

RECEIVED

By Bourne Health Department at 2:25 pm, Nov 22, 2022



holmes and mcgrath

civil engineers and land surveyors

800 Falmouth Road, Suite 301C Mashpee MA 02649
508-548-3564 office@holmesandmcgrath.com

November 9, 2022

Ms. Terri Guarino, R.S., C.H.O.
Bourne Board of Health Agent
24 Perry Avenue
Bourne, MA 02532

RE: 3 Sunny Lane, Bourne, Liam Coyne

Dear Ms. Guarino:

On behalf of our client, Liam Coyne, and in accordance with the State Environmental code, Title 5, 310 CMR 15.410, please accept this letter of request to be heard before the Board of Health at their next meeting to discuss relief from the below listed requirements of 310CMR 15.00 (Title 5) and/or Local Board of Health Regulations, for the installation of a new Title 5 sewage disposal system to consist of a DEP approved NitriFAST alternative treatment system for remedial use, followed by UV treatment and an aggregateless leaching system.

The project involves the removal of the existing 3-bedroom dwelling, existing septic, and the construction of a new 3-bedroom dwelling with a new sewage disposal system on the subject property. The existing systems to be replaced, consists of a septic tank and leaching pit, which are located within the season high ground water. The new dwelling will be elevated as required for construction within the FEMA flood zone.

The project site is within 100 feet of a wetland resource area. The seasonal high ground water was recorded at 4" below the ground level. Given these two challenging conditions, a NitriFAST system and UV treatment are proposed to mitigate the location of the leaching system relative to the wetland resource areas located south of the site. The soil absorption system will be located 60 feet from a wetland resource area, in conformance with Title 5, but less than the local requirement of 150 ft. Given the shape and size of the lot, no other viable location for the S.A.S exists on the site. The S.A.S is proposed to be constructed with Quick4 Plus Standard Low-Profile Chambers without aggregate, in accordance with their DEP approval. This allows for a reduction in the size of the S.A.S. when compared to that of a conventional pipe and stone system. This reduction in area provides for an increase in the setback from the wetland resource areas. In accordance with DEP remedial approval for the NitriFAST system, the separation between the observed groundwater and the leaching systems will be 3 feet. This allows for a reduction in the impacts of the height of the system on the lot in the flood zone. A UV treatment system is proposed after the NitriFAST to provide further treatment of the effluent. The entire system will be surrounded by retaining walls placed adjacent to the proposed new dwelling.



holmes and mcgrath

civil engineers and land surveyors

800 Falmouth Road, Suite 301C Mashpee MA 02649
508-548-3564 office@holmesandmcgrath.com

The area under the dwelling, adjacent to the retaining wall will be open. An impervious barrier will be provided along the interior of the walls.

Due to these circumstances, the setback distances requested are as follows:

NO	DESCRIPTION	BYLAW REQUIRED	STATE REQUIRED	PROPOSED	WAIVER
1.	S.A.S Setback to Wetland (310CMR 15.211)	150'	50'	60'	90'
2.	S.A.S. Setback to Groundwater (310CMR 15.212)	5'	5'	3'	N/A*
3.	MicroFast tank to Foundation (310CMR 15.211)	10'	10'	2'	8'

*Note: 2' reduction in ground water separation permitted under DEP remedial approval for NitrifAST.

No additional bedrooms are to be created, and therefore, there is no increase in sanitary design flow.

An Order of Conditions from the Bourne Conservation Commission, was issued on October 7, 2022 (DEP SE# 7-2216) for the project

In Consideration of the above, we request the Town of Bourne, Board of Health review and approve the proposed Title 5 Septic Upgrade Design at the above referenced address.

Please feel free to contact me if you have any questions or require any additional information.

Sincerely,

N. Douglas Schneider, P.E., P.L.S.

- Encl. 6 copies Plan entitled: "Plan of Sewage disposal system prepared for Liam Coyne" dated Aug 8, 2022
 Nitrogen Loading Calculations for existing and proposed conditions.
 Sketch of existing floor plan

Bank of America
ACH R/T 011000138

1318

53-13/110 MA
27382

HOLMES & McGRATH
205 WORCESTER CT STE A4
FALMOUTH, MA 02540-3920

11/9/2022

PAY TO THE ORDER OF Town of Bourne

\$ **250.00

Two Hundred Fifty and 00/100***** DOLLARS

Town of Bourne
24 Perry Avenue
Buzzards Bay, MA 02532


AUTHORIZED SIGNATURE

MEMO
Septic System Permit Fee 3 Sunny Lane

⑈001318⑈ ⑆011000138⑆ 466014764989⑈

Bank of America
ACH R/T 011000138

1317

53-13/110 MA
27382

HOLMES & McGRATH
205 WORCESTER CT STE A4
FALMOUTH, MA 02540-3920

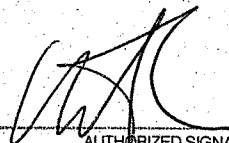
11/9/2022

PAY TO THE ORDER OF Town of Bourne

\$ **125.00

One Hundred Twenty-Five and 00/100***** DOLLARS

Town of Bourne
24 Perry Avenue
Buzzards Bay, MA 02532


AUTHORIZED SIGNATURE

MEMO
Town Filing Fee BOH \$125 3 Sunny Lane

⑈001317⑈ ⑆011000138⑆ 466014764989⑈

November 9, 2022

Ms. Terri Guarino, R.S., C.H.O.
Bourne Board of Health Agent
24 Perry Avenue
Bourne, MA 02532

RE: Application for Local Upgrade Approval, 3 Sunny Lane, Bourne, MA

Dear Ms. Guarino:

This letter is in regard the above referenced application.

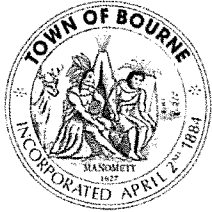
Please accept this letter as my written authorization to allow N. Douglas Schneider, P.E., P.L.S. of Holmes and McGrath and/or Associates to represent this property on my behalf.

If you have any questions, please feel free to contact me.

Sincerely,



Liam Coyne
22 Fair View Lane
Norton, MA 02766



Bourne Board of Health Application for Local Upgrade Approvals



In accordance with the established procedures of the Bourne Board of Health, this application is for septic variances and waivers which have not been approved administratively and require approval at a public meeting. Please use the following application form for guidance on how to apply for variances and waivers which serve new construction, changes in use, or increases in flow to on-site sewage disposal systems with design flows of less than 10,000 gallons/ day.

1. Facility Name and Address:

Owner's Name Liam Coyne
Facility's Street Address 3 Sunny Lane, Bourne, MA
Owner's Telephone Number 508-638-8722
Owner's E-mail Address liam@galwayconcepts.com
Owner's Mailing Address 22 Fair View Lane, Norton, MA 02766

2. Applicant or Preparer's Name and Address (if different from above):

Preparer's Name N. Douglas Schneider, P.E., P.L.S.
Company Holmes & McGrath
Telephone Number 508-5483564
E-mail Address dschneider@holmesandmcgrath.com
Mailing Address 800 Falmouth Road, Suite 301C
State/ Zip Code Mashpee, MA 02649

3. Type of Facility (check all that apply):

Residential Commercial Institutional School Industrial

4. Describe Facility (i.e., single-family dwelling, 45 seat restaurant): Single Family Residence with three bedrooms. Zoning district = R-40. Assessors Map 26.3 Parcel 25.

5. Type of Existing System (check all that apply): Conventional Title 5 I/A System Privy

Pressure Dosed Single Cesspool Overflow Cesspool Systems Other

6. Describe Existing System / Proposed Components: Failed existing system: septic tank + single leaching pit system. Propose to install new Title 5 Sewage Disposal System to consist of DEP approved NitriFAST alternative treatment system for remedial use, followed by UV treatment and an aggregateless leaching system.

7. Design Flow per 310 CMR 15.203 (in gallons/ day):

Design flow of existing system: 330 GPD

Design flow of proposed upgraded system: 330 GPD

Total design flow of facility: 336 GPD (Capacity)

8. Enclose a letter of request for variances/ waivers which makes reference to the specific provisions of Title 5 and/ or the Board Bourne of Health Regulations for which a variance is sought. Please use this opportunity to demonstrate compliance with 310 CMR 15.410, and to justify the relevant facts and circumstances of the individual case. Note that with regard to variances for new construction, enforcement of the provision from which a variance is sought must be shown to deprive the applicant of substantially all beneficial use of the subject property in order to be manifestly unjust. Be sure to explain why full compliance with the applicable regulations is not feasible, and how a level of environmental protection that is at least equivalent to that provided under Title 5 and the Board of Health Regulations can be achieved without strict application of said regulations. (See Attached)

9. In order for this Application to be deemed complete, it must be accompanied by the following:

- Supplemental permit application
- \$125 filing fee + applicable permit application fees paid to the Town of Bourne.
- Letter of request describing nature of variances (see samples)
- Six sets of complete plans and specifications, plus one electronic copy. One with original stamp of design engineer.
- Nitrogen Loading Calculation Sheet(s) if applicable
- If abutter notification is required, one of each of the following must be submitted:
 - A copy of the certified list of abutters from the Assessor's Department
 - Sample letter for abutter notification postmarked 10 days prior to meeting date
 - Proof of certified mailing (receipts) meeting requirements of 310 CMR 15.405(2)
- Proposals for installation of Innovative/ Alternative septic systems must be accompanied by:
 - A copy of the Certification for Use including technology specific conditions
 - Draft disclosure notice for the I/A technology to be recorded in the deed
- Hydrogeologic data for all leaching facilities proposed within 100ft of a wetland/ watercourse
- Percentage of Increase Worksheet may be required for waivers or increases in flow

10. Certification:

"I certify under penalty of law that this document and all attachments, to the best of my knowledge and belief, are true, accurate, and complete. I am aware that there may be significant consequences for submitting false information, including, but not limited to, penalties or fine and/or imprisonment for deliberate violations."

Facility Owner's Signature William Coyne Date 7 Nov 2022

Print Name Liam Coyne

Signature of Preparer  Date November 9, 2022

Print Name N. Douglas Schneider, P.E., P.L.S., Holmes and McGrath

For Office Use Only

Completed Application Received: _____ Reviewed By: _____

Hearing Date: _____ Permit #: _____ Existing
_____ Proposed

Septic Plans Dated: _____ Floor Plans Dated: _____

Drawn By: _____ Drawn By: _____

Before BOH in past: NO YES *If yes, enclose copy of minutes.* (Date _____)

Notes: _____

Circle all that apply: _____ Approved _____ Continued _____ Disapproved _____ Other

Notes: _____

NOTICE OF ALTERNATIVE SEWAGE DISPOSAL SYSTEM

M.G.L. c. 21A, § 13 and 310 CMR 15.0287(10)

ADDRESS OF PROPERTY SERVED BY ALTERNATIVE SYSTEM: 3 Sunny Lane, Bourne, MA

TITLE REFERENCE FOR PROPERTY SERVED BY ALTERNATIVE SYSTEM *[check and complete each that applies]:*

Deed recorded with the BARNSTABLE Registry of Deeds in Book 33095, Page 347

Certificate of Title No. _____ issued by the Land Registration Office of the _____
Registry District

Source of title other than by deed _____

NAME(S) OF OWNER OF PROPERTY SERVED BY ALTERNATIVE SYSTEM: Liam Coyne

OWNER(S) MAILING ADDRESS: 22 Fair View Lane, Norton, MA 02766

WHEREAS, Section 15.280 of Title 5 of the State Environmental Code (“Approval of Alternative Systems”), provides for the Massachusetts Department of Environmental Protection (the “Department”) to approve or certify, as appropriate, all proposals to construct, upgrade or replace on-site sewage disposal systems using alternative systems;

WHEREAS, owners and/or operators of approved or certified alternative systems are subject to general conditions, as specified in Section 15.287 of Title 5 of the State Environmental Code, 310 CMR 15.287, and may be subject to special conditions, as specified in the Department’s approvals or certifications; such general and special conditions potentially including, without limitation, requirements relating to the use of trained operators, periodic inspections, maintenance, sampling, reporting and/or recordkeeping;

WHEREAS, the owners and/or operators this alternative system acknowledges and agrees to comply with the provisions of all of the Bourne Board of Health Alternative Septic System Regulations and any other conditions for the existence of the system;

WHEREAS, Section 15.287(10) of Title 5 of the State Environmental Code, 310 CMR 15.287(10), requires that “prior to obtaining a Certificate of Compliance for installation of a new or upgraded system, the system owner shall record in the chain of title for the property served by the alternative system in the Registry of Deeds and/or Land Registration Office, as applicable, a Notice disclosing both the existence of the alternative on-site system and the Department’s approval of the system. The system owner shall also provide evidence of such recording to the Bourne Board of Health [;]” and

WHEREAS, the Property is served by an alternative sewage disposal system.

NOW, THEREFORE, Notice of an alternative sewage disposal system is hereby given for the above-referenced Property, as follows:

1. Existence. An alternative system has been installed as a new or upgraded alternative sewage disposal system, on or adjacent to the Property, and serves the Property. The trade name and model number(s) of the alternative system are as follows:

Trade name of technology: Micro Fast Treatment System

Manufacturer Name: Bio-Microbics, Inc.

Model number(s): NitriFAST 0.5

A copy of the Department of Environmental Protection’s Approval/Certification is available online at the Department’s website:

<https://www.mass.gov/guides/title-5-innovativealternative-technology-approval-letters>

2. Approval/Certification. On 11-05-2012 [date], the Department, pursuant to its authority under the section of Title 5 as specified below, approved or certified the technology used in the above referenced alternative system, under MassDEP Transmittal Number W072367 [Transmittal Number].

[Check one of the following, as applicable:]

- Approved for remedial use under 310 CMR 15.284
- Approved for piloting under 310 CMR 15.285
- Provisionally approved under 310 CMR 15.286
- Certified for general use under 310 CMR 15.288

This Notice of Alternative Sewage Disposal System must be submitted to the Bourne Board of Health

WITNESS the execution hereof under seal this _____ day of _____, 20____, made by the above-named Alternative System Owner(s).

[Alternative System Owner(s) Signature(s)]

Print Name(s): Liam Coyne

COMMONWEALTH OF MASSACHUSETTS

_____, ss

On this ____ day of _____, 20__, before me, the undersigned notary public, personally appeared _____ (name of document signer), proved to me through satisfactory evidence of identification, which were _____, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that (he) (she) signed it voluntarily for its stated purpose.

(Official signature and seal of notary)

Approved and Accepted By:

Terri Guarino, R.S., C.H.O.
Health Director
Town of Bourne



holmes and mcgrath

civil engineers and land surveyors

800 Falmouth Road, Suite 301C Mashpee MA 02649

508-548-3564 office@holmesandmcgrath.com

November 9, 2022

Abutters to referenced property.

RE: Notice of Board of Health Public Hearing 3 Sunny Lane, Bourne - Liam Coyne

Dear Abutter:

In accordance with the State Environmental Code, Title 5: 310 CMR 15.00, and Section 1 of the Town of Bourne Board of Health Regulations, you are hereby notified that Liam Coyne, has requested a hearing before the Bourne Board of Health for relief from Title 5 and/or the Town of Bourne Board of Health Regulations for a new sewage disposal system on the subject property. The new system will consist of DEP approved NitrifAST Alternative treatment system for remedial use, followed by UV treatment and an aggregateless leaching system. The NitrifAST system and UV treatment are proposed to mitigate the location of the leaching system relative to wetland resource areas located south of the site. In accordance with DEP remedial approval for the NitrifAST system the separation between the observed groundwater and the leaching systems will be 3 feet. This allows for a reduction in the impacts of the height of the system on the lot. The entire system will be surrounded by a retaining wall. An impervious barrier will be provided along the interior of the wall. The location of the property for this proposal is 3 Sunny Lane, Bourne, MA.

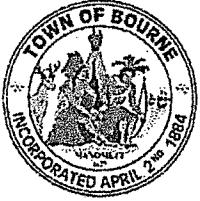
Due to these circumstances, the setback distances requested are as follows:

NO	DESCRIPTION	BYLAW REQUIRED	STATE REQUIRED	PROPOSED	WAIVER
1.	S.A.S Setback to Wetland (310CMR 15.211)	150'	50'	60'	90'
2.	S.A.S. Setback to Groundwater (310CMR 15.212)	5'	5'	3'	N/A*
3.	MicroFast tank to Foundation (310CMR 15.211)	10'	10'	2'	8'

*Note: 2' reduction in ground water separation permitted under DEP remedial approval for NitrifAST.

This hearing is tentatively scheduled for Wednesday December 14, 2022 at 6:00 pm, **IN PERSON** at the Bourne Veteran's Memorial Community Center, 239 Main Street, Conference Room 2, Buzzards Bay, MA. Information regarding the hearing may be available for your review one week prior to the meeting at the Bourne Health Department, 24 Perry Avenue, Buzzards Bay, Monday through Friday from 8:30 am until 4:30 pm.

Meeting agendas are posted on the Town of Bourne website, www.townofbourne.com/health no less than 48 hours in advance of the hearing. Please confirm the date, time, and location of the meeting with the Town, in case of any changes. Should you have any questions or concerns, please do not hesitate to contact me or the Bourne Health Department at 508-759-0600 ext. 1513.



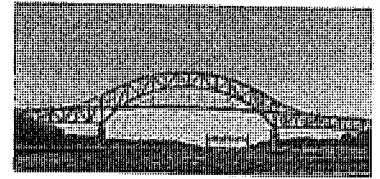
TOWN OF BOURNE

Board of Assessors

24 Perry Avenue

Buzzards Bay, MA 02532

(508) 759-0600 Ext. 1510 ♦ Fax (508) 759-8026



Michael Leitzel, Chairperson
Ellen Doyle Sullivan, Clerk
Donna Barakauskas, Member

Rui Pereira, MAA
Director of Assessing

October 31, 2022

Holmes & McGrath

Laura Nelson

800 Falmouth Rd, Ste. 301C

Mashpee, MA 02649

Re: Abutters List for Map 26.3 Parcel 25
Property address: 3 Sunny Lane

As required by the Bourne Board of Health, pursuant with section 310 CMR 15.411(1), this is to certify that the attached list of names and addresses constitutes all of the parties in interest as shown on the most recent tax list of the Town of Bourne.

Abutting properties are: Map 26.1 Parcel 138; Map 26.3 Parcels 24, 26 & 27.

Your payment of \$10.00 has been received by the Bourne Assessor's Office.

Please be advised that this abutters list is only good for 30 days from the date on this letter. Expired abutters list can be recertified for an additional filing fee.

See enclosed for abutters mailing addresses.

Board of Assessors

Ellen Doyle Sullivan
Donna Barakauskas
Michael Leitzel

Report #24: Owner Listing Report
Fiscal Year 2023

ABUTTERS LIST
LIVE
Key: IN 5359, 5571, 5573, 5574

Bourne MA

Extract: 5359
Database: 26.1-128-0
Filter: 5571, 5573, 5574
Sort:

Key	Parcel ID	Owner	Location	LC/CI	BK-Pq(Cert) /DI	Mailing Street	Mailing City	ST	Zip Cd/County
5359	26.1-128-0	SCHALLER DAVID M ETUX LINDSEY D SCHALLER	2 SUNNY LN	N	29406/288	3656 31ST STREET APT C	SAN DIEGO	CA	92104
5571	26.3-24-0	ROLPH BRADFORD F & DAWN M PISCHETOLA	5 SUNNY LN	N	19480/9	98 CHRISTIAN HILL RD	UPTON	MA	01568-1214
5573	26.3-28-0	JOHNSTON AMANDA & TODD JOHNSTON	20 MASHNEE RD	N	33506/65	319 PEMBERTON ST	PHILADELPHIA	PA	19147-3213
5574	26.3-27-0	KELLY DENNIS	15 MASHNEE RD	N	N/A/N/A	15 MASHNEE RD	BUZZARDS BAY	MA	02532

Total Records 4

7021 1970 0001 6345 9289

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee	
Extra Services & Fees (check box, add fee as appropriate)	
<input type="checkbox"/> Return Receipt (hardcopy) \$	
<input type="checkbox"/> Return Receipt (electronic) \$	
<input type="checkbox"/> Certified Mail Restricted Delivery \$	
<input type="checkbox"/> Adult Signature Required \$	
<input type="checkbox"/> Adult Signature Restricted Delivery \$	
Postage	
Total Postage and Fees	
Sent To	
Street and Apt. No. or PO Box No.	
City, State, Zip+4®	

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

NOV 10 2022

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee	
Extra Services & Fees (check box, add fee as appropriate)	
<input type="checkbox"/> Return Receipt (hardcopy) \$	
<input type="checkbox"/> Return Receipt (electronic) \$	
<input type="checkbox"/> Certified Mail Restricted Delivery \$	
<input type="checkbox"/> Adult Signature Required \$	
<input type="checkbox"/> Adult Signature Restricted Delivery \$	
Postage	
Total	
Sent To	
Street and Apt. No. or PO Box No.	
City, State, Zip+4®	

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

NOV 10 2022

7021 1970 0001 5981 3659

7021 1970 0001 5981 3666

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee	
Extra Services & Fees (check box, add fee as appropriate)	
<input type="checkbox"/> Return Receipt (hardcopy) \$	
<input type="checkbox"/> Return Receipt (electronic) \$	
<input type="checkbox"/> Certified Mail Restricted Delivery \$	
<input type="checkbox"/> Adult Signature Required \$	
<input type="checkbox"/> Adult Signature Restricted Delivery \$	
Postage	
Total	
Sent To	
Street and Apt. No. or PO Box No.	
City, State, Zip+4®	

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

NOV 10 2022

7021 1970 0001 5981 3673

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee	
Extra Services & Fees (check box, add fee as appropriate)	
<input type="checkbox"/> Return Receipt (hardcopy) \$	
<input type="checkbox"/> Return Receipt (electronic) \$	
<input type="checkbox"/> Certified Mail Restricted Delivery \$	
<input type="checkbox"/> Adult Signature Required \$	
<input type="checkbox"/> Adult Signature Restricted Delivery \$	
Postage	
Total	
Sent To	
Street and Apt. No. or PO Box No.	
City, State, Zip+4®	

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

NOV 10 2022

7021 1970 0001 5981 3680

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee	
Extra Services & Fees (check box, add fee as appropriate)	
<input type="checkbox"/> Return Receipt (hardcopy) \$	
<input type="checkbox"/> Return Receipt (electronic) \$	
<input type="checkbox"/> Certified Mail Restricted Delivery \$	
<input type="checkbox"/> Adult Signature Required \$	
<input type="checkbox"/> Adult Signature Restricted Delivery \$	
Postage	
Total Postage	
Sent To	
Street and Apt. No. or PO Box No.	
City, State, Zip+4®	

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

NOV 10 2022



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

One Winter Street Boston, MA 02108 • 617-292-5500

DEVAL L. PATRICK
Governor

TIMOTHY P. MURRAY
Lieutenant Governor

RICHARD K. SULLIVAN JR.
Secretary

KENNETH L. KIMMELL
Commissioner

REVISION OF APPROVAL FOR REMEDIAL USE

Pursuant to Title 5, 310 CMR 15.00

Name and Address of Applicant:

Bio-Microbics, Inc.
8450 Cole Parkway
Shawnee, KS 66227

Trade name of technology and models: MicroFAST® Treatment System Models *MicroFAST® 0.5, 0.75, 0.9, 1.5, 3.0, 4.5 and 9.0*; HighStrengthFAST® Treatment System Models *HighStrength FAST® 1.0, 1.5, 3.0, 4.5 and 9.0* and NitriFAST® Treatment System Models *NitriFAST® 0.5, 0.75, 1.0, 1.5, 3.0, 4.5 and 9.0* (hereinafter called the "System"). Schematic Drawings illustrating each System, a design and installation manual, an owner's manual, an operation and maintenance manual, and an inspection checklist are part of this Approval.

Transmittal Number: W 072367
Date of Issuance: June 16, 2006 (modified January 23, 2008)
Revision date: November 05, 2012

Authority for Issuance

Pursuant to Title 5 of the State Environmental Code, 310 CMR 15.000, the Department of Environmental Protection hereby issues this Approval for Remedial Use to: Bio-Microbics, Inc., 8450 Cole Parkway, Shawnee, KS 66227, (hereinafter "the Company"), approving the System described herein for Remedial Use in the Commonwealth of Massachusetts. The sale, design, installation, and use of the System are conditioned on compliance by the Company, the Designer, the Installer, the Service Contractor, and the System Owner with the terms and conditions set forth below. Any noncompliance with the terms or conditions of this Approval constitutes a violation of 310 CMR 15.000.

David Ferris, Director
Wastewater Management Program,
Bureau of Resource Protection

November 05, 2012

Date

Technology Description

The System is a Secondary Treatment Unit (STU). The Systems, MicroFAST® 0.5, 0.75, 0.9, 1.5, 3.0, 4.5 and 9.0, and HighStrengthFAST® 1.0, 1.5, 3.0, 4.5 and 9.0, and, NitriFAST® 0.5, 0.75, 0.9, 1.5, 3.0, 4.5 and 9.0 units are installed in a tank or tanks having a primary settling zone and an aerobic biological zone. Solids settle in the primary settling zone that is quiescent. In the aerobic zone, the sewage is continually agitated and aerated. Bacteria in the sewage attach to the surface of a submerged plastic media; they reproduce by consuming the organic material in the sewage.

Conditions of Approval

The term “System” refers to the STU in combination with the other components of an on-site treatment and disposal system that may be required to serve a facility in accordance with 310 CMR 15.000.

The term “Approval” refers to the technology-specific Special Conditions, the conditions applicable to all STU’s with Remedial Use Approval, the General Conditions of 310 CMR 15.287, and any Attachments.

For Secondary Treatment Units that have been issued Remedial Use Approval for the upgrade or replacement of an existing failed or nonconforming system., the Department authorizes reductions in the effective leaching area (310 CMR 15.242), the depth to groundwater (310 CMR 15.212), and/or the depth of naturally occurring pervious material (310 CMR 15.240(1)) subject to the conditions that apply to all Secondary Treatment Units Approved for Remedial Use and subject to the Special Conditions applicable to the Technology.

Special Conditions

1. The System is Secondary Treatment Unit Approved for Remedial Use. In addition to the Special Conditions contained in this Approval, the System shall comply with all the “Standard Conditions for Secondary Treatment Units Approved for Remedial Use”, except where stated otherwise in these Special Conditions.
2. The System is approved for facilities where the local approving authority finds that:
 - a) there is no increase in the actual or proposed design flow;
 - b) the System is for the upgrade of a failed, failing or nonconforming system; and
 - c) a conventional system with a reserve area, designed in accordance with the standards of 310 CMR 15.100 through 15.255, cannot feasibly be built on-site.

3. The MicroFAST® 0.5, 0.75 and 0.9, HighStrengthFAST® 1.0 and NitriFAST® 0.5, 0.75 and 0.9 are installed in the second compartment of a two-compartment tank with a total liquid capacity of at least 1,500 gallons constructed in accordance with 310 CMR 15.226.
4. The MicroFAST®, HighStrengthFAST® and NitriFAST® 1.5 are installed in the second compartment of a two compartment 3,000-gallon tank constructed in accordance with 310 CMR 15.226.
5. The MicroFAST®, HighStrengthFAST® and NitriFAST® 3.0, 4.5, and 9.0 units are installed in a separate tank constructed in accordance with 310 CMR 15.226. The units are located between a standard Title 5 septic tank, designed in accordance with 310 CMR 15.223 and 15.224, and the soil adsorption system (SAS).
6. Access shall be provided to all tanks in the primary settling and aerobic biological zones in accordance with 310 CMR 15.228 (2). The primary settling tank shall have at least three manholes with readily removable impermeable covers of durable material provided at grade. Two manholes, over the inlet and outlet of the primary settling tank, shall have a minimum opening of 20 inches. All access ports and manhole covers shall be installed and maintained at grade to allow for maintenance of the System.



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

One Winter Street Boston, MA 02108 • 617-292-5500

Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Matthew A. Beaton
Secretary

Martin Suuberg
Commissioner

APPROVAL FOR GENERAL USE Pursuant to Title 5, 310 CMR 15.000

Name and Address of Applicant:

Infiltrator Water Technologies, LLC.
P.O. Box 768
6 Business Park Road
Old Saybrook, CT 06475

Trade name of technology and model: High Capacity chamber, High Capacity H-20 chamber¹, Quick4 High Capacity chamber, Quick4 High Capacity HD chamber, Quick4 Plus High Capacity chamber (8-inch invert), Quick4 Plus High Capacity chamber (13-inch invert), Standard chamber, Quick4 Standard chamber, Quick4 Standard HD chamber, Quick4 Plus Standard chamber (5.3-inch invert), Quick4 Plus Standard chamber (8.0-inch invert), Quick4 Plus Standard LP (Low Profile) chamber (3.3-inch invert), Quick4 Plus Standard LP (Low Profile) chamber (8-inch invert), Infiltrator 3050 (Storm Tech SC-740) chamber, Equalizer 24 chamber, Quick4 Equalizer 24 chamber, Equalizer 36 chamber, Quick4 Equalizer 36 chamber, Quick4 Equalizer 24 LP (Low Profile) chamber (6 inch invert), and Quick4 Equalizer 24 LP (Low Profile) chamber (2 inch invert) (hereinafter the "System"). Schematic drawings of the System and a design and installation manual are a part of this Certification. This approval allows the installation of the above identified chambers without aggregate.

Transmittal Number: **X259183**

Date of Revision: February 19, 2015, modified June 12, 2015

Authority for Issuance

Pursuant to Title 5 of the State Environmental Code, 310 CMR 15.000, the Department of Environmental Protection hereby issues this Certification to: Infiltrator Water Technologies, LLC., P.O. Box 768, 6 Business Park Road, Old Saybrook, CT 06475 (hereinafter "the Company"), for General Use of the System described herein. The sale, design, installation, and use of the System are conditioned on compliance by the Company, the Designer, the Installer and the System Owner with the terms and conditions set forth below. Any noncompliance with the terms or conditions of this Approval constitutes a violation of 310 CMR 15.000.

David Ferris, Director
Wastewater Management Program
Bureau of Water Resources

June 12, 2015

Date

I. Design Standards

1. The models listed in Table 1 are covered under this Certification.

Table 1: Chamber Dimensions

Model	Dimensions W x L x H Inches	Invert Height Inches
Equalizer 24	15 x 100 x 11	6
Quick4 Equalizer 24	16 x 48 x 11	6
Quick4 Equalizer 24 LP (6-inch invert)	16 x 48 x 8	6 ²
Quick4 Equalizer 24 LP (2-inch invert)	16 x 48 x 8	2
Equalizer 36	22 x 100 x 13.5	6
Quick4 Equalizer 36	22 x 48 x 12	6
Standard Chamber	34 x 75 x 12	6.5
Quick4 Standard	34 x 48 x 12	8
Quick4 Standard HD	34 x 48 x 12	8
Quick4 Plus Standard (5.3-inch invert)	34 x 48 x 12	5.3
Quick4 Plus Standard (8-inch invert)	34 x 48 x 12	8
Quick4 Plus Standard LP (3.3-inch invert)	34 x 48 x 8	3.3
Quick4 Plus Standard LP (8-inch invert)	34 x 48 x 8	8 ³
Infiltrator 3050 or StormTech SC-740	51 x 85.4 x 30	22.25 ⁴
High Capacity Chamber	34 x 75 x 16	11
High Capacity H-20 ¹ Chamber	34 x 75 x 16	11
Quick4 High Capacity	34 x 48 x 16	11.5
Quick4 High Capacity HD	34 x 48 x 16	11.5
Quick4 Plus High Capacity (8-inch invert)	34 x 48 x 14	8
Quick4 Plus High Capacity (13-inch invert)	34 x 48 x 14	13 ⁵

¹ This approval allows the use of the high capacity H-20 chambers but makes no determination as to the chambers meeting the H-20 loading requirements.

² Includes Infiltrator Multiport™ invert adapter attached to the side of the end cap.

³ Includes Quick4 Plus Periscope adapter attached to the top of the Quick4 Plus All-in-One 8 Endcap.

⁴ Only systems installed with this invert height shall be allowed to use the effective leaching area associated with this model in Table 2.

⁵ Includes Quick4 Plus Periscope adapter attached to the top of the Quick4 Plus All-in-One 12 Endcap.

2. The System is an open-bottom leaching unit molded from polyolefin resin. It can be installed without aggregate or distribution pipe as an absorption trench or as a bed or field. If the System is installed with stone aggregate then the “Effective Leaching Area” in Tables 2 and 3 is not applicable, and must be designed in accordance with the provisions of 310 CMR 15.000.

3. The total effective leaching area for any Chamber Model shall be calculated by multiplying the Effective Leaching Area per square foot of chamber times the total length of chamber from end cap to end cap including end caps.
4. For new construction or upgrades, the applicant can size the System in a trench configuration, using the effective leaching areas presented in Table 2.

Table 2: Effective Leaching Area in Trench Configuration for New Construction and Remedial Sites⁶

Model	Effective Leaching ⁷ Area SF/LF	Effective Leaching ⁸ Area SF/LF
Equalizer 24	3.76	N/A
Quick4 Equalizer 24	3.90	N/A
Quick4 Equalizer 24 LP (6-inch invert)	3.90	N/A
Quick4 Equalizer 24 LP (2-inch invert)	2.78	N/A
Equalizer 36	4.73	N/A
Quick4 Equalizer 36	4.73	N/A
Standard Chamber	6.53	N/A
Quick4 Standard	6.96	N/A
Quick4 Standard HD	6.96	N/A
Quick4 Plus Standard (5.3-inch invert)	6.20	N/A
Quick4 Plus Standard (8-inch invert)	6.96	N/A
Quick4 Plus Standard LP (3.3-inch invert)	5.65	N/A
Quick4 Plus Standard LP (8-inch invert)	6.96	N/A
Infiltrator 3050 or StormTech SC-740	N/A	6.71 ⁹
High Capacity Chamber	7.79	N/A
High Capacity H-20 ¹ Chamber ¹	7.79	N/A
Quick4 High Capacity	7.93	N/A
Quick4 High Capacity HD	7.93	N/A
Quick4 Plus High Capacity (8-inch invert)	6.96	N/A
Quick4 Plus High Capacity (13-inch invert)	7.93	N/A

⁶. Effective April 21, 2006, 310 CMR 15.251(1)(b) maximum trench width is 3 feet.

⁷. Effective leaching area is equal to 1.67 (bottom width + (2x invert height)) for Systems 3 feet or less in width.

⁸. Effective leaching area is equal to 1.0 (3 + (2x invert Height)) for Systems with a width greater than 3 feet.

⁹. The maximum trench width allowed to calculate effective leaching area is 3 feet.

5. Systems installed on remedial sites shall be allowed to utilize the effective leaching areas presented in Tables 2 or 3, or additional reductions in soil absorption system may be allowed. In no instance shall the reduction in the soil absorption system required in 310 CMR 15.242 exceed the maximum reduction allowed for alternative systems approved in accordance with 310 CMR 15.284.

6. For new construction or an upgrade, the applicant can size the System in bed or field configuration, using the effective leaching areas presented in Table 3.

Table 3: Effective Leaching Area for Bed or Field Configuration New Construction and Remedial Sites

Model	Effective Leaching ¹⁰ Area SF/LF
Equalizer 24	2.09
Quick4 Equalizer 24	2.23
Quick4 Equalizer 24 LP (6-inch invert)	2.23
Quick4 Equalizer 24 LP (2-inch invert)	2.23
Equalizer 36	3.06
Quick4 Equalizer 36	3.06
Standard Chamber	4.73
Quick4 Standard	4.73
Quick4 Standard HD	4.73
Quick4 Plus Standard (5.3-inch invert)	4.73
Quick4 Plus Standard (8-inch invert)	4.73
Quick4 Plus Standard LP (3.3-inch invert)	4.73
Quick4 Plus Standard LP (8-inch invert)	4.73
Infiltrator 3050 or StormTech SC-740	7.10
High Capacity Chamber	4.73
High Capacity H-20 ¹ Chamber	4.73
Quick4 High Capacity	4.73
Quick4 High Capacity HD	4.73
Quick4 Plus High Capacity (8-inch invert)	4.73
Quick4 Plus High Capacity (13-inch invert)	4.73

¹⁰. Effective Leaching area is equal to 1.67 times bottom width only.

7. When the System is used with a secondary treatment unit approved in accordance with 310 CMR 15.284 or 15.288, additional reductions in soil absorption system may be allowed. In these situations the reduction in the SAS cannot exceed the maximum allowed under the secondary treatment units approval. In no instance shall the reduction in the soil absorption system area required in 310 CMR 15.242 exceed the maximum reduction allowed for alternative systems approved in accordance with 310 CMR 15.284.

II. Special Conditions

1. The System is an approved Alternative Chamber for use as an Alternative Soil Absorption System. In addition to the Special Conditions contained in this Approval, the System shall comply with the “*Standard Conditions for Alternative SAS with General Use Certification and/or Approved for Remedial Use*” (the

'Standard Conditions'), except where stated otherwise in these Special Conditions.

2. New Construction This Certification is for the installation of a System to serve new construction or an existing facility with a proposed increase in flow, for which a site evaluation in compliance with 310 CMR 15.000 has been approved by the Approving Authority and the site meets the siting requirements for new construction, as provided in Paragraph 6 in section II Design and Installation Requirements of the Standard Conditions.
3. Remedial Site This General Use Certification also applies to the installation of a System for the upgrade or replacement of an existing failed or nonconforming system, provided that the facility meets the siting requirements for upgrades, as provided in Paragraph 7 in section II Design and Installation Requirements of the Standard Conditions
4. The System shall be exempt from the minimum inlet spacing requirements of 310 CMR15.253.
5. The System shall have a minimum of one inspection port through the top of one of the chambers. The inspection port shall be capped with a screw type cap and accessible to within three inches of finish grade.
6. When the System is installed in trench configuration, then the system shall comply with these requirements:
 - a) Length (each trench) 100 feet maximum (310 CMR 15.251(1)(a));
 - b) Width (each trench) 2 feet minimum to 3 feet maximum (310 CMR 15.251(1)(b)). - Chambers greater than 3 feet wide, when specifically approved, are subject to other Special Conditions and limitations;
 - c) The minimum separation distance between any two trenches shall be two times the effective width or depth of each trench, whichever is greater, or where the area between trenches is designated as reserve area, three times the effective width or depth of each trench, whichever is greater (310 CMR 15.251(1)(d));
 - d) The effective leaching area shall be calculated using the bottom area and a maximum of two feet (per side) of side wall area for each trench (310 CMR 15.251(1)(e));
 - e) Trenches shall be situated, where possible, with their long dimension perpendicular to the slope of the natural soil. Where possible they shall follow the contour lines (310 CMR 15.251(2));
 - f) Trenches constructed at different elevations shall be designed to prevent effluent from the higher trench(es) flowing into the lower trench(es) (310 CMR 15.251(3));
 - g) The area between trenches may be designated as system reserve area only where the separation distance between the excavation sidewalls of the primary trenches is at least three times the effective width or depth of each trench, whichever is greater (310 CMR 15.251(4)) - Chambers greater than 3 feet

- wide, when specifically approved, shall be separated by three times the actual width and are subject to other Special Conditions and limitations; and
- h) Effluent distribution lines exceeding 50 feet in length shall be connected and venting provided in accordance with 310 CMR 15.241 (310 CMR 15.251(11)).
7. When installed in trench configuration, approved Alternative Chambers greater than 3 feet wide:
- a) shall be installed with a minimum separation distance between any two trenches of two times the actual width of the chamber, or where the area between trenches is designated as reserve area, three times the actual width of the chamber; and
 - b) shall only be entitled to a maximum effective width of 3 feet for the purposes of calculating total effective leaching area.
8. When installed in a bed or field configuration, the System may be installed without distribution piping, but must comply with the following requirements in 310 CMR 15.252:
- a) the use of leaching beds or fields is restricted to systems with a calculated design flow of less than 5,000 gpd per leaching bed or field (310 CMR 15.252(1));
 - b) the maximum length of chambers in series shall be 100 feet (310 CMR 15.252(2)(b));
 - c) separation distance between adjacent beds/fields shall be ten feet (310 CMR 15.252(2)(f)); and
 - d) the effective leaching area shall include only the bottom area, not the sidewalls (310 CMR 15.252(2)(i)).
9. For Systems constructed in fill and installed, the System shall be installed as specified in 310 CMR 15.255 Construction in Fill, except the minimum 15 foot horizontal separation distance to be provided between the soil absorption area and the adjacent side slope shall be measured horizontally from the top of the chamber.
10. The System is exempt from 310 CMR 15.287, specifically items: (5) requiring written notification of alternative system prior to property transfer, (6) need for a certified operator, (9) need for an operation and maintenance contract with an operator and (10) deed notice requirement.

NITROGEN LOADING CALCULATIONS
 THIS CALCULATES THE FINAL N2 CONCENTRATION IN GROUND WATER

PROJECT Coyne
 3 Sunny Lane, Bourne

EXISTING CONDITIONS

PAGE 1 OF 2

ESTIMATED GW N2 CONC = 17.55 mg/l average loading

TOWN
 TOWN DENSITY 2.5
 Town Recharge 21 inches per year
 TOWN RAINFALL 40 inches per year

NUMBER OF BEDROOMS LOTS NO. OF BEDROOMS BEDROOMS
 1 X 3 = 3 BEDROOMS
 PROJECT SIZE 6365 SF = 0.15 ACRES

IMPERVIOUS SURFACES LOTS AREA TOTAL AREA
 ROOF AREA 1 X 952.8 = 953 SF
 DRIVEWAY, TERRACE & PATIO 1 X 782.9 = 783 SF
 ROADWAY LF WIDTH
 0 X 24 = 0 SF
 TOTAL PAVED 783 SF

NATURAL 4629 SF
 LOTS AREA TOTAL AREA
 LAWN 1 X 4467.9 = 4468 SF

WASTEWATER FLOWS (NITROGEN LOADS & WATER LOADS) TITLE 5
 TOTAL NITROGEN IN FINAL EFFLUENT = 35 mg/l
 Nitrogen loading from Wastewater 14572.0 mg NO3-N/DAY/BEDROOM
 WATER FROM TITLE 5 DESIGN = 416.3 L H2O/DAY/BEDROOM Bedroom Count =

TITLE 5 FLOW bedroom number mg NO3-N/DAY
 3 X 14572.0 = 43716 mg NO3-N/DAY
 NITROGEN FROM WASTEWATER bedroom number L H2O/DAY
 3 X 416.3 = 1249 L H2O/DAY

ACTUAL NITROGEN LOAD = 6071.5 mg NO3-N/DAY/BEDROOM
 ACTUAL WATER LOAD = 173.5 H2O/DAY/BEDROOM FOR 2.5 PEOPLE PER DWELLING
 THE WORKSHEET ADJUSTS FOR ACTUAL TOWN DENSITY ENTERED ABOVE

ACTUAL WASTEWATER FLOW bedroom number mg NO3-N/DAY
 3 X 6072.5 = 18218 mg NO3-N/DAY
 ACTUAL WASTEWATER NITROGEN bedroom number L H2O/DAY
 3 X 173.5 = 521 L H2O/DAY

IMPERVIOUS SURFACE (NITROGEN LOADS & WATER LOADS)

NO3-N LOAD= NUMBER SF OF ROOF SURFACE X CONC mg NO3-N
 H2O LOAD = NUMBER SF OF ROOF SURFACE X RAINFALL L/SF
 NITROGEN LOAD Area(sf) mg NO3-N/DAY
 952.8 X 0.194 = 185 mg NO3-N/DAY
 RECHARGE FROM ROOF Area(sf) L H2O/DAY
 952.8 X 0.259 = 246 L H2O/DAY

NO3-N LOAD= NUMBER SF OF PAVED SURFACE X 0.388 mg NO3-N
 H2O LOAD = NUMBER SF OF ROOF SURFACE X 0.2586 L/SF
 NITROGEN LOAD Area(sf) mg NO3-N/DAY
 782.9 X 0.388 = 304 mg NO3-N/DAY
 RECHARGE FROM DRAINAGE Area(sf) L H2O/DAY
 782.9 X 0.259 = 202 L H2O/DAY

NITROGEN LOADING CALCULATIONS
 LBS OF N2 PER 1000 SF PER YEAR 3
 AMOUNT LEACHED 25%

PROJECT Coyne
 3 Sunny Lane, Bourne
 PAGE 2 OF 2

EXISTING CONDITIONS

===== : ===== : ===== : ===== : ===== : ===== :
 LAWN NITROGEN LOAD = 0.93 mg NO3/SF LAWN

Area(sf) mg NO3/SF LAWN
 5) SF LAWN AREA = 4467.9 x 0.93 mg NO3/SF 4168 mg NO3-N/DAY

NATURAL AREA WATER LOADING

Area(sf) RECHARGE PER SF RECHARGE
 6) NATURAL AREA = 4629.3 x 0.14 629 L PER DAY

SUMMARY OF NITROGEN LOADING

ESTIMATED TITLE 5 NITROGEN AND WATER LOADING

7a) ADD THE NO3-N LOADING

EFFLUENT	43716 mg NO3-N/DAY
ROOF LOADING	185 mg NO3-N/DAY
PAVEMENT LOADING	304 mg NO3-N/DAY
LAWN LOADING	4168 mg NO3-N/DAY

TOTAL	48373 mg NO3-N/DAY

7b) ADD THE ABOVE WATER LOAD

EFFLUENT VOLUME	1249 L H2O/ DAY
ROOF RECHARGE	246 L H2O/ DAY
PAVEMENT RECHARGE	202 L H2O/ DAY
NATURAL RECHARGE (INC. LAWN)	629 L H2O/ DAY

TOTAL	2326 L H2O/ DAY

7c) DIVIDE 7a BY 7b= 20.79 ppm NO3-N

ACTUAL NITROGEN AND WATER LOADING

8a) ADD THE ABOVE NO3-N LOADING

EFFLUENT	18218 mg NO3-N/DAY
ROOF LOADING	185 mg NO3-N/DAY
PAVEMENT LOADING	304 mg NO3-N/DAY
LAWN LOADING	4168 mg NO3-N/DAY

TOTAL	22874 mg NO3-N/DAY

8b) ADD THE ABOVE WATER LOAD

EFFLUENT VOLUME	521 L H2O/ DAY
ROOF RECHARGE	246 L H2O/ DAY
PAVEMENT RECHARGE	202 L H2O/ DAY
NATURAL RECHARGE (INC. LAWN)	629 L H2O/ DAY

TOTAL	1598 L H2O/ DAY

8c) DIVIDE 7a BY 7b= 14.31 ppm NO3-N

FINAL CALCULATION ADD 7C AND 8C /2= 17.55 ppm NO3-N

NITROGEN LOADING CALCULATIONS
 THIS CALCULATES THE FINAL N2 CONCENTRATION IN GROUND WATER

PROJECT Coyne
 3 Sunny Lane, Bourne

Proposed Conditions

PAGE 1 OF 2

ESTIMATED GW N2 CONC = 10.47

TOWN

TOWN DENSITY 2.5
 Town Recharge 21 inches per year
 TOWN RAINFALL 40 inches per year

NUMBER OF BEDROOMS LOTS NO. OF BEDROOMS BEDROOMS
 1 X 3 = 3 BEDROOMS
 PROJECT SIZE 6365 SF = 0.15 ACRES

IMPERVIOUS SURFACES LOTS AREA TOTAL AREA
 ROOF AREA 1 X 1143.4 = 1143 SF
 DRIVEWAY, TERRACE & PATIO 1 X 843.7 = 844 SF
 ROADWAY LF WIDTH
 0 X 0 = 0 SF
 TOTAL PAVED 844 SF

NATURAL 4378 SF
 LAWN LOTS AREA TOTAL AREA
 1 X 4378 = 4378 SF

WASTEWATER FLOWS (NITROGEN LOADS & WATER LOADS) TITLE 5
 TOTAL NITROGEN IN FINAL EFFLUENT = 19 mg/l
 Nitrogen loading from Wastewater 7910.5 mg NO3-N/DAY/BEDROOM
 WATER FROM TITLE 5 DESIGN = 416.3 L H2O/DAY/BEDROOM Bedroom Count = 3

TITLE 5 FLOW bedroom number mg NO3-N/DAY
 3 X 7910.5 = 23732 mg NO3-N/DAY
 NITROGEN FROM WASTEWATER bedroom number L H2O/DAY
 3 X 416.3 = 1249 L H2O/DAY

ACTUAL NITROGEN LOAD = 3296.0 mg NO3-N/DAY/BEDROOM
 ACTUAL WATER LOAD = 173.5 H2O/DAY/BEDROOM FOR 2.5 PEOPLE PER DWELLING
 THE WORKSHEET ADJUSTS FOR ACTUAL TOWN DENSITY ENTERED ABOVE

ACTUAL WASTEWATER FLOW bedroom number mg NO3-N/DAY
 3 X 3296.5 = 9890 mg NO3-N/DAY
 ACTUAL WASTEWATER NITROGEN bedroom number L H2O/DAY
 3 X 173.5 = 521 L H2O/DAY

IMPERVIOUS SURFACE (NITROGEN LOADS & WATER LOADS)

NO3-N LOAD= NUMBER SF OF ROOF SURFACE X CONC mg NO3-N
 H2O LOAD = NUMBER SF OF ROOF SURFACE X RAINFALL L/SF
 NITROGEN LOAD Area(sf) mg NO3-N/DAY
 1143.4 X 0.194 = 222 mg NO3-N/DAY
 RECHARGE FROM ROOF Area(sf) L H2O/DAY
 1143.4 X 0.259 = 296 L H2O/DAY

NO3-N LOAD= NUMBER SF OF PAVED SURFACE X 0.388 mg NO3-N
 H2O LOAD = NUMBER SF OF ROOF SURFACE X 0.2586 L/SF
 NITROGEN LOAD Area(sf) mg NO3-N/DAY
 843.7 X 0.388 = 327 mg NO3-N/DAY
 RECHARGE FROM DRAINAGE Area(sf) L H2O/DAY
 843.7 X 0.259 = 218 L H2O/DAY

NITROGEN LOADING CALCULATIONS
 LBS OF N2 PER 1000 SF PER YEAR 3
 AMOUNT LEACHED 25%

PROJECT Coyne
 3 Sunny Lane, Bourne
 PAGE 2 OF 2

Proposed Conditions

===== : ===== : ===== : ===== : ===== : ===== :
 LAWN NITROGEN LOAD = 0.93 mg NO3/SF LAWN

Area(sf) mg NO3/SF LAWN
 5) SF LAWN AREA = 4378 x 0.93 mg NO3/SF 4084 mg NO3-N/DAY

NATURAL AREA WATER LOADING

Area(sf) RECHARGE PER SF RECHARGE
 6) NATURAL AREA = 4377.9 x 0.14 594 L PER DAY

SUMMARY OF NITROGEN LOADING

ESTIMATED TITLE 5 NITROGEN AND WATER LOADING

7a) ADD THE NO3-N LOADING

EFFLUENT	23732	mg NO3-N/DAY
ROOF LOADING	222	mg NO3-N/DAY
PAVEMENT LOADING	327	mg NO3-N/DAY
LAWN LOADING	4084	mg NO3-N/DAY

TOTAL	28365	mg NO3-N/DAY

7b) ADD THE ABOVE WATER LOAD

EFFLUENT VOLUME	1249	L H2O/ DAY
ROOF RECHARGE	296	L H2O/ DAY
PAVEMENT RECHARGE	218	L H2O/ DAY
NATURAL RECHARGE (INC. LAWN)	594	L H2O/ DAY

TOTAL	2357	L H2O/ DAY

7c) DIVIDE 7a BY 7b= 12.03 ppm NO3-N

ACTUAL NITROGEN AND WATER LOADING

8a) ADD THE ABOVE NO3-N LOADING

EFFLUENT	9890	mg NO3-N/DAY
ROOF LOADING	222	mg NO3-N/DAY
PAVEMENT LOADING	327	mg NO3-N/DAY
LAWN LOADING	4084	mg NO3-N/DAY

TOTAL	14523	mg NO3-N/DAY

8b) ADD THE ABOVE WATER LOAD

EFFLUENT VOLUME	521	L H2O/ DAY
ROOF RECHARGE	296	L H2O/ DAY
PAVEMENT RECHARGE	218	L H2O/ DAY
NATURAL RECHARGE (INC. LAWN)	594	L H2O/ DAY

TOTAL	1629	L H2O/ DAY

8c) DIVIDE 7a BY 7b= 8.92 ppm NO3-N

FINAL CALCULATION ADD 7C AND 8C /2= 10.47 ppm NO3-N

MASSACHUSETTS STATE EXCISE TAX
BARNSTABLE COUNTY REGISTRY OF DEEDS
Date: 07-22-2020 @ 01:29pm
Ctl#: 779 Doc#: 36396
Fee: \$519.84 Cons: \$152,000.00

BARNSTABLE COUNTY EXCISE TAX
BARNSTABLE COUNTY REGISTRY OF DEEDS
Date: 07-22-2020 @ 01:29pm
Ctl#: 779 Doc#: 36396
Fee: \$465.12 Cons: \$152,000.00

Property Address: 3 Sunny Lane, Bourne, Massachusetts 02532

QUITCLAIM DEED

Hughes Turner, LLC, a Massachusetts limited liability company, having a business address of 5 Quimby Lane, East Falmouth, MA 02536,

For consideration of One Hundred Fifty-Two Thousand (\$152,000.00) Dollars paid,

Grant to **Liam Coyne**, individually, of 22 Fair View Lane, Norton, MA 02766.

With Quitclaim Covenants

A certain parcel of land together with the improvements thereon as set forth on Exhibit A, situated in that part of Bourne called Gray Gables, Barnstable County Massachusetts being shown as LOT 3 on "Plan of Gray Gables Park, Section 1, in Gray Gables, Bourne, owned by Mashnee Associates; Scale: 1" = 50', July 3, 1948; Newell B. Snow, Eng'r, Buzzards Bay, Mass." which plan is recorded with the Barnstable County Registry of Deeds in Plan Book 84, Page 27. Said Lot 3 contains of 6367 square feet according to said plan.

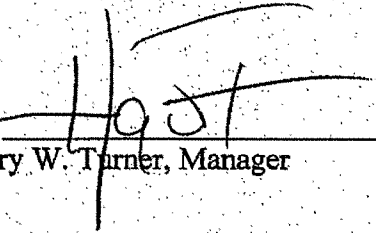
Grantor hereby states, under the pains and penalties of perjury, that there are no persons entitled to any homestead rights to the property herein conveyed pursuant to M.G.L. Chapter 188 or otherwise.

The Grantor has not elected to be treated as a corporation for income tax purposes.

For title, see deed dated March 30, 2018 recorded at the Barnstable County Registry of Deeds in Book 31172 Page 336.

Executed this 10TH day of June, 2020 under the pains and penalties of perjury.

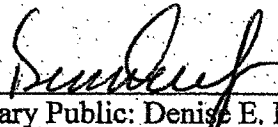
Hughes Turner, LLC

By: 
Harry W. Turner, Manager

COMMONWEALTH OF MASSACHUSETTS

Barnstable, ss

On this 10TH day of June, 2020 before me, the undersigned notary public, personally appeared Harry W. Turner, as Manager aforesaid, proved to me through satisfactory evidence of identification which was [] _____ Driver's License [x] personally known to me [] Other: to be the person whose name is signed on the preceding or attached document and acknowledged to me that he signed it voluntarily for its stated purpose and who swore or affirmed to me that the contents of this document are truthful and accurate to the best of his knowledge and belief.


Notary Public: Denise E. McGovern
My commission expires: 9/19/2025
(SEAL)

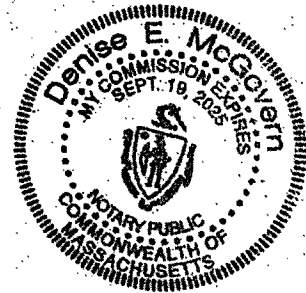


EXHIBIT "A"

A certain parcel of land with the buildings thereon, situated in that pan of Bourne called Gray Gables, Barnstable County, Massachusetts and bounded and described as follows :

BEGINNING at the southeasterly corner of the premises at a point in the westerly line of the private way leading from President Road in said Gray Gables to the Mashnee Island Dike, so-called, said point being distant along said westerly line N 4° 31' 10" E, sixty -seven and 42/100 (67.42) feet from a concrete bound marking jog therein;

THENCE N 85° 26' 50" W by other land of Mashnee Associates, one hundred (100.00) feet;

THENCE N 4° 33' 10" E by other land of Mashnee Associates, sixty-five (65.00) feet;

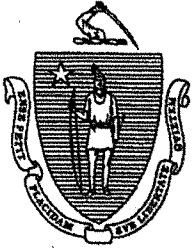
THENCE S 85° 26' 50" E by other land of Mashnee Associates, seventy-five (75.00) feet;

THENCE Southeasterly by a curve to the right of twenty-five (25.00) feet radius by other land of Mashnee Associates, thirty-nine and 27/100 (39.27) feet to a concrete bound;

THENCE S 4° 33' 10" W by said private way forty (40.00) feet to point of beginning.

Containing an area of 6,367 Square feet.

Being shown as LOT 3 on "Plan of Gray Gables Park, Section 1, in Gray Gables, Bourne, owned by Mashnee Associates. Scale: 1" = 50', July 3, 1948; Newell B. Snow, Eng'r, Buzzards Bay, Mass." which plan is recorded with the Barnstable County Registry of Deeds in Plan Book 84, Page 27.



The Commonwealth of Massachusetts
Secretary of the Commonwealth
State House, Boston, Massachusetts 02133

William Francis Galvin
Secretary of the
Commonwealth

June 15, 2020

TO WHOM IT MAY CONCERN:

I hereby certify that a certificate of organization of a Limited Liability Company was filed in this office by

HUGHES TURNER, LLC

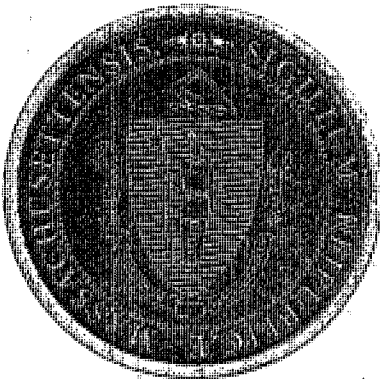
in accordance with the provisions of Massachusetts General Laws Chapter 156C on **August 29, 2016.**

I further certify that said Limited Liability Company has filed all annual reports due and paid all fees with respect to such reports; that said Limited Liability Company has not filed a certificate of cancellation; that there are no proceedings presently pending under the Massachusetts General Laws Chapter 156C, § 70 for said Limited Liability Company's dissolution; and that said Limited Liability Company is in good standing with this office.

I also certify that the names of all managers listed in the most recent filing are: **HARRY W. TURNER**

I further certify, the names of all persons authorized to execute documents filed with this office and listed in the most recent filing are: **HARRY W. TURNER**

The names of all persons authorized to act with respect to real property listed in the most recent filing are: **HARRY W. TURNER**



In testimony of which,
I have hereunto affixed the
Great Seal of the Commonwealth
on the date first above written.

William Francis Galvin
Secretary of the Commonwealth

Processed By:KMT



Massachusetts Department of Environmental Protection
 Bureau of Resource Protection - Wetlands
WPA Form 5 – Order of Conditions
 Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
 SE7-2216
 MassDEP File #

eDEP Transaction #
 Bourne
 City/Town

A. General Information (cont.)

6. Property recorded at the Registry of Deeds for (attach additional information if more than one parcel):
Barnstable
 a. County Barnstable b. Certificate Number (if registered land) 347
 c. Book 33095 d. Page 347
7. Dates: 8/17/2022 10/06/2022 10/07/2022
 a. Date Notice of Intent Filed b. Date Public Hearing Closed c. Date of Issuance
8. Final Approved Plans and Other Documents (attach additional plan or document references as needed):
Plan of proposed sewage disposal system prepared for Liam Coyne for Lot 3, #3 Sunny Lane in Gray Gables, Bourne MA
Matthew C. Costa, PLS Raul Lizardi-Rivera, PE
 b. Prepared By c. Signed and Stamped by
8/8/2022 1" = 20'
 d. Final Revision Date e. Scale
- f. Additional Plan or Document Title _____ g. Date _____

B. Findings

1. Findings pursuant to the Massachusetts Wetlands Protection Act:
 Following the review of the above-referenced Notice of Intent and based on the information provided in this application and presented at the public hearing, this Commission finds that the areas in which work is proposed is significant to the following interests of the Wetlands Protection Act (the Act). Check all that apply:
- a. Public Water Supply b. Land Containing Shellfish c. Prevention of Pollution
 d. Private Water Supply e. Fisheries f. Protection of Wildlife Habitat
 g. Groundwater Supply h. Storm Damage Prevention i. Flood Control
2. This Commission hereby finds the project, as proposed, is: (check one of the following boxes)

Approved subject to:

- a. the following conditions which are necessary in accordance with the performance standards set forth in the wetlands regulations. This Commission orders that all work shall be performed in accordance with the Notice of Intent referenced above, the following General Conditions, and any other special conditions attached to this Order. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, these conditions shall control.



Massachusetts Department of Environmental Protection
 Bureau of Resource Protection - Wetlands
WPA Form 5 – Order of Conditions
 Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
 SE7-2216
 MassDEP File # _____
 eDEP Transaction # _____
 Bourne
 City/Town

B. Findings (cont.)

Denied because:

- b. the proposed work cannot be conditioned to meet the performance standards set forth in the wetland regulations. Therefore, work on this project may not go forward unless and until a new Notice of Intent is submitted which provides measures which are adequate to protect the interests of the Act, and a final Order of Conditions is issued. **A description of the performance standards which the proposed work cannot meet is attached to this Order.**
- c. the information submitted by the applicant is not sufficient to describe the site, the work, or the effect of the work on the interests identified in the Wetlands Protection Act. Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides sufficient information and includes measures which are adequate to protect the Act's interests, and a final Order of Conditions is issued. **A description of the specific information which is lacking and why it is necessary is attached to this Order as per 310 CMR 10.05(6)(c).**
- 3. Buffer Zone Impacts: Shortest distance between limit of project disturbance and the wetland resource area specified in 310 CMR 10.02(1)(a) _____ a. linear feet

Inland Resource Area Impacts: Check all that apply below. (For Approvals Only)

Resource Area	Proposed Alteration	Permitted Alteration	Proposed Replacement	Permitted Replacement
4. <input type="checkbox"/> Bank	_____ a. linear feet	_____ b. linear feet	_____ c. linear feet	_____ d. linear feet
5. <input type="checkbox"/> Bordering Vegetated Wetland	_____ a. square feet	_____ b. square feet	_____ c. square feet	_____ d. square feet
6. <input type="checkbox"/> Land Under Waterbodies and Waterways	_____ a. square feet _____ e. c/y dredged	_____ b. square feet _____ f. c/y dredged	_____ c. square feet	_____ d. square feet
7. <input type="checkbox"/> Bordering Land Subject to Flooding	_____ a. square feet	_____ b. square feet	_____ c. square feet	_____ d. square feet
Cubic Feet Flood Storage	_____ e. cubic feet	_____ f. cubic feet	_____ g. cubic feet	_____ h. cubic feet
8. <input type="checkbox"/> Isolated Land Subject to Flooding	_____ a. square feet	_____ b. square feet		
Cubic Feet Flood Storage	_____ c. cubic feet	_____ d. cubic feet	_____ e. cubic feet	_____ f. cubic feet
9. <input type="checkbox"/> Riverfront Area	_____ a. total sq. feet	_____ b. total sq. feet		
Sq ft within 100 ft	_____ c. square feet	_____ d. square feet	_____ e. square feet	_____ f. square feet
Sq ft between 100-200 ft	_____ g. square feet	_____ h. square feet	_____ i. square feet	_____ j. square feet



**Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands**

WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

SE7-2216

MassDEP File #

eDEP Transaction #

Bourne

City/Town

B. Findings (cont.)

Coastal Resource Area Impacts: Check all that apply below. (For Approvals Only)

	Proposed Alteration	Permitted Alteration	Proposed Replacement	Permitted Replacement
10. <input type="checkbox"/> Designated Port Areas	Indicate size under Land Under the Ocean, below			
11. <input type="checkbox"/> Land Under the Ocean	<u> </u> a. square feet	<u> </u> b. square feet		
	<u> </u> c. c/y dredged	<u> </u> d. c/y dredged		
12. <input type="checkbox"/> Barrier Beaches	Indicate size under Coastal Beaches and/or Coastal Dunes below			
13. <input type="checkbox"/> Coastal Beaches	<u> </u> a. square feet	<u> </u> b. square feet	<u> </u> c. nourishment	<u> </u> d. nourishment
14. <input type="checkbox"/> Coastal Dunes	<u> </u> a. square feet	<u> </u> b. square feet	<u> </u> c. nourishment	<u> </u> d. nourishment
15. <input type="checkbox"/> Coastal Banks	<u> </u> a. linear feet	<u> </u> b. linear feet		
16. <input type="checkbox"/> Rocky Intertidal Shores	<u> </u> a. square feet	<u> </u> b. square feet		
17. <input type="checkbox"/> Salt Marshes	<u> </u> a. square feet	<u> </u> b. square feet	<u> </u> c. square feet	<u> </u> d. square feet
18. <input type="checkbox"/> Land Under Salt Ponds	<u> </u> a. square feet	<u> </u> b. square feet		
	<u> </u> c. c/y dredged	<u> </u> d. c/y dredged		
19. <input type="checkbox"/> Land Containing Shellfish	<u> </u> a. square feet	<u> </u> b. square feet	<u> </u> c. square feet	<u> </u> d. square feet
20. <input type="checkbox"/> Fish Runs	Indicate size under Coastal Banks, Inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above			
	<u> </u> a. c/y dredged	<u> </u> b. c/y dredged		
21. <input checked="" type="checkbox"/> Land Subject to Coastal Storm Flowage	<u>6365</u> a. square feet	<u>6365</u> b. square feet		
22. <input checked="" type="checkbox"/> Riverfront Area	<u>6365</u> a. total sq. feet	<u>6365</u> b. total sq. feet		
Sq ft within 100 ft	<u>5425</u> c. square feet	<u>5425</u> d. square feet	<u> </u> e. square feet	<u> </u> f. square feet
Sq ft between 100-200 ft	<u>940</u> g. square feet	<u>940</u> h. square feet	<u> </u> i. square feet	<u> </u> j. square feet



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

SE7-2216

MassDEP File #

eDEP Transaction #

Bourne

City/Town

B. Findings (cont.)

* #23. If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage that has been entered in Section B.5.c (BWV) or B.17.c (Salt Marsh) above, please enter the additional amount here.

23. Restoration/Enhancement *:

a. square feet of BWV

b. square feet of salt marsh

24. Stream Crossing(s):

a. number of new stream crossings

b. number of replacement stream crossings

C. General Conditions Under Massachusetts Wetlands Protection Act

The following conditions are only applicable to Approved projects.

1. Failure to comply with all conditions stated herein, and with all related statutes and other regulatory measures, shall be deemed cause to revoke or modify this Order.
2. The Order does not grant any property rights or any exclusive privileges; it does not authorize any injury to private property or invasion of private rights.
3. This Order does not relieve the permittee or any other person of the necessity of complying with all other applicable federal, state, or local statutes, ordinances, bylaws, or regulations.
4. The work authorized hereunder shall be completed within three years from the date of this Order unless either of the following apply:
 - a. The work is a maintenance dredging project as provided in the Act; or
 - b. The time for completion has been extended to a specified date more than three years, but less than five years, from the date of issuance. If this Order is intended to be valid for more than three years, the extension date and the special circumstances warranting the extended time period are set forth as a special condition in this Order.
 - c. If the work is for a Test Project, this Order of Conditions shall be valid for no more than one year.
5. This Order may be extended by the issuing authority for one or more periods of up to three years each upon application to the issuing authority at least 30 days prior to the expiration date of the Order. An Order of Conditions for a Test Project may be extended for one additional year only upon written application by the applicant, subject to the provisions of 310 CMR 10.05(11)(f).
6. If this Order constitutes an Amended Order of Conditions, this Amended Order of Conditions does not extend the issuance date of the original Final Order of Conditions and the Order will expire on _____ unless extended in writing by the Department.
7. Any fill used in connection with this project shall be clean fill. Any fill shall contain no trash, refuse, rubbish, or debris, including but not limited to lumber, bricks, plaster, wire, lath, paper, cardboard, pipe, tires, ashes, refrigerators, motor vehicles, or parts of any of the foregoing.



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 5 – Order of Conditions
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
SE7-2216
MassDEP File #
eDEP Transaction #
Bourne
City/Town

C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

17. Prior to the start of work, and if the project involves work adjacent to a Bordering Vegetated Wetland, the boundary of the wetland in the vicinity of the proposed work area shall be marked by wooden stakes or flagging. Once in place, the wetland boundary markers shall be maintained until a Certificate of Compliance has been issued by the Conservation Commission.
18. All sedimentation barriers shall be maintained in good repair until all disturbed areas have been fully stabilized with vegetation or other means. At no time shall sediments be deposited in a wetland or water body. During construction, the applicant or his/her designee shall inspect the erosion controls on a daily basis and shall remove accumulated sediments as needed. The applicant shall immediately control any erosion problems that occur at the site and shall also immediately notify the Conservation Commission, which reserves the right to require additional erosion and/or damage prevention controls it may deem necessary. Sedimentation barriers shall serve as the limit of work unless another limit of work line has been approved by this Order.
19. The work associated with this Order (the "Project")
- (1) is subject to the Massachusetts Stormwater Standards
- (2) is NOT subject to the Massachusetts Stormwater Standards

If the work is subject to the Stormwater Standards, then the project is subject to the following conditions:

- a) All work, including site preparation, land disturbance, construction and redevelopment, shall be implemented in accordance with the construction period pollution prevention and erosion and sedimentation control plan and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollution Discharge Elimination System Construction General Permit as required by Stormwater Condition 8. Construction period erosion, sedimentation and pollution control measures and best management practices (BMPs) shall remain in place until the site is fully stabilized.
- b) No stormwater runoff may be discharged to the post-construction stormwater BMPs unless and until a Registered Professional Engineer provides a Certification that:
- i. all construction period BMPs have been removed or will be removed by a date certain specified in the Certification. For any construction period BMPs intended to be converted to post construction operation for stormwater attenuation, recharge, and/or treatment, the conversion is allowed by the MassDEP Stormwater Handbook BMP specifications and that the BMP has been properly cleaned or prepared for post construction operation, including removal of all construction period sediment trapped in inlet and outlet control structures;
 - ii. as-built final construction BMP plans are included, signed and stamped by a Registered Professional Engineer, certifying the site is fully stabilized;
 - iii. any illicit discharges to the stormwater management system have been removed, as per the requirements of Stormwater Standard 10;



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

SE7-2216

MassDEP File #

eDEP Transaction #

Bourne

City/Town

C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

iv. all post-construction stormwater BMPs are installed in accordance with the plans (including all planting plans) approved by the issuing authority, and have been inspected to ensure that they are not damaged and that they are in proper working condition;

v. any vegetation associated with post-construction BMPs is suitably established to withstand erosion.

c) The landowner is responsible for BMP maintenance until the issuing authority is notified that another party has legally assumed responsibility for BMP maintenance. Prior to requesting a Certificate of Compliance, or Partial Certificate of Compliance, the responsible party (defined in General Condition 18(e)) shall execute and submit to the issuing authority an Operation and Maintenance Compliance Statement ("O&M Statement") for the Stormwater BMPs identifying the party responsible for implementing the stormwater BMP Operation and Maintenance Plan ("O&M Plan") and certifying the following:

i.) the O&M Plan is complete and will be implemented upon receipt of the Certificate of Compliance, and

ii.) the future responsible parties shall be notified in writing of their ongoing legal responsibility to operate and maintain the stormwater management BMPs and implement the Stormwater Pollution Prevention Plan.

d) Post-construction pollution prevention and source control shall be implemented in accordance with the long-term pollution prevention plan section of the approved Stormwater Report and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollution Discharge Elimination System Multi-Sector General Permit.

e) Unless and until another party accepts responsibility, the landowner, or owner of any drainage easement, assumes responsibility for maintaining each BMP. To overcome this presumption, the landowner of the property must submit to the issuing authority a legally binding agreement of record, acceptable to the issuing authority, evidencing that another entity has accepted responsibility for maintaining the BMP, and that the proposed responsible party shall be treated as a permittee for purposes of implementing the requirements of Conditions 18(f) through 18(k) with respect to that BMP. Any failure of the proposed responsible party to implement the requirements of Conditions 18(f) through 18(k) with respect to that BMP shall be a violation of the Order of Conditions or Certificate of Compliance. In the case of stormwater BMPs that are serving more than one lot, the legally binding agreement shall also identify the lots that will be serviced by the stormwater BMPs. A plan and easement deed that grants the responsible party access to perform the required operation and maintenance must be submitted along with the legally binding agreement.

f) 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.



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

SE7-2216

MassDEP File #

eDEP Transaction #

Bourne

City/Town

C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

- g) The responsible party shall:
1. Maintain an operation and maintenance log for the last 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);
 2. Make the maintenance log available to MassDEP and the Conservation Commission ("Commission") upon request; and
 3. Allow members and agents of the MassDEP and the Commission 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.
- h) All sediment or other contaminants removed from stormwater BMPs shall be disposed of in accordance with all applicable federal, state, and local laws and regulations.
- i) Illicit discharges to the stormwater management system as defined in 310 CMR 10.04 are prohibited.
- j) The stormwater management system approved in the Order of Conditions shall not be changed without the prior written approval of the issuing authority.
- k) Areas designated as qualifying pervious areas for the purpose of the Low Impact Site Design Credit (as defined in the MassDEP Stormwater Handbook, Volume 3, Chapter 1, Low Impact Development Site Design Credits) shall not be altered without the prior written approval of the issuing authority.
- l) Access for maintenance, repair, and/or replacement of BMPs shall not be withheld. Any fencing constructed around stormwater BMPs shall include access gates and shall be at least six inches above grade to allow for wildlife passage.

Special Conditions (if you need more space for additional conditions, please attach a text document):

See attached text

20. For Test Projects subject to 310 CMR 10.05(11), the applicant shall also implement the monitoring plan and the restoration plan submitted with the Notice of Intent. If the conservation commission or Department determines that the Test Project threatens the public health, safety or the environment, the applicant shall implement the removal plan submitted with the Notice of Intent or modify the project as directed by the conservation commission or the Department.



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

SE7-2216

MassDEP File #

eDEP Transaction #

Bourne

City/Town

D. Findings Under Municipal Wetlands Bylaw or Ordinance

1. Is a municipal wetlands bylaw or ordinance applicable? Yes No

2. The Bourne hereby finds (check one that applies):
Conservation Commission

a. that the proposed work cannot be conditioned to meet the standards set forth in a municipal ordinance or bylaw, specifically:

1. Municipal Ordinance or Bylaw

2. Citation

Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides measures which are adequate to meet these standards, and a final Order of Conditions is issued.

b. that the following additional conditions are necessary to comply with a municipal ordinance or bylaw:

Bourne wetland protection bylaw

Article 3.7

1. Municipal Ordinance or Bylaw

2. Citation

3. The Commission orders that all work shall be performed in accordance with the following conditions and with the Notice of Intent referenced above. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, the conditions shall control.

The special conditions relating to municipal ordinance or bylaw are as follows (if you need more space for additional conditions, attach a text document):

see attached text

Applicant's Name: Liam Coyne
Address: 3 Sunny Lane

DEP # SE7-2216
Bourne #:

This Order of Conditions is being issued based upon strict accordance with the information submitted in the Notice of Intent filed on 08/12/2022 and the Plan of Record dated 8/08/22 and stamped by Matthew C. Costa PLS, Raul Lizardi-Rivera, PE

Additional materials reviewed included:

In addition to the GENERAL CONDITIONS referenced in the Order of Conditions, the Commission has found it necessary to impose the following Special Conditions pursuant to M.G.L. Ch. 131, s.40 and the Town of Bourne Natural Resources Protection Bylaw Article 3.7.

THE SPECIAL CONDITIONS AND BYLAW CONDITIONS CHECKED BELOW APPLY TO YOUR PROPOSAL. NOTE THAT THE ABOVE LISTED GENERAL CONDITIONS ARE AUTOMATICALLY PART OF THIS ORDER OF CONDITIONS.

SPECIAL CONDITIONS Pursuant to M.G.L. C. 131, s. 40.

*** (Pre-Construction) ***

- 1. This Order of Conditions shall apply to any successor in interest or successor in control of the property.
- 2. NO WORK SHALL BEGIN until General Condition #9 has been complied with. The Commission must be in receipt of the Registry information certificate BEFORE work begins. An Enforcement Order will be issued if work is prematurely begun without compliance with this condition.
- 3. ALL CONSTRUCTION MUST COMPLY WITH THE ABOVE-REFERENCED PLANS AND THE CONDITIONS OF THIS ORDER. ANY CHANGES INTENDED TO BE MADE IN THE PLANS OR IN THE WORK, SHALL REQUIRE THE APPLICANT TO FILE A NEW NOTICE OF INTENT, OR TO INQUIRE OF THE COMMISSION IN WRITING WHETHER THE CHANGE IS SUBSTANTIAL ENOUGH TO REQUIRE A NEW FILING. NO CHANGE IN PLAN OR WORK, UNDER THIS FILING IS PERMISSIBLE WITHOUT A NEW NOTICE OF INTENT, OR PERMISSION FROM THE COMMISSION. FAILURE TO COMPLY WITH THIS CONDITION WILL RESULT IN THE ORDER OF CONDITIONS (PERMIT) BEING REVOKED.
- 4. The Plan of Record shall be in full compliance with Appendix G of 780 CMR Massachusetts State Building Code and the requirements the Federal Emergency Management Agency (FEMA). Specific design requirements for construction in flood zones (A, A1-A30, AE, AC, AH, V1-V30, and VE) shall be determined by the Town of Bourne Building Inspector. The final foundation design APPROVED by the Building Inspector shall automatically become a part of the Plan of Record. Noncompliance with any of the requirements of Appendix G of 780 CMR or those of the Building Inspector shall constitute a violation of the Order of Conditions and will be grounds for Enforcement Action and/or the non-issuance of the Certificate of Compliance. Upon requesting a Certificate of Compliance the applicant must present PROOF that his/her project has been designed according to the Plan of Record and to the satisfaction of the Building Inspector.
- 5. Prior to the installation of the subsurface sewage disposal system, you are advised of the necessity to comply with, or receive a variance from, the local Board of Health Regulations & Bylaws and obtain a valid health permit. The Order of Conditions re-emphasizes this requirement and prohibits any construction prior to obtaining a Board of Health permit. A leaching facility must be 150' from any wetland resource area (including the top of the coastal bank) unless a variance or other approval has been granted by the Board of Health.

6. Since the building was or is to be constructed after August 10, 1978, and is or will be within 100' of the top of an eroding coastal bank, (310 CMR, 10.30), this Order and the Certificate of Compliance incorporate 310 CMR 10.30(5) which states: "no coastal engineering structure, such as a bulkhead, revetment, or seawall shall be permitted on an eroding bank at any time in the future to protect the project allowed by this Order of Conditions."
7. The applicant as a condition of this Order, grants to the Commission members, and agents of the Commission the right to enter, inspect, and sample the premises to evaluate compliance with the conditions and performance standards stated in this Order, the Act, and 310 CMR 10.00 and the Town of Bourne Wetlands Protection Bylaw Article 3.7, and may require the submittal of any data deemed necessary by the Commission for that evaluation.
8. An on-site pre-construction inspection meeting must be held between the Bourne Conservation Commission and/or agent, the contractor responsible for implementing the project, and if applicable, the outside consultant/representative responsible for permitting. The Bourne Conservation Commission must be contacted in writing at least two weeks prior to the scheduled meeting. All erosion controls must be installed at the location of the project prior to the pre-construction meeting, unless otherwise agreed upon by the applicant and the Bourne Conservation Commission.
9. The landowner and/or his contractor will notify the Commission in writing 5 days prior to the start of work. The letter shall state the name, address, telephone number (business & home phone) of the project supervisor who will be responsible for insuring on-site compliance with this Order. All sedimentation/erosion control devices shall be installed BEFORE the start of work.
10. This document shall be included in all construction contracts and subcontracts dealing with the work proposed and shall supersede other contract requirements.
11. No underground petroleum product storage tanks are allowed within 100' of any wetland or within any velocity (V) floodzone as indicated on the most recent FEMA floodzone maps.

{Construction}

12. The project engineer and contractors (and all subcontractors) must be informed of the conditions of this Order. A copy of this Order of Conditions must be available at all times at the construction site for reference. The Applicant is held responsible for compliance with this Order of Conditions.
13. Whatever erosion control measures are indicated on the plan, they shall consist of at least a double row of staked hay-bales and these must be maintained throughout the construction period. It is the applicant's responsibility to take additional appropriate measures to control sedimentation/erosion into the wetland areas.
14. The Applicant must employ and maintain suitable erosion control measures such as staked hay bales, siltation curtains, bark mulch, jute netting, etc. as shown on the Plan of Record and/or addressed in the Notice of Intent. This siltation control shall be maintained until all disturbed areas are successfully revegetated. Additional erosion controls shall be kept on-site in order to respond to unforeseen circumstances.
15. The applicant, owner, successors or assignees shall be responsible for maintaining any on-site drainage structures and out falls, assuring the lasting integrity of vegetative cover on the site and site activities so as to prevent erosion, siltation, sedimentation, chemical contamination or other detrimental impact to the on-site wetland resource area(s) and/or off-site wetland resource area(s). The maintenance activities specified in this Order shall not expire with the issuance of the Certificate of Compliance and shall continue in perpetuity. It is the responsibility of the property owner of record to see that maintenance conditions are complied with as required by this Order.

- 16. Gutters, downspouts and drywell must be installed to collect all roof runoff.
- 17. All drainage must be directed into a leaching type catch basin before being discharged towards or into any wetland or surface water body. All catch basins must incorporate measures to insure the removal of pollutants such as oil and gas and must provide for adequate sediment retention. The basins and oil absorbent material shall be regularly cleaned and maintained.
- 18. Any refuse material generated through the project construction will be removed to an approved landfill, and in no case will these materials be allowed to be buried or disposed of on site or on abutting property. REMOVAL MUST BE DONE WEEKLY DURING THE CONSTRUCTION PHASE OF THE PROJECT. REFUSE MUST NOT BE ALLOWED TO ENTER ANY WETLAND AREAS.
- 19. Used petroleum products from the operation or maintenance of construction equipment and construction debris shall be collected weekly and disposed of off-site at an approved landfill. No on-site disposal is permitted.
- 20. Only rubber tired or tracked vehicles utilizing swamp mats/planks will be permitted to traverse the following resource areas: beaches, dunes, and saltmarshes.
- 21. Use of heavy equipment shall be confined to inside the limit of work as shown on the Plan of Record. All work shall be accomplished from the UPLAND side of the limit of work line.
- 22. The use of heavy equipment upon the saltmarsh, dunes or coastal beach is PROHIBITED. All work within these resource areas must be done by hand or with suitable equipment approved by the Commission
- 23. The proposed stairs shall be elevated ___ feet above the existing grade. All pilings should be supported by SONO tube footings. Excavated materials shall be removed from the coastal bank.
- 24. Driveway must be constructed out of pervious material in perpetuity.
- 25. A landscaping plan including the size, quantity, species and location of plantings including square footage of lawn, mulch, etc. must be submitted and approved by the Conservation Agent and/or the Commission prior to receiving the occupancy permit.
- 26. All vegetation must be predominantly native and non-invasive. All plants must be allowed to grow to maturity before pruning. All plantings will be monitored for a minimum of two growing seasons and any plants that do not survive must be replaced.

*** (Post Construction) ***

- 27. Upon completion of your project you must apply for a Certificate of Compliance. This Order will not be considered complied with until the Certificate of Compliance has been requested, granted and RECORDED at the Registry of Deeds in Barnstable. To insure timely issuance of the Certificate of Compliance you must request the Certificate within 30 days of the completion of your project.
- 28. Prior to the issuance of a Certificate of Compliance, the project engineer or consultant shall certify that the project has been completed in compliance with this Order and the original Plan of Record. Any variations from the approved plan should be clearly noted and reasons given to justify the noncompliance. (see Bylaw condition/requirement also)

29. An as-built plan, signed and stamped by a registered professional engineer or land surveyor in the Commonwealth of Massachusetts shall be submitted to the Commission at the same time as a written request for a Certificate of Compliance and shall specify how the completed plan differs from that shown on the plans referred to in the Order of Conditions. The as-built plan shall include, but not be limited to the following:

All pipe/culvert inverts for inflow and outfalls, pipe slope, size and composition; location of other drainage structures; limits of fill or alteration; location of any structure and pavement within 100' of any wetland resource area (including the top of the coastal bank); the edge of each wetland resource area; the grade contours within 100' of the wetland resource areas

SPECIAL CONDITIONS pursuant to the Bourne Wetland Protection By-Law Article 3.7

1. The total lawn area for this lot shall not exceed ___ s.f. Lawn fertilizer is a known source of nitrogen loading, which causes pollution of coastal waters. Phosphates are known causes of freshwater eutrophication.
2. All new habitable buildings, and accessories thereto, shall be setback at least fifty (50) feet from any wetland resource area as per Article 3.7 Town of Bourne Wetlands Protection By-Laws unless the Commission has specifically approved a lesser setback distance.
3. A Minimum distance of ___ feet of natural vegetation (buffer zone) must be maintained between any resource area and altered area.
4. No clear-cutting of standing trees, brush, or surface vegetation is allowed outside of the approved limit of work as shown on the approved Plan of Record. Any additional vista pruning or vegetation removal not identified on the Plan of Record will require additional coordination and/or filing with the Conservation Commission.
5. All excavation will immediately halt if any historical or archeological artifacts are uncovered and the Applicant will report this information immediately to the Commission, the Town of Bourne Historical Commission and the Massachusetts Historical Commission. Failure to report this information will be grounds to revoke this permit.
6. During construction for this project, an on-site foreman, directing engineer or designated construction manager and the excavating contractor shall have a copy of this Order at the site, shall familiarize him or herself with the conditions of this permit, and shall adhere to said conditions.
7. To insure timely issuance of the Certificate of Compliance, requests should be made within 30 days of the completion of the project.
8. In order to determine whether or not the Order of Conditions (OOC) has been properly complied with, the Commission requires that you provide a copy of the foundation As-built. This is necessary to determine if you have complied with your original Plan of Record and Notice of Intent prior to the Commission issuing the Certificate of Compliance.
9. The installation of a garbage grinder is strictly PROHIBITED under this Order of Conditions and it is recommended that the applicant have the Septic System serviced (checked & pumped if necessary) every two years. This condition shall continue in perpetuity.
10. This Order of Conditions (OOC) is not valid until the applicant applies for and receives a Section 10 and/or Section 404 Permit from the United States Army Corps of Engineers for the proposed project.
11. This Order of Conditions (OOC) is not valid until the applicant applies for and receives a Water

Quality Certificate from the DEP Division of Water Pollution Control relative to 401

12. This Order of Conditions (OOC) is not valid until the applicant applies for and receives a License from the DEP Division of Wetlands and Waterways relative to Chapter 91, The Public Waterfront Act & its regulations at 310 CMR 9.00.

*** (Docks, Piers, Floats, Dredging, etc.) ***

13. Post dredging soundings shall be made by the project engineer and submitted to the Con-Com for review.
14. The structure shall be continuously maintained in a manner that will insure safe use and shall be subject to inspection by the Harbormaster at anytime.
15. The public shall not be hindered from free access over or under the proposed structure for the purposes of fishing or fowling between the tide lines.
16. The structure shall be subject to annual review and approval by the Harbormaster in accordance with M.G.L. Chapter 91, Section 10A and/or current Town of Bourne Waterways Regulations.
17. No ramps, floats or other parts of the proposed structure are to be stored upon the saltmarsh, coastal dune, coastal bank or any other wetland resource area except the floodzone. All floats and other seasonal structures must be removed from the waterways from October 15 to April 1st and stored in a suitable UPLAND AREA.
18. Any changes in the configuration of the proposed structure would require an additional filing with the Commission and/or approval of the Harbormaster.
19. Any shellfish that must be relocated as a result of the proposed construction will be done at the applicant's expense and under the direction of the Department of Natural Resources (Shellfish Warden)
20. Should the proposed float(s) and/or other parts of the proposed structure break loose it will be the responsibility of the applicant to recover same and repair any damage to property of other parties that occurred due to the loose structure.
21. If it should be determined at a later date that this structure is an interference to navigation, the applicant will be required to down size the structure accordingly under the direction of the Harbormaster.
22. Piles must be driven, not jetted into the substrate.
23. Only non-leaching CCA treated lumber/piles or galvanized steel piles will be permitted for use on structures that will be placed into the water. No creosote is allowed.
24. Deck spacing must be spaced at 3/4 - 1" apart to allow for light penetration to the vegetation below the decking.
25. If ice damage or extreme weather conditions cause piling(s) to be damaged, an RDA must be filed to restore the stability, safety and function of the structure. The Conservation Commission may use discretion for cases that may disturb the wetland resource areas to a point that may require the filing of a Notice of Intent.

ADDITIONAL SPECIAL CONDITIONS pursuant to the Bourne Wetland Protection By-Law Article 3.7

General condition Number(s), Special Condition Number(s), Bylaw Conditions Number(s) above shall continue in perpetuity beyond the limitations of this Order and with the sale of the property to others.

The Applicant is reminded of his/her right to Appeal this Order or any part herein. This Appeal must

be a dual appeal to both DEP within 10 days and to Superior Court pursuant to M.G.L c. 249 s. 4 within 60 calendar days of the issuance of this Order of Conditions.



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 5 – Order of Conditions
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
SE7- 2216
MassDEP File #

eDEP Transaction #
Bourne
City/Town

E. Signatures

This Order is valid for three years, unless otherwise specified as a special condition pursuant to General Conditions #4, from the date of issuance.

10-07-2022
1. Date of issuance

Please indicate the number of members who will sign this form.
This Order must be signed by a majority of the Conservation Commission.

6
2. Number of Signers

The Order must be mailed by certified mail (return receipt requested) or hand delivered to the applicant. A copy also must be mailed or hand delivered at the same time to the appropriate Department of Environmental Protection Regional Office, if not filing electronically, and the property owner, if different from applicant.

Thomas L. Ligor
Signature

Thomas L. Ligor
Printed Name

[Signature]
Signature

Susan J. West-
Printed Name

[Signature]
Signature

ROBERT M. GRAY
Printed Name

[Signature]
Signature

Robert Palumbo
Printed Name

[Signature]
Signature

P.S. SEWED
Printed Name

[Signature]
Signature

MR HOLMES
Printed Name

Signature

Printed Name

Signature

Printed Name

by hand delivery on

by certified mail, return receipt requested, on

Date

Date

10-07-2022



Massachusetts Department of Environmental Protection
 Bureau of Resource Protection - Wetlands

WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

SE7-2216

MassDEP File #

eDEP Transaction #

Bourne

City/Town

F. Appeals

The applicant, the owner, any person aggrieved by this Order, any owner of land abutting the land subject to this Order, or any ten residents of the city or town in which such land is located, are hereby notified of their right to request the appropriate MassDEP Regional Office to issue a Superseding Order of Conditions. The request must be made by certified mail or hand delivery to the Department, with the appropriate filing fee and a completed Request for Departmental Action Fee Transmittal Form, as provided in 310 CMR 10.03(7) within ten business days from the date of issuance of this Order. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant, if he/she is not the appellant.

Any appellants seeking to appeal the Department's Superseding Order associated with this appeal will be required to demonstrate prior participation in the review of this project. Previous participation in the permit proceeding means the submission of written information to the Conservation Commission prior to the close of the public hearing, requesting a Superseding Order, or providing written information to the Department prior to issuance of a Superseding Order.

The request shall state clearly and concisely the objections to the Order which is being appealed and how the Order does not contribute to the protection of the interests identified in the Massachusetts Wetlands Protection Act (M.G.L. c. 131, § 40), and is inconsistent with the wetlands regulations (310 CMR 10.00). To the extent that the Order is based on a municipal ordinance or bylaw, and not on the Massachusetts Wetlands Protection Act or regulations, the Department has no appellate jurisdiction.

