tailwater)
↑ **1=10" HDPE** (Outlet Controls 0.10 cfs @ 0.26 fps)

Pond 4P: RL-3

Hydrograph



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Page 166

Stage-Area-Storage for Pond 4P: RL-3

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
41.50	0	43.54	0	45.58	0
41.54	0	43.58	0	45.62	0
41.58	0	43.62	0	45.66	0
41.62	0	43.66	0	45.70	0
41.66	0	43.70	0	45.74	0
41.70	0	43.74	0	45.78	0
41.74	0	43.78	0	45.82	0
41.78	0	43.82	0	45.86	0
41.82	0	43.86	0	45.90	0
41.86	0	43.90	0	45.94	0
41.90	0	43.94	0	45.98	0
41.94	0	43.98	0	46.02	0
41.98	0	44.02	0	46.06	0
42.02	0	44.06	0	46.10	0
42.06	0	44.10	0	46.14	0
42.10	0	44.14	0	46.18	0
42.14	0	44.18	0	46.22	0
42.18	0	44.22	0	46.26	0
42.22	0	44.26	0	46.30	0
42.26	0	44.30	0	46.34	0
42.30	0	44.34	0	46.38	0
42.34	0	44.38	0	46.42	0
42.38	0	44.42	0	46.46	0
42.42	0	44.46	0	46.50	0
42.46	0	44.50	0	46.54	0
42.50	0	44.54	0	46.58	0
42.54	0	44.58	0	46.62	0
42.58	0	44.62	0	46.66	0
42.62	0	44.66	0	46.70	0
42.66	0	44.70	0	46.74	0
42.70	0	44.74	0	46.78	0
42.74	0	44.78	0	46.82	0
42.78	0	44.82	0	46.86	0
42.82	0	44.86	0	46.90	0
42.86	0	44.90	0	46.94	0
42.90	0	44.94	0	46.98	0
42.94	0	44.98	0	47.02	0
42.98	0	45.02	0	47.06	0
43.02	0	45.06	0	47.10	0
43.06	0	45.10	0	47.14	0
43.10	0	45.14	0	47.18	0
43.14	0	45.18	0	47.22	0
43.18	0	45.22	0		
43.22	0	45.26	0		
43.26	0	45.30	0		
43.30	0	45.34	0		
43.34	0	45.38	0		
43.38	0	45.42	0		
43.42	0	45.46	0		
43.46	0	45.50	0		
43.50	0	45.54	0		

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Page 167

Summary for Pond 5P: SDI-5

Inflow Area = 0.240 ac, 94.66% Impervious, Inflow Depth > 4.82" for 10-yr event
Inflow = 1.86 cfs @ 11.91 hrs, Volume= 0.096 af
Outflow = 1.86 cfs @ 11.91 hrs, Volume= 0.096 af, Atten= 0%, Lag= 0.0 min
Primary = 1.86 cfs @ 11.91 hrs, Volume= 0.096 af

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

Peak Elev= 42.48' @ 11.94 hrs

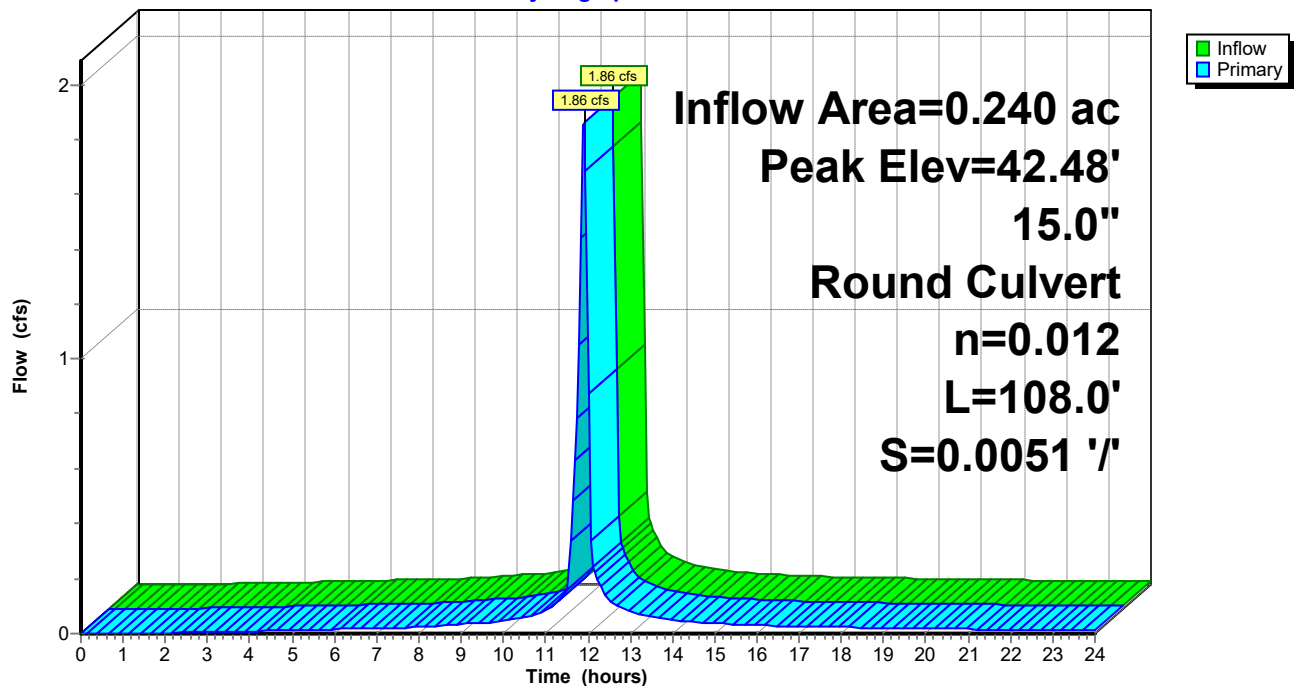
Flood Elev= 46.75'

Device	Routing	Invert	Outlet Devices
#1	Primary	41.45'	15.0" Round 15" HDPE L= 108.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 41.45' / 40.90' S= 0.0051 '/ Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=1.41 cfs @ 11.91 hrs HW=42.41' TW=42.21' (Dynamic Tailwater)
↑ **1=15" HDPE** (Outlet Controls 1.41 cfs @ 1.94 fps)

Pond 5P: SDI-5

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Page 168

Stage-Area-Storage for Pond 5P: SDI-5

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
41.45	0	43.49	0	45.53	0
41.49	0	43.53	0	45.57	0
41.53	0	43.57	0	45.61	0
41.57	0	43.61	0	45.65	0
41.61	0	43.65	0	45.69	0
41.65	0	43.69	0	45.73	0
41.69	0	43.73	0	45.77	0
41.73	0	43.77	0	45.81	0
41.77	0	43.81	0	45.85	0
41.81	0	43.85	0	45.89	0
41.85	0	43.89	0	45.93	0
41.89	0	43.93	0	45.97	0
41.93	0	43.97	0	46.01	0
41.97	0	44.01	0	46.05	0
42.01	0	44.05	0	46.09	0
42.05	0	44.09	0	46.13	0
42.09	0	44.13	0	46.17	0
42.13	0	44.17	0	46.21	0
42.17	0	44.21	0	46.25	0
42.21	0	44.25	0	46.29	0
42.25	0	44.29	0	46.33	0
42.29	0	44.33	0	46.37	0
42.33	0	44.37	0	46.41	0
42.37	0	44.41	0	46.45	0
42.41	0	44.45	0	46.49	0
42.45	0	44.49	0	46.53	0
42.49	0	44.53	0	46.57	0
42.53	0	44.57	0	46.61	0
42.57	0	44.61	0	46.65	0
42.61	0	44.65	0	46.69	0
42.65	0	44.69	0	46.73	0
42.69	0	44.73	0		
42.73	0	44.77	0		
42.77	0	44.81	0		
42.81	0	44.85	0		
42.85	0	44.89	0		
42.89	0	44.93	0		
42.93	0	44.97	0		
42.97	0	45.01	0		
43.01	0	45.05	0		
43.05	0	45.09	0		
43.09	0	45.13	0		
43.13	0	45.17	0		
43.17	0	45.21	0		
43.21	0	45.25	0		
43.25	0	45.29	0		
43.29	0	45.33	0		
43.33	0	45.37	0		
43.37	0	45.41	0		
43.41	0	45.45	0		
43.45	0	45.49	0		

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

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Page 169

Summary for Pond 6P: RL-4

Inflow Area = 0.072 ac, 100.00% Impervious, Inflow Depth > 5.06" for 10-yr event
Inflow = 0.58 cfs @ 11.90 hrs, Volume= 0.031 af
Outflow = 0.58 cfs @ 11.90 hrs, Volume= 0.031 af, Atten= 0%, Lag= 0.0 min
Primary = 0.58 cfs @ 11.90 hrs, Volume= 0.031 af

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

Peak Elev= 43.19' @ 11.91 hrs

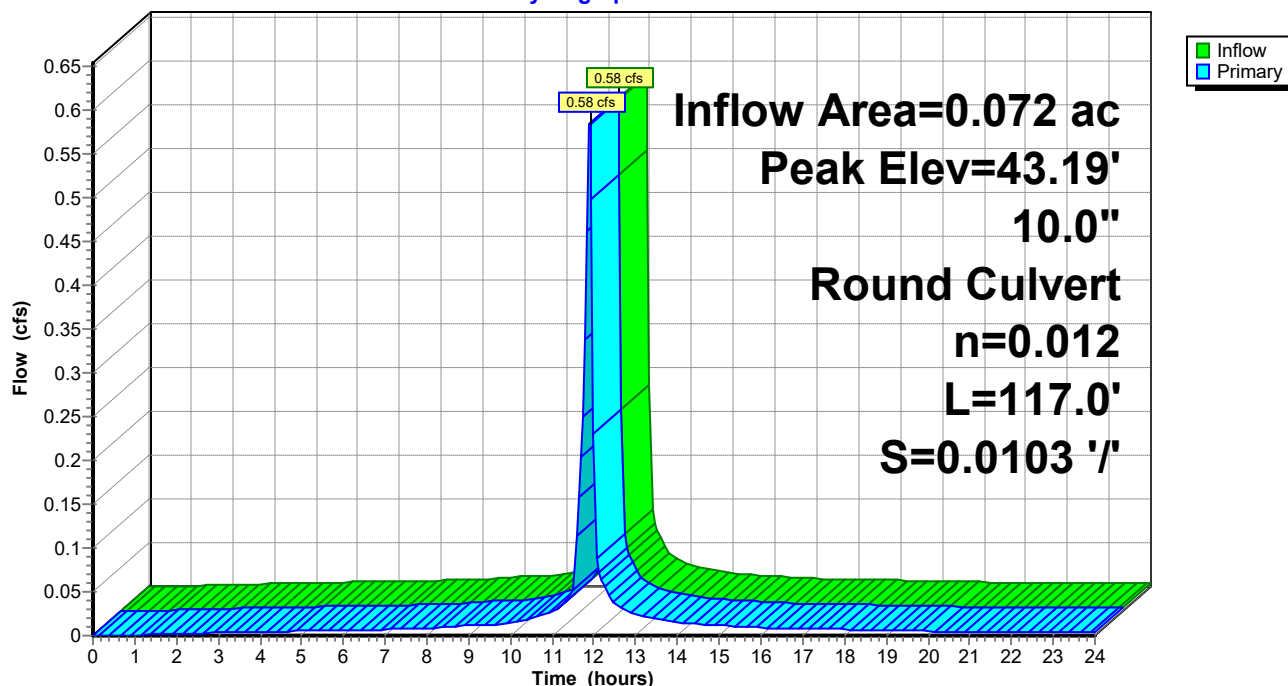
Flood Elev= 47.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	42.75'	10.0" Round 10" HDPE L= 117.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 42.75' / 41.55' S= 0.0103 '/ Cc= 0.900 n= 0.012, Flow Area= 0.55 sf

Primary OutFlow Max=0.55 cfs @ 11.90 hrs HW=43.19' TW=42.40' (Dynamic Tailwater)
↑ **1=10" HDPE** (Outlet Controls 0.55 cfs @ 2.77 fps)

Pond 6P: RL-4

Hydrograph



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

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Page 170

Stage-Area-Storage for Pond 6P: RL-4

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
42.75	0	45.30	0
42.80	0	45.35	0
42.85	0	45.40	0
42.90	0	45.45	0
42.95	0	45.50	0
43.00	0	45.55	0
43.05	0	45.60	0
43.10	0	45.65	0
43.15	0	45.70	0
43.20	0	45.75	0
43.25	0	45.80	0
43.30	0	45.85	0
43.35	0	45.90	0
43.40	0	45.95	0
43.45	0	46.00	0
43.50	0	46.05	0
43.55	0	46.10	0
43.60	0	46.15	0
43.65	0	46.20	0
43.70	0	46.25	0
43.75	0	46.30	0
43.80	0	46.35	0
43.85	0	46.40	0
43.90	0	46.45	0
43.95	0	46.50	0
44.00	0	46.55	0
44.05	0	46.60	0
44.10	0	46.65	0
44.15	0	46.70	0
44.20	0	46.75	0
44.25	0	46.80	0
44.30	0	46.85	0
44.35	0	46.90	0
44.40	0	46.95	0
44.45	0	47.00	0
44.50	0	47.05	0
44.55	0	47.10	0
44.60	0	47.15	0
44.65	0	47.20	0
44.70	0		
44.75	0		
44.80	0		
44.85	0		
44.90	0		
44.95	0		
45.00	0		
45.05	0		
45.10	0		
45.15	0		
45.20	0		
45.25	0		

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

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Page 171

Summary for Pond 7P: SDI-6

Inflow Area = 0.270 ac, 85.31% Impervious, Inflow Depth > 4.49" for 10-yr event
Inflow = 2.12 cfs @ 11.90 hrs, Volume= 0.101 af
Outflow = 2.12 cfs @ 11.90 hrs, Volume= 0.101 af, Atten= 0%, Lag= 0.0 min
Primary = 2.12 cfs @ 11.90 hrs, Volume= 0.101 af

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

Peak Elev= 44.82' @ 11.90 hrs

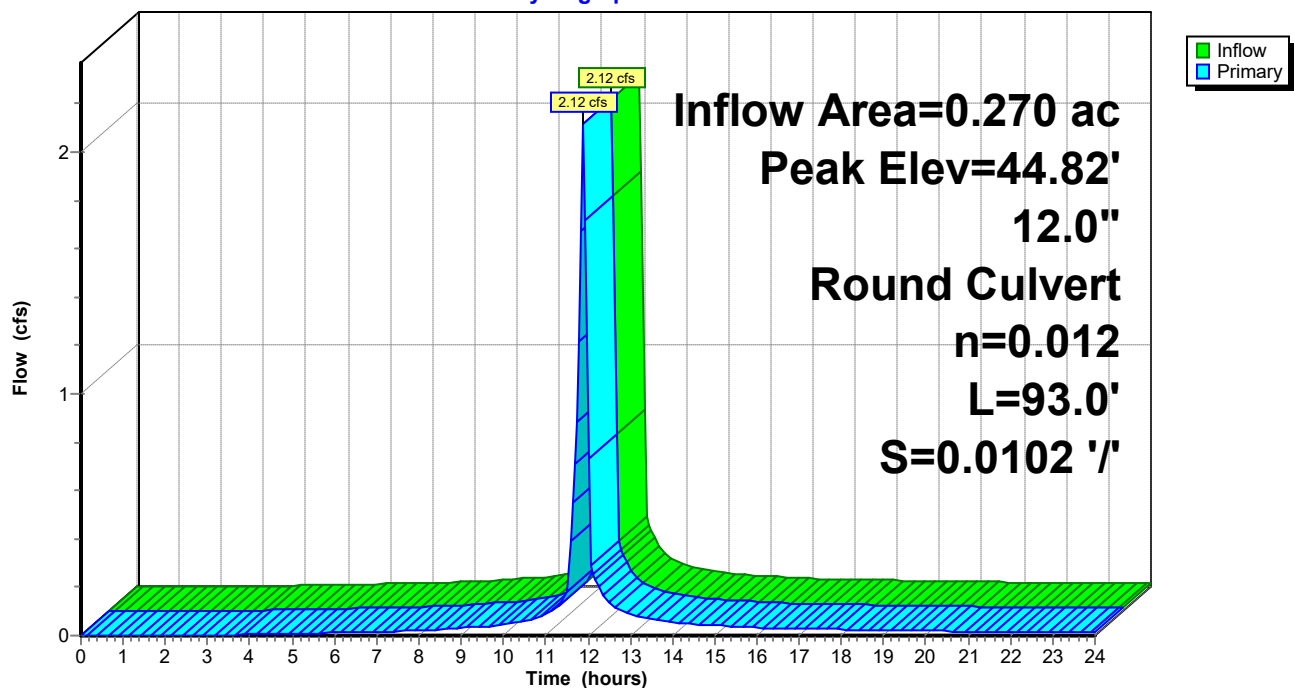
Flood Elev= 46.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	44.00'	12.0" Round Culvert L= 93.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 44.00' / 43.05' S= 0.0102 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=2.11 cfs @ 11.90 hrs HW=44.82' TW=43.38' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 2.11 cfs @ 3.07 fps)

Pond 7P: SDI-6

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

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Page 172

Stage-Area-Storage for Pond 7P: SDI-6

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
44.00	0	45.02	0	46.04	0
44.02	0	45.04	0	46.06	0
44.04	0	45.06	0	46.08	0
44.06	0	45.08	0	46.10	0
44.08	0	45.10	0	46.12	0
44.10	0	45.12	0	46.14	0
44.12	0	45.14	0	46.16	0
44.14	0	45.16	0	46.18	0
44.16	0	45.18	0	46.20	0
44.18	0	45.20	0	46.22	0
44.20	0	45.22	0	46.24	0
44.22	0	45.24	0	46.26	0
44.24	0	45.26	0	46.28	0
44.26	0	45.28	0	46.30	0
44.28	0	45.30	0	46.32	0
44.30	0	45.32	0	46.34	0
44.32	0	45.34	0	46.36	0
44.34	0	45.36	0	46.38	0
44.36	0	45.38	0	46.40	0
44.38	0	45.40	0		
44.40	0	45.42	0		
44.42	0	45.44	0		
44.44	0	45.46	0		
44.46	0	45.48	0		
44.48	0	45.50	0		
44.50	0	45.52	0		
44.52	0	45.54	0		
44.54	0	45.56	0		
44.56	0	45.58	0		
44.58	0	45.60	0		
44.60	0	45.62	0		
44.62	0	45.64	0		
44.64	0	45.66	0		
44.66	0	45.68	0		
44.68	0	45.70	0		
44.70	0	45.72	0		
44.72	0	45.74	0		
44.74	0	45.76	0		
44.76	0	45.78	0		
44.78	0	45.80	0		
44.80	0	45.82	0		
44.82	0	45.84	0		
44.84	0	45.86	0		
44.86	0	45.88	0		
44.88	0	45.90	0		
44.90	0	45.92	0		
44.92	0	45.94	0		
44.94	0	45.96	0		
44.96	0	45.98	0		
44.98	0	46.00	0		
45.00	0	46.02	0		

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

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Page 173

Summary for Pond 8P: SDI-2

Inflow Area = 0.592 ac, 90.75% Impervious, Inflow Depth > 4.65" for 10-yr event
Inflow = 4.62 cfs @ 11.90 hrs, Volume= 0.229 af
Outflow = 4.62 cfs @ 11.90 hrs, Volume= 0.229 af, Atten= 0%, Lag= 0.0 min
Primary = 4.62 cfs @ 11.90 hrs, Volume= 0.229 af

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

Peak Elev= 42.73' @ 11.93 hrs

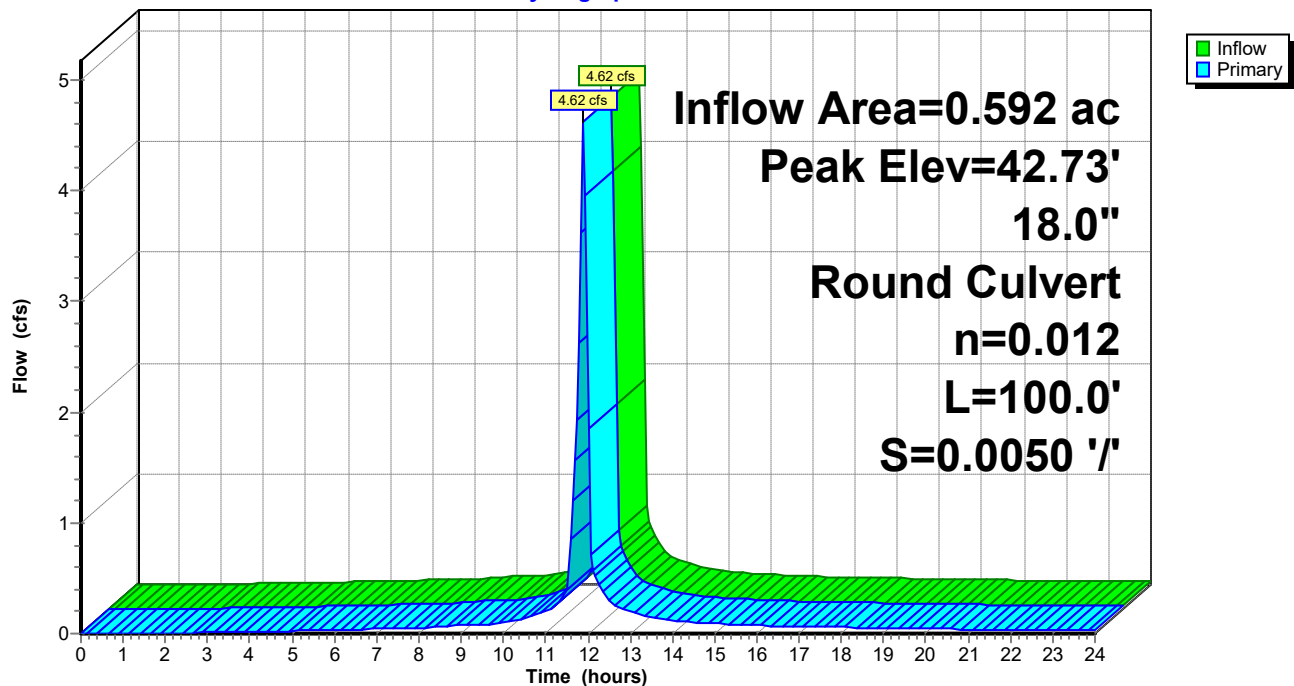
Flood Elev= 46.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	41.40'	18.0" Round 18" HDPE L= 100.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 41.40' / 40.90' S= 0.0050 '/ Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=3.89 cfs @ 11.90 hrs HW=42.68' TW=42.22' (Dynamic Tailwater)
↑ **1=18" HDPE** (Outlet Controls 3.89 cfs @ 3.25 fps)

Pond 8P: SDI-2

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Page 174

Stage-Area-Storage for Pond 8P: SDI-2

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
41.40	0	43.44	0	45.48	0
41.44	0	43.48	0	45.52	0
41.48	0	43.52	0	45.56	0
41.52	0	43.56	0	45.60	0
41.56	0	43.60	0	45.64	0
41.60	0	43.64	0	45.68	0
41.64	0	43.68	0	45.72	0
41.68	0	43.72	0	45.76	0
41.72	0	43.76	0	45.80	0
41.76	0	43.80	0	45.84	0
41.80	0	43.84	0	45.88	0
41.84	0	43.88	0	45.92	0
41.88	0	43.92	0	45.96	0
41.92	0	43.96	0	46.00	0
41.96	0	44.00	0	46.04	0
42.00	0	44.04	0	46.08	0
42.04	0	44.08	0	46.12	0
42.08	0	44.12	0	46.16	0
42.12	0	44.16	0	46.20	0
42.16	0	44.20	0	46.24	0
42.20	0	44.24	0	46.28	0
42.24	0	44.28	0	46.32	0
42.28	0	44.32	0	46.36	0
42.32	0	44.36	0	46.40	0
42.36	0	44.40	0	46.44	0
42.40	0	44.44	0	46.48	0
42.44	0	44.48	0	46.52	0
42.48	0	44.52	0	46.56	0
42.52	0	44.56	0	46.60	0
42.56	0	44.60	0		
42.60	0	44.64	0		
42.64	0	44.68	0		
42.68	0	44.72	0		
42.72	0	44.76	0		
42.76	0	44.80	0		
42.80	0	44.84	0		
42.84	0	44.88	0		
42.88	0	44.92	0		
42.92	0	44.96	0		
42.96	0	45.00	0		
43.00	0	45.04	0		
43.04	0	45.08	0		
43.08	0	45.12	0		
43.12	0	45.16	0		
43.16	0	45.20	0		
43.20	0	45.24	0		
43.24	0	45.28	0		
43.28	0	45.32	0		
43.32	0	45.36	0		
43.36	0	45.40	0		
43.40	0	45.44	0		

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

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Page 175

Summary for Pond 9P: SDI-3

Inflow Area = 0.095 ac, 91.82% Impervious, Inflow Depth > 4.72" for 10-yr event
Inflow = 0.76 cfs @ 11.90 hrs, Volume= 0.037 af
Outflow = 0.76 cfs @ 11.90 hrs, Volume= 0.037 af, Atten= 0%, Lag= 0.0 min
Primary = 0.76 cfs @ 11.90 hrs, Volume= 0.037 af

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

Peak Elev= 42.85' @ 11.94 hrs

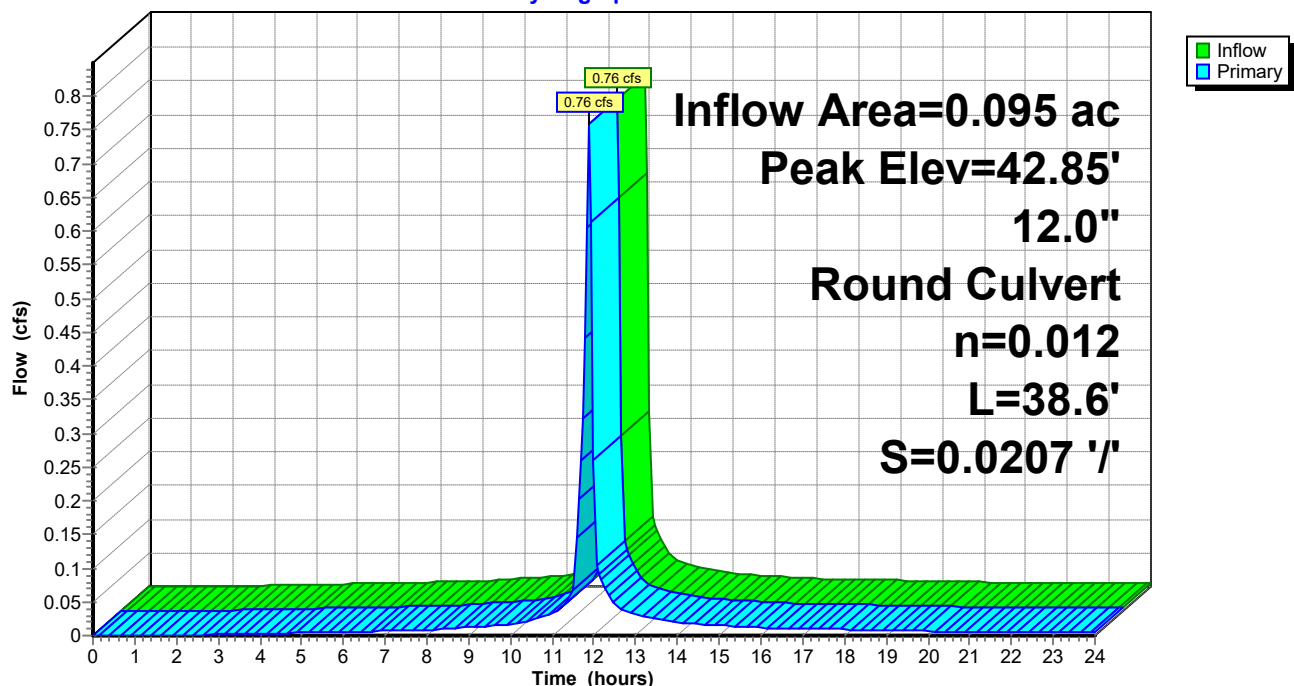
Flood Elev= 46.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	42.30'	12.0" Round 12" HDPE L= 38.6' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 42.30' / 41.50' S= 0.0207 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.47 cfs @ 11.90 hrs HW=42.81' TW=42.68' (Dynamic Tailwater)
↑ **1=12" HDPE** (Outlet Controls 0.47 cfs @ 1.71 fps)

Pond 9P: SDI-3

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Page 176

Stage-Area-Storage for Pond 9P: SDI-3

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
42.30	0	44.85	0
42.35	0	44.90	0
42.40	0	44.95	0
42.45	0	45.00	0
42.50	0	45.05	0
42.55	0	45.10	0
42.60	0	45.15	0
42.65	0	45.20	0
42.70	0	45.25	0
42.75	0	45.30	0
42.80	0	45.35	0
42.85	0	45.40	0
42.90	0	45.45	0
42.95	0	45.50	0
43.00	0	45.55	0
43.05	0	45.60	0
43.10	0	45.65	0
43.15	0	45.70	0
43.20	0	45.75	0
43.25	0	45.80	0
43.30	0	45.85	0
43.35	0	45.90	0
43.40	0	45.95	0
43.45	0	46.00	0
43.50	0	46.05	0
43.55	0	46.10	0
43.60	0	46.15	0
43.65	0	46.20	0
43.70	0	46.25	0
43.75	0		
43.80	0		
43.85	0		
43.90	0		
43.95	0		
44.00	0		
44.05	0		
44.10	0		
44.15	0		
44.20	0		
44.25	0		
44.30	0		
44.35	0		
44.40	0		
44.45	0		
44.50	0		
44.55	0		
44.60	0		
44.65	0		
44.70	0		
44.75	0		
44.80	0		

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

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Page 177

Summary for Pond 10P: SDI-4

Inflow Area = 0.232 ac, 84.85% Impervious, Inflow Depth > 4.38" for 10-yr event
Inflow = 1.78 cfs @ 11.90 hrs, Volume= 0.085 af
Outflow = 1.78 cfs @ 11.90 hrs, Volume= 0.085 af, Atten= 0%, Lag= 0.0 min
Primary = 1.78 cfs @ 11.90 hrs, Volume= 0.085 af

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

Peak Elev= 43.73' @ 11.90 hrs

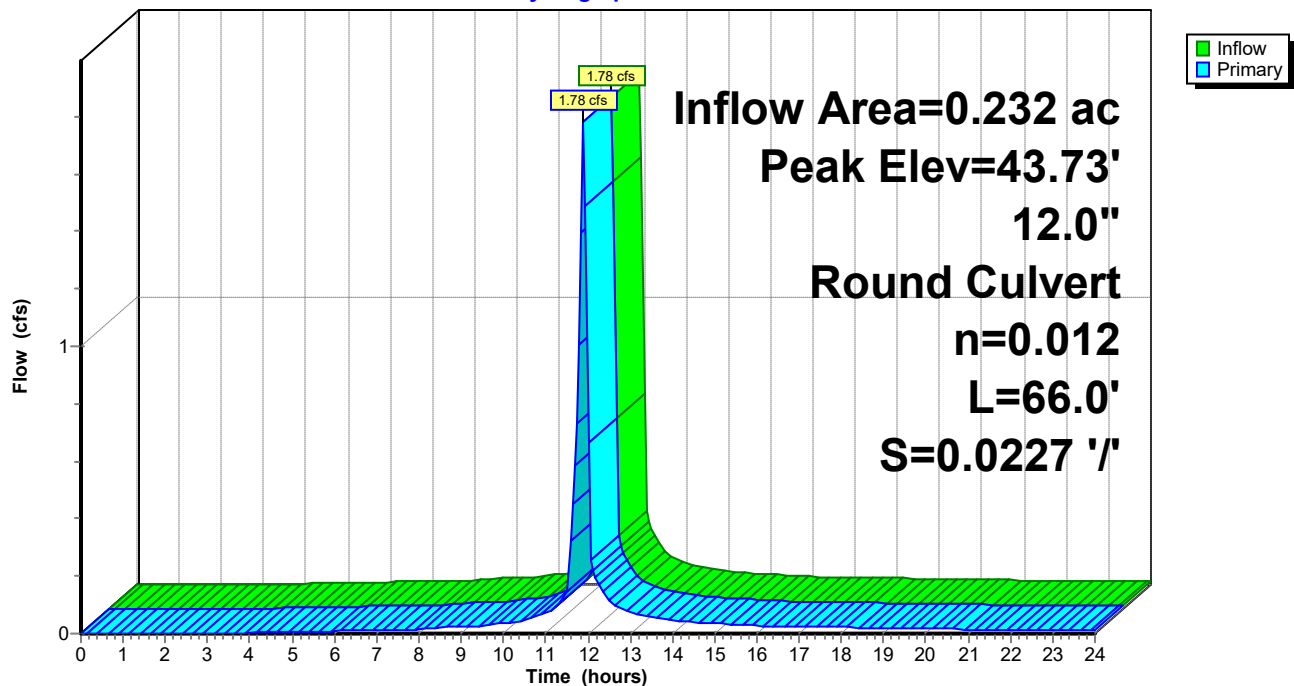
Flood Elev= 45.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	43.00'	12.0" Round 12" HDPE L= 66.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 43.00' / 41.50' S= 0.0227 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.76 cfs @ 11.90 hrs HW=43.72' TW=42.68' (Dynamic Tailwater)
↑ **12" HDPE** (Inlet Controls 1.76 cfs @ 2.90 fps)

Pond 10P: SDI-4

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Page 178

Stage-Area-Storage for Pond 10P: SDI-4

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
43.00	0	44.02	0	45.04	0
43.02	0	44.04	0	45.06	0
43.04	0	44.06	0	45.08	0
43.06	0	44.08	0	45.10	0
43.08	0	44.10	0	45.12	0
43.10	0	44.12	0	45.14	0
43.12	0	44.14	0	45.16	0
43.14	0	44.16	0	45.18	0
43.16	0	44.18	0	45.20	0
43.18	0	44.20	0	45.22	0
43.20	0	44.22	0	45.24	0
43.22	0	44.24	0	45.26	0
43.24	0	44.26	0	45.28	0
43.26	0	44.28	0	45.30	0
43.28	0	44.30	0	45.32	0
43.30	0	44.32	0	45.34	0
43.32	0	44.34	0	45.36	0
43.34	0	44.36	0	45.38	0
43.36	0	44.38	0	45.40	0
43.38	0	44.40	0	45.42	0
43.40	0	44.42	0	45.44	0
43.42	0	44.44	0	45.46	0
43.44	0	44.46	0	45.48	0
43.46	0	44.48	0	45.50	0
43.48	0	44.50	0	45.52	0
43.50	0	44.52	0	45.54	0
43.52	0	44.54	0	45.56	0
43.54	0	44.56	0	45.58	0
43.56	0	44.58	0	45.60	0
43.58	0	44.60	0	45.62	0
43.60	0	44.62	0	45.64	0
43.62	0	44.64	0	45.66	0
43.64	0	44.66	0	45.68	0
43.66	0	44.68	0	45.70	0
43.68	0	44.70	0	45.72	0
43.70	0	44.72	0	45.74	0
43.72	0	44.74	0	45.76	0
43.74	0	44.76	0	45.78	0
43.76	0	44.78	0	45.80	0
43.78	0	44.80	0	45.82	0
43.80	0	44.82	0	45.84	0
43.82	0	44.84	0	45.86	0
43.84	0	44.86	0	45.88	0
43.86	0	44.88	0	45.90	0
43.88	0	44.90	0		
43.90	0	44.92	0		
43.92	0	44.94	0		
43.94	0	44.96	0		
43.96	0	44.98	0		
43.98	0	45.00	0		
44.00	0	45.02	0		

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

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Page 179

Summary for Pond 11P: SDI-8

Inflow Area = 0.117 ac, 82.35% Impervious, Inflow Depth > 4.27" for 10-yr event
Inflow = 0.88 cfs @ 11.90 hrs, Volume= 0.042 af
Outflow = 0.88 cfs @ 11.90 hrs, Volume= 0.042 af, Atten= 0%, Lag= 0.0 min
Primary = 0.88 cfs @ 11.90 hrs, Volume= 0.042 af

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

Peak Elev= 45.04' @ 12.20 hrs

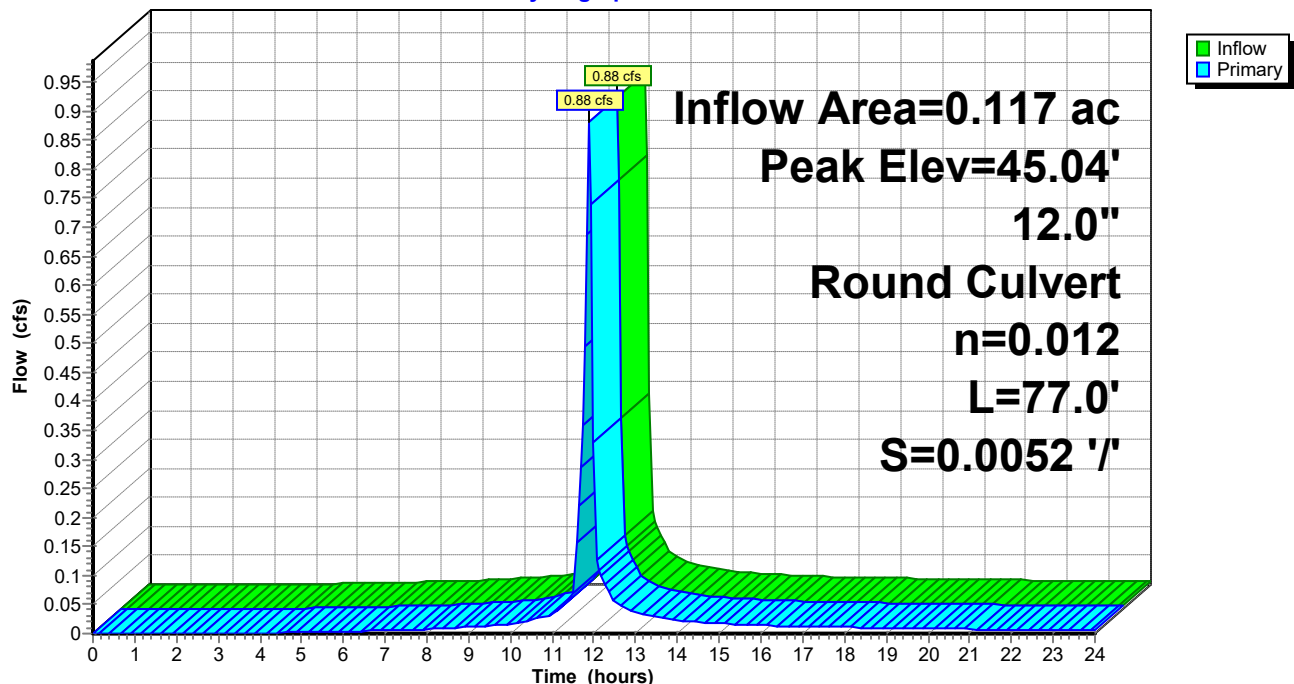
Flood Elev= 45.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	44.20'	12.0" Round 12" HDPE L= 77.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 44.20' / 43.80' S= 0.0052 '/ Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.57 cfs @ 11.90 hrs HW=44.77' TW=44.57' (Dynamic Tailwater)
↑ **1=12" HDPE** (Outlet Controls 0.57 cfs @ 1.81 fps)

Pond 11P: SDI-8

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

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Page 180

Stage-Area-Storage for Pond 11P: SDI-8

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
44.20	0	44.71	0	45.22	0
44.21	0	44.72	0	45.23	0
44.22	0	44.73	0	45.24	0
44.23	0	44.74	0	45.25	0
44.24	0	44.75	0		
44.25	0	44.76	0		
44.26	0	44.77	0		
44.27	0	44.78	0		
44.28	0	44.79	0		
44.29	0	44.80	0		
44.30	0	44.81	0		
44.31	0	44.82	0		
44.32	0	44.83	0		
44.33	0	44.84	0		
44.34	0	44.85	0		
44.35	0	44.86	0		
44.36	0	44.87	0		
44.37	0	44.88	0		
44.38	0	44.89	0		
44.39	0	44.90	0		
44.40	0	44.91	0		
44.41	0	44.92	0		
44.42	0	44.93	0		
44.43	0	44.94	0		
44.44	0	44.95	0		
44.45	0	44.96	0		
44.46	0	44.97	0		
44.47	0	44.98	0		
44.48	0	44.99	0		
44.49	0	45.00	0		
44.50	0	45.01	0		
44.51	0	45.02	0		
44.52	0	45.03	0		
44.53	0	45.04	0		
44.54	0	45.05	0		
44.55	0	45.06	0		
44.56	0	45.07	0		
44.57	0	45.08	0		
44.58	0	45.09	0		
44.59	0	45.10	0		
44.60	0	45.11	0		
44.61	0	45.12	0		
44.62	0	45.13	0		
44.63	0	45.14	0		
44.64	0	45.15	0		
44.65	0	45.16	0		
44.66	0	45.17	0		
44.67	0	45.18	0		
44.68	0	45.19	0		
44.69	0	45.20	0		
44.70	0	45.21	0		

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

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Page 181

Summary for Pond 13P: SDI-9

Inflow Area = 0.408 ac, 89.26% Impervious, Inflow Depth > 4.64" for 10-yr event
Inflow = 3.11 cfs @ 11.91 hrs, Volume= 0.158 af
Outflow = 3.11 cfs @ 11.91 hrs, Volume= 0.158 af, Atten= 0%, Lag= 0.0 min
Primary = 3.11 cfs @ 11.91 hrs, Volume= 0.158 af

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

Peak Elev= 41.92' @ 11.91 hrs

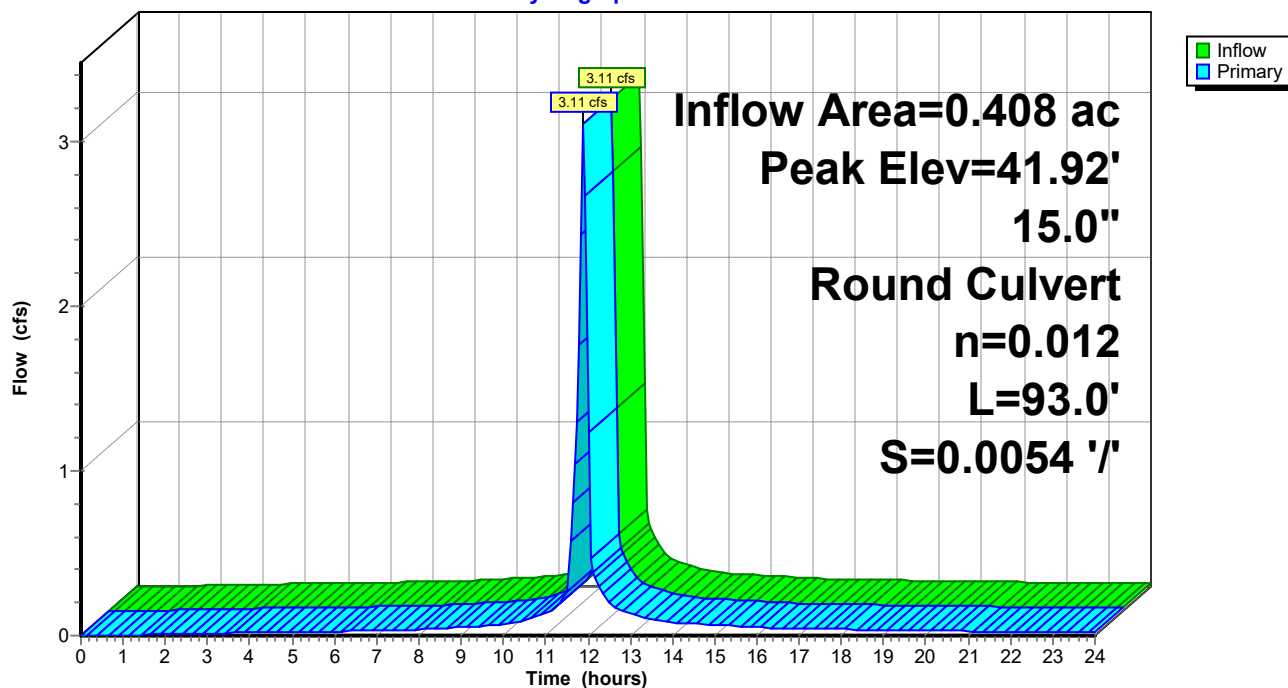
Flood Elev= 43.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	40.90'	15.0" Round 15" HDPE L= 93.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 40.90' / 40.40' S= 0.0054 '/ Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=2.91 cfs @ 11.91 hrs HW=41.91' TW=41.24' (Dynamic Tailwater)
↑ **1=15" HDPE** (Outlet Controls 2.91 cfs @ 3.74 fps)

Pond 13P: SDI-9

Hydrograph



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

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Page 182

Stage-Area-Storage for Pond 13P: SDI-9

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
40.90	0	41.92	0	42.94	0
40.92	0	41.94	0	42.96	0
40.94	0	41.96	0	42.98	0
40.96	0	41.98	0	43.00	0
40.98	0	42.00	0		
41.00	0	42.02	0		
41.02	0	42.04	0		
41.04	0	42.06	0		
41.06	0	42.08	0		
41.08	0	42.10	0		
41.10	0	42.12	0		
41.12	0	42.14	0		
41.14	0	42.16	0		
41.16	0	42.18	0		
41.18	0	42.20	0		
41.20	0	42.22	0		
41.22	0	42.24	0		
41.24	0	42.26	0		
41.26	0	42.28	0		
41.28	0	42.30	0		
41.30	0	42.32	0		
41.32	0	42.34	0		
41.34	0	42.36	0		
41.36	0	42.38	0		
41.38	0	42.40	0		
41.40	0	42.42	0		
41.42	0	42.44	0		
41.44	0	42.46	0		
41.46	0	42.48	0		
41.48	0	42.50	0		
41.50	0	42.52	0		
41.52	0	42.54	0		
41.54	0	42.56	0		
41.56	0	42.58	0		
41.58	0	42.60	0		
41.60	0	42.62	0		
41.62	0	42.64	0		
41.64	0	42.66	0		
41.66	0	42.68	0		
41.68	0	42.70	0		
41.70	0	42.72	0		
41.72	0	42.74	0		
41.74	0	42.76	0		
41.76	0	42.78	0		
41.78	0	42.80	0		
41.80	0	42.82	0		
41.82	0	42.84	0		
41.84	0	42.86	0		
41.86	0	42.88	0		
41.88	0	42.90	0		
41.90	0	42.92	0		

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

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Page 183

Summary for Pond 14P: RL-5

Inflow Area = 0.308 ac, 100.00% Impervious, Inflow Depth > 5.06" for 10-yr event
Inflow = 2.48 cfs @ 11.90 hrs, Volume= 0.130 af
Outflow = 2.48 cfs @ 11.90 hrs, Volume= 0.130 af, Atten= 0%, Lag= 0.0 min
Primary = 2.48 cfs @ 11.90 hrs, Volume= 0.130 af

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

Peak Elev= 42.37' @ 11.92 hrs

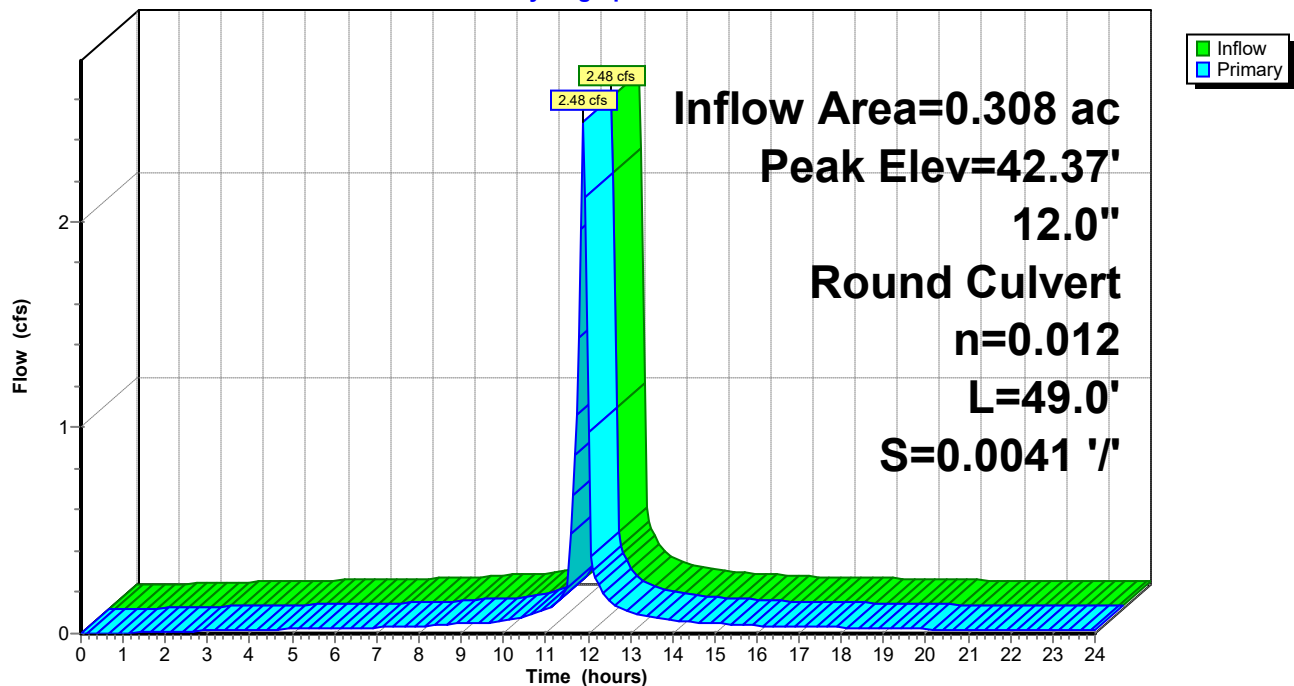
Flood Elev= 46.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	41.20'	12.0" Round 12" HDPE L= 49.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 41.20' / 41.00' S= 0.0041 '/ Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=2.23 cfs @ 11.90 hrs HW=42.36' TW=41.91' (Dynamic Tailwater)
↑ **1=12" HDPE** (Inlet Controls 2.23 cfs @ 2.84 fps)

Pond 14P: RL-5

Hydrograph



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

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Page 184

Stage-Area-Storage for Pond 14P: RL-5

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
41.20	0	43.24	0	45.28	0
41.24	0	43.28	0	45.32	0
41.28	0	43.32	0	45.36	0
41.32	0	43.36	0	45.40	0
41.36	0	43.40	0	45.44	0
41.40	0	43.44	0	45.48	0
41.44	0	43.48	0	45.52	0
41.48	0	43.52	0	45.56	0
41.52	0	43.56	0	45.60	0
41.56	0	43.60	0	45.64	0
41.60	0	43.64	0	45.68	0
41.64	0	43.68	0	45.72	0
41.68	0	43.72	0	45.76	0
41.72	0	43.76	0	45.80	0
41.76	0	43.80	0	45.84	0
41.80	0	43.84	0	45.88	0
41.84	0	43.88	0	45.92	0
41.88	0	43.92	0	45.96	0
41.92	0	43.96	0	46.00	0
41.96	0	44.00	0	46.04	0
42.00	0	44.04	0	46.08	0
42.04	0	44.08	0	46.12	0
42.08	0	44.12	0	46.16	0
42.12	0	44.16	0	46.20	0
42.16	0	44.20	0	46.24	0
42.20	0	44.24	0	46.28	0
42.24	0	44.28	0	46.32	0
42.28	0	44.32	0	46.36	0
42.32	0	44.36	0	46.40	0
42.36	0	44.40	0	46.44	0
42.40	0	44.44	0	46.48	0
42.44	0	44.48	0		
42.48	0	44.52	0		
42.52	0	44.56	0		
42.56	0	44.60	0		
42.60	0	44.64	0		
42.64	0	44.68	0		
42.68	0	44.72	0		
42.72	0	44.76	0		
42.76	0	44.80	0		
42.80	0	44.84	0		
42.84	0	44.88	0		
42.88	0	44.92	0		
42.92	0	44.96	0		
42.96	0	45.00	0		
43.00	0	45.04	0		
43.04	0	45.08	0		
43.08	0	45.12	0		
43.12	0	45.16	0		
43.16	0	45.20	0		
43.20	0	45.24	0		

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

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Page 185

Summary for Pond 15P: 30x19 RCP

Inflow Area = 2.704 ac, 59.07% Impervious, Inflow Depth > 3.46" for 10-yr event
Inflow = 9.38 cfs @ 12.04 hrs, Volume= 0.780 af
Outflow = 9.38 cfs @ 12.04 hrs, Volume= 0.780 af, Atten= 0%, Lag= 0.0 min
Primary = 9.38 cfs @ 12.04 hrs, Volume= 0.780 af

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

Peak Elev= 41.74' @ 12.04 hrs

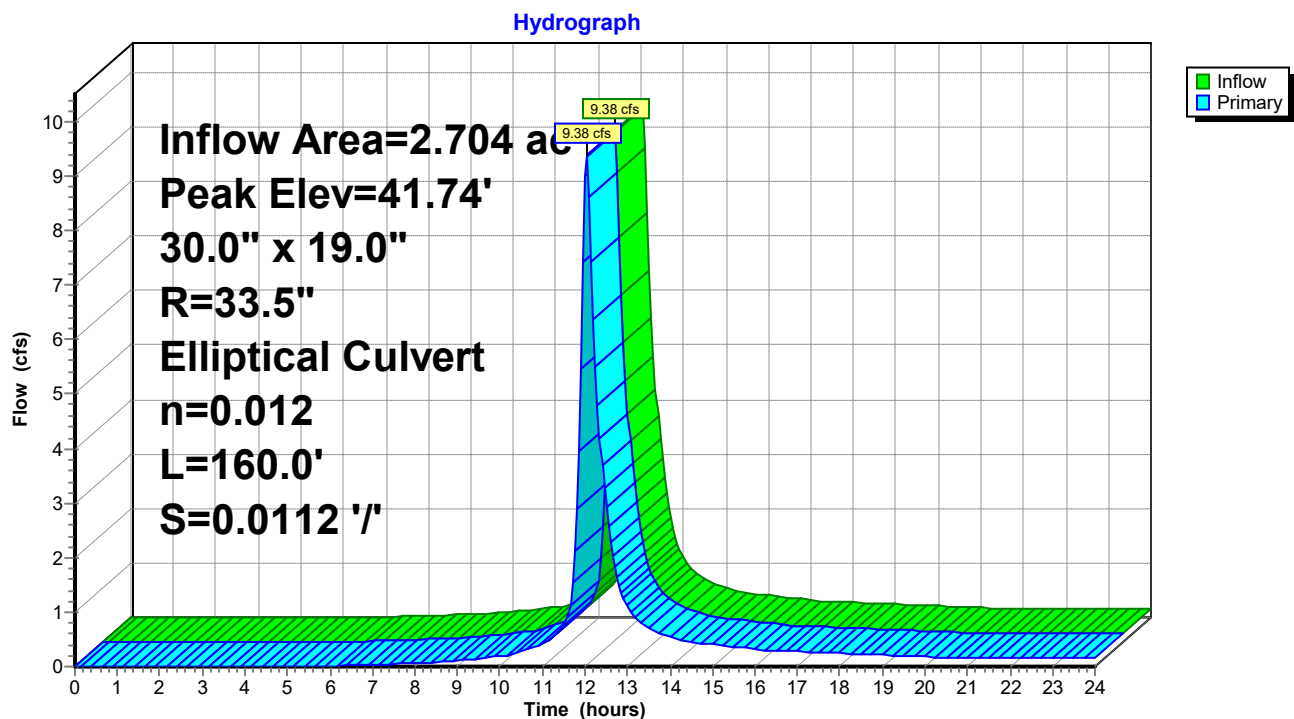
Flood Elev= 42.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	40.50'	30.0" W x 19.0" H, R=33.5" Elliptical RCP_Elliptical 30x19 L= 160.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 40.50' / 38.70' S= 0.0112 '/' Cc= 0.900 n= 0.012, Flow Area= 3.28 sf

Primary OutFlow Max=9.30 cfs @ 12.04 hrs HW=41.74' TW=39.64' (Dynamic Tailwater)

↑1=RCP_Elliptical 30x19 (Inlet Controls 9.30 cfs @ 3.43 fps)

Pond 15P: 30x19 RCP



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

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Page 186

Stage-Area-Storage for Pond 15P: 30x19 RCP

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
40.50	0	41.52	0
40.52	0	41.54	0
40.54	0	41.56	0
40.56	0	41.58	0
40.58	0	41.60	0
40.60	0	41.62	0
40.62	0	41.64	0
40.64	0	41.66	0
40.66	0	41.68	0
40.68	0	41.70	0
40.70	0	41.72	0
40.72	0	41.74	0
40.74	0	41.76	0
40.76	0	41.78	0
40.78	0	41.80	0
40.80	0	41.82	0
40.82	0	41.84	0
40.84	0	41.86	0
40.86	0	41.88	0
40.88	0	41.90	0
40.90	0	41.92	0
40.92	0	41.94	0
40.94	0	41.96	0
40.96	0	41.98	0
40.98	0	42.00	0
41.00	0	42.02	0
41.02	0	42.04	0
41.04	0	42.06	0
41.06	0	42.08	0
41.08	0		
41.10	0		
41.12	0		
41.14	0		
41.16	0		
41.18	0		
41.20	0		
41.22	0		
41.24	0		
41.26	0		
41.28	0		
41.30	0		
41.32	0		
41.34	0		
41.36	0		
41.38	0		
41.40	0		
41.42	0		
41.44	0		
41.46	0		
41.48	0		
41.50	0		

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

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Page 187

Summary for Pond 16P: RL-6

Inflow Area = 0.207 ac, 100.00% Impervious, Inflow Depth > 5.06" for 10-yr event
Inflow = 1.67 cfs @ 11.90 hrs, Volume= 0.087 af
Outflow = 1.67 cfs @ 11.90 hrs, Volume= 0.087 af, Atten= 0%, Lag= 0.0 min
Primary = 1.67 cfs @ 11.90 hrs, Volume= 0.087 af

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

Peak Elev= 42.69' @ 11.93 hrs

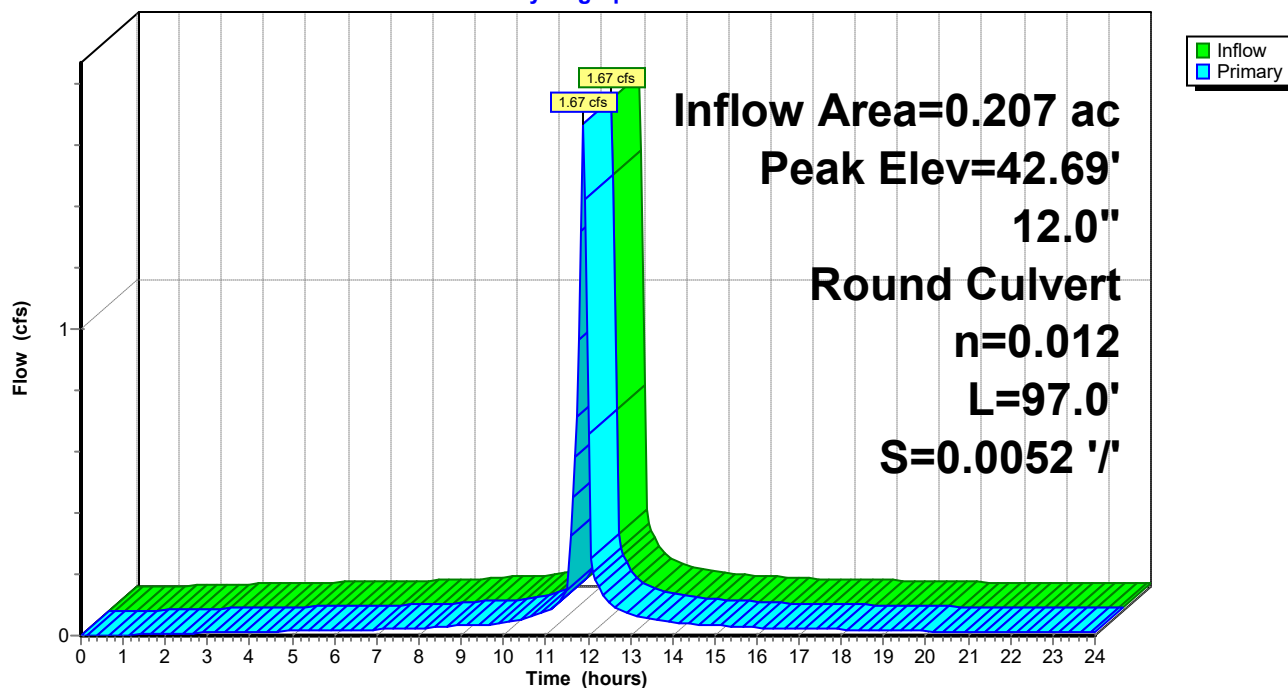
Flood Elev= 46.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	41.70'	12.0" Round 12" HDPE L= 97.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 41.70' / 41.20' S= 0.0052 '/ Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.29 cfs @ 11.90 hrs HW=42.64' TW=42.36' (Dynamic Tailwater)
↑ **1=12" HDPE** (Outlet Controls 1.29 cfs @ 2.19 fps)

Pond 16P: RL-6

Hydrograph



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

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Page 188

Stage-Area-Storage for Pond 16P: RL-6

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
41.70	0	44.25	0
41.75	0	44.30	0
41.80	0	44.35	0
41.85	0	44.40	0
41.90	0	44.45	0
41.95	0	44.50	0
42.00	0	44.55	0
42.05	0	44.60	0
42.10	0	44.65	0
42.15	0	44.70	0
42.20	0	44.75	0
42.25	0	44.80	0
42.30	0	44.85	0
42.35	0	44.90	0
42.40	0	44.95	0
42.45	0	45.00	0
42.50	0	45.05	0
42.55	0	45.10	0
42.60	0	45.15	0
42.65	0	45.20	0
42.70	0	45.25	0
42.75	0	45.30	0
42.80	0	45.35	0
42.85	0	45.40	0
42.90	0	45.45	0
42.95	0	45.50	0
43.00	0	45.55	0
43.05	0	45.60	0
43.10	0	45.65	0
43.15	0	45.70	0
43.20	0	45.75	0
43.25	0	45.80	0
43.30	0	45.85	0
43.35	0	45.90	0
43.40	0	45.95	0
43.45	0	46.00	0
43.50	0	46.05	0
43.55	0	46.10	0
43.60	0	46.15	0
43.65	0	46.20	0
43.70	0	46.25	0
43.75	0	46.30	0
43.80	0	46.35	0
43.85	0	46.40	0
43.90	0	46.45	0
43.95	0	46.50	0
44.00	0		
44.05	0		
44.10	0		
44.15	0		
44.20	0		

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Page 189

Summary for Pond 20P: RL-8

Inflow Area = 0.104 ac, 100.00% Impervious, Inflow Depth > 5.06" for 10-yr event
Inflow = 0.84 cfs @ 11.90 hrs, Volume= 0.044 af
Outflow = 0.84 cfs @ 11.90 hrs, Volume= 0.044 af, Atten= 0%, Lag= 0.0 min
Primary = 0.84 cfs @ 11.90 hrs, Volume= 0.044 af

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

Peak Elev= 42.95' @ 11.93 hrs

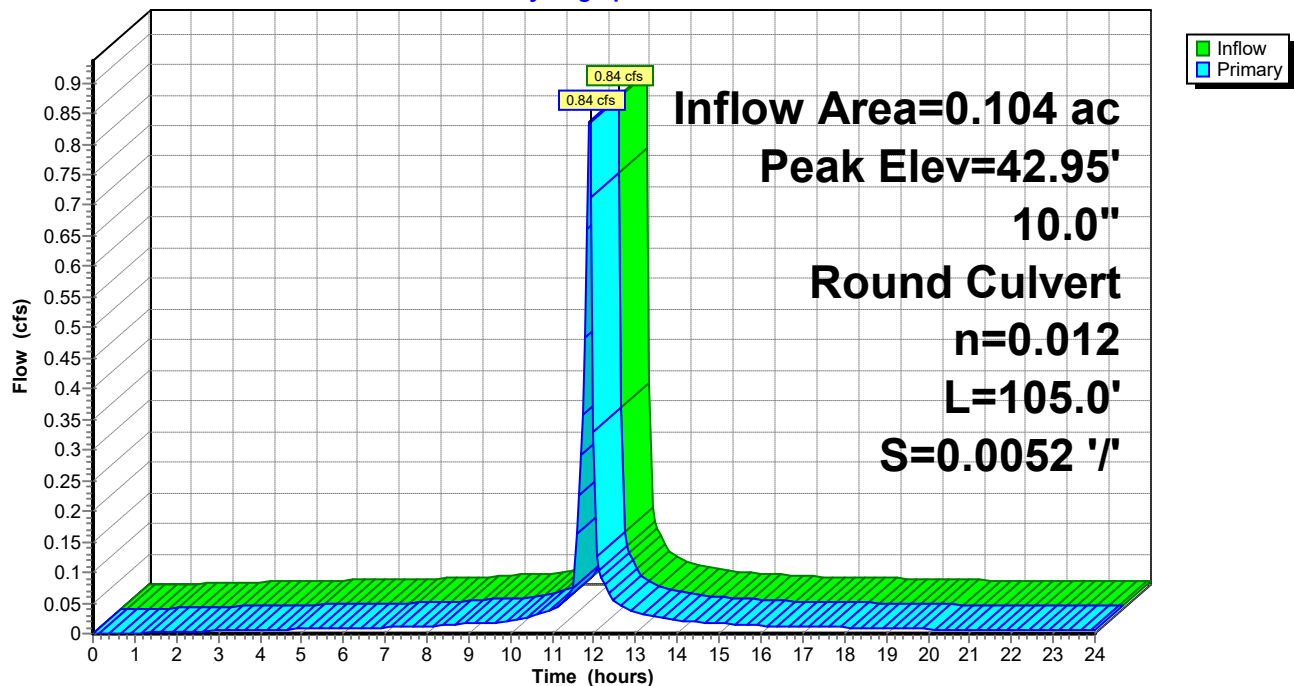
Flood Elev= 45.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	42.25'	10.0" Round 10" HDPE L= 105.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 42.25' / 41.70' S= 0.0052 '/ Cc= 0.900 n= 0.012, Flow Area= 0.55 sf

Primary OutFlow Max=0.67 cfs @ 11.90 hrs HW=42.92' TW=42.64' (Dynamic Tailwater)
↑ **1=10" HDPE** (Outlet Controls 0.67 cfs @ 1.94 fps)

Pond 20P: RL-8

Hydrograph



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

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Page 190

Stage-Area-Storage for Pond 20P: RL-8

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
42.25	0	43.27	0	44.29	0
42.27	0	43.29	0	44.31	0
42.29	0	43.31	0	44.33	0
42.31	0	43.33	0	44.35	0
42.33	0	43.35	0	44.37	0
42.35	0	43.37	0	44.39	0
42.37	0	43.39	0	44.41	0
42.39	0	43.41	0	44.43	0
42.41	0	43.43	0	44.45	0
42.43	0	43.45	0	44.47	0
42.45	0	43.47	0	44.49	0
42.47	0	43.49	0	44.51	0
42.49	0	43.51	0	44.53	0
42.51	0	43.53	0	44.55	0
42.53	0	43.55	0	44.57	0
42.55	0	43.57	0	44.59	0
42.57	0	43.59	0	44.61	0
42.59	0	43.61	0	44.63	0
42.61	0	43.63	0	44.65	0
42.63	0	43.65	0	44.67	0
42.65	0	43.67	0	44.69	0
42.67	0	43.69	0	44.71	0
42.69	0	43.71	0	44.73	0
42.71	0	43.73	0	44.75	0
42.73	0	43.75	0	44.77	0
42.75	0	43.77	0	44.79	0
42.77	0	43.79	0	44.81	0
42.79	0	43.81	0	44.83	0
42.81	0	43.83	0	44.85	0
42.83	0	43.85	0	44.87	0
42.85	0	43.87	0	44.89	0
42.87	0	43.89	0	44.91	0
42.89	0	43.91	0	44.93	0
42.91	0	43.93	0	44.95	0
42.93	0	43.95	0	44.97	0
42.95	0	43.97	0	44.99	0
42.97	0	43.99	0	45.01	0
42.99	0	44.01	0	45.03	0
43.01	0	44.03	0	45.05	0
43.03	0	44.05	0	45.07	0
43.05	0	44.07	0	45.09	0
43.07	0	44.09	0	45.11	0
43.09	0	44.11	0	45.13	0
43.11	0	44.13	0	45.15	0
43.13	0	44.15	0	45.17	0
43.15	0	44.17	0	45.19	0
43.17	0	44.19	0	45.21	0
43.19	0	44.21	0	45.23	0
43.21	0	44.23	0	45.25	0
43.23	0	44.25	0		
43.25	0	44.27	0		

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Page 191

Summary for Pond 25P: SDI-1

Inflow Area = 2.024 ac, 64.51% Impervious, Inflow Depth > 3.60" for 10-yr event
Inflow = 10.24 cfs @ 11.98 hrs, Volume= 0.607 af
Outflow = 10.24 cfs @ 11.98 hrs, Volume= 0.607 af, Atten= 0%, Lag= 0.0 min
Primary = 10.24 cfs @ 11.98 hrs, Volume= 0.607 af

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

Peak Elev= 43.79' @ 12.02 hrs

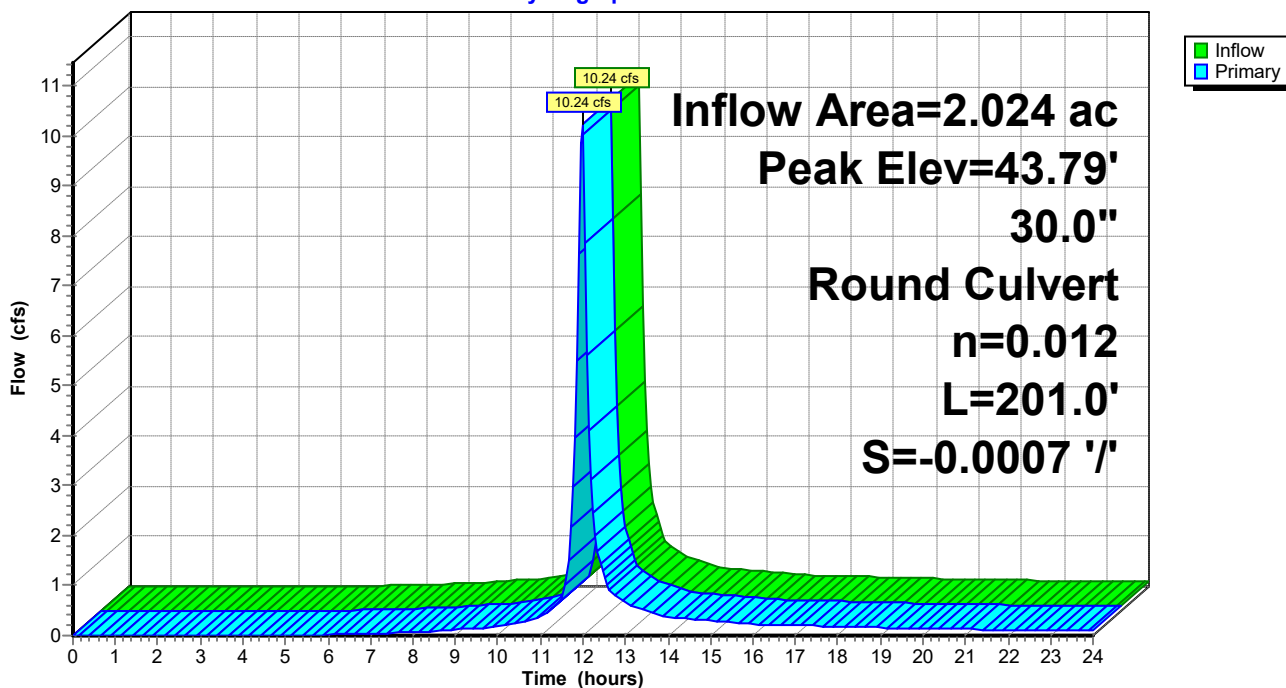
Flood Elev= 46.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	41.84'	30.0" Round 30" PERF. HDPE L= 201.0' Box, headwall w/3 rounded edges, Ke= 0.200 Inlet / Outlet Invert= 41.69' / 41.84' S= -0.0007 '/' Cc= 0.900 n= 0.012, Flow Area= 4.91 sf

Primary OutFlow Max=7.69 cfs @ 11.98 hrs HW=43.70' TW=43.46' (Dynamic Tailwater)
1=30" PERF. HDPE (Outlet Controls 7.69 cfs @ 2.48 fps)

Pond 25P: SDI-1

Hydrograph



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

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Page 192

Stage-Area-Storage for Pond 25P: SDI-1

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
41.84	0	44.39	0
41.89	0	44.44	0
41.94	0	44.49	0
41.99	0	44.54	0
42.04	0	44.59	0
42.09	0	44.64	0
42.14	0	44.69	0
42.19	0	44.74	0
42.24	0	44.79	0
42.29	0	44.84	0
42.34	0	44.89	0
42.39	0	44.94	0
42.44	0	44.99	0
42.49	0	45.04	0
42.54	0	45.09	0
42.59	0	45.14	0
42.64	0	45.19	0
42.69	0	45.24	0
42.74	0	45.29	0
42.79	0	45.34	0
42.84	0	45.39	0
42.89	0	45.44	0
42.94	0	45.49	0
42.99	0	45.54	0
43.04	0	45.59	0
43.09	0	45.64	0
43.14	0	45.69	0
43.19	0	45.74	0
43.24	0	45.79	0
43.29	0	45.84	0
43.34	0	45.89	0
43.39	0	45.94	0
43.44	0	45.99	0
43.49	0		
43.54	0		
43.59	0		
43.64	0		
43.69	0		
43.74	0		
43.79	0		
43.84	0		
43.89	0		
43.94	0		
43.99	0		
44.04	0		
44.09	0		
44.14	0		
44.19	0		
44.24	0		
44.29	0		
44.34	0		

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

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Page 193

Summary for Pond 28P: Doghouse SDMH

Inflow Area = 4.944 ac, 68.48% Impervious, Inflow Depth > 3.59" for 10-yr event
Inflow = 10.62 cfs @ 11.98 hrs, Volume= 1.478 af
Outflow = 10.62 cfs @ 11.98 hrs, Volume= 1.478 af, Atten= 0%, Lag= 0.0 min
Primary = 10.62 cfs @ 11.98 hrs, Volume= 1.478 af

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

Peak Elev= 43.51' @ 12.00 hrs

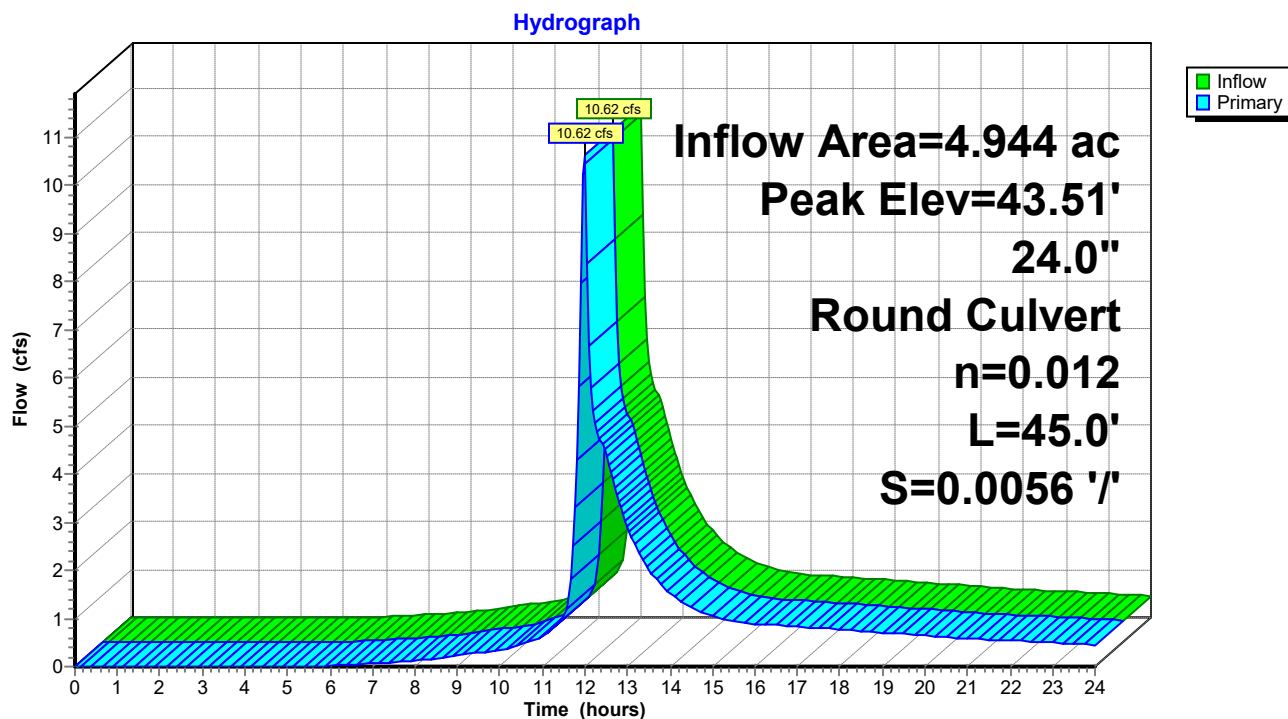
Flood Elev= 48.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	41.65'	24.0" Round Culvert L= 45.0' Box, headwall w/3 rounded edges, Ke= 0.200 Inlet / Outlet Invert= 41.65' / 41.40' S= 0.0056 '/' Cc= 0.900 n= 0.012, Flow Area= 3.14 sf

Primary OutFlow Max=9.39 cfs @ 11.98 hrs HW=43.46' TW=43.04' (Dynamic Tailwater)

↑1=Culvert (Outlet Controls 9.39 cfs @ 4.14 fps)

Pond 28P: Doghouse SDMH



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

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Page 194

Stage-Area-Storage for Pond 28P: Doghouse SDMH

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
41.65	0	46.75	0
41.75	0	46.85	0
41.85	0	46.95	0
41.95	0	47.05	0
42.05	0	47.15	0
42.15	0	47.25	0
42.25	0	47.35	0
42.35	0	47.45	0
42.45	0	47.55	0
42.55	0	47.65	0
42.65	0	47.75	0
42.75	0	47.85	0
42.85	0	47.95	0
42.95	0		
43.05	0		
43.15	0		
43.25	0		
43.35	0		
43.45	0		
43.55	0		
43.65	0		
43.75	0		
43.85	0		
43.95	0		
44.05	0		
44.15	0		
44.25	0		
44.35	0		
44.45	0		
44.55	0		
44.65	0		
44.75	0		
44.85	0		
44.95	0		
45.05	0		
45.15	0		
45.25	0		
45.35	0		
45.45	0		
45.55	0		
45.65	0		
45.75	0		
45.85	0		
45.95	0		
46.05	0		
46.15	0		
46.25	0		
46.35	0		
46.45	0		
46.55	0		
46.65	0		

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Page 195

Summary for Pond EX-P: G2 Pond & Underground

Inflow Area = 3.213 ac, 70.08% Impervious, Inflow Depth > 3.85" for 10-yr event
 Inflow = 13.18 cfs @ 12.01 hrs, Volume= 1.030 af
 Outflow = 4.60 cfs @ 12.37 hrs, Volume= 0.934 af, Atten= 65%, Lag= 21.4 min
 Primary = 4.60 cfs @ 12.37 hrs, Volume= 0.934 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

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

Peak Elev= 46.27' @ 12.37 hrs Surf.Area= 0 sf Storage= 19,288 cf

Flood Elev= 47.00' Surf.Area= 0 sf Storage= 23,400 cf

Plug-Flow detention time= 167.0 min calculated for 0.932 af (90% of inflow)

Center-of-Mass det. time= 119.5 min (921.5 - 802.0)

Volume	Invert	Avail.Storage	Storage Description
#1	42.00'	23,400 cf	Custom Stage Data Listed below

Elevation (feet)	Cum.Store (cubic-feet)
42.00	0
42.25	523
42.50	1,508
42.75	2,524
43.00	3,566
43.25	4,630
43.50	5,712
43.75	6,809
44.00	7,911
44.25	9,006
44.50	10,072
45.00	12,544
46.00	17,789
47.00	23,400

Device	Routing	Invert	Outlet Devices
#1	Primary	42.00'	30.0" Round 30" PERF HDPE L= 12.0' Box, headwall w/3 rounded edges, Ke= 0.200 Inlet / Outlet Invert= 42.00' / 41.84' S= 0.0133 '/' Cc= 0.900 n= 0.012, Flow Area= 4.91 sf
#2	Device 1	42.00'	4.0" Vert. 4" hole in S-2 weir from 2005 G2 Plans C= 0.600
#3	Device 1	44.70'	6.0" W x 16.8" H Vert. 4" notched weir from G2 plans C= 0.600
#4	Device 1	46.10'	4.0' long Top of Weir in S-2 outlet box Cv= 2.62 (C= 3.28)
#5	Secondary	46.50'	60.0' long x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

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

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Page 196

Primary OutFlow Max=4.57 cfs @ 12.37 hrs HW=46.26' TW=43.75' (Dynamic Tailwater)

1=30" PERF HDPE (Passes 4.57 cfs of 46.83 cfs potential flow)

2=4" hole in S-2 weir from 2005 G2 Plans (Orifice Controls 0.67 cfs @ 7.63 fps)

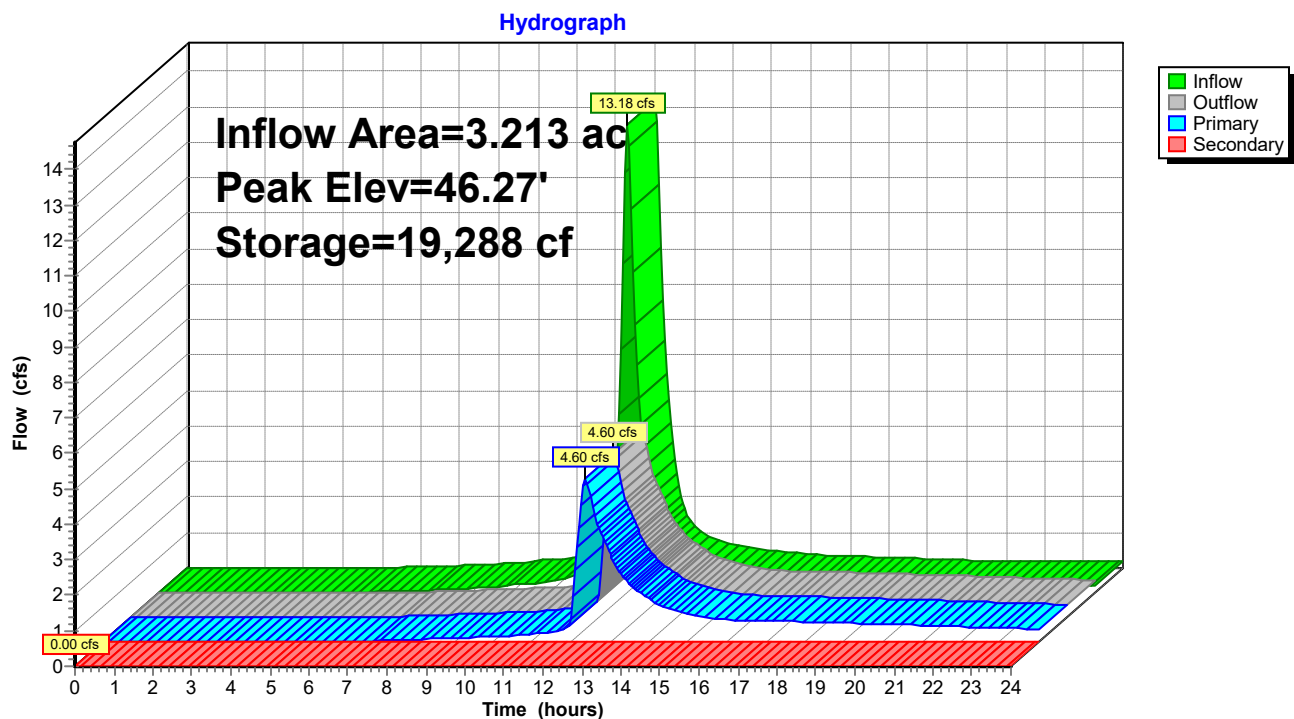
3=4" notched weir from G2 plans (Orifice Controls 3.03 cfs @ 4.33 fps)

4=Top of Weir in S-2 outlet box (Weir Controls 0.87 cfs @ 1.33 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=42.00' TW=0.00' (Dynamic Tailwater)

5=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond EX-P: G2 Pond & Underground



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Page 197

Stage-Area-Storage for Pond EX-P: G2 Pond & Underground

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
42.00	0	44.55	10,319
42.05	105	44.60	10,566
42.10	209	44.65	10,814
42.15	314	44.70	11,061
42.20	418	44.75	11,308
42.25	523	44.80	11,555
42.30	720	44.85	11,802
42.35	917	44.90	12,050
42.40	1,114	44.95	12,297
42.45	1,311	45.00	12,544
42.50	1,508	45.05	12,806
42.55	1,711	45.10	13,069
42.60	1,914	45.15	13,331
42.65	2,118	45.20	13,593
42.70	2,321	45.25	13,855
42.75	2,524	45.30	14,117
42.80	2,732	45.35	14,380
42.85	2,941	45.40	14,642
42.90	3,149	45.45	14,904
42.95	3,358	45.50	15,167
43.00	3,566	45.55	15,429
43.05	3,779	45.60	15,691
43.10	3,992	45.65	15,953
43.15	4,204	45.70	16,216
43.20	4,417	45.75	16,478
43.25	4,630	45.80	16,740
43.30	4,846	45.85	17,002
43.35	5,063	45.90	17,264
43.40	5,279	45.95	17,527
43.45	5,496	46.00	17,789
43.50	5,712	46.05	18,070
43.55	5,931	46.10	18,350
43.60	6,151	46.15	18,631
43.65	6,370	46.20	18,911
43.70	6,590	46.25	19,192
43.75	6,809	46.30	19,472
43.80	7,029	46.35	19,753
43.85	7,250	46.40	20,033
43.90	7,470	46.45	20,314
43.95	7,691	46.50	20,595
44.00	7,911	46.55	20,875
44.05	8,130	46.60	21,156
44.10	8,349	46.65	21,436
44.15	8,568	46.70	21,717
44.20	8,787	46.75	21,997
44.25	9,006	46.80	22,278
44.30	9,219	46.85	22,558
44.35	9,432	46.90	22,839
44.40	9,646	46.95	23,119
44.45	9,859	47.00	23,400
44.50	10,072		

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

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Page 198

Summary for Pond EX-PP: G2 Pond & Underground

Inflow Area = 2.920 ac, 71.23% Impervious, Inflow Depth > 3.84" for 10-yr event
 Inflow = 12.24 cfs @ 12.03 hrs, Volume= 0.934 af
 Outflow = 3.22 cfs @ 12.47 hrs, Volume= 0.870 af, Atten= 74%, Lag= 26.6 min
 Primary = 3.22 cfs @ 12.47 hrs, Volume= 0.870 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

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

Peak Elev= 46.04' @ 12.47 hrs Surf.Area= 0 sf Storage= 17,987 cf

Flood Elev= 47.00' Surf.Area= 0 sf Storage= 23,400 cf

Plug-Flow detention time= 167.3 min calculated for 0.869 af (93% of inflow)

Center-of-Mass det. time= 130.6 min (933.9 - 803.3)

Volume	Invert	Avail.Storage	Storage Description
#1	42.00'	23,400 cf	Custom Stage Data Listed below

Elevation (feet)	Cum.Store (cubic-feet)
42.00	0
42.25	523
42.50	1,508
42.75	2,524
43.00	3,566
43.25	4,630
43.50	5,712
43.75	6,809
44.00	7,911
44.25	9,006
44.50	10,072
45.00	12,544
46.00	17,789
47.00	23,400

Device	Routing	Invert	Outlet Devices
#1	Primary	42.00'	30.0" Round 30" PERF HDPE L= 12.0' Box, headwall w/3 rounded edges, Ke= 0.200 Inlet / Outlet Invert= 42.00' / 41.84' S= 0.0133 '/' Cc= 0.900 n= 0.012, Flow Area= 4.91 sf
#2	Device 1	42.00'	4.0" Vert. 4" hole in S-2 weir from 2005 G2 Plans C= 0.600
#3	Device 1	44.70'	6.0" W x 16.8" H Vert. 4" notched weir from G2 plans C= 0.600
#4	Device 1	46.10'	4.0' long Top of Weir in S-2 outlet box Cv= 2.62 (C= 3.28)
#5	Secondary	46.50'	60.0' long x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

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Page 199

Primary OutFlow Max=3.22 cfs @ 12.47 hrs HW=46.03' TW=42.86' (Dynamic Tailwater)

1=30" PERF HDPE (Passes 3.22 cfs of 45.05 cfs potential flow)

2=4" hole in S-2 weir from 2005 G2 Plans (Orifice Controls 0.75 cfs @ 8.58 fps)

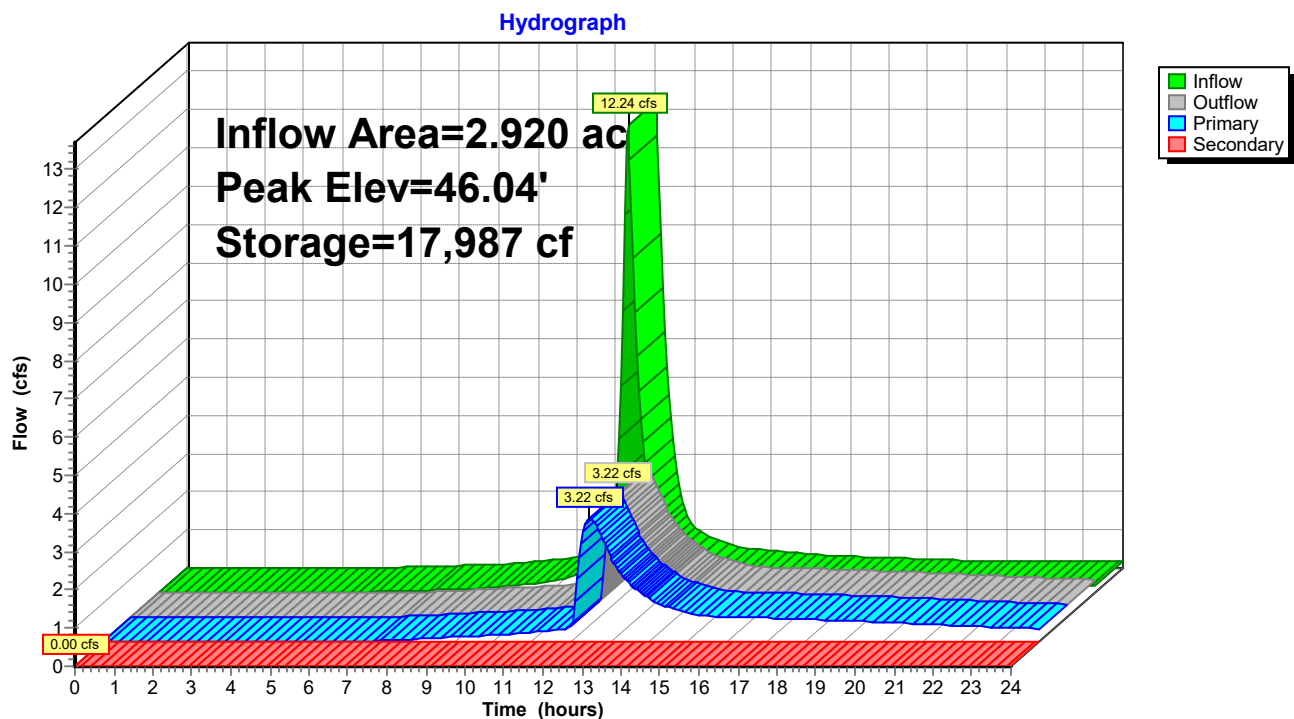
3=4" notched weir from G2 plans (Orifice Controls 2.47 cfs @ 3.71 fps)

4=Top of Weir in S-2 outlet box (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=42.00' TW=0.00' (Dynamic Tailwater)

5=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond EX-PP: G2 Pond & Underground



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

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Page 200

Stage-Area-Storage for Pond EX-PP: G2 Pond & Underground

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
42.00	0	44.55	10,319
42.05	105	44.60	10,566
42.10	209	44.65	10,814
42.15	314	44.70	11,061
42.20	418	44.75	11,308
42.25	523	44.80	11,555
42.30	720	44.85	11,802
42.35	917	44.90	12,050
42.40	1,114	44.95	12,297
42.45	1,311	45.00	12,544
42.50	1,508	45.05	12,806
42.55	1,711	45.10	13,069
42.60	1,914	45.15	13,331
42.65	2,118	45.20	13,593
42.70	2,321	45.25	13,855
42.75	2,524	45.30	14,117
42.80	2,732	45.35	14,380
42.85	2,941	45.40	14,642
42.90	3,149	45.45	14,904
42.95	3,358	45.50	15,167
43.00	3,566	45.55	15,429
43.05	3,779	45.60	15,691
43.10	3,992	45.65	15,953
43.15	4,204	45.70	16,216
43.20	4,417	45.75	16,478
43.25	4,630	45.80	16,740
43.30	4,846	45.85	17,002
43.35	5,063	45.90	17,264
43.40	5,279	45.95	17,527
43.45	5,496	46.00	17,789
43.50	5,712	46.05	18,070
43.55	5,931	46.10	18,350
43.60	6,151	46.15	18,631
43.65	6,370	46.20	18,911
43.70	6,590	46.25	19,192
43.75	6,809	46.30	19,472
43.80	7,029	46.35	19,753
43.85	7,250	46.40	20,033
43.90	7,470	46.45	20,314
43.95	7,691	46.50	20,595
44.00	7,911	46.55	20,875
44.05	8,130	46.60	21,156
44.10	8,349	46.65	21,436
44.15	8,568	46.70	21,717
44.20	8,787	46.75	21,997
44.25	9,006	46.80	22,278
44.30	9,219	46.85	22,558
44.35	9,432	46.90	22,839
44.40	9,646	46.95	23,119
44.45	9,859	47.00	23,400
44.50	10,072		

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

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Page 201

Summary for Pond EX1: Existing SDMH

Inflow Area = 3.213 ac, 70.08% Impervious, Inflow Depth > 3.49" for 10-yr event
Inflow = 4.60 cfs @ 12.37 hrs, Volume= 0.934 af
Outflow = 4.60 cfs @ 12.37 hrs, Volume= 0.934 af, Atten= 0%, Lag= 0.0 min
Primary = 4.60 cfs @ 12.37 hrs, Volume= 0.934 af

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

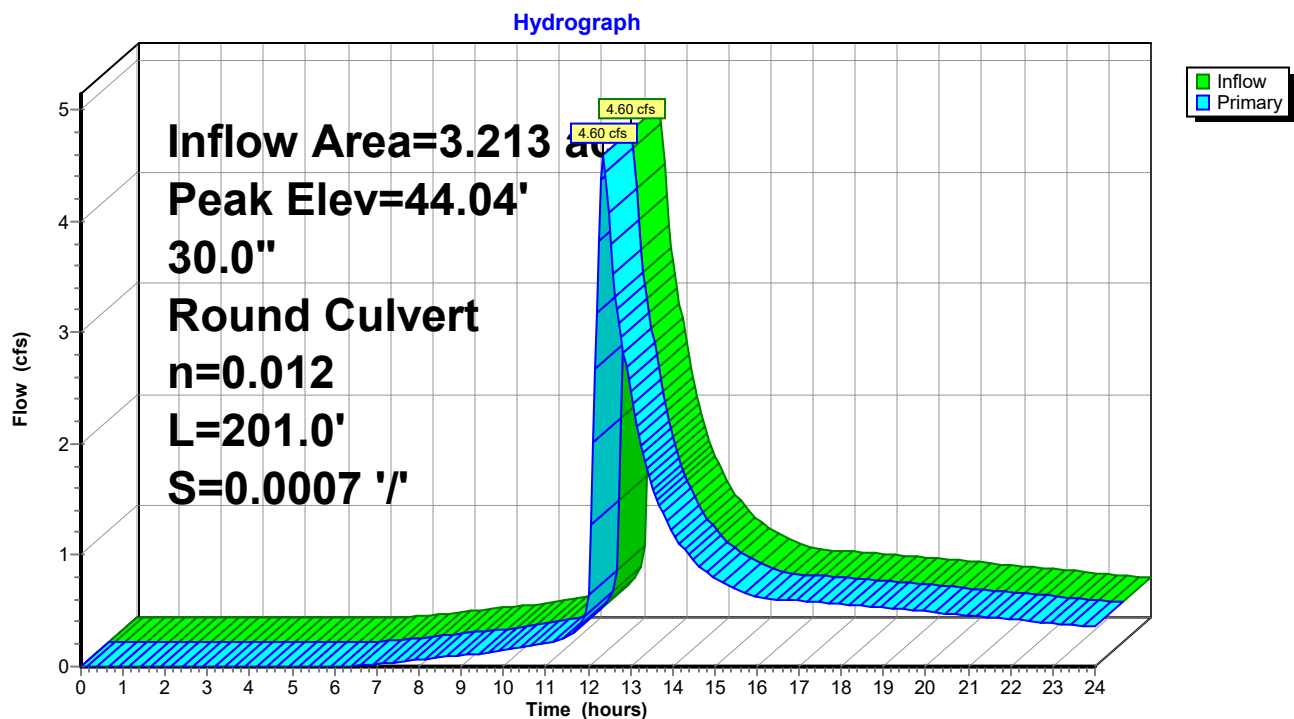
Peak Elev= 44.04' @ 12.13 hrs

Flood Elev= 48.04'

Device	Routing	Invert	Outlet Devices
#1	Primary	41.84'	30.0" Round 30" PERF. HDPE L= 201.0' Box, headwall w/3 rounded edges, Ke= 0.200 Inlet / Outlet Invert= 41.84' / 41.69' S= 0.0007 '/' Cc= 0.900 n= 0.012, Flow Area= 4.91 sf

Primary OutFlow Max=4.99 cfs @ 12.37 hrs HW=43.75' TW=43.63' (Dynamic Tailwater)
1=30" PERF. HDPE (Outlet Controls 4.99 cfs @ 1.71 fps)

Pond EX1: Existing SDMH



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Page 202

Stage-Area-Storage for Pond EX1: Existing SDMH

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
41.84	0	46.94	0
41.94	0	47.04	0
42.04	0	47.14	0
42.14	0	47.24	0
42.24	0	47.34	0
42.34	0	47.44	0
42.44	0	47.54	0
42.54	0	47.64	0
42.64	0	47.74	0
42.74	0	47.84	0
42.84	0	47.94	0
42.94	0	48.04	0
43.04	0		
43.14	0		
43.24	0		
43.34	0		
43.44	0		
43.54	0		
43.64	0		
43.74	0		
43.84	0		
43.94	0		
44.04	0		
44.14	0		
44.24	0		
44.34	0		
44.44	0		
44.54	0		
44.64	0		
44.74	0		
44.84	0		
44.94	0		
45.04	0		
45.14	0		
45.24	0		
45.34	0		
45.44	0		
45.54	0		
45.64	0		
45.74	0		
45.84	0		
45.94	0		
46.04	0		
46.14	0		
46.24	0		
46.34	0		
46.44	0		
46.54	0		
46.64	0		
46.74	0		
46.84	0		

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Page 203

Summary for Pond EX2: Existing SDI

Inflow Area = 3.213 ac, 70.08% Impervious, Inflow Depth > 3.49" for 10-yr event
Inflow = 4.60 cfs @ 12.37 hrs, Volume= 0.934 af
Outflow = 4.60 cfs @ 12.36 hrs, Volume= 0.933 af, Atten= 0%, Lag= 0.0 min
Primary = 4.60 cfs @ 12.36 hrs, Volume= 0.933 af

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

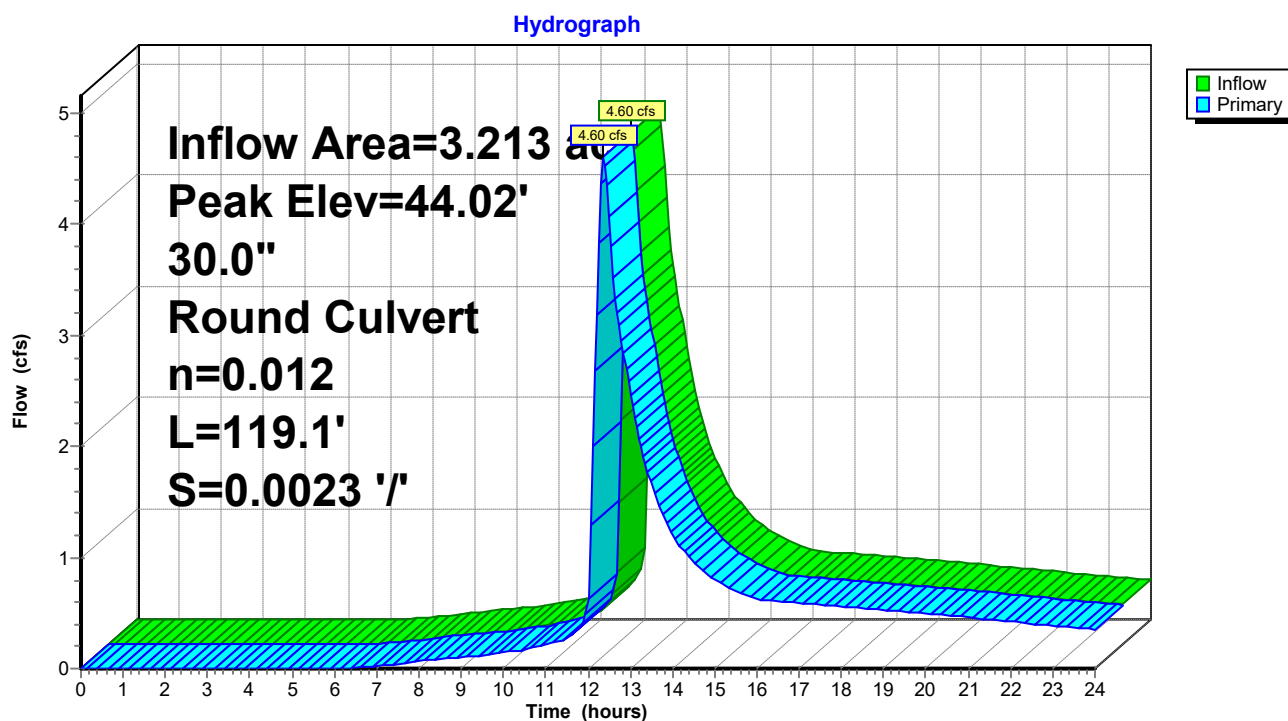
Peak Elev= 44.02' @ 12.08 hrs

Flood Elev= 47.05'

Device	Routing	Invert	Outlet Devices
#1	Primary	41.49'	30.0" Round 30" HDPE L= 119.1' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 41.49' / 41.22' S= 0.0023 '/ Cc= 0.900 n= 0.012, Flow Area= 4.91 sf

Primary OutFlow Max=5.20 cfs @ 12.36 hrs HW=43.63' TW=43.55' (Dynamic Tailwater)
1=30" HDPE (Outlet Controls 5.20 cfs @ 1.56 fps)

Pond EX2: Existing SDI



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Page 204

Stage-Area-Storage for Pond EX2: Existing SDI

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
41.49	0	43.53	0	45.57	0
41.53	0	43.57	0	45.61	0
41.57	0	43.61	0	45.65	0
41.61	0	43.65	0	45.69	0
41.65	0	43.69	0	45.73	0
41.69	0	43.73	0	45.77	0
41.73	0	43.77	0	45.81	0
41.77	0	43.81	0	45.85	0
41.81	0	43.85	0	45.89	0
41.85	0	43.89	0	45.93	0
41.89	0	43.93	0	45.97	0
41.93	0	43.97	0	46.01	0
41.97	0	44.01	0	46.05	0
42.01	0	44.05	0	46.09	0
42.05	0	44.09	0	46.13	0
42.09	0	44.13	0	46.17	0
42.13	0	44.17	0	46.21	0
42.17	0	44.21	0	46.25	0
42.21	0	44.25	0	46.29	0
42.25	0	44.29	0	46.33	0
42.29	0	44.33	0	46.37	0
42.33	0	44.37	0	46.41	0
42.37	0	44.41	0	46.45	0
42.41	0	44.45	0	46.49	0
42.45	0	44.49	0	46.53	0
42.49	0	44.53	0	46.57	0
42.53	0	44.57	0	46.61	0
42.57	0	44.61	0	46.65	0
42.61	0	44.65	0	46.69	0
42.65	0	44.69	0	46.73	0
42.69	0	44.73	0	46.77	0
42.73	0	44.77	0	46.81	0
42.77	0	44.81	0	46.85	0
42.81	0	44.85	0	46.89	0
42.85	0	44.89	0	46.93	0
42.89	0	44.93	0	46.97	0
42.93	0	44.97	0	47.01	0
42.97	0	45.01	0	47.05	0
43.01	0	45.05	0		
43.05	0	45.09	0		
43.09	0	45.13	0		
43.13	0	45.17	0		
43.17	0	45.21	0		
43.21	0	45.25	0		
43.25	0	45.29	0		
43.29	0	45.33	0		
43.33	0	45.37	0		
43.37	0	45.41	0		
43.41	0	45.45	0		
43.45	0	45.49	0		
43.49	0	45.53	0		

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

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Page 205

Summary for Pond EXCL1: Ex Northern Entrance Culvert

Inflow Area = 10.662 ac, 56.13% Impervious, Inflow Depth > 3.22" for 10-yr event
Inflow = 21.25 cfs @ 12.06 hrs, Volume= 2.859 af
Outflow = 21.25 cfs @ 12.06 hrs, Volume= 2.859 af, Atten= 0%, Lag= 0.0 min
Primary = 11.91 cfs @ 12.06 hrs, Volume= 2.558 af
Secondary = 9.34 cfs @ 12.06 hrs, Volume= 0.301 af

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

Peak Elev= 42.33' @ 12.06 hrs

Flood Elev= 40.05'

Device	Routing	Invert	Outlet Devices
#1	Primary	38.52'	21.0" W x 15.0" H, R=10.8"/33.1" Pipe Arch CMP_Arch_1/2 21x15 L= 44.7' CMP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 38.52' / 37.56' S= 0.0215 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 1.74 sf
#2	Secondary	40.00'	1.0' long x 42.0' breadth Over top of entrance pavement Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

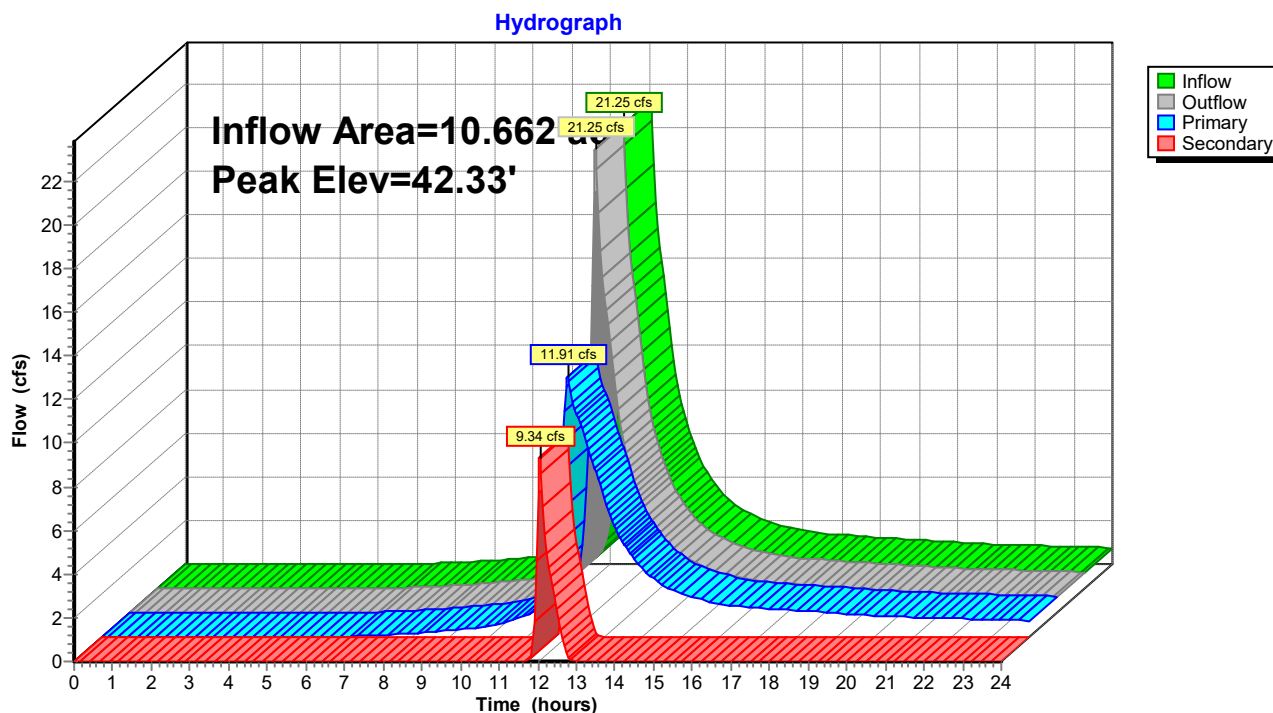
Primary OutFlow Max=11.86 cfs @ 12.06 hrs HW=42.30' TW=0.00' (Dynamic Tailwater)

↳ **1=CMP_Arch_1/2 21x15** (Barrel Controls 11.86 cfs @ 6.80 fps)

Secondary OutFlow Max=9.17 cfs @ 12.06 hrs HW=42.30' TW=0.00' (Dynamic Tailwater)

↳ **2=Over top of entrance pavement** (Weir Controls 9.17 cfs @ 3.99 fps)

Pond EXCL1: Ex Northern Entrance Culvert



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

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Page 206

Stage-Area-Storage for Pond EXCL1: Ex Northern Entrance Culvert

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
38.52	0	41.07	0
38.57	0	41.12	0
38.62	0	41.17	0
38.67	0	41.22	0
38.72	0	41.27	0
38.77	0	41.32	0
38.82	0	41.37	0
38.87	0	41.42	0
38.92	0	41.47	0
38.97	0	41.52	0
39.02	0	41.57	0
39.07	0	41.62	0
39.12	0	41.67	0
39.17	0	41.72	0
39.22	0	41.77	0
39.27	0	41.82	0
39.32	0	41.87	0
39.37	0	41.92	0
39.42	0	41.97	0
39.47	0	42.02	0
39.52	0	42.07	0
39.57	0	42.12	0
39.62	0	42.17	0
39.67	0	42.22	0
39.72	0	42.27	0
39.77	0	42.32	0
39.82	0		
39.87	0		
39.92	0		
39.97	0		
40.02	0		
40.07	0		
40.12	0		
40.17	0		
40.22	0		
40.27	0		
40.32	0		
40.37	0		
40.42	0		
40.47	0		
40.52	0		
40.57	0		
40.62	0		
40.67	0		
40.72	0		
40.77	0		
40.82	0		
40.87	0		
40.92	0		
40.97	0		
41.02	0		

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

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Page 207

Summary for Pond EXCL2: Ex Southern Entrance Culvert

Inflow Area = 8.271 ac, 61.23% Impervious, Inflow Depth > 3.38" for 10-yr event
Inflow = 19.80 cfs @ 12.05 hrs, Volume= 2.332 af
Outflow = 19.80 cfs @ 12.05 hrs, Volume= 2.332 af, Atten= 0%, Lag= 0.0 min
Primary = 11.53 cfs @ 12.04 hrs, Volume= 2.133 af
Secondary = 8.29 cfs @ 12.05 hrs, Volume= 0.199 af

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

Peak Elev= 43.35' @ 12.05 hrs

Flood Elev= 41.33'

Device	Routing	Invert	Outlet Devices
#1	Primary	38.94'	18.0" Round 18" CMP L= 46.0' CMP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 38.94' / 38.46' S= 0.0104 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 1.77 sf
#2	Secondary	41.20'	1.0' long x 45.0' breadth Over top of entrance pavement Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

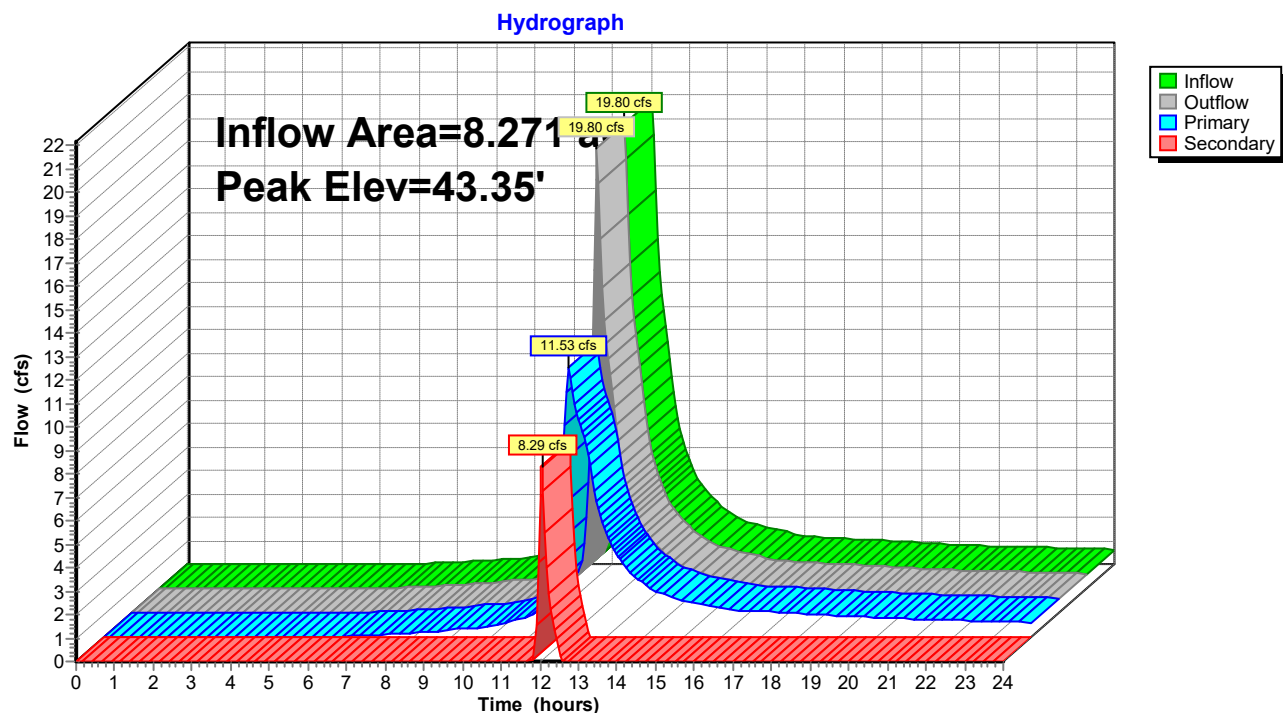
Primary OutFlow Max=11.31 cfs @ 12.04 hrs HW=43.29' TW=40.23' (Dynamic Tailwater)

↳ **1=18" CMP** (Outlet Controls 11.31 cfs @ 6.40 fps)

Secondary OutFlow Max=8.25 cfs @ 12.05 hrs HW=43.34' TW=40.24' (Dynamic Tailwater)

↳ **2=Over top of entrance pavement** (Weir Controls 8.25 cfs @ 3.85 fps)

Pond EXCL2: Ex Southern Entrance Culvert



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

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Page 208

Stage-Area-Storage for Pond EXCL2: Ex Southern Entrance Culvert

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
38.94	0	41.49	0
38.99	0	41.54	0
39.04	0	41.59	0
39.09	0	41.64	0
39.14	0	41.69	0
39.19	0	41.74	0
39.24	0	41.79	0
39.29	0	41.84	0
39.34	0	41.89	0
39.39	0	41.94	0
39.44	0	41.99	0
39.49	0	42.04	0
39.54	0	42.09	0
39.59	0	42.14	0
39.64	0	42.19	0
39.69	0	42.24	0
39.74	0	42.29	0
39.79	0	42.34	0
39.84	0	42.39	0
39.89	0	42.44	0
39.94	0	42.49	0
39.99	0	42.54	0
40.04	0	42.59	0
40.09	0	42.64	0
40.14	0	42.69	0
40.19	0	42.74	0
40.24	0	42.79	0
40.29	0	42.84	0
40.34	0	42.89	0
40.39	0	42.94	0
40.44	0	42.99	0
40.49	0	43.04	0
40.54	0	43.09	0
40.59	0	43.14	0
40.64	0	43.19	0
40.69	0	43.24	0
40.74	0	43.29	0
40.79	0	43.34	0
40.84	0		
40.89	0		
40.94	0		
40.99	0		
41.04	0		
41.09	0		
41.14	0		
41.19	0		
41.24	0		
41.29	0		
41.34	0		
41.39	0		
41.44	0		

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Page 209

Summary for Pond MBR#1: MBR#1

Inflow Area = 0.452 ac, 67.32% Impervious, Inflow Depth > 3.73" for 10-yr event
 Inflow = 3.02 cfs @ 11.91 hrs, Volume= 0.141 af
 Outflow = 0.37 cfs @ 12.16 hrs, Volume= 0.072 af, Atten= 88%, Lag= 14.8 min
 Primary = 0.37 cfs @ 12.16 hrs, Volume= 0.072 af

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

Peak Elev= 45.04' @ 12.16 hrs Surf.Area= 2,245 sf Storage= 3,422 cf

Plug-Flow detention time= 237.7 min calculated for 0.072 af (51% of inflow)

Center-of-Mass det. time= 126.4 min (920.7 - 794.4)

Volume	Invert	Avail.Storage	Storage Description			
#1	41.79'	5,356 cf	Custom Stage Data (Irregular) Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
41.79	1,437	149.0	0.0	0	0	1,437
41.80	1,437	149.0	40.0	6	6	1,438
43.79	1,437	149.0	40.0	1,144	1,150	1,735
43.80	1,437	149.0	100.0	14	1,164	1,736
45.80	2,833	200.0	100.0	4,192	5,356	3,195

Device	Routing	Invert	Outlet Devices
#1	Primary	41.79'	12.0" Round 12" HDPE L= 43.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 41.79' / 41.70' S= 0.0021 ' / Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	44.80'	12.0" W x 6.0" H Vert. 12" notch in box C= 0.600
#3	Device 1	45.30'	10.7' long Rim SHA 374.23 0 End Contraction(s)

Primary OutFlow Max=0.37 cfs @ 12.16 hrs HW=45.04' TW=42.71' (Dynamic Tailwater)

1=12" HDPE (Passes 0.37 cfs of 5.77 cfs potential flow)
 2=12" notch in box (Orifice Controls 0.37 cfs @ 1.56 fps)
 3=Rim SHA 374.23 (Controls 0.00 cfs)

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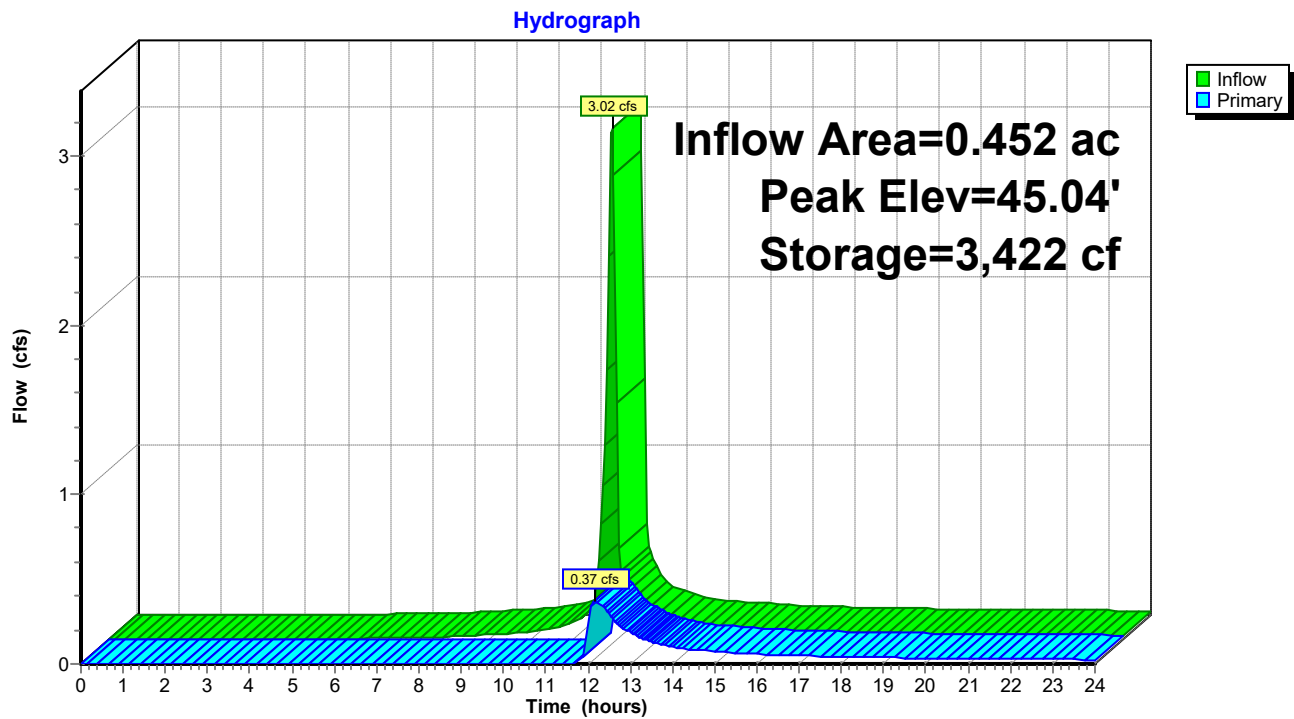
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Page 210

Pond MBR#1: MBR#1



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Page 211

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

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
41.79	1,437	0	44.34	1,768	2,028
41.84	1,437	29	44.39	1,800	2,117
41.89	1,437	57	44.44	1,833	2,208
41.94	1,437	86	44.49	1,866	2,300
41.99	1,437	115	44.54	1,899	2,394
42.04	1,437	144	44.59	1,932	2,490
42.09	1,437	172	44.64	1,966	2,588
42.14	1,437	201	44.69	2,000	2,687
42.19	1,437	230	44.74	2,035	2,788
42.24	1,437	259	44.79	2,069	2,890
42.29	1,437	287	44.84	2,104	2,994
42.34	1,437	316	44.89	2,140	3,101
42.39	1,437	345	44.94	2,175	3,208
42.44	1,437	374	44.99	2,211	3,318
42.49	1,437	402	45.04	2,247	3,430
42.54	1,437	431	45.09	2,284	3,543
42.59	1,437	460	45.14	2,320	3,658
42.64	1,437	489	45.19	2,357	3,775
42.69	1,437	517	45.24	2,395	3,894
42.74	1,437	546	45.29	2,432	4,014
42.79	1,437	575	45.34	2,470	4,137
42.84	1,437	604	45.39	2,509	4,261
42.89	1,437	632	45.44	2,547	4,388
42.94	1,437	661	45.49	2,586	4,516
42.99	1,437	690	45.54	2,625	4,646
43.04	1,437	719	45.59	2,664	4,779
43.09	1,437	747	45.64	2,704	4,913
43.14	1,437	776	45.69	2,744	5,049
43.19	1,437	805	45.74	2,784	5,187
43.24	1,437	833	45.79	2,825	5,327
43.29	1,437	862			
43.34	1,437	891			
43.39	1,437	920			
43.44	1,437	948			
43.49	1,437	977			
43.54	1,437	1,006			
43.59	1,437	1,035			
43.64	1,437	1,063			
43.69	1,437	1,092			
43.74	1,437	1,121			
43.79	1,437	1,150			
43.84	1,460	1,222			
43.89	1,490	1,296			
43.94	1,519	1,371			
43.99	1,549	1,448			
44.04	1,580	1,526			
44.09	1,610	1,606			
44.14	1,641	1,687			
44.19	1,672	1,770			
44.24	1,704	1,854			
44.29	1,736	1,940			

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Page 212

Summary for Pond SGW#1: SGW#1

Inflow Area = 2.315 ac, 74.35% Impervious, Inflow Depth > 4.10" for 10-yr event
 Inflow = 15.99 cfs @ 11.91 hrs, Volume= 0.790 af
 Outflow = 1.02 cfs @ 12.51 hrs, Volume= 0.437 af, Atten= 94%, Lag= 36.2 min
 Primary = 1.02 cfs @ 12.51 hrs, Volume= 0.437 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 41.79' @ 12.51 hrs Surf.Area= 11,047 sf Storage= 21,669 cf

Plug-Flow detention time= 310.1 min calculated for 0.436 af (55% of inflow)
 Center-of-Mass det. time= 195.3 min (961.5 - 766.2)

Volume	Invert	Avail.Storage	Storage Description
#1	39.40'	35,078 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
39.40	7,196	368.0	0	0	7,196
40.40	8,760	400.0	7,965	7,965	9,189
42.90	13,074	463.0	27,113	35,078	13,648

Device	Routing	Invert	Outlet Devices
#1	Primary	38.00'	12.0" Round Culvert L= 52.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 38.00' / 37.70' S= 0.0058 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	40.90'	4.0" W x 6.0" H Vert. 4" Notch in 374.23 C= 0.600
#3	Device 1	41.40'	6.0" W x 12.0" H Vert. 6" Notch in 374.23 C= 0.600
#4	Device 1	42.40'	10.7' long Rim SHA 374.23 0 End Contraction(s)
#5	Secondary	42.70'	10.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=1.02 cfs @ 12.51 hrs HW=41.79' TW=38.94' (Dynamic Tailwater)

1=Culvert (Passes 1.02 cfs of 6.25 cfs potential flow)
 2=4" Notch in 374.23 (Orifice Controls 0.64 cfs @ 3.82 fps)
 3=6" Notch in 374.23 (Orifice Controls 0.39 cfs @ 2.00 fps)
 4=Rim SHA 374.23 (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=39.40' (Free Discharge)

5=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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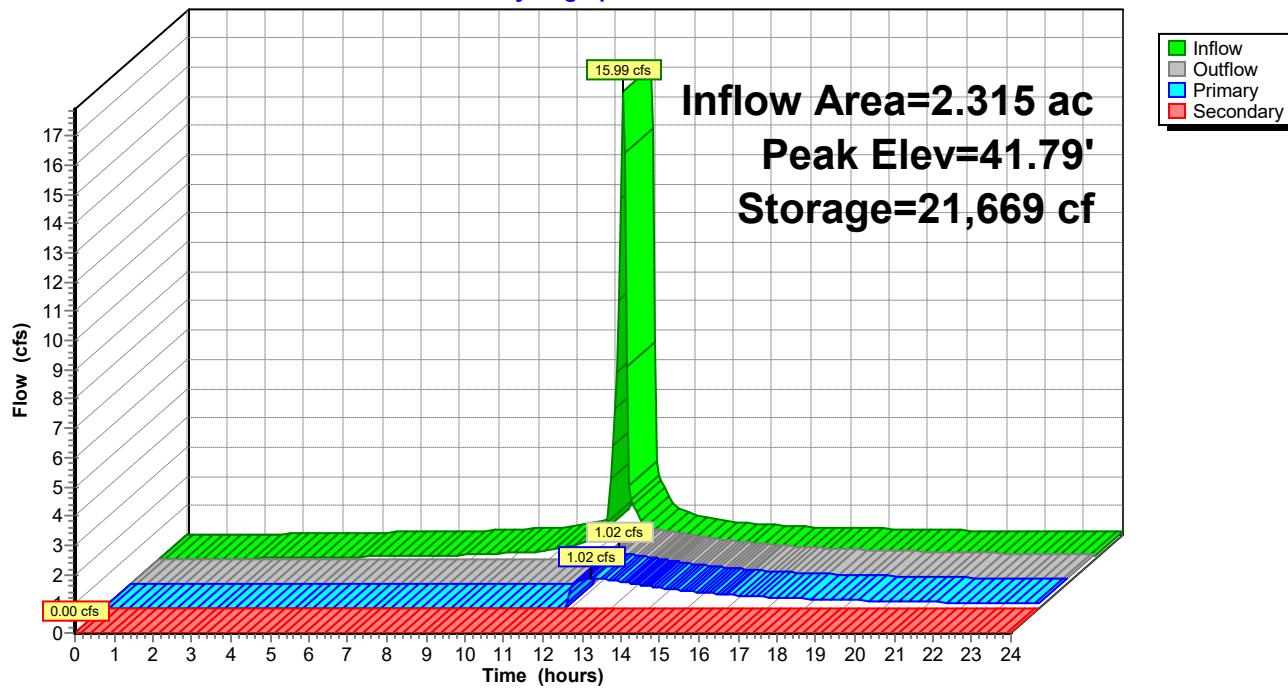
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Page 213

Pond SGW#1: SGW#1

Hydrograph



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Page 214

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

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
39.40	7,196	0	41.95	11,333	23,495
39.45	7,271	362	42.00	11,422	24,064
39.50	7,345	727	42.05	11,511	24,637
39.55	7,421	1,096	42.10	11,600	25,215
39.60	7,497	1,469	42.15	11,689	25,797
39.65	7,573	1,846	42.20	11,779	26,384
39.70	7,649	2,226	42.25	11,870	26,975
39.75	7,726	2,611	42.30	11,960	27,571
39.80	7,803	2,999	42.35	12,051	28,171
39.85	7,881	3,391	42.40	12,142	28,776
39.90	7,959	3,787	42.45	12,234	29,385
39.95	8,037	4,187	42.50	12,326	29,999
40.00	8,116	4,591	42.55	12,418	30,618
40.05	8,195	4,999	42.60	12,511	31,241
40.10	8,275	5,410	42.65	12,604	31,869
40.15	8,355	5,826	42.70	12,697	32,501
40.20	8,435	6,246	42.75	12,791	33,139
40.25	8,516	6,670	42.80	12,885	33,780
40.30	8,597	7,097	42.85	12,979	34,427
40.35	8,678	7,529	42.90	13,074	35,078
40.40	8,760	7,965			
40.45	8,838	8,405			
40.50	8,916	8,849			
40.55	8,995	9,297			
40.60	9,073	9,748			
40.65	9,153	10,204			
40.70	9,232	10,664			
40.75	9,312	11,127			
40.80	9,392	11,595			
40.85	9,473	12,067			
40.90	9,554	12,542			
40.95	9,635	13,022			
41.00	9,717	13,506			
41.05	9,799	13,994			
41.10	9,881	14,486			
41.15	9,964	14,982			
41.20	10,047	15,482			
41.25	10,130	15,986			
41.30	10,214	16,495			
41.35	10,298	17,008			
41.40	10,382	17,525			
41.45	10,467	18,046			
41.50	10,552	18,572			
41.55	10,638	19,101			
41.60	10,723	19,635			
41.65	10,809	20,174			
41.70	10,896	20,716			
41.75	10,983	21,263			
41.80	11,070	21,815			
41.85	11,157	22,370			
41.90	11,245	22,930			

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Page 215

Summary for Pond SGW#2: SGW#2

Inflow Area = 0.931 ac, 51.02% Impervious, Inflow Depth > 3.22" for 10-yr event
 Inflow = 5.58 cfs @ 11.91 hrs, Volume= 0.250 af
 Outflow = 0.17 cfs @ 13.81 hrs, Volume= 0.112 af, Atten= 97%, Lag= 114.3 min
 Primary = 0.17 cfs @ 13.81 hrs, Volume= 0.112 af

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

Peak Elev= 44.02' @ 13.81 hrs Surf.Area= 4,941 sf Storage= 7,086 cf

Plug-Flow detention time= 344.3 min calculated for 0.112 af (45% of inflow)

Center-of-Mass det. time= 221.6 min (1,023.6 - 801.9)

Volume	Invert	Avail.Storage	Storage Description
#1	42.05'	12,835 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
42.05	1,891	314.0	0	0	1,891
43.05	3,888	346.0	2,830	2,830	3,604
45.05	6,207	396.0	10,005	12,835	6,648

Device	Routing	Invert	Outlet Devices
#1	Primary	43.55'	2.0" W x 12.0" H Vert. 2" Notch in box C= 0.600
#2	Primary	44.55'	16.3' long Rim SHA 374.70 0 End Contraction(s)

Primary OutFlow Max=0.17 cfs @ 13.81 hrs HW=44.02' TW=42.24' (Dynamic Tailwater)

1=2" Notch in box (Orifice Controls 0.17 cfs @ 2.19 fps)

2=Rim SHA 374.70 (Controls 0.00 cfs)

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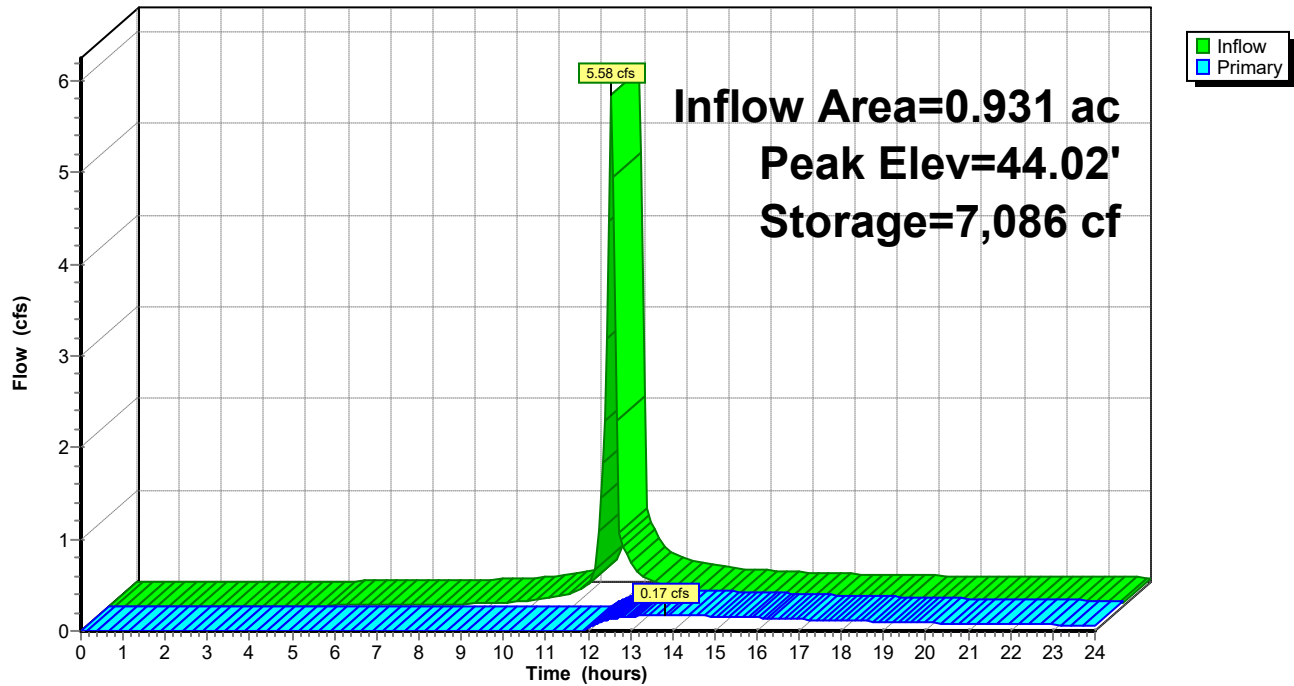
Type II 24-hr 10-yr Rainfall=5.30"

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Page 216

Pond SGW#2: SGW#2

Hydrograph



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

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Page 217

Stage-Area-Storage for Pond SGW#2: SGW#2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
42.05	1,891	0	44.60	5,638	10,171
42.10	1,974	97	44.65	5,700	10,454
42.15	2,059	197	44.70	5,762	10,741
42.20	2,145	303	44.75	5,825	11,031
42.25	2,233	412	44.80	5,888	11,324
42.30	2,323	526	44.85	5,951	11,619
42.35	2,415	644	44.90	6,014	11,919
42.40	2,509	767	44.95	6,078	12,221
42.45	2,604	895	45.00	6,142	12,526
42.50	2,702	1,028	45.05	6,207	12,835
42.55	2,800	1,165			
42.60	2,901	1,308			
42.65	3,004	1,456			
42.70	3,108	1,608			
42.75	3,214	1,766			
42.80	3,322	1,930			
42.85	3,432	2,099			
42.90	3,543	2,273			
42.95	3,656	2,453			
43.00	3,771	2,639			
43.05	3,888	2,830			
43.10	3,939	3,026			
43.15	3,991	3,224			
43.20	4,043	3,425			
43.25	4,096	3,628			
43.30	4,148	3,835			
43.35	4,201	4,043			
43.40	4,255	4,255			
43.45	4,309	4,469			
43.50	4,363	4,686			
43.55	4,417	4,905			
43.60	4,472	5,127			
43.65	4,527	5,352			
43.70	4,582	5,580			
43.75	4,638	5,810			
43.80	4,694	6,044			
43.85	4,751	6,280			
43.90	4,808	6,519			
43.95	4,865	6,761			
44.00	4,922	7,005			
44.05	4,980	7,253			
44.10	5,038	7,503			
44.15	5,097	7,757			
44.20	5,155	8,013			
44.25	5,215	8,272			
44.30	5,274	8,535			
44.35	5,334	8,800			
44.40	5,394	9,068			
44.45	5,455	9,339			
44.50	5,515	9,613			
44.55	5,577	9,891			

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

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Page 218

Summary for Pond TOE1: SDI/OS#1

Inflow Area = 8.641 ac, 68.11% Impervious, Inflow Depth > 2.91" for 10-yr event
Inflow = 11.48 cfs @ 11.99 hrs, Volume= 2.099 af
Outflow = 11.48 cfs @ 11.99 hrs, Volume= 2.099 af, Atten= 0%, Lag= 0.0 min
Primary = 11.48 cfs @ 11.99 hrs, Volume= 2.099 af

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

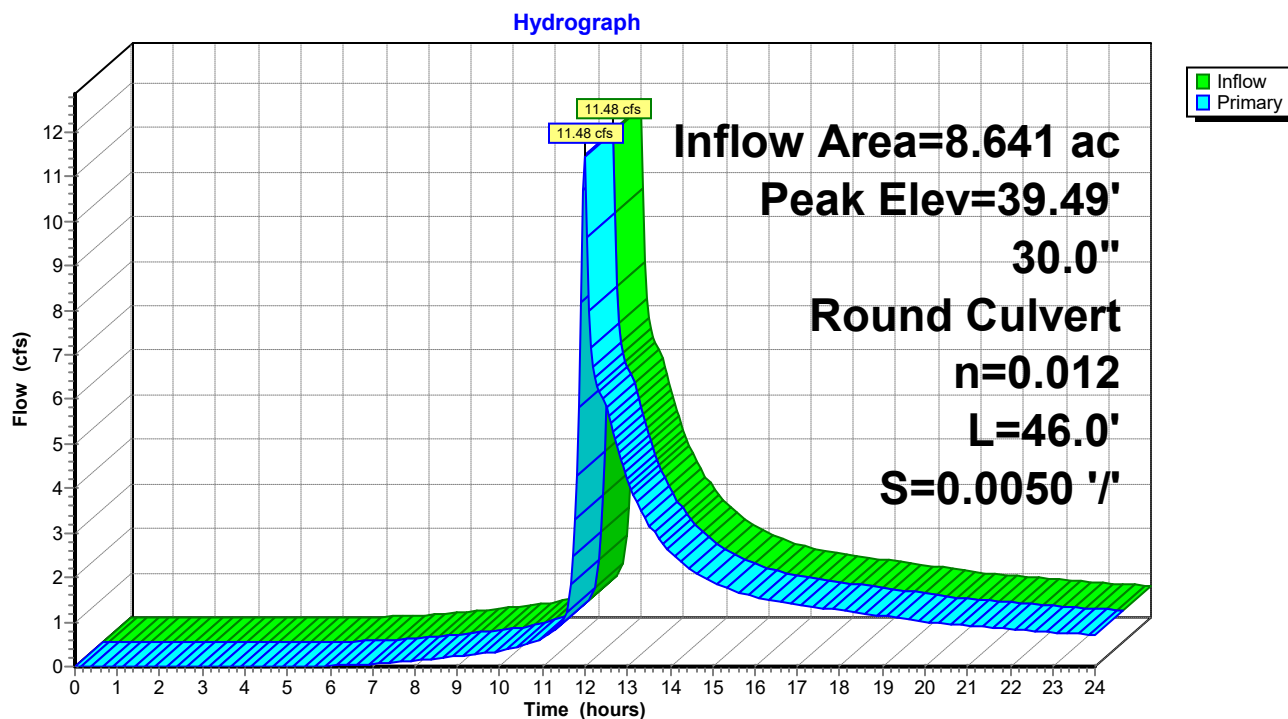
Peak Elev= 39.49' @ 11.99 hrs

Flood Elev= 42.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	37.83'	30.0" Round 30" HDPE L= 46.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 37.83' / 37.60' S= 0.0050 '/ Cc= 0.900 n= 0.012, Flow Area= 4.91 sf

Primary OutFlow Max=11.27 cfs @ 11.99 hrs HW=39.47' TW=0.00' (Dynamic Tailwater)
↑ **1=30" HDPE** (Barrel Controls 11.27 cfs @ 4.69 fps)

Pond TOE1: SDI/OS#1



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Page 219

Stage-Area-Storage for Pond TOE1: SDI/OS#1

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
37.83	0	40.38	0
37.88	0	40.43	0
37.93	0	40.48	0
37.98	0	40.53	0
38.03	0	40.58	0
38.08	0	40.63	0
38.13	0	40.68	0
38.18	0	40.73	0
38.23	0	40.78	0
38.28	0	40.83	0
38.33	0	40.88	0
38.38	0	40.93	0
38.43	0	40.98	0
38.48	0	41.03	0
38.53	0	41.08	0
38.58	0	41.13	0
38.63	0	41.18	0
38.68	0	41.23	0
38.73	0	41.28	0
38.78	0	41.33	0
38.83	0	41.38	0
38.88	0	41.43	0
38.93	0	41.48	0
38.98	0	41.53	0
39.03	0	41.58	0
39.08	0	41.63	0
39.13	0	41.68	0
39.18	0	41.73	0
39.23	0	41.78	0
39.28	0	41.83	0
39.33	0	41.88	0
39.38	0	41.93	0
39.43	0	41.98	0
39.48	0	42.03	0
39.53	0	42.08	0
39.58	0	42.13	0
39.63	0	42.18	0
39.68	0	42.23	0
39.73	0	42.28	0
39.78	0	42.33	0
39.83	0	42.38	0
39.88	0	42.43	0
39.93	0	42.48	0
39.98	0		
40.03	0		
40.08	0		
40.13	0		
40.18	0		
40.23	0		
40.28	0		
40.33	0		

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

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Page 220

Summary for Pond TOE2: SDMH

Inflow Area = 6.327 ac, 65.83% Impervious, Inflow Depth > 3.15" for 10-yr event
Inflow = 10.81 cfs @ 11.98 hrs, Volume= 1.662 af
Outflow = 10.81 cfs @ 11.98 hrs, Volume= 1.662 af, Atten= 0%, Lag= 0.0 min
Primary = 10.81 cfs @ 11.98 hrs, Volume= 1.662 af

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

Peak Elev= 39.92' @ 12.01 hrs

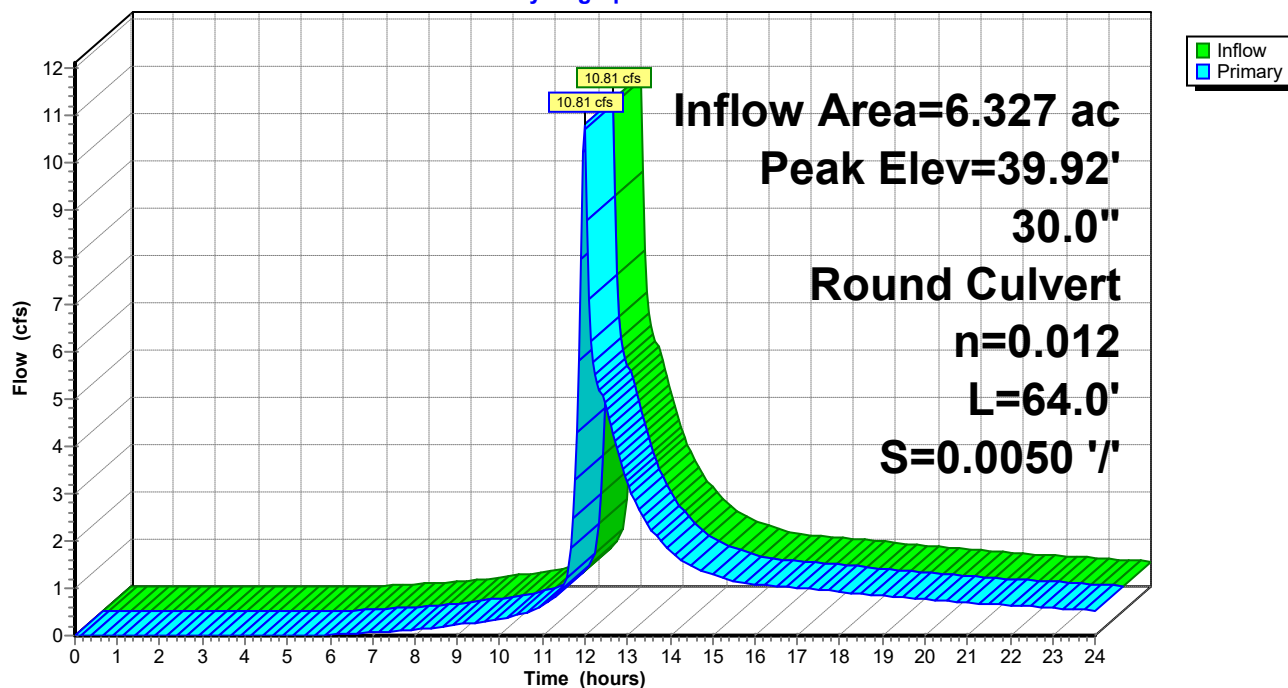
Flood Elev= 43.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	38.25'	30.0" Round 30" HDPE L= 64.0' Box, headwall w/3 rounded edges, Ke= 0.200 Inlet / Outlet Invert= 38.25' / 37.93' S= 0.0050 '/ Cc= 0.900 n= 0.012, Flow Area= 4.91 sf

Primary OutFlow Max=9.37 cfs @ 11.98 hrs HW=39.88' TW=39.46' (Dynamic Tailwater)
↑ **1=30" HDPE** (Outlet Controls 9.37 cfs @ 3.94 fps)

Pond TOE2: SDMH

Hydrograph



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

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Page 221

Stage-Area-Storage for Pond TOE2: SDMH

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
38.25	0	40.29	0	42.33	0
38.29	0	40.33	0	42.37	0
38.33	0	40.37	0	42.41	0
38.37	0	40.41	0	42.45	0
38.41	0	40.45	0	42.49	0
38.45	0	40.49	0	42.53	0
38.49	0	40.53	0	42.57	0
38.53	0	40.57	0	42.61	0
38.57	0	40.61	0	42.65	0
38.61	0	40.65	0	42.69	0
38.65	0	40.69	0	42.73	0
38.69	0	40.73	0	42.77	0
38.73	0	40.77	0	42.81	0
38.77	0	40.81	0	42.85	0
38.81	0	40.85	0	42.89	0
38.85	0	40.89	0	42.93	0
38.89	0	40.93	0	42.97	0
38.93	0	40.97	0	43.01	0
38.97	0	41.01	0	43.05	0
39.01	0	41.05	0	43.09	0
39.05	0	41.09	0	43.13	0
39.09	0	41.13	0	43.17	0
39.13	0	41.17	0	43.21	0
39.17	0	41.21	0	43.25	0
39.21	0	41.25	0	43.29	0
39.25	0	41.29	0		
39.29	0	41.33	0		
39.33	0	41.37	0		
39.37	0	41.41	0		
39.41	0	41.45	0		
39.45	0	41.49	0		
39.49	0	41.53	0		
39.53	0	41.57	0		
39.57	0	41.61	0		
39.61	0	41.65	0		
39.65	0	41.69	0		
39.69	0	41.73	0		
39.73	0	41.77	0		
39.77	0	41.81	0		
39.81	0	41.85	0		
39.85	0	41.89	0		
39.89	0	41.93	0		
39.93	0	41.97	0		
39.97	0	42.01	0		
40.01	0	42.05	0		
40.05	0	42.09	0		
40.09	0	42.13	0		
40.13	0	42.17	0		
40.17	0	42.21	0		
40.21	0	42.25	0		
40.25	0	42.29	0		

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

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Page 222

Summary for Pond TOE3: SDMH

Inflow Area = 6.327 ac, 65.83% Impervious, Inflow Depth > 3.15" for 10-yr event
Inflow = 10.81 cfs @ 11.98 hrs, Volume= 1.662 af
Outflow = 10.81 cfs @ 11.98 hrs, Volume= 1.662 af, Atten= 0%, Lag= 0.0 min
Primary = 10.81 cfs @ 11.98 hrs, Volume= 1.662 af

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

Peak Elev= 40.75' @ 12.00 hrs

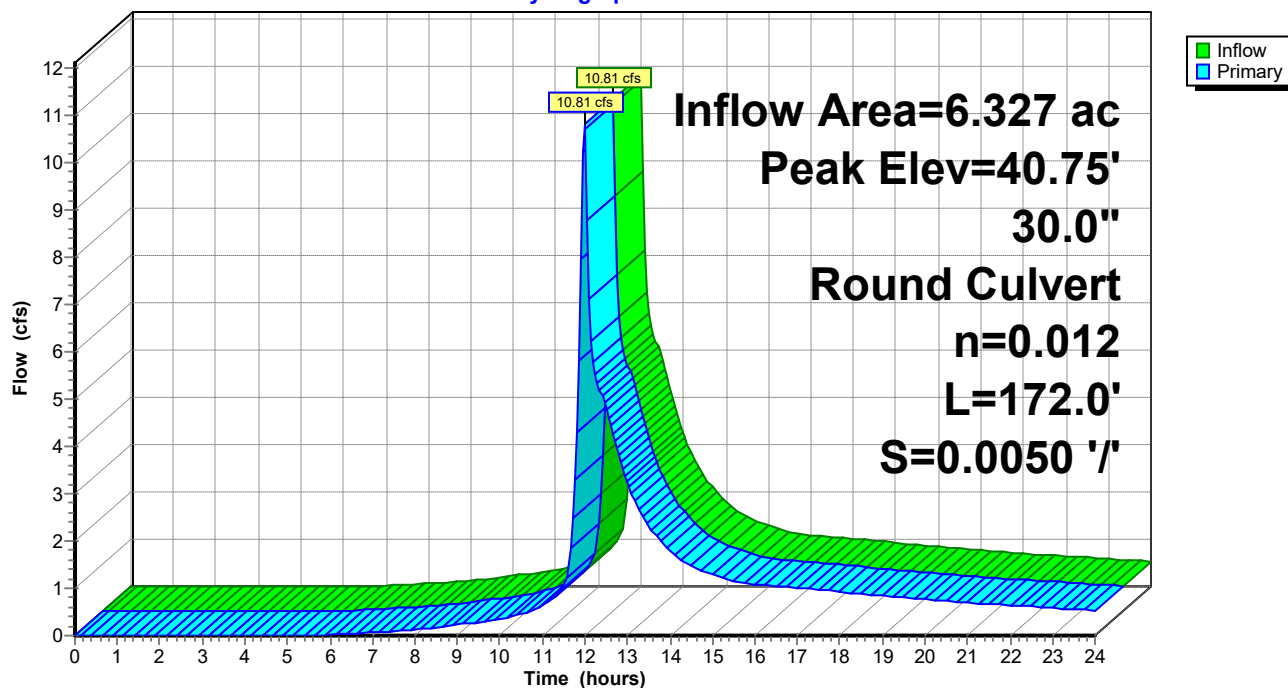
Flood Elev= 45.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	39.21'	30.0" Round 30" HDPE L= 172.0' Box, headwall w/3 rounded edges, Ke= 0.200 Inlet / Outlet Invert= 39.21' / 38.35' S= 0.0050 '/ Cc= 0.900 n= 0.012, Flow Area= 4.91 sf

Primary OutFlow Max=9.64 cfs @ 11.98 hrs HW=40.71' TW=39.88' (Dynamic Tailwater)
1=30" HDPE (Outlet Controls 9.64 cfs @ 4.48 fps)

Pond TOE3: SDMH

Hydrograph



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Page 223

Stage-Area-Storage for Pond TOE3: SDMH

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
39.21	0	44.31	0
39.31	0	44.41	0
39.41	0	44.51	0
39.51	0	44.61	0
39.61	0	44.71	0
39.71	0	44.81	0
39.81	0	44.91	0
39.91	0	45.01	0
40.01	0	45.11	0
40.11	0	45.21	0
40.21	0	45.31	0
40.31	0	45.41	0
40.41	0	45.51	0
40.51	0	45.61	0
40.61	0	45.71	0
40.71	0	45.81	0
40.81	0		
40.91	0		
41.01	0		
41.11	0		
41.21	0		
41.31	0		
41.41	0		
41.51	0		
41.61	0		
41.71	0		
41.81	0		
41.91	0		
42.01	0		
42.11	0		
42.21	0		
42.31	0		
42.41	0		
42.51	0		
42.61	0		
42.71	0		
42.81	0		
42.91	0		
43.01	0		
43.11	0		
43.21	0		
43.31	0		
43.41	0		
43.51	0		
43.61	0		
43.71	0		
43.81	0		
43.91	0		
44.01	0		
44.11	0		
44.21	0		

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

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Page 224

Summary for Pond TOE4: SDI/OS #2

Inflow Area = 6.327 ac, 65.83% Impervious, Inflow Depth > 3.15" for 10-yr event
Inflow = 10.81 cfs @ 11.98 hrs, Volume= 1.662 af
Outflow = 10.81 cfs @ 11.98 hrs, Volume= 1.662 af, Atten= 0%, Lag= 0.0 min
Primary = 10.81 cfs @ 11.98 hrs, Volume= 1.662 af

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

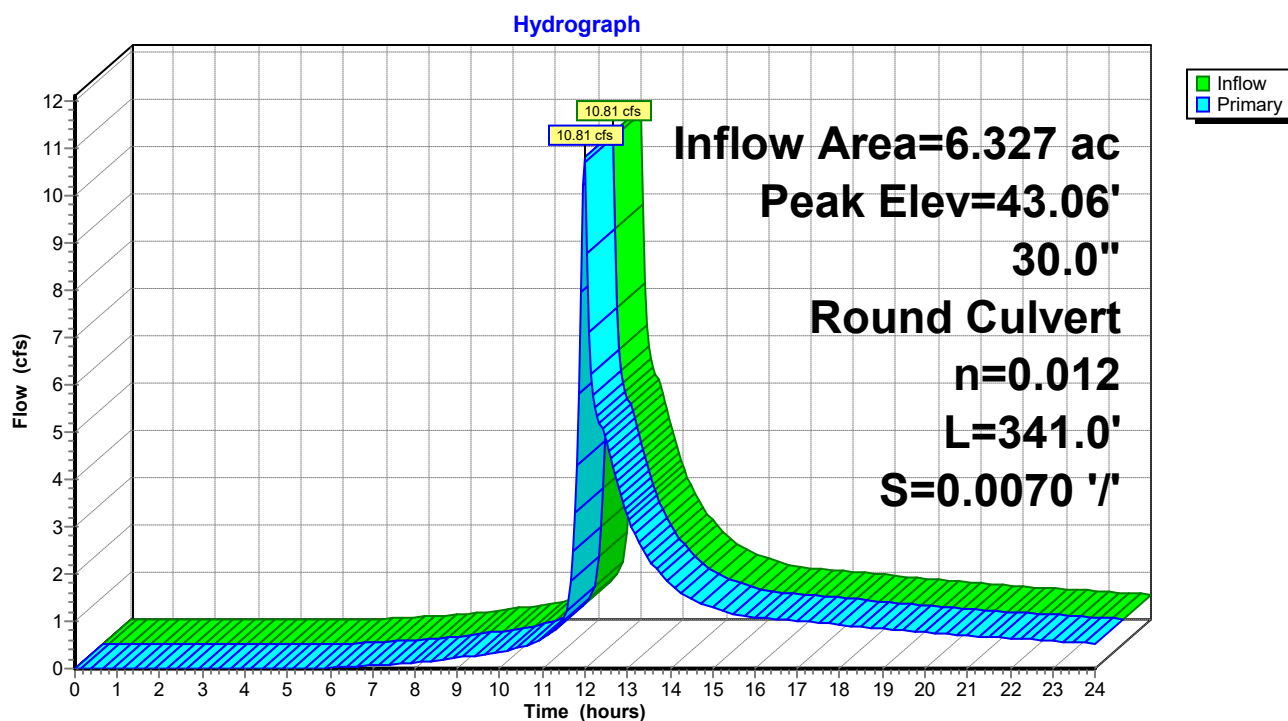
Peak Elev= 43.06' @ 11.99 hrs

Flood Elev= 45.05'

Device	Routing	Invert	Outlet Devices
#1	Primary	41.70'	30.0" Round 30" HPDE L= 341.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 41.70' / 39.31' S= 0.0070 '/ Cc= 0.900 n= 0.012, Flow Area= 4.91 sf

Primary OutFlow Max=10.36 cfs @ 11.98 hrs HW=43.04' TW=40.71' (Dynamic Tailwater)
↑**1=30" HPDE** (Outlet Controls 10.36 cfs @ 5.60 fps)

Pond TOE4: SDI/OS #2



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Page 225

Stage-Area-Storage for Pond TOE4: SDI/OS #2

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
41.70	0	44.25	0
41.75	0	44.30	0
41.80	0	44.35	0
41.85	0	44.40	0
41.90	0	44.45	0
41.95	0	44.50	0
42.00	0	44.55	0
42.05	0	44.60	0
42.10	0	44.65	0
42.15	0	44.70	0
42.20	0	44.75	0
42.25	0	44.80	0
42.30	0	44.85	0
42.35	0	44.90	0
42.40	0	44.95	0
42.45	0	45.00	0
42.50	0	45.05	0
42.55	0		
42.60	0		
42.65	0		
42.70	0		
42.75	0		
42.80	0		
42.85	0		
42.90	0		
42.95	0		
43.00	0		
43.05	0		
43.10	0		
43.15	0		
43.20	0		
43.25	0		
43.30	0		
43.35	0		
43.40	0		
43.45	0		
43.50	0		
43.55	0		
43.60	0		
43.65	0		
43.70	0		
43.75	0		
43.80	0		
43.85	0		
43.90	0		
43.95	0		
44.00	0		
44.05	0		
44.10	0		
44.15	0		
44.20	0		

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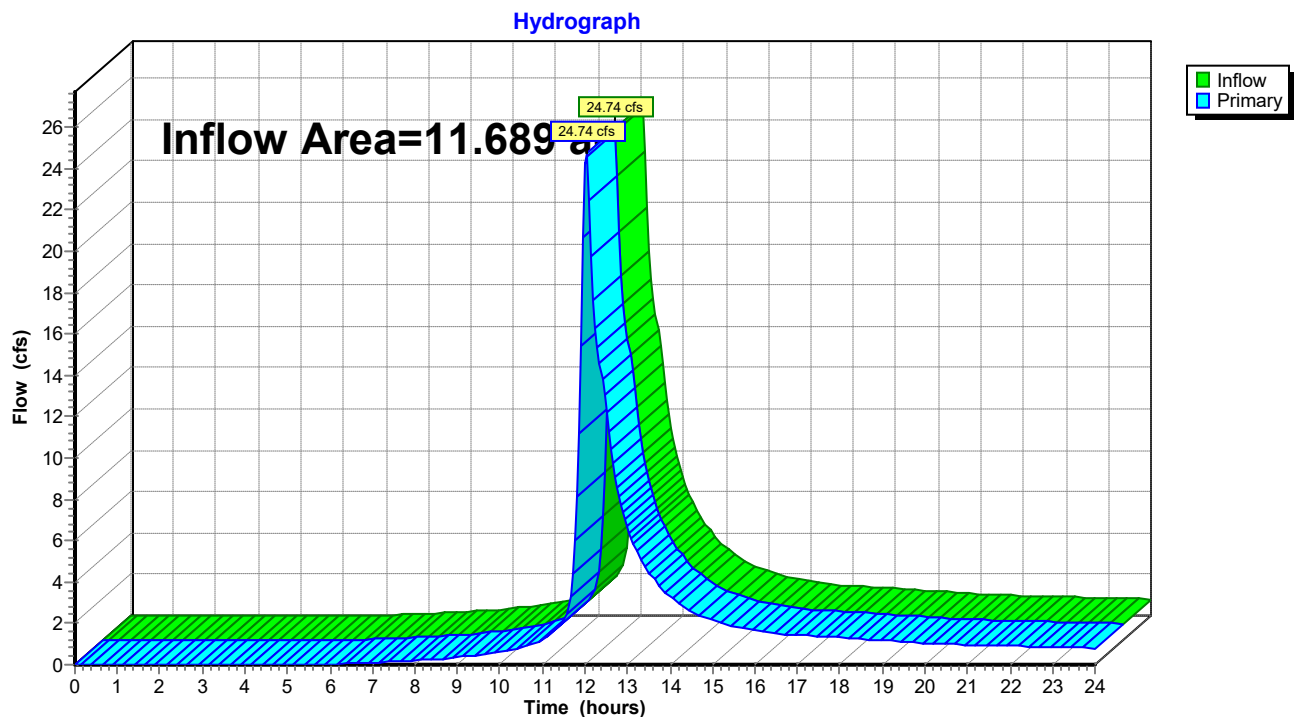
Page 226

Summary for Link PRE: PRE-DEVELOPMENT

Inflow Area = 11.689 ac, 55.03% Impervious, Inflow Depth > 3.25" for 10-yr event
Inflow = 24.74 cfs @ 12.03 hrs, Volume= 3.162 af
Primary = 24.74 cfs @ 12.03 hrs, Volume= 3.162 af, Atten= 0%, Lag= 0.0 min

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

Link PRE: PRE-DEVELOPMENT



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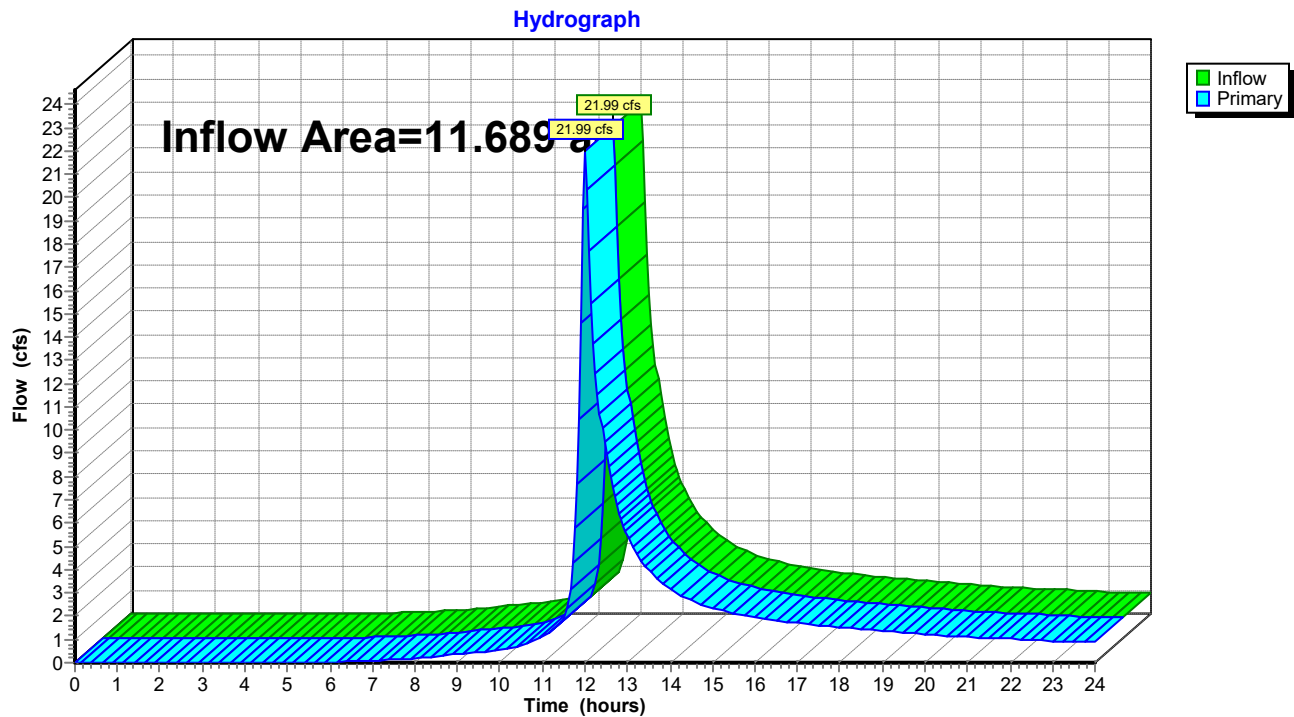
Page 227

Summary for Link PST: POST-DEVELOPMENT

Inflow Area = 11.689 ac, 65.73% Impervious, Inflow Depth > 3.06" for 10-yr event
Inflow = 21.99 cfs @ 12.01 hrs, Volume= 2.977 af
Primary = 21.99 cfs @ 12.01 hrs, Volume= 2.977 af, Atten= 0%, Lag= 0.0 min

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

Link PST: POST-DEVELOPMENT



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

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Page 228

Summary for Subcatchment EX-1: NORTH OF SITE

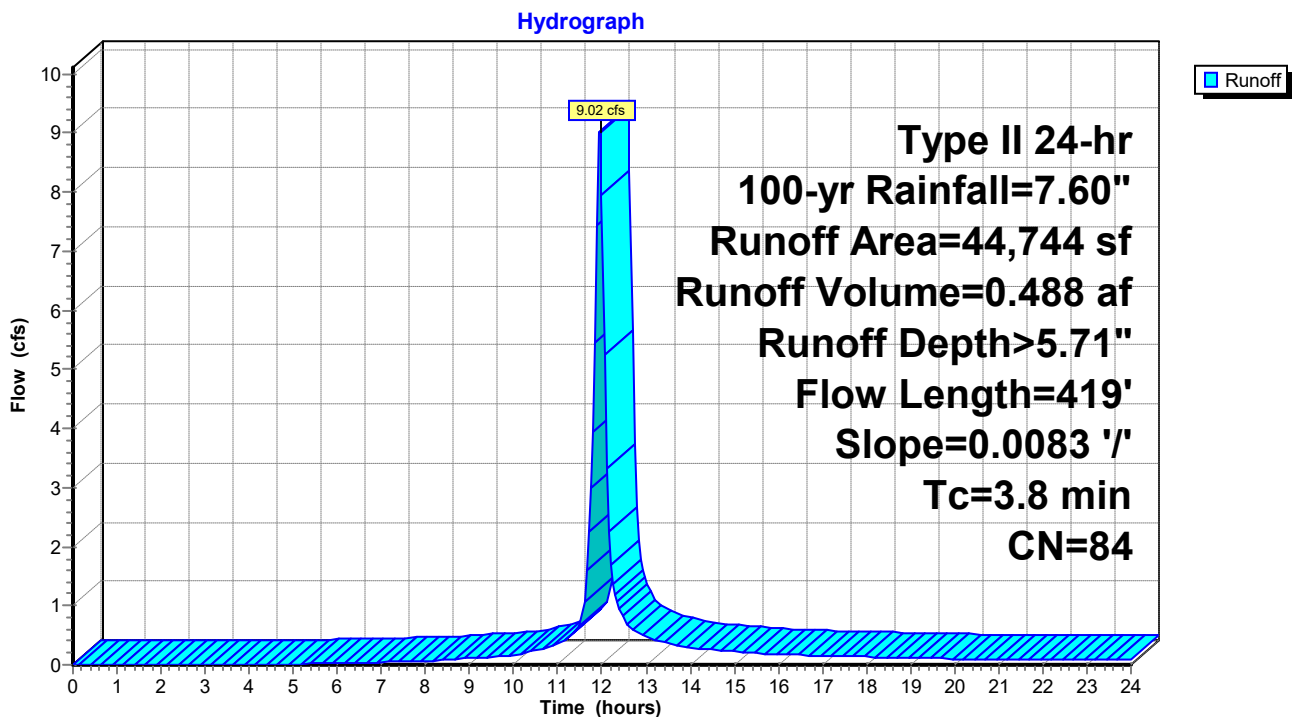
Runoff = 9.02 cfs @ 11.95 hrs, Volume= 0.488 af, Depth> 5.71"

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

	Area (sf)	CN	Description
*	19,542	98	Gravel Driveway; Bldg; Old foundations
	25,202	74	>75% Grass cover, Good, HSG C
	44,744	84	Weighted Average
	25,202		56.32% Pervious Area
	19,542		43.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	419	0.0083	1.85		Shallow Concentrated Flow, Compacted Gravel Driveway Paved Kv= 20.3 fps

Subcatchment EX-1: NORTH OF SITE



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Page 229

Summary for Subcatchment EX-2: MIDDLE OF SITE

Runoff = 5.31 cfs @ 12.36 hrs, Volume= 0.919 af, Depth> 4.61"

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

	Area (sf)	CN	Description
*	40,056	98	Ex Bldg; Front Parking; US 50
	64,086	61	>75% Grass cover, Good, HSG B
	104,142	75	Weighted Average
	64,086		61.54% Pervious Area
	40,056		38.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
34.4	150	0.0018	0.07		Sheet Flow, Vacant Grassed Lot Grass: Short n= 0.150 P2= 3.40"
1.1	137	0.0189	2.06		Shallow Concentrated Flow, Grassed Lot Grassed Waterway Kv= 15.0 fps
0.1	31	0.0070	4.49	3.52	Pipe Channel, 12" RCP 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.011 Concrete pipe, straight & clean
0.6	10	0.0001	0.28	0.02	Pipe Channel, 4" PVC Culverts 4.0" Round Area= 0.1 sf Perim= 1.0' r= 0.08' n= 0.010 PVC, smooth interior
0.3	70	0.0800	4.24		Shallow Concentrated Flow, Grassed Lot Grassed Waterway Kv= 15.0 fps
36.5	398	Total			

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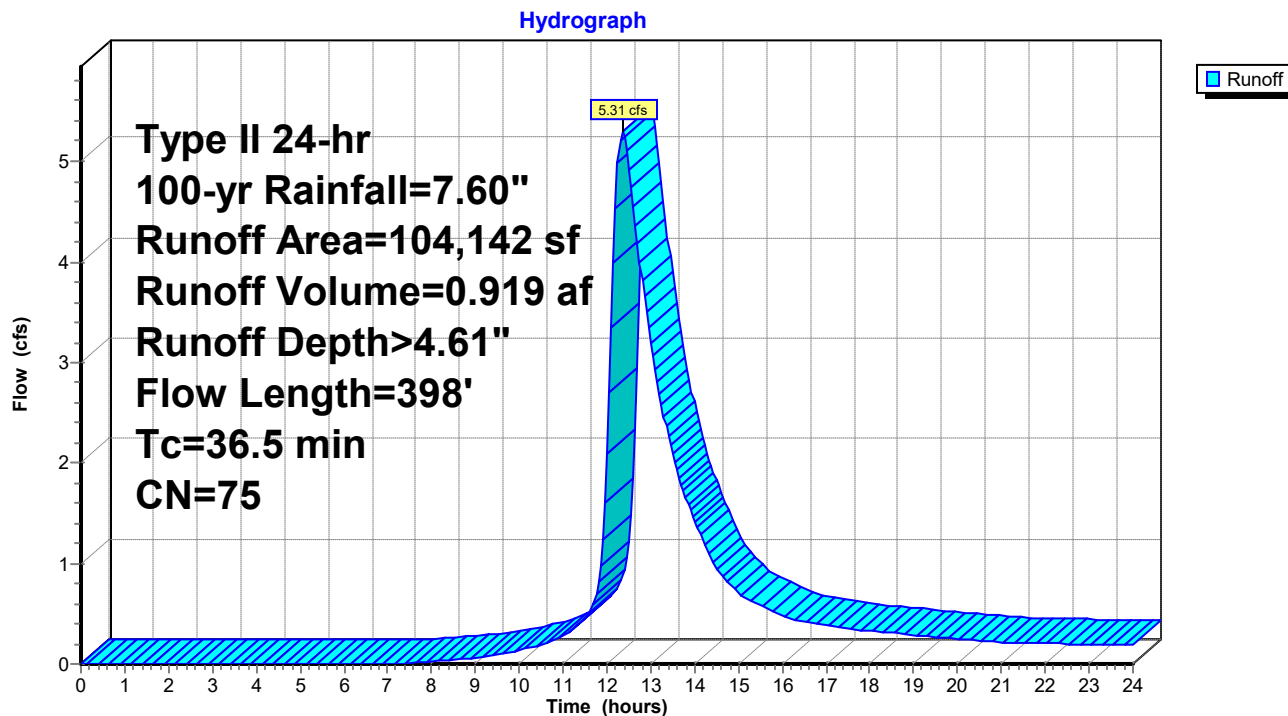
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Type II 24-hr 100-yr Rainfall=7.60"

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Page 230

Subcatchment EX-2: MIDDLE OF SITE



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

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Page 231

Summary for Subcatchment EX-3: SOUTHERN SITE + US50

Runoff = 4.80 cfs @ 11.99 hrs, Volume= 0.285 af, Depth> 3.56"

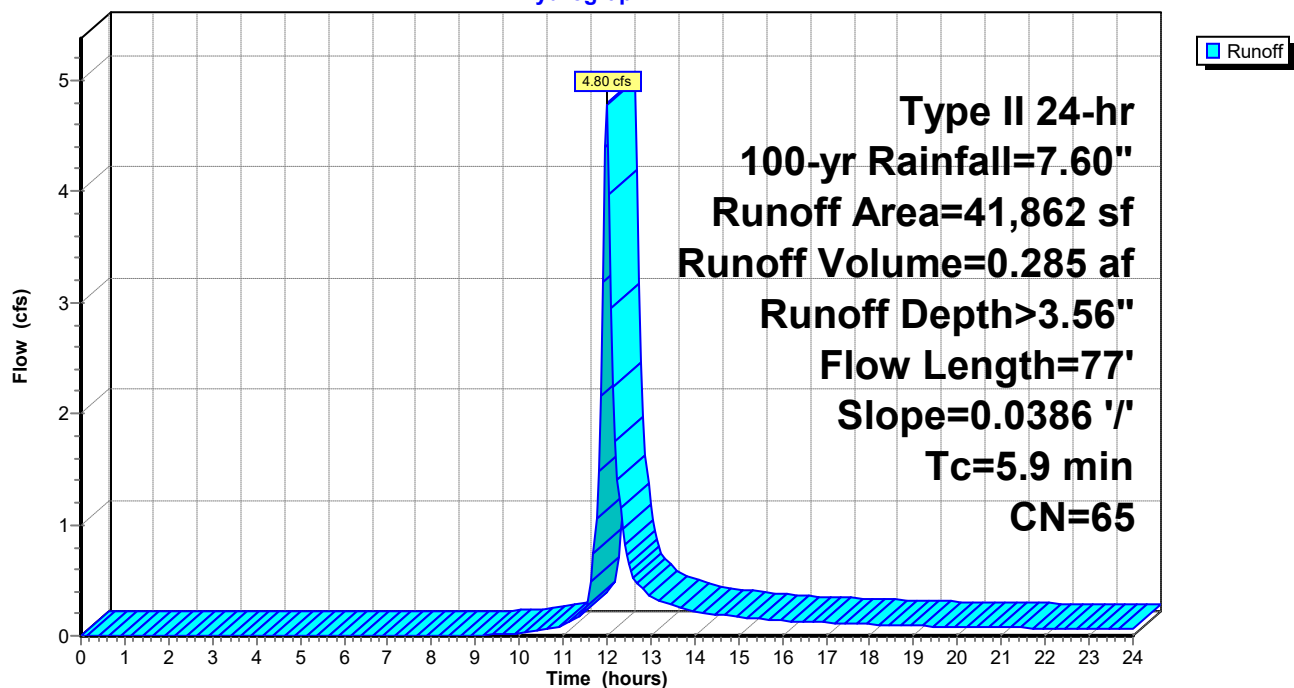
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=7.60"

Area (sf)	CN	Description
37,243	61	>75% Grass cover, Good, HSG B
* 4,619	98	SHA/Route 50
41,862	65	Weighted Average
37,243		88.97% Pervious Area
4,619		11.03% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.9	77	0.0386	0.22		Sheet Flow, Vacant Grassed Lot
					Grass: Short n= 0.150 P2= 3.40"

Subcatchment EX-3: SOUTHERN SITE + US50

Hydrograph



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Page 232

Summary for Subcatchment EX-4: ADJ to Ex SWM Pond

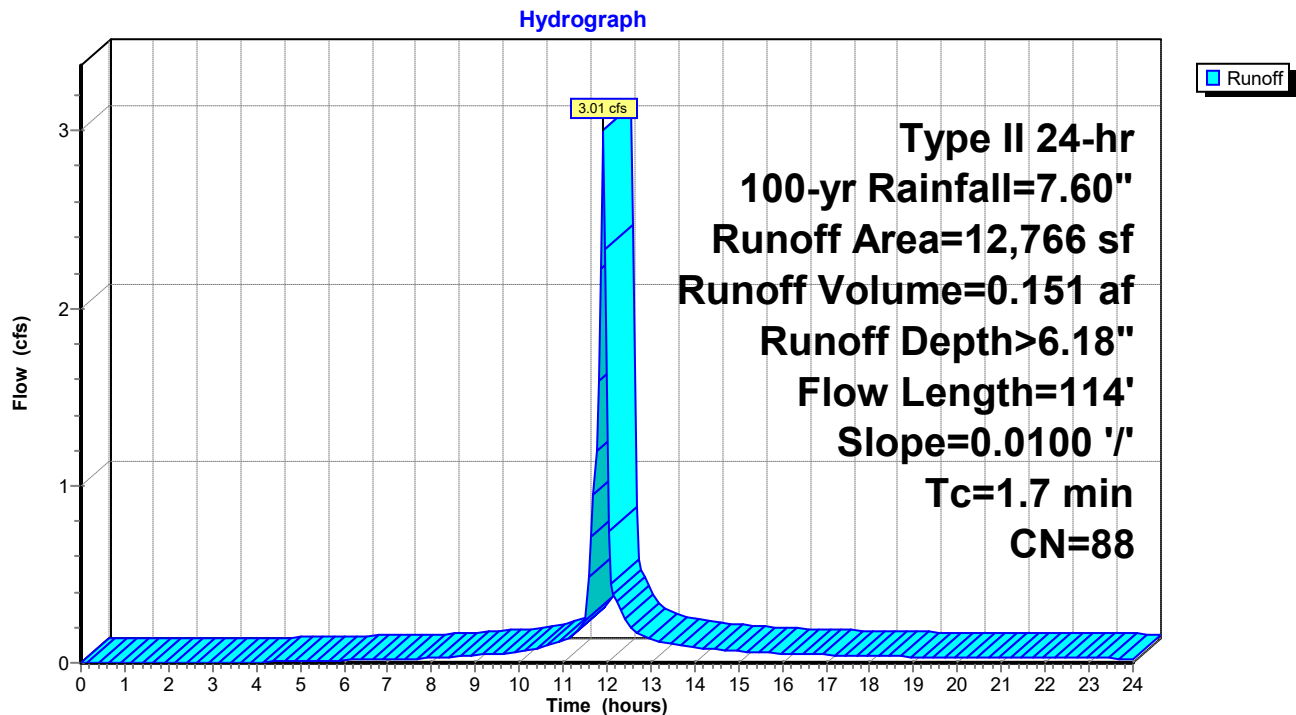
Runoff = 3.01 cfs @ 11.92 hrs, Volume= 0.151 af, Depth> 6.18"

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

	Area (sf)	CN	Description
*	7,479	98	Old foundations
	5,287	74	>75% Grass cover, Good, HSG C
	12,766	88	Weighted Average
	5,287		41.41% Pervious Area
	7,479		58.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	114	0.0100	1.10		Sheet Flow, Concrete Foundation Smooth surfaces n= 0.011 P2= 3.40"

Subcatchment EX-4: ADJ to Ex SWM Pond



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Page 233

Summary for Subcatchment G2-A: Commerce Street/G2 Associates

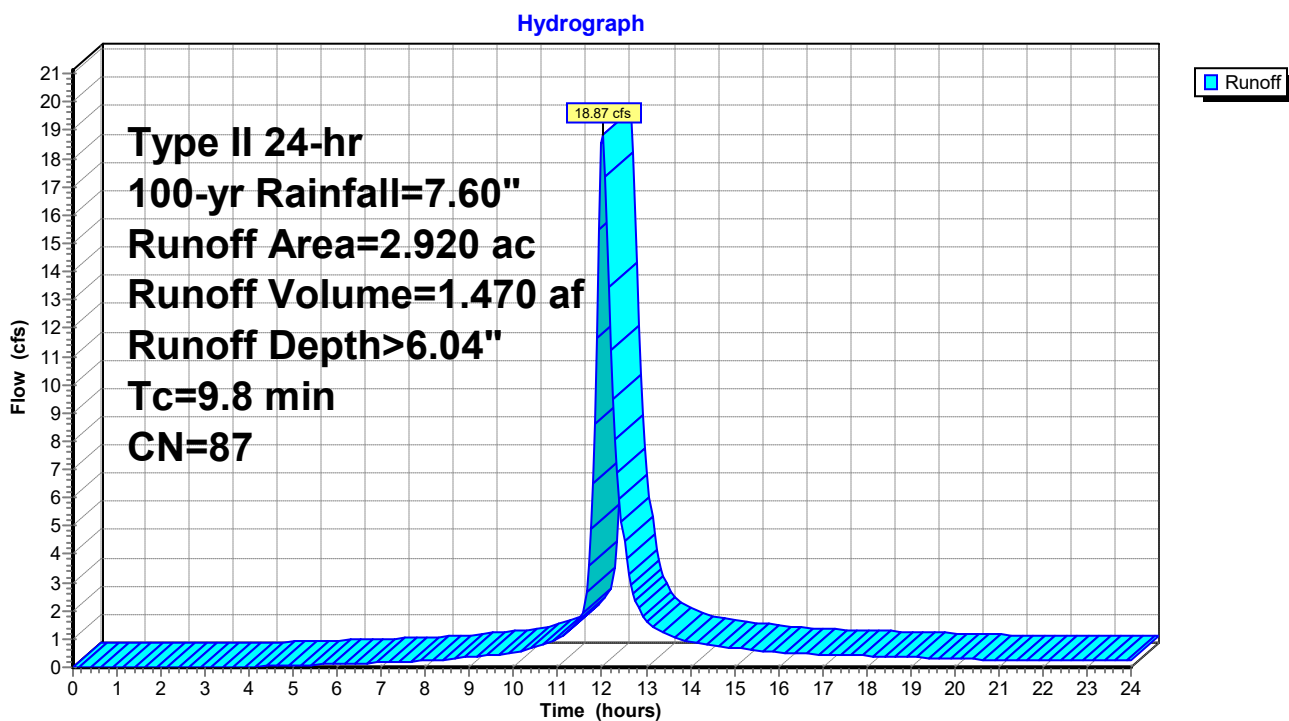
Runoff = 18.87 cfs @ 12.03 hrs, Volume= 1.470 af, Depth> 6.04"

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

Area (ac)	CN	Description
* 2.080	98	G2 Development circa 2005
* 0.840	61	>75% Grass cover, Good, HSG C
2.920	87	Weighted Average
0.840		28.77% Pervious Area
2.080		71.23% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8					Direct Entry, Tcon from TR-55 Report circa 2005

Subcatchment G2-A: Commerce Street/G2 Associates



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

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Page 234

Summary for Subcatchment G2-AA: Commerce Street/G2 Associates

Runoff = 18.87 cfs @ 12.03 hrs, Volume= 1.470 af, Depth> 6.04"

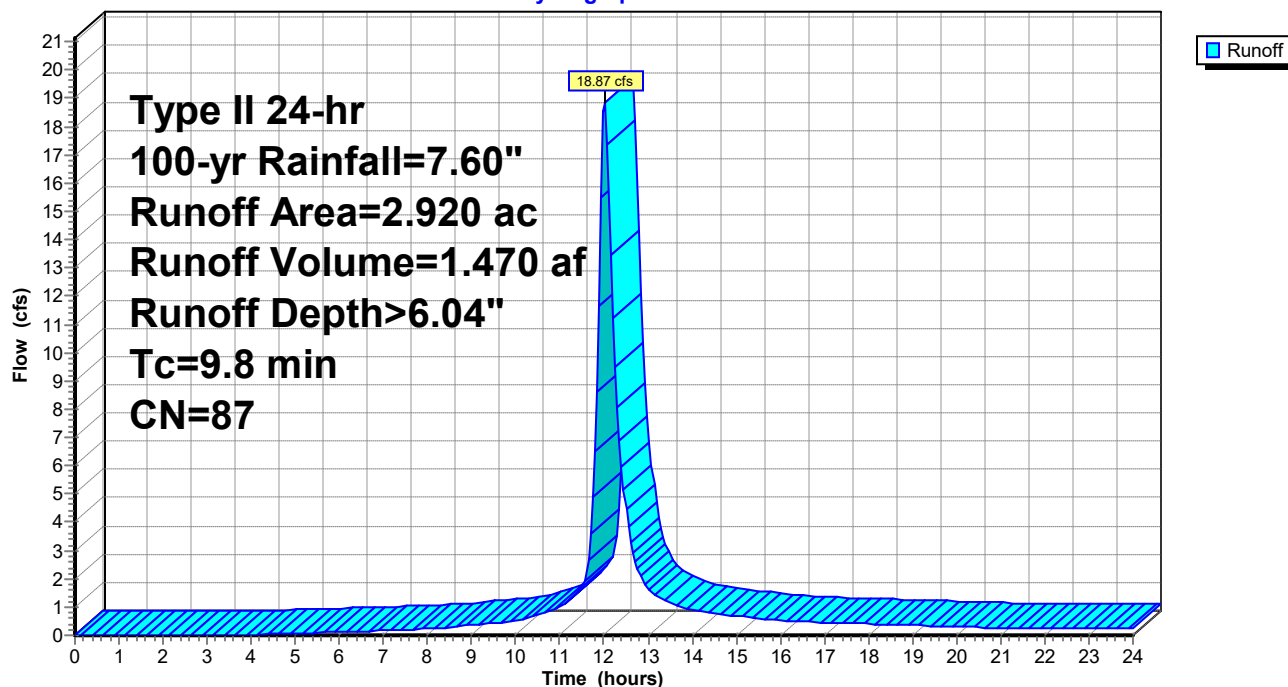
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=7.60"

Area (ac)	CN	Description
* 2.080	98	G2 Development circa 2005
* 0.840	61	>75% Grass cover, Good, HSG C
2.920	87	Weighted Average
0.840		28.77% Pervious Area
2.080		71.23% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8					Direct Entry, Tcon from TR-55 Report circa 2005

Subcatchment G2-AA: Commerce Street/G2 Associates

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

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Page 235

Summary for Subcatchment MB-1: 1/4 Medical Roof

Runoff = 0.79 cfs @ 11.90 hrs, Volume= 0.042 af, Depth> 7.36"

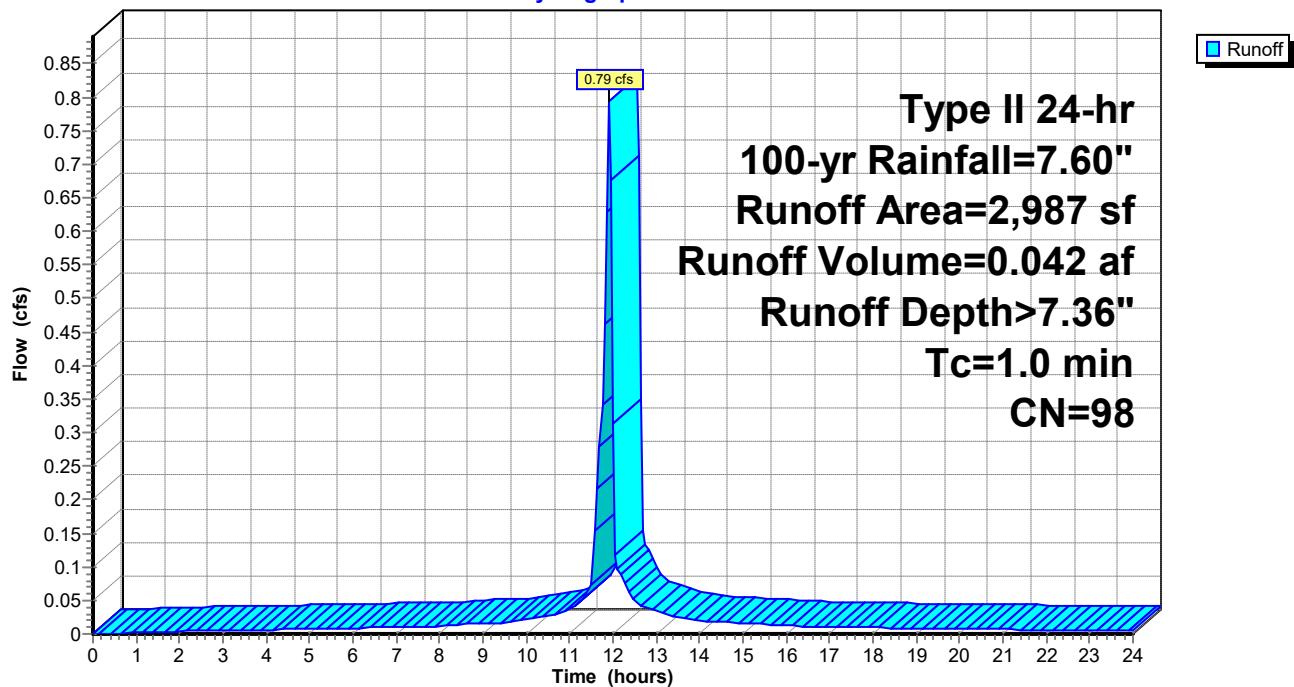
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	2,987	98	Rear Med. Building Roof
	2,987		100.00% Impervious Area

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

Subcatchment MB-1: 1/4 Medical Roof

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

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Page 236

Summary for Subcatchment MB-2: 1/4 Medical Roof

Runoff = 0.84 cfs @ 11.90 hrs, Volume= 0.044 af, Depth> 7.36"

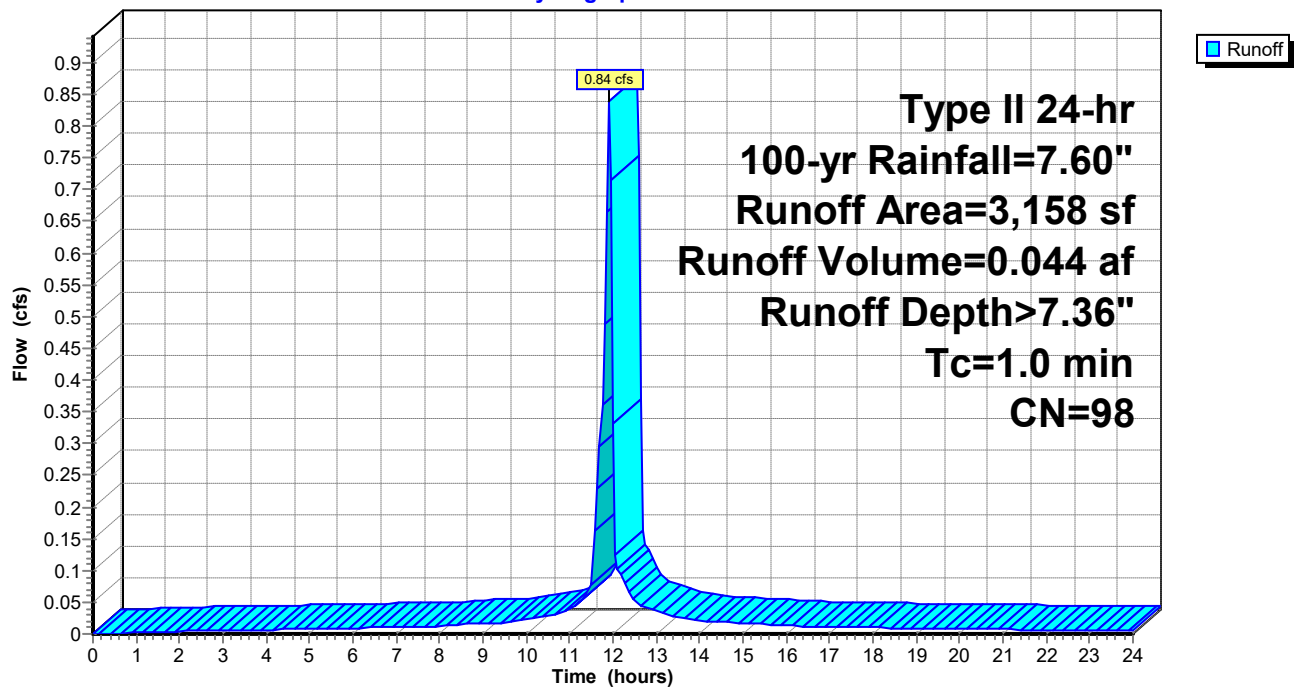
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	3,158	98	Rear Med. Building Roof
	3,158		100.00% Impervious Area

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

Subcatchment MB-2: 1/4 Medical Roof

Hydrograph



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

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Page 237

Summary for Subcatchment MB-3: 1/4 Medical Roof

Runoff = 0.84 cfs @ 11.90 hrs, Volume= 0.044 af, Depth> 7.36"

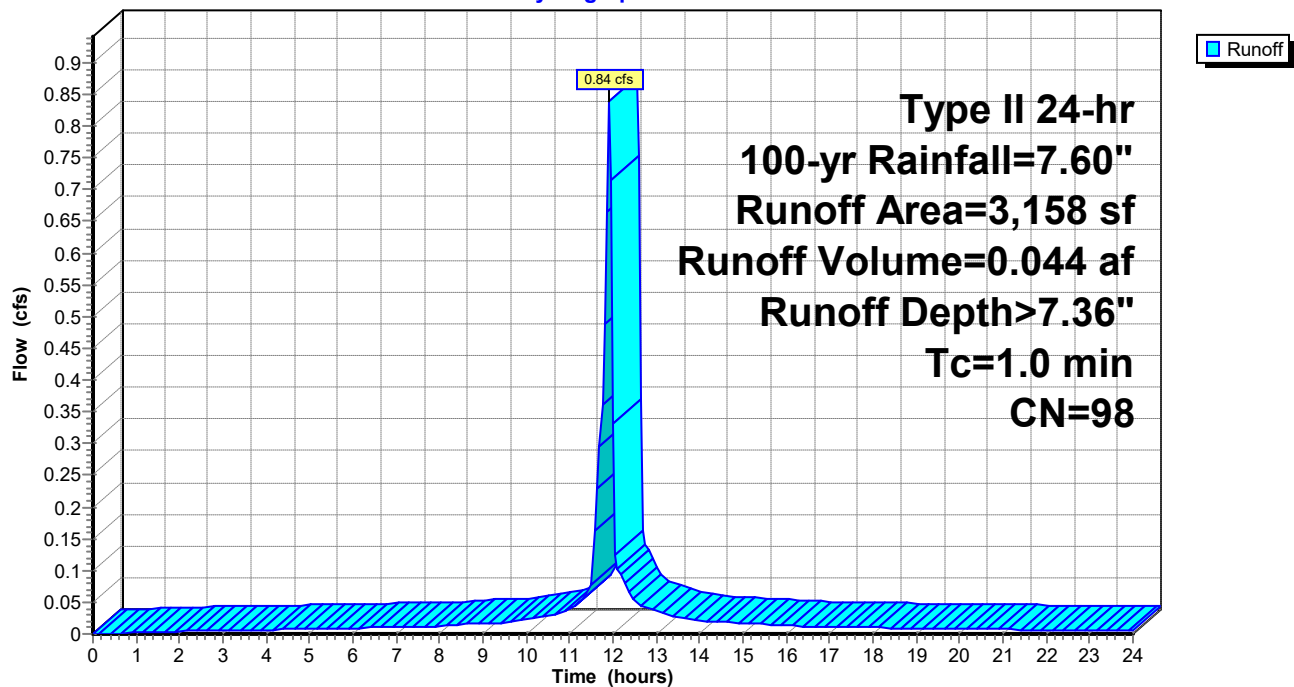
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	3,158	98	Rear Med. Building Roof
	3,158		100.00% Impervious Area

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

Subcatchment MB-3: 1/4 Medical Roof

Hydrograph



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

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Page 238

Summary for Subcatchment MB-4: 1/4 Medical Roof

Runoff = 0.79 cfs @ 11.90 hrs, Volume= 0.042 af, Depth> 7.36"

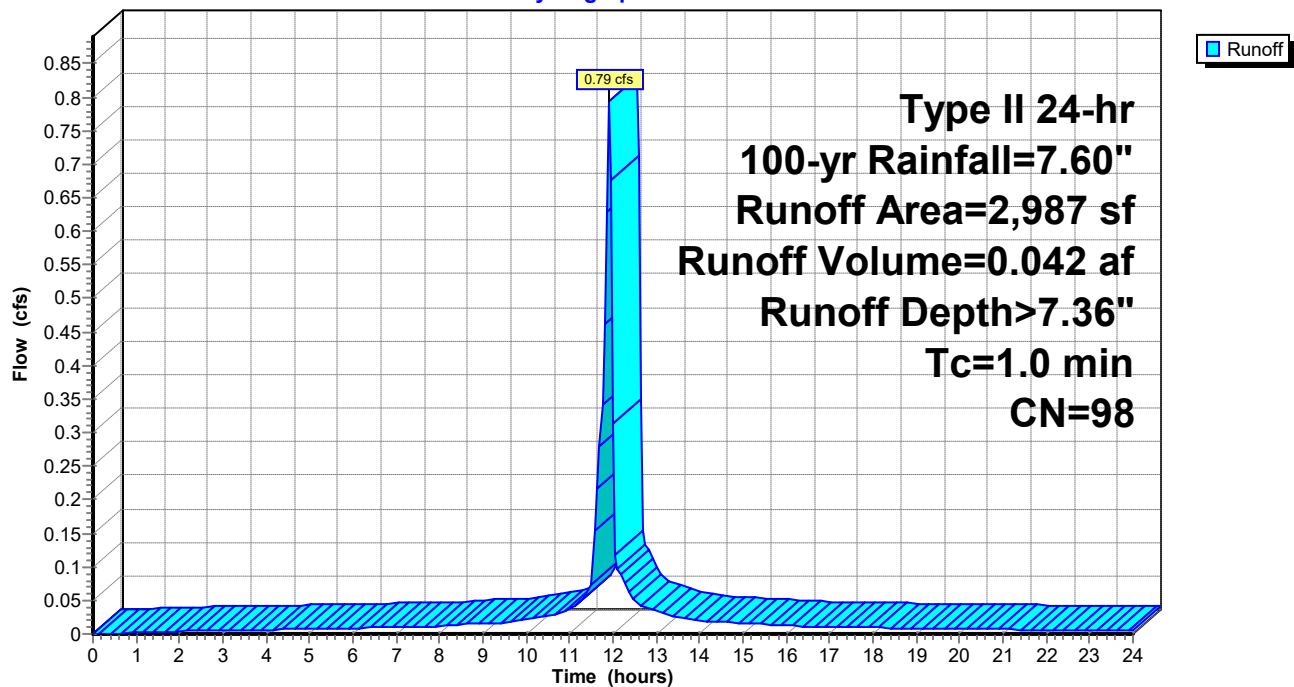
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	2,987	98	Rear Med. Building Roof
	2,987		100.00% Impervious Area

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

Subcatchment MB-4: 1/4 Medical Roof

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Page 239

Summary for Subcatchment MY-1: 1/4 Retail Roof

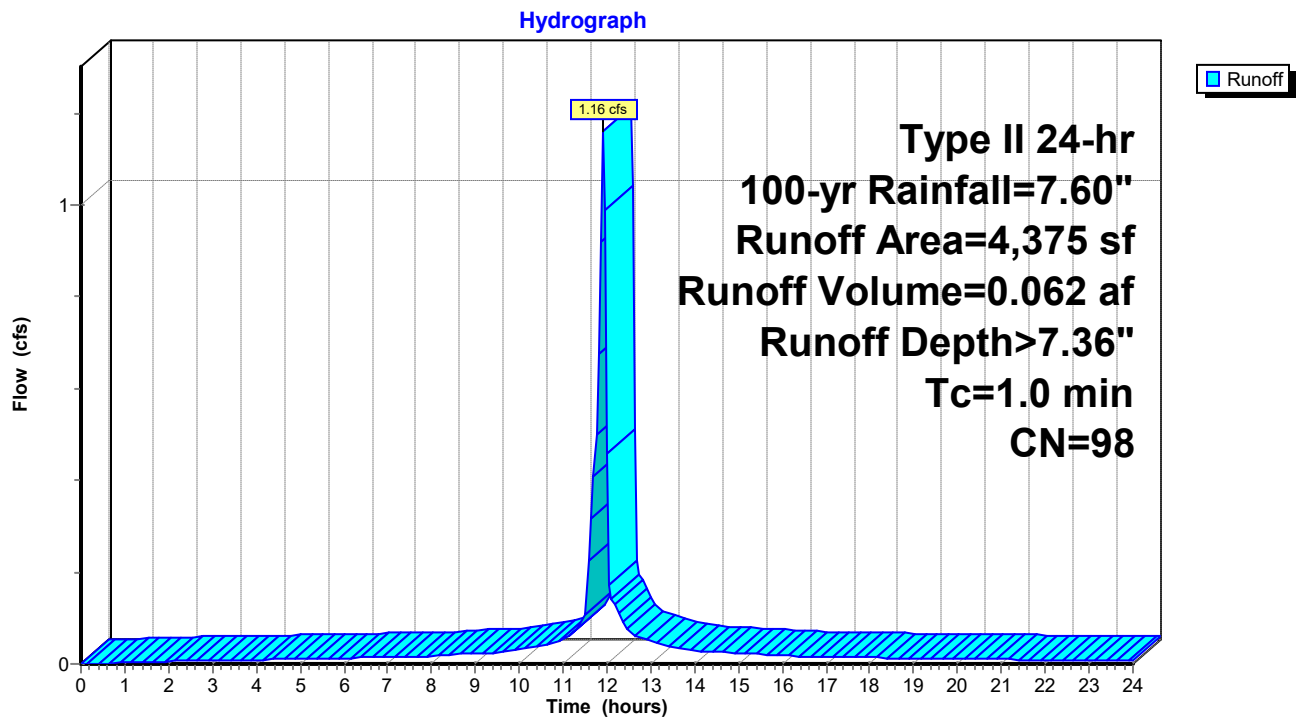
Runoff = 1.16 cfs @ 11.90 hrs, Volume= 0.062 af, Depth> 7.36"

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

	Area (sf)	CN	Description
*	4,375	98	Building Roof
	4,375		100.00% Impervious Area

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

Subcatchment MY-1: 1/4 Retail Roof



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Page 240

Summary for Subcatchment MY-2: 1/4 Retail Roof

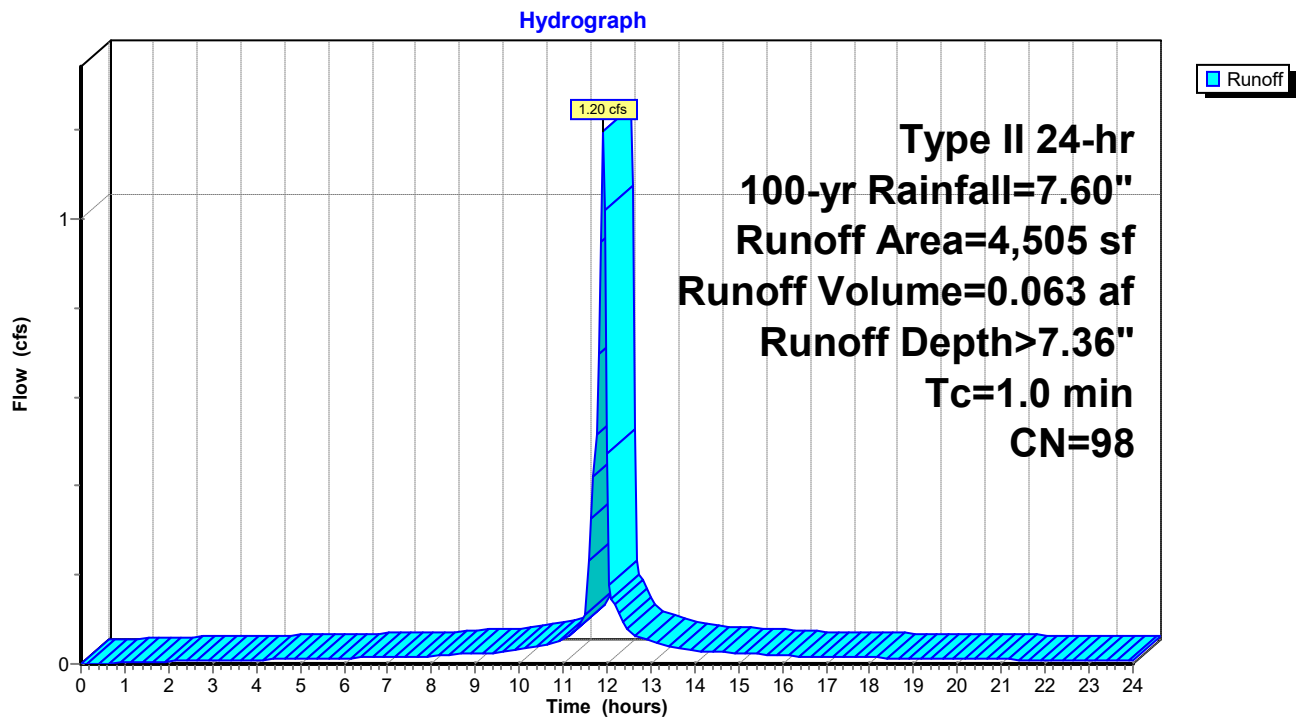
Runoff = 1.20 cfs @ 11.90 hrs, Volume= 0.063 af, Depth> 7.36"

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

	Area (sf)	CN	Description
*	4,505	98	Rear Building Roof
	4,505		100.00% Impervious Area

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

Subcatchment MY-2: 1/4 Retail Roof



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Page 241

Summary for Subcatchment MY-3: 1/4 Retail Roof

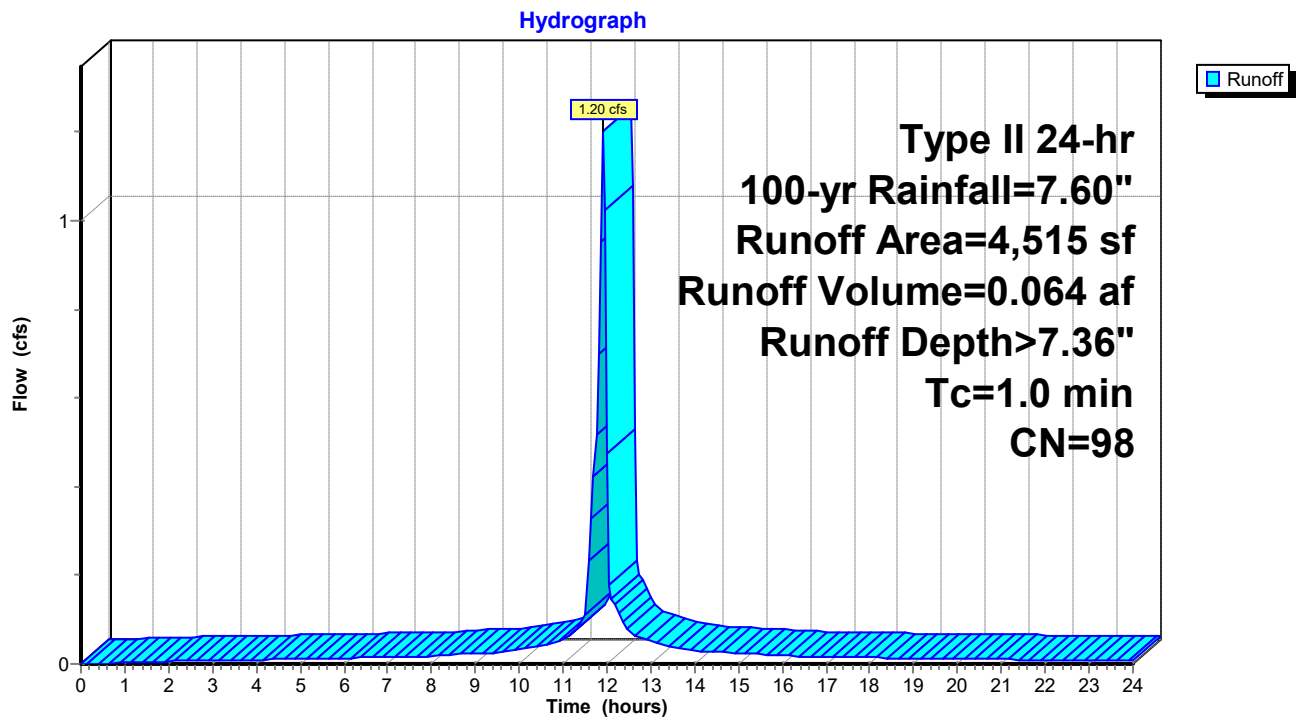
Runoff = 1.20 cfs @ 11.90 hrs, Volume= 0.064 af, Depth> 7.36"

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

	Area (sf)	CN	Description
*	4,515	98	Rear Building Roof
	4,515		100.00% Impervious Area

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

Subcatchment MY-3: 1/4 Retail Roof



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

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Page 242

Summary for Subcatchment MY-4: 1/4 Retail Roof

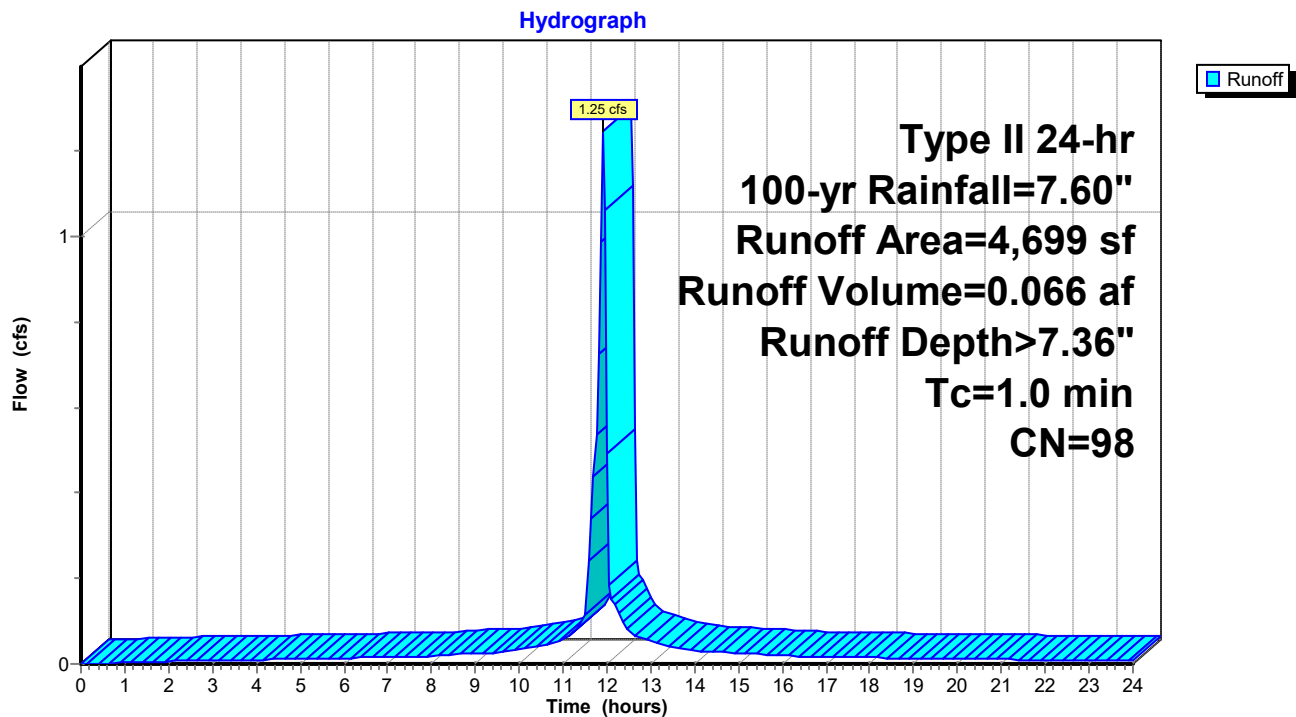
Runoff = 1.25 cfs @ 11.90 hrs, Volume= 0.066 af, Depth> 7.36"

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

	Area (sf)	CN	Description
*	4,699	98	Building Roof
	4,699		100.00% Impervious Area

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

Subcatchment MY-4: 1/4 Retail Roof



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

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Page 243

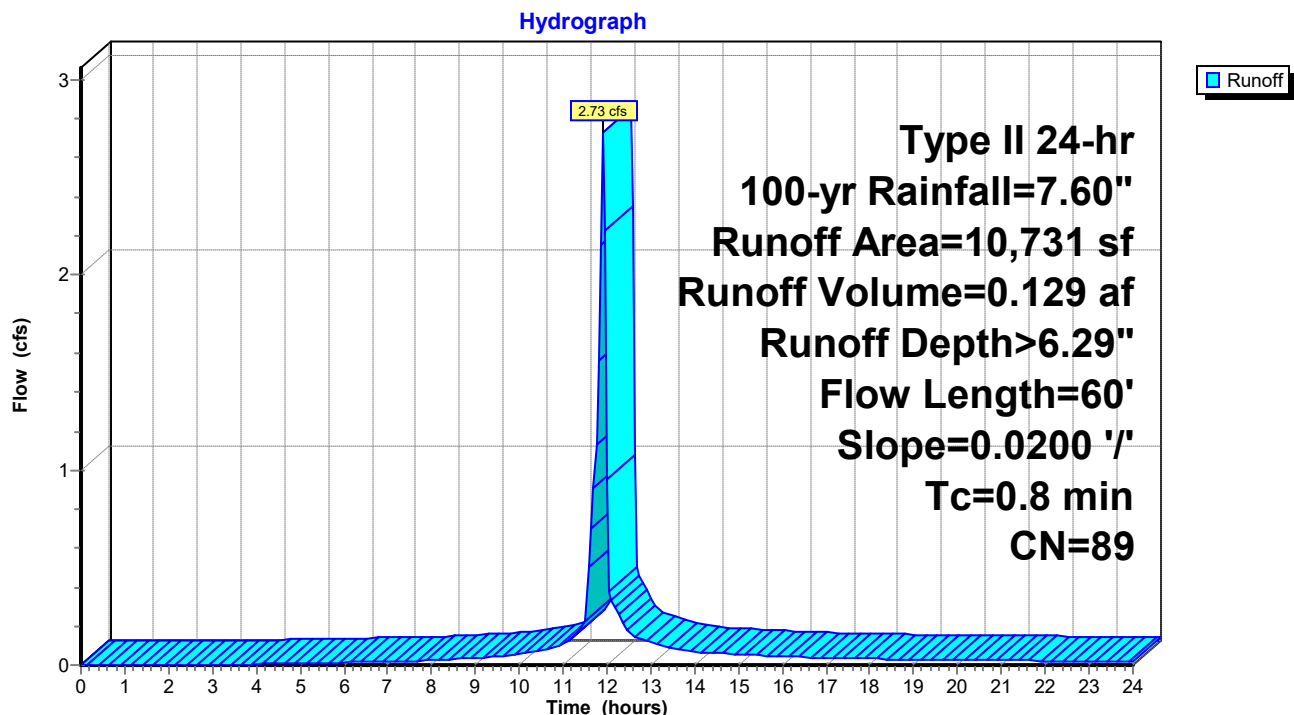
Summary for Subcatchment PK-1: Parking

Runoff = 2.73 cfs @ 11.90 hrs, Volume= 0.129 af, Depth> 6.29"

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

	Area (sf)	CN	Description
*	4,140	98	Parking Area
	2,703	61	>75% Grass cover, Good, HSG B
*	3,888	98	Parking Spaces
	10,731	89	Weighted Average
	2,703		25.19% Pervious Area
	8,028		74.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	60	0.0200	1.28		Sheet Flow, Parking Lot Smooth surfaces n= 0.011 P2= 3.40"

Subcatchment PK-1: Parking

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Page 244

Summary for Subcatchment PK-10: Parking

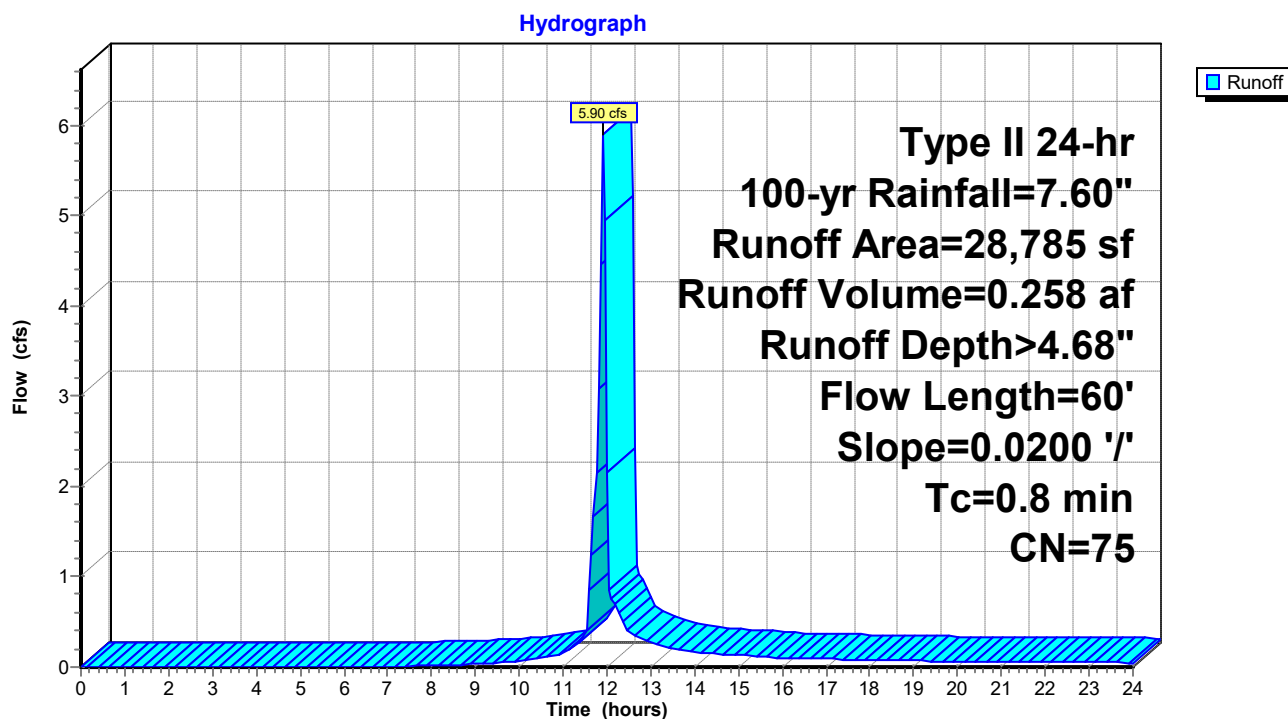
Runoff = 5.90 cfs @ 11.91 hrs, Volume= 0.258 af, Depth> 4.68"

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

	Area (sf)	CN	Description
*	6,254	98	Asphalt
	18,135	61	>75% Grass cover, Good, HSG B
*	4,396	98	Parking Spaces
	28,785	75	Weighted Average
	18,135		63.00% Pervious Area
	10,650		37.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	60	0.0200	1.28		Sheet Flow, Parking Lot
					Smooth surfaces n= 0.011 P2= 3.40"

Subcatchment PK-10: Parking



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Page 245

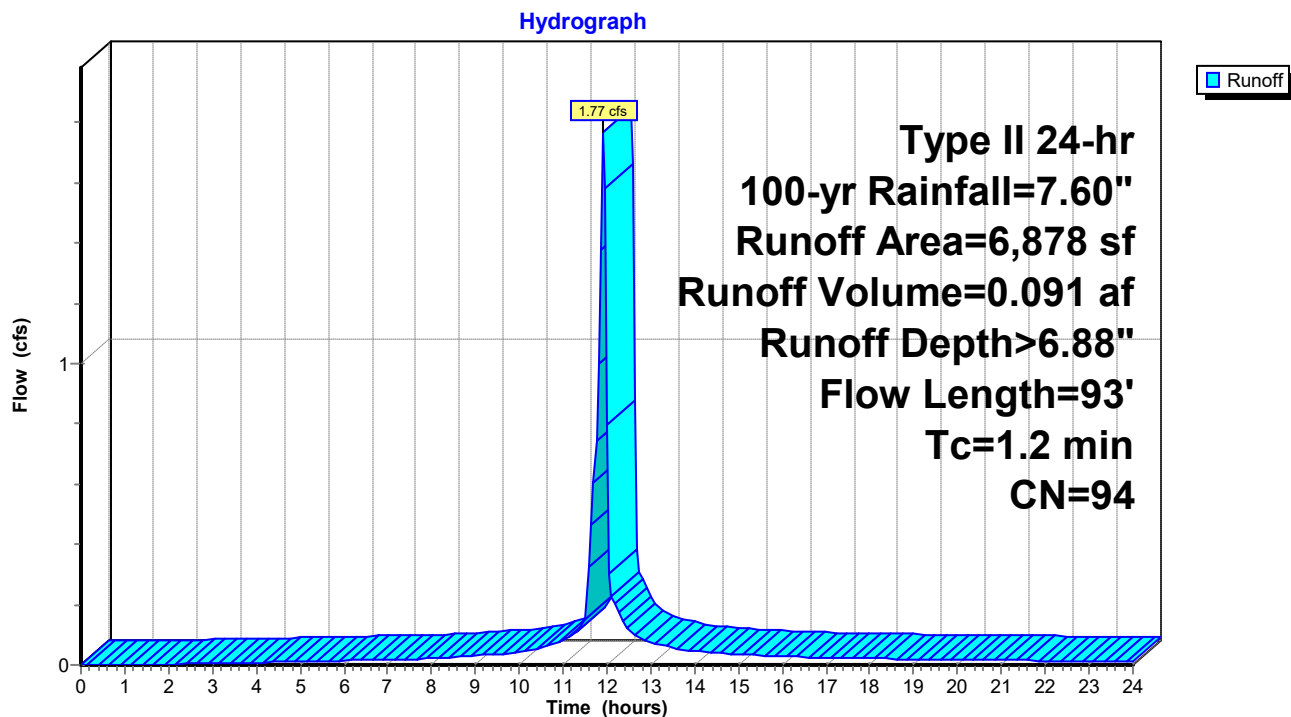
Summary for Subcatchment PK-2: Parking

Runoff = 1.77 cfs @ 11.91 hrs, Volume= 0.091 af, Depth> 6.88"

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

	Area (sf)	CN	Description
*	4,272	98	Parking Area
	801	61	>75% Grass cover, Good, HSG B
*	1,805	98	Parking Spaces
	6,878	94	Weighted Average
	801		11.65% Pervious Area
	6,077		88.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	60	0.0200	1.28		Sheet Flow, Parking lot
					Smooth surfaces n= 0.011 P2= 3.40"
0.4	33	0.0050	1.44		Shallow Concentrated Flow, Curb
					Paved Kv= 20.3 fps
1.2	93				Total

Subcatchment PK-2: Parking

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Page 246

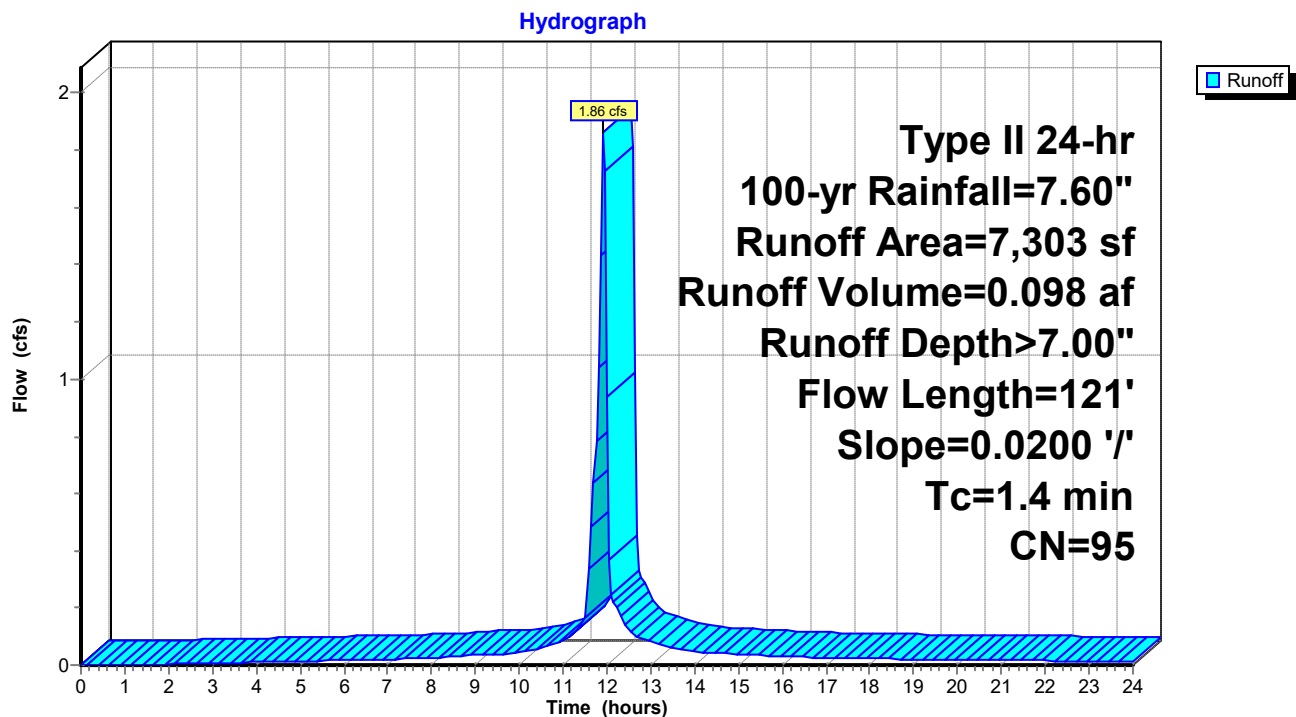
Summary for Subcatchment PK-3: Parking

Runoff = 1.86 cfs @ 11.91 hrs, Volume= 0.098 af, Depth> 7.00"

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

	Area (sf)	CN	Description
*	4,424	98	Parking Area
	559	61	>75% Grass cover, Good, HSG B
*	2,320	98	Parking Spaces
	7,303	95	Weighted Average
	559		7.65% Pervious Area
	6,744		92.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	121	0.0200	1.47		Sheet Flow, Parking Lot Smooth surfaces n= 0.011 P2= 3.40"

Subcatchment PK-3: Parking

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Page 247

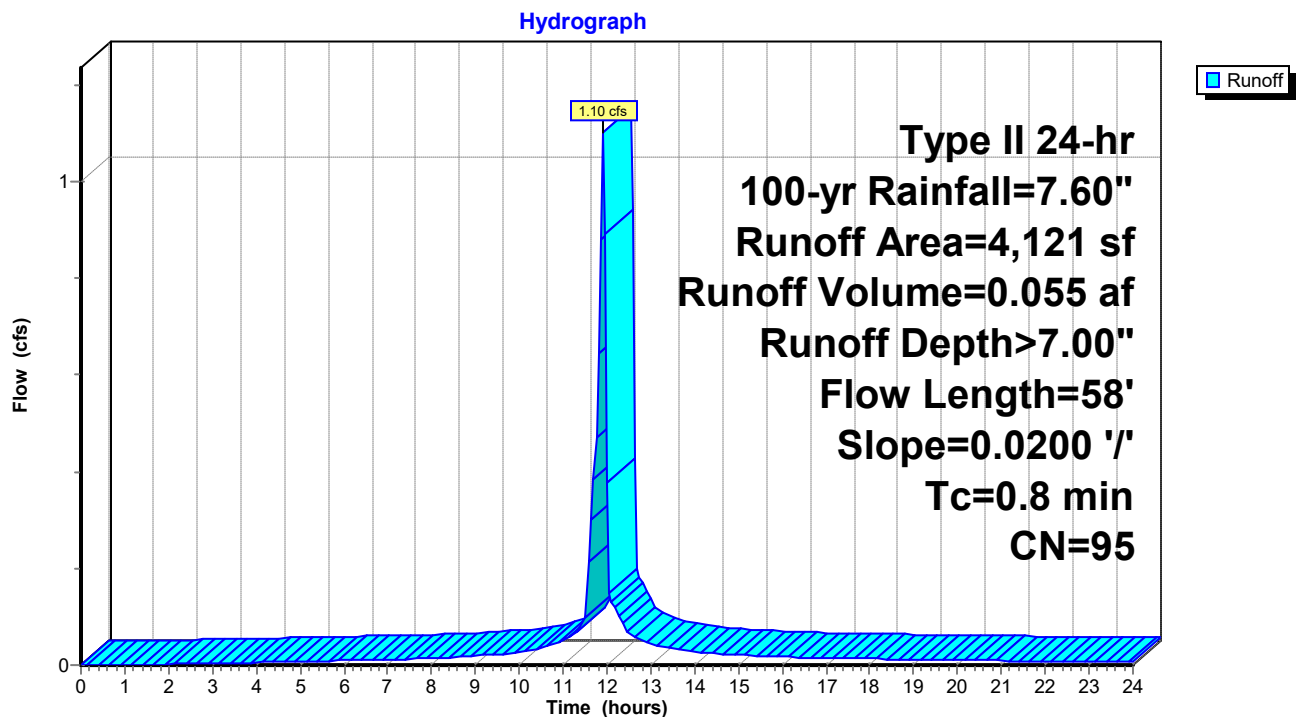
Summary for Subcatchment PK-4: Parking

Runoff = 1.10 cfs @ 11.90 hrs, Volume= 0.055 af, Depth> 7.00"

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

	Area (sf)	CN	Description
*	2,405	98	Asphalt
	337	61	>75% Grass cover, Good, HSG B
*	1,379	98	Parking Spaces
	4,121	95	Weighted Average
	337		8.18% Pervious Area
	3,784		91.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	58	0.0200	1.27		Sheet Flow, Parking Lot
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment PK-4: Parking

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Page 248

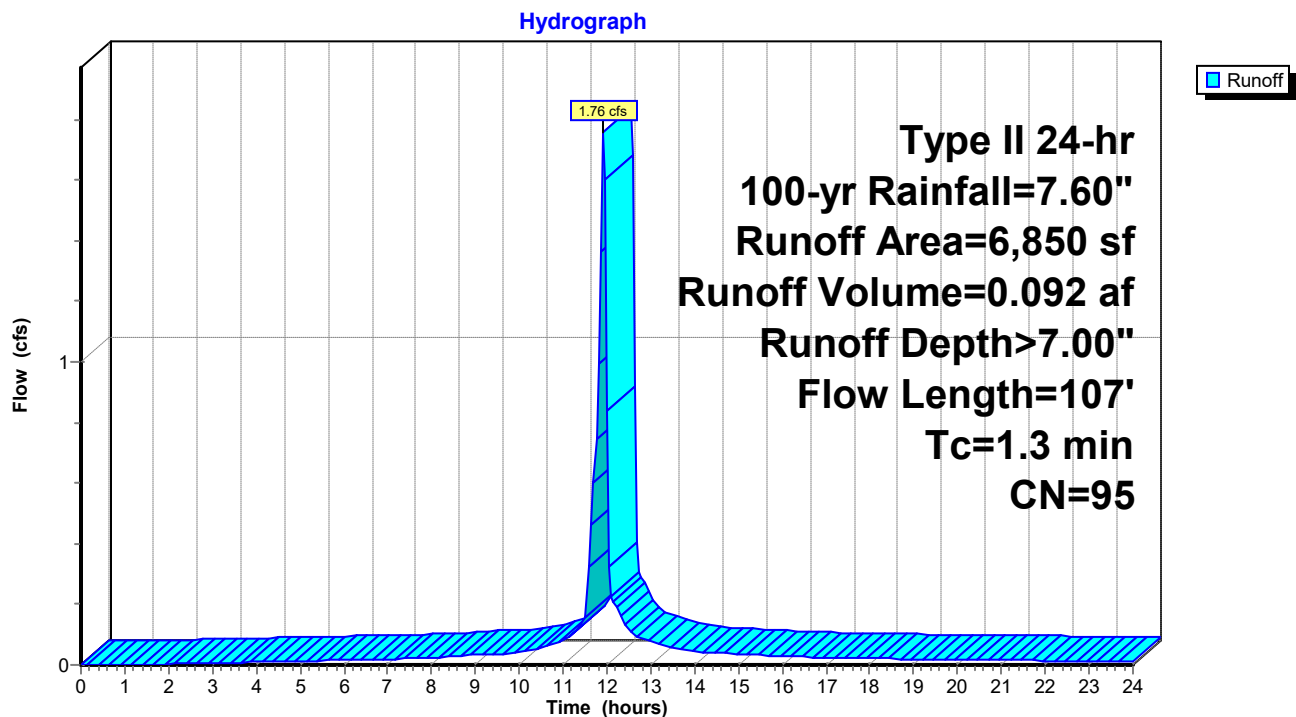
Summary for Subcatchment PK-5: Parking

Runoff = 1.76 cfs @ 11.91 hrs, Volume= 0.092 af, Depth> 7.00"

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

	Area (sf)	CN	Description
*	4,714	98	Asphalt
	516	61	>75% Grass cover, Good, HSG B
*	1,620	98	Parking Spaces
	6,850	95	Weighted Average
	516		7.53% Pervious Area
	6,334		92.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	18	0.0200	1.01		Sheet Flow, Parking Lot
					Smooth surfaces n= 0.011 P2= 3.40"
1.0	89	0.0050	1.44		Shallow Concentrated Flow, Gutter
					Paved Kv= 20.3 fps
1.3	107	Total			

Subcatchment PK-5: Parking

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Page 249

Summary for Subcatchment PK-6: Parking

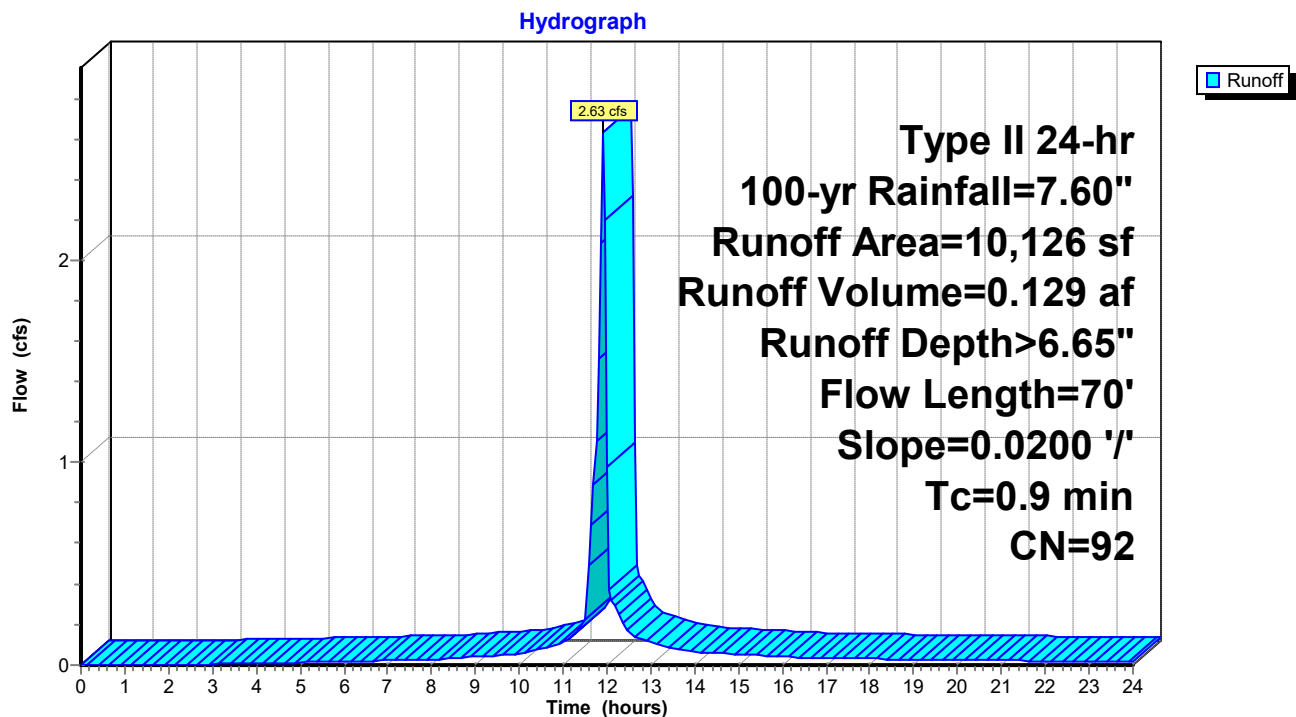
Runoff = 2.63 cfs @ 11.90 hrs, Volume= 0.129 af, Depth> 6.65"

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

	Area (sf)	CN	Description
*	6,357	98	Asphalt
	1,534	61	>75% Grass cover, Good, HSG B
*	2,235	98	Parking Spaces
	10,126	92	Weighted Average
	1,534		15.15% Pervious Area
	8,592		84.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	70	0.0200	1.32		Sheet Flow, Parking Lot
					Smooth surfaces n= 0.011 P2= 3.40"

Subcatchment PK-6: Parking



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

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Page 250

Summary for Subcatchment PK-7: Parking

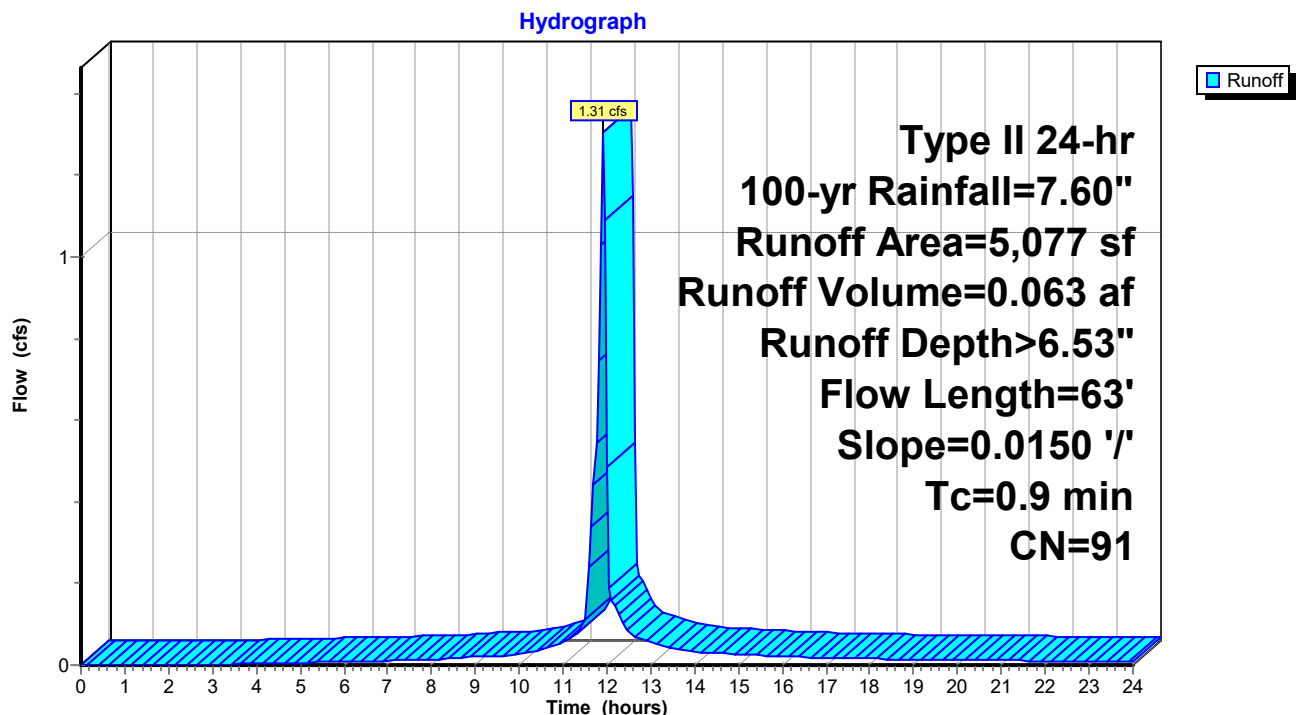
Runoff = 1.31 cfs @ 11.90 hrs, Volume= 0.063 af, Depth> 6.53"

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

	Area (sf)	CN	Description
*	3,258	98	Asphalt
	896	61	>75% Grass cover, Good, HSG B
*	923	98	Parking Spaces
	5,077	91	Weighted Average
	896		17.65% Pervious Area
	4,181		82.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	63	0.0150	1.15		Sheet Flow, Pavement
Smooth surfaces n= 0.011 P2= 3.40"					

Subcatchment PK-7: Parking



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

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Page 251

Summary for Subcatchment PK-8: Parking

Runoff = 3.36 cfs @ 11.91 hrs, Volume= 0.160 af, Depth> 5.71"

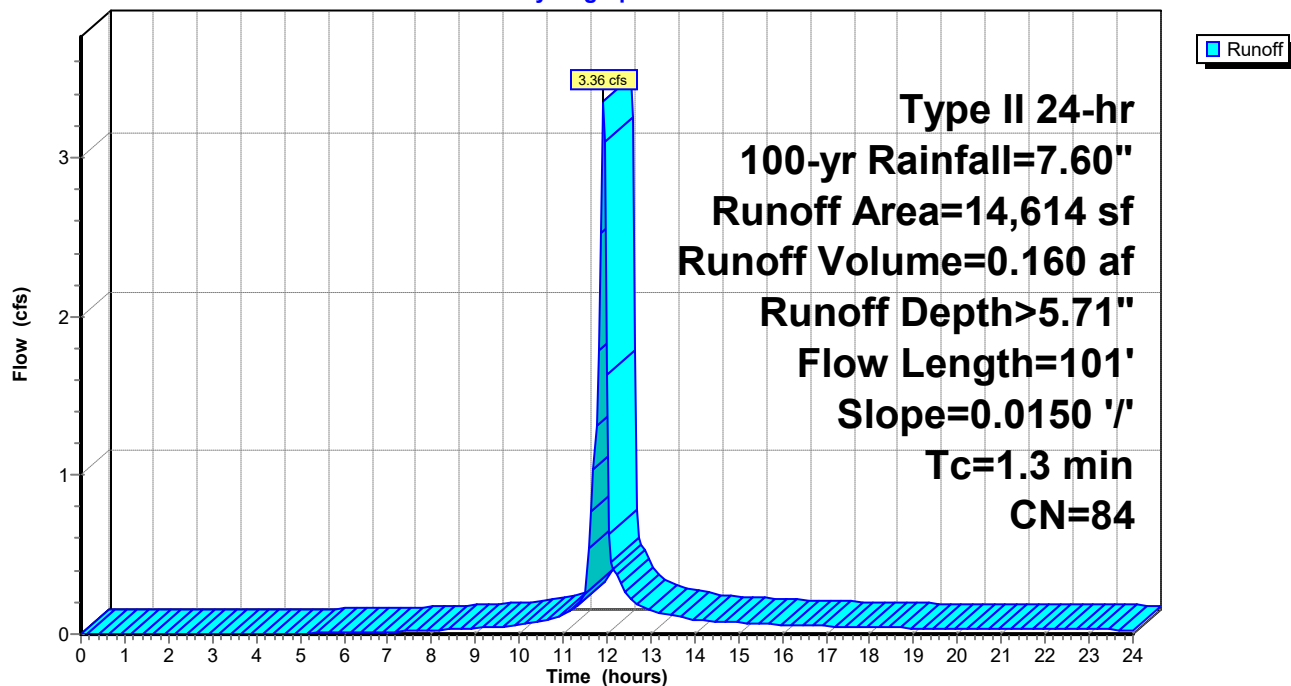
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	6,414	98	Asphalt Drive Aisles & Sidewalk
*	2,660	98	Parking Spaces
	5,540	61	>75% Grass cover, Good, HSG B
	14,614	84	Weighted Average
	5,540		37.91% Pervious Area
	9,074		62.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	101	0.0150	1.27		Sheet Flow, Asphalt Smooth surfaces n= 0.011 P2= 3.40"

Subcatchment PK-8: Parking

Hydrograph



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

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Page 252

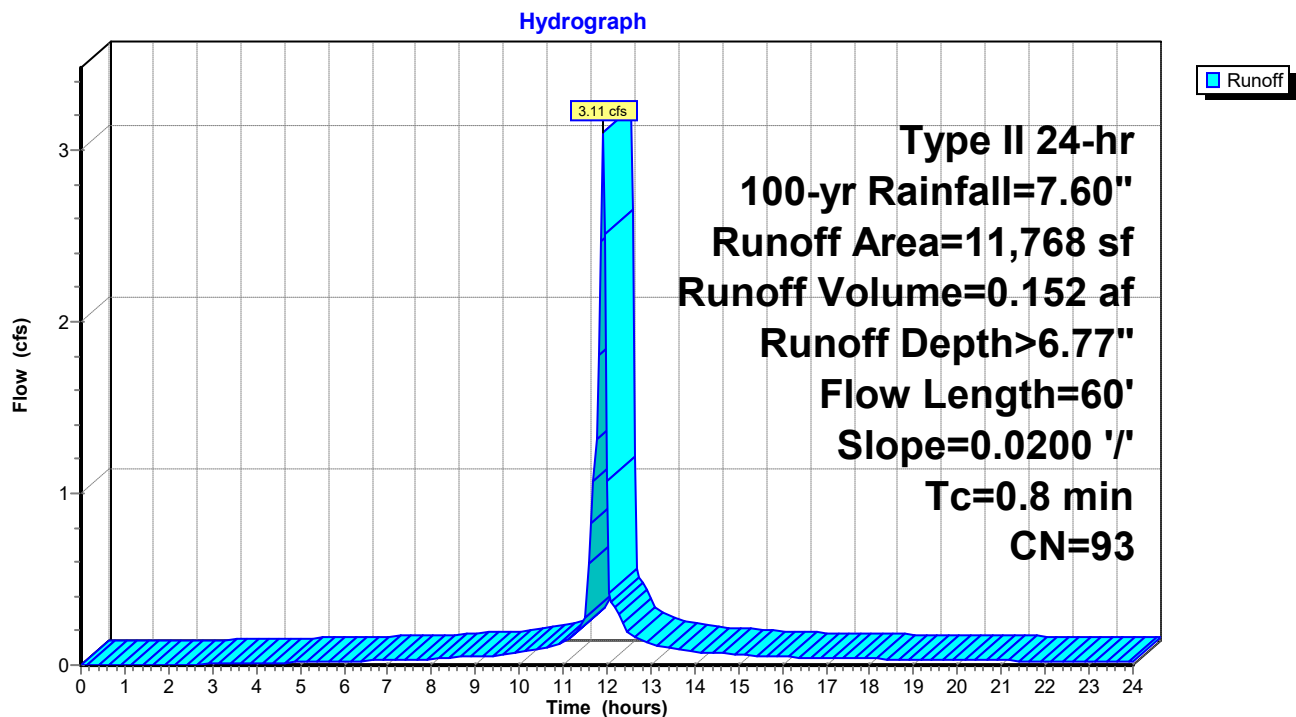
Summary for Subcatchment PK-9: Parking

Runoff = 3.11 cfs @ 11.90 hrs, Volume= 0.152 af, Depth> 6.77"

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

	Area (sf)	CN	Description
*	7,036	98	Asphalt
	1,729	61	>75% Grass cover, Good, HSG B
*	3,003	98	Parking Spaces
	11,768	93	Weighted Average
	1,729		14.69% Pervious Area
	10,039		85.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	60	0.0200	1.28		Sheet Flow, Parking Lot Smooth surfaces n= 0.011 P2= 3.40"

Subcatchment PK-9: Parking

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

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Page 253

Summary for Subcatchment RD: Onsite Residue

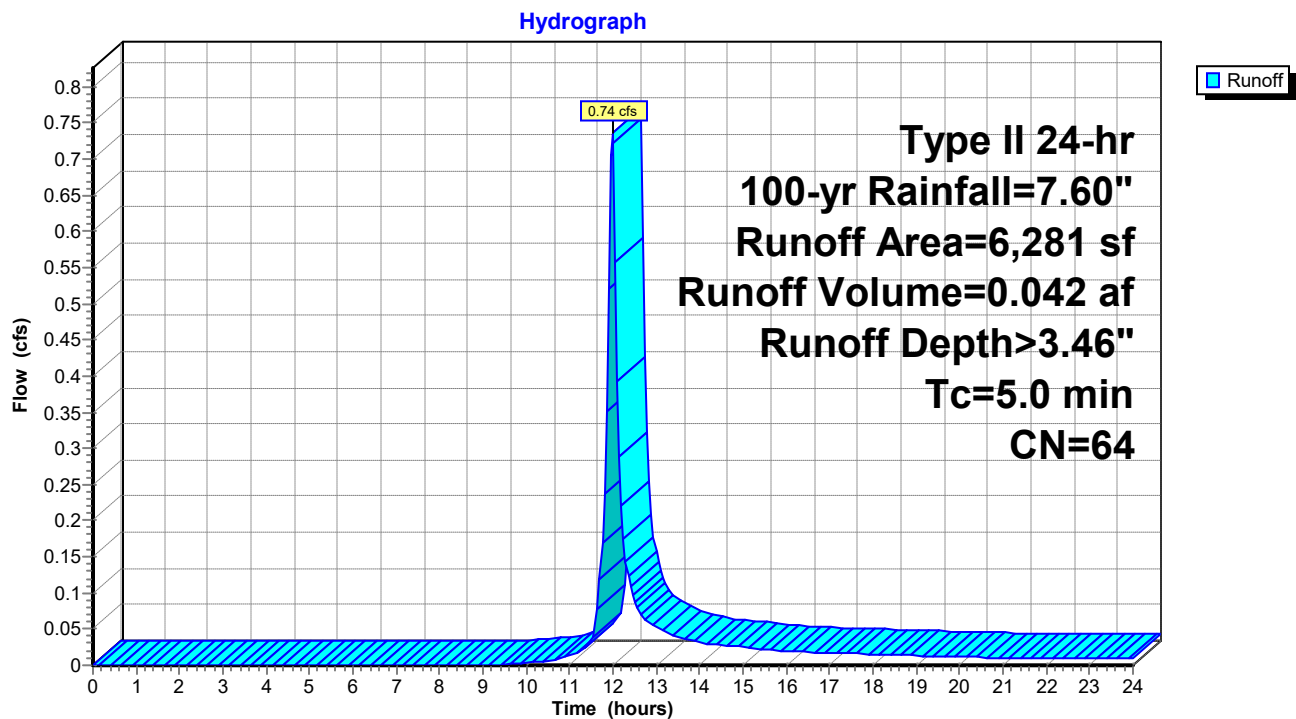
Runoff = 0.74 cfs @ 11.98 hrs, Volume= 0.042 af, Depth> 3.46"

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

Area (sf)	CN	Description
5,797	61	>75% Grass cover, Good, HSG B
* 484	98	Sidewalk & Portion Entrance
6,281	64	Weighted Average
5,797		92.29% Pervious Area
484		7.71% Impervious Area

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

Subcatchment RD: Onsite Residue



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

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Page 254

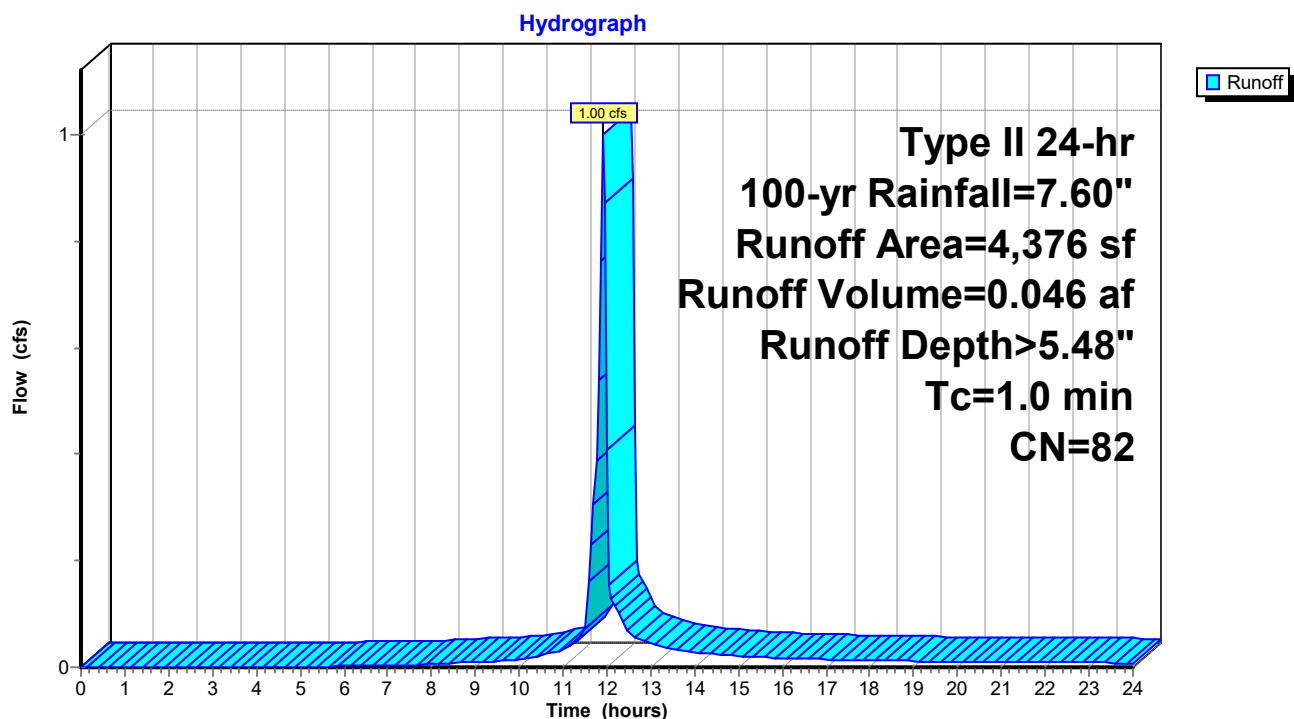
Summary for Subcatchment SHA-1: Onsite SHA

Runoff = 1.00 cfs @ 11.91 hrs, Volume= 0.046 af, Depth> 5.48"

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

Area (sf)	CN	Description
1,908	61	>75% Grass cover, Good, HSG B
* 2,468	98	Pavement & Sidewalk
4,376	82	Weighted Average
1,908		43.60% Pervious Area
2,468		56.40% Impervious Area

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

Subcatchment SHA-1: Onsite SHA

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

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Page 255

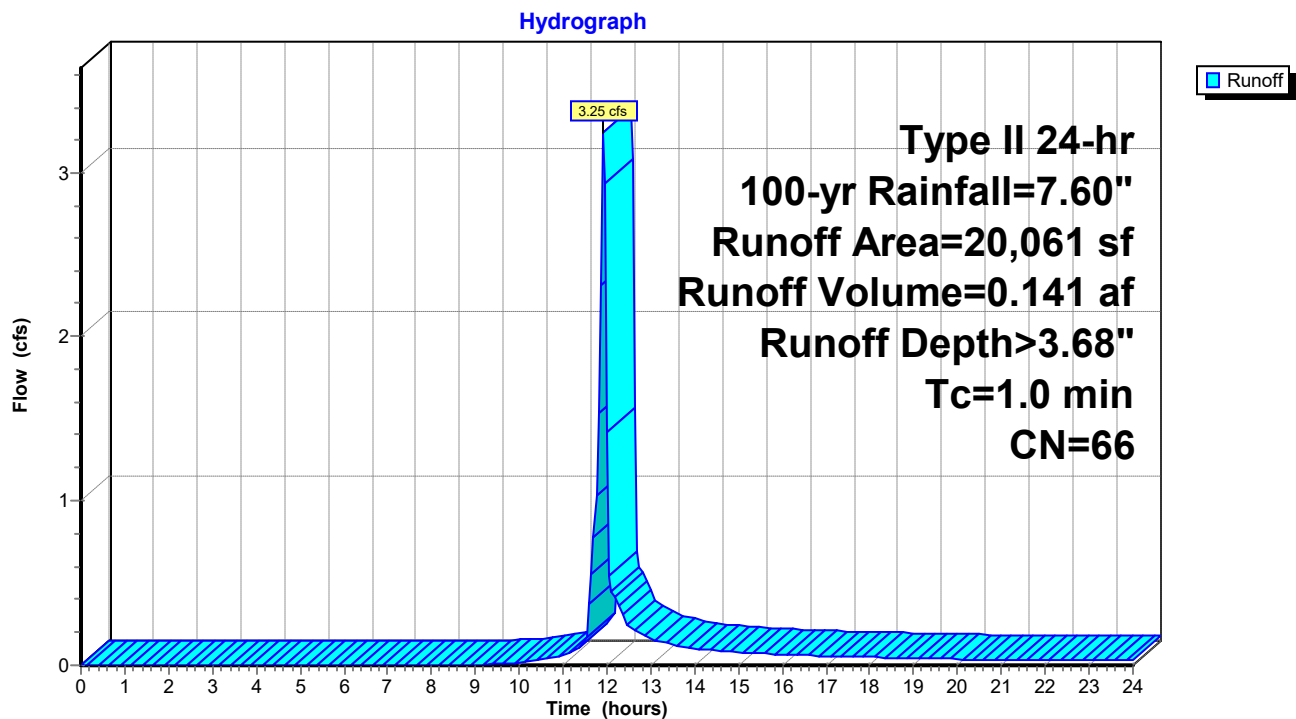
Summary for Subcatchment SHA-2: Area of SGW #1 & Onsite SHA

Runoff = 3.25 cfs @ 11.91 hrs, Volume= 0.141 af, Depth> 3.68"

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

Area (sf)	CN	Description
17,507	61	>75% Grass cover, Good, HSG B
* 2,554	98	SHA Entrance Pavement
20,061	66	Weighted Average
17,507		87.27% Pervious Area
2,554		12.73% Impervious Area

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

Subcatchment SHA-2: Area of SGW #1 & Onsite SHA

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Page 256

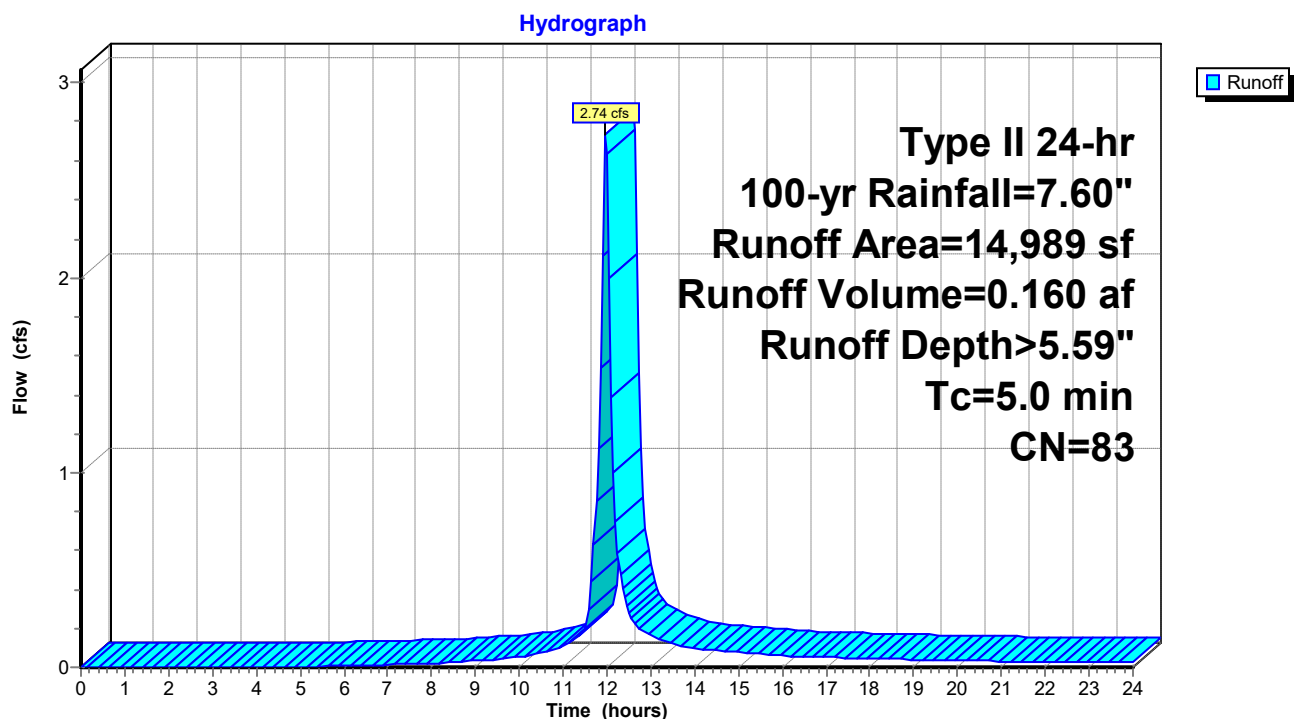
Summary for Subcatchment SHA-3: SHA Improvements (North)

Runoff = 2.74 cfs @ 11.97 hrs, Volume= 0.160 af, Depth> 5.59"

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

	Area (sf)	CN	Description
*	8,750	98	SHA Pavement & Entrance
	6,239	61	>75% Grass cover, Good, HSG B
	14,989	83	Weighted Average
	6,239		41.62% Pervious Area
	8,750		58.38% Impervious Area

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

Subcatchment SHA-3: SHA Improvements (North)

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Page 257

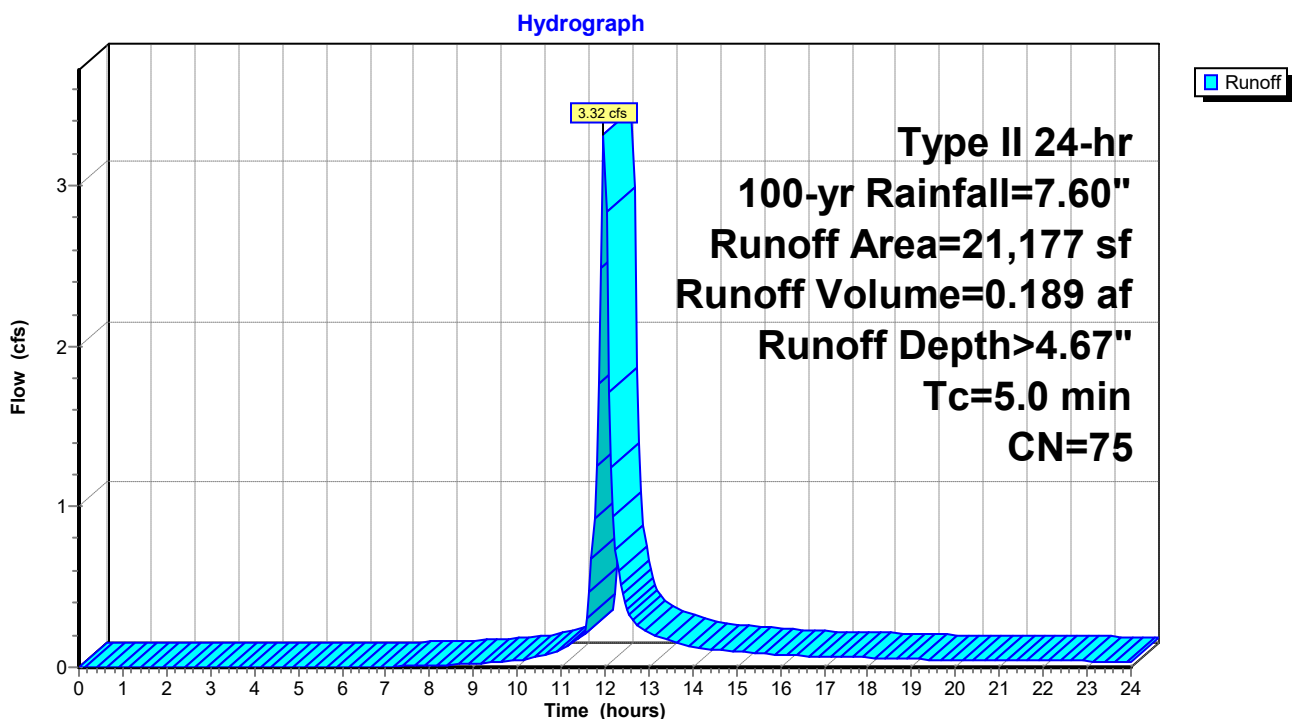
Summary for Subcatchment SHA-4: SHA Improvements (South)

Runoff = 3.32 cfs @ 11.97 hrs, Volume= 0.189 af, Depth> 4.67"

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

	Area (sf)	CN	Description
*	8,053	98	US 50 & SHA Entrance
	13,124	61	>75% Grass cover, Good, HSG B
	21,177	75	Weighted Average
	13,124		61.97% Pervious Area
	8,053		38.03% Impervious Area

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

Subcatchment SHA-4: SHA Improvements (South)

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Page 258

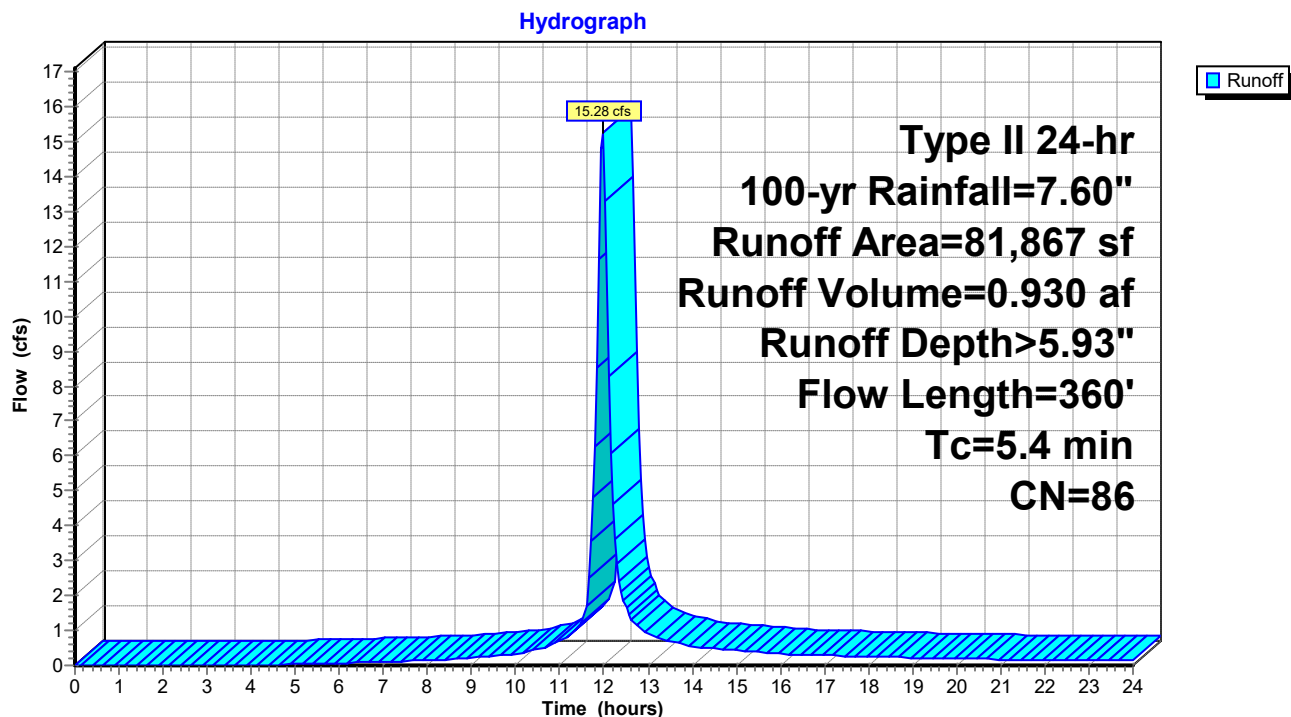
Summary for Subcatchment VZ-A: Verizon (Offsite)

Runoff = 15.28 cfs @ 11.98 hrs, Volume= 0.930 af, Depth> 5.93"

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

	Area (sf)	CN	Description
*	56,382	98	Verizon Storage Yard
	25,485	61	>75% Grass cover, Good, HSG B
	81,867	86	Weighted Average
	25,485		31.13% Pervious Area
	56,382		68.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	80	0.0100	1.03		Sheet Flow, Pavement Smooth surfaces n= 0.011 P2= 3.40"
4.1	280	0.0050	1.14		Shallow Concentrated Flow, Shallow Grass Channel Unpaved Kv= 16.1 fps
5.4	360	Total			

Subcatchment VZ-A: Verizon (Offsite)

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Page 259

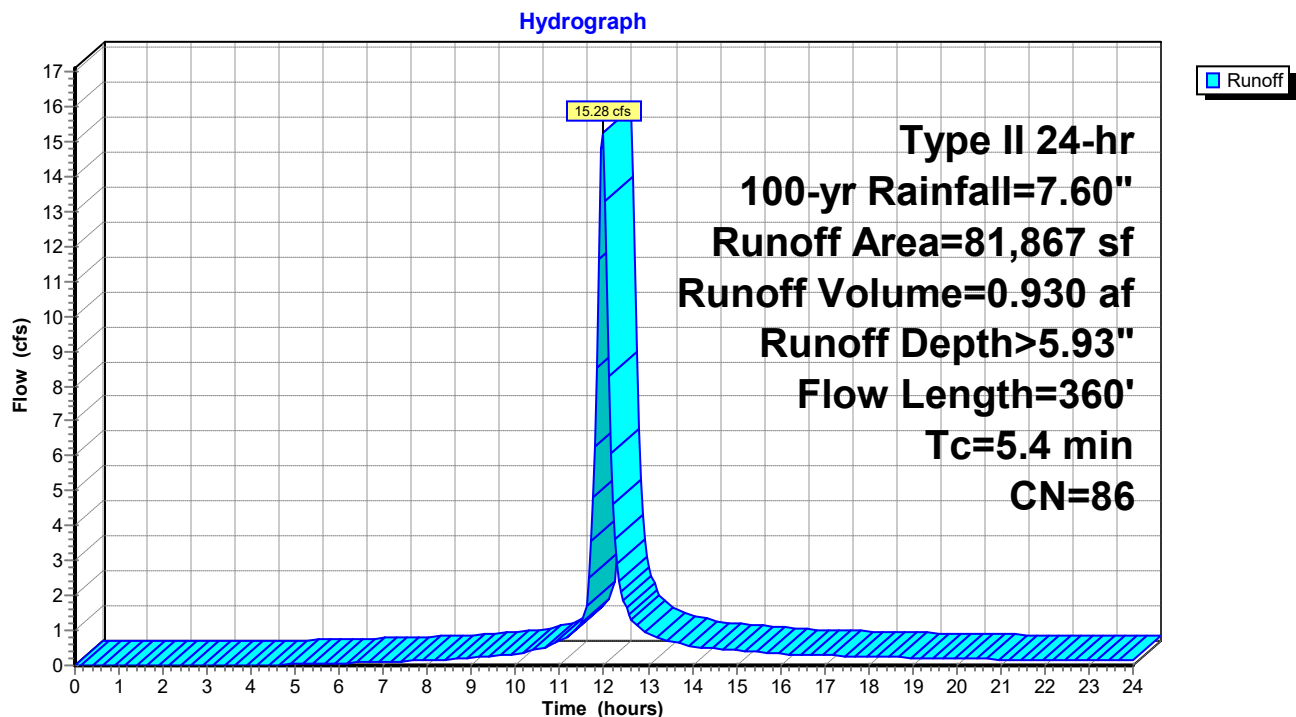
Summary for Subcatchment VZ-AA: Verizon (Offsite)

Runoff = 15.28 cfs @ 11.98 hrs, Volume= 0.930 af, Depth> 5.93"

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

	Area (sf)	CN	Description
*	56,382	98	Verizon Storage Yard
	25,485	61	>75% Grass cover, Good, HSG B
	81,867	86	Weighted Average
	25,485		31.13% Pervious Area
	56,382		68.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	80	0.0100	1.03		Sheet Flow, Pavement
					Smooth surfaces n= 0.011 P2= 3.40"
4.1	280	0.0050	1.14		Shallow Concentrated Flow, Shallow Grass Channel
					Unpaved Kv= 16.1 fps
5.4	360	Total			

Subcatchment VZ-AA: Verizon (Offsite)

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

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Page 260

Summary for Subcatchment VZ-B: Verizon & US 50/Idlewild Intersection

Runoff = 12.49 cfs @ 12.05 hrs, Volume= 1.073 af, Depth> 5.80"

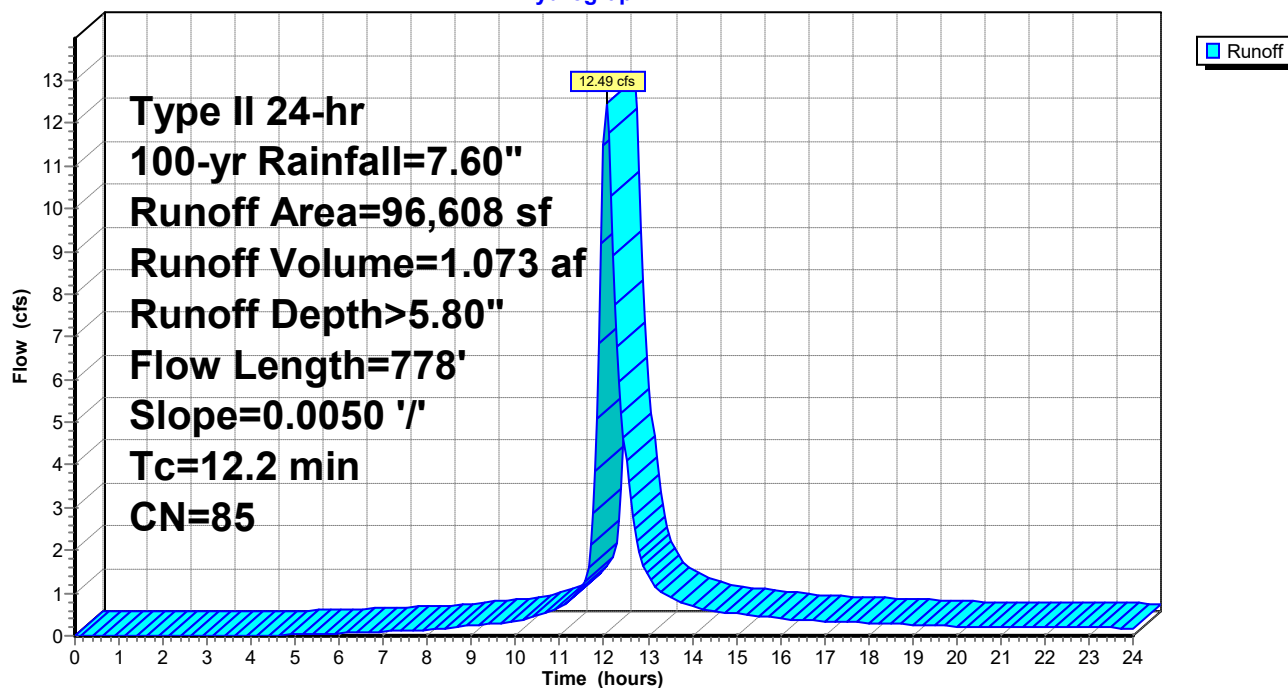
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=7.60"

	Area (sf)	CN	Description
	35,081	61	>75% Grass cover, Good, HSG B
*	61,527	98	Roads & Verizon Yard
	96,608	85	Weighted Average
	35,081		36.31% Pervious Area
	61,527		63.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.2	778	0.0050	1.06		Shallow Concentrated Flow, Road Adjacent Swale Grassed Waterway Kv= 15.0 fps

Subcatchment VZ-B: Verizon & US 50/Idlewild Intersection

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

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Page 261

Summary for Subcatchment VZ-BB: Verizon & US 50/Idlewild Intersection

Runoff = 12.49 cfs @ 12.05 hrs, Volume= 1.073 af, Depth> 5.80"

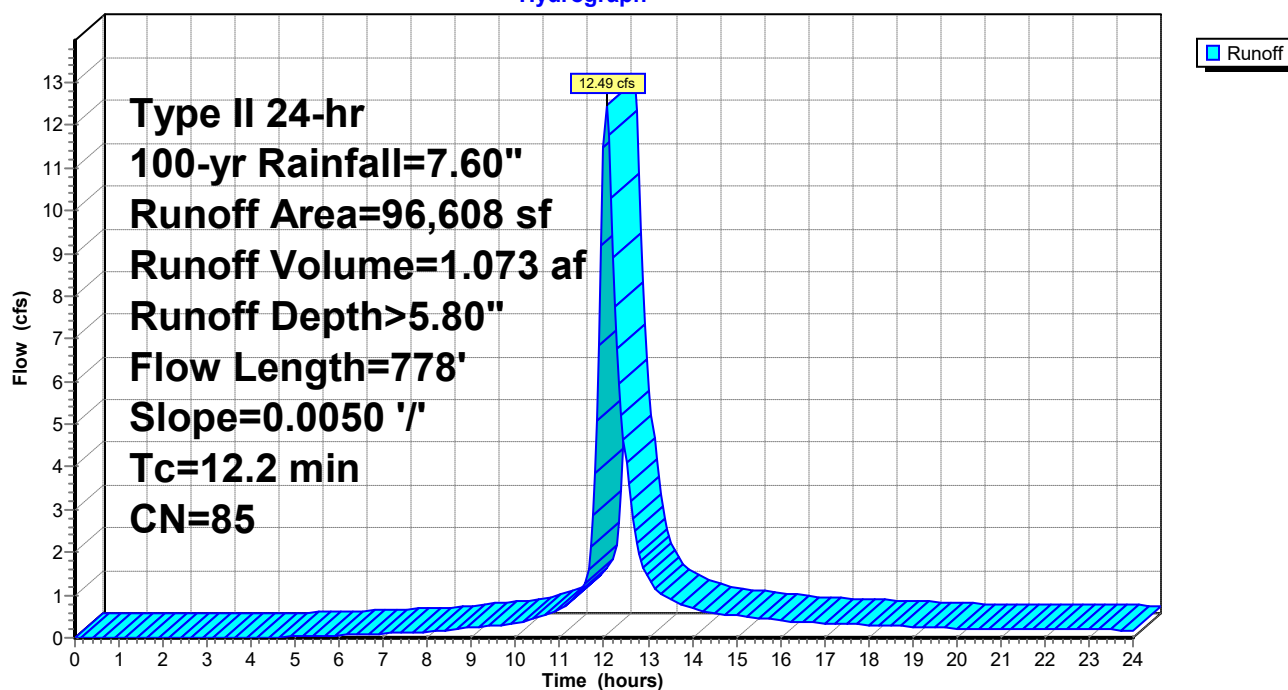
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=7.60"

	Area (sf)	CN	Description
	35,081	61	>75% Grass cover, Good, HSG B
*	61,527	98	Roads & Verizon Yard
	96,608	85	Weighted Average
	35,081		36.31% Pervious Area
	61,527		63.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.2	778	0.0050	1.06		Shallow Concentrated Flow, Road Adjacent Swale Grassed Waterway Kv= 15.0 fps

Subcatchment VZ-BB: Verizon & US 50/Idlewild Intersection

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

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Page 262

Summary for Reach 10R: Ex. Lotside Swale

Inflow Area = 6.053 ac, 60.33% Impervious, Inflow Depth > 5.10" for 100-yr event
Inflow = 25.12 cfs @ 12.03 hrs, Volume= 2.573 af
Outflow = 24.16 cfs @ 12.06 hrs, Volume= 2.567 af, Atten= 4%, Lag= 1.9 min

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

Max. Velocity= 2.33 fps, Min. Travel Time= 2.8 min

Avg. Velocity= 0.98 fps, Avg. Travel Time= 6.7 min

Peak Storage= 4,077 cf @ 12.06 hrs

Average Depth at Peak Storage= 2.78'

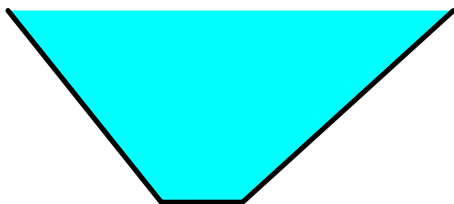
Bank-Full Depth= 2.59' Flow Area= 9.2 sf, Capacity= 20.81 cfs

1.10' x 2.59' deep channel, n= 0.022 Earth, clean & straight

Side Slope Z-value= 0.8 1.1 '/' Top Width= 6.02'

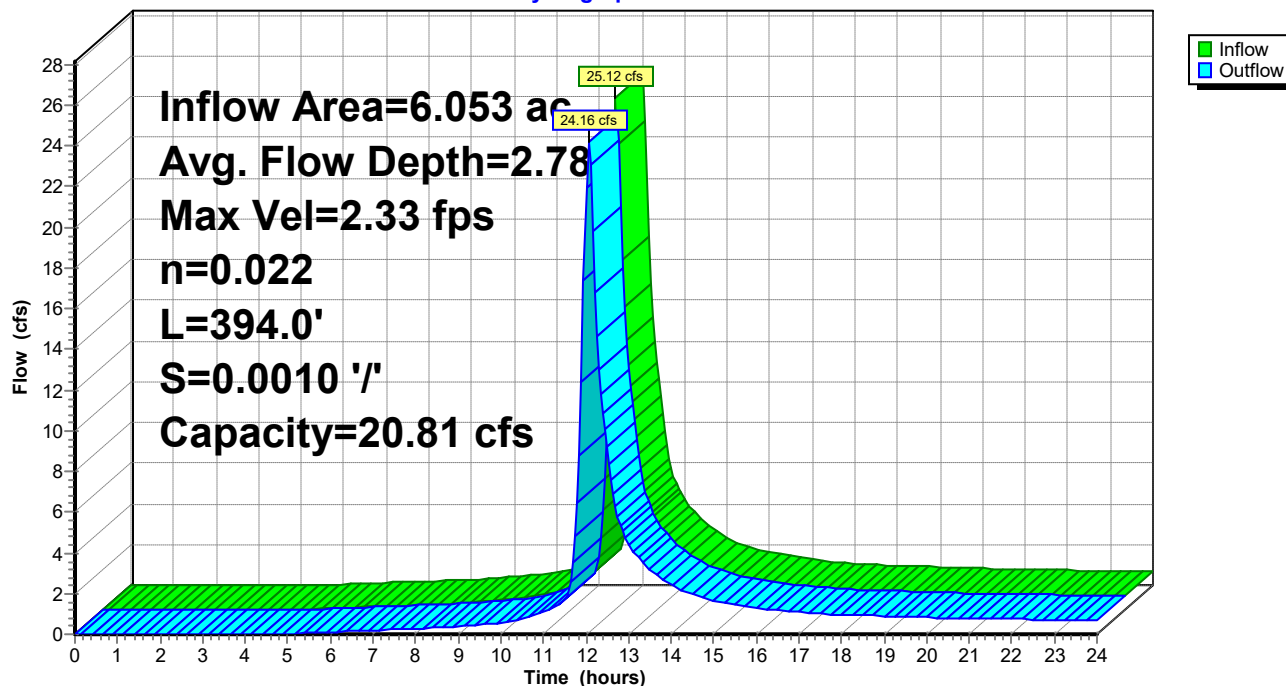
Length= 394.0' Slope= 0.0010 '/'

Inlet Invert= 42.00', Outlet Invert= 41.62'



Reach 10R: Ex. Lotside Swale

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

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Page 263

Stage-Area-Storage for Reach 10R: Ex. Lotside Swale

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)	Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
42.00	0.0	0	44.55	9.0	3,539
42.05	0.1	23			
42.10	0.1	47			
42.15	0.2	73			
42.20	0.3	102			
42.25	0.3	132			
42.30	0.4	164			
42.35	0.5	198			
42.40	0.6	233			
42.45	0.7	271			
42.50	0.8	310			
42.55	0.9	352			
42.60	1.0	395			
42.65	1.1	440			
42.70	1.2	487			
42.75	1.4	536			
42.80	1.5	586			
42.85	1.6	639			
42.90	1.8	693			
42.95	1.9	750			
43.00	2.1	808			
43.05	2.2	868			
43.10	2.4	930			
43.15	2.5	993			
43.20	2.7	1,059			
43.25	2.9	1,127			
43.30	3.0	1,196			
43.35	3.2	1,267			
43.40	3.4	1,340			
43.45	3.6	1,415			
43.50	3.8	1,492			
43.55	4.0	1,571			
43.60	4.2	1,652			
43.65	4.4	1,734			
43.70	4.6	1,819			
43.75	4.8	1,905			
43.80	5.1	1,993			
43.85	5.3	2,083			
43.90	5.5	2,175			
43.95	5.8	2,268			
44.00	6.0	2,364			
44.05	6.2	2,461			
44.10	6.5	2,561			
44.15	6.8	2,662			
44.20	7.0	2,765			
44.25	7.3	2,870			
44.30	7.6	2,977			
44.35	7.8	3,086			
44.40	8.1	3,196			
44.45	8.4	3,309			
44.50	8.7	3,423			

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Page 264

Summary for Reach SP1: Ex Swale Adj US 50 (North)

Inflow Area = 3.048 ac, 58.99% Impervious, Inflow Depth > 5.60" for 100-yr event
Inflow = 17.38 cfs @ 12.02 hrs, Volume= 1.422 af
Outflow = 17.27 cfs @ 12.03 hrs, Volume= 1.422 af, Atten= 1%, Lag= 0.4 min

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

Max. Velocity= 4.62 fps, Min. Travel Time= 0.4 min

Avg. Velocity= 1.69 fps, Avg. Travel Time= 1.2 min

Peak Storage= 460 cf @ 12.03 hrs

Average Depth at Peak Storage= 1.14'

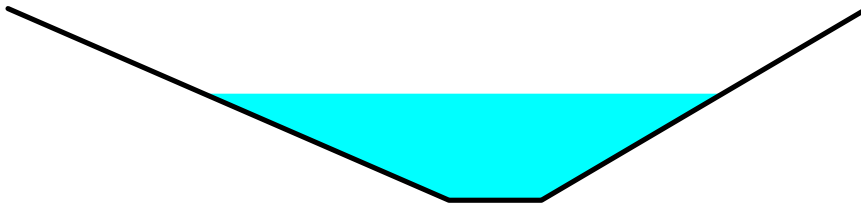
Bank-Full Depth= 2.05' Flow Area= 10.4 sf, Capacity= 68.26 cfs

0.99' x 2.05' deep channel, n= 0.022 Earth, clean & straight

Side Slope Z-value= 2.3 1.7 '/' Top Width= 9.19'

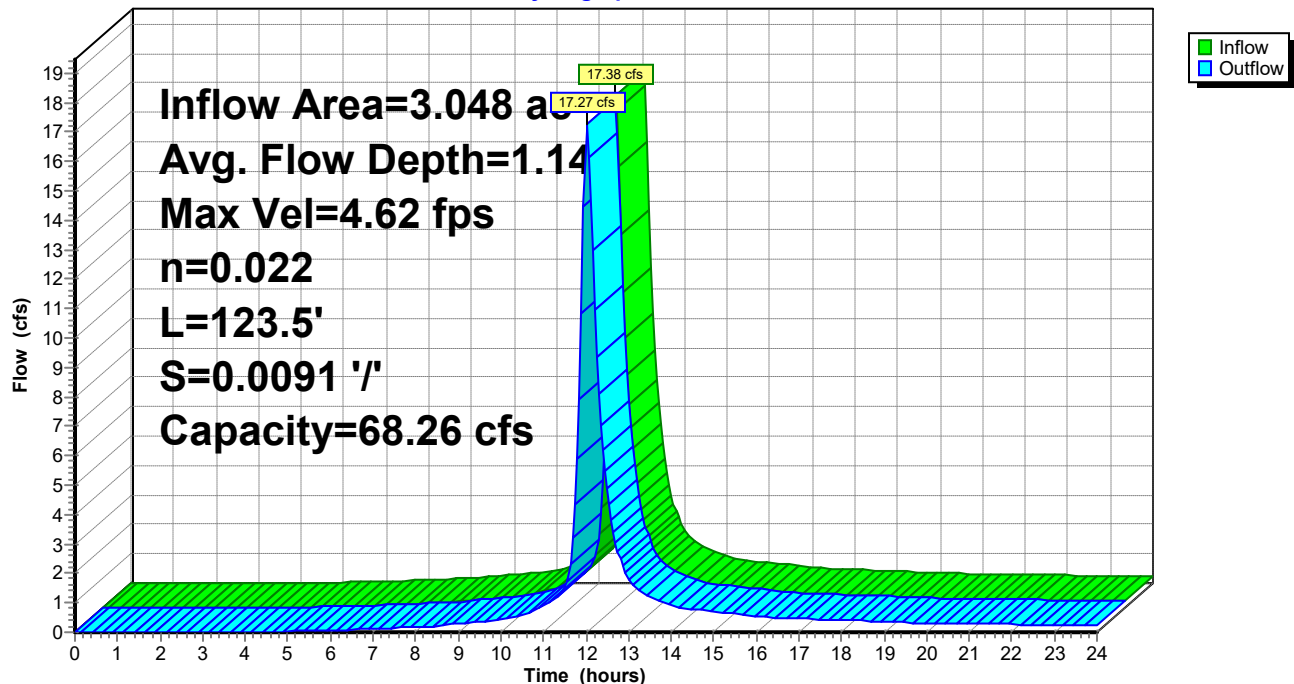
Length= 123.5' Slope= 0.0091 '/'

Inlet Invert= 38.72', Outlet Invert= 37.60'



Reach SP1: Ex Swale Adj US 50 (North)

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

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Page 265

Stage-Area-Storage for Reach SP1: Ex Swale Adj US 50 (North)

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
38.72	0.0	0
38.77	0.1	7
38.82	0.1	15
38.87	0.2	24
38.92	0.3	34
38.97	0.4	46
39.02	0.5	59
39.07	0.6	73
39.12	0.7	88
39.17	0.9	105
39.22	1.0	123
39.27	1.1	142
39.32	1.3	162
39.37	1.5	184
39.42	1.7	207
39.47	1.9	231
39.52	2.1	256
39.57	2.3	282
39.62	2.5	310
39.67	2.7	339
39.72	3.0	369
39.77	3.2	401
39.82	3.5	433
39.87	3.8	467
39.92	4.1	502
39.97	4.4	539
40.02	4.7	576
40.07	5.0	615
40.12	5.3	655
40.17	5.6	697
40.22	6.0	739
40.27	6.3	783
40.32	6.7	828
40.37	7.1	874
40.42	7.5	922
40.47	7.9	970
40.52	8.3	1,020
40.57	8.7	1,072
40.62	9.1	1,124
40.67	9.5	1,178
40.72	10.0	1,233
40.77	10.4	1,289

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Page 266

Summary for Reach SP2: Ex. Swale Adj US 50 (South)

Inflow Area = 2.218 ac, 63.69% Impervious, Inflow Depth > 5.80" for 100-yr event
Inflow = 12.49 cfs @ 12.05 hrs, Volume= 1.073 af
Outflow = 12.49 cfs @ 12.06 hrs, Volume= 1.072 af, Atten= 0%, Lag= 0.2 min

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

Max. Velocity= 4.66 fps, Min. Travel Time= 0.3 min

Avg. Velocity= 1.58 fps, Avg. Travel Time= 1.0 min

Peak Storage= 247 cf @ 12.06 hrs

Average Depth at Peak Storage= 0.84'

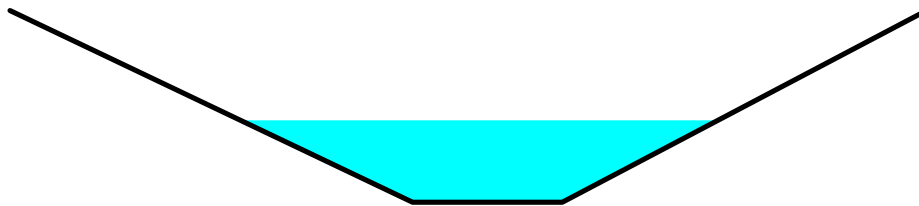
Bank-Full Depth= 1.96' Flow Area= 10.7 sf, Capacity= 80.11 cfs

1.53' x 1.96' deep channel, n= 0.022 Earth, clean & straight

Side Slope Z-value= 2.1 1.9 '/' Top Width= 9.37'

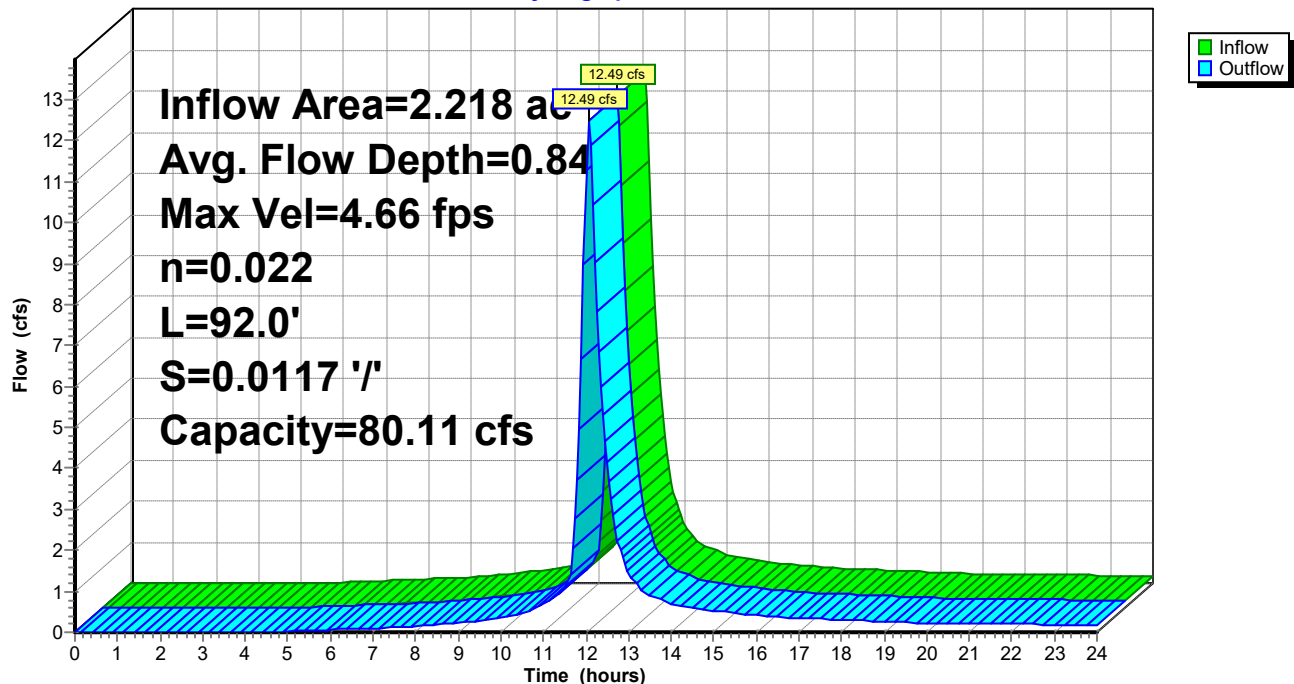
Length= 92.0' Slope= 0.0117 '/'

Inlet Invert= 41.58', Outlet Invert= 40.50'



Reach SP2: Ex. Swale Adj US 50 (South)

Hydrograph



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Page 267

Stage-Area-Storage for Reach SP2: Ex. Swale Adj US 50 (South)

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)	Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
41.58	0.0	0	42.60	3.6	335
41.60	0.0	3	42.62	3.8	345
41.62	0.1	6	42.64	3.9	356
41.64	0.1	9	42.66	4.0	367
41.66	0.1	12	42.68	4.1	377
41.68	0.2	16	42.70	4.2	388
41.70	0.2	20	42.72	4.3	400
41.72	0.3	23	42.74	4.5	411
41.74	0.3	27	42.76	4.6	422
41.76	0.3	31	42.78	4.7	434
41.78	0.4	36	42.80	4.8	446
41.80	0.4	40	42.82	5.0	457
41.82	0.5	44	42.84	5.1	469
41.84	0.5	49	42.86	5.2	482
41.86	0.6	54	42.88	5.4	494
41.88	0.6	59	42.90	5.5	506
41.90	0.7	64	42.92	5.6	519
41.92	0.8	69	42.94	5.8	532
41.94	0.8	75	42.96	5.9	545
41.96	0.9	80	42.98	6.1	558
41.98	0.9	86	43.00	6.2	571
42.00	1.0	92	43.02	6.4	584
42.02	1.1	98	43.04	6.5	598
42.04	1.1	104	43.06	6.6	611
42.06	1.2	110	43.08	6.8	625
42.08	1.3	116	43.10	6.9	639
42.10	1.3	123	43.12	7.1	653
42.12	1.4	130	43.14	7.3	667
42.14	1.5	137	43.16	7.4	682
42.16	1.6	144	43.18	7.6	696
42.18	1.6	151	43.20	7.7	711
42.20	1.7	158	43.22	7.9	726
42.22	1.8	165	43.24	8.1	741
42.24	1.9	173	43.26	8.2	756
42.26	2.0	181	43.28	8.4	771
42.28	2.1	189	43.30	8.5	786
42.30	2.1	197	43.32	8.7	802
42.32	2.2	205	43.34	8.9	818
42.34	2.3	213	43.36	9.1	834
42.36	2.4	222	43.38	9.2	850
42.38	2.5	230	43.40	9.4	866
42.40	2.6	239	43.42	9.6	882
42.42	2.7	248	43.44	9.8	898
42.44	2.8	257	43.46	9.9	915
42.46	2.9	266	43.48	10.1	932
42.48	3.0	276	43.50	10.3	949
42.50	3.1	285	43.52	10.5	966
42.52	3.2	295	43.54	10.7	983
42.54	3.3	305			
42.56	3.4	315			
42.58	3.5	325			

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Page 268

Summary for Reach SW1: Ex Swale Adj US 50 (North)

Inflow Area = 10.662 ac, 56.13% Impervious, Inflow Depth > 5.13" for 100-yr event
Inflow = 39.52 cfs @ 12.07 hrs, Volume= 4.557 af
Outflow = 39.50 cfs @ 12.07 hrs, Volume= 4.556 af, Atten= 0%, Lag= 0.3 min

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

Max. Velocity= 4.01 fps, Min. Travel Time= 0.3 min

Avg. Velocity = 1.69 fps, Avg. Travel Time= 0.8 min

Peak Storage= 771 cf @ 12.07 hrs

Average Depth at Peak Storage= 1.98'

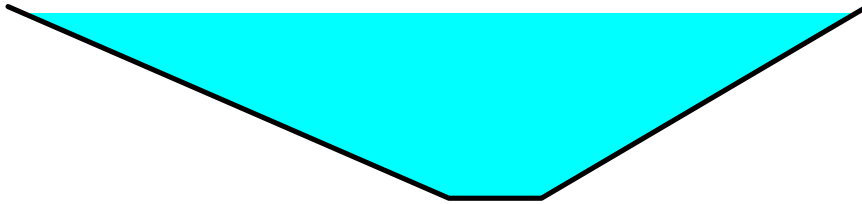
Bank-Full Depth= 2.05' Flow Area= 10.4 sf, Capacity= 42.81 cfs

0.99' x 2.05' deep channel, n= 0.022 Earth, clean & straight

Side Slope Z-value= 2.3 1.7 '/' Top Width= 9.19'

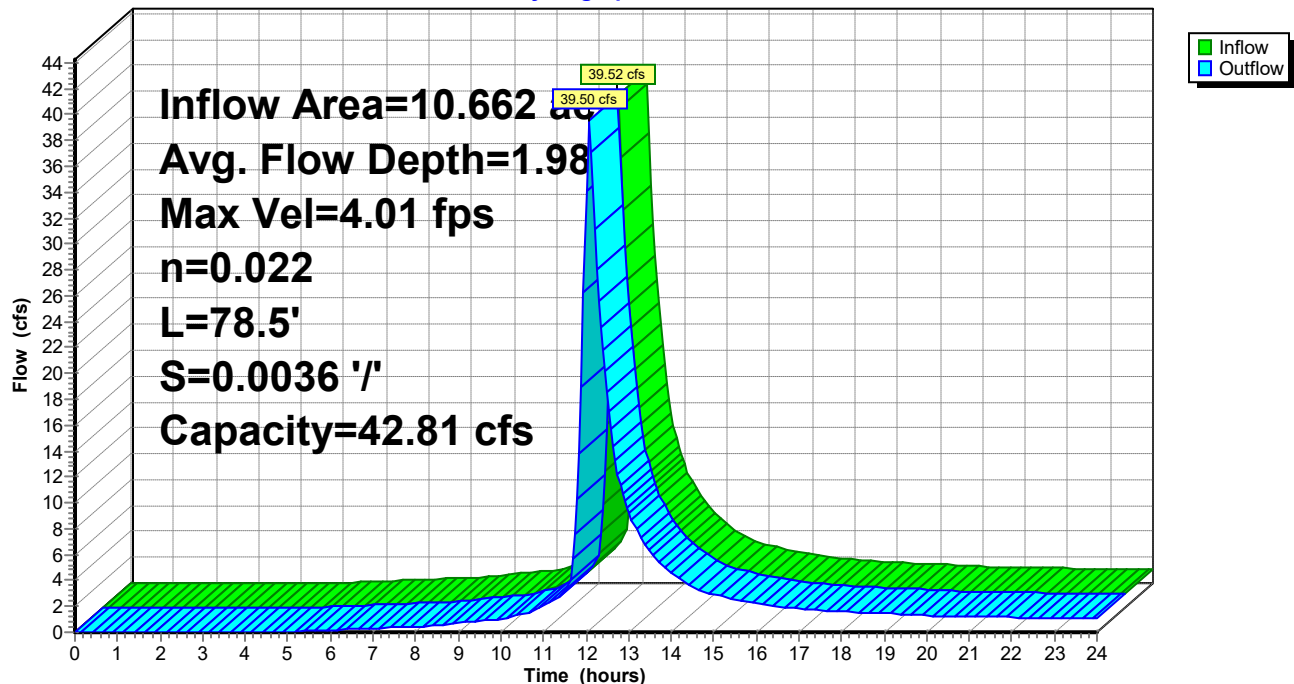
Length= 78.5' Slope= 0.0036 '/'

Inlet Invert= 38.72', Outlet Invert= 38.44'



Reach SW1: Ex Swale Adj US 50 (North)

Hydrograph



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Page 269

Stage-Area-Storage for Reach SW1: Ex Swale Adj US 50 (North)

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
38.72	0.0	0
38.77	0.1	4
38.82	0.1	9
38.87	0.2	15
38.92	0.3	22
38.97	0.4	29
39.02	0.5	37
39.07	0.6	46
39.12	0.7	56
39.17	0.9	67
39.22	1.0	78
39.27	1.1	90
39.32	1.3	103
39.37	1.5	117
39.42	1.7	131
39.47	1.9	147
39.52	2.1	163
39.57	2.3	180
39.62	2.5	197
39.67	2.7	216
39.72	3.0	235
39.77	3.2	255
39.82	3.5	275
39.87	3.8	297
39.92	4.1	319
39.97	4.4	342
40.02	4.7	366
40.07	5.0	391
40.12	5.3	417
40.17	5.6	443
40.22	6.0	470
40.27	6.3	498
40.32	6.7	526
40.37	7.1	556
40.42	7.5	586
40.47	7.9	617
40.52	8.3	649
40.57	8.7	681
40.62	9.1	714
40.67	9.5	749
40.72	10.0	783
40.77	10.4	819

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Page 270

Summary for Reach SW2: Ex. Swale Adj US 50 (South)

Inflow Area = 8.271 ac, 61.23% Impervious, Inflow Depth > 5.28" for 100-yr event
Inflow = 36.65 cfs @ 12.06 hrs, Volume= 3.640 af
Outflow = 36.60 cfs @ 12.06 hrs, Volume= 3.638 af, Atten= 0%, Lag= 0.4 min

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

Max. Velocity= 6.11 fps, Min. Travel Time= 0.5 min

Avg. Velocity= 2.35 fps, Avg. Travel Time= 1.4 min

Peak Storage= 1,158 cf @ 12.06 hrs

Average Depth at Peak Storage= 1.39'

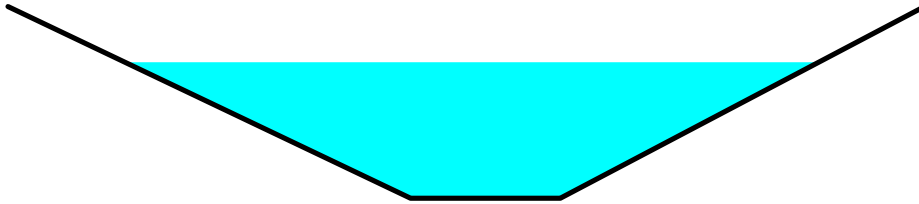
Bank-Full Depth= 1.96' Flow Area= 10.7 sf, Capacity= 79.53 cfs

1.53' x 1.96' deep channel, n= 0.022 Earth, clean & straight

Side Slope Z-value= 2.1 1.9 '/' Top Width= 9.37'

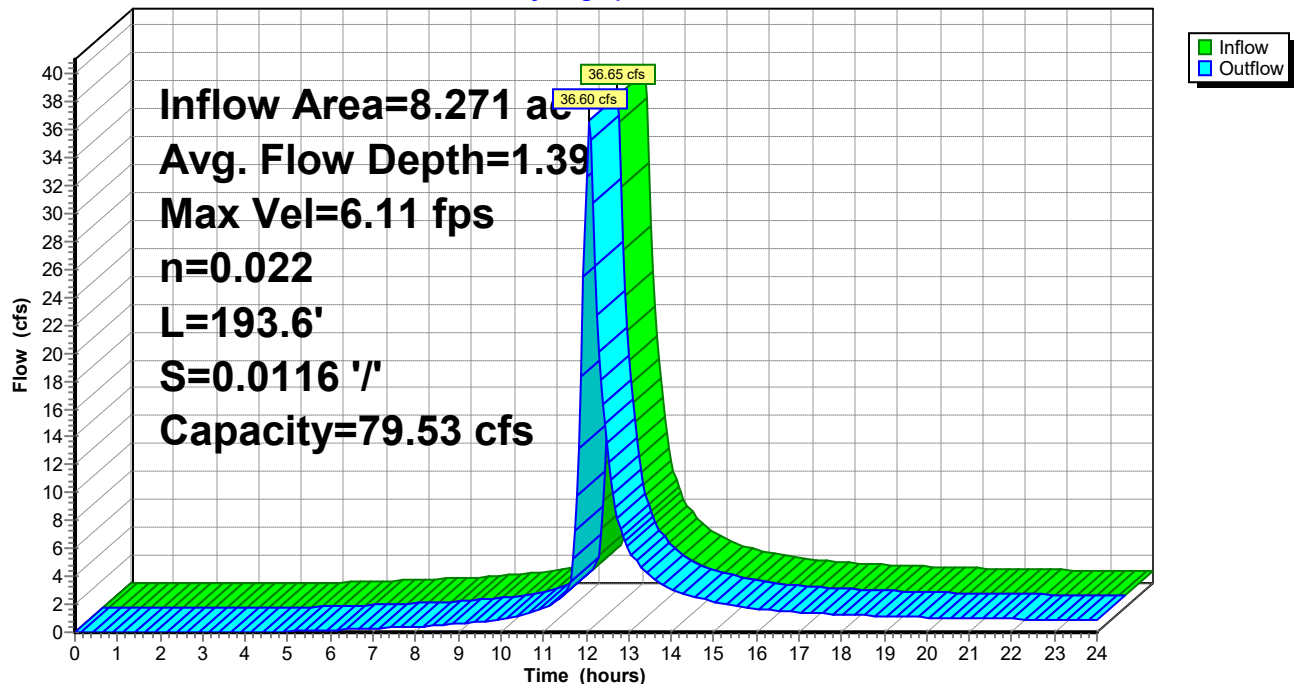
Length= 193.6' Slope= 0.0116 '/'

Inlet Invert= 41.58', Outlet Invert= 39.34'



Reach SW2: Ex. Swale Adj US 50 (South)

Hydrograph



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Page 271

Stage-Area-Storage for Reach SW2: Ex. Swale Adj US 50 (South)

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)	Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
41.58	0.0	0	42.60	3.6	705
41.60	0.0	6	42.62	3.8	727
41.62	0.1	12	42.64	3.9	749
41.64	0.1	19	42.66	4.0	772
41.66	0.1	26	42.68	4.1	794
41.68	0.2	34	42.70	4.2	817
41.70	0.2	41	42.72	4.3	841
41.72	0.3	49	42.74	4.5	865
41.74	0.3	57	42.76	4.6	889
41.76	0.3	66	42.78	4.7	913
41.78	0.4	75	42.80	4.8	938
41.80	0.4	84	42.82	5.0	963
41.82	0.5	93	42.84	5.1	988
41.84	0.5	103	42.86	5.2	1,014
41.86	0.6	113	42.88	5.4	1,039
41.88	0.6	124	42.90	5.5	1,066
41.90	0.7	134	42.92	5.6	1,092
41.92	0.8	146	42.94	5.8	1,119
41.94	0.8	157	42.96	5.9	1,146
41.96	0.9	169	42.98	6.1	1,174
41.98	0.9	180	43.00	6.2	1,201
42.00	1.0	193	43.02	6.4	1,229
42.02	1.1	205	43.04	6.5	1,258
42.04	1.1	218	43.06	6.6	1,287
42.06	1.2	231	43.08	6.8	1,316
42.08	1.3	245	43.10	6.9	1,345
42.10	1.3	259	43.12	7.1	1,374
42.12	1.4	273	43.14	7.3	1,404
42.14	1.5	287	43.16	7.4	1,435
42.16	1.6	302	43.18	7.6	1,465
42.18	1.6	317	43.20	7.7	1,496
42.20	1.7	333	43.22	7.9	1,527
42.22	1.8	348	43.24	8.1	1,559
42.24	1.9	364	43.26	8.2	1,590
42.26	2.0	380	43.28	8.4	1,623
42.28	2.1	397	43.30	8.5	1,655
42.30	2.1	414	43.32	8.7	1,688
42.32	2.2	431	43.34	8.9	1,721
42.34	2.3	449	43.36	9.1	1,754
42.36	2.4	467	43.38	9.2	1,788
42.38	2.5	485	43.40	9.4	1,822
42.40	2.6	503	43.42	9.6	1,856
42.42	2.7	522	43.44	9.8	1,891
42.44	2.8	541	43.46	9.9	1,925
42.46	2.9	561	43.48	10.1	1,961
42.48	3.0	580	43.50	10.3	1,996
42.50	3.1	600	43.52	10.5	2,032
42.52	3.2	621	43.54	10.7	2,068
42.54	3.3	641			
42.56	3.4	662			
42.58	3.5	683			

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

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Page 272

Summary for Pond 1P: SDI-1

Inflow Area = 1.063 ac, 91.91% Impervious, Inflow Depth > 6.99" for 100-yr event
Inflow = 12.04 cfs @ 11.91 hrs, Volume= 0.619 af
Outflow = 12.04 cfs @ 11.91 hrs, Volume= 0.619 af, Atten= 0%, Lag= 0.0 min
Primary = 12.04 cfs @ 11.91 hrs, Volume= 0.619 af

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

Peak Elev= 42.68' @ 11.92 hrs

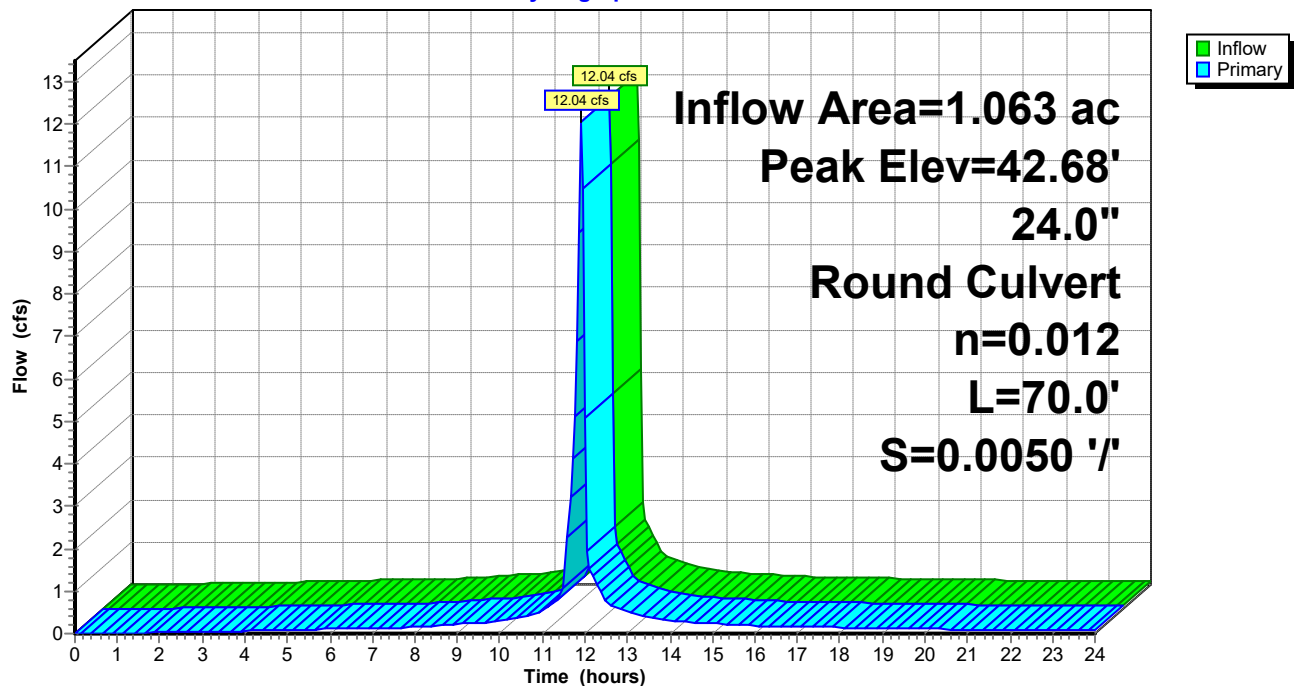
Flood Elev= 45.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	40.75'	24.0" Round 24" HDPE L= 70.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 40.75' / 40.40' S= 0.0050 '/ Cc= 0.900 n= 0.012, Flow Area= 3.14 sf

Primary OutFlow Max=10.20 cfs @ 11.91 hrs HW=42.64' TW=42.05' (Dynamic Tailwater)
1=24" HDPE (Outlet Controls 10.20 cfs @ 4.28 fps)

Pond 1P: SDI-1

Hydrograph



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Page 273

Stage-Area-Storage for Pond 1P: SDI-1

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
40.75	0	42.79	0	44.83	0
40.79	0	42.83	0	44.87	0
40.83	0	42.87	0	44.91	0
40.87	0	42.91	0	44.95	0
40.91	0	42.95	0	44.99	0
40.95	0	42.99	0	45.03	0
40.99	0	43.03	0	45.07	0
41.03	0	43.07	0	45.11	0
41.07	0	43.11	0	45.15	0
41.11	0	43.15	0	45.19	0
41.15	0	43.19	0	45.23	0
41.19	0	43.23	0	45.27	0
41.23	0	43.27	0	45.31	0
41.27	0	43.31	0	45.35	0
41.31	0	43.35	0	45.39	0
41.35	0	43.39	0	45.43	0
41.39	0	43.43	0	45.47	0
41.43	0	43.47	0	45.51	0
41.47	0	43.51	0	45.55	0
41.51	0	43.55	0	45.59	0
41.55	0	43.59	0	45.63	0
41.59	0	43.63	0	45.67	0
41.63	0	43.67	0	45.71	0
41.67	0	43.71	0	45.75	0
41.71	0	43.75	0	45.79	0
41.75	0	43.79	0	45.83	0
41.79	0	43.83	0	45.87	0
41.83	0	43.87	0		
41.87	0	43.91	0		
41.91	0	43.95	0		
41.95	0	43.99	0		
41.99	0	44.03	0		
42.03	0	44.07	0		
42.07	0	44.11	0		
42.11	0	44.15	0		
42.15	0	44.19	0		
42.19	0	44.23	0		
42.23	0	44.27	0		
42.27	0	44.31	0		
42.31	0	44.35	0		
42.35	0	44.39	0		
42.39	0	44.43	0		
42.43	0	44.47	0		
42.47	0	44.51	0		
42.51	0	44.55	0		
42.55	0	44.59	0		
42.59	0	44.63	0		
42.63	0	44.67	0		
42.67	0	44.71	0		
42.71	0	44.75	0		
42.75	0	44.79	0		

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Page 274

Summary for Pond 2P: RL-1

Inflow Area = 0.137 ac, 100.00% Impervious, Inflow Depth > 7.36" for 100-yr event
Inflow = 1.59 cfs @ 11.90 hrs, Volume= 0.084 af
Outflow = 1.59 cfs @ 11.90 hrs, Volume= 0.084 af, Atten= 0%, Lag= 0.0 min
Primary = 1.59 cfs @ 11.90 hrs, Volume= 0.084 af

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

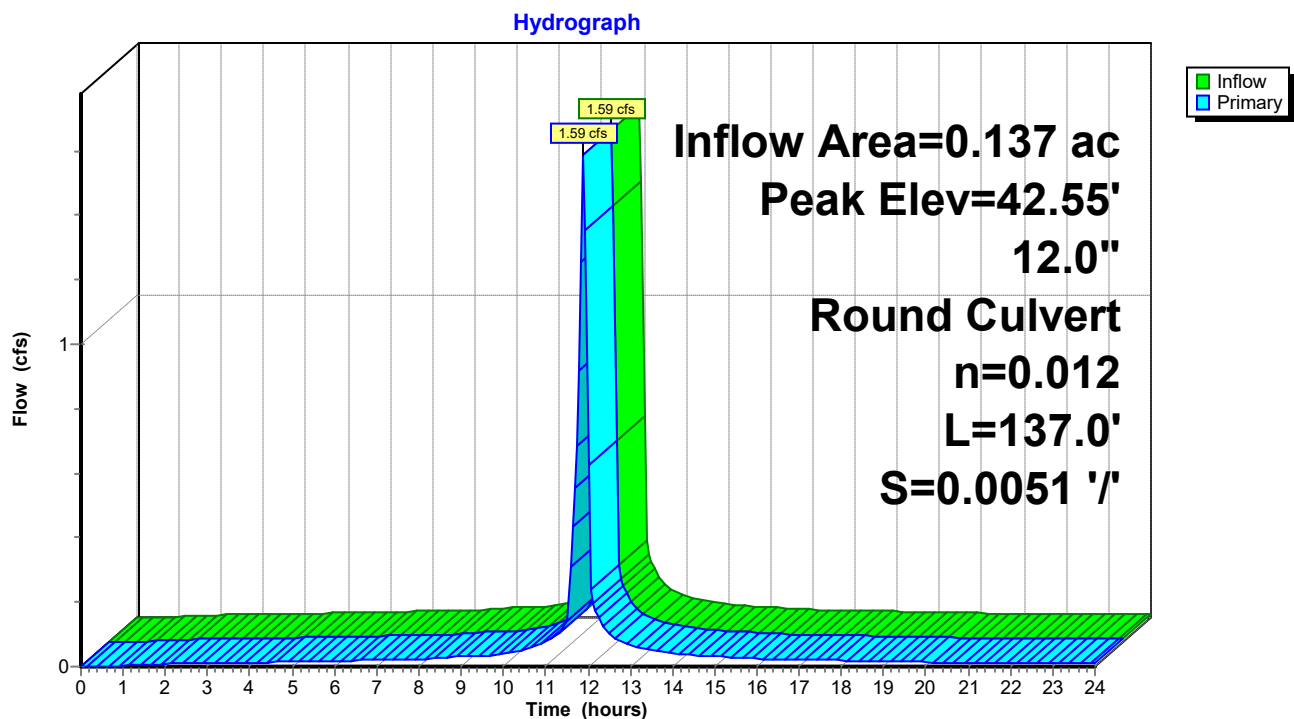
Peak Elev= 42.55' @ 12.11 hrs

Flood Elev= 46.35'

Device	Routing	Invert	Outlet Devices
#1	Primary	41.10'	12.0" Round 12" HDPE L= 137.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 41.10' / 40.40' S= 0.0051 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.71 cfs @ 11.90 hrs HW=42.12' TW=42.03' (Dynamic Tailwater)
↑ **1=12" HDPE** (Outlet Controls 0.71 cfs @ 1.10 fps)

Pond 2P: RL-1



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Page 275

Stage-Area-Storage for Pond 2P: RL-1

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
41.10	0	43.14	0	45.18	0
41.14	0	43.18	0	45.22	0
41.18	0	43.22	0	45.26	0
41.22	0	43.26	0	45.30	0
41.26	0	43.30	0	45.34	0
41.30	0	43.34	0	45.38	0
41.34	0	43.38	0	45.42	0
41.38	0	43.42	0	45.46	0
41.42	0	43.46	0	45.50	0
41.46	0	43.50	0	45.54	0
41.50	0	43.54	0	45.58	0
41.54	0	43.58	0	45.62	0
41.58	0	43.62	0	45.66	0
41.62	0	43.66	0	45.70	0
41.66	0	43.70	0	45.74	0
41.70	0	43.74	0	45.78	0
41.74	0	43.78	0	45.82	0
41.78	0	43.82	0	45.86	0
41.82	0	43.86	0	45.90	0
41.86	0	43.90	0	45.94	0
41.90	0	43.94	0	45.98	0
41.94	0	43.98	0	46.02	0
41.98	0	44.02	0	46.06	0
42.02	0	44.06	0	46.10	0
42.06	0	44.10	0	46.14	0
42.10	0	44.14	0	46.18	0
42.14	0	44.18	0	46.22	0
42.18	0	44.22	0	46.26	0
42.22	0	44.26	0	46.30	0
42.26	0	44.30	0	46.34	0
42.30	0	44.34	0		
42.34	0	44.38	0		
42.38	0	44.42	0		
42.42	0	44.46	0		
42.46	0	44.50	0		
42.50	0	44.54	0		
42.54	0	44.58	0		
42.58	0	44.62	0		
42.62	0	44.66	0		
42.66	0	44.70	0		
42.70	0	44.74	0		
42.74	0	44.78	0		
42.78	0	44.82	0		
42.82	0	44.86	0		
42.86	0	44.90	0		
42.90	0	44.94	0		
42.94	0	44.98	0		
42.98	0	45.02	0		
43.02	0	45.06	0		
43.06	0	45.10	0		
43.10	0	45.14	0		

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Page 276

Summary for Pond 3P: RL-2

Inflow Area = 0.069 ac, 100.00% Impervious, Inflow Depth > 7.36" for 100-yr event
Inflow = 0.79 cfs @ 11.90 hrs, Volume= 0.042 af
Outflow = 0.79 cfs @ 11.90 hrs, Volume= 0.042 af, Atten= 0%, Lag= 0.0 min
Primary = 0.79 cfs @ 11.90 hrs, Volume= 0.042 af

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

Peak Elev= 43.26' @ 11.91 hrs

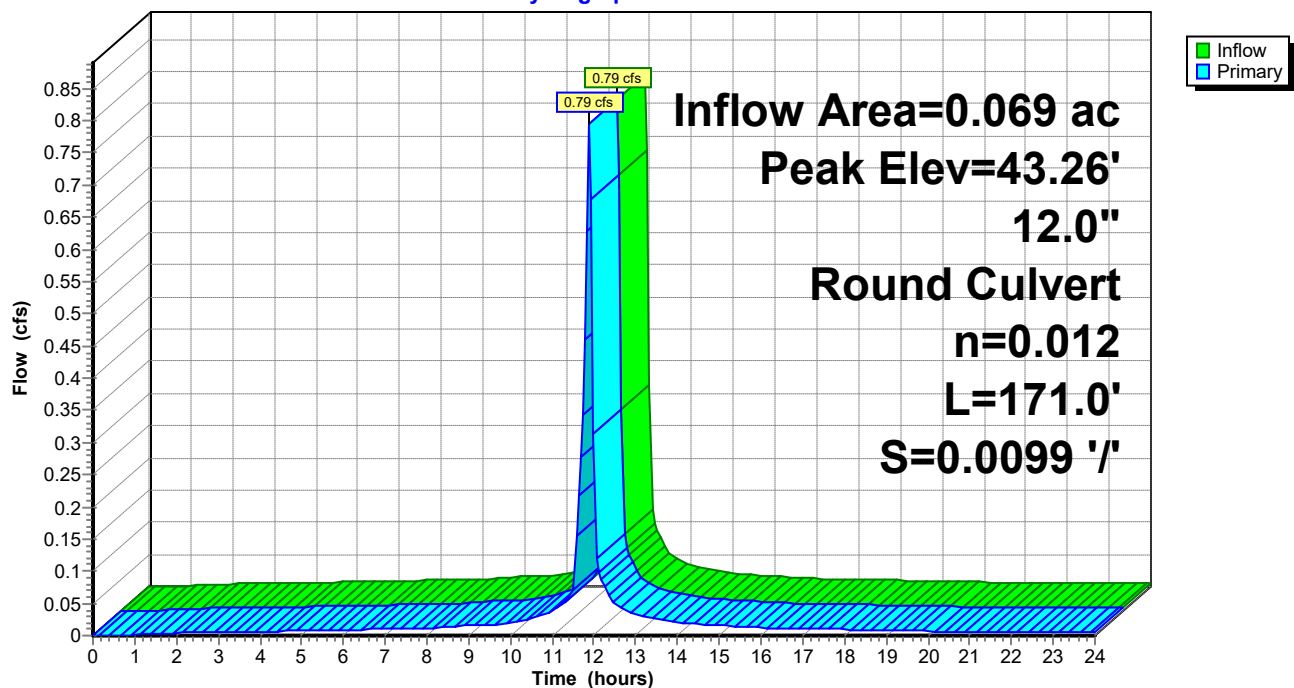
Flood Elev= 46.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	42.80'	12.0" Round 12" HPDE L= 171.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 42.80' / 41.10' S= 0.0099 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.72 cfs @ 11.90 hrs HW=43.26' TW=42.12' (Dynamic Tailwater)
↑ **1=12" HPDE** (Outlet Controls 0.72 cfs @ 3.02 fps)

Pond 3P: RL-2

Hydrograph



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

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Page 277

Stage-Area-Storage for Pond 3P: RL-2

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
42.80	0	45.35	0
42.85	0	45.40	0
42.90	0	45.45	0
42.95	0	45.50	0
43.00	0	45.55	0
43.05	0	45.60	0
43.10	0	45.65	0
43.15	0	45.70	0
43.20	0	45.75	0
43.25	0	45.80	0
43.30	0	45.85	0
43.35	0	45.90	0
43.40	0	45.95	0
43.45	0	46.00	0
43.50	0	46.05	0
43.55	0	46.10	0
43.60	0	46.15	0
43.65	0	46.20	0
43.70	0	46.25	0
43.75	0	46.30	0
43.80	0	46.35	0
43.85	0	46.40	0
43.90	0	46.45	0
43.95	0	46.50	0
44.00	0	46.55	0
44.05	0	46.60	0
44.10	0	46.65	0
44.15	0	46.70	0
44.20	0	46.75	0
44.25	0	46.80	0
44.30	0	46.85	0
44.35	0	46.90	0
44.40	0		
44.45	0		
44.50	0		
44.55	0		
44.60	0		
44.65	0		
44.70	0		
44.75	0		
44.80	0		
44.85	0		
44.90	0		
44.95	0		
45.00	0		
45.05	0		
45.10	0		
45.15	0		
45.20	0		
45.25	0		
45.30	0		

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

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Page 278

Summary for Pond 4P: RL-3

Inflow Area = 0.072 ac, 100.00% Impervious, Inflow Depth > 7.36" for 100-yr event
Inflow = 0.84 cfs @ 11.90 hrs, Volume= 0.044 af
Outflow = 0.84 cfs @ 11.90 hrs, Volume= 0.044 af, Atten= 0%, Lag= 0.0 min
Primary = 0.84 cfs @ 11.90 hrs, Volume= 0.044 af

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

Peak Elev= 42.80' @ 11.96 hrs

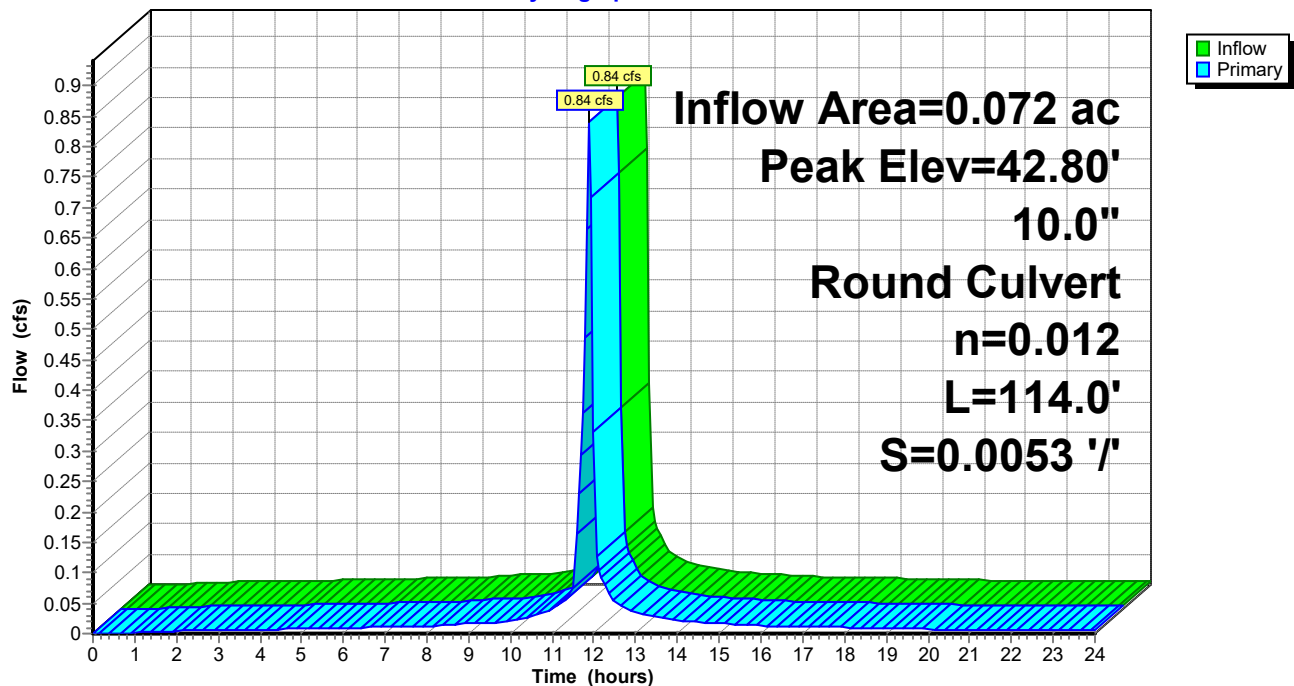
Flood Elev= 47.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	41.50'	10.0" Round 10" HDPE L= 114.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 41.50' / 40.90' S= 0.0053 '/ Cc= 0.900 n= 0.012, Flow Area= 0.55 sf

Primary OutFlow Max=0.00 cfs @ 11.90 hrs HW=42.57' TW=42.64' (Dynamic Tailwater)
↑ **1=10" HDPE** (Controls 0.00 cfs)

Pond 4P: RL-3

Hydrograph



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Page 279

Stage-Area-Storage for Pond 4P: RL-3

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
41.50	0	43.54	0	45.58	0
41.54	0	43.58	0	45.62	0
41.58	0	43.62	0	45.66	0
41.62	0	43.66	0	45.70	0
41.66	0	43.70	0	45.74	0
41.70	0	43.74	0	45.78	0
41.74	0	43.78	0	45.82	0
41.78	0	43.82	0	45.86	0
41.82	0	43.86	0	45.90	0
41.86	0	43.90	0	45.94	0
41.90	0	43.94	0	45.98	0
41.94	0	43.98	0	46.02	0
41.98	0	44.02	0	46.06	0
42.02	0	44.06	0	46.10	0
42.06	0	44.10	0	46.14	0
42.10	0	44.14	0	46.18	0
42.14	0	44.18	0	46.22	0
42.18	0	44.22	0	46.26	0
42.22	0	44.26	0	46.30	0
42.26	0	44.30	0	46.34	0
42.30	0	44.34	0	46.38	0
42.34	0	44.38	0	46.42	0
42.38	0	44.42	0	46.46	0
42.42	0	44.46	0	46.50	0
42.46	0	44.50	0	46.54	0
42.50	0	44.54	0	46.58	0
42.54	0	44.58	0	46.62	0
42.58	0	44.62	0	46.66	0
42.62	0	44.66	0	46.70	0
42.66	0	44.70	0	46.74	0
42.70	0	44.74	0	46.78	0
42.74	0	44.78	0	46.82	0
42.78	0	44.82	0	46.86	0
42.82	0	44.86	0	46.90	0
42.86	0	44.90	0	46.94	0
42.90	0	44.94	0	46.98	0
42.94	0	44.98	0	47.02	0
42.98	0	45.02	0	47.06	0
43.02	0	45.06	0	47.10	0
43.06	0	45.10	0	47.14	0
43.10	0	45.14	0	47.18	0
43.14	0	45.18	0	47.22	0
43.18	0	45.22	0		
43.22	0	45.26	0		
43.26	0	45.30	0		
43.30	0	45.34	0		
43.34	0	45.38	0		
43.38	0	45.42	0		
43.42	0	45.46	0		
43.46	0	45.50	0		
43.50	0	45.54	0		

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Page 280

Summary for Pond 5P: SDI-5

Inflow Area = 0.240 ac, 94.66% Impervious, Inflow Depth > 7.11" for 100-yr event
Inflow = 2.70 cfs @ 11.91 hrs, Volume= 0.142 af
Outflow = 2.70 cfs @ 11.91 hrs, Volume= 0.142 af, Atten= 0%, Lag= 0.0 min
Primary = 2.70 cfs @ 11.91 hrs, Volume= 0.142 af

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

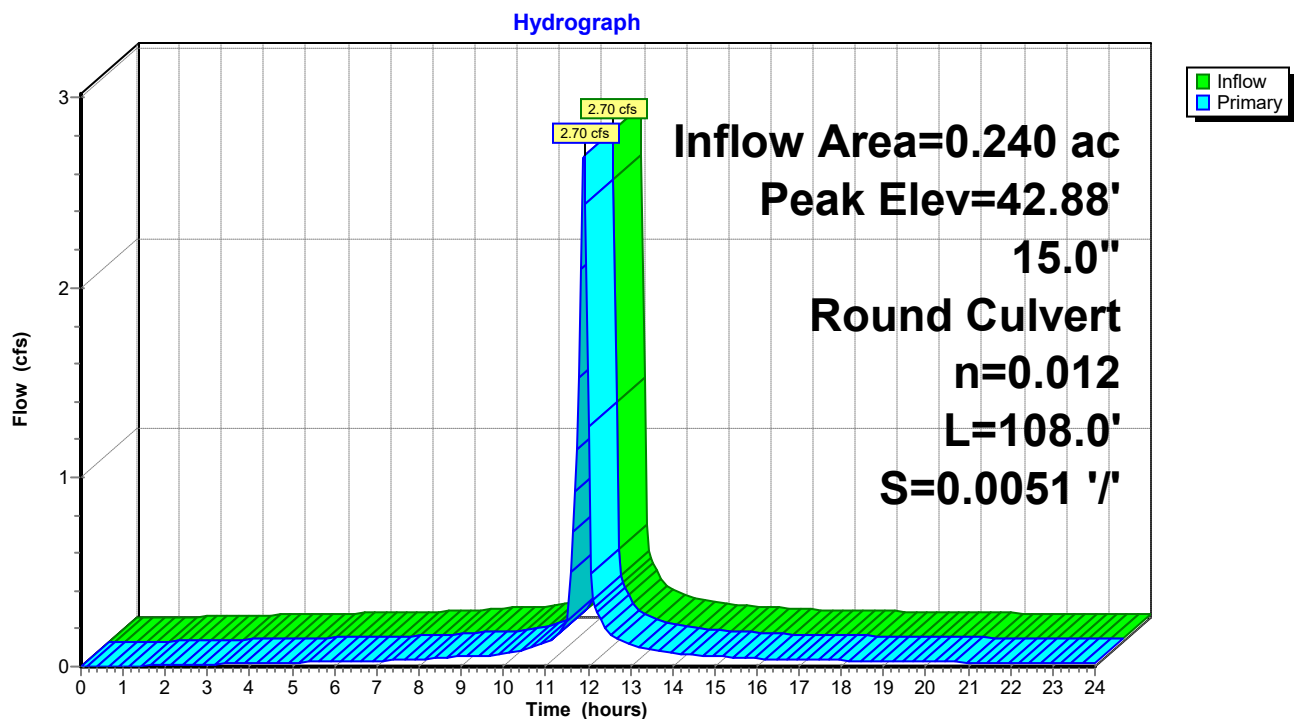
Peak Elev= 42.88' @ 11.95 hrs

Flood Elev= 46.75'

Device	Routing	Invert	Outlet Devices
#1	Primary	41.45'	15.0" Round 15" HDPE L= 108.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 41.45' / 40.90' S= 0.0051 '/ Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=1.52 cfs @ 11.91 hrs HW=42.75' TW=42.64' (Dynamic Tailwater)
1=15" HDPE (Outlet Controls 1.52 cfs @ 1.48 fps)

Pond 5P: SDI-5



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Page 281

Stage-Area-Storage for Pond 5P: SDI-5

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
41.45	0	43.49	0	45.53	0
41.49	0	43.53	0	45.57	0
41.53	0	43.57	0	45.61	0
41.57	0	43.61	0	45.65	0
41.61	0	43.65	0	45.69	0
41.65	0	43.69	0	45.73	0
41.69	0	43.73	0	45.77	0
41.73	0	43.77	0	45.81	0
41.77	0	43.81	0	45.85	0
41.81	0	43.85	0	45.89	0
41.85	0	43.89	0	45.93	0
41.89	0	43.93	0	45.97	0
41.93	0	43.97	0	46.01	0
41.97	0	44.01	0	46.05	0
42.01	0	44.05	0	46.09	0
42.05	0	44.09	0	46.13	0
42.09	0	44.13	0	46.17	0
42.13	0	44.17	0	46.21	0
42.17	0	44.21	0	46.25	0
42.21	0	44.25	0	46.29	0
42.25	0	44.29	0	46.33	0
42.29	0	44.33	0	46.37	0
42.33	0	44.37	0	46.41	0
42.37	0	44.41	0	46.45	0
42.41	0	44.45	0	46.49	0
42.45	0	44.49	0	46.53	0
42.49	0	44.53	0	46.57	0
42.53	0	44.57	0	46.61	0
42.57	0	44.61	0	46.65	0
42.61	0	44.65	0	46.69	0
42.65	0	44.69	0	46.73	0
42.69	0	44.73	0		
42.73	0	44.77	0		
42.77	0	44.81	0		
42.81	0	44.85	0		
42.85	0	44.89	0		
42.89	0	44.93	0		
42.93	0	44.97	0		
42.97	0	45.01	0		
43.01	0	45.05	0		
43.05	0	45.09	0		
43.09	0	45.13	0		
43.13	0	45.17	0		
43.17	0	45.21	0		
43.21	0	45.25	0		
43.25	0	45.29	0		
43.29	0	45.33	0		
43.33	0	45.37	0		
43.37	0	45.41	0		
43.41	0	45.45	0		
43.45	0	45.49	0		

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

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Page 282

Summary for Pond 6P: RL-4

Inflow Area = 0.072 ac, 100.00% Impervious, Inflow Depth > 7.36" for 100-yr event
Inflow = 0.84 cfs @ 11.90 hrs, Volume= 0.044 af
Outflow = 0.84 cfs @ 11.90 hrs, Volume= 0.044 af, Atten= 0%, Lag= 0.0 min
Primary = 0.84 cfs @ 11.90 hrs, Volume= 0.044 af

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

Peak Elev= 43.32' @ 11.93 hrs

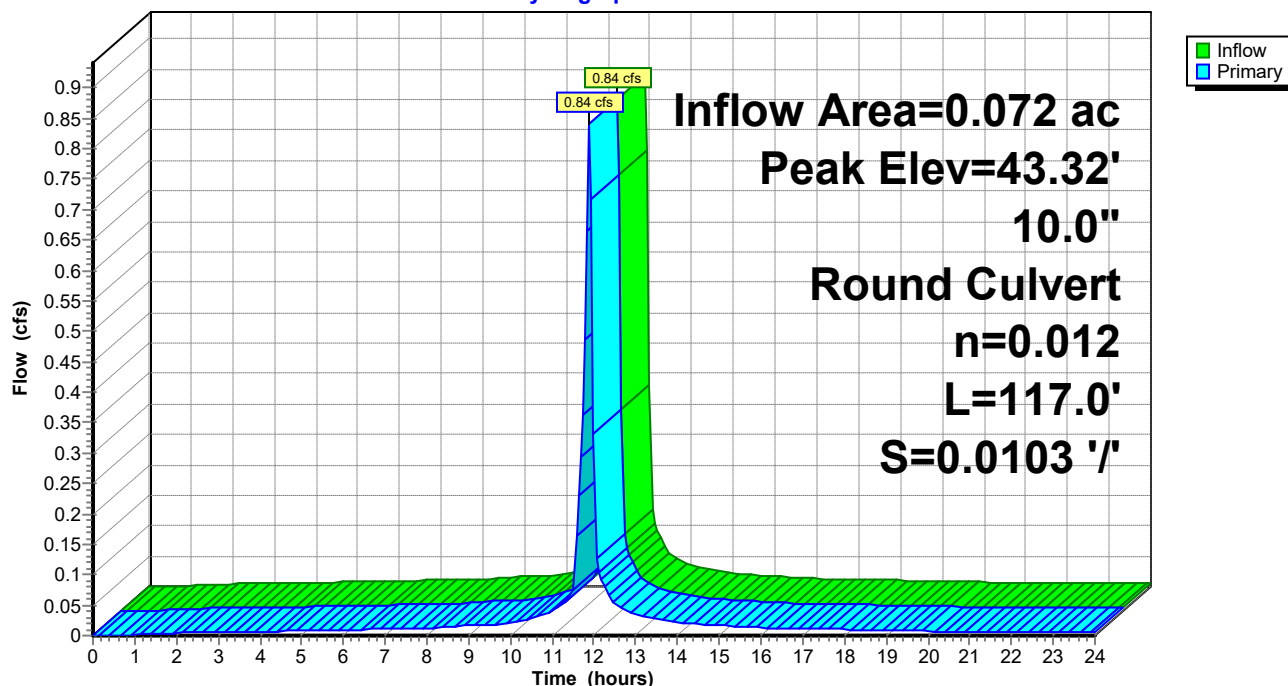
Flood Elev= 47.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	42.75'	10.0" Round 10" HDPE L= 117.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 42.75' / 41.55' S= 0.0103 '/ Cc= 0.900 n= 0.012, Flow Area= 0.55 sf

Primary OutFlow Max=0.69 cfs @ 11.90 hrs HW=43.30' TW=42.73' (Dynamic Tailwater)
↑ **1=10" HDPE** (Outlet Controls 0.69 cfs @ 2.55 fps)

Pond 6P: RL-4

Hydrograph



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Page 283

Stage-Area-Storage for Pond 6P: RL-4

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
42.75	0	45.30	0
42.80	0	45.35	0
42.85	0	45.40	0
42.90	0	45.45	0
42.95	0	45.50	0
43.00	0	45.55	0
43.05	0	45.60	0
43.10	0	45.65	0
43.15	0	45.70	0
43.20	0	45.75	0
43.25	0	45.80	0
43.30	0	45.85	0
43.35	0	45.90	0
43.40	0	45.95	0
43.45	0	46.00	0
43.50	0	46.05	0
43.55	0	46.10	0
43.60	0	46.15	0
43.65	0	46.20	0
43.70	0	46.25	0
43.75	0	46.30	0
43.80	0	46.35	0
43.85	0	46.40	0
43.90	0	46.45	0
43.95	0	46.50	0
44.00	0	46.55	0
44.05	0	46.60	0
44.10	0	46.65	0
44.15	0	46.70	0
44.20	0	46.75	0
44.25	0	46.80	0
44.30	0	46.85	0
44.35	0	46.90	0
44.40	0	46.95	0
44.45	0	47.00	0
44.50	0	47.05	0
44.55	0	47.10	0
44.60	0	47.15	0
44.65	0	47.20	0
44.70	0		
44.75	0		
44.80	0		
44.85	0		
44.90	0		
44.95	0		
45.00	0		
45.05	0		
45.10	0		
45.15	0		
45.20	0		
45.25	0		

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Page 284

Summary for Pond 7P: SDI-6

Inflow Area = 0.270 ac, 85.31% Impervious, Inflow Depth > 6.77" for 100-yr event
Inflow = 3.11 cfs @ 11.90 hrs, Volume= 0.152 af
Outflow = 3.11 cfs @ 11.90 hrs, Volume= 0.152 af, Atten= 0%, Lag= 0.0 min
Primary = 3.11 cfs @ 11.90 hrs, Volume= 0.152 af

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

Peak Elev= 45.18' @ 11.90 hrs

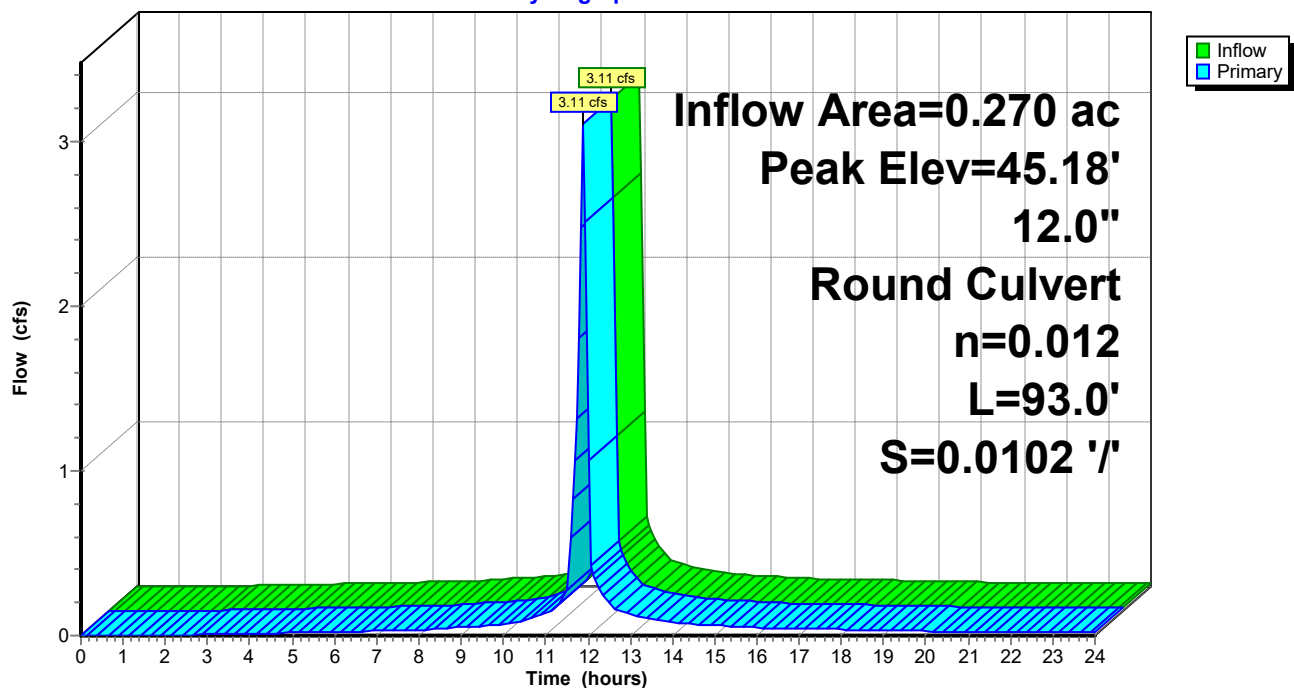
Flood Elev= 46.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	44.00'	12.0" Round Culvert L= 93.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 44.00' / 43.05' S= 0.0102 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=3.10 cfs @ 11.90 hrs HW=45.17' TW=44.07' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 3.10 cfs @ 3.95 fps)

Pond 7P: SDI-6

Hydrograph



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Page 285

Stage-Area-Storage for Pond 7P: SDI-6

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
44.00	0	45.02	0	46.04	0
44.02	0	45.04	0	46.06	0
44.04	0	45.06	0	46.08	0
44.06	0	45.08	0	46.10	0
44.08	0	45.10	0	46.12	0
44.10	0	45.12	0	46.14	0
44.12	0	45.14	0	46.16	0
44.14	0	45.16	0	46.18	0
44.16	0	45.18	0	46.20	0
44.18	0	45.20	0	46.22	0
44.20	0	45.22	0	46.24	0
44.22	0	45.24	0	46.26	0
44.24	0	45.26	0	46.28	0
44.26	0	45.28	0	46.30	0
44.28	0	45.30	0	46.32	0
44.30	0	45.32	0	46.34	0
44.32	0	45.34	0	46.36	0
44.34	0	45.36	0	46.38	0
44.36	0	45.38	0	46.40	0
44.38	0	45.40	0		
44.40	0	45.42	0		
44.42	0	45.44	0		
44.44	0	45.46	0		
44.46	0	45.48	0		
44.48	0	45.50	0		
44.50	0	45.52	0		
44.52	0	45.54	0		
44.54	0	45.56	0		
44.56	0	45.58	0		
44.58	0	45.60	0		
44.60	0	45.62	0		
44.62	0	45.64	0		
44.64	0	45.66	0		
44.66	0	45.68	0		
44.68	0	45.70	0		
44.70	0	45.72	0		
44.72	0	45.74	0		
44.74	0	45.76	0		
44.76	0	45.78	0		
44.78	0	45.80	0		
44.80	0	45.82	0		
44.82	0	45.84	0		
44.84	0	45.86	0		
44.86	0	45.88	0		
44.88	0	45.90	0		
44.90	0	45.92	0		
44.92	0	45.94	0		
44.94	0	45.96	0		
44.96	0	45.98	0		
44.98	0	46.00	0		
45.00	0	46.02	0		

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Page 286

Summary for Pond 8P: SDI-2

Inflow Area = 0.592 ac, 90.75% Impervious, Inflow Depth > 6.93" for 100-yr event
Inflow = 6.74 cfs @ 11.90 hrs, Volume= 0.342 af
Outflow = 6.74 cfs @ 11.90 hrs, Volume= 0.342 af, Atten= 0%, Lag= 0.0 min
Primary = 6.74 cfs @ 11.90 hrs, Volume= 0.342 af

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

Peak Elev= 43.18' @ 11.93 hrs

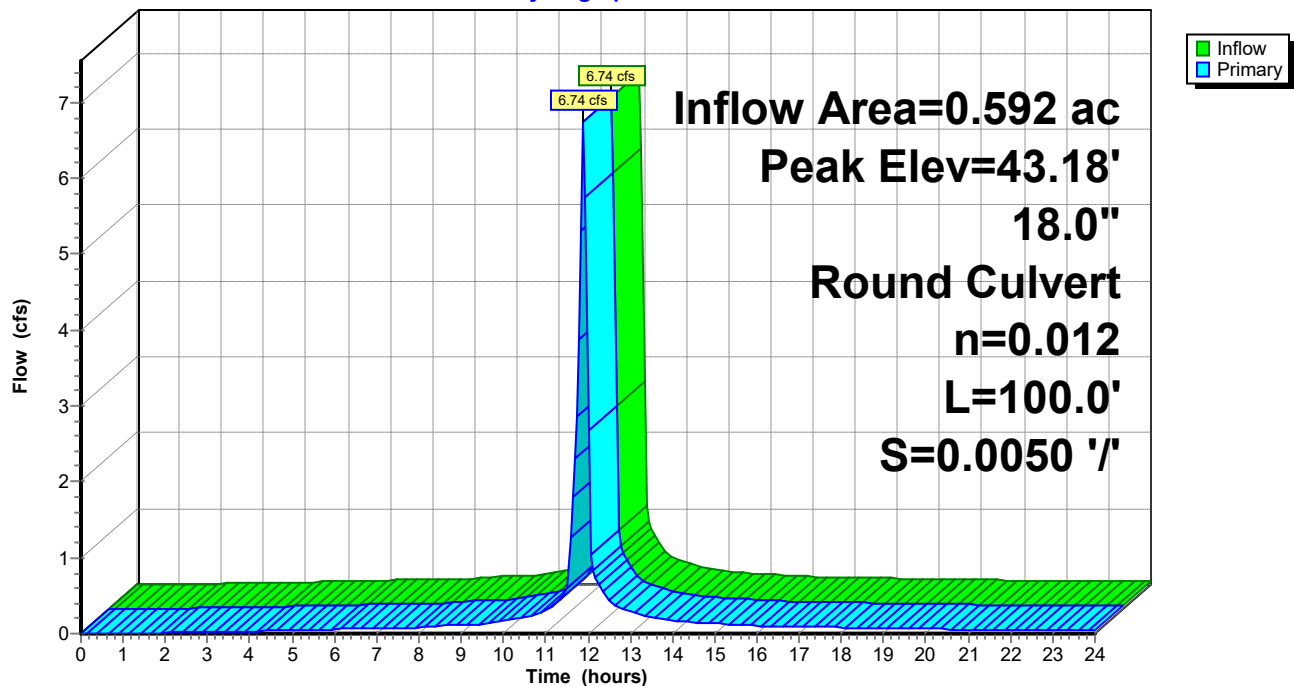
Flood Elev= 46.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	41.40'	18.0" Round 18" HDPE L= 100.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 41.40' / 40.90' S= 0.0050 '/ Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=5.35 cfs @ 11.90 hrs HW=43.11' TW=42.64' (Dynamic Tailwater)
1=18" HDPE (Outlet Controls 5.35 cfs @ 3.33 fps)

Pond 8P: SDI-2

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Page 287

Stage-Area-Storage for Pond 8P: SDI-2

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
41.40	0	43.44	0	45.48	0
41.44	0	43.48	0	45.52	0
41.48	0	43.52	0	45.56	0
41.52	0	43.56	0	45.60	0
41.56	0	43.60	0	45.64	0
41.60	0	43.64	0	45.68	0
41.64	0	43.68	0	45.72	0
41.68	0	43.72	0	45.76	0
41.72	0	43.76	0	45.80	0
41.76	0	43.80	0	45.84	0
41.80	0	43.84	0	45.88	0
41.84	0	43.88	0	45.92	0
41.88	0	43.92	0	45.96	0
41.92	0	43.96	0	46.00	0
41.96	0	44.00	0	46.04	0
42.00	0	44.04	0	46.08	0
42.04	0	44.08	0	46.12	0
42.08	0	44.12	0	46.16	0
42.12	0	44.16	0	46.20	0
42.16	0	44.20	0	46.24	0
42.20	0	44.24	0	46.28	0
42.24	0	44.28	0	46.32	0
42.28	0	44.32	0	46.36	0
42.32	0	44.36	0	46.40	0
42.36	0	44.40	0	46.44	0
42.40	0	44.44	0	46.48	0
42.44	0	44.48	0	46.52	0
42.48	0	44.52	0	46.56	0
42.52	0	44.56	0	46.60	0
42.56	0	44.60	0		
42.60	0	44.64	0		
42.64	0	44.68	0		
42.68	0	44.72	0		
42.72	0	44.76	0		
42.76	0	44.80	0		
42.80	0	44.84	0		
42.84	0	44.88	0		
42.88	0	44.92	0		
42.92	0	44.96	0		
42.96	0	45.00	0		
43.00	0	45.04	0		
43.04	0	45.08	0		
43.08	0	45.12	0		
43.12	0	45.16	0		
43.16	0	45.20	0		
43.20	0	45.24	0		
43.24	0	45.28	0		
43.28	0	45.32	0		
43.32	0	45.36	0		
43.36	0	45.40	0		
43.40	0	45.44	0		

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

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Page 288

Summary for Pond 9P: SDI-3

Inflow Area = 0.095 ac, 91.82% Impervious, Inflow Depth > 7.00" for 100-yr event
Inflow = 1.10 cfs @ 11.90 hrs, Volume= 0.055 af
Outflow = 1.10 cfs @ 11.90 hrs, Volume= 0.055 af, Atten= 0%, Lag= 0.0 min
Primary = 1.10 cfs @ 11.90 hrs, Volume= 0.055 af

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

Peak Elev= 43.21' @ 11.97 hrs

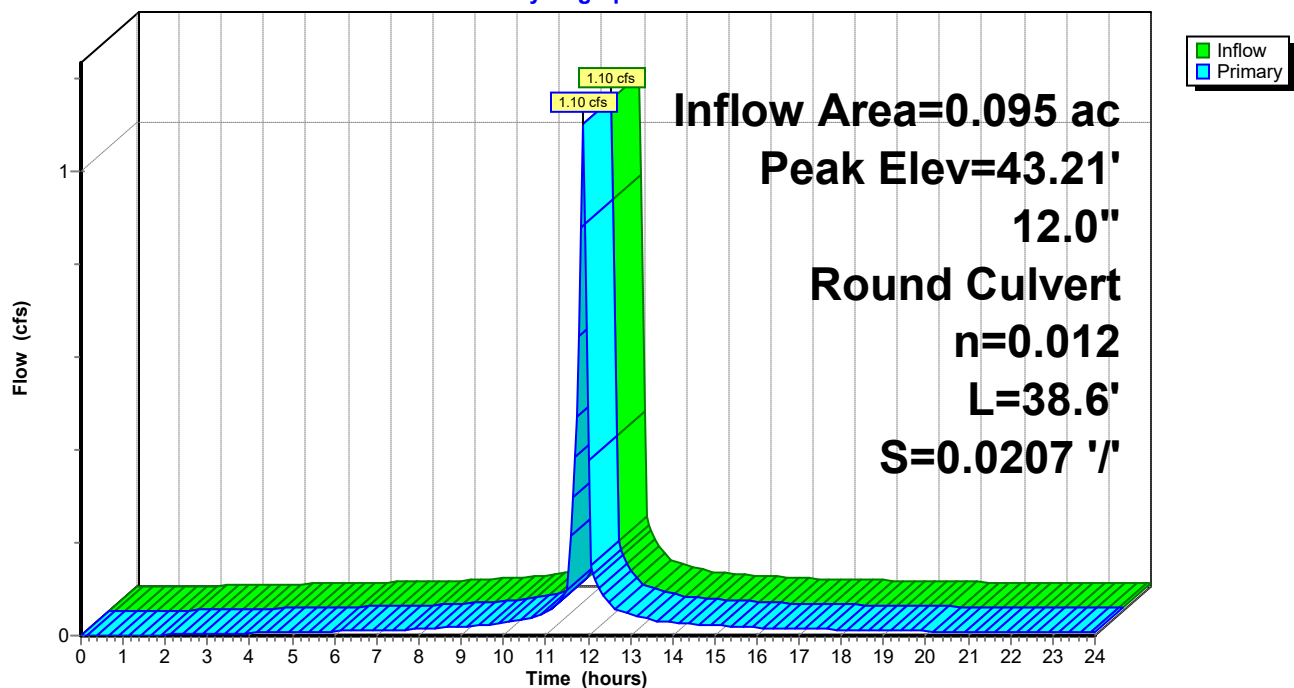
Flood Elev= 46.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	42.30'	12.0" Round 12" HDPE L= 38.6' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 42.30' / 41.50' S= 0.0207 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 11.90 hrs HW=43.03' TW=43.10' (Dynamic Tailwater)
↑1=12" HDPE (Controls 0.00 cfs)

Pond 9P: SDI-3

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Page 289

Stage-Area-Storage for Pond 9P: SDI-3

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
42.30	0	44.85	0
42.35	0	44.90	0
42.40	0	44.95	0
42.45	0	45.00	0
42.50	0	45.05	0
42.55	0	45.10	0
42.60	0	45.15	0
42.65	0	45.20	0
42.70	0	45.25	0
42.75	0	45.30	0
42.80	0	45.35	0
42.85	0	45.40	0
42.90	0	45.45	0
42.95	0	45.50	0
43.00	0	45.55	0
43.05	0	45.60	0
43.10	0	45.65	0
43.15	0	45.70	0
43.20	0	45.75	0
43.25	0	45.80	0
43.30	0	45.85	0
43.35	0	45.90	0
43.40	0	45.95	0
43.45	0	46.00	0
43.50	0	46.05	0
43.55	0	46.10	0
43.60	0	46.15	0
43.65	0	46.20	0
43.70	0	46.25	0
43.75	0		
43.80	0		
43.85	0		
43.90	0		
43.95	0		
44.00	0		
44.05	0		
44.10	0		
44.15	0		
44.20	0		
44.25	0		
44.30	0		
44.35	0		
44.40	0		
44.45	0		
44.50	0		
44.55	0		
44.60	0		
44.65	0		
44.70	0		
44.75	0		
44.80	0		

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Page 290

Summary for Pond 10P: SDI-4

Inflow Area = 0.232 ac, 84.85% Impervious, Inflow Depth > 6.65" for 100-yr event
Inflow = 2.63 cfs @ 11.90 hrs, Volume= 0.129 af
Outflow = 2.63 cfs @ 11.90 hrs, Volume= 0.129 af, Atten= 0%, Lag= 0.0 min
Primary = 2.63 cfs @ 11.90 hrs, Volume= 0.129 af

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

Peak Elev= 43.98' @ 11.91 hrs

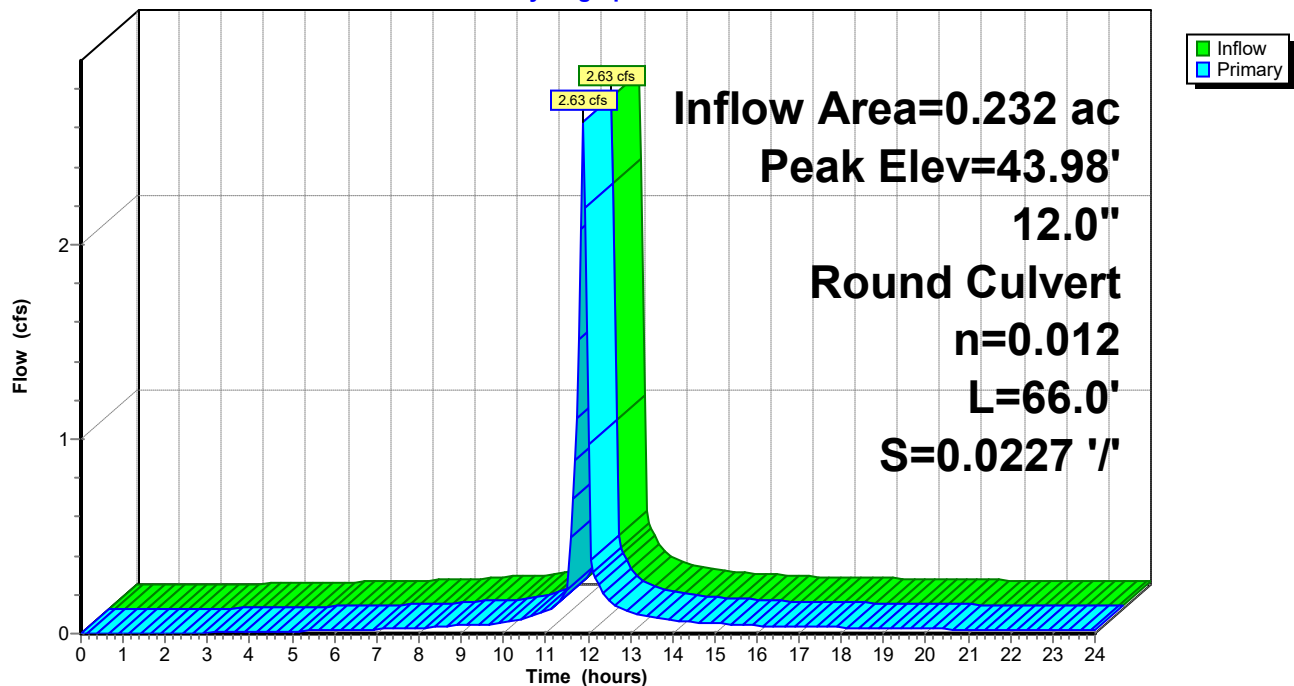
Flood Elev= 45.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	43.00'	12.0" Round 12" HDPE L= 66.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 43.00' / 41.50' S= 0.0227 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=2.61 cfs @ 11.90 hrs HW=43.97' TW=43.11' (Dynamic Tailwater)
↑ **1=12" HDPE** (Inlet Controls 2.61 cfs @ 3.36 fps)

Pond 10P: SDI-4

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Page 291

Stage-Area-Storage for Pond 10P: SDI-4

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
43.00	0	44.02	0	45.04	0
43.02	0	44.04	0	45.06	0
43.04	0	44.06	0	45.08	0
43.06	0	44.08	0	45.10	0
43.08	0	44.10	0	45.12	0
43.10	0	44.12	0	45.14	0
43.12	0	44.14	0	45.16	0
43.14	0	44.16	0	45.18	0
43.16	0	44.18	0	45.20	0
43.18	0	44.20	0	45.22	0
43.20	0	44.22	0	45.24	0
43.22	0	44.24	0	45.26	0
43.24	0	44.26	0	45.28	0
43.26	0	44.28	0	45.30	0
43.28	0	44.30	0	45.32	0
43.30	0	44.32	0	45.34	0
43.32	0	44.34	0	45.36	0
43.34	0	44.36	0	45.38	0
43.36	0	44.38	0	45.40	0
43.38	0	44.40	0	45.42	0
43.40	0	44.42	0	45.44	0
43.42	0	44.44	0	45.46	0
43.44	0	44.46	0	45.48	0
43.46	0	44.48	0	45.50	0
43.48	0	44.50	0	45.52	0
43.50	0	44.52	0	45.54	0
43.52	0	44.54	0	45.56	0
43.54	0	44.56	0	45.58	0
43.56	0	44.58	0	45.60	0
43.58	0	44.60	0	45.62	0
43.60	0	44.62	0	45.64	0
43.62	0	44.64	0	45.66	0
43.64	0	44.66	0	45.68	0
43.66	0	44.68	0	45.70	0
43.68	0	44.70	0	45.72	0
43.70	0	44.72	0	45.74	0
43.72	0	44.74	0	45.76	0
43.74	0	44.76	0	45.78	0
43.76	0	44.78	0	45.80	0
43.78	0	44.80	0	45.82	0
43.80	0	44.82	0	45.84	0
43.82	0	44.84	0	45.86	0
43.84	0	44.86	0	45.88	0
43.86	0	44.88	0	45.90	0
43.88	0	44.90	0		
43.90	0	44.92	0		
43.92	0	44.94	0		
43.94	0	44.96	0		
43.96	0	44.98	0		
43.98	0	45.00	0		
44.00	0	45.02	0		

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Page 292

Summary for Pond 11P: SDI-8

Inflow Area = 0.117 ac, 82.35% Impervious, Inflow Depth > 6.53" for 100-yr event
Inflow = 1.31 cfs @ 11.90 hrs, Volume= 0.063 af
Outflow = 1.31 cfs @ 11.90 hrs, Volume= 0.063 af, Atten= 0%, Lag= 0.0 min
Primary = 1.31 cfs @ 11.90 hrs, Volume= 0.063 af

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

Peak Elev= 45.46' @ 12.01 hrs

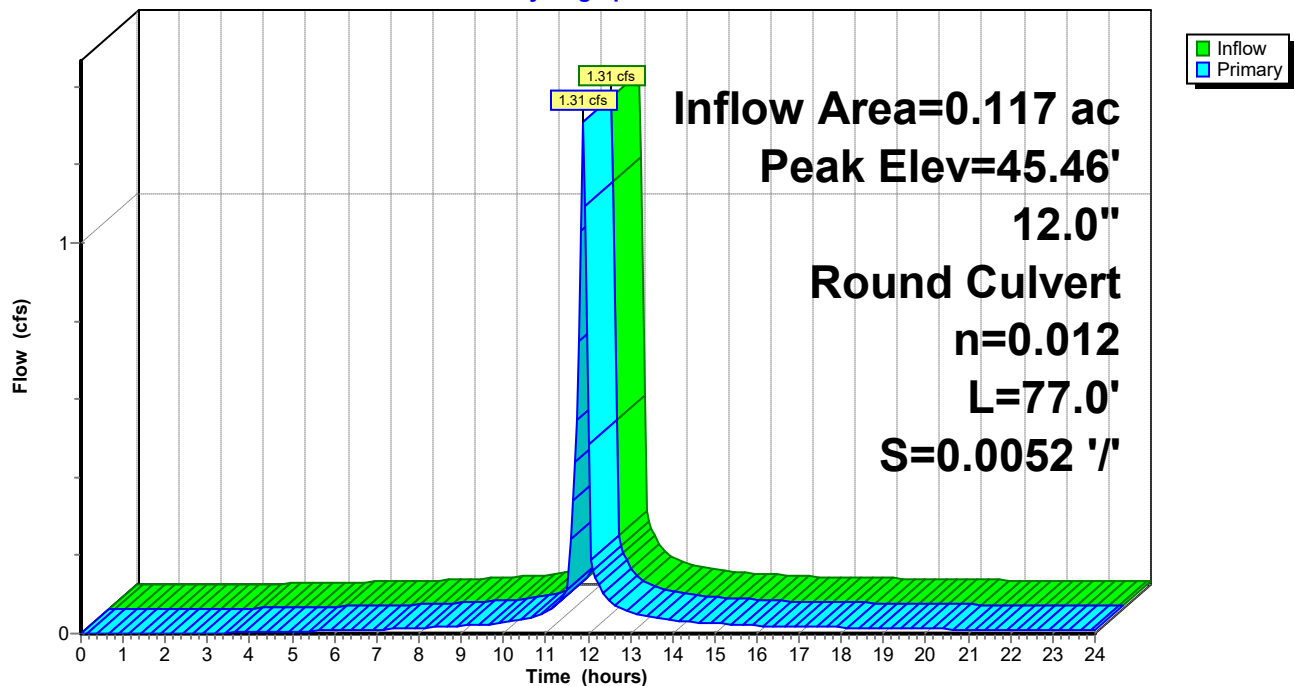
Flood Elev= 45.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	44.20'	12.0" Round 12" HDPE L= 77.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 44.20' / 43.80' S= 0.0052 '/ Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 11.90 hrs HW=45.22' TW=45.28' (Dynamic Tailwater)
↑1=12" HDPE (Controls 0.00 cfs)

Pond 11P: SDI-8

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Page 293

Stage-Area-Storage for Pond 11P: SDI-8

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
44.20	0	44.71	0	45.22	0
44.21	0	44.72	0	45.23	0
44.22	0	44.73	0	45.24	0
44.23	0	44.74	0	45.25	0
44.24	0	44.75	0	45.26	0
44.25	0	44.76	0	45.27	0
44.26	0	44.77	0	45.28	0
44.27	0	44.78	0	45.29	0
44.28	0	44.79	0	45.30	0
44.29	0	44.80	0	45.31	0
44.30	0	44.81	0	45.32	0
44.31	0	44.82	0	45.33	0
44.32	0	44.83	0	45.34	0
44.33	0	44.84	0	45.35	0
44.34	0	44.85	0	45.36	0
44.35	0	44.86	0	45.37	0
44.36	0	44.87	0	45.38	0
44.37	0	44.88	0	45.39	0
44.38	0	44.89	0	45.40	0
44.39	0	44.90	0	45.41	0
44.40	0	44.91	0	45.42	0
44.41	0	44.92	0	45.43	0
44.42	0	44.93	0	45.44	0
44.43	0	44.94	0	45.45	0
44.44	0	44.95	0	45.46	0
44.45	0	44.96	0		
44.46	0	44.97	0		
44.47	0	44.98	0		
44.48	0	44.99	0		
44.49	0	45.00	0		
44.50	0	45.01	0		
44.51	0	45.02	0		
44.52	0	45.03	0		
44.53	0	45.04	0		
44.54	0	45.05	0		
44.55	0	45.06	0		
44.56	0	45.07	0		
44.57	0	45.08	0		
44.58	0	45.09	0		
44.59	0	45.10	0		
44.60	0	45.11	0		
44.61	0	45.12	0		
44.62	0	45.13	0		
44.63	0	45.14	0		
44.64	0	45.15	0		
44.65	0	45.16	0		
44.66	0	45.17	0		
44.67	0	45.18	0		
44.68	0	45.19	0		
44.69	0	45.20	0		
44.70	0	45.21	0		

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

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Page 294

Summary for Pond 13P: SDI-9

Inflow Area = 0.408 ac, 89.26% Impervious, Inflow Depth > 6.90" for 100-yr event
Inflow = 4.56 cfs @ 11.90 hrs, Volume= 0.234 af
Outflow = 4.56 cfs @ 11.90 hrs, Volume= 0.234 af, Atten= 0%, Lag= 0.0 min
Primary = 4.56 cfs @ 11.90 hrs, Volume= 0.234 af

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

Peak Elev= 42.55' @ 12.11 hrs

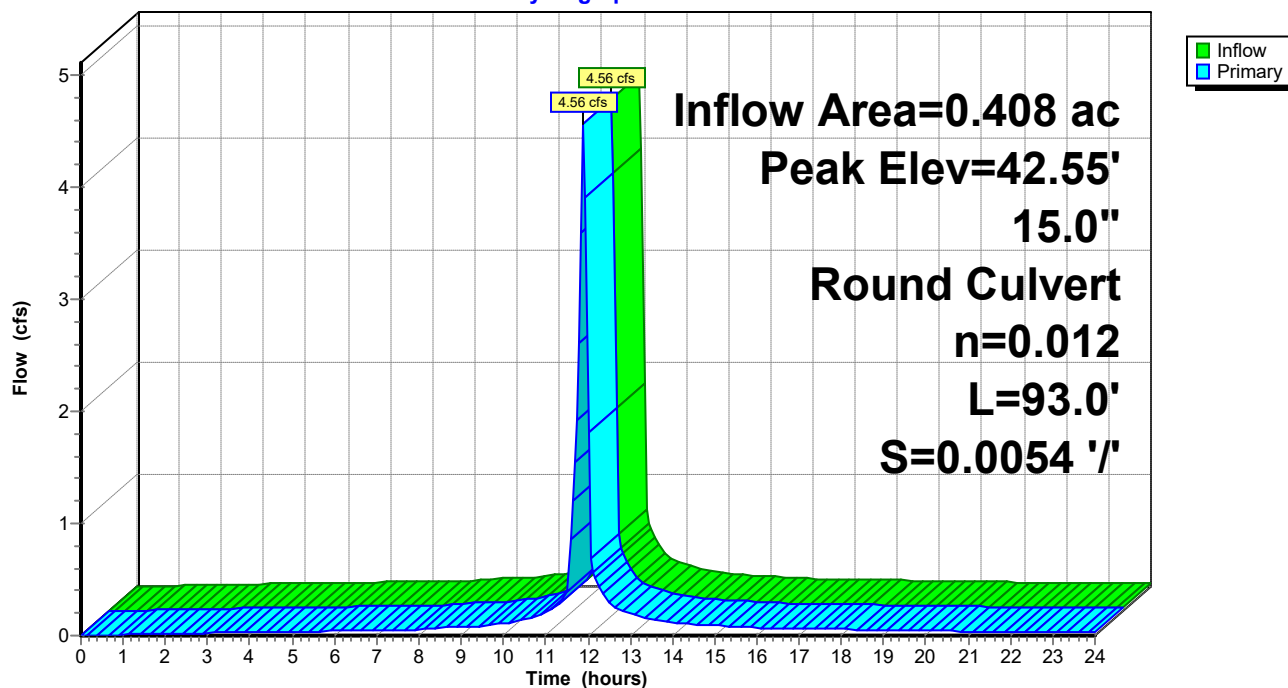
Flood Elev= 43.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	40.90'	15.0" Round 15" HDPE L= 93.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 40.90' / 40.40' S= 0.0054 '/ Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=3.27 cfs @ 11.90 hrs HW=42.40' TW=42.04' (Dynamic Tailwater)
↑ **15" HDPE** (Outlet Controls 3.27 cfs @ 2.81 fps)

Pond 13P: SDI-9

Hydrograph



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Page 295

Stage-Area-Storage for Pond 13P: SDI-9

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
40.90	0	41.92	0	42.94	0
40.92	0	41.94	0	42.96	0
40.94	0	41.96	0	42.98	0
40.96	0	41.98	0	43.00	0
40.98	0	42.00	0		
41.00	0	42.02	0		
41.02	0	42.04	0		
41.04	0	42.06	0		
41.06	0	42.08	0		
41.08	0	42.10	0		
41.10	0	42.12	0		
41.12	0	42.14	0		
41.14	0	42.16	0		
41.16	0	42.18	0		
41.18	0	42.20	0		
41.20	0	42.22	0		
41.22	0	42.24	0		
41.24	0	42.26	0		
41.26	0	42.28	0		
41.28	0	42.30	0		
41.30	0	42.32	0		
41.32	0	42.34	0		
41.34	0	42.36	0		
41.36	0	42.38	0		
41.38	0	42.40	0		
41.40	0	42.42	0		
41.42	0	42.44	0		
41.44	0	42.46	0		
41.46	0	42.48	0		
41.48	0	42.50	0		
41.50	0	42.52	0		
41.52	0	42.54	0		
41.54	0	42.56	0		
41.56	0	42.58	0		
41.58	0	42.60	0		
41.60	0	42.62	0		
41.62	0	42.64	0		
41.64	0	42.66	0		
41.66	0	42.68	0		
41.68	0	42.70	0		
41.70	0	42.72	0		
41.72	0	42.74	0		
41.74	0	42.76	0		
41.76	0	42.78	0		
41.78	0	42.80	0		
41.80	0	42.82	0		
41.82	0	42.84	0		
41.84	0	42.86	0		
41.86	0	42.88	0		
41.88	0	42.90	0		
41.90	0	42.92	0		

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Page 296

Summary for Pond 14P: RL-5

Inflow Area = 0.308 ac, 100.00% Impervious, Inflow Depth > 7.36" for 100-yr event
Inflow = 3.56 cfs @ 11.90 hrs, Volume= 0.189 af
Outflow = 3.56 cfs @ 11.90 hrs, Volume= 0.189 af, Atten= 0%, Lag= 0.0 min
Primary = 3.56 cfs @ 11.90 hrs, Volume= 0.189 af

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

Peak Elev= 43.30' @ 11.92 hrs

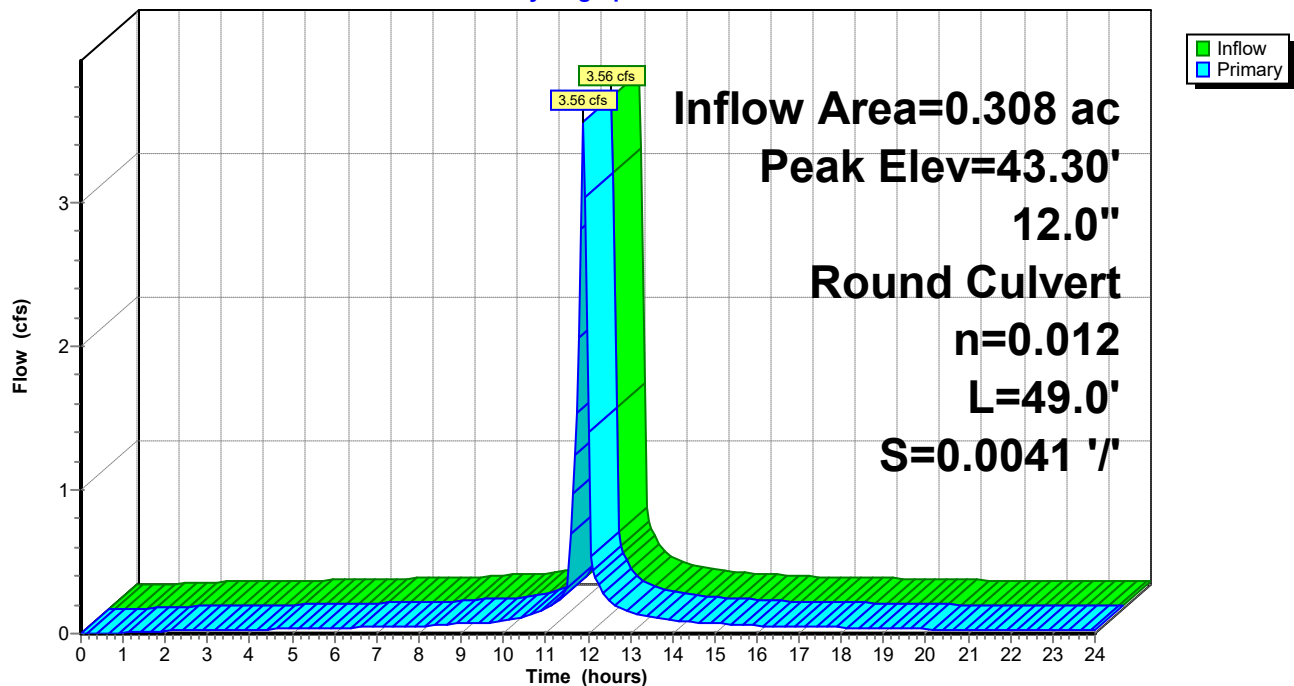
Flood Elev= 46.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	41.20'	12.0" Round 12" HDPE L= 49.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 41.20' / 41.00' S= 0.0041 '/ Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=3.04 cfs @ 11.90 hrs HW=43.23' TW=42.40' (Dynamic Tailwater)
↑ **12" HDPE** (Inlet Controls 3.04 cfs @ 3.86 fps)

Pond 14P: RL-5

Hydrograph



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Page 297

Stage-Area-Storage for Pond 14P: RL-5

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
41.20	0	43.24	0	45.28	0
41.24	0	43.28	0	45.32	0
41.28	0	43.32	0	45.36	0
41.32	0	43.36	0	45.40	0
41.36	0	43.40	0	45.44	0
41.40	0	43.44	0	45.48	0
41.44	0	43.48	0	45.52	0
41.48	0	43.52	0	45.56	0
41.52	0	43.56	0	45.60	0
41.56	0	43.60	0	45.64	0
41.60	0	43.64	0	45.68	0
41.64	0	43.68	0	45.72	0
41.68	0	43.72	0	45.76	0
41.72	0	43.76	0	45.80	0
41.76	0	43.80	0	45.84	0
41.80	0	43.84	0	45.88	0
41.84	0	43.88	0	45.92	0
41.88	0	43.92	0	45.96	0
41.92	0	43.96	0	46.00	0
41.96	0	44.00	0	46.04	0
42.00	0	44.04	0	46.08	0
42.04	0	44.08	0	46.12	0
42.08	0	44.12	0	46.16	0
42.12	0	44.16	0	46.20	0
42.16	0	44.20	0	46.24	0
42.20	0	44.24	0	46.28	0
42.24	0	44.28	0	46.32	0
42.28	0	44.32	0	46.36	0
42.32	0	44.36	0	46.40	0
42.36	0	44.40	0	46.44	0
42.40	0	44.44	0	46.48	0
42.44	0	44.48	0		
42.48	0	44.52	0		
42.52	0	44.56	0		
42.56	0	44.60	0		
42.60	0	44.64	0		
42.64	0	44.68	0		
42.68	0	44.72	0		
42.72	0	44.76	0		
42.76	0	44.80	0		
42.80	0	44.84	0		
42.84	0	44.88	0		
42.88	0	44.92	0		
42.92	0	44.96	0		
42.96	0	45.00	0		
43.00	0	45.04	0		
43.04	0	45.08	0		
43.08	0	45.12	0		
43.12	0	45.16	0		
43.16	0	45.20	0		
43.20	0	45.24	0		

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Page 298

Summary for Pond 15P: 30x19 RCP

Inflow Area = 2.704 ac, 59.07% Impervious, Inflow Depth > 5.60" for 100-yr event
Inflow = 14.99 cfs @ 12.04 hrs, Volume= 1.262 af
Outflow = 14.99 cfs @ 12.04 hrs, Volume= 1.262 af, Atten= 0%, Lag= 0.0 min
Primary = 14.99 cfs @ 12.04 hrs, Volume= 1.262 af

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

Peak Elev= 42.24' @ 12.04 hrs

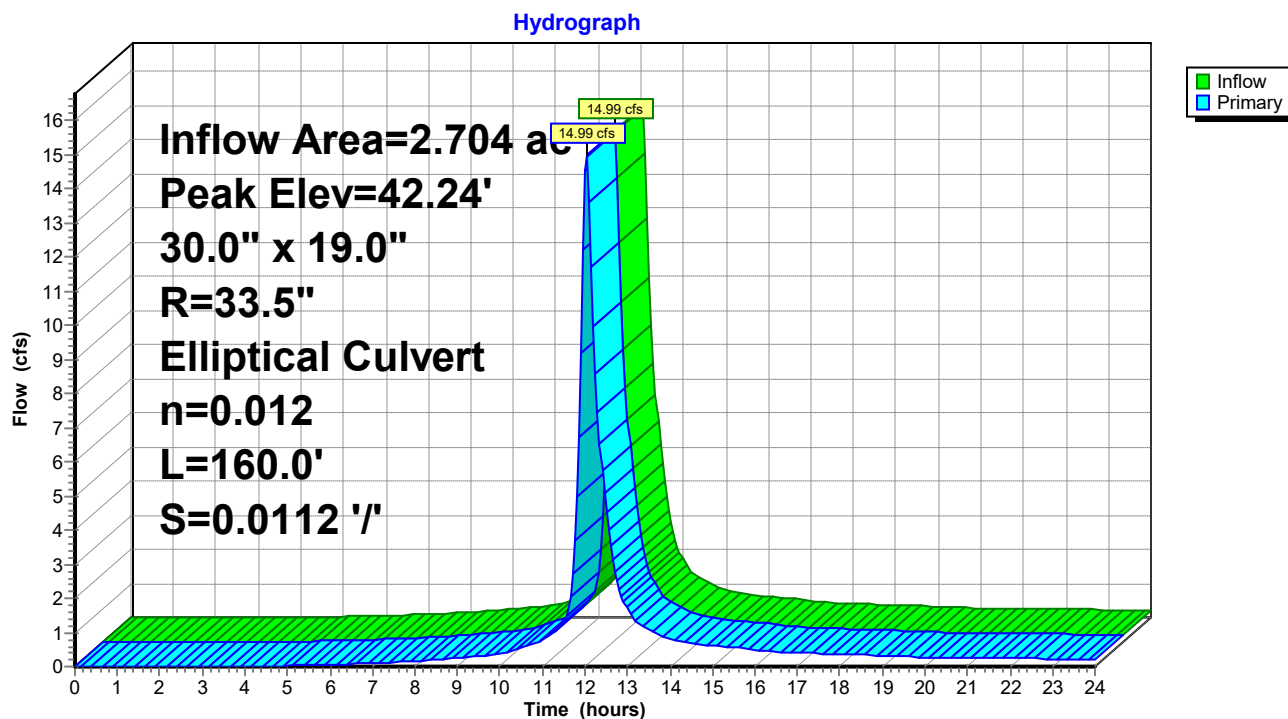
Flood Elev= 42.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	40.50'	30.0" W x 19.0" H, R=33.5" Elliptical RCP_Elliptical 30x19 L= 160.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 40.50' / 38.70' S= 0.0112 '/' Cc= 0.900 n= 0.012, Flow Area= 3.28 sf

Primary OutFlow Max=14.82 cfs @ 12.04 hrs HW=42.22' TW=39.85' (Dynamic Tailwater)

↑1=RCP_Elliptical 30x19 (Inlet Controls 14.82 cfs @ 4.52 fps)

Pond 15P: 30x19 RCP



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Page 299

Stage-Area-Storage for Pond 15P: 30x19 RCP

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
40.50	0	41.52	0
40.52	0	41.54	0
40.54	0	41.56	0
40.56	0	41.58	0
40.58	0	41.60	0
40.60	0	41.62	0
40.62	0	41.64	0
40.64	0	41.66	0
40.66	0	41.68	0
40.68	0	41.70	0
40.70	0	41.72	0
40.72	0	41.74	0
40.74	0	41.76	0
40.76	0	41.78	0
40.78	0	41.80	0
40.80	0	41.82	0
40.82	0	41.84	0
40.84	0	41.86	0
40.86	0	41.88	0
40.88	0	41.90	0
40.90	0	41.92	0
40.92	0	41.94	0
40.94	0	41.96	0
40.96	0	41.98	0
40.98	0	42.00	0
41.00	0	42.02	0
41.02	0	42.04	0
41.04	0	42.06	0
41.06	0	42.08	0
41.08	0	42.10	0
41.10	0	42.12	0
41.12	0	42.14	0
41.14	0	42.16	0
41.16	0	42.18	0
41.18	0	42.20	0
41.20	0	42.22	0
41.22	0	42.24	0
41.24	0		
41.26	0		
41.28	0		
41.30	0		
41.32	0		
41.34	0		
41.36	0		
41.38	0		
41.40	0		
41.42	0		
41.44	0		
41.46	0		
41.48	0		
41.50	0		

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

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Page 300

Summary for Pond 16P: RL-6

Inflow Area = 0.207 ac, 100.00% Impervious, Inflow Depth > 7.36" for 100-yr event
Inflow = 2.40 cfs @ 11.90 hrs, Volume= 0.127 af
Outflow = 2.40 cfs @ 11.90 hrs, Volume= 0.127 af, Atten= 0%, Lag= 0.0 min
Primary = 2.40 cfs @ 11.90 hrs, Volume= 0.127 af

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

Peak Elev= 43.68' @ 11.95 hrs

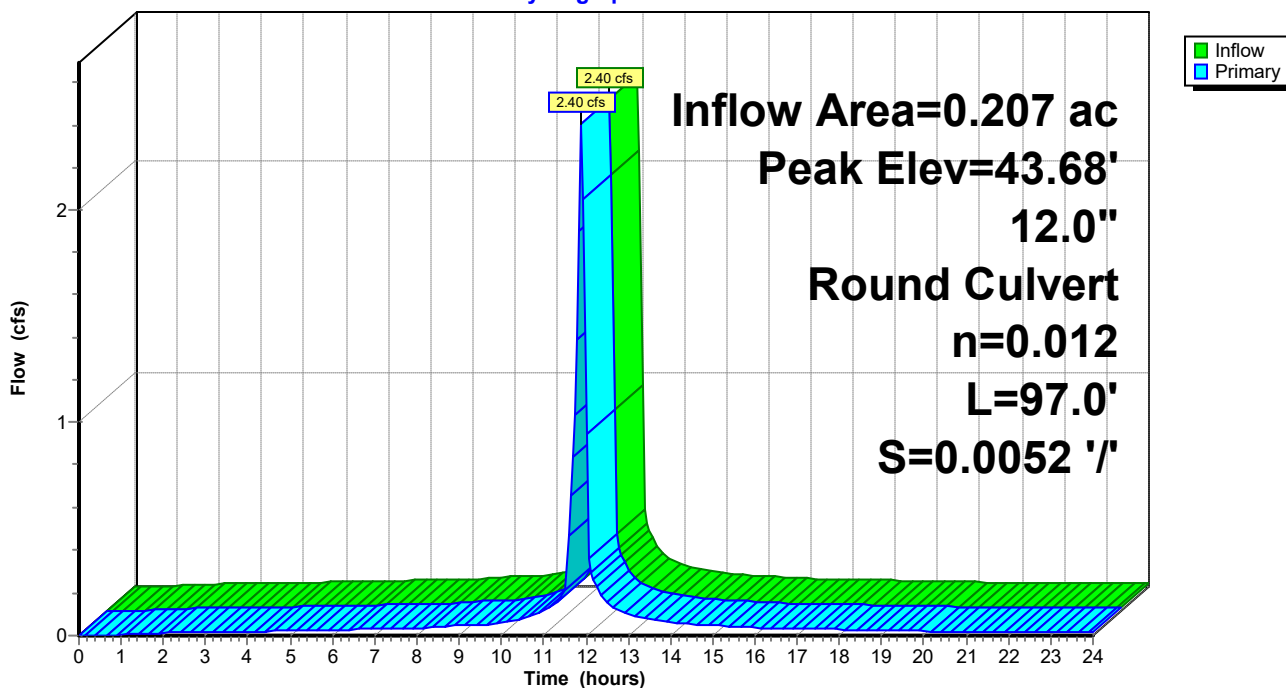
Flood Elev= 46.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	41.70'	12.0" Round 12" HDPE L= 97.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 41.70' / 41.20' S= 0.0052 '/ Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.57 cfs @ 11.90 hrs HW=43.26' TW=43.23' (Dynamic Tailwater)
↑ **1=12" HDPE** (Outlet Controls 0.57 cfs @ 0.73 fps)

Pond 16P: RL-6

Hydrograph



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Page 301

Stage-Area-Storage for Pond 16P: RL-6

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
41.70	0	44.25	0
41.75	0	44.30	0
41.80	0	44.35	0
41.85	0	44.40	0
41.90	0	44.45	0
41.95	0	44.50	0
42.00	0	44.55	0
42.05	0	44.60	0
42.10	0	44.65	0
42.15	0	44.70	0
42.20	0	44.75	0
42.25	0	44.80	0
42.30	0	44.85	0
42.35	0	44.90	0
42.40	0	44.95	0
42.45	0	45.00	0
42.50	0	45.05	0
42.55	0	45.10	0
42.60	0	45.15	0
42.65	0	45.20	0
42.70	0	45.25	0
42.75	0	45.30	0
42.80	0	45.35	0
42.85	0	45.40	0
42.90	0	45.45	0
42.95	0	45.50	0
43.00	0	45.55	0
43.05	0	45.60	0
43.10	0	45.65	0
43.15	0	45.70	0
43.20	0	45.75	0
43.25	0	45.80	0
43.30	0	45.85	0
43.35	0	45.90	0
43.40	0	45.95	0
43.45	0	46.00	0
43.50	0	46.05	0
43.55	0	46.10	0
43.60	0	46.15	0
43.65	0	46.20	0
43.70	0	46.25	0
43.75	0	46.30	0
43.80	0	46.35	0
43.85	0	46.40	0
43.90	0	46.45	0
43.95	0	46.50	0
44.00	0		
44.05	0		
44.10	0		
44.15	0		
44.20	0		

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

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Page 302

Summary for Pond 20P: RL-8

Inflow Area = 0.104 ac, 100.00% Impervious, Inflow Depth > 7.36" for 100-yr event
Inflow = 1.20 cfs @ 11.90 hrs, Volume= 0.064 af
Outflow = 1.20 cfs @ 11.90 hrs, Volume= 0.064 af, Atten= 0%, Lag= 0.0 min
Primary = 1.20 cfs @ 11.90 hrs, Volume= 0.064 af

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

Peak Elev= 43.75' @ 11.99 hrs

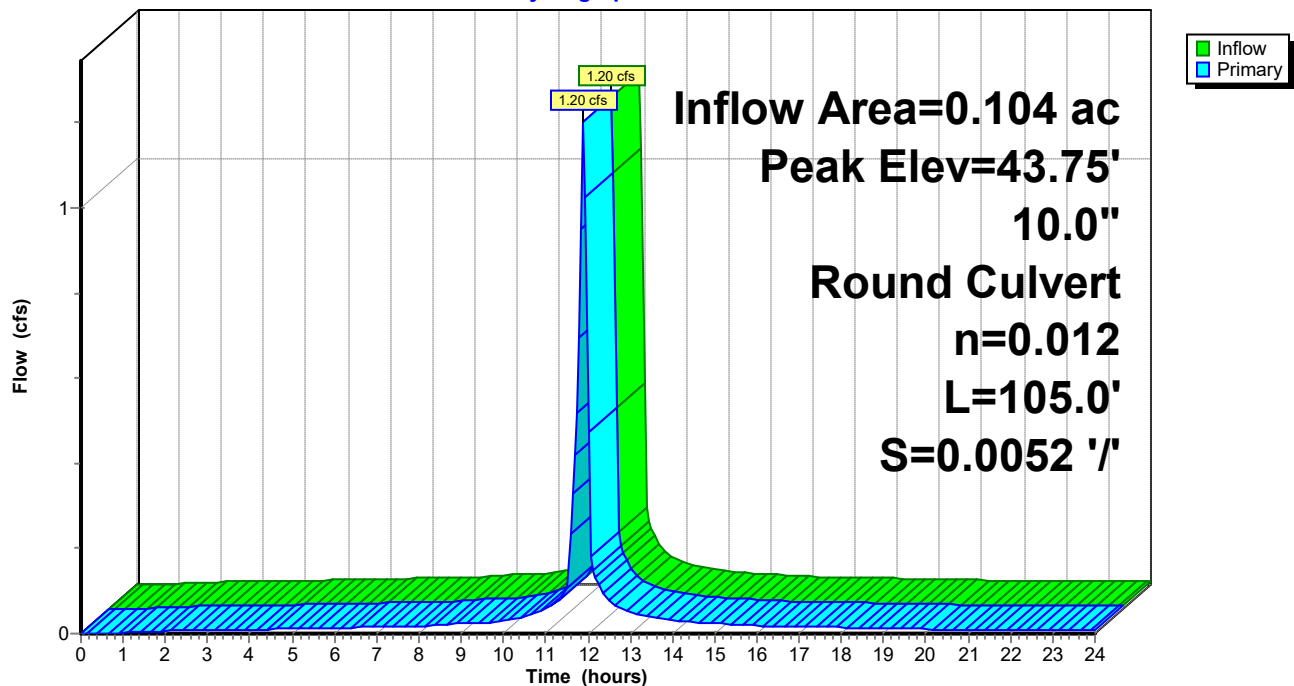
Flood Elev= 45.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	42.25'	10.0" Round 10" HDPE L= 105.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 42.25' / 41.70' S= 0.0052 '/ Cc= 0.900 n= 0.012, Flow Area= 0.55 sf

Primary OutFlow Max=0.00 cfs @ 11.90 hrs HW=43.18' TW=43.26' (Dynamic Tailwater)
↑ **1=10" HDPE** (Controls 0.00 cfs)

Pond 20P: RL-8

Hydrograph



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Page 303

Stage-Area-Storage for Pond 20P: RL-8

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
42.25	0	43.27	0	44.29	0
42.27	0	43.29	0	44.31	0
42.29	0	43.31	0	44.33	0
42.31	0	43.33	0	44.35	0
42.33	0	43.35	0	44.37	0
42.35	0	43.37	0	44.39	0
42.37	0	43.39	0	44.41	0
42.39	0	43.41	0	44.43	0
42.41	0	43.43	0	44.45	0
42.43	0	43.45	0	44.47	0
42.45	0	43.47	0	44.49	0
42.47	0	43.49	0	44.51	0
42.49	0	43.51	0	44.53	0
42.51	0	43.53	0	44.55	0
42.53	0	43.55	0	44.57	0
42.55	0	43.57	0	44.59	0
42.57	0	43.59	0	44.61	0
42.59	0	43.61	0	44.63	0
42.61	0	43.63	0	44.65	0
42.63	0	43.65	0	44.67	0
42.65	0	43.67	0	44.69	0
42.67	0	43.69	0	44.71	0
42.69	0	43.71	0	44.73	0
42.71	0	43.73	0	44.75	0
42.73	0	43.75	0	44.77	0
42.75	0	43.77	0	44.79	0
42.77	0	43.79	0	44.81	0
42.79	0	43.81	0	44.83	0
42.81	0	43.83	0	44.85	0
42.83	0	43.85	0	44.87	0
42.85	0	43.87	0	44.89	0
42.87	0	43.89	0	44.91	0
42.89	0	43.91	0	44.93	0
42.91	0	43.93	0	44.95	0
42.93	0	43.95	0	44.97	0
42.95	0	43.97	0	44.99	0
42.97	0	43.99	0	45.01	0
42.99	0	44.01	0	45.03	0
43.01	0	44.03	0	45.05	0
43.03	0	44.05	0	45.07	0
43.05	0	44.07	0	45.09	0
43.07	0	44.09	0	45.11	0
43.09	0	44.11	0	45.13	0
43.11	0	44.13	0	45.15	0
43.13	0	44.15	0	45.17	0
43.15	0	44.17	0	45.19	0
43.17	0	44.19	0	45.21	0
43.19	0	44.21	0	45.23	0
43.21	0	44.23	0	45.25	0
43.23	0	44.25	0		
43.25	0	44.27	0		

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Page 304

Summary for Pond 25P: SDI-1

Inflow Area = 2.024 ac, 64.51% Impervious, Inflow Depth > 5.76" for 100-yr event
Inflow = 16.01 cfs @ 11.98 hrs, Volume= 0.971 af
Outflow = 16.01 cfs @ 11.98 hrs, Volume= 0.971 af, Atten= 0%, Lag= 0.0 min
Primary = 16.01 cfs @ 11.98 hrs, Volume= 0.971 af

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

Peak Elev= 44.83' @ 12.06 hrs

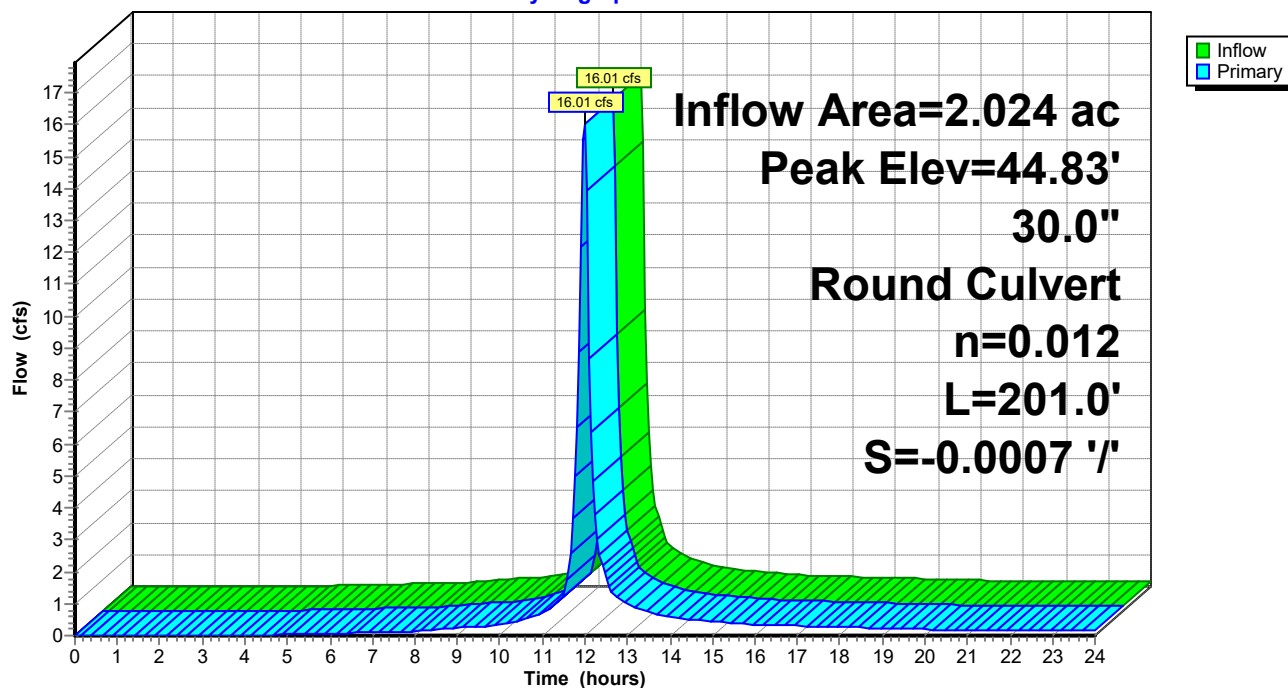
Flood Elev= 46.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	41.84'	30.0" Round 30" PERF. HDPE L= 201.0' Box, headwall w/3 rounded edges, Ke= 0.200 Inlet / Outlet Invert= 41.69' / 41.84' S= -0.0007 '/' Cc= 0.900 n= 0.012, Flow Area= 4.91 sf

Primary OutFlow Max=4.44 cfs @ 11.98 hrs HW=44.36' TW=44.32' (Dynamic Tailwater)
↑1=30" PERF. HDPE (Outlet Controls 4.44 cfs @ 1.05 fps)

Pond 25P: SDI-1

Hydrograph



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Page 305

Stage-Area-Storage for Pond 25P: SDI-1

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
41.84	0	44.39	0
41.89	0	44.44	0
41.94	0	44.49	0
41.99	0	44.54	0
42.04	0	44.59	0
42.09	0	44.64	0
42.14	0	44.69	0
42.19	0	44.74	0
42.24	0	44.79	0
42.29	0	44.84	0
42.34	0	44.89	0
42.39	0	44.94	0
42.44	0	44.99	0
42.49	0	45.04	0
42.54	0	45.09	0
42.59	0	45.14	0
42.64	0	45.19	0
42.69	0	45.24	0
42.74	0	45.29	0
42.79	0	45.34	0
42.84	0	45.39	0
42.89	0	45.44	0
42.94	0	45.49	0
42.99	0	45.54	0
43.04	0	45.59	0
43.09	0	45.64	0
43.14	0	45.69	0
43.19	0	45.74	0
43.24	0	45.79	0
43.29	0	45.84	0
43.34	0	45.89	0
43.39	0	45.94	0
43.44	0	45.99	0
43.49	0		
43.54	0		
43.59	0		
43.64	0		
43.69	0		
43.74	0		
43.79	0		
43.84	0		
43.89	0		
43.94	0		
43.99	0		
44.04	0		
44.09	0		
44.14	0		
44.19	0		
44.24	0		
44.29	0		
44.34	0		

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Page 306

Summary for Pond 28P: Doghouse SDMH

Inflow Area = 4.944 ac, 68.48% Impervious, Inflow Depth > 5.52" for 100-yr event
Inflow = 17.71 cfs @ 12.00 hrs, Volume= 2.274 af
Outflow = 17.71 cfs @ 12.00 hrs, Volume= 2.274 af, Atten= 0%, Lag= 0.0 min
Primary = 17.71 cfs @ 12.00 hrs, Volume= 2.274 af

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

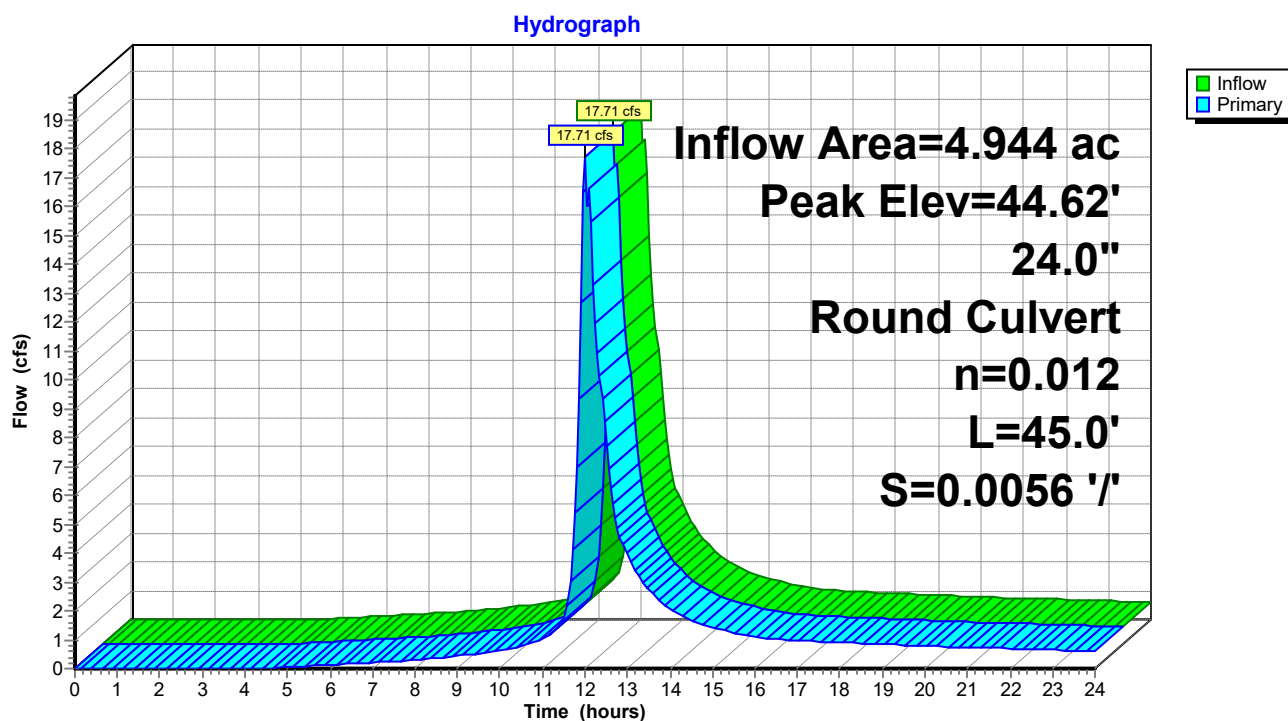
Peak Elev= 44.62' @ 12.02 hrs

Flood Elev= 48.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	41.65'	24.0" Round Culvert L= 45.0' Box, headwall w/3 rounded edges, Ke= 0.200 Inlet / Outlet Invert= 41.65' / 41.40' S= 0.0056 '/ Cc= 0.900 n= 0.012, Flow Area= 3.14 sf

Primary OutFlow Max=15.96 cfs @ 12.00 hrs HW=44.52' TW=43.81' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 15.96 cfs @ 5.08 fps)

Pond 28P: Doghouse SDMH



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Page 307

Stage-Area-Storage for Pond 28P: Doghouse SDMH

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
41.65	0	46.75	0
41.75	0	46.85	0
41.85	0	46.95	0
41.95	0	47.05	0
42.05	0	47.15	0
42.15	0	47.25	0
42.25	0	47.35	0
42.35	0	47.45	0
42.45	0	47.55	0
42.55	0	47.65	0
42.65	0	47.75	0
42.75	0	47.85	0
42.85	0	47.95	0
42.95	0		
43.05	0		
43.15	0		
43.25	0		
43.35	0		
43.45	0		
43.55	0		
43.65	0		
43.75	0		
43.85	0		
43.95	0		
44.05	0		
44.15	0		
44.25	0		
44.35	0		
44.45	0		
44.55	0		
44.65	0		
44.75	0		
44.85	0		
44.95	0		
45.05	0		
45.15	0		
45.25	0		
45.35	0		
45.45	0		
45.55	0		
45.65	0		
45.75	0		
45.85	0		
45.95	0		
46.05	0		
46.15	0		
46.25	0		
46.35	0		
46.45	0		
46.55	0		
46.65	0		

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Page 308

Summary for Pond EX-P: G2 Pond & Underground

Inflow Area = 3.213 ac, 70.08% Impervious, Inflow Depth > 6.05" for 100-yr event
 Inflow = 20.33 cfs @ 12.01 hrs, Volume= 1.621 af
 Outflow = 18.68 cfs @ 12.10 hrs, Volume= 1.474 af, Atten= 8%, Lag= 5.4 min
 Primary = 9.62 cfs @ 12.10 hrs, Volume= 1.358 af
 Secondary = 9.07 cfs @ 12.10 hrs, Volume= 0.116 af

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

Peak Elev= 46.65' @ 12.10 hrs Surf.Area= 0 sf Storage= 21,420 cf

Flood Elev= 47.00' Surf.Area= 0 sf Storage= 23,400 cf

Plug-Flow detention time= 125.8 min calculated for 1.474 af (91% of inflow)

Center-of-Mass det. time= 79.1 min (868.7 - 789.6)

Volume	Invert	Avail.Storage	Storage Description
#1	42.00'	23,400 cf	Custom Stage Data Listed below

Elevation (feet)	Cum.Store (cubic-feet)
42.00	0
42.25	523
42.50	1,508
42.75	2,524
43.00	3,566
43.25	4,630
43.50	5,712
43.75	6,809
44.00	7,911
44.25	9,006
44.50	10,072
45.00	12,544
46.00	17,789
47.00	23,400

Device	Routing	Invert	Outlet Devices
#1	Primary	42.00'	30.0" Round 30" PERF HDPE L= 12.0' Box, headwall w/3 rounded edges, Ke= 0.200 Inlet / Outlet Invert= 42.00' / 41.84' S= 0.0133 '/' Cc= 0.900 n= 0.012, Flow Area= 4.91 sf
#2	Device 1	42.00'	4.0" Vert. 4" hole in S-2 weir from 2005 G2 Plans C= 0.600
#3	Device 1	44.70'	6.0" W x 16.8" H Vert. 4" notched weir from G2 plans C= 0.600
#4	Device 1	46.10'	4.0' long Top of Weir in S-2 outlet box Cv= 2.62 (C= 3.28)
#5	Secondary	46.50'	60.0' long x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

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Page 309

Primary OutFlow Max=9.49 cfs @ 12.10 hrs HW=46.64' TW=44.93' (Dynamic Tailwater)

1=30" PERF HDPE (Passes 9.49 cfs of 38.71 cfs potential flow)

2=4" hole in S-2 weir from 2005 G2 Plans (Orifice Controls 0.55 cfs @ 6.31 fps)

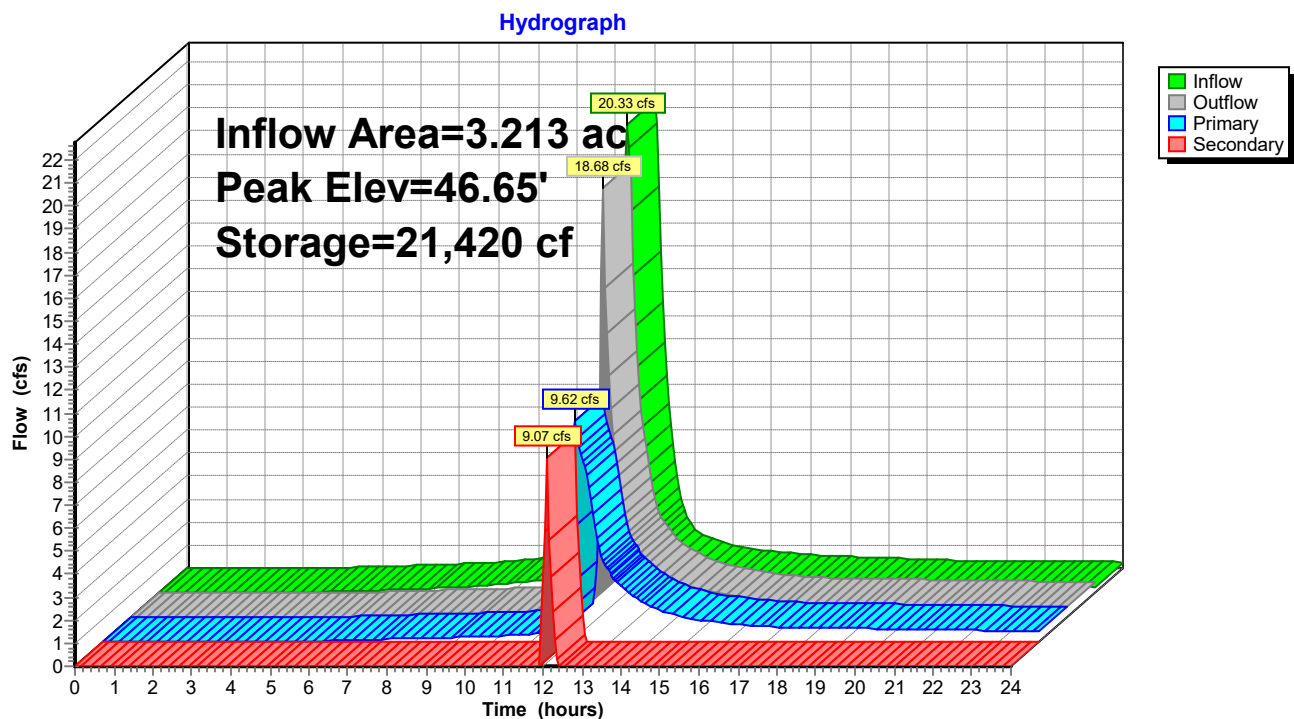
3=4" notched weir from G2 plans (Orifice Controls 3.68 cfs @ 5.26 fps)

4=Top of Weir in S-2 outlet box (Weir Controls 5.25 cfs @ 2.42 fps)

Secondary OutFlow Max=8.97 cfs @ 12.10 hrs HW=46.65' TW=0.00' (Dynamic Tailwater)

5=Broad-Crested Rectangular Weir (Weir Controls 8.97 cfs @ 1.02 fps)

Pond EX-P: G2 Pond & Underground



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Page 310

Stage-Area-Storage for Pond EX-P: G2 Pond & Underground

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
42.00	0	44.55	10,319
42.05	105	44.60	10,566
42.10	209	44.65	10,814
42.15	314	44.70	11,061
42.20	418	44.75	11,308
42.25	523	44.80	11,555
42.30	720	44.85	11,802
42.35	917	44.90	12,050
42.40	1,114	44.95	12,297
42.45	1,311	45.00	12,544
42.50	1,508	45.05	12,806
42.55	1,711	45.10	13,069
42.60	1,914	45.15	13,331
42.65	2,118	45.20	13,593
42.70	2,321	45.25	13,855
42.75	2,524	45.30	14,117
42.80	2,732	45.35	14,380
42.85	2,941	45.40	14,642
42.90	3,149	45.45	14,904
42.95	3,358	45.50	15,167
43.00	3,566	45.55	15,429
43.05	3,779	45.60	15,691
43.10	3,992	45.65	15,953
43.15	4,204	45.70	16,216
43.20	4,417	45.75	16,478
43.25	4,630	45.80	16,740
43.30	4,846	45.85	17,002
43.35	5,063	45.90	17,264
43.40	5,279	45.95	17,527
43.45	5,496	46.00	17,789
43.50	5,712	46.05	18,070
43.55	5,931	46.10	18,350
43.60	6,151	46.15	18,631
43.65	6,370	46.20	18,911
43.70	6,590	46.25	19,192
43.75	6,809	46.30	19,472
43.80	7,029	46.35	19,753
43.85	7,250	46.40	20,033
43.90	7,470	46.45	20,314
43.95	7,691	46.50	20,595
44.00	7,911	46.55	20,875
44.05	8,130	46.60	21,156
44.10	8,349	46.65	21,436
44.15	8,568	46.70	21,717
44.20	8,787	46.75	21,997
44.25	9,006	46.80	22,278
44.30	9,219	46.85	22,558
44.35	9,432	46.90	22,839
44.40	9,646	46.95	23,119
44.45	9,859	47.00	23,400
44.50	10,072		

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

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Page 311

Summary for Pond EX-PP: G2 Pond & Underground

Inflow Area = 2.920 ac, 71.23% Impervious, Inflow Depth > 6.04" for 100-yr event
 Inflow = 18.87 cfs @ 12.03 hrs, Volume= 1.470 af
 Outflow = 15.63 cfs @ 12.16 hrs, Volume= 1.361 af, Atten= 17%, Lag= 7.8 min
 Primary = 9.16 cfs @ 12.16 hrs, Volume= 1.303 af
 Secondary = 6.47 cfs @ 12.16 hrs, Volume= 0.058 af

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

Peak Elev= 46.62' @ 12.16 hrs Surf.Area= 0 sf Storage= 21,256 cf

Flood Elev= 47.00' Surf.Area= 0 sf Storage= 23,400 cf

Plug-Flow detention time= 129.1 min calculated for 1.361 af (93% of inflow)

Center-of-Mass det. time= 89.2 min (880.0 - 790.8)

Volume	Invert	Avail.Storage	Storage Description
#1	42.00'	23,400 cf	Custom Stage Data Listed below

Elevation (feet)	Cum.Store (cubic-feet)
42.00	0
42.25	523
42.50	1,508
42.75	2,524
43.00	3,566
43.25	4,630
43.50	5,712
43.75	6,809
44.00	7,911
44.25	9,006
44.50	10,072
45.00	12,544
46.00	17,789
47.00	23,400

Device	Routing	Invert	Outlet Devices
#1	Primary	42.00'	30.0" Round 30" PERF HDPE L= 12.0' Box, headwall w/3 rounded edges, Ke= 0.200 Inlet / Outlet Invert= 42.00' / 41.84' S= 0.0133 '/' Cc= 0.900 n= 0.012, Flow Area= 4.91 sf
#2	Device 1	42.00'	4.0" Vert. 4" hole in S-2 weir from 2005 G2 Plans C= 0.600
#3	Device 1	44.70'	6.0" W x 16.8" H Vert. 4" notched weir from G2 plans C= 0.600
#4	Device 1	46.10'	4.0' long Top of Weir in S-2 outlet box Cv= 2.62 (C= 3.28)
#5	Secondary	46.50'	60.0' long x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

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Page 312

Primary OutFlow Max=9.06 cfs @ 12.16 hrs HW=46.61' TW=44.39' (Dynamic Tailwater)

1=30" PERF HDPE (Passes 9.06 cfs of 43.99 cfs potential flow)

2=4" hole in S-2 weir from 2005 G2 Plans (Orifice Controls 0.63 cfs @ 7.17 fps)

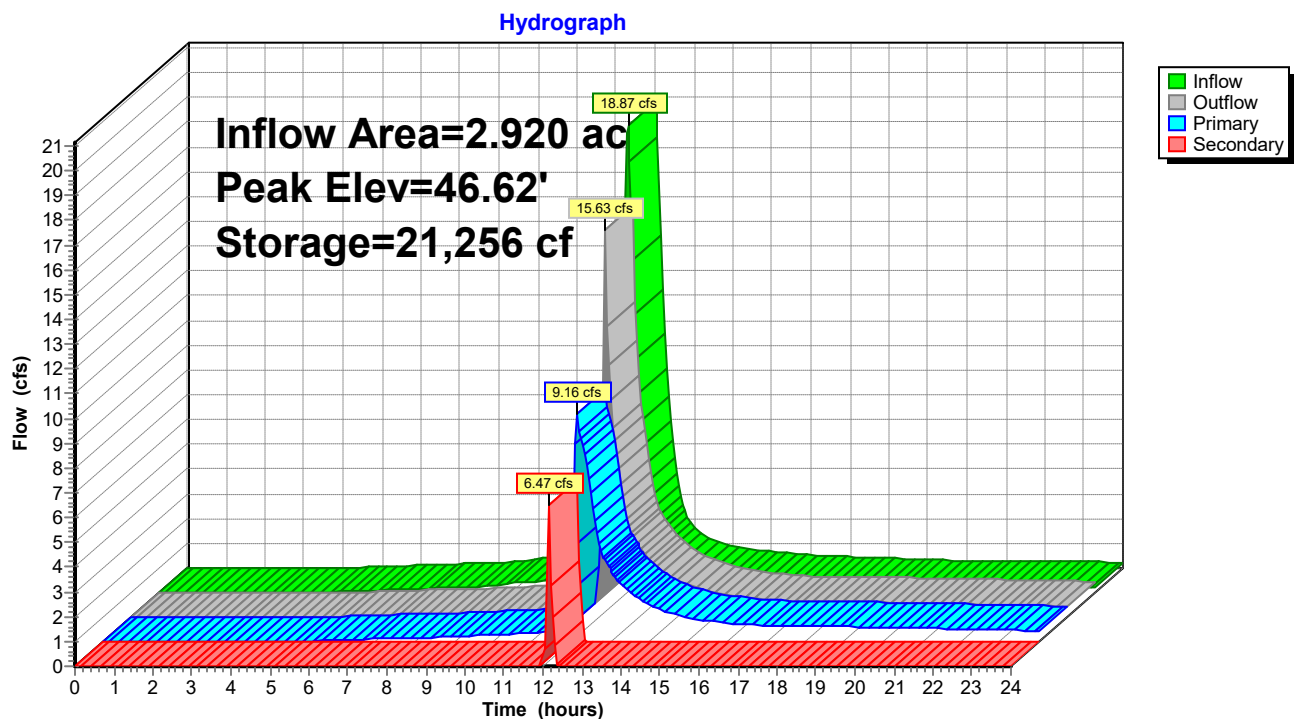
3=4" notched weir from G2 plans (Orifice Controls 3.65 cfs @ 5.22 fps)

4=Top of Weir in S-2 outlet box (Weir Controls 4.78 cfs @ 2.34 fps)

Secondary OutFlow Max=6.01 cfs @ 12.16 hrs HW=46.61' TW=0.00' (Dynamic Tailwater)

5=Broad-Crested Rectangular Weir (Weir Controls 6.01 cfs @ 0.90 fps)

Pond EX-PP: G2 Pond & Underground



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Page 313

Stage-Area-Storage for Pond EX-PP: G2 Pond & Underground

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
42.00	0	44.55	10,319
42.05	105	44.60	10,566
42.10	209	44.65	10,814
42.15	314	44.70	11,061
42.20	418	44.75	11,308
42.25	523	44.80	11,555
42.30	720	44.85	11,802
42.35	917	44.90	12,050
42.40	1,114	44.95	12,297
42.45	1,311	45.00	12,544
42.50	1,508	45.05	12,806
42.55	1,711	45.10	13,069
42.60	1,914	45.15	13,331
42.65	2,118	45.20	13,593
42.70	2,321	45.25	13,855
42.75	2,524	45.30	14,117
42.80	2,732	45.35	14,380
42.85	2,941	45.40	14,642
42.90	3,149	45.45	14,904
42.95	3,358	45.50	15,167
43.00	3,566	45.55	15,429
43.05	3,779	45.60	15,691
43.10	3,992	45.65	15,953
43.15	4,204	45.70	16,216
43.20	4,417	45.75	16,478
43.25	4,630	45.80	16,740
43.30	4,846	45.85	17,002
43.35	5,063	45.90	17,264
43.40	5,279	45.95	17,527
43.45	5,496	46.00	17,789
43.50	5,712	46.05	18,070
43.55	5,931	46.10	18,350
43.60	6,151	46.15	18,631
43.65	6,370	46.20	18,911
43.70	6,590	46.25	19,192
43.75	6,809	46.30	19,472
43.80	7,029	46.35	19,753
43.85	7,250	46.40	20,033
43.90	7,470	46.45	20,314
43.95	7,691	46.50	20,595
44.00	7,911	46.55	20,875
44.05	8,130	46.60	21,156
44.10	8,349	46.65	21,436
44.15	8,568	46.70	21,717
44.20	8,787	46.75	21,997
44.25	9,006	46.80	22,278
44.30	9,219	46.85	22,558
44.35	9,432	46.90	22,839
44.40	9,646	46.95	23,119
44.45	9,859	47.00	23,400
44.50	10,072		

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Page 314

Summary for Pond EX1: Existing SDMH

Inflow Area = 3.213 ac, 70.08% Impervious, Inflow Depth > 5.07" for 100-yr event
Inflow = 9.62 cfs @ 12.10 hrs, Volume= 1.358 af
Outflow = 9.62 cfs @ 12.10 hrs, Volume= 1.358 af, Atten= 0%, Lag= 0.0 min
Primary = 9.62 cfs @ 12.10 hrs, Volume= 1.358 af

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

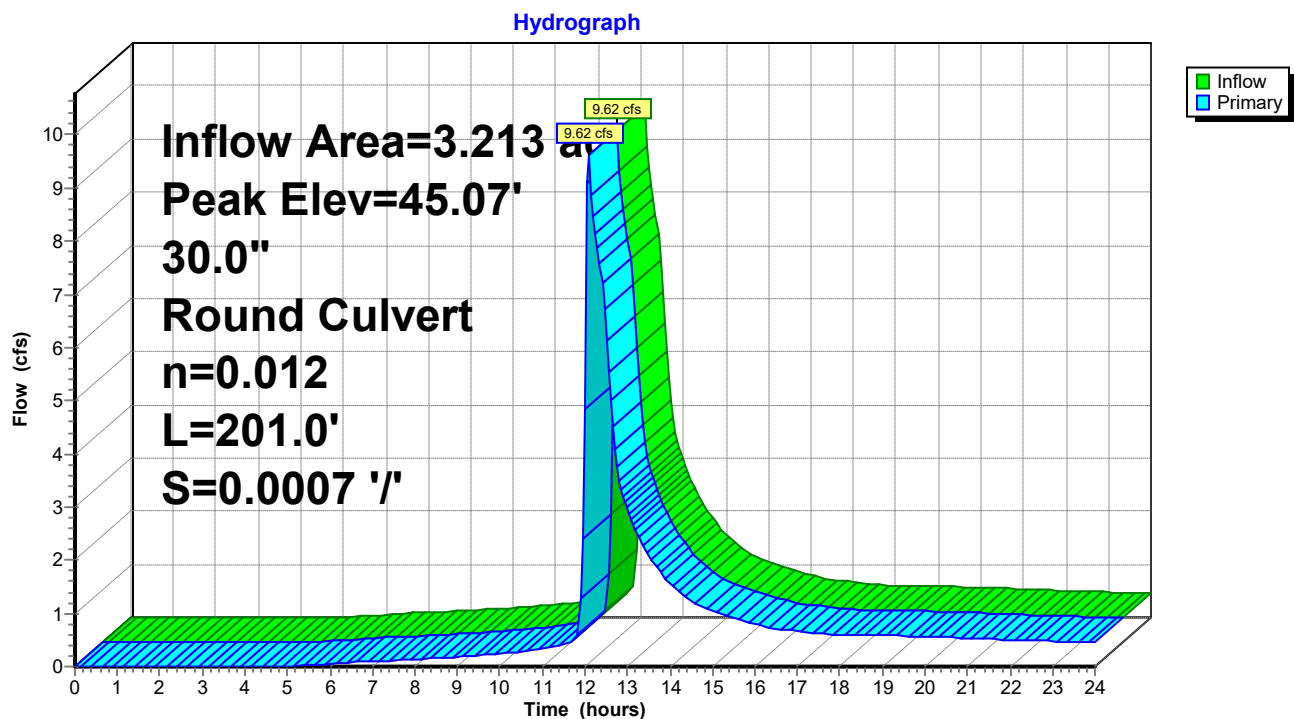
Peak Elev= 45.07' @ 12.15 hrs

Flood Elev= 48.04'

Device	Routing	Invert	Outlet Devices
#1	Primary	41.84'	30.0" Round 30" PERF. HDPE L= 201.0' Box, headwall w/3 rounded edges, Ke= 0.200 Inlet / Outlet Invert= 41.84' / 41.69' S= 0.0007 '/' Cc= 0.900 n= 0.012, Flow Area= 4.91 sf

Primary OutFlow Max=0.00 cfs @ 12.10 hrs HW=44.93' TW=44.93' (Dynamic Tailwater)
↑1=30" PERF. HDPE (Controls 0.00 cfs)

Pond EX1: Existing SDMH



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Page 315

Stage-Area-Storage for Pond EX1: Existing SDMH

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
41.84	0	46.94	0
41.94	0	47.04	0
42.04	0	47.14	0
42.14	0	47.24	0
42.24	0	47.34	0
42.34	0	47.44	0
42.44	0	47.54	0
42.54	0	47.64	0
42.64	0	47.74	0
42.74	0	47.84	0
42.84	0	47.94	0
42.94	0	48.04	0
43.04	0		
43.14	0		
43.24	0		
43.34	0		
43.44	0		
43.54	0		
43.64	0		
43.74	0		
43.84	0		
43.94	0		
44.04	0		
44.14	0		
44.24	0		
44.34	0		
44.44	0		
44.54	0		
44.64	0		
44.74	0		
44.84	0		
44.94	0		
45.04	0		
45.14	0		
45.24	0		
45.34	0		
45.44	0		
45.54	0		
45.64	0		
45.74	0		
45.84	0		
45.94	0		
46.04	0		
46.14	0		
46.24	0		
46.34	0		
46.44	0		
46.54	0		
46.64	0		
46.74	0		
46.84	0		

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Page 316

Summary for Pond EX2: Existing SDI

Inflow Area = 3.213 ac, 70.08% Impervious, Inflow Depth > 5.07" for 100-yr event
Inflow = 9.62 cfs @ 12.10 hrs, Volume= 1.358 af
Outflow = 9.63 cfs @ 12.10 hrs, Volume= 1.358 af, Atten= 0%, Lag= 0.0 min
Primary = 9.63 cfs @ 12.10 hrs, Volume= 1.358 af

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

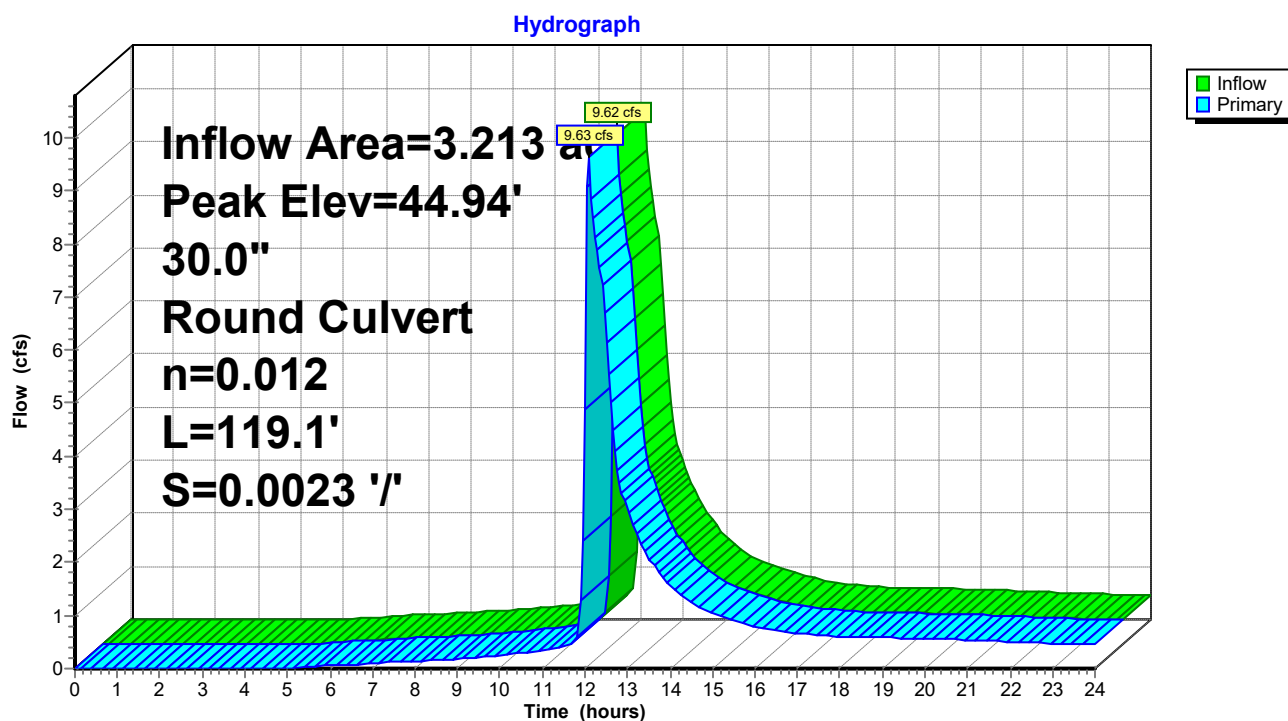
Peak Elev= 44.94' @ 12.11 hrs

Flood Elev= 47.05'

Device	Routing	Invert	Outlet Devices
#1	Primary	41.49'	30.0" Round 30" HDPE L= 119.1' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 41.49' / 41.22' S= 0.0023 '/' Cc= 0.900 n= 0.012, Flow Area= 4.91 sf

Primary OutFlow Max=10.84 cfs @ 12.10 hrs HW=44.93' TW=44.72' (Dynamic Tailwater)
↑1=30" HDPE (Inlet Controls 10.84 cfs @ 2.21 fps)

Pond EX2: Existing SDI



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Page 317

Stage-Area-Storage for Pond EX2: Existing SDI

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
41.49	0	43.53	0	45.57	0
41.53	0	43.57	0	45.61	0
41.57	0	43.61	0	45.65	0
41.61	0	43.65	0	45.69	0
41.65	0	43.69	0	45.73	0
41.69	0	43.73	0	45.77	0
41.73	0	43.77	0	45.81	0
41.77	0	43.81	0	45.85	0
41.81	0	43.85	0	45.89	0
41.85	0	43.89	0	45.93	0
41.89	0	43.93	0	45.97	0
41.93	0	43.97	0	46.01	0
41.97	0	44.01	0	46.05	0
42.01	0	44.05	0	46.09	0
42.05	0	44.09	0	46.13	0
42.09	0	44.13	0	46.17	0
42.13	0	44.17	0	46.21	0
42.17	0	44.21	0	46.25	0
42.21	0	44.25	0	46.29	0
42.25	0	44.29	0	46.33	0
42.29	0	44.33	0	46.37	0
42.33	0	44.37	0	46.41	0
42.37	0	44.41	0	46.45	0
42.41	0	44.45	0	46.49	0
42.45	0	44.49	0	46.53	0
42.49	0	44.53	0	46.57	0
42.53	0	44.57	0	46.61	0
42.57	0	44.61	0	46.65	0
42.61	0	44.65	0	46.69	0
42.65	0	44.69	0	46.73	0
42.69	0	44.73	0	46.77	0
42.73	0	44.77	0	46.81	0
42.77	0	44.81	0	46.85	0
42.81	0	44.85	0	46.89	0
42.85	0	44.89	0	46.93	0
42.89	0	44.93	0	46.97	0
42.93	0	44.97	0	47.01	0
42.97	0	45.01	0	47.05	0
43.01	0	45.05	0		
43.05	0	45.09	0		
43.09	0	45.13	0		
43.13	0	45.17	0		
43.17	0	45.21	0		
43.21	0	45.25	0		
43.25	0	45.29	0		
43.29	0	45.33	0		
43.33	0	45.37	0		
43.37	0	45.41	0		
43.41	0	45.45	0		
43.45	0	45.49	0		
43.49	0	45.53	0		

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Page 318

Summary for Pond EXCL1: Ex Northern Entrance Culvert

Inflow Area = 10.662 ac, 56.13% Impervious, Inflow Depth > 5.13" for 100-yr event
Inflow = 39.50 cfs @ 12.07 hrs, Volume= 4.556 af
Outflow = 39.50 cfs @ 12.07 hrs, Volume= 4.556 af, Atten= 0%, Lag= 0.0 min
Primary = 15.04 cfs @ 12.07 hrs, Volume= 3.615 af
Secondary = 24.45 cfs @ 12.07 hrs, Volume= 0.941 af

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

Peak Elev= 44.42' @ 12.07 hrs

Flood Elev= 40.05'

Device	Routing	Invert	Outlet Devices
#1	Primary	38.52'	21.0" W x 15.0" H, R=10.8"/33.1" Pipe Arch CMP_Arch_1/2 21x15 L= 44.7' CMP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 38.52' / 37.56' S= 0.0215 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 1.74 sf
#2	Secondary	40.00'	1.0' long x 42.0' breadth Over top of entrance pavement Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

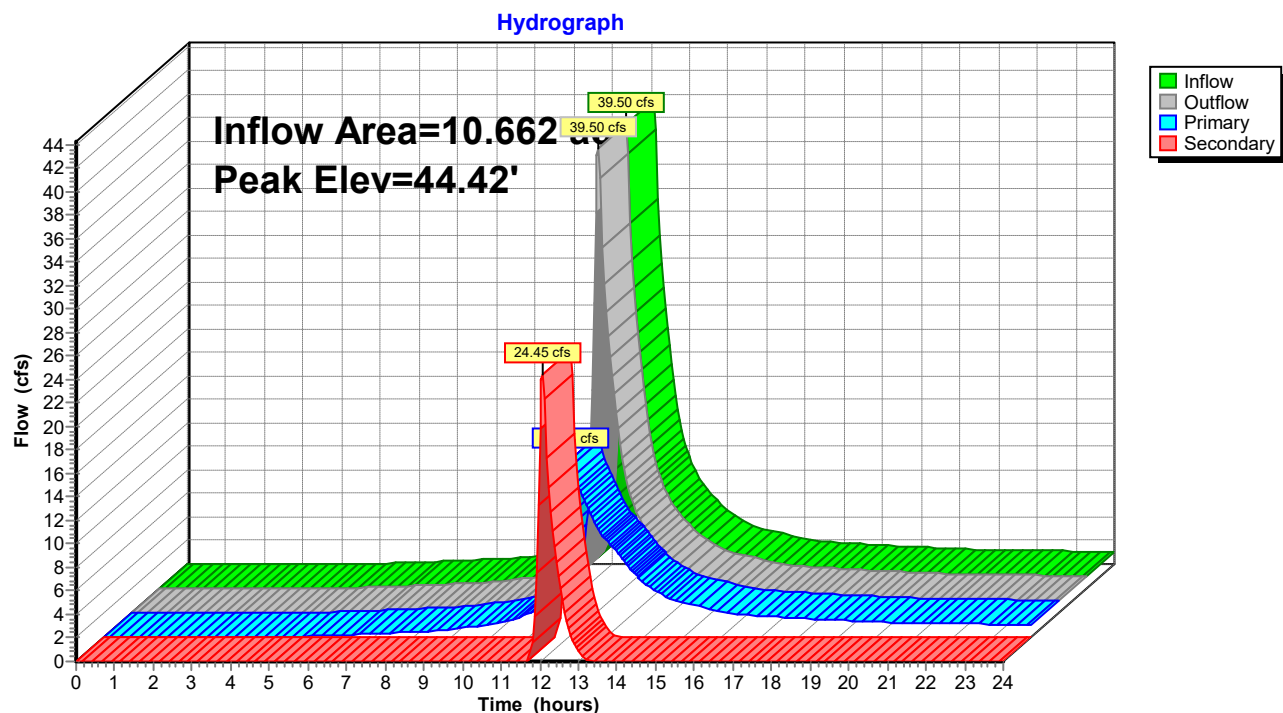
Primary OutFlow Max=14.95 cfs @ 12.07 hrs HW=44.36' TW=0.00' (Dynamic Tailwater)

↑**1=CMP_Arch_1/2 21x15** (Barrel Controls 14.95 cfs @ 8.57 fps)

Secondary OutFlow Max=23.93 cfs @ 12.07 hrs HW=44.36' TW=0.00' (Dynamic Tailwater)

↑**2=Over top of entrance pavement** (Weir Controls 23.93 cfs @ 5.49 fps)

Pond EXCL1: Ex Northern Entrance Culvert



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Page 319

Stage-Area-Storage for Pond EXCL1: Ex Northern Entrance Culvert

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
38.52	0	40.56	0	42.60	0
38.56	0	40.60	0	42.64	0
38.60	0	40.64	0	42.68	0
38.64	0	40.68	0	42.72	0
38.68	0	40.72	0	42.76	0
38.72	0	40.76	0	42.80	0
38.76	0	40.80	0	42.84	0
38.80	0	40.84	0	42.88	0
38.84	0	40.88	0	42.92	0
38.88	0	40.92	0	42.96	0
38.92	0	40.96	0	43.00	0
38.96	0	41.00	0	43.04	0
39.00	0	41.04	0	43.08	0
39.04	0	41.08	0	43.12	0
39.08	0	41.12	0	43.16	0
39.12	0	41.16	0	43.20	0
39.16	0	41.20	0	43.24	0
39.20	0	41.24	0	43.28	0
39.24	0	41.28	0	43.32	0
39.28	0	41.32	0	43.36	0
39.32	0	41.36	0	43.40	0
39.36	0	41.40	0	43.44	0
39.40	0	41.44	0	43.48	0
39.44	0	41.48	0	43.52	0
39.48	0	41.52	0	43.56	0
39.52	0	41.56	0	43.60	0
39.56	0	41.60	0	43.64	0
39.60	0	41.64	0	43.68	0
39.64	0	41.68	0	43.72	0
39.68	0	41.72	0	43.76	0
39.72	0	41.76	0	43.80	0
39.76	0	41.80	0	43.84	0
39.80	0	41.84	0	43.88	0
39.84	0	41.88	0	43.92	0
39.88	0	41.92	0	43.96	0
39.92	0	41.96	0	44.00	0
39.96	0	42.00	0	44.04	0
40.00	0	42.04	0	44.08	0
40.04	0	42.08	0	44.12	0
40.08	0	42.12	0	44.16	0
40.12	0	42.16	0	44.20	0
40.16	0	42.20	0	44.24	0
40.20	0	42.24	0	44.28	0
40.24	0	42.28	0	44.32	0
40.28	0	42.32	0	44.36	0
40.32	0	42.36	0		
40.36	0	42.40	0		
40.40	0	42.44	0		
40.44	0	42.48	0		
40.48	0	42.52	0		
40.52	0	42.56	0		

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Page 320

Summary for Pond EXCL2: Ex Southern Entrance Culvert

Inflow Area = 8.271 ac, 61.23% Impervious, Inflow Depth > 5.28" for 100-yr event
Inflow = 36.60 cfs @ 12.06 hrs, Volume= 3.638 af
Outflow = 36.60 cfs @ 12.06 hrs, Volume= 3.638 af, Atten= 0%, Lag= 0.0 min
Primary = 14.13 cfs @ 12.05 hrs, Volume= 2.947 af
Secondary = 22.50 cfs @ 12.07 hrs, Volume= 0.691 af

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

Peak Elev= 45.38' @ 12.07 hrs

Flood Elev= 41.33'

Device	Routing	Invert	Outlet Devices
#1	Primary	38.94'	18.0" Round 18" CMP L= 46.0' CMP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 38.94' / 38.46' S= 0.0104 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 1.77 sf
#2	Secondary	41.20'	1.0' long x 45.0' breadth Over top of entrance pavement Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

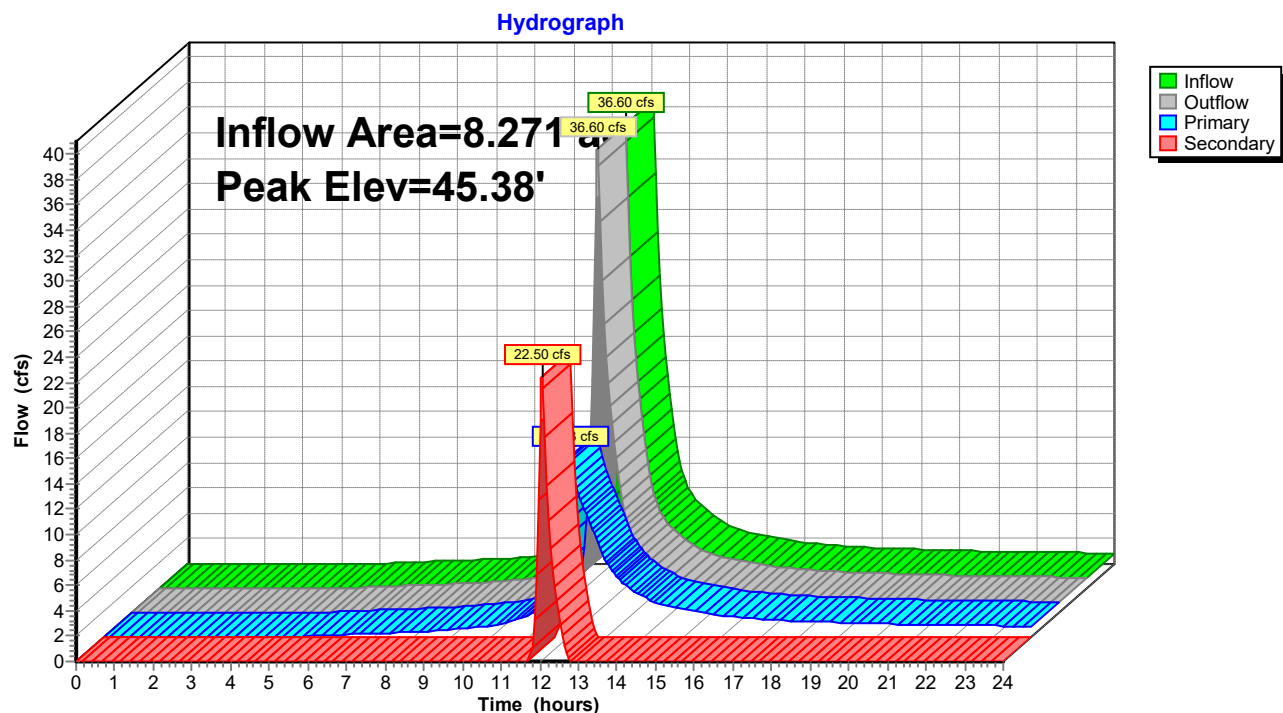
Primary OutFlow Max=13.96 cfs @ 12.05 hrs HW=45.35' TW=40.69' (Dynamic Tailwater)

↑ **1=18" CMP** (Outlet Controls 13.96 cfs @ 7.90 fps)

Secondary OutFlow Max=22.04 cfs @ 12.07 hrs HW=45.33' TW=40.69' (Dynamic Tailwater)

↑ **2=Over top of entrance pavement** (Weir Controls 22.04 cfs @ 5.34 fps)

Pond EXCL2: Ex Southern Entrance Culvert



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Page 321

Stage-Area-Storage for Pond EXCL2: Ex Southern Entrance Culvert

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
38.94	0	44.04	0
39.04	0	44.14	0
39.14	0	44.24	0
39.24	0	44.34	0
39.34	0	44.44	0
39.44	0	44.54	0
39.54	0	44.64	0
39.64	0	44.74	0
39.74	0	44.84	0
39.84	0	44.94	0
39.94	0	45.04	0
40.04	0	45.14	0
40.14	0	45.24	0
40.24	0	45.34	0
40.34	0		
40.44	0		
40.54	0		
40.64	0		
40.74	0		
40.84	0		
40.94	0		
41.04	0		
41.14	0		
41.24	0		
41.34	0		
41.44	0		
41.54	0		
41.64	0		
41.74	0		
41.84	0		
41.94	0		
42.04	0		
42.14	0		
42.24	0		
42.34	0		
42.44	0		
42.54	0		
42.64	0		
42.74	0		
42.84	0		
42.94	0		
43.04	0		
43.14	0		
43.24	0		
43.34	0		
43.44	0		
43.54	0		
43.64	0		
43.74	0		
43.84	0		
43.94	0		

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Page 322

Summary for Pond MBR#1: MBR#1

Inflow Area = 0.452 ac, 67.32% Impervious, Inflow Depth > 5.92" for 100-yr event
 Inflow = 4.66 cfs @ 11.91 hrs, Volume= 0.223 af
 Outflow = 3.50 cfs @ 11.97 hrs, Volume= 0.154 af, Atten= 25%, Lag= 3.8 min
 Primary = 3.50 cfs @ 11.97 hrs, Volume= 0.154 af

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

Peak Elev= 45.46' @ 11.97 hrs Surf.Area= 2,560 sf Storage= 4,430 cf

Plug-Flow detention time= 173.8 min calculated for 0.154 af (69% of inflow)

Center-of-Mass det. time= 77.1 min (858.9 - 781.8)

Volume	Invert	Avail.Storage	Storage Description			
#1	41.79'	5,356 cf	Custom Stage Data (Irregular) Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
41.79	1,437	149.0	0.0	0	0	1,437
41.80	1,437	149.0	40.0	6	6	1,438
43.79	1,437	149.0	40.0	1,144	1,150	1,735
43.80	1,437	149.0	100.0	14	1,164	1,736
45.80	2,833	200.0	100.0	4,192	5,356	3,195

Device	Routing	Invert	Outlet Devices
#1	Primary	41.79'	12.0" Round 12" HDPE L= 43.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 41.79' / 41.70' S= 0.0021 ' S= 0.0021 ' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	44.80'	12.0" W x 6.0" H Vert. 12" notch in box C= 0.600
#3	Device 1	45.30'	10.7' long Rim SHA 374.23 0 End Contraction(s)

Primary OutFlow Max=3.22 cfs @ 11.97 hrs HW=45.44' TW=43.75' (Dynamic Tailwater)

1=12" HDPE (Passes 3.22 cfs of 4.91 cfs potential flow)
 2=12" notch in box (Orifice Controls 1.47 cfs @ 2.93 fps)
 3=Rim SHA 374.23 (Weir Controls 1.75 cfs @ 1.20 fps)

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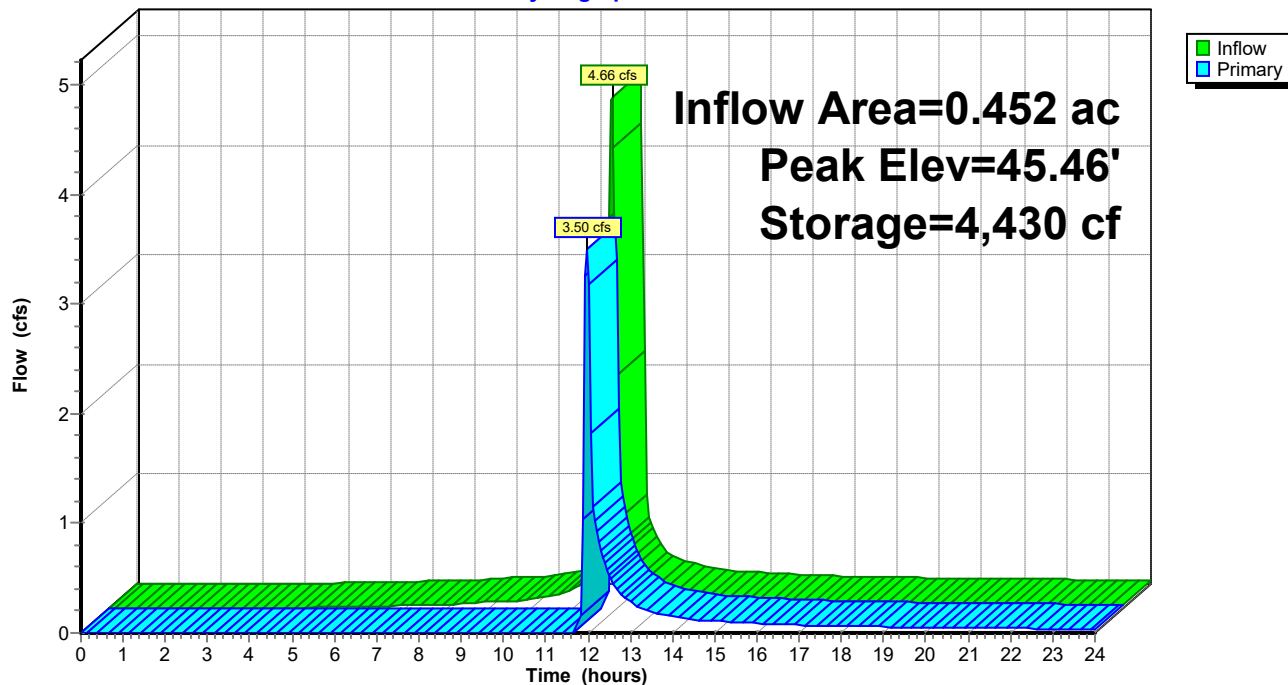
Type II 24-hr 100-yr Rainfall=7.60"

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Page 323

Pond MBR#1: MBR#1

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Page 324

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

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
41.79	1,437	0	44.34	1,768	2,028
41.84	1,437	29	44.39	1,800	2,117
41.89	1,437	57	44.44	1,833	2,208
41.94	1,437	86	44.49	1,866	2,300
41.99	1,437	115	44.54	1,899	2,394
42.04	1,437	144	44.59	1,932	2,490
42.09	1,437	172	44.64	1,966	2,588
42.14	1,437	201	44.69	2,000	2,687
42.19	1,437	230	44.74	2,035	2,788
42.24	1,437	259	44.79	2,069	2,890
42.29	1,437	287	44.84	2,104	2,994
42.34	1,437	316	44.89	2,140	3,101
42.39	1,437	345	44.94	2,175	3,208
42.44	1,437	374	44.99	2,211	3,318
42.49	1,437	402	45.04	2,247	3,430
42.54	1,437	431	45.09	2,284	3,543
42.59	1,437	460	45.14	2,320	3,658
42.64	1,437	489	45.19	2,357	3,775
42.69	1,437	517	45.24	2,395	3,894
42.74	1,437	546	45.29	2,432	4,014
42.79	1,437	575	45.34	2,470	4,137
42.84	1,437	604	45.39	2,509	4,261
42.89	1,437	632	45.44	2,547	4,388
42.94	1,437	661	45.49	2,586	4,516
42.99	1,437	690	45.54	2,625	4,646
43.04	1,437	719	45.59	2,664	4,779
43.09	1,437	747	45.64	2,704	4,913
43.14	1,437	776	45.69	2,744	5,049
43.19	1,437	805	45.74	2,784	5,187
43.24	1,437	833	45.79	2,825	5,327
43.29	1,437	862			
43.34	1,437	891			
43.39	1,437	920			
43.44	1,437	948			
43.49	1,437	977			
43.54	1,437	1,006			
43.59	1,437	1,035			
43.64	1,437	1,063			
43.69	1,437	1,092			
43.74	1,437	1,121			
43.79	1,437	1,150			
43.84	1,460	1,222			
43.89	1,490	1,296			
43.94	1,519	1,371			
43.99	1,549	1,448			
44.04	1,580	1,526			
44.09	1,610	1,606			
44.14	1,641	1,687			
44.19	1,672	1,770			
44.24	1,704	1,854			
44.29	1,736	1,940			

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Page 325

Summary for Pond SGW#1: SGW#1

Inflow Area = 2.315 ac, 74.35% Impervious, Inflow Depth > 6.26" for 100-yr event
 Inflow = 24.16 cfs @ 11.91 hrs, Volume= 1.208 af
 Outflow = 4.72 cfs @ 12.06 hrs, Volume= 0.838 af, Atten= 80%, Lag= 9.2 min
 Primary = 4.72 cfs @ 12.06 hrs, Volume= 0.838 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 42.54' @ 12.06 hrs Surf.Area= 12,406 sf Storage= 30,536 cf

Plug-Flow detention time= 250.3 min calculated for 0.838 af (69% of inflow)
 Center-of-Mass det. time= 151.2 min (910.5 - 759.2)

Volume	Invert	Avail.Storage	Storage Description
#1	39.40'	35,078 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
39.40	7,196	368.0	0	0	7,196
40.40	8,760	400.0	7,965	7,965	9,189
42.90	13,074	463.0	27,113	35,078	13,648

Device	Routing	Invert	Outlet Devices
#1	Primary	38.00'	12.0" Round Culvert L= 52.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 38.00' / 37.70' S= 0.0058 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	40.90'	4.0" W x 6.0" H Vert. 4" Notch in 374.23 C= 0.600
#3	Device 1	41.40'	6.0" W x 12.0" H Vert. 6" Notch in 374.23 C= 0.600
#4	Device 1	42.40'	10.7' long Rim SHA 374.23 0 End Contraction(s)
#5	Secondary	42.70'	10.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=4.64 cfs @ 12.06 hrs HW=42.54' TW=40.42' (Dynamic Tailwater)

1=Culvert (Passes 4.64 cfs of 5.39 cfs potential flow)
 2=4" Notch in 374.23 (Orifice Controls 0.94 cfs @ 5.67 fps)
 3=6" Notch in 374.23 (Orifice Controls 1.87 cfs @ 3.74 fps)
 4=Rim SHA 374.23 (Weir Controls 1.82 cfs @ 1.22 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=39.40' (Free Discharge)

5=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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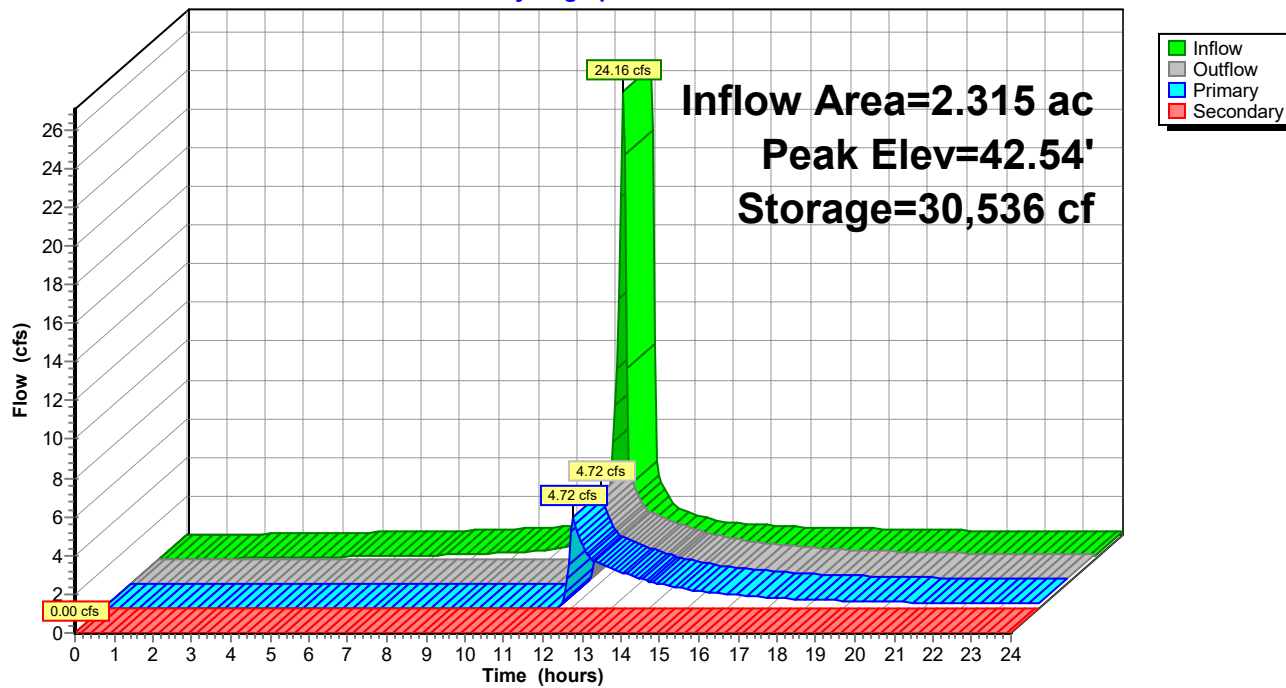
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Page 326

Pond SGW#1: SGW#1

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Page 327

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

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
39.40	7,196	0	41.95	11,333	23,495
39.45	7,271	362	42.00	11,422	24,064
39.50	7,345	727	42.05	11,511	24,637
39.55	7,421	1,096	42.10	11,600	25,215
39.60	7,497	1,469	42.15	11,689	25,797
39.65	7,573	1,846	42.20	11,779	26,384
39.70	7,649	2,226	42.25	11,870	26,975
39.75	7,726	2,611	42.30	11,960	27,571
39.80	7,803	2,999	42.35	12,051	28,171
39.85	7,881	3,391	42.40	12,142	28,776
39.90	7,959	3,787	42.45	12,234	29,385
39.95	8,037	4,187	42.50	12,326	29,999
40.00	8,116	4,591	42.55	12,418	30,618
40.05	8,195	4,999	42.60	12,511	31,241
40.10	8,275	5,410	42.65	12,604	31,869
40.15	8,355	5,826	42.70	12,697	32,501
40.20	8,435	6,246	42.75	12,791	33,139
40.25	8,516	6,670	42.80	12,885	33,780
40.30	8,597	7,097	42.85	12,979	34,427
40.35	8,678	7,529	42.90	13,074	35,078
40.40	8,760	7,965			
40.45	8,838	8,405			
40.50	8,916	8,849			
40.55	8,995	9,297			
40.60	9,073	9,748			
40.65	9,153	10,204			
40.70	9,232	10,664			
40.75	9,312	11,127			
40.80	9,392	11,595			
40.85	9,473	12,067			
40.90	9,554	12,542			
40.95	9,635	13,022			
41.00	9,717	13,506			
41.05	9,799	13,994			
41.10	9,881	14,486			
41.15	9,964	14,982			
41.20	10,047	15,482			
41.25	10,130	15,986			
41.30	10,214	16,495			
41.35	10,298	17,008			
41.40	10,382	17,525			
41.45	10,467	18,046			
41.50	10,552	18,572			
41.55	10,638	19,101			
41.60	10,723	19,635			
41.65	10,809	20,174			
41.70	10,896	20,716			
41.75	10,983	21,263			
41.80	11,070	21,815			
41.85	11,157	22,370			
41.90	11,245	22,930			

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Page 328

Summary for Pond SGW#2: SGW#2

Inflow Area = 0.931 ac, 51.02% Impervious, Inflow Depth > 5.29" for 100-yr event
 Inflow = 9.01 cfs @ 11.90 hrs, Volume= 0.410 af
 Outflow = 0.98 cfs @ 12.22 hrs, Volume= 0.265 af, Atten= 89%, Lag= 19.3 min
 Primary = 0.98 cfs @ 12.22 hrs, Volume= 0.265 af

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

Peak Elev= 44.59' @ 12.22 hrs Surf.Area= 5,625 sf Storage= 10,111 cf

Plug-Flow detention time= 263.8 min calculated for 0.265 af (65% of inflow)

Center-of-Mass det. time= 159.4 min (949.6 - 790.2)

Volume	Invert	Avail.Storage	Storage Description
#1	42.05'	12,835 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
42.05	1,891	314.0	0	0	1,891
43.05	3,888	346.0	2,830	2,830	3,604
45.05	6,207	396.0	10,005	12,835	6,648

Device	Routing	Invert	Outlet Devices
#1	Primary	43.55'	2.0" W x 12.0" H Vert. 2" Notch in box C= 0.600
#2	Primary	44.55'	16.3' long Rim SHA 374.70 0 End Contraction(s)

Primary OutFlow Max=0.97 cfs @ 12.22 hrs HW=44.59' TW=43.47' (Dynamic Tailwater)

1=2" Notch in box (Orifice Controls 0.56 cfs @ 3.37 fps)

2=Rim SHA 374.70 (Weir Controls 0.41 cfs @ 0.65 fps)

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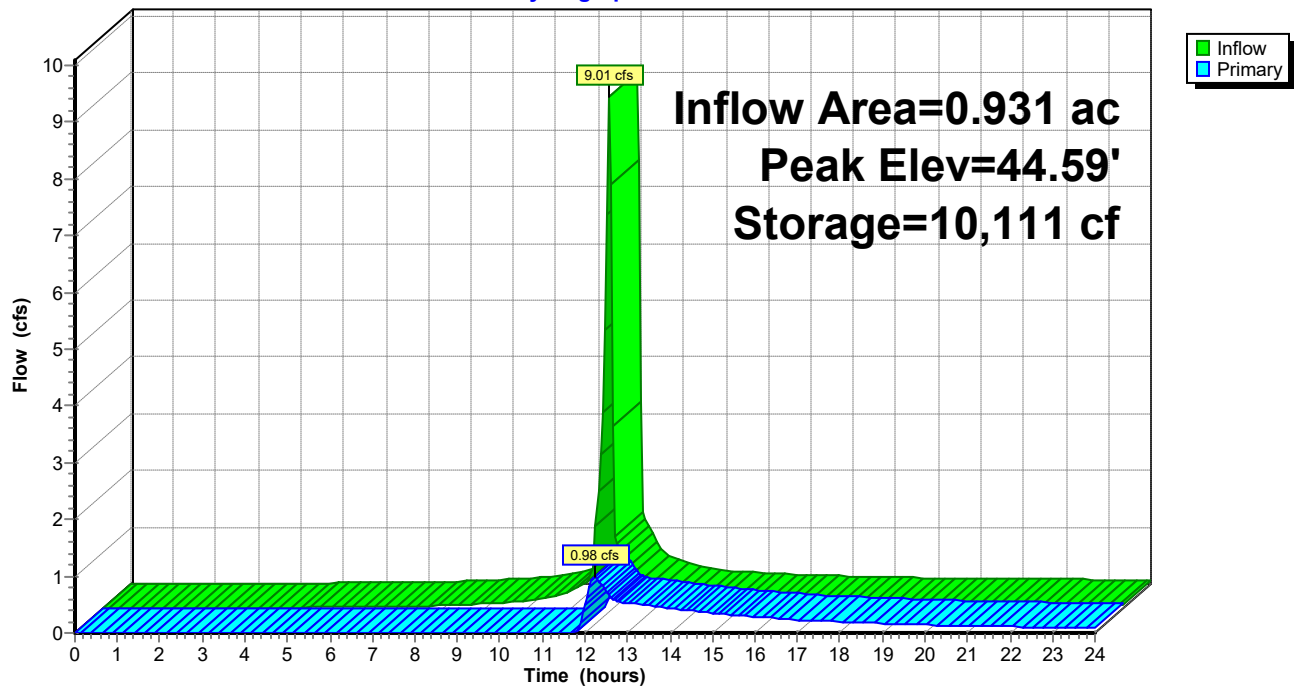
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Page 329

Pond SGW#2: SGW#2

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Page 330

Stage-Area-Storage for Pond SGW#2: SGW#2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
42.05	1,891	0	44.60	5,638	10,171
42.10	1,974	97	44.65	5,700	10,454
42.15	2,059	197	44.70	5,762	10,741
42.20	2,145	303	44.75	5,825	11,031
42.25	2,233	412	44.80	5,888	11,324
42.30	2,323	526	44.85	5,951	11,619
42.35	2,415	644	44.90	6,014	11,919
42.40	2,509	767	44.95	6,078	12,221
42.45	2,604	895	45.00	6,142	12,526
42.50	2,702	1,028	45.05	6,207	12,835
42.55	2,800	1,165			
42.60	2,901	1,308			
42.65	3,004	1,456			
42.70	3,108	1,608			
42.75	3,214	1,766			
42.80	3,322	1,930			
42.85	3,432	2,099			
42.90	3,543	2,273			
42.95	3,656	2,453			
43.00	3,771	2,639			
43.05	3,888	2,830			
43.10	3,939	3,026			
43.15	3,991	3,224			
43.20	4,043	3,425			
43.25	4,096	3,628			
43.30	4,148	3,835			
43.35	4,201	4,043			
43.40	4,255	4,255			
43.45	4,309	4,469			
43.50	4,363	4,686			
43.55	4,417	4,905			
43.60	4,472	5,127			
43.65	4,527	5,352			
43.70	4,582	5,580			
43.75	4,638	5,810			
43.80	4,694	6,044			
43.85	4,751	6,280			
43.90	4,808	6,519			
43.95	4,865	6,761			
44.00	4,922	7,005			
44.05	4,980	7,253			
44.10	5,038	7,503			
44.15	5,097	7,757			
44.20	5,155	8,013			
44.25	5,215	8,272			
44.30	5,274	8,535			
44.35	5,334	8,800			
44.40	5,394	9,068			
44.45	5,455	9,339			
44.50	5,515	9,613			
44.55	5,577	9,891			

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Page 331

Summary for Pond TOE1: SDI/OS#1

Inflow Area = 8.641 ac, 68.11% Impervious, Inflow Depth > 4.90" for 100-yr event
Inflow = 25.34 cfs @ 12.00 hrs, Volume= 3.531 af
Outflow = 25.34 cfs @ 12.00 hrs, Volume= 3.531 af, Atten= 0%, Lag= 0.0 min
Primary = 25.34 cfs @ 12.00 hrs, Volume= 3.531 af

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

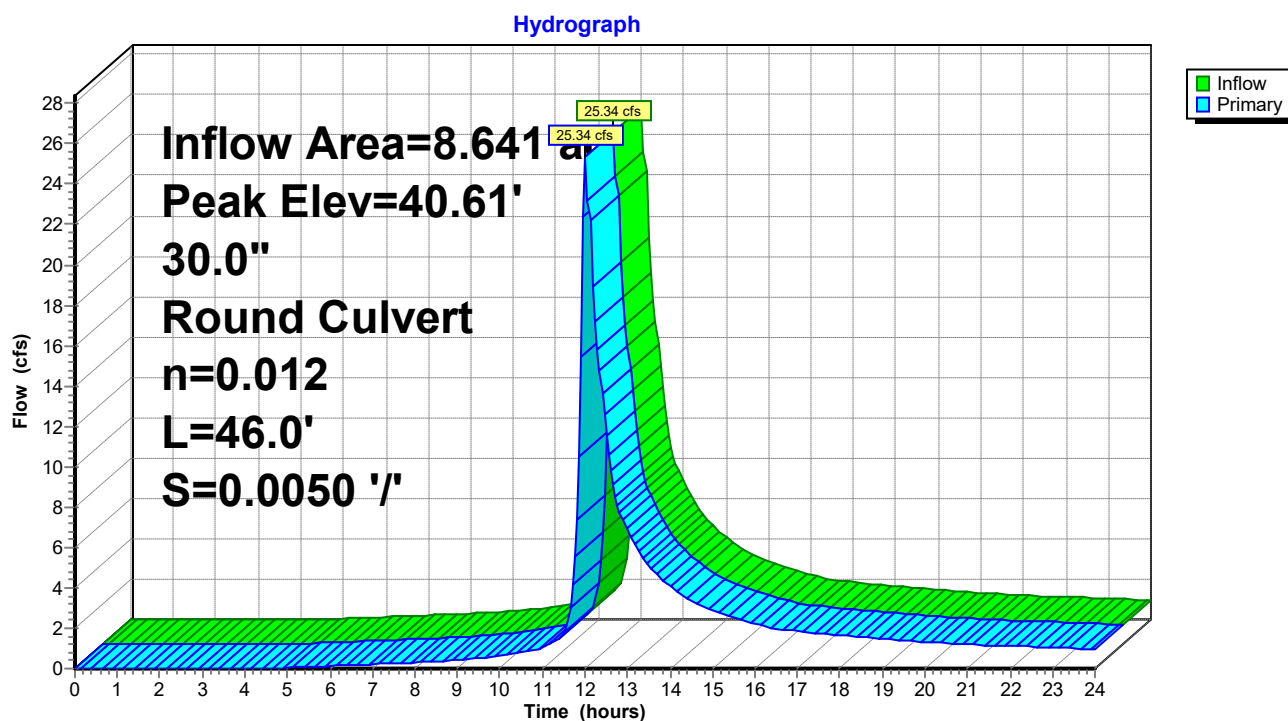
Peak Elev= 40.61' @ 12.00 hrs

Flood Elev= 42.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	37.83'	30.0" Round 30" HDPE L= 46.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 37.83' / 37.60' S= 0.0050 '/ Cc= 0.900 n= 0.012, Flow Area= 4.91 sf

Primary OutFlow Max=25.18 cfs @ 12.00 hrs HW=40.60' TW=0.00' (Dynamic Tailwater)
↑ **1=30" HDPE** (Barrel Controls 25.18 cfs @ 5.78 fps)

Pond TOE1: SDI/OS#1



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Page 332

Stage-Area-Storage for Pond TOE1: SDI/OS#1

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
37.83	0	40.38	0
37.88	0	40.43	0
37.93	0	40.48	0
37.98	0	40.53	0
38.03	0	40.58	0
38.08	0	40.63	0
38.13	0	40.68	0
38.18	0	40.73	0
38.23	0	40.78	0
38.28	0	40.83	0
38.33	0	40.88	0
38.38	0	40.93	0
38.43	0	40.98	0
38.48	0	41.03	0
38.53	0	41.08	0
38.58	0	41.13	0
38.63	0	41.18	0
38.68	0	41.23	0
38.73	0	41.28	0
38.78	0	41.33	0
38.83	0	41.38	0
38.88	0	41.43	0
38.93	0	41.48	0
38.98	0	41.53	0
39.03	0	41.58	0
39.08	0	41.63	0
39.13	0	41.68	0
39.18	0	41.73	0
39.23	0	41.78	0
39.28	0	41.83	0
39.33	0	41.88	0
39.38	0	41.93	0
39.43	0	41.98	0
39.48	0	42.03	0
39.53	0	42.08	0
39.58	0	42.13	0
39.63	0	42.18	0
39.68	0	42.23	0
39.73	0	42.28	0
39.78	0	42.33	0
39.83	0	42.38	0
39.88	0	42.43	0
39.93	0	42.48	0
39.98	0		
40.03	0		
40.08	0		
40.13	0		
40.18	0		
40.23	0		
40.28	0		
40.33	0		

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Page 333

Summary for Pond TOE2: SDMH

Inflow Area = 6.327 ac, 65.83% Impervious, Inflow Depth > 5.11" for 100-yr event
Inflow = 21.46 cfs @ 11.99 hrs, Volume= 2.693 af
Outflow = 21.46 cfs @ 11.99 hrs, Volume= 2.693 af, Atten= 0%, Lag= 0.0 min
Primary = 21.46 cfs @ 11.99 hrs, Volume= 2.693 af

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

Peak Elev= 41.05' @ 12.04 hrs

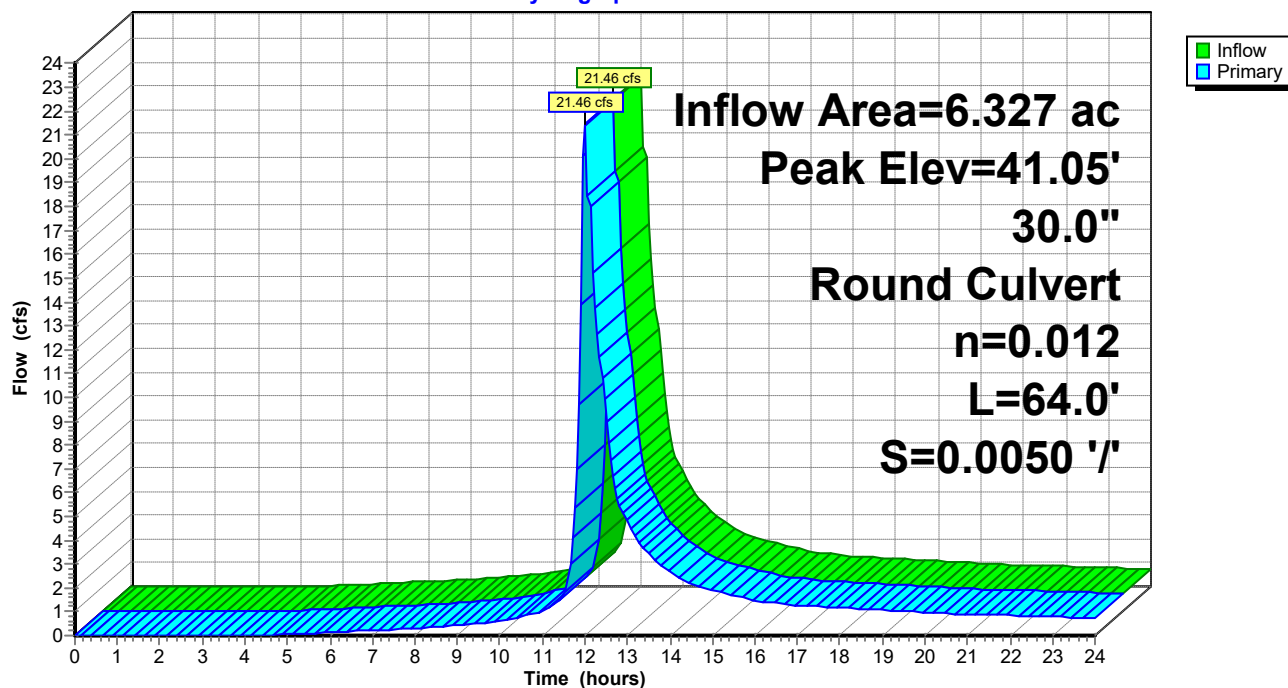
Flood Elev= 43.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	38.25'	30.0" Round 30" HDPE L= 64.0' Box, headwall w/3 rounded edges, Ke= 0.200 Inlet / Outlet Invert= 38.25' / 37.93' S= 0.0050 '/ Cc= 0.900 n= 0.012, Flow Area= 4.91 sf

Primary OutFlow Max=15.35 cfs @ 11.99 hrs HW=40.90' TW=40.56' (Dynamic Tailwater)
1=30" HDPE (Outlet Controls 15.35 cfs @ 3.67 fps)

Pond TOE2: SDMH

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Page 334

Stage-Area-Storage for Pond TOE2: SDMH

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
38.25	0	40.29	0	42.33	0
38.29	0	40.33	0	42.37	0
38.33	0	40.37	0	42.41	0
38.37	0	40.41	0	42.45	0
38.41	0	40.45	0	42.49	0
38.45	0	40.49	0	42.53	0
38.49	0	40.53	0	42.57	0
38.53	0	40.57	0	42.61	0
38.57	0	40.61	0	42.65	0
38.61	0	40.65	0	42.69	0
38.65	0	40.69	0	42.73	0
38.69	0	40.73	0	42.77	0
38.73	0	40.77	0	42.81	0
38.77	0	40.81	0	42.85	0
38.81	0	40.85	0	42.89	0
38.85	0	40.89	0	42.93	0
38.89	0	40.93	0	42.97	0
38.93	0	40.97	0	43.01	0
38.97	0	41.01	0	43.05	0
39.01	0	41.05	0	43.09	0
39.05	0	41.09	0	43.13	0
39.09	0	41.13	0	43.17	0
39.13	0	41.17	0	43.21	0
39.17	0	41.21	0	43.25	0
39.21	0	41.25	0	43.29	0
39.25	0	41.29	0		
39.29	0	41.33	0		
39.33	0	41.37	0		
39.37	0	41.41	0		
39.41	0	41.45	0		
39.45	0	41.49	0		
39.49	0	41.53	0		
39.53	0	41.57	0		
39.57	0	41.61	0		
39.61	0	41.65	0		
39.65	0	41.69	0		
39.69	0	41.73	0		
39.73	0	41.77	0		
39.77	0	41.81	0		
39.81	0	41.85	0		
39.85	0	41.89	0		
39.89	0	41.93	0		
39.93	0	41.97	0		
39.97	0	42.01	0		
40.01	0	42.05	0		
40.05	0	42.09	0		
40.09	0	42.13	0		
40.13	0	42.17	0		
40.17	0	42.21	0		
40.21	0	42.25	0		
40.25	0	42.29	0		

240020-Southern States Parcel

Prepared by Lane Engineering, LLC

HydroCAD® 10.00-17 s/n 03788 © 2016 HydroCAD Software Solutions LLC

240020 - Southern States Redevelopment

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

Printed 2/7/2024

Page 335

Summary for Pond TOE3: SDMH

Inflow Area = 6.327 ac, 65.83% Impervious, Inflow Depth > 5.11" for 100-yr event
Inflow = 21.46 cfs @ 11.99 hrs, Volume= 2.693 af
Outflow = 21.46 cfs @ 11.99 hrs, Volume= 2.693 af, Atten= 0%, Lag= 0.0 min
Primary = 21.46 cfs @ 11.99 hrs, Volume= 2.693 af

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

Peak Elev= 41.79' @ 12.09 hrs

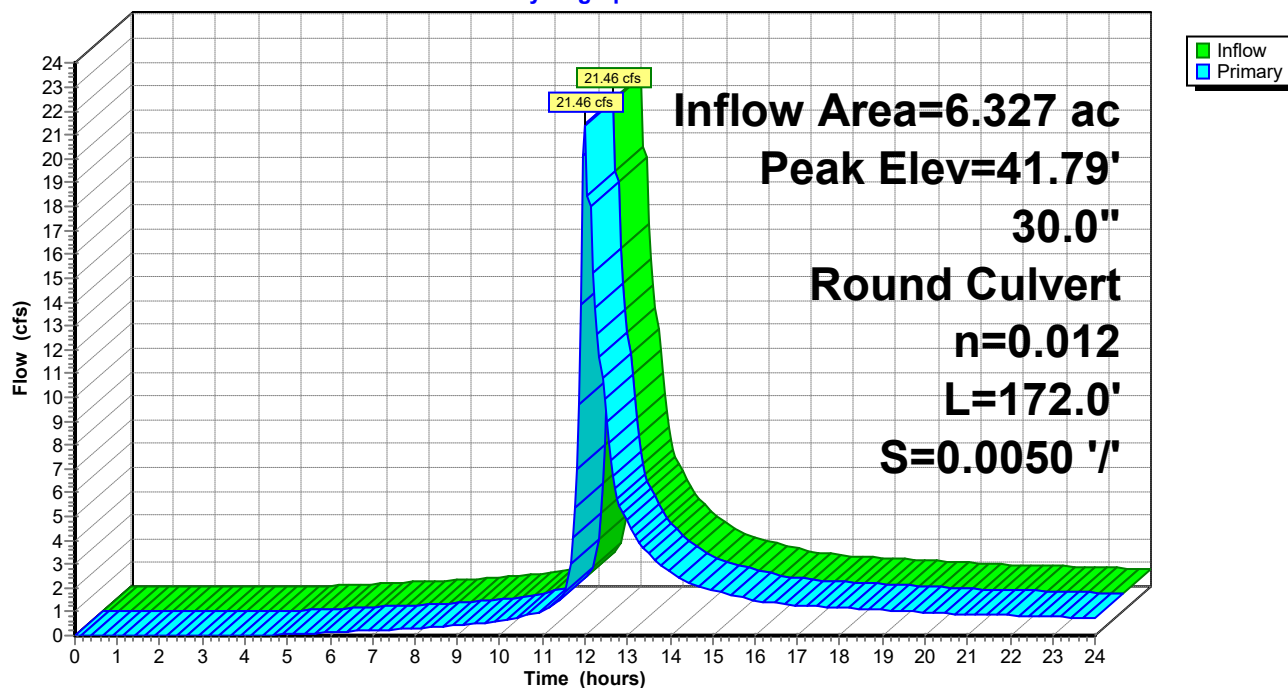
Flood Elev= 45.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	39.21'	30.0" Round 30" HDPE L= 172.0' Box, headwall w/3 rounded edges, Ke= 0.200 Inlet / Outlet Invert= 39.21' / 38.35' S= 0.0050 '/ Cc= 0.900 n= 0.012, Flow Area= 4.91 sf

Primary OutFlow Max=16.71 cfs @ 11.99 hrs HW=41.59' TW=40.90' (Dynamic Tailwater)
↑ **1=30" HDPE** (Outlet Controls 16.71 cfs @ 4.45 fps)

Pond TOE3: SDMH

Hydrograph



240020-Southern States Parcel

Prepared by Lane Engineering, LLC

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240020 - Southern States Redevelopment

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

Printed 2/7/2024

Page 336

Stage-Area-Storage for Pond TOE3: SDMH

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
39.21	0	44.31	0
39.31	0	44.41	0
39.41	0	44.51	0
39.51	0	44.61	0
39.61	0	44.71	0
39.71	0	44.81	0
39.81	0	44.91	0
39.91	0	45.01	0
40.01	0	45.11	0
40.11	0	45.21	0
40.21	0	45.31	0
40.31	0	45.41	0
40.41	0	45.51	0
40.51	0	45.61	0
40.61	0	45.71	0
40.71	0	45.81	0
40.81	0		
40.91	0		
41.01	0		
41.11	0		
41.21	0		
41.31	0		
41.41	0		
41.51	0		
41.61	0		
41.71	0		
41.81	0		
41.91	0		
42.01	0		
42.11	0		
42.21	0		
42.31	0		
42.41	0		
42.51	0		
42.61	0		
42.71	0		
42.81	0		
42.91	0		
43.01	0		
43.11	0		
43.21	0		
43.31	0		
43.41	0		
43.51	0		
43.61	0		
43.71	0		
43.81	0		
43.91	0		
44.01	0		
44.11	0		
44.21	0		

240020-Southern States Parcel

Prepared by Lane Engineering, LLC

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240020 - Southern States Redevelopment

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

Printed 2/7/2024

Page 337

Summary for Pond TOE4: SDI/OS #2

Inflow Area = 6.327 ac, 65.83% Impervious, Inflow Depth > 5.11" for 100-yr event
Inflow = 21.46 cfs @ 11.99 hrs, Volume= 2.693 af
Outflow = 21.46 cfs @ 11.99 hrs, Volume= 2.693 af, Atten= 0%, Lag= 0.0 min
Primary = 21.46 cfs @ 11.99 hrs, Volume= 2.693 af

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

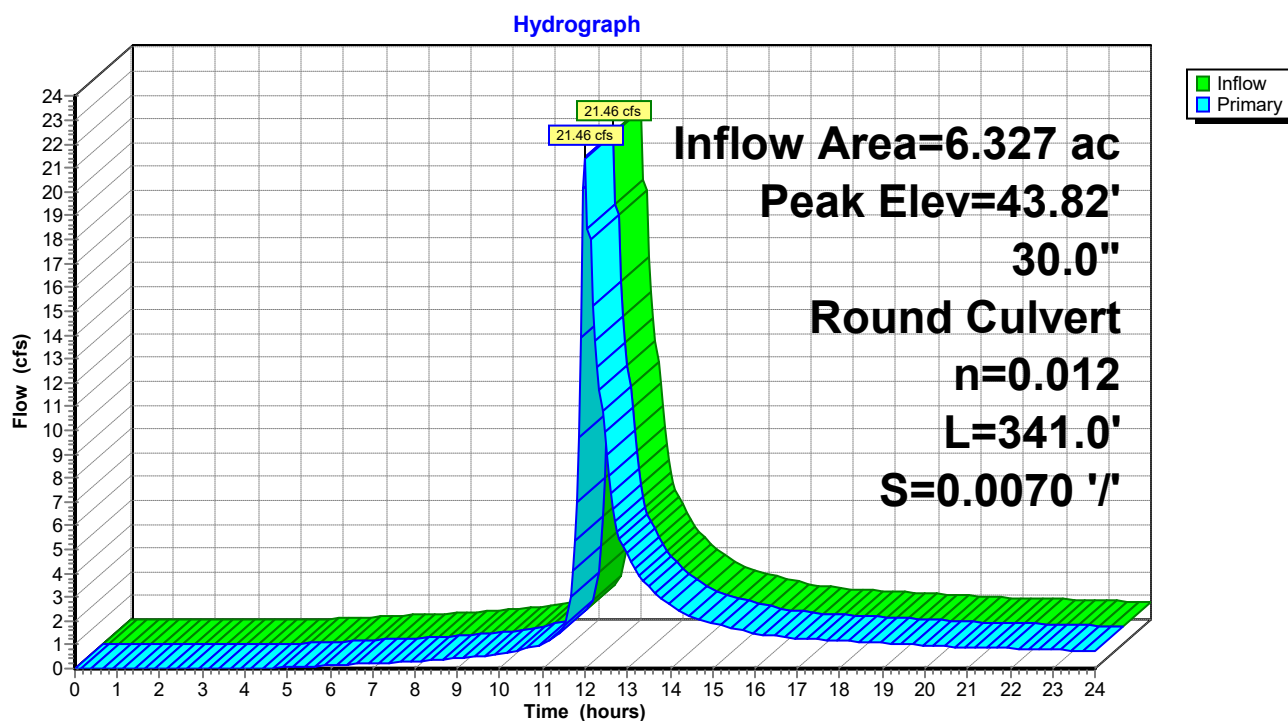
Peak Elev= 43.82' @ 12.00 hrs

Flood Elev= 45.05'

Device	Routing	Invert	Outlet Devices
#1	Primary	41.70'	30.0" Round 30" HPDE L= 341.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 41.70' / 39.31' S= 0.0070 '/ Cc= 0.900 n= 0.012, Flow Area= 4.91 sf

Primary OutFlow Max=19.90 cfs @ 11.99 hrs HW=43.79' TW=41.59' (Dynamic Tailwater)
↑ **1=30" HPDE** (Outlet Controls 19.90 cfs @ 6.13 fps)

Pond TOE4: SDI/OS #2



240020-Southern States Parcel

Prepared by Lane Engineering, LLC

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240020 - Southern States Redevelopment

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

Printed 2/7/2024

Page 338

Stage-Area-Storage for Pond TOE4: SDI/OS #2

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
41.70	0	44.25	0
41.75	0	44.30	0
41.80	0	44.35	0
41.85	0	44.40	0
41.90	0	44.45	0
41.95	0	44.50	0
42.00	0	44.55	0
42.05	0	44.60	0
42.10	0	44.65	0
42.15	0	44.70	0
42.20	0	44.75	0
42.25	0	44.80	0
42.30	0	44.85	0
42.35	0	44.90	0
42.40	0	44.95	0
42.45	0	45.00	0
42.50	0	45.05	0
42.55	0		
42.60	0		
42.65	0		
42.70	0		
42.75	0		
42.80	0		
42.85	0		
42.90	0		
42.95	0		
43.00	0		
43.05	0		
43.10	0		
43.15	0		
43.20	0		
43.25	0		
43.30	0		
43.35	0		
43.40	0		
43.45	0		
43.50	0		
43.55	0		
43.60	0		
43.65	0		
43.70	0		
43.75	0		
43.80	0		
43.85	0		
43.90	0		
43.95	0		
44.00	0		
44.05	0		
44.10	0		
44.15	0		
44.20	0		

240020-Southern States Parcel

Prepared by Lane Engineering, LLC

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240020 - Southern States Redevelopment

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

Printed 2/7/2024

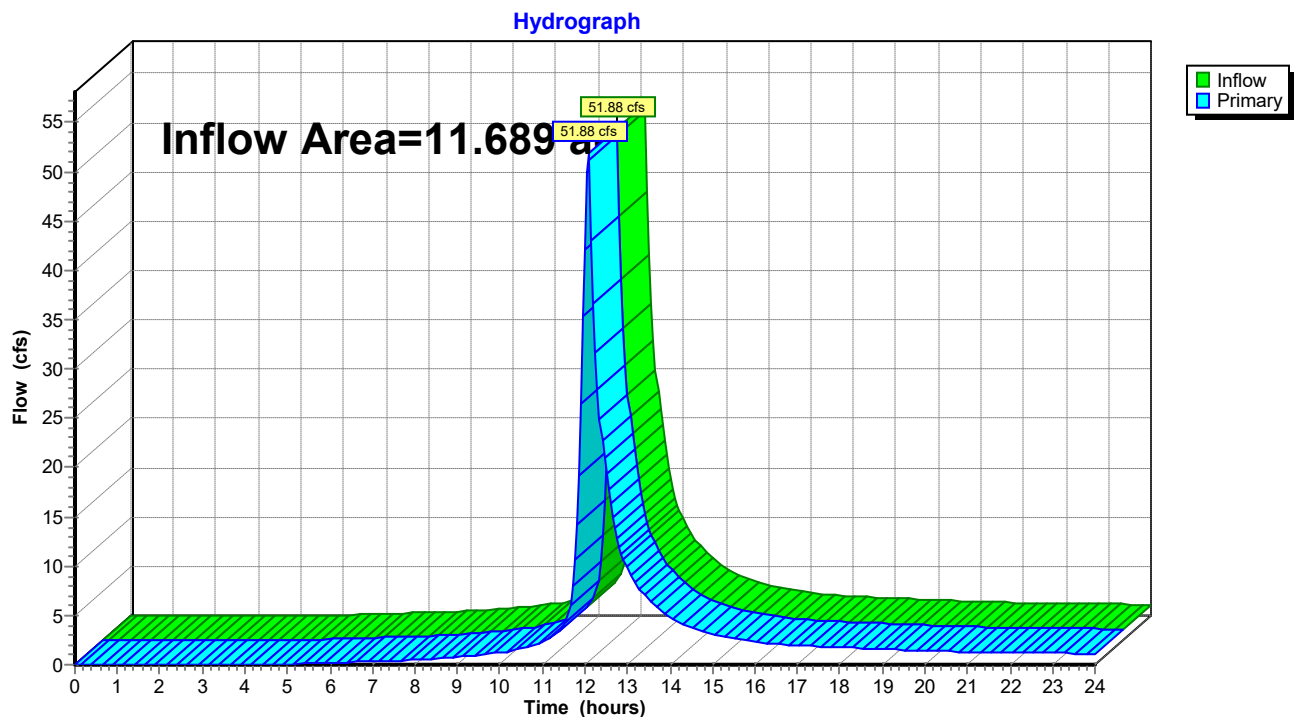
Page 339

Summary for Link PRE: PRE-DEVELOPMENT

Inflow Area = 11.689 ac, 55.03% Impervious, Inflow Depth > 5.30" for 100-yr event
Inflow = 51.88 cfs @ 12.08 hrs, Volume= 5.160 af
Primary = 51.88 cfs @ 12.08 hrs, Volume= 5.160 af, Atten= 0%, Lag= 0.0 min

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

Link PRE: PRE-DEVELOPMENT



240020-Southern States Parcel

Prepared by Lane Engineering, LLC

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240020 - Southern States Redevelopment

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

Printed 2/7/2024

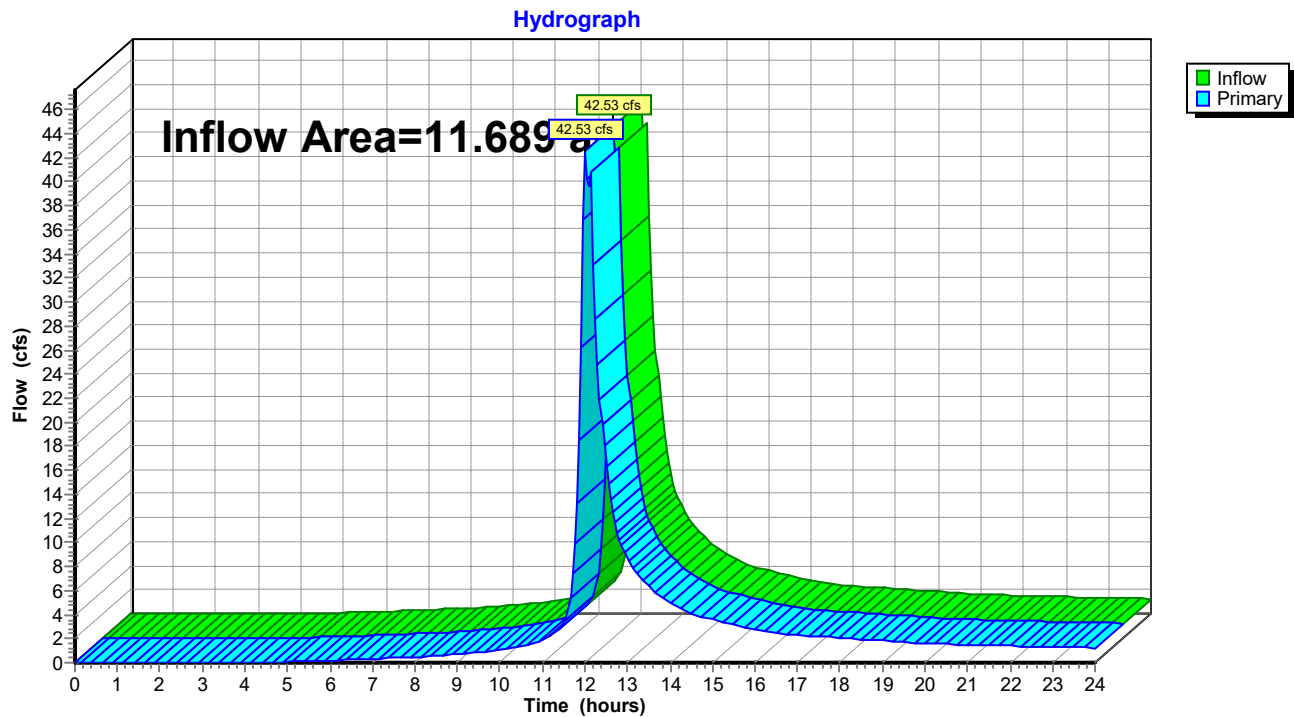
Page 340

Summary for Link PST: POST-DEVELOPMENT

Inflow Area = 11.689 ac, 65.73% Impervious, Inflow Depth > 5.14" for 100-yr event
Inflow = 42.53 cfs @ 12.01 hrs, Volume= 5.011 af
Primary = 42.53 cfs @ 12.01 hrs, Volume= 5.011 af, Atten= 0%, Lag= 0.0 min

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

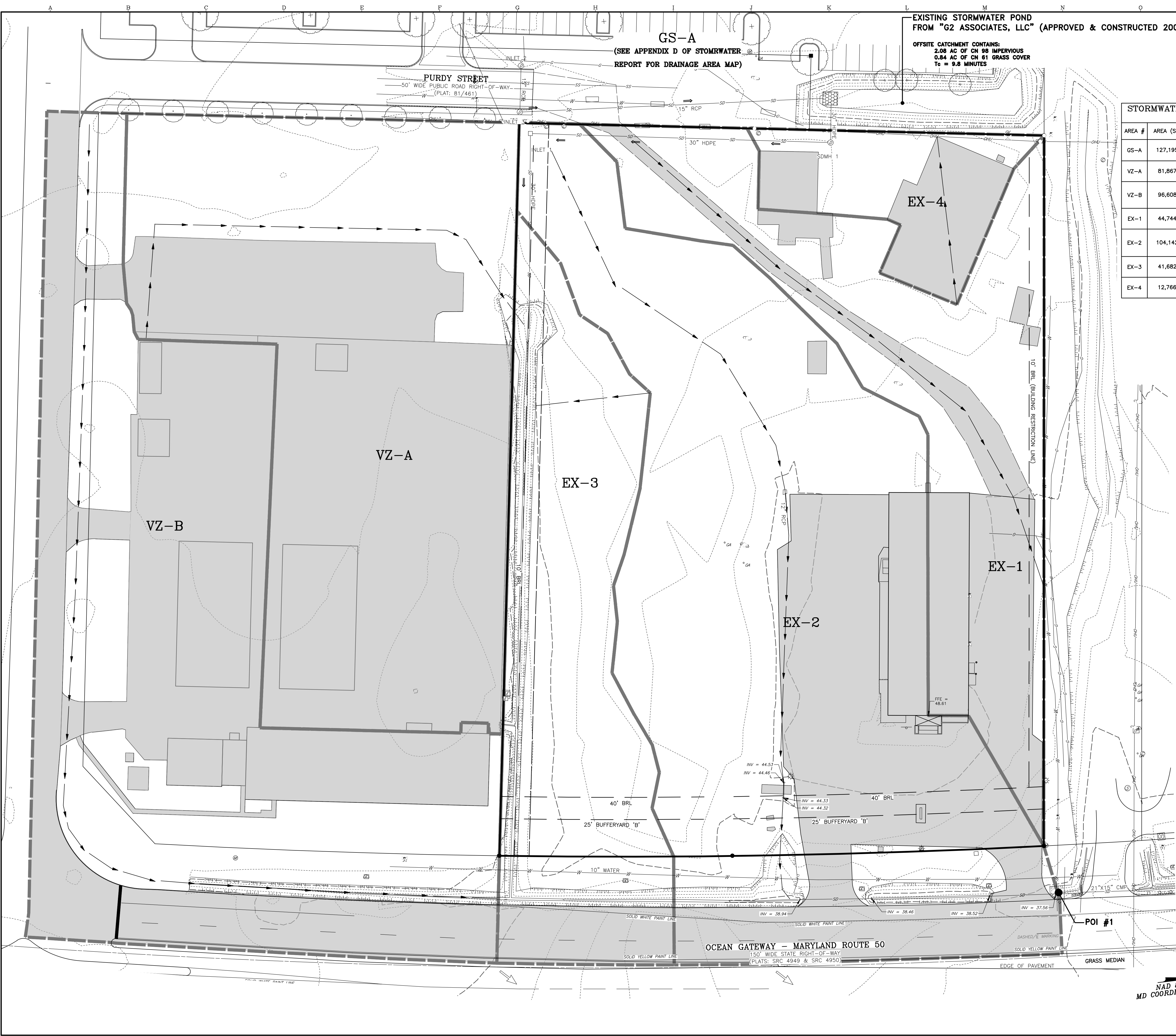
Link PST: POST-DEVELOPMENT



APPENDIX C

Drainage Area Maps

Date: 02/07/2024 - 7:46am User: acobato Project Manager: BCE
Drawing Path: J:\2024\0000\240020\Civil3D\240020 Dwg\Plots\CD-A-PLT5-240020.dwg 1 OF 2
XREF File(s): VSF-BASE-210666/RD-BASE-210666/RSF-SRCE-210666/RSF-SRCE-210666/VERIZON/CD-A-BASE-240020/RSF-BASE-240020/RSK-BASE-240020



EXISTING STORMWATER POND
FROM "G2 ASSOCIATES, LLC" (APPROVED & CONSTRUCTED 2007)

OFFSITE CATCHMENT CONTAINS:
2.08 AC OF CN 98 IMPERVIOUS
0.84 AC OF CN 61 GRASS COVER
Tc = 9.6 MINUTES

SWM PRE-DEVELOPMENT DISCHARGES (CFS)			
STUDY POINT	Q ₂	Q ₁₀	Q ₁₀₀
1	12.41	24.74	51.88

STORMWATER MANAGEMENT DRAINAGE AREA
TABLE

AREA #	AREA (SF)	TOTAL Tc (MINUTES)	IMPERVIOUS (%)	DESCRIPTION
GS-A	127,195	9.80	71.23	COMMERCE STREET/G2 ASSOCIATES
VZ-A	81,867	5.40	68.87	ADJ. VERIZON STORAGE YARD
VZ-B	96,608	12.20	63.69	ADJ. VERIZON BUILDING, HALF IDLEWILD, & PORTION US 50
EX-1	44,744	3.80	43.68	HALF EX BLDG & PARKING
EX-2	104,142	36.50	38.46	HALF EX BLDG & PARKING/STORAGE & SHA
EX-3	41,682	5.90	11.03	VACANT FIELD & SHA
EX-4	12,766	1.70	58.59	REMNANT FOUNDATIONS

APPROVED:

PLANS ARE

TOWN OF EASTON - TOWN ENGINEER DATE

ISSUED FOR

REVIEW ONLY

TOWN OF EASTON - TOWN ENGINEER DATE

APPROVED:

PLANS ARE NOT

EASTON TOWN ENGINEER DATE

APPROVED FOR

CONSTRUCTION

REVISIONS TO APPROVED PLANS			
No.	DATE	DESCRIPTION	BY

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



Lane Engineering, LLC

Established 1986

Civil Engineers • Land Planning • Land Surveyors

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

PROFESSIONAL CERTIFICATION: I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 23152, Expiration Date: 7/5/2025.

SEAL

DATE

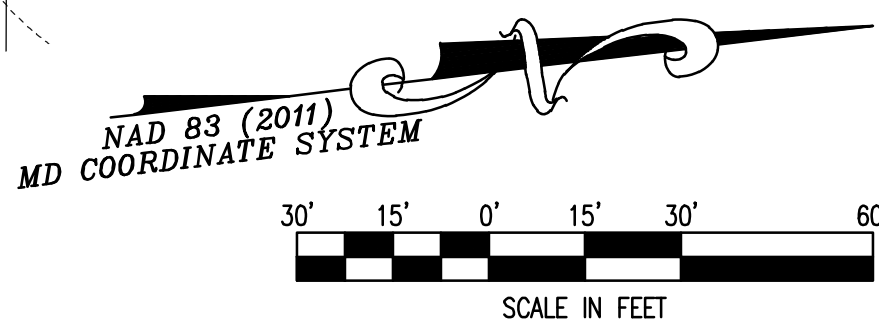
PRE-DEVELOPMENT
DRAINAGE AREA MAP

IN TOWN PROPERTIES, LLC
7872 OCEAN GATEWAY

IN THE TOWN OF EASTON, ELECTION WARD 1
TALBOT COUNTY, MARYLAND
TAX MAP 105 GRID 17 PARCEL 2990

ISSUED/REVISED FOR: DATE: BY:
ESDR SUBMITTAL 2/7/2024 BCE

SHEET No.	1 OF 2	JOB No.	240020
SCALE:	AS NOTED	FILE No.	1026

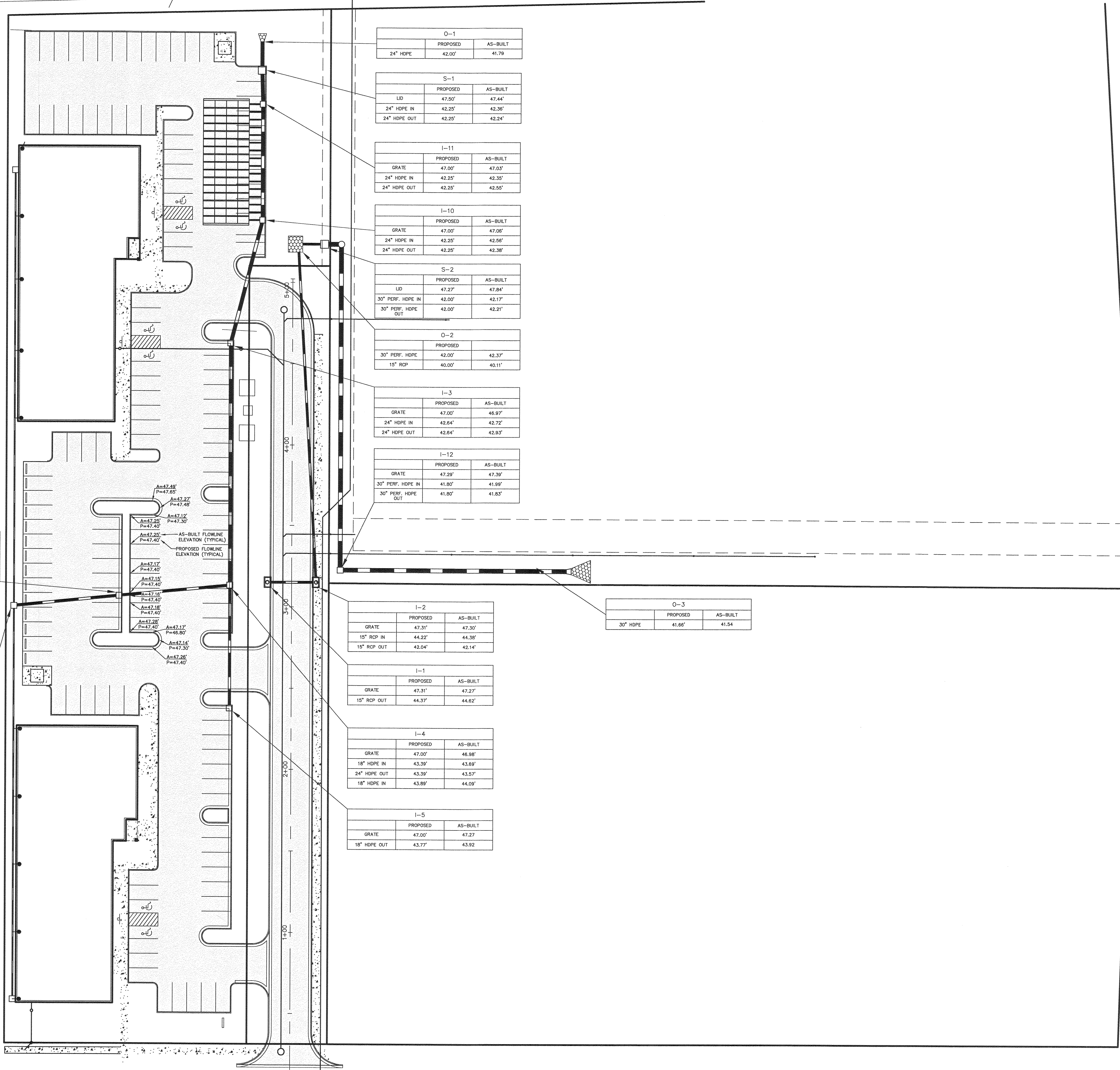


APPENDIX D

Existing G-2 & Purdy St. Improvements

I-6		
	PROPOSED	AS-BUILT
GRATE	47.10'	47.03'
18" HDPE IN	44.24'	44.38'
18" HDPE OUT	44.24'	44.37'

I-7		
	PROPOSED	AS-BUILT
GRATE	49.00'	47.82'



O-1		
	PROPOSED	AS-BUILT
24" HDPE	42.00'	41.79'

S-1		
	PROPOSED	AS-BUILT
LID	47.50'	47.44'
24" HDPE IN	42.25'	42.36'
24" HDPE OUT	42.25'	42.24'

I-11		
	PROPOSED	AS-BUILT
GRATE	47.00'	47.03'
24" HDPE IN	42.25'	42.35'
24" HDPE OUT	42.25'	42.55'

I-10		
	PROPOSED	AS-BUILT
GRATE	47.00'	47.08'
24" HDPE IN	42.35'	42.56'
24" HDPE OUT	42.35'	42.38'

S-2		
	PROPOSED	AS-BUILT
LID	47.27'	47.84'
30" PERF. HDPE IN	42.00'	42.17'
30" PERF. HDPE OUT	42.00'	42.21'

O-2		
	PROPOSED	AS-BUILT
30" PERF. HDPE	42.00'	42.37'
15" RCP	40.00'	40.11'

I-3		
	PROPOSED	AS-BUILT
GRATE	47.00'	46.97'
24" HDPE IN	42.84'	42.72'
24" HDPE OUT	42.84'	42.93'

I-12		
	PROPOSED	AS-BUILT
GRATE	47.29'	47.39'
30" PERF. HDPE IN	41.80'	41.99'
30" PERF. HDPE OUT	41.80'	41.83'

I-2		
	PROPOSED	AS-BUILT
GRATE	47.31'	47.30'
15" RCP IN	44.22'	44.38'
15" RCP OUT	42.04'	42.14'

I-1		
	PROPOSED	AS-BUILT
GRATE	47.31'	47.27'
15" RCP OUT	44.37'	44.82'

I-4		
	PROPOSED	AS-BUILT
GRATE	47.00'	46.98'
18" HDPE IN	43.39'	43.69'
24" HDPE OUT	43.39'	43.57'
18" HDPE IN	43.89'	44.09'

I-5		
	PROPOSED	AS-BUILT
GRATE	47.00'	47.27'
18" HDPE OUT	43.77'	43.92'

O-3		
	PROPOSED	AS-BUILT
30" HDPE	41.66'	41.54'

STORM DRAIN SYSTEM AS-BUILT

FOR

G 2 ASSOCIATES, LLC

TOWN OF EASTON

TALBOT COUNTY, MARYLAND

MAP 105

GRID 17

PARCEL 2990A

DATE: 04/18/06

SCALE: 1"=30'

DESIGN NO: 030885

DRAWN BY: KOT

TWS NAME: 030885SSD

APPROVED: R.L.V.

SEAL

Lane Engineering, Inc.

Civil Engineers – Land Planning – Land Surveyors

117 Bay St. Easton, MD 21801 (410) 822-8003 FAX (410) 822-2024

15 Washington St. Cambridge, MD 21613 (410) 221-0818 FAX (410) 476-9942

1105 West Water St. Centerville, MD 21037 (410) 738-2095 FAX (410) 738-4422

E-mail: mail@lenc.com

REVISION

DATE

BY

No.

APPROVED

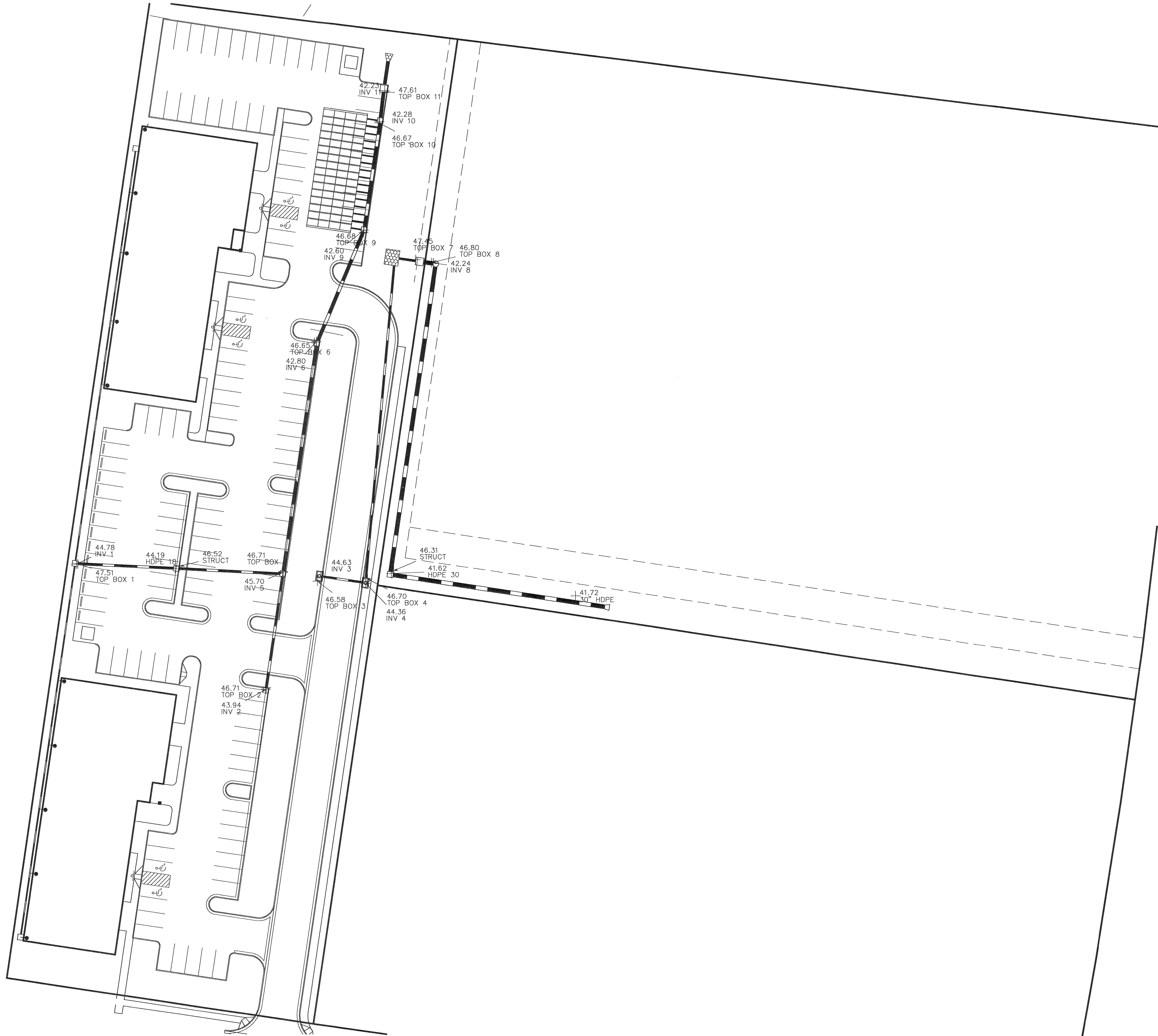
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SHEET No.

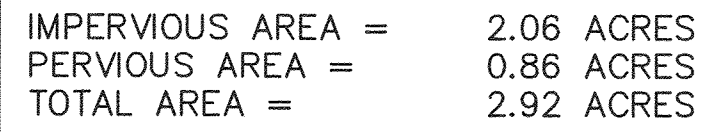
1 OF 1

FILE No.

1026



STORMWATER ASBUILT		DATE: 06-05-06	SEAL	
FOR		SCALE: 1"=30'		
G 2 ASSOCIATES, LLC		JOB NO: 030665		
TOWN OF EASTON		DRAWN BY: E.S.M.		
TALBOT COUNTY, MARYLAND		ENG. NAME: 030665SSO		
MAP 105		APPROVED:		
GRID 17		PARCEL 2990A		
SHEET No. 1 OF 1		FILE No. 1026		
Lane Engineering, Inc.				
Civil Engineers - Land Planning - Land Surveyors				
117 Bay St. Easton, MD 21829 15 Washington St. Cambridge, MD 21613 114B West Water St. Centerville, MD 21817			FAX (410) 822-2024 FAX (410) 476-9942 FAX (410) 758-2095 FAX (410) 758-4422	
E-mail: mal@lane.com E-mail: jay@lane.com E-mail: tom@lane.com				
No. BY DATE REVISION				
APPROVED				

[illegible]



TOWN OF EASTON

14 South Harrison Street
Easton, Maryland 21601

March 6, 2024

Dear Resident,

The Easton Planning Commission (Commission) will hold a public meeting on **Thursday, March 21, 2024 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 Lane Engineering, LLC has filed application 2024 - 1129 on behalf of In Town Properties, LLC to request Sketch Site Plan approval for the redevelopment of a two-story medical clinic, and a one-story retail store with mezzanine office space. The property is located at 7872 Ocean Gateway, also known as Tax Map 105, Grid 000, Parcel 2990. The applicant is also seeking a property line adjustment to subdivide the redeveloped properties into two separate lots.

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 will be available for review one week prior to the scheduled meeting 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 email at ssmith@eastonMD.gov.

Samantha N. Smith

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

APG Media of Chesapeake, LLC

29088 Airpark Drive
Easton, MD 21601

Phone: Fax:

INVOICE
03/04/24

Cust. AcctID:	Creation Date: 03/04/24
	Ad Date: 03/06/24
	Class: 10
Name: Joanne Drummer	Ad ID:
Company: TOWN OF EASTON (L)	Words: 339
Address: PO Box 520	Lines: 54
EASTON, MD 21601	Agate Lines: 261
	Depth: 7.25
	Inserts: 2
	Blind Box:
Telephone: (410) 822-2525	
Description: Planning Comm Meeting	

Other Charges:

Total:

Discount:

Paid Amount:

Surcharge:

Amount Due:

Credits:

Bill Depth:

CREDIT CARD DETAILS

PT	CT	CN	Number	Exp.	Amnt.

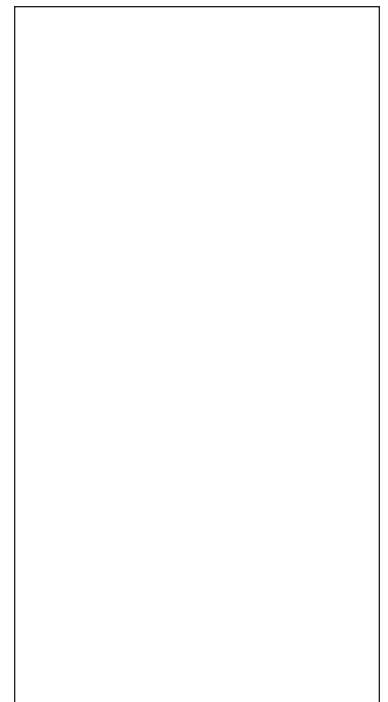
Publication	Start	Stop	Inserts
The Star Democrat	03/06/24	03/06/24	

Ad Note:

Sign posted on March 4, 2024

Customer Note:

We Appreciate Your Business!
Thank You Joanne Drummer!



Planning Commission MEETING AGENDA Thursday, March 21, 2024 - 1:00 PM Council Chambers, Easton Town Office 14 S Harrison Street	
Please continue to check our website at: https://eastonmd.gov/129/Agendas-Minutes for agenda updates	
1. Call to Order	
2. Approval of Minutes.	
3. a. Approval of the Decision Summary from the February 15, 2024 meeting.	
4. Old Business	
a. New Business	
Applicant: John and Kimberly Wooters	
File No.: 2024 - 1137	
Location: 7365 Brent Road	
Tax Map 108, Grid 000, Parcel 2777E, Lot 23	
Zoning District: R-10A	
Nature of Request: Conditional approval for the construction of a 24' x 30' pole building with a 2' x 12' concrete apron, and a 4' x 4' service pad. In addition, the applicant is requesting a Supplemental Waiver for a portion of the garage which will reside inside the 100' potential stream buffer zone.	
b. Applicant: 128 S. West Street LLC	
File No.: 2024 - 1148	
Location: 128 S. West Street	
Tax Map 104, Grid 0EA, Parcel 1990	
Zoning District: C8	
Nature of Request: Request to allow the use of a portable on demand storage (POSD) to remain at 128 S. West Street on a long term basis.	
c. Applicant: Blue Crab Self Storage LLC	
File No.: 2022 - 780	
Location: 28091 Fairway Wood Court	
Tax Map 025, Grid 016, Parcel 0138, Lot 6C	
Zoning District: Sketch Site Plan approval to construct a warehouse and climate-controlled self storage building with associated stormwater management, parking, and landscaping.	
d. Applicant: Lane Engineering LLC	
File No.: 2024 - 1129	
Location: 7877 Ocean Gateway	
Tax Map 105, Grid 000, Parcel 2980 CG	
Zoning District: Sketch Site Plan approval for the redevelopment of a two-story medical clinic, and a one-story retail store with overhead office space. The applicant is also seeking a minor subdivision to create two (2) lots.	
5. Discussion Item	
a. Draft review of the Inclusionary Zoning Ordinance.	
b. Potential Revisions to the Zoning and Subdivision Text Amendments.	
c. Continued discussion of New Town Design Guidelines.	
6. Adjournment	
3048003 SD	3/6/2024



**PLANNING COMMISSION
INFORMATION ITEM**

SUBJECT: Draft Inclusionary Zoning Ordinance

WARD DISTRICT: Townwide

STAFF CONTACT: Miguel Salinas, Director, P&Z

PURPOSE: To discuss the components of a draft Inclusionary Zoning Ordinance (Attachment 1).

BACKGROUND:

According to the annual Income Limits Summary published by the United States Department of Housing and Urban Development (HUD), the FY 2023 Median Family Income (MFI) for Talbot County is \$107,900.¹ The County's MFI is 16% higher than the average MFI for the eastern shore of Maryland (excluding Cecil County) and second only to Queen Anne's County.

HUD sets income limits that determine eligibility for assisted housing programs including the Public Housing, Section 8 project-based, Section 8 Housing Choice Voucher, Section 202 housing for the elderly, and Section 811 housing for persons with disabilities programs. HUD's Income Limits Summary Table for Talbot County (Table 1 below) includes income limit categories based on the MFI for Low Income, Very Low Income, and Extremely Low Income categories adjusted for family size.

Table 1: Talbot County Median Family Income and Income Limits Summary²

FY 2023 Income Limit Area	Median Family Income Click for More Detail	FY 2023 Income Limit Category	Persons in Family							
			1	2	3	4	5	6	7	8
Talbot County, MD	\$107,900	Very Low (50%) Income Limits (\$) Click for More Detail	36,200	41,400	46,550	51,700	55,850	60,000	64,150	68,250
		Extremely Low Income Limits (\$)* Click for More Detail	21,700	24,800	27,900	31,000	35,140	40,280	45,420	50,560
		Low (80%) Income Limits (\$) Click for More Detail	57,900	66,200	74,450	82,700	89,350	95,950	102,550	109,200

¹ This number is calculated using the 5-year 2017-2021 American Community Survey MFY estimate (\$96,226) with an inflation factor adjustment based on the cumulative change in the national Consumer Price Index.

² Source: Department of Housing and Urban Development, Office of Policy Development and Research

Based on a brief analysis, staff concludes that the limited supply of market-rate homes for sale and apartments for rent in and around Easton are not attainable to a large percentage of our workforce. Below are two examples.

Example 1: A family of four making 80% of the MFI should spend no more than 30% of their monthly income on housing.³ The current median price of a new or existing home for sale in the Town of Easton and its immediate area is \$474,000.⁴ Assuming a 3% down payment at an interest rate of 6.67% on a thirty (30) year, fully amortizing fixed rate mortgage, the total monthly mortgage payment (Principal and Interest only) is \$2,957⁵. In comparison, a family of four in Talbot County making 80% of the Easton MFI (\$79,164) can have a monthly affordable mortgage payment of \$978 without being cost-burdened;⁶ or a home at an affordable sales price of \$181,500.

Example 2: A physical therapy assistant with an associate degree making approximately \$54,000 per year can have a monthly affordable rental rate of \$1,310⁷. However, available apartments at that rate are severely limited. A recent search on the real estate website zillow.com does not list any home for rent under that price. The website apartments.com lists only Chatham Village Apartments offering a 1-bedroom starting at \$1,200 per month. For a graphic designer making \$45,000 per year or a restaurant cook making \$32,000 per year (less than 50% of the MFI, defined by HUD as very-low income), there are virtually no attainable market-rate apartments or homes on the market available for rent.⁸

There are also no opportunities for attainable housing in the unincorporated areas of Talbot County. The County's comprehensive plan places high value on the protection of the shoreline, waterway, and agricultural lands, equally important goals as attainable housing. The County's plan to accomplish this is twofold: restrict the extension of sewer outside of development and growth areas that surround the towns and to take a restrictive approach toward the use of land over which it has zoning authority.⁹ To implement these objectives, the County's zoning regulations prohibit all housing types except single-family; the zoning districts are characterized as very low density; and the bulk requirements for each lot include large minimum lot sizes and low maximum lot coverage requirements. The end effect is housing segregation due to the cost of land and development supporting only higher-end housing in the unincorporated areas of

³ The 30% is adjusted for property taxes, HOA fees, mortgage insurance premiums, utility costs, and an allowance for typical maintenance and repairs.

⁴ The median was based on a recent search by staff on the real estate market website zillow.com.

⁵ The interest rate is based on the Freddie Mac Weekly Mortgage Survey. A more typical 10% down payment results in a monthly mortgage payment of \$2,744.

⁶ The monthly affordable mortgage payment is based on 30% of a family of four making 80% of the MFI, after subtracting utility costs, real property taxes, mortgage insurance premium and a maintenance and repair allowance. Utility costs are derived from the Talbot County Housing Commission's average monthly utility allowance of housing choice voucher recipients; the property tax is based on a standard factor of 1.243 of the market price of the unit; and the maintenance and repair allowance is based on a 3-bedroom home at \$25 per bedroom.

⁷ The monthly affordable rental rate is based on 30% of a family of one making 80% of the MFI.

⁸ Wages are based on the 2021 Maryland Occupational Employment and Wage Estimates.

⁹ This policy is overridden for failing septic systems.

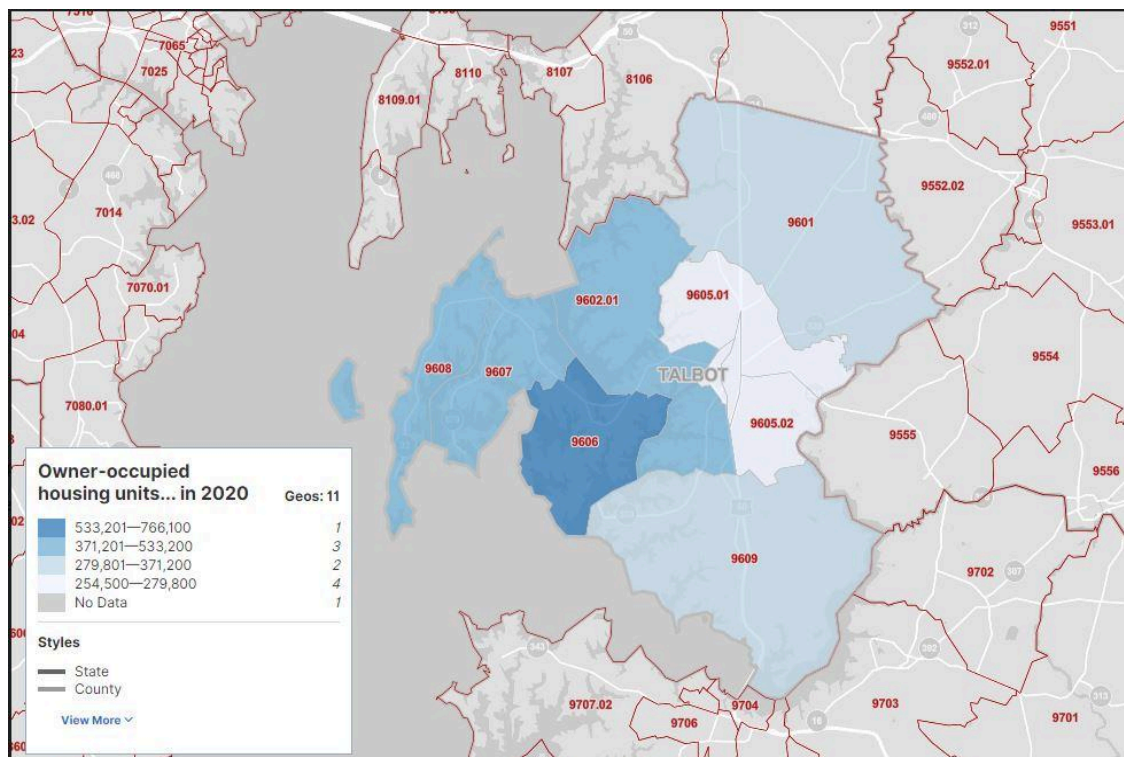
Talbot County. And as the graphics show below, housing segregation is the door to other types of segregation (see Graphics 1, 2, and 3 below).

As for the remaining towns outside of Easton, there are extremely limited areas for future growth and development adjacent to Oxford and St. Michaels. While Lakeside at Trappe, the new development in the Town of Trappe, will eventually provide approximately 2,500 homes, the approval of the Planned Unit Development by the Town of Trappe did not require any proffers for affordable or workforce housing.

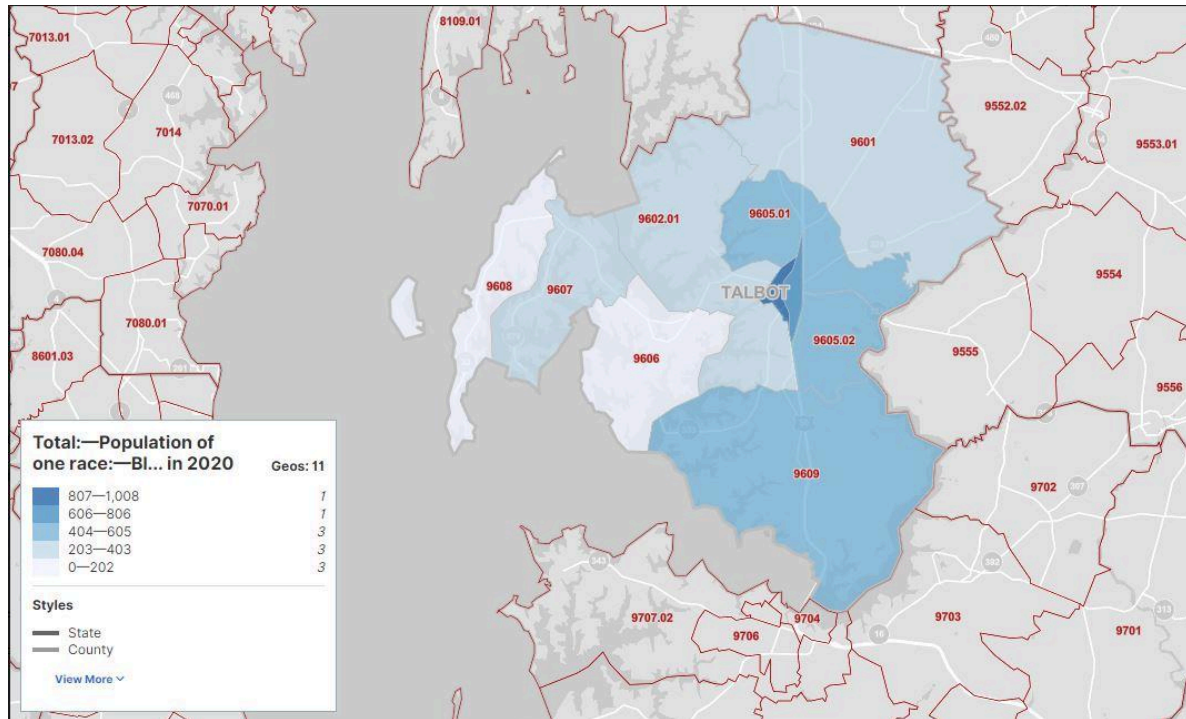
The Town of Easton is in the forefront of the current zoning reformation movement by adopting options and incentives for middle housing, such as triplexes, fourplexes, courtyard homes, cottage courts, and mansion apartments. However, infill options are currently limited. Habitat for Humanity Choptank has indicated that in 2024, the housing organization will run out of land to develop in Easton; the lots are too expensive to fit their model, with this occurring even though they receive 65 to 70 calls per month from people inquiring about eligibility. Where there is potential for infill development, private developers have to provide market rate housing to cover their costs due to limited density potential stemming from regulatory, infrastructure and site constraints (for example: historic district guidelines, limited space for off-street parking) and neighborhood opposition. Attainable housing opportunities in Easton from new greenfield developments are limited; the Town Code does not require attainable housing commitments from new development unless it's proffered from the developer.

The cumulative result of market forces, limited supply, and exclusionary zoning is that much of Easton's workforce has no choice but to live outside of Talbot County and commute into the Town of Easton for their jobs, primarily from Caroline and Dorchester Counties where housing is more affordable.

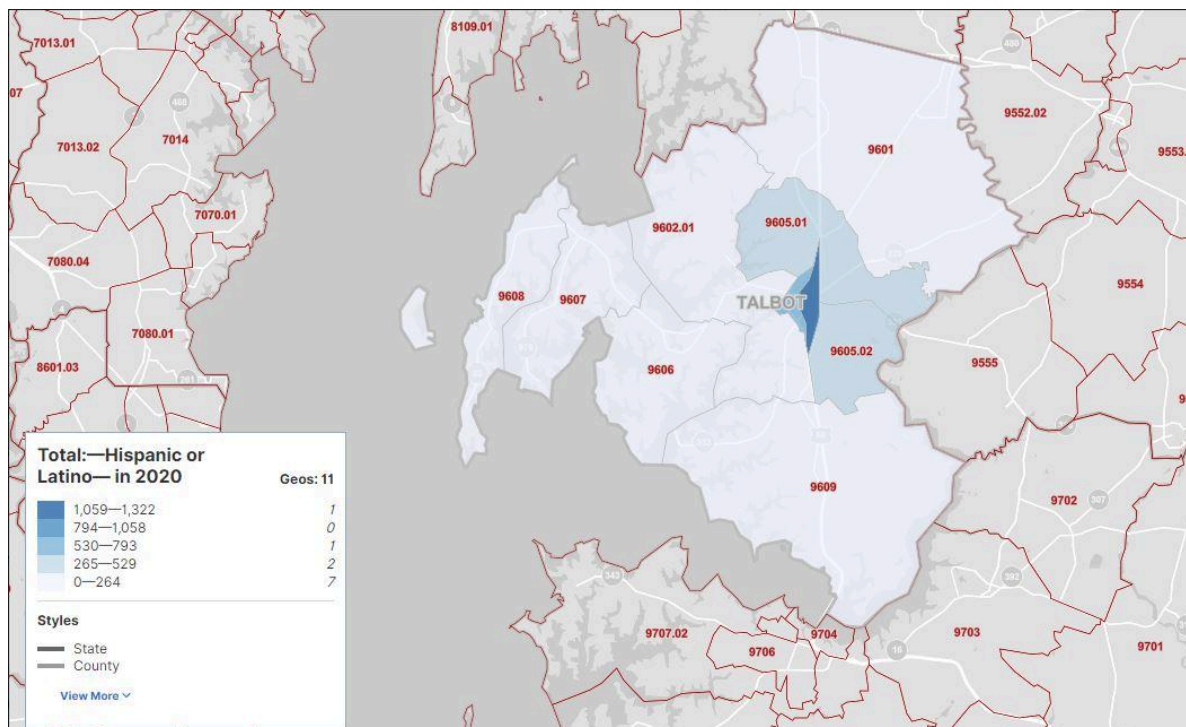
Graphic 1: Talbot County Median Value of Owner-Occupied Housing Units in 2020 by Census Tract



Graphic 2: Talbot County Black Population by Census Tract



Graphic 3: Talbot County Hispanic Population by Census Tract



Talbot County Smart Growth Survey

The lack of attainable housing is a concern to County residents. American Strategies, sponsored by the National Association of Realtors with support provided by the Mid-Shore Board of Realtors, designed and administered a telephone survey in June of 2022. The survey reached 325 adults, age 18 or older, who indicated they were registered to vote in Talbot County, Maryland (see Attachment 2 for a summary of their survey results).

The results of the survey indicated that residents are satisfied with their quality of life and they value the historic nature of Talbot's towns and villages and its natural resources, but they understand the need for additional housing – and in particular for more affordable housing for young people and those with lower incomes. Specific highlights are below:

- Residents are concerned about the County's affordable housing, where 51% say "creating more housing that is affordable to low and middle-income people" is a top priority
- A majority of Talbot residents consider the county's stock of available housing to be a "fairly big" or "very big" problem (60%)." Similarly, 66% consider housing affordability to be a problem in the county
- Looking at specific sectors of Talbot's housing market, 68% of residents believe there is too little housing for people with low incomes and for younger people who are just starting their careers. 60% also believe there to be too little housing for people who work in retail and service jobs, with the same number saying there are too few units available to rent full-time
- Talbot County residents are broadly supportive of government-led proposals to increase housing opportunities for the county
 - 67% percent of residents favor a proposal that requires developers to set aside sub-market rate housing for new projects and 62% favor providing tax breaks to developers who do so
 - Slightly smaller majorities are favorable toward proposals that change zoning laws to ease the process of building multi-family units (57%), and proposals that reduce government fees and regulatory barriers for builders (56%)

Draft Inclusionary Housing Ordinance

§ 3-114 of the Annotated Code of Maryland requires a housing element in comprehensive plans that addresses the need for affordable housing within a local jurisdiction, including for workforce and low-income housing. The law further states that local jurisdictions have a duty to affirmatively further fair housing through their housing and other programs and that the housing element of a comprehensive plan enacted or amended on or after January 1, 2023 include an assessment of fair housing to ensure that the local jurisdiction is furthering fair housing.¹⁰

¹⁰ "Affirmatively further fair housing" means to take meaningful actions, in addition to actions aimed at combating discrimination, to overcome patterns of segregation and foster inclusive communities free from barriers that restrict access to housing and opportunity based on protected characteristics. It also includes to take meaningful actions that, taken together: (i) address significant disparities in housing needs and access to opportunity; (ii) replace segregated living patterns with truly integrated and balanced living patterns; (iii) transform racially and ethnically concentrated areas of poverty into areas of opportunity; and (iv) foster and maintain compliance with civil rights and fair housing laws.

In addition to any other zoning and planning powers granted by the State of Maryland, § 7-401 of the Annotated Code of Maryland expressly gives a local legislative body the authority to enact local laws that:

- 1) impose inclusionary zoning, and award density bonuses, to create affordable housing units; and
- 2) restrict the use, cost, and resale of housing that is created under this authority to ensure that the purposes of affordable housing are carried out.

Thus inclusionary zoning is one land use regulatory tool that can be used to further fair and attainable housing policies in local jurisdictions. Inclusionary zoning refers to zoning ordinance requirements that new residential development must include a percentage of its units to be built to accommodate affordably priced dwelling units, either for rental or home ownership. The control period, or time in which the units must remain available to households below a certain income level, typically varies from 20-99 years depending on ownership versus rental unit type.¹¹ Several Maryland jurisdictions have passed inclusionary zoning ordinances, including the counties of Montgomery and Queen Anne's, and the cities of Annapolis, Frederick and Baltimore.

Given the many challenges that the Town of Easton and Talbot County face in the provision of attainable housing, the adoption of an Inclusionary Zoning Ordinance for the Town of Easton is one way to respond to the crisis and add another tool in the toolbox of fair, equitable and affordable housing efforts currently undertaken by the Town.

The Inclusionary Zoning Ordinance for Council consideration was drafted after a review of existing ordinances in the Maryland jurisdictions of Annapolis, Queen Anne's County, and Montgomery County and in Loudoun County, Virginia and East Palo Alto, California.¹² Staff also consulted with Maryland Affordable Housing Coalition, the Virginia Housing Alliance, and the National Low Income Housing Coalition during the drafting of the ordinance. The Chair of the Easton Affordable Housing Board also reviewed the draft ordinance prior to Council distribution. The draft was discussed at three Town Council workshops in 2023¹³. Subsequent to the July workshop, the Council agreed to staff coordination of a Housing Work Group to review the draft Inclusionary Zoning Ordinance discussed at the three Council work sessions last year.

The work group included Council Members Maureen Curry and Rev. Elmer Davis, Mayor Megan Cook, Town Manager Don Richardson, Town Attorney Sharon VanEmburch, Miguel

¹¹ Maryland Department of Planning, Common Practices and Examples:

<https://planning.maryland.gov/Pages/OurWork/housing-element-mg/common-practices.aspx>

¹² Loudoun County was chosen for its location outside of Maryland and its similarity to Fairfax County, Virginia's and Montgomery County, Maryland's inclusionary housing ordinances. East Palo Alto, California was chosen because of its unique approach the provisions and management of their program; an example of a response to California's Housing Element Law, enacted in 1969, that required that all local governments adequately plan to meet the housing needs of everyone in the community; and as a response to exclusionary zoning and severe shortages of affordable housing combined with a reduction of federal housing subsidies. Over 170 California jurisdictions have inclusionary housing ordinances on the books.

¹³ The workshops were held on February 6, February 20, and July 17.

Salinas and Lynn Thomas from Planning and Zoning, Holly Dekarske from the Easton Economic Development Corporation, and Jim Bent from the Affordable Housing Board. The Housing Work Group met five times since July of last year and their work resulted in changes to the initial draft.

The updated draft is now ready for Planning Commission review and a recommendation to be forwarded to the Council prior to any introduction of legislation.

Below are brief descriptions of each section of the draft ordinance:

Section 1601: Purpose

Section 1601 acknowledges the housing problem in Easton due to rapidly increasing property values and the reduction in the availability of housing choices. The section also affirms the Town's commitment to addressing the issue, its commitment to a diverse and balanced community and the impact of an inadequate supply of attainable housing to attract and retain employers and maintain an adequate workforce.

Section 1602: Definitions

Section 1602 contains definitions of terms used in the draft ordinance. The Section establishes definitions for affordable rental rates and monthly affordable mortgage payments and establishes definitions for Very Low-Income (0-50% MFI), Low-Income (up to 60% MFI), Median-Income (up to 80% MFI), and Moderate-Income Households (up to 100% MFI). Note that the definition of Median Family Income states that the annual County MFI published by HUD will be adjusted each year by the Affordable Housing Board based on the Town of Easton's median income.

Section 1603: Intent

Section 1603 establishes the intent of the ordinance; namely to provide attainable housing, mitigate the impact of market rate housing on attainable housing due to limited supply, and promote the integration of attainable housing with market rate housing.

Section 1604: Authority

Section 1604 cites the section of the Annotated Code of Maryland that gives the authority to local jurisdictions to enact inclusionary housing regulations and award density bonuses to further attainable housing.

Section 1605: Applicability

Section 1605 establishes that the regulations apply to all residential developments which are the subject of a development site plan, preliminary plat, or building permit, whichever comes first.

Section 1606: Exemptions

Section 1606 exempts from the regulations any housing that is developed with less than 15 dwelling units, accessory dwelling units, cartian projects undertaken by housing organizations or a continuing care retirement community, projects undertaken by the Town of Easton, and projects developed under the Low-Income Housing Tax Credit Program.

Section 1607: Inclusionary Zoning Requirements

Section 1607 establishes when a 10% inclusionary zoning requirement is required: when residential development is proposed of 25 or more units for ***new construction or substantial rehabilitation*** of existing structures and when residential development is proposed of 30 or more units for ***adaptive reuse*** or the ***conversion of a nonresidential use to a residential use***. This difference is to recognize the potential increased costs for adaptive reuse, infill development, and redevelopment.

Below are additional elements of Section 1607:

- A. When inclusionary zoning is required for residential developments that include for-sale units, the for-sale Inclusionary Units are targeted towards median-income and moderate-income households. When Inclusionary Units are required for residential developments that include rental units, the rental Inclusionary Units are targeted towards very low-income and low-income households. The reason for the different target incomes is the assumption that households in the low and very-low income range have more limited resources for down payments and housing costs associated with home ownership besides mortgage payments, including housing repair and maintenance.
- B. If only one Inclusionary Unit is required, then the homes shall be targeted towards the lower range of household incomes.
- C. Fractional units are required to be rounded up to one full unit.
- D. Calculations of the required number of units are based on the number of units exclusive of any additional units proposed by the developer under the density bonus provisions of the ordinance.
- E. Developers cannot circumvent or avoid the Inclusionary Zoning Ordinance requirements by piecemealing or phasing developments.
- F. Provisions are outlined for the tracking of the required Inclusionary Units for each building permit application submitted.
- G. Developments that propose between 15 and 24 new dwelling units for new construction or substantial rehabilitation, or between 15 and 29 new dwelling units for redevelopment, are not required to build Inclusionary Units; they are required to pay a Cash In Lieu Fee.

Section 1608: Inclusionary Zoning Incentives

Section 1608 establishes incentives for the developer. These incentives include:

- A. For residential developments that require Inclusionary Units on the same site, the developer may receive up to a 20% density bonus above the maximum density allowed in the residential base zoning district (A-1, R-7A, R-10A, R-10M, CB, MXW).¹⁴
- B. If all required Inclusionary Units are provided on the same site, the developer may receive a variance of up to 20% from the dimensional requirements (lot size, lot frontage, lot coverage, height, and setbacks) without having to receive approval from the Board of Zoning Appeals. The developer may also receive a 20% modification from the parking requirements. The flexibility is provided to accommodate more units on the site when the developer chooses to utilize the density bonus.

¹⁴ Planned Unit Development, which is a discretionary floating district, may already allow for higher densities: 16 dwelling units per acre for PUD-General, 60 dwelling units per acre for PUD-Infill, and 30 dwelling units per acre for PUD-Redevelopment. The Planned Redevelopment Overlay District permits a density of up to 40 dwelling units per acre.

- C. Projects shall receive: 1) a cash subsidy from the Affordable Housing Fund for the deferral of impact fees, provided the funds exist, and 3) a real property tax abatement if the developer provides at least double the number of Inclusionary Units than what is required in the Inclusionary Zoning ordinance.¹⁵

D.

Section 1609: Alternative Compliance Options

Section 1609 provides alternative compliance options, including:

- A. Partnering with a qualified housing organization to build on-site Inclusionary Units or to partner with such organization to build off-site units within the Town limits provided the number of units provided is one and one-half times the required number of units. The preference is for the developer to provide the Inclusionary Units onsite so housing segregation is minimized, thus the one and one-half times the required number of units.
- B. Purchasing land within the Town or the growth area and donating it to a qualified housing organization to build the aforementioned one and one-half number of required units.
- C. For adaptive reuse or conversion of nonresidential to residential, when 30 or more dwelling units are proposed, the developer may provide a Cash In Lieu Fee, which would be based on the fees initially established by the Town Council.

Proposed off-site construction or Cash In Lieu Fees would be subject to certain conditions. The in lieu fees will be updated by the Affordable Housing Board on an annual basis, after the revised fees are approved by Town Council Resolution. Projects that choose this option are not eligible for the density bonus.

Section 1610: Inclusionary Housing Plan and Agreement

Section 1610 requires the developer to submit an Inclusionary Housing Plan with their residential development application (site plan, preliminary plat, building permit) for staff review. The plan describes how the development complies with the inclusionary zoning regulations, the Inclusionary Housing Guidelines (see Section 1612 below), and their marketing plan. The plan also describes how they will comply with all applicable fair housing and discrimination laws.

The Inclusionary Housing Agreement is a recorded legal document that ensures that all the requirements of the ordinance are satisfied. The specifics of the agreement are outlined in this section.

Section 1611: Percentage of Affordable Units

Section 1611 reaffirms the calculation of Inclusionary Housing units.

Section 1612: General Requirements for Inclusionary Units

Inclusionary Housing Guidelines are any requirements for implementation and administration of the Inclusionary Housing ordinance, as recommended by the Easton Affordable Housing Board and adopted by the Town Council. Adopted Inclusionary Housing Guidelines may include, but not be limited to, standards for determining household composition; income eligibility and prices

¹⁵ The incentive for real property tax abatement is only available if the Town Council establishes such an abatement program.

for sale and rental of Inclusionary Units; income limit schedules; inclusionary housing costs or carrying charges; design guidelines; provisions of continued monitoring of tenant eligibility; and document templates. Guidelines may also specify the contents of the Inclusionary Housing Plan. The Guidelines are reviewed and updated on a regular basis.

Section 1612 establishes what minimum requirements must be included in the Inclusionary Housing Guidelines adopted by the Town Council..

Section 1613: For-Sale of Inclusionary Units

Section 1613 establishes that guidelines will be established by the Affordable Housing Board for the method of calculation of the selling price of for-sale Inclusionary Units. The section also establishes that: 1) the developer is responsible for the screening and qualification of the initial purchaser of a for-sale Inclusionary Unit, 2) the for-sale Inclusionary Unit must be the primary residence of the purchaser, and 3) the purchaser of a for-sale Inclusionary Unit is required to execute and consent to the affordability restrictions at the settlement of the property.

Section 1614: Rental of Inclusionary Units

Section 1614 establishes that guidelines will be established by the Affordable Housing Board for the method of calculation of the affordable rental rate for the rental Inclusionary Units. The section also establishes that: 1) the developer, property owner, or property manager is responsible for verifying household income eligibility, 2) the Easton Affordable Housing Board is the entity that establishes and updates the Affordable Rental Rate and notifies the property owner or manager of the new rental rates, 3) each residential development containing rental Inclusionary Units is subject to an annual compliance process which is specified in the Inclusionary Housing Agreement, 4) rental Inclusionary Unit tenants are subject to the same conditions of tenancy as other market-rate tenants occupying the same property, and 5) the initial lease term for the rental Inclusionary Unit is for one year.

Section 1615: Marketing of Inclusionary Units

Section 1615 requires the developer to market, rent and sell all Inclusionary Units and must notify the Affordable Housing Board and the Town when the Inclusionary Unit is available at the time the building permit is issued. For rentals, the property owner or manager must provide advance notice to the Affordable Housing Board and Town when there is an impending vacancy. The section also allows the developer to assign these responsibilities to a qualified housing organization.

Section 1616: Continued Affordability Requirements

Section 1616 establishes that all rental Inclusionary Units shall remain affordable for a period of no less than 30 years and that for-sale units shall remain affordable for a period of no less than 20 years. The continued affordability requirement would be embodied in a legally binding agreement, covenants, and/or a deed restriction. The section also gives the Affordable Housing Board an exclusive 30-day option to purchase any Inclusionary Unit when it's offered for resale. Lastly, the section prohibits subletting or leasing of Inclusionary Units except to allow a

temporary rental of the Inclusionary Unit for good and sufficient cause. Leasing of Inclusionary Units must be approved by the Easton Affordable Housing Board under terms that may be specified in the Inclusionary Housing Guidelines.

Section 1617: Transfer of Development

Section 1617 establishes that all approved covered projects “run with the property” and are subject to the Inclusionary Zoning Ordinance.

Section 1618: Enforcement

Section 1618 refers to an unspecified area of the Town Code for enforcement of the ordinance.

Section 1619: Administration

Section 1619 establishes how Inclusionary Units are tracked on site plans, record final plats, and building permits. The section also requires the Affordable Housing Board to monitor activity under the ordinance and provide a report at least every 2 years to the Town Council.

ISSUES: Developer incentives, including property tax abatement and fee waivers or deferrals fees have definite revenue implications and a cost-benefit analysis is prudent.

Staff will need to identify where the final drafted language is inconsistent with the Town Code and propose revisions as necessary.

FISCAL IMPACT: The draft ordinance requires a significant expansion of time and responsibilities from the Affordable Housing Board, including but not limited to:

- Managing the Affordable Housing Fund
- Establishing the Cash In Lieu Fees and updating the fees on an annual basis
- Developing and updating the Inclusionary Housing Guidelines and document templates
- Developing and updating the design standards for Inclusionary Units
- Updating and annually posting the income eligibility requirements
- Calculating and updating the pricing and rents of for-sale and rental Inclusionary Units
- Monitoring tenant eligibility for rental Inclusionary Units
- Monitoring activity and providing regular reports to the Town Council

The administration of the program will also need dedicated housing staff to assist the Board with their responsibilities, develop and update the program’s website, and provide day-to-day management of the program. Maryland jurisdictions that have inclusionary zoning ordinances include Queen Anne’s County, which is managed by staff from the Division of Housing and Community Services as part of the Department of Community Services along with other housing programs including homeless assistance and prevention, rental code enforcement, workforce loans, and other special projects. The City of Annapolis inclusionary zoning ordinance is administered by the Office of Community Development under the Community and Economic Development Division. The Office includes a full-time Housing Affordability Specialist. The City of Frederick’s inclusionary housing program is administered by their Community Action Agency.

ATTACHMENTS:

1. Draft Inclusionary Zoning Ordinance, February 7, 2024
2. AMSTRAT - MD Talbot County Smart Growth Presentation
3. Inclusionary Housing Comparison table



**TOWN COUNCIL
INFORMATION ITEM**

SUBJECT: Attainable Housing Task Force

WARD DISTRICTS: Townwide

STAFF CONTACTS: Lynn Thomas, Town Planner
Miguel Salinas, Director

PURPOSE: To establish a sixteen-member Attainable Housing Task Force (Task Force) to provide prioritized recommendations to the Town Council (Council) for the implementation of policies, regulations, and incentives to further attainable housing in Easton.

BACKGROUND: A joint workshop between the Town Council and Planning Commission was held on January 16, 2024 to discuss proposed zoning code amendments, several of which related to missing middle housing. At the conclusion of the discussion, the Council agreed to staff's suggestion to develop a Scope of Work for the development of a comprehensive strategy that furthers attainable housing in Easton. Outlined below is the proposed Scope of Work that is expected to be completed within a four-month timeframe.

A. Attainable Housing Task Force

Staff proposes establishing a sixteen (16)-member Attainable Housing Task Force to achieve the above-stated objective. The Task Force, with members nominated by the Mayor and appointed by the Council, would include:

- Two members of the Town Council
- Two members of the Planning Commission
- One member of the County Council
- One member of Easton Utilities
- One member of the Easton Affordable Housing Board
- One member of the Easton Economic Development Corporation
- One member of the Talbot County Housing Authority
- One member of the Mid-Shore Board of Realtors
- One member of a non-profit or for-profit housing organization
- One member of the architecture profession
- One member of an HOA Board
- One member of the business community
- Two at-large members

The Task Force will appoint two Co-Chairs. The Department of Planning and Zoning will provide staff support to the Task Force. The first five meetings will be open to the public with the opportunity for public comments at the end of every meeting. The final three meetings are breakout discussions involving task force members for the purpose of developing the objectives and strategies that will be forwarded to the Council.

Table 1: Tentative Meeting Schedule, Agenda & Participants

Meeting	Topic	Agenda
Meeting One	Task Force Kick-Off	Introductions and Purpose of the Task Force Presentations: Overview of the Affordable Housing Board and current housing programs; Town policies; the draft Inclusionary Zoning Ordinance; County recommendations from the 2015 Affordable/Workforce Housing Commission Discussion: Individual perspectives and concerns Public Comment
Meeting Two	Understanding the Challenges	Presentation: Demographic, workforce, and market overview, American Strategies survey Discussion: Zoning and Missing Middle Housing Public Comment
Meeting Three	Balancing the Need Versus Housing Market Realities	Panel: Housing organizations and real estate development Discussion: Attainable Housing Incentives Public Comment
Meeting Four	Impact of Housing on Business Development and Retention	Panel: Talbot County Economic Development Commission, Easton Economic Development Corporation, Talbot County Chamber of Commerce, Mid-Shore Regional Council, University of Maryland Shore Medical Center Discussion: Growth Areas Public Comment
Meeting Five	Attainable Housing Best Practices	Presentation: Salisbury Housing and Community Development, Queen Anne's Community Services, Anne Arundel County Discussion: Short- and Long-term housing policies Public Comment
Meeting Six	Draft Task Force Recommendations	Break-out session Report-outs
Meeting Seven	Draft Task Force Recommendations	Break-out session Proposed objectives and strategies
Meeting Eight	Draft Task Force Recommendations	Finalized proposed objectives and strategies

B. Workforce and Housing Market Assessment

Staff will conduct and analyze workforce and housing market intelligence prior to the second meeting of the Task Force. Workforce and housing intelligence will include, but not be limited to, the number of employees in the workforce earning less than 80%, 50%, and 30% of Easton's Median Family Income (MFI); census commuting patterns; a comparison of housing prices and rents versus MFI over a period of time; a comparison of new housing prices versus existing housing supply on the market; current availability of housing at various price points; and the current inventory of housing by typology. Staff is also considering administering a public sector employee survey that will include the Town of Easton, Talbot County Public Schools and the volunteer fire department.

C. Define the attainability issues

Staff will summarize the public's perceptions of attainable housing, or the lack thereof, from the community input received from the housing-related questions from the comprehensive plan update and the 2022 American Strategies phone survey. Staff will also produce a gap analysis that determines the difference between prototypical housing construction costs by housing type and size in the Easton market versus affordable sales and rental prices. Additional data will include the calculation of affordable sales prices for new homes in the Easton market versus the median house sales price; the percentage of homes sold under calculated affordable sales prices; and the percentage of cost-burdened or severely cost-burdened households. Using this information, staff will define the top contributing factors to a lack of attainable housing.

D. Implement a community education and awareness program

Staff will develop a landing page to inform citizens of Easton and Talbot County on the issues of attainable housing, the Town's ongoing efforts to address housing issues and policies, and the Task Force activities. Staff will also host a community-wide event on the relationship between attainable housing and zoning. Through these outreach efforts, a diverse network of citizens will stay informed on the Town's efforts related to housing.

E. Develop Recommendations

The Task Force will develop policy, regulatory, and incentive recommendations to the Town Council to further attainable housing in Easton. The recommendations will be prioritized with an actionable plan for implementation.

ISSUES: The Scope of Work is expected to be completed within a four-month timeframe, or the end of May where the Task Force will submit its recommendations to the Town Council. The Task Force will be scheduled to meet every other week. If the Task Force agrees that additional meetings are needed to complete their Scope of Work, staff and the Task Force Co-Chairs will provide the Council an update on the progress of their work to date and the new timeframe for completion.

FISCAL IMPACT: There are no fiscal impacts with the exception of the gap analysis, which is a complex formula that determines the difference between prototypical housing construction costs by housing type and size in the Easton market versus affordable sales and rental prices. Staff is exploring assistance from an experienced housing, development, and finance advisory firm to conduct the gap analysis. Assistance will be selected if costs can be absorbed in the Department of Planning and Zoning's current budget FY 24 budget. Further, the data summaries, gap analysis, Task Force recommendations, survey results and other products derived from the Scope of Work will benefit other ongoing planning efforts, including the update to the Comprehensive Plan, the East End Small Area Plan, and the ongoing inclusionary zoning effort.

INCLUSIONARY ZONING ORDINANCE

DRAFT – February 7, 2024

Section 1601 Purpose.

The purpose of this Article is to promote the public health, safety, and general welfare by promoting housing of high quality, located in neighborhoods throughout the community, for households of all incomes, ages, and sizes, in order to promote a culturally and economically diverse population in the Town. Based upon the review and consideration of the Town's officially adopted Comprehensive Plan (2010) as well as subsequent reports and analyses of the housing situation in the Town of Easton, it is apparent that the diversity of the Town's housing stock has declined as a result of rapidly increasing property values and housing costs and a reduction in the availability of housing choices. In light of this situation, the Easton Town Council makes the following findings:

1. It is a legitimate public purpose of the Town to achieve a diverse and balanced community with housing available for households of all income levels. Economic diversity fosters social and environmental conditions that protect and enhance the social fabric of the Town and are beneficial to the health, safety, and general welfare of its residents.
2. The Town is experiencing an increasing shortage of Attainable Housing due in part to the high cost of newly constructed housing. As a result, much of the workforce is excluded from many new neighborhoods, live in overcrowded or substandard housing, and devote an inordinately large percentage of their incomes to pay for housing.
3. In the legitimate pursuit of other worthy and valid goals relative to growth management, redevelopment, and resource protection, the amount of land available for residential development in the Town of Easton is limited, thereby exacerbating the housing supply and affordability problem.
4. The Town recognizes the need to provide Attainable Housing in order to maintain a diverse population and provide housing for those who live or work in the Town and Talbot County.
5. Without intervention, the increasing housing prices is resulting in an inadequate supply of affordable housing for residents and employees, which will have a negative impact upon the ability of the Town to attract new employers; to maintain an adequate work force to retain and expand existing employers; to guarantee the public health, safety, and general welfare of the Town and its residents.
6. The remaining land available and appropriate for new residential development within the Town is limited. It is essential that a reasonable proportion of such land be developed into housing units attainable to households and working families.

7. While this Article provides specific alternatives to the production of on-site inclusionary units, the intent and preference of this Article is for the provision of inclusionary units constructed on-site and privately produced, owned, and managed.

Section 1602

Definitions.

1. Adaptive Reuse: Repurposing of an existing building(s) or structures, often obsolete or historic, for any use(s) other than the present use(s).
2. Affordable Housing Fund: The fund established in Article I of Chapter 13 of the Code of the Town of Easton.
3. Affordable Rental Rates: Based on household income limits that do not exceed the following:
 - (a) Very low-income households: one-twelfth of 30 percent of 50 percent of Median Family Income, adjusted for household size, appropriate for the unit or market rent, whichever is less.
 - (b) Low-income households: one-twelfth of 30 percent of 60 percent of Median Family Income, adjusted for household size, appropriate for the unit or market rent, whichever is less.
4. Affordable Sales Price: The maximum amount of a mortgage loan that could be obtained based on the monthly affordable mortgage payment, interest rate, and a fully amortized 30-year fixed rate mortgage. The affordable sales price is adjusted based on a reasonable down payment.
5. Applicant or Developer: A person, persons or entity that applies for a residential development and also includes the owner or owners of the property if the applicant does not own the property on which residential development is proposed.
6. Attainable Housing: Housing types, through ownership or rental, that are attainable to those households making 100% or less of the MFI and generally do not spend more than 30% of their income on housing costs.
7. Charges: Expenses the owner of a home pays over the course of owning it. These costs usually include utilities, debt service payments, property taxes, insurance, deferred water and sewer fees, and home owner association fees, among other items.
8. Cash In Lieu Fee: A per-unit fee for for-sale and rental Inclusionary Units as an alternative compliance option when the number of dwelling units proposed through adaptive reuse or conversion of a nonresidential use to residential results in the creation of 30 or more new

dwelling units. The fee is mandatory for new construction or substantial rehabilitation that results in 15 to 24 new residential dwelling units, or for adaptive reuse, or conversion of a nonresidential use to residential that results in 15 to 29 new residential dwelling units.

Cash In lieu Fees as an alternative compliance option are initially established by the Town Council, upon recommendation by the Easton Affordable Housing Board. Mandatory Cash In Lieu Fees are initially established in this Chapter. The Cash In Lieu Fees shall be updated by the Easton Affordable Housing Board on an annual basis and may also include estimated costs of administration.

9. Continued Affordability: The time during which an inclusionary unit is subject to rental price controls and owner occupancy and resale requirements.
10. Covered Project: Any project meeting the criteria of this section shall be deemed a covered project. A covered project is subject to a Town of Easton Housing Inclusionary Housing Plan and Inclusionary Housing Agreement.
11. Density Bonus: Dwelling units approved in a residential development that are in excess of the maximum allowable residential density otherwise permitted by the Town of Easton.
12. Inclusionary Housing Agreement: An agreement between the Town of Easton and an applicant governing how the applicant shall comply with this Chapter.
13. Inclusionary Housing Guidelines: Any requirements for implementation and administration of this Chapter, recommended by the Easton Affordable Housing Board and adopted by the Town Council. Adopted Inclusionary Housing Guidelines may include, but not be limited to, standards for determining household composition; income eligibility and prices for sale and rental of Inclusionary Units; income limit schedules; inclusionary housing costs or Carrying Charges; design guidelines; provisions of continued monitoring of tenant eligibility; and document templates. Guidelines may also specify the contents of the Inclusionary Housing Plan and are updated on a regular basis.
14. Inclusionary Housing Plan: A plan containing all of the information specified in this Chapter, and includes the manner in which Inclusionary Units will be provided in conformance with this Chapter and any adopted Inclusionary Housing Guidelines.
15. Inclusionary Unit: A dwelling unit required by this Chapter to be affordable to very low, low, median, or moderate-income households and subject to recorded affordability restrictions.
16. Low-Income Households: Those households whose income does not exceed 60% of the MFI, adjusted for household size.

17. Market Rate Housing: Housing that already exists or is part of a proposed development that is based on existing area market values and demand and is not an Inclusionary Unit. Families making above 100% of the Median Family Income qualify for Market Rate Housing.
18. Median Family Income (MFI): An annual estimate calculated by HUD as a function of the area's MFI. The basis for HUD's MFI is data from the American Community Survey. The MFI is adjusted each year by the Easton Affordable Housing Board based on Easton's median income.
19. Median-Income Households: Those households whose income does not exceed 80% of the MFI, adjusted for household size appropriate for the unit.
20. Moderate-Income Households: Those households whose income does not exceed 100% of the MFI, adjusted for household size appropriate for the unit.
21. Monthly Affordable Mortgage Payment: The cost that will be affordable to the specified household at the specified income level as follows:
 - (a) Median-income households: one-twelfth of 30 percent times 80 percent of Median Family Income adjusted for household size appropriate for the unit.
 - (b) Moderate-income households: One-twelfth of 30 percent times 100 percent of Median Family Income adjusted for household size appropriate for the unit.

The monthly affordable mortgage payment is adjusted based on property taxes, homeowner association fees, mortgage insurance and property insurance premiums, utility costs, and a reasonable allowance for property maintenance and repairs.
22. Ownership Residential Development: Any development that includes the creation of one or more residential dwelling units that may be sold individually.
23. Priority Preference: Priority preference for the sale or rental of units is given to persons who live or work in the Town of Easton or as otherwise determined by the Town Council.
24. Qualified Housing Organization: A public housing authority, a for-profit company, or a non-profit organization whose mission includes the purpose of providing Attainable Housing.
25. Rental Residential Development: Any development that creates one or more residential dwelling units that are not lawfully sold.
26. Residential Development: Any development that includes residential units for which a development site plan, preliminary plat subdivision, or building permit is required that includes:

- (a) The creation of one or more dwelling units;
 - (b) The substantial rehabilitation of one or more dwelling units;
 - (c) The creation of dwelling units through adaptive reuse; or
 - (d) The conversion of non-residential uses to dwelling units.
27. Substantial Rehabilitation: Any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50% of the structure's market value before the improvement's start of construction.
28. Very Low-Income Household: Those households whose income does not exceed 50% of the MFI, adjusted for household size.

Section 1603 Intent.

The intent of these regulations is:

1. To provide Attainable Housing opportunities and choices for all of Easton's citizens;
2. To mitigate the impact of market rate housing construction on the limited supply of available land suitable for Attainable Housing, thus excluding housing that meets the needs of all economic groups within the Town; and
3. To prevent overcrowding and deterioration of the limited supply of Attainable Housing, and thereby promoting the public health, safety and general welfare of the Town and its residents.
4. To promote the integration of Attainable Housing with Market Rate Housing.

Section 1604 Authority.

These regulations are enacted under the authority of Section 7-401 of the Land Use Article of the Annotated Code of Maryland.

Section 1605 Applicability.

1. Except as otherwise provided in this Chapter, these regulations shall apply to all residential development on a site, or portion thereof, at one location which is the subject of an

application for a development site plan, preliminary plat subdivision, or building permit, whichever comes first.

2. Any revision or modification to an approved Final Site Plan, Final Plat, or Building Permit that would increase the number of residential units are subject to the requirements of this Chapter.

Section 1606 Exemptions.

1. Residential developments proposing less than 15 new dwelling units.
2. This Chapter does not apply to a development that sets aside affordable dwelling units in accordance with Section 42 of the Federal Internal Revenue Code, pursuant to which a restricted covenant is to be recorded in the land records of Talbot County setting forth income limitations of tenants in accordance with the Federal Low Income Housing Tax Credit Program in favor of the Maryland Department of Housing and Community Development or a subsidiary thereof or other governmental entity responsible for administration of the Federal Low-Income Housing Tax Credit Program.
3. A development is exempt from the requirements of this Chapter if, before [insert date], the project has received approval of a development site plan, preliminary plat, or building permit.
4. Projects undertaken by a Qualified Housing Organization, or a continuing care retirement community if at least 10% of the persons renting or purchasing units within the retirement community would be considered eligible to buy or rent an Inclusionary Unit.
5. Accessory Dwelling Units are exempt from the provisions of this Chapter.
6. Any development project undertaken by the Town of Easton is exempt from the requirements of this Chapter.

Section 1607 Inclusionary Housing Requirements.

1. Residential developments proposing between 15 and 24 dwelling units through new construction and/or substantial rehabilitation of existing structures, or the creation of 15 to 29 dwelling units through adaptive reuse or conversion of all or a portion of a nonresidential use to residential use, shall provide a Cash In Lieu Fee for each unit prior to issuance of the first building permit. The initial fees are established in this Chapter and are as follows:
 - (a) Average market rate unit price within the development is under \$300,000 = \$3,000 per permit

- (b) Average market rate unit price within the development is \$300,000-\$500,000 = \$5,000 per permit
 - (c) Average market rate unit price within the development is over \$500,000 = \$7,500 per permit
- 2. Residential developments proposing 25 or more new dwelling units through new construction and/or substantial rehabilitation of existing structures or the creation of 30 or more new dwelling units through adaptive reuse or conversion of all or a portion of a nonresidential use to residential use shall provide 10% of the dwelling units in the residential development as Inclusionary Units upon the same site as the residential development as follows:
 - (a) Ownership residential development. The applicant shall provide:
 - 1) 50% of the Inclusionary Units in the residential development available at an affordable sales price to Median-Income Households
 - 2) 50% of the Inclusionary Units in the residential development available at an affordable sales price to Moderate-Income Households
 - (b) Rental Residential Development. The applicant shall provide:
 - 1) 50% off the Inclusionary Units in the residential development available at an affordable rent to Very Low-Income Households
 - 2) 50% of the Inclusionary Units in the residential development available at an affordable rent to Low-Income Households
- 3. In the event only one Inclusionary Unit is required, the Inclusionary Unit shall be provided at the lower required affordability level. In the event the required Inclusionary Units result in a fraction that does not evenly divide by the percentages required above, the required fractional portion shall be rounded up to one Inclusionary Unit.
- 4. Calculations of the number of Inclusionary Units required by this section shall be based on the number of dwelling units in the residential development, excluding any Density Bonuses.
- 5. When a residential development includes both ownership and rental dwelling units, the provisions of this Chapter that apply to Ownership Residential Development shall apply to that portion of the development that consists of ownership dwelling units, while the provisions of this Chapter that apply to Rental Residential Development shall apply to that portion of the development that consists of rental dwelling units.

6. Multiple developments or projects by the same applicant or responsible party within any consecutive twenty-four (24) month period that in the aggregate equal or exceed the above criteria shall be subject to these regulations.
7. An applicant for a development site plan, preliminary plat subdivision, or building permit shall not avoid the requirements of this chapter by submitting piecemeal applications. At the time of the application for first approval for the residential development, the applicant shall identify all contiguous property under common ownership and control. The applicant shall not be required to construct dwelling units upon the contiguous property at the time of the application for first approval; however, the applicant shall be required to include the contiguous property under common ownership or control in its Inclusionary Housing Plan. The Inclusionary Housing Agreement shall be recorded against the residential development and all contiguous property under common ownership or control. The agreement shall require compliance with this Chapter upon development of each contiguous property at such time as there are applications that would authorize a total of 25 or more residential units through new construction and/or substantial rehabilitation of existing structures, or 30 or more residential units through adaptive reuse or conversion of a nonresidential use to residential use, for both the residential development and the contiguous property under common ownership or control.
8. An applicant shall not be exempt from the requirements by submitting phased applications for the residential development. Occupancy permits for no more than fifty percent (50%) of the market rate units shall be issued prior to the issuance of occupancy permits for fifty percent (50%) of the Inclusionary Units. Occupancy permits for no more than seventy-five percent (75%) of the market rate dwelling units shall be issued until occupancy permits have been issued for seventy-five percent (75%) of the Inclusionary Units for the residential development. Occupancy permits for no more than ninety percent (90%) of the market rate dwelling units shall be issued until occupancy permits have been issued for one hundred percent (100%) of the Inclusionary Units for the development.
9. The following information shall be submitted with each building permit application for a market rate dwelling unit within the residential development:
 - (a) The total number of dwelling units, market rate units, and Inclusionary Units proposed for the development;
 - (b) The number of occupancy permits already issued for market rate units within the development;
 - (c) The number of occupancy permits already issued for Inclusionary Units within the development; and
 - (d) The lot number or unit number of each Inclusionary Unit for which an occupancy permit has been issued.

Section 1608**Inclusionary Housing Incentives.**

1. The developer of a residential development on a base residential zoning district providing all required Inclusionary Units upon the same site as the market-rate units may, at the developer's sole option and concurrently with the submittal of the Inclusionary Housing Plan, may receive a Density Bonus of 20% from the base zoning district.
2. The developer of a residential development providing all required Inclusionary Units upon the same site as the market rate units may receive up to a 20% variance in development standards, including lot size, lot frontage, lot coverage, height, and setbacks, as well as a 20% modification from the required parking standards.
3. New developments proposing 25 or more dwelling units through new construction and/or substantial rehabilitation of existing structures, or the creation of 30 or more dwelling units through adaptive reuse or conversion of a nonresidential use to residential use shall receive:
 - (a) A cash subsidy from the Affordable Housing Fund for the deferral of the payment of Impact Fees in accordance with Section 29.5 of the Code of the Town of Easton provided that the Town Council has allocated affordable housing reserves in the general fund as part of the Town's budget process.
 - (b) Residential developments that provide at least 20% of the dwelling units as Inclusionary Units shall be eligible for real property tax abatement or a payment in lieu of taxes as established by the Town Council.

Section 1609**Alternative Compliance Options.**

1. In the case where Inclusionary Units are provided on-site pursuant to Section 1607 above, the developer shall provide Inclusionary Units at a price or rent approved by the Affordable Housing Board. Nothing in this Chapter precludes the developer from partnering with a Qualified Housing Organization to build the on-site Inclusionary Units provided at least 10% of the units within the development project would be considered eligible to buy or rent by persons at or below the income limitations specified in Section 1607 of this Chapter.
2. Alternatively, the developer may:
 - (a) Build at least one and one-half times the required number of the Inclusionary Units of the residential development off-site within the Town limits of Easton on property either owned by the Town or by partnering with a Qualified Housing Organization to build Inclusionary Units.

- (b) A developer may also fulfill their off-site requirement by purchasing land within the Town of Easton or the Town's Municipal Growth Areas and donating it to a Qualified Housing Organization or the Town of Easton to build at a minimum one and one-half times the required number of Inclusionary Units.
 - (c) The developer's proposal for off-site construction of Inclusionary Units is subject to Town Council review and approval. The Town may grant off-site construction approval if the proposal meets all of the following conditions:
 - 1) Off-site Inclusionary Units shall comply with the general requirements defined in Section 1610 and with any adopted Inclusionary Housing Guidelines;
 - 2) Financing or a viable financing plan, which may include public funding, shall be in place for the off-site Inclusionary Units;
 - 3) The off-site location, based on location, size, and existing conditions, is suitable for the proposed inclusionary housing and is consistent with any adopted Inclusionary Housing Guidelines;
 - 4) All entitlements and land development permits have been obtained; and
 - 5) Construction of the off-site Inclusionary Units may not have commenced prior to the first approval of the residential development.
 - (d) The Town Council may approve a combination of on—site and off-site Inclusionary Units equivalent to providing at a minimum one and one-half times the required number of Inclusionary Units and subject to subsection (c) above.
- 3. Residential developments proposing the creation of 30 or more dwelling units through adaptive reuse or conversion of all or a portion of a nonresidential use to residential use may provide a Cash in Lieu Fee. A request for a Cash In Lieu Fee shall be made concurrently with the development site plan, preliminary subdivision or building permit application, whichever comes first.
 - (a) The Town shall not issue a building permit for any market rate housing units until all Cash In Lieu Fees have been paid to the Town of Easton.
 - (b) Cash In Lieu Fees are to be paid prior to issuance of the first building permit and shall be calculated in terms of current dollars, adjusted by the CPI, at the time the actual contribution is officially transferred to the Town.
 - (c) Cash In Lieu Fees collected shall be placed in the Affordable Housing Fund to be used by the Easton Affordable Housing Board for their programs.

- (d) The density bonus described in Section 1608 of this Chapter may not be used for a project that fulfills the requirement of this Chapter by making a Cash In Lieu Fee payment in lieu of building the Inclusionary Units.
4. When the number of dwelling units proposed through adaptive reuse, or conversion of a nonresidential use to residential use, results in 30 or more units, a developer may propose an alternative compliance method to provide Inclusionary Units through other means consistent with this Chapter and any adopted Inclusionary Housing Guidelines. The Town Council, following a Planning Commission and Affordable Housing Board recommendation, may approve or conditionally approve such an alternative only if the Council determines, based on substantial evidence, that such alternative compliance will provide as many or more Inclusionary Units at the same or lower income levels or will otherwise provide greater public benefit than would the provision of the on-site Inclusionary Units.

Section 1610 Inclusionary Housing Plan and Agreement.

1. An application for the first approval of a residential development shall include an Inclusionary Housing Plan describing how the development will comply with the provisions of this Chapter and the Inclusionary Housing Guidelines. As an alternative to compliance with the basic provisions included in this Chapter, an applicant may propose one of the alternatives listed in Section 1609 of this Chapter as part of the Inclusionary Housing Plan.
2. Any proposed density bonus, variances, modification of parking standards, or other incentives shall be included in the inclusionary housing plan.
3. No application may be deemed complete unless an Inclusionary Housing Plan is submitted. The Inclusionary Housing Plan shall be processed concurrently with the development site plan, preliminary plat, or building permit, whichever occurs first. Before the Town of Easton approves the Inclusionary Housing Plan, the Town must affirmatively find that the Inclusionary Housing Plan conforms to the requirements set forth in this Chapter. The inclusion agreement, described below, shall be recorded prior to the approval of any final site plan, final record plat, or building permit for the residential development, whichever occurs first.
4. The approved Inclusionary Housing Plan for a residential development, or for a building phase in a residential development, where phasing has been approved as part of planning permit approvals, may be amended prior to issuance of any building permit for the residential development or building phase, if applicable. A request for a minor modification of an approved Inclusionary Housing Plan may be granted by the Town Manager or their designee if the modification is substantially in compliance with the original Inclusionary Housing Plan and conditions of approval. Other modifications to the Inclusionary Housing Plan shall be processed in the same manner as the original plan.

5. The Inclusionary Housing Plan shall describe the applicant's marketing plan in conformance with Section 1613 below, which shall comply with all applicable fair housing and discrimination laws and shall not discriminate in the sale or rental of inclusionary units on the basis of race, color, religion, sex, familial status, national origin, marital status, sexual orientation, gender identity, disability, or source of income, with the exception of residential developments that comply with the Housing for Older Persons Act.
6. The applicant shall enter into an Inclusionary Housing Agreement with the Town of Easton, in a form approved by the Town Attorney, to be executed by the Mayor or their designee, to ensure that all the requirements of this chapter are satisfied.
 - (a) The Inclusionary Housing Agreement shall be recorded against the residential development prior to approval of any final site plan or final record plat, or issuance of any building permit, whichever occurs first. The agreement shall run with the property for the entire continued affordability period.
 - (b) The Inclusionary Housing Agreement shall specify the number, type, location, size, and phasing of all Inclusionary Units, provisions for income certification and screening of potential purchasers or renters of units, maintenance obligations, and the financing of ongoing administrative and monitoring costs, consistent with the approved Inclusionary Housing Plan and any adopted Inclusionary Housing Guidelines, as determined by the Town Manager or designee.
 - (c) The Inclusionary Housing Agreement shall define rent and sale price increase procedures, and provide formulas for how resale prices for ownership Inclusionary Units are calculated, including the ability for homeowners to capture some or all of the depreciated value of capital improvements they made to the Inclusionary Unit, and for sharing of excess profits after the control period ends.
 - (d) In selecting households for the Inclusionary Units in accordance with this Chapter, the Inclusionary Housing Agreement shall specify preferences that shall be given as described in the Inclusionary Housing Guidelines, if any.

Section 1611 Percentage of Affordable Units.

All covered projects shall meet the percentage requirements for Inclusionary Units as specified in Section 1607. The percentage of Inclusionary units shall be calculated with a base number that excludes any bonus units added to the covered project under Section 1608.

Section 1612 General Requirements for Inclusionary Units.

1. In addition to design requirements that may be specified in the Inclusionary Housing Guidelines, all covered projects must comply with the requirements set forth in subparagraphs (a) through (g) below:
 - (a) On-site Inclusionary Units shall be interspersed among market rate units.
 - (b) In order to assure an adequate distribution of on-site Inclusionary Units by household size, the bedroom mix of Inclusionary Units in any project shall be in approximately the same ratio as the bedroom mix of the market rate units of the project, unless otherwise approved by the Easton Planning Commission.
 - (c) On-site Inclusionary Units may differ from the market units in a covered project with regard to interior amenities and gross floor area; provided, that:
 - 1) These differences, excluding differences related to size differentials, are not apparent in the general exterior appearance of the project's units; and
 - 2) These differences do not include insulation, windows, heating systems, and other improvements related to the energy efficiency of the project's units;
 - 3) Inclusionary Units shall have at a minimum builder grade finishes on the interior, including appliances, and a basic landscaping package similar to the package included with market-rate units; and
 - 4) The gross floor area of the Inclusionary Units is not less than the following minimum requirements, unless otherwise recommended in the Inclusionary Housing Guidelines approved by the Easton Town Council.

NUMBER OF BEDROOMS	Minimum SIZE
Studios	600 square feet
One bedroom	850 square feet
Two bedrooms	1,100 square feet
Three bedrooms	1,300 square feet
Four bedrooms	1,500 square feet

- (d) The Inclusionary Units shall have the same amenities as the market rate units included within the development, such as access to and enjoyment of common open space, parking, storage, and other facilities in the residential development.
- (e) Priority in the sale of on-site Inclusionary Units may be established by criteria specified in the Inclusionary Housing Guidelines;

- (f) Except for household income limitations as set forth herein, occupancy of any on-site Inclusionary Unit shall not be limited by any conditions that are not otherwise applicable to all units within the covered project; and
- (g) The final calculations for the number of on-site Inclusionary Units and the initial sales or rental price for these units shall be made prior to the issuance of building permits for the covered project.

Section 1613 For-Sale of Inclusionary Units.

1. The Developer (or designee) is responsible for the screening and qualification of the initial purchaser of a for-sale Inclusionary Unit. The Developer must provide 90 days advance written notice to the Town of Easton and the Easton Affordable Housing Board prior to the initial marketing of the Inclusionary Units for the calculation of the affordable housing cost, as adjusted to an Affordable Sales Price, pursuant to this Chapter and the Inclusionary Housing Guidelines. Final approval of qualified applicants is contingent on approval by the Easton Affordable Housing Board.
2. Every unit shall be first marketed to priority persons, as established by the Easton Affordable Housing Board, for 90 days from the initial marketing period. Following the priority marketing period, a unit may be offered for sale to the general public.
3. The Easton Affordable Housing Board shall establish guidelines for the calculation of the Affordable Sales Price for an Inclusionary Unit within a residential development and the calculation shall be updated yearly thereafter.
4. The purchaser of a for-sale Inclusionary Unit shall execute and consent to the affordability restrictions and other conditions at the settlement of the property. The property shall be sold subject to Covenants in a form approved by the Town Attorney.
5. The Inclusionary Unit shall be the purchaser's primary place of residence.

Section 1614 Rental of Inclusionary Units.

1. The developer, property owner, or property manager is responsible for verifying household income eligibility and for incorporating any applicable priority preference requirements for the selection of households into the screening process.
2. Every unit will be first marketed to priority persons, as established by the Easton Affordable Housing Board, for 90 days from the initial marketing period. Following the priority marketing period, a unit may be offered for sale to the general public.

3. The Easton Affordable Housing Board shall establish guidelines for the calculation of the Affordable Rental Rate for an Inclusionary Unit within a residential development and the calculation shall be updated yearly thereafter.
4. In situations where there are multiple affordability restrictions/income or rent limits set by different funding requirements, the residential development shall adhere to the strictest requirement so it can meet all of the layering restrictions.
5. The maximum Affordable Rental Rates shall be adjusted annually based on the most recently published Household Income Limits by the Easton Housing Affordability Board. The Board shall notify the property owner or property manager of the new rental rates. If the owner chooses to raise rents, the tenant must be given at least a sixty (60) day notice before any rent increase and the opportunity to terminate the lease if the rental amount is unacceptable. This provision does not give the landlord the right to increase the rental amount if the lease provides otherwise.
6. Each residential development containing rental Inclusionary Units shall be subject to an annual compliance process, which shall be specified in the Inclusionary Housing Agreement.
7. Rental Inclusionary Unit tenants will be subject to the same conditions of tenancy as other tenants occupying the same property, except for the requirements provided by this Chapter and terms related to occupancy, income eligibility, annual recertification, limits on rents, and other terms that may be included in the Inclusionary Housing Guidelines.
8. The initial lease term for the rental Inclusionary Unit shall be for one year.

Section 1615 Marketing of Inclusionary Units.

Any applicant developing a covered project shall adhere to the following provisions with respect to the initial offering of Inclusionary Units for sale or rent:

1. The developer and owner shall be responsible for marketing, renting, and selling of all Inclusionary Units.
2. The developer and owner shall notify the Easton Affordable Housing Board and the Town of Easton of the prospective availability of any Inclusionary Units at the time that the building permit is issued for such units in a covered project.
3. The property owner or property manager shall post each vacant rental Inclusionary Unit as soon as possible but not later than ten (10) days after notice of an impending vacancy and provide advanced notice of the opening to the Easton Affordable Housing Board and the Town of Easton.

4. The developer and owner may assign its options under this section to a Qualified Housing Organization dedicated to the provision of Attainable Housing, in which event it shall notify the Easton Affordable Housing Board and the Town of Easton of the organization to which it has assigned the option. The Qualified Housing Organization shall deal directly with the developer and owner. The Qualified Housing Organization and the organization's plan for the property shall be subject to approval by the Easton Affordable Housing Board.

Section 1616 Continued Affordability Requirements.

All covered projects shall comply with the following provisions to ensure continued affordability of Inclusionary Units provided under this Chapter and required to be continually affordable under Section 1606.

1. Continued Affordability Requirement. All inclusionary rental units shall remain affordable for a period of no less than thirty (30) years commencing from the date of initial occupancy of the units. Ownership residential Inclusionary Units shall remain affordable for a period of no less than twenty (20) years commencing from the date of initial occupancy of the units. The first sale of an Ownership residential Inclusionary Unit after the control period shall pay Fifty Percent (50%) of the net profits over the maximum resale price calculation and after permitted allowances to the Easton Affordable Housing Fund.
2. Deed Restrictions. Provisions to ensure continued affordability of Inclusionary Units shall be embodied in legally binding agreements, covenants, and/or deed restrictions, which shall be prepared by the developer, but which shall not be recorded or filed until reviewed and approved by the Town Attorney with such modifications as it may deem necessary to carry out the purpose of this article. Any adopted Inclusionary Housing Guidelines may include standard documents.
3. Purchase Option. Provisions for continued affordability of Inclusionary Units shall provide that the Easton Affordable Housing Board or its designee shall have an exclusive option to purchase any Inclusionary Unit when it is offered for resale. The purchase option shall be for a period of ninety (30) days from the date on which the Board is notified of the availability of the unit. The purchase price shall be calculated as per the appreciation allowances specified in the deed restrictions and the Inclusionary Housing Agreement.
4. Leasing/Subletting Restrictions. Provisions for continued affordability of Inclusionary Units shall prohibit subletting or leasing of the property. This provision may be waived by the Easton Affordable Housing Board in writing to allow a temporary rental of the Inclusionary Unit for good and sufficient cause under terms that may be specified in the Inclusionary Housing Guidelines.

Section 1617 Transfer of Development.

For all approved covered projects that transfer ownership of the approved development, the new owner or developer shall be subject to all sections of this Chapter.

Section 1618 Enforcement.

Violations of this article shall be punishable as provided by **Article X** of this Chapter.

Section 1619 Administration.

1. Approved site plans and/or record final subdivision plats shall identify the specific number and location of each type of unit, by bedroom count, which are to be regulated as Inclusionary Units and a tabulation that demonstrates that the number of units provided satisfies the number of required units.
2. Written documentation and/or plans demonstrating that the affordable housing units are in conformance with Section 1609.1(d) shall be provided to the Office of Permits and Inspections prior to building permit issuance for the Inclusionary Units.
3. The Easton Affordable Housing Board shall monitor activity under this article and shall provide a report no less than every two (2) years to the Town Council, setting forth its findings, conclusions and recommendations for changes that will render the program more effective. The report described above shall be presented to the Town Council at a public meeting.

National Association of REALTORS®

Talbot County, MD Smart Growth July 2022

American Strategies designed and administered this telephone survey conducted by professional interviewers. The survey reached 325 adults, age 18 or older, who indicated they were registered to vote in Talbot County, Maryland. The survey was conducted July 18-21, 2022.

Sixty-eight percent of respondents were reached on wireless phones, six percent on VOIP phones, and twenty-seven percent on landlines. Quotas were assigned to reflect the demographic distribution of Talbot County, Maryland. The sample was drawn from a third-party vendor file. The overall margin of error is +/- 5.4%. The margin of error for subgroups is larger and varies.

Percentage totals may not add up precisely due to rounding.

Executive Summary

Residents of Talbot County are overall very satisfied with their quality of life. They value both the historic nature of Talbot's towns and villages and its natural resources, but also understand the need for additional housing – and in particular for more affordable housing for young people and those with lower incomes. Residents are supportive of efforts to develop underused land, so long as this does not impact the natural or historic attractiveness of the county.

- **Residents rank the quality of life in Talbot very highly (86 percent excellent/good).** Nearly four-in-ten (38 percent) say the quality of life is excellent while another 48 percent call it “good.” These numbers vary based on location and income, with lower-income households less likely to rank it as “excellent.”
- **Affordable housing, the cost of living, and homelessness account for 24 percent of voters' top concerns.** When asked to name in their own words the biggest issue facing Talbot County decisionmakers, residents most often cite housing or cost of living issues like affordable housing (13 percent), homelessness (4 percent) or inflation. Many are also concerned about overcrowding and development (16 percent).

Executive Summary

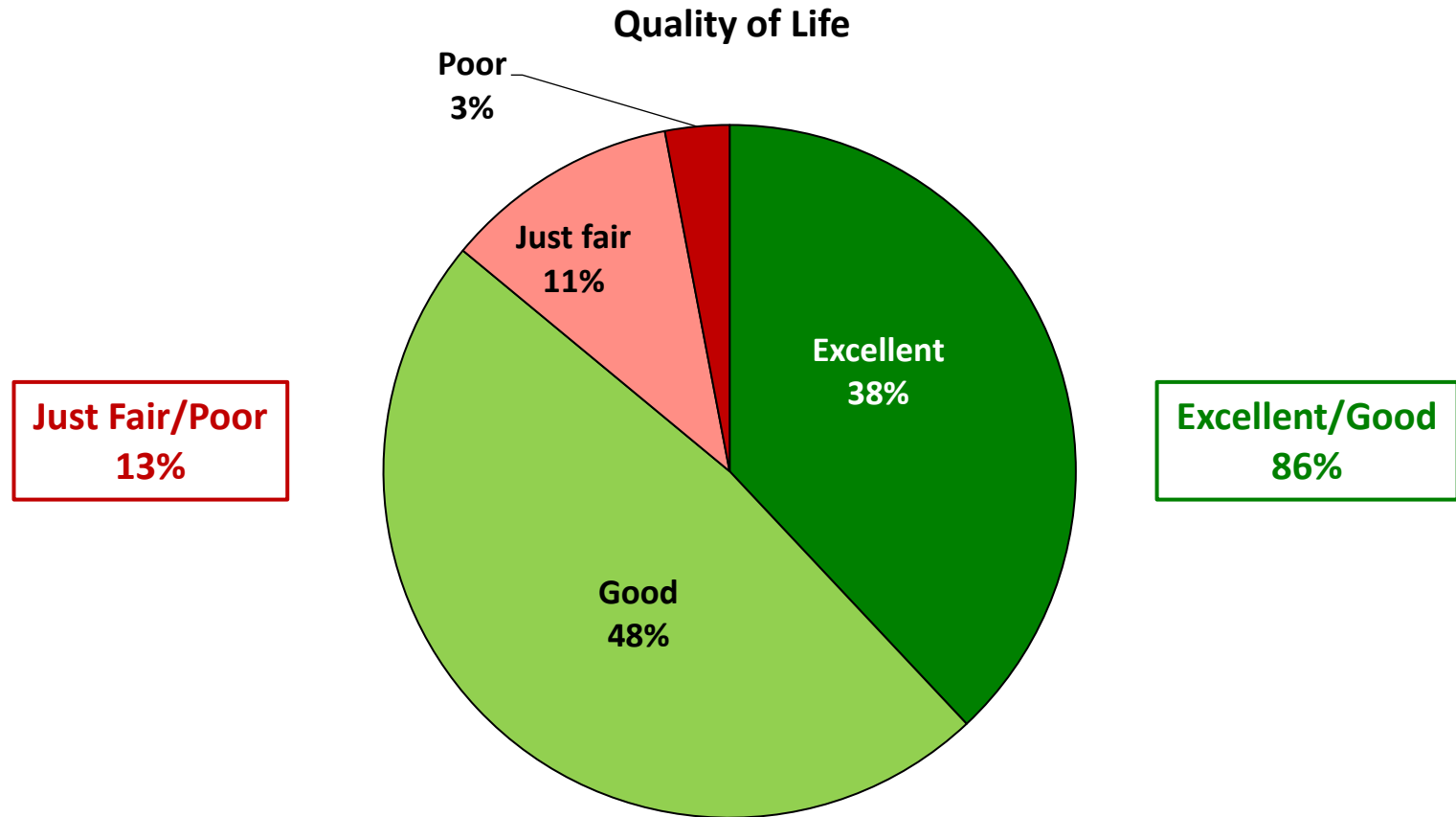
- **Protecting Talbot’s quality of life is a major policy priority for residents, but residents are also concerned about affordable housing.** Protecting the county’s coast, rural areas and historic character top the list of resident’s priorities for local elected officials, but fifty-one percent also say “creating more housing that is affordable to low and middle-income people” is a top priority.
 - Younger residents, Easton residents, and women are more likely to see housing affordability as a top priority.
- **A majority of Talbot residents consider the county’s stock of available housing to be a “fairly big” or “very big” problem (60 percent total), and that housing affordability is a problem (66 percent total).** This was especially pronounced among Easton residents and non-homeowners.
- **Sizeable majorities of residents believe that there is too little housing for people with low incomes and people just starting their careers.** Non-owners and Easton residents also report that there is too little housing available to rent full-time.

Executive Summary

- **Talbot County residents support a range of government-led proposals to increase housing opportunities for the county.** Sixty-seven percent of residents favor (36 percent strongly) a proposal that requires developers to set aside sub-market rate housing for new projects, and 62 percent favor (22 percent strongly) providing tax breaks to developers who do so.
 - Younger women and non-owners are most supportive of these proposals; older residents are least supportive.
 - Support for most of these proposals lack intensity.
- **Residents support utilizing under-developed land for housing.** A majority of residents (61 percent) support Easton annexing unincorporated land from Talbot County as a means to increase housing opportunities and 74 percent support the practice of infill development.
 - While there is some intensity to support for annexation and infill development, most are only “somewhat” supportive of these two measures. It is unclear how existing support would hold up under opposition.

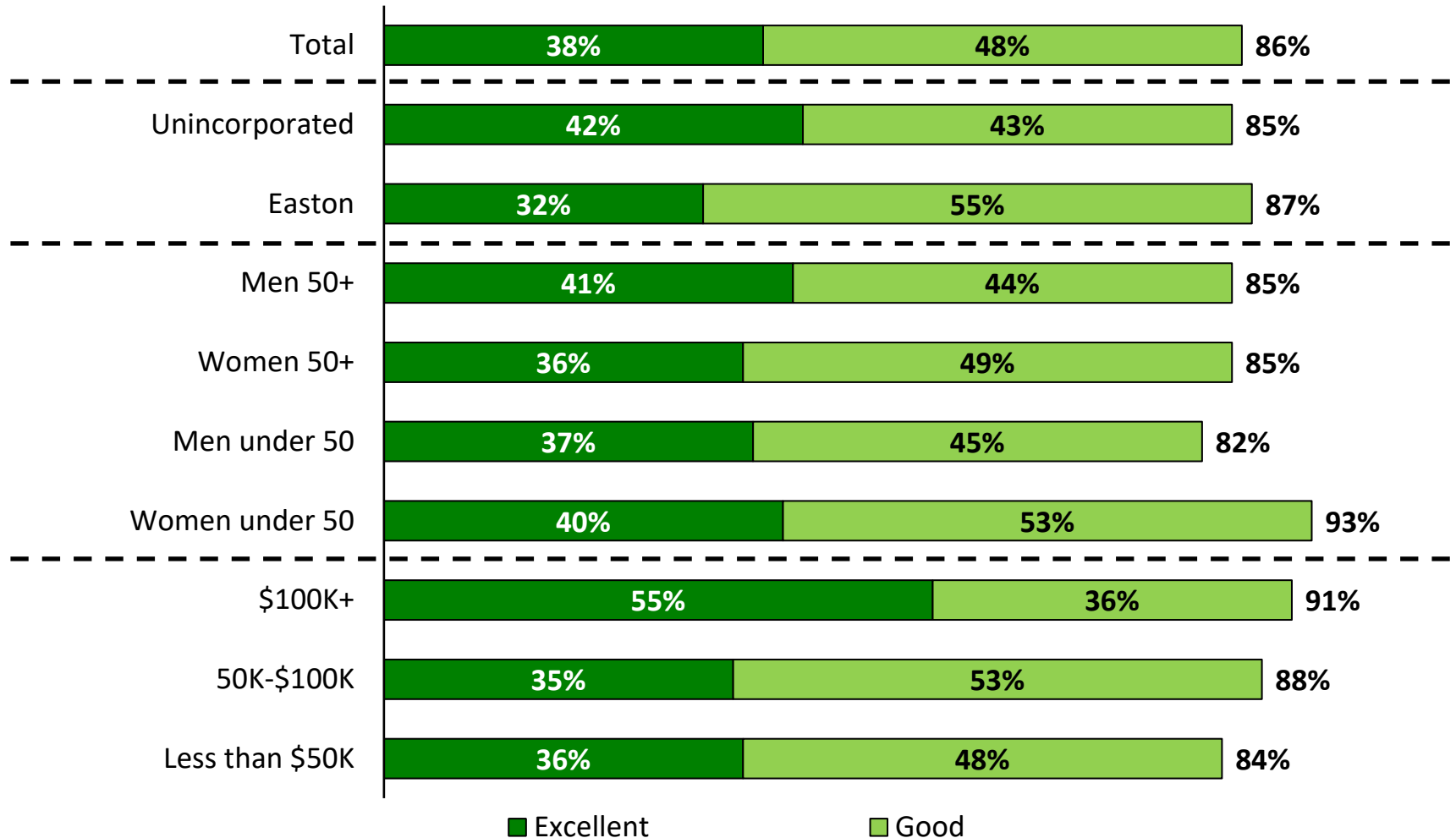
Mood and Priorities in Talbot County

Almost Nine-in-Ten View Quality of Life in Talbot County as Excellent or Good



Quality of Life is High Across Demographic Groups; Intensity Varies

Quality of Life “Excellent/Good” by Municipal District, Gender/Age, and Income

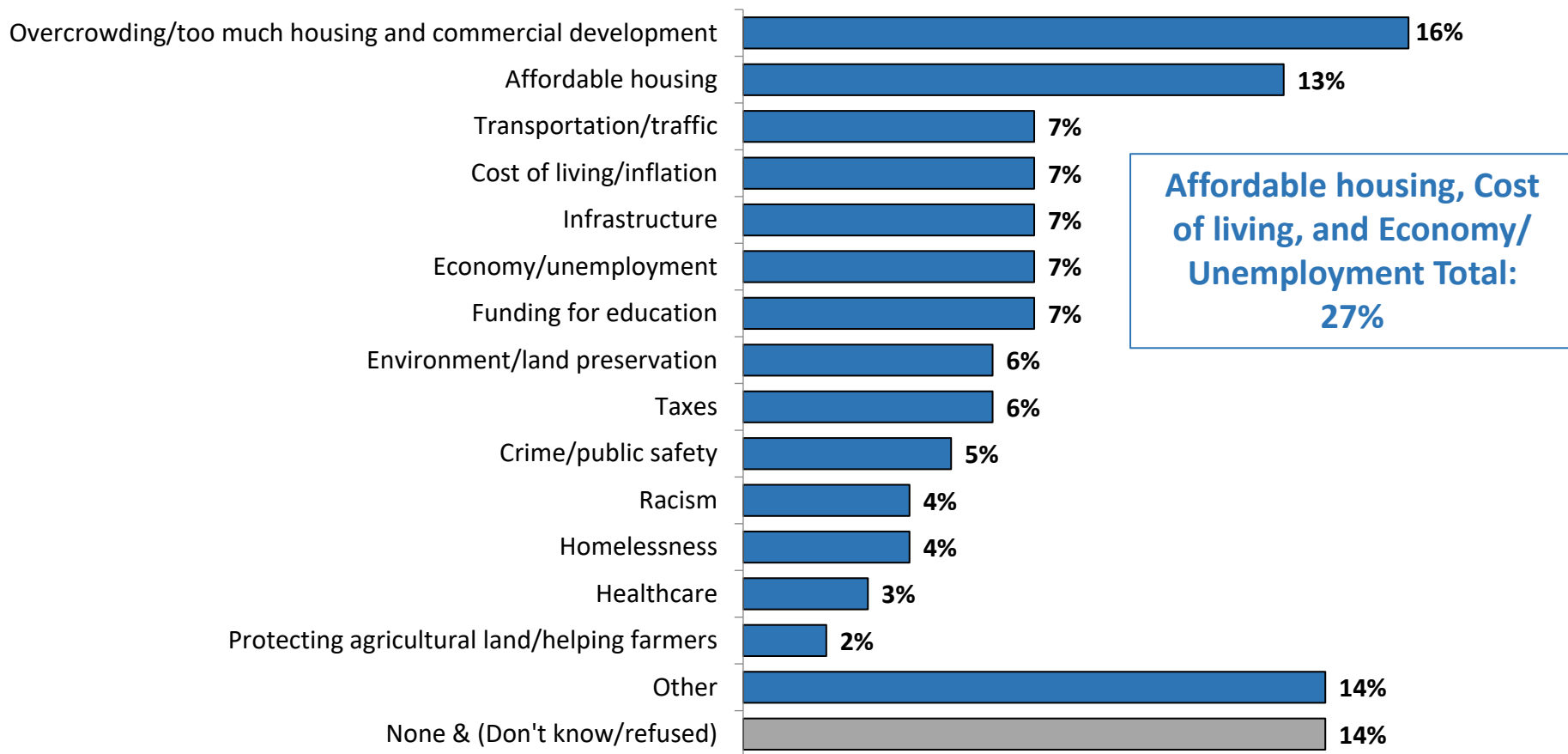


Q.3 Overall, how would you describe the quality of life in Talbot County - (ROTATE FIRST TO LAST, LAST TO FIRST) excellent, good, just fair, or poor?

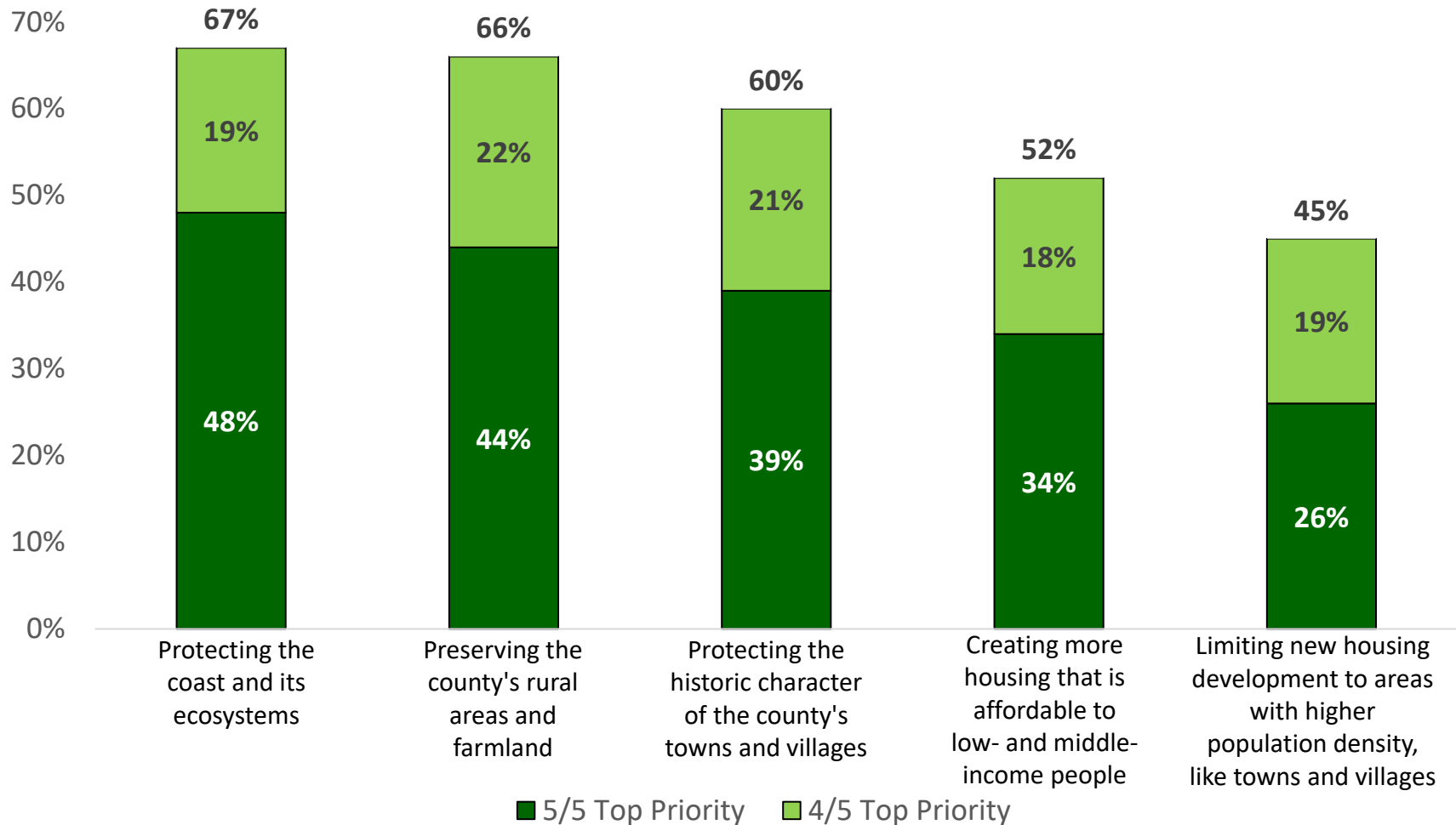
Voters Most Often Cite Overcrowding as Their Top Issue

Affordable housing and cost-of-living considerations rank higher in total

Biggest Issues in Talbot, 2022



Residents Place a High Priority on Protecting the County's Environment, Rural Areas, and Historic Character



Q.5 Next, I am going to read some issues that people say should be a priority for county and town governments in Talbot County. Please rate each of the following using a scale of one to five, where one means that issue is not a priority for you at this time, and five means that issue is a top priority for you at this time.

Protecting the Countryside and Historic Character of Towns More Important to Homeowners, Older Female Residents

Affordable housing more important to non-homeowners

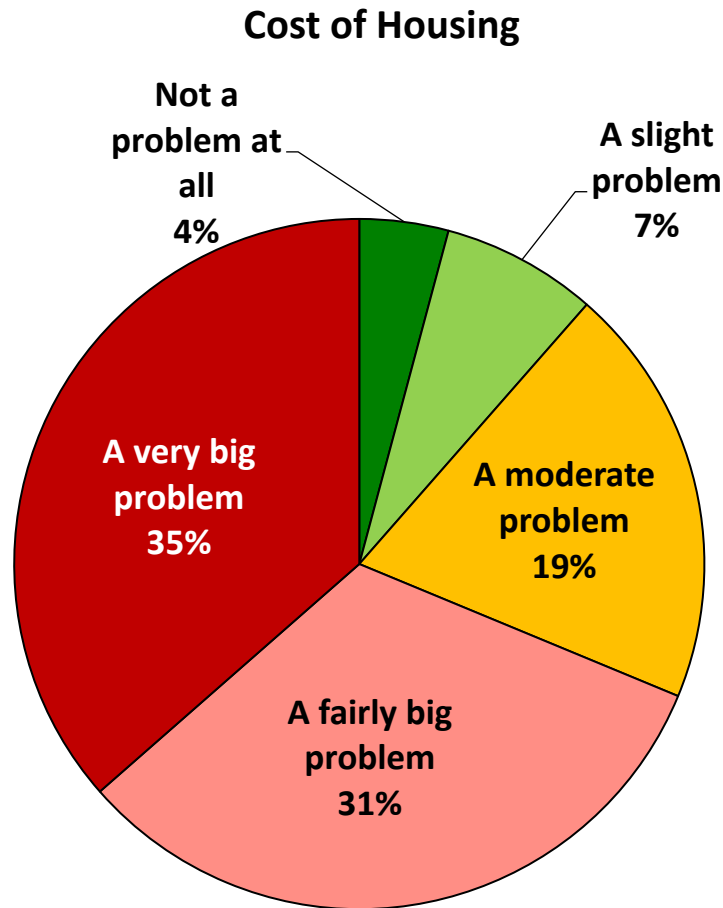
4-5 Scores by Region, Gender/Age, and Homeownership Status	Total	Younger Men	Older Men	Younger Women	Older Women	Own	Total Non - owner
Protecting the coast and its ecosystems	67	63	63	67	75	71	61
Preserving the county's rural areas and farmland	66	60	59	68	72	71	55
Protecting the historic character of the county's towns and villages	59	52	57	45	71	64	45
Creating more housing that is affordable to low- and middle- income people	51	48	39	55	64	44	61
Limiting new housing development to areas with higher population density, like towns and villages	44	45	41	35	51	47	33

Q.5 Next, I am going to read some issues that people say should be a priority for county and town governments in Talbot County. Please rate each of the following using a scale of one to five, where one means that issue is not a priority for you at this time, and five means that issue is a top priority for you at this time. Of course, you can use any number between one and five, the higher the number the higher the priority you place on that issue.

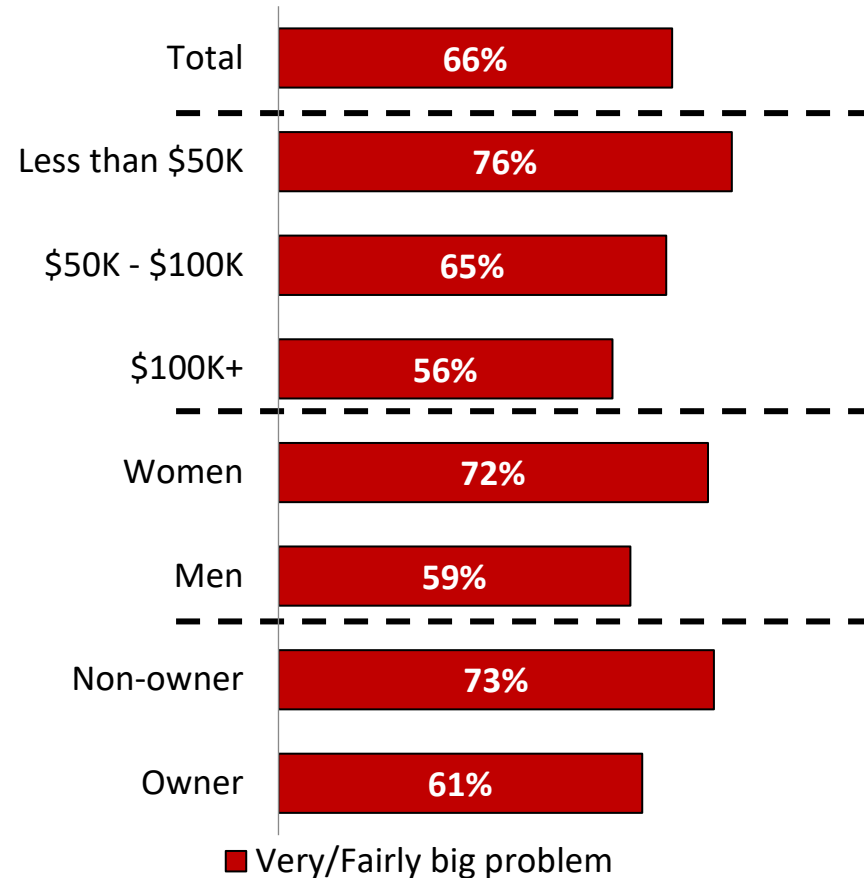
Housing Costs & Development

Nearly Seven-in-Ten Say Housing Affordability is a Big Problem

Women, non-homeowners, and lower-income residents most likely to see it as a major issue



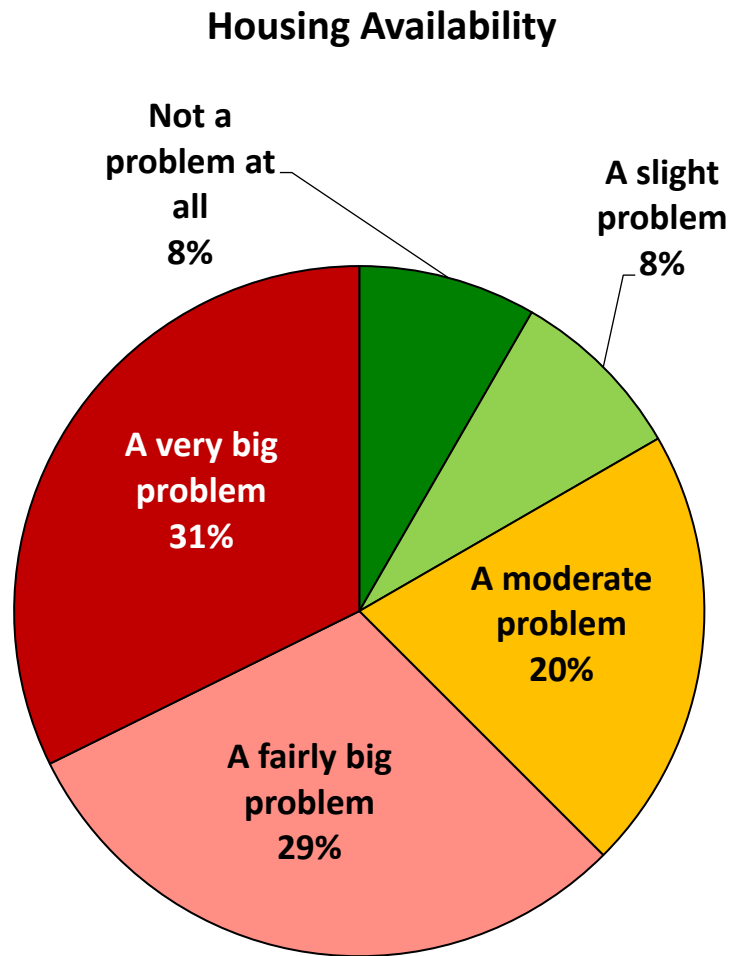
Very/Fairly Big Problem By Income, Gender, and Homeownership Status



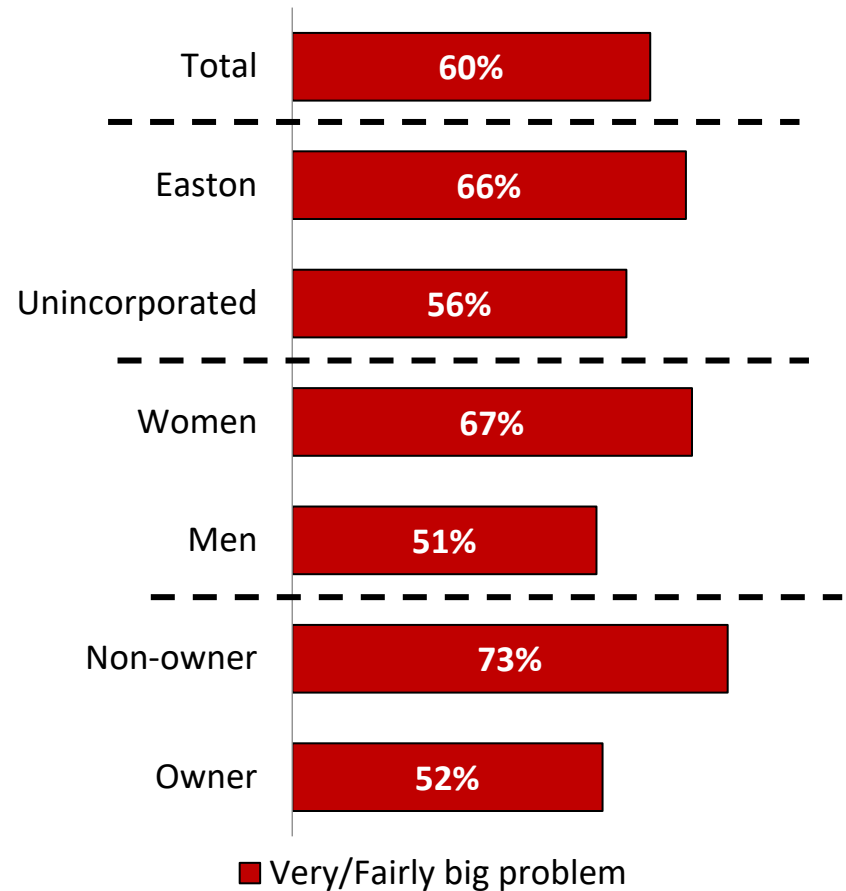
Q.7 (ROTATE Q.6 AND Q.7) In general, how much of a problem is housing affordability in Talbot County, including its towns and villages? That is to say, how much it costs to buy or rent a home?

Six-in-Ten Say Housing Availability is a Big Problem

Easton residents, women, and non-homeowners most likely to see it as a major issue



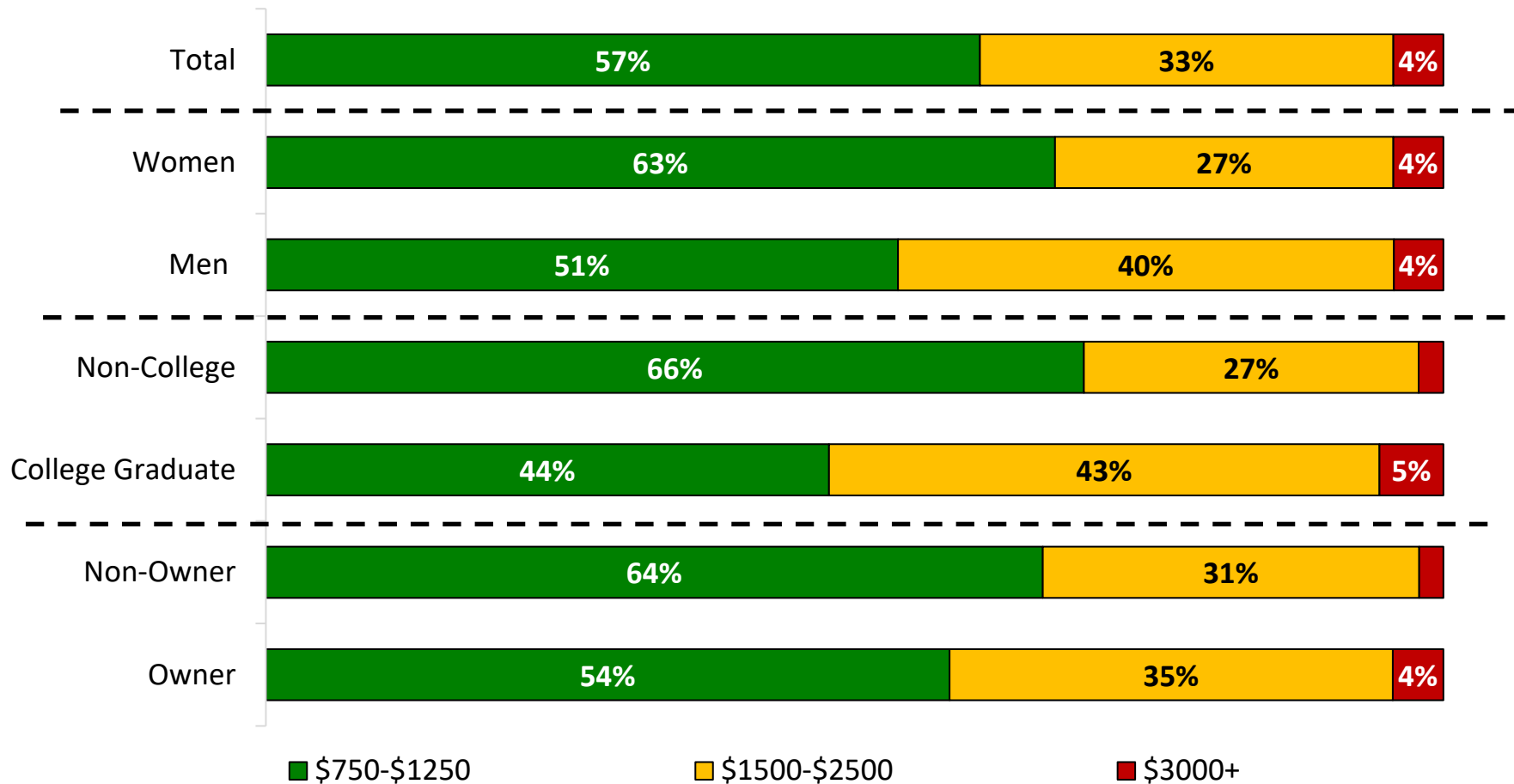
Very/Fairly Big Problem By Region, Gender, and Homeownership Status



Q.6 Next, I am going to ask you some questions about housing in Talbot County. (ROTATE Q.6 AND Q.7) In general, how much of a problem is the availability of housing in Talbot County, including its towns and villages? That is to say, the number of homes, condominiums, or apartments that are available to buy or rent?

Most Residents Define “Affordable” Rent/Mortgage As Below \$1250 per Month

Housing Monthly Cost



■ \$750-\$1250

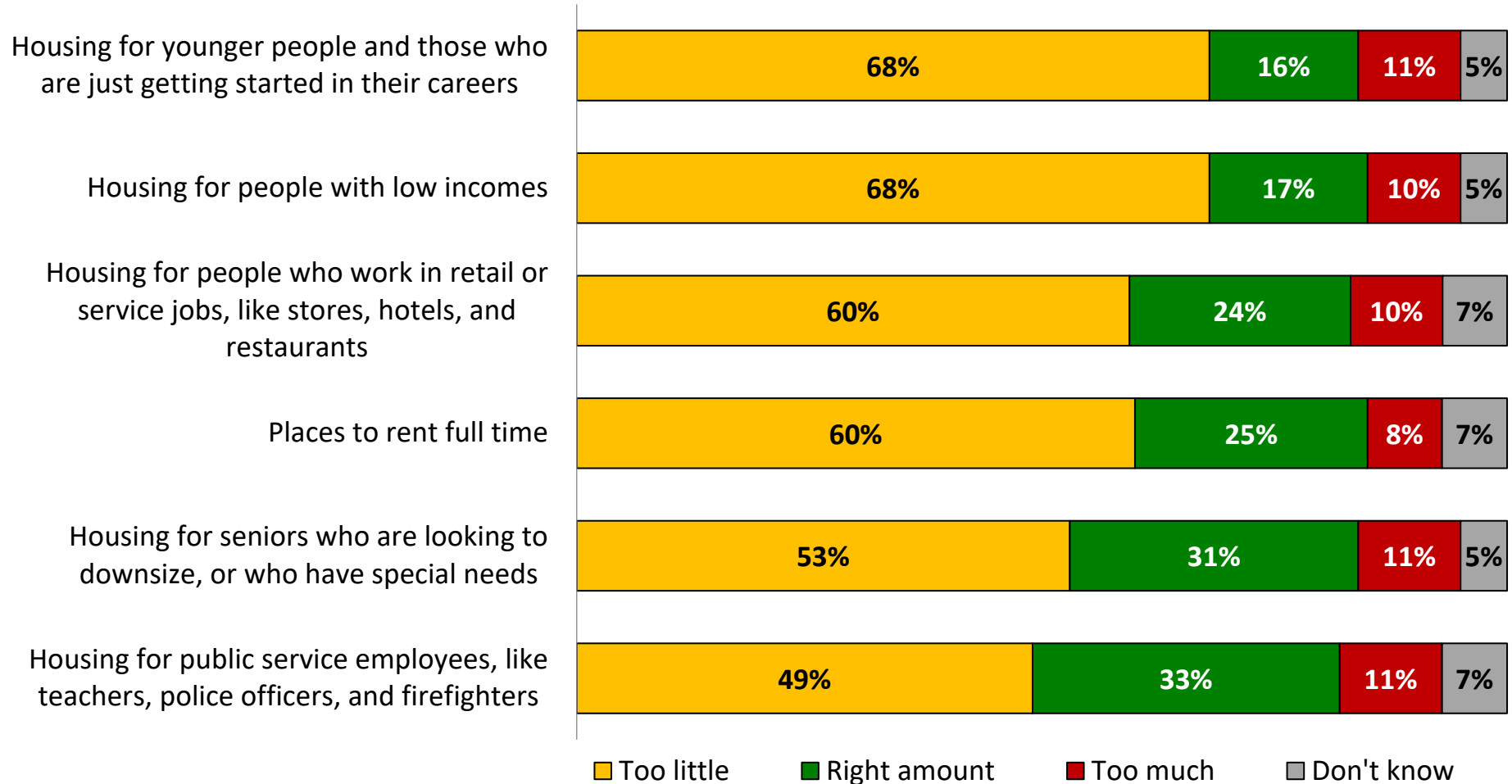
■ \$1500-\$2500

■ \$3000+

Q.8 In general, what would you say is the monthly cost for housing that is affordable for most families in Talbot County? In other words, what do you think most families in your community can afford to pay for their rent or mortgage each month? Just stop me when I get to the right amount. (READ OPTIONS TOP TO BOTTOM)

Most Agree: Too Little Housing in Talbot County

Amount of Housing Available in Talbot County



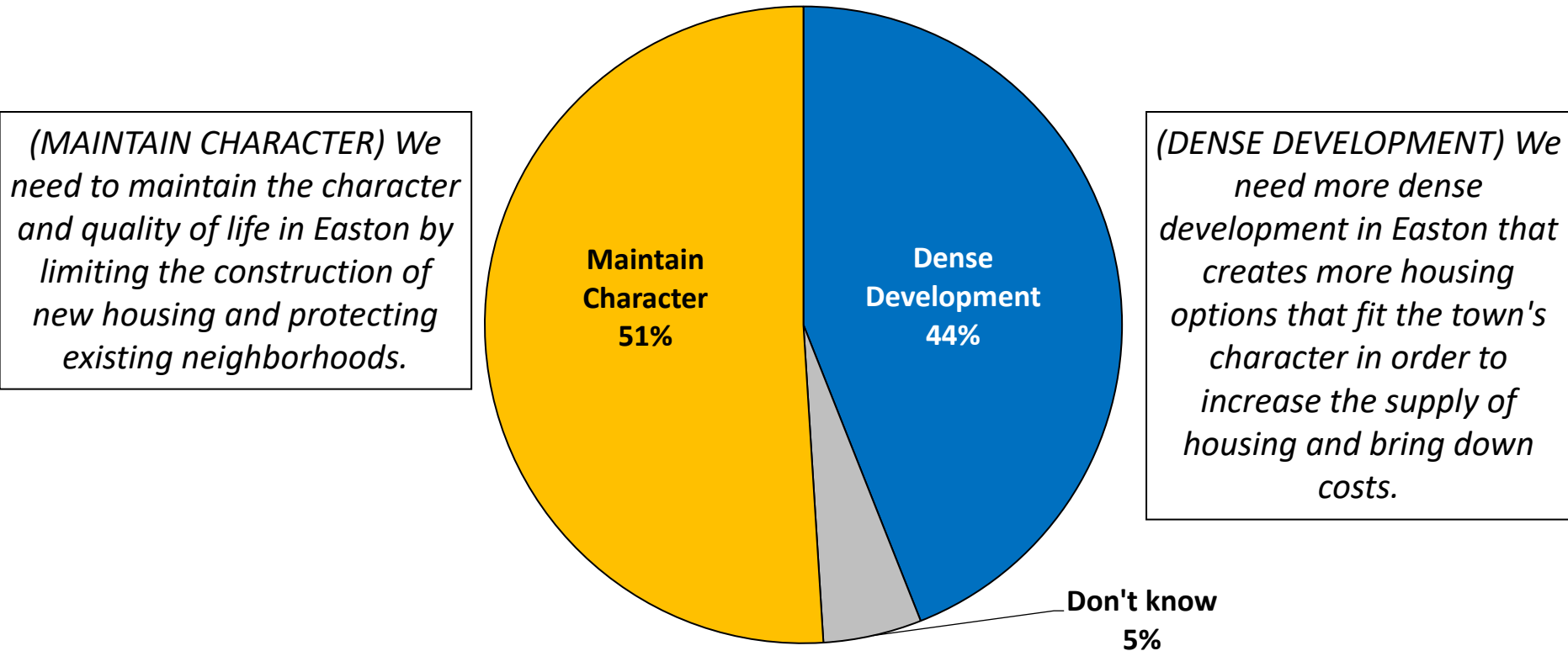
Most Say Too Little Housing for Low Income, Younger People

Non-owners, Easton residents concerned with full-time rentals

Too Little Housing by Region, Gender/Age, and Homeownership Status	Total	Easton	Unincorp / Other	Own	Total Non - owner
Housing for people with low incomes	68	74	65	64	76
Housing for younger people...	68	71	66	61	78
Housing for people in the services industry	60	59	61	56	67
Places to rent full time	60	66	57	54	72
Housing for seniors...	53	53	54	47	63
Housing for public service employees...	49	57	44	44	58

Policy Proposals

Voters Split on Maintaining Character vs. More Dense Development

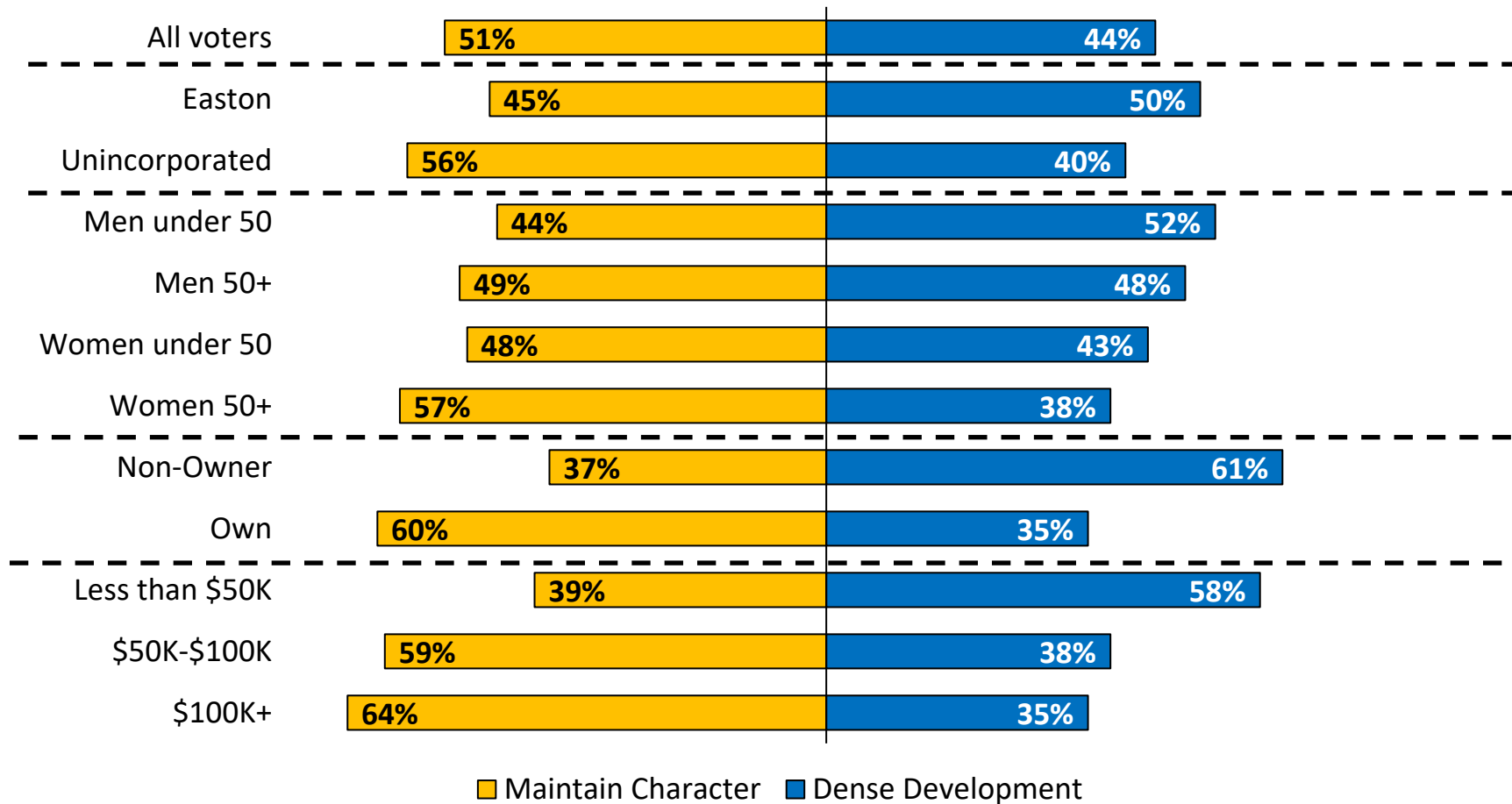


Q.13 As you may know, housing density refers to the number of homes or apartments that are allowed in a neighborhood, city, or county area. I am going to read two statements about housing density IN THE TOWN OF EASTON. Please tell me which one comes closer to your way of thinking, even if neither one is exactly right.

Voters Split on Character vs. Density

Easton residents, younger men, non-property owners, and lower-income residents most attracted to density

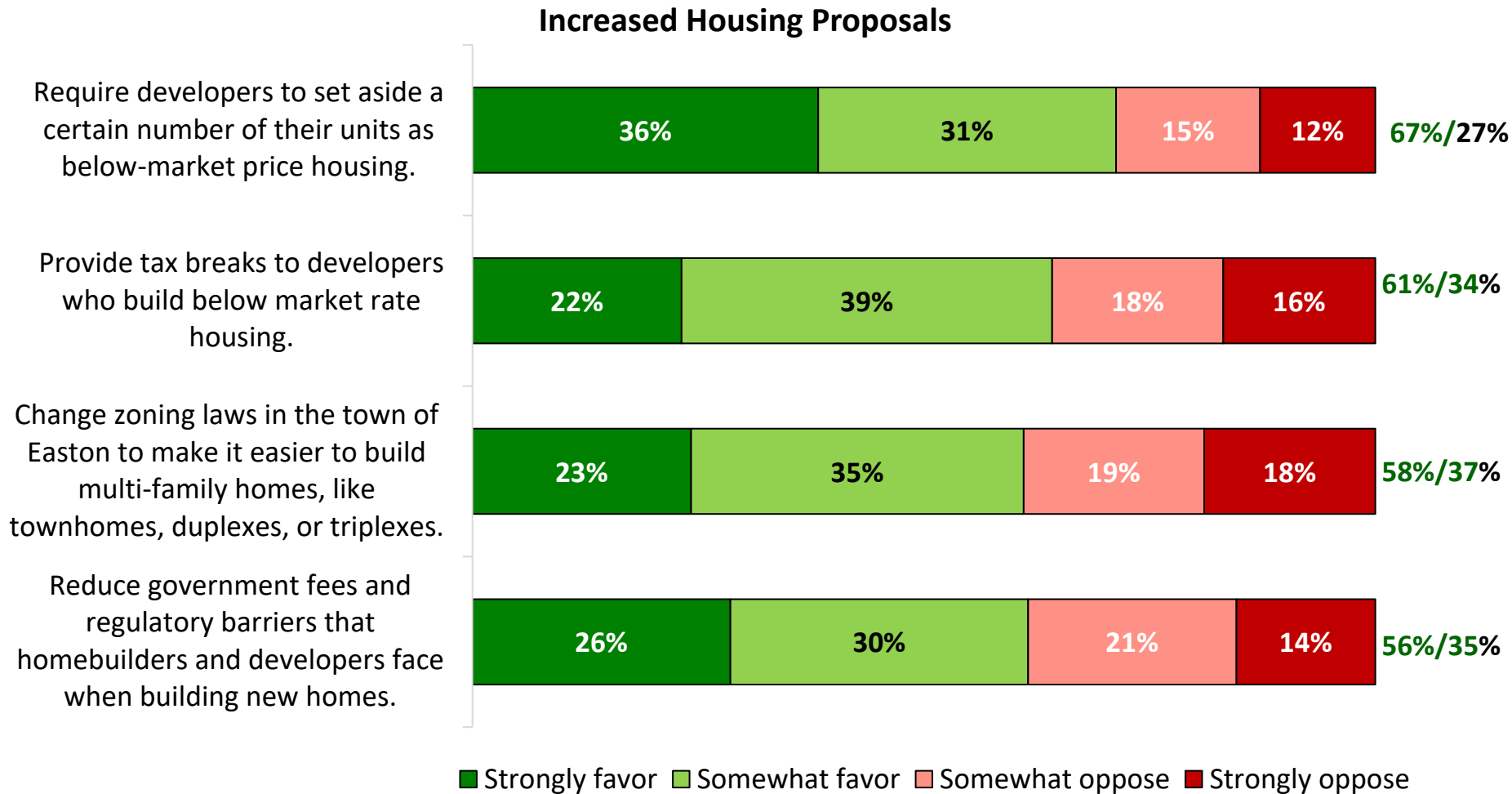
Views on Housing Density



Q.13 As you may know, housing density refers to the number of homes or apartments that are allowed in a neighborhood, city, or county area. I am going to read two statements about housing density IN THE TOWN OF EASTON. Please tell me which one comes closer to your way of thinking, even if neither one is exactly right.

Residents Broadly Approve of Housing Proposals

Affordable housing requirements for new developments and tax breaks for affordable housing most popular



Easton Residents, Younger Residents, Non-Owners More Supportive of Policies Overall

*Older women and owners are least supportive of changing zoning laws
and reducing government barriers for developers*

Total Favor Housing Proposals by Region, Gender/Age, and Homeownership Status	Total	Easton	Unincorp / Other	Younger Men	Older Men	Younger Women	Older Women	Own	Total Non - owner
Require developers to set aside a certain number of their units as below-market price housing.	67	66	67	65	60	78	67	63	74
Provide tax breaks to developers who build below market rate housing.	62	67	58	69	57	70	58	56	72
Change zoning laws in the town of Easton to make it easier to build multi-family homes, like townhomes, duplexes, or triplexes.	57	67	51	61	58	65	51	52	64
Reduce government fees and regulatory barriers that homebuilders and developers face when building new homes.	56	55	57	66	61	60	45	53	61

Q.10 Next, I am going to read to you some proposals intended to increase housing opportunities for Talbot County residents. For each one, please tell me whether you (ROTATE) favor or oppose that proposal.

Non-Owners, Younger Women, and Easton Residents Strongly Favor Requiring Developers to Plan for Affordability

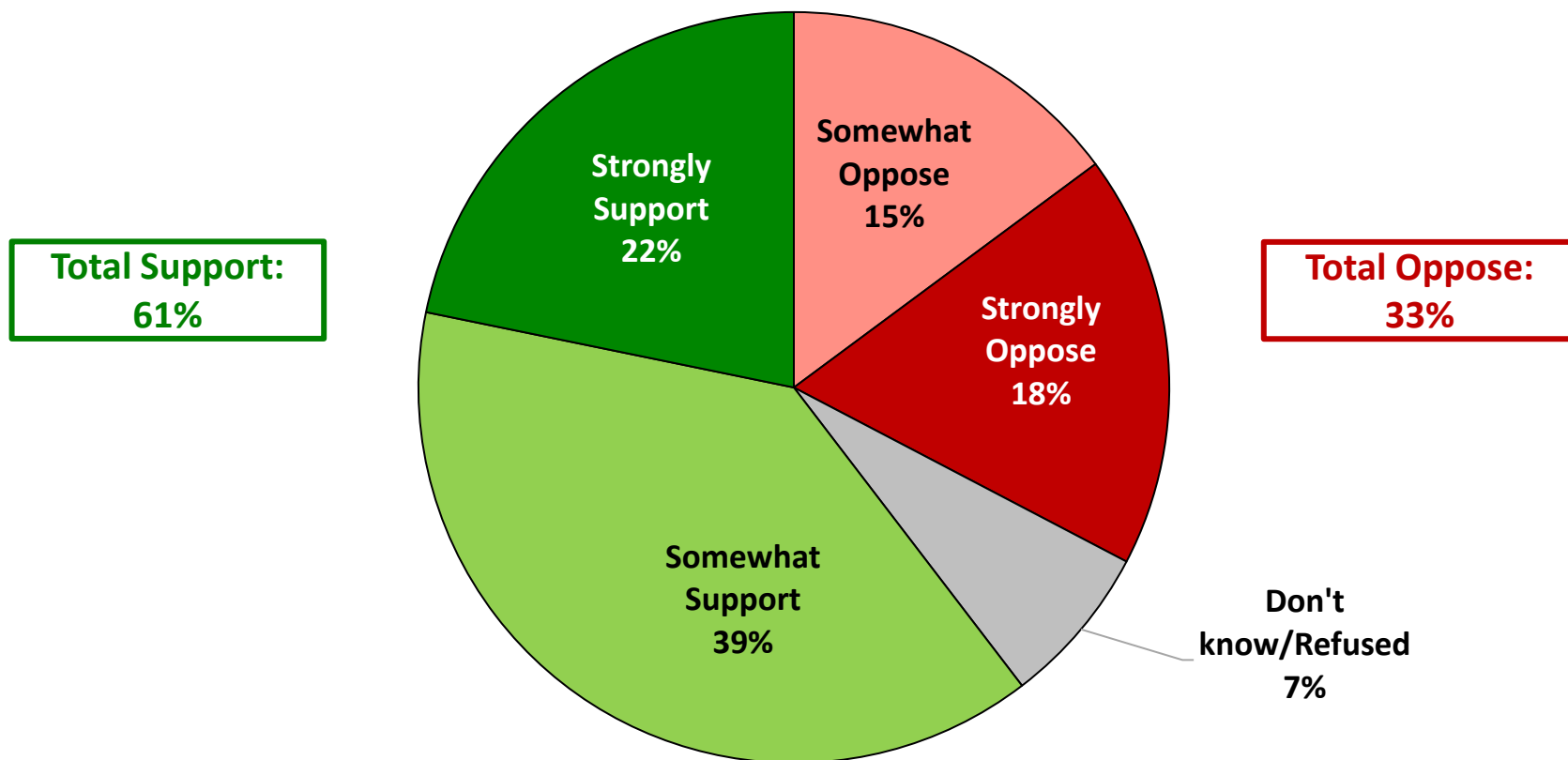
Strongly Favor Housing Proposals by Region, Gender/Age, and Homeownership Status	Total	Easton	Unincorp / Other	Younger Men	Older Men	Younger Women	Older Women	Own	Total Non-owner
Require developers to set aside a certain number of their units as below-market price housing.	36	40	33	27	36	43	36	33	43
Reduce government fees and regulatory barriers that homebuilders and developers face when building new homes.	26	29	25	31	34	27	17	25	29
Change zoning laws in the town of Easton to make it easier to build multi-family homes, like townhomes, duplexes, or triplexes.	23	27	20	19	30	23	19	20	28
Provide tax breaks to developers who build below market rate housing.	22	26	19	27	22	22	22	21	26

Q.10 Next, I am going to read to you some proposals intended to increase housing opportunities for Talbot County residents. For each one, please tell me whether you (ROTATE) favor or oppose that proposal.

Majority of Residents Support Annexation

Though most do not feel strongly one way or another

Views on Town of Easton Annexing Unincorporated Land

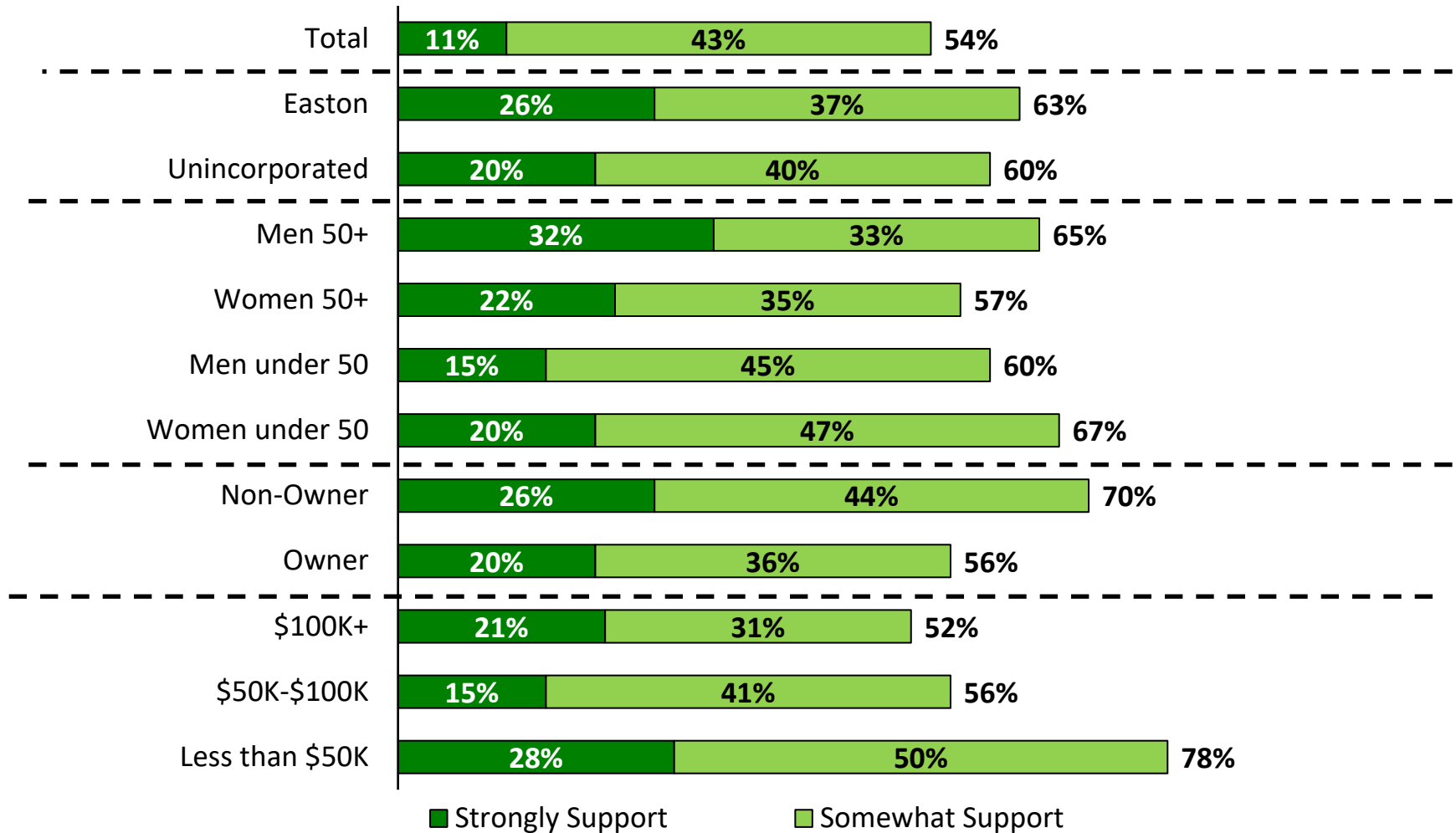


Q.11 Another way to deal with the housing issue in Talbot County is to expand the Easton town limits to include vacant county land near existing town boundaries. This would increase the amount of land available for housing opportunities. Do you generally (ROTATE) support or oppose allowing the Town of Easton to annex unincorporated land from Talbot County?

Majority of Residents Support Annexation

Highest among younger women, non-property owners, lower income, Easton residents

Town of Easton Annexation By Region, Gender/Age, Homeownership Status, and Income

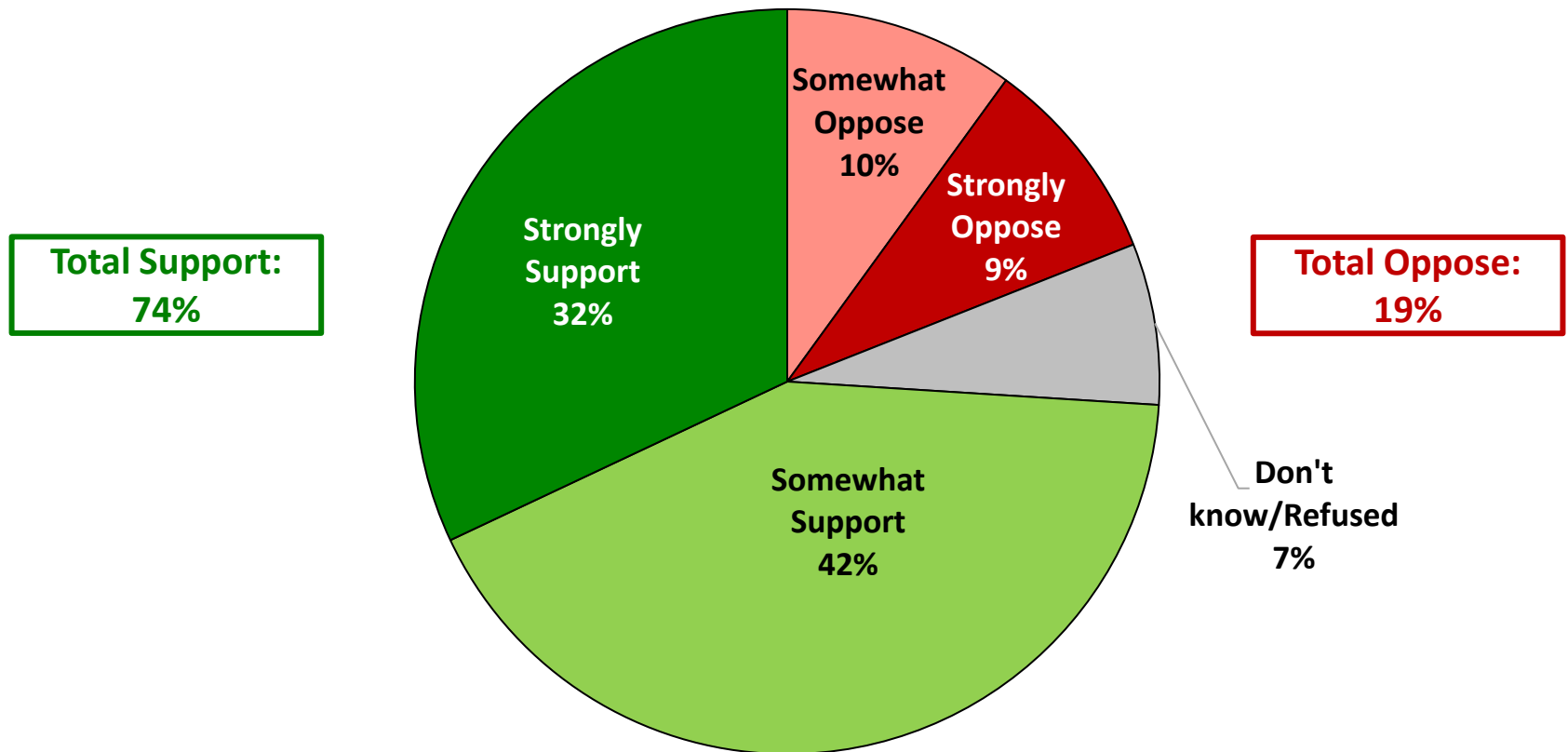


Q.11 Another way to deal with the housing issue in Talbot County is to expand the Easton town limits to include vacant county land near existing town boundaries. This would increase the amount of land available for housing opportunities. Do you generally (ROTATE) support or oppose allowing the Town of Easton to annex unincorporated land from Talbot County?

Vast Majority Support Infill Development

A plurality approve while lacking intensity

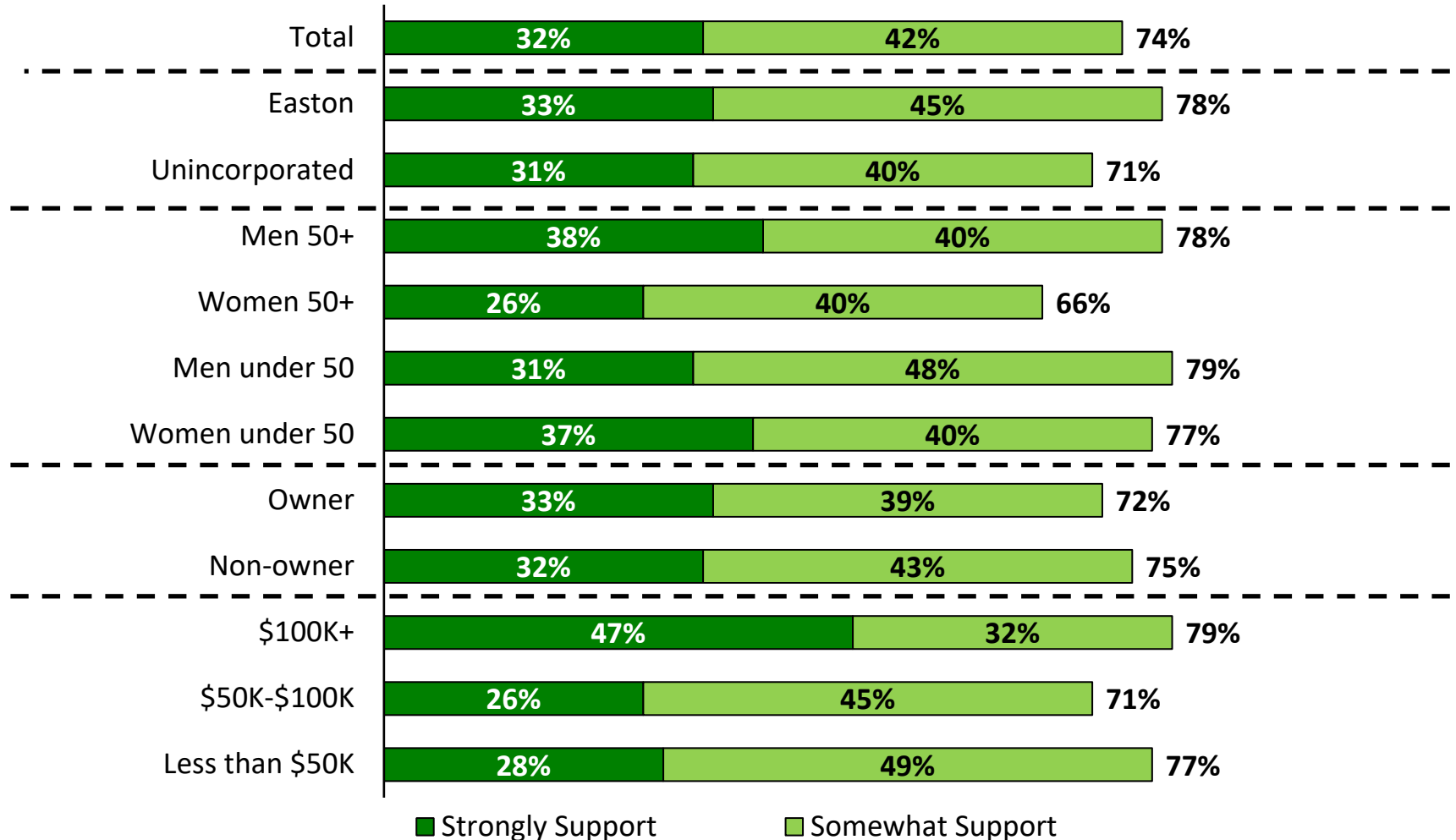
Views on Infill Development in the Town of Easton



Q.12 Another way to deal with the housing issue in towns and villages is to make use of something called infill development, which converts vacant lots and decaying properties into homes and businesses. (PROMPT) In general, do you (ROTATE) SUPPORT or OPPOSE the use of infill development in the Town of Easton?

Easton Residents, Men, Higher-Income Households Most Supportive of Infill Development

Support for Infill Development
By Region, Gender/Age, Homeownership, and Income



Strongly Support

Somewhat Support

Q.12 Another way to deal with the housing issue in towns and villages is to make use of something called infill development, which converts vacant lots and decaying properties into homes and businesses. (PROMPT) In general, do you (ROTATE) SUPPORT or OPPOSE the use of infill development in the Town of Easton?

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Comparison of the Town of Easton’s Draft Inclusionary Housing Ordinance with other jurisdictions

	EASTON	QUEEN ANNE’S COUNTY	ANNAPOLIS	MONTGOMERY COUNTY	FREDERICK	LOUDOUN COUNTY, VA
Name	Inclusionary Housing Ordinance (Draft)	Moderately Priced Dwelling Unit Program	Moderately Priced Dwelling Unit Program	Moderately Priced Dwelling Unit Program	Moderately Priced Dwelling Unit Program	Affordable Dwelling Unit Program
Applicability	1. New construction or substantial rehabilitation: 5 or more units. 2. Adaptive reuse or nonresidential to residential conversion: 10 or more units.	1. Inside of growth areas: 20 or more lots or units. 2. Outside of growth areas: 60 or more lots or units.	Development or redevelopment of 10 or more dwelling units.	Residential developments of 20 or more units at one location.	1. Residential development projects of 25 or more units. 2. Mixed-use projects with a residential component of 25 or more units.	Sites that are served by public water and sewer and which yield 24 or more units at an equivalent density greater than one unit per forty thousand square feet.
Exemptions (Excluding Grandfathered Applications)	Accessory Dwelling Units are exempt from the provisions.	Not included in the legislation.	1. The conversion of a residential rental property to a condominium property if the condominium was registered with the Secretary of State prior to March 13, 2006.	Not specified in the legislation.	1. Development projects undertaken by the City. 2. Projects undertaken by a nonprofit housing development organization or a continuing care retirement community if at least 12.5% of the persons renting or purchasing units would be considered eligible to buy or rent an MPDU.	1. Multi-family dwellings of four stories or more with an elevator. 2. Applications which deal exclusively with issues of: building relocation, site access, stormwater drainage, or other engineering or public facility issues; the preservation of historic structures; wetlands; child care facilities; or changes in the size of units, a reduction in the number of units, or which request the addition of a non-residential special exception use.
Required Minimum Percentage of Inclusionary Units	10%	10%	Proportionate to the approved development density and is a variable percentage that is not less than 15%.	1. 15% where at least 45% of the census tracts in the planning area have a median household income of at least 150%. 2. 12.5% for any other planning area. 3. The percentage is inclusive of the increased units from the optional density provisions (bonus density).	1. 12.5% 2. The Council may establish a higher base requirement, up to 15%, as part of a master plan approval.	1. SFD & SFA: 12.5%, inclusive of the density bonus units. 2. MF: 6.25%. 3. The percentage is inclusive of the increased units from the density bonus.
Eligibility	100% of the Talbot County MFI, adjusted based on Easton’s MFI. For-Sale units: 50% units required for median income households (up to 80% MFI) and the remainder to moderate-income households (up to 100% MFI). Rental Units: 50% units required for very low-income households (up to 50% MFI) and the remainder to low-income households (up to 60% MFI).	1. 80% of MHI. 2. Must not have owned any residential property during the previous five years.	1. 100% or less than the Baltimore MSA MFI, adjusted for family size. 2. City resident or employed by the City within the past 12 mos.; employee of the City; City public school teacher or staff member; employee of the Naval Academy; resident of the County and is under a disability.	1. Garden Apartment or High-Rise Rental: 65% of the AMI. 2. Purchase or High-Rise Rental: 70% of the AMI. 1. Members of a household must not have owed any residential property during the previous 5 years (may be waived for good cause).	1. 30% to 80% of the Washington MSA median household income. 2. Priority given to persons who first live within the City, then second, work within the City.	1. For-sale units: 30%-70% of Washington MSA median income. 2. Rental units: 30%-50% of Washington MSA median income.

	EASTON	QUEEN ANNE'S COUNTY	ANNAPOLIS	MONTGOMERY COUNTY	FREDERICK	LOUDOUN COUNTY, VA
Control Period	1. For-sale units: 20 years. 2. Rental Units: 30 years.	1. For-sale units: 15 years. 2. Rental units: 25 years. 3. Covenants recorded in the County land records. 4. Units sold during the control period reverts to a new control period.	1. For-sale units: 30 years. 2. Rental units: 99 years. 3. Units sold during the control period reverts to a new control period.	1. For-sale units: 30 years. 2. Rental units: 99 years. 3. If a for-sale unit is sold within 30 years after its original sale, the unit must be treated as a new sale and a new control period must begin on the date of the sale. 4. MPDU Agreement recorded in the land records is required.	1. 30 years. 2. MPDU Agreement is recorded in the land records of Frederick County with assurance that the City may create a lien to collect a portion of the sale price or the foreclosure sale price that exceeds the approved resale price.	
Cash-In-Lieu	Permitted, with approval by the Town Council and based on specific considerations, for the adaptive reuse or nonresidential to residential conversion of 10 or more units.	Permitted based on specific PC findings (dedication is impractical based on site physical characteristics, public benefits outweigh the benefits of constructing on site, etc.).	Not permitted.	1. Developments between 11 and 19 units require a payment to the Housing Initiative Fund. 2. An alternative payment agreement may be approved by the Director instead of building some or all of the required for-sale units with the funds placed in the Housing Initiative Fund and upon specific findings.	1. Permitted for all or a portion of the required units. 2. The density bonus cannot be applied if payment is made in lieu of building the units.	Permitted for developments which contain only SFD units.
Cash-In-Lieu Fees	Initially established by ordinance as flat fees based on the average market rate unit price (range = \$3,000 to \$7,500), as amended by the Council. The draft ordinance gives the Town Council the ability to establish fees through alternative calculation methods.	Difference between median price of same size units sold in the prior year and maximum allowable price of an MPDU unit.	Not permitted.	The payment in lieu of satisfying all the required units is 3% of the sale price of each market rate unit in the development. A payment made in partial satisfaction of the required units is adjusted based on the percentage of required units provided.	\$16,100 per unit.	100% of the construction cost of a prototypical SFD affordable dwelling unit based on the number of bedrooms provided within the predominate market rate units in the development. The cash in lieu fee is adjusted by the CPI at the time the actual contribution is transferred to the County.
Other Alternatives	1. Build off-site and sell one and one-half the required number of units. 2. Purchasing land in the County and donating to a qualified housing organization to build one and one-half the required number of units. 3. Consideration given for other unique or innovative proposals.	1. Off-site option approved by PC based on access to public amenities and surrounding density and land use compatibility. 2. Donations of on-site or off-site land if the land is suitable for construction. The value of the land must be equal to or greater than the value of the fee-in-lieu payment.	The design, construction, pricing or amenity package may be eliminated or modified by the Department of P&Z if it lessens the eligibility of eligible persons to qualify.	1. Allows an applicant to build high-rise units at another location. 2. Allows an applicant to transfer land to the County if the value transferred is at least equal to the value of the units not constructed by the applicant. The land must be used to produce or preserve moderately-priced units or can be sold with the funds allocated to the Affordable Housing Acquisition and Preservation CIP portion of the Housing Initiative Fund. 3. If a waiver of impact fees is granted, the applicant cannot propose an alternative compliance.	Government or non-profit agencies may buy or lease up to 20% of the units as they become available.	1. The percentage of affordable units, density bonuses, and phasing requirements can be modified upon approval by the Board of Supervisors based on specific criteria but the affordable units can be no less than 5%. However, the ratio of affordable units proposed to the total density increase is no less than 12.5:20% for SFD and SFA and 6.25%/10% for MF. 2. The Board of Supervisors may approve a combination of affordable dwelling units, land, or contributions equivalent to providing the required number of affordable units.

	EASTON	QUEEN ANNE'S COUNTY	ANNAPOLIS	MONTGOMERY COUNTY	FREDERICK	LOUDOUN COUNTY, VA
Incentives (Including Density Bonuses)	1. Density bonus of 20% from the base zoning district density limits. 2. The developer can receive up to a 20% relief from bulk requirements and parking standards. 3. For adaptive reuse and nonresidential to residential conversion: a) Impact fee subsidies from the Housing Fund b) Reduction in capital charges. c) Real property tax abatement for developers that provide at least 20% inclusionary units.	1. Density bonus of 10%. 2. County Commissioners may subsidize, adjust, or exempt impact fees.	1. For-sale units: 15% density bonus. 2. Rental units: 10% density bonus. 3. The P&Z Director can provide up to 20% relief from bulk, parking, and loading development standards.	1. Optional density bonus provisions are allowed in certain zoning districts. The optional density provisions permit additional building types and more flexibility in dimensional standards other than those allowed under the standard method of development when units are provided above the minimum required. Ex: In a residential detached zone, an applicant who voluntarily provides at least 12.5% units in a development with 20 or fewer dwelling units may use the optional method development standards Ex: In Commercial/Residential zones (mixed-use), the Floor Area Ratio (FAR)\ for residential density can be increased for increases in units above 12.5%. If 100% of the units are inclusionary, the total FAR (nonresidential and residential) is exempt from limits provided the maximum residential density does not exceed 2.5 FAR	1. A sliding scale density bonus is allowed if the developer constructs more than the minimum required of units, but no more than 22% over the maximum density.	1. SFD & SFA - 20% density bonus. 2. MF - 10% density bonus. 3. Maximum 90-day review time for final site plans, preliminary subdivisions or record plats. 4. Application fee waivers for developments where the applicant proposes a Concept Development Plan Amendment only in order to provide affordable dwelling units which are otherwise exempt. 5. Review of final site plans, preliminary subdivisions, or record subdivision plats processed within 90 days provided that such plans and plats substantially comply with all ordinance requirements when submitted (time does not include the applicant's time for revisions or modifications).
Maximum Sales Price	See examples included in the Council's packet.		Set annually and assumes market rate interest with no more than 30% of the annual gross household income applied towards the cost of housing.	The sale price, including closing costs and brokerage fees, must not exceed an applicable maximum sale price established from time to time by the County Executive.	Established by the Board of Alderman and adjusted periodically based on the CPI percentage change.	The sales prices for affordable housing units provided shall be in accordance with the rules and regulations governing such programs.
Maximum Rent	See examples included in the Council's packet.		Rental rates are recalculated yearly and capped at 100% of HUD's fair market rents if the property owner pays all utilities, and at 80% of fair market rents if the property owner does not pay all utilities.	1. The rent for any unit, including surface parking but excluding utilities when they are paid by the tenant, must not exceed a maximum rent for the unit set by regulations. 2. Different rents must be set for units when utility costs are paid by the owner and included in the rent. 3. Different rents may be set for age-restricted units. 4. Different rents also may be set for high-rise rental units.	Established by the Board of Alderman. Two different rates based on whether the renter pays utility costs. Rates include parking.	The rents for affordable housing units provided shall be in accordance with the rules and regulations governing such programs.
Resale Restrictions	A subordinate shared appreciation loan agreement is required at the time of closing in favor of the Town	Cannot be resold for a price greater than the original selling price plus a percentage of the selling price based	The initial difference in value between the purchase price and the real market value is paid to the City unless the	A purchase and sale agreement and any deed or instrument conveying title must acknowledge that the owner	Sales during the control period: Cannot be resold for a price greater than the original sales price plus a	Not specified in the legislation.

	EASTON	QUEEN ANNE’S COUNTY	ANNAPOLIS	MONTGOMERY COUNTY	FREDERICK	LOUDOUN COUNTY, VA
	of Easton. Net proceed rules will need to be established.	on the CPI, value of improvements, and allowance for closing costs. Sales after the control period: If the resale price exceeds the sum of the above, the seller contributes to the County Housing Fund 50% of the difference, which can be adjusted so the seller retains at a minimum \$10,000.	purchaser owns and occupies the unit for at least 30 years; the seller keeps the net proceeds.	cannot sell the property until they have notified the Department that the unit is for sale, the Department has notified the owner they do not intend to buy the unit, and the Department has notified the owner of the maximum resale price. When a deed or other instrument conveying title to an MPDU is recorded in the land records, the grantor must cause to be filed in the land records a notice of sale for the benefit of the County in the form provided by state law. Resale requirements during the control period and first sale requirements after the control period are similar to Frederick’s provisions.	percentage of the unit’s price based on the CPI, fair market value of improvements, allowance for closing costs, and a reasonable sales.commission Sales after the control period: If the resale price exceeds the sum of the above, the seller contributes to the City Housing Fund 50% of the difference, which can be adjusted so the seller retains at a minimum \$10,000.	
Eligible Housing Fund Expenditures	Not included in the draft legislation.	Not Specified in the legislation. The Housing Department provides grants or loan funding for housing rehabilitation and emergency home repair and manages the Critical Workforce Mortgage Program.	Housing trust funds are used for the following: 1. Purchase land or buildings for other affordable housing to persons that meet the eligibility criteria 2. Contribute to settlement expense, down payment, and mortgage write-down assistance to eligible persons or households 3. Construct for-sale units 4. Purchase and/or rehabilitate rental housing for conversion to home ownership 5. Rehabilitate residential units 6. Match other state or federal housing programs 7. Pay for administrative costs 8. Contract with nonprofit developers for development of housing units for sale 9. Grant rental assistance to eligible persons or households.	Housing Initiative Fund payments cannot be used to reduce the annual county payment to the fund, must be deposited in the Affordable Housing Acquisition and Preservation CIP, and must be used only to buy, build, or preserve more units in the same planning area as the development for which the payment was made (unless the payment is used in a Planning Area where at least 45% of the census tracts have a median household income of at least 150% of the County-wide median household income or the Director provides the Council with a notice of intent to use the payment in a different planning area).	Used for the following: 1. Offset the costs of operating the program. 2. To purchase and resell or rent the unit. 3. Address the affordable housing needs of low-income and special populations that don’t qualify or may require supportive or service-enriched housing. 4. Provide homebuyer education, delinquency, and default counseling 5. Provide grants for the modification of units to promote accessibility. 6. Provide grants for the modification of units to promote energy efficiency and conservation. 7. Provide emergency loans to buyers to prevent mortgage defaults. 8. Address health and life safety hazards in owner-occupied housing.	Cash in lieu fees are placed in the Loudoun County Housing Trust Fund.
Management	TBD	Housing Department. The department maintains an eligibility list and certifies eligibility, including a	Department of Planning and Zoning, Division of Community and Economic Development. Staff grant and monitor	Department of Housing and Community Affairs. The Department maintains a list of eligible households.	Frederick Community Action Agency. The CAA maintains a list of eligible persons.	1. Department of Family Services. 2. Affordable Dwelling Unit Advisory

	EASTON	QUEEN ANNE’S COUNTY	ANNAPOLIS	MONTGOMERY COUNTY	FREDERICK	LOUDOUN COUNTY, VA
		completion of home ownership counseling. Points are awarded based on waiting time on the eligibility list, county residency, employment in the county, and qualification as a Critical Workforce Employee (emergency responders, law enforcement, and teachers). Department annually monitors the occupants of rental units.	certificates of eligibility.	The Executive by regulation establishes a buyer and renter selection system which considers household size, County residency, employment in the County, and length of time since the household was certified for the program. Eligible households will be notified when units are available for sale or rent and will be given an opportunity to buy or rent a unit during a 90-day priority marketing (60-day for resale price or renter vacancy) period in the order of their selection priority ranking.		Board.

Source: Department of Planning and Zoning, Town of Easton, MD



TOWN OF EASTON

Planning & Zoning Department

STAFF MEMORANDUM

TO: EASTON PLANNING AND ZONING COMMISSION

FROM: LYNN B. THOMAS, JR., AICP
TOWN PLANNER

DATE: MARCH 13, 2024

SUBJECT: PROPOSED ZONING CODE AMENDMENTS

The Commission may be aware that the packet of proposed Zoning Code amendments that you finalized at the end of 2022 have finally been approved by the Town Council and became effective on February 25, 2024. This did not include changes to the Table of Permissible Uses that you proposed for the Middle Housing Types (from SE to P for most of these uses in the various residential zoning districts). These were pulled at the request of the Commission with the suggestion that we would take a broader look at housing issues and, presumably, be back before the Council with a more comprehensive set of recommendations specific to housing diversity and affordability issues.

Outside specific text amendment requests, or single-topic issues such as the one described above concerning housing, staff-suggested Code amendments are prepared on an annual basis. Although there is no official policy, we generally start this process in the Fall of the year, which usually leads to final action by the Town Council in the first quarter of the following year. Given that there was a packet of such amendments still pending before the Council, we did not discuss the need/desire for any such amendments in 2023. However, during the course of 2023, the Board of Zoning Appeals heard a Variance request for Planet Aid who sought relief from the various dimensional requirements for Donation Bins to legitimize the "Donation Center" that was installed in the Giant parking lot. The Board was sympathetic to the request, but indicated that they would likely have a difficult time making the legal findings required to grant a Variance. In particular, there is a requirement that the Variance is necessitated by something unusual or unique to the property. The Board felt that the same circumstances that exist at this site would likely exist at most, if not all, of the existing and potential sites for this use. As a result, they suggested to

the Applicant that the appropriate “remedy” was not a Variance from the law to benefit only them, but to actually change the law via a text amendment resulting in revised regulations applicable to everyone.

The applicant worked with staff to develop a proposed text amendment. Once we were satisfied that what they had proposed was at least worthy for discussion and debate, they proceeded to file the request, but as a non-profit organization, also sought relief from the fee associated with text amendments. Staff has no ability to waive such fees so they approached the Mayor. The Mayor indicated that she was not keen to set a precedent to waive fees under these circumstances and asked me if there was any other alternative. I mentioned that if the request were included in the annual packet of amendments, it would be considered at no charge. I indicated that this is not typically the time of year that we start the process, but we do have a number of issues we would like to address so now is as good a time as any. Thus, we are presenting via this memorandum, a number of issues that staff have noted as requiring (or at least benefiting from) clarification or redress in some fashion. Here then, are the issues we would like to discuss with the Commission. Following your input we will return at a future meeting with the actual proposed amendment for each of the issues you agree to address.

1. **Donation Centers** - The proposal that initiated this round of amendments is attached, as prepared by the representative from Planet Aid. If you have been by Giant and seen the “Donation Center” at the far end of the parking lot (next to the main entrance drive between Wal*Mart and the Shopping Center), over the course of the last several months, you will know what they are seeking to legitimize.
2. **Additional differentiation criteria for single family homes** - The supplemental standards for single family detached homes requires a degree of variety between houses within two lots on either side of the proposed unit on the same side of the street. This is measured through differentiation standards which require that the units differ with regard to two of five criteria (type, # of stories, type of garage, roof type, or articulation of the front facade). With only five criteria listed, it is often challenging to meet this standard and at the staff level we have long talked about the desire to add more criteria, and possibly (if we add enough) to increase the number that must be different (e.g., 3 out of 7, or 4 out of 9...). On a related note, I think it might also be worth considering whether or not to allow exceptions to this standard. There are certainly parts of the Historic District where there may be 4 or 5 consecutive homes that are virtually identical and they present a pleasant streetscape. I think the difference comes down to the architectural quality, if we can find a way to appropriately state that.
3. **Revised internal illumination standards for signage** - The current illumination standards for signs are somewhat limited for internal illumination. They are as follows:
 - i. Individual backlit letters which are silhouetted against a softly illuminated wall;
 - ii. Individual letters with translucent faces, containing soft lighting elements inside each letter; and
 - iii. Metal-faced box signs with cut-out letters and soft-glow fluorescent tubes.

The most common form of internal illumination involves something like item iii, but rarely with metal-faced signs. Instead, they are generally a plastic-like material. They are very common and unless we want to create an even larger number of non-conforming signs, we should probably legitimize them by expressly allowing them in this list, and if we do want to prohibit them, the Code should more clearly make such a statement. There may also be a middle-ground and if so, we should specify what that is. One example of this is from the City of Alexandria, VA who prohibits internally illuminated translucent *rectangular* panel signs (but allows them in other shapes).

4. **Revised language regarding signage not being located above the eave line** - The Ordinance currently addresses this issue by stating that:

B. Wall signs shall not be mounted higher than the eave line or top of the parapet wall of the building and no portions of the sign shall extend beyond the ends of the wall to which it is attached.

This poses an issue because there are certain roof types where a wall sign would seem appropriate, but are precluded based on this language. A front-facing gable (a la at the Amish Market) is one example.

5. **Add definitions for sheds, swimming pools, and patios** - We have no definitions for these common structures and given that they have unique standards (e.g., setbacks) it is important to establish precisely what each term encompasses. In addition, the ordinance needs to specify whether, and to what extent, we may allow encroachment of patios into setbacks.
6. **Removal of "Tree of Heaven" as a suitable street tree** -

This is a highly invasive species and not appropriate for planting generally ,or specifically as a Street Tree.

7. **Reducing the site triangle distance for some zones and clarifying whether an alley and street corner is considered an intersection**

There is some thought amongst staff that rather than using a blanket standard, sight triangles should be determined by the design speed of the street, the type of traffic control at the intersection, and the location of the travel ways from the edge of buildings at the corners, at least on urban streets. In any event, the AASHTO Green Book addresses the determination of clear sight triangles and the Town Engineer's Standard Details may also provide additional requirements and guidance. Any changes to the site triangle distance or intersection design in general will require close coordination with the Town Engineer.

8. **Re-visit restaurant use types to allow more flexibility for hybrid take out/eat in restaurants -**
The current zoning code lists four types of restaurants: Fast Food, Carry Out/Deli, Night Club, and Sit Down. It does not particularly describe a sit-down restaurant with carry out service, which has become almost commonplace since the COVID Pandemic. This is occasionally an issue with regards to the question of the use and more commonly when trying to determine the appropriate parking requirement.
9. **Removing "Parking Districts" from code -** This is an outdated reference to an old code and an old practice whereby businesses located within a defined geographic area could pay a fee in lieu of providing required off-street parking. It was eliminated probably 20 years ago so the reference should be removed from the Zoning Code.
10. **Revisit minimum parking space requirements -** This is simply a suggestion to look at national standards to make sure we are not out of sync with contemporary recommendations.
11. **Change language for parking space dimensions -**
Are our dimensional requirements for parking spaces appropriate?
12. **Conflicting statements in Article 12 -** Check this section for internal conflicts regarding non-conformities. Also, consider changing from 6 months to 12 consecutive months for a nonconforming use to be considered to be abandoned unless the use was disrupted due to repair or remodeling.
13. **Removal of fuel price regulations for freestanding signs -** There is actually a State Law that also regulates fuel price signs and our local zoning regulations appear to be at conflict with them. We should either make them consistent, or perhaps eliminate our regulation and simply allow the State law (whatever it is at any given moment) to apply.
14. **More specifics on what driveway materials are dust free and resistant to erosion -** We have received several requests for gravel driveways, presumably to reduce costs. The zoning ordinance states that "all off-street parking facilities shall be constructed of dust-free materials, have a surface resistant to erosion, drained so as to prevent damage to abutting properties or public streets, and maintained properly by the owner". Historically, gravel and stone were considered to satisfy this standard. More recently, we have interpreted this standard to exclude gravel and crushed aggregate. This prohibition is due to gravel spilling out into the rights-of-way. This is bad for seniors, wheelchairs, and people with physical disabilities or limited mobility. In addition, gravel is eventually compacted and considered an impervious surface (people have made the argument that gravel driveways are good for stormwater infiltration). More consideration and clarification for this standard needs to be made. For example, do we continue to prohibit, but allow exceptions for gravel parking areas for agriculturally-zoned properties, temporary and overflow parking areas, or for areas devoted to commercial vehicle storage? In addition, discussion should be held with the Town Engineer regarding any other equivalent and acceptable paving material(s).

15. Map Corrections -

- a. Waterside Village is indicated as CG rather than PUD
- b. Parcel on Creamery and another on Wrightson behind the Seafood Market/Deli are both shown as CG but should have been changed to CB in 2021 Update.
- c. Elliott Road Apartment site is now PUD
- d. Gannon Range site is now PUD
- e. Should we consider changing the base zoning of any part of the properties in the general vicinity of the ill-fated Mansion Apartment on August Street? They are now CB. Was suggested at the meeting that they should be residential, even though until 2021 they were Industrial (I-1).

16. MXW window and door placement standards. - There is a seemingly contradictory statement that Zach Smith identified that says "The uses on the ground floor shall be visible from and/or accessible to the street through the use of windows and doors on at least 50% of the length of the first floor street frontage. At least 60% or more than 90% of the total surface area of the front elevation shall be in public entrances and windows (including retail display windows)."

28-312.4.4

17. MXW LEED standard is outdated -

Simply need to change LEED Bronze to LEED Certified.

18. Food trucks - The Zoning Code regulates Food Trucks (mobile food uses) on private property. Although food trucks on public property (e.g., on streets or in government-owned parks or parking lots) are also common, those would be regulated in other parts of the Town Code. Currently food trucks on private property are only permitted in limited circumstances:

- a. At an active construction site (the idea being they could provide a lunch option to construction workers).
- b. In association with an approved Special Event (e.g., ABC Store is Having Customer Appreciation Day and as part of the celebration, Food Trucks will be present).
- c. In the Planned Redevelopment District on a site that bears some connection to the principal use (e.g., Four Sisters sells products from their store and Rise Up sells menu items to compliment the coffee shop).

Along with short-term rentals, Food Trucks are probably the issue I get asked about the most and people are surprised/disappointed by how limiting our rules are. Arguments for allowing them more generally are that they provide more variety in food selection, they provide some lower cost options, they bring a sense of vibrancy to an area, and they can be a way for prospective restaurateurs to get established before moving on to a traditional brick-and-mortar business. The arguments against, in the last, have been primarily two-fold. First, some say they promote a "carnival atmosphere" that Easton has long sought to avoid. Second, there is concern about the impact food trucks may have on traditional restaurants. If the Commission is of a mind that there is a role for more food trucks in Easton, I believe the two primary objections can be addressed with appropriate supplemental standards.

19. **Freestanding signs where a solid base isn't practical** - Our sign regulations currently require freestanding signs to be constructed on a solid base that is at least as wide as the sign face. We make exceptions in the CB (Central Business) District out of recognition that there likely is insufficient room to accommodate an otherwise permitted freestanding sign given the small lot sizes and the degree to which these lots are usually covered. These properties may have, for example, a post-mounted sign or a projecting sign. Some property-owners in the CG Zoning District have suggested that site constraints limit their ability to comply with this standard as well.
20. **Clean up usage of the terms single-family attached and townhomes** - are these synonymous or is there a difference and if so, what is it and does that affect how each is treated on the use table?
21. **Parking standards for single-family detached** - Since at least 1976, the parking requirement for single-family detached houses has been two spaces, and the Code has indicated that a driveway with minimum dimensions of 10' by 35' shall be deemed adequate for meeting that requirement. There has been discussion at some of your more recent subdivision reviews concerning the overall appropriateness of this standard. Issues raised include:
- Garages should count as parking spaces (they never have on the basis that there is no guarantee that they won't become filled up with the homeowners "stuff" and thus not be available for parking).
 - If a driveway of 10' x 35' cannot be provided (or the homeowner does not want to provide it) are there other arrangements that are appropriate and if so, what are the dimensional requirements for them? This is increasingly an issue where we are encouraging houses to be built closer to the street (i.e., with 15' setbacks) and still allowing front-loaded garages.
 - On-street parking should count. The short answer to why it does not is that this is an off-street parking requirement. However, this is now being viewed by many (especially new urbanists and like-minded planners) as a particularly suburban standard that is detrimental to supporting or reinstating a more urban design in communities. In fact, one of my New Urbanist resources recommends subtracting the amount of on-street parking fronting single family housing, from the required off-street parking. Presumably in most cases this will satisfy the requirement. See also attached discussion from the Form Based Codes book that Tal Bone bequeathed me when he left the Commission. There are a number of good points/observations.
22. **Backing into the Street from a Parking Space** - Another standard that has been part of our regulations since, at least, 1976, is one which states: "All off-street parking spaces, other than for a single family or duplex dwelling, which requires vehicles to back into a public road, street or highway are prohibited." We are finding that this can pose a challenge for infill projects, specifically for potential Missing Middle Housing projects. A thought for consideration - perhaps the limiting factor should not be the use, but rather the type of street onto which such backing would occur. I offer as Exhibit A, the parking lot behind Town Hall, which has a lot more cars backing onto this (admittedly busy) side street than would occur at a MMH type, and yet in 34 years at the Town (most of which has been in an office overlooking this parking lot) I have not witnessed a single accident on this street.

- 23. Clarifying intrusions into easements vs setbacks** - The Code allows for exceptions for certain structures or features to extend into the Building Setback. This is generally not an issue, but it can be when the intrusion is also into/over an easement, which is not uncommon.

Attachment 1 - Proposed Donation Center Text Amendment

1. Donation Bins

- a. No person or other legal entity shall place or maintain any Donation Bin on the premises open to the public except when issued a permit by the Building Inspection Division in accordance with this section.
- b. All Donation Bins shall be appropriately located so as not to interfere with sight triangles, on-site circulation, required setbacks, landscaping, parking and any other requirements that have been imposed as part of the site plan approval for the property, and shall be placed on a concrete or paved surface.
- c. The Donation Bin shall be of a type that is enclosed by use of a receiving door and locked so that the contents of the bin may not be accessed by anyone other than those responsible for the retrieval of the contents.
- d. The Donation Bin shall not cover a ground surface area in excess of thirty-one (31) square feet, nor be more than seven (7) feet in height.
- e. Donation Bins must be maintained and kept in good repair. The Donation Bins area shall be maintained in a safe, orderly condition. Donation bins shall have no rust, peeling paint or graffiti. The areas around the Donation Bin must be kept clean and free of garbage and debris on the premises where the Donation Bin is located. Each Donation Bin shall be regularly emptied of its contents so that it does not overflow.
- f. There shall be no more than two Donation Bins per property.
- g. A permit for a Donation Bin shall be required. The permit shall be issued by the Building Inspection Division, but can only be granted in compliance with the following:
 - i. The Donation Bin is owned by a duly registered organization in good standing in the State of Maryland. The applicant shall submit a statement of declaration of whether the organization is "for profit" or "not for profit". A "not for profit" must submit proof of the organization's 501 c (3) designation and a "for profit" must submit proof of the organization's tax ID as well as name and address of the owner;
 - ii. Each duly registered non profit organization shall be permitted to have a maximum of eight (8) Donation Bins within the Town of Easton;

- iii. The type, size and location of the Donation Bin comply with this subsection;
- iv. The applicant submits a letter of authority/permission from the property owners upon which the Donation Bin is proposed to be located;
- v. The name, address and telephone number of the organization is displayed on each Donation Bin;
- vi. The general use of any donations or funds raised from the sale of the donations are displayed on each Donation Bin. If the organization is "for profit" the Donation Bin shall be labeled "For Profit" and "Not tax Deductible"; and
- vii. All information required to be displayed on the Donation Bin shall be in lettering not smaller than one and a half (1.5) inches tall and must be in contrasting color with the background.

2. Donation Centers

Donation Center – A variation of a Donation Bin that is larger, equipped with lights and monitored via security camera 24 hours per day, seven days per week.

- a. Except as hereby modified, Donation Centers shall comply with all Supplemental Standards applicable to Donation Bins.
- b. Donation Centers shall not cover a ground surface area in excess of one hundred sixty (160) square feet, nor be more than eight (8) feet in height, exclusive of equipment installed on top of the Donation Center.
- c. The Donation Center shall be equipped with lights to provide a safe environment for any citizen who wishes to donate items after dark.
- d. The Donation Center shall be equipped and maintained in working condition with 24/7 video monitoring.
- e. The Donation Center shall be attended and/or serviced by the organization operating the Donation Center at least three times per week.
- f. The Donation Center may not occupy more than four off-street parking spaces.
- g. Donation Centers shall be placed on the property of vacant businesses or the parking area of businesses with a clearly demonstrable excess of parking. Such Centers may also be located outside of parking lots on such sites. In either case, such Centers shall be located so as to not interfere with traffic and circulation of the establishment.

- h. Donation Centers established at the site of vacant businesses shall cease to operate at said site within 30 days of the Application of a Use and Occupancy permit for the property, unless the new business owner agrees to the continuation of the Donation Center and can demonstrate that the locational criteria specified in item g above will continue to be satisfied.**
- i. There shall be no more than one (1) Donation Center within a one (1) mile radius.**
- j. Any given property may have one (1) Donation Center or two (2) Donation Bins.**

Attachment 2 - Form-Based Codes Parking Commentary

Parking

by Jeffrey Tumlin
Principal, Nelson/
Nygaard Consulting
Associates

Since the 1950s, minimum parking requirements have been established in planning codes in order to force private developers to supply more parking than the market would support. This market intervention is done with the following policy objectives in mind:

- By oversupplying parking for each individual land use on site, the spillover of parking demand from one land use to another is prevented.
- Different land uses need not share parking with each other.
- Existing on-street parking and other public parking need not be managed to ensure adequate availability.
- Excess supply means the market cost of parking is reduced to zero, ensuring that parking is free for end users.
- For infill sites, oversupplying parking eliminates a potential objection existing neighbors may have against new development.

Unfortunately, requirements to oversupply parking have resulted in some unintended negative consequences. These have been documented in a variety of publications, especially Donald Shoup's *The High Cost of Free Parking* (APA Planners Press, 2005). Among these consequences:

- **Housing affordability:** Each parking space associated with a residential unit typically increases the cost of that unit by up to 20 percent and decreases the number of units that can be built on a typical lot by up to 20%.¹¹ Each vehicle that a household can eliminate can qualify it for an additional \$60,000 in mortgage.¹²
- **Walkability:** Where parking supply exceeds 3 spaces per 1,000 square feet, more area is set aside for parking than for occupiable floor space. Parking requirements are the greatest single determinant for achievable density. When density is reduced, opportunities are reduced for providing

services within walking distance, and transit's potential for success is reduced.

- **Traffic congestion:** When the costs of parking are hidden in the cost of rent or goods and services, the result is a strong incentive to drive. Even in suburban locations, automobile trip generation rates can be reduced by 15 to 40 percent by eliminating parking subsidies.
- **Air and water pollution:** When parking subsidies are eliminated, the air quality, water quality, and CO₂ impacts of driving are also reduced.
- **Suburban bias:** While parking demand varies more by location than land-use type, parking requirements are typically set regardless of context. Parking demand data collected by the Institute of Transportation Engineers and the American Planning Association are generally from isolated, single-use locations without transit service or pedestrian accommodation. Too often, these worst-case scenario numbers are erroneously applied as minimums in mixed-use, pedestrian-friendly contexts.

To correct these problems, planners and developers have implemented a variety of tools to ensure adequate parking availability while minimizing parking's negative impacts. These tools may be more or less appropriate depending upon a project's transect zone:

- **Eliminate minimum requirements:** In most areas, government does not need to force developers to build more parking than the market would support. Minimum parking requirements are illegal as a matter of national law in the United Kingdom and have been eliminated in cities and towns of all sizes in the United States.
- **Establish maximums:** Some cities establish parking maximums as part of their overall traffic management, pollution reduction, or housing affordability strategies.

- **Require shared parking:** Arlington, Virginia's Columbia Pike FBC, for example, establishes minimum requirements for shared parking and maximum allowances for reserved parking.
- **In lieu fees:** Where minimum parking requirements are provided, permitting projects to pay a fee in lieu of building required parking can be especially helpful on awkward lots and can raise money for local improvements.
- **Unbundled parking:** Municipalities should encourage developers to unbundle the cost of parking from the cost of housing, particularly in rental and multifamily housing.
- **Market pricing:** Downtown Redwood City, California, for example, has set performance requirements for parking, adjusting public parking prices to ensure adequate availability on every block at all times of day.
- **Parking benefit districts:** Downtown Pasadena, California, for example, funnels all net parking revenue into the district in which the revenue is raised, ensuring merchant support for the parking meter program.
- **Residential parking permit programs:** Particularly where T3 neighborhoods abut denser zones, many cities allow residents to create restrictive parking districts where only residents with a special permit can park on-street. Austin, Texas, allows these districts to sell their surplus parking capacity to commuters and invest net revenue in neighborhood improvements.
- **Mechanical, tandem, and valet parking:** Rather than requiring all spaces to be independently accessible, some cities encourage more efficient parking arrangements.
- **Parking taxes:** San Francisco and Seattle have a parking sales tax used to fund local transportation improvements. Vancouver, British Columbia, has a flat, regional per-space parking tax.

Parking along the Transect

(See the table on the next page.)

Calculating Parking Demand

The Institute of Transportation Engineers' *Parking Generation* manual is the most thorough summary of parking demand data available in the United States, but it should be used with caution. Most of the data in the document is from isolated, single-use locations with no transit service or pedestrian accommodation. It is appropriate for T3 and T2 locations, but it is not useful for more urban or mixed-use areas. To estimate actual parking demand, a variety of other tools may be useful:

- The Urban Land Institute's *Shared Parking* manual is helpful for estimating peak parking accumulation and shared parking potential in mixed-use areas in suburban locations. It should be calibrated in more urban areas to reflect urban mode splits.
- By mapping household auto ownership by census block group from the U.S. Census data, planners can see how residential parking demand varies by location and adjust accordingly.
- Nothing is more useful, however, than collecting actual local parking data, or data from a comparable location. In walkable commercial areas in T5 and T4, for example, peak cumulative parking demand rarely exceeds 2.0 spaces per 1,000 square feet, even where parking is free and transit limited, simply because many motorists park once and visit a few destinations.

Parking along the Transect By Jeffrey Tumlin *Principal, Nelson\Nygaard Consulting Associates*

	Commercial Supply	Residential Supply	Public Parking	Design	Management
T6	No minimum requirement. Set maximum allowance as part of traffic management strategy. Require all parking be shared. Actual demand is typically around 1 space per 1,000 sq. ft.	No minimum requirement. Set maximum if desired to encourage housing affordability. Require cost of parking to be unbundled from cost of housing. Actual demand varies by household type; typically around 1 space per unit. Parking need not be independently accessible.	Most parking considered "public."	Encourage or require underground. Require above-ground parking to be wrapped in active uses. Restrict curb cuts on retail streets or primary pedestrian streets.	Use price to ensure adequate parking availability at all times.
T5	Minimum, if any, should be aggregated for all nonresidential uses and no greater than 2 spaces per 1,000. No minimum for uses under 5,000 square feet. Shared parking should be required or encouraged. In lieu fees allowed. Consider maximum for reserved (nonshared) parking.	Minimum, if any, should be no greater than 1 space per unit. Encourage cost of parking be unbundled from cost of housing. Parking need not be independently accessible.	Same as T6.	Same as T6, but may allow exposed parking garages above ground floor facing alleys or side streets.	Same as T6.

	Commercial Supply	Residential Supply	Public Parking	Design	Management
T4	Same as T5.	Same as T5.	All on-street parking in commercial areas public. On-street parking in residential areas shared by residents and guests.	Apply T5 rules in commercial district. Greater flexibility appropriate in residential areas.	Apply T5 rules in commercial district. To achieve political support for infill projects, may be necessary to establish Residential Parking Permit Districts or Parking Benefit Districts in residential areas.
T3	Minimum parking requirements may be appropriate for ancillary commercial uses, but no greater than 4 spaces per 1,000.	Minimum parking requirements may be appropriate to achieve political support, but not necessary. On-street tandem and driveway spaces should count toward meeting minimum.	All guest parking on street.	Generally, parking at rear of lot, accessed from alley or side driveway.	Generally, no management necessary, but Residential Permit Districts or Parking Benefit Districts may be established where T3 abuts denser areas.
T2	None.	Generally not necessary.	Generally not necessary.	No requirements.	None necessary.
District	Parking demand will vary widely depending upon type of district, location, and Transportation Demand Management (TDM) programs. Require applicant to develop comprehensive TDM, and set minimum and maximum accordingly.	Similar to T3, but plan as part of overall district TDM strategy.	Varies.	Varies.	Varies.

ing. Shared or other parking strategies may also be implemented. (See the sidebar “Parking along the Transect.”)

In addition, the design should mitigate the parking’s visual impact by hiding parking from view, especially from the front street. For example, in more urban areas, placing lots and garages in the center of blocks, lining them with retail and commercial spaces along the streets, and locating their entrances along side streets creates close parking locations for visitors without detracting from the pedestrian experience. In less urban places, locating the parking garages behind the houses will have a similar effect.

The impact of parking on a community must not be underestimated. It needs to be addressed in order to ensure a vibrant, walkable, mixed-use community. (See Figure 2.25.)

Required Spaces

The mandatory number of off-street parking spaces, typically regulated by use type and size.

While including minimum parking requirements may be a political necessity in most communities, it should be seriously tempered by the impact it has on the creation of walkable neighborhoods. (See the sidebar “Parking.”)

The number of required spaces should be calibrated to the transect and not simply tied to use. For example, a restaurant or café in a vibrant, mixed-use downtown should require fewer spaces and possibly no off-street spaces due to the presence of on-street parking and public parking lots.

Hints for Implementation

- Create parking management programs and other strategies in place of lot-by-lot requirements for mixed-use and more urban

locations so that off-street parking requirements do not create obstacles for good infill development.

- Consider eliminating minimum parking requirements.
- In most cases, count on-street parking spaces in front of a building toward parking requirements.
- Require little to no parking for small uses (3,000–6,000 sf), especially in neighborhood centers to encourage small, locally owned and neighborhood-supporting businesses to move in and bring vitality to the area.
- Do not require covered spaces on residential units, as this will reduce development cost and encourage affordable housing.
- Do not require off-street parking spaces for ancillary units or granny flats as long as they are below a certain size, such as 500 square feet, in order to encourage their development. These buildings are important contributors to good communities.
- Do not require “visitor parking” in locations with on-street parking.
- Integrate maximum parking requirements to ensure that large, unattractive parking lots are not developed in new projects.
- Find ways to integrate transit alternatives in your community so that fewer people will rely on cars and need parking spaces.

Location

The area on the lot in which parking is allowed.

This helps ensure that parking is built in appropriate locations for the desired urban form. Placing the parking out of site from the street reduces its negative visual impact. The best way to achieve this is to require underground parking, or more commonly, to use setbacks.

The sizes of parking spaces and travel lanes in lots are also regulated. (See Figure 2.26.) This

table is typically located at the end of all of the various zone regulations in the Building Form Standards.

Typical Regulations

- Front Setback
- Side Street Setback
- Side Setback
- Rear Setback

Hints for Implementation

- Never allow parking in front of buildings.
- Require a minimum depth of habitable space in front of parking, typically 40 feet for commercial and retail uses and 15 feet for residential uses in more urban areas to ensure the space is deep enough to function well.
- Require any parking areas not behind or within buildings to have a 3-foot 6-inch tall hedge, wall, or fence at the front and side street ROWs.
- Regulate a maximum width of 60 feet of parking along a side street to prevent long, dead street edges.
- Allow parking that is completely underground to be built out to the lot lines.
- Encourage shared parking areas and drives.
- Consider requiring bicycle-parking locations and regulating locations in more urban areas, except for residences designed for four families or less.
- Require parking drives to be located on side streets for corner lots, and regulate their maximum width to minimize gaps in the urban fabric.

Allowed Land Uses

While not organized around land uses, FBCs still regulate them, but in a different manner and to a different degree than conventional zoning codes. The initial concept is basically the same as in conventional zoning codes, which is that land use can be regulated in three ways:

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4.2.1

4.2.1: Additional Parking Standards for all FBC Zones

Parking		Table 4.6: Standard Vehicle Space Requirements					
Required Space Sizes		Perp.	30°	45°	60°	Perp.	
Off-Street Space	9'x18' min.	9'	9'	9'	9'	9'	
Compact Space	8'x16' min.	9'	15'	20' 6"	22'	18'	
Vehicle Space Requirements		Space Width	9'	15'	20' 6"	22'	18'
See Tables 4.6 and 4.7		Space Depth	20'	20'	20'	20'	18'
Allowed Compact Spaces		Space Length	20'	20'	20'	20'	18'
T3: Town Core	75% max.	1-way Aisle Width	12'	12'	14'	18'	24'
T4: Neighborhood Center	60% max.	2-way Aisle Width	24'	N/A	N/A	N/A	24'
T5: Neighborhood General	50% max.	*Measured perpendicular to aisle					
Miscellaneous		Table 4.7: Compact Vehicle Space Requirements					
		Perp.	30°	45°	60°	Perp.	
On lots with alleys, all drives shall be located on the alley.		Space Width	8'	8'	8'	8'	8'
On corner lots, all drives shall be located on the alley or side street.		Space Depth	8'	15' 6"	17'	18'	16'
Shared drives are encouraged between adjacent lots to minimize curb-outs along the street.		Space Length	18'	16'	16'	16'	16'
Malibu Drives with central planting strips are encouraged.		1-way Aisle Width	12'	12'	14'	18'	24'
Off-street parking spaces do not have to be covered.		2-way Aisle Width	24'	N/A	N/A	N/A	24'
All surface parking areas that are not behind buildings must be screened by a 3'6" tall min. hedge, fence, or wall in character with the building at the Property Line.		*Measured perpendicular to aisle					
All garages must be screened from the street by a minimum depth of 40' of habitable space.							
Tandem parking is allowed for off-street parking as long as both spaces are behind the required setback.							
For parking calculations, all fractions shall be rounded up to the next whole number.							

1. Through the number and types of land uses listed in all of the zones and districts provided by the code, given that if a specific use is not listed in the code and cannot reasonably be interpreted by staff to be equivalent to a listed use, it is not allowed;
2. By limiting certain land-use types to certain zones (for example by allowing heavy industrial uses only within industrial districts); and,
3. By identifying the land uses allowed within each zone or district as "permitted" or "conditional," or in the case of the SmartCode, as "open," "limited," or "restricted," and "by right" or "by warrant."

Fig. 2.26 Parking size regulations

Communities choose to control the location and type of land uses in their codes for several reasons. They may have limited confidence that the local economy and real estate market will independently operate to timely locate specific, desired land uses where they will be most responsive to the needs of residents and businesses. They may be concerned about the potential for land uses with inherently incompat-

 Peaceful →

 Sacred →

 Variety →

 Harmony →

 Emotive →

 Balance →

 Adaptability →

 Tension & Release →

 Proportion →

 Uniqueness →

 Scene of Place →

 Melody →

  Treasured →

 Appearance of Materials →

 Connection →

 Scale →

 Conversation →

 Systemic (Logical) →

 Manipulation of Light →

 Rhythm →

 Honesty →

 Texture →

 Color →

 Massing →

 Curiosity →

 Contextual Continuity →

 Tempo →

	← Peaceful		← Connection
	← Sacred		← Scale
	← Variety		← Conversation
	← Harmony		← Systemic (Logical)
	← Emotive		← Manipulation of Light
	← Balance		← Rhythm
	← Adaptability		← Honesty
	← Tension & Release		← Texture
	← Proportion		← Color
	← Uniqueness		← Massing
	← Sense of Place		← Curiosity
	← Melody		← Contextual Continuity
 	← Treasured		← Tempo
	← Appearance of Materials		

 ← Curiosity →

  ← Multi Modal →

 ← Identity →

 ← Inclusive (Economics, Culture) →

 ← Format →

 ← Scale →

 ← Community Benefit →

   ← Siting →

 ← Adaptability →

 ← Connection →

 ← Financial Accessibility →

  Open Space →

 ← Being a Good Neighbor →

 ← Safety →

 ← Reflective of Community →

  ← Shelter Embracing →

■ ← Curiosity



 ← Multi Modal

← Identity

← Inclusive (Economics, Culture)

☐ ← Format

← Scale

← Community Benefit

   ← Siting

■ ← Adaptability

← Connection

← Financial Accessibility

  ← Open Space

← Being a Good Neighbor

← Safety

← Reflective of Community

  ← Shelter Embracing

-  ← Logical →
-  ← Green Design →
-  ← Respect for Street Space →
-  ← Climate Conscious →
-  ← Sacredness →
-  ← Financial Infrastructure →
-    ← Siting →
-  ← Local Historical Context →
-   ← Longevity →
-  ← Materials →
-  ← Organic →
-   ← Adaptability →
-  ← Safety →
-   ← Open Space →
-  ← Cultural Durability →

-  ← Logical
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-  ← Sacredness
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-   ← Longevity
-  ← Materials
-  ← Organic
-   ← Adaptability
-  ← Safety
-   ← Open Space
-  ← Cultural Durability

COMMUNITY
SPACE/PLACE
PLACE BASED

CONTEXT

BEING A GOOD NEIGHBOR
WOULD YOU LIKE TO LIVE NEXT TO

SUSTAINABILITY

STEWARDSHIP

ENGAGEMENT

SENSORY

INTERFACE/ENGAGEMENT

CONTEXT

SUSTAINABILITY

INVESTMENT