



WPA Form 3 – Notice of Intent

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

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Bourne

City/Town

Important:
When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



Note:
Before completing this form consult your local Conservation Commission regarding any municipal bylaw or ordinance.

A. General Information

1. Project Location (**Note:** electronic filers will click on button to locate project site):

<u>191 Phillips Road</u>	<u>Bourne</u>	<u>02532</u>
a. Street Address	b. City/Town	c. Zip Code
Latitude and Longitude:		
<u>4.4</u>	<u>N41d 47' 31"</u>	<u>W70d 31' 10"</u>
d. Latitude	e. Longitude	
<u>4.4</u>	<u>131</u>	
f. Assessors Map/Plat Number	g. Parcel /Lot Number	

2. Applicant:

<u>Tim</u>	<u>Hashem</u>	
a. First Name	b. Last Name	
c. Organization		
<u>P.O. Box 265</u>		
d. Street Address		
<u>Middleborough</u>	<u>MA</u>	<u>02346</u>
e. City/Town	f. State	g. Zip Code
<u>774-406-0299</u>	<u>middlake@yahoo.com</u>	
h. Phone Number	i. Fax Number	j. Email Address

3. Property owner (required if different from applicant): Check if more than one owner

<u></u>	<u></u>	
a. First Name	b. Last Name	
c. Organization		
d. Street Address		
<u></u>	<u></u>	<u></u>
e. City/Town	f. State	g. Zip Code
<u></u>	<u></u>	<u></u>
h. Phone Number	i. Fax Number	j. Email address

4. Representative (if any):

<u>Nyles</u>	<u>Zager, PE</u>	
a. First Name	b. Last Name	
<u>Zenith Consulting Engineers, LLC.</u>		
c. Company		
<u>3 Main Street</u>		
d. Street Address		
<u>Lakeville</u>	<u>MA</u>	<u>02347</u>
e. City/Town	f. State	g. Zip Code
<u>508-947-4208</u>	<u>nyles@zcellc.com</u>	
h. Phone Number	i. Fax Number	j. Email address

5. Total WPA Fee Paid (from NOI Wetland Fee Transmittal Form):

<u>\$220.00</u>	<u>\$97.50</u>	<u>\$122.50</u>
a. Total Fee Paid	b. State Fee Paid	c. City/Town Fee Paid



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A. General Information (continued)

6. General Project Description:

Upgrade of an existing septic system and construction of a deck with addition above on posts.

7a. Project Type Checklist: (Limited Project Types see Section A. 7b.)

- 1. Single Family Home
- 2. Residential Subdivision
- 3. Commercial/Industrial
- 4. Dock/Pier
- 5. Utilities
- 6. Coastal engineering Structure
- 7. Agriculture (e.g., cranberries, forestry)
- 8. Transportation
- 9. Other

7b. Is any portion of the proposed activity eligible to be treated as a limited project (including Ecological Restoration Limited Project) subject to 310 CMR 10.24 (coastal) or 310 CMR 10.53 (inland)?

1. Yes No If yes, describe which limited project applies to this project. (See 310 CMR 10.24 and 10.53 for a complete list and description of limited project types)

2. Limited Project Type

If the proposed activity is eligible to be treated as an Ecological Restoration Limited Project (310 CMR10.24(8), 310 CMR 10.53(4)), complete and attach Appendix A: Ecological Restoration Limited Project Checklist and Signed Certification.

8. Property recorded at the Registry of Deeds for:

Barnstable

a. County

33844

c. Book

b. Certificate # (if registered land)

208

d. Page Number

B. Buffer Zone & Resource Area Impacts (temporary & permanent)

- 1. Buffer Zone Only – Check if the project is located only in the Buffer Zone of a Bordering Vegetated Wetland, Inland Bank, or Coastal Resource Area.
- 2. Inland Resource Areas (see 310 CMR 10.54-10.58; if not applicable, go to Section B.3, Coastal Resource Areas).

Check all that apply below. Attach narrative and any supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.



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B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

For all projects affecting other Resource Areas, please attach a narrative explaining how the resource area was delineated.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. <input type="checkbox"/> Bank	1. linear feet	2. linear feet
b. <input type="checkbox"/> Bordering Vegetated Wetland	1. square feet	2. square feet
c. <input type="checkbox"/> Land Under Waterbodies and Waterways	1. square feet	2. square feet
	3. cubic yards dredged	

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
d. <input type="checkbox"/> Bordering Land Subject to Flooding	1. square feet	2. square feet
	3. cubic feet of flood storage lost	4. cubic feet replaced
e. <input type="checkbox"/> Isolated Land Subject to Flooding	1. square feet	
	2. cubic feet of flood storage lost	3. cubic feet replaced
f. <input type="checkbox"/> Riverfront Area	1. Name of Waterway (if available) - specify coastal or inland	

2. Width of Riverfront Area (check one):

- 25 ft. - Designated Densely Developed Areas only
- 100 ft. - New agricultural projects only
- 200 ft. - All other projects

3. Total area of Riverfront Area on the site of the proposed project: _____ square feet

4. Proposed alteration of the Riverfront Area:

a. total square feet	b. square feet within 100 ft.	c. square feet between 100 ft. and 200 ft.
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5. Has an alternatives analysis been done and is it attached to this NOI? Yes No

6. Was the lot where the activity is proposed created prior to August 1, 1996? Yes No

3. Coastal Resource Areas: (See 310 CMR 10.25-10.35)

Note: for coastal riverfront areas, please complete **Section B.2.f.** above.



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B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

Check all that apply below. Attach narrative and supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

Online Users:
Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

<u>Resource Area</u>	<u>Size of Proposed Alteration</u>	<u>Proposed Replacement (if any)</u>
a. <input type="checkbox"/> Designated Port Areas	Indicate size under Land Under the Ocean, below	
b. <input type="checkbox"/> Land Under the Ocean	_____	
	1. square feet	

	2. cubic yards dredged	
c. <input checked="" type="checkbox"/> Barrier Beach	Indicate size under Coastal Beaches and/or Coastal Dunes below	
d. <input type="checkbox"/> Coastal Beaches	_____	_____
	1. square feet	2. cubic yards beach nourishment
e. <input checked="" type="checkbox"/> Coastal Dunes	4,100+/-	0
	_____	_____
	1. square feet	2. cubic yards dune nourishment
	<u>Size of Proposed Alteration</u>	<u>Proposed Replacement (if any)</u>
f. <input type="checkbox"/> Coastal Banks	_____	
	1. linear feet	
g. <input type="checkbox"/> Rocky Intertidal Shores	_____	
	1. square feet	
h. <input type="checkbox"/> Salt Marshes	_____	_____
	1. square feet	2. sq ft restoration, rehab., creation
i. <input type="checkbox"/> Land Under Salt Ponds	_____	
	1. square feet	

	2. cubic yards dredged	
j. <input type="checkbox"/> Land Containing Shellfish	_____	
	1. square feet	
k. <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	

	1. cubic yards dredged	
l. <input checked="" type="checkbox"/> Land Subject to Coastal Storm Flowage	4,100+/-	

	1. square feet	
4. <input type="checkbox"/> Restoration/Enhancement	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.2.b or B.3.h above, please enter the additional amount here.	
	_____	_____
	a. square feet of BVW	b. square feet of Salt Marsh
5. <input type="checkbox"/> Project Involves Stream Crossings		
	_____	_____
	a. number of new stream crossings	b. number of replacement stream crossings



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C. Other Applicable Standards and Requirements

- This is a proposal for an Ecological Restoration Limited Project. Skip Section C and complete Appendix A: Ecological Restoration Limited Project Checklists – Required Actions (310 CMR 10.11).

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

- 1. Is any portion of the proposed project located in **Estimated Habitat of Rare Wildlife** as indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetland Wildlife published by the Natural Heritage and Endangered Species Program (NHESP)? To view habitat maps, see the *Massachusetts Natural Heritage Atlas* or go to http://maps.massgis.state.ma.us/PRI_EST_HAB/viewer.htm.

a. Yes No **If yes, include proof of mailing or hand delivery of NOI to:**

**Natural Heritage and Endangered Species Program
Division of Fisheries and Wildlife
1 Rabbit Hill Road
Westborough, MA 01581**

8/2021
b. Date of map

If yes, the project is also subject to Massachusetts Endangered Species Act (MESA) review (321 CMR 10.18). To qualify for a streamlined, 30-day, MESA/Wetlands Protection Act review, please complete Section C.1.c, and include requested materials with this Notice of Intent (NOI); *OR* complete Section C.2.f, if applicable. *If MESA supplemental information is not included with the NOI, by completing Section 1 of this form, the NHESP will require a separate MESA filing which may take up to 90 days to review (unless noted exceptions in Section 2 apply, see below).*

c. Submit Supplemental Information for Endangered Species Review*

- 1. Percentage/acreage of property to be altered:
(a) within wetland Resource Area _____ percentage/acreage
(b) outside Resource Area _____ percentage/acreage

2. Assessor's Map or right-of-way plan of site

- 2. Project plans for entire project site, including wetland resource areas and areas outside of wetlands jurisdiction, showing existing and proposed conditions, existing and proposed tree/vegetation clearing line, and clearly demarcated limits of work **
(a) Project description (including description of impacts outside of wetland resource area & buffer zone)
(b) Photographs representative of the site

* Some projects **not** in Estimated Habitat may be located in Priority Habitat, and require NHESP review (see <http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/regulatory-review/>). Priority Habitat includes habitat for state-listed plants and strictly upland species not protected by the Wetlands Protection Act.

** MESA projects may not be segmented (321 CMR 10.16). The applicant must disclose full development plans even if such plans are not required as part of the Notice of Intent process.



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C. Other Applicable Standards and Requirements (cont'd)

(c) MESA filing fee (fee information available at http://www.mass.gov/dfwele/dfw/nhosp/regulatory_review/mesa/mesa_fee_schedule.htm).
Make check payable to "Commonwealth of Massachusetts - NHESP" and **mail to NHESP** at above address

Projects altering 10 or more acres of land, also submit:

(d) Vegetation cover type map of site

(e) Project plans showing Priority & Estimated Habitat boundaries

(f) OR Check One of the Following

1. Project is exempt from MESA review.
Attach applicant letter indicating which MESA exemption applies. (See 321 CMR 10.14, http://www.mass.gov/dfwele/dfw/nhosp/regulatory_review/mesa/mesa_exemptions.htm; the NOI must still be sent to NHESP if the project is within estimated habitat pursuant to 310 CMR 10.37 and 10.59.)

2. Separate MESA review ongoing. a. NHESP Tracking # _____ b. Date submitted to NHESP _____

3. Separate MESA review completed.
Include copy of NHESP "no Take" determination or valid Conservation & Management Permit with approved plan.

3. For coastal projects only, is any portion of the proposed project located below the mean high water line or in a fish run?

a. Not applicable – project is in inland resource area only b. Yes No

If yes, include proof of mailing, hand delivery, or electronic delivery of NOI to either:

South Shore - Cohasset to Rhode Island border, and the Cape & Islands:

Division of Marine Fisheries -
Southeast Marine Fisheries Station
Attn: Environmental Reviewer
1213 Purchase Street – 3rd Floor
New Bedford, MA 02740-6694
Email: DMF.EnvReview-South@state.ma.us

North Shore - Hull to New Hampshire border:

Division of Marine Fisheries -
North Shore Office
Attn: Environmental Reviewer
30 Emerson Avenue
Gloucester, MA 01930
Email: DMF.EnvReview-North@state.ma.us

Also if yes, the project may require a Chapter 91 license. For coastal towns in the Northeast Region, please contact MassDEP's Boston Office. For coastal towns in the Southeast Region, please contact MassDEP's Southeast Regional Office.



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Online Users:
Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

C. Other Applicable Standards and Requirements (cont'd)

4. Is any portion of the proposed project within an Area of Critical Environmental Concern (ACEC)?
 a. Yes No If yes, provide name of ACEC (see instructions to WPA Form 3 or MassDEP Website for ACEC locations). **Note:** electronic filers click on Website.
 b. ACEC
5. Is any portion of the proposed project within an area designated as an Outstanding Resource Water (ORW) as designated in the Massachusetts Surface Water Quality Standards, 314 CMR 4.00?
 a. Yes No
6. Is any portion of the site subject to a Wetlands Restriction Order under the Inland Wetlands Restriction Act (M.G.L. c. 131, § 40A) or the Coastal Wetlands Restriction Act (M.G.L. c. 130, § 105)?
 a. Yes No
7. Is this project subject to provisions of the MassDEP Stormwater Management Standards?
 a. Yes. Attach a copy of the Stormwater Report as required by the Stormwater Management Standards per 310 CMR 10.05(6)(k)-(q) and check if:
 1. Applying for Low Impact Development (LID) site design credits (as described in Stormwater Management Handbook Vol. 2, Chapter 3)
 2. A portion of the site constitutes redevelopment
 3. Proprietary BMPs are included in the Stormwater Management System.
 b. No. Check why the project is exempt:
 1. Single-family house
 2. Emergency road repair
 3. Small Residential Subdivision (less than or equal to 4 single-family houses or less than or equal to 4 units in multi-family housing project) with no discharge to Critical Areas.

D. Additional Information

- This is a proposal for an Ecological Restoration Limited Project. Skip Section D and complete Appendix A: Ecological Restoration Notice of Intent – Minimum Required Documents (310 CMR 10.12).

Applicants must include the following with this Notice of Intent (NOI). See instructions for details.

Online Users: Attach the document transaction number (provided on your receipt page) for any of the following information you submit to the Department.

1. USGS or other map of the area (along with a narrative description, if necessary) containing sufficient information for the Conservation Commission and the Department to locate the site. (Electronic filers may omit this item.)
2. Plans identifying the location of proposed activities (including activities proposed to serve as a Bordering Vegetated Wetland [BVW] replication area or other mitigating measure) relative to the boundaries of each affected resource area.



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D. Additional Information (cont'd)

3. Identify the method for BVW and other resource area boundary delineations (MassDEP BVW Field Data Form(s), Determination of Applicability, Order of Resource Area Delineation, etc.), and attach documentation of the methodology.

4. List the titles and dates for all plans and other materials submitted with this NOI.

Subsurface Sewage Disposal System Upgrade

a. Plan Title

Zenith Consulting Engineers, LLC.

Nyles Zager, P.E.

b. Prepared By

c. Signed and Stamped by

1-26-22

varies

d. Final Revision Date

e. Scale

See attached

f. Additional Plan or Document Title

g. Date

5. If there is more than one property owner, please attach a list of these property owners not listed on this form.

6. Attach proof of mailing for Natural Heritage and Endangered Species Program, if needed.

7. Attach proof of mailing for Massachusetts Division of Marine Fisheries, if needed.

8. Attach NOI Wetland Fee Transmittal Form

9. Attach Stormwater Report, if needed.

E. Fees

1. Fee Exempt: No filing fee shall be assessed for projects of any city, town, county, or district of the Commonwealth, federally recognized Indian tribe housing authority, municipal housing authority, or the Massachusetts Bay Transportation Authority.

Applicants must submit the following information (in addition to pages 1 and 2 of the NOI Wetland Fee Transmittal Form) to confirm fee payment:

3315

2-1-22

2. Municipal Check Number

3. Check date

3316

2-1-22

4. State Check Number

5. Check date

Zenith Consulting Engineers, LLC.

6. Payor name on check: First Name

7. Payor name on check: Last Name



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Bourne

City/Town

F. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Notice of Intent and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge. I understand that the Conservation Commission will place notification of this Notice in a local newspaper at the expense of the applicant in accordance with the wetlands regulations, 310 CMR 10.05(5)(a).

I further certify under penalties of perjury that all abutters were notified of this application, pursuant to the requirements of M.G.L. c. 131, § 40. Notice must be made by Certificate of Mailing or in writing by hand delivery or certified mail (return receipt requested) to all abutters within 100 feet of the property line of the project location.

	2-2-22
1. Signature of Applicant	2. Date
3. Signature of Property Owner (if different)	4. Date
	2-2-22
5. Signature of Representative (if any)	6. Date

For Conservation Commission:

Two copies of the completed Notice of Intent (Form 3), including supporting plans and documents, two copies of the NOI Wetland Fee Transmittal Form, and the city/town fee payment, to the Conservation Commission by certified mail or hand delivery.

For MassDEP:

One copy of the completed Notice of Intent (Form 3), including supporting plans and documents, one copy of the NOI Wetland Fee Transmittal Form, and a **copy** of the state fee payment to the MassDEP Regional Office (see Instructions) by certified mail or hand delivery.

Other:

If the applicant has checked the "yes" box in any part of Section C, Item 3, above, refer to that section and the Instructions for additional submittal requirements.

The original and copies must be sent simultaneously. Failure by the applicant to send copies in a timely manner may result in dismissal of the Notice of Intent.



Massachusetts Department of Environmental Protection
 Bureau of Resource Protection - Wetlands
NOI Wetland Fee Transmittal Form
 Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A. Applicant Information

1. Location of Project:

191 Phillips Road	Bourne
a. Street Address	b. City/Town
3316	\$97.50
c. Check number	d. Fee amount

2. Applicant Mailing Address:

Tim	Hashem	
a. First Name	b. Last Name	
c. Organization		
P.O. Box 265		
d. Mailing Address		
Middleborough	MA	02346
e. City/Town	f. State	g. Zip Code
774-406-0299	middlake@yahoo.com	
h. Phone Number	i. Fax Number	j. Email Address

3. Property Owner (if different):

a. First Name	b. Last Name	

c. Organization		

d. Mailing Address		
_____	_____	_____
e. City/Town	f. State	g. Zip Code
_____	_____	_____
h. Phone Number	i. Fax Number	j. Email Address

B. Fees

Fee should be calculated using the following process & worksheet. **Please see Instructions before filling out worksheet.**

Step 1/Type of Activity: Describe each type of activity that will occur in wetland resource area and buffer zone.

Step 2/Number of Activities: Identify the number of each type of activity.

Step 3/Individual Activity Fee: Identify each activity fee from the six project categories listed in the instructions.

Step 4/Subtotal Activity Fee: Multiply the number of activities (identified in Step 2) times the fee per category (identified in Step 3) to reach a subtotal fee amount. Note: If any of these activities are in a Riverfront Area in addition to another Resource Area or the Buffer Zone, the fee per activity should be multiplied by 1.5 and then added to the subtotal amount.

Step 5/Total Project Fee: Determine the total project fee by adding the subtotal amounts from Step 4.

Step 6/Fee Payments: To calculate the state share of the fee, divide the total fee in half and subtract \$12.50. To calculate the city/town share of the fee, divide the total fee in half and add \$12.50.

To calculate filing fees, refer to the category fee list and examples in the instructions for filling out WPA Form 3 (Notice of Intent).



B. Fees (continued)

Step 1/Type of Activity	Step 2/Number of Activities	Step 3/Individual Activity Fee	Step 4/Subtotal Activity Fee
Cat 1 a)	1	\$110.00	\$110.00
Cat 1 e)	1	\$110.00	\$110.00

Step 5/Total Project Fee: \$220.00

Step 6/Fee Payments:

Total Project Fee:	<u>\$220.00</u>
	a. Total Fee from Step 5
State share of filing Fee:	<u>\$97.50</u>
	b. 1/2 Total Fee less \$12.50
City/Town share of filing Fee:	<u>\$122.50</u>
	c. 1/2 Total Fee plus \$12.50

C. Submittal Requirements

a.) Complete pages 1 and 2 and send with a check or money order for the state share of the fee, payable to the Commonwealth of Massachusetts.

Department of Environmental Protection
 Box 4062
 Boston, MA 02211

b.) **To the Conservation Commission:** Send the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and the city/town fee payment.

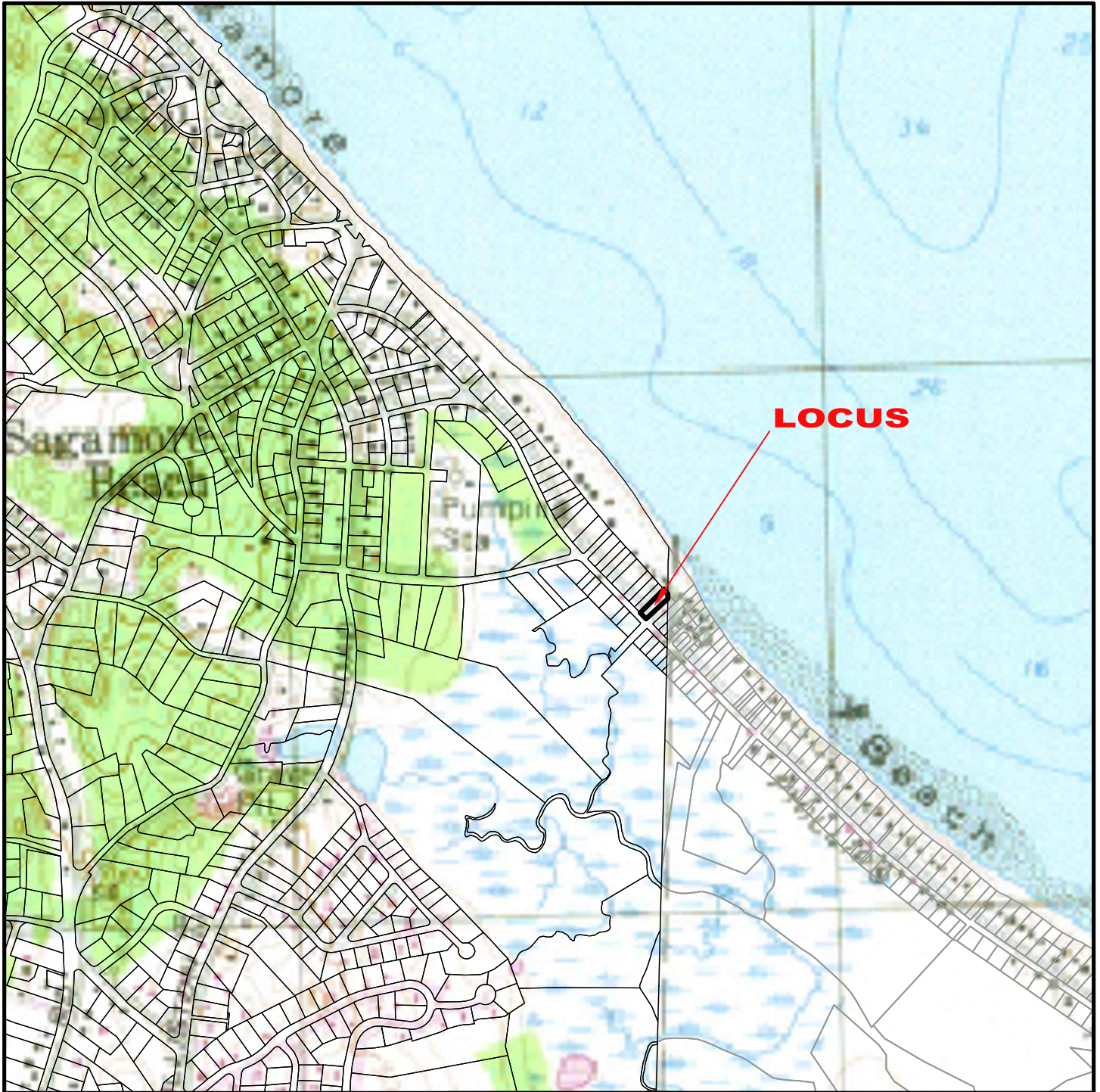
To MassDEP Regional Office (see Instructions): Send a copy of the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and a **copy** of the state fee payment. (E-filers of Notices of Intent may submit these electronically.)

Locus: 191 Philips Road in Bourne, MA
Assessors Map 4.4 lot 131

Notice of Intent Attachments

- 1 USGS Map**
- 2 Certified Abutters List**
- 3 Notification to Abutters**
- 4 Massachusetts Natural Heritage Map**
- 5 ACEC Map**
- 6 ORW Map (Outstanding Resource Water)**
- 7 Firm Map**
- 8 Nitrogen Loading Calculations**
- 9 Copies of Checks**

USGS Map



SHEET NAME:

USGS MAP

PROJECT SITE:

**191 PHILIPS ROAD
BOURNE, MASSACHUSETTS**

CLIENT INFO:

**TIM HASHEM
PO BOX 265 MIDDLEBORO, MA 02346**



ZENITH CONSULTING ENGINEERS, LLC

3 MAIN STREET LAKEVILLE, MA 02347

PHONE: (508) 947-4208

Certified Abutters List

Notification to Abutters

**Notification to Abutters Under the
Massachusetts Wetlands Protection Act**

In accordance with the second paragraph of Massachusetts General Laws Chapter 131, Section 40, you are hereby notified of the following.

- A. The name of the applicant is **Tim Hashem**
- B. The applicant has filed a Notice of Intent with the Conservation Commission for the municipality of **Bourne, Massachusetts** Subject to Protection Under the Wetlands Protection Act (General Laws Chapter 1331, Section 40).
- C. The address of the lot where the activity is proposed is **191 Phillips Road Bourne, Massachusetts (Assessors Map 4.4, Lot 131).**
- D. Copies of the Notice of Intent may be examined at **Bourne Conservation Commission, 24 Perry Ave. Buzzards Bay, MA 02532 by appointment. For more information, call: (508) 759-0600 ext. 1344.**

Check One: This is the applicant , representative , or other , (specify):
Conservation Commission

Copies of the Notice of Intent may be obtained from either (check one) the applicant , or the applicant's representative , by calling this telephone number (508) 947-4208 between the hours of 9 and 3 on the following days of the week: Monday - Friday.

Information regarding the date, time, and place of the public hearing may be obtained from **Bourne Conservation Commission** by calling this telephone number **(508) 759-0600 ext 1344 between the hours of 8:30 - 4:30 Monday - Friday**.

Check one: This is the applicant , representative , or other (specify):
Conservation Commission.

NOTE: Notice of the public hearing, including its date, time, and place, will be published at least five (5) days in advance in the Bourne Courier or another newspaper of local circulation.

NOTE: Notice of the public hearing, including its date, time and place, will be posted in the City or Town Hall not less than forty-eight (48) hours in advance.

NOTE: You also may contact your local Conservation Commission or the nearest Department of Environmental Protection Regional Office for more information about this publication or the Wetlands Protection Act. To contact DEP, call:

Central Region: (508) 792-7650
Southeast Region: (508) 946-2700

Northeast Region: (617) 932-7600
Western Region: (413) 784-1100

Massachusetts Natural Heritage Map



SHEET NAME:

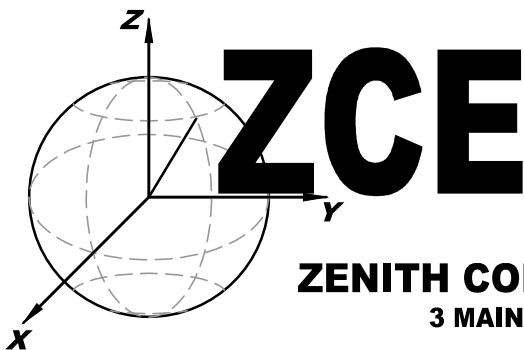
NHESP MAP (8/2021)

PROJECT SITE:

**191 PHILIPS ROAD
BOURNE, MASSACHUSETTS**

CLIENT INFO:

**TIM HASHEM
PO BOX 265 MIDDLEBORO, MA 02346**

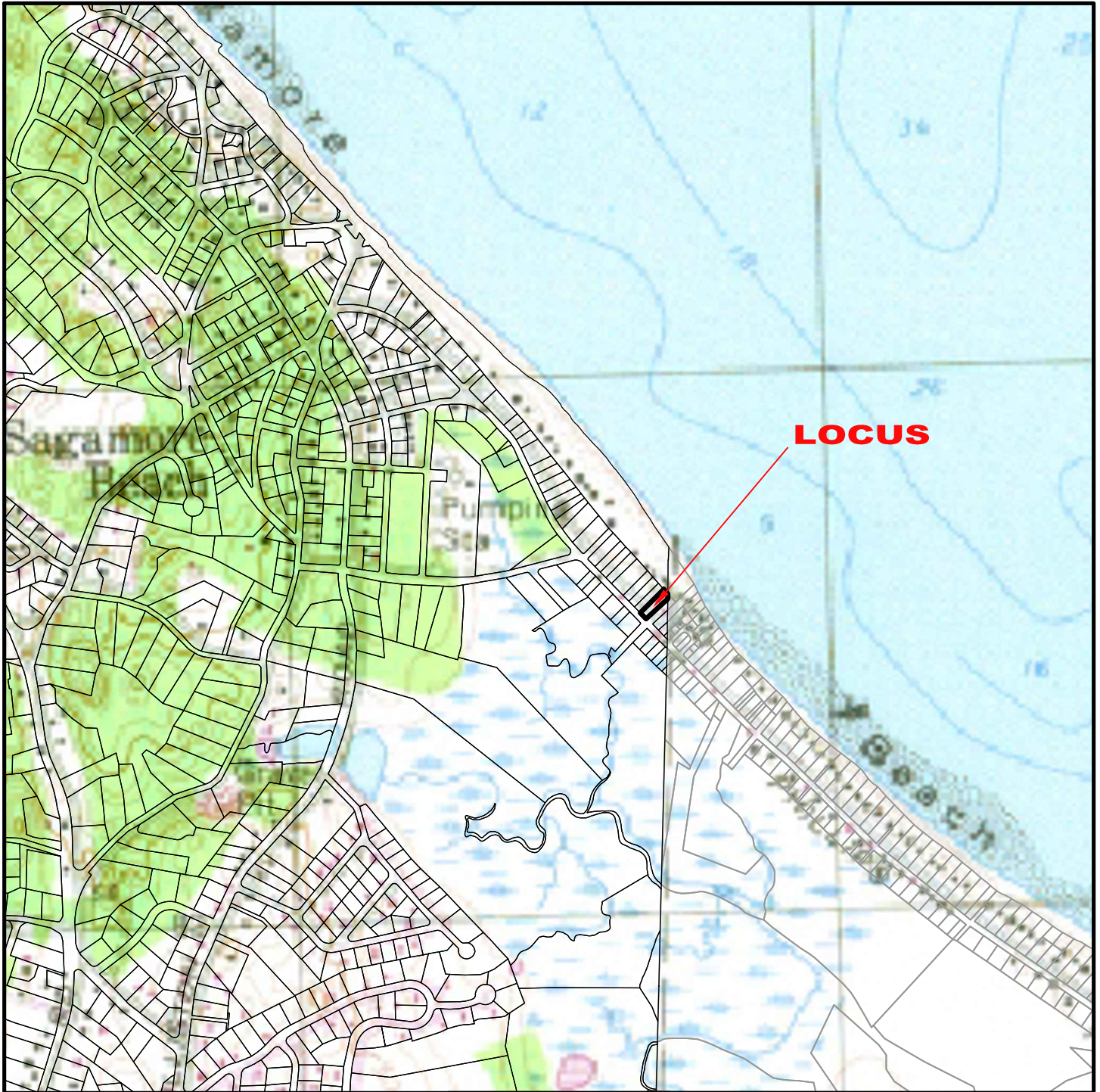


ZENITH CONSULTING ENGINEERS, LLC

3 MAIN STREET LAKEVILLE, MA 02347

PHONE: (508) 947-4208

ACEC Map



SHEET NAME:

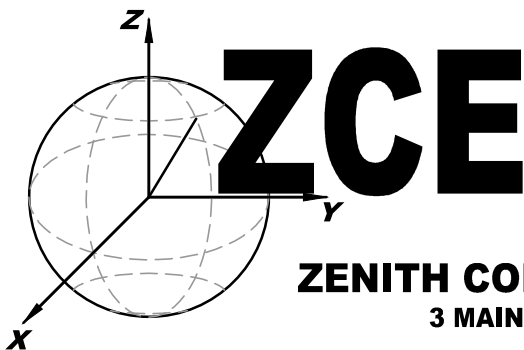
ACEC MAP

PROJECT SITE:

**191 PHILIPS ROAD
BOURNE, MASSACHUSETTS**

CLIENT INFO:

**TIM HASHEM
PO BOX 265 MIDDLEBORO, MA 02346**

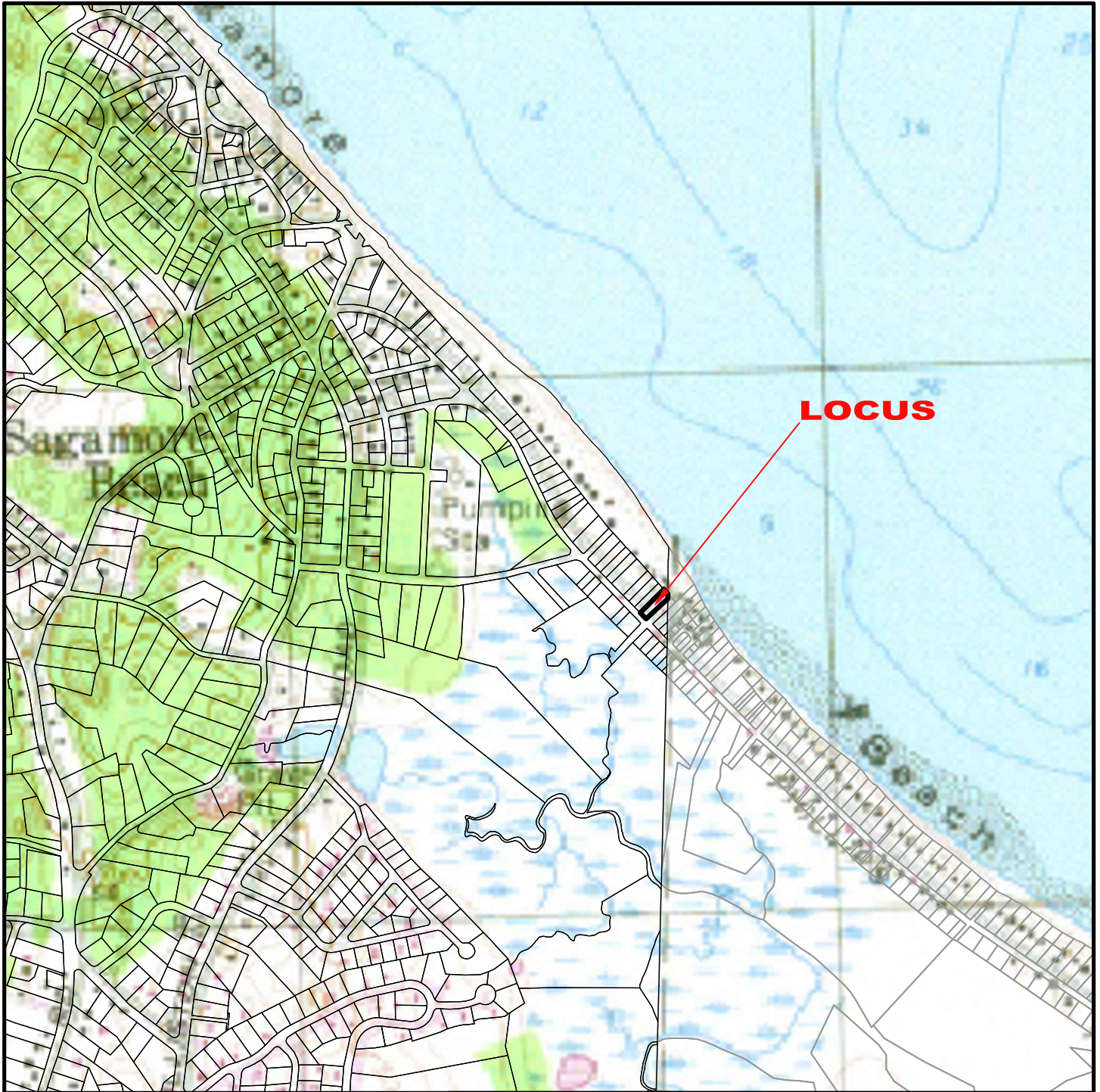


ZENITH CONSULTING ENGINEERS, LLC

3 MAIN STREET LAKEVILLE, MA 02347

PHONE: (508) 947-4208

ORW Map (Outstanding Resource Water)



SHEET NAME:

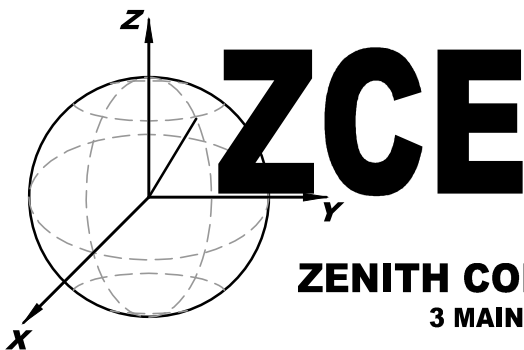
OUTSTANDING RESOURCE WATER MAP

PROJECT SITE:

**191 PHILIPS ROAD
BOURNE, MASSACHUSETTS**

CLIENT INFO:

**TIM HASHEM
PO BOX 265 MIDDLEBORO, MA 02346**



ZENITH CONSULTING ENGINEERS, LLC

3 MAIN STREET LAKEVILLE, MA 02347

PHONE: (508) 947-4208

Firm Map

National Flood Hazard Layer FIRMette

70°31'30"W 41°47'45"N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS

- Without Base Flood Elevation (BFE)
Zone A, V, A99
- With BFE or Depth
Zone AE, AO, AH, VE, AR
- Regulatory Floodway

0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile
Zone X

Future Conditions 1% Annual Chance Flood Hazard
Zone X

Area with Reduced Flood Risk due to Levee. See Notes.
Zone X

Area with Flood Risk due to Levee
Zone D

OTHER AREAS OF FLOOD HAZARD

NO SCREEN
Zone X

Area of Minimal Flood Hazard
Zone X

Effective LOMRMs
Zone D

Area of Undetermined Flood Hazard
Zone D

OTHER AREAS

GENERAL STRUCTURES

- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

Cross Sections with 1% Annual Chance Water Surface Elevation

- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Profile Baseline
- Hydrographic Feature

OTHER FEATURES

Digital Data Available

No Digital Data Available

Unmapped

MAP PANELS

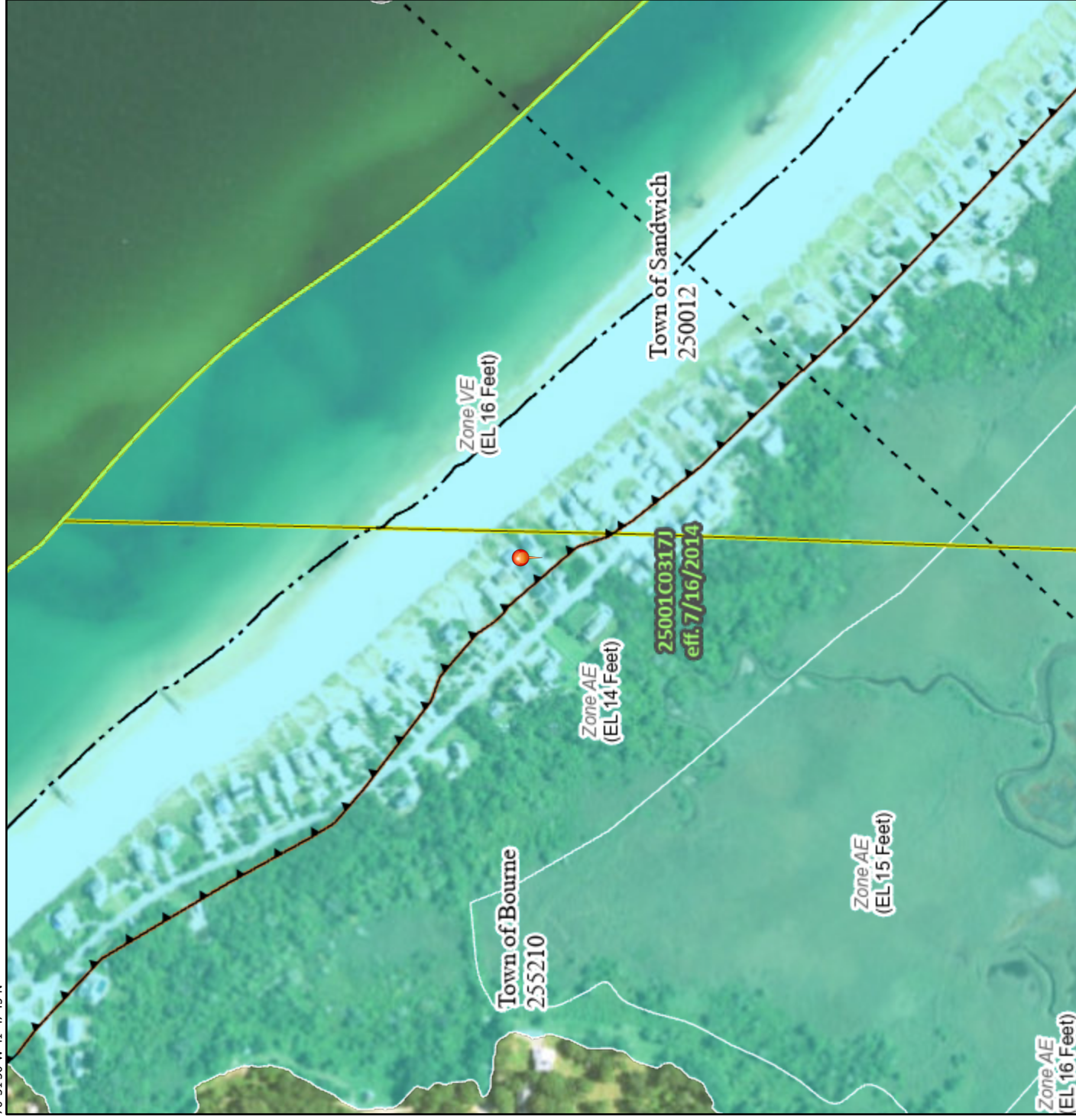


The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards.

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **12/30/2021 at 2:42 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.



70°30'52"W 41°47'18"N

Feet 1:6,000

0 250 500 1,000 1,500 2,000

Basemap: USGS National Map; Data refreshed October, 2020

Nitrogen Loading Calculations

Town of Bourne

CONSERVATION COMMISSION

Nitrogen Loading Calculation Sheet for Residential Housing

The following calculation sheet is based upon Technical Bulletin 91-001 issued by the Cape Cod Commission and deals with nitrate nitrogen (NO₃-N). Use the information from your PLAN OF RECORD to provide the following:

Number of bedrooms (Title 5 definition)	=	<u>4</u>	bedrooms
Lot size (in square feet)	=	<u>10,139</u>	sq. ft.
Impervious surfaces; **Roof area = <u>1,517</u> sq. ft. **Paved area =	=	<u>2,790</u>	sq. ft.
Natural Area = lot area minus all impervious surfaces	=	<u>5,832</u>	sq. ft.
Lawn area in sq. ft.	=	<u>0</u>	sq. ft.

TITLE 5 FLOW = 110 GAL. / DAY PER BEDROOM
 WASTEWATER FLOWS (NITROGEN LOAD & WATER LOAD)

Nitrogen from Title 5 design = 14,572 mg NO₃-N / day / bedroom
 Water from Title 5 design = 416.3 L H₂O / day / bedroom (26,230 @ 55% reduction with Micro-Fast 0.5 unit)

1a) Number of bedrooms = 4 X 14,572 = 58,288 mg. NO₃-N / day

1b) Number of bedrooms = 4 X 416 = 1,664 L H₂O / day

Actual Nitrogen load = 6071.5 mg NO₃-N / day / bedroom

Actual Water load = 173.5 L H₂O / day / bedroom

*Note: This assumes 2.5 people / unit average occupancy within the Town.
 (12,143 @ 55% reduction with Micro-Fast Unit)

2a) Number of bedrooms = 4 X 6071.5 = 24,286 mg. NO₃-N / day

2b) Number of bedrooms = 4 X 173.5 = 694 L H₂O / day

IMPERVIOUS SURFACES (NITROGEN LOAD & WATER LOAD)

NO₃-N load number sq. ft. of roof surface X 0.19395 mg NO₃-N / sq. ft.

H₂O load number sq. ft. of roof surface X 0.2586 L / sq. ft.

3a) Roof surface = 1,517 sq. ft. X 0.19395 = 294 mg NO₃-N

3b) Roof surface = 1,517 sq. ft. X 0.2586 = 392 L H₂O

NO₃-N load number sq. ft. of paved surface X 0.388 mg / sq. ft.

H₂O load number sq. ft. of paved surface X 0.2586 L / sq. ft.

4a) NO₃-N = 2,790 sq. ft. paved surface X 0.388 mg / sq. ft. = 1,083 mg NO₃-N

4b) H₂O = 2,790 sq. ft. paved surface X 0.2586 L / sq. ft. = 721 L H₂O

LAWN NITROGEN LOAD = 0.933 mg / sq. ft. lawn surface

5) sq. ft. of lawn = 0 X 0.933 = 0 mg

NATURAL AREA WATER LOADING

Natural area = lot size - impervious surface = 5,832 sq.ft.

6) Natural area = 5,832 X water recharge factor = 792 L
(0.1358 L / sq. ft. for Bourne)¹

SUMMARY OF NITROGEN LOADING

Estimated Title 5 Nitrogen & Water Loading

7a) ADD the above NO₃N load:

1a + 3a + 4a + 5
26,230 + 294 + 1,083 + 0 = 27,607 mg NO₃-N / day

7b) ADD the above water (H₂O) load:

1b + 3b + 4b + 6
1,664 + 392 + 721 + 792 = 3,569 L H₂O / day

7c) DIVIDE 7a by 7b = 7.74 ppm NO₃-N*****

Actual Nitrogen & Water Loading

8a) ADD the above NO₃N load:

2a + 3a + 4a + 5
12,143 + 294 + 1,083 + 0 = 13,520 mg NO₃-N / day

8b) ADD the above water (H₂O) load:

2b + 3b + 4b + 6
694 + 392 + 721 + 792 = 2,599 L H₂O / day

8c) DIVIDE 8a by 8b = 5.20 ppm NO₃-N*****

FINAL CALCULATION ADD 7c & 8c (ppm) = 12.94 divide by 2 = 6.47 ppm NO₃-N

This is the actual nitrate nitrogen load for the project as designed. The target for coastal areas is 5 ppm nitrate nitrogen. Certain critical embayments may require a LOWER figure to prevent degradation.

*******If your nitrate nitrogen load exceeds the target limit USE A SECOND CALCULATION SHEET TO SHOW ALTERNATIVES IN TRYING TO ACHIEVE THE 5 PPM NITRATE NITROGEN LEVEL*******

¹ Water recharge factors for data line 6: @21' / yr. use 0.1358 in Bourne and Falmouth; @ 19" / yr. use 0.1228 for Mashpee & Sandwich; @ 18" / yr. 0.1164 for Barnstable, Dennis & Yarmouth; @ 17" / yr. use 0.1101 for Brewster & Harwich; @ 16" / yr. use 0.1031 for Chatham, Eastham, Orleans, Provincetown, Truro & Wellfleet.

Copies of Checks