



August 5, 2021

**Electronic Delivery**

Lynnfield Conservation Commission  
Lynnfield Town Hall  
55 Summer Street  
Lynnfield MA 01940

**Re: Peer Review of Notice of Intent Application**  
**DEP File #: 209-0649**  
**99 Crest Road**  
**Assessor’s Map 35, Lot 255**  
**Lynnfield, Massachusetts**

[LEC File #: LCC\21-325.02]

Dear Members of the Conservation Commission:

LEC Environmental Consultants, Inc., (LEC) conducted a site evaluation and peer review of the May, 2021 Notice of Intent (NOI) Application filed by Hayes Engineering, Inc., (Hayes), on behalf of the Applicant, Mary Jo Milano. The purpose of this peer review was to determine compliance with the *Massachusetts Wetlands Protection Act* (M.G.L. c. 131, s. 40, the *Act*) and its implementing Regulations (310 CMR 10.00, the *Act Regulations*), and the *Town of Lynnfield Wetland Protection Bylaw* (Chapter 240, the *Bylaw*) and the *Town of Lynnfield Wetland Protection Regulations* (Chapter 320, the *Bylaw Regulations*). As part of this peer review, LEC conducted a site evaluation on July 21, 2021 and reviewed the following documents:

- Notice of Intent Application dated May, 2021 prepared by Hayes (NOI Application);
- Plan to Accompany Notice of Intent in Lynnfield, Mass. dated May 27, 2021 prepared by Hayes (NOI Plan); and
- Supplemental Letter dated June 15, 2021 prepared by Hayes (Supplemental Letter).

The intent of the proposed project is to prevent erosion of roughly 194 linear feet of Bank along Pillings Pond located along the eastern edge of the property. The site contains a single-family dwelling with detached garage accessed from Crest Road via a paved driveway. Lawn and landscape plants generally surround the dwelling and driveway, with lawn extending to a relatively narrow band of natural vegetation along the pond edge, including: individual red maple (*Acer rubrum*), Norway maple (*Acer platanoides*), American linden (*Tilia americana*), and gray birch (*Betula populifolia*) trees; patches of European buckthorn (*Frangula alnus*) and individuals of multiflora rose (*Rosa multiflora*) and silky dogwood (*Cornus amomum*) in the shrub layer; and an herbaceous/groundcover vegetated with patches of common reed (*Phragmites australis*), sensitive fern (*Onoclea sensibilis*), royal fern (*Osmunda regalis*),

<b>LEC Environmental Consultants, Inc.</b>					<b><a href="http://www.lecenvironmental.com">www.lecenvironmental.com</a></b>
12 Resnik Road Suite 1 Plymouth, MA 02360 508.746.9491	380 Lowell Street Suite 101 Wakefield, MA 01880 781.245.2500	100 Grove Street Suite 302 Worcester, MA 01605 508.753.3077	P.O. Box 590 Rindge, NH 03461 603.899.6726	680 Warren Avenue Suite 3 East Providence, RI 02914 401.685.3109	
<b>PLYMOUTH, MA</b>	<b>WAKEFIELD, MA</b>	<b>WORCESTER, MA</b>	<b>RINDGE, NH</b>	<b>EAST PROVIDENCE, RI</b>	

and poison ivy (*Toxicodendron radicans*). Wetland resource areas associated with the project site include Bank, Land Under Water (LUW), and Bordering Land Subject to Flooding (BLSF). Depending on the location of Bank (to be determined), a narrow band of Bordering Vegetated Wetlands (BVW) also may occur along the pond edge.

Based on our observations (site photographs included herein as **Attachment A** and in the NOI Application), the lot appears to have been constructed, at least in part, on historic fill material, as evidenced by a roughly 12-inch thick, loamy sand fill layer (C horizon) observed along the vegetated pond edge, and human transported material (e.g., concrete and brick fragments, stones, etc.) observed intermittently within the water column immediately adjacent to the pond edge. Scattered larger stones and tree roots were observed along the pond edge as well.

According to the Supplemental Letter, wave action caused by boat wakes is eroding the pond edge, increasing the size of the pond, and decreasing the size of the land surface on the property. While it is challenging to determine the extent of erosion that may have taken place over time, **Attachment B** contains Google Earth imagery from April 1995 through October 2020. The measurements depicted on these images using the ruler tool are variable, likely due (in part) to the angle from which the images were taken. However, a reduction in the amount of land between the dwelling and the pond edge appears to be evident when comparing the size of the dwelling to the area of land between the dwelling and the pond edge. This is particularly evident when comparing the April 1995 image to the December 2001 and April 2018 images, and likely caused by the boat wave action as suggested by the Applicant.

## Recommendations

In order to demonstrate compliance with the *Act Regulations* (the *Bylaw* and *Bylaw Regulations* do not apply given that the lot predates the *Bylaw*), LEC recommends the following:

1) Determine and delineate the jurisdictional Wetland Resource Areas at the site.

According to our conversations with Conservation Agent Emilie Cademartori, water levels within Pillings Pond are determined by adjustable pond levelers situated at the pond outlet, and the water levels are elevated in the summer months and lowered in the winter months. Emilie indicated that the summer and winter elevations of the pond levelers are available. The Applicant should consider whether the upper boundary of Bank is the higher summer pond leveler elevation and the lower boundary of Bank is the lower winter pond leveler elevation, and add these elevations and label “Upper Boundary of Bank” and “Lower Boundary of Bank” to a revised NOI Plan (adjusting/correcting the topographic datums as needed). LEC recommends that the Upper Boundary of Bank be located in the field by the project surveyor and that Hayes determine whether any areas of BVW occur along the upper Bank boundary and delineate the BVW boundaries, if present. LUW extends from the Lower Boundary of Bank, and BLSF extends from the Upper Boundary of Bank or BVW if present to the FEMA Flood elevation 98 NAVD88 (see **Attachment C** – to be confirmed by the Applicant by evaluating the FEMA Flood Profile Data).

In addition to the upper and lower boundaries of Bank, the extent of LUW, BLSF, and any areas of BVW should be added to the revised NOI Plan. Please include a note referencing the pond leveler elevations including data source, FEMA Flood Insurance Rate Map, any associated Flood Profile Data, and explaining any datum adjustments.

2) Consider Alternative Soft Engineering Solutions to stabilize the Bank

The abrupt slope along the edge of Pillings Pond transitions from historic fill soil to comparatively coarse stones, brick and concrete fragments, etc., located roughly 6 inches below the water surface observed during our June 21, 2021 site inspection. Such conditions warrant an evaluation of soft engineering solutions to stabilize the pond edge, such as:

- Coir (coconut) Fiber Logs: Fiber logs are generally available in 10 to 12-foot lengths and 12 and 16-inch diameters, and are available as ‘Standard’ or ‘Premium’ depending on density. A double-log installation may be prudent for this site with the upper log protecting the historic fill soil from wave action above the water line. Coir logs must always be staked in place with hardwood stakes (both layers if two), and a rip-rap toe also may be used to anchor the coir logs in place. The logs can be backfilled with an organic-laden topsoil (8-10% organic content) and planted with live-stakes and/or tubelings (see below), native herbaceous plugs suitable for the site’s hydrology, and/or seeded (those portions above the water level) with an appropriate native seed mixture.
- Dormant Live Material: Dormant live material (typically willow and dogwood species) is available as brush layers, coir fascines, and/or stakes. This material is to be installed outside of the growing season, and takes root and sprouts the following growing season. These materials can be installed on their own or in addition to (on top of) the coir logs.
- Tubelings: Tubelings are rooted cuttings of willow or dogwood that are installed during the growing season, generally in conjunction with the coir logs, and are intended for areas requiring more rapid root growth for stabilization. Tubelings are generally easier to install and have a higher survival rate compared to dormant live material.

Please note that the manufacturer for the above soft engineering solutions should be consulted to fine-tune a design for a specific application. For example, it is often recommended that live-stakes or tubelings/plugs be installed directly into the coir log. This is typically recommended for Banks with more consistent water levels when coir logs remain at least partially inundated. Given that water levels are lowered during the winter months at this site, installing the live stakes or tubelings in the coir log could make them more susceptible to frost and lessen survivorship. Accordingly, installing the plant material in the soil behind the coir logs, or at an angle between two coir logs into the soil behind the coir logs is recommended.<sup>1</sup>

---

<sup>1</sup> Personal communication with Dave Anderson – Owner of New England Wetland Plants, Inc.

Once an appropriate Bank stabilization method is selected, the Applicant should provide several profiles/sections (perhaps one every 50± feet) of the proposed method on the revised NOI Plan, and include a construction sequence, material lay-down area, and indicate how the materials will be installed. LEC recommends the materials be installed outside the growing season, while pond levels are low. It should be determined whether materials can be installed from the existing lawn area, or if access to the exposed Bank is required. If access to the exposed Bank is required, the Applicant should indicate whether this access is only required for laborers, or if a bobcat, or similar construction equipment access is required. If the latter, LEC recommends specifying swamp mats so as to minimize alteration to the Bank during installation. Other mitigating measures might also be considered, including erosion and sediment control during construction (e.g., silt boom), restoration of any altered areas of vegetation required for access, and invasive species management, etc.

3) Determine the Extent of Wetland Resource Area Alteration and Demonstrate Compliance with 310 CMR 10.00

Once the materials and methods for stabilizing the pond edge have been determined and depicted on the revised NOI Plan, the area (linear feet/square feet) of temporary and permanent alteration for each Wetland Resource Area (e.g., Bank, LUW, BVW, and/or BLSF) should be quantified and depicted on the Revised NOI Plan. LEC recommends the Applicant then provide a narrative description of how the project meets the performance standards for each Wetland Resource Area to be altered by citing the performance standards for each resource area, followed by a detailed explanation of how the project meets each standard. For this project, since the alteration of Bank exceeds 50 linear feet and is more than twice the 50-foot threshold, the Applicant also should demonstrate compliance with 310 CMR 10.60 and complete the Appendix B – Detailed Wildlife Habitat Evaluation.

Thank you for your consideration of this Peer Review. We look forward to meeting with you at the August 17, 2021 Public Hearing to discuss further. Should you have any questions, please do not hesitate to contact me in our Wakefield office at 781-245-2500 or at rkirby@lecenvironmental.com.

Sincerely,

**LEC Environmental Consultants, Inc.**



Richard A. Kirby  
Senior Wetland Scientist

cc: DEP, Northeast Region

---

rak: projects\21-325\NOI Review Letter.doc

**Attachment A**

Site Photographs

**Site Photographs:** June 21, 2021 Site Evaluation



Views of abrupt break in topography along pond edge.

**Site Photographs:** June 21, 2021 Site Evaluation



Stones and tree roots stabilize the pond edge intermittently along its length.

**Site Photographs:** June 21, 2021 Site Evaluation



View of stones, concrete and brick fragments immediately adjacent to historic fill pond edge.



**Attachment B**

Google Earth imagery from April 1995 through October 2020

99 Crest Road, Lynnfield, MA  Search

ex: 94043 [Get Directions](#) [History](#)

99 Crest Rd

Places

- My Places
  - Sightseeing Tour
    - Make sure 3D Buildings layer is checked
  - Untitled Path
  - Potential Upland Area
  - Potential Upland Area
  - Temporary Places

Layers

- Primary Database
  - Announcements
  - Photos
  - 3D Buildings
  - Weather
  - Gallery
  - More
  - Borders and Labels (Outdated)
  - Places (Outdated)
  - Roads (Outdated)
  - Terrain

4/1995

99 Crest Rd

Ruler

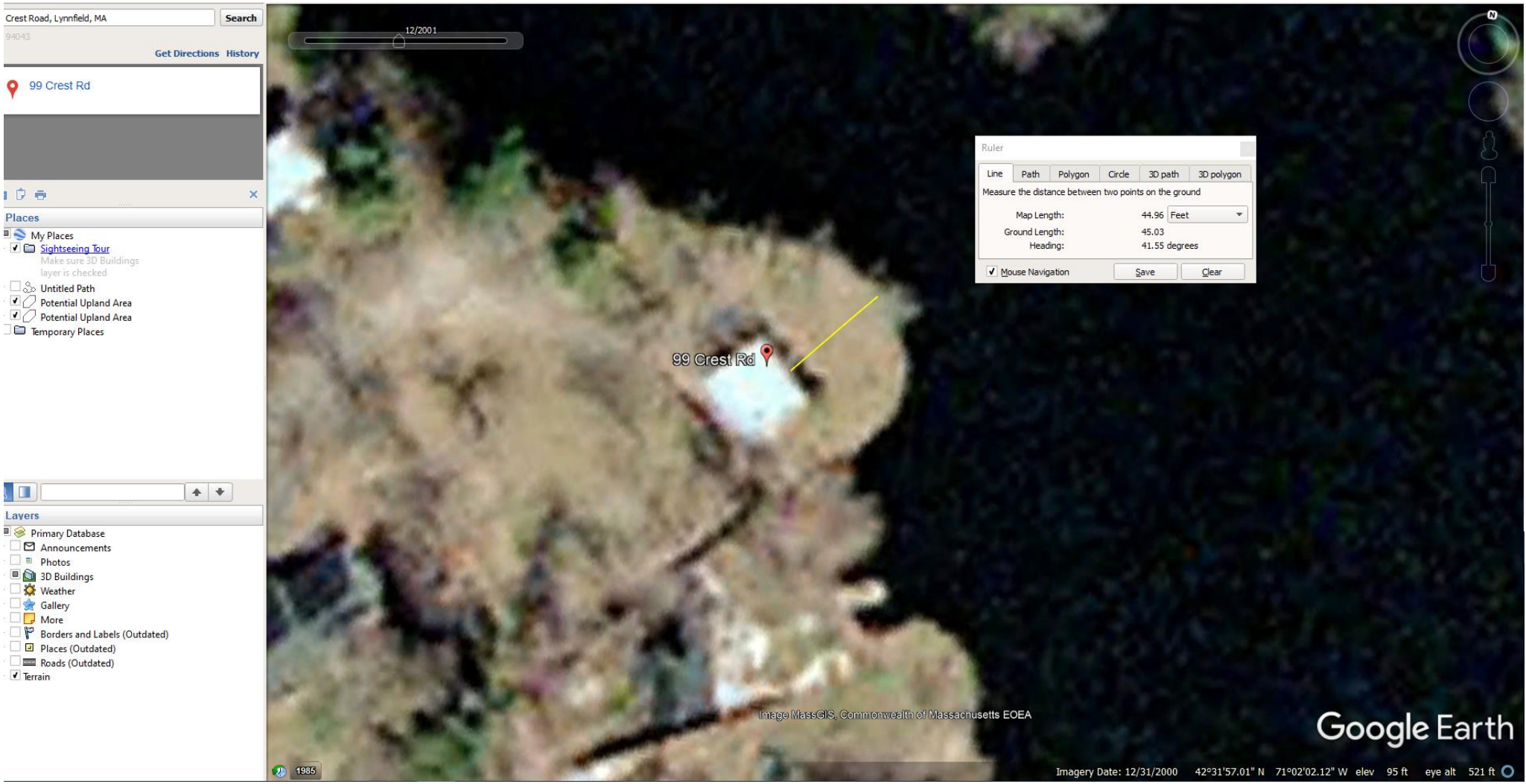
Line	Path	Polygon	Circle	3D path	3D polygon
Measure the distance between two points on the ground					
Map Length:		56.09 Feet			
Ground Length:		56.21			
Heading:		48.39 degrees			

Image U.S. Geological Survey

Google Earth

1985 Imagery Date: 4/2/1995 42°31'57.30" N 71°02'01.73" W elev 95 ft eye alt 521 ft

4/1995



12/2001

99 Crest Road, Lynnfield, MA Search

ex: 94043 Get Directions History

99 Crest Rd

Places

- My Places
  - [Sightseeing Tour](#)  
Make sure 3D Buildings layer is checked
  - Untitled Path
  - Potential Upland Area
  - Potential Upland Area
  - Temporary Places

Layers

- Primary Database
- Announcements
- Photos
- 3D Buildings
- Weather
- Gallery
- More
- Borders and Labels (Outdated)
- Places (Outdated)
- Roads (Outdated)
- Terrain



4/2002

99 Crest Road, Lynnfield, MA  Search

ex: 94043 [Get Directions](#) [History](#)

99 Crest Rd

**Places**

- My Places
  - Sightseeing Tour
    - Make sure 3D Buildings layer is checked
  - Untitled Path
    - Potential Upland Area
    - Potential Upland Area
  - Temporary Places

**Layers**

- Primary Database
  - Announcements
  - Photos
  - 3D Buildings
  - Weather
  - Gallery
  - More
  - Borders and Labels (Outdated)
  - Places (Outdated)
  - Roads (Outdated)
  - Terrain

4/2005

1985 2020

99 Crest Rd

**Ruler**

Line Path Polygon Circle 3D path 3D polygon

Measure the distance between two points on the ground

Map Length:	41.96	Feet
Ground Length:	42.03	
Heading:	41.34	degrees

Mouse Navigation

Image MassGIS: Commonwealth of Massachusetts EOE

Google Earth

1985 Imagery Date: 3/31/2005 42°31'57.42" N 71°02'02.27" W elev 95 ft eye alt 521 ft

4/2005

99 Crest Road, Lynnfield, MA  Search

ex: 94043 [Get Directions](#) [History](#)

99 Crest Rd

Places

- My Places
  - Sightseeing Tour
    - Make sure 3D Buildings layer is checked
  - Untitled Path
  - Potential Upland Area
  - Potential Upland Area
  - Temporary Places

Layers

- Primary Database
- Announcements
- Photos
- 3D Buildings
- Weather
- Gallery
- More
- Borders and Labels (Outdated)
- Places (Outdated)
- Roads (Outdated)
- Terrain

4/2008

1985 2020

99 Crest Rd

Ruler

Line	Path	Polygon	Circle	3D path	3D polygon
Measure the distance between two points on the ground					
Map Length:	38.76	Feet			
Ground Length:	38.86				
Heading:	43.25	degrees			

Mouse Navigation

Image: MassGIS, Commonwealth of Massachusetts EOEa

Google Earth

1985 Imagery Date: 4/9/2008 42°31'57.31" N 71°02'01.92" W elev 95 ft eye alt 521 ft

4/2008

99 Crest Road, Lynnfield, MA  Search

ex: 94043 [Get Directions](#) [History](#)

99 Crest Rd

Places

- My Places
  - Sightseeing Tour
    - Make sure 3D Buildings layer is checked
  - Untitled Path
  - Potential Upland Area
  - Potential Upland Area
  - Temporary Places

Layers

- Primary Database
- Announcements
- Photos
- 3D Buildings
- Weather
- Gallery
- More
- Borders and Labels (Outdated)
- Places (Outdated)
- Roads (Outdated)
- Terrain



6/2010

99 Crest Road, Lynnfield, MA

ex: 94043

**99 Crest Rd**

---

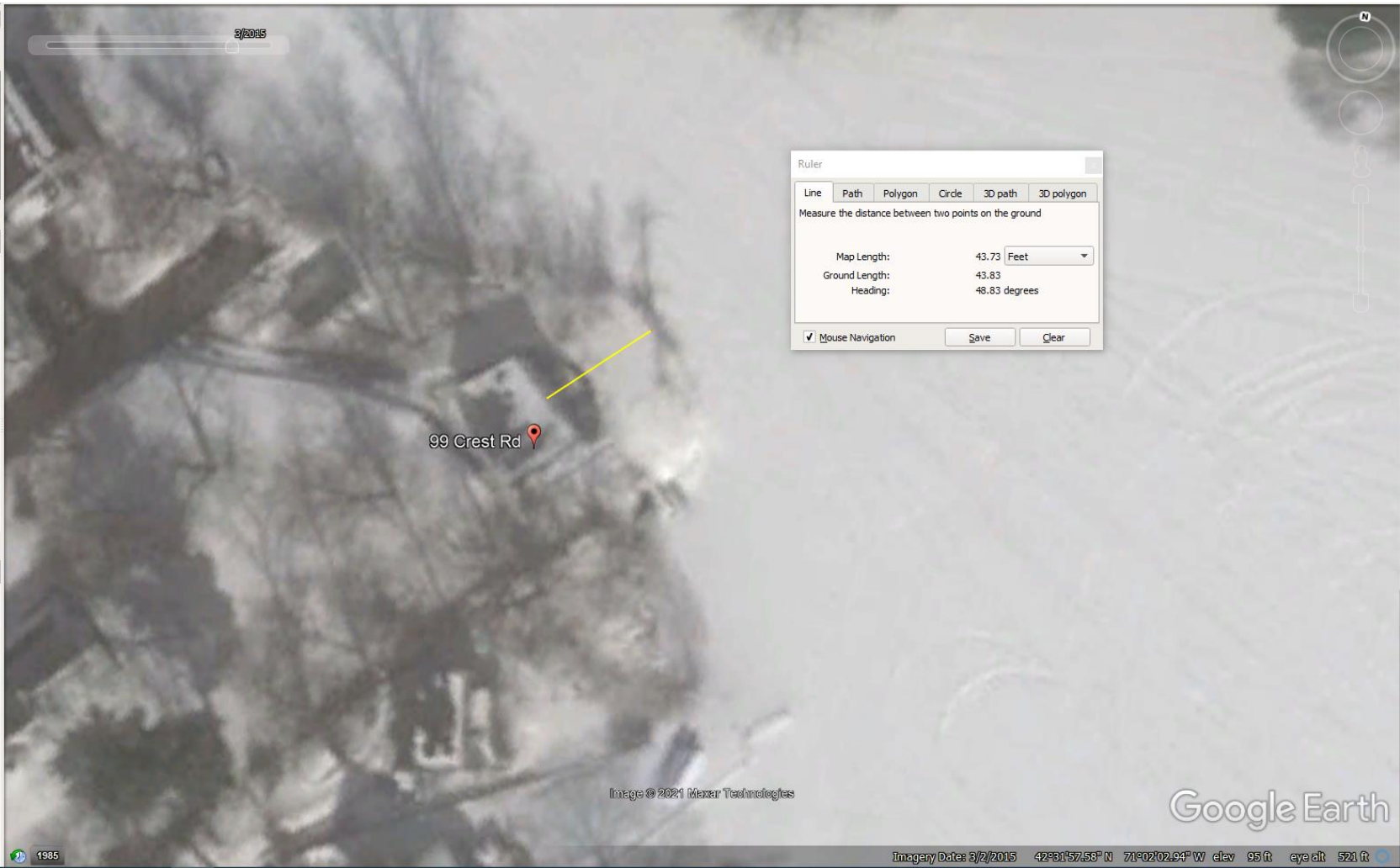
**Places**

- My Places
  - Sightseeing Tour**  
Make sure 3D Buildings layer is checked
  - Untitled Path
  - Potential Upland Area
  - Potential Upland Area
  - Temporary Places

---

**Layers**

- Primary Database
  - Announcements
  - Photos
  - 3D Buildings
  - Weather
  - Gallery
  - More
  - Borders and Labels (Outdated)
  - Places (Outdated)
  - Roads (Outdated)
  - Terrain



3/2015



99 Crest Road, Lynnfield, MA

ex: 94043 6/2015

[Get Directions](#) [History](#)

99 Crest Rd

Places

- My Places
  - Sightseeing Tour
    - Make sure 3D Buildings layer is checked
  - Untitled Path
  - Potential Upland Area
  - Potential Upland Area
  - Temporary Places

Layers

- Primary Database
- Announcements
- Photos
- 3D Buildings
- Weather
- Gallery
- More
- Borders and Labels (Outdated)
- Places (Outdated)
- Roads (Outdated)
- Terrain



6/2015

99 Crest Road, Lynnfield, MA Search

Get Directions History

99 Crest Rd

Places

- My Places
  - Sightseeing Tour
    - Untitled Path
    - Potential Upland Area
    - Potential Upland Area
    - Temporary Places

Layers

- Primary Database
  - Announcements
  - Photos
  - 3D Buildings
  - Weather
  - Gallery
  - More
  - Borders and Labels (Outdated)
  - Places (Outdated)
  - Roads (Outdated)
  - Terrain

5/2016

99 Crest Rd

Ruler

Line	Path	Polygon	Circle	3D path	3D polygon
Measure the distance between two points on the ground					
Map Length:	36.29	Feet			
Ground Length:	36.39				
Heading:	40.12	degrees			

Mouse Navigation Save Clear

Google Earth

Imagery Date: 5/10/2016 42°31'57.31" N 71°02'02.25" W elev 95 ft eye alt 521 ft

1985

5/2016

99 Crest Road, Lynnfield, MA  Search

ex: 94043 4/2017

[Get Directions](#) [History](#)

📍 99 Crest Rd

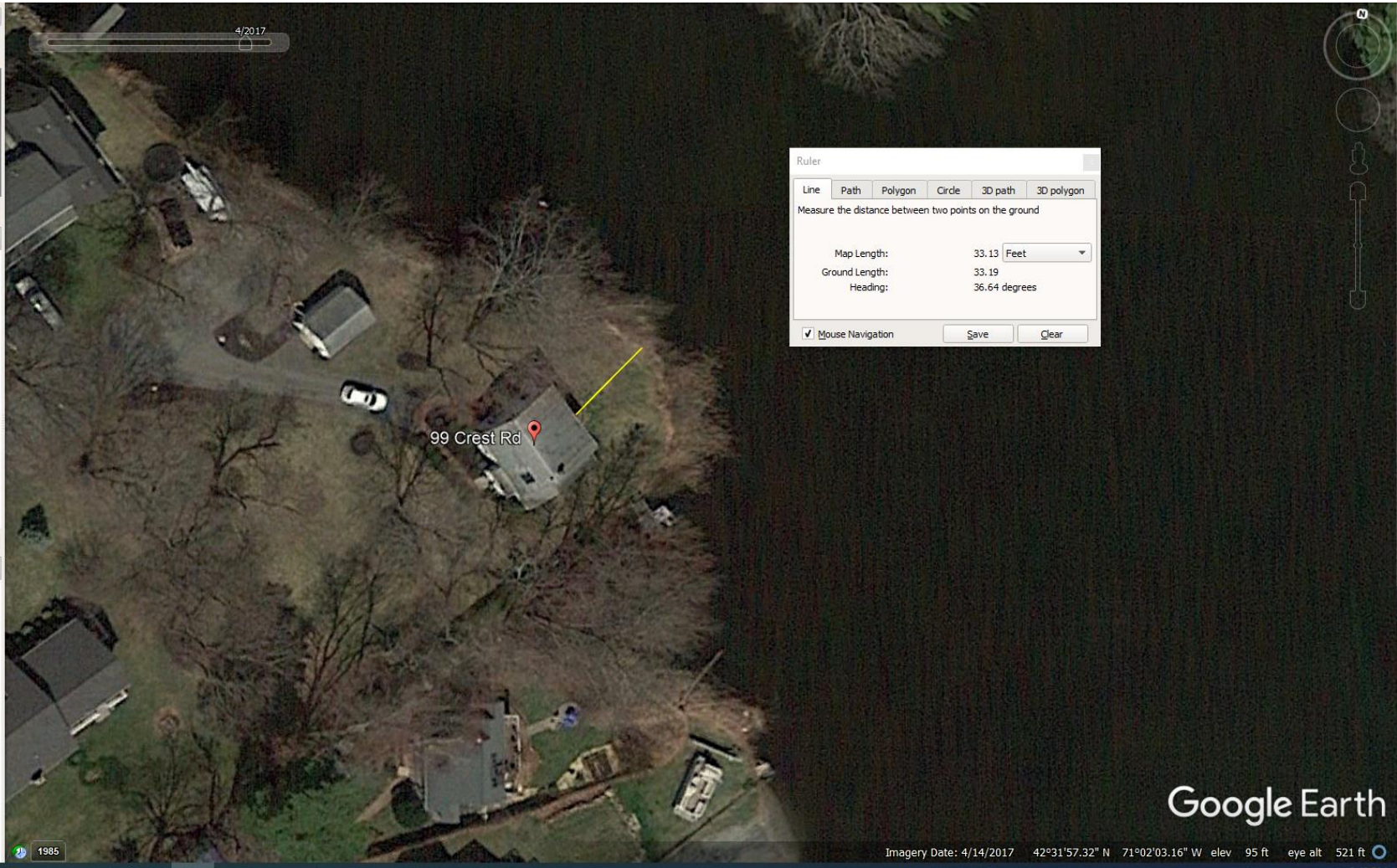
**Places**

- My Places
  - [Sightseeing Tour](#)  
Make sure 3D Buildings layer is checked
  - Untitled Path
  - Potential Upland Area
  - Potential Upland Area
  - Temporary Places

---

**Layers**

- Primary Database
  - Announcements
  - Photos
  - 3D Buildings
  - Weather
  - Gallery
  - More
  - Borders and Labels (Outdated)
  - Places (Outdated)
  - Roads (Outdated)
  - Terrain



Ruler

Line Path Polygon Circle 3D path 3D polygon

Measure the distance between two points on the ground

Map Length: 33.13 Feet

Ground Length: 33.19

Heading: 36.64 degrees

Mouse Navigation

Google Earth

Imagery Date: 4/14/2017 42°31'57.32" N 71°02'03.16" W elev 95 ft eye alt 521 ft

4/2017

99 Crest Road, Lynnfield, MA

ex: 94043 4/2018

[Get Directions](#) [History](#)

📍 99 Crest Rd

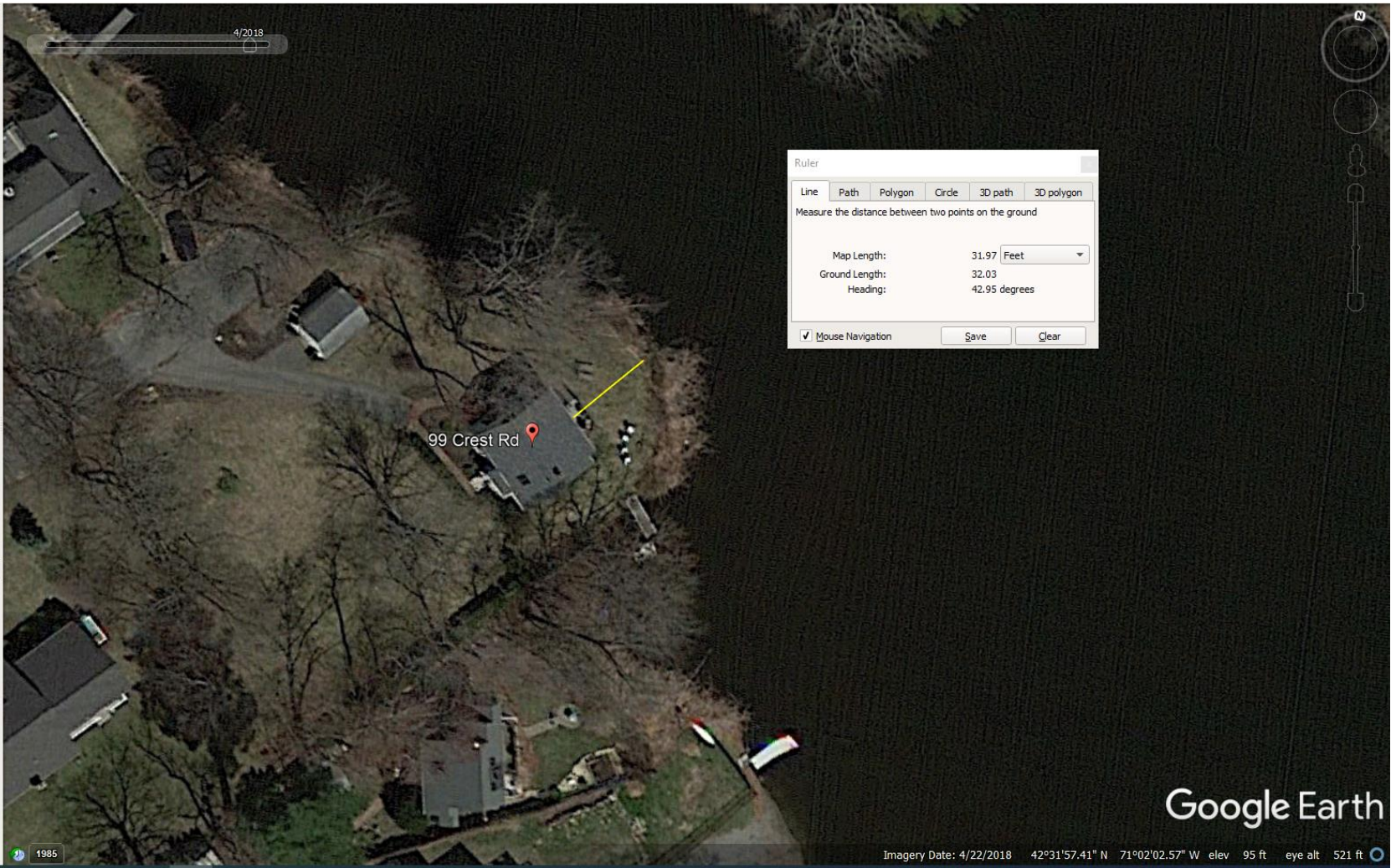
**Places**

- My Places
  - Sightseeing Tour**  
Make sure 3D Buildings layer is checked
  - Untitled Path
  - Potential Upland Area
  - Potential Upland Area
  - Temporary Places

---

**Layers**

- Primary Database
  - Announcements
  - Photos
  - 3D Buildings
  - Weather
  - Gallery
  - More
  - Borders and Labels (Outdated)
  - Places (Outdated)
  - Roads (Outdated)
  - Terrain



4/2018

99 Crest Road, Lynnfield, MA

ex: 94043

99 Crest Rd

Places

- My Places
  - Sightseeing Tour
    - Make sure 3D Buildings layer is checked
  - Untitled Path
  - Potential Upland Area
  - Potential Upland Area
  - Temporary Places

Layers

- Primary Database
  - Announcements
  - Photos
  - 3D Buildings
  - Weather
  - Gallery
  - More
  - Borders and Labels (Outdated)
    - Places (Outdated)
    - Roads (Outdated)
  - Terrain



8/2018

99 Crest Road, Lynnfield, MA Search

ex: 94043 4/2019

[Get Directions](#) [History](#)

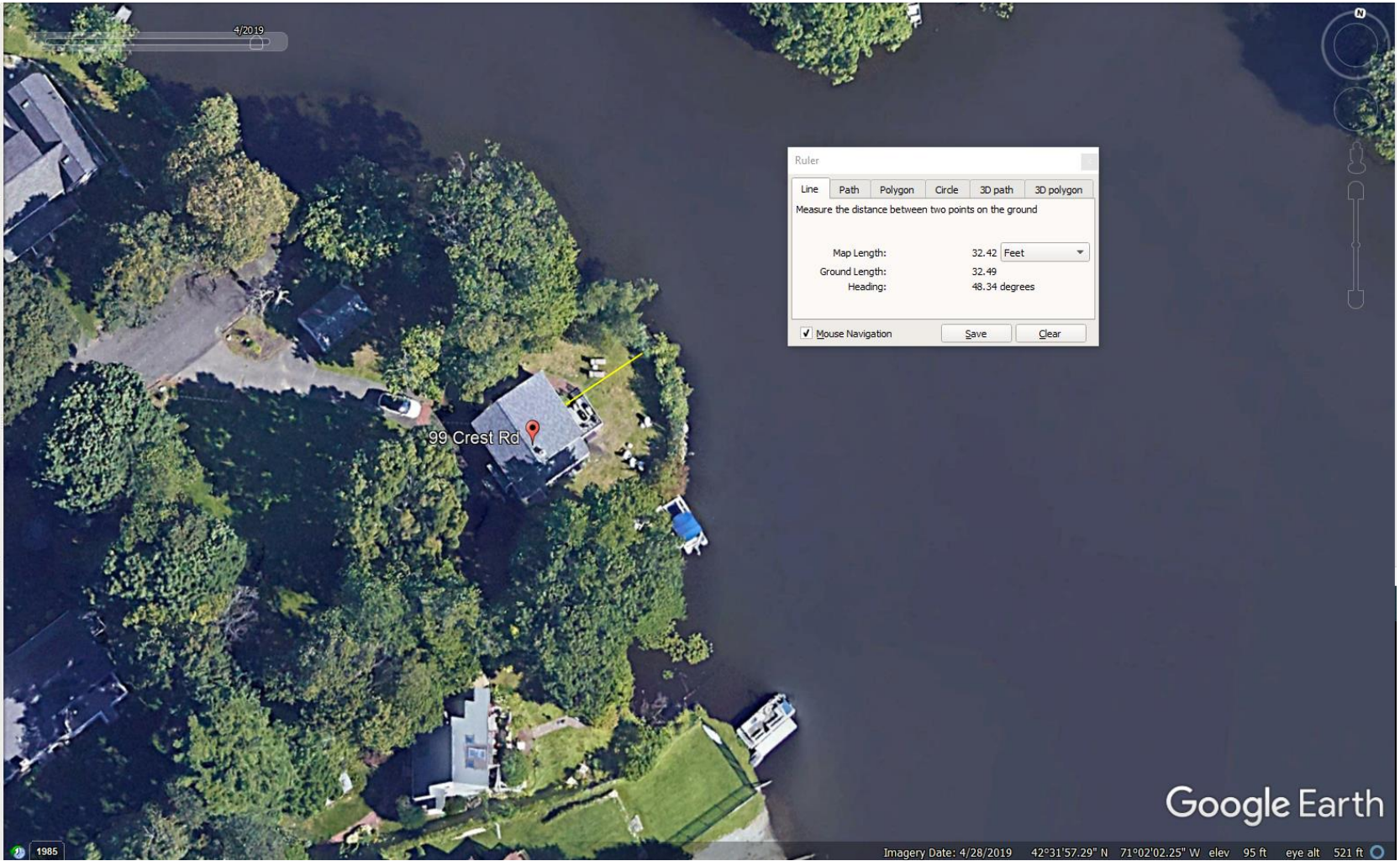
99 Crest Rd

Places

- My Places
  - Sightseeing Tour
    - Make sure 3D Buildings layer is checked
  - Untitled Path
  - Potential Upland Area
  - Potential Upland Area
  - Temporary Places

Layers

- Primary Database
- Announcements
- Photos
- 3D Buildings
- Weather
- Gallery
- More
- Borders and Labels (Outdated)
- Places (Outdated)
- Roads (Outdated)
- Terrain



4/2019

99 Crest Road, Lynnfield, MA Search

6/2019

Get Directions History

99 Crest Rd

Places

- My Places
  - Sightseeing Tour
    - Make sure 3D Buildings layer is checked
  - Untitled Path
    - Potential Upland Area
    - Potential Upland Area
  - Temporary Places

Layers

- Primary Database
- Announcements
- Photos
- 3D Buildings
- Weather
- Gallery
- More
- Borders and Labels (Outdated)
- Places (Outdated)
- Roads (Outdated)
- Terrain

Ruler

Line Path Polygon Circle 3D path 3D polygon

Measure the distance between two points on the ground

Map Length:	29.24 Feet
Ground Length:	29.29
Heading:	47.90 degrees

Mouse Navigation Save Clear

99 Crest Rd

Google Earth

Imagery Date: 6/22/2019 42°31'57.38" N 71°02'03.45" W elev 95 ft eye alt 521 ft

6/2019

99 Crest Road, Lynnfield, MA  Search

ex: 94043 10/2020

[Get Directions](#) [History](#)

📍 99 Crest Rd

**Places**

- My Places
  - [Sightseeing Tour](#)  
Make sure 3D Buildings layer is checked
  - Untitled Path
  - Potential Upland Area
  - Potential Upland Area
  - Temporary Places

---

**Layers**

- Primary Database
- Announcements
- Photos
- 3D Buildings
- Weather
- Gallery
- More
- Borders and Labels (Outdated)
- Places (Outdated)
- Roads (Outdated)
- Terrain

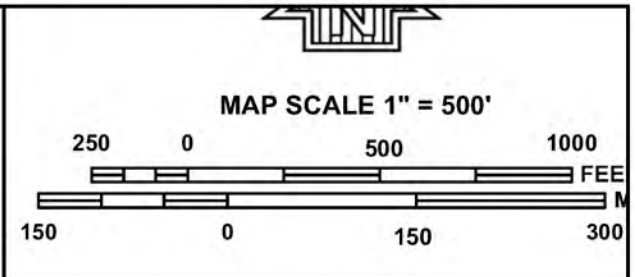
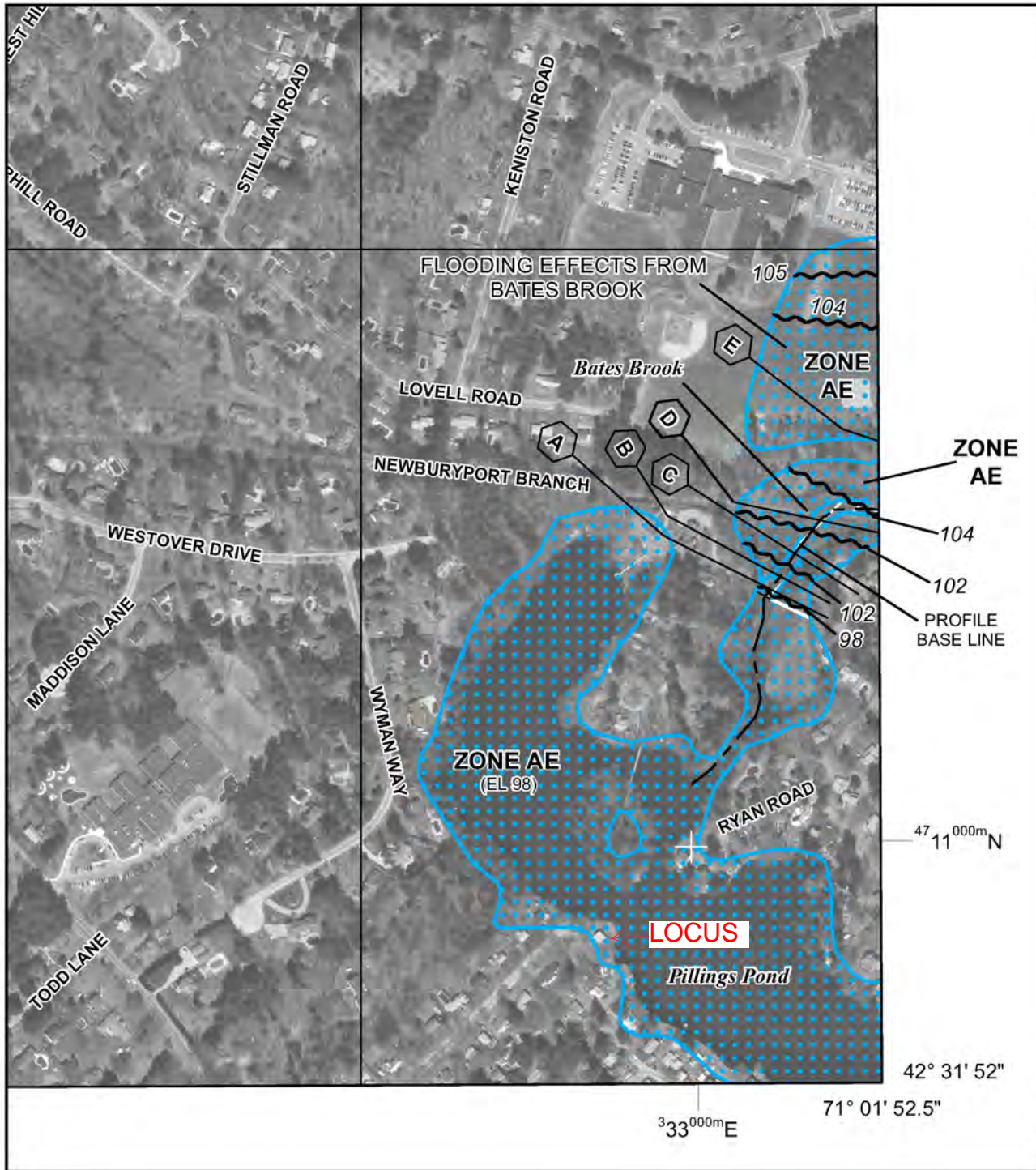


10/2020



**Attachment C**

FEMA Flood Insurance Rate Map



**NATIONAL FLOOD INSURANCE PROGRAM**  
**NFIP**

PANEL 0391F

## FIRM

### FLOOD INSURANCE RATE MAP


#### ESSEX COUNTY, MASSACHUSETTS (ALL JURISDICTIONS)

PANEL 391 OF 600  
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
LYNNFIELD, TOWN OF	250089	0391	F
PEABODY, CITY OF	250099	0391	F

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.



**MAP NUMBER**  
25009C0391F

**EFFECTIVE DATE**  
JULY 3, 2012

Federal Emergency Management Agency

This is an official FIRMette showing a portion of the above-referenced flood map created from the MSC FIRMette Web tool. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For additional information about how to make sure the map is current, please see the Flood Hazard Mapping Updates Overview Fact Sheet available on the FEMA Flood Map Service Center home page at <https://msc.fema.gov>.