Town of Brewster Planning Board

2198 Main St., Brewster, MA 02631
brewplan@brewster-ma.gov
(508) 896-3701 x1133

MEETING AGENDA
2198 Main Street
January 10, 2024 at 6:30 PM

This meeting will be conducted in person at the time and location identified above. This means that at least a quorum of the members of the public body will attend the meeting in person and members of the public are welcome to attend in person as well. **As a courtesy only, access to the meeting is also being provided via remote means in accordance with applicable law. Please note that while an option for remote attendance and/or participation is being provided as a courtesy to the public, the meeting/hearing will not be suspended or terminated if technological problems interrupt the virtual broadcast or affect remote attendance or participation, unless otherwise required by law.** Members of the public with particular interest in any specific item on this agenda, which includes an applicant and its representatives, should make plans for in-person vs. virtual attendance accordingly.

Members of the public who wish to access the meeting may do so in the following manner:

Phone: Call (312) 626 6799 or (301) 715-8592. Webinar ID: 841 0778 1002. Passcode: 612505.
To request to speak: Press *9 and wait to be recognized.
Zoom Webinar: https://us02web.zoom.us/j/84107781002?pwd=VTVSV1ExaUNCL253NmNZV21Gdmo4dz09
Passcode: 612505. To request to speak: Tap Zoom "Raise Hand", then wait to be recognized.

When required by law or allowed by the Chair, persons wishing to provide public comment or otherwise participate in the meeting, may do so by accessing the meeting remotely, as noted above. Additionally, the meeting will be broadcast live, in real time, via ***Live broadcast*** (Brewster Government TV Channel 18), ***Livestream*** (livestream.brewster-ma.gov), or ***Video recording*** (tv.brewster-ma.gov).

The Planning Board packet can be found on the Calendar on the Town of Brewster website (www.brewster-ma.gov). Please note that the Planning Board may take official action, including votes, on any item on this agenda.

1. Call to Order.
2. Declaration of a Quorum.
3. Meeting Participation Statement.
4. Recording Statement. As required by the Open Meeting Law we are informing you that the Town will be video and audio taping as well as broadcasting this public meeting. In addition, if anyone else intends to either video or audio tape this meeting they are required to inform the Chair.
5. Public Announcements and Comment. Members of the public may address the Planning Board on matters not on the meeting's agenda for a maximum of 3-5 minutes at the Chair's discretion. The Planning Board will not reply to statements made or answer questions raised during public comment but may add items presented to a future agenda.
6. **Site Plan Review Case No. 2024-01:** Applicant/Owner MOG Real Estate Holdings, LLC has applied for Site Plan Review under Brewster Zoning Bylaw Article XII to demolish all buildings and structures and construct a new automotive service garage with supporting site improvements at 94 Thad Ellis Road (Tax Map 89 Parcel 5), located within the Commercial High Density (CH) Zoning District. The Planning Board will consider and potentially vote whether to grant Site Plan Approval.
7. Approval of Meeting Minutes: December 13, 2023.
8. Committee Reports.
9. For Your Information.
10. Matters Not Reasonably Anticipated by the Chair.

Planning Board

Amanda Bebrin, Chair

Alexander Wentworth
Vice Chair

Robert Michaels
Clerk

Charlotte Degen

Madalyn Hillis-Dineen

Antone Freitas

Elizabeth Taylor

Town Planner
Jonathon Idman

Senior Department Assistant
Lynn St. Cyr

11. Next Meetings: January 24, 2024 and February 14, 2024.
12. Adjournment.

Date Posted:	**Date Revised:**	**Received by Town Clerk:**
01/02/24		

BREWSTER TOWN CLERK

'24 JAN 2 3:10PM

SITE PLAN REVIEW CASE NO. 2024-01

APPLICANT/OWNER: MOG REAL ESTATE HOLDINGS, LLC

PROPERTY: 94 THAD ELLIS ROAD (TAX MAP 89 PARCEL 5)

Town of Brewster

2198 Main Street
Brewster, MA 02631-1898
Phone: (508) 896-3701

Office of:
Planning Board
Planning Dept.

MEMORANDUM

TO: Planning Board
FROM: Town Planner
RE: Site Plan Review # 24-1, Brewster Zoning Bylaw Article XII
Owner/ Applicant MOG Real Estate Holdings, LLC dba Wentworth Motorsports
94 Thad Ellis Road (Map 89, Parcel 5)
DATE: January 4, 2024

The proposal involves redevelopment: demolition of all existing site structures and buildings (including a single-family dwelling and an old auto repair building) and construction of a new, multi-bay automotive repair building with supporting site improvements like stormwater facilities and parking. Customer waiting and office areas are also proposed in the building. Automotive service and repair is permitted by right in the subject Commercial High Density (CH) district. The single-family dwelling to be removed is a preexisting nonconforming use in the CH district.

The property is not located in any zoning overlay districts or the historic district. The project is located within 100' of regulated wetlands. The property is not located within a Zone II or a special flood hazard zone.

The project will undergo ZBA review for the proposed building's preexisting nonconforming north side yard setback.

The Conservation Commission will review the project and also serve as the stormwater permitting authority for the project.

The project underwent Formal Staff Review consistent with and pursuant to Chapter 83 of the Town Code (a copy of said report has been provided in the Board's packet).

Site Plan Review is triggered because of the proposed increase in floor area and site coverage. Because the use is allowed by right in the district, the Planning Board cannot deny site plan approval. The Planning Board can impose reasonable conditions on the project, however, even though the use is allowed by right.

As set out in more detail below, my opinion is that the project is consistent with the applicable Site Plan review standards. In some cases, as noted in italics, conditions are recommended.

<u>Site Plan Review Standards- Zoning Bylaw Section 179-66</u>

Transportation/ Access

- There is no proposed change in use, no anticipated significant change in the intensity of use, and thus no anticipated increase in trip generation or degradation of Level of Service.
- Two curbcuts exist and two are proposed, in essentially their existing locations.

- There is no history of traffic safety problems at the property.
- ***The reconfigured curbcuts will be subject to review or permitting by the DPW because Thad Ellis Road is a town way. DPW will determine the construction of the apron connecting to the town way. Among other things, the apron shall be consistent with driveway width standards set out in the Zoning Bylaw (which does not include the radius width).***
- A 10' wide, limited access paved drive is proposed between the building and north property line, for emergency vehicle use as necessary.
- The two curbcut arrangement allows the most efficient, practical and safest site circulation under the circumstances.

Parking

- Parking has been relocated entirely to the rear of the building/ lot, which is preferred under the Zoning Bylaw.
- Nine outside spaces (including one handicapped space) are proposed. Under the parking policy, 12 spaces are recommended. I'd suggest that the proposed number of spaces are appropriate under the Site Plan Review Standards and Article VII (Off Street Parking) of the Zoning Bylaw, especially where parking is also available inside the building for staff and overnight storage as necessary.
- Parking areas comply with the minimum required 5 ft setback.
- No loading spaces are proposed or are necessary because deliveries are made directly through the overhead bay doors (located on both the front and rear of the building).
- A bicycle rack is proposed in the southwest corner of the property.
- The dumpster is also located in the southwest corner of the property and proposed to be screened with stockade fence.

Landscaping and Design

- At least 25% of the front yard is proposed to be landscaped with vegetation. This area is integrated with the site stormwater management system as a rain garden. The rain garden includes a combination of shrubs, trees and plants that are both native and appropriate for the intended use. See detail sheets and landscaping plan in the site plan set.
- There are no existing old, well-established or specimen trees on-site.
- The building's street façade is an attractive, modern design that is appropriate to the surrounding area.
- There are plantings or vegetated buffer areas proposed along the rear and side lines of the property. There is no immediately surrounding development along the north and west sides of the property. Currently, there is no vegetated buffering along the perimeter of the property.
- The use of paving is minimized by using gravel drive areas along the south-side and front of the building.
- One existing freestanding sign exists. ***New or altered signage shall be subject to/ permitted pursuant to Article VI of the Zoning Bylaw.***
- The property is not located in the historic district.
- The proposed development and use is consistent with surrounding properties and the zoning district.

Environmental Protection/ Stormwater Management/ Erosion Control

- The Conservation Commission will be the (major) stormwater permit authority for the project.
- The project is proposed to decrease run-off rates over existing conditions and create water quality treatment where none currently exists on-site, as set out in the Stormwater Management Report. The site stormwater management system includes various subsurface leaching facilities

(including connected to the building downspouts), catch basins and a rain garden. An oil water separator is included in the system due to the site auto repair use.

- Erosion controls are proposed during construction, including a stone driveway apron and limit of work siltation barriers. The erosion control plan appears via notes and details in the site plan set as well as in the Stormwater Management Report.
- ***The Applicant shall protect the catch basin (near the southerly site curbcut) within the town's road right of way during construction with silt socks or the equivalent.***
- An appropriate Long-term Stormwater Operations & Maintenance Plan is proposed and has been submitted with the application. A copy will be recorded along with the major stormwater permit to be issued by the Conservation Commission.
- ***The stormwater leaching facilities shall be separated from groundwater by at least two feet, consistent with Massachusetts Stormwater Handbook Standards.***

Plants and Animals

- There is no mapped rare or endangered species habitat on-site.
- There are no existing specimen trees on-site.
- The Conservation Commission will review the project and issue an order of conditions relative to proposed development within wetlands buffer areas on-site.

Lighting

- The plans indicate wall mounted lights are proposed on the front and rear of the building.
- ***Prior to issuance of a building permit for the project, the applicant shall provide planning staff specifications for the proposed lighting to confirm compliance with the exterior lighting standards of the Zoning Bylaw.***

Noise

- The project is not anticipated to create noise levels that exceed the limits set out in the Site Plan Review Standards of the Zoning Bylaw.

Brewster Planning Board
2198 Main Street
Brewster, MA 02631-1898
(508) 896-3701 x1133
brewplan@brewster-ma.gov

DEPARTMENT REVIEW SUMMARY
Site Plan Review Case No. 2024-01

APPLICANT/OWNER: MOG Real Estate Holdings, LLC
PROPERTY ADDRESS: 94 Thad Ellis Road
MAP/PARCEL: Map 89, Parcel 5
Received from:

Town Manager's Office **Comments received from Donna Kalinick, Assistant Town Manager**
See attached Staff Review Report dated September 26, 2023.

Assessing Department **Comments received from James Gallagher, Deputy Assessor**
See attached Staff Review Report dated September 26, 2023.

Building Department **Comments received from Victor Staley, Alternate Building Commissioner**
See attached comments from Victor Staley dated December 4, 2023.

Conservation Commission **Comments received from William Grafton, Conservation Administrator**
See attached comments from William Grafton dated December 22, 2023.

Department of Public Works **Comments received from Griffin Ryder, Director**
See attached Staff Review Report dated September 26, 2023.

Fire Department **Comments received from Chief Robert Moran**
See attached Staff Review Report dated September 26, 2023.

Health Department **Comments received from Sherrie McCullough, Assistant Health Director**
See attached Staff Review Report dated September 26, 2023.

Historic District Committee **Comments received from Erika Glidden, Senior Department Assistant**
This property is not in HDC jurisdiction.

Natural Resources Department **Comments received from Chris Miller, Director of Natural Resources**
The Natural Resources Department has no comments on this application.

Police Department **Comments received from Lt. Charles Mawn**
The Police Department has no comments on this application.

Water Department **Comments received from Paul Anderson, Superintendent**

1. It is likely the Applicant will need to request a cut and cap outside the construction area while they raise the structure.
2. The existing service was upgraded in 2001 so it should be in good shape.
3. There is a private line between the main building and the garage. The Applicant should request a mark-out directly from the Water Department prior to excavating. The Water Department is not part of Dig Safe so the Applicant should also contact Dig Safe.

Town of Brewster

2198 Main Street
Brewster, MA 02631-1898
Phone: (508) 896-3701
Fax: (508) 896-8089

Office of:
Planning Board
Planning Dept.

REPORT

TO: Owner/ Applicant MOG Real Estate Holdings, LLC dba Wentworth Motorsports
c/o Ben Zehnder, Esq.

FROM: Jon Idman, Town Planner

RE: Formal Staff Review # 23-7, Brewster Code Chapter 83, Section 4(D)
94 Thad Ellis Road (Map 89, Parcel 5)
CH Zoning District

DATE: September 26, 2023

Demolition of all existing site structures and buildings (including a single-family dwelling) and construction of a new building with supporting site improvements. The existing and proposed site use is automotive service and repair, which is permitted by right in the CH district.

The property is not located in any zoning overlay districts. The project is located within 100' of regulated wetlands.

Site Plan Set by Down Cape Engineering dated 7/18/23, consisting of 5 sheets; architectural elevations and floor plans by Ben Mayo dated 8/10/23, sheets A100, A101, A102, A103.

The Staff Review meeting was held 9/21/23 at Town Hall, Room B with the Applicant team.

Town Staff in attendance were:

- Paul Anderson- Water Superintendent
- Bill Grafton – Conservation Administrator
- Jon Idman – Town Planner
- Donna Kalinick- Asst. Town Manager
- Sherrie McCullough- Assistant Health Director
- Chief Robert Moran- Fire Department
- Griffin Ryder, PE- DPW Director
- Davis Walters- Building Commissioner

DEPT COMMENTS

- The Police Department was not able to attend the staff review meeting but have no comments on the application at this time.
- Assessing office did not attend but provided comments, attached.

Fire

- The need for fire suppression system is dependent on proposed use & occupancy and floor area (including any mezzanine space).
- It appears that a hydrant is located across the from the property on the east side of the street.

- Revise site plan to specify use limitations of the two drives proposed; no full access drive now proposed to the north, which might alleviate FD concerns about access to the north of the building (which would interfere with proposed building setback).
- ensure access and turning movements for fire apparatus.
- FD might like to use building demolition (residence) as training.
- Also see additional comments attached.

DPW

- Confirm driveway width (limited by zoning).
- Evaluate catch basin near proposed driveway cut & decide whether it should be relocated. Could work with the town on this as necessary.
- A curbcut permit might be needed for new/ altered driveway (Thad Ellis Rd is a Town Way).
- It appears site is graded so that run-off will be captured on site and not enter into the street.

Bldg

- The proposal to build around the existing building might create some interesting building and fire code issues down the line.
- Solar panels are proposed but no ESS/ battery storage proposed.
- Bldg Comm will provide email zoning referral to PB and ZBA upon request by applicant.

Planning

- There should be separate Planning and Zoning Board review processes.
- Planning Bd site plan review will precede and inform ZBA review (the latter related to nonconforming conditions such as the north side setback and driveway width as applicable)- though filings may be made at same time.
- PB meets twice a month and site plan review does not require a public hearing/ hearing notice publication.
- Discuss existing traffic flows similar to proposed flows in the site plan review application; discuss driveway offsets/ separation in the application.
- Also see additional comments attached.

Conservation

- Wetland lines need to be established through an approved delineation, including for flood plain (there are also wetlands across the street from property that affect the proposed development via buffer zone). These wetland lines may be different than currently shown on the site plan set. The delineation should be done prior to any other review and permitting as other boards and committees will rely on the approved wetlands lines.
- Stormwater review needs to be coordinated between planning and conservation- including the local stormwater permit under Brewster Code Ch. 272. If the delineation and project are reviewed and approved through an RDA, the stormwater permit would be joined with the planning board site plan review.
- Wetland lines could be established and the project in chief could potentially be reviewed by RDA (perhaps not requiring an NOI). If only an RDA is required, the stormwater report would have to be provided to the conscom during the RDA review. You should consult further with the conservation dept.

Health

- It doesn't appear that any variances from BOH or State Regulations required; thus Health review will be with the Dept. (not BOH) over septic system and tight tank/ oil and grit separator.
- Title 5 Flows include existing flows from the residence proposed to be demolished.
- The proposed use is relatively low flow.
- Site is in an ESA because of wetland buffer areas.
- Also see additional comments attached.

Water

- Consider whether to 'cut and cap' existing service given unique constriction phasing proposed.
- Brewster Water is not part of Dig Safe so needs to be called separately.
- Existing service is relatively new.

Town Manager

- Is supportive of good local business.

ENC

Lynn St. Cyr

From: James Gallagher
Sent: Tuesday, September 19, 2023 2:01 PM
To: Lynn St. Cyr
Subject: Declined: Staff Review Application #23-07 for 94 Thad Ellis Road (Wentworth Motorsports)
Attachments: 3275.pdf

Hello Lynn,
I am unavailable to attend the staff meeting on Thursday.
I did want to forward along a copy of the updated property record card for this property. I visited the property in January 2023 as a result of the property transfer in September 2022. The property was previously mis-classified and the repair shop did not appear on the record card. The existing repair shop now appears on page two of the record card (attached) and the property has been classified as multiple use *for Assessing Purposes* for FY2024.

The updated property record cards have been finalized and will be appearing on our website in advance of the FY2024 Tax Bills prior to October 1, but they are not posted yet.

Let me know if you have any questions.
Jim

James Gallagher
Deputy Assessor
Town of Brewster
508 896 3701 ext. 1123
jgallagher@brewster-ma.gov

Brewster Town Offices are open to the public Monday through Thursday from 8:30 to 4:00pm, and by appointment on Fridays. For the latest updates on Town services, please visit www.brewster-ma.gov

Key: 3275 **Town of BREWSTER - Fiscal Year 2024** 9/19/2023 11:20 am SEQ #: 1

LEGAL

CURRENT OWNER	PARCEL ID	LOCATION
MOG REAL ESTATE HOLDING LLC 972 STONY BROOK ROAD BREWSTER, MA 02631	89-5-0	94 THAD ELLIS ROAD

TRANSFER HISTORY	DOS	T	SALE PRICE	BK-PG (Cert)
MOG REAL ESTATE HOLDING L	09/13/2022	B	1	35360-213
WENTWORTH ALEXANDER TRUST	04/11/2022	ML		31420-131
WENTWORTH DONALD B TRUSTE	07/23/2018	F	1	31420-131

CLASS	CLASS%	DESCRIPTION	BN ID	BN	CARD
0130	70	MULTI-USE RES		1	1 of 2

PMT NO	PMT DT	TY	DESC	AMOUNT	INSP	BY	1st	%
		14	CYCLICAL GRO		01/18/2023	JMG	100	100
440	10/20/1992	5	OTHER	1,500			100	100

LAND

CD	T	AC/SF/UN	Nbhd	St Ind	Infl	ADJ BASE	SAF	Topo	Loi	VC	CREDIT AMT	ADJ VALUE
103	S	16,800	CIM 1.00	33 1.00	RC 0.85	223,975	1.96	A 1.00	C01 0.85			169,480

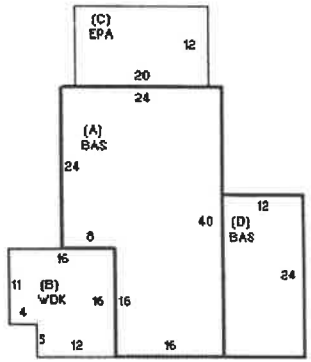
TOTAL	16,800 SF	ZONING	CH	FRNT	0
Nbhd	CIM	NOTE			
St Ind	CH UNDERPASS				
Infl	MIXED				

ASSESSED	CURRENT	PREVIOUS
LAND	169,500	164,000
BUILDING	169,800	151,900
DETACHED	1,900	1,400
OTHER	66,500	0
TOTAL	407,700	317,300

DETACHED

TY	QUAL	COND	DIM/NOTE	YB	UNITS	ADJ PRICE	RCNLD
SHF	L 0.80	70 0.30	24X12		288	15.67	1,400
SHF	L 0.80	50 0.50	10 X 5		50	18.12	500

PHOTO 12/22/2020



BLDG COMMENTS

BUILDING

BUILDING	CD	ADJ	DESC
MODEL	1		RESIDENTIAL
STYLE	6	1.05	COTT/BUNGLW [100%]
QUALITY	-	0.90	MINUS AVE [100%]
FRAME	1	1.00	WD FRAME [100%]

MEASURE	1/18/2023	JMG
LIST	1/18/2023	JMG
REVIEW	1/18/2023	JMG

YEAR BLT	1958	SIZE ADJ	1.000
NET AREA	1,120	DETAIL ADJ	1.000
$NLA(RCN)	$241	OVERALL	1.000

CAPACITY	UNITS	ADJ
STORIES	1	1.00
ROOMS	5	1.00
BEDROOMS	3	1.00
BATHROOMS	1	1.00
FIXTURES	3	$3,510
GARAGE SPACES	0	1.00
% BSMT FIN	0	1.00
# 1/2 BATHS	0	1.00
# OF UNITS	1	1.00

ELEMENT	CD	DESCRIPTION	ADJ
FOUNDATION	2	SLAB	0.95
EXT COVER	1	WD SHINGLE	1.00
ROOF SHAPE	4	FLAT/SHED	1.00
ROOF COVER	1	ASPH/CMP SH	1.00
FLOOR COVER	5	VINYL	1.00
INT FINISH	2	DRYWALL	1.00
HEATING/COOL	3	RADIANT	1.00
FUEL SOURCE	1	OIL	1.00

S	BAT	T	DESCRIPTION	UNITS	YB	ADJ PRICE	RCN
A	BAS	L	BASE AREA	832	1958	215.53	179,319
B	WDK	N	WOOD DECK	236		33.30	7,859
C	EPA	N	ENCLOSED PORCH	240		61.48	14,755
D	BAS	L	BASE AREA	288	1975	215.53	62,072
	ODS	O	OUTDOOR SHOWER	1		2,050.20	2,050

TOTAL RCN	269,564

CONDITION ELEM	CD
EXTERIOR	F
INTERIOR	A
KITCHEN	A
BATHS	A
HEAT/ELEC	A

EFF.YR/AGE	1958 / 64
COND	37 37 %
FUNC	0
ECON	0
DEPR	37 % GD 63
RCNLD	$169,800

Key: 3275

Town of BREWSTER - Fiscal Year 2024

9/19/2023 11:20 am SEQ #: 2

LEGAL

CURRENT OWNER	PARCEL ID	LOCATION
MOG REAL ESTATE HOLDING LLC 972 STONY BROOK ROAD BREWSTER, MA 02631	89-5-0	94 THAD ELLIS ROAD

TRANSFER HISTORY	DOS	T	SALE PRICE	BK-PG (Cert)

CLASS	CLASS%	DESCRIPTION	BN ID	BN	CARD
0130	70	MULTI-USE RES		2	2 of 2

PMT NO	PMT DT	TY	DESC	AMOUNT	INSP	BY	1st	%

LAND

CD	T	AC/SF/UN	Nbhd	St Ind	Infl	ADJ BASE	SAF	Topo	Loi	VC	CREDIT AMT	ADJ VALUE

TOTAL | ZONING | FRNT

Nbhd
St Ind
Infl

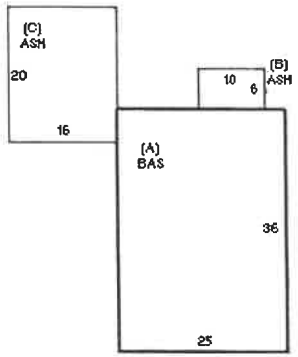
NOTE

ASSESSED	CURRENT	PREVIOUS
LAND		
BUILDING	66,500	
DETACHED		
OTHER		
TOTAL		

DETACHED

TY	QUAL	COND	DIM/NOTE	YB	UNITS	ADJ PRICE	RCNLD

PHOTO



BLDG COMMENTS
Wentworth Motorsports
Year Built Estimated

BUILDING	CD	ADJ	DESC
MODEL	5		CIM
STYLE	52	1.09	SERVICE GARAGE [100%]
QUALITY	L	0.80	LOW COST [100%]
FRAME	1	1.00	WOOD FRAME [100%]

MEASURE	1/18/2023	JMG
LIST	1/18/2023	JMG
REVIEW	1/18/2023	JMG

BUILDING

YEAR BLT	1971	SIZE ADJ	1.680
NET AREA	900	DETAIL ADJ	1.035
$NLA(RCN)	$127	OVERALL	1.000

CAPACITY	UNITS	ADJ
STORIES	1	1.00
% HEATED	100	1.00
% AIR COND	0	1.00
% SPRINKLERS	0	1.00

ELEMENT	CD	DESCRIPTION	ADJ
FOUNDATION	2	SLAB	1.00
EXT. COVER	1	WOOD SHINGLE	1.00
ROOF SHAPE	1	GABLE	1.00
ROOF COVER	1	ASPH/CMP SHNGL	1.00
FLOOR COVER	9	CONCRETE	0.95
INT. FINISH	2	DRYWALL	1.00
HEATING/COOL	1	FORCED AIR	1.00
FUEL SOURCE	2	GAS	1.00

S	BAT	T	DESCRIPTION	UNITS	YB	ADJ PRICE	RCN
A	BAS	L	BASE AREA	900	1971	111.00	99,904
+	ASH	N	ATT SHED	380		38.67	14,695

TOTAL RCN 114,599

CONDITION ELEM	CD
EXTERIOR	F
INTERIOR	F

EFF.YR/AGE 1971 / 51

COND	42	42 %	
FUNC	0		
ECON	0		
DEPR	42	% GD	58
RCNLD			$66,500

Fire Department Staff Review
94 Thad Ellis Road
Wentworth Motors

1. Construction shall meet all current regulations contained within 527 CMR 1.00 Massachusetts Comprehensive Fire Safety Code including all referenced NFPA Standards and Massachusetts Building Code requirements.
2. In the event a fire suppression system is required the fire department shall determine the type and location of the fire department connection prior to install.
3. A fire hydrant shall be located within 300' of the structure.
4. The width of the northern driveway is not sufficient for the travel of fire department apparatus. It does not meet MA Fire Code "Chapter 18 Fire Department Access".
5. All driveways and parking areas shall be considered fire lanes. Type of signage and location of same shall be determined by the fire department prior to occupancy.
6. The landscape area along the south side of the building shall contain a stone base with a width no less than 18" from building.
7. A Knox Box key vault shall be placed on the building at a location to be determined by the fire department prior to occupancy.
8. Storage of hazardous, flammable, or combustible materials shall meet requirements set forth in the MA Fire Code.
9. An emergency responder radio communication system shall be installed per section 916.1 of the Massachusetts State Building Code.

RECEIVED

SEP 13 2023

BREWSTER PLANNING BOARD
ZONING BOARD OF APPEALS

Lynn St. Cyr

From: Jonathon Idman
Sent: Wednesday, April 12, 2023 4:44 PM
To: Benjamin Zehnder <bzehnder@zehnderllc.com>; Building <building@brewster-ma.gov>
Cc: Danny Gonsalves <dgonsalves@downcape.com>; wentworthmotorsports@comcast.net; brewplan <brewplan@brewster-ma.gov>; Lynn St. Cyr <lstcyr@brewster-ma.gov>
Subject: RE: 94 Thad Ellis Road

Thanks for the plans Ben.

Here are some site plan review comments from the initial plans:

1) Please provide the parking space calculations per the Pl Bd's Off Street Parking and Loading Policy dated 9/11/23 (Lynn can send you a copy of this policy of you don't one). 9 spaces seems sufficient but please "show your work" per the parking policy's use table.
2) Please list the rear drive aisle width. If less than 24' wide per ZBL Sec. 179-23(4) there is a waiver available through site plan review.
3) Is there a dumpster proposed? Loading areas?
4) It appears that the circulation pattern is around the building. Have you consulted FD to ask whether 10 feet on the north side is sufficient.
5) I'd be prepared to justify to the Pl Bd why, as proposed, no vegetated buffer is necessary to the northern property.
6) Is there a pylon sign proposed? If so, I'd add the proposed location.
7) I don't believe any Water Quality Review/ Certificate is required because the site is not in the DCPC overlay district.
8) They are all uses allowed by right in the CH district, but for completeness, please include in the application, as applicable and desired: outdoor storage of business materials/ equipment; outdoor commercial vehicle storage; or sales of autos/ auto accessories or tires.
9) Eventually please provide lighting 'cut'/ spec sheets and proposed mounting heights. Lighting should be downcast and shielded.
10) Please provide existing vs proposed impervious to determine if a stormwater permit (Brewster Code Ch. 272) is required.
11) Even if a stormwater permit is not required, the site plan review standards require stormwater info including some analysis of pre- vs post- development peak discharge rates.
12) Is any oil separator proposed for the subsurface stormwater leaching systems?
13) Please add construction period erosion control notes/ BMPs to plan.
14) ZBL sec. 179-66B(4) & (9): I'd be prepared to justify to the Pl Bd why maintaining two curbcuts as they are proposed results in better site design and circulation without detrimental effect on off-site traffic.
15) Is the proposed north sideline setback 10' to the foundation? Note, that the ZBL allows a 2 ft encroachment anyway for roof eaves and the like.

Thanks, Jon

Jonathon D. Idman
Brewster Town Planner
(508) 896-3701 x. 1150

Addendum

94 Thad Ellis Road

Applicant's responses to Town Planner Jon Idman's comments

1) *Please provide the parking space calculations per the Pl Bd's Off Street Parking and Loading Policy dated 9/11/23 (Lynn can send you a copy of this policy of you don't one). 9 spaces seems sufficient but please "show your work" per the parking policy's use table.*

Please see parking calculations at Sheet 3. Under the requirements ten spaces are required and nine are provided, which should be enough for the applicant's business. If necessary 2-3 vehicles can be parked inside the proposed building.

2) *Please list the rear drive aisle width. If less than 24' wide per ZBL Sec. 179-23(4) there is a waiver available through site plan review.*

Please see Sheet 3. The proposed drive aisle is 28.9' wide.

3) *Is there a dumpster proposed? Loading areas?*

Please see Sheets 3 and 4. A fenced in dumpster is proposed in the southwest corner of the property. No loading areas are proposed. The applicant anticipates deliveries will be made to the front of the building.

4) *It appears that the circulation pattern is around the building. Have you consulted FD to ask whether 10 feet on the north side is sufficient.*

The applicant will provide a copy of the site plans to the Fire Department and ask for comments on the circulation pattern and the driveway width.

5) *I'd be prepared to justify to the Pl Bd why, as proposed, no vegetated buffer is necessary to the northern property.*

There is currently no vegetated buffer on the north side of the property. The site layout is designed so that the applicant's business can remain in operation during construction, which the northerly driveway will facilitate. The applicant submits that at least a 10 foot width is necessary for the drive, which does not leave enough room for a vegetated buffer.

6) *Is there a pylon sign proposed? If so, I'd add the proposed location.*

The applicant does not propose a new sign. There is an existing sign at the northeast corner of the property which will be moved to the middle of the east property line along the road.

7) *I don't believe any Water Quality Review/ Certificate is required because the site is not in the DCPC overlay district.*

The property is not in the DCPC.

8) *They are all uses allowed by right in the CH district, but for completeness, please include in the application, as applicable and desired: outdoor storage of business materials/ equipment; outdoor commercial vehicle storage; or sales of autos/ auto accessories or tires.*

The applicant will list all relevant proposed uses in its combined Site Plan Review / Special Permit application.

9) *Eventually please provide lighting 'cut'/ spec sheets and proposed mounting heights. Lighting should be downcast and shielded.*

LED wall pack locations are shown on the site plan. The applicant will provide lighting specification sheets and proposed mounting heights when its electrical contractor determines the exact fixtures proposed for installation.

10) *Please provide existing vs proposed impervious to determine if a stormwater permit (Brewster Code Ch. 272) is required.*

Please see Sheet 3 for hardscape calculations for the 100' buffer to the wetlands. The applicant is preparing a stormwater report and will file it as a supplement to this application.

11) *Even if a stormwater permit is not required, the site plan review standards require stormwater info including some analysis of pre- vs post- development peak discharge rates.*

This information will be included in the applicant's stormwater report.

12) *Is any oil separator proposed for the subsurface stormwater leaching systems?*

An oil grit separator is proposed for the rear parking area.

13) *Please add construction period erosion control notes/ BMPs to plan.*

The applicant will include these with its stormwater report.

14) *ZBL sec. 179-66B(4) & (9): I'd be prepared to justify to the Pl Bd why maintaining two curbcuts as they are proposed results in better site design and circulation without detrimental effect on off-site traffic.*

The applicant submits that having two curb cuts allows more efficient use of the property, safer access to and from Thad Ellis Road, and provides better access for fire vehicles. Having two curb cuts permits the proposed one-way driveway around the building which eliminates the need for turnaround space in the back and front lots.

15) *Is the proposed north sideline setback 10' to the foundation? Note, that the ZBL allows a 2 ft encroachment anyway for roof eaves and the like.*

The northerly setback is 10' to the foundation.

Lynn St. Cyr

From: Sherrie McCullough
Sent: Monday, September 11, 2023 3:22 PM
To: Lynn St. Cyr
Subject: Staff Review Application #23-07, 94 Thad Ellis Road (Wentworth Motorsports)

Applicant MOG Real Estate Holdings, LLC proposes to demolish an existing dwelling, garage and two sheds and construct a new garage/workshop with a new Title 5 septic system and other site improvements.

Health Department comments based on information provided at this time.

- This property lies outside the Zone II, and the District of Critical Planning Concern (DCPC). The property is located within an Environmentally Sensitive Area (ESA) per our local BoH regulation. The total land area is 16,800 SF +/- and has access to town water.
- The wetland line(s) will need Conservation approval prior to a full Health Department review.
- Due to the depth of suitable material observed during soil testing, a percolation test was not conducted. A sieve analysis of the suitable material must be conducted, or a perc test must be conducted at the time of installation of the new septic system.
- Any proposed hazardous material storage or disposal must meet appropriate requirements.
- Prior to construction, septic plans and a Building Waiver Application will need to be submitted to the Health Department for full department review prior to final approval.

Respectfully submitted,

Sherrie McCullough R.S.

Assistant Health Director
Town of Brewster

Beginning March 21, Brewster Town Offices will be open to the public Monday through Thursday from 8:30 to 4:00pm, and by appointment on Fridays. For the latest updates on Town services, please visit www.brewster-ma.gov.

Lynn St. Cyr

From: Richard Leibowitz <rleibowitz@brewster-ma.gov>
Sent: Monday, December 4, 2023 1:25 PM
To: bzehnder@zehenderllc.com
Cc: Jonathon Idman <jidman@brewster-ma.gov>; Ellen Murphy <emurphy@brewster-ma.gov>; Erika Glidden <eglidden@brewster-ma.gov>; czehender@zehenderllc.com; Richard Leibowitz <rleibowitz@brewster-ma.gov>
Subject: FW: ZBA application / 94 Thad Ellis Road (89-5)

Hello Attorney Zehender,

The property in question includes two pre-existing nonconformities as a detached dwelling is prohibited or would require a Special Permit as a Commercial Accessory Dwelling Unit and the current auto repair garage exists closer to the side property line at 14 feet than the minimum allowed 15 feet identified in Brewster Zoning Bylaw Table 2.

You are correct in that pursuant to Brewster Zoning Bylaw Section 25-B, the reconstruction of the auto repair garage, which would extend a nonconformity (side yard setback), may be allowed by Special Permit so long as the Board of Appeals Board finds that this extension is not substantially more detrimental to the neighborhood than the existing building.

If I can be of further assistance, please do not hesitate to contact the Building Department.

Victor Staley
Alternate Building Commissioner

From: Thomas Delaney <tdelaney@brewster-ma.gov>
Sent: Wednesday, November 29, 2023 8:30 AM
To: Richard Leibowitz <rleibowitz@brewster-ma.gov>
Subject: FW: ZBA application / 94 Thad Ellis Road (89-5)

From: Benjamin Zehnder <bzehnder@zehnderllc.com>
Sent: Tuesday, November 28, 2023 4:06 PM
To: Thomas Delaney <tdelaney@brewster-ma.gov>
Cc: Charlie Zehnder <czehnder@zehnderllc.com>; Ellen Murphy <emurphy@brewster-ma.gov>
Subject: RE: ZBA application / 94 Thad Ellis Road (89-5)

Hello Tom:

I have filed an application to the Board of Appeals for a special permit to remove a dwelling and commercial auto repair garage at 94 Thad Ellis Road and replace with a single commercial building for auto repair. The use is permitted by right, but the existing building is nonconforming on the North side, being 14' where 15' is required. The intent is to construct a new building around the existing building, then demolish the old building. This will save the applicant's auto repair business significant down-time. The proposed setback on the North side will decrease from 14' to 10'.

I believe that this requires a special permit under Brewster Zoning Bylaw 179-25(B) which provides:

B.

Other pre-existing nonconforming structures or uses may be changed, extended or altered on special permit from the Board of Appeals, if the Board of Appeals finds that such change, extension or alteration will not be substantially more detrimental to the neighborhood than the existing nonconforming use.

Would you be willing to provide me with a zoning referral letter for this project? We have also filed an application for Planning Board Site Plan Review. The PB hearing will be on January 10. The zoning hearing will be on January 9.

I have attached the staff review comments for your review as well.

My thanks for your attention. Call me anytime – my cell 508.246.4064 is best.

Ben Zehnder

Benjamin E. Zehnder
Benjamin E. Zehnder, LLC
62 Route 6A, Unit B
Orleans, MA 02653
508.255.7766 – Office
508.246.4064 – Mobile
bzehnder@zehnderllc.com

Lynn St. Cyr

From: William Grafton
Sent: Friday, December 22, 2023 2:16 PM
To: Ellen Murphy; James Gallagher; Griffin Ryder; Robert Moran; Kevin Varley; Amy von Hone; Chris Miller; Peter Lombardi; Paul Anderson; Charles Mawn; Donna Kalinick; Jonathon Idman; Erika Glidden; Richard Leibowitz
Cc: Lynn St. Cyr
Subject: RE: ZBA January 9 - Department Reviews

Ellen, good day.

I have reviewed the 94 Thad Ellis Road submittals that you provided along with a Notice of Intent and Stormwater Management Permit Application submitted to Conservation.

The proposed work is a great improvement in relation to the existing conditions.

On the Conservation/wetlands topic, the wetlands delineations have been checked and I did not have any comments. The site plan has been revised to include the 100-foot buffer to the flood plain associated with the adjacent Brown property. The impervious area within the 100 foot setback is a 1700 square foot increase triggering the need for a Notice of Intent rather than an RDA.

On the Stormwater Management topic, I requested that the project team and property owner provide additional information on two of the standards within the Stormwater Checklist. See excerpt below. Their response is due to the Conservation Department by 12 noon, Tuesday, January 2, 2024.

During my review of the stormwater report, I had two questions pertaining to Item 4C and 5.

Regarding 4c. (see screenshot below), please provide a submittal of the "long-term pollution prevention plan" or timeline when we can expect this.

> **4. Stormwater management systems shall be designed to remove 80% of the average annual post-construction load of Total Suspended Solids (TSS). This Standard is met when:**
>
> **a. Suitable practices for source control and pollution prevention are identified in a long-term pollution prevention plan, and thereafter are implemented and maintained;**
>
> **b. Structural stormwater best management practices are sized to capture the required water quality volume determined in accordance with the Massachusetts Stormwater Handbook; and**
>
> **c. Pretreatment is provided in accordance with the Massachusetts Stormwater Handbook.**
>
> A long-term pollution prevention plan is to be attached, in excess of the correct volumes are captured, and pretreatment is provided per the Handbook, so compliance with #4 is assured.

Regarding 5, it appears that additional elaboration would be helpful for the Commission. Per our conversation, it appears that the front and back of the property have different levels of stormwater management control. Please clarify why the higher potential pollutant loads referenced in your response are not applicable and how the two different systems function. This will provide the Commission with clear and convincing information.

5. For land uses with higher potential pollutant loads, source control and pollution prevention shall be implemented in accordance with the Massachusetts Stormwater Handbook to eliminate or reduce the discharge of stormwater runoff from such land uses to the maximum extent practicable. If through source control and/or pollution prevention all land uses with higher potential pollutant loads cannot be completely protected from exposure to rain, snow, snow melt, and stormwater runoff, the proponent shall use the specific structural stormwater BMPs determined by the Department to be suitable for such uses as provided in the Massachusetts Stormwater Handbook. Stormwater discharges from land uses with higher potential pollutant loads shall also comply with the requirements of the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53 and the regulations promulgated thereunder at 314 CMR 3.00, 314 CMR 4.00 and 314 CMR 5.00.

The standard commercial development and parking lot are not applicable to higher potential pollutant loads per the Handbook, so this standard is "Not Applicable" for this site. The site is not within state zone II or public water supply. Floor drains leading to a non-hazardous industrial wastewater holding tank is proposed.

All in all it is a great project that will improve the neighborhood and provide an upgrade in the stormwater management.

Respectfully,

Bill Grafton
Brewster Conservation Administrator
1657 Main Street
Brewster, MA 02631
Phone (508) 896-4546 ext. 4242

Brewster Town Offices are open to the public Monday through Thursday from 8:30 to 4:00pm, and by appointment on Fridays. For the latest updates on Town services, please visit www.brewster-ma.gov

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From: Ellen Murphy <emurphy@brewster-ma.gov>
Sent: Thursday, December 7, 2023 10:52 AM
To: James Gallagher <jgallagher@brewster-ma.gov>; Griffin Ryder <gryder@brewster-ma.gov>; Robert Moran <rmoran@brewster-ma.gov>; Kevin Varley <kvarley@brewster-ma.gov>; Amy von Hone <avonhone@brewster-ma.gov>; Chris Miller <cmiller@brewster-ma.gov>; Peter Lombardi <plombardi@brewster-ma.gov>; Paul Anderson <panderson@brewster-ma.gov>; Charles Mawn <cmawn@brewster-ma.gov>; Donna Kalinick <dkalinick@brewster-ma.gov>; Jonathon Idman <jIdman@brewster-ma.gov>; William Grafton <wgrafton@brewster-ma.gov>; Erika Glidden <eglidden@brewster-ma.gov>; Richard Leibowitz <rleibowitz@brewster-ma.gov>
Subject: ZBA January 9 - Department Reviews

Good morning,

Attached please find the department review comment form, application and plans submitted on behalf of:

ZBA Case #24-01 Owner/Applicant: MOG Real Estate Holdings, LLC (represented by Benjamin E. Zehnder, Esq.) 94 Thad Ellis Road, Map 89, Lot 8, in the CH zoning district. The applicant seeks a special permit pursuant to section 179-25B of the Brewster zoning bylaw to alter and extend the pre-existing commercial garage building on the property by razing and replacing it within the pre-existing, nonconforming (north) side yard setback.

Copies of the attached are available for review upon request. **Kindly provide any comments you have on this application by Friday, December 22nd for a public hearing scheduled for Tuesday, January 9th .**

Thank you,
Ellen

Ellen Murphy
Administrative Assistant
Zoning Board of Appeals
508-896-3701 x 1168

Brewster Town Offices will be open to the public Monday through Thursday from 8:30am to 4:00pm, and by appointment on Fridays. For the latest updates on Town services, please visit www.brewster-ma.gov

Benjamin E. Zehnder LLC

62 Route 6A, Suite B
Orleans, Massachusetts 02653

Benjamin E. Zehnder, Esq.
bzehnder@zehnderllc.com
Tel: (508) 255-7766

November 22, 2023

Colette Williams, Town Clerk
Brewster Town Hall
2198 Main Street
Brewster, MA 02631

Via hand delivery & email

Re: New Planning Board site plan review application
94 Thad Ellis Road (Assessor's Parcel ID 89-5)

Dear Ms. Williams:

On behalf of MOG Real Estate Holdings, LLC please find enclosed for filing with the Planning Board one complete site plan review application packet for the property at 94 Thad Ellis Road, as well as payment in the amount of $1,100.00 for the filing fee. I am enclosing a flash drive with an electronic copy of these materials.

Pursuant to my office's correspondence with Lynn St. Cyr, we are enclosing ten (10) sets of the following materials from the application packet (the Planning Department has copies of the remainder of the packets from our earlier staff review filing):

1. Cover letter;
2. Application form;
3. Narrative;
4. Site plans.

Thank you as always for your assistance. I remain –

Very truly yours,

Benjamin E. Zehnder

Enc.
cc via email w/ attachments (reduced file size):
client
Heather Marie Cornell
Daniel Gonsalves
Jon Idman
Ellen Murphy
Daniel Ojala
Lynn St. Cyr (& via flash drive at full file size)
Colette Williams

Town of Brewster
Planning Board
Ch. 179 Application Cover Sheet

FOR TOWN OFFICIAL USE ONLY

TOWN CLERK RECEIVED:

BREWSTER TOWN CLERK

PERMIT NUMBER ASSIGNED:

PB 2024-022 3:19pm

Project Location:

94 Thad Ellis Road
Street Address

89-5
Assessors Map(s) and Parcel(s)

B.C.R.D. Book 35360, Page 213
Deed/ Title Reference

CH
Zoning District(s)

Applicant:

MOG Real Estate Holdings, LLC by Alexander Wentworth and Kristen Wentworth, Managers
Name

972 Stony Brook Road, Brewster, MA 02631
Mailing Address

(508) 896-8660
Phone Number

wentworthmotorsports@comcast.net
Email Address

Property Owner (if different than Applicant):

(same)
Name

Mailing Address

Phone Number

Email Address

Professional Representative:

Benjamin E. Zehnder
Name

62 Route 6A, Suite B, Orleans, MA 02653
Mailing Address

(508) 255-7766
Phone Number

bzehnder@zehnderllc.com
Email Address

Type of Application (Check as applicable):

_____ Special Permit
(Zoning Bylaw Section 179-51 or list other or different Zoning Bylaw Sections, as applicable, below)

XX Site Plan Review (Zoning Bylaw Section 179-63)

_____ Decision Modification (Provide relevant case number/s below)

_____ Decision Extension (Provide relevant case number/s below)

_____ Other (List Zoning Bylaw Section/s below)

Brief Project Description: Demolition of existing dwelling, garage, and two sheds; construction of new garage / workshop; grading, site work, and landscaping; installation of new septic system, wastewater holding tank, and drainage system.

Signatures

Applicant — Date

Property Owner (if different than Applicant) — Date

Professional Representative (as applicable) — Date 11/21/23

If the Applicant is not the Owner, the Application materials shall include the Owner's written consent or authorization to make application, or evidence that the Applicant's interest in the property is sufficient to make application (e.g. lease, P&S Agreement, etc.).

The burden is on the applicant to provide accurate, sufficient and complete information in the application. Attached is a checklist of materials and information required to be submitted for a complete application. Incompleteness could be cause for delays in review or denial of an application.

By making application, the Owner and Applicant hereby authorize the Planning Board and its agents to conduct site visits, at reasonable times, to assist in review of the application.

Please refer to current Planning Board schedule for application filing deadlines and associated meeting dates. The Board will make best efforts to work within this filing schedule but is not obligated to do so; the Board's review timelines are established under the Brewster Code and Massachusetts General Laws. In its discretion, the Board may agenda matters, which do not require public hearings, for the next available meeting even if received after the respective filing deadline.

Submit to: **Brewster Planning Department**
Town Offices- 2198 Main Street
Brewster, Massachusetts 02631-1898
(508) 896-3701 x 1133
brewplan@brewster-ma.gov

Project Narrative

Brewster Planning Board
Site Plan Review Application

94 Thad Ellis Road
Assessor's Map 89, Parcel 5
MOG Real Estate Holdings, LLC

November 22, 2023 *Prepared by Benjamin E. Zehnder*

Alexander Wentworth and Kristen Wentworth are the managers of MOG Real Estate Holdings, LLC, owner of the developed property at 94 Thad Ellis Road in the Commercial High Density zoning district and the location of the applicants' automotive repair business, Wentworth Motorsports. They seek site plan review for their proposal to demolish four existing structures, construct a new garage, grade, landscape, and install parking areas and driveways on the site, and install a new septic system, wastewater holding tank, and drainage system. The proposed new 60' x 80' (2,400 s.f.) four bay garage will be placed on a new concrete slab foundation.

The proposal will reconfigure the site layout so that vehicles enter via the northerly curb cut and can either drive into the garage bays or travel over the southerly access driveway to the customer parking area at the back of the property. There is a proposed narrower partial access driveway on the north side of the building. The driveways and front parking area will be gravel and the rear parking area will be paved. The applicants propose landscaping along the southerly and westerly sides of the property, as well as along the northerly side of the rear parking area, and a stand-alone rain garden island adjacent to Thad Ellis Road.

Planning Board Site Plan Review is required pursuant to Bylaw §§ 179-64-A (development requiring staff review), -C (existing commercial use increasing floor area by more than 500 s.f.), and -E (increase in lot coverage 10% or more). The applicants have separately applied to the Zoning Board of Appeals for a special permit to extend an existing side yard setback non-conformity pursuant to Bylaw § 179-25-B. The proposal has previously completed staff review pursuant to Bylaw Chapter 83.

With regard to the site plan review standards at Bylaw § 179-66(A) – (H), the applicants refer to the existing conditions, landscape / layout, utilities / grading, and civil detail site plans, the architectural floor plans, elevations, and renderings, the structural steel plans, and the stormwater management report filed herewith. The applicants submit that the proposal meets the review standards and request site plan approval pursuant to Bylaw § 179-65(A).

Brewster Planning Department
2198 Main Street
Brewster, MA 02631-1898
(508) 896-3701 x1133
brewplan@brewster-ma.gov

AGENT AFFIDAVIT

Name of Owner: MOG Real Estate Holdings, LLC Phone: (508) 896-8660

Address (mailing): 972 Stony Brook Road, Brewster, MA 02631

Address of Property: 94 Thad Ellis Road

Map 89 Lot 85

I testify that I have granted the authority to: Benjamin E. Zehnder to act as agent for me and the property for which I/We own(s).

Agent Name: Benjamin E. Zehnder Phone: (508) 255-7766

Company Name: Benjamin E. Zehnder LLC

Address: 62 Route 6A, Suite B, Orleans, MA 02653

I do hereby certify under the pains and penalties of perjury that the information provided above is true and correct.

Signature of Owner _____ KWentworth
MOG Real Estate Holdings, LLC by Alexander Wentworth & Kristen Wentworth, Managers

Date: 7-31-23

Key: 3275

Town of BREWSTER - Fiscal Year 2023

9/22/2022 2:56 pm SEQ #: 3,478

LEGAL

CURRENT OWNER	PARCEL ID	LOCATION
WENTWORTH DONALD B TRUSTEE **C/O MOG REAL ESTATE HOLDING LLC** **972 STONY BROOK ROAD** **BREWSTER, MA 02631**	**89-5-0**	**94 THAD ELLIS ROAD**

TRANSFER HISTORY	DOS	T	SALE PRICE	BK-PG (Cert)
MOG REAL ESTATE HOLDING L	09/13/2022	B	1	35360-213
WENTWORTH ALEXANDER TRUST	04/11/2022	ML		31420-131
WENTWORTH DONALD B TRUSTE	07/23/2018	F	1	31420-131

CLASS	CLASS%	DESCRIPTION	BN ID	BN	CARD
1010	100	SINGLE FAMILY		1	1 of 1

PMT NO	PMT DT	TY	DESC	AMOUNT	INSP	BY	1st	%
440	10/20/1992	5	OTHER	1,500			100	100

LAND

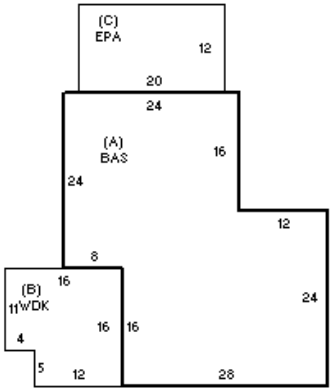
CD	T	AC/SF/UN	Nbhd	St Ind	Infl	ADJ BASE	SAF	Topo	Lpi	VC	CREDIT AMT	ADJ VALUE
100	S	16,800	13 1.00	A 1.00	A 1.00	166,140	2.56	A 1.00	RM3 0.90			164,000

TOTAL	16,800 SF	ZONING	CH	FRNT	0

Nbhd	NBHD 13
St Ind	AVERAGE
Infl	AVERAGE

NOTE

ASSESSED	CURRENT	PREVIOUS
LAND	164,000	136,600
BUILDING	151,900	126,900
DETACHED	1,400	1,400
OTHER	0	0
TOTAL	**317,300**	**264,900**



DETACHED

TY	QUAL	COND	DIM/NOTE	YB	UNITS	ADJ PRICE	RCNLD
DGF	A 1.00	90 0.10	24X12		288	34.71	1,000
SHF	A 1.00	90 0.10	12X20		240	18.69	400

PHOTO 12/22/2020

BLDG COMMENTS

INFO @ DOOR (12/22/20)

BUILDING

BUILDING	CD	ADJ	DESC
MODEL	1		RESIDENTIAL
STYLE	6	1.05	COTT/BUNGLW [100%]
QUALITY	-	0.90	MINUS AVE [100%]
FRAME	1	1.00	WD FRAME [100%]

MEASURE	12/22/2020	TCK
LIST	3/8/2007	JH
REVIEW	2/12/2021	MR

YEAR BLT	1958	SIZE ADJ	1.000
NET AREA	1,120	DETAIL ADJ	1.000
$NLA(RCN)	$226	OVERALL	1.050

CAPACITY	UNITS	ADJ
STORIES	1	1.00
ROOMS	5	1.00
BEDROOMS	2	1.00
BATHROOMS	1	1.00
FIXTURES	3	$3,686
GARAGE SPACES	0	1.00
% BSMT FIN	0	1.00
# 1/2 BATHS	0	1.00
# OF UNITS	1	1.00

ELEMENT	CD	DESCRIPTION	ADJ
FOUNDATION	5	OTHER	1.00
EXT COVER	1	WD SHINGLE	1.00
ROOF SHAPE	4	FLAT/SHED	1.00
ROOF COVER	1	ASPH/CMP SH	1.00
FLOOR COVER	3	W/W CARPET	1.00
INT FINISH	2	DRYWALL	1.00
HEATING/COOL	3	RADIANT	1.00
FUEL SOURCE	1	OIL	1.00

S	BAT	T	DESCRIPTION	UNITS	YB	ADJ PRICE	RCN
A	BAS	L	BASE AREA	1,120	1958	202.07	226,315
B	WDK	N	WOOD DECK	236		31.19	7,360
C	EPA	N	ENCLOSED PORCH	240		57.66	13,840
	ODS	O	OUTDOOR SHOWER	1		1,922.10	1,922

TOTAL RCN	253,122

CONDITION ELEM	CD
EXTERIOR	F
INTERIOR	F
KITCHEN	F
BATHS	A
HEAT/ELEC	A

EFF.YR/AGE	1931 / 90		
COND	40	40 %	
FUNC	0		
ECON	0		
DEPR	40	% GD	60
RCNLD			$151,900

0 140 280 ft

Printed on 05/04/2023 at 09:27 AM

Bk 35360 Pg213 #45487
09-13-2022 @ 01:56p

QUITCLAIM DEED

I, ALEXANDER WENTWORTH, as I am Trustee of The Donald B. Wentworth 2018 Living Trust u/t/a dated June 21, 2018, for which a Trustee Certificate pursuant to M.G.L. c.184, §35 is recorded herewith, with a mailing address of 972 Stony Brook Road, Brewster, MA 02631,

For consideration in the amount of ONE AND 00/100 ($1.00) DOLLAR,

Grant to MOG Real Estate Holdings, LLC, a Massachusetts Limited Liability Company, with a mailing address of 972 Stony Brook Road, Brewster, MA 02631,

With QUITCLAIM COVENANTS,

The land in Brewster, Barnstable County, Massachusetts, together with the buildings thereon, bounded and described as follows:

Property Address: 94 Thad Ellis Road, Brewster, MA 2631

Located at 94 Thad Ellis Road, also known as Country Club Road and Golf Course Road, Brewster, Massachusetts, as shown on a plan entitled "Pleasant Acres, A subdivision in Brewster, Mass. Property of Warren E. Burgess, Scale 1 inch = 60 feet, Feb. 1951, Nickerson & Berger, Civil Engineers, Eastham, Mass." and being recorded in Barnstable County Registry of Deeds in Plan Book 97, Page 155 and being the lot labeled thereon "George C. and Janice M. Dunsford" and

Beginning at the Northeast corner of the granted premises at a stake on the West side of a Town Road, called Proprietors Road leading to the Brewster Golf Course Road, said stake being two hundred thirty-two (232) feet northerly from the northerly line of land now or formerly of Old Colony Railroad Company;

Thence running westerly by land now or formerly of Warren E. Burgess, one hundred fifty (150) feet to a stake at the Northwest corner;

Thence running southerly by other land now or formerly of said Warren E. Burgess, one hundred twelve (112) feet to a stake at the Southwest corner;

Thence running easterly by other land now or formerly of said Warren E. Burgess, one hundred fifty (150) feet to a stake at the Southeast corner in said Proprietors Road; and

Thence running northerly by said Proprietors Road, one hundred twelve (112) feet to the stake at the point of beginning.

The grantor hereby releases all rights of Homestead in the within-described property and certifies under pains and penalties of perjury that no person occupies the premises as a primary residence and no person has or can claim the benefit of a Homestead therein.

Said property is hereby conveyed subject to and together with the benefit of all rights, restrictions and easements of record, insofar as the same are in force and applicable.

The manager of MOG Real Estate Holdings, LLC is the son of Donald B. Wentworth, therefore, no consideration is required.

For title, see deed recorded with Barnstable County Registry of Deeds in Book 31420, Page 131.

TITLE NOT EXAMINED.

Signed under the pains and penalties of perjury this 9 day of SEPT, 2021.

THE DONALD B. WENTWORTH 2018
LIVING TRUST,

By: ALEXANDER WENTWORTH
Trustee

COMMONWEALTH OF MASSACHUSETTS

County of Barnstable, ss.

On this 9th day of Sept, 2022, before me, the undersigned notary public, personally appeared ALEXANDER WENTWORTH, Trustee as aforesaid, proved to me through satisfactory evidence of identification, which was ☒ photographic identification with signature issued by a federal or state governmental agency, ☐ oath or affirmation of a credible witness, ☐ personal knowledge of the undersigned, to be the person whose name is signed on the preceding or attached document, and who swore or affirmed to me that the contents of the document are truthful and accurate to the best of his knowledge and belief.

Notary Public:

My Commission Expires: Nov 4, 2027

Gailynn G Miller
Notary Public
COMMONWEALTH OF MASSACHUSETTS
My Commission Expires
November 4, 2027

TRUSTEE CERTIFICATE

I, ALEXANDER WENTWORTH, as I am Trustee of The Donald B. Wentworth 2018 Living Trust u/t/a dated June 21, 2018, hereby certify that:

1. I am the current Trustee of said Trust;

2. Said Trust has not been amended and is in full force and effect; and

3. All of the beneficiaries of said Trust who are natural persons, if any, are of full age;

4. All of the beneficiaries of said Trust who are natural persons, if any, are competent.

5. The Beneficiaries of said Trust have consented to the transfer of 94 Thad Ellis Road, Brewster, Massachusetts, to ALEXANDER WENTWORTH for nominal consideration.

EXECUTED as a sealed instrument this 9 day of SEPT, 2022.

THE DONALD B. WENTWORTH 2018 LIVING TRUST,

By: ALEXANDER WENTWORTH
Trustee

COMMONWEALTH OF MASSACHUSETTS

Barnstable, ss.

On this 9th day of Sept, 2022, before me, the undersigned notary public, personally appeared ALEXANDER WENTWORTH, Trustee as aforesaid, proved to me through satisfactory evidence of identification, which was ☒ photographic identification with signature issued by a federal or state governmental agency, ☐ oath or affirmation of a credible witness, ☐ personal knowledge of the undersigned, to be the person whose name is signed on the preceding Quitclaim Deed, and acknowledged to me that he signed it voluntarily as his free act and deed.

Notary Public:
My Commission Expires: NOV 4, 2027

Gailynn G Miller
Notary Public
COMMONWEALTH OF MASSACHUSETTS
My Commission Expires
November 4, 2027

1171129.v1

97-155

STATE (Route 6) HIGHWAY 1901 Layout

N 74°35'25"E 28.00 N 68°14'10"E 92.00 40.43

Royal P. Teele

200.00 N 13°20'10"W 200.00

120.00 S 69°43'40"W

1 AREA: 9,800 sq ft ±

72.95 563.68 93.94

S 79°47'10"W 119.38

100.00 N 13°22'50"W 86.00 S 13°22'50"E 86.00

Susie L. Burgess

50.00 N 79°47'10"E 100.00

30 FT. WAY N 79°47'10"E 152.46

30.00 30.05

2 AREA: 16,500 sq ft ±

102.73 109.01

S 81°58'00"W 161.49

3 AREA: 19,600 sq ft ±

to be conveyed to Walter A. C. Landers

120.00 N 8°37'10"W 44.68 40.00

N 82°15'10"E 167.80

4 AREA: 15,900 sq ft ±

93.95 R: 777.36 A: 73.10 R: 817.36 40.00

S 84°48'30"W 160.45

5 AREA: 15,000 sq ft ±

93.95 101.32

N 87°38'25"E 150.00

George C. & Janice M Dunsford

112.00 118.00 360.31

S 87°38'25"W 150.00

6 AREA: 17,900 sq ft ±

164.01 N 2°21'35"W 85.82 S 2°21'35"E 342.13

164.78 N 63°11'55"E

30 FT. WAY

164.78 S 63°11'55"W

32.95 72.95 43.94

* Also known as THAD ELLIS ROAD

N.Y. NH. & HARTFORD R.R. CO. (Lessee)

Warren E. Burgess

1931 Layout 569.57

ROAD

Way

COUNTRY CLUB

Town

PLEASANT ACRES

A Subdivision in Brewster Mass.

property of

WARREN E. BURGESS

Scale 1 inch = 60 ft. Feb. 1951

Nickerson & Berger Civil Engineers

EASTHAM MASS.

BARNSTABLE REGISTRY OF DEEDS
MAR 19 1951
2 H 15 M P M
RECORDED

Plan Book 97 Page 155

down cape engineering, inc.
CIVIL ENGINEERS & LAND SURVEYORS
939 MAIN ST / ROUTE 6A YARMOUTHPORT, MA 02675
(508) 362-4541 FAX (508) 362-9880

STORMWATER REPORT WITH DRAINAGE CALCULATIONS:

Wentworth Motor Sports
94 Thad Ellis Road
Brewster, MA

DATE: 9-20-2023

Owner: Wentworth Motorsports
508-896-8660

9-20-23

STORMWATER MANAGEMENT PERMIT APPLICATION

94 Thad Ellis Road, Brewster, MA

PROJECT OVERVIEW:

The applicant is pleased to submit a stormwater application to develop a proposed commercial property. The 16,800 s.f. property currently has two existing buildings. One commercial building along with a parking lot and associated utilities are proposed. The proposed design flow will match the existing design flow of 480 GPD. The new septic and leaching field will be located greater than 100' from any resource area. No Board of Health variances are required as the septic systems meet local and state requirements. The site needs a Major Stormwater Permit as it results in a net increase in impervious areas of over 2,500 s.f.

The Site is bordered on the West and the East by a bordering vegetated wetland. Some work will take place inside of the 100' and 50' buffer to the Eastern BVW. The site does not lie within Priority and Estimated Habitats in accordance with the NHESP Map dated August 2021.

The site is fairly flat throughout the entirety of the lot. The proposed grading and fill in the front will allow for a relatively gentle parking lot around the proposed property. All runoff is designed to be infiltrated on-site.

Compliance with the Brewster Stormwater Bylaw Regulations:

To comply with the Brewster Stormwater Regulations, a work limit line of staked silt fence backed by coir logs is proposed downgradient of all proposed work and around the sides of the site. All work limit lines shall remain in place until all construction is completed, and areas are planted and stable. The underlying material is sand, hydrologic group A with a perc rate of less than two minutes per inch. See soil logs on the detail sheet. A soil removal is proposed down to the clean sandy layer beneath and around the proposed leaching structures.

The site plans also show existing topography, hydrology, and proposed grading. The grading and fill in the parking lot will direct the runoff to a catch basin with an oil grit separator tank and an overflow leaching pit in the rear and one sediment forebay in the front that leads to a bioretention area for added treatment with an overflow leaching pit. The parking lot and other impervious areas are kept to a minimal width on the site, and all roof runoff is directed to large drywells around the site for direct infiltration.

The proposed construction activities will not have a deleterious effect upon any wetland resource area. The silt fence will contain all construction activities. Roof drainage will be mitigated utilizing downspouts to drywells. Work will need to be done within the 100' and 50' buffer to the BVW.

All machinery will access the areas of proposed construction through the proposed parking lot entrance. A silt fence will be installed downgradient of any proposed work. A stone construction apron will be installed to reduce silt from leaving the site.

No additional stormwater is expected to leave the site based on the grading indicated on the drawings.

Compliance with the 10 State Stormwater Standards (in order in bold with explanation in lighter font following the numbered Standards) is as follows:

1. **No new stormwater conveyances (e.g. outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.**

No new untreated stormwater discharges are proposed.

2. **Stormwater management systems shall be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates. This Standard may be waived for discharges to land subject to coastal storm flowage as defined in 310 CMR 10.04.**

The sandy soils permit onsite infiltration, as shown by the attached calculations. The development was analyzed under the 100-year, 24 hour storm and the drainage systems as designed, will not increase off-site flooding over existing conditions.

3. **Loss of annual recharge to groundwater shall be eliminated or minimized through the use of infiltration measures including environmentally sensitive site design, low impact development techniques, stormwater best management practices, and good operation and maintenance. At a minimum, the annual recharge from the post-development site shall approximate the annual recharge from pre-development conditions based on soil type. This Standard is met when the stormwater management system is designed to infiltrate the required recharge volume as determined in accordance with the Massachusetts Stormwater Handbook.**

The proposed infiltration systems are sized to adequately infiltrate the required recharge volume and low impact drainage solutions were implemented.

4. **Stormwater management systems shall be designed to remove 80% of the average annual post-construction load of Total Suspended Solids (TSS). This Standard is met when:**

a. Suitable practices for source control and pollution prevention are identified in a long-term pollution prevention plan, and thereafter are implemented and maintained;

b. Structural stormwater best management practices are sized to capture the required water quality volume determined in accordance with the Massachusetts Stormwater Handbook; and

c. Pretreatment is provided in accordance with the Massachusetts Stormwater Handbook.

A long-term pollution prevention plan is to be attached, in excess of the correct volumes are captured, and pretreatment is provided per the Handbook, so compliance with #4 is assured.

5. For land uses with higher potential pollutant loads, source control and pollution prevention shall be implemented in accordance with the Massachusetts Stormwater Handbook to eliminate or reduce the discharge of stormwater runoff from such land uses to the maximum extent practicable. If through source control and/or pollution prevention all land uses with higher potential pollutant loads cannot be completely protected from exposure to rain, snow, snow melt, and stormwater runoff, the proponent shall use the specific structural stormwater BMPs determined by the Department to be suitable for such uses as provided in the Massachusetts Stormwater Handbook. Stormwater discharges from land uses with higher potential pollutant loads shall also comply with the requirements of the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53 and the regulations promulgated thereunder at 314 CMR 3.00, 314 CMR 4.00 and 314 CMR 5.00.

The standard commercial development and parking lots are not applicable to higher potential pollutant loads per the Handbook, so this standard is "Not Applicable" for this site. While a vehicle maintenance and repair land use may be considered a source for higher potential pollutant loads, all repair work will take place inside the new covered building. Floor drains leading to a double walled non-hazardous industrial wastewater holding tank is proposed to handle any potential pollutant spills inside the building. The drainage design for the rear paved parking area includes a deep sump hooded catch basin leading to an oil grit separator which will filter out any potential oil, grease, sand, salt, etc. before it enters the infiltration basin. The front gravel driveway area will not have parked cars for any extended period which limits the potential of pollutant loads from entering the drainage system. The front drainage system includes a natural sediment forebay which will help prevent any oil, grease, sand, salt, etc. from entering the rain garden and infiltration basin. Both drainage systems are sized to handle in excess of the required volume of 1" of stormwater runoff on the site. Both systems also provide the required 44% TSS removal prior to discharge to an infiltration device. The site is not within State Zone II or public water supply.

6. Stormwater discharges within the Zone II or Interim Wellhead Protection Area of a public water supply, and stormwater discharges near or to any other critical area, require the use of the specific source control and pollution prevention measures and the specific structural stormwater best management practices determined by the Department to be suitable for managing discharges to such areas, as provided in the Massachusetts Stormwater Handbook. A discharge is near a critical area if there is a strong likelihood of a significant impact occurring to said area, taking into account site-specific factors. Stormwater discharges to Outstanding Resource Waters and Special Resource Waters shall be removed and set back from the receiving water or wetland and receive the highest and best practical method of treatment. A "storm water discharge" as defined in 314 CMR 3.04(2)(a)1 or (b) to an Outstanding Resource Water or Special Resource Water shall comply with 314 CMR 3.00 and 314 CMR 4.00. Stormwater discharges to a Zone I or Zone A are prohibited unless essential to the operation of a public water supply.

The site is not within a Zone I, Zone A, or Zone II

7. A redevelopment project is required to meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural best management practice requirements of Standards 4, 5, and 6. Existing stormwater discharges shall comply with Standard 1 only to the maximum extent practicable. A redevelopment project shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions.

This project fully complies with the standards.

8. A plan to control construction-related impacts including erosion, sedimentation and other pollutant sources during construction and land disturbance activities (construction period erosion, sedimentation, and pollution prevention plan) shall be developed and implemented.

The plans are to be provided under separate cover.

9. A long-term operation and maintenance plan shall be developed and implemented to ensure that stormwater management systems function as designed.

The plan to be attached.

10. All illicit discharges to the stormwater management system are prohibited.

No illicit discharges are allowed or planned related to this site. Additional documentation will be filed per the stormwater instructions.

As shown above and in the following calculations, the proposed site will be compliant with the State Stormwater Management Guidelines.

INSTRUCTIONS:
1. In BMP Column, click on Blue Cell to Activate Drop Down Menu
2. Select BMP from Drop Down Menu
3. After BMP is selected, TSS Removal and other Columns are automatically completed.

Version 1, Automated: Mar. 4, 2008

Location: Rear of proposed property

TSS Removal Calculation Worksheet

B BMP[1]	C TSS Removal Rate[1]	D Starting TSS Load*	E Amount Removed (C*D)	F Remaining Load (D-E)
Deep Sump and Hooded Catch Basin	0.25	1.00	0.25	0.75
Oil Grit Separator	0.25	0.75	0.19	0.56
Infiltration Trench	0.80	0.56	0.45	0.11
	0.00	0.11	0.00	0.11
	0.00	0.11	0.00	0.11

Total TSS Removal = 89%

Separate Form Needs to be Completed for Each Outlet or BMP Train

Project: 94 Thad Ellis Road
Prepared By: Downcape Engineering
Date: 8/17/2023

*Equals remaining load from previous BMP (E) which enters the BMP

Non-automated TSS Calculation Sheet must be used if Proprietary BMP Proposed
1. From MassDEP Stormwater Handbook Vol. 1

INSTRUCTIONS:
1. In BMP Column, click on Blue Cell to Activate Drop Down Menu
2. Select BMP from Drop Down Menu
3. After BMP is selected, TSS Removal and other Columns are automatically completed.

Version 1, Automated: Mar. 4, 2008

Location: Front of proposed property

TSS Removal Calculation Worksheet

B BMP[1]	C TSS Removal Rate[1]	D Starting TSS Load*	E Amount Removed (C*D)	F Remaining Load (D-E)
Deep Sump and Hooded Catch Basin	0.25	1.00	0.25	0.75
Sediment Forebay	0.25	0.75	0.19	0.56
Infiltration Trench	0.80	0.56	0.45	0.11
Rain Garden	0.90	0.11	0.10	0.01
	0.00	0.01	0.00	0.01

Total TSS Removal = 99%

Separate Form Needs to be Completed for Each Outlet or BMP Train

Project: 94 Thad Ellis Road
Prepared By: Downcape Engineering
Date: 8/17/2023

*Equals remaining load from previous BMP (E) which enters the BMP

Non-automated TSS Calculation Sheet must be used if Proprietary BMP Proposed
1. From MassDEP Stormwater Handbook Vol. 1

LONG TERM POLLUTION PREVENTION PLAN

#94 Thad Ellis Road, Brewster, MA

DATE: 12/28/2023

Prepared by: down cape engineering, inc.
939 Route 6a Yarmouthport, MA 02675
Ph. 1-508-362-4541
Fax 1-508-362-9880

LONG TERM POLLUTION PREVENTION PLAN:

#94 Thad Ellis Road, Brewster, MA

1. **Street Sweeping of parking lot shall be performed on or about April 1st of every year or as needed.**

2. **Dumpster area fence shall be maintained in good condition and unauthorized access to the dumpster prohibited.**

3. **Dumpster lids shall be properly maintained and replaced if damaged.**

4. **Ongoing maintenance of stormwater drainage systems shall be per O&M plan.**

5. **Spill response plan shall be posted per Stormwater O&M plan.**

6. **Excessive use of fertilizers, herbicides, and pesticides shall be avoided.**

7. **Illicit discharges to the stormwater management system or waters of the Commonwealth are prohibited, and personnel shall be instructed that no such discharges are allowed. An illicit discharge statement is attached and is to be signed by the owner prior to occupancy.**

8. **Floor drain tight tank to be inspected and maintained in accordance with approval, licensed hauler required, track gallonage and destination, permit, plans and pumping records to be maintained on clipboard by tank alarm- not for regular use, so limited pumping expected.**

LONG TERM POLLUTION PREVENTION PLAN:

RESPONSIBLE PARTY FOR LTPPP COMPLIANCE:

OWNER/RESPONSIBLE PARTY:

Wentworth Motorsport
Alex Wentworth
94 Thad Ellis Road
Brewster, MA
508-246-7351

Note: Responsibility may be transferred using legally binding contract.

ILLICIT DISCHARGE COMPLIANCE STATEMENT

SITE ADDRESS: 94 THAD ELLIS ROAD, BREWSTER, MASSACHUSETTS

OWNER: WENTWORTH MOTORSPORT

PLAN REFERENCE: SITE PLAN SET PREPARED BY DOWN CAPE ENGINEERING, INC.

DATE: REV. DECEMBER 6, 2023

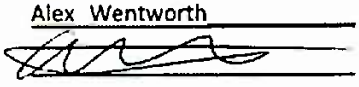
As required by Standard 10 of the Massachusetts Stormwater Standards, I, the undersigned, being the authorized owner/responsible party of the above referenced property do hereby certify that no illicit discharges exist on the site and that the stormwater management system, as shown on the above referenced plan, does not contain or permit any illicit discharges to enter the stormwater management system. Furthermore discharges from interior building drains or plumbing within the buildings are prohibited. Illicit discharges do not include discharges from the following activities or facilities: firefighting, water line flushing, landscape irrigation, uncontaminated groundwater, potable water sources, foundation drains, air conditioning condensation, footing drains, individual resident car washing, flows from riparian habitats and wetlands, dechlorinated water from swimming pools, water used for street washing and water used to clean residential buildings without detergents.

The pollution prevention plan measures to implements in this project to prevent illicit discharges to the stormwater management system, including wastewater discharges and discharges of stormwater contaminated by contact with process wastes, raw materials, toxic pollutants, hazardous substances, oil, or grease, include:

1. Identifying the responsible personnel for the implementation of an effective Illicit Discharge Detection and Elimination (IDDE) program.
2. Identify potential sources of Illicit Discharges.
3. Implement the Spill Prevention and Control Plan contained in the property Stormwater Pollution Prevention Plan (SWPPP).

Further, I certify that the stormwater management system ass shown on the referenced plan will be maintained in accordance with the conditions of the Long Term Pollution Prevention Plan.

NAME: Alex Wentworth

SIGNED: 

DATE: December 29, 2023

STORMWATER
OPERATIONS AND MAINTENANCE PLAN:

#94 Thad Ellis Road, Brewster, MA

DATE: 9-1-2023

Prepared by: down cape engineering, inc.
939 Route 6a Yarmouthport, MA 02675
Ph. 1-508-362-4541
Fax 1-508-362-9880

STORMWATER OPERATIONS AND MAINTENANCE PLAN:

#94 Thad Ellis Road, Brewster, MA

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STORMWATER OPERATIONS AND MAINTENANCE PLAN:

#94 Thad Ellis Road, Brewster, MA

OWNER OF STORMWATER SYSTEM AND RESPONSIBLE PARTY FOR OPERATIONS AND MAINTENANCE:

OWNER/RESPONSIBLE PARTY:

Wentworth Motorsport
Alex Wentworth
94 Thad Ellis Road
Brewster, MA
508-246-7351

The responsible party shall:
Operate and maintain all stormwater BMPs in accordance with the design plans, the O&M Plan, and the requirements of the Massachusetts Stormwater Handbook, and local Town of Brewster Stormwater Management Regulations, maintain an operation and maintenance log continuously and retain for the latest three (3) consecutive calendar years, of inspections, repairs, maintenance and/or replacement of the stormwater management system or any part thereof, and disposal (for disposal the log shall indicate the type of material and the disposal location), make the maintenance log available to Brewster Stormwater Authority or its designated agents upon request, and allow members and agents of the Brewster Stormwater Authority to enter and inspect the site to evaluate and ensure that the responsible party is in compliance with the requirements for each BMP established in the O&M Plan approved by the issuing authority.

STORMWATER OPERATIONS AND MAINTENANCE PLAN:

#94 Thad Ellis Road, Brewster, MA

OVERVIEW OF STORMWATER MANAGEMENT SYSTEM:

The drainage systems specified for the proposed development area have been designed in accordance with Town of Brewster Stormwater Management Regulation. The system has been designed to fully comply with the Stormwater Management Guidelines.
The system utilizes catch basins with overflow leaching pits, sediment forebays, an oil grit separator and a rain garden. The roof areas are directed to subsurface infiltration pits. The proposed use is a typical commercial property with a parking lot and is not a "Land Use with Higher Potential Pollutant Load" per the State Stormwater Management Guidelines, and onsite infiltration of the full design storm is utilized for the proposed hardscaped areas. The underlying material is sand, hydrologic group A under the guidelines.
During construction the installation of silt controls near the down gradient border will provide protection. The erosion control fence is to be inspected after every rain event and is to be maintained until the site is stabilized. The systems are designed to contain and infiltrate the design storm event onsite.

Best Management Practices incorporated in the project are as follows:

-Infiltration Trenches/Pit	(80% TSS Removal)
-Sediment forebay	(25% TSS Removal)
-Rain Gardens / Bioinfiltration areas	(90% TSS Removal)
-Oil Grit Separator	(25% TSS Removal)
-Street Sweeping as required	(required BMP)

STORMWATER OPERATIONS AND MAINTENANCE PLAN:

#94 Thad Ellis Road, Brewster, MA

SCHEDULE OF INSPECTION AND MAINTENANCE OF STORMWATER MANAGEMENT SYSTEM:

SCHEDULE OF INSPECTION AND MAINTENANCE:

The stormwater management system proposed for the site requires regular inspection and maintenance to ensure proper operation and effectiveness.

1. It is recommended that the stormwater system proposed for the site be inspected annually, and sediment removed from the catch basins, sediment forebays and gutters as required, generally once per year for the gutter and catch basins and four times per year for the forebays. The inspection should involve physical inspection of the catch basins, gutters, and forebays for sediment buildup and inspecting the leaching pits for solids carryover. If significant solids are found in the catch basins, gutters, forebays, or infiltration pits, they shall be cleaned, and the sediment disposed of offsite in compliance with all local, state, and federal regulations. If slow infiltration is noted during storm events, the infiltration pits should be repaired or rebuilt as necessary to restore function. If standing water is observed in the bottom of the bioinfiltration areas, any sediment shall be removed, and the bottom scarified to increase infiltration as needed to prevent standing water more than 72 hours after a rain event.
2. Grass in infiltration areas should be mowed once annually, aerate/till and re-seed if water is standing more than 72 hours after a rain event.
3. The parking lot areas shall be swept free of sand when necessary and kept free of any debris.

STORMWATER OPERATIONS AND MAINTENANCE PLAN:

#94 Thad Ellis Road, Brewster, MA

SOURCE CONTROL BEST MANAGEMENT PRACTICES:

1. The pavement should be swept when necessary to remove accumulated debris.
2. No illicit discharges of any type are allowed into the storm water drainage system or septic system. Owners of the dwellings should be instructed in proper disposal of any cleaning materials, paints, chemicals, or other potentially harmful substances utilized on or about the property.
3. Good housekeeping procedures shall be used to reduce sources of sediment, phosphorus, nitrogen and other contaminants in stormwater runoff. These shall include:
    (a) Wash vehicles at offsite commercial car washes or on lawns or pervious areas using biodegradable and phosphate free detergent (washing of vehicles onsite is discouraged in general, however).
    (b) Removal of sediment, leaf litter and other organic debris from impervious surfaces a minimum of twice a year in the spring (after snowmelt) and fall (after leaf fall)
    (c) Removal of sediment/debris from trench drain and gutters a minimum of once a year
    (d) Restrictions on the application of fertilizers, including:
        i. Fertilizer shall not be applied during or immediately prior to heavy rainfall, such as but not limited to thunderstorms, hurricanes, or northeastern storms, or when the soil is saturated due to intense or extended rainfall;
        ii. Fertilizer shall not be applied between November 12 and the following March 31;
        iii. Fertilizer shall not be applied, spilled or deposited on impervious surfaces or in a manner that allows it to enter into storm drains;
        iv. Fertilizer shall not be applied within 100 feet of any surface water or within the Zone I of a public drinking water well;
        v. Fertilizer containing phosphorus shall not be applied unless a soil test taken not more than three years before the proposed fertilizer application indicates that additional phosphorus is needed for growth of that turf, or unless establishing new turf or reestablishing or repairing turf after substantial damage or land disturbance;

vi. A single application of fertilizer that contains nitrogen shall not exceed 1.0 pound of nitrogen per 1,000 square feet, shall consist of at least 20% slow-release nitrogen (SRN) fertilizer (NOTE: This represents the minimum percentage: use of higher SRN content is generally preferable, especially on sandy root zones, during stress and pre-stress periods, and when there are fewer annual applications of nitrogen made to a lawn) and the annual rate shall not exceed 3.2 pounds of actual nitrogen per thousand square feet. Single applications shall be done at intervals of no less than four weeks until the annual maximum is reached;

vii. Grass clippings, leaves, or any other vegetative debris shall not be deposited into or within 50 feet of water bodies, retention and detention areas, drainage ditches or stormwater drains, or onto impervious surfaces, such as, but not limited to, roadways and sidewalks, except during scheduled clean- up programs.

STORMWATER OPERATIONS AND MAINTENANCE PLAN:

#94 Thad Ellis Road, Brewster, MA

EMERGENCY SPILL CONTIGENCY PLAN:

1. The owner of the facility shall have a designated person with overall responsibility for spill response.

2. A summary of this plan shall be posted in a prominent location in the building. The Summary shall identify the phone numbers of regulatory agencies and individuals to be contacted in the event of a spill.

3. In the event of a spill, the following shall be notified: (emergencies dial 911)

a) Brewster Fire Department 1-508-896-7018
(For a gasoline or hazardous materials spill)

b) Department of Environmental Protection
Emergency Response 1-508-946-2850

c) Brewster Water Department 1-508-896-5454

d) Brewster Board of Health 1-508-896-3701

4. Notification of authorities for the cleanup of spills shall be done immediately upon discovery of a spill, except for minor spills inside the building which can be managed by onsite personnel. Any release to the environment must be reported immediately.

STORMWATER OPERATIONS AND MAINTENANCE PLAN:

#94 Thad Ellis Road, Brewster, MA

ESTIMATED OPERATIONS AND MAINTENANCE BUDGET:

Inspections: Inspection of drainage system 2 times per year:
Visual inspection, probe sediment depth, review for signs of drainage issues, ...Est. $150/visit = $300/year.

Catch basin and gutter cleaning: 1 time per year or when sediment buildup is apparent - $150/year.

Forebay cleaning: four times per year - $400/year

Street Sweeping: as needed - Est. $600/visit.

INSPECTION AND MAINTENANCE LOG FORM-
Long Term Pollution Prevention and Erosion and Sedimentation Control
Project Name: #94 Thad Ellis Road, Brewster, MA
Owner: Wentworth Motorsports
Contractor:

Date	Description of Inspection or Maintenance (Sweep road, apron maintenance, silt fence, etc.)	Person	Comments

STORMWATER
OPERATIONS AND MAINTENANCE PLAN:

#94 Thad Ellis Road, Brewster, MA

DATE: 8-17-2023

Prepared by: down cape engineering, inc.
939 Route 6a Yarmouthport, MA 02675
Ph. 1-508-362-4541
Fax 1-508-362-9880

STORMWATER OPERATIONS AND MAINTENANCE PLAN:

#94 Thad Ellis Road, Brewster, MA

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STORMWATER OPERATIONS AND MAINTENANCE PLAN:

#94 Thad Ellis Road, Brewster, MA

OWNER OF STORMWATER SYSTEM AND RESPONSIBLE PARTY FOR OPERATIONS AND MAINTENANCE:

OWNER/RESPONSIBLE PARTY:

Wentworth Motorsport
Alex Wentworth
94 Thad Ellis Road
Brewster, MA
508-246-7351

The responsible party shall:
Operate and maintain all stormwater BMPs in accordance with the design plans, the O&M Plan, and the requirements of the Massachusetts Stormwater Handbook, and local Town of Brewster Stormwater Management Regulations, maintain an operation and maintenance log continuously and retain for the latest three (3) consecutive calendar years, of inspections, repairs, maintenance and/or replacement of the stormwater management system or any part thereof, and disposal (for disposal the log shall indicate the type of material and the disposal location), make the maintenance log available to Brewster Stormwater Authority or its designated agents upon request, and allow members and agents of the Brewster Stormwater Authority to enter and inspect the site to evaluate and ensure that the responsible party is in compliance with the requirements for each BMP established in the O&M Plan approved by the issuing authority.

STORMWATER OPERATIONS AND MAINTENANCE PLAN:

#94 Thad Ellis Road, Brewster, MA

OVERVIEW OF STORMWATER MANAGEMENT SYSTEM:

The drainage systems specified for the proposed development area have been designed in accordance with Town of Brewster Stormwater Management Regulation. The system has been designed to fully comply with the Stormwater Management Guidelines.
The system utilizes catch basins with overflow leaching pits, sediment forebays, an oil grit separator and a rain garden. The roof areas are directed to subsurface infiltration pits. The proposed use is a typical commercial property with a parking lot and is not a "Land Use with Higher Potential Pollutant Load" per the State Stormwater Management Guidelines, and onsite infiltration of the full design storm is utilized for the proposed hardscaped areas. The underlying material is sand, hydrologic group A under the guidelines.
During construction the installation of silt controls near the down gradient border will provide protection. The erosion control fence is to be inspected after every rain event and is to be maintained until the site is stabilized. The systems are designed to contain and infiltrate the design storm event onsite.

Best Management Practices incorporated in the project are as follows:

-Infiltration Trenches/Pit	(80% TSS Removal)
-Sediment forebay	(25% TSS Removal)
-Rain Gardens / Bioinfiltration areas	(90% TSS Removal)
-Oil Grit Separator	(25% TSS Removal)
-Street Sweeping as required	(required BMP)

STORMWATER OPERATIONS AND MAINTENANCE PLAN:

#94 Thad Ellis Road, Brewster, MA

SCHEDULE OF INSPECTION AND MAINTENANCE OF STORMWATER MANAGEMENT SYSTEM:

SCHEDULE OF INSPECTION AND MAINTENANCE:

The stormwater management system proposed for the site requires regular inspection and maintenance to ensure proper operation and effectiveness.

1. It is recommended that the stormwater system proposed for the site be inspected annually, and sediment removed from the catch basins, sediment forebays and gutters as required, generally once per year for the gutter and catch basins and four times per year for the forebays. The inspection should involve physical inspection of the catch basins, gutters, and forebays for sediment buildup and inspecting the leaching pits for solids carryover. If significant solids are found in the catch basins, gutters, forebays, or infiltration pits, they shall be cleaned, and the sediment disposed of offsite in compliance with all local, state, and federal regulations. If slow infiltration is noted during storm events, the infiltration pits should be repaired or rebuilt as necessary to restore function. If standing water is observed in the bottom of the bioinfiltration areas, any sediment shall be removed, and the bottom scarified to increase infiltration as needed to prevent standing water more than 72 hours after a rain event.
2. Grass in infiltration areas should be mowed once annually, aerate/till and re-seed if water is standing more than 72 hours after a rain event.
3. The parking lot areas shall be swept free of sand when necessary and kept free of any debris.

STORMWATER OPERATIONS AND MAINTENANCE PLAN:

#94 Thad Ellis Road, Brewster, MA

SOURCE CONTROL BEST MANAGEMENT PRACTICES:

1. The pavement should be swept when necessary to remove accumulated debris.
2. No illicit discharges of any type are allowed into the storm water drainage system or septic system. Owners of the dwellings should be instructed in proper disposal of any cleaning materials, paints, chemicals, or other potentially harmful substances utilized on or about the property.
3. Good housekeeping procedures shall be used to reduce sources of sediment, phosphorus, nitrogen and other contaminants in stormwater runoff. These shall include:
    (a) Wash vehicles at offsite commercial car washes or on lawns or pervious areas using biodegradable and phosphate free detergent (washing of vehicles onsite is discouraged in general, however).
    (b) Removal of sediment, leaf litter and other organic debris from impervious surfaces a minimum of twice a year in the spring (after snowmelt) and fall (after leaf fall)
    (c) Removal of sediment/debris from trench drain and gutters a minimum of once a year
    (d) Restrictions on the application of fertilizers, including:
        i. Fertilizer shall not be applied during or immediately prior to heavy rainfall, such as but not limited to thunderstorms, hurricanes, or northeastern storms, or when the soil is saturated due to intense or extended rainfall;
        ii. Fertilizer shall not be applied between November 12 and the following March 31;
        iii. Fertilizer shall not be applied, spilled or deposited on impervious surfaces or in a manner that allows it to enter into storm drains;
        iv. Fertilizer shall not be applied within 100 feet of any surface water or within the Zone I of a public drinking water well;
        v. Fertilizer containing phosphorus shall not be applied unless a soil test taken not more than three years before the proposed fertilizer application indicates that additional phosphorus is needed for growth of that turf, or unless establishing new turf or reestablishing or repairing turf after substantial damage or land disturbance;

vi. A single application of fertilizer that contains nitrogen shall not exceed 1.0 pound of nitrogen per 1,000 square feet, shall consist of at least 20% slow-release nitrogen (SRN) fertilizer (NOTE: This represents the minimum percentage: use of higher SRN content is generally preferable, especially on sandy root zones, during stress and pre-stress periods, and when there are fewer annual applications of nitrogen made to a lawn) and the annual rate shall not exceed 3.2 pounds of actual nitrogen per thousand square feet. Single applications shall be done at intervals of no less than four weeks until the annual maximum is reached;

vii. Grass clippings, leaves, or any other vegetative debris shall not be deposited into or within 50 feet of water bodies, retention and detention areas, drainage ditches or stormwater drains, or onto impervious surfaces, such as, but not limited to, roadways and sidewalks, except during scheduled clean- up programs.

STORMWATER OPERATIONS AND MAINTENANCE PLAN:

#94 Thad Ellis Road, Brewster, MA

EMERGENCY SPILL CONTIGENCY PLAN:

1. The owner of the facility shall have a designated person with overall responsibility for spill response.

2. A summary of this plan shall be posted in a prominent location in the building. The Summary shall identify the phone numbers of regulatory agencies and individuals to be contacted in the event of a spill.

3. In the event of a spill, the following shall be notified: (emergencies dial 911)

a) Brewster Fire Department 1-508-896-7018
(For a gasoline or hazardous materials spill)

b) Department of Environmental Protection
Emergency Response 1-508-946-2850

c) Brewster Water Department 1-508-896-5454

d) Brewster Board of Health 1-508-896-3701

4. Notification of authorities for the cleanup of spills shall be done immediately upon discovery of a spill, except for minor spills inside the building which can be managed by onsite personnel. Any release to the environment must be reported immediately.

STORMWATER OPERATIONS AND MAINTENANCE PLAN:

#94 Thad Ellis Road, Brewster, MA

ESTIMATED OPERATIONS AND MAINTENANCE BUDGET:

Inspections: Inspection of drainage system 2 times per year:
Visual inspection, probe sediment depth, review for signs of drainage issues, ...Est. $150/visit = $300/year.

Catch basin and gutter cleaning: 1 time per year or when sediment buildup is apparent - $150/year.

Forebay cleaning: four times per year - $400/year

Street Sweeping: as needed - Est. $600/visit.

INSPECTION AND MAINTENANCE LOG FORM-
Long Term Pollution Prevention and Erosion and Sedimentation Control
Project Name: #94 Thad Ellis Road, Brewster, MA
Owner: Wentworth Motorsports
Contractor:

Date	Description of Inspection or Maintenance Person (Sweep road, apron maintenance, silt fence, etc.)		Comments

down cape engineering, inc.
CIVIL ENGINEERS & LAND SURVEYORS
939 MAIN ST / ROUTE 6A YARMOUTHPORT, MA 02675
(508) 362-4541 FAX (508) 362-9880

Date: 9-20-23
STORMWATER NARRATIVE:
94 Thad Ellis Road, Brewster, MA- Wentworth Motorsports

STORMWATER DRAINAGE CALCULATION OVERVIEW:

The drainage systems specified for proposed development have been designed in accordance with Town of Brewster Stormwater Regulations and the State Stormwater Management Guidelines. The project consists of small commercial site which is being redeveloped. Paved and gravel surfaces will serve a central building on the site. Full compliance with all Stormwater Standards is met by the design. The site is not a "Land Use with Higher Potential Pollutant Load" per the State Stormwater Management Guidelines, so infiltration is utilized. The underlying material is a somewhat impervious layer of clay overlying highly pervious sand, hydrologic group A under the guidelines.
During construction, the perimeter silt fence and the rain garden area to be excavated on the East side of the site will provide protection of the adjacent resource areas. The erosion control fence and silt sacks in roadway drainage are to installed and inspected after every rain event in excess of a half inch of precipitation and are to be maintained until the site is stabilized and ready for occupancy.
The proposed deep sump hooded catch basin with flows to an oil water separator in the rear and sediment forebays in the front, which then flow to a rain garden in front overflowing to a subsurface infiltration pit. The design meets the 44% TSS removal prior to infiltration. The systems are designed to contain and infiltrate the design storm event onsite and provide the required Total Suspended Solids (TSS) removal mandated by the State Stormwater Management Guidelines.
The attached HydroCAD calculations utilizing an exact storage and infiltration model indicate the existing conditions flow uncontrolled offsite, while the Proposed DA P1 (rear) and P2 (front)drainage areas are completely infiltrated during smaller and 25 and 100 year storms, so no runoff from the site is anticipated after construction. The Pre and Post Development Hydrographs show that less runoff (nearly zero) will leave the site in the Post Development conditions as required by the regulations. The parking lot is to be swept free of sand each spring, on or about April 1st, and the drainage shall be inspected regularly per the operations and maintenance plan. Please refer to attached HydroCAD output and existing and proposed drainage area maps.

Best Management Practices incorporated in the project are as follows:

- Deep sump hooded catch basin offline (25% TSS Removal)
-Secondary deep sump manholes offline/o/w sep. (25% TSS Removal)
-Bioretention Areas/Rain Gardens (90% TSS Removal)
-Infiltration Drywells (80% TSS Removal)
-Street Sweeping- vacuum truck (required for pavement)

HYDRO-CAD DRAINAGE ANALYSIS INFORMATION
STAGE-DISCHARGE AND STAGE STORAGE TABLE DA P1

6' DIA PRECAST CATCH BASINS, 6'-8" HIGH
3/4" - 1-1/2" WASHED STONE FOR EFF. DIA SELECTED

INPUT VARIABLES:

NUMBER OF LEACHPITS:	1	(NO. PITS)
LENGTH OF TRENCHES:	0	(FT.)
WIDTH OF TRENCHES:	3	(FT.)
INVERT OF STRUCTURES:	60	(EL. ABOVE DATUM)
EFFECTIVE DIAMETER PITS:	14	(STONE + LPIT O.A. DIA)
STONE VOID RATIO, E:	0.35	(FT3/FT3)
TOWN LEACH RATE:	0.7	(GPM/SF)

CALCULATED VALUES:

TOP OF PRECAST STRUCTURES ELEV.:	62.00	BOTTOM LPIT ELEV.	55.33
		BOTTOM TRENCH EL.	58.00

ELEVATION (FT)	STORAGE (CU.FT.)	DISCHARGE (CFS)
55.23	0	0
55.33	0	0.24
56.00	48.4	0.26
57.00	120.7	0.35
57.93	187.9	0.42
58.00	192.9	0.42
59.00	265.2	0.49
60.00	337.4	0.56
61.00	409.7	0.63
62.00	481.9	0.70

HYDRO-CAD DRAINAGE ANALYSIS INFORMATION
STAGE-DISCHARGE AND STAGE STORAGE TABLE DA P2

6' DIA PRECAST CATCH BASINS, 6'-8" HIGH
3/4" - 1-1/2" WASHED STONE FOR EFF. DIA SELECTED

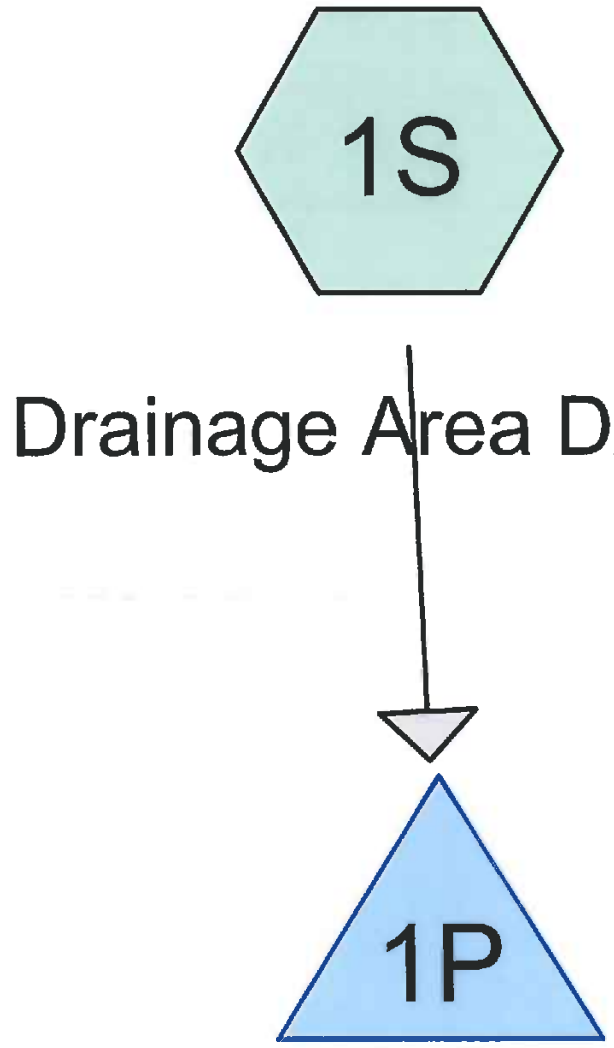
INPUT VARIABLES:

NUMBER OF LEACHPITS:	1	(NO. PITS)
LENGTH OF TRENCHES:	0	(FT.)
WIDTH OF TRENCHES:	3	(FT.)
INVERT OF STRUCTURES:	60	(EL. ABOVE DATUM)
EFFECTIVE DIAMETER PITS:	14	(STONE + LPIT O.A. DIA)
STONE VOID RATIO, E:	0.35	(FT3/FT3)
TOWN LEACH RATE:	0.7	(GPM/SF)

CALCULATED VALUES:

TOP OF PRECAST STRUCTURES ELEV.:	62.00	BOTTOM LPIT ELEV.	55.33
		BOTTOM TRENCH EL.	58.00

ELEVATION (FT)	STORAGE (CU.FT.)	DISCHARGE (CFS)
55.23	0	0
55.33	0	0.24
56.00	48.4	0.26
57.00	120.7	0.35
57.93	187.9	0.42
58.00	192.9	0.42
59.00	265.2	0.49
60.00	337.4	0.56
61.00	409.7	0.63
62.00	481.9	0.70



Existing Conditions Model

Subcat Reach Pond Link

Routing Diagram for 21-490 DA E1 Existing
Prepared by down cape engineering, inc.

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	Barn Cty 10 Yr	Type III 24-hr		Default	24.00	1	4.95	2
2	Barn Cty 100 yr	Type III 24-hr		Default	24.00	1	7.80	2
3	Barn Cty 2 Yr	Type III 24-hr		Default	24.00	1	3.39	2
4	Barn Cty 25 Yr	Type III 24-hr		Default	24.00	1	5.92	2
5	Barn Cty 5 Yr	Type III 24-hr		Default	24.00	1	4.24	2
6	Barn Cty 50 yr.	Type III 24-hr		Default	24.00	1	6.65	2

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
2,992	98	Building Area (1S)
178	75	Deck Area (1S)
9,575	60	Grass over clay soils (1S)
3,772	67	Gravel over clay soils (1S)
977	98	Pavement Areas (1S)
17,494	**70**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
0	HSG B	
0	HSG C	
0	HSG D	
17,494	Other	1S
17,494		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Sub Num
0	0	0	0	2,992	2,992	Building Area	
0	0	0	0	178	178	Deck Area	
0	0	0	0	9,575	9,575	Grass over clay soils	
0	0	0	0	3,772	3,772	Gravel over clay soils	
0	0	0	0	977	977	Pavement Areas	
0	**0**	**0**	**0**	**17,494**	**17,494**	**TOTAL AREA**	

Notes Listing (all nodes)

Line#	Node Number	Notes
1	1S	Time of Concentration
2	1P	Model for uncontrolled flow off site existing conditions no onsite drainage

Time span=1.00-24.00 hrs, dt=0.01 hrs, 2301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Drainage Area DA E1 Runoff Area=17,494 sf 22.69% Impervious Runoff Depth>2.00"
Tc=5.0 min CN=70 Runoff=0.96 cfs 2,911 cf

Pond 1P: Existing Conditions Model Peak Elev=23.41' Storage=0 cf Inflow=0.96 cfs 2,911 cf
Outflow=0.96 cfs 2,911 cf

Total Runoff Area = 17,494 sf Runoff Volume = 2,911 cf Average Runoff Depth = 2.00"
77.31% Pervious = 13,525 sf 22.69% Impervious = 3,969 sf

Summary for Subcatchment 1S: Drainage Area DA E1

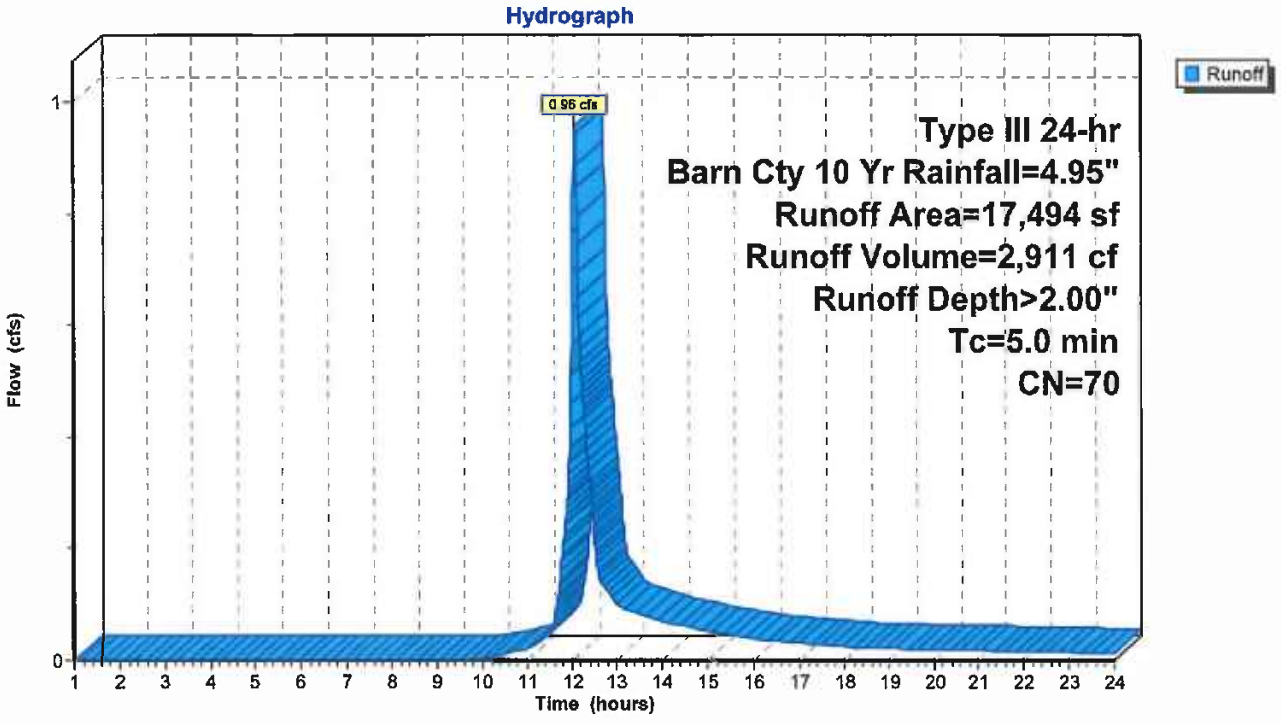
Runoff = 0.96 cfs @ 12.08 hrs, Volume= 2,911 cf, Depth> 2.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr Barn Cty 10 Yr Rainfall=4.95"

	Area (sf)	CN	Description
*	3,772	67	Gravel over clay soils
*	977	98	Pavement Areas
*	2,992	98	Building Area
*	178	75	Deck Area
*	9,575	60	Grass over clay soils
	17,494	70	Weighted Average
	13,525		77.31% Pervious Area
	3,969		22.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Time Concentration**

Subcatchment 1S: Drainage Area DA E1



Summary for Pond 1P: Existing Conditions Model

Inflow Area = 17,494 sf, 22.69% Impervious, Inflow Depth > 2.00" for Barn Cty 10 Yr event
Inflow = 0.96 cfs @ 12.08 hrs, Volume= 2,911 cf
Outflow = 0.96 cfs @ 12.08 hrs, Volume= 2,911 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.96 cfs @ 12.08 hrs, Volume= 2,911 cf

Routing by Stor-Ind method, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 23.41' @ 12.08 hrs Storage= 0 cf

Plug-Flow detention time= 0.0 min calculated for 2,910 cf (100% of inflow)
Center-of-Mass det. time= 0.0 min (846.6 - 846.6)

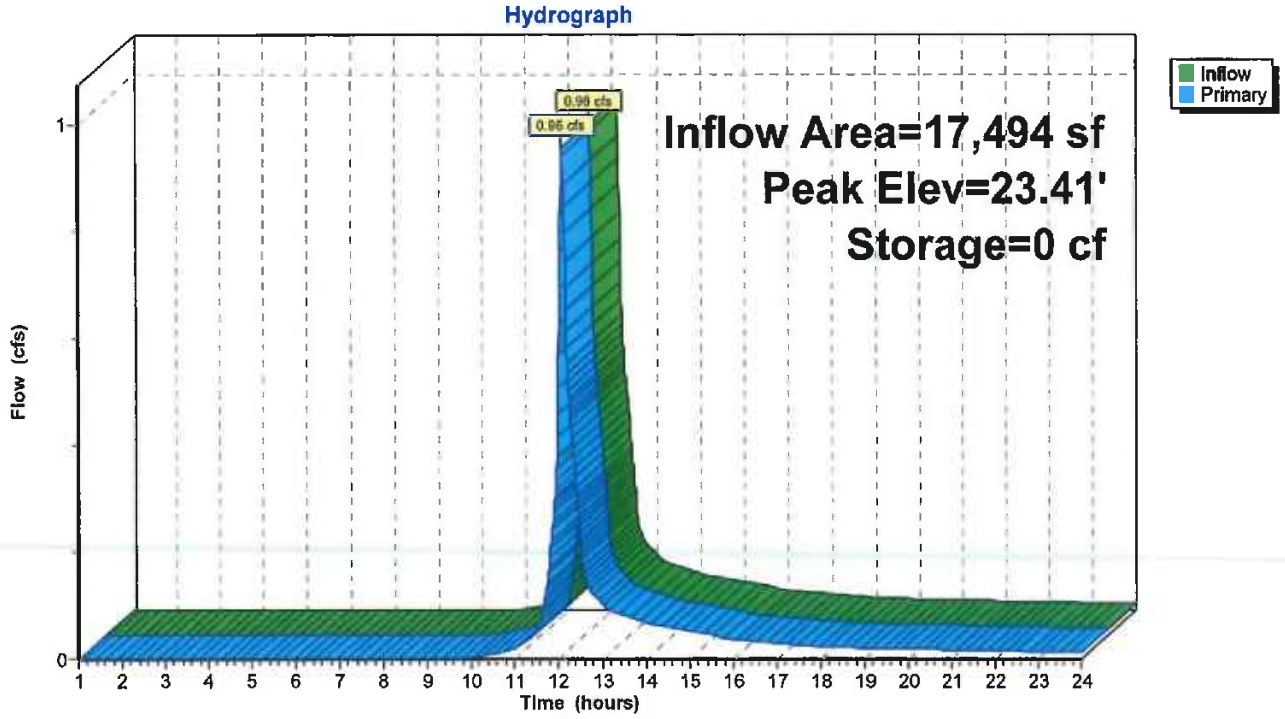
Volume	Invert	Avail.Storage	Storage Description
#1	23.40'	3,000 cf	**Existing flow off site Model**Listed below

Elevation (feet)	Cum.Store (cubic-feet)
23.40	0
23.50	1
24.00	1,000
25.00	2,000
26.00	3,000

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**Model for Existing Conditions** Elev. (feet) 0.00 1.00 30.00 Disch. (cfs) 0.000 0.010 6.000

Primary OutFlow Max=4.64 cfs @ 12.08 hrs HW=23.41' (Free Discharge)
└**1=Model for Existing Conditions** (Custom Controls 4.64 cfs)

Pond 1P: Existing Conditions Model



Time span=1.00-24.00 hrs, dt=0.01 hrs, 2301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Drainage Area DA E1 Runoff Area=17,494 sf 22.69% Impervious Runoff Depth>4.29"
Tc=5.0 min CN=70 Runoff=2.10 cfs 6,252 cf

Pond 1P: Existing Conditions Model Peak Elev=23.43' Storage=0 cf Inflow=2.10 cfs 6,252 cf
Outflow=2.10 cfs 6,252 cf

Total Runoff Area = 17,494 sf Runoff Volume = 6,252 cf Average Runoff Depth = 4.29"
77.31% Pervious = 13,525 sf 22.69% Impervious = 3,969 sf

Summary for Subcatchment 1S: Drainage Area DA E1

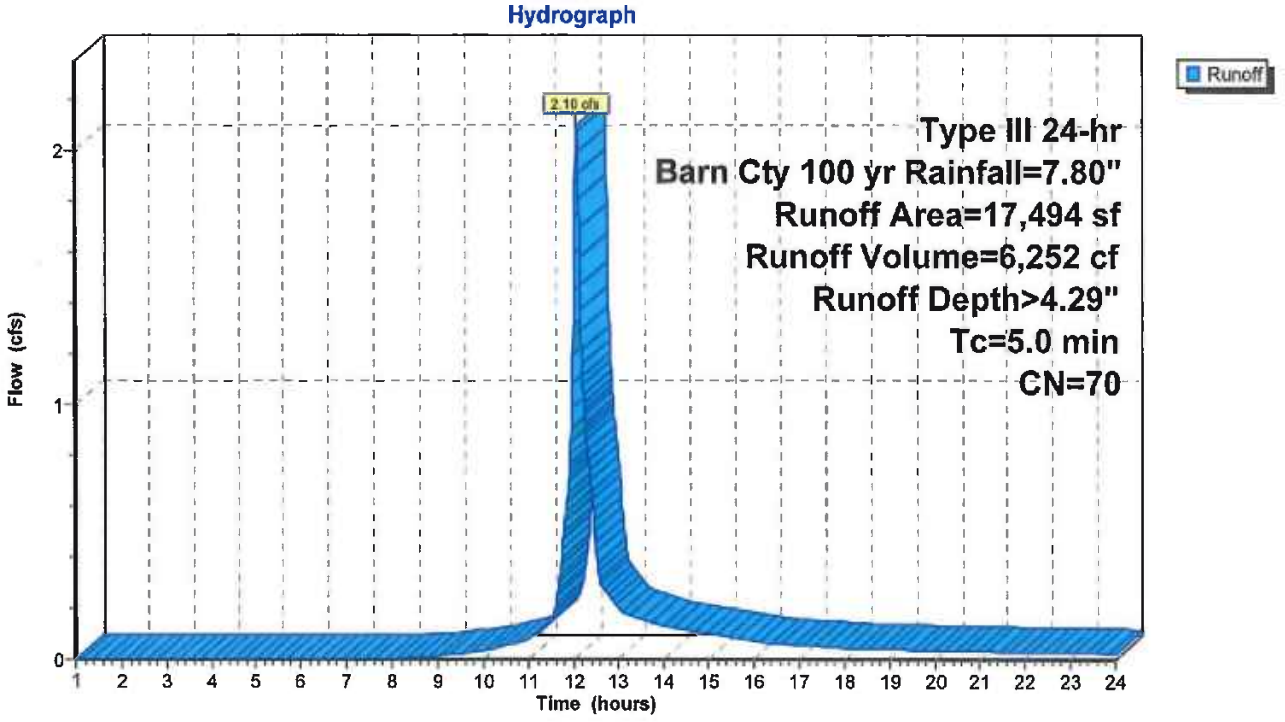
Runoff = 2.10 cfs @ 12.07 hrs, Volume= 6,252 cf, Depth> 4.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr Barn Cty 100 yr Rainfall=7.80"

	Area (sf)	CN	Description
*	3,772	67	Gravel over clay soils
*	977	98	Pavement Areas
*	2,992	98	Building Area
*	178	75	Deck Area
*	9,575	60	Grass over clay soils
	17,494	70	Weighted Average
	13,525		77.31% Pervious Area
	3,969		22.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Time Concentration**

Subcatchment 1S: Drainage Area DA E1



Summary for Pond 1P: Existing Conditions Model

Inflow Area = 17,494 sf, 22.69% Impervious, Inflow Depth > 4.29" for Barn Cty 100 yr event
Inflow = 2.10 cfs @ 12.07 hrs, Volume= 6,252 cf
Outflow = 2.10 cfs @ 12.07 hrs, Volume= 6,252 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.10 cfs @ 12.07 hrs, Volume= 6,252 cf

Routing by Stor-Ind method, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 23.43' @ 12.07 hrs Storage= 0 cf

Plug-Flow detention time= 0.0 min calculated for 6,250 cf (100% of inflow)
Center-of-Mass det. time= 0.0 min (824.4 - 824.4)

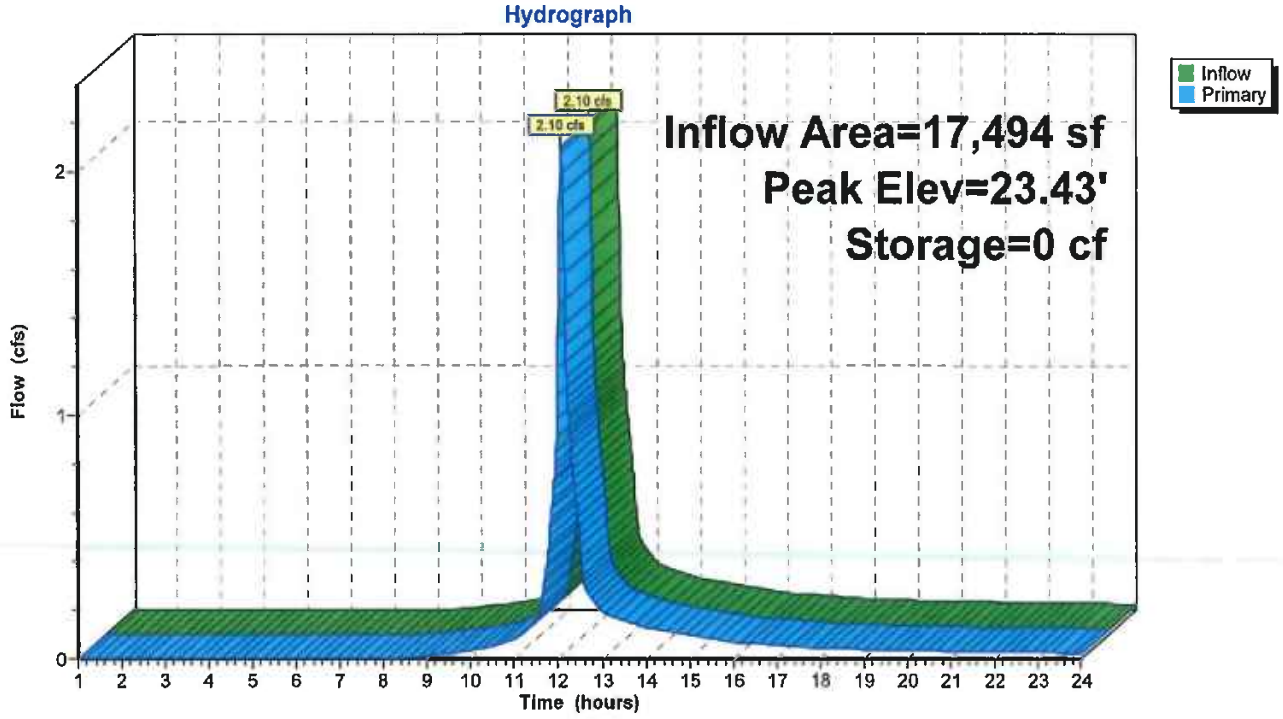
Volume	Invert	Avail.Storage	Storage Description
#1	23.40'	3,000 cf	**Existing flow off site Model**Listed below

Elevation (feet)	Cum.Store (cubic-feet)
23.40	0
23.50	1
24.00	1,000
25.00	2,000
26.00	3,000

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**Model for Existing Conditions** Elev. (feet) 0.00 1.00 30.00 Disch. (cfs) 0.000 0.010 6.000

Primary OutFlow Max=4.64 cfs @ 12.07 hrs HW=23.43' (Free Discharge)
↑**1=Model for Existing Conditions** (Custom Controls 4.64 cfs)

Pond 1P: Existing Conditions Model



Time span=1.00-24.00 hrs, dt=0.01 hrs, 2301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Drainage Area DA E1 Runoff Area=17,494 sf 22.69% Impervious Runoff Depth>0.94"
Tc=5.0 min CN=70 Runoff=0.42 cfs 1,370 cf

Pond 1P: Existing Conditions Model Peak Elev=23.41' Storage=0 cf Inflow=0.42 cfs 1,370 cf
Outflow=0.42 cfs 1,370 cf

Total Runoff Area = 17,494 sf Runoff Volume = 1,370 cf Average Runoff Depth = 0.94"
77.31% Pervious = 13,525 sf 22.69% Impervious = 3,969 sf

Summary for Subcatchment 1S: Drainage Area DA E1

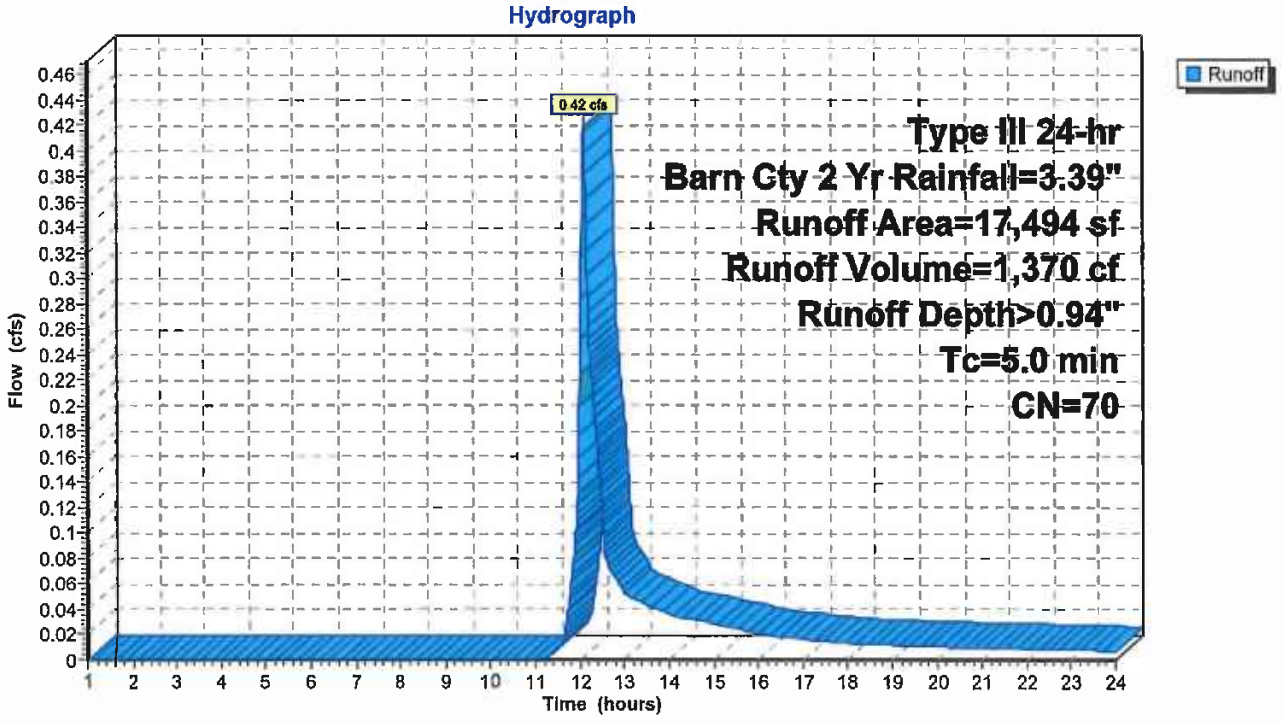
Runoff = 0.42 cfs @ 12.08 hrs, Volume= 1,370 cf, Depth> 0.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr Barn Cty 2 Yr Rainfall=3.39"

	Area (sf)	CN	Description
*	3,772	67	Gravel over clay soils
*	977	98	Pavement Areas
*	2,992	98	Building Area
*	178	75	Deck Area
*	9,575	60	Grass over clay soils
	17,494	70	Weighted Average
	13,525		77.31% Pervious Area
	3,969		22.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Time Concentration**

Subcatchment 1S: Drainage Area DA E1



Summary for Pond 1P: Existing Conditions Model

Inflow Area = 17,494 sf, 22.69% Impervious, Inflow Depth > 0.94" for Barn Cty 2 Yr event
Inflow = 0.42 cfs @ 12.08 hrs, Volume= 1,370 cf
Outflow = 0.42 cfs @ 12.08 hrs, Volume= 1,370 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.42 cfs @ 12.08 hrs, Volume= 1,370 cf

Routing by Stor-Ind method, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 23.41' @ 12.08 hrs Storage= 0 cf

Plug-Flow detention time= 0.0 min calculated for 1,369 cf (100% of inflow)
Center-of-Mass det. time= 0.0 min (869.8 - 869.8)

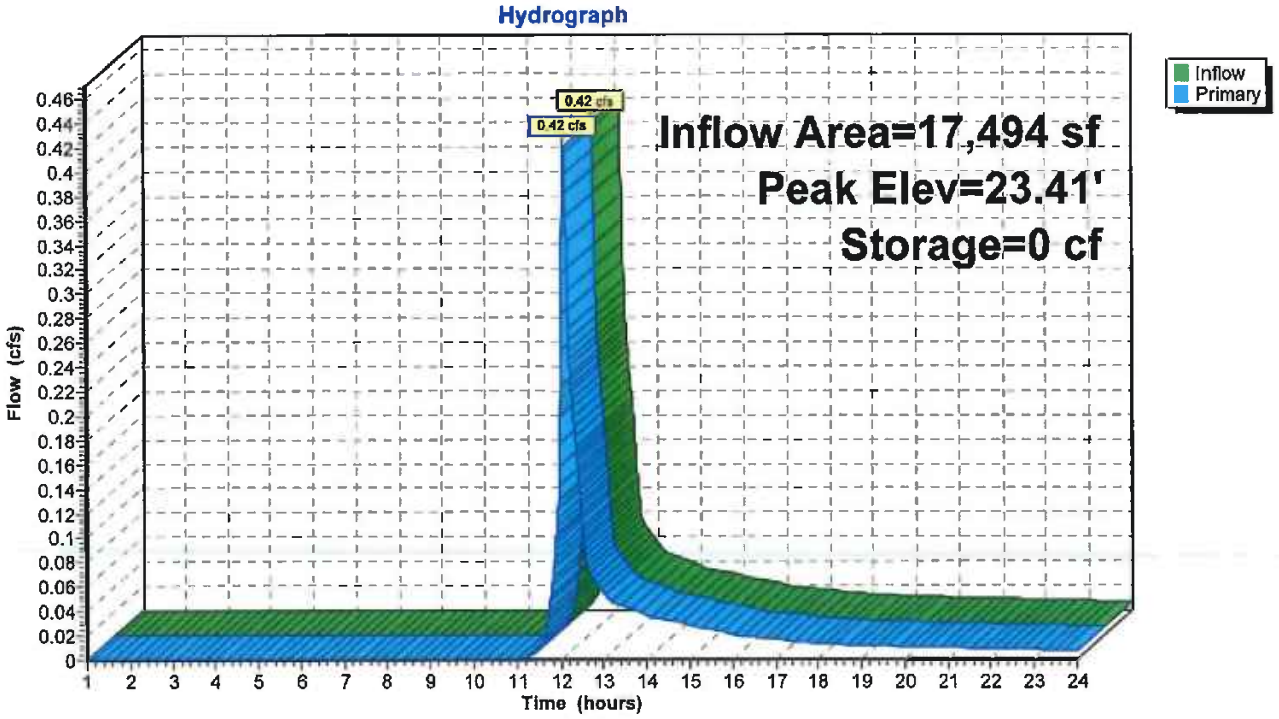
Volume	Invert	Avail.Storage	Storage Description
#1	23.40'	3,000 cf	**Existing flow off site Model**Listed below

Elevation (feet)	Cum.Store (cubic-feet)
23.40	0
23.50	1
24.00	1,000
25.00	2,000
26.00	3,000

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**Model for Existing Conditions** Elev. (feet) 0.00 1.00 30.00 Disch. (cfs) 0.000 0.010 6.000

Primary OutFlow Max=4.64 cfs @ 12.08 hrs HW=23.41' (Free Discharge)
↑—**1=Model for Existing Conditions** (Custom Controls 4.64 cfs)

Pond 1P: Existing Conditions Model



Time span=1.00-24.00 hrs, dt=0.01 hrs, 2301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Drainage Area DA E1 Runoff Area=17,494 sf 22.69% Impervious Runoff Depth>2.74"
Tc=5.0 min CN=70 Runoff=1.33 cfs 3,993 cf

Pond 1P: Existing Conditions Model Peak Elev=23.42' Storage=0 cf Inflow=1.33 cfs 3,993 cf
Outflow=1.33 cfs 3,993 cf

Total Runoff Area = 17,494 sf Runoff Volume = 3,993 cf Average Runoff Depth = 2.74"
77.31% Pervious = 13,525 sf 22.69% Impervious = 3,969 sf

Summary for Subcatchment 1S: Drainage Area DA E1

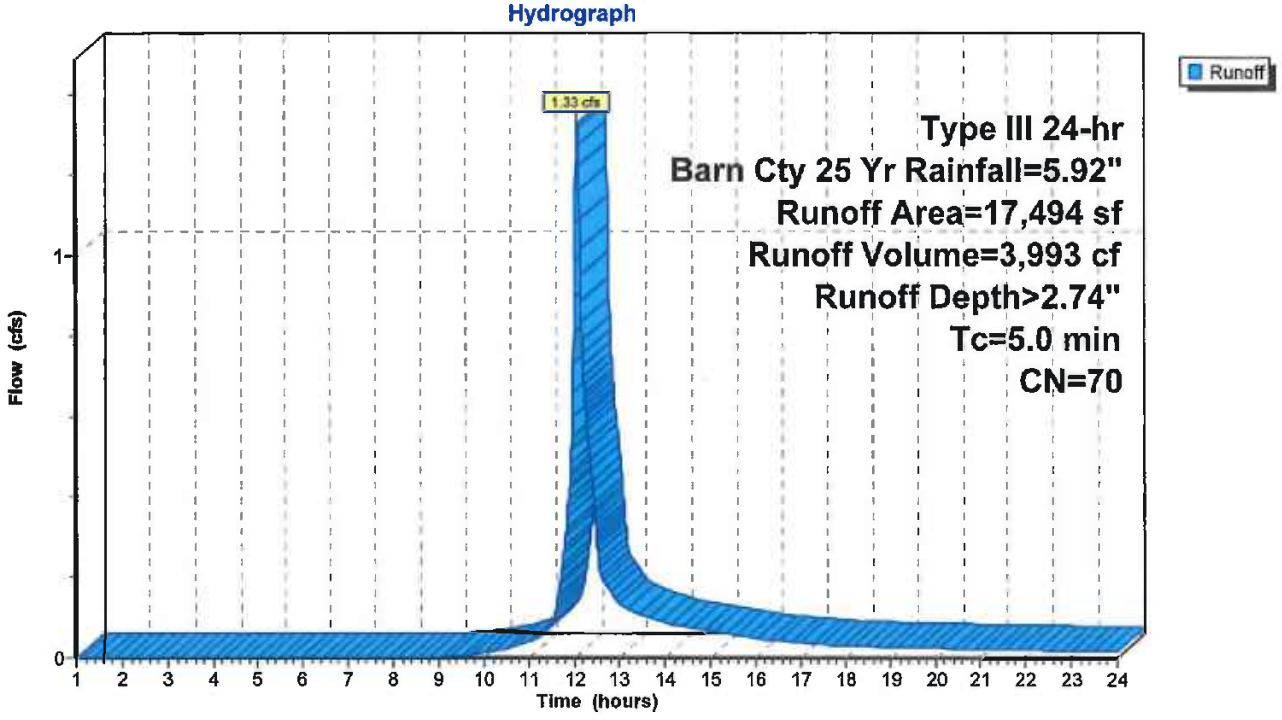
Runoff = 1.33 cfs @ 12.08 hrs, Volume= 3,993 cf, Depth> 2.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr Barn Cty 25 Yr Rainfall=5.92"

	Area (sf)	CN	Description
*	3,772	67	Gravel over clay soils
*	977	98	Pavement Areas
*	2,992	98	Building Area
*	178	75	Deck Area
*	9,575	60	Grass over clay soils
	17,494	70	Weighted Average
	13,525		77.31% Pervious Area
	3,969		22.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Time Concentration**

Subcatchment 1S: Drainage Area DA E1



Summary for Pond 1P: Existing Conditions Model

Inflow Area = 17,494 sf, 22.69% Impervious, Inflow Depth > 2.74" for Barn Cty 25 Yr event
Inflow = 1.33 cfs @ 12.08 hrs, Volume= 3,993 cf
Outflow = 1.33 cfs @ 12.08 hrs, Volume= 3,993 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.33 cfs @ 12.08 hrs, Volume= 3,993 cf

Routing by Stor-Ind method, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 23.42' @ 12.08 hrs Storage= 0 cf

Plug-Flow detention time= 0.0 min calculated for 3,991 cf (100% of inflow)
Center-of-Mass det. time= 0.0 min (837.3 - 837.3)

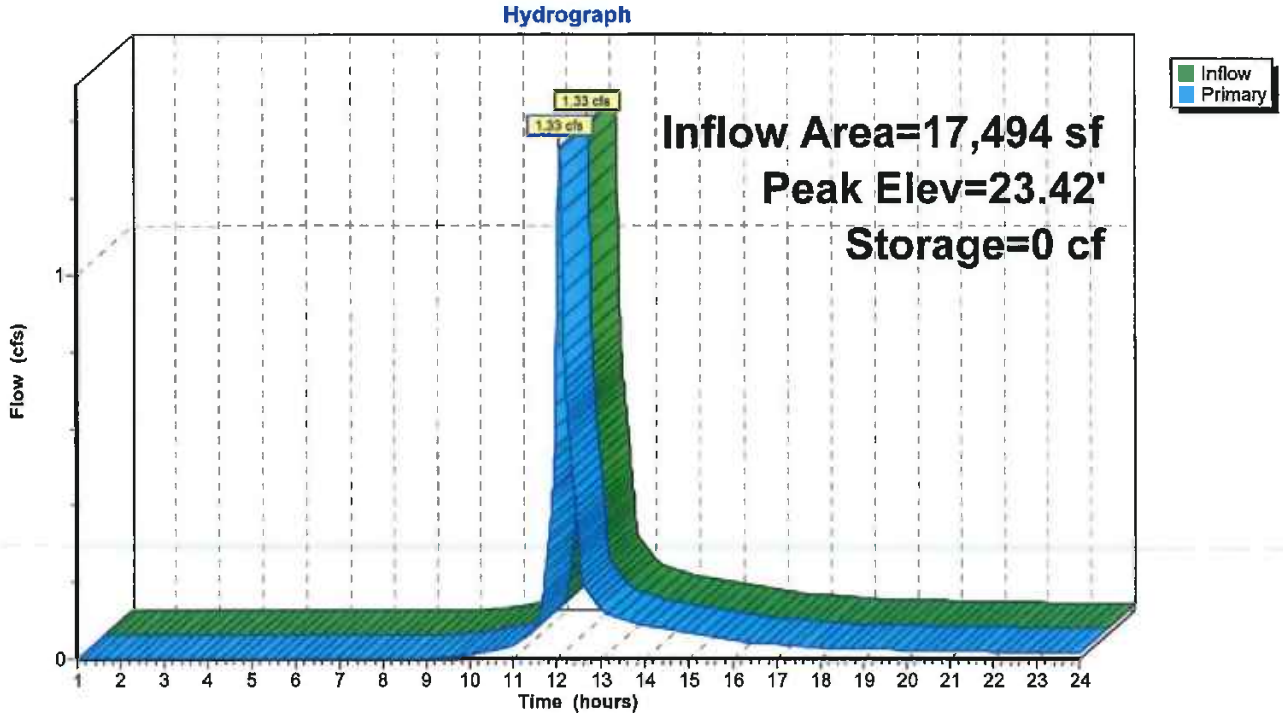
Volume	Invert	Avail.Storage	Storage Description
#1	23.40'	3,000 cf	**Existing flow off site Model**Listed below

Elevation (feet)	Cum.Store (cubic-feet)
23.40	0
23.50	1
24.00	1,000
25.00	2,000
26.00	3,000

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**Model for Existing Conditions** Elev. (feet) 0.00 1.00 30.00 Disch. (cfs) 0.000 0.010 6.000

Primary OutFlow Max=4.64 cfs @ 12.08 hrs HW=23.42' (Free Discharge)
↑—**1=Model for Existing Conditions** (Custom Controls 4.64 cfs)

Pond 1P: Existing Conditions Model



Time span=1.00-24.00 hrs, dt=0.01 hrs, 2301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Drainage Area DA E1 Runoff Area=17,494 sf 22.69% Impervious Runoff Depth>1.49"
Tc=5.0 min CN=70 Runoff=0.70 cfs 2,173 cf

Pond 1P: Existing Conditions Model Peak Elev=23.41' Storage=0 cf Inflow=0.70 cfs 2,173 cf
Outflow=0.70 cfs 2,173 cf

Total Runoff Area = 17,494 sf Runoff Volume = 2,173 cf Average Runoff Depth = 1.49"
77.31% Pervious = 13,525 sf 22.69% Impervious = 3,969 sf

Summary for Subcatchment 1S: Drainage Area DA E1

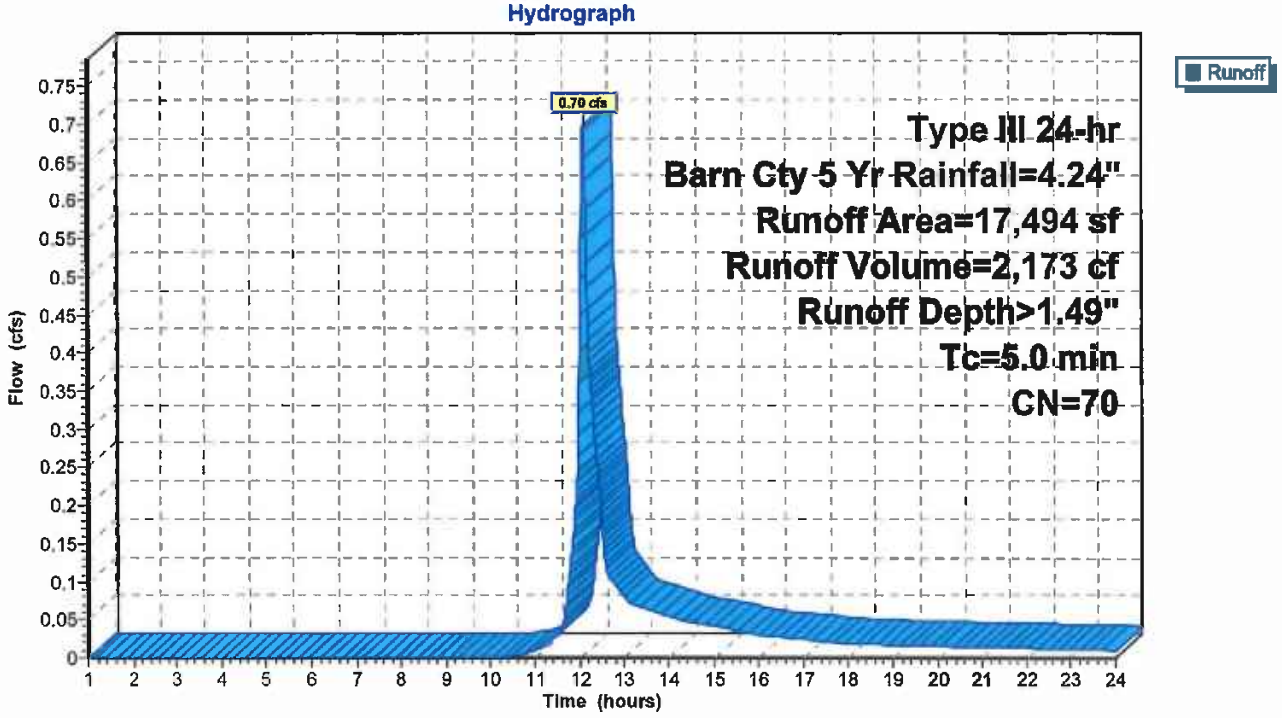
Runoff = 0.70 cfs @ 12.08 hrs, Volume= 2,173 cf, Depth> 1.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr Barn Cty 5 Yr Rainfall=4.24"

	Area (sf)	CN	Description
*	3,772	67	Gravel over clay soils
*	977	98	Pavement Areas
*	2,992	98	Building Area
*	178	75	Deck Area
*	9,575	60	Grass over clay soils
	17,494	70	Weighted Average
	13,525		77.31% Pervious Area
	3,969		22.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Time Concentration**

Subcatchment 1S: Drainage Area DA E1



Summary for Pond 1P: Existing Conditions Model

Inflow Area = 17,494 sf, 22.69% Impervious, Inflow Depth > 1.49" for Barn Cty 5 Yr event
Inflow = 0.70 cfs @ 12.08 hrs, Volume= 2,173 cf
Outflow = 0.70 cfs @ 12.08 hrs, Volume= 2,173 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.70 cfs @ 12.08 hrs, Volume= 2,173 cf

Routing by Stor-Ind method, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 23.41' @ 12.08 hrs Storage= 0 cf

Plug-Flow detention time= 0.0 min calculated for 2,173 cf (100% of inflow)
Center-of-Mass det. time= 0.0 min (855.4 - 855.4)

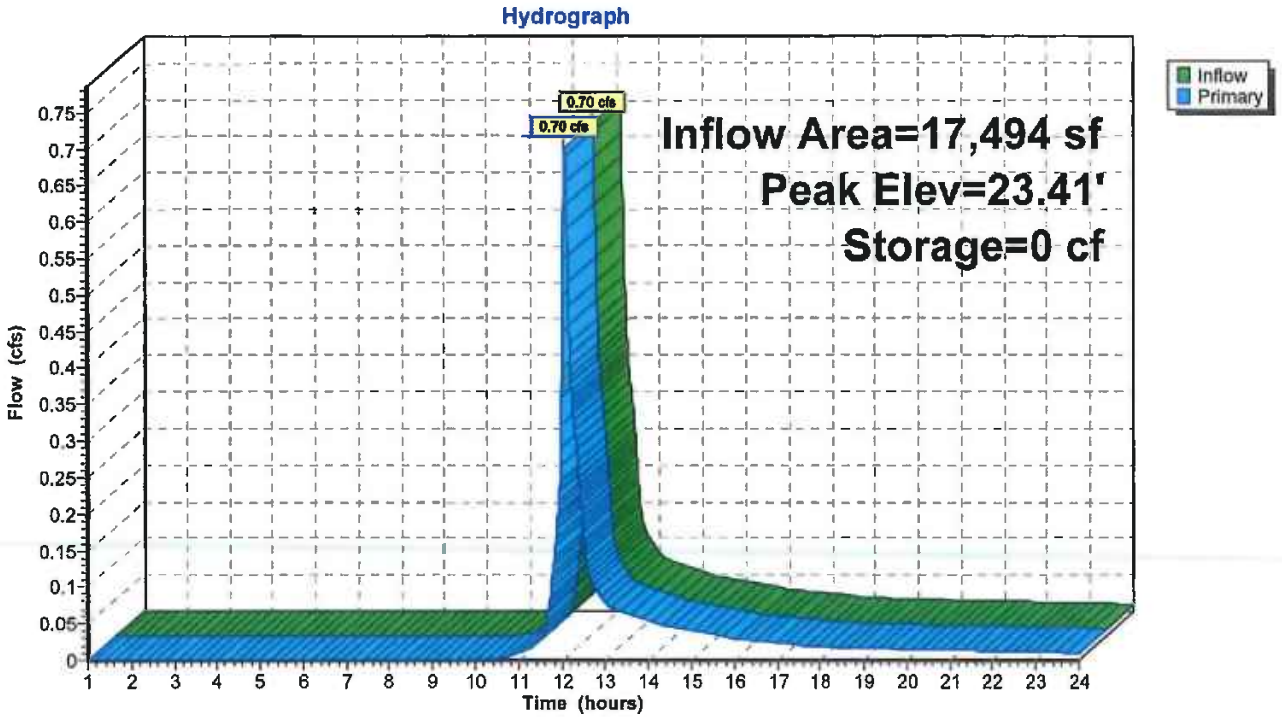
Volume	Invert	Avail.Storage	Storage Description
#1	23.40'	3,000 cf	**Existing flow off site Model**Listed below

Elevation (feet)	Cum.Store (cubic-feet)
23.40	0
23.50	1
24.00	1,000
25.00	2,000
26.00	3,000

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**Model for Existing Conditions** Elev. (feet) 0.00 1.00 30.00 Disch. (cfs) 0.000 0.010 6.000

Primary OutFlow Max=4.64 cfs @ 12.08 hrs HW=23.41' (Free Discharge)
↑—**1=Model for Existing Conditions** (Custom Controls 4.64 cfs)

Pond 1P: Existing Conditions Model



Time span=1.00-24.00 hrs, dt=0.01 hrs, 2301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Drainage Area DA E1 Runoff Area=17,494 sf 22.69% Impervious Runoff Depth>3.33"
Tc=5.0 min CN=70 Runoff=1.62 cfs 4,849 cf

Pond 1P: Existing Conditions Model Peak Elev=23.42' Storage=0 cf Inflow=1.62 cfs 4,849 cf
Outflow=1.62 cfs 4,849 cf

Total Runoff Area = 17,494 sf Runoff Volume = 4,849 cf Average Runoff Depth = 3.33"
77.31% Pervious = 13,525 sf 22.69% Impervious = 3,969 sf

Summary for Subcatchment 1S: Drainage Area DA E1

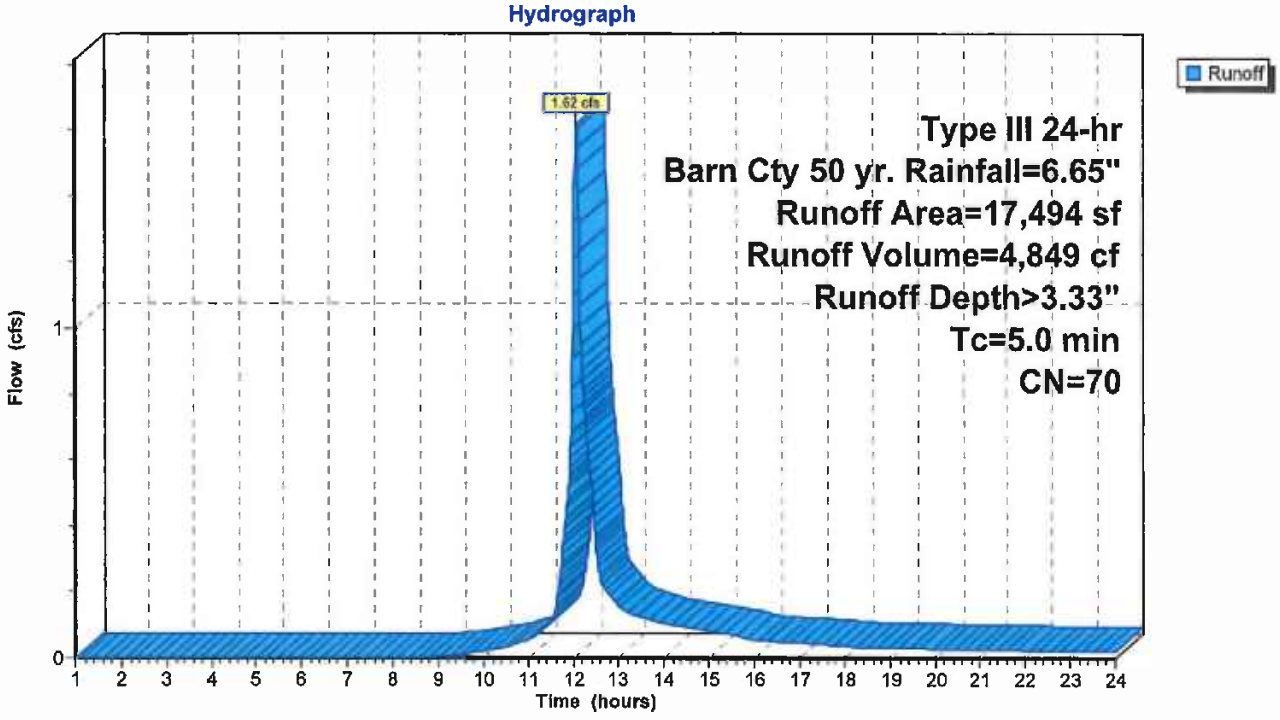
Runoff = 1.62 cfs @ 12.08 hrs, Volume= 4,849 cf, Depth> 3.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr Barn Cty 50 yr. Rainfall=6.65"

	Area (sf)	CN	Description
*	3,772	67	Gravel over clay soils
*	977	98	Pavement Areas
*	2,992	98	Building Area
*	178	75	Deck Area
*	9,575	60	Grass over clay soils
	17,494	70	Weighted Average
	13,525		77.31% Pervious Area
	3,969		22.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Time Concentration**

Subcatchment 1S: Drainage Area DA E1



Summary for Pond 1P: Existing Conditions Model

Inflow Area = 17,494 sf, 22.69% Impervious, Inflow Depth > 3.33" for Barn Cty 50 yr. event
Inflow = 1.62 cfs @ 12.08 hrs, Volume= 4,849 cf
Outflow = 1.62 cfs @ 12.08 hrs, Volume= 4,849 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.62 cfs @ 12.08 hrs, Volume= 4,849 cf

Routing by Stor-Ind method, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 23.42' @ 12.08 hrs Storage= 0 cf

Plug-Flow detention time= 0.0 min calculated for 4,847 cf (100% of inflow)
Center-of-Mass det. time= 0.0 min (831.7 - 831.7)

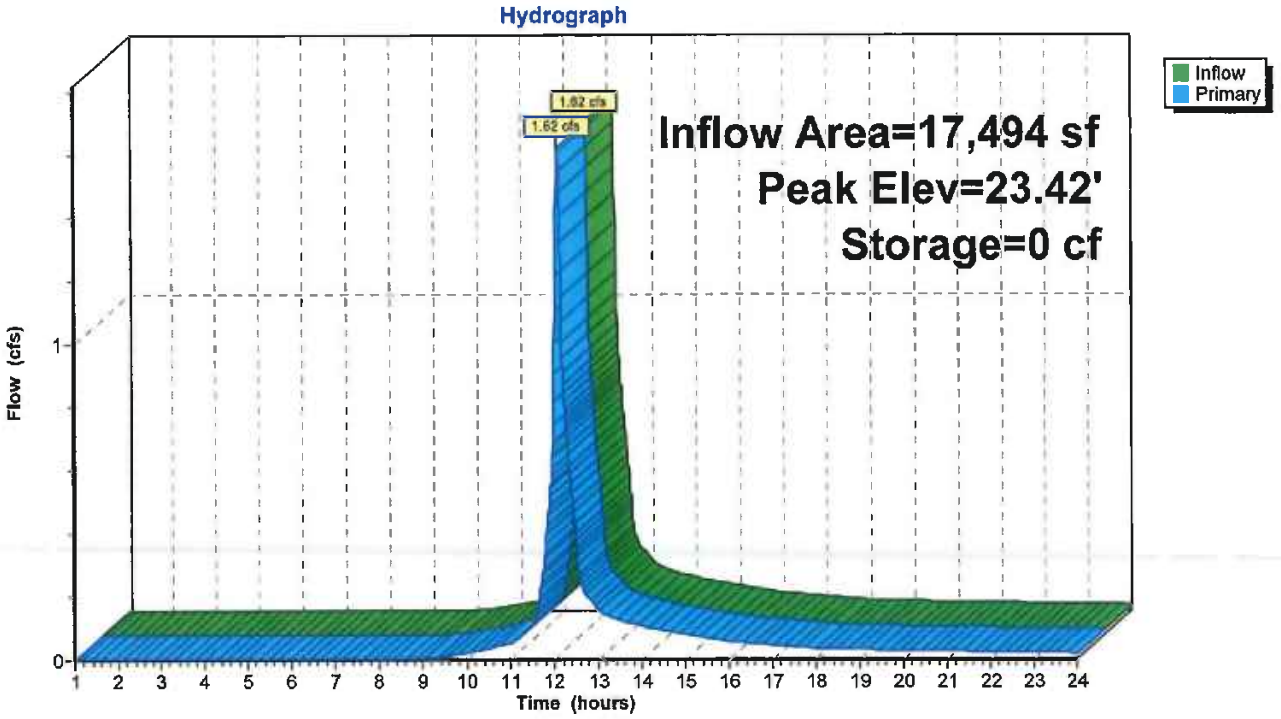
Volume	Invert	Avail.Storage	Storage Description
#1	23.40'	3,000 cf	**Existing flow off site Model**Listed below

Elevation (feet)	Cum.Store (cubic-feet)
23.40	0
23.50	1
24.00	1,000
25.00	2,000
26.00	3,000

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**Model for Existing Conditions** Elev. (feet) 0.00 1.00 30.00 Disch. (cfs) 0.000 0.010 6.000

Primary OutFlow Max=4.64 cfs @ 12.08 hrs HW=23.42' (Free Discharge)
↑—**1=Model for Existing Conditions** (Custom Controls 4.64 cfs)

Pond 1P: Existing Conditions Model



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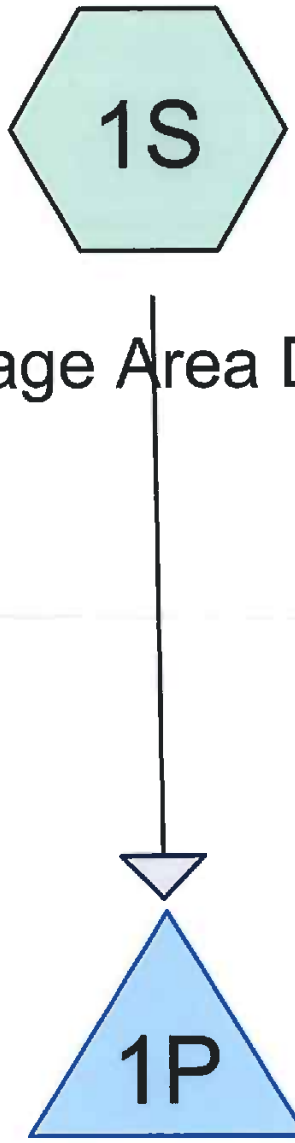


Drainage Infiltration Model

Subcat Reach Pond Link

Routing Diagram for 21-490 WENTWORTH DA P1
Prepared by down cape engineering, inc.

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	Barn Cty 10 Yr	Type III 24-hr		Default	24.00	1	4.95	2
2	Barn Cty 2 Yr	Type III 24-hr		Default	24.00	1	3.39	2
3	Barn Cty 25 Yr	Type III 24-hr		Default	24.00	1	5.92	2
4	Barn Cty 5 Yr	Type III 24-hr		Default	24.00	1	4.24	2
5	Barn Cty 50 yr.	Type III 24-hr		Default	24.00	1	6.65	2

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
4,519	98	Asphalt (1S)
400	98	Concrete (1S)
1,129	60	Grass over clay soils (1S)
2,400	98	Rear of Roof (1S)
8,448	**93**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
0	HSG B	
0	HSG C	
0	HSG D	
8,448	Other	1S
8,448		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Subc Num
0	0	0	0	4,519	4,519	Asphalt	
0	0	0	0	400	400	Concrete	
0	0	0	0	1,129	1,129	Grass over clay soils	
0	0	0	0	2,400	2,400	Rear of Roof	
0	**0**	**0**	**0**	**8,448**	**8,448**	**TOTAL AREA**	

Notes Listing (all nodes)

Line#	Node Number	Notes
1	1S	Time of Concentration
2	1P	Infiltration/Stage/Storage Model

Time span=1.00-24.00 hrs, dt=0.01 hrs, 2301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Drainage Area DA-P1 Runoff Area=8,448 sf 86.64% Impervious Runoff Depth>4.15"
Tc=5.0 min CN=93 Runoff=0.92 cfs 2,919 cf

Pond 1P: Drainage Infiltration Model Peak Elev=59.33' Storage=289 cf Inflow=0.92 cfs 2,919 cf
Outflow=0.51 cfs 2,917 cf

Total Runoff Area = 8,448 sf Runoff Volume = 2,919 cf Average Runoff Depth = 4.15"
13.36% Pervious = 1,129 sf 86.64% Impervious = 7,319 sf

Summary for Subcatchment 1S: Drainage Area DA-P1

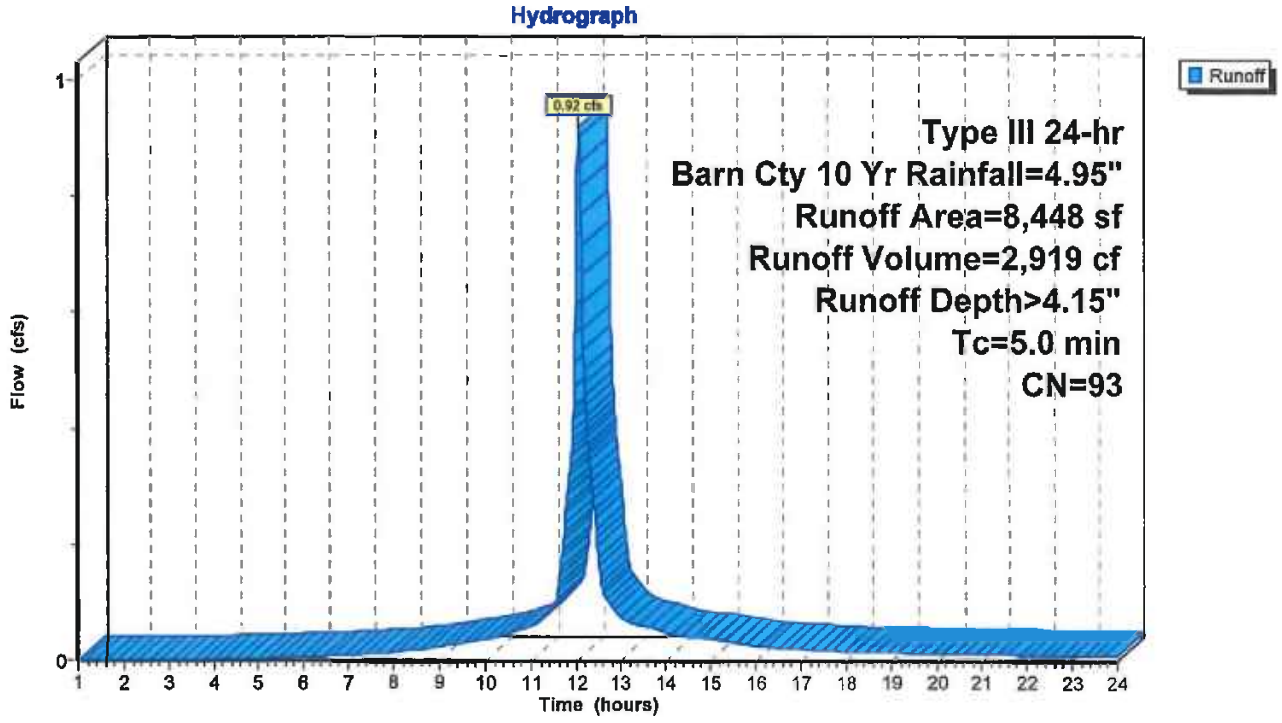
Runoff = 0.92 cfs @ 12.07 hrs, Volume= 2,919 cf, Depth> 4.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr Barn Cty 10 Yr Rainfall=4.95"

	Area (sf)	CN	Description
*	4,519	98	Asphalt
*	400	98	Concrete
*	2,400	98	Rear of Roof
*	1,129	60	Grass over clay soils
	8,448	93	Weighted Average
	1,129		13.36% Pervious Area
	7,319		86.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Time Concentration**

Subcatchment 1S: Drainage Area DA-P1



Summary for Pond 1P: Drainage Infiltration Model

Inflow Area = 8,448 sf, 86.64% Impervious, Inflow Depth > 4.15" for Barn Cty 10 Yr event
Inflow = 0.92 cfs @ 12.07 hrs, Volume= 2,919 cf
Outflow = 0.51 cfs @ 12.18 hrs, Volume= 2,917 cf, Atten= 44%, Lag= 6.3 min
Primary = 0.51 cfs @ 12.18 hrs, Volume= 2,917 cf

Routing by Stor-Ind method, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 59.33' @ 12.18 hrs Storage= 289 cf

Plug-Flow detention time= 3.0 min calculated for 2,916 cf (100% of inflow)
Center-of-Mass det. time= 2.7 min (779.8 - 777.2)

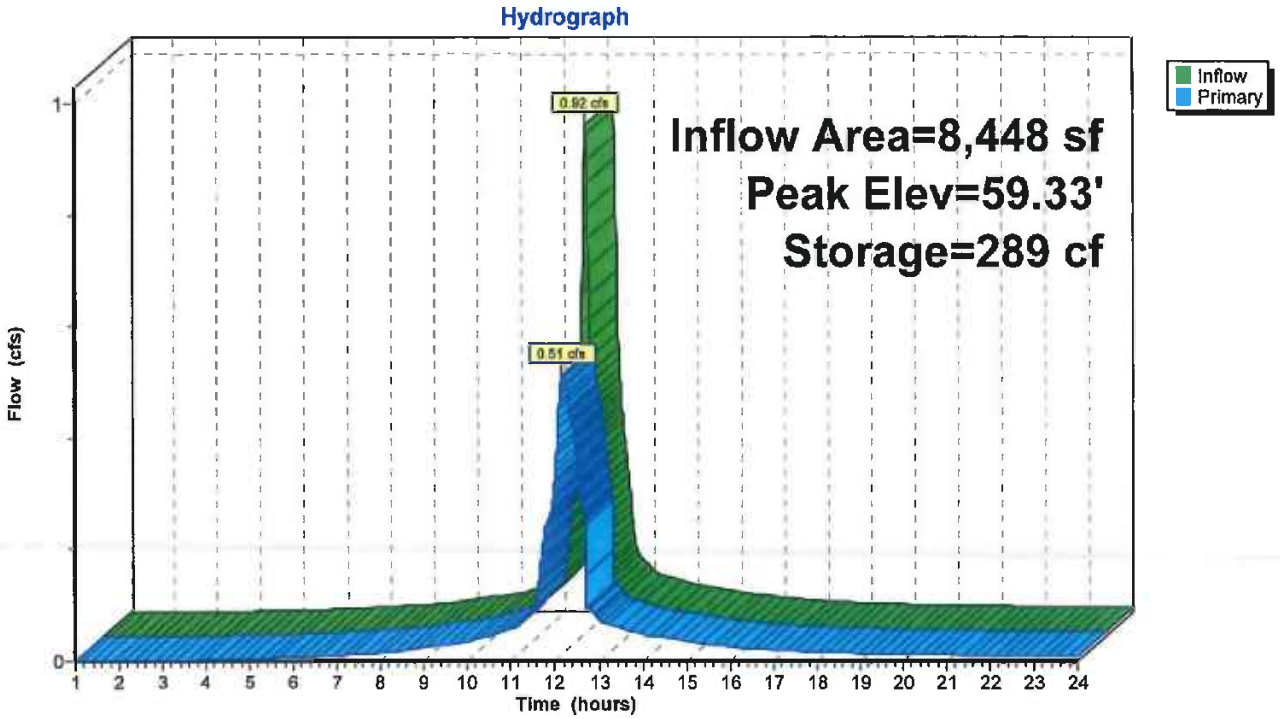
Volume	Invert	Avail.Storage	Storage Description
#1	55.20'	482 cf	**Infiltration System Storage Model**Listed below

Elevation (feet)	Cum.Store (cubic-feet)
55.20	0
55.30	1
56.00	48
58.00	193
60.00	338
62.00	482

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**Infiltration Model** Elev. (feet) 0.00 55.20 55.30 58.00 60.00 62.00 Disch. (cfs) 0.000 0.010 0.240 0.420 0.560 0.700

Primary OutFlow Max=0.51 cfs @ 12.18 hrs HW=59.33' (Free Discharge)
↑—**1=Infiltration Model** (Custom Controls 0.51 cfs)

Pond 1P: Drainage Infiltration Model



Time span=1.00-24.00 hrs, dt=0.01 hrs, 2301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Drainage Area DA-P1 Runoff Area=8,448 sf 86.64% Impervious Runoff Depth>2.63"
Tc=5.0 min CN=93 Runoff=0.60 cfs 1,849 cf

Pond 1P: Drainage Infiltration Model Peak Elev=57.10' Storage=128 cf Inflow=0.60 cfs 1,849 cf
Outflow=0.36 cfs 1,849 cf

Total Runoff Area = 8,448 sf Runoff Volume = 1,849 cf Average Runoff Depth = 2.63"
13.36% Pervious = 1,129 sf 86.64% Impervious = 7,319 sf

Summary for Subcatchment 1S: Drainage Area DA-P1

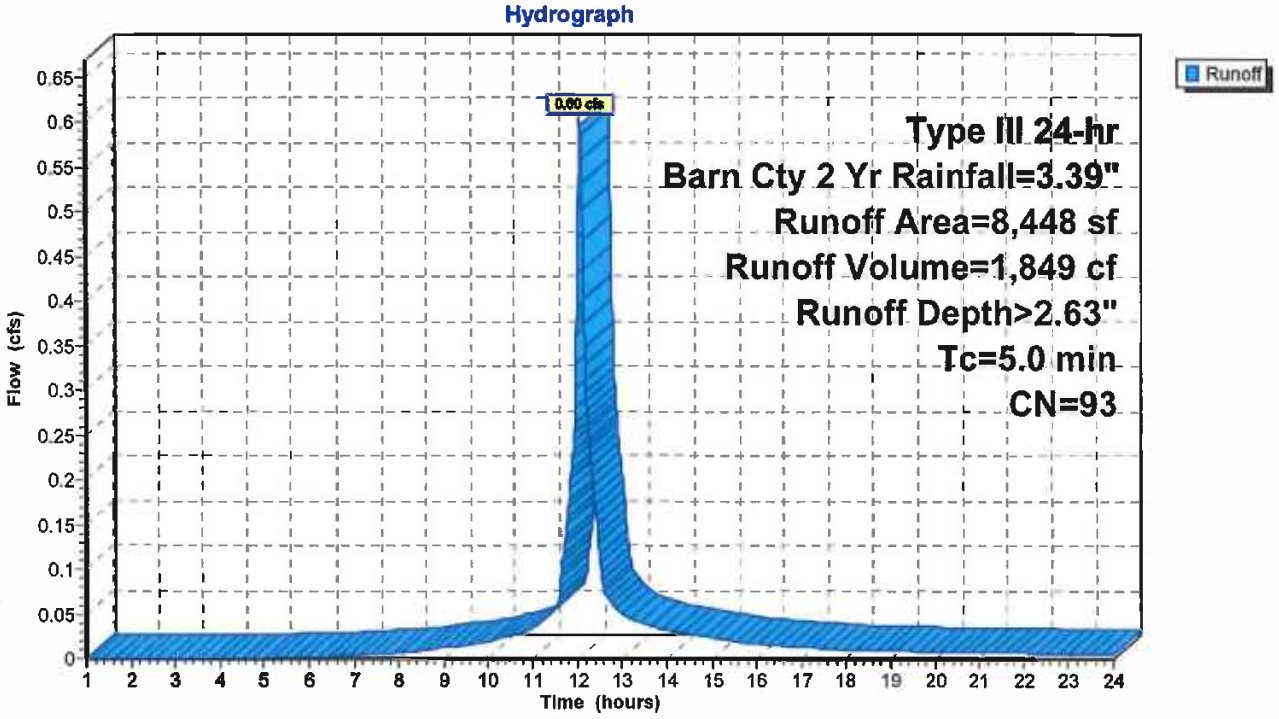
Runoff = 0.60 cfs @ 12.07 hrs, Volume= 1,849 cf, Depth> 2.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr Barn Cty 2 Yr Rainfall=3.39"

	Area (sf)	CN	Description
*	4,519	98	Asphalt
*	400	98	Concrete
*	2,400	98	Rear of Roof
*	1,129	60	Grass over clay soils
	8,448	93	Weighted Average
	1,129		13.36% Pervious Area
	7,319		86.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Time Concentration**

Subcatchment 1S: Drainage Area DA-P1



Summary for Pond 1P: Drainage Infiltration Model

Inflow Area = 8,448 sf, 86.64% Impervious, Inflow Depth > 2.63" for Barn Cty 2 Yr event
Inflow = 0.60 cfs @ 12.07 hrs, Volume= 1,849 cf
Outflow = 0.36 cfs @ 12.17 hrs, Volume= 1,849 cf, Atten= 40%, Lag= 5.7 min
Primary = 0.36 cfs @ 12.17 hrs, Volume= 1,849 cf

Routing by Stor-Ind method, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 57.10' @ 12.17 hrs Storage= 128 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 1.3 min (790.6 - 789.3)

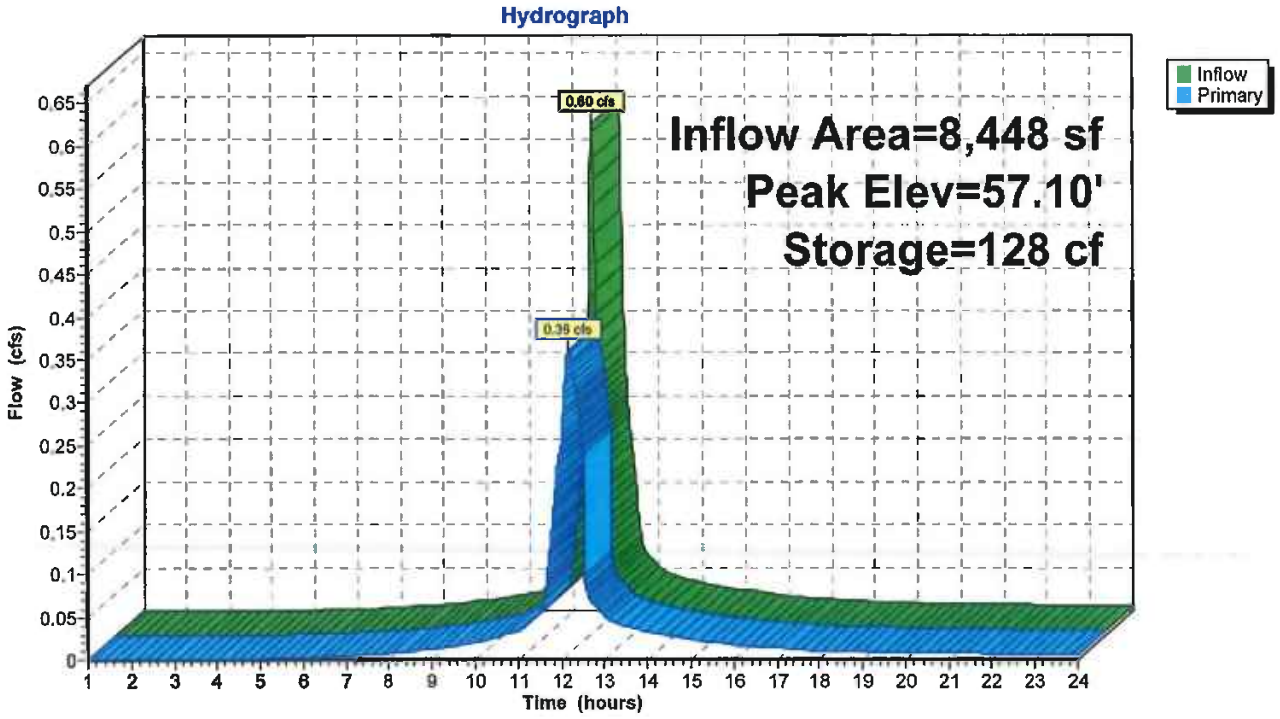
Volume	Invert	Avail.Storage	Storage Description
#1	55.20'	482 cf	**Infiltration System Storage Model**Listed below

Elevation (feet)	Cum.Store (cubic-feet)
55.20	0
55.30	1
56.00	48
58.00	193
60.00	338
62.00	482

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**Infiltration Model** Elev. (feet) 0.00 55.20 55.30 58.00 60.00 62.00 Disch. (cfs) 0.000 0.010 0.240 0.420 0.560 0.700

Primary OutFlow Max=0.36 cfs @ 12.17 hrs HW=57.10' (Free Discharge)
↑—**1=Infiltration Model** (Custom Controls 0.36 cfs)

Pond 1P: Drainage Infiltration Model



Time span=1.00-24.00 hrs, dt=0.01 hrs, 2301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Drainage Area DA-P1 Runoff Area=8,448 sf 86.64% Impervious Runoff Depth>5.10"
Tc=5.0 min CN=93 Runoff=1.12 cfs 3,590 cf

Pond 1P: Drainage Infiltration Model Peak Elev=60.78' Storage=394 cf Inflow=1.12 cfs 3,590 cf
Outflow=0.61 cfs 3,592 cf

Total Runoff Area = 8,448 sf Runoff Volume = 3,590 cf Average Runoff Depth = 5.10"
13.36% Pervious = 1,129 sf 86.64% Impervious = 7,319 sf

Summary for Subcatchment 1S: Drainage Area DA-P1

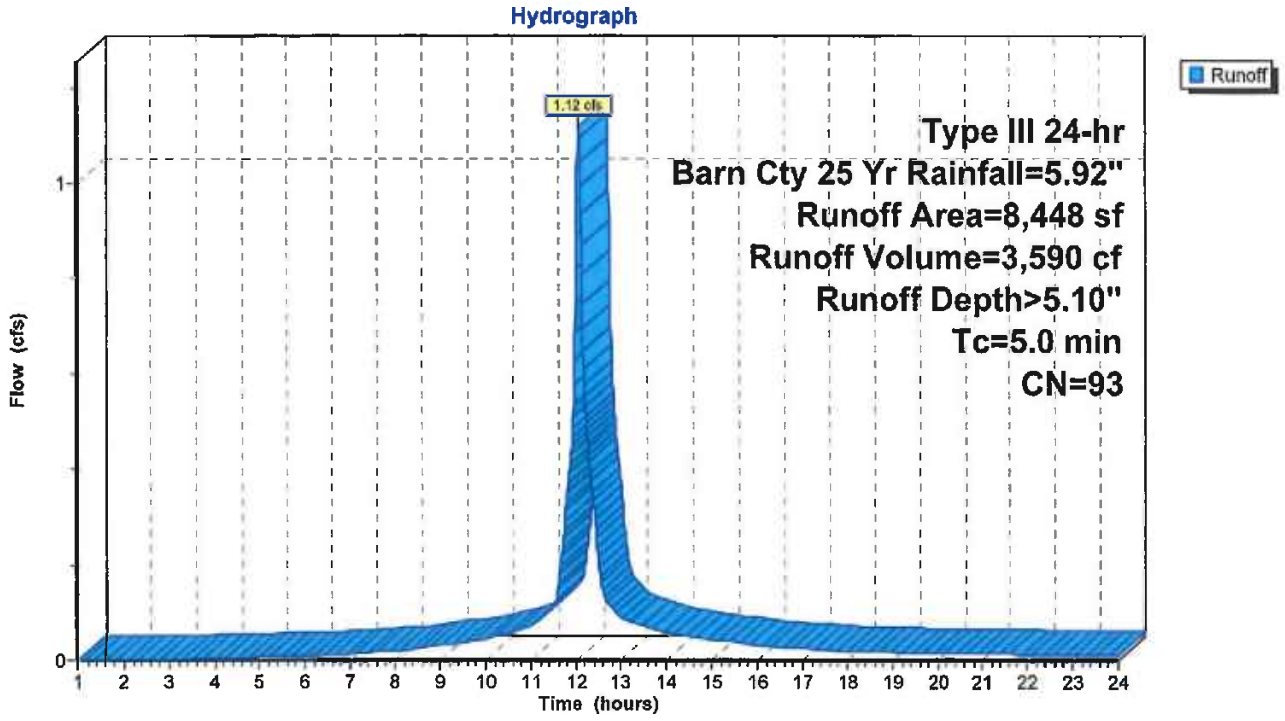
Runoff = 1.12 cfs @ 12.07 hrs, Volume= 3,590 cf, Depth> 5.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr Barn Cty 25 Yr Rainfall=5.92"

	Area (sf)	CN	Description
*	4,519	98	Asphalt
*	400	98	Concrete
*	2,400	98	Rear of Roof
*	1,129	60	Grass over clay soils
	8,448	93	Weighted Average
	1,129		13.36% Pervious Area
	7,319		86.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Time Concentration**

Subcatchment 1S: Drainage Area DA-P1



Summary for Pond 1P: Drainage Infiltration Model

Inflow Area = 8,448 sf, 86.64% Impervious, Inflow Depth > 5.10" for Barn Cty 25 Yr event
Inflow = 1.12 cfs @ 12.07 hrs, Volume= 3,590 cf
Outflow = 0.61 cfs @ 12.18 hrs, Volume= 3,592 cf, Atten= 45%, Lag= 6.5 min
Primary = 0.61 cfs @ 12.18 hrs, Volume= 3,592 cf

Routing by Stor-Ind method, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 60.78' @ 12.18 hrs Storage= 394 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 3.3 min (775.3 - 772.0)

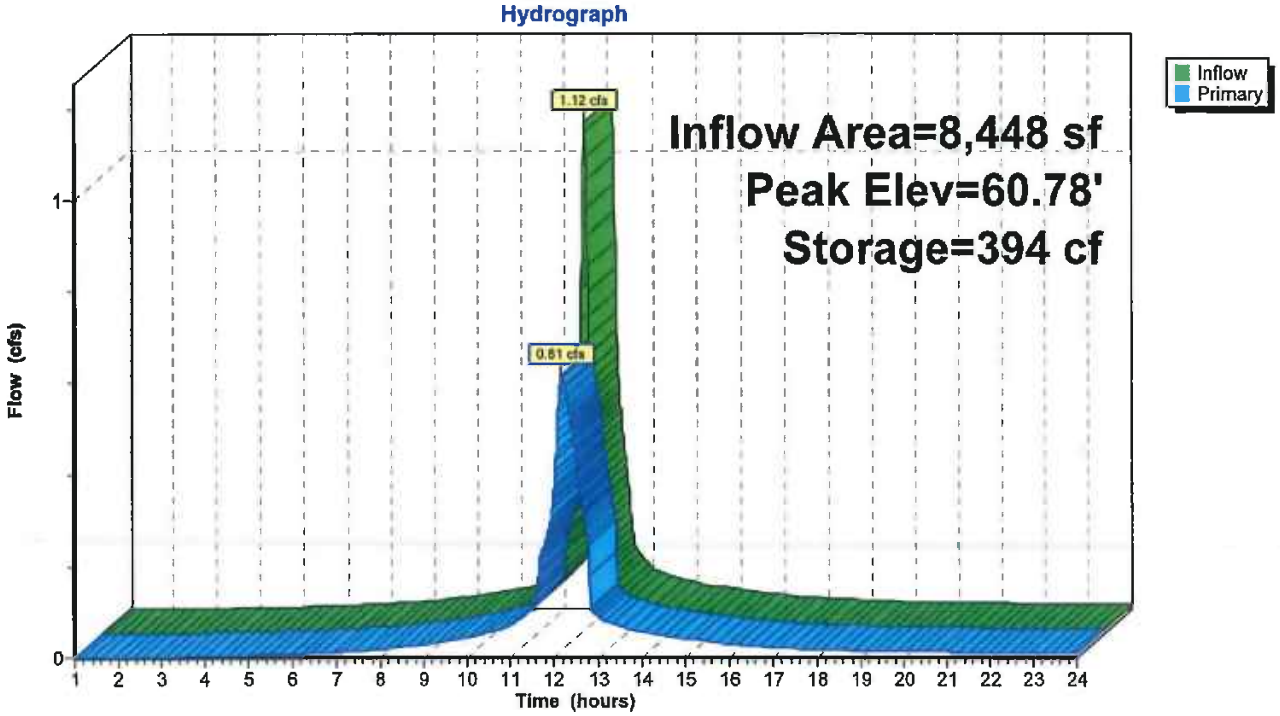
Volume	Invert	Avail.Storage	Storage Description
#1	55.20'	482 cf	**Infiltration System Storage Model**Listed below

Elevation (feet)	Cum.Store (cubic-feet)
55.20	0
55.30	1
56.00	48
58.00	193
60.00	338
62.00	482

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**Infiltration Model** Elev. (feet) 0.00 55.20 55.30 58.00 60.00 62.00 Disch. (cfs) 0.000 0.010 0.240 0.420 0.560 0.700

Primary OutFlow Max=0.61 cfs @ 12.18 hrs HW=60.78' (Free Discharge)
↑—**1=Infiltration Model** (Custom Controls 0.61 cfs)

Pond 1P: Drainage Infiltration Model



Time span=1.00-24.00 hrs, dt=0.01 hrs, 2301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Drainage Area DA-P1 Runoff Area=8,448 sf 86.64% Impervious Runoff Depth>3.45"
Tc=5.0 min CN=93 Runoff=0.77 cfs 2,430 cf

Pond 1P: Drainage Infiltration Model Peak Elev=58.29' Storage=214 cf Inflow=0.77 cfs 2,430 cf
Outflow=0.44 cfs 2,427 cf

Total Runoff Area = 8,448 sf Runoff Volume = 2,430 cf Average Runoff Depth = 3.45"
13.36% Pervious = 1,129 sf 86.64% Impervious = 7,319 sf

Summary for Subcatchment 1S: Drainage Area DA-P1

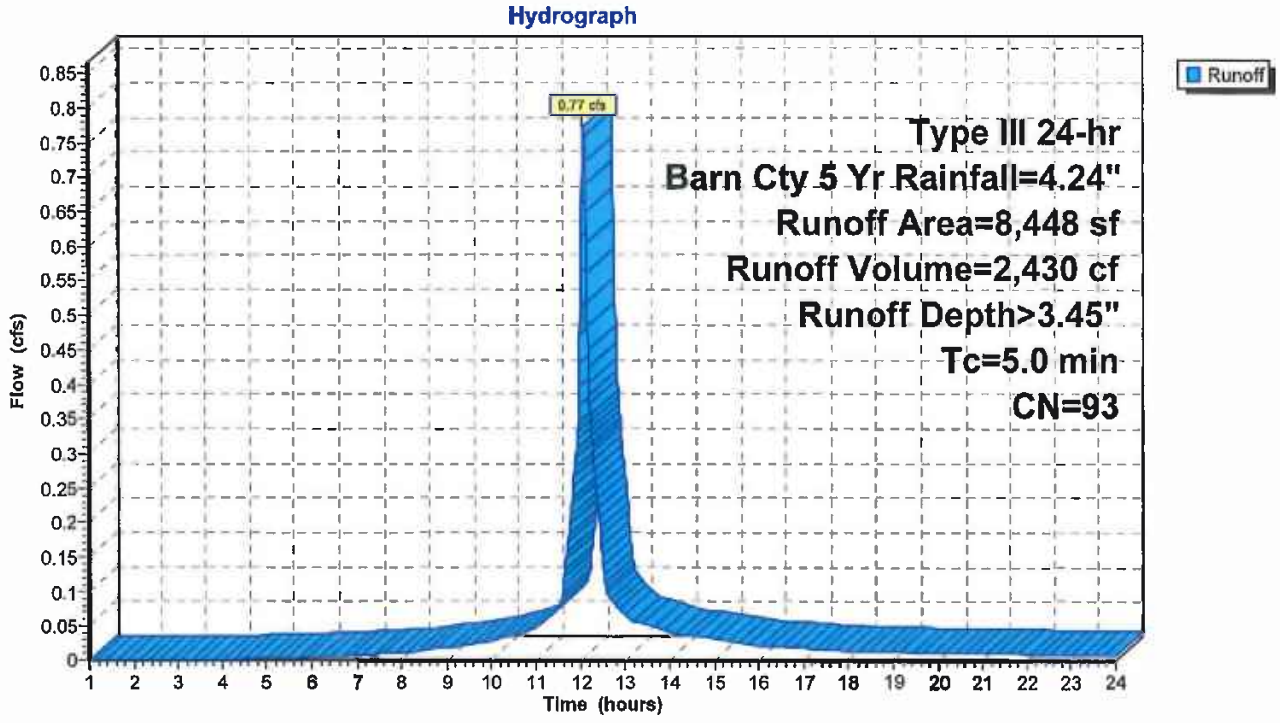
Runoff = 0.77 cfs @ 12.07 hrs, Volume= 2,430 cf, Depth> 3.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr Barn Cty 5 Yr Rainfall=4.24"

	Area (sf)	CN	Description
*	4,519	98	Asphalt
*	400	98	Concrete
*	2,400	98	Rear of Roof
*	1,129	60	Grass over clay soils
	8,448	93	Weighted Average
	1,129		13.36% Pervious Area
	7,319		86.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Time Concentration**

Subcatchment 1S: Drainage Area DA-P1



Summary for Pond 1P: Drainage Infiltration Model

Inflow Area = 8,448 sf, 86.64% Impervious, Inflow Depth > 3.45" for Barn Cty 5 Yr event
Inflow = 0.77 cfs @ 12.07 hrs, Volume= 2,430 cf
Outflow = 0.44 cfs @ 12.17 hrs, Volume= 2,427 cf, Atten= 43%, Lag= 6.2 min
Primary = 0.44 cfs @ 12.17 hrs, Volume= 2,427 cf

Routing by Stor-Ind method, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 58.29' @ 12.17 hrs Storage= 214 cf

Plug-Flow detention time= 2.9 min calculated for 2,427 cf (100% of inflow)
Center-of-Mass det. time= 2.1 min (784.1 - 781.9)

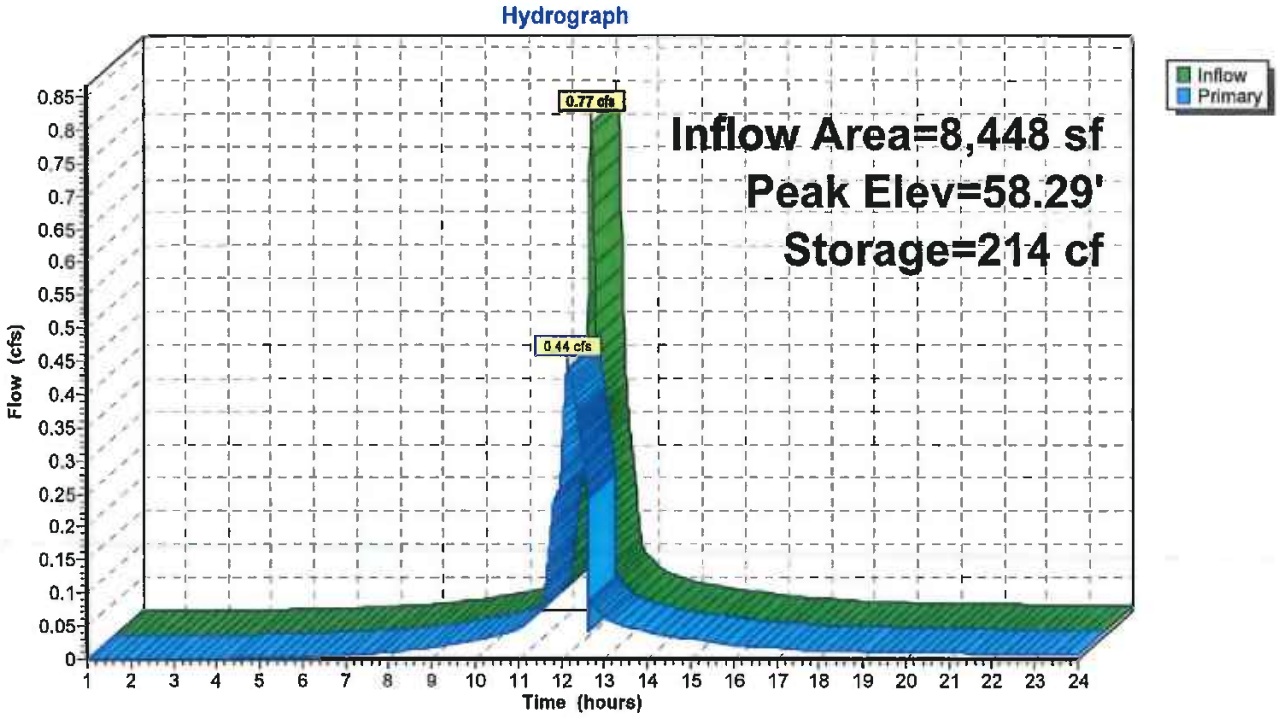
Volume	Invert	Avail.Storage	Storage Description
#1	55.20'	482 cf	**Infiltration System Storage Model**Listed below

Elevation (feet)	Cum.Store (cubic-feet)
55.20	0
55.30	1
56.00	48
58.00	193
60.00	338
62.00	482

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**Infiltration Model** Elev. (feet) 0.00 55.20 55.30 58.00 60.00 62.00 Disch. (cfs) 0.000 0.010 0.240 0.420 0.560 0.700

Primary OutFlow Max=0.44 cfs @ 12.17 hrs HW=58.28' (Free Discharge)
↑—**1=Infiltration Model** (Custom Controls 0.44 cfs)

Pond 1P: Drainage Infiltration Model



Time span=1.00-24.00 hrs, dt=0.01 hrs, 2301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Drainage Area DA-P1 Runoff Area=8,448 sf 86.64% Impervious Runoff Depth>5.82"
Tc=5.0 min CN=93 Runoff=1.27 cfs 4,098 cf

Pond 1P: Drainage Infiltration Model Peak Elev=61.89' Storage=474 cf Inflow=1.27 cfs 4,098 cf
Outflow=0.69 cfs 4,098 cf

Total Runoff Area = 8,448 sf Runoff Volume = 4,098 cf Average Runoff Depth = 5.82"
13.36% Pervious = 1,129 sf 86.64% Impervious = 7,319 sf

Summary for Subcatchment 1S: Drainage Area DA-P1

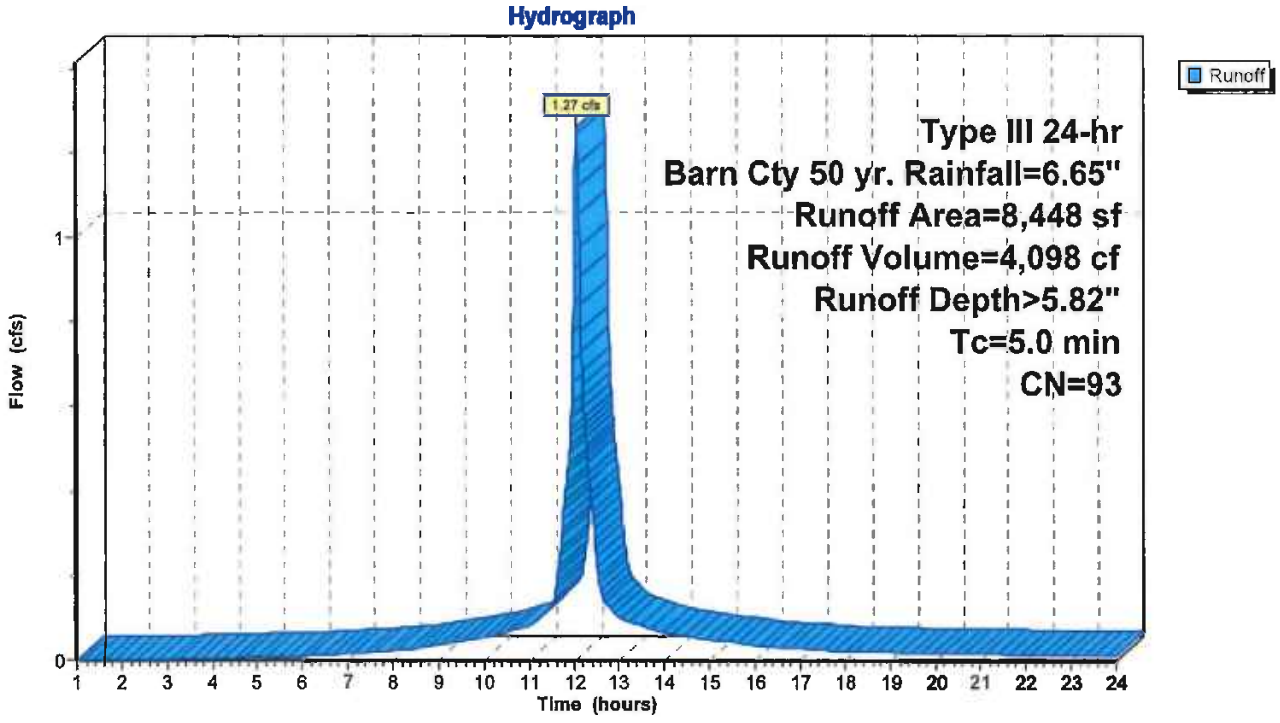
Runoff = 1.27 cfs @ 12.07 hrs, Volume= 4,098 cf, Depth> 5.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr Barn Cty 50 yr. Rainfall=6.65"

	Area (sf)	CN	Description
*	4,519	98	Asphalt
*	400	98	Concrete
*	2,400	98	Rear of Roof
*	1,129	60	Grass over clay soils
	8,448	93	Weighted Average
	1,129		13.36% Pervious Area
	7,319		86.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Time Concentration**

Subcatchment 1S: Drainage Area DA-P1



Summary for Pond 1P: Drainage Infiltration Model

Inflow Area = 8,448 sf, 86.64% Impervious, Inflow Depth > 5.82" for Barn Cty 50 yr. event
Inflow = 1.27 cfs @ 12.07 hrs, Volume= 4,098 cf
Outflow = 0.69 cfs @ 12.18 hrs, Volume= 4,098 cf, Atten= 45%, Lag= 6.5 min
Primary = 0.69 cfs @ 12.18 hrs, Volume= 4,098 cf

Routing by Stor-Ind method, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 61.89' @ 12.18 hrs Storage= 474 cf

Plug-Flow detention time= 3.7 min calculated for 4,098 cf (100% of inflow)
Center-of-Mass det. time= 3.7 min (772.5 - 768.8)

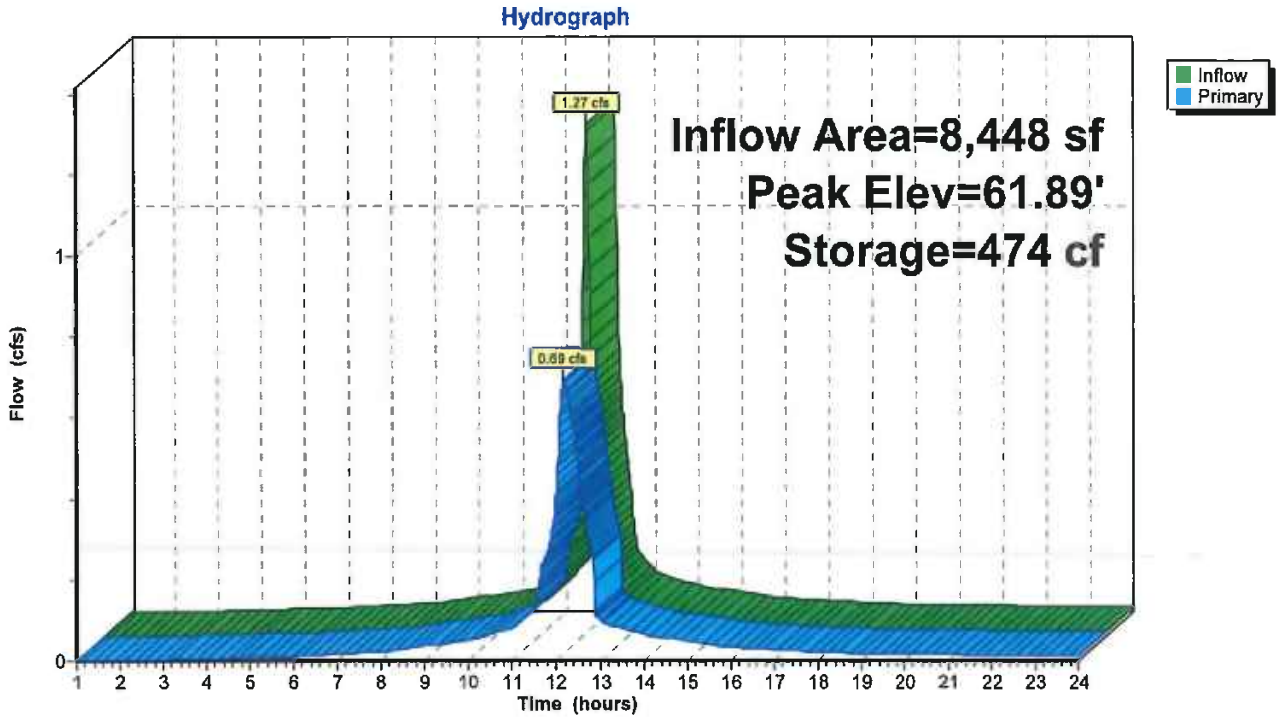
Volume	Invert	Avail.Storage	Storage Description
#1	55.20'	482 cf	**Infiltration System Storage Model**Listed below

Elevation (feet)	Cum.Store (cubic-feet)
55.20	0
55.30	1
56.00	48
58.00	193
60.00	338
62.00	482

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**Infiltration Model** Elev. (feet) 0.00 55.20 55.30 58.00 60.00 62.00 Disch. (cfs) 0.000 0.010 0.240 0.420 0.560 0.700

Primary OutFlow Max=0.69 cfs @ 12.18 hrs HW=61.89' (Free Discharge)
↑—**1=Infiltration Model** (Custom Controls 0.69 cfs)

Pond 1P: Drainage Infiltration Model



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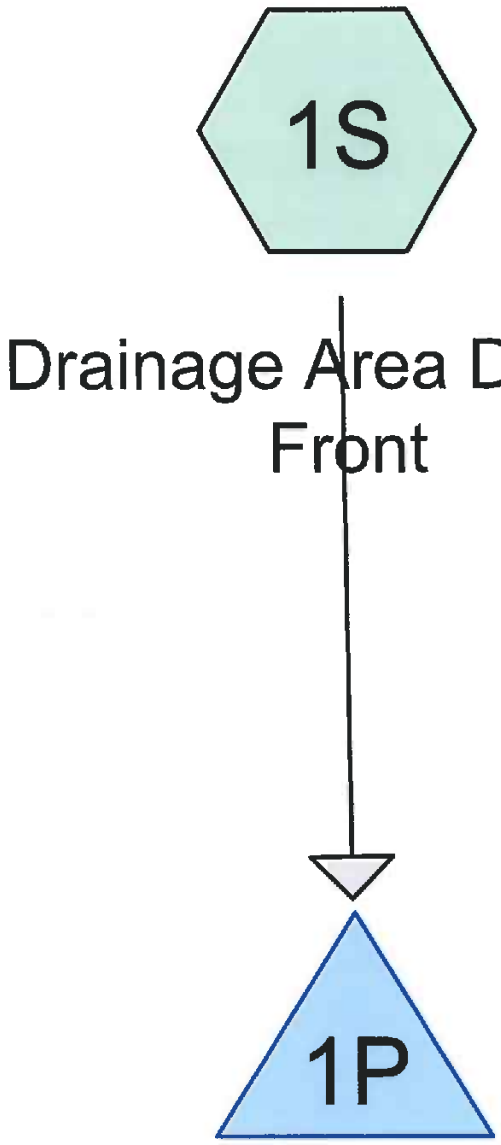


Subcat Reach Pond Link

Routing Diagram for 21-490 WENTWORTH DA P2
Prepared by down cape engineering, inc.

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	Barn Cty 10 Yr	Type III 24-hr		Default	24.00	1	4.95	2
2	Barn Cty 100 yr	Type III 24-hr		Default	24.00	1	7.80	2
3	Barn Cty 2 Yr	Type III 24-hr		Default	24.00	1	3.39	2
4	Barn Cty 25 Yr	Type III 24-hr		Default	24.00	1	5.92	2
5	Barn Cty 5 Yr	Type III 24-hr		Default	24.00	1	4.24	2
6	Barn Cty 50 yr.	Type III 24-hr		Default	24.00	1	6.65	2

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
400	98	Concrete (1S)
2,400	98	Front of Roof (1S)
1,842	60	Grass over clay soils (1S)
4,403	65	Gravel compacted (1S)
9,045	**74**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
0	HSG B	
0	HSG C	
0	HSG D	
9,045	Other	1S
9,045		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Subc Num
0	0	0	0	400	400	Concrete	
0	0	0	0	2,400	2,400	Front of Roof	
0	0	0	0	1,842	1,842	Grass over clay soils	
0	0	0	0	4,403	4,403	Gravel compacted	
0	**0**	**0**	**0**	**9,045**	**9,045**	**TOTAL AREA**	

Notes Listing (all nodes)

Line#	Node Number	Notes
1	1S	Time of Concentration
2	1P	Infiltration/Stage/Storage Model

Time span=1.00-24.00 hrs, dt=0.01 hrs, 2301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Drainage Area DA-P2 Runoff Area=9,045 sf 30.96% Impervious Runoff Depth>2.32"
Tc=5.0 min CN=74 Runoff=0.58 cfs 1,750 cf

Pond 1P: Drainage Infiltration Model Peak Elev=57.01' Storage=121 cf Inflow=0.58 cfs 1,750 cf
Outflow=0.35 cfs 1,751 cf

Total Runoff Area = 9,045 sf Runoff Volume = 1,750 cf Average Runoff Depth = 2.32"
69.04% Pervious = 6,245 sf 30.96% Impervious = 2,800 sf

Summary for Subcatchment 1S: Drainage Area DA-P2 Front

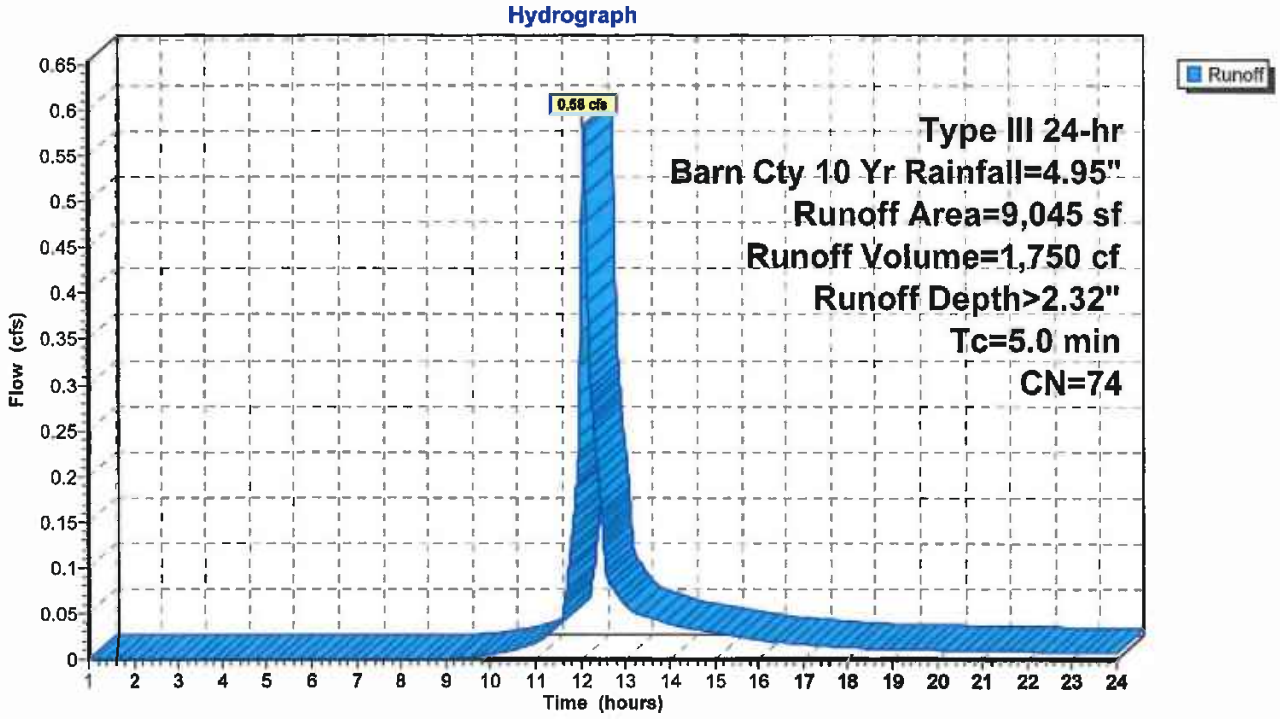
Runoff = 0.58 cfs @ 12.08 hrs, Volume= 1,750 cf, Depth> 2.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr Barn Cty 10 Yr Rainfall=4.95"

	Area (sf)	CN	Description
*	4,403	65	Gravel compacted
*	400	98	Concrete
*	2,400	98	Front of Roof
*	1,842	60	Grass over clay soils
	9,045	74	Weighted Average
	6,245		69.04% Pervious Area
	2,800		30.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Time Concentration**

Subcatchment 1S: Drainage Area DA-P2 Front



Summary for Pond 1P: Drainage Infiltration Model

Inflow Area = 9,045 sf, 30.96% Impervious, Inflow Depth > 2.32" for Barn Cty 10 Yr event
Inflow = 0.58 cfs @ 12.08 hrs, Volume= 1,750 cf
Outflow = 0.35 cfs @ 12.18 hrs, Volume= 1,751 cf, Atten= 39%, Lag= 6.0 min
Primary = 0.35 cfs @ 12.18 hrs, Volume= 1,751 cf

Routing by Stor-Ind method, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 57.01' @ 12.18 hrs Storage= 121 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 1.3 min (837.7 - 836.4)

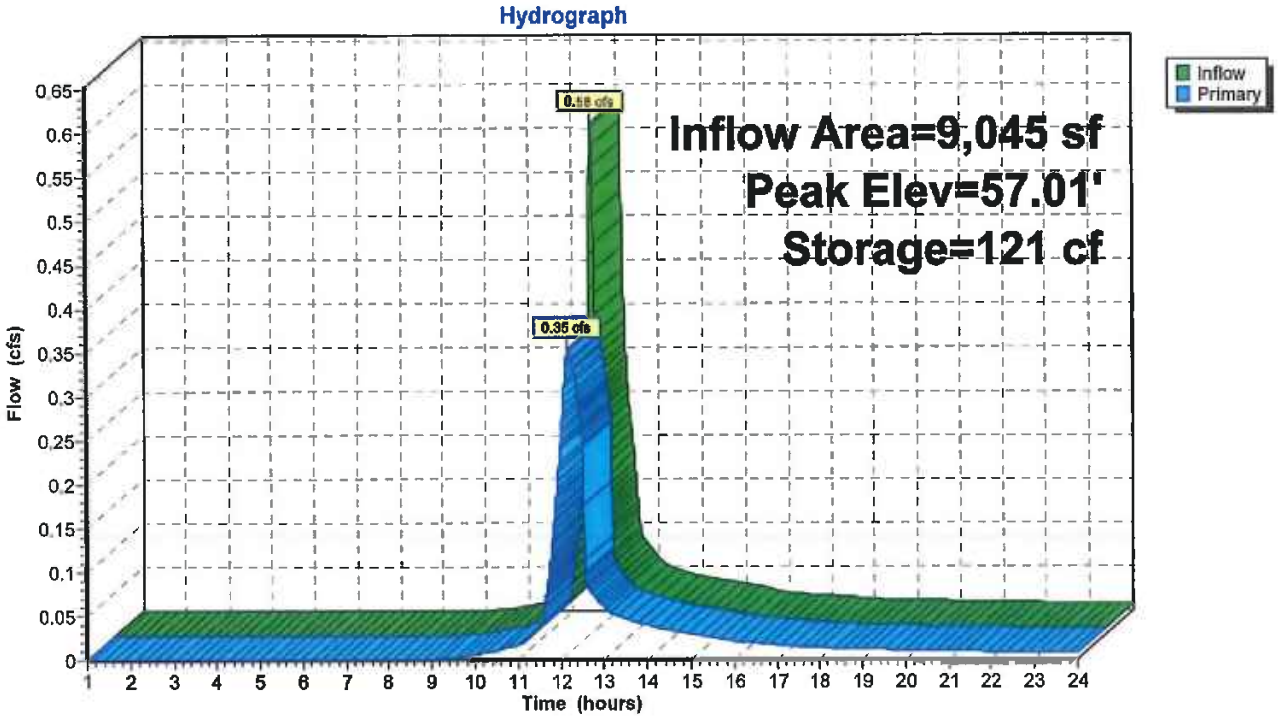
Volume	Invert	Avail.Storage	Storage Description
#1	55.20'	482 cf	**Infiltration System Storage Model**Listed below

Elevation (feet)	Cum.Store (cubic-feet)
55.20	0
55.30	1
56.00	48
58.00	193
60.00	338
62.00	482

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**Infiltration Model** Elev. (feet) 0.00 55.20 55.30 58.00 60.00 62.00 Disch. (cfs) 0.000 0.010 0.240 0.420 0.560 0.700

Primary OutFlow Max=0.35 cfs @ 12.18 hrs HW=57.01' (Free Discharge)
↑—**1=Infiltration Model** (Custom Controls 0.35 cfs)

Pond 1P: Drainage Infiltration Model



Time span=1.00-24.00 hrs, dt=0.01 hrs, 2301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Drainage Area DA-P2 Runoff Area=9,045 sf 30.96% Impervious Runoff Depth>4.74"
Tc=5.0 min CN=74 Runoff=1.20 cfs 3,575 cf

Pond 1P: Drainage Infiltration Model Peak Elev=61.20' Storage=424 cf Inflow=1.20 cfs 3,575 cf
Outflow=0.64 cfs 3,573 cf

Total Runoff Area = 9,045 sf Runoff Volume = 3,575 cf Average Runoff Depth = 4.74"
69.04% Pervious = 6,245 sf 30.96% Impervious = 2,800 sf

Summary for Subcatchment 1S: Drainage Area DA-P2 Front

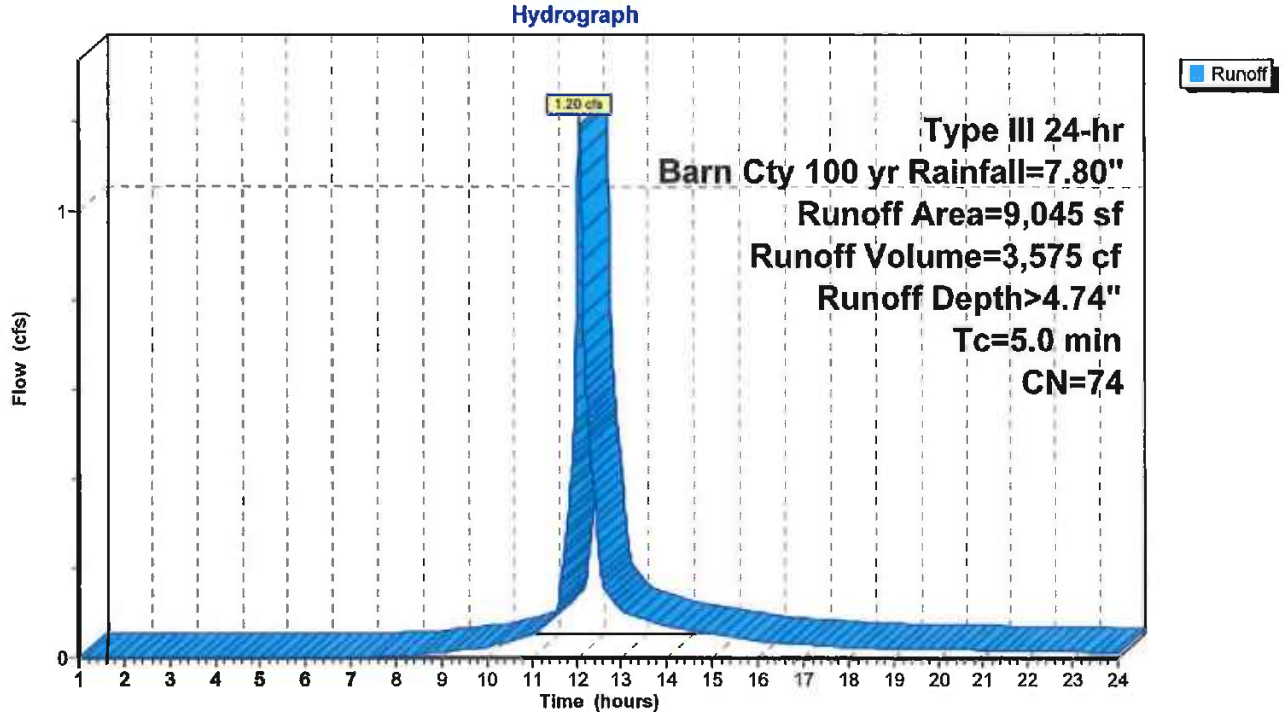
Runoff = 1.20 cfs @ 12.07 hrs, Volume= 3,575 cf, Depth> 4.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr Barn Cty 100 yr Rainfall=7.80"

	Area (sf)	CN	Description
*	4,403	65	Gravel compacted
*	400	98	Concrete
*	2,400	98	Front of Roof
*	1,842	60	Grass over clay soils
	9,045	74	Weighted Average
	6,245		69.04% Pervious Area
	2,800		30.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Time Concentration**

Subcatchment 1S: Drainage Area DA-P2 Front



Summary for Pond 1P: Drainage Infiltration Model

Inflow Area = 9,045 sf, 30.96% Impervious, Inflow Depth > 4.74" for Barn Cty 100 yr event
Inflow = 1.20 cfs @ 12.07 hrs, Volume= 3,575 cf
Outflow = 0.64 cfs @ 12.19 hrs, Volume= 3,573 cf, Atten= 46%, Lag= 7.1 min
Primary = 0.64 cfs @ 12.19 hrs, Volume= 3,573 cf

Routing by Stor-Ind method, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 61.20' @ 12.19 hrs Storage= 424 cf

Plug-Flow detention time= 4.2 min calculated for 3,571 cf (100% of inflow)
Center-of-Mass det. time= 3.8 min (819.6 - 815.9)

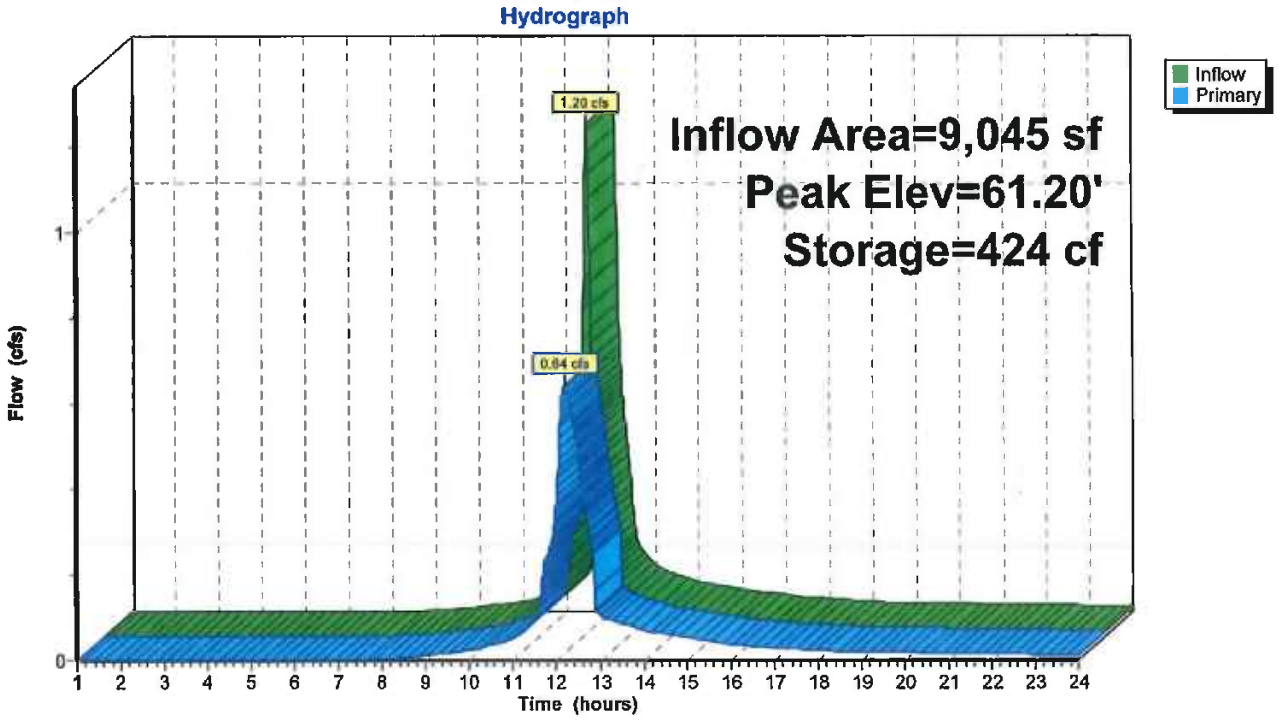
Volume	Invert	Avail.Storage	Storage Description
#1	55.20'	482 cf	**Infiltration System Storage Model**Listed below

Elevation (feet)	Cum.Store (cubic-feet)
55.20	0
55.30	1
56.00	48
58.00	193
60.00	338
62.00	482

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**Infiltration Model** Elev. (feet) 0.00 55.20 55.30 58.00 60.00 62.00 Disch. (cfs) 0.000 0.010 0.240 0.420 0.560 0.700

Primary OutFlow Max=0.64 cfs @ 12.19 hrs HW=61.20' (Free Discharge)
↑—**1=Infiltration Model** (Custom Controls 0.64 cfs)

Pond 1P: Drainage Infiltration Model



Time span=1.00-24.00 hrs, dt=0.01 hrs, 2301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Drainage Area DA-P2 Runoff Area=9,045 sf 30.96% Impervious Runoff Depth>1.16"
Tc=5.0 min CN=74 Runoff=0.28 cfs 877 cf

Pond 1P: Drainage Infiltration Model Peak Elev=55.41' Storage=8 cf Inflow=0.28 cfs 877 cf
Outflow=0.25 cfs 878 cf

Total Runoff Area = 9,045 sf Runoff Volume = 877 cf Average Runoff Depth = 1.16"
69.04% Pervious = 6,245 sf 30.96% Impervious = 2,800 sf

Summary for Subcatchment 1S: Drainage Area DA-P2 Front

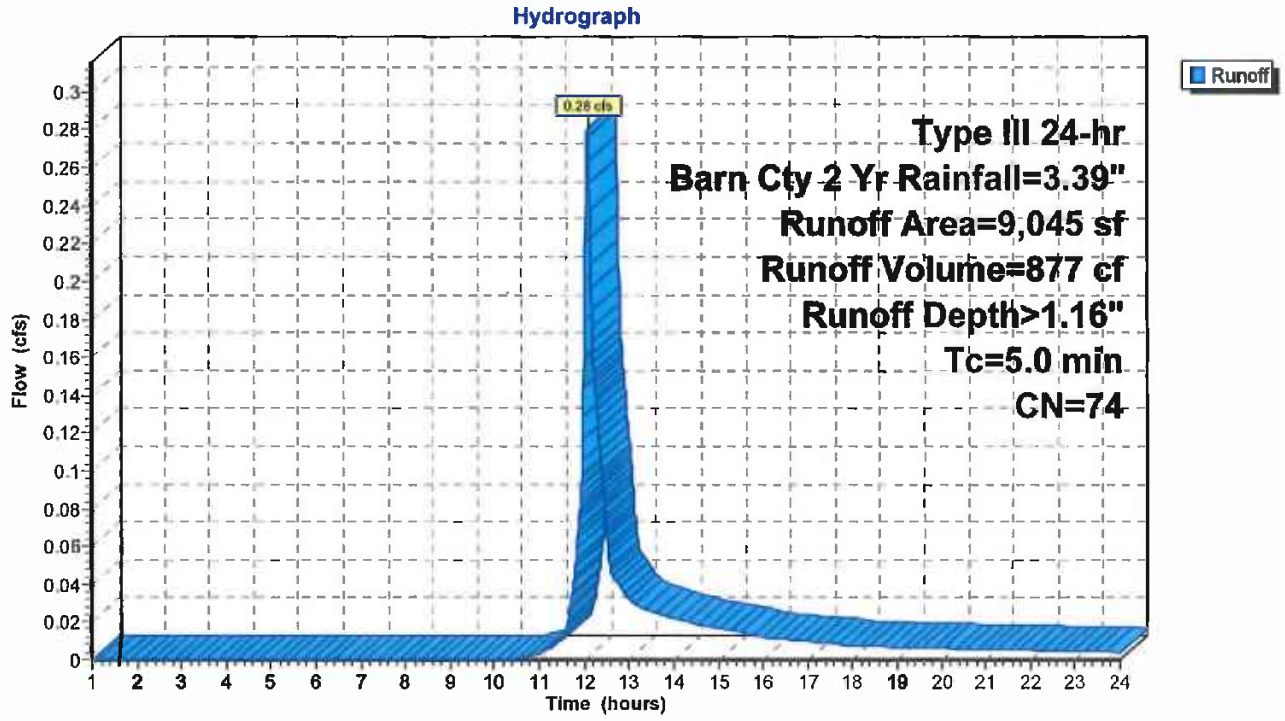
Runoff = 0.28 cfs @ 12.08 hrs, Volume= 877 cf, Depth> 1.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr Barn Cty 2 Yr Rainfall=3.39"

	Area (sf)	CN	Description
*	4,403	65	Gravel compacted
*	400	98	Concrete
*	2,400	98	Front of Roof
*	1,842	60	Grass over clay soils
	9,045	74	Weighted Average
	6,245		69.04% Pervious Area
	2,800		30.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Time Concentration**

Subcatchment 1S: Drainage Area DA-P2 Front



Summary for Pond 1P: Drainage Infiltration Model

Inflow Area = 9,045 sf, 30.96% Impervious, Inflow Depth > 1.16" for Barn Cty 2 Yr event
Inflow = 0.28 cfs @ 12.08 hrs, Volume= 877 cf
Outflow = 0.25 cfs @ 12.12 hrs, Volume= 878 cf, Atten= 12%, Lag= 2.5 min
Primary = 0.25 cfs @ 12.12 hrs, Volume= 878 cf

Routing by Stor-Ind method, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 55.41' @ 12.12 hrs Storage= 8 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= (not calculated: outflow precedes inflow)

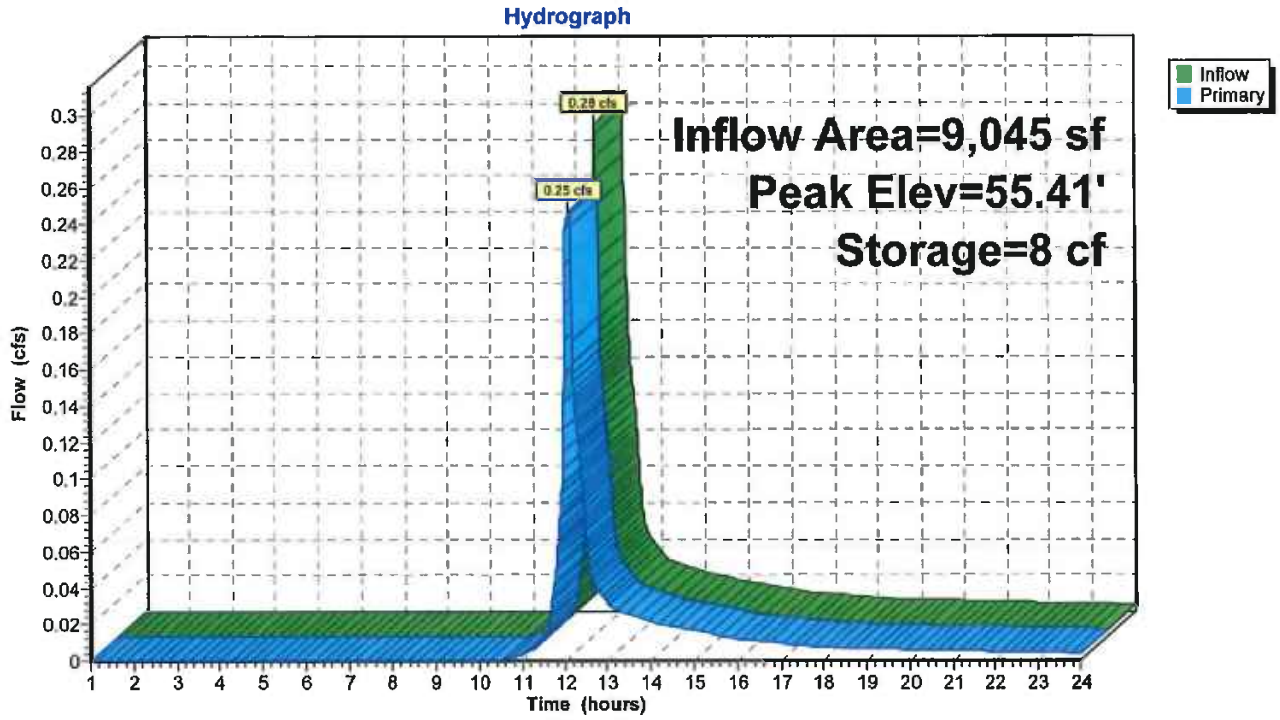
Volume	Invert	Avail.Storage	Storage Description
#1	55.20'	482 cf	**Infiltration System Storage Model**Listed below

Elevation (feet)	Cum.Store (cubic-feet)
55.20	0
55.30	1
56.00	48
58.00	193
60.00	338
62.00	482

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**Infiltration Model** Elev. (feet) 0.00 55.20 55.30 58.00 60.00 62.00 Disch. (cfs) 0.000 0.010 0.240 0.420 0.560 0.700

Primary OutFlow Max=0.25 cfs @ 12.12 hrs HW=55.41' (Free Discharge)
↑**1=Infiltration Model** (Custom Controls 0.25 cfs)

Pond 1P: Drainage Infiltration Model



Time span=1.00-24.00 hrs, dt=0.01 hrs, 2301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Drainage Area DA-P2 Runoff Area=9,045 sf 30.96% Impervious Runoff Depth>3.11"
Tc=5.0 min CN=74 Runoff=0.79 cfs 2,348 cf

Pond 1P: Drainage Infiltration Model Peak Elev=58.31' Storage=215 cf Inflow=0.79 cfs 2,348 cf
Outflow=0.44 cfs 2,346 cf

Total Runoff Area = 9,045 sf Runoff Volume = 2,348 cf Average Runoff Depth = 3.11"
69.04% Pervious = 6,245 sf 30.96% Impervious = 2,800 sf

Summary for Subcatchment 1S: Drainage Area DA-P2 Front

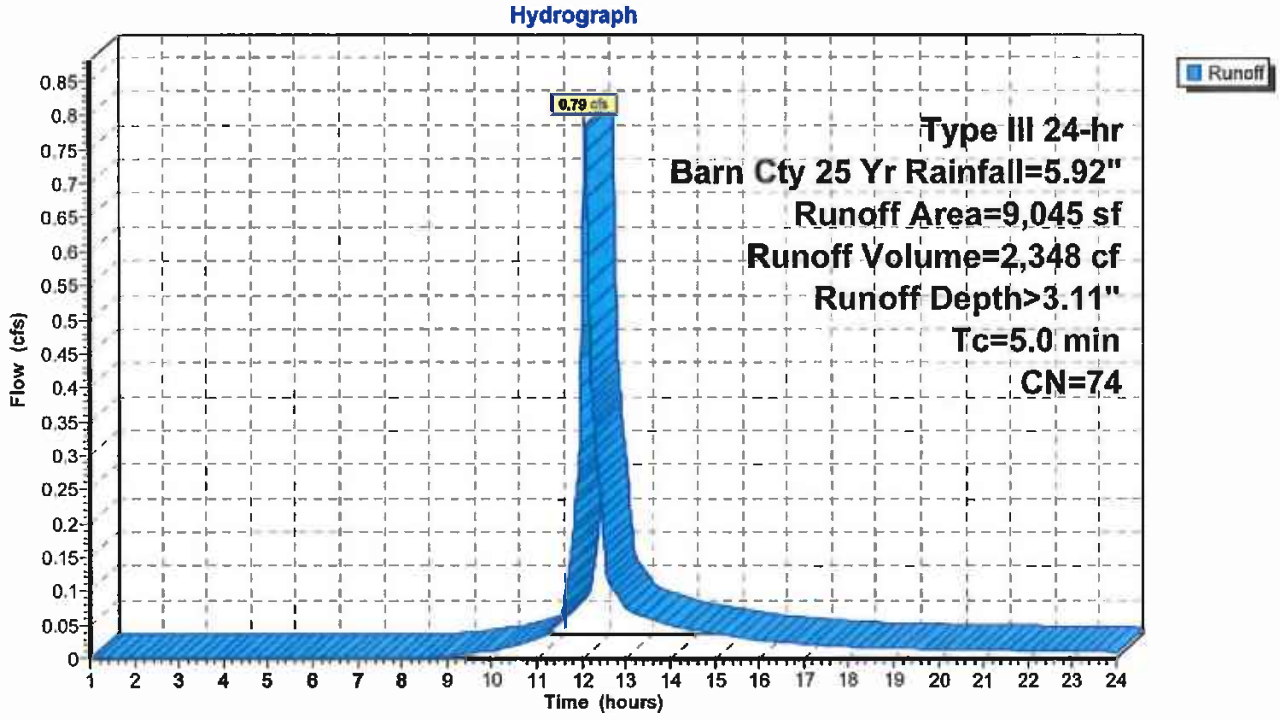
Runoff = 0.79 cfs @ 12.08 hrs, Volume= 2,348 cf, Depth> 3.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr Barn Cty 25 Yr Rainfall=5.92"

	Area (sf)	CN	Description
*	4,403	65	Gravel compacted
*	400	98	Concrete
*	2,400	98	Front of Roof
*	1,842	60	Grass over clay soils
	9,045	74	Weighted Average
	6,245		69.04% Pervious Area
	2,800		30.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Time Concentration**

Subcatchment 1S: Drainage Area DA-P2 Front



Summary for Pond 1P: Drainage Infiltration Model

Inflow Area = 9,045 sf, 30.96% Impervious, Inflow Depth > 3.11" for Barn Cty 25 Yr event
Inflow = 0.79 cfs @ 12.08 hrs, Volume= 2,348 cf
Outflow = 0.44 cfs @ 12.19 hrs, Volume= 2,346 cf, Atten= 44%, Lag= 6.8 min
Primary = 0.44 cfs @ 12.19 hrs, Volume= 2,346 cf

Routing by Stor-Ind method, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 58.31' @ 12.19 hrs Storage= 215 cf

Plug-Flow detention time= 2.6 min calculated for 2,345 cf (100% of inflow)
Center-of-Mass det. time= 2.3 min (830.2 - 827.9)

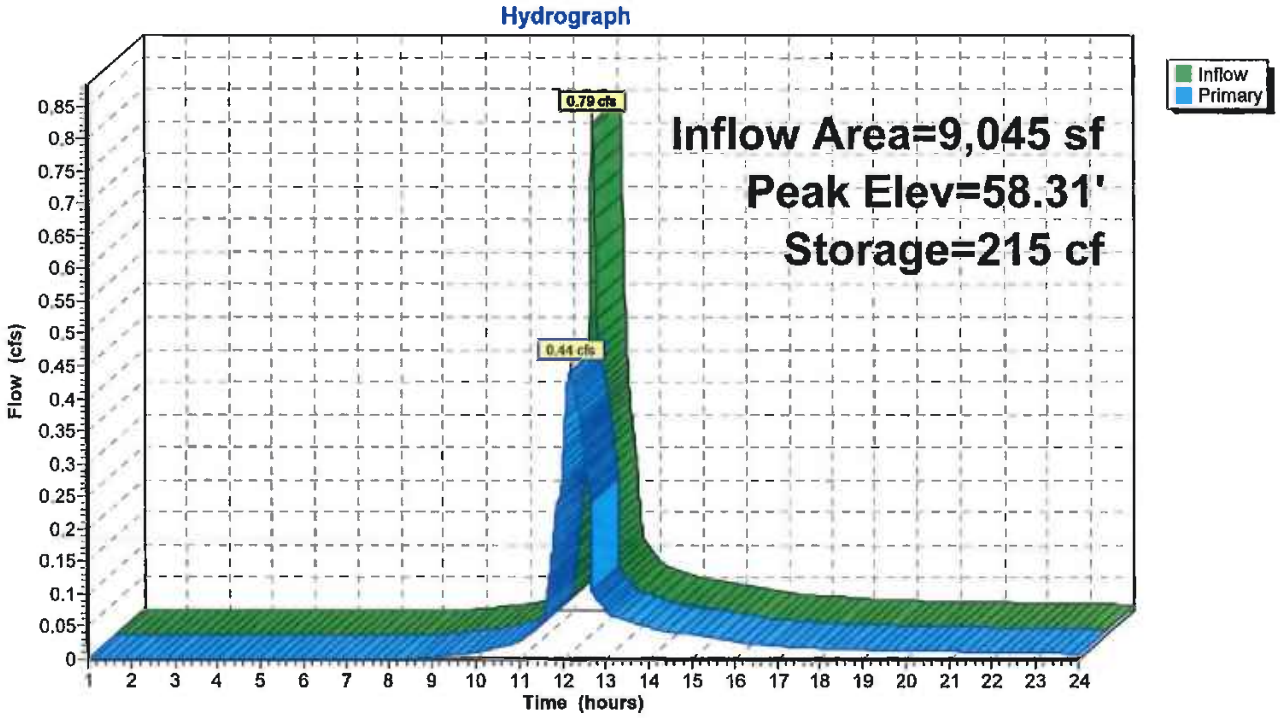
Volume	Invert	Avail.Storage	Storage Description
#1	55.20'	482 cf	**Infiltration System Storage Model**Listed below

Elevation (feet)	Cum.Store (cubic-feet)
55.20	0
55.30	1
56.00	48
58.00	193
60.00	338
62.00	482

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**Infiltration Model** Elev. (feet) 0.00 55.20 55.30 58.00 60.00 62.00 Disch. (cfs) 0.000 0.010 0.240 0.420 0.560 0.700

Primary OutFlow Max=0.44 cfs @ 12.19 hrs HW=58.30' (Free Discharge)
↑—**1=Infiltration Model** (Custom Controls 0.44 cfs)

Pond 1P: Drainage Infiltration Model



Time span=1.00-24.00 hrs, dt=0.01 hrs, 2301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Drainage Area DA-P2 Runoff Area=9,045 sf 30.96% Impervious Runoff Depth>1.77"
Tc=5.0 min CN=74 Runoff=0.44 cfs 1,336 cf

Pond 1P: Drainage Infiltration Model Peak Elev=56.19' Storage=62 cf Inflow=0.44 cfs 1,336 cf
Outflow=0.30 cfs 1,337 cf

Total Runoff Area = 9,045 sf Runoff Volume = 1,336 cf Average Runoff Depth = 1.77"
69.04% Pervious = 6,245 sf 30.96% Impervious = 2,800 sf

Summary for Subcatchment 1S: Drainage Area DA-P2 Front

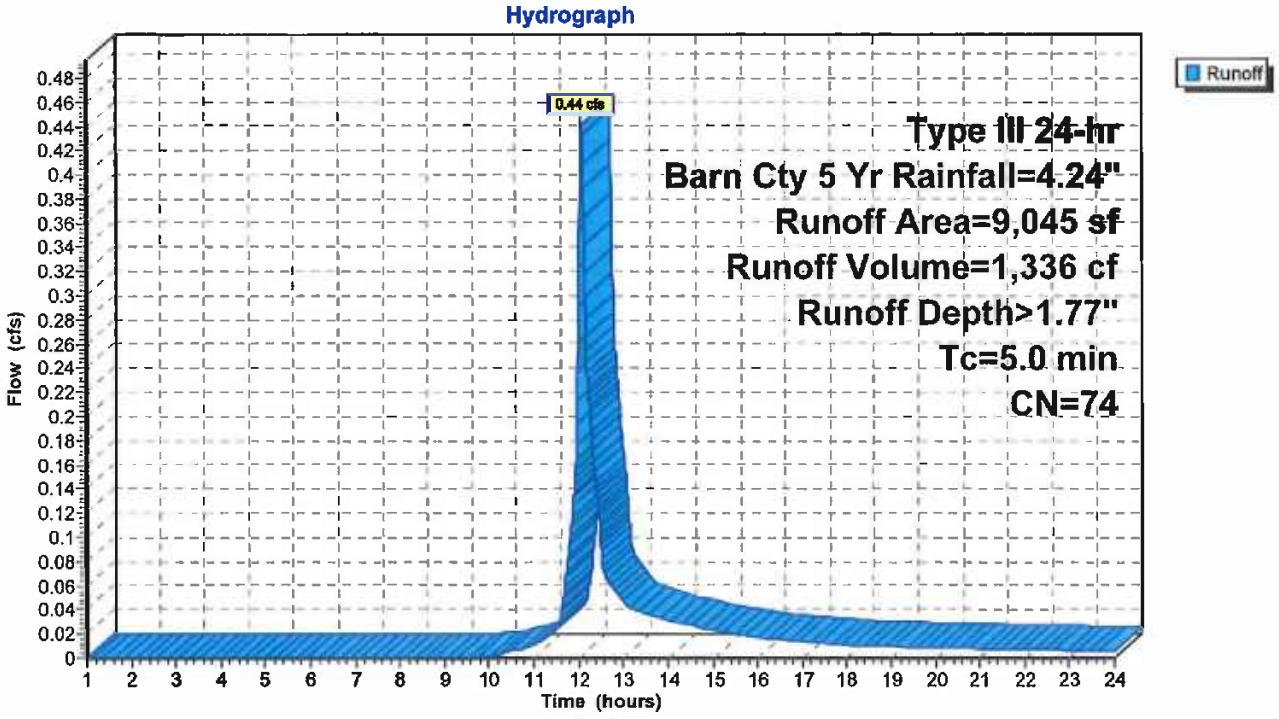
Runoff = 0.44 cfs @ 12.08 hrs, Volume= 1,336 cf, Depth> 1.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr Barn Cty 5 Yr Rainfall=4.24"

	Area (sf)	CN	Description
*	4,403	65	Gravel compacted
*	400	98	Concrete
*	2,400	98	Front of Roof
*	1,842	60	Grass over clay soils
	9,045	74	Weighted Average
	6,245		69.04% Pervious Area
	2,800		30.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Time Concentration**

Subcatchment 1S: Drainage Area DA-P2 Front



Summary for Pond 1P: Drainage Infiltration Model

Inflow Area = 9,045 sf, 30.96% Impervious, Inflow Depth > 1.77" for Barn Cty 5 Yr event
Inflow = 0.44 cfs @ 12.08 hrs, Volume= 1,336 cf
Outflow = 0.30 cfs @ 12.16 hrs, Volume= 1,337 cf, Atten= 32%, Lag= 4.9 min
Primary = 0.30 cfs @ 12.16 hrs, Volume= 1,337 cf

Routing by Stor-Ind method, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 56.19' @ 12.16 hrs Storage= 62 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.6 min (844.9 - 844.3)

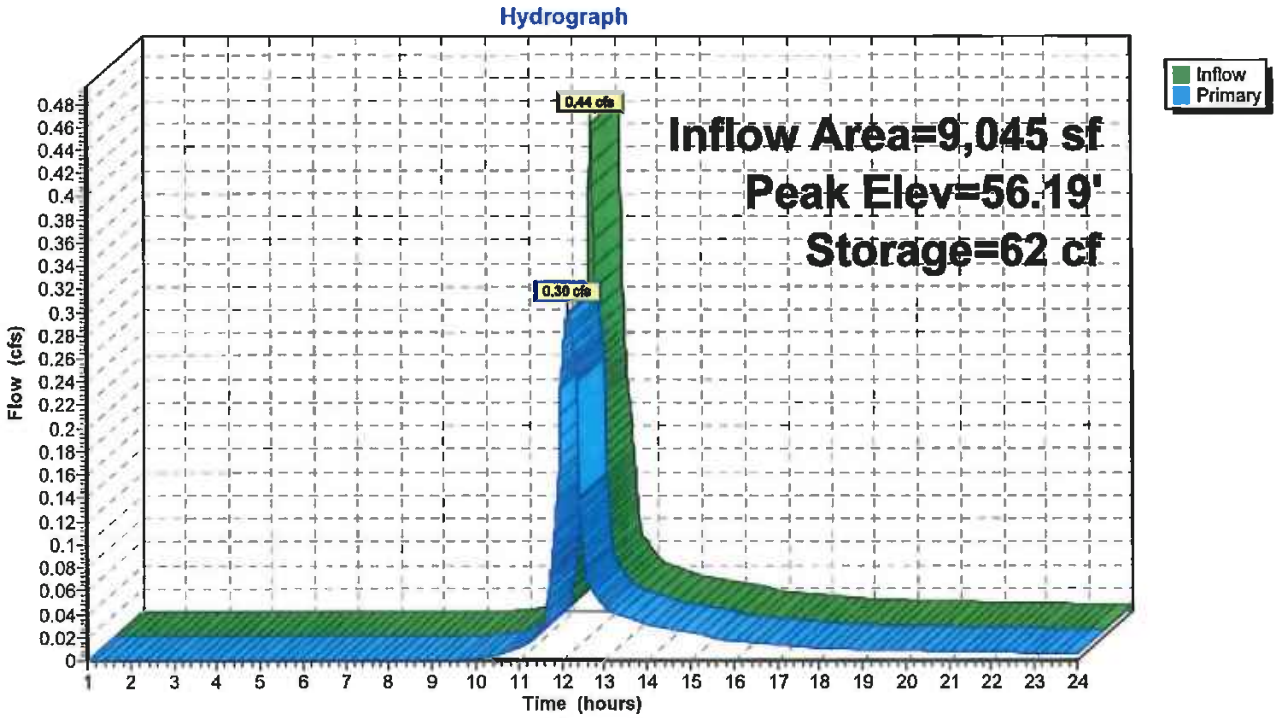
Volume	Invert	Avail.Storage	Storage Description
#1	55.20'	482 cf	**Infiltration System Storage Model**Listed below

Elevation (feet)	Cum.Store (cubic-feet)
55.20	0
55.30	1
56.00	48
58.00	193
60.00	338
62.00	482

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**Infiltration Model** Elev. (feet) 0.00 55.20 55.30 58.00 60.00 62.00 Disch. (cfs) 0.000 0.010 0.240 0.420 0.560 0.700

Primary OutFlow Max=0.30 cfs @ 12.16 hrs HW=56.19' (Free Discharge)
↑**1=Infiltration Model** (Custom Controls 0.30 cfs)

Pond 1P: Drainage Infiltration Model



Time span=1.00-24.00 hrs, dt=0.01 hrs, 2301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Drainage Area DA-P2 Runoff Area=9,045 sf 30.96% Impervious Runoff Depth>3.74"
Tc=5.0 min CN=74 Runoff=0.94 cfs 2,815 cf

Pond 1P: Drainage Infiltration Model Peak Elev=59.39' Storage=294 cf Inflow=0.94 cfs 2,815 cf
Outflow=0.52 cfs 2,816 cf

Total Runoff Area = 9,045 sf Runoff Volume = 2,815 cf Average Runoff Depth = 3.74"
69.04% Pervious = 6,245 sf 30.96% Impervious = 2,800 sf

Summary for Subcatchment 1S: Drainage Area DA-P2 Front

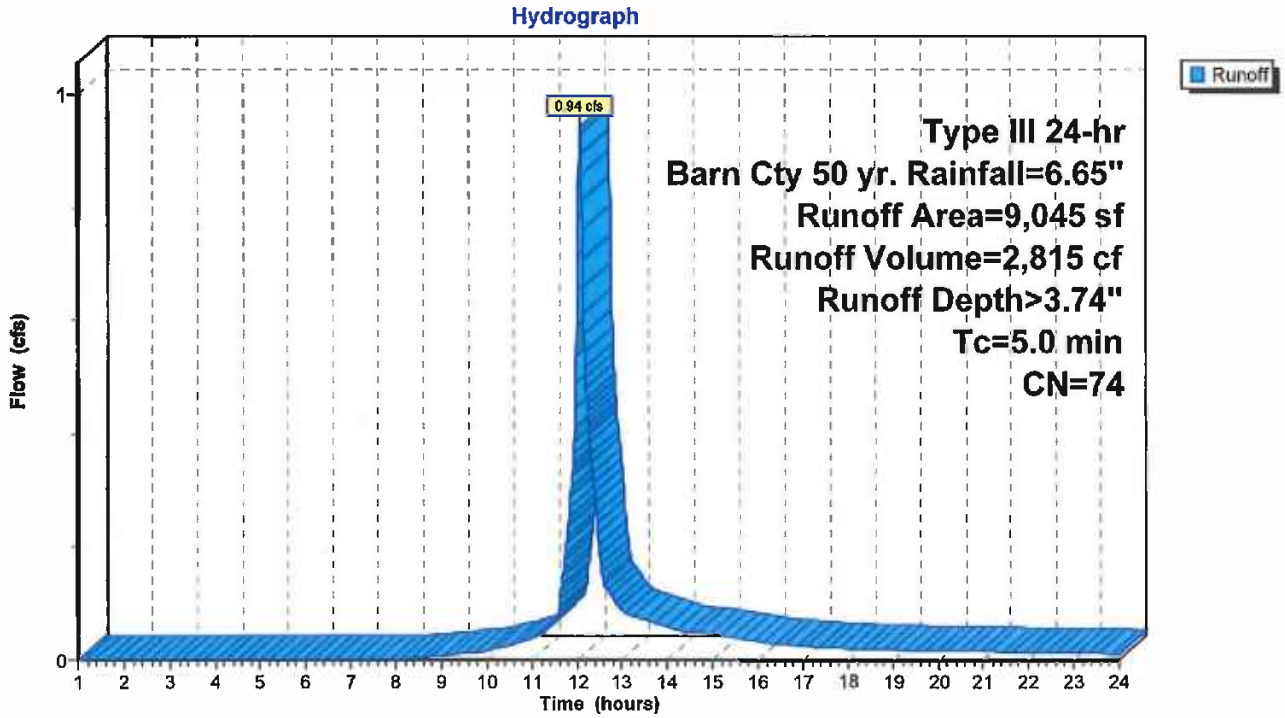
Runoff = 0.94 cfs @ 12.07 hrs, Volume= 2,815 cf, Depth> 3.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr Barn Cty 50 yr. Rainfall=6.65"

	Area (sf)	CN	Description
*	4,403	65	Gravel compacted
*	400	98	Concrete
*	2,400	98	Front of Roof
*	1,842	60	Grass over clay soils
	9,045	74	Weighted Average
	6,245		69.04% Pervious Area
	2,800		30.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Time Concentration**

Subcatchment 1S: Drainage Area DA-P2 Front



Summary for Pond 1P: Drainage Infiltration Model

Inflow Area = 9,045 sf, 30.96% Impervious, Inflow Depth > 3.74" for Barn Cty 50 yr. event
Inflow = 0.94 cfs @ 12.07 hrs, Volume= 2,815 cf
Outflow = 0.52 cfs @ 12.19 hrs, Volume= 2,816 cf, Atten= 45%, Lag= 7.0 min
Primary = 0.52 cfs @ 12.19 hrs, Volume= 2,816 cf

Routing by Stor-Ind method, Time Span= 1.00-24.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 59.39' @ 12.19 hrs Storage= 294 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 2.9 min (825.6 - 822.7)

Volume	Invert	Avail.Storage	Storage Description
#1	55.20'	482 cf	**Infiltration System Storage Model**Listed below

Elevation (feet)	Cum.Store (cubic-feet)
55.20	0
55.30	1
56.00	48
58.00	193
60.00	338
62.00	482

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**Infiltration Model** Elev. (feet) 0.00 55.20 55.30 58.00 60.00 62.00 Disch. (cfs) 0.000 0.010 0.240 0.420 0.560 0.700

Primary OutFlow Max=0.52 cfs @ 12.19 hrs HW=59.39' (Free Discharge)
↑—**1=Infiltration Model** (Custom Controls 0.52 cfs)

Pond 1P: Drainage Infiltration Model

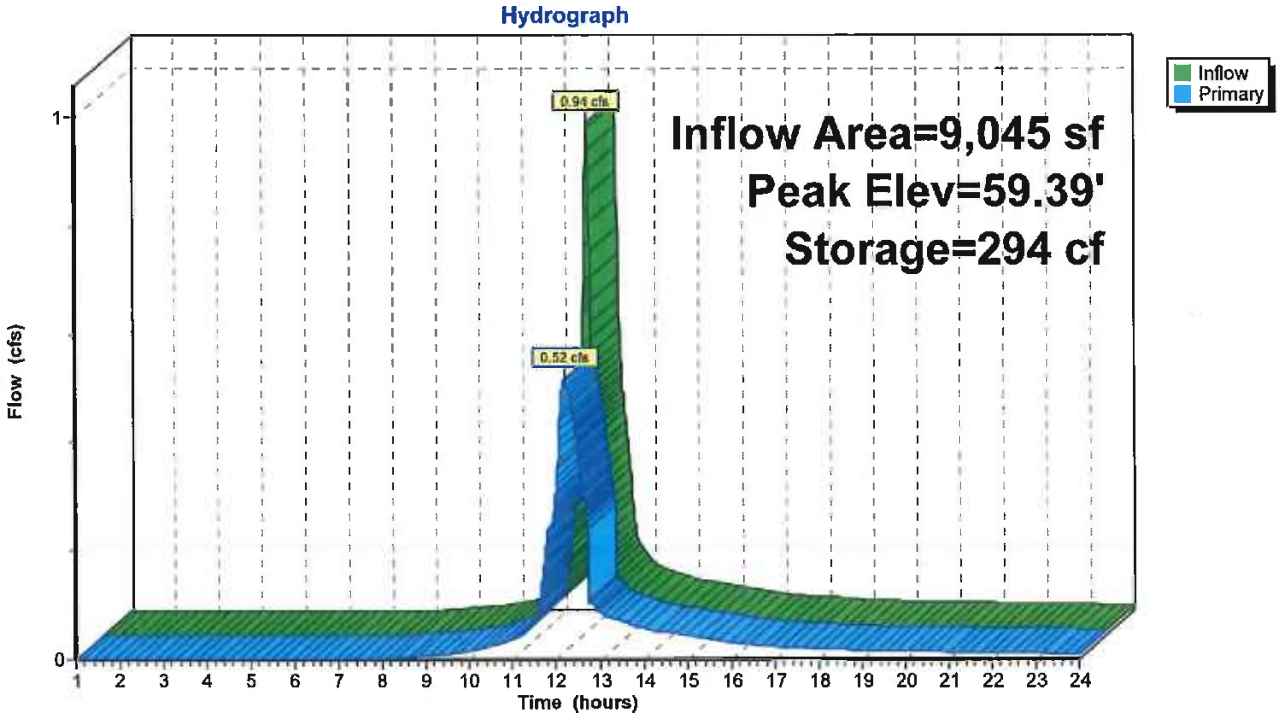
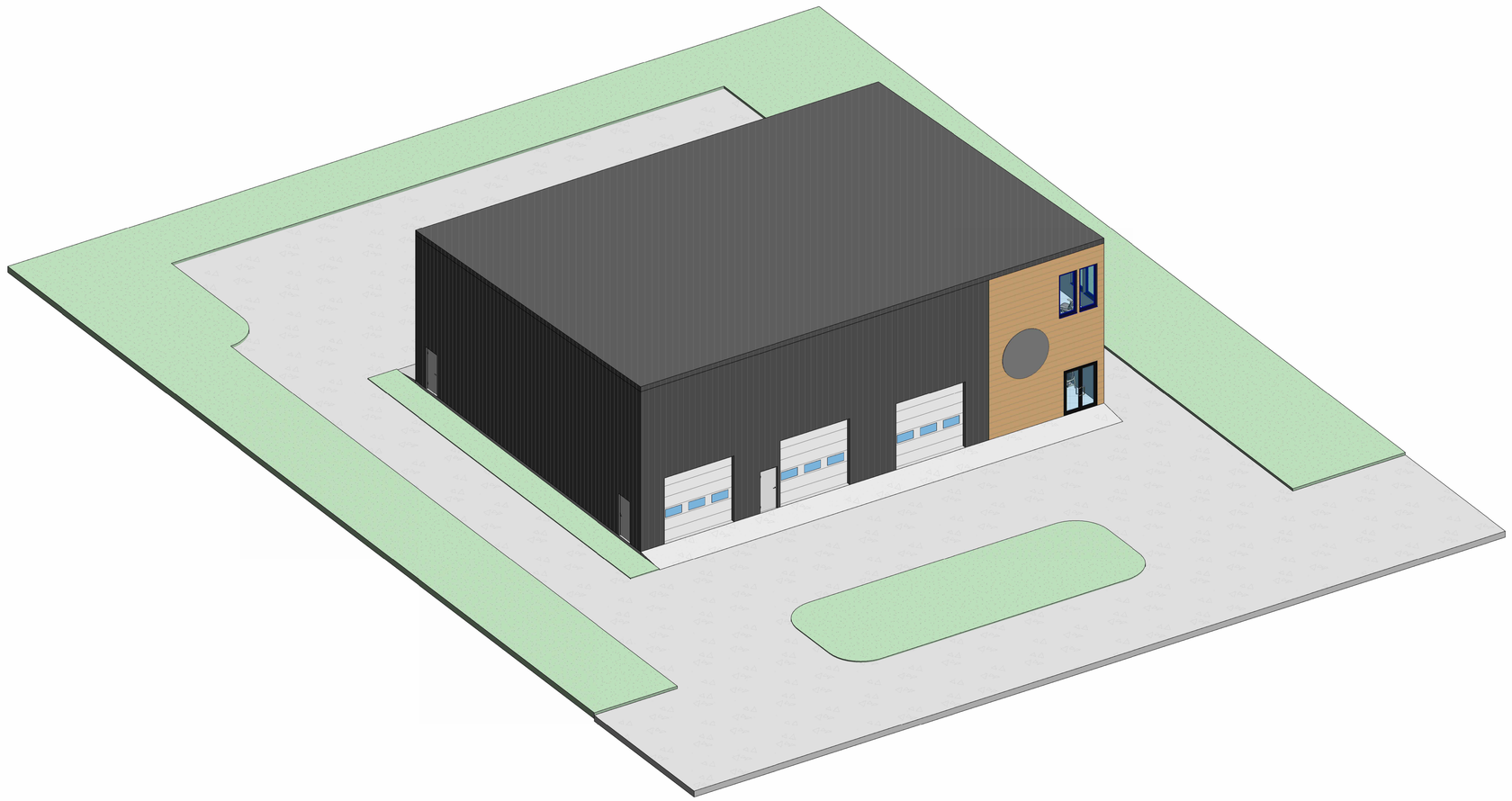


TABLE OF CONTENTS


WENTWORTH MOTORSPORTS
WORCESTER, CAPE COD
508-896-8660
IMPORT SERVICE
SPECIALIZING IN



WENTWORTH MOTORSPORTS

Location: 94B Thad Ellis Rd. Brewster, MA 02631

Client: Alex Wentworth

DESIGNER

Ben Mayo
Unaffiliated Designer
mayoben21@gmail.com
(912) 398-2274

DISCLAIMER

These drawings are for conceptual and descriptive purposes only. They are NOT intended for construction use.

Original Issue Date

08/10/23

Plan Name:

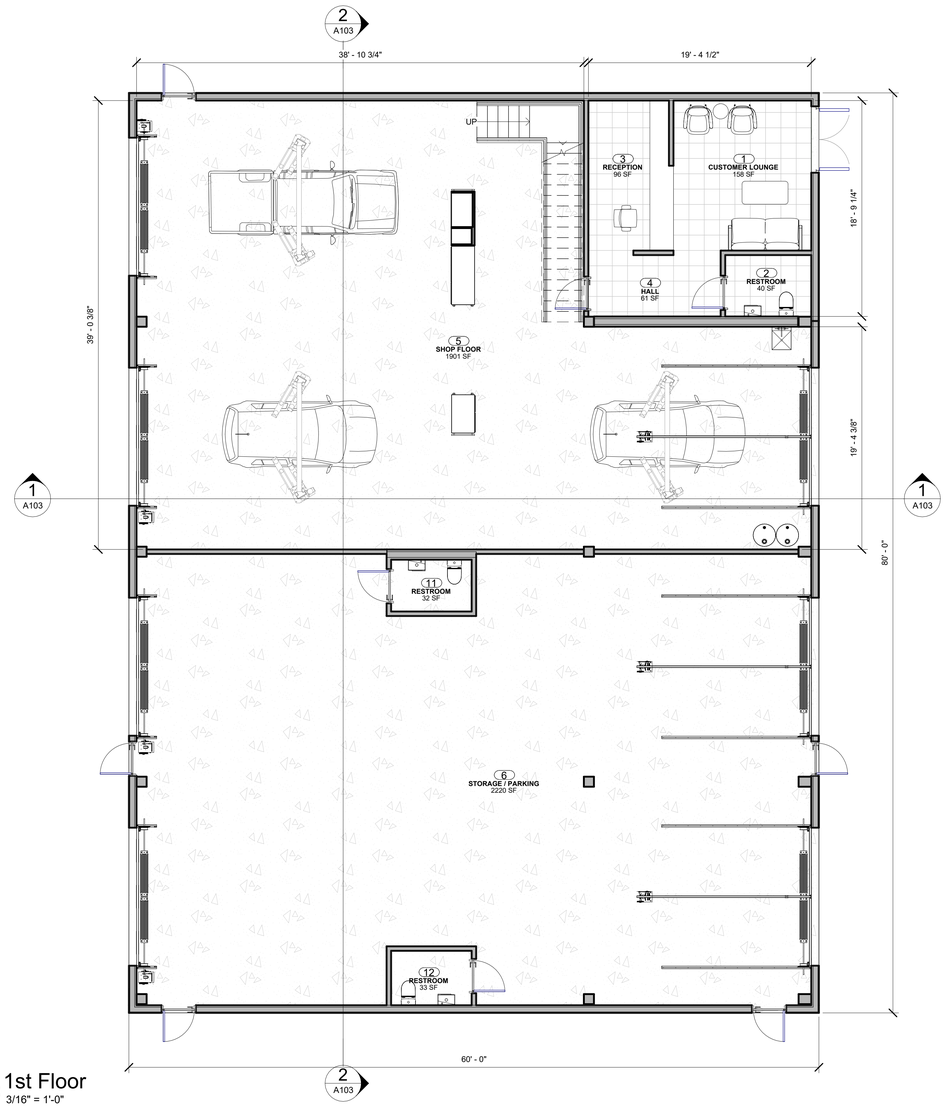
Isometric

Drawing Number:

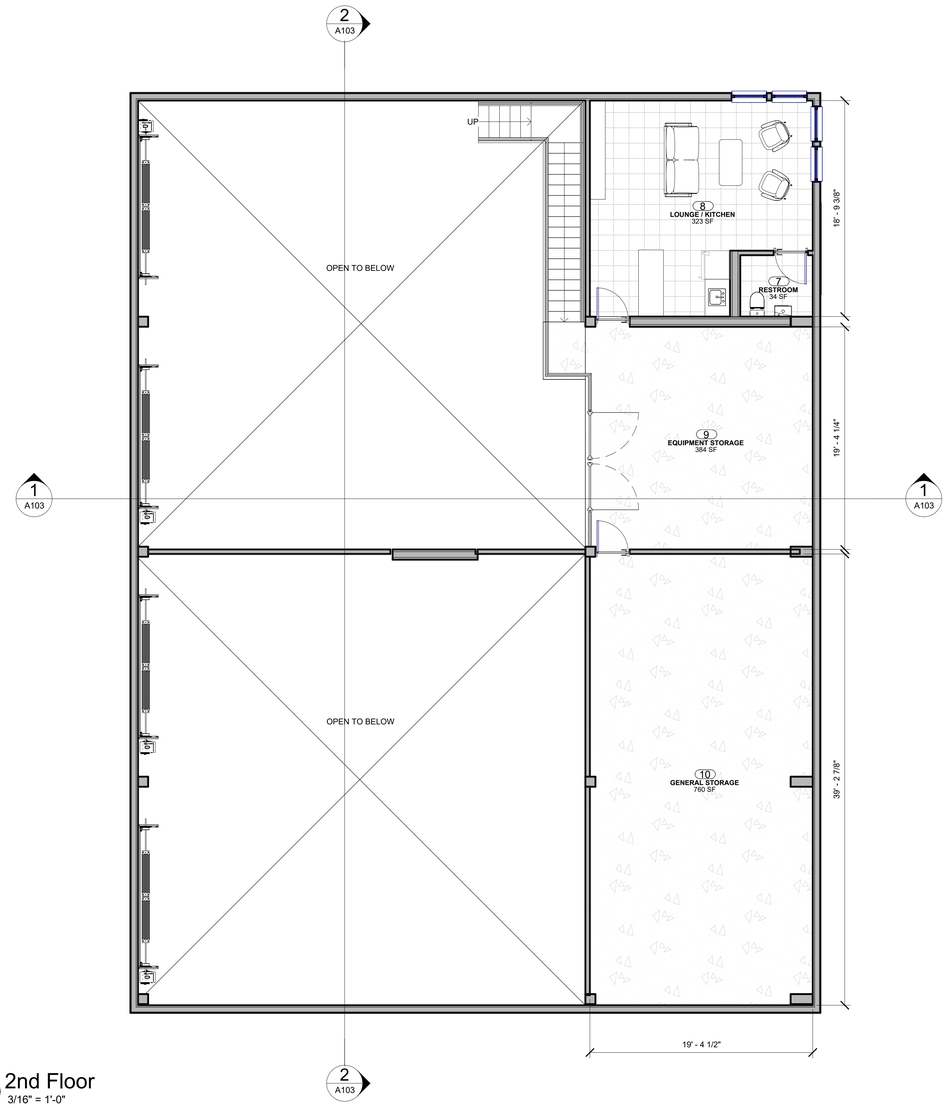
A100

Drawing of

File Path: XXXXXXXXXXX



1 1st Floor
3/16" = 1'-0"



2 2nd Floor
3/16" = 1'-0"

0' 2' 4' 8' 12'

WENTWORTH MOTORSPORTS

Location: 94B Thad Ellis Rd. Brewster, MA 02631

Client: Alex Wentworth

DESIGNER

Ben Mayo
Unaffiliated Designer
mayoben21@gmail.com
(912) 398-2274

DISCLAIMER

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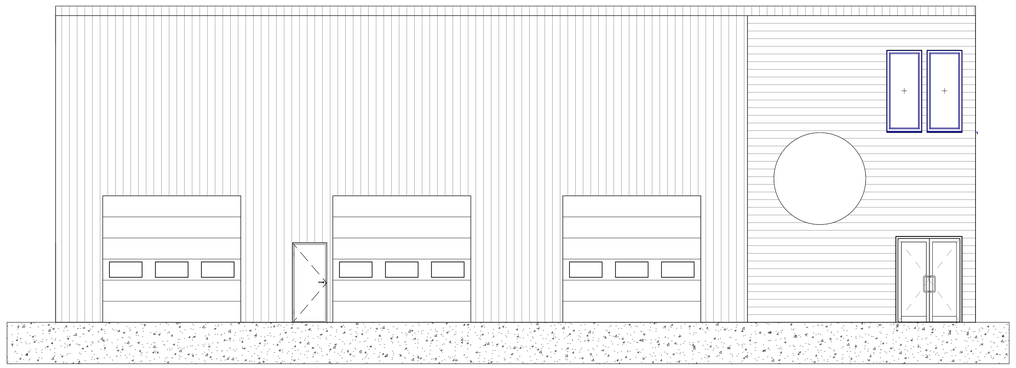
Original Issue Date
08/08/23

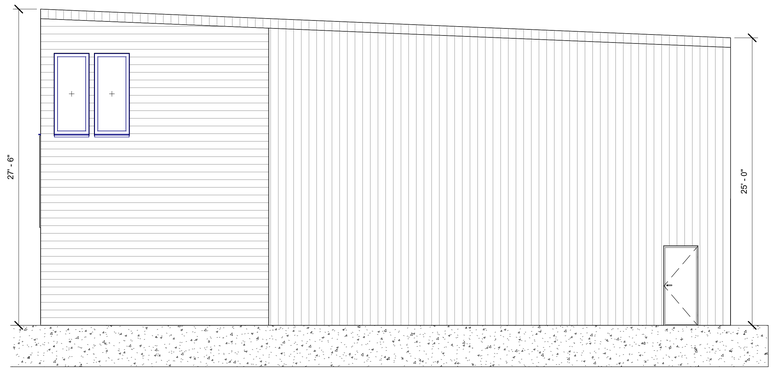
Plan Name:
Floorplans

Drawing Number:
A101
Drawing of

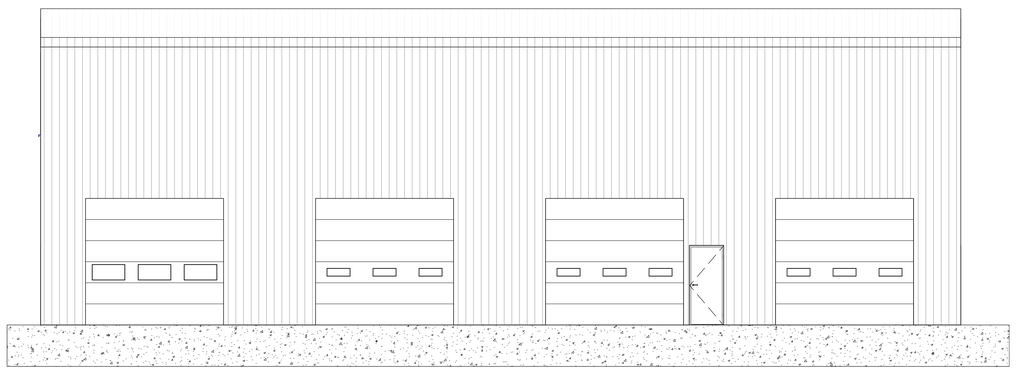
File Path: XXXXXXXXXXXX



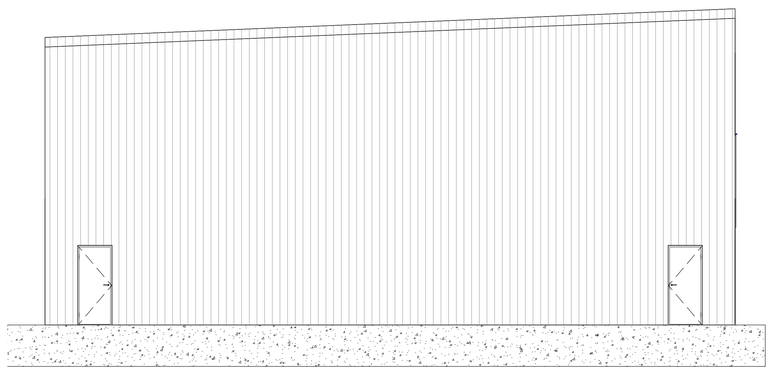
1 East Elevation
3/16" = 1'-0"



2 North Elevation
3/16" = 1'-0"



4 West Elevation
3/16" = 1'-0"



3 South Elevation
3/16" = 1'-0"

0' 2' 4' 8' 12'

File Path: XXXXXXXXXXXX

WENTWORTH MOTORSPORTS

Location: 94B Thad Ellis Rd. Brewster, MA 02631

Client: Alex Wentworth

DESIGNER

Ben Mayo
Unaffiliated Designer
mayoben21@gmail.com
(912) 398-2274

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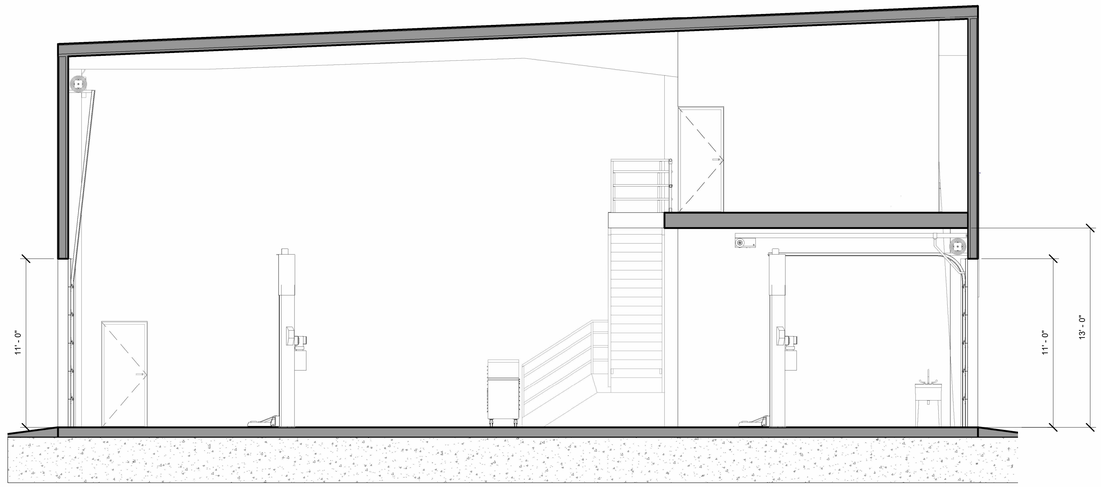
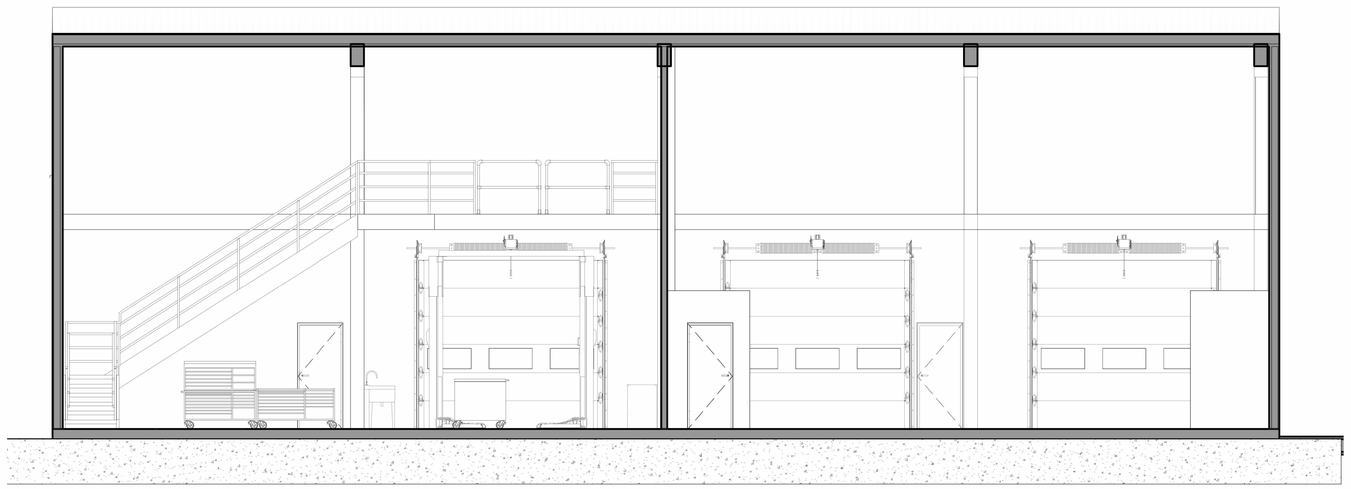
Original Issue Date
08/08/23

Plan Name:
Elevations

Drawing Number:
A102
Drawing of



1 Section 1
1/4" = 1'-0"



2 Section 2
1/4" = 1'-0"

0' 2' 4' 8' 16'

WENTWORTH MOTORSPORTS

Location: 94B Thad Ellis Rd. Brewster, MA 02631

Client: Alex Wentworth

DESIGNER

Ben Mayo
Unaffiliated Designer
mayoben21@gmail.com
(912) 398-2274

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Original Issue Date
08/10/23

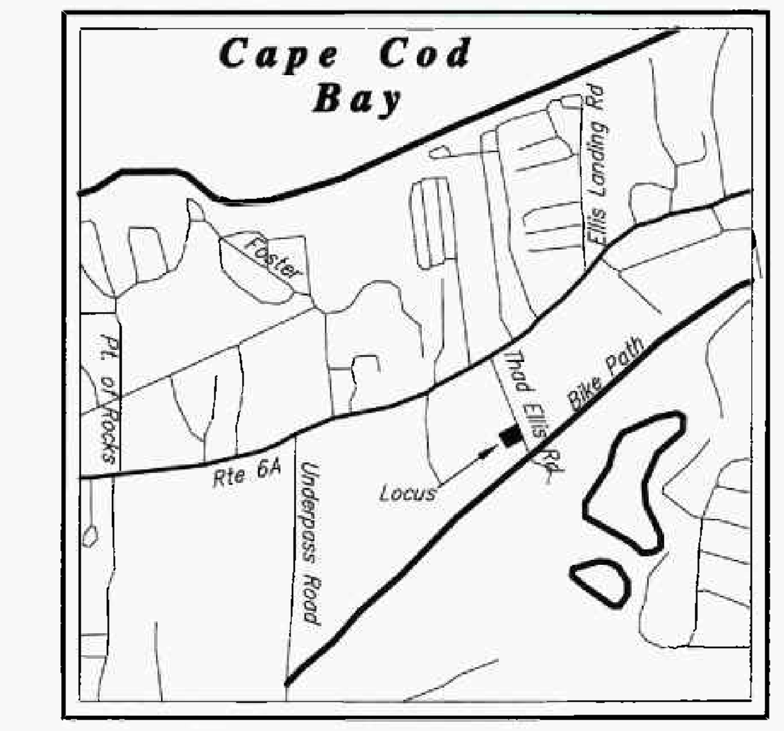
Plan Name:
Sections

Drawing Number:
A103
Drawing of

File Path: XXXXXXXXXXXX

Wentworth Motorsports
Site Construction Plans

94 Thad Ellis Road
Brewster, MA



LOCUS MAP

SCALE 1"=2000'±

ASSESSORS MAP 89 PARCEL 5

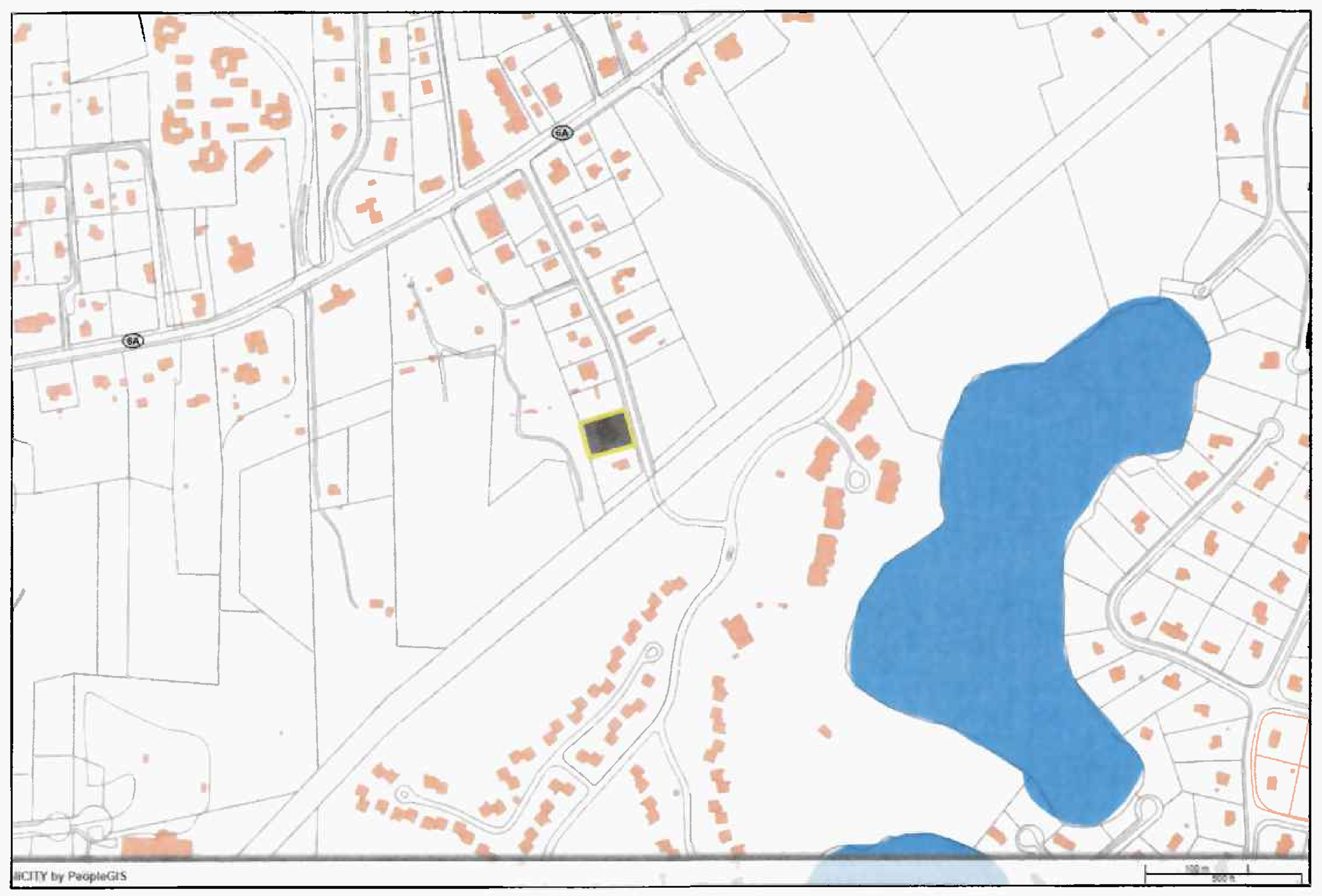
LOCUS IS WITHIN FEMA FLOOD ZONE X (AREA OF MINIMAL FLOOD HAZARD) AS SHOWN ON COMMUNITY PANEL #25001C0418J DATED 7/16/2014

OWNER OF RECORD

MOG REAL ESTATE HOLDINGS, LLC
972 STONY BROOK ROAD
BREWSTER, MA 02631

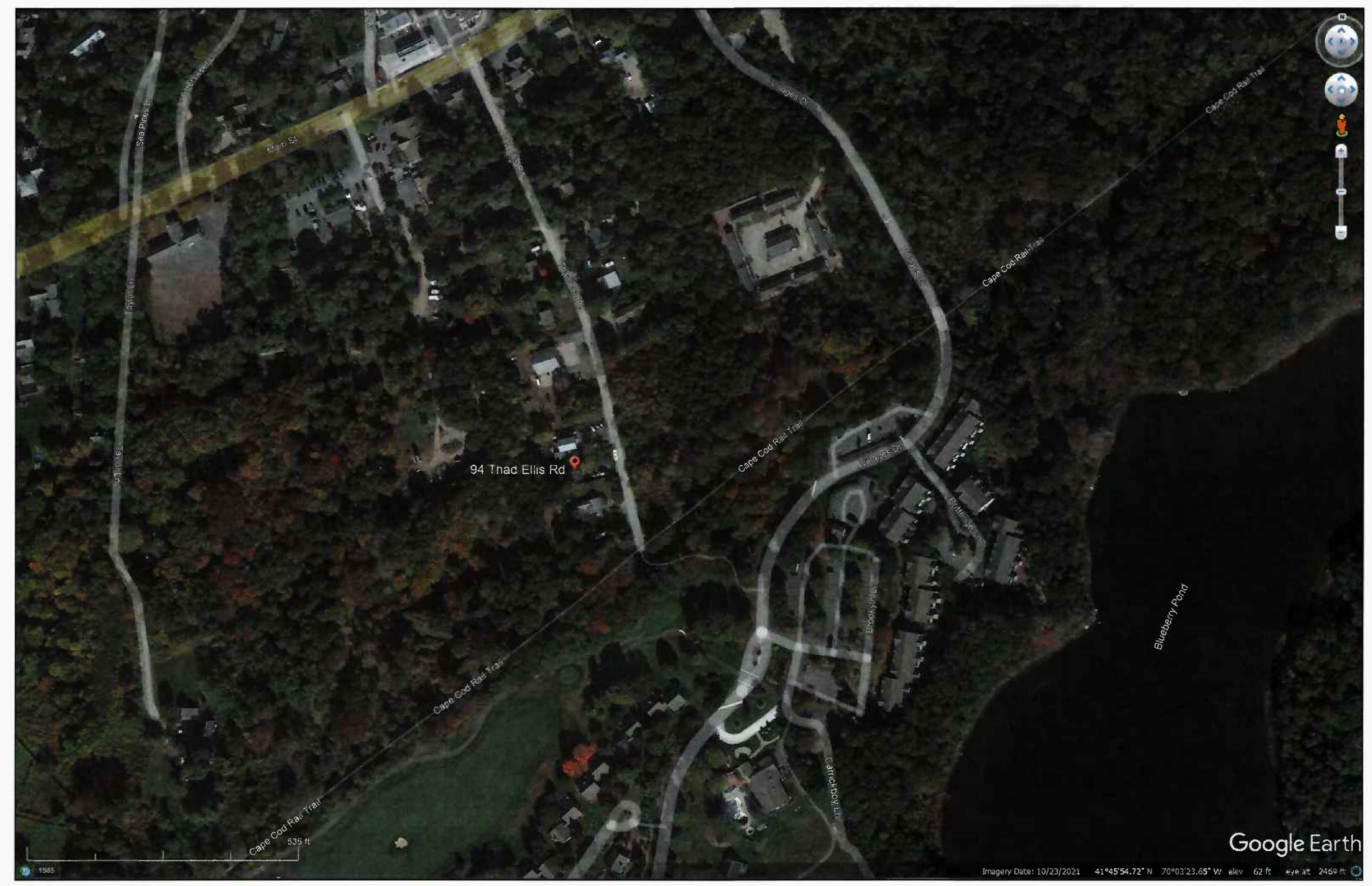
REFERENCES

DEED BOOK 35360 PAGE 213
PLAN BOOK 97 PAGE 155



ZONING MAP: TOWN OF BREWSTER GIS, N.T.S.

NORTH



AERIAL IMAGE GOOGLE EARTH, N.T.S.

NORTH

PLAN SHEET INDEX:

1. Cover Sheet
2. Existing Conditions Plan
3. Landscape/Layout
4. Utilities/Grading Plan
5. Civil Detail Sheet

COVER SHEET
FOR
SITE PLAN
OF
94 THAD ELLIS ROAD
BREWSTER, MA
PREPARED FOR
WENTWORTH MOTORSPORTS

DATE: JULY 18, 2023
REV: OCTOBER 27, 2023 (STAFF COMMENTS)

COMMONWEALTH OF MASSACHUSETTS — DANIEL A OJALA CIVIL No. 46502 REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS — DANIEL A. OJALA No. 40980 PROFESSIONAL LAND SURVEYOR

10/27/23

DANIEL A. OJALA, P.E., P.L.S. — DATE
PERMIT SET, NOT FOR CONSTRUCTION

SHEET 1 OF 5

off 508-362-4541
fax 508-362-9880
downcape.com ©
down cape engineering, inc.
civil engineers
land surveyors
939 Main Street (Rte 6A)
YARMOUTHPORT MA 02675

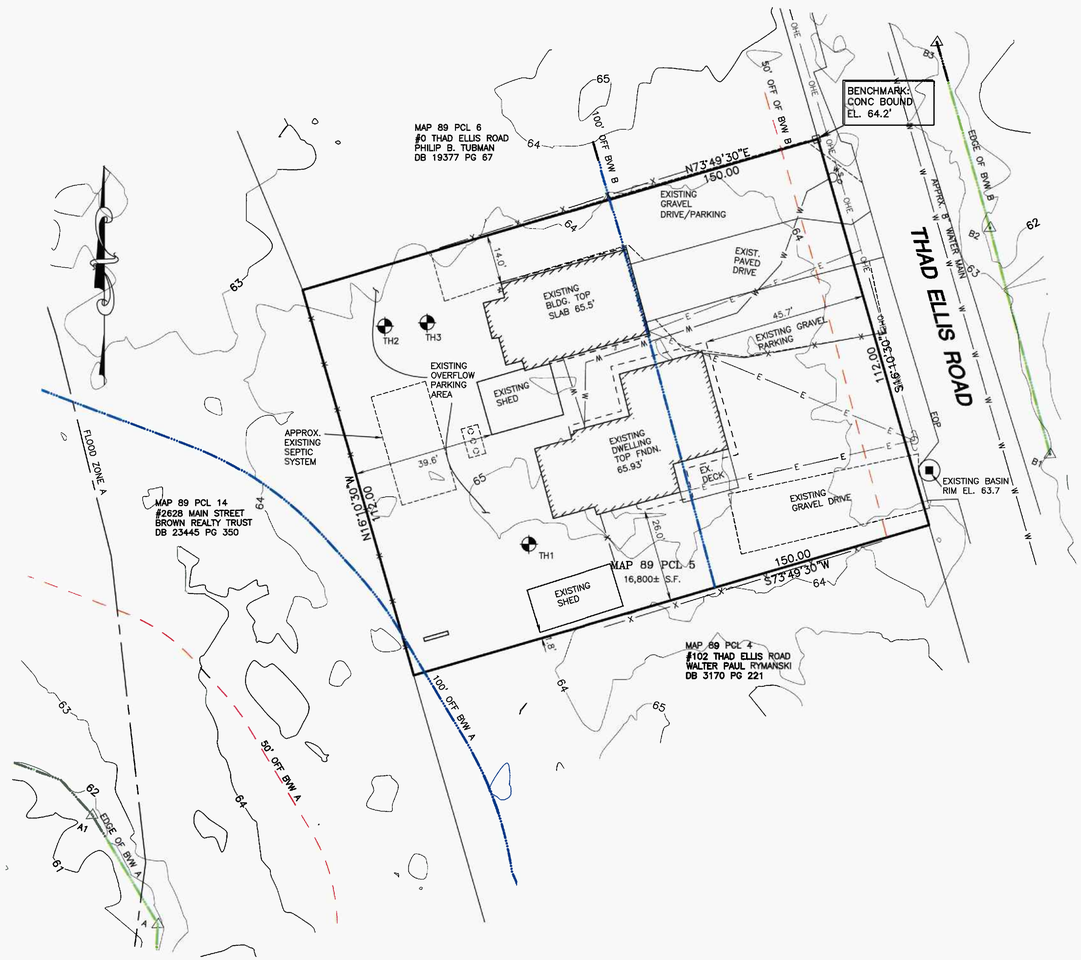
21-490 WENTWORTH.DWG

DCE #21-490

LEGEND

99	EXISTING CONTOUR
× 99.1	EXIST. SPOT ELEV.
{99}	PROPOSED CONTOUR
[98.4]	PROPOSED SPOT EL.
TH1	TEST HOLE
2%	SLOPE OF GROUND
	UTILITY POLE
	FIRE HYDRANT

NOTE: NOT ALL SYMBOLS MAY APPEAR IN DRAWING



NOTES

1. DATUM IS NAVD88
2. THIS PLAN IS FOR PROPOSED WORK ONLY AND NOT TO BE USED FOR LOT LINE STAKING OR ANY OTHER PURPOSE.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR CALLING DIGSAFE (1-888-344-7233) AND VERIFYING THE LOCATION OF ALL UNDERGROUND & OVERHEAD UTILITIES PRIOR TO COMMENCEMENT OF WORK.
4. EXISTING SEPTIC SYSTEM SHOWN IS APPROXIMATE. NO SEPTIC INFORMATION ON FILE WITH THE TOWN.
5. WETLAND FLAGGED BY INDEPENDENT ENVIRONMENTAL CONSULTANTS, INC. 1/5/2022.

LOCUS MAP

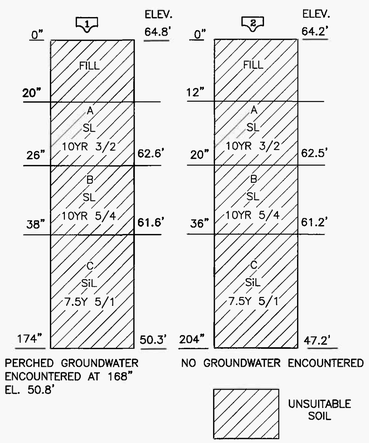
SCALE 1"=2000'±

ASSESSORS MAP 89 PARCEL 5

LOCUS IS WITHIN FEMA FLOOD ZONE X (AREA OF MINIMAL FLOOD HAZARD) AS SHOWN ON COMMUNITY PANEL #25001C0418J DATED 7/16/2014

TEST HOLE LOGS

ENGINEER: DANIEL E. GONSALVES, SE #13587
WITNESS: AMY VON HONE, RS, CHO
DATE: 9/22/22
PERC. RATE = FAILED (NO SUITABLE SOILS DISCOVERED
CLASS I SOILS

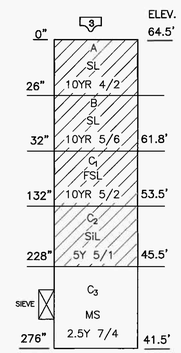


PERCHED GROUNDWATER ENCOUNTERED AT 168" EL. 50.8'

NO GROUNDWATER ENCOUNTERED

TEST HOLE LOGS

ENGINEER: DANIEL E. GONSALVES, SE #13587
WITNESS: SHERRI MCCULLOUGH (BREWSTER)
DATE: 10/18/22
PERC. RATE = < 2 MIN/INCH
CLASS I SOILS



PERCHED GROUNDWATER ENCOUNTERED AT 228" EL. 45.5'

ZONING SUMMARY

ZONING DISTRICT: C-H COMMERCIAL HIGH DENSITY DISTRICT

		EXIST.
MIN. LOT SIZE	15,000 S.F.	16,800 S.F
MIN. LOT FRONTAGE	80'	112'
MIN. FRONT SETBACK	30'	45.7'
MIN. SIDE SETBACK	15'	14.0'
MIN. REAR SETBACK	15'	39.6'
MAX. BUILDING COVERAGE	40%	20.1% (3376 S.F.)
MAX BUILDING HEIGHT	30'	<30'

OWNER OF RECORD

MOG REAL ESTATE HOLDINGS, LLC
972 STONY BROOK ROAD
BREWSTER, MA 02631

REFERENCES

DEED BOOK 35360 PAGE 213
PLAN BOOK 97 PAGE 155

Scale: 1" = 20'
0 10 20 30 40 50 FEET

EXISTING CONDITIONS
FOR
SITE PLAN
OF
94 THAD ELLIS ROAD
BREWSTER, MA
PREPARED FOR
WENTWORTH MOTORSPORTS

DATE: JULY 18, 2023
REV: OCTOBER 27, 2023 (STAFF COMMENTS)

COMMONWEALTH OF MASSACHUSETTS DANIEL A OJALA No. 40980 PROFESSIONAL LAND SURVEYOR
COMMONWEALTH OF MASSACHUSETTS DANIEL A OJALA CIVIL No. 46502 REGISTERED PROFESSIONAL ENGINEER

DANIEL A. OJALA, P.E., P.L.S. — DATE 10/27/23

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fax 508-362-9880
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down cape engineering, inc.
civil engineers
land surveyors
939 Main Street (Rte 6A)
YARMOUTHPORT MA 02675

21-490 WENTWORTH.DWG

DCE #21-490

LEGEND

99	EXISTING CONTOUR
× 99.1	EXIST. SPOT ELEV.
[99]	PROPOSED CONTOUR
[98.4]	PROPOSED SPOT EL.
TH1	TEST HOLE
2%	SLOPE OF GROUND
	UTILITY POLE
	FIRE HYDRANT

NOTE: NOT ALL SYMBOLS MAY APPEAR IN DRAWING

HARDSCAPE CALCULATIONS:

HARDSCAPE	0–50'	50–100'
EXISTING:	780 SF	3803 SF
PROPOSED:	726 SF	5503 SF
INCREASE:	–54 SF	1700 SF

PARKING CALCULATIONS:

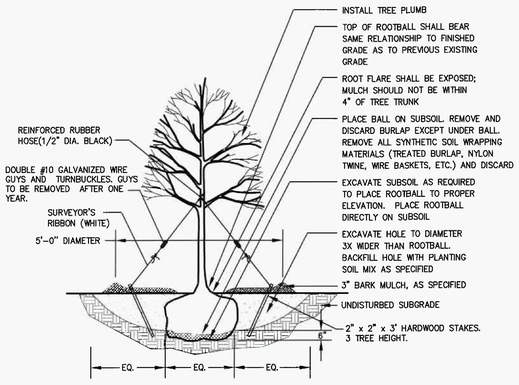
AUTOMOTIVE SERVICE AND REPAIR FACILITY:
3 BAYS (2 SPACES/BAY) = 6 SPACES
1/ EMPLOYEE MAX SHIFT = 2 SPACES
400 S.F. OFFICE:
(1 SPACE/250 S.F.) = 2 SPACES REQ.

TOTAL: 10 SPACES REQUIRED
9 SPACES PROVIDED

LANDSCAPE KEY

- Hydrangea macrophylla 'Nikko Blue' — Nikko Blue Hydrangea–blue mophead
- Ilex glabra 'Shamrock' — Shamrock Inkberry–compact
- Juniperus Virginiana — Eastern Red Cedar

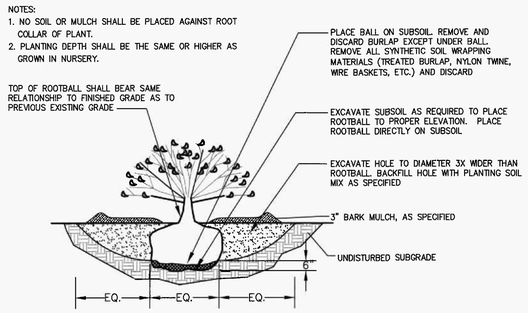
RAIN GARDEN PLANTING SCHEDULE			
SYMBOL	PLANT NAME	SIZE	QUANT.
	WINTERBERRY *ILEX VERTICILLATA*	#3	3
	NORTHERN BAYBERRY *MYRICA PENSYLVANICA*	#3	4



DECIDUOUS TREE PLANTING
FOR 2.5" CAL. AND ABOVE

NOT TO SCALE

NOTES:
1. NO SOIL OR MULCH SHALL BE PLACED AGAINST ROOT COLLAR OF PLANT.
2. PLANTING DEPTH SHALL BE THE SAME OR HIGHER AS GROWN IN NURSERY.



SHRUB PLANTING

NOT TO SCALE

Scale: 1" = 20'

0 10 20 30 40 50 FEET

NOTES

1. DATUM IS NAVD88
2. MUNICIPAL WATER IS AVAILABLE
3. MINIMUM PIPE PITCH TO BE 1/8" PER FOOT.
4. DESIGN LOADING FOR ALL PROPOSED PRECAST UNITS TO BE AASHO H–20
5. PIPE JOINTS TO BE MADE WATERTIGHT.
6. CONSTRUCTION DETAILS TO BE IN ACCORDANCE WITH 310 CMR 15.000 (TITLE V).
7. THIS PLAN IS FOR PROPOSED WORK ONLY AND NOT TO BE USED FOR LOT LINE STAKING OR ANY OTHER PURPOSE.
8. PIPE FOR SEPTIC SYSTEM TO SCH. 40–4" PVC.
9. COMPONENTS NOT TO BE BACKFILLED OR CONCEALED WITHOUT INSPECTION BY BOARD OF HEALTH AND PERMISSION OBTAINED FROM BOARD OF HEALTH.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR CALLING DIGSAFE (1–888–344–7233) AND VERIFYING THE LOCATION OF ALL UNDERGROUND & OVERHEAD UTILITIES PRIOR TO COMMENCEMENT OF WORK.
11. ANY UNSUITABLE MATERIAL ENCOUNTERED SHALL BE REMOVED BENEATH AND 5' AROUND THE PROPOSED LEACHING FACILITY AND LEACHING PITS.
12. EXISTING LEACHING FACILITY SHALL BE PUMPED AND REMOVED.
13. WETLAND FLAGGED BY INDEPENDENT ENVIRONMENTAL CONSULTANTS, INC. 1/5/2022.
14. ALL ROOF RUNOFF TO BE DIRECTED TO ROOF DRYWELLS.

LOCUS MAP

SCALE 1"=2000'±

ASSESSORS MAP 89 PARCEL 5

LOCUS IS WITHIN FEMA FLOOD ZONE X (AREA OF MINIMAL FLOOD HAZARD) AS SHOWN ON COMMUNITY PANEL #25001C0418J DATED 7/16/2014

ZONING SUMMARY

ZONING DISTRICT: C–H COMMERCIAL HIGH DENSITY DISTRICT

		EXIST.	PROP.
MIN. LOT SIZE	15,000 S.F.	16,800 S.F	16,800 S.F
MIN. LOT FRONTAGE	80'	112'	112'
MIN. FRONT SETBACK	30'	45.7'	36.0'
MIN. SIDE SETBACK	15'	14.0'	10.0'
MIN. REAR SETBACK	15'	39.6'	54.0'
MAX. BUILDING COVERAGE	40%	20.1% (3376 S.F.)	28.5% (4800 S.F.)
MAX BUILDING HEIGHT	30'	<30'	<30'

OWNER OF RECORD

MOG REAL ESTATE HOLDINGS, LLC
972 STONY BROOK ROAD
BREWSTER, MA 02631

REFERENCES

DEED BOOK 35360 PAGE 213
PLAN BOOK 97 PAGE 155

GENERAL SEEDING NOTES

1) PERMANENT SEEDING SHALL CONSIST OF THE FOLLOWING MIXTURE OR APPROVED EQUAL – OPTIMUM SEEDING DATES ARE BETWEEN APRIL 1 AND MAY 31 AND AUGUST 16 AND OCTOBER 15.
SUMMER STRESS MIXTURE (LOFTS SEED INC.)
90% REBEL II OR TRIBUTE TALL FESCUE
10% NASSAU OR BARON KENTUCKY BLUEGRASS
SEEDING RATE: 5# PER 1,000 SQ. FT. OR 200# PER ACRE.

2) PERMANENT SEEDING TO BE APPLIED BY RAKING OR DRILLING INTO THE SOILS AT A RATE OF 150# PER ACRE. SLOPED AREA TO BE COVERED WITH MULCH AS INDICATED IN NOTE 4.

3) FERTILIZER FOR THE ESTABLISHMENT OF TEMPORARY AND PERMANENT VEGETATIVE COVER SHALL BE 10–10–10 APPLIED AT A RATE OF 15# PER 1,000 SQ. FT. OR AS DETERMINED BY SOIL TESTS. LIMESTONE FOR TEMPORARY SEEDING SHALL BE APPLIED AT A RATE OF 90# PER 1,000 SQ. FT. LIMESTONE FOR PERMANENT SEEDING SHALL BE APPLIED AT A RATE OF 135# PER 1,000 SQ. FT.

GENERAL PLANTING NOTES

1) ALL PLANT MATERIAL SHALL CONFORM TO THE AMERICAN STANDARD FOR NURSERY STOCK BY THE AMERICAN NURSERY & LANDSCAPE ASSOCIATION OR THE PLANT MATERIAL WILL BE UNACCEPTABLE. ALL PLANT MATERIAL SHALL BE TRUE TO SPECIES, VARIETY, SIZE AND BE CERTIFIED DISEASE AND INSECT FREE. THE OWNER AND/OR THE LANDSCAPE ARCHITECT RESERVES THE RIGHT TO APPROVE ALL PLANT MATERIAL ON SITE PRIOR TO INSTALLATION.

2) PROVIDE PLANTING PITS AS INDICATED ON PLANTING DETAILS. BACKFILL PLANTING PITS WITH ONE PART EACH OF TOPSOIL, PEAT MOSS AND PARENT MATERIAL. IF WET SOIL CONDITIONS EXIST THEN PLANTING PITS SHALL BE EXCAVATED AN ADDITIONAL 12" AND FILLED WITH SAND.

3) NEWLY INSTALLED PLANT MATERIAL SHALL BE WATERED AT THE TIME OF INSTALLATION. REGULAR WATERING SHALL BE PROVIDED TO ENSURE THE ESTABLISHMENT, GROWTH AND SURVIVAL OF ALL PLANTS.

4) ALL PLANT MATERIAL SHALL BE GUARANTEED BY THE CONTRACTOR FOR ONE YEAR AFTER THE DATE OF FINAL ACCEPTANCE. ANY PLANT MATERIAL THAT DIES WITHIN THAT TIME PERIOD SHALL BE REMOVED, INCLUDING THE STUMP, AND REPLACED BY A TREE OF SIMILAR SIZE AND SPECIES AT THE EXPENSE OF THE CONTRACTOR.

5) ALL PLANTING BEDS SHALL RECEIVE 2" OF SHREDDED PINE BARK.

LAYOUT LANDSCAPE
FOR
SITE PLAN
OF
94 THAD ELLIS ROAD
BREWSTER, MA

PREPARED FOR

WENTWORTH MOTORSPORTS

DATE: JULY 18, 2023
REV: OCTOBER 27, 2023 (STAFF COMMENTS)

COMMONWEALTH OF MASSACHUSETTS — DANIEL A. OJALA — No. 40980 — REGISTERED LAND SURVEYOR

COMMONWEALTH OF MASSACHUSETTS — DANIEL A OJALA — CIVIL — No. 46502 — REGISTERED PROFESSIONAL ENGINEER

DANIEL A. OJALA, P.E., P.L.S. — DATE 10/27/23

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939 Main Street (Rte 6A)
YARMOUTHPORT MA 02675

21–490 WENTWORTH.DWG

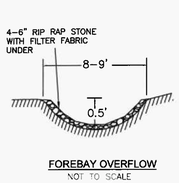
SHEET 3 OF 5

DCE #21–490

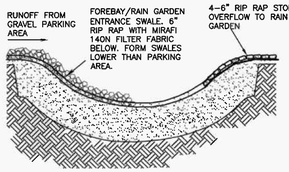
LEGEND

99	EXISTING CONTOUR
X 99.1	EXIST. SPOT ELEV.
[99]	PROPOSED CONTOUR
[98.4]	PROPOSED SPOT EL.
TH1	TEST HOLE
2%	SLOPE OF GROUND
	UTILITY POLE
	FIRE HYDRANT

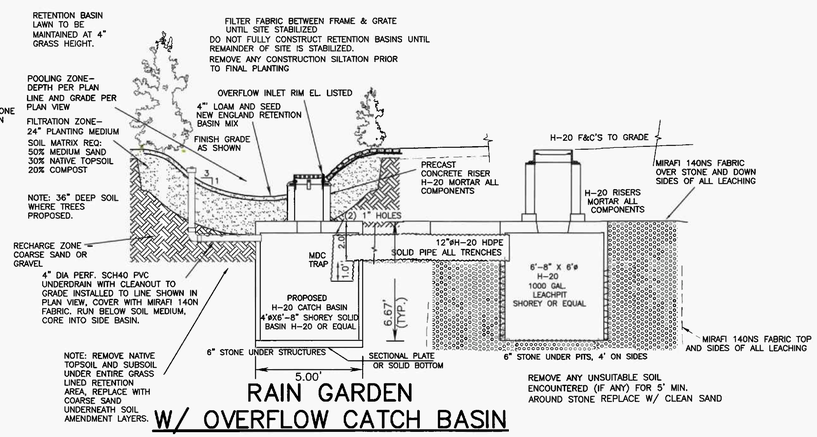
NOTE: NOT ALL SYMBOLS MAY APPEAR IN DRAWING



FOREBAY OVERFLOW
NOT TO SCALE



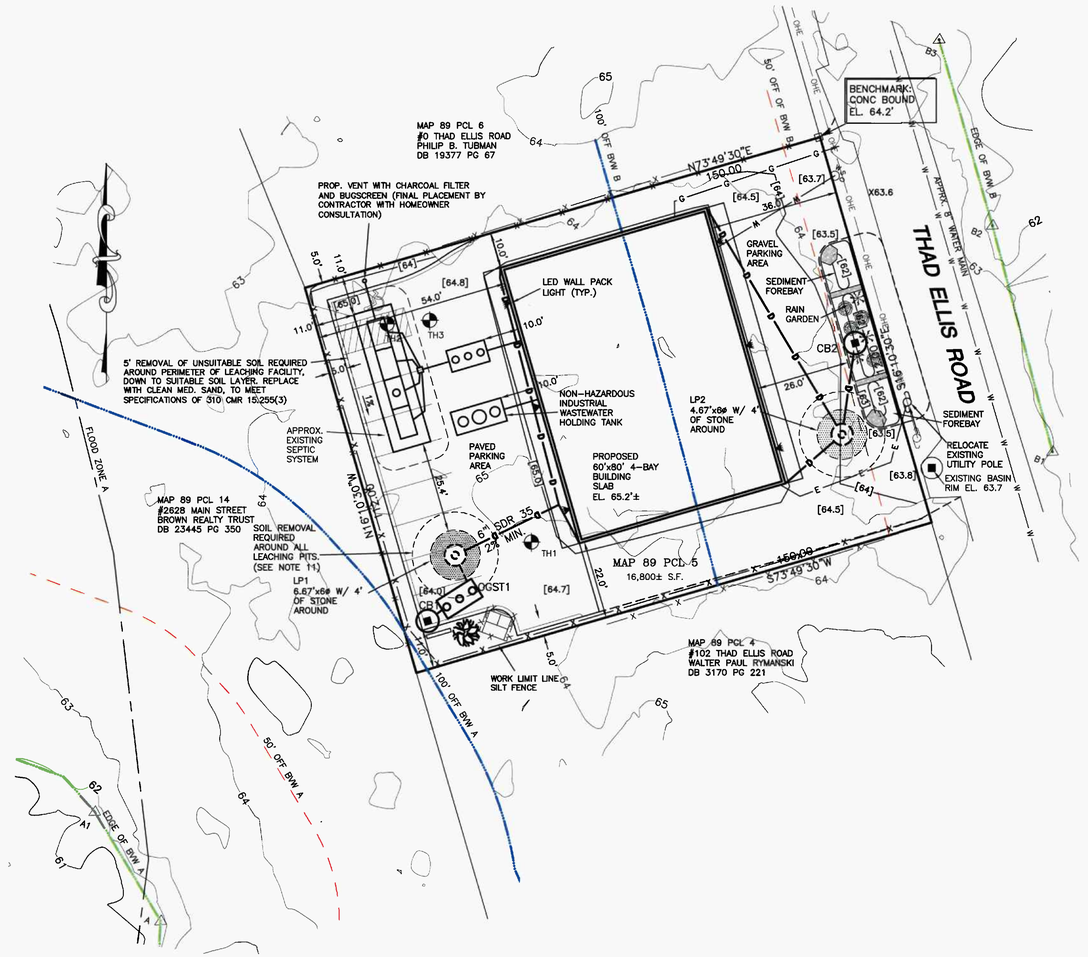
SEDIMENT FOREBAY
NOT TO SCALE



RAIN GARDEN
W/ OVERFLOW CATCH BASIN
NOT TO SCALE

DRAINAGE ELEV. SCHEDULE

NAME	RIM	INV.
CB1	64.0	60.5
CB2	62.5	60.5
OGST1	64.0	60.4
LP1	64.1	60.1
LP2	64.4	60.0



Scale: 1" = 20'
0 10 20 30 40 50 FEET

NOTES

1. DATUM IS NAVD88
2. MUNICIPAL WATER IS AVAILABLE
3. MINIMUM PIPE PITCH TO BE 1/8" PER FOOT.
4. DESIGN LOADING FOR ALL PROPOSED PRECAST UNITS TO BE AASHO H-20
5. PIPE JOINTS TO BE MADE WATERTIGHT.
6. CONSTRUCTION DETAILS TO BE IN ACCORDANCE WITH 310 CMR 15.000 (TITLE V).
7. THIS PLAN IS FOR PROPOSED WORK ONLY AND NOT TO BE USED FOR LOT LINE STAKING OR ANY OTHER PURPOSE.
8. PIPE FOR SEPTIC SYSTEM TO SCH. 40-4" PVC.
9. COMPONENTS NOT TO BE BACKFILLED OR CONCEALED WITHOUT INSPECTION BY BOARD OF HEALTH AND PERMISSION OBTAINED FROM BOARD OF HEALTH.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR CALLING DIGSAFE (1-888-344-7233) AND VERIFYING THE LOCATION OF ALL UNDERGROUND & OVERHEAD UTILITIES PRIOR TO COMMENCEMENT OF WORK.
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13. WETLAND FLAGGED BY INDEPENDENT ENVIRONMENTAL CONSULTANTS, INC. 1/5/2022.
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LOCUS MAP

SCALE 1"=2000'±

ASSESSORS MAP 89 PARCEL 5

LOCUS IS WITHIN FEMA FLOOD ZONE X (AREA OF MINIMAL FLOOD HAZARD) AS SHOWN ON COMMUNITY PANEL #25001C0418J DATED 7/16/2014

ZONING SUMMARY

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OWNER OF RECORD

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972 STONY BROOK ROAD
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UTILITIES/GRADING
FOR
SITE PLAN
OF
94 THAD ELLIS ROAD
BREWSTER, MA
PREPARED FOR
WENTWORTH MOTORSPORTS

DATE: JULY 18, 2023
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COMMONWEALTH OF MASSACHUSETTS DANIEL A OJALA CIVIL No. 46502 REGISTERED PROFESSIONAL ENGINEER

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SHEET 4 OF 5

DCE #21-490

SYSTEM DESIGN:

EXISTING 3-BEDROOM DWELLING AND 1 SERVICE STATION BAY
EXISTING 480 GPD DESIGN FLOW
PROPOSED 3 BAY SERVICE STATION AT 150 GPD/BAY
400 S.F. OFFICE @ 75 GPD/1000 S.F. = 30 GPD

TOTAL DESIGN FLOW ESTIMATE = 480 GPD

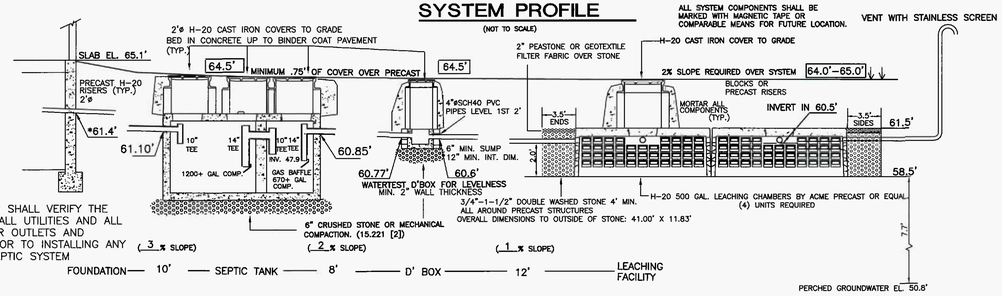
SEPTIC TANK: 480 GPD (2) = 960 (FIRST COMPARTMENT)
480 GPD (1) = 480 (SECOND COMPARTMENT)
960 + 480 = 1440 GAL. REQUIRED
USE A 2000 GAL. DUAL COMPARTMENT SEPTIC TANK

LEACHING:
SIDES: 2 (41.0 + 11.8) 2 (.74) = 156 GPD
BOTTOM 41.0 x 11.8 (.74) = 359 GPD
TOTAL: 696 S.F. 515 GPD

USE (4) 500 GAL. LEACHING CHAMBERS (ACME OR EQUAL) WITH 3.5' STONE ALL AROUND

SYSTEM PROFILE

(NOT TO SCALE)



*THE INSTALLER SHALL VERIFY THE LOCATIONS OF ALL UTILITIES AND ALL BUILDING SEWER OUTLETS AND ELEVATIONS PRIOR TO INSTALLING ANY PORTION OF SEPTIC SYSTEM.

GENERAL NOTES: (APPLY TO ALL SHEETS)

1. THE LOCATION OF EXISTING UNDERGROUND UTILITIES SHOWN ON THIS PLAN IS APPROXIMATE. PRIOR TO ANY EXCAVATION ON THIS SITE, THE EXCAVATING CONTRACTOR SHALL MAKE THE REQUIRED 72 HOUR NOTIFICATION TO DIG SAFE (1-888-344-7233) AND ANY OTHER UTILITIES WHICH MAY HAVE CABLE, PIPE OR EQUIPMENT IN THE CONSTRUCTION AREA FOR VERIFICATION OF LOCATIONS.

2. ALL CONSTRUCTION MATERIALS, COMPONENTS, AND METHODS EMPLOYED ON THIS PROJECT WORK SHALL CONFORM TO THE TOWN OF BREWSTER SUBDIVISION REGULATIONS AND/OR THE MASSACHUSETTS DEPARTMENT OF PUBLIC WORKS STANDARD SPECIFICATIONS FOR BRIDGES AND HIGHWAYS AS AMENDED TO PRESENT. ALL SEPTIC WORK AND MATERIALS TO CONFORM TO 310 CMR 15.00 TITLE 5. AND DENNIS HEALTH REGULATIONS.

3. VERTICAL DATUM NAVD88. MUNICIPAL WATER IS AVAILABLE.

4. DESIGN LOADING FOR ALL PRECAST UNITS TO BE AASHTO-H20 UNLESS NOTED.

5. COORDINATE UTILITY INSTALLATIONS/DISCONNECTS WITH APPROPRIATE VENDORS.

6. SURVEY PLAN IS SUFFICIENTLY ACCURATE FOR PROPOSED WORK, PLAN NOT TO BE UTILIZED FOR LOT LINE STAKING, CONVEYANCING, OR ANY OTHER PURPOSE EXCEPT PERMITTING.

7. ALL SEPTIC PIPING 6"ø SCH-40 PVC UNLESS NOTED.

8. COMPONENTS NOT TO BE BACKFILLED OR CONCEALED WITHOUT INSPECTION BY BOARD OF HEALTH AND PERMISSION OBTAINED FROM BOARD OF HEALTH.

9. DESIGN ENGINEER TO INSPECT AND CERTIFY CONSTRUCTION OF SEPTIC SYSTEM. SEE INSPECTION NOTES

10. COMPONENTS NOT TO BE BACKFILLED OR CONCEALED WITHOUT INSPECTION BY ENGINEERING AND PERMISSION OBTAINED.

11. NOTE THAT ELECTRICAL CONDUITS ARE NOT ALL SHOWN IN DETAIL, PROVIDE CONDUITS AS REQ.

12. EXISTING SEPTIC COMPONENTS ON THE SITE SHALL BE REMOVED AND REPLACED WITH CLEAN COMPACTED SAND

13. WATER SERVICE APPROXIMATE AS SHOWN. CONTRACTOR TO COORDINATE ALL UTILITY WORK WITH APPROPRIATE VENDORS.

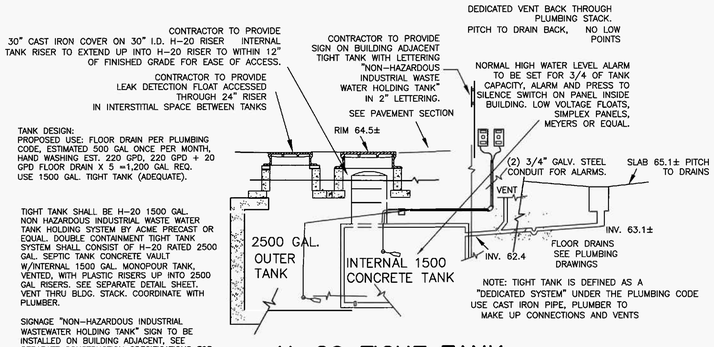
14. TOPOGRAPHY AND DETAIL FROM SURVEYS BY DOWN CAPE ENGINEERING

15. CONTRACTOR TO VERIFY INVERTS, PRECAST SIZES AND ALL SITE CONDITIONS PRIOR TO ANY CONSTRUCTION.

16. CONTRACTOR TO REVIEW SITE AND PLANS AND ANY WORK LIMIT LINE ESTABLISHED. PROTECT ABUTTERS AS REQ.

GENERAL SCOPE OF WORK:

(SEE ALSO ALL NOTES AND DETAILS AND ITEMS ON PLANS):
THE SITEWORK CONTRACTOR SHALL PROVIDE THE OWNER/GENERAL CONTRACTOR WITH ALL MATERIALS AND LABOR NECESSARY TO COMPLETE THE VARIOUS SITEWORK AND THE SEPTIC SYSTEM UPGRADE SHOWN ON THESE PLANS. CONTRACTOR TO VISIT THE SITE PRIOR TO PLACING BID, AND MAKE SUCH INSPECTIONS AND INQUIRIES AS REQUIRED TO ACCURATELY ESTIMATE THE COST OF THE SITEWORK WHICH INCLUDES AMONG OTHER PARTS DRAINAGE, PARKING, AND SEPTIC SYSTEM INSTALLATION. THE CONTRACTORS SCOPE OF WORK SHALL INCLUDE ALL NECESSARY PERMITS AND FEES, LIKELY INCLUDING BUT NOT LIMITED TO DISPOSAL WORKS CONSTRUCTION PERMIT, PLUMBING PERMIT, TRENCH PERMIT, ELECTRICAL PERMIT, COORDINATION WITH WATER DEPARTMENT, GAS COMPANY, AND OTHER UTILITIES AS REQUIRED TO COMPLETE THE WORK SHOWN ON THE PLANS. THE CONTRACTOR SHALL PROVIDE FOR PUMPING OF ALL EXISTING TANKS AND COMPONENTS, AND SHALL CRUSH AND REMOVE ALL ABANDONED LEACHING COMPONENTS, ALL PER TITLE 5 REQUIREMENTS. NOTE SIGNIFICANT SOIL REMOVAL AROUND PROPOSED SEPTIC LEACHING AND DRAINAGE PITS IS REQUIRED.
THE CONTRACTOR SHALL COORDINATE THEIR WORK WITH THEIR ELECTRIC SUBCONTRACTOR AND UTILITY COMPANIES AS NEEDED.
SAFETY OF STRUCTURES AND PUBLIC AND ANY TRAFFIC CONTROL REQUIRED ON THE PROJECT IS THE RESPONSIBILITY OF THE CONTRACTOR.
THE CONTRACTOR SHALL PROVIDE ALL NEW FIRST QUALITY PRODUCTS AND CLEAN DOUBLE WASHED STONE FOR THE PROJECT. THE CONTRACTOR SHALL COMPACT ALL BACKFILL TO 95% OF THE MODIFIED PROCTOR DENSITY OF THE BACKFILL IN ALL PLACES, AND SHALL PROVIDE GRAVEL AND NEW PAVEMENT PER THE PAVEMENT SECTION. THE CONTRACTOR IS RESPONSIBLE FOR GRADING OVER THE SYSTEM COMPONENTS AND PITCHING THE PARKING TO MATCH PROPOSED GRADES WITHOUT FORMING PUDDLES. ANY DEFICIENT WORK SHALL BE REMOVED AND REPLACED AT NO ADDITIONAL COST TO THE OWNER. THE CONTRACTOR IS RESPONSIBLE FOR ALL SAFETY AND TRAFFIC MANAGEMENT FOR THE PROJECT. IT IS UNDERSTOOD BY ALL PARTIES THAT THE CONTRACTOR SHALL ULTIMATELY BE RESPONSIBLE FOR THE PROMPT COMPLETION OF ALL PHASES OF WORK DESCRIBED ON THESE PLANS, AND FINAL PAYMENT CAN BE WITHHELD UNTIL A CERTIFICATE OF COMPLIANCE IS ISSUED BY THE BREWSTER HEALTH DEPARTMENT AND THE OWNERS ENGINEER IS SATISFIED ALL WORK HAS BEEN COMPLETED PER THE PLANS AND FINAL CLEANUP IS COMPLETE. ANY WRITTEN CONTRACT BETWEEN THE OWNER AND CONTRACTOR WILL GOVERN OVER LANGUAGE IN THIS SCOPE WHERE NOT CONTRARY TO THE DESIGN INTENT, CODES, AND THE PERMITTING AUTHORITIES JURISDICTION.



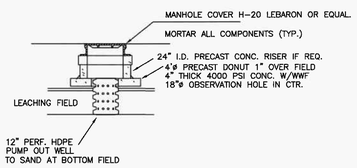
TANK DESIGN:
PROPOSED USE: FLOOR DRAIN PER PLUMBING CODE, ESTIMATED 500 GAL ONCE PER MONTH, HAND WASHING EST. 220 GPD, 220 GPD + 20 GPD FLOOR DRAIN X 5 =1,200 GAL REQ. USE 1500 GAL. TIGHT TANK (ADEQUATE).

TIGHT TANK SHALL BE H-20 1500 GAL. NON HAZARDOUS INDUSTRIAL WASTE WATER TANK HOLDING SYSTEM BY ACME PRECAST OR EQUAL. DOUBLE CONTAINMENT TIGHT TANK SYSTEM SHALL CONSIST OF H-20 RATED 2500 GAL. SEPTIC TANK CONCRETE VAULT W/INTERNAL 1500 GAL. MONOPOUR TANK, VENTED, WITH PLASTIC RISERS UP INTO 2500 GAL RISERS. SEE SEPARATE DETAIL SHEET. VENT THRU BLDG. STACK. COORDINATE WITH PLUMBER.

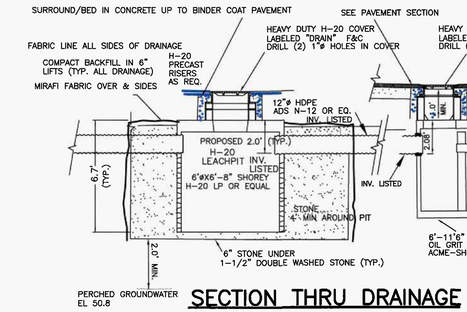
SIGNAGE "NON-HAZARDOUS INDUSTRIAL WASTEWATER HOLDING TANK" SIGN TO BE INSTALLED ON BUILDING ADJACENT, SEE SEPARATE CONSTRUCTION SPECIFICATIONS FOR DETAILS, LOG BOOK REQUIREMENTS, ETC. REFER TO 314 CMR 18.00.

H-20 TIGHT TANK

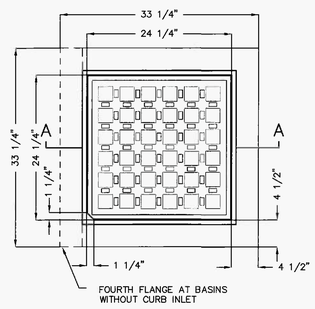
NOT TO SCALE
WATERPROOF/WATERTIGHT



INSPECTION PORT DETAIL



SECTION THRU DRAINAGE

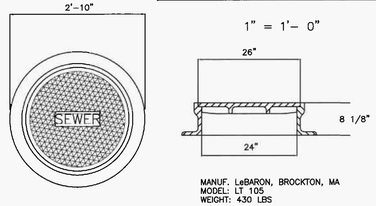


SECTION A-A

MINIMUM FRAME WEIGHT:	3-FLANGE - 265 LBS. 4-FLANGE - 295 LBS.
MINIMUM GRATE WEIGHT:	215 LBS.
PASS AREA:	255 SQ. IN.

FRAME AND GRATE

1" = 1'- 0"

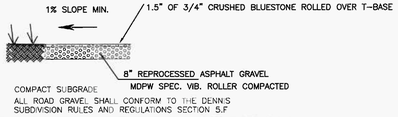


NOTE: REMOVE FROST SUSCEPTIBLE MATERIAL TO A DEPTH OF 36" BELOW FINISHED GRADE. REPLACE WITH NON FROST SUSCEPTIBLE MATERIAL (MEDIUM SAND W/LESS THAN 10% PASSING #200 SIEVE)

NOTE: SIGNIFICANT FILL REQUIRED ON SOUTH SIDE SITE, 8" LIFTS VIB. ROLLER COMPACTED TO 95% MAX. DENSITY MOD. PROCTOR PER ASTM-1557 METHOD D

PAVEMENT CROSS SECTION

NOT TO SCALE



ALL ROAD GRAVEL SHALL CONFORM TO THE DENNIS SUBDIVISION RULES AND REGULATIONS SECTION 5.F

GRAVEL CROSS SECTION

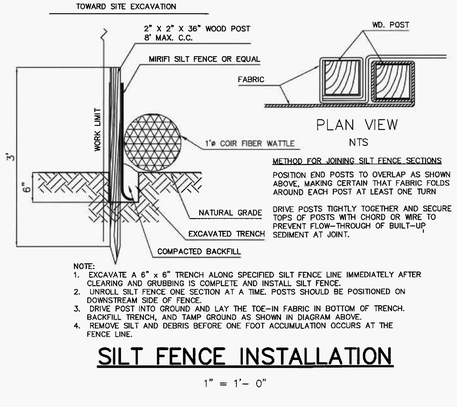
NOT TO SCALE

NOTE: COMPACT ALL FILL IN 6" LIFTS TO 95% MOD. PROCTOR DENSITY WITH VIBRATORY ROLLER COMPACTER.

MANUF. LeBARON, BROCKTON, MA
MODEL: LT 105
WEIGHT: 430 LBS

TYPICAL ACCESS COVER

SCALE: 3/4" = 1'-0"
LABEL SEWER OR DRAIN AS APPROPRIATE



METHOD FOR JOINING SILT FENCE SECTIONS
POSITION END POSTS TO OVERLAP AS SHOWN ABOVE, MAKING CERTAIN THAT FABRIC FOLDS AROUND EACH POST AT LEAST ONE TURN
DRIVE POSTS TIGHTLY TOGETHER AND SECURE TOPS OF POSTS WITH CHORD OR WIRE TO PREVENT FLOW-THROUGH OF BUILT-UP SEDIMENT AT JOINT.

NOTE:
1. EXCAVATE A 6" x 6" TRENCH ALONG SPECIFIED SILT FENCE LINE IMMEDIATELY AFTER CLEARING AND GRUBBING IS COMPLETE AND INSTALL SILT FENCE.
2. UNROLL SILT FENCE ONE SECTION AT A TIME. POSTS SHOULD BE POSITIONED ON DOWNSTREAM SIDE OF FENCE.
3. DRIVE POST INTO GROUND AND LAY THE TOE-IN FABRIC IN BOTTOM OF TRENCH. BACKFILL TRENCH, AND TAMP GROUND AS SHOWN IN DIAGRAM ABOVE.
4. REMOVE SILT AND DEBRIS BEFORE ONE FOOT ACCUMULATION OCCURS AT THE FENCE LINE.

SILT FENCE INSTALLATION

1" = 1'- 0"

DETAIL SHEET

FOR

SITE PLAN

OF

94 THAD ELLIS ROAD
BREWSTER, MA

PREPARED FOR

WENTWORTH MOTORSPORTS

DATE: JULY 18, 2023
REV: OCTOBER 27. 2023 (STAFF COMMENTS)

COMMONWEALTH OF MASSACHUSETTS DANIEL A. OJALA No. 40960 REGISTERED PROFESSIONAL LAND SURVEYOR
COMMONWEALTH OF MASSACHUSETTS DANIEL A. OJALA CIVIL No. 46502 REGISTERED PROFESSIONAL ENGINEER

DANIEL A. OJALA, P.E., P.L.S. 10/27/23 DATE

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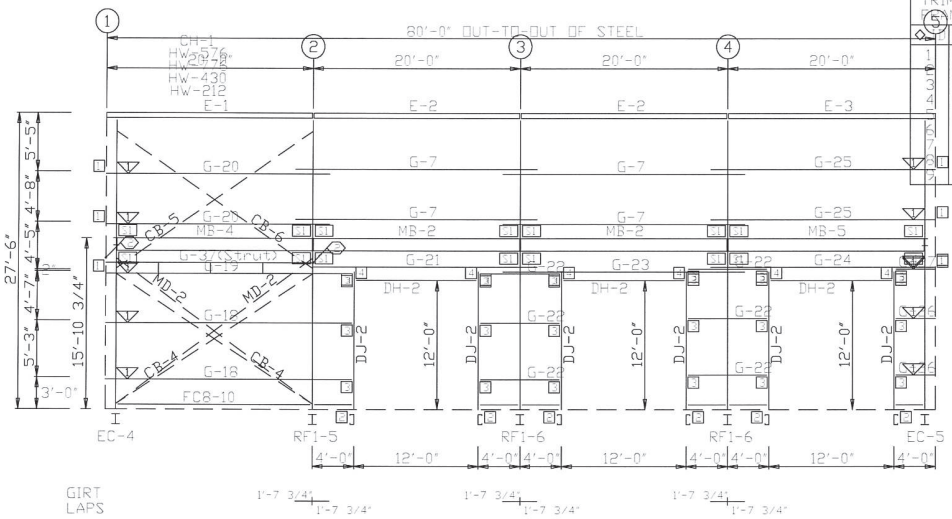
SHEET 5 OF 5

DCE #21-490

21-490 WENTWORTH.DWG



SIDEWALL FRAMING: FRAME LINE A

TRIM TABLE
FRAME LINE A

ID	QUAN	PART	LENGTH	DESCRIPTION	DETAIL
1	6	SF 10	10'-3"	BASE SILL FLASHING	TRIM_48
2	4	OCT 14	14'-3"	OUTSIDE CORNER TRIM	TRIM_40
3	1	SSHFT 10	10'-3"	HIGH PEAK FACIA TRIM	TRIM_456
4	5	SSHFT 15	15'-3"	HIGH PEAK FACIA TRIM	TRIM_456
5	1	HMCC 1L	1'-0"	HIGH CORNER COVER	
6	1	HMCC 1R	1'-0"	HIGH CORNER COVER	
7	6	JF 12	12'-3"	JAMB FLASHING	TRIM_31
8	9	DC 12	12'-3"	DOOR COVER TRIM	
9	3	HF 12	12'-8"	HEADER FLASHING	TRIM_30

SUPPORT BEAM BOLT TABLE
FRAME LINE A

ID	QUAN	TYPE	DIA	LENGTH	QUAN MARK/PART
S1	6	A325	3/4"	1 3/4"	16 AC 3

MEMBER TABLE
FRAME LINE A

QUAN	MARK	PART	LENGTH
5	DJ-2	8x25C16	12'-7 3/4"
3	DH-2	8x25C16	12'-0"
1	E-1	10ESH114	19'-11 5/8"
2	E-2	10ESH114	19'-11 3/4"
1	E-3	10ESH114	19'-11 5/8"
4	G-7	8x25Z16	23'-3 1/2"
2	G-18	8x25Z14	23'-7 1/2"
1	G-19	8x25Z14	23'-7 1/2"
2	G-20	8x25Z16	21'-7 1/2"
1	G-21	8x35Z16	21'-11 1/2"
6	G-22	8x25Z16	7'-3 1/2"
1	G-23	8x35Z16	23'-3 1/2"
1	G-24	8x35Z14	21'-7 1/2"
2	G-25	8x25Z16	21'-7 1/2"
2	G-26	8x25Z16	3'-7 1/2"
1	G-27	8x25Z16	3'-7 1/2"
1	G-37	8x25Z16	20'-3 1/2"
2	CB-4	CB0438	23'-1"
1	CB-5	CB0438	23'-8"
1	CB-6	CB0438	23'-9"
2	MB-2	W14X26	19'-10 3/4"
1	MB-4	W14X26	18'-10 3/4"
1	MB-5	W14X26	18'-10 3/4"
2	MD-2	CB0313	23'-9"

SPECIAL BOLTS

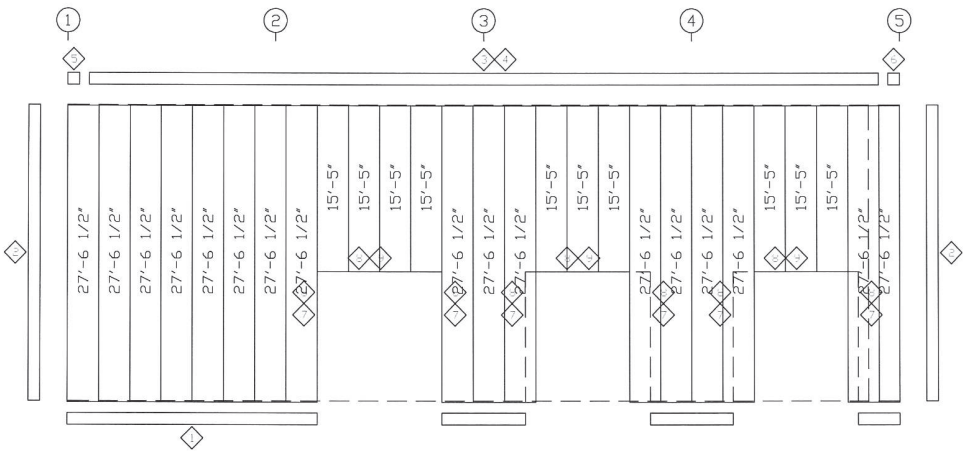
ID	QUAN	TYPE	DIA	LENGTH	WASH
2	4	A325	1/2"	1 1/2"	2

FLANGE BRACE TABLE
FRAME LINE A

ID	QUAN	MARK	LENGTH
1	11	FB23.5	1'-11 1/2"

CONNECTION PLATES
FRAME LINE A

ID	QUAN	MARK/PART
1	7	GFA 2
2	6	JGC 3
3	24	JGC 1
4	6	JGC 2

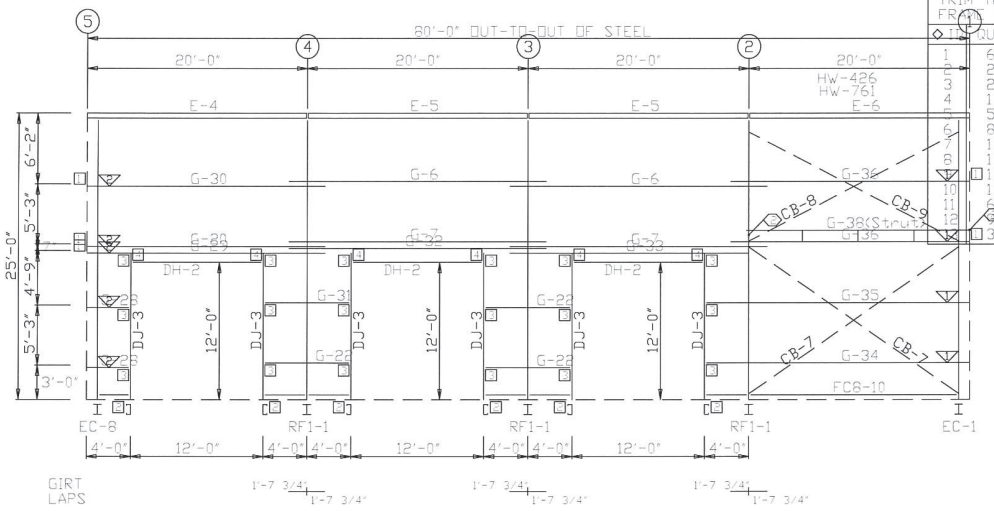


SIDEWALL SHEETING & TRIM: FRAME LINE A

PANELS: 26 Ga. PBR (Std. Roll) - 200 Need Color

PACKAGE STEEL SYSTEMS, INC.		Marty McGough	
PROJECT	Wentworth Motorsports	SIDEWALL FRAMING	
ID	g2211-0064	PRELIMINARY - NOT FOR CONSTRUCTION	
PROJECT	94 Thad Ellis Road	CSR ---	
ADDRESS	Brewster, Ma Barnstable	DATE: 1/ 6/23	DRAWING SWFR-1

PACKAGE



SIDEWALL FRAMING: FRAME LINE D

TRIM TABLE
FRAME LINE D

ID	QUAN	PART	LENGTH	DESCRIPTION	DETAIL
1	6	SF 10	10'-3"	BASE SILL FLASHING	TRIM_48
2	2	OCT 12	12'-3"	OUTSIDE CORNER TRIM	TRIM_40
3	2	OCT 14	14'-3"	OUTSIDE CORNER TRIM	TRIM_40
4	1	FG 10	10'-3"	FACIA GUTTER	TRIM_451
5	5	FG 15	15'-3"	FACIA GUTTER	TRIM_451
6	8	NBET 10	10'-3"	EAVE TRIM	TRIM_489
7	1	LMCC 1L	1'-0"	LOW CORNER COVER	
8	1	GEC L	6"	GUTTER END CAP	
9	1	LMCC 1R	1'-0"	LOW CORNER COVER	
10	1	GEC R	6"	GUTTER END CAP	
11	6	JF 12	12'-3"	JAMB FLASHING	TRIM_31
12	2	DC 12	12'-3"	DOOR COVER TRIM	
13	3	HF 12	12'-8"	HEADER FLASHING	TRIM_30

MEMBER TABLE
FRAME LINE D

QUAN	MARK	PART	LENGTH
6	DJ-3	8x25C16	12'-7 3/4"
3	DH-2	8x25C16	12'-0"
1	E-4	10ESL114	19'-11 5/8"
2	E-5	10ESL114	19'-11 3/4"
1	E-6	10ESL114	19'-11 5/8"
2	G-6	8x25Z14	23'-3 1/2"
2	G-7	8x25Z16	23'-3 1/2"
1	G-20	8x25Z16	21'-7 1/2"
3	G-22	8x25Z16	7'-3 1/2"
2	G-28	8x25Z16	3'-7 1/2"
1	G-29	8x25Z14	21'-7 1/2"
1	G-30	8x25Z14	21'-7 1/2"
1	G-31	8x30Z16	7'-3 1/2"
1	G-32	8x25Z16	23'-3 1/2"
1	G-33	8x25Z16	21'-11 1/2"
1	G-34	8x25Z14	23'-7 1/2"
1	G-35	8x25Z12	23'-7 1/2"
2	G-36	8x25Z14	21'-7 1/2"
1	G-38	8x25Z16	20'-3 1/2"
2	CB-7	CB0438	23'-6"
1	CB-8	CB0438	22'-2"
1	CB-9	CB0438	22'-0"

SPECIAL BOLTS

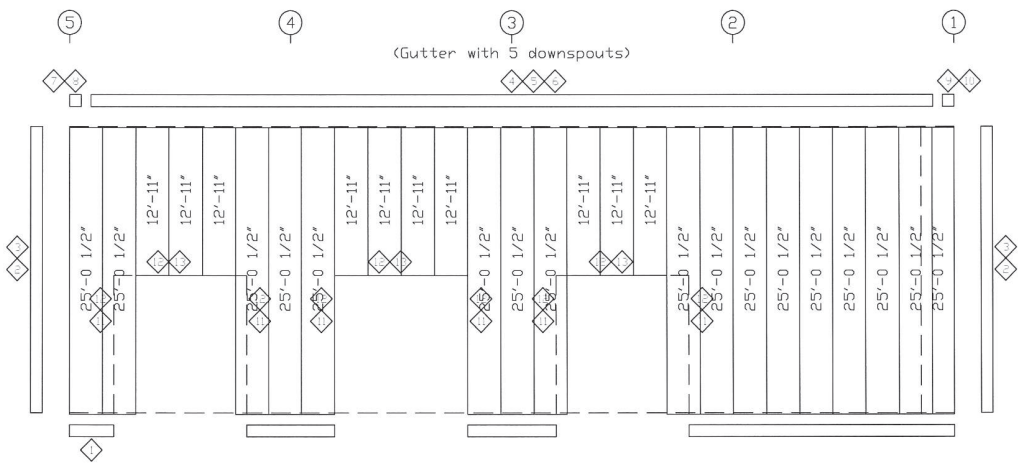
ID	QUAN	TYPE	DIA	LENGTH	WASH
2	4	A325	1/2"	1 1/2"	2

FLANGE BRACE TABLE
FRAME LINE D

ID	QUAN	MARK	LENGTH
1	4	FB23.5	1'-11 1/2"
2	5	FB23.1	1'-11 1/8"

CONNECTION PLATES
FRAME LINE D

ID	QUAN	MARK/PART
1	5	GFA 2
2	6	JGC 3
3	18	JGC 1
4	6	JGC 2

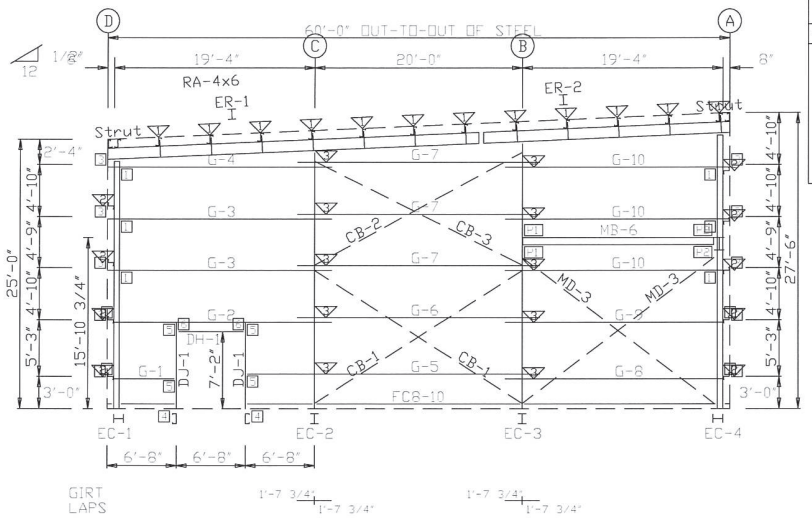


SIDEWALL SHEETING & TRIM: FRAME LINE D

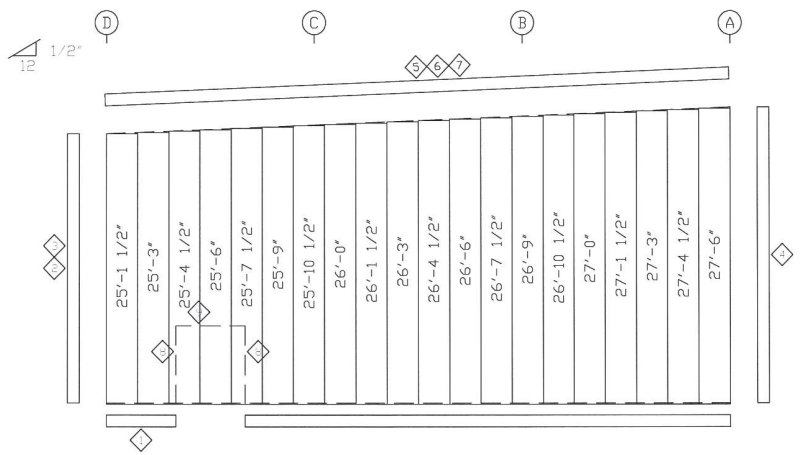
PANELS: 26 Ga. PBR (Std. Roll) - 200 Need Color

PACKAGE STEEL SYSTEMS, INC.		Marty McGough	
PROJECT	Wentworth Motorsports	SIDEWALL FRAMING	
ID	g2211-0064	PRELIMINARY - NOT FOR CONSTRUCTION	
PROJECT	94 Thad Ellis Road	CSR ---	
ADDRESS	Brewster, Ma. Barnstable	DATE: 1/ 6/23	DRAWING SWFR-2

PACKAGE



ENDWALL FRAMING: FRAME LINE 1



ENDWALL SHEETING & TRIM: FRAME LINE 1

PANELS: 26 Ga. PBR (Std. Roll) - 200 Need Color

TRIM TABLE
FRAME LINE 1

◇ ID	QUAN.	PART	LENGTH	DESCRIPTION	DETAIL
1	6	SF 10	10'-3"	SILL FLASHING	TRIM_48
2	1	OCT 12	12'-3"	OUTSIDE CORNER TRIM	TRIM_40
3	1	OCT 14	14'-3"	OUTSIDE CORNER TRIM	TRIM_40
4	2	OCT 14	14'-3"	OUTSIDE CORNER TRIM	TRIM_40
5	4	FT 15	15'-3"	FACIA TRIM	TRIM_471
6	6	GCF 10	10'-3"	GABLE CAP FLASHING	TRIM_471
7	6	SZT 10	10'-3"	SLIDER ZEE TRIM	TRIM_471
8	2	JF 8	8'-3"	JAMB FLASHING	TRIM_34
9	2	HF 3	3'-8"	HEADER FLASHING	TRIM_33

PERIMETER BEAM BOLT TABLE
FRAME LINE 1

□ ID	QUAN.	TYPE	DIA.	LENGTH	QUAN.	MARK/PART
P1	6	A325	3/4"	1 1/2"	2	AC 2
P2	6	A325	3/4"	1 1/2"	2	------

BOLT TABLE
FRAME LINE 1

LOCATION	QUAN.	TYPE	DIA.	LENGTH
ER-1/ER-2	4	A325	5/8"	1 3/4"
Columns/Raf	4	A325	1/2"	1 1/2"

MEMBER TABLE
FRAME LINE 1

QUAN.	MARK	PART	LENGTH
1	EC-1	W10X12	23'-6 3/4"
1	EC-2	W12X16	24'-4 1/16"
1	EC-3	W12X16	25'-2 1/16"
1	EC-4	W10X12	25'-11 11/16"
1	ER-1	W8X13	36'-0 13/16"
1	ER-2	W8X13	23'-11 13/16"
2	DJ-1	8X25C16	7'-10 3/4"
1	DH-1	8X25C16	6'-8"
1	G-1	8X25Z16	5'-7 1/2"
1	G-2	8X25Z12	20'-11 1/2"
2	G-3	8X25Z14	21'-7 1/2"
1	G-4	8X25Z16	21'-7 1/2"
1	G-5	8X25Z16	27'-11 1/2"
1	G-6	8X25Z14	23'-3 1/2"
3	G-7	8X25Z16	23'-3 1/2"
1	G-8	8X25Z16	20'-11 1/2"
1	G-9	8X25Z14	20'-11 1/2"
3	G-10	8X25Z14	21'-7 1/2"
2	CB-1	CB0313	24'-1"
1	CB-2	CB0313	23'-7"
1	CB-3	CB0313	23'-3"
1	MB-6	W8X10	18'-5"
2	MD-3	CB0313	23'-4"

FLANGE BRACE TABLE
FRAME LINE 1

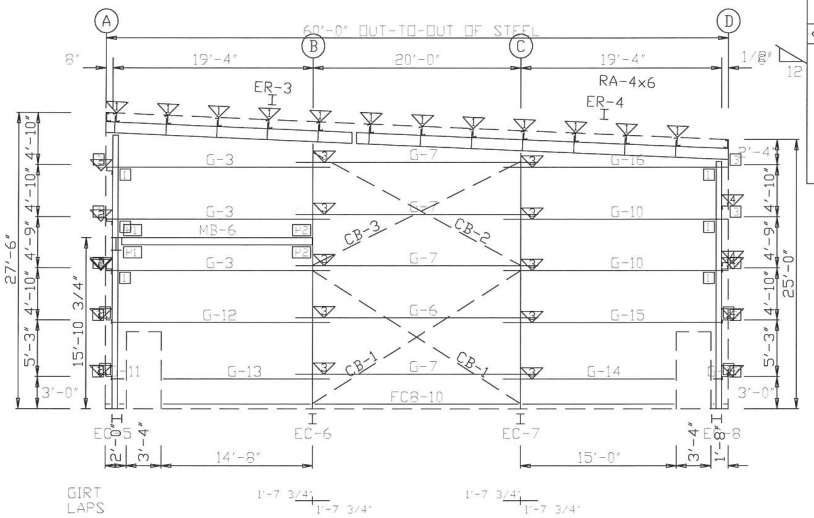
▽ ID	QUAN.	MARK	LENGTH
1	12	FB23.1	1'-11 1/8"
2	9	FB23.5	1'-11 1/2"
3	10	FB24.1	2'-0 1/8"

CONNECTION PLATES
FRAME LINE 1

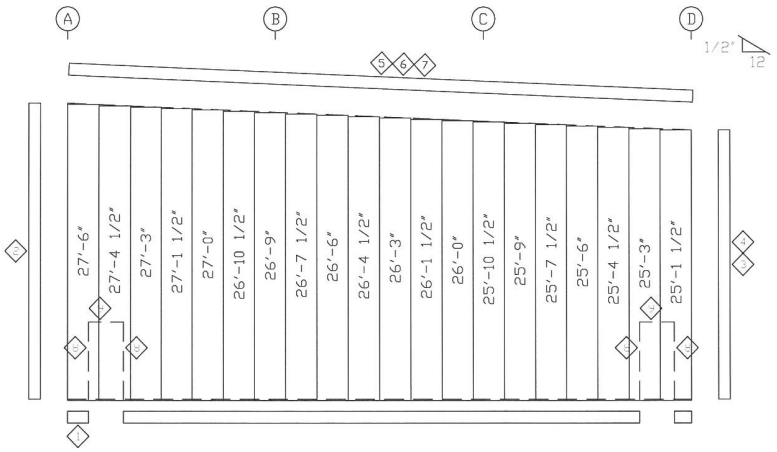
□ ID	QUAN.	MARK/PART
1	6	CGC 12
2	4	BGC 8
3	10	GFA 2
4	2	JGC 3
5	4	JGC 1
6	2	JGC 2

PACKAGE STEEL SYSTEMS, INC.		Marty McGough	
PROJECT	Wentworth Motorsports	ENDWALL FRAMING	
ID	g2211-0064	PRELIMINARY - NOT FOR CONSTRUCTION	
PROJECT	94 Thad Ellis Road	CSR: ---	
ADDRESS	Brewster, Ma Barnstable	DATE: 1/ 6/23	DRAWING: EWFR-1

PACKAGE



ENDWALL FRAMING: FRAME LINE 5



ENDWALL SHEETING & TRIM: FRAME LINE 5

PANELS: 26 Ga. PBR (Std. Roll) - 200 Need Color

TRIM TABLE
FRAME LINE 5

◇ ID	QUAN	PART	LENGTH	DESCRIPTION	DETAIL
1	7	SF 10	10'-3"	SILL FLASHING	TRIM_48
2	2	OCT 14	14'-3"	OUTSIDE CORNER TRIM	TRIM_40
3	1	OCT 12	12'-3"	OUTSIDE CORNER TRIM	TRIM_40
4	1	OCT 14	14'-3"	OUTSIDE CORNER TRIM	TRIM_40
5	4	FT 15	15'-3"	FACIA TRIM	TRIM_471
6	6	GCF 10	10'-3"	GABLE CAP FLASHING	TRIM_471
7	6	SZT 10	10'-3"	SLIDER ZEE TRIM	TRIM_471
8	4	JF 8	8'-3"	JAMB FLASHING	TRIM_34
9	2	HF 4	4'-8"	HEADER FLASHING	TRIM_33

PERIMETER BEAM BOLT TABLE
FRAME LINE 5

□ ID	QUAN	TYPE	DIA	LENGTH	QUAN	MARK/PART
P1	6	A325	3/4"	1 1/2"	2	------
P2	6	A325	3/4"	1 1/2"	2	AC 2

BOLT TABLE
FRAME LINE 5

LOCATION	QUAN	TYPE	DIA	LENGTH
ER-3/ER-4	4	A325	5/8"	1 3/4"
Columns/Raf	4	A325	1/2"	1 1/2"

MEMBER TABLE
FRAME LINE 5

QUAN	MARK	PART	LENGTH
1	EC-5	W10X12	25'-11 11/16"
1	EC-6	W12X16	25'-2 1/16"
1	EC-7	W12X16	24'-4 1/16"
1	EC-8	W8X10	23'-6 11/16"
1	ER-3	W8X13	23'-11 13/16"
1	ER-4	W8X13	36'-0 13/16"
3	G-3	8x25Z14	21'-7 1/2"
1	G-6	8x25Z14	23'-3 1/2"
4	G-7	8x25Z16	23'-3 1/2"
2	G-10	8x25Z14	21'-7 1/2"
1	G-11	8x25Z16	11 1/2"
1	G-12	8x25Z12	20'-11 1/2"
1	G-13	8x25Z16	15'-11 1/2"
1	G-14	8x25Z16	16'-3 1/2"
1	G-15	8x25Z12	20'-11 1/2"
1	G-16	8x25Z16	21'-7 1/2"
1	G-17	8x25Z16	7 1/2"
2	CB-1	CB0313	24'-1"
1	CB-2	CB0313	23'-7"
1	CB-3	CB0313	23'-3"
1	MB-6	W8X10	18'-5"

FLANGE BRACE TABLE
FRAME LINE 5

▽ ID	QUAN	MARK	LENGTH
1	12	FB23.1	1'-11 1/8"
2	6	FB23.5	1'-11 1/2"
3	10	FB24.1	2'-0 1/8"
4	5	FB23.1	1'-11 1/8"

CONNECTION PLATES
FRAME LINE 5

□ ID	QUAN	MARK/PART
1	6	CGC 12
2	4	BGC 8
3	10	GFA 2

PACKAGE STEEL SYSTEMS, INC.		Marty McGough	
PROJECT	Wentworth Motorsports	ENDWALL FRAMING	
ID	q2211-0064	PRELIMINARY - NOT FOR CONSTRUCTION	
PROJECT	94 Thad Ellis Road	CSR: ---	
ADDRESS	Brewster, Ma. Barnstable	DATE: 1/ 6/23	DRAWING: EWFR-2

PACKAGE

MyGenerationEnergy®

Invest in a clean energy future with a partner you can trust.

Prepared for:

WENTWORTH MOTORSPORTS

Solar Energy System Proposal

July 24, 2023

100 Independence Drive, Suite 10, Hyannis, MA 02601 • Ph: 508-694-6884 • visit us at: mygenerationenergy.com

Proposal Overview

In response to your request for a proposal, My Generation Energy has created an energy system plan for your rooftop solar array at 94B Thad Ellis Road, Brewster. Outlined within this proposal is a grid-tied system.

Our proposed energy system design includes:

- ✓ Quality and high reliability components to ensure system uptime
- ✓ Low maintenance and industry leading warranties
- ✓ Complimentary internet-based monitoring system
- ✓ Maximized electrical production
- ✓ Lightweight and durable modules

Current technology and policies have made solar energy more accessible for many businesses in Massachusetts. These systems operate for 25 year or more with little maintenance and pay for themselves many times over before the warranties run out. Incentives in the form of tax credits, depreciation, and solar energy certificate sales pay-back the systems cost in less than 4 years.

Service & Design

Metal Roof Mounting |265 solar panels in Chatham, MA
Solar Panel Installation by My Generation Energy

My Generation Energy provides a full-service energy system. From initial assessment to final commissioning and follow-up assessment, we submit all relevant and required forms with utility, local offices, and state agencies.

We also manage:

- Scheduling installation, inspection, and commissioning activities.
- Backing the system with a five-year warranty on workmanship in addition to the individual component warrantees.
- Follow-up assessments scheduled approximately six months and one year after commissioning.

My Generation Energy is fully insured for general liability ($2M/$4M). Upon signing the contract, you become named as additionally insured on our policy. All work is performed by qualified tradesmen with the appropriate licensing. The installation is performed under the proper permitting and in compliance with local, state, and national building and electrical codes.

Equipment & Technology

Asphalt Roof Mounting |34 solar panels in Eastham, MA
Solar Panel Installation by My Generation Energy

The proposed system design and components are selected for an anticipated useful life exceeding 25 years with minimal, if any, maintenance. All major components, photovoltaic modules, Enphase micro-inverters, and the structural system are specified by model number in the contract. The components we chose have been selected for:

- ✓ Performance
- ✓ Design reliability
- ✓ Safety
- ✓ Compatibility
- ✓ Availability
- ✓ Industry-leading warranties

The critical ancillary electrical components including wiring, conduit, load panel, disconnect switch, equipment grounding components, and electrical service inter-connection devices, are selected to exceed the National Electric Code (NEC) requirements. Weather-exposed hardware, fasteners, and related components are industrial-grade stainless steel, anodized aluminum, or UV resistant PVC. There are no sources for rust or similar corrosion in the solar array structure.

Remote System Monitoring

An internet-based monitoring service is included to help you track how much energy your system is producing.

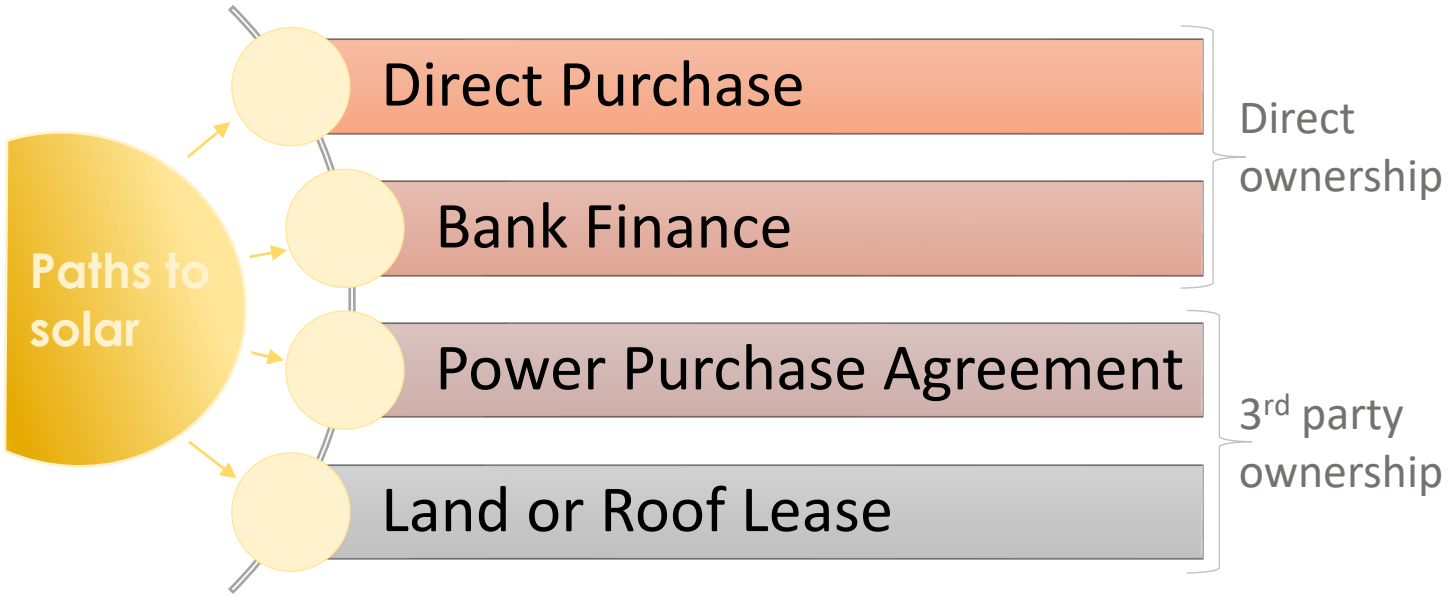
- ✓ View your dashboard and get up-to-the-minute data on your system.
- ✓ Gain greater insight on performance.
- ✓ Easy access from computer or smart phone.
- ✓ Create performance and analytical reports

MyGenerationEnergy®

Multiple Ways to "Go Solar"

There are a range of solar project alternatives available including several no-capital outlay options.

My Generation Energy can help you determine which option is best for you and deliver that solution.



Energy Credits & Tax Incentives

How does the electricity get used? The electricity produced is directly metered and fed to your business, which in turn, is interconnected to the utility grid as a net metering facility. This means that at times when the system produces more electricity than you need, the utility meter runs backward, giving you credit for that energy. At the end of the billing cycle, you pay only for the difference (net) between the energy you used and the credit you received. If the system makes more than you use, the utility carries the credit forward.

In addition to the up-front tax and depreciation incentives, the system generates Renewable Energy Certificates. The REC program is designed to establish a statewide solar incentive program that encourages the continued development of solar photovoltaic (PV) installations. The continued installation of solar PV has the potential to reduce peak demand, the need for investment in new infrastructure, and increase grid reliability. It also helps diversify the Commonwealth's energy supply.

The value of the REC incentive program to you is around $0.03 per kWh that the solar array produces. That incentive is on top of the electric savings.

Pricing & Analysis

My Generation Energy is pleased to offer a turnkey installation for this system at the price displayed in the table below. This pricing assumes that the structure of the building will be suitable for the additional loads and the main electrical service will have a sufficient rating to accept the back-fed current.

The additional information has been developed as a guide and reflects the current REC values. This is a simplified financial analysis; some quantities stated here may have variable influences. Particularly, the actual price of electricity is variable with time and includes demand charges and rate schedules. Also, while the federal tax implications presented below reflect the case where full tax credits may be applied, we cannot make claims or offer tax advice. Please consult your tax expert about the use of these credits in your situation.

Version	1	2
System Description (# Modules)	50	84
Watts	20,000	30,240
Price	$64,000	$93,744
State Tax Depreciation Savings	$2,285	$3,347
Fed Tax Credit	$19,200	$28,123
Fed Tax Depreciation Savings	$19,040	$27,889
Effective Price after Tax Incentives	$23,475	$34,385
Estimated Generation kWh/yr	24,536	37,099
Estimated Annual Electric Savings	$7,361	$11,130
Estimated Annual REC Revenue	$736	$1,113
Net Income Annual	$8,097	$12,243
Simple Payback (yrs)	2.9	2.8
Net Cumulative Benefit at Year 20	**$138,465.04**	**$210,468.34**

**Estimated Cumulative Net Benefit at Year 20* is income from RECs and electrical savings after the payback period (in years) through year 20. Please note: The cost of electricity in this analysis if fixed at $0.30 per kWh and does not assume increases in electrical rates.

The simplified above analysis assumes the following:

- The fixed electrical rate of $0.30 per kWh
- The REC value of $0.03
- No performance degradation over time.
- A 92% performance factor due to pitch, orientation and shading.
- A 2.5% additional performance factor due to Micro-inverter efficiency (5%-25% expected additional generation as stated by Enphase Energy www.enphasenergy.com)

Meet the Commercial Team

Andrew Wade, President

Andrew grew up in Eastham and graduated from Nauset Regional High School. He attended Clemson University in South Carolina where he received a Bachelor's in Business Marketing. In 2009, Andrew returned to Cape Cod and joined the team at My Generation Energy. He became President and CEO in 2014. Under his leadership, My Generation Energy has grown into a regional leader in the solar industry.

Joshua Buck, Vice President – Commercial Solar

After graduating from Chatham High School, Josh moved to California where he was a project manager for a well-established electrical contracting firm. When he moved back to the East Coast, he joined My Generation Energy. With his technical background, passion for the environment, and understanding of leading technologies, Josh is dedicated to keeping My Generation Energy at the forefront of the solar industry.

Nate Blois, Vice President of Operations

Originally from Maine, Nate graduated from the University of Maine with his Bachelor of Science degree in Marketing and a concentration in International Business. His travel experiences have taken him to Asia, Europe, and Africa. Upon graduation, Nate worked in customer relations and technical support with Verizon Wireless. Wanting something different in life, Nate moved to Cape Cod and joined the My Generation Energy team.

Lorelei Stevens, Customer Service & Support Manager

Chances are if you've called our office, you've spoken to Lorelei Stevens. Lorelei manages our Service Department and handles all our customer relations. If you have questions, you can always contact our office, and Lorelei will happily assist you.

Proposed Next Steps

- My Generation Energy is given approval to move forward on the proposed project and will draft a contract, which provides a pathway to speedier incentive awards and estimated project timeline as outlined within the contract.

- Once the contract is signed by both parties, My Generation Energy will conduct a comprehensive feasibility analysis for the proposed project.
  - → Electrical and structural final engineering
  - → My Generation Energy applies for interconnection approvals
  - → My Generation Energy applies for all permitting requirements

- My Generation Energy begins installation when all approvals have been received.

Thank you for your consideration of this initial proposal. If you have any questions or comments about the proposed service information or analysis, please feel free to contact us at your convenience. We sincerely look forward to working with you on this project.

Commercial Portfolio

Plymouth, MA

This South Shore company's unused roof space became a revenue stream that will generate $71,000 in electricity revenue every year.

We installed 588 panels to complete this system.

Commercial Portfolio

The award-winning Sippican Community Solar Garden® in Marion, MA is a 912 kW system, powering approximately 200 homes.

Commercial Portfolio

Chatham, MA

Stage Harbor Marine in Chatham, MA added solar to their roof, transforming an unused space into a revenue stream for the owner of this popular marina.

The powerhouse array shown here produces 165,155 kWh of clean energy every year.

Commercial Portfolio

This office park in Hyannis, MA partnered with My Generation Energy to take advantage of a commercial solar lease. This 344.8 kW system was installed as a flat roof mounting system and produces 400,000 kWh per year!

APPROVAL OF MEETING MINUTES: DECEMBER 13, 2023

Brewster Planning Board
2198 Main Street
Brewster, MA 02631-1898
(508) 896-3701 x1133
brewplan@brewster-ma.gov

Approved:
Vote:

MEETING MINUTES
Wednesday, December 13, 2023 at 6:30 pm
Brewster Town Office Building

Chair Amanda Bebrin convened a meeting of the Planning Board at 6:30 pm with the following members participating: Charlotte Degen, Tony Freitas, Madalyn Hillis-Dineen, Rob Michaels, Elizabeth Taylor, and Alex Wentworth. Also participating: Jon Idman, Town Planner, and Lynn St. Cyr, Senior Department Assistant. Bebrin declared that a quorum of the Planning Board was present. The Meeting Participation Statement and Recording Statement were read.

6:32 PM PUBLIC ANNOUNCEMENTS AND COMMENT
None.

6:33 PM PUBLIC MEETING
Major Stormwater Management Permit, Case No. SWMP2023-43: Applicant/Owner: Town of Brewster has submitted a major stormwater permit application related to the Millstone Road Improvements Project, pursuant to Brewster Town Code Chapter 272 and its accompanying Regulations.
Documents:

- 10/31/23 Stormwater Management Memorandum
- 11/03/23 Major Stormwater Management Permit Application with plan set and plant palette

Bebrin recused herself from this application and Wentworth took over as Chair.

Griffin Ryder, Department of Public Works Director and Steve Rhoads, P.E., VHB (remotely) participated on behalf of the Applicant Town of Brewster. Ryder described the Millstone Road Improvements Project to the Planning Board. He stated that Millstone Road is approximately 2.5 miles long and is a major connector that handles approximately 4,000 vehicles per day in the peak season. The proposed project includes 11' travel lanes, 1.5' shoulders, and a 5' sidewalk. Ryder stated that the existing conditions of the road vary from about 20' wide to 22' wide with no shoulders. Ryder noted that ponding occurs on the road when there is a significant amount of rain in a short period of time. There has also been a concern of ponding on private property. Ryder stated that the Applicant is seeking a permit pursuant to Section 6.2B(7) of the Stormwater Management Regulations related to redevelopment. Ryder stated that this project is an eligible redevelopment project as it is exclusively limited to the maintenance and improvement of the existing roadways. Low impact development has been considered throughout the planning stage of the project and the road has been minimally widened. Impact to neighboring properties has also been a consideration.

Ryder stated that the Applicant is trying to improve the existing conditions on the road by adding an additional 78 catch basins, 18 leaching pits, and 145 leaching galleys. These additions will lead to more efficient capturing of stormwater, better treatment, and more opportunity for infiltration. Ryder stated that the increase in impervious area is mitigated with the upgraded infrastructure. Ryder stated that roadway projects are unique as there typically is not a lot of right of way to work with and infiltration is constructed in the roadway. The stormwater infrastructure in being improved with solid catch basins with a 4' deep sump and hood with leaching pits and galleys encapsulated in stone. There is void space in the stone allowing acceptance of volume and infiltration. Ryder stated that the proposed project includes more consistent spacing of the catch basins. Ryder stated this project will significantly improve existing conditions.

Ryder explained that permitting of this project has been ongoing through other agencies. The project received a MEPA certificate. An Order of Conditions has been issued by the Brewster Conservation Commission. The Conservation Commission recommended the Planning Board review the stormwater permit because the amount of roadway adjacent to the wetland is so small and there is no discharge to the wetland. Ryder stated that conditional approval for the MA DOT access permit has also been received which allows a crosswalk and infrastructure to cross Route 6A.

Ryder stated that low impact development has been considered for this project including implementing grass strips along the sidewalk. Ryder explained that there were two spots where the road leaves the Town's right of way. One location is near Nickerson State Park and the other is near Joe Long Road by the spring rock. A rain garden will be placed across from Joe Long Road which will allow for better treatment of runoff. Ryder referenced the planting plan that was provided to the Planning Board and noted that it includes native plants that will be easy to maintain. Ryder stated that a planting palette was put together and he is working with property owners who will be impacted by the project to replace trees and shrubs using the palette. He also referred the Planning Board to the plan set and stormwater report put together by the Applicant's consultant, VHB. He stated that the project was designed to provide the maximum treatment possible for stormwater and he believes the design will significantly improve ponding that is occurring. Normal storms up to a 25-year event will be collected and well-treated.

Wentworth asked Idman for clarification on the redevelopment standards that should be considered in review of this project. Idman stated that this is a limited roadway project and under redevelopment treatment standards are exempted for pre-treatment, TSS, and phosphorous. This project does satisfy a significant amount of the treatment standards but the Planning Board does not need to consider treatment for this type of redevelopment project. The MA Stormwater Handbook standards would apply for this project and the Applicant would need to meet the applicable standards for redevelopment of a roadway to the extent practicable. Strict compliance is not required in the redevelopment context. Idman stated that the project meets the runoff rate to the extent possible but as a retrofit project the rate cannot be met to the strict letter of the law. Idman stated that impervious surface is being added and the Applicant has limited right of way so existing and proposed conditions cannot be matched due to the available area. Ryder stated that the addition of stormwater infrastructure alone will significantly improve existing conditions. Ryder also stated that the project meets the TSS removal rate of 80% through infiltration. Ultimately, the treatment happens as it filters through the sand before hitting groundwater. Ryder noted that the soils along Millstone Road are consistent and he is confident that there will be good infiltration. Idman stated that the pre-treatment component is less important as the DPW cleans and maintains the catch basin regularly. Ryder stated that the catch basins will be cleaned once a year. The DPW also does street sweeping for source control as much as possible.

Taylor asked for clarification on widening of the road closest to the wetland. Ryder stated that there is minimal widening on the wetland side of the road and minimal vegetation clearing along the wetland edge. Both the widening and clearing were reviewed by the Conservation Commission. Taylor asked about drainage and Ryder responded that drainage is routed outside the buffer zones. This wetland is not located at the low point of the road. Drainage is collected on both sides of the road via catch basins and piped away from the wetland to outside of the buffer zone. Taylor asked Ryder to provide more information about which tress are being removed and Ryder stated that additional information will be provided at the tree hearing.

Michaels asked about the 3.3 acres of impervious surface being added and Ryder responded that approximately 1.6 acres of the project is new sidewalk. Michaels noted that this is a redevelopment project so it appears that no waivers are needed. He asked if waivers would be needed if this was not a redevelopment project and Idman responded that a waiver may be needed for the runoff rate. Ryder also stated that a waiver for the 44% pre-treatment rate may also have been needed. Michaels pointed out differences in the calculation of water quality volume and water quality volume required.

Degen asked about the maintenance of the additional catch basins on Millstone Road and if any other additions were considered throughout the Town. Ryder stated that the Town receives assistance from a private contractor for the

cleaning of the catch basins. Ryder stated that it was hard to anticipate additional catch basins needed throughout town as the roads vary in age and condition. Idman stated that this project helps maintain consistency with the Town's MS4 permit. Ryder stated that the Town measures how much sediment is collected from catch basins each year so the data from Millstone Road will be interesting to review.

Hillis-Dineen appreciated the added sidewalks for safety and noted that they will be well used especially by the children in the surrounding neighborhoods. There was discussion regarding the logistics of the project. Ryder noted that there is a tabletop crossing proposed near the rail trail to help reduce speeding.

Motion by Degen to Approve Major Stormwater Management Permit, Case No. 2023-43, subject to the Conditions Required by the Stormwater Management Regulations. Second by Michaels. Vote: 6-0-0.

Ryder reviewed the project timeline and stated that utilities will start construction in the Spring and the DPW will begin their work in the Fall.

Bebrin rejoined the meeting as Chair.

7:10 PM PUBLIC MEETING

Major Stormwater Management Permit, Case No. SWMP2023-46: Applicant/Owner: David and Heidi Jenkins has submitted a major stormwater permit application for property located at 87 Timberlane Drive and shown on Tax Map 144, Parcel 11, pursuant to Brewster Town Code Chapter 272 and its accompanying Regulations.

Documents:

- 11/16/23 Stormwater Management Report and Operations & Maintenance Manual
- 11/16/23 Proposed Site and Drainage Plan
- 11/20/23 Stormwater Management Permit Application
- 11/28/23 Staff Report

John O'Reilly of J.M. O'Reilly & Associates, Inc. was present on behalf of the Applicant. Applicant Heidi Jenkins was also present. O'Reilly described the subject property as 5.4 acres with a single-family home and paved driveway. The Applicant is adding a building to the property which is just over 2500 SF. The proposal utilizes kettle holes and the topography of the lot. Stormwater from the roof is being collected by gutters and downspouts and into a subsurface leaching trench. The gravel apron that feeds off the paved driveway will be pitched towards the swale on the east side of the paved driveway. The gravel driveway and apron on the north side of the property will also be pitched towards the east. The western side of the building is pitched to the low point just off the property. O'Reilly stated that the gutters, downspouts, and trench are being used to not exacerbate flooding off the property. O'Reilly stated that the low points on the property are being utilized as bioswales and the project meets the required treatment and design capacity in the regulations.

The Planning Board appreciated that the project uses the existing features of the property including the kettle holes and topography. Degen asked if the Applicant would have concerns if the permit was issued including conditions that the building is limited to accessory residential uses, any use or storage of hazardous materials in the building will be limited to household amounts, and a stone driveway apron shall be installed and maintained during construction. The Applicant had no concerns with these conditions. Idman noted that the conditions were included because the property is in the DCPC. Michaels referenced requirements for properties in the Zone II for pre-treatment of metal roofs. He inquired as to whether the roof of the proposed building was metal and whether the Applicant would be requesting a waiver from the pre-treatment requirements. O'Reilly responded that the building will contain a metal roof but that does not change any of the proposed stormwater design due to the size of the lot, height above groundwater, and the type of soils present. The Applicant requested a waiver from the pre-treatment requirements for metal roofs in Zone II. Taylor asked about use of the building and how any future change of use would be reviewed. Idman responded that the Planning

Board's jurisdiction is limited to stormwater review for this application. Idman further stated that for certain uses, not single-family residential, there are stormwater concerns regarding storage of hazardous materials.

Motion by Wentworth to Approve Major Stormwater Management Permit, Case No. 2023-46, subject to the Conditions Referenced in the Staff Report and a Waiver from the Pre-treatment Requirements as referenced in the Staff Report. Second by Hillis-Dineen. There was further discussion by the Planning Board on conditions. **Vote: 7-0-0.**

7:20 PM APPROVAL OF MEETING MINUTES

Approval of Meeting Minutes: November 8, 2023.

The Board reviewed the November 8, 2023 meeting minutes**. Motion by Wentworth to Approve November 8, 2023 Meeting Minutes, as amended. Second by Michaels. Vote: 5-0-2. Degen and Hillis-Dineen abstained.**

7:22 PM COMMITTEE REPORTS

Freitas summarized a recent meeting of the Affordable Housing trust including a presentation by the Preservation of Affordable Housing (POAH) and the Housing Assistance Corporation (HAC) regarding changes to the proposed Millstone Road/Spring Rock Village housing development. POAH and HAC will seek approval of the proposed changes from the Zoning Board of Appeals in January. Freitas also gave an update on 212 Yankee Drive and noted that applications were available through the Housing Office. A Housing 101 course for residents is also being planned. The Trust also approved their 2024 guidelines at the meeting. A part time Housing Assistant has been hired and will start working with Jill Scalise in the Housing Office soon. Wentworth stated that the Local Comprehensive Plan passed at Fall Town Meeting. Bebrin noted that the Vision Planning Committee completed work and the Select Board voted to dissolve the VPC. Degen summarized two recent meetings of the Select Board and noted that Brewster was awarded a $65,000 planning grant to analyze the zoning bylaw. There was discussion on senior shellfish licenses, a report from public safety leaders, and information on a childcare subsidy program the Select Board will review as a goal in their strategic plan. There was also discussion on regionalizing elementary schools. Michaels stated that the Water Quality Review Committee will begin discussions in January regarding the application and renewal process for certificates, the current and future role of the committee, and the zoning bylaw as it relates to water quality and its current function and future need. Bebrin stated that there will be a final Sea Camps virtual forum in February and final plans are expected to be ready for consideration at Spring 2024 Town Meeting. There will also be a joint meeting with the Select Board to discuss the pool at the bay property on January 18th.

7:33 PM FOR YOUR INFORMATION

None.

7:33 PM MATTERS NOT REASONABLY ANTICIPATED BY THE CHAIR

Freitas commended Bebrin on the excellent work she did at Fall Town Meeting.

Motion by Wentworth to Adjourn. Second by Michaels. Vote: 7-0-0. The meeting adjourned at 7:34 PM.

Next Planning Board Meeting Date: January 10, 2024.

Respectfully submitted,

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Lynn St. Cyr, Senior Department Assistant, Planning