



November 9, 2023

**VIA ELECTRONIC MAIL
(jcopeland@townofbourne.com)**

Town of Bourne Planning Board
Attn: Jennifer Copeland, Town Planner
Bourne Town Hall
24 Perry Avenue
Buzzards Bay, MA 02532

**Re: Site Plan -- Special Permit Enforcement Request
Ocean Pines Condominium**

Dear Planning Board Members and Planning Director:

I represent Hebb Builders, Inc. (“Hebb”) concerning this Enforcement Request by the Ocean Pines Condominium Trust (“Trust”), which is the organization of unit owners at the Ocean Pines Condominium (“Condominium”). Please accept this letter in response to the letters filed with you by Cetrulo LLP on behalf of the Trust, dated October 20, 2023 and November 2, 2023. As set forth in greater detail below, the Trust’s Enforcement Request concerning the Special Permit issued by the Planning Board (“Board”) over thirty-five (35) years ago on April 28, 1987 is baseless and should be voted down.

I. Project Background & Timeline

To put the Trust’s Enforcement Request in its proper context, it is important to understand the background leading up to the present time concerning this project. As set forth in greater detail below, the project has been developed in separate and distinct phases, and all of the phased work has been properly vetted, designed, and approved by the Town, including this Board.

On April 28, 1987, the Board granted a Special Permit to Frank J. Nuovo and Pat J. Piscitelli concerning at 74.1 acre parcel of land in North Sagamore, Bourne, MA. See Special Permit attached hereto as **Exhibit A**.

Office Locations

Main Office – Use for all correspondence
2 Batterymarch Park, Suite 202
Quincy, MA 02169
Tel. (508) 510-5727 ■ Fax (508) 857-0751
Office Hours: Monday – Friday ■ 9:00 AM – 5:00 PM
Only

183 Mammoth Road
Londonderry, NH 03053
Tel. (603) 404-6200
Office Hours: Appointment

On April 30, 1987 the Board issued a Certificate of Approval of a Definitive Subdivision Plan for the aforementioned parcel of land. The Approval, which the Board issued by unanimous vote, provides: “That a Subdivision Plan and Plan and Profile of a Subdivision Ocean Pines at North Sagamore dated 16 December 1986 Revised 1 April 1987 designed by Wilson Hill Associates Inc. . . . be and hereby are approved[.]” See Certificate of Approval attached hereto as **Exhibit B.**

The plan by Wilson Hill Associates Inc. referenced in the Board’s Certificate of Approval (“Subdivision Plan”) shows 66 individually-numbered building lots, open space parcels labeled A-E, and roadways for the subdivision. The Subdivision Plan notes that up to 78 dwelling units are allowed. The Board endorsed the Subdivision Plan. See Subdivision Plan attached hereto as **Exhibit C.**

Thereafter, construction proceeded in separate and distinct phases as per the below timeline, under the direction of the Board and the Town, but also included pauses in construction due to various litigations with the Town:

- 1992-2001 – Champion Builders Built out the 30 single family home phase of the Special Permit;
- June 2000 – Construction of the infrastructure phase was completed and approved by the Town. This phase included the construction of Wildwood Lane and the detention pond;
- August 2006 – Weston Design Dev/Hebb Builders wins Appeals Court case to remove restrictive Covenants that were only meant for single family element of the Special Permit;
- October 2006 – Ocean Pines LLC purchases the project from Weston Design Development;
- October 2006 – Lots 61-66 were released from the most recent Form F Covenant;
- September 2007 – Planning Board rescinded Special Permit;
- 2007-2009 – Legal battle with Town over the rescission of the Special Permit, in Land Court;
- April 12, 2012 – Town enters into Agreement for Judgment in Land Court to reverse the rescission of the Special Permit;
- 2012 April – Amos Financial foreclosed on the project, Hebb Builders Inc. is forced into Chapter 11 Bankruptcy due to the delay in the issuance of Building Permits on Ocean Pines Condominium project, which was compounded by Land Court litigation;
- 2012-2015 – Legal battle for permits with Town of Bourne & Amos Financial;

- 2015 -- Hebb signed a new P&S with Amos Financial to buy the project back 1 lot at a time;
- 2016 – First Building permit was released for 12A-F Ocean Pines Dr (Lot 66);
- 2015-2016 – Permitting and Engineering began for Ocean Pines Condominium and units;
- 2016-2023 – Hebb built out 36 out of 48 Condo units to date;
- 2024-2026 – Hebb intends to build out of final 12 Condo units & top coat of pavement (Wildwood Lane).

When my client purchased the property in 2006, the property came with the completed aforementioned infrastructure phase (roads and detention pond). My client then proceeded to complete construction of the remaining units, and to install drainage systems for the individual units that have become the Condominium. These drainage systems include Cultec systems, surface water mitigation and surface sloping. At each juncture during the work when building permit applications were submitted to the Town, the Town Planner conducted a review of the proposed work, conferred with the Board, and ultimately recommended to the approval of the building permit applications.

For example, attached hereto as **Exhibit D**, is an August 2, 2007 Memo from Town Planner Coreen V. Moore to the Board regarding site plan design for Lot 66. Ms. Moore states:

According to the Zoning Bylaw Section 4644 - Open Space Community, prior to issuance of building permits the Planning Board shall certify to the Building Inspector that a detailed site plan has been submitted **and meets the functional standards established and adopted within the subdivision regulations as it relates to access, drainage, utilities and grading.**

(Emphasis added). Ms. Moore then goes on to outline how these standards have been met, and thereafter the Town issued building permits.

Therefore, all of my client's drainage work performed on the site was vetted and approved by the Town, and performed to current standards that applied at the time that the Town issued building permits for the work. For example, on November 9, 2022, my client's drainage engineer, Existing Grade, Inc., provided the Town Planner with a written memo, supporting documentation and narrative "regarding the proposed Stormwater Management and Best Management Practices (BMP's) for Eastern Sky, LLC (Proponent) for the property located at 61 Wildwood Lane, Bourne (Assessors Map 7, Parcel 100, Lot 61)." See November 9, 2022 Memo to Town Planner from Existing Grade, Inc. attached hereto as **Exhibit E**. The memo provides:

The Stormwater Management information is being submitted at the request of the Town of Bourne Planning Department regarding the

proposed site plans for Lot 61, Wildwood Lane – Buildings 1 through 7. The proposed parking area consists of two separate infiltration systems, each with a typical deep sump catch basin feeding 3 underground leaching chambers with 3' of crushed stone. The leaching chambers have been sized to fully infiltrate the typical 25-year storm event as shown on the attached HydroCAD drainage analysis. The building recharge systems consist of a standard Cultec R-330XLHD infiltration bed which has been designed to maximize infiltration for the roof runoff of the typical 1" water quality storm event. Any excess runoff from the site will flow into the roadway drainage system, ensuring no increase in peak rate of runoff to abutting properties. Please reference the attached HydroCAD drainage reports, web soil survey mapping, and supporting area calculation plan for further detail. Please do not hesitate to call the undersigned at (508) 694-6501 with any questions or concerns.

Similar reports/memos were provided by my client's engineer concerning other building lots on the project. All of this drainage work was reviewed and approved by the Town.

Thereafter, my client provided the Town with an as-built site plan, stamped by my client's engineer and dated May 23, 2023, for Lots 61-66, which was accepted by the Town without issue. See copy of as-built site plan attached hereto as **Exhibit F**.

Thereafter, on August 3, 2023, this Board, through the Town Planner, issued a Memorandum to Ken Murphy, the Town's Building Inspector concerning Site Plan Review for "3A-D Wildwood Lane, Building Permit, Map 6 Parcel 125 Lot 61 B-23-104, B-23-107, B-23-118, and B-23-120, Bourne, MA." See Memorandum attached hereto as **Exhibit G**. The Memorandum provides:

The above mentioned building permits are subject to an open space community special permit #38 from 1987. According to the conditions of the permit and the zoning bylaw section 4644 - Open Space Community. The multifamily portion of this development has a maximum of 48 units with 90 bedrooms. The approved development plan and the special permit have also provided development constraints, such as number of units and setbacks. This review is applicable to 3 A-D Wildwood Lane. Separate permits will be applied for in the future for the remaining units located at 1A-D Wildwood Ln, 16 Ocean Pine Drive and 18 Ocean Pine Drive. Per the Lot 61 site layout plan dated June 13, 2022 and revised May 15, 2023, **the structures comply with the side and rear setbacks to the property line**. Lot 61 has a total of 26 bedrooms and there are not more than 20 dwelling units in a single structure. The structures provide a separation of no less than twice the building height from the boundary of the overall development.

The parking areas are not located within the front yard and are screened with arborvitae plants. The parking area is located more than 75 feet from the boundary of the overall development plan. The parking areas are separated from the guest parking area by more than 20 feet. Lighting complies per note 9 and shall be less than 15 feet high. **The developer provided an overall as-built plan dated May 15, 2023 and the lot coverage for the entire project is 19.4%, below the maximum of 20%.** The development complies with the open space requirements such that no land therein shall be sold and no lot line or structure altered from that shown on the Overall Development Plan so as to increase the extent of nonconformity with the standard dimensional regulations of the Zoning Bylaw. **Lastly, a stamped stormwater report dated Nov. 9, 2022 from Existing Grade, Inc. has been provided to the Planning Office.** Please note any changes to the following constraints or requirements would require an amendment to the special permit. Feel free to contact me should you have any questions.

(Emphasis added).

Construction has proceeded without issue until the Trust recently filed the instant Enforcement Request with the Board.

II. Creation of the Condominium and the Trust

The Condominium was created on October 25, 2017 by the recording of a Master Deed at the Registry of Deeds (“Registry”) at Book 30850, Page 325. The Trust was created by the recording of a Declaration of Trust at the Registry at Book 30851, Page 1 on October 25, 2017. The developer has since turned over control of the Trust to unit owner Trustees.

The areas of the Condominium that concern the Trust’s instant Enforcement Action are all part of the Condominium’s common areas as defined in the Master Deed. Per the Declaration of Trust at Section 5.1, the Trust, by its Trustees, has the duty for the “[o]peration, care, upkeep and management of the Common Areas and Facilities or any part thereof[.]”

All of the unit owners who live at the Condominium purchased their units with knowledge of these publicly-available governing documents pertaining to the Condominium, which include the Trust’s duty to maintain the common areas and to assess the unit owners to pay for all of the Condominium’s common expenses, which include maintenance.

III. Response to the Trust's Engineering Opinions

The Trust has submitted a letter from its engineer, Civil Environmental Consultants, Inc. ("CEC"), dated October 20, 2023 which contains several opinions concerning the drainage site work at the project. Many of CEC's opinions contained in its letter are vague and speculative. For example:

- P. 4: In assessing the 1997 Drainage Analysis, CEC states: "**Current design practices** would **typically** include design of drainage infrastructure to at least a 10-year storm event (often 25-year storm event). . . . Accordingly the system **may be undersized** based on the intended design storm, **potentially** resulting in localized ponding during larger storm events which **may result** in overflows into residential properties when located below the street grade[.]"
 - What "current design practices"? How are they applicable here?
 - "Typically"? Is it required or not?
 - "May be undersized" . . . "potentially" . . . "may result" = speculation.

- PP. 4-5: In assessing the 1997 Drainage Analysis, CEC states: "**Current design practices** require that detention basins provide storage and mitigation for all storm events up to and including the 100-year storm event; therefore, this basis is undersized based on **current design standards** and the volume of runoff exceeds the storage capacity for design storms larger than the 10-year storm event."
 - What "current design practices" and "standards"? How are they applicable here?
 - What was the standard when this was constructed?

My client strongly disagrees with the opinions contained in CEC's letter. To that end, please see the letter, dated November 9, 2023, from my client's engineer concerning the project, which is attached hereto as **Exhibit H**.

IV. Completion of Wildwood Lane, Increase of Performance Bond

As I stated to this Board in the previous public hearing concerning this matter, my client fully intends to complete construction of Wildwood Lane by installing a top coat at the conclusion of construction of the remaining units. This is standard practice as it is not advisable to run construction equipment over unfinished roads.

In addition, and as I previously stated to this Board, my client has received an updated estimate from Plymouth County Paving, dated October 13, 2023, to complete the top coat work. The amount of this estimate is \$50,475. My client has agreed to increase the \$38,000 bond on file with the Town to this amount.

V. So-Called “Open Space Issue”

In its October 20, 2023 letter to the Board, the Trust’s counsel states that there is “very little clarity” on who is supposed to maintain the Open Space parcels. But the document attached as Exhibit 2 to this letter provides a clear answer on this.

Exhibit 2 is entitled “Ocean Pines Homeowners Trust” (“HOA Trust”) and it was recorded at the Registry in Book 22332, Page 176 on September 13, 2007. The HOA Trust provides that Ocean Pines LLC, “a duly organized and existing Delaware limited liability company with offices at 498 Newton Road, Littleton, Middlesex County, Massachusetts,” was the original owner of the Open Space parcels A-E at issue here.

The HOA Trust provides that Ocean Pines, LLC, as the Trustee of the HOA Trust, “agrees for itself and its successors in trust to hold, manage, administer, and depose of such property in accordance with the terms of this instrument.”

The HOA Trust provides that the beneficiaries of the HOA Trust are the 30 single family lot owners (each owning 1/36th of the beneficial interest in the HOA Trust) and the Condominium unit owners (who collectively, and in common, own 1/6 of the beneficial interest in the HOA Trust). The HOA Trust then provides that the Trustee has certain powers and duties, including the maintaining of the Trust property and the assessment of common expenses from the beneficiaries to do so.

The HOA Trust then provides that Ocean Pines LLC will cease to serve as the initial Trustee when it no longer owns Lots 61-66, at which time successor trustees from amongst the lot owners may be elected. The HOA Trust also provides that the President of the Ocean Pines Condominium Trust shall always be a Trustee of the HOA Trust once Ocean Pines LLC is no longer a Trustee.

As such, there is absolute clarity as to how the Open Space parcels are to be managed and maintained, and the Open Space parcels’ ownership and stewardship comply with the Town’s Zoning Bylaw at §4645, which allows open space parcels to be owned and managed by a trust.

VI. Response to the Trust’s Legal Arguments in Counsel’s Letter, Dated Nov. 3, 2023

The Trust’s counsel argues that the entire project, which has been worked on in several successive and distinct phases since the late 1980s, should all be brought up to current zoning bylaw standards. In support of this argument, the Trust’s counsel cites to M.G.L. c. 40A, §6 and several cases. The cited law, however, does not apply in cases of a clearly phased development such as this one, where separate and distinct phases are completed and approved by the

municipality. Moreover, and as set forth herein previously, the drainage/topography work done on the site fully complies with the Town's Zoning Bylaw and applicable standards.

VII. Response to Trust's Counsel's Letter, Dated November 7, 2023¹

The Trust's counsel argues in a letter dated November 7, 2023 that Hebb improperly intends to create a new condominium trust for the units being built on Lot 61. There is absolutely nothing improper with this as Lot 61 was never part of the Condominium, and was never phased into the Condominium. The Trust and the Condominium unit owners have absolutely no ownership interest in Lot 61. As such, they have no claim on Lot 61. This also does not impact the management and ownership of the Open Space parcels for reasons previously stated herein.

In short, this is not a "scheme". It is a standard practice of land development that happens frequently in the Commonwealth. And the creation of a second condominium trust does not violate any provision of the Special Permit at issue here.

*

For the aforementioned reasons, the Board should vote down the Enforcement Request and allow for the completion of the project.

Sincerely,

MIRRIONE, SHAUGHNESSY
& UITTI, LLC

/s/ David C. Uitti

David C. Uitti, Esq.

Enclosure

¹ Although the Trust's counsel filed this letter with the Town on November 7, 2023 raising additional arguments and complaints, the Trust's counsel waited until 2:18 p.m. on November 9, 2023 (the day of the continued public hearing) to share a copy of this letter with me.



TOWN OF BOURNE
Planning Board
TOWN HALL
BUZZARDS BAY, MA 02532



May 23, 1989

Mr. Frank Nuovo
P.O. Box 1487
Buzzards Bay, MA 02532

Re: Ocean Pines

Dear Mr. Nuovo:

Please be advised that the confirmation of "substantial construction" concerning Ocean Pines, North Sagamore (Special Permit # 38) has been addressed by the Planning Board. Members Ellis and Mealy visited the site on April 1, 1989, conducted an in depth inspection on April 9, 1989.

Their findings were reported to the Planning Board at its regular meeting and it was voted unanimously that Ocean Pines does comply with the requirement (Sec. 1330) and that substantial construction has occurred.

Should you have any questions concerning this matter, please feel free to contact the Planning Board Office at 759-6295.

Very truly yours,

Thomas E. Donovan,
Chairman

TED/msj

CC: Building Inspector

a J. J. O'Connor



TOWN OF BOURNE
Planning Board
 TOWN HALL
 BUZZARDS BAY, MA 02532



Special Permit # 38A amended⁵

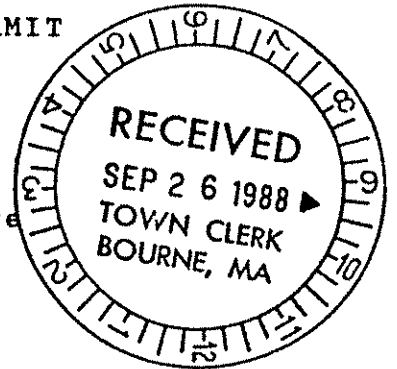
NOTICE OF EXTENSION OF SPECIAL PERMIT

Applicant: Frank J. Nuovo
 Pat J. Piscitelli
 Ocean Pines at North Sagamore
 P.O. Box 1487
 Buzzards Bay, MA 02532

Date: August 11, 1988

Owners: Same as applicants

Premises Affected: 74.1 acres of land in North Sagamore
 Town of Bourne



On August 11, 1988 to applicants requested a twelve month month extension to their Special Permit granted May 4, 1987 with the Definitive Plan signed by the Clerk of the Planning Board on September 29, 1987.

Under Section 1330 of the Bourne Zoning By-Law, the Special Permit shall expire if construction has not begun, except for good cause, within the twelve months of approval.

The applicants cite the overbuilding of the surrounding area and the present real estate market as good cause.

The approval has been received and the Bourne Planning Board voted 6 members in favor of the extension, 1 member opposed and two members absent. A roll call vote of the Bourne Planning Board was as follows:

- | | | | |
|----------------|------------|------------------|------------|
| Alan Besse | - approved | Steven Mealy | - approved |
| William Norman | - approved | Tom Donovan | - approved |
| William Holden | - approved | Sally Parady | - approved |
| John Sanna | - denied | Donald Ellis | - absent |
| | | Hamilton Whiting | - absent |

SPECIAL PERMIT WILL BE NULL AND VOID ON MAY 19, 1989.

Decision filed with the Town Clerk: September 26, 1988

BOURNE PLANNING BOARD



TOWN OF BOURNE
Planning Board
TOWN HALL
BUZZARDS BAY, MA 02532



NOTICE OF DECISION ON SPECIAL PERMIT

COPY

Applicants: Frank J. Nuovo, Pat J. Piscitelli
P.O. Box 1487
Buzzards Bay, MA. 02532

Date: 28 April 1987 Permit No. 38

Owner: Frank J. Nuovo and Pat J. Piscitelli

Premises Affected:
74.1 Acres of Land in North Sagamore, Bourne MA.
as shown on Wilson Hill Associates plan of
22 December 1987, Book 1478 Page 48.

Special Permit application submitted 6 January 1987.

A public hearing was held on 12 February 1987 and on 23 April 1987 at Bourne Town Hall, Perry Ave., Buzzards Bay Massachusetts.

At the public hearing the Board found that the conditions of Sec. 1330 had been met and that no undue nuisance, hazard or congestion would be created by this project.

The following conditions must be adhered to:

1. Water for domestic and fire fighting purposes must meet ISC requirements for Volume & pressure
2. Entrance to Old Plymouth Road is to have a divider.

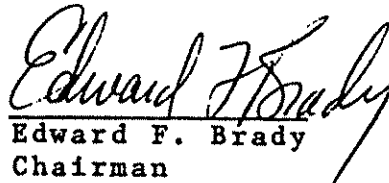
A roll call vote of the Bourne Planning Board was as follows:

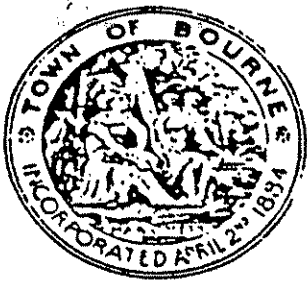
Edward F. Brady	Approved
Donald E. Ellis	Approved
Sally Parady	Approved
John Sanna	Approved
Thomas Barlow	Approved
Maureen Jason	Approved
H. Austin Murray	Approved
Hamilton Whiting	Approved

Decision filed with the Town Clerk: 30 April, 1987.

IMPORTANT: Any appeal from the decision of the Planning Board can be made only to the Court and must be made pursuant to Section 17, Chapter 40A (G.L.) as amended, and must be filed within twenty days after the date of filing of the decision with the Town Clerk.

BOURNE PLANNING BOARD


Edward F. Brady
Chairman



TOWN OF BOURNE, MASSACHUSETTS

COPY

FORM D-1

CERTIFICATE OF APPROVAL OF A DEFINITIVE SUBDIVISION PLAN

April 30, 1987

TO: Town Clerk

The Bourne Planning Board hereby certifies that at a meeting of said Board on 23 April 1987, at which a majority and quorum were present, following a public hearing by the Board on 23 April & 12 Feb., 1987 pursuant to notice published in the Bourne Courier on 28 January 87 & 4 February 1987, and on 1987, it was (unanimously)

VOTED: That a Subdivision Plan and Plan and Profile of a Subdivision called Ocean Pines at North Sagamore 16 December 1986 Revised 1 April 1987, dated 1987, and 1987, designed by Wilson Hill Associates, Inc., registered as an Engineer or Land Surveyor in Massachusetts, submitted for the Board's approval by Frank Nuovo & Pat Piscitelli applicant, be and hereby are approved on condition that prior to the Board's endorsement of its approval thereon the subdivider shall furnish guarantees to the Planning Board as provided in Section 266 of the Subdivision Regulations that except as otherwise expressly provided in Section 81-U of Chapter 41, G.L., no lot included in such plan shall be built upon or conveyed until the work on the ground necessary to serve such lot has been completed in the manner specified by the Subdivision Regulations of the Town of Bourne with the following specific qualifications:

- a. All such installation and construction shall be completed within 24 months of this date;
- b. All streets or ways shall be surfaced with at least a 2" binder course prior to application for occupancy permits for any structures served by such streets or ways;
- c. Water installation must meet ISO Fire Flow requirements
- d. Entrance to Old Plymouth Road is to be devided.

or a performance bond or other security in lieu of completion has been accepted by the Planning Board.

respectfully submitted,

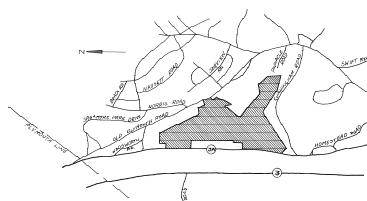
By: *Edward F. Brady*
.....
Edward F. Brady, Chairman
.....

BOURNE PLANNING BOARD

OFFICIAL OF ENANTIAL

SHEET INDEX

SHEET NO.	DESCRIPTION
1	DEFINITIVE PLAN OF LAND, B-2 ZONING DISTRICT
2	DEFINITIVE PLAN OF LAND, B-2 ZONING DISTRICT
3	DEFINITIVE PLAN OF LAND, B-2 ZONING DISTRICT
4	DEFINITIVE PLAN OF LAND, B-2 ZONING DISTRICT
5	DEFINITIVE PLAN OF LAND, B-2 ZONING DISTRICT
6	DEFINITIVE PLAN OF LAND, B-2 ZONING DISTRICT



DIMENSIONAL REGULATIONS *	OFFICE PARK		
	OPEN SPACE COMMUNITY WITHIN WATER RESOURCE DISTRICT	COMMUNITY WITHIN WATER RESOURCE DISTRICT	OUTSIDE WATER RESOURCE DISTRICT
(ZONING: R-20 AND B-2)			
MINIMUM LOT SIZE (SQ. FT.)	20,000	30,000	15,000
MINIMUM LOT FRONTAGE (FT.)	125	100	100
MINIMUM FRONT YARD (FT.)	30	30	30
MINIMUM SIDE YARD (FT.)	12	15	12
MINIMUM REAR YARD (FT.)	12	15	12
MAXIMUM LOT COVERAGE %	50	20	25
MAXIMUM BUILDING HEIGHT (FT.)	35	35	35
MAXIMUM LOT SHAPE FACTOR	220	220	220

* OPEN SPACE DEVELOPMENT IS TO CONFORM TO THE DIMENSIONAL REGULATIONS OF SECTION 4643 OF THE TOWN OF BOURNE ZONING BYLAWS.

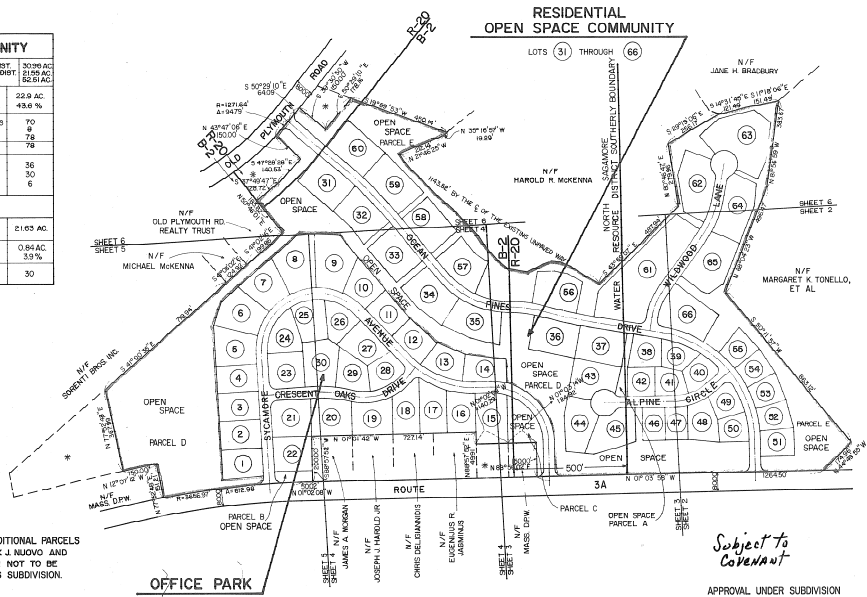
LOCUS
NOT TO SCALE

PROPOSED RESIDENTIAL OPEN SPACE COMMUNITY			
I AREA	AREA WITHIN WATER RESOURCE DISTRICT AREA OUTSIDE WATER RESOURCE DISTRICT TOTAL AREA	21.05 AC 21.05 AC 42.10 AC	
II OPEN SPACE	TOTAL AREA OF OPEN SPACE PERCENT OPEN SPACE	23.9 AC 43.6 %	
III DWELLING UNITS	TOTAL BASIC ALLOWABLE UNITS BONUS POINT UNITS MAXIMUM ALLOWABLE UNITS TOTAL UNITS PROVIDED	70 8 78 78	
IV LOT DATA	TOTAL LOTS PROVIDED SINGLE FAMILY LOTS MULTI-FAMILY LOTS	36 30 6	

PROPOSED OFFICE PARK			
I AREA	TOTAL AREA	21.05 AC	
II OPEN SPACE	TOTAL AREA OF OPEN SPACE PERCENT OPEN SPACE	0.84 AC 39 %	
III LOT DATA	TOTAL LOTS PROVIDED	30	

GENERAL NOTES

- SURVEY SURVEY CONDUCTED BY WILSON HILL ASSOCIATES, INC. IN OCTOBER 1986 & MARCH 1987.
- TOPOGRAPHY PHOTOGRAMMETRICALLY COMPILED BY COL-PART, INC., GROUND CONTROL BY WILSON HILL ASSOCIATES.
- PROPERTY IS ZONED R-20 & B-2 PER TOWN OF BOURNE ZONING MAP REVISION 1985, REVISED MAY 13, 1985.
- RESIDENT 35 LOCATED ON PLANNED ZONE C PER BOURNE PLANNING BOARD MAP 41-4-B, DATED 1964, REVISED ZONE S, 1988.
- REFERENCE 38 MADE TO A PLAN OF LAND DATED OCTOBER 1, 1973 BY NICHOLE B. BISH RECORDED IN PLAN BOOK 303, PAGE 69, BARNSTABLE REGISTER OF DEEDS.
- OPEN SPACE AREAS ARE TO BE CONVEYED TO A CORPORATION OR TRUST CREATED BY THE ORDERS OF THE INDIVIDUAL INCLUDING UNITS AND LOTS, PARCELS A THROUGH E ARE NON-SELLABLE LOTS.
- NOTES NOTED FOR LOTS ON THE OUTER SIDE OF A CURVED STREET, LOT FRONTAGE HAS BEEN MEASURED AS THE STRAIGHT LINE DISTANCE BETWEEN POINTS ON THE SIDE LOT LINES AS THE REQUIRED FRONT YARD SETBACK (30 FT.), THE STREET LINE SETBACK EXCEEDS 68% OF THE REQUIRED LOT FRONTAGE.
- THE LANCES SHOWN ON THIS PLAN ARE TO BE DEVELOPED IN ACCORDANCE WITH THE ORIGINAL DEVELOPMENT PLAN OF MORGAN FINCH & BROWN ENGINEERS*, PREPARED BY WILSON HILL ASSOCIATES, INC. DATED DECEMBER 16, 1984, REVISED APRIL 1, 1987, AND THE SPECIAL PERMIT #38 GRANTED BY THE BOURNE PLANNING BOARD ON APRIL 28, 1987.
- OCEAN PINES DRIVE, ALPINE CIRCLE, AND WILLOW LANE ARE TO BE DESIGNATED AS PRIVATE DRIVES.
- LOTS 61 THROUGH 66 ARE SUBJECT TO DRIVEWAY AND USAGE AGREEMENTS AS SHOWN ON THE OVERALL DEVELOPMENT PLAN MENTIONED IN NOTE 8.
- STUMPS AND OTHER UNWANTED MATERIAL RESULTING FROM THE DEVELOPMENT OF THIS SUBDIVISION ARE TO BE REMOVED FROM THE SITE AND DISPOSED OF AT AN APPROPRIATE LOCATION AND IN AN APPROPRIATE MANNER.



Subject to Covenant

APPROVAL UNDER SUBDIVISION CONTROL, LAW IS REQUIRED.
Pat J. Piscitelli
BOURNE PLANNING BOARD
DATE: Sept 29, 1987

I CERTIFY THAT NOTICE OF APPROVAL OF THIS PLAN BY THE BOURNE PLANNING BOARD HAS BEEN RECEIVED AND RECORDED AT THIS OFFICE AND NO APPEAL WAS RECEIVED IN THE TWENTY DAYS SUBSEQUENT TO SUCH RECEIPT AND RECORDING.
Pat J. Piscitelli
BOURNE TOWN CLERK
DATE: Sept 17, 1987

NOTE: SEE SHEETS 2 THROUGH 6 FOR COMPLETE SURVEY INFORMATION, LOT DATA, AND DEFINITIVE ROAD AND LOT GEOMETRY.

I CERTIFY THAT THIS PLAN HAS BEEN PREPARED IN CONFORMITY WITH THE RULES AND REGULATIONS OF THE REGISTER OF DEEDS.
Pat J. Piscitelli
REGISTERED LAND SURVEYOR

439-35

WILSON HILL ASSOCIATES
ENGINEERS, SURVEYORS, & PLANNERS

Designed by: G.S.T., S.J.D.
Drawn by: M.A.
Checked by: R.J.T.
Field Survey ch. by: E.P.S.
Approved by:

SCALE
1" = 200'
0 10 20 30 40 50 60 70 80 90 100

DATE: DEC 16, 1986

APPROVAL UNDER SUBDIVISION CONTROL, LAW IS REQUIRED.
Pat J. Piscitelli
BOURNE PLANNING BOARD
DATE: Sept 29, 1987

OWNERS AND APPLICANTS:
FRANK J. NUOVO
PAT J. PISCITELLI

DEFINITIVE PLAN OF LAND
AT
OCEAN PINES
NORTH SAGAMORE
BOURNE, MASS.

SHEET 1 OF 6
JOB NUMBER
36101



COREEN V. MOORE
TOWN PLANNER

TOWN OF BOURNE

Office of the Town Planner

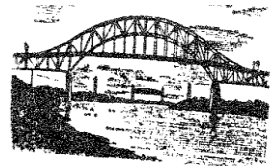
TOWN HALL

24 PERRY AVE.

BUZZARDS BAY, MA 02532

PHONE: 508-759-0615 ● FAX: 508-759-8026

Email: cmoore@townofbourne.com



M E M O R A N D U M

To: Planning Board
Cc: Ocean Pines LLC, applicant
 Roger Laporte, Building Inspector
From: Coreen V. Moore, Town Planner
Date: August 2, 2007

Re: Site Plan Septic Design for Wildwood Lane, Lot 66, dated 7/30/07 (revised) Bourne, MA
 - Map 6 Parcel 128

According to the Zoning Bylaw Section 4644 - Open Space Community, prior to issuance of building permits the Planning Board shall certify to the Building Inspector that a detailed site plan has been submitted and meets the functional standards established and adopted within the subdivision regulations as it relates to access, drainage, utilities and grading.

The approved development plan and the special permit have also provided development constraints, such as number of units and setbacks. In addition, within the open space community section of the bylaw the following constraints must be met.

Please note any changes to the following constraints or requirements would require an amendment to the special permit.

Open Space Community Requirement	Information provided
1. Structures must have a separation of no less than their building height from any other structure on the same lot and from any lot line.	Building height per architecturals 27'-7" Setbacks provided – 30.8"
2. Structures shall provide a separation of no less than twice their building height from the boundary of the Overall Development Plan.	Required: 55.16" Provided 75'+/-
3. Parking areas shall not be located within any required yard, and shall be screened from public ways by building location, grading, fencing, or plantings.	No screening shown
4. Parking areas shall not be located within 75 feet of the boundary of the Overall Development Plan.	Meets requirement
5. Parking area shall contain no more than 36 spaces, and be separated from all other parking areas by at least 20'	Meets requirement
6. No buildings shall be floodlit.	Information not shown

7. Drives and parking areas shall be illuminated by shielded lights not higher than 15 feet.	Information not shown
8. There shall be not more than 20 dwelling units in a single structure.	Meets requirement
9. The basic maximum number of dwelling units allowed. Which are 78 total including 30 single-family dwellings, leaving the multifamily portion a maximum of 48 units.	The proposed number units for Lot 66 contains the same number of units on overall development plan.
<p>10. Dimensional Regulations. Dwellings shall be on designated lots, whether or not the lots are or can be owned separately or independently of adjoining lots. More than one multifamily dwelling may be erected on a lot.</p> <p>Minimum lot size (s.f.) 15,000 Minimum lot frontage (ft.) 100 Minimum front yard (ft.)^a 30 Minimum side and rear yards (ft.)^a see overall development plan for setbacks Maximum lot coverage (%) 20 Maximum building height (ft.) 35 (<i>note overall development plans states a 26' max height</i>)</p> <p>^a Increase to 50 feet where abutting the boundary of the Overall Development Plan.</p>	<p>Lot size = 39,073 s.f. Lot frontage = 215' + Side and rear yards (ft.) = 30'+ Lot coverage (%) = 14.6% Building height (ft.) = 27.7'</p>
11. Open Space land shall be kept in an open or natural state and not be built upon or developed for accessory uses such as parking or roadway.	Overall development plan allows drainage within the open space.
12. Subsequent to approval of an Open Space Community, no land therein shall be sold and no lot line or structure altered from that shown on the Overall Development Plan so as to increase the extent of nonconformity with the standard dimensional regulations of this Bylaw.	No changes proposed.

EXISTING GRADE, INC.

Land Surveyors - Civil Engineers

November 09, 2022

Town of Bourne Planning Department
Ms. Jennifer Copeland – Town Planner
Bourne Town Hall
24 Perry Avenue – Room 201
Buzzards Bay, Massachusetts 02532

**RE: *Narrative for Stormwater Summary – Lot 61
Eastern Sky, LLC
61 Wildwood Lane
Bourne, Massachusetts***

Ms. Copeland:

This memo serves to provide supporting documentation and narrative regarding the proposed Stormwater Management and Best Management Practices (BMP's) for Eastern Sky, LLC (Proponent) for the property located at 61 Wildwood Lane, Bourne (Assessors Map 7, Parcel 100, Lot 61). The Stormwater Management information is being submitted at the request of the Town of Bourne Planning Department regarding the proposed site plans for Lot 61, Wildwood Lane – Buildings 1 through 7.

The proposed parking area consists of two separate infiltration systems, each with a typical deep sump catch basin feeding 3 underground leaching chambers with 3' of crushed stone. The leaching chambers have been sized to fully infiltrate the typical 25-year storm event as shown on the attached HydroCAD drainage analysis. The building recharge systems consist of a standard Cultec R-330XLHD infiltration bed which has been designed to maximize infiltration for the roof runoff of the typical 1" water quality storm event. Any excess runoff from the site will flow into the roadway drainage system, ensuring no increase in peak rate of runoff to abutting properties.

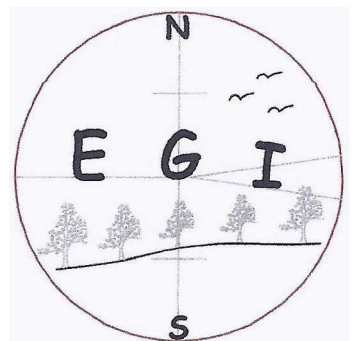
Please reference the attached HydroCAD drainage reports, web soil survey mapping, and supporting area calculation plan for further detail. Please do not hesitate to call the undersigned at (508) 694-6501 with any questions or concerns.

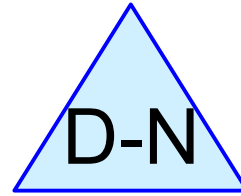
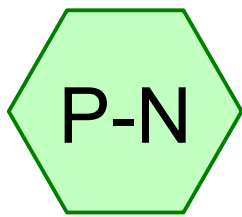
EXISTING GRADE INC.

Edwin Gless, PE, PLS
President



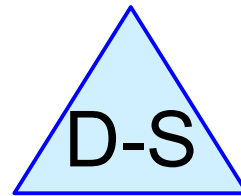
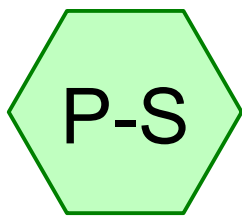
62 Riedell Road
Douglas, MA 01516
(508) 694-6501





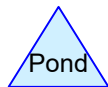
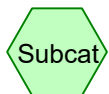
PAVEMENT NORTH

3xLeach Pits



PAVEMENT SOUTH

3xLeach Pits



1292_LOT 61 DRAINAGE

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Page 2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.483	98	Paved parking, HSG A (P-N, P-S)
0.483	98	TOTAL AREA

1292_LOT 61 DRAINAGE

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Page 3

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.483	HSG A	P-N, P-S
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
0.000	Other	
0.483		TOTAL AREA

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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.483	0.000	0.000	0.000	0.000	0.483	Paved parking	P-N, P-S
0.483	0.000	0.000	0.000	0.000	0.483	TOTAL AREA	

1292_LOT 61 DRAINAGE

Type II 24-hr 2-YR Rainfall=3.41"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmenP-N: PAVEMENTNORTH Runoff Area=7,435 sf 100.00% Impervious Runoff Depth>2.94"
Tc=6.0 min CN=98 Runoff=0.80 cfs 0.042 af

SubcatchmenP-S: PAVEMENTSOUTH Runoff Area=13,593 sf 100.00% Impervious Runoff Depth>2.94"
Tc=6.0 min CN=98 Runoff=1.46 cfs 0.076 af

Pond D-N: 3xLeachPits Peak Elev=82.40' Storage=0.015 af Inflow=0.80 cfs 0.042 af
Outflow=0.10 cfs 0.042 af

Pond D-S: 3xLeachPits Peak Elev=85.19' Storage=0.033 af Inflow=1.46 cfs 0.076 af
Outflow=0.10 cfs 0.076 af

Total Runoff Area = 0.483 ac Runoff Volume = 0.118 af Average Runoff Depth = 2.94"
0.00% Pervious = 0.000 ac 100.00% Impervious = 0.483 ac

1292_LOT 61 DRAINAGE

Type II 24-hr 2-YR Rainfall=3.41"

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Summary for Subcatchment P-N: PAVEMENT NORTH

Runoff = 0.80 cfs @ 11.96 hrs, Volume= 0.042 af, Depth> 2.94"

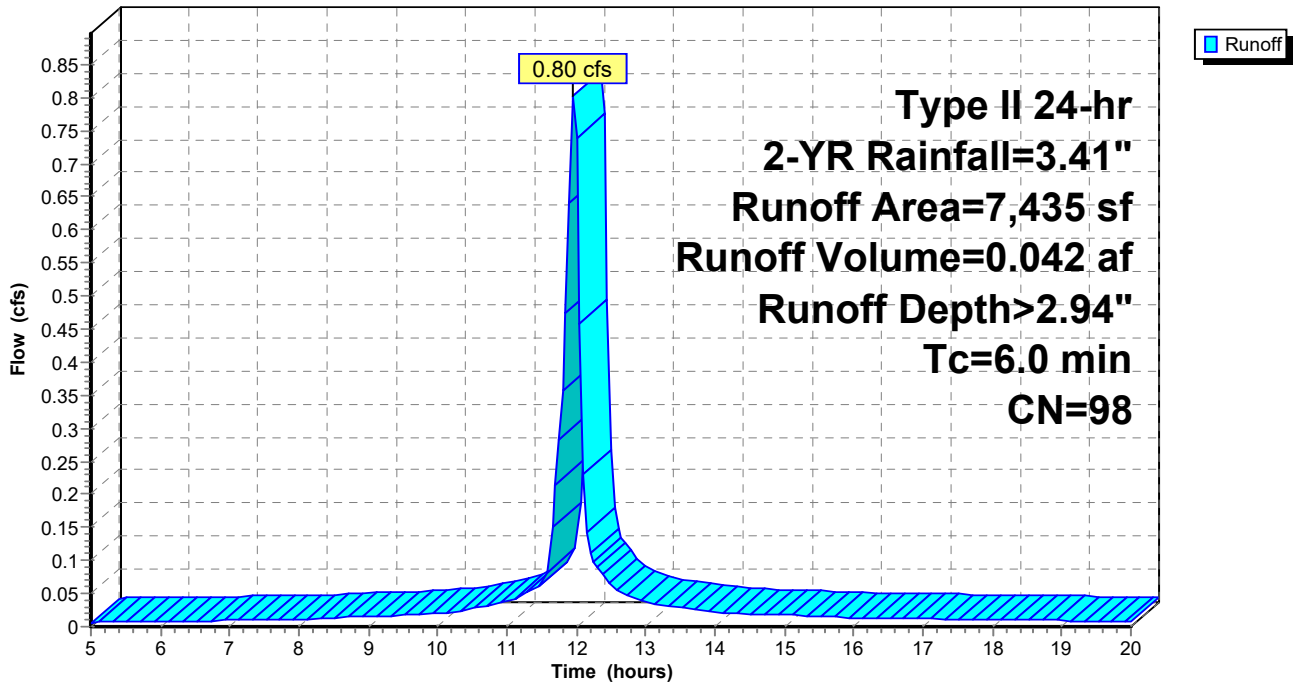
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-YR Rainfall=3.41"

Area (sf)	CN	Description
7,435	98	Paved parking, HSG A
7,435		100.00% Impervious Area

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

Subcatchment P-N: PAVEMENT NORTH

Hydrograph



1292_LOT 61 DRAINAGE

Type II 24-hr 2-YR Rainfall=3.41"

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Summary for Subcatchment P-S: PAVEMENT SOUTH

Runoff = 1.46 cfs @ 11.96 hrs, Volume= 0.076 af, Depth> 2.94"

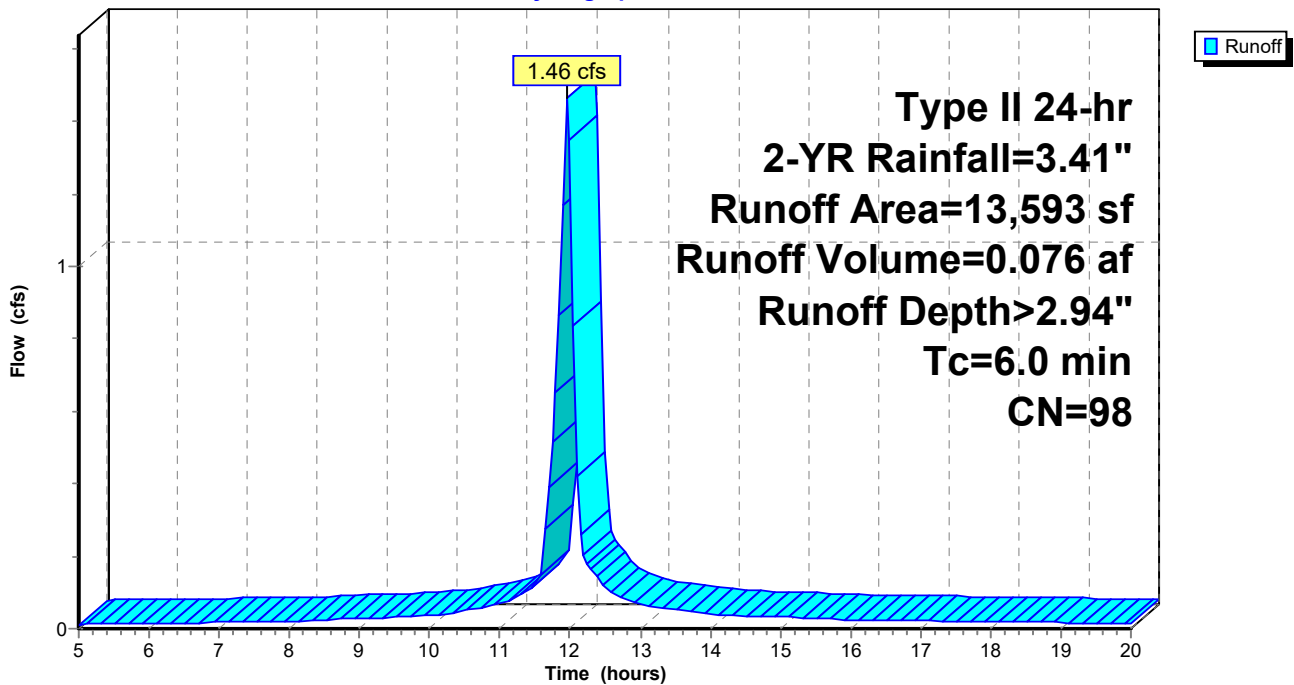
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-YR Rainfall=3.41"

Area (sf)	CN	Description
13,593	98	Paved parking, HSG A
13,593		100.00% Impervious Area

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

Subcatchment P-S: PAVEMENT SOUTH

Hydrograph



1292_LOT 61 DRAINAGE

Type II 24-hr 2-YR Rainfall=3.41"

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Summary for Pond D-N: 3xLeach Pits

Inflow Area = 0.171 ac, 100.00% Impervious, Inflow Depth > 2.94" for 2-YR event
 Inflow = 0.80 cfs @ 11.96 hrs, Volume= 0.042 af
 Outflow = 0.10 cfs @ 12.27 hrs, Volume= 0.042 af, Atten= 88%, Lag= 18.4 min
 Discarded = 0.10 cfs @ 12.27 hrs, Volume= 0.042 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 82.40' @ 12.27 hrs Surf.Area= 0.011 ac Storage= 0.015 af

Plug-Flow detention time=46.8 min calculated for 0.042 af (100% of inflow)
 Center-of-Mass det. time=45.8 min (778.4 - 732.6)

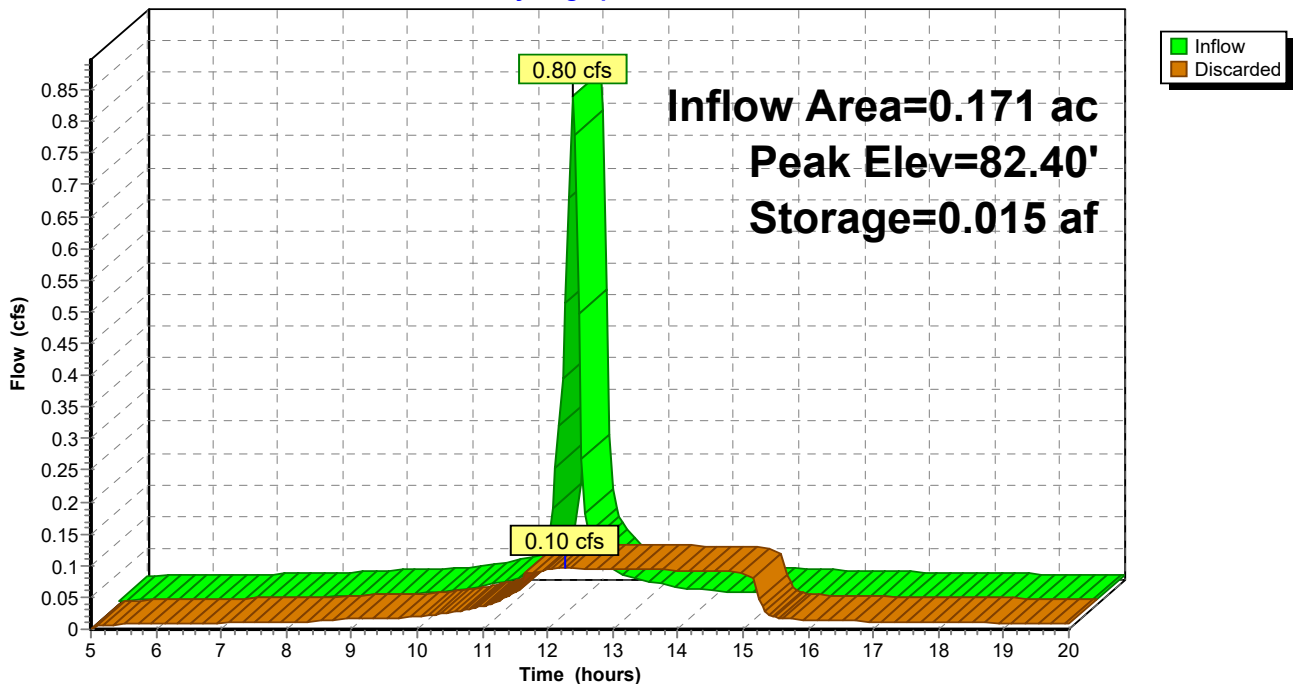
Volume	Invert	Avail.Storage	Storage Description
#1	80.00'	0.052 af	14.00'D x 12.00'H 4' Stone Surround 3 0.127 af Overall - 0.023 af Embedded= 0.104 af x 50.0% Voids
#2	80.00'	0.023 af	6.00'D x 12.00'H Vertical Cone/Cylinder 3 Inside #1
		0.075 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	80.00'	8.270 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 50.00'

Discarded OutFlowMax=0.10 cfs @ 12.27 hrs HW=82.40' (Free Discharge)
 ↑1=Exfiltration (Controls 0.10 cfs)

Pond D-N: 3xLeach Pits

Hydrograph



1292_LOT 61 DRAINAGE

Type II 24-hr 2-YR Rainfall=3.41"

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Summary for Pond D-S: 3xLeach Pits

Inflow Area = 0.312 ac, 100.00% Impervious, Inflow Depth > 2.94" for 2-YR event
 Inflow = 1.46 cfs @ 11.96 hrs, Volume= 0.076 af
 Outflow = 0.10 cfs @ 12.55 hrs, Volume= 0.076 af, Atten= 93%, Lag= 35.5 min
 Discarded = 0.10 cfs @ 12.55 hrs, Volume= 0.076 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 85.19' @ 12.55 hrs Surf.Area= 0.011 ac Storage= 0.033 af

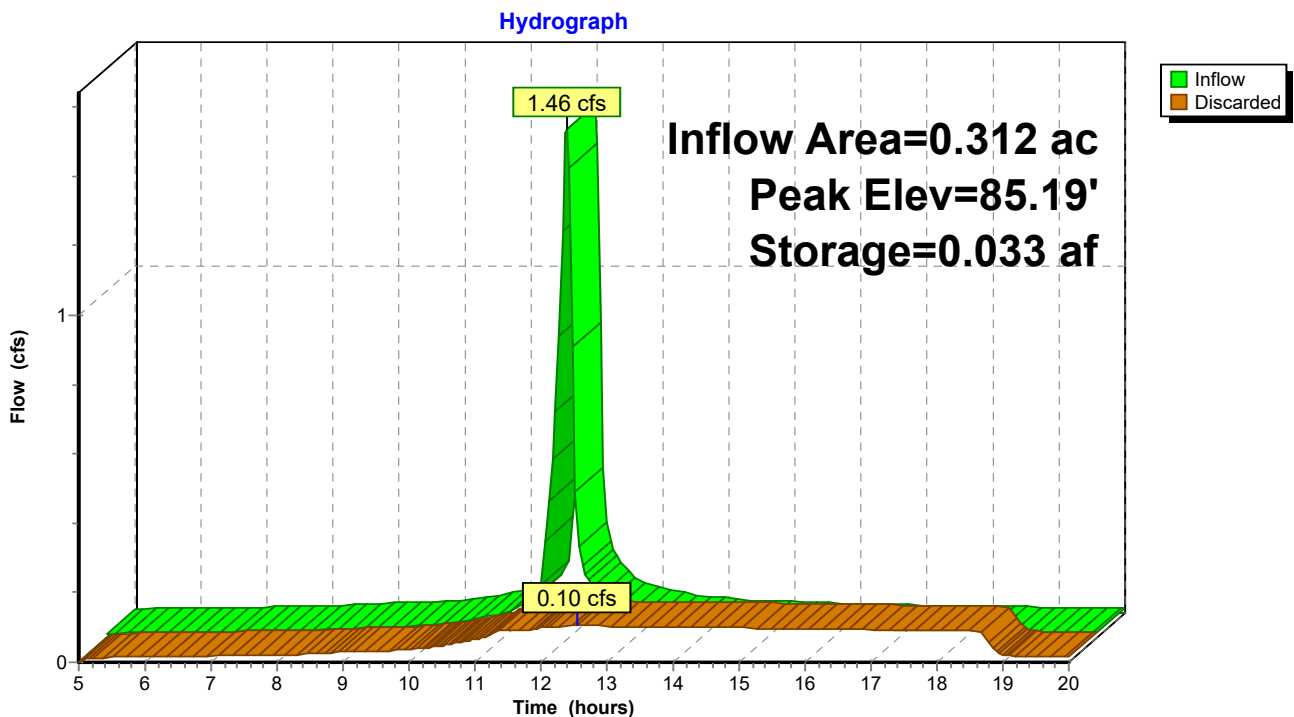
Plug-Flow detention time=107.7 min calculated for 0.076 af (99% of inflow)
 Center-of-Mass det. time=106.4 min (839.1 - 732.6)

Volume	Invert	Avail.Storage	Storage Description
#1	80.00'	0.052 af	14.00'D x 12.00'H 4' Stone Surround 3 0.127 af Overall - 0.023 af Embedded= 0.104 af x 50.0% Voids
#2	80.00'	0.023 af	6.00'D x 12.00'H Vertical Cone/Cylinder 3 Inside #1
		0.075 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	80.00'	8.270 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 50.00'

Discarded OutFlowMax=0.10 cfs @ 12.55 hrs HW=85.19' (Free Discharge)
 ↑1=Exfiltration (Controls 0.10 cfs)

Pond D-S: 3xLeach Pits



1292_LOT 61 DRAINAGE

Type II 24-hr 10-YR Rainfall=4.98"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment P-N: PAVEMENTNORTH Runoff Area=7,435 sf 100.00% Impervious Runoff Depth>4.35"
Tc=6.0 min CN=98 Runoff=1.18 cfs 0.062 af

Subcatchment P-S: PAVEMENTSOUTH Runoff Area=13,593 sf 100.00% Impervious Runoff Depth>4.35"
Tc=6.0 min CN=98 Runoff=2.15 cfs 0.113 af

Pond D-N: 3xLeachPits Peak Elev=83.94' Storage=0.025 af Inflow=1.18 cfs 0.062 af
Outflow=0.10 cfs 0.062 af

Pond D-S: 3xLeachPits Peak Elev=88.47' Storage=0.053 af Inflow=2.15 cfs 0.113 af
Outflow=0.11 cfs 0.097 af

Total Runoff Area = 0.483 ac Runoff Volume = 0.175 af Average Runoff Depth = 4.35"
0.00% Pervious = 0.000 ac 100.00% Impervious = 0.483 ac

1292_LOT 61 DRAINAGE

Type II 24-hr 10-YR Rainfall=4.98"

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Summary for Subcatchment P-N: PAVEMENT NORTH

Runoff = 1.18 cfs @ 11.96 hrs, Volume= 0.062 af, Depth> 4.35"

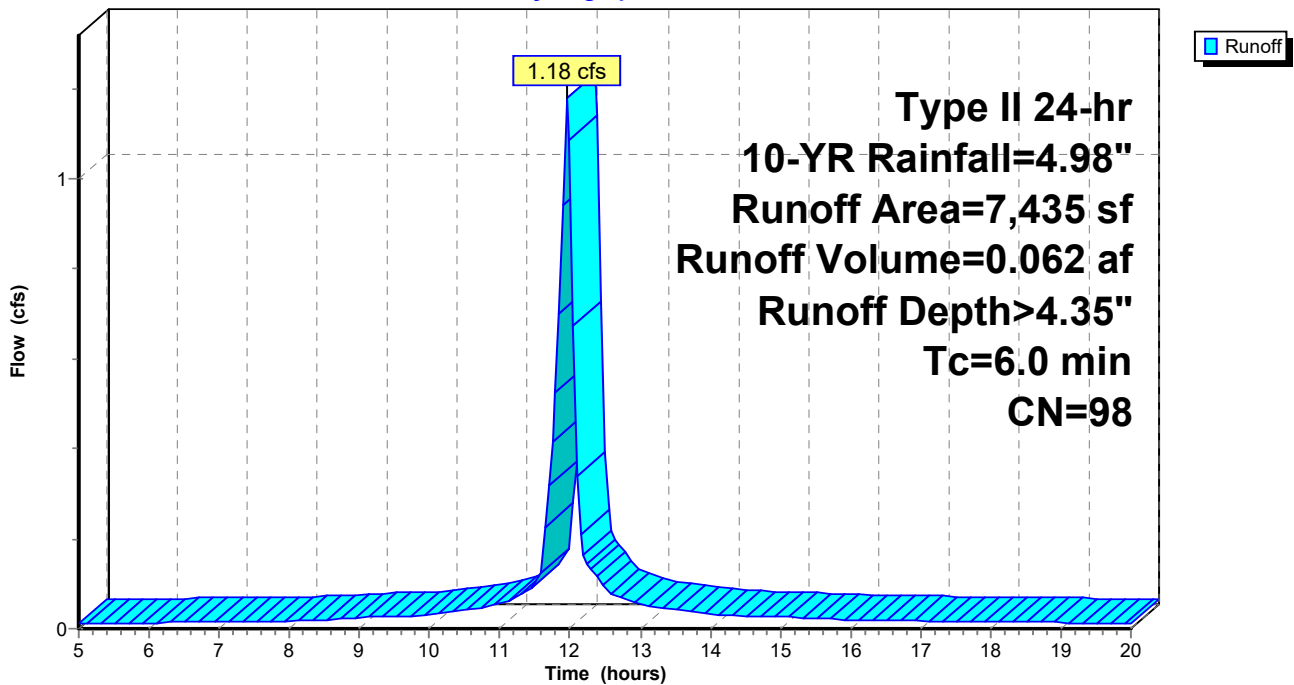
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-YR Rainfall=4.98"

Area (sf)	CN	Description
7,435	98	Paved parking, HSG A
7,435		100.00% Impervious Area

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

Subcatchment P-N: PAVEMENT NORTH

Hydrograph



1292_LOT 61 DRAINAGE

Type II 24-hr 10-YR Rainfall=4.98"

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Summary for Subcatchment P-S: PAVEMENT SOUTH

Runoff = 2.15 cfs @ 11.96 hrs, Volume= 0.113 af, Depth> 4.35"

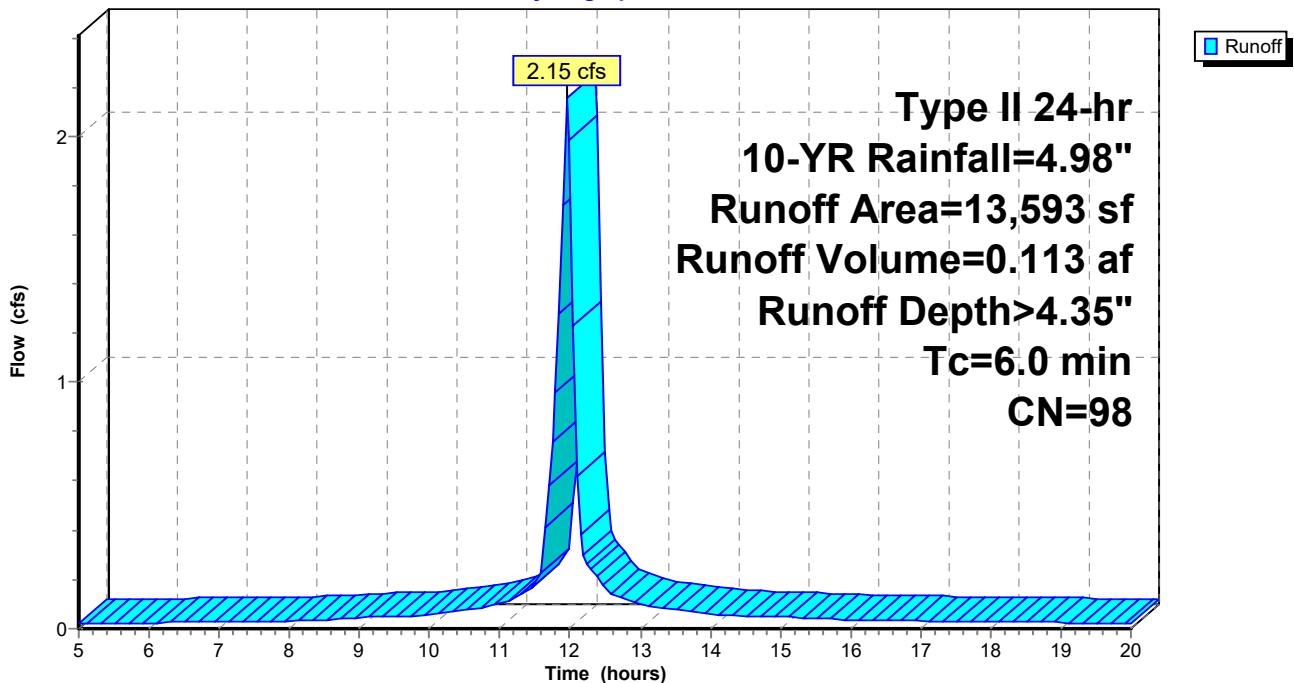
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-YR Rainfall=4.98"

Area (sf)	CN	Description
13,593	98	Paved parking, HSG A
13,593		100.00% Impervious Area

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

Subcatchment P-S: PAVEMENT SOUTH

Hydrograph



1292_LOT 61 DRAINAGE

Type II 24-hr 10-YR Rainfall=4.98"

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Summary for Pond D-N: 3xLeach Pits

Inflow Area = 0.171 ac, 100.00% Impervious, Inflow Depth > 4.35" for 10-YR event
 Inflow = 1.18 cfs @ 11.96 hrs, Volume= 0.062 af
 Outflow = 0.10 cfs @ 12.46 hrs, Volume= 0.062 af, Atten= 91%, Lag= 30.0 min
 Discarded = 0.10 cfs @ 12.46 hrs, Volume= 0.062 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 83.94' @ 12.46 hrs Surf.Area= 0.011 ac Storage= 0.025 af

Plug-Flow detention time=79.3 min calculated for 0.062 af (99% of inflow)
 Center-of-Mass det. time=78.1 min (808.1 - 730.1)

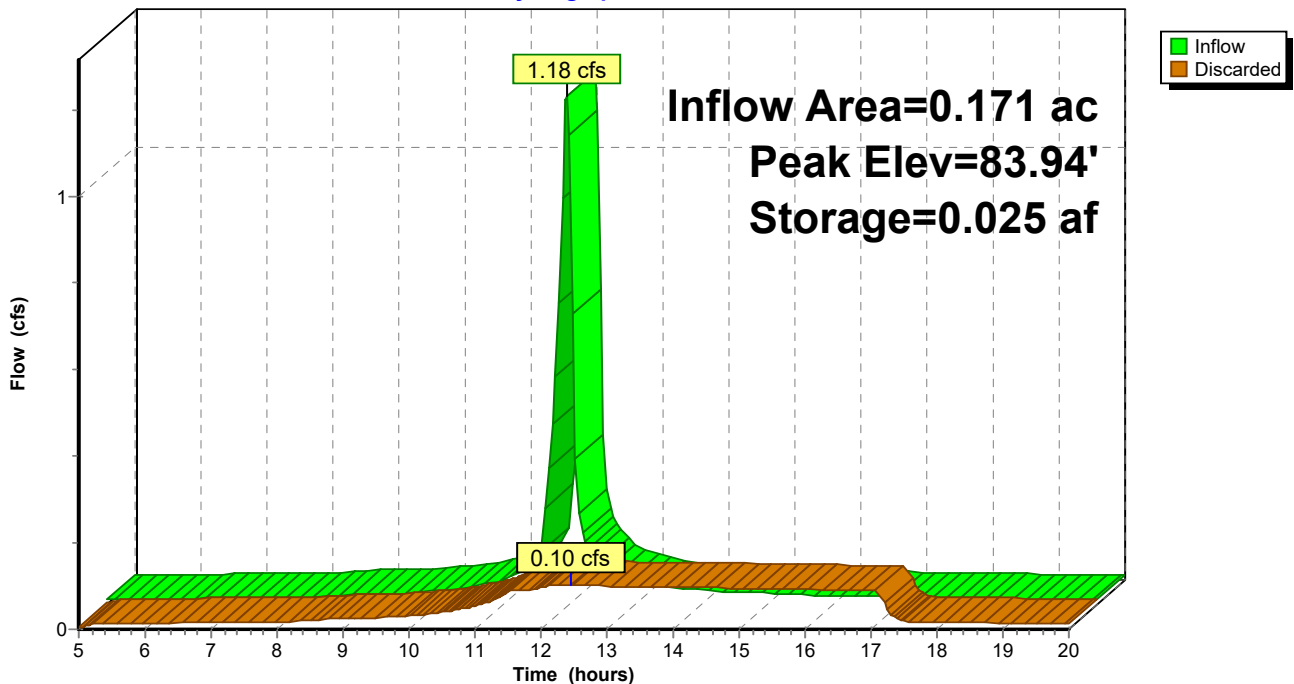
Volume	Invert	Avail.Storage	Storage Description
#1	80.00'	0.052 af	14.00'D x 12.00'H 4' Stone Surround 3 0.127 af Overall - 0.023 af Embedded= 0.104 af x 50.0% Voids
#2	80.00'	0.023 af	6.00'D x 12.00'H Vertical Cone/Cylinder 3 Inside #1
		0.075 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	80.00'	8.270 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 50.00'

Discarded OutFlow Max=0.10 cfs @ 12.46 hrs HW=83.94' (Free Discharge)
 ↑1=Exfiltration (Controls 0.10 cfs)

Pond D-N: 3xLeach Pits

Hydrograph



1292_LOT 61 DRAINAGE

Type II 24-hr 10-YR Rainfall=4.98"

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Summary for Pond D-S: 3xLeach Pits

Inflow Area = 0.312 ac, 100.00% Impervious, Inflow Depth > 4.35" for 10-YR event
 Inflow = 2.15 cfs @ 11.96 hrs, Volume= 0.113 af
 Outflow = 0.11 cfs @ 12.87 hrs, Volume= 0.097 af, Atten= 95%, Lag= 54.6 min
 Discarded = 0.11 cfs @ 12.87 hrs, Volume= 0.097 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 88.47' @ 12.87 hrs Surf.Area= 0.011 ac Storage= 0.053 af

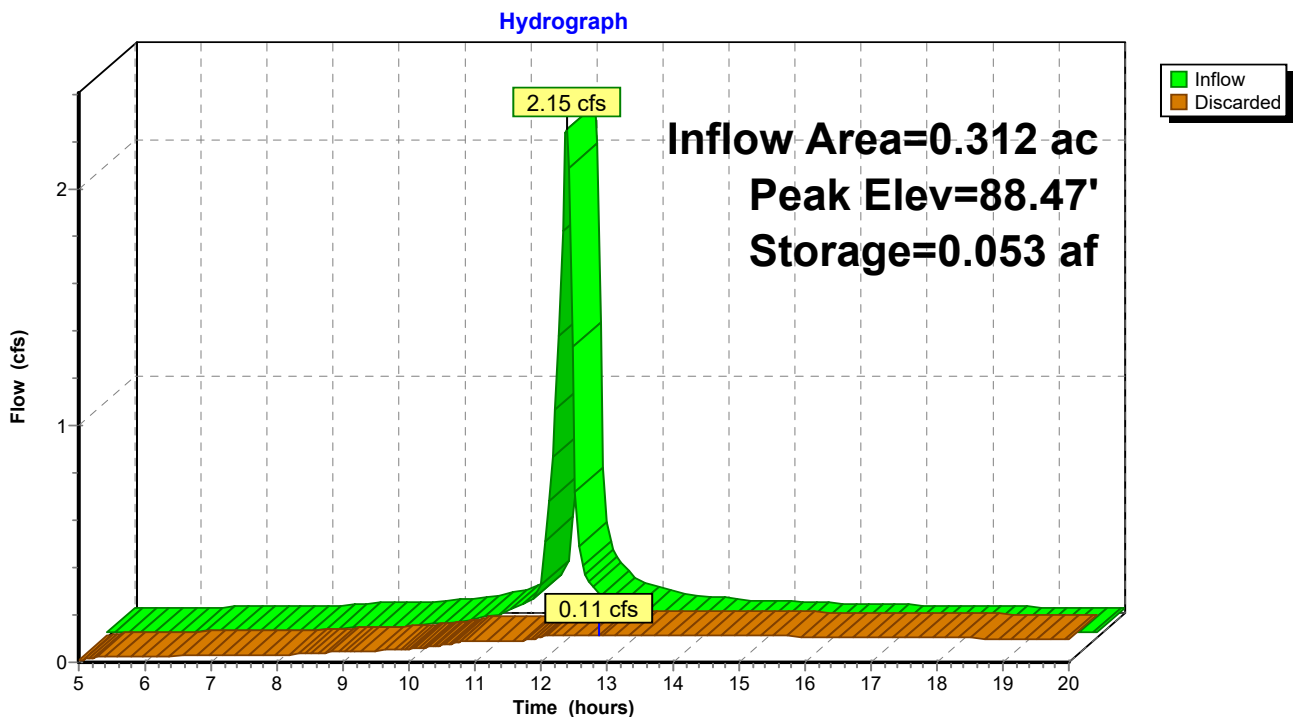
Plug-Flow detention time=162.3 min calculated for 0.097 af (86% of inflow)
 Center-of-Mass det. time=118.3 min (848.3 - 730.1)

Volume	Invert	Avail.Storage	Storage Description
#1	80.00'	0.052 af	14.00'D x 12.00'H 4' Stone Surround 3 0.127 af Overall - 0.023 af Embedded= 0.104 af x 50.0% Voids
#2	80.00'	0.023 af	6.00'D x 12.00'H Vertical Cone/Cylinder 3 Inside #1
		0.075 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	80.00'	8.270 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 50.00'

Discarded OutFlow Max=0.11 cfs @ 12.87 hrs HW=88.47' (Free Discharge)
 ↑1=Exfiltration (Controls 0.11 cfs)

Pond D-S: 3xLeach Pits



1292_LOT 61 DRAINAGE

Type II 24-hr 25-YR Rainfall=5.95"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment P-N: PAVEMENTNORTH Runoff Area=7,435 sf 100.00% Impervious Runoff Depth>5.22"
Tc=6.0 min CN=98 Runoff=1.41 cfs 0.074 af

Subcatchment P-S: PAVEMENTSOUTH Runoff Area=13,593 sf 100.00% Impervious Runoff Depth>5.22"
Tc=6.0 min CN=98 Runoff=2.57 cfs 0.136 af

Pond D-N: 3xLeachPits Peak Elev=84.96' Storage=0.031 af Inflow=1.41 cfs 0.074 af
Outflow=0.10 cfs 0.074 af

Pond D-S: 3xLeachPits Peak Elev=90.63' Storage=0.067 af Inflow=2.57 cfs 0.136 af
Outflow=0.12 cfs 0.106 af

Total Runoff Area = 0.483 ac Runoff Volume = 0.210 af Average Runoff Depth = 5.22"
0.00% Pervious = 0.000 ac 100.00% Impervious = 0.483 ac

1292_LOT 61 DRAINAGE

Type II 24-hr 25-YR Rainfall=5.95"

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Summary for Subcatchment P-N: PAVEMENT NORTH

Runoff = 1.41 cfs @ 11.96 hrs, Volume= 0.074 af, Depth> 5.22"

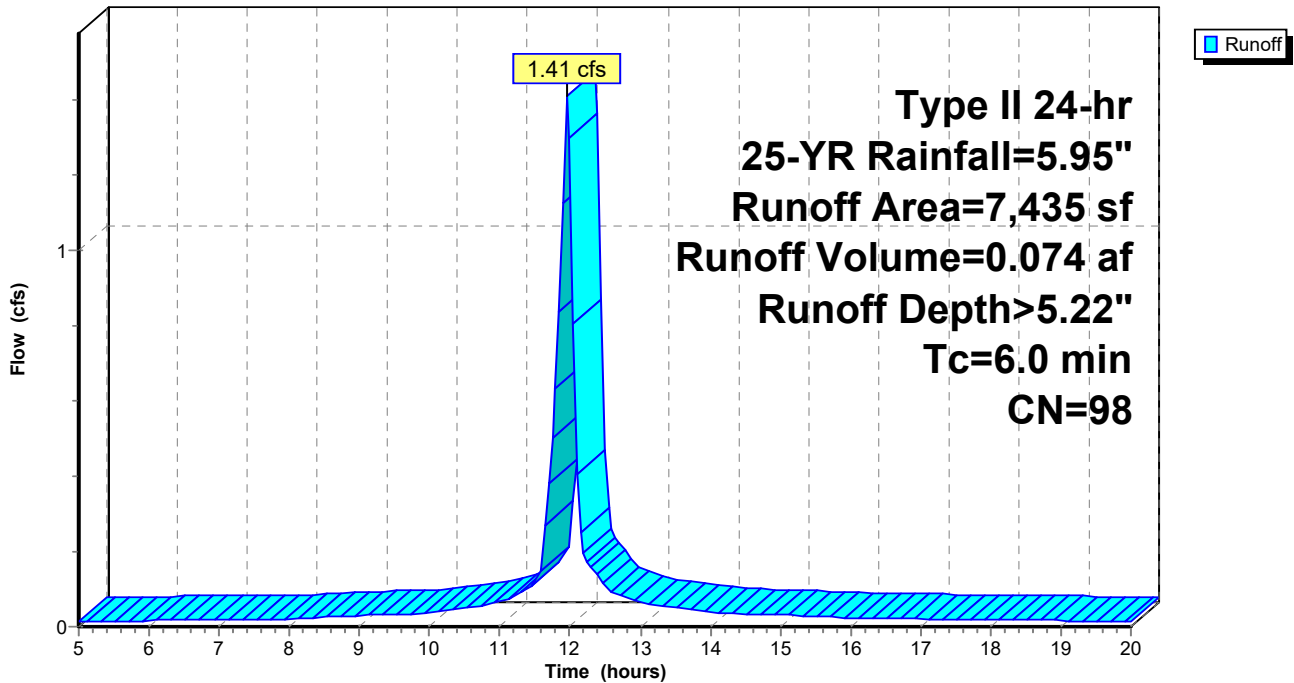
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-YR Rainfall=5.95"

Area (sf)	CN	Description
7,435	98	Paved parking, HSG A
7,435		100.00% Impervious Area

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

Subcatchment P-N: PAVEMENT NORTH

Hydrograph



1292_LOT 61 DRAINAGE

Type II 24-hr 25-YR Rainfall=5.95"

Prepared by {enter your company name here}

Printed 11/9/2022

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Summary for Subcatchment P-S: PAVEMENT SOUTH

Runoff = 2.57 cfs @ 11.96 hrs, Volume= 0.136 af, Depth> 5.22"

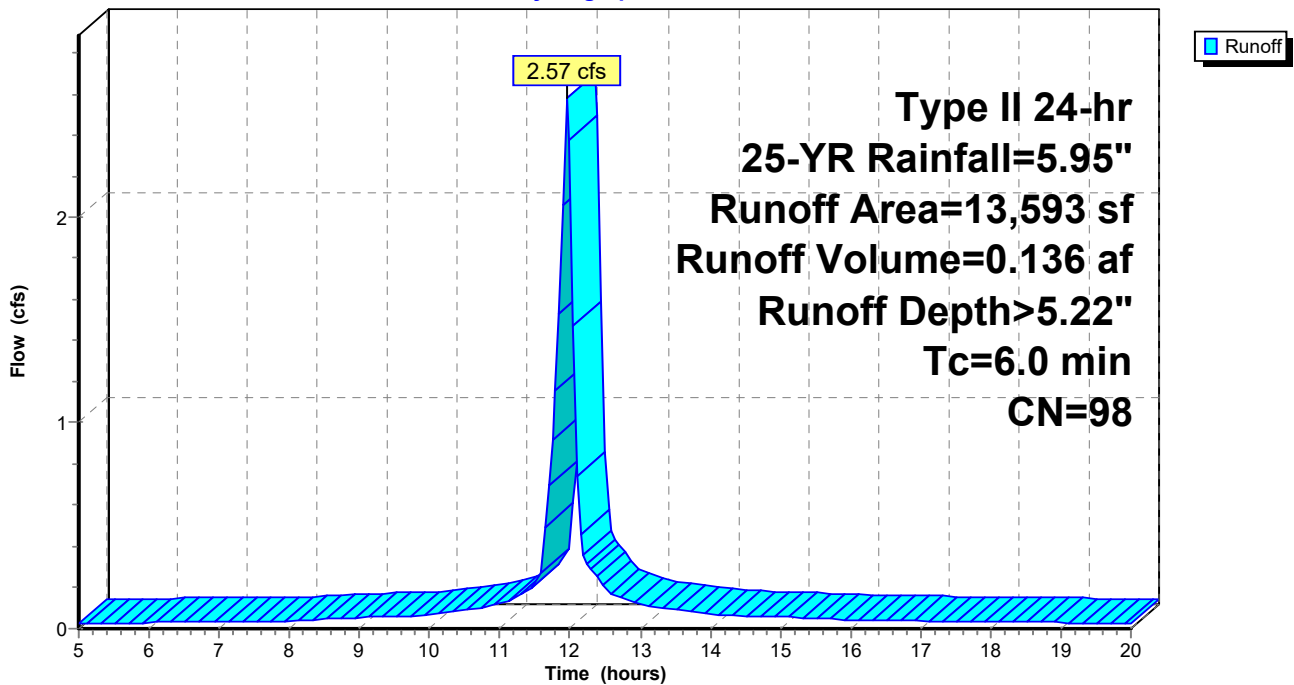
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-YR Rainfall=5.95"

Area (sf)	CN	Description
13,593	98	Paved parking, HSG A
13,593		100.00% Impervious Area

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

Subcatchment P-S: PAVEMENT SOUTH

Hydrograph



1292_LOT 61 DRAINAGE

Type II 24-hr 25-YR Rainfall=5.95"

Prepared by {enter your company name here}

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Summary for Pond D-N: 3xLeach Pits

Inflow Area = 0.171 ac, 100.00% Impervious, Inflow Depth > 5.22" for 25-YR event
 Inflow = 1.41 cfs @ 11.96 hrs, Volume= 0.074 af
 Outflow = 0.10 cfs @ 12.53 hrs, Volume= 0.074 af, Atten= 93%, Lag= 34.4 min
 Discarded = 0.10 cfs @ 12.53 hrs, Volume= 0.074 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 84.96' @ 12.53 hrs Surf.Area= 0.011 ac Storage= 0.031 af

Plug-Flow detention time=101.0 min calculated for 0.074 af (100% of inflow)
 Center-of-Mass det. time=99.9 min (829.2 - 729.2)

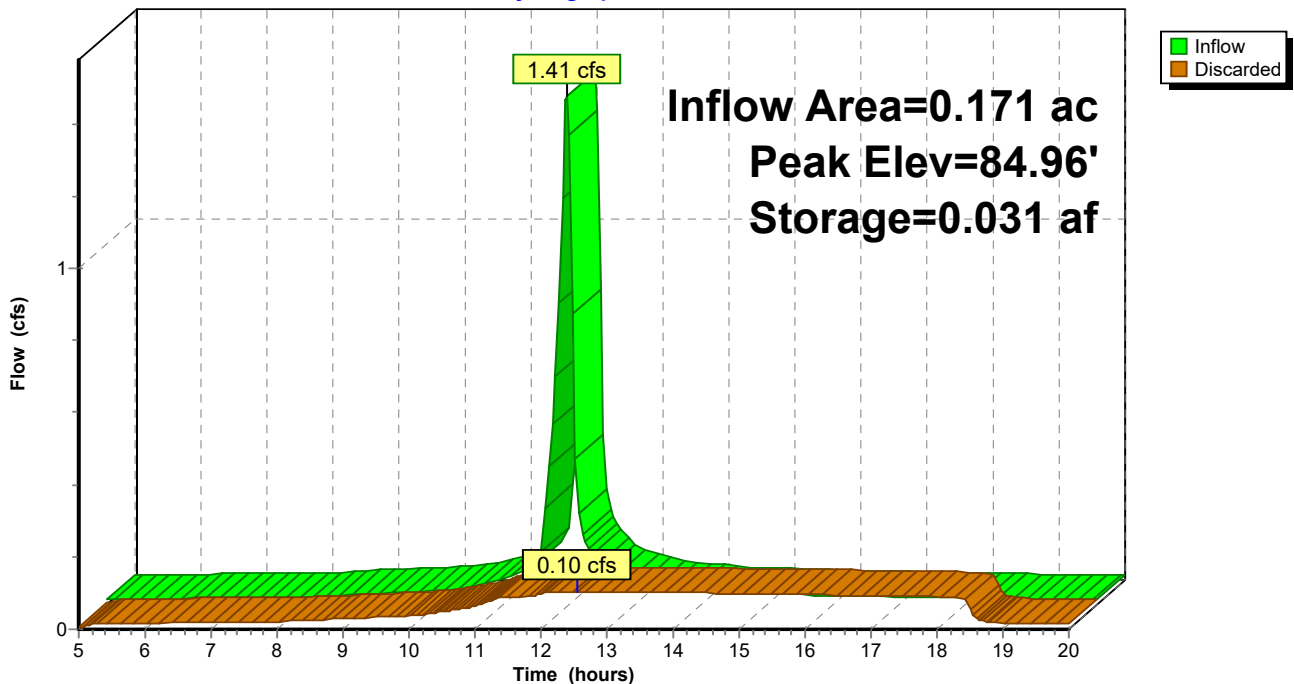
Volume	Invert	Avail.Storage	Storage Description
#1	80.00'	0.052 af	14.00'D x 12.00'H 4' Stone Surround 3 0.127 af Overall - 0.023 af Embedded= 0.104 af x 50.0% Voids
#2	80.00'	0.023 af	6.00'D x 12.00'H Vertical Cone/Cylinder 3 Inside #1
		0.075 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	80.00'	8.270 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 50.00'

Discarded OutFlowMax=0.10 cfs @ 12.53 hrs HW=84.96' (Free Discharge)
 ↑1=Exfiltration (Controls 0.10 cfs)

Pond D-N: 3xLeach Pits

Hydrograph



1292_LOT 61 DRAINAGE

Type II 24-hr 25-YR Rainfall=5.95"

Prepared by {enter your company name here}

Printed 11/9/2022

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Summary for Pond D-S: 3xLeach Pits

Inflow Area = 0.312 ac, 100.00% Impervious, Inflow Depth > 5.22" for 25-YR event
 Inflow = 2.57 cfs @ 11.96 hrs, Volume= 0.136 af
 Outflow = 0.12 cfs @ 13.04 hrs, Volume= 0.106 af, Atten= 95%, Lag= 64.4 min
 Discarded = 0.12 cfs @ 13.04 hrs, Volume= 0.106 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 90.63' @ 13.04 hrs Surf.Area= 0.011 ac Storage= 0.067 af

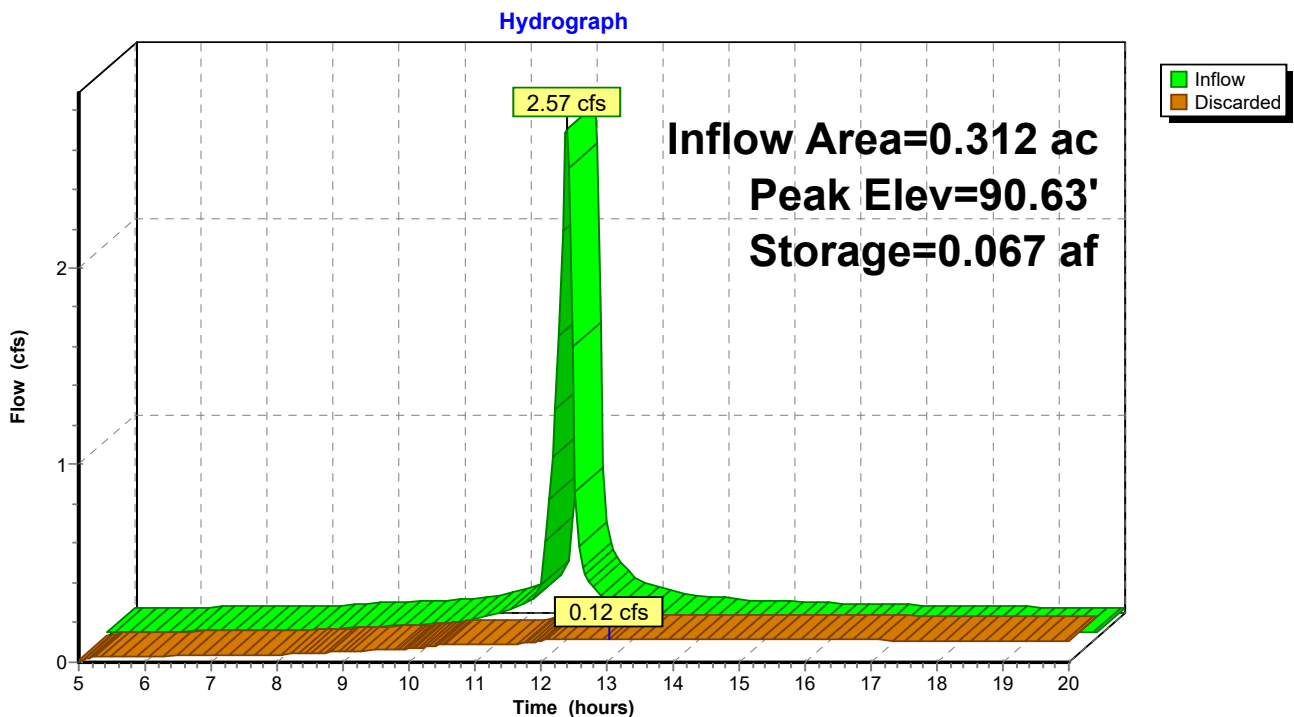
Plug-Flow detention time=169.7 min calculated for 0.106 af (78% of inflow)
 Center-of-Mass det. time=111.7 min (840.9 - 729.2)

Volume	Invert	Avail.Storage	Storage Description
#1	80.00'	0.052 af	14.00'D x 12.00'H 4' Stone Surround 3 0.127 af Overall - 0.023 af Embedded= 0.104 af x 50.0% Voids
#2	80.00'	0.023 af	6.00'D x 12.00'H Vertical Cone/Cylinder 3 Inside #1
		0.075 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	80.00'	8.270 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 50.00'

Discarded OutFlowMax=0.12 cfs @ 13.04 hrs HW=90.63' (Free Discharge)
 ↑1=Exfiltration (Controls 0.12 cfs)

Pond D-S: 3xLeach Pits





NOAA Atlas 14, Volume 10, Version 3
Location name: Sagamore Beach, Massachusetts, USA*
Latitude: 41.7895°, Longitude: -70.5398°
Elevation: 98.46 ft**
* source: ESRI Maps
** source: USGS



POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sandra Pavlovic, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Orlan Wilhite
 NOAA, National Weather Service, Silver Spring, Maryland

[PF_tabular](#) | [PF_graphical](#) | [Maps_&_aerials](#)

PF tabular

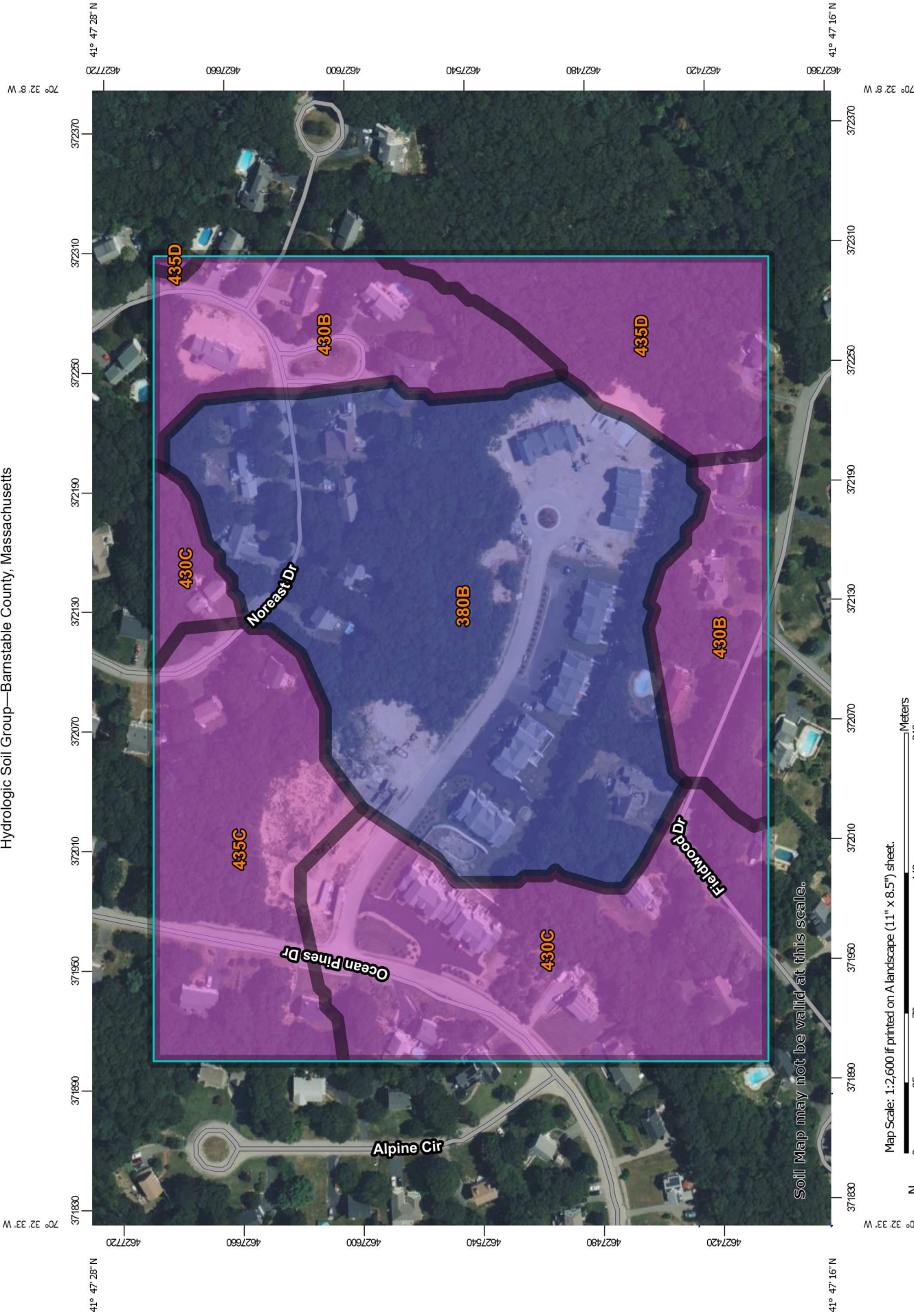
PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.289 (0.235-0.352)	0.360 (0.293-0.440)	0.477 (0.387-0.584)	0.574 (0.463-0.706)	0.708 (0.552-0.906)	0.807 (0.616-1.05)	0.913 (0.678-1.23)	1.04 (0.722-1.41)	1.23 (0.820-1.72)	1.39 (0.904-1.97)
10-min	0.409 (0.334-0.499)	0.511 (0.416-0.623)	0.677 (0.549-0.828)	0.814 (0.657-1.00)	1.00 (0.782-1.28)	1.14 (0.873-1.49)	1.29 (0.961-1.75)	1.47 (1.02-2.00)	1.74 (1.16-2.43)	1.97 (1.28-2.79)
15-min	0.482 (0.392-0.587)	0.601 (0.489-0.733)	0.795 (0.645-0.974)	0.957 (0.771-1.18)	1.18 (0.920-1.51)	1.34 (1.03-1.75)	1.52 (1.13-2.06)	1.73 (1.20-2.35)	2.05 (1.37-2.86)	2.32 (1.51-3.29)
30-min	0.693 (0.565-0.846)	0.863 (0.703-1.05)	1.14 (0.925-1.40)	1.37 (1.11-1.69)	1.69 (1.32-2.16)	1.93 (1.47-2.51)	2.18 (1.62-2.94)	2.48 (1.72-3.37)	2.93 (1.96-4.10)	3.32 (2.16-4.71)
60-min	0.905 (0.738-1.10)	1.13 (0.916-1.37)	1.49 (1.21-1.82)	1.79 (1.44-2.20)	2.20 (1.71-2.81)	2.50 (1.91-3.27)	2.83 (2.11-3.83)	3.23 (2.24-4.38)	3.82 (2.55-5.33)	4.32 (2.81-6.13)
2-hr	1.22 (1.00-1.48)	1.52 (1.25-1.84)	2.01 (1.64-2.44)	2.42 (1.96-2.95)	2.97 (2.34-3.78)	3.39 (2.61-4.39)	3.83 (2.88-5.15)	4.38 (3.07-5.89)	5.20 (3.50-7.19)	5.91 (3.89-8.30)
3-hr	1.44 (1.19-1.74)	1.79 (1.47-2.16)	2.35 (1.93-2.85)	2.82 (2.30-3.43)	3.46 (2.74-4.38)	3.94 (3.05-5.08)	4.46 (3.37-5.95)	5.08 (3.59-6.80)	6.03 (4.09-8.29)	6.85 (4.54-9.56)
6-hr	1.88 (1.56-2.26)	2.30 (1.90-2.75)	2.97 (2.46-3.57)	3.54 (2.90-4.26)	4.31 (3.43-5.40)	4.88 (3.81-6.22)	5.50 (4.18-7.24)	6.23 (4.44-8.25)	7.33 (5.02-9.97)	8.26 (5.53-11.4)
12-hr	2.39 (2.00-2.85)	2.86 (2.38-3.40)	3.62 (3.01-4.32)	4.25 (3.51-5.09)	5.12 (4.10-6.34)	5.77 (4.53-7.26)	6.45 (4.92-8.36)	7.24 (5.22-9.48)	8.37 (5.81-11.3)	9.31 (6.31-12.7)
24-hr	2.89 (2.43-3.41)	3.41 (2.87-4.03)	4.26 (3.57-5.05)	4.98 (4.14-5.92)	5.95 (4.80-7.30)	6.69 (5.29-8.33)	7.46 (5.72-9.53)	8.31 (6.05-10.8)	9.50 (6.66-12.6)	10.5 (7.16-14.1)
2-day	3.33 (2.82-3.90)	3.93 (3.33-4.61)	4.91 (4.15-5.78)	5.73 (4.81-6.76)	6.85 (5.57-8.32)	7.70 (6.13-9.49)	8.58 (6.63-10.8)	9.54 (7.03-12.2)	10.9 (7.72-14.3)	12.0 (8.29-16.0)
3-day	3.65 (3.11-4.26)	4.28 (3.64-5.00)	5.31 (4.50-6.21)	6.16 (5.19-7.24)	7.33 (5.99-8.87)	8.22 (6.58-10.1)	9.14 (7.10-11.5)	10.1 (7.51-12.9)	11.5 (8.23-15.1)	12.6 (8.80-16.7)
4-day	3.93 (3.36-4.58)	4.57 (3.90-5.33)	5.62 (4.78-6.56)	6.49 (5.49-7.60)	7.69 (6.30-9.26)	8.60 (6.90-10.5)	9.53 (7.43-11.9)	10.5 (7.84-13.4)	11.9 (8.55-15.5)	13.0 (9.12-17.2)
7-day	4.67 (4.01-5.40)	5.33 (4.58-6.17)	6.42 (5.49-7.45)	7.32 (6.23-8.52)	8.56 (7.06-10.2)	9.52 (7.68-11.5)	10.5 (8.20-12.9)	11.5 (8.62-14.5)	12.8 (9.28-16.5)	13.8 (9.79-18.1)
10-day	5.35 (4.61-6.16)	6.04 (5.20-6.96)	7.17 (6.15-8.28)	8.10 (6.92-9.40)	9.39 (7.77-11.1)	10.4 (8.42-12.5)	11.4 (8.94-13.9)	12.4 (9.36-15.5)	13.7 (9.99-17.6)	14.7 (10.5-19.1)
20-day	7.36 (6.40-8.42)	8.15 (7.07-9.33)	9.43 (8.16-10.8)	10.5 (9.04-12.1)	12.0 (9.98-14.1)	13.1 (10.7-15.6)	14.2 (11.2-17.2)	15.3 (11.7-19.0)	16.6 (12.3-21.1)	17.6 (12.7-22.6)
30-day	9.06 (7.91-10.3)	9.93 (8.66-11.3)	11.4 (9.87-13.0)	12.5 (10.8-14.4)	14.2 (11.9-16.5)	15.4 (12.7-18.2)	16.7 (13.2-20.0)	17.8 (13.7-21.9)	19.2 (14.3-24.1)	20.1 (14.6-25.7)
45-day	11.2 (9.83-12.7)	12.2 (10.7-13.8)	13.8 (12.0-15.7)	15.1 (13.1-17.2)	16.9 (14.2-19.6)	18.4 (15.1-21.5)	19.7 (15.7-23.4)	20.9 (16.2-25.6)	22.3 (16.7-27.9)	23.3 (17.0-29.5)
60-day	13.0 (11.5-14.8)	14.1 (12.4-16.0)	15.8 (13.9-17.9)	17.3 (15.0-19.6)	19.2 (16.3-22.2)	20.8 (17.2-24.3)	22.3 (17.8-26.3)	23.5 (18.3-28.7)	25.0 (18.8-31.1)	25.9 (19.1-32.7)

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

[Back to Top](#)

PF graphical

Hydrologic Soil Group—Barnstable County, Massachusetts




Map Scale: 1:2,600 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84











MAP LEGEND









Area of Interest (AOI)
 Area of Interest (AOI)

Soils





Soil Rating Polygons

-  A
-  A/D
-  B
-  B/D
-  C
-  C/D
-  D
-  Not rated or not available


Soil Rating Lines

-  A
-  A/D
-  B
-  B/D
-  C
-  C/D
-  D
-  Not rated or not available






Soil Rating Points

-  A
-  A/D
-  B
-  B/D


Water Features

-  Streams and Canals





Transportation

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

Background

-  Aerial Photography

Soils

-  C
-  C/D
-  D
-  Not rated or not available

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:25,000.

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

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

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

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

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

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

Soil Survey Area: Barnstable County, Massachusetts
 Survey Area Data: Version 19, Sep 9, 2022

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

Date(s) aerial images were photographed: Sep 5, 2020—Sep 7, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
380B	Nantucket sandy loam, 3 to 8 percent slopes	B	11.8	38.3%
430B	Barnstable sandy loam, 3 to 8 percent slopes	A	5.1	16.4%
430C	Barnstable sandy loam, 8 to 15 percent slopes	A	6.6	21.5%
435C	Plymouth loamy coarse sand, 8 to 15 percent slopes	A	4.5	14.6%
435D	Plymouth loamy coarse sand, 15 to 35 percent slopes	A	2.8	9.2%
Totals for Area of Interest			30.8	100.0%

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

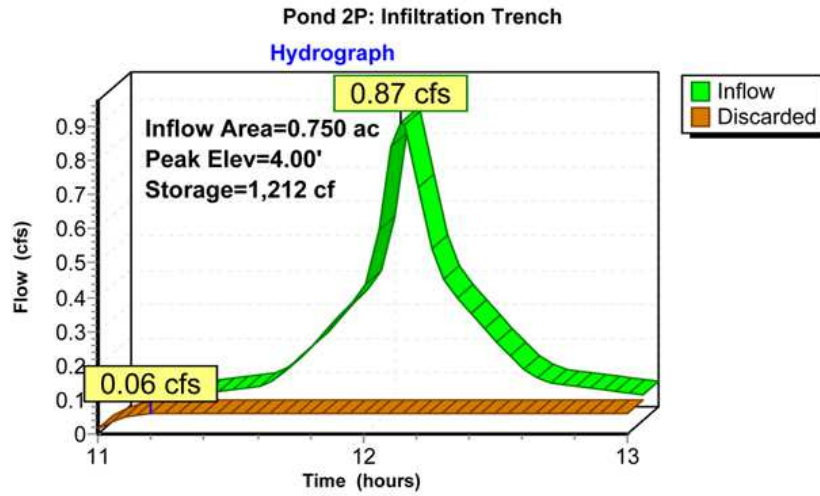
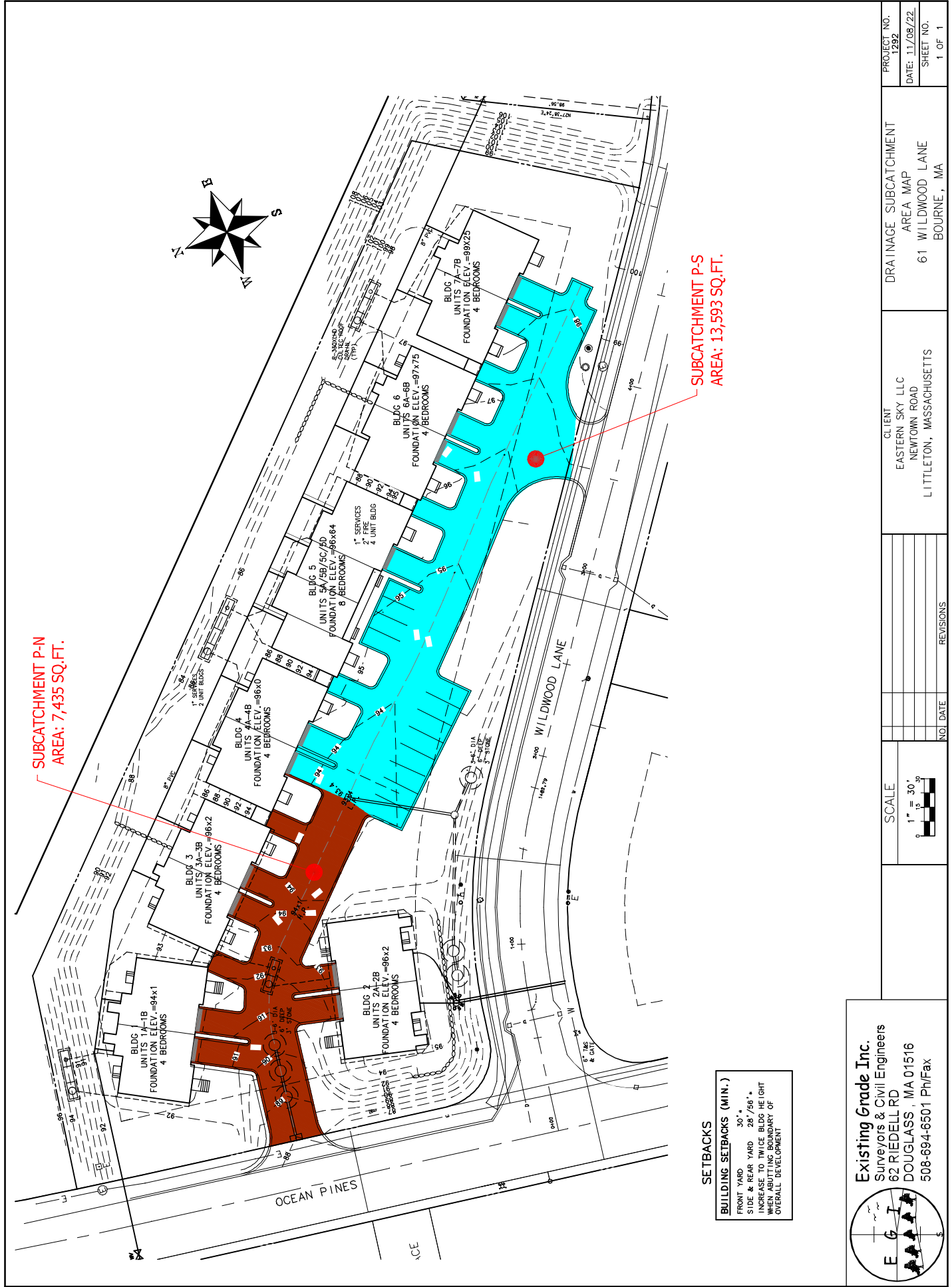


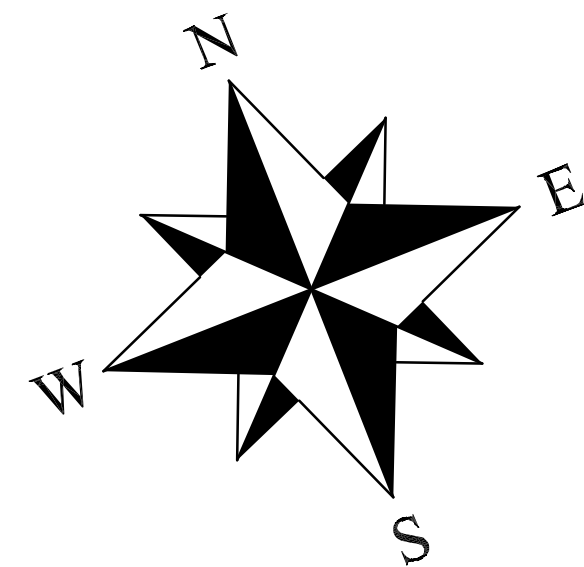
Table 2.3.3. 1982 Rawls Rates¹⁸

Texture Class	NRCS Hydrologic Soil Group (HSG)	Infiltration Rate Inches/Hour
Sand	A	8.27
Loamy Sand	A	2.41
Sandy Loam	B	1.02
Loam	B	0.52
Silt Loam	C	0.27
Sandy Clay Loam	C	0.17
Clay Loam	D	0.09
Silty Clay Loam	D	0.06
Sandy Clay	D	0.05
Silty Clay	D	0.04
Clay	D	0.02

¹⁸ Rawls, Brakensiek and Saxton, 1982

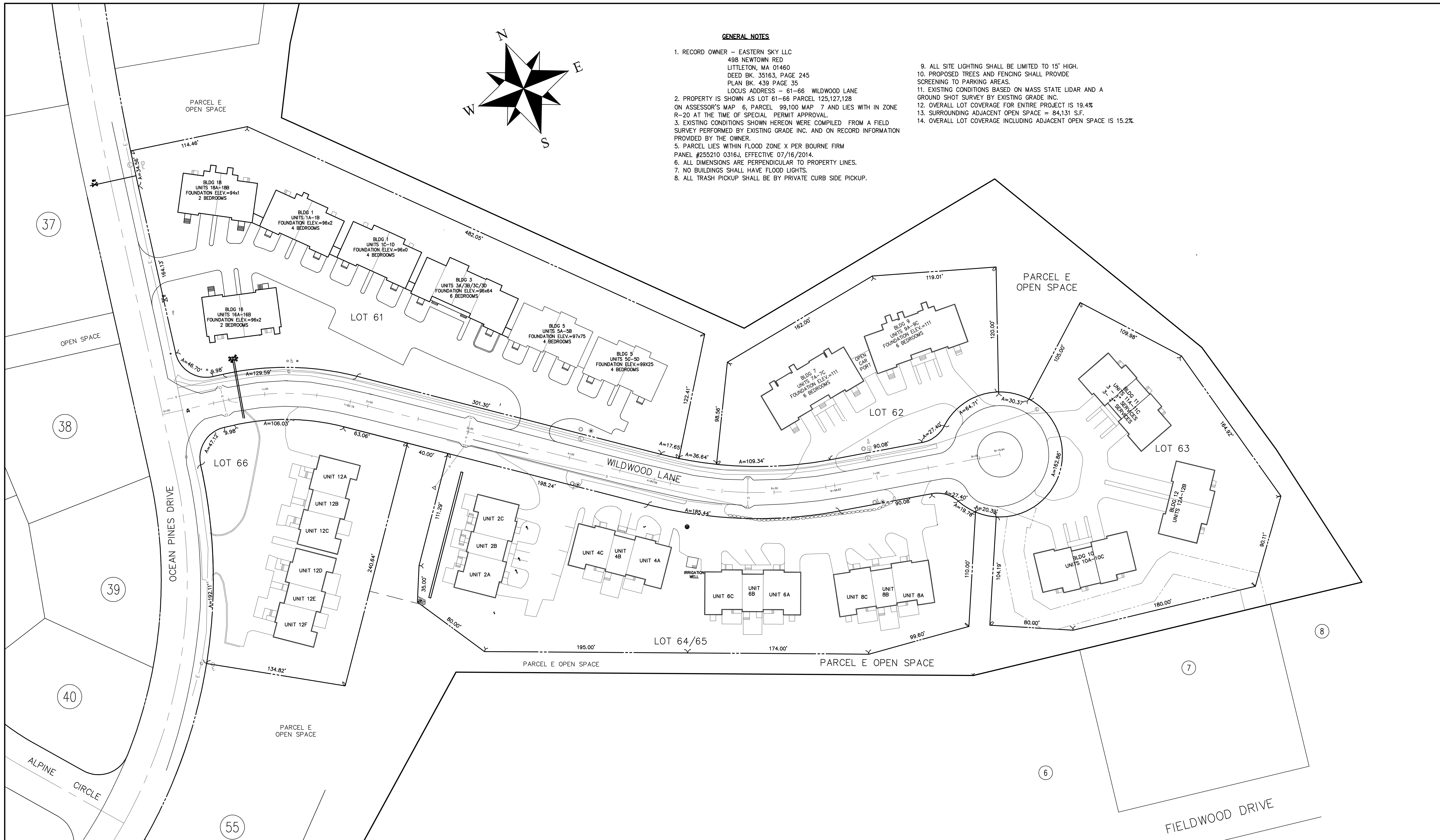


Existing Grade Inc.
 Surveyors & Civil Engineers
 62 RIEDELL RD
 DOUGLASS, MA 01516
 508-694-6501 Ph/Fax



GENERAL NOTES

- RECORD OWNER - EASTERN SKY LLC
498 NEWTOWN RD
LITTLETON, MA 01460
DEED BK. 35163, PAGE 245
PLAN BK. 439 PAGE 35
LOCUS ADDRESS - 61-66 WILDWOOD LANE
- PROPERTY IS SHOWN AS LOT 61-66 PARCEL 125,127,128 ON ASSESSOR'S MAP 6, PARCEL 99,100 MAP 7 AND LIES WITH IN ZONE R-20 AT THE TIME OF SPECIAL PERMIT APPROVAL.
- EXISTING CONDITIONS SHOWN HEREON WERE COMPILED FROM A FIELD SURVEY PERFORMED BY EXISTING GRADE INC. AND ON RECORD INFORMATION PROVIDED BY THE OWNER.
- PARCEL LIES WITHIN FLOOD ZONE X PER BOURNE FIRM PANEL #255210 0316J, EFFECTIVE 07/16/2014.
- ALL DIMENSIONS ARE PERPENDICULAR TO PROPERTY LINES.
- NO BUILDINGS SHALL HAVE FLOOD LIGHTS.
- ALL TRASH PICKUP SHALL BE BY PRIVATE CURB SIDE PICKUP.
- ALL SITE LIGHTING SHALL BE LIMITED TO 15' HIGH.
- PROPOSED TREES AND FENCING SHALL PROVIDE SCREENING TO PARKING AREAS.
- EXISTING CONDITIONS BASED ON MASS STATE LIDAR AND A GROUND SHOT SURVEY BY EXISTING GRADE INC.
- OVERALL LOT COVERAGE FOR ENTIRE PROJECT IS 19.4%
- SURROUNDING ADJACENT OPEN SPACE = 84,131 S.F.
- OVERALL LOT COVERAGE INCLUDING ADJACENT OPEN SPACE IS 15.2%



Existing Grade Inc.
Surveyors & Civil Engineers
62 Riedell Road
Douglas, MA. 01516
508-694-6501 Ph/Fax

SCALE

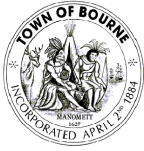
SCALE 1" = 40'

NO.	DATE	BY	REVISIONS

CLIENT
EASTERN SKY LLC
NEWTOWN ROAD
LITTLETON, MASSACHUSETTS

OVERALL AS BUILT PLAN
WILDWOOD LANE
BOURNE, MA

OVERALL_AS_BUILT_PLAN
PROJECT NO. 1292
DATE: 05/15/23
SHEET NO. 1 of 1



JENNIFER COPELAND
TOWN PLANNER
jcopeland@townofbourne.com
508-759-0600 ext. 1347

TOWN OF BOURNE
Office of the Town Planner
TOWN HALL
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M E M O R A N D U M

To: Ken Murphy, Building Inspector

Cc: Hebb Builders, Applicant

From: Jennifer Copeland, Town Planner

Date: August 3, 2023

Re: Site Plan Review for 3 A-D Wildwood Lane, Building Permit, Map 6 Parcel 125 Lot 61
B-23-104, B-23-107, B-23-118, and B-23-120, Bourne, MA

The above mentioned building permits are subject to an open space community special permit #38 from 1987. According to the conditions of the permit and the zoning bylaw section 4644 - Open Space Community. The multifamily portion of this development has a maximum of 48 units with 90 bedrooms. The approved development plan and the special permit have also provided development constraints, such as number of units and setbacks. This review is applicable to 3 A-D Wildwood Lane. Separate permits will be applied for in the future for the remaining units located at 1A-D Wildwood Ln, 16 Ocean Pine Drive and 18 Ocean Pine Drive.

Per the Lot 61 site layout plan dated June 13, 2022 and revised May 15, 2023, the structures comply with the side and rear setbacks to the property line. Lot 61 has a total of 26 bedrooms and there are not more than 20 dwelling units in a single structure. The structures provide a separation of no less than twice the building height from the boundary of the overall development. The parking areas are not located within the front yard and are screened with arborvitae plants. The parking area is located more than 75 feet from the boundary of the overall development plan. The parking areas are separated from the guest parking area by more than 20 feet. Lighting complies per note 9 and shall be less than 15 feet high.

The developer provided an overall as-built plan dated May 15, 2023 and the lot coverage for the entire project is 19.4%, below the maximum of 20%. The development complies with the open space requirements such that no land therein shall be sold and no lot line or structure altered from that shown on the Overall Development Plan so as to increase the extent of nonconformity with the standard dimensional regulations of the Zoning Bylaw. Lastly, a stamped stormwater report dated Nov. 9, 2022 from Existing Grade, Inc. has been provided to the Planning Office.

Please note any changes to the following constraints or requirements would require an amendment to the special permit. Feel free to contact me should you have any questions.

EXISTING GRADE, INC.

Land Surveyors - Civil Engineers

November 9, 2023

Ocean Dunes LLC

Mr. Brian Hebb

498 Newtown Rd

Littleton, MA 01460-2206

RE: Storm Water Drainage Response for Wildwood Condominium

Ocean Dunes

Wildwood Lane

Bourne, Massachusetts

Mr Hebb:

Existing Grade Inc. is writing in response to the concerns raised regarding the drainage design and performance of the Wildwood Condominium Project located on Wildwood Lane (Town of Bourne Assessors Map 6, Parcels 125 - 128). Bourne, MA .

Infiltration and Leach Pits: The site drainage systems for the Wildwood Condominium Project have been meticulously designed to handle extreme weather events, including the 100-year storm event. Infiltrators and leach pits have been strategically placed to capture and manage stormwater effectively. These pits are designed to allow water to slowly infiltrate into the ground, reducing the risk of flooding and erosion while promoting natural groundwater recharge.

Runoff Management: The project has been designed to management runoff , with approximately 90% of runoff being retained within the lot boundaries. This approach minimizes the impact and ensures that only a small percentage of runoff is discharged onto Wildwood Lane. The original design of the Subdivision would have calculated a much larger contribution area entering the Wildwood Road drainage system.

Catch Basin Performance: The developer has reported that catch basins located on Wildwood Lane have not experienced surcharging. This indicates that the drainage pipe network and pond are operating as intended.

Additional Pavement: The installation of extra pavement was a requirement by the local fire chief to ensure the safety and accessibility of the development for emergency services. This additional pavement does not negatively impact stormwater drainage as the majority of the pavement is self contained on the lots and does not flow onto Wildwood Lane; instead, it serves an essential safety purpose.

Grading Modification: The adjustment of the grading behind lot 63 was carried out to meet the requirements of the water department for looping water lines. This modification ensures that the development has a reliable and redundant water supply, which is a crucial element in any residential project. It does not have any effect on water entering Wildwood Lane but rather supports the overall infrastructure's integrity.

Pond Design: The original pond design for the subdivision most likely followed the Barnstable method, which did not require outlets. This design approach aligned with the local standards at the time. There are numerous ponds in Bourne designed and constructed per this method. The subdivisions stormwater management was developed in accordance with established and accepted practices at the time.

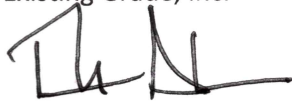
Pond Revamping: The developer's proactive action to revamp the pond bottom and wick approximately four years ago has significantly improved the pond's capacity to infiltrate water. This enhancement indicates a commitment to maintaining and improving the stormwater infrastructure over time, which is essential for long-term effective stormwater management.

Silt and Water Runoff: Acknowledging the concerns related to silt and water runoff into Ocean Pines Drive due to poor site development practices on Lot 61, corrective measures have been implemented . These measures include enhanced erosion control and sediment management practices to prevent further silt and water runoff issues. These improvements will help maintain water quality and reduce the environmental impact of the project.

Summary: EGI finds it highly improbable that the development of the sites has had a highly negative impact on the Ocean Pines drainage system. The effort to self contain the stormwater on each lot and designing for the 100 year storm events (greatly above the requirements at the time of approval) have ensured that less water is entering Ocean Pines than originally designed for.

Please feel free to contact this office should you have any questions or concerns.

Very Truly Yours,
Existing Grade, Inc.



Edwin Gless, P.E., P.L.S.
President

