Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

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

Shutesbury
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):

66 Lake Drive — a. Street Address
Shutesbury — b. City/Town
01072 — c. Zip Code

Latitude and Longitude:
d. Latitude
e. Longitude

B — f. Assessors Map/Plat Number
49 — g. Parcel /Lot Number

2. Applicant:

Robert — a. First Name
Douglas — b. Last Name

c. Organization

163 Stow Road — d. Street Address

Harvard — e. City/Town
MA — f. State
01451 — g. Zip Code

978-860-6682 — h. Phone Number
i. Fax Number
drbobdouglas@yahoo.com — j. Email Address

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

a. First Name
b. Last Name

c. Organization

d. Street Address

e. City/Town
f. State
g. Zip Code

h. Phone Number
i. Fax Number
j. Email address

4. Representative (if any):

a. First Name
b. Last Name

c. Company

d. Street Address

e. City/Town
f. State
g. Zip Code

h. Phone Number
i. Fax Number
j. Email address

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

a. Total Fee Paid
b. State Fee Paid
c. City/Town Fee Paid

Massachusetts Department of Environmental Protection
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A. General Information (continued)

6. General Project Description:

Work on single family lot: Deactivation of a side drain, expand driveway 1 space, steps, install roadside planter, restore stormwater scour and stabilize erosion damage, remove damaged tree.

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:

a. County	b. Certificate # (if registered land)
Franklin	
c. Book	d. Page Number
07450	98

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. ☐ Bank	1. linear feet	2. linear feet
b. ☐ Bordering Vegetated Wetland	1. square feet	2. square feet
c. ☐ Land Under Waterbodies and Waterways	1. square feet 3. cubic yards dredged	2. square feet

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
d. ☐ Bordering Land Subject to Flooding	1. square feet 3. cubic feet of flood storage lost	2. square feet 4. cubic feet replaced
e. ☐ Isolated Land Subject to Flooding	1. square feet 2. cubic feet of flood storage lost	3. cubic feet replaced

f. ☐ 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. _____

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.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☐ Designated Port Areas	Indicate size under Land Under the Ocean, below	
b. ☐ Land Under the Ocean	1. square feet 2. cubic yards dredged	
c. ☐ Barrier Beach	Indicate size under Coastal Beaches and/or Coastal Dunes below	
d. ☐ Coastal Beaches	1. square feet	2. cubic yards beach nourishment
e. ☐ Coastal Dunes	1. square feet	2. cubic yards dune nourishment

	Size of Proposed Alteration	Proposed Replacement (if any)
f. ☐ Coastal Banks	1. linear feet	
g. ☐ Rocky Intertidal Shores	1. square feet	
h. ☐ Salt Marshes	1. square feet	2. sq ft restoration, rehab., creation
i. ☐ Land Under Salt Ponds	1. square feet 2. cubic yards dredged	
j. ☐ Land Containing Shellfish	1. square feet	
k. ☐ 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. ☐ Land Subject to Coastal Storm Flowage	1. square feet	

4. ☐ 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. ☐ 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

   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 https://www.mass.gov/ma-endangered-species-act-mesa-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 https://www.mass.gov/how-to/how-to-file-for-a-mesa-project-review).
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, https://www.mass.gov/service-details/exemptions-from-review-for-projectsactivities-in-priority-habitat; 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
836 South Rodney French Blvd.
New Bedford, MA 02744
Email: dmf.envreview-south@mass.gov

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@mass.gov

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.

c. ☐ Is this an aquaculture project? d. ☐ Yes ☐ No

If yes, include a copy of the Division of Marine Fisheries Certification Letter (M.G.L. c. 130, § 57).

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

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

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.

Septic Repair Plan
a. Plan Title

SVE Associates
b. Prepared By

9/23/13 Douglas Macleay
c. Signed and Stamped by

Modified 2022 sketch site plan
d. Final Revision Date

1:10
e. Scale

Town Map as Locus
f. Additional Plan or Document Title

2022 website
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:

2. Municipal Check Number

3. Check date

4. State Check Number

5. Check date

6. Payor name on check: First Name

7. Payor name on check: Last Name

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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.

1. Signature of Applicant	2. Date: Aug 20-22
3. Signature of Property Owner (if different)	4. Date
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.

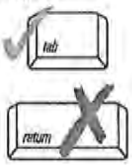
The original and copies must be sent simultaneously. Failure by the applicant to send copies in a timely manner may result in dismissal of the Notice of Intent.

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:

66 Lake Drive a. Street Address	Shutesbury b. City/Town
 c. Check number	42.50 d. Fee amount

2. Applicant Mailing Address:

Robert a. First Name	Douglas b. Last Name

c. Organization

163 Stow Road
d. Mailing Address

Harvard e. City/Town	MA f. State	01451 g. Zip Code

9788606682 h. Phone Number	i. Fax Number	drbobdouglas@yahoo.com 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

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

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.

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B. Fees (continued)

Step 1/Type of Activity	Step 2/Number of Activities	Step 3/Individual Activity Fee	Step 4/Subtotal Activity Fee
Work on single family home	1	1	110

Step 5/Total Project Fee: 110

Step 6/Fee Payments:

Total Project Fee:	110 (a. Total Fee from Step 5)
State share of filing Fee:	42.50 (b. 1/2 Total Fee **less** $12.50)
City/Town share of filling Fee:	67.50 (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.)

NARRATIVE – NOTICE OF INTENT - 66 Lake Drive

Work on Single family lot – including removal of unpermitted drain – addition of single driveway space and landscaping retaining wall – addition of wooden steps on the east side of the house – installation of planter – removal of a tree – mitigation of eroded trench and scour.

Project Description.

The applicant is seeking a permit to remove an unpermitted hydraulic connection to a catch basin, and some site improvements including expanding a parking area which will require a retaining wall, the addition of landscaped stairs, adding a road side planter, the removal of a damaged tree, and the revegetation of the stormwater damaged area.

The property at 66 Lake Drive holds a single family home. It was remolded within its historic footprint and the cesspool was removed and a state-of-the-art septic treatment system – and endless sand filter – was installed. The limit of the resource area is the existing cement "sea-wall" that marks the properties edge. This structure, the house, driveway and Lake Drive are all detailed on the modified engineering plan. The applicant seeks a waiver from doing an additional plan and believes that the plan presented will cover the relevant information. Most of the proposed projects (Deactivation of the pipe - will take place outside of the 100-foot mark.) The parking space will be about 90-feet from the resource area. The steps will require a minimal disturbance, and the permanent stabilization of the scoured yard will be an environmental plus.

The majority of the property at is within 100-feet of a jurisdictional resource area. While no work is proposed in the Lake resource itself (Land Under Water Body or LUWB), the proposed work will take place in the (State's) Wetland Protection Act's 100-foot Buffer to a resource area, and most of the work will occur within the 100-foot Jurisdiction of the Shutesbury General Wetlands Bylaw.

1) Drain removal and mitigation of eroded trench.

The proponent was recently informed that the culvert that parallels the septic system at 66 Lake Drive was not given a permit during the construction of the home or the septic system. This pipe has proven to be problematic as it provides a conduit for storm water originating on Lake Drive to a discharge into Lake Wyola.

This culvert could be considered a point source discharge of sediments and pollutants into the lake, and its unpermitted nature could place it as being subject to an Enforcement Order from the Conservation Commission (ConCom). It is the desire of the property's current owner to work cooperatively with the ConCom to dismantle the plastic pipe where it enters the 66 Lake Drive property and sever it using a hand tools or a small excavator and then block the remaining pipe at both ends from further discharge. The removal of the culvert's hydraulic connection from the roadway to the Lake will serve to improve water quality and protect the interests of the Town Bylaw and the Wetlands Protection Act. The location of the pipe where it will be severed is approximately 130-feet from the edge of the Resource Area – (LUWB).

2) Construction of new parking space and supporting block wall.

Independent of the drain removal project, the proponent seeks to extend the existing parking area on Lake Drive one car length toward the house. This new space will serve as a place for a boat trailer or an additional vehicle to be parked when needed. The project will require some fill to be brought in and a lock-block retaining wall installed near the house to assist in making the required grade. The closest edge of the proposed parking area is approximately 90-feet from the resource area. Sedimentation control will be placed between the new parking space and the resource area. The surface of the parking area will be pervious crushed stone with a hard paved edge closer to the roadway.

2) Landscape side stairs to be constructed on East Side of home.

Currently there is a set of landscape timbers that make a retaining wall at the northeast side of the home. The applicant proposes to add three steps to make it safer to walk down this side of the home. The closest of the landscape steps will be approximately 55-feet from the lake resource area.

3) Removal of hemlock tree.

Lakeside tree was damaged by vandals and must be taken down. It will be cut at the base, which will hopefully side propagate new growth.

4) Stabilization of storm water related erosion and scour.

The lawn area near the lake that has received the water discharged from Lake Drive has been scoured away leaving a scar of unstable rocks and soil. The erosion trenches will be filled with clean loam, and seeded, and restored with vegetative cover. This stabilization is an environmental plus - in keeping with the Wetlands act and the Shutesbury Bylaw. All materials will be brought in via wheelbarrow or boat. No heavy equipment will be used. The entire restoration will take just a few days at most, and the area will be immediately seeded with a rapid growing fescue grass seed. With the drain deactivated we don't anticipate any run-off in this area, however straw wattles be placed at the Lakes edge as a precautionary measure to control the sediment.

5) Protective planter.

A sturdy planter is proposed for the west side of the property frontage on Lake Derive to protect the leach-field. This area is currently protected from cars parking on it by a few boulders and the current location of the drain. The leach-field is a portion of the existing septic system where the water that has been treated to near drinking water standards is discharged. This leach field is in what had previously been a parking space along the Lake Drive. The entirety of this work will be performed at approximately 120-feet from the water's edge and will be outside of the 100-foot WPA bufferzone and the 100-foot Shutesbury Bylaw buffer resource area. This area benefits from sun most of the day – as the tree-cover is limited due to the road - and will be a good place for ornamental plants or container grown vegetables.

Site History.

Professor James Douglas purchased the house in the 1970s for a place he could escape to and write his books. The property underwent a major renovation in the 2000's which included the removing the in-basement cesspool and the construction of a new recirculating sand filter septic system. Both the septic system and the house renovations, and a later curtain drain were permitted by the Shutesbury Conservation Commission and the Board of Health.

According to the recollection of the current owner and the site's immediate neighbors the drain pipe leading from the edge of Lake Drive was installed in that same time period. While the current owner and a neighbor recall seeing a color plan with the drain shown next to the septic system, that plan is not in the records of the Board of Health or the Conservation Commission, and the applicant has been unable to locate a copy.

There was an understanding that the pipe may have been put in at the request of the septic installer, the property owner, or the Board of Health; but there are no available documents associated with the property that are recorded at town hall that show this. Equally, it has been difficult to get information from the people directly involved. The previous owner, James Douglas has passed on; the designer of the system, Engineer Doug Macleay of SVE Engineering has retired; the house builder Don Putnam has moved, and we have been unable to identify the excavator or installer of the system and culvert. While perhaps the initial reasoning for the pipe was good; the culvert currently injects sediment laden

stormwater directly to the lake and removing it should stop that pollution as well as ceasing the erosion of the property's back yard.

Modifications to the Association roadways and the increase in Stormwater run-off.

When I first started coming to lake Wyola in the 1970s the property surrounding each lakefront home sloped down to the lake. This is important because the water traveled off of the road quickly and in small quantities. Each property handled a little water and it was usually in contact with plants on its way to the lake. This is a good way to handle runoff.

A guide to *Healthy Lakes Using Lakeshore Landscaping* – by the Federation of Vermont Lakes and Ponds states: *"Plants are the natural way to keep nutrients, pollutants and sediments from reaching the lake, by slowing the rainwaters flow and increasing water infiltration to the soil. Plants absorb the nutrients and can filter or transform pollutants. Multi layered vegetated buffers also stabilize banks, prevent erosion, and alleviate flooding impacts, holding soil in place a absorbing and then releasing excess water."* (Available on the Shutesbury Conservation Website.)

A stormwater report on Lake Wyola roadways recommended the roads be "crowned". By making the center of the road higher than its edges, water is passed off through surface drainage to the individual properties on its margin. This is good for the health and longevity of the roadway as well as the properties and natural environment spaces at its edges.

I have included this cited below document "Technical Bulletin: Crown and Cross Slope" in this Notice.

"THE PURPOSE OF DRAINING THE ROAD SURFACE
When standing water is allowed to penetrate the road surface, through retention in puddles or potholes, the road surface and the road base become soft and weak. Flowing water that is allowed to concentrate on the road, such as in wheel tracks, causes damage and material loss from erosion. The purpose of surface drainage is to cause the water to leave the road as thin and non-erosive sheet flow in a direction and pattern chosen to suit various terrain and traffic conditions."

In the case of Great Pines, Oak Knoll, and Lake Drive in recent years, the roadways are <u>not crowned</u>. They are actually graded lower than the properties on their edges even in the areas where they are not held in by berms. This results in the opposite of the best management practices mentioned above. Surface water is being deliberately captured in the gully-like roadway, where it increases in volume, it increases in speed and it increases in turbidity & sediment. It unquestioningly undermines the integrity of the roadway - AND when collected and discharged to a single area – causes damage and pollution. Material used for filling potholes is washed into the lake – only to be relaced by new sand the following year, and the cycle repeats. The roads are washed out and the lake fills with sediment.

Following the installation of the bypass pipe - the collective footprints of Lake Drive, Great Pine, and Oak Knoll were altered. Where water had previously drained across the lawns of the lakeside properties, large and often elaborate berms were erected within the layout of the Association roadways. The berms essentially 'bottled up' the run-off from escaping the road. With all of its outlets eliminated – the water volume on the roadway increased substantially. One homeowner said he had erected the berm so "*the water would get to the drain quicker*", meaning he was intentionally diverting the run-off from his property so that it would traverse the length of the roadway until it reached 66-Lake Drive.

The layout of Oak Knoll was altered to raise it up where it intersects Great Pine, which also had the

effect sending the flow of water down Great Pine. A large surficial trench was deliberately excavated across Great Pine near the juncture of Oak Knoll onto Town property directly up-hill of 66 Lake Drive which also served to increase flow to that property.

The berming and loss of outlets along the roadway caused an increase in water volume and velocity. The fast moving stormwater collects large amounts of sand, sediments and possibly pollutants which rushed down the roadways. In even in small storms the sediment laden water takes on the color of chocolate milk and the plumes where it discharged and dropped its load into Lake Wyola could be easily seen. (There is a video of just two of these storm events available from the Conservation office).

The velocity of the water out of the bypass drain has such force that it would easily push out of its way rocks that were bigger than a bowling ball. The concentrated jet of water discharging into 66 Lake Drive has blasted away grass and dirt and ripped a trench almost a foot deep into what - as can be seen in photographs - had previously been for decades a pleasant waterfront lawn. Last year the scour pushed away the dirt beneath a 30-year oak tree and sent it toppling into a neighbor's yard. It is the proponent's desire to cease this flow and repair and stabilize this area with clean soil and restore it to lawn with grass seed.

The Commission's Jurisdiction.

Lake Wyola is a named "Great Pond" in the Wetland Protection Act - and has special recognition with the Department of Environmental Protection. It is one of the few clean-water lakes that does not have a pollution related restriction on what types of fish may be eaten. The Lake itself is listed by Massachusetts Natural Heritage as an area of habitat for state-protected, state listed and endangered species. It its protective status is designated as Priority Habitat PH-1589 on the state map (included in this submittal).

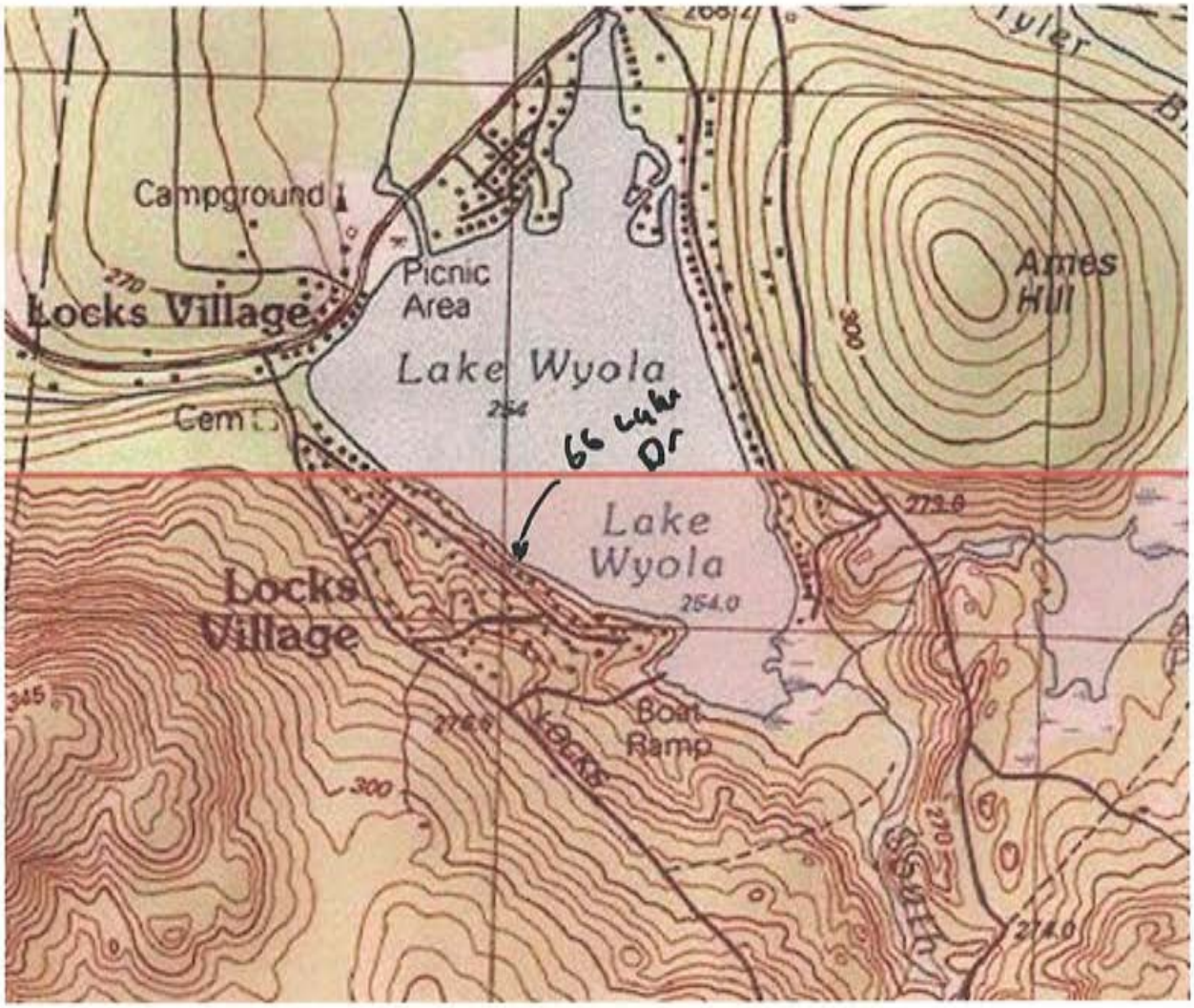
Lake Wyola is a resource area, recognized as *Land Under Waterbody* (LUWB). On the property 66 Lake Drive the resource begins at the edge of the sea-wall. The area of the pond that receives the stormwater discharge from Lake Drive has been greatly affected by the high levels of dirty runoff. The deposition of material has added sediment to the pond in such a great quantity that it has formed a 'sand bar'. The bottom of the lake bed has been impacted and changed, and it is no longer a consistent drop off, but instead a visible shelf of sediment. It has been observed that during the wintertime this area is one of the last to freeze, likely because of the concentration of salt in the sediment that originated from the roadway. Deposition of this material is not heathy for the lake, as the stormwater sediment can have higher levels of pollutants from fertilizers, or automotive chemicals (i.e., oil and grease; toxic metals such as zinc, nickel and lead; salt; and other de-icing chemicals) that are washed down from the roadway. Furthermore, the sheer amount of the constant storm driven sediment is dangerous as well. The blanketing effect of the sand and dirt smothers macro-invertebrates which are the base of the lake's food-chain. The health of the lake should be a priority for everybody.

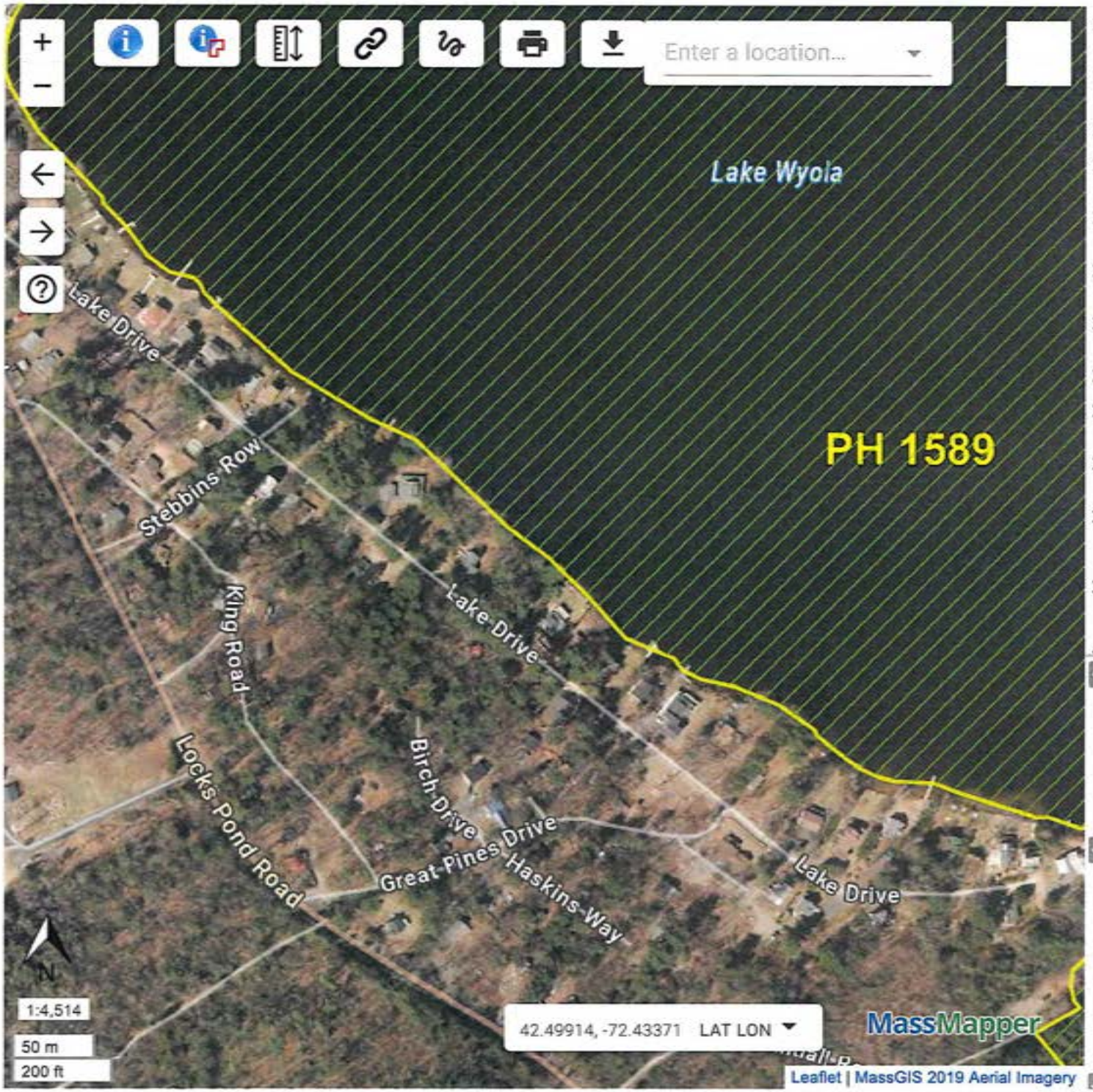
The Commission clearly has jurisdiction over the surface water concerning the manner in which it has been diverted from its natural flow. Areas outside of the Bylaw and Wetland Protection Act's 100-foot buffer that directly lead to the impairment of a resource area do come within the Commission's jurisdiction. The Shutesbury Wetland Bylaw protects 16-Conservation values, many of which come into play related to this runoff. These include water supply, groundwater, surface water, flood control, erosion, sediment control, storm damage prevention, water pollution, damage to fisheries, storm drainage, runoff, wildlife habitat, recreation, and aesthetics.

It must be noted that the water and sediment causing the damage is not from 66-Lake Drive – it originates from the roadway. The water polluting the lake does not arrive at that property by natural means, as due to the man-made alteration and manipulation, it no longer traverses the individual

lakeside lots as it did historically. The flow has been deliberately diverted though the trenching and berming of areas within the footprint of Lake Drive and adjacent roadways.
There is no easement allowing the owner of the roads or any other entity to utilize the property at 66 Lake Drive for its drainage purposes. By the removing the connection to the pipe at 66 Lake Drive we are seeking to protect the lake and our property from this damaging run-off.


LAKE DRIVE
66
OAK KNOLL
BIRCH DRIVE
GREAT PINES DRIVE
GREAT PINES DRIVE EXT
HASKINS WAY
135


Campground
Picnic Area
Locks Village
Lake Wyola
Cem
66 Lake Dr
Ames Hill
Lake Wyola
Locks Village
Boat Ramp
Locks
270
300
345
254
254.0
272.6
274.0

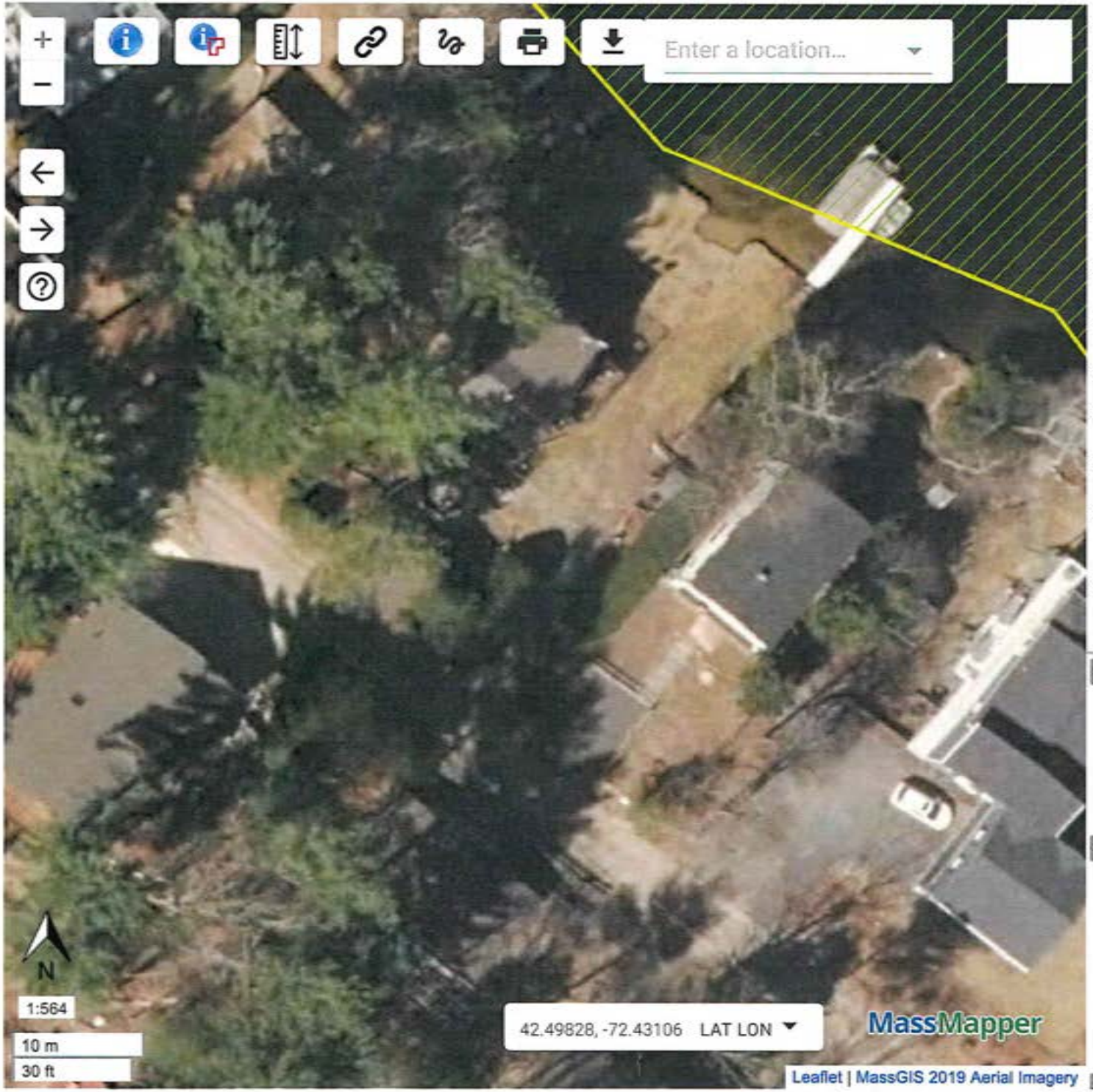


- Census
- Coastal and Marine Features
- Conservation / Recreation
- Cultural Resources
- Environmental Monitoring (testing/monitoring sites)
- Images
- Index (grids/tiling schemes for certain layers)
- Infrastructure
- Physical Resources
- Political / Administrative Boundaries
- Regulated Areas
- Status / Availability (maps showing where data is available or date of data)

NHESP Estimated Habitats of Rare Wildlife

NHESP Priority Habitats of Rare Species

Map Features



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NHESP Estimated Habitats of Rare Wildlife

NHESP Priority Habitats of Rare Species

Map Features

Even in small rain events, the sediment laden water enters the lake.

Water from the entire neighborhood has been directed to the Draw


Lake Dr


Water that once drained across yards
has been diverted w/ berms to 66 Lake Dr
+ Discharge to the Pond.


Water trapped by the berm
flows to the Lake through
drain at 66 Lake Dr

Huge scour caused by directed water

66 Lake Yard

No Scour
Beha


Bermed flow

subtle grading traps flow in roadway

Public Notice

SHUTESBURY
CONSERVATION COMMISSION

In accordance with the Wetlands Protection Act, MGL Ch. 131, §40 and/or the Town of Shutesbury Wetlands Protection Bylaw, the Conservation Commission will hold a Public Hearing on Thursday, August 25, 2022 at 8 p.m. by remote participation only, for a Notice of Intent filed by Robert Douglas for removal/ deactivation of a drain, expansion of parking area with retaining wall, a landscape planter, installation of landscape steps, restoration of scoured yard, and removal of a tree at 66 Lake Drive Shutesbury, MA 01451.

The application may be viewed at shutesbury.org/concom.

This meeting of the Shutesbury Conservation Commission will be conducted via remote participation. Instructions for participating in the virtual Public Hearing will be listed on the meeting agenda posted on the Town calendar at least 48 hours in advance of the meeting. The public hearing may be rescheduled due to unforeseen circumstances. Remote access information will be published on the Shutesbury meeting calendar: www.shutesbury.org/node/2. Click on the agenda for the meeting you wish to attend. The public hearing may be rescheduled due to unforeseen circumstances.

August 20

348795

Technical Bulletin

Crown & Cross-Slope

3/2019

PennState Center for Dirt and Gravel Road Studies

CROWN AND CROSS-SLOPE – This bulletin illustrates basic methods to drain water from the road surface using three (3) different surface templates. Crown describes the side to side, or the cross-sectional shape of a road surface. Typically road segments are either center-crowned, in-sloped, or out-sloped. The degree of the side slope is typically measured in percent or degrees, or expressed as inches of fall per foot of road width.

THE PURPOSE OF DRAINING THE ROAD SURFACE

When standing water is allowed to penetrate the road surface, through retention in puddles or potholes, the road surface and the road base become soft and weak. Flowing water that is allowed to concentrate on the road, such as in wheel tracks, causes damage and material loss from erosion. The purpose of surface drainage is to cause the water to leave the road as thin and non-erosive sheet flow in a direction and pattern chosen to suit various terrain and traffic conditions.

TYPES OF ROAD SURFACE TEMPLATES

1. **Centerline crown**: A surface shape that sheds water to both sides of the road from a highpoint at the road center (Figure 1).

   - **In-slope**: A surface configuration that drains water from the entire width of the road toward the cut-bank or up-slope side. Commonly used on steep side-hills for safety. Super-elevation of curves (banked curves) is a form of in-sloping that both supports traffic and drains the road surface..

   - **Out-slope**: Out-sloped road surfaces drain water from the entire width of the road toward the fill-bank or down-slope side. Elimination of road ditches on both sides of the road is possible with this surface shape. This shape best mimics natural drainage patterns and allows minor overland sheet flow is to flow across the road (Figure 2). Out-sloping is useful on low volume roads where side-slopes are gentle and concerns about winter icing are minimal.

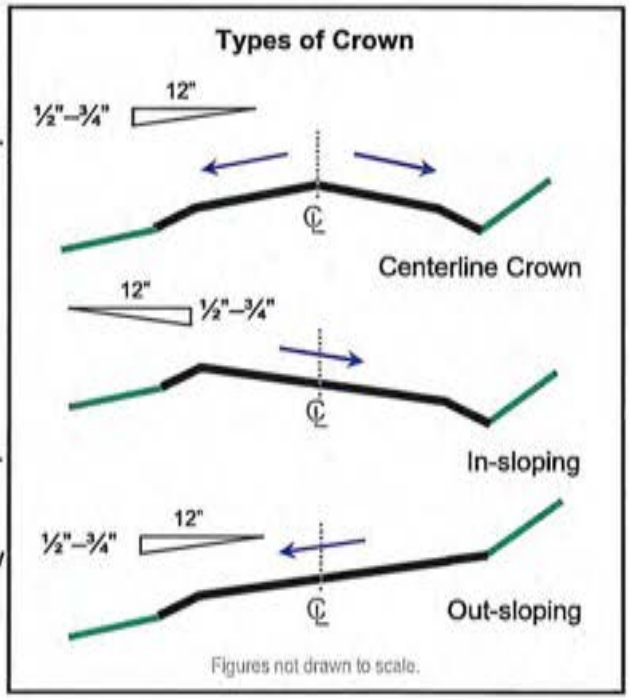


Figure 1. Centerline Crown

Figure 2. Out-sloping

The publishers of this publication gratefully acknowledge the financial support of the PA State Conservation Commission. For additional information or assistance, contact: Center for Dirt & Gravel Roads Studies, Penn State University, 215 Transportation Research Building, University Park, PA 16802 (Toll-Free Phone: 1-866-668-6683, Fax: 814-863-6787, Email: dirtandgravel@psu.edu). Additional copies available on our website at: https://www.dirtandgravel.psu.edu.

SCC

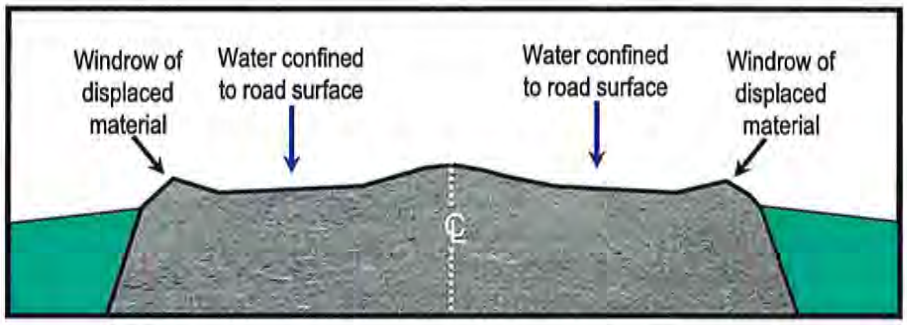
PennState Center for Dirt and Gravel Road Studies

MAINTAINING ROAD CROWN

Compaction, abrasion, and displacement of aggregate caused by traffic, as well as disturbance from snowplowing, inappropriate grading technique, and forces from flowing water work to deform the road surface. Over time, fines, which bind the coarse aggregate together, are lost. The unbound coarse material is displaced by traffic and accumulates along the edge of the road. This traps water on the traveled surface, allowing the water additional time to saturate and soften the road. Compaction in the wheel tracks and windrows formed by displaced surface stone changes the shape of the surface cross-section. Additionally, water trapped on steeper road segments accumulates volume and velocity, eroding the driving surface, further changing the road's cross-sectional shape This increasingly restricts the ability to shed water from the road surface (see Illustration 1). The process starts slowly, but if maintenance is not completed on a timely basis the damage to the road can be severe.

*Note - Specific procedures for re-establishing crown during maintenance operations are detailed in the *Grading Sequence with a Carbide-Tipped Blade* Technical Bulletin.

Illustration 1. A Center-crowned road that has become misshapen over time. The desired "A" shaped road surface has become a "W" shape, due to compaction of the wheel tracks and displacement of aggregate into windrows at the road center and road edges. Water ponds on the road surface and softens the road. Or, drainage is forced to travel on the road surface causing erosion, loss of road material, and an increased need for maintenance.
*Note - Additional methods of controlling this concentrated flow on the road surface are shown in the other Technical Bulletins.



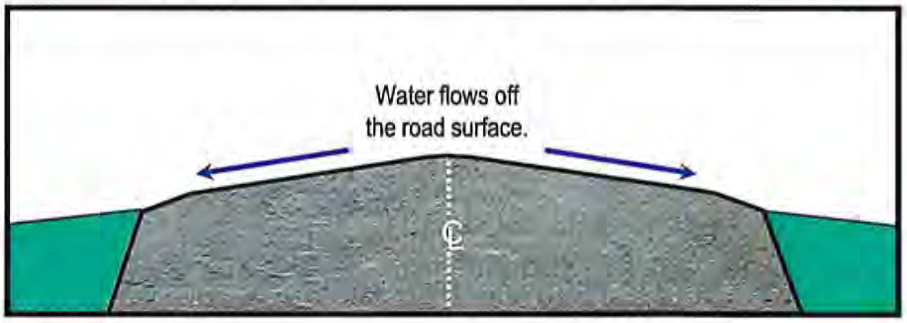


Illustration 2. Centerline crown with proper cross-slope. Road drainage flows without obstruction off the road surface into ditches or surrounding vegetation.

CROWN: PAVED ROADS VS. UNPAVED ROADS

Unpaved roads require more aggressive crown than do paved roads. Pavement resists infiltration of water and will shed water more quickly than an unpaved surface. The cross-slope of a paved road is typically 2%, or ¼" of fall per horizontal foot of road width. A common problem is to shape a dirt or gravel road like a paved road. An unpaved road requires 2X to 3X the side-slope to guard against erosion and displacement.

On unpaved surfaces, the recommended cross-slope is between 4% and 6%, or ½" to ¾" of fall per horizontal foot of road width. The steeper cross-slope creates less potential for water to concentrate and scour the road surface , or to penetrate and weaken the road base. This equals less loss of purchased road material therefore and a smoother road with longer intervals between maintenance grading operations. Over time, traffic and mother nature will wash out and drive out the crown, so grading is routine and on-going maintenance. Ever road is different, and some roads will require more frequent grading than others. Road shoulders should be set at the same side-slope as the travelway, or slightly steeper. Pay attention to the elevation of your road shoulders. A shoulder only slightly higher that the road surface can trap a whole lot of water on your road and it will only get worse from there!

LAKE

41'± along the lake

4.41'

S 46°47'25" E

Hemlock

41.30'
(tie course only)

PROPOSED EROSION CONTROL. SEE SILT FENCE DETAIL.

6

W

EXISTING 50' WELL RADIUS

5,396± SQ. FT.
0.1239± ACRES

Surface Flow

APPROXIMATE LOCATION OF EXISTING 100 PSI.- 1" POLY WATER LINE

5

N/F
MARK RIVERS
BK:3895 PG:220

128'± (total line) - rebar set to lake

125.00' (rebar set to rebar set)

130.95' (rebar set to rebar set)

133'± (total line) - lake to rebar set

N/F
EVAN D. JONES
BK:6165 PG:192

N 51°29'12" E

S 51°29'12" W

Existing

DWELLING
#66

66 Lake Drive

Sub Surface Pipe

PUMP AND FILL EXISTING SEPTIC TANK IN BASEMENT

PROPOSED EROSION CONTROL. SEE SILT FENCE DETAIL.

TOP OF WALL ELEV.94.5'

AX20 POD OUTLET INVERT ELEV. 92.0'

INSULATE WITH 2" RIGID FOAM

CONSTRUCT 6" WIDE LANDSCAPE TIMBERS TO SURROUND AX20 POD. KEEP 1' SEPARATION BETWEEN COMPONENTS AND WALL.

EXISTING RETAINING WALL TO BE REMOVED

PROPOSED PUMP CHAMBER

EXISTING 100' WELL RADIUS

4

PROPOSED 40 MIL PLASTIC IMPERVIOUS BARRIER TOP 4' HIGH AT ELEV. 95.5'

STUMPS AND ROOTS TO BE REMOVED

Parking Area

TP 1

PARKING AREA

TP 2

LOT #69

Lot

BENCHMARK: 100.0
TOP OF BOUNDARY PIN

LAKE DRIVE

OH

89 90 92 93 94 95 96 97 98 99 100

1'

2.0'

7.5'

5.0'

1.25'

2.5'

10.0'

1.9'

7.5'

5.5'

8.1'

SYSTEM LAYOUT

SCALE: 1" = 5'

AdvanTex AX20ow Pod w/Anti-Floatation Flanges, Center Unit Between Risers & Across Tank. Set Unit Level, Both Ways With Top 2" Above Finish Grade

Anti-Floatation Flanges Bolted Onto Unit

Splitter Ball Valve Assembly (RSV3D)

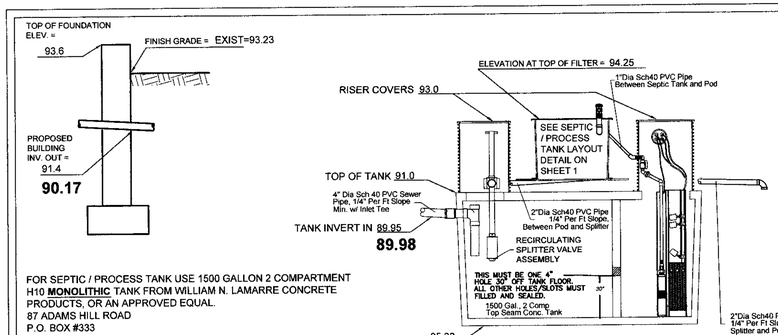
Inlet

4" Dia Sch 40 PVC Sewer Pipe, With 4" Dia PVC Tee, Set At 1/4" Per Ft Slope Minimum

24"Dia x 36" High PVC Inlet Riser Over 22" Dia opening in Tank

SANITARY SYSTEM PROFILE

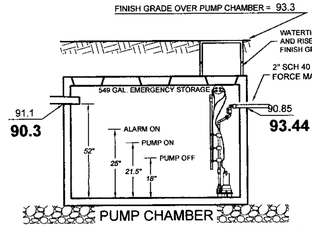
NOT TO SCALE



(SEE ADVANTEX 1500 GALLON TWO COMPARTMENT PROCESS/SEPTIC TANK DETAILS BELOW)

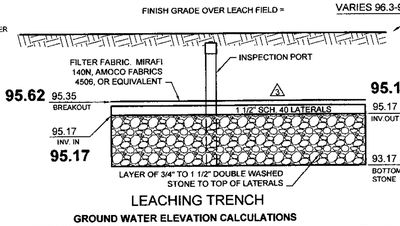
FOR SEPTIC / PROCESS TANK USE 1500 GALLON 2 COMPARTMENT H10 **MONOLITHIC** TANK FROM WILLIAM N. LAMARRE CONCRETE PRODUCTS, OR AN APPROVED EQUAL.
87 ADAMS HILL ROAD
P.O. BOX #333
GREENVILLE, NH 03048

LENGTH 10'-3", WIDTH 6'-2.5", DEPTH 5'-8"
TANK TO BE ON A STABLE LEVEL BASE (6" DEEP CRUSHED STONE)



1000 GALLON CONCRETE TANK (WITH NO BAFFLES) HS10 LOADING (LAMARRE)
LENGTH 8'-6" WIDTH 4'-10" DEPTH 5'-8"
TANK TO BE ON A STABLE LEVEL BASE (6" DEEP CRUSHED STONE)

(SEE ADVANTEX AX20cw MODE3B SYSTEM BELOW FOR DETAILS ON PUMP.)

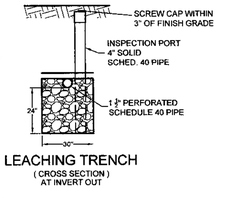


LEACHING TRENCH

GROUND WATER ELEVATION CALCULATIONS

MAXIMUM ELEVATION OF EXISTING GRADE BENEATH PROPOSED TRENCHES = 99.0
ASSUMED DEPTH OF GROUND WATER = 130"
(BASED ON THE ESHWT IN TP # 1)

MAXIMUM ELEVATION OF GROUND WATER BENEATH PROPOSED TRENCHES = 88.17
PROPOSED GROUND WATER SEPARATION = 5.0



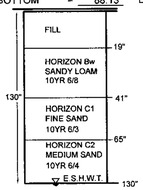
LEACHING TRENCH
(CROSS SECTION)
AT INVERT OUT

TEST PIT DATA

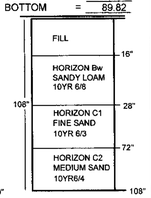
BOARD OF HEALTH WITNESS: DAVID ZAROZINSKI
DATE: APRIL 30, 2013
SOIL EVALUATOR: ERNEST MATHIEU

PERC TEST ID	PERC RATE (MIN/IN)	PERC DEPTH (IN)
1	>2	60

TEST PIT # 1
ELEV. TOP = 98.96
ESHWT = 88.13
OBS. H20 = NONE
BOTTOM = 88.13



TEST PIT # 2
ELEV. TOP = 98.82
ESHWT = 87.99
OBS. H20 = NONE
BOTTOM = 89.82



9-30-14

ANTHONY WONSESKI JR. DATE
R.C.E. NUMBER: 46815

NO	REVISION	DATE	DWN	CHK
1	TITLE V NOTE	31 - JUL - 13	JLS	DJM
2	LOCAL UPGRADE NOTES	31 - JUL - 13	JLS	DJM
3	LATERAL SIZE	31 - JUL - 13	JLS	DJM
4	MARK RIVERS WELL RADIUS	31 - JUL - 13	JLS	DJM
5	EXISTING WATER LINE LOCATION	23 - SEPT - 13	JLS	DJM
6	EROSION CONTROL LOCATION	23 - SEPT - 13	JLS	DJM
7	AS-BUILT SURVEY	29 - SEPT - 14	JLS	DJM

DESIGN DATA

DESIGN BASED ON SINGLE FAMILY DWELLING (3 BEDROOM)
DESIGN FLOW 110 GALLON PER DAY PER BEDROOM
TOTAL DESIGN FLOW 330 GALLON PER DAY.

SEPTIC TANK
330 GALLONS X 200% = 660 GALLONS DESIGN CAPACITY.
USE NEW 1500 GALLON SEPTIC TANK.

LEACHING TRENCHES* 50% SAS REDUCTION I/A SYSTEM
SOIL CLASS: I PERC RATE: <2 MINUTES PER INCH
EFFLUENT LOADING RATE: 0.74 GPD / SQ.FT.
REQUIRED LEACHING AREA: 330 GPD / 0.74 = 446/2=223 SQ.FT.
SIDEWALL:
2 x 18' LENGTH x 2' DEPTH = 72 SQUARE FEET.
BOTTOM:
18' LENGTH x 2.5' WIDTH = 45 SQUARE FEET.
TOTAL NUMBER OF LEACHING TRENCHES 2
TOTAL LEACHING AREA = 234 SQUARE FEET.

GENERAL NOTES

1. SEPTIC LINE FROM HOUSE OUT TO SEPTIC TANK, USE 4" SCHED. 40 PVC PIPE MINIMUM GRADE: 1/4 INCH PER FOOT (2%).
2. ALL SYSTEM COMPONENTS SHALL BE MARKED WITH MAGNETIC MARKING TAPE OR A COMPARABLE MEANS IN ORDER TO LOCATE THEM ONCE BURIED. PER 15.221:(12)
3. ALL PIPES IN THE DISPOSAL SYSTEM SHALL HAVE WATERTIGHT JOINTS.
4. SHUTESBURY BOARD OF HEALTH MUST BE NOTIFIED WHEN SYSTEM IS NEARLY COMPLETE AND PRIOR TO BACKFILLING.
5. ELEVATIONS BASED ON ASSUMED DATUM
6. UNLESS OTHERWISE NOTED, ALL SYSTEM COMPONENTS SHALL BE INSTALLED IN ACCORDANCE WITH TITLE 5 OF THE STATE SANITARY CODE AND ANY APPLICABLE LOCAL RULES.
7. ANY CHANGE TO THIS PLAN MUST BE APPROVED BY THE BOARD OF HEALTH AND THE DESIGN ENGINEER.
8. THIS SYSTEM IS NOT DESIGNED FOR A GARBAGE GRINDER.
9. **A SYSTEM WHICH IS FULLY COMPLIANT WITH THE REQUIREMENTS OF TITLE V 310 CMR 15.000 IS NOT POSSIBLE ON THIS LOT.**

CONSTRUCTION NOTES:
1. THIS PLAN IS FOR THE CONSTRUCTION OF A REPLACEMENT SYSTEM FOR A FAILED SEPTIC SYSTEM.
2. REMOVE TOPSOIL, SUBSOIL AND C1 LAYER TO TOP OF C2 LAYER 5' ON ALL SIDES OF THE LEACHING AREA. TITLE 5 REQUIRES INSPECTION OF INITIAL BED EXCAVATION. CONTACT OUR OFFICE TWO BUSINESS DAYS BEFORE REQUESTED DATE OF OBSERVATION. REPLACE WITH MATERIAL MEETING THE SPECIFICATIONS OF 310 15.255(3). (TITLE 5 310 CMR 15.255(5).)
3. TITLE 5 REQUIRES OBSERVATION OF THE INSTALLED SYSTEM BY THE DESIGN ENGINEER AND A BOARD OF HEALTH MEMBER OR AGENT FOR THE BOARD OF HEALTH. THE SYSTEM MUST NOT BE BACKFILLED PRIOR TO OUR OBSERVATION. CONTACT OUR OFFICE AND THE BOARD OF HEALTH TWO BUSINESS DAYS BEFORE REQUESTED DATE FOR OBSERVATION.
4. ALL DISTURBED AREAS SHOULD BE LOAMED, RAKED, FERTILIZED, SEEDED, AND MULCHED AT THE COMPLETION OF CONSTRUCTION.
5. THIS PLAN REQUIRES A FILING WITH THE SHUTESBURY CONSERVATION COMMISSION.

PROPER SEPTIC SYSTEM USE:
1. DO NOT POUR GREASE, OILS, OR CHEMICALS IN DRAINS
2. DO NOT WASH PAINT BRUSHES INTO DRAINS
3. DO NOT USE OR INSTALL GARBAGE DISPOSAL
4. USE LIQUID DETERGENTS LABELED "SEPTIC SYSTEM SAFE" OR "BIODEGRADABLE"
5. PUMP TANK EVERY 3 YEARS OR AS NEEDED

PROPERTY LINE REFERENCE:
PROPERTY LINES ARE BASED ON HAROLD L. EATON AND ASSOCIATES, INC PLAN DATED JUNE 27, 2013

LOCAL UPGRADE APPROVALS:
A LOCAL UPGRADE APPROVAL FOR A REDUCTION IN FOUNDATION OFFSET DISTANCE TO SEPTIC TANK FROM 10' TO 5.5' IS REQUIRED FOR THIS PLAN. AN APPLICATION IS TO BE SUBMITTED ALONG WITH THIS PLAN. 310 CMR 15.405 (1) (b).

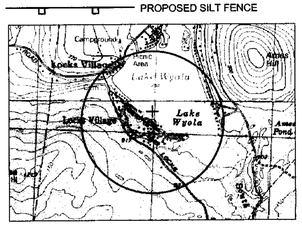
⚠2 A LOCAL UPGRADE APPROVAL FOR A REDUCTION IN PROPERTY LINE OFFSET DISTANCE TO SOIL ABSORPTION SYSTEM FROM 10' TO 5.5' IS REQUIRED FOR THIS PLAN. AN APPLICATION IS TO BE SUBMITTED ALONG WITH THIS PLAN. 310 CMR 15.405 (1) (a).

⚠2 A LOCAL UPGRADE APPROVAL FOR A REDUCTION IN PROPERTY LINE OFFSET DISTANCE TO SEPTIC TANK FROM 10' TO 8.1' IS REQUIRED FOR THIS PLAN. AN APPLICATION IS TO BE SUBMITTED ALONG WITH THIS PLAN. 310 CMR 15.405 (1) (a).

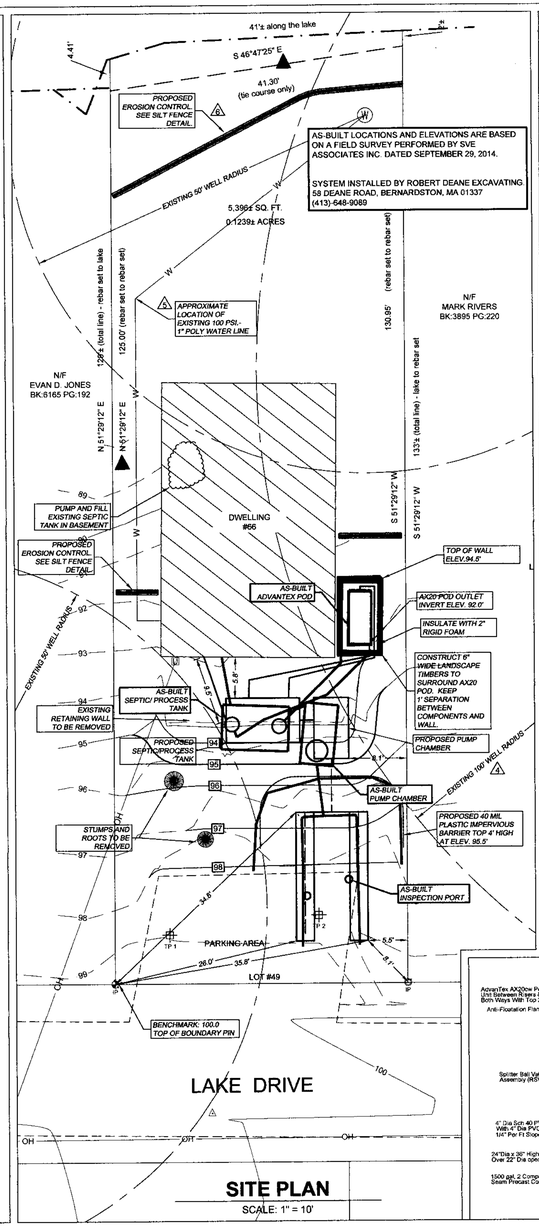
⚠2 A LOCAL UPGRADE APPROVAL FOR A REDUCTION IN PRIVATE WATER SUPPLY WELLS DISTANCE TO SOIL ABSORPTION SYSTEM FROM 100' TO 54' IS REQUIRED FOR THIS PLAN. AN APPLICATION IS TO BE SUBMITTED ALONG WITH THIS PLAN. 310 CMR 15.405 (1) (g).

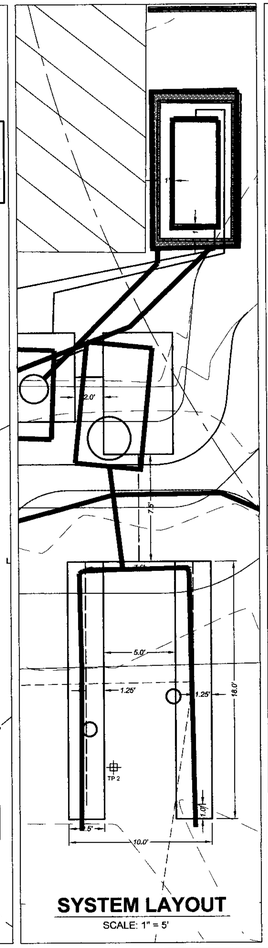
LEGEND

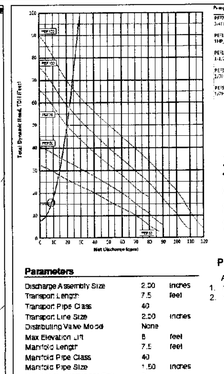
- 100 — EXISTING MAJOR CONTOUR
- 99 — EXISTING MINOR CONTOUR
- 100 — PROPOSED MAJOR CONTOUR
- 99 — PROPOSED MINOR CONTOUR
- PROPOSED SPOT GRADE
- SUBJECT PROPERTY BOUNDARY
- PROPOSED 4" SCH 40 PVC PIPE
- PROPOSED 2" SCH 40 PVC PIPE
- PROPOSED SILT FENCE



SITE LOCUS
SCALE: 1" = 2000'







Parameters

Discharge Assembly Size	2.00	inches
Transport Length	7.5	feet
Transport Pipe Class	40	
Transport Line Size	2.00	inches
Distributing Valve Model	None	
Max Elevation Lift	8	feet
Manifold Length	7.5	feet
Manifold Pipe Class	40	
Manifold Pipe Size	1.50	inches
Number of Laterals per Cell	2	
Lateral Length	16	feet
Lateral Pipe Class	40	
Lateral Pipe Size	1.50	inches
Orifice Size	5/32	inches
Orifice Spacing	2	feet
Residual Head	2.5	feet
Flow Meter	None	inches
Add-on Friction Losses	5	feet

Calculations

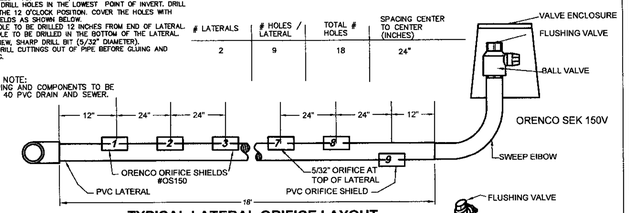
Minimum Flow Rate per Orifice	0.48	gpm
Number of Orifices per Zone	18	
Total Flow Rate per Zone	8.6	gpm
Number of Laterals per Zone	2	
% Flow Differential Top Last Orifice	0.2	%
Transport Velocity	0.8	fps

DRILLING NOTES:
1. ALL DRILLED HOLES TO BE 5/32" DIAMETER.
2. DO NOT DRILL HOLES IN THE LOWEST POINT OF INVERT. DRILL HOLES AT THE 12 O'CLOCK POSITION. COVER THE HOLES WITH ORIFICE SHIELDS AS SHOWN BELOW.
3. FIRST HOLE TO BE DRILLED 12 INCHES FROM END OF LATERAL.
4. LAST HOLE TO BE DRILLED IN THE BOTTOM OF THE LATERAL.
5. USE A NEW, SHARP DRILL BIT (5/32" DIAMETER).
6. FLUSH DRILL CUTTINGS OUT OF PIPE BEFORE GLUING AND ASSEMBLING.

GENERAL NOTE:
1. ALL PIPING AND COMPONENTS TO BE SCHEDULE 40 PVC DRAIN AND SEWER.

HOLE SPACING IN DISTRIBUTION LATERALS

# LATERALS	# HOLES / LATERAL	TOTAL # HOLES	SPACING CENTER TO CENTER (INCHES)
2	9	18	24"



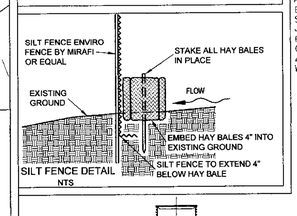
TYPICAL LATERAL ORIFICE LAYOUT
2 LATERALS REQUIRED
NOT TO SCALE

PUMP CHAMBER COMPONENTS SPECIFICATIONS:

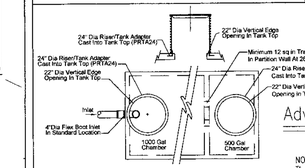
ALL COMPONENTS ARE TO BE AS SPECIFIED OR AN APPROVED EQUAL
1. 1- ORENCO #PEF-33, 1/3 HP, SEWAGE PUMP (USE MOST EFFICIENT VOLTAGE AT SITE)
2. 1- ORENCO VCOM-AX20B1 HTSA PANEL
   ALL COMPONENTS LISTED ABOVE AVAILABLE AT:
   ATLANTIC SOLUTIONS LTD
   2417 East Main Road
   Portsmouth, RI 02871
   1-401-293-0176
   (401)84-WATER
   1-877-214-WATER
   Fax: 1-401-293-0178
3. PUMP CHAMBER TO BE 1000 GAL. SEPTIC TANK
4. LENGTH OF FORCE MAIN: 7.5 FT.
   VOLUME OF FORCE MAIN: 1.22 GAL.
   FIELD DOSING FREQUENCY: 5 DOSES PER DAY
   REQUIRED DOSE VOLUME: 67.2 GAL.
   PROVIDED PUMP DRAWDOWN: 3.5 IN.
   PROVIDED DOSE VOLUME: 75.5 GAL.
5. ALARM CONTROLS TO BE ON SEPARATE CIRCUIT AND SET TO SOUND WHEN LIQUID LEVEL IS 25 INCHES ABOVE FLOOR OF TANK.

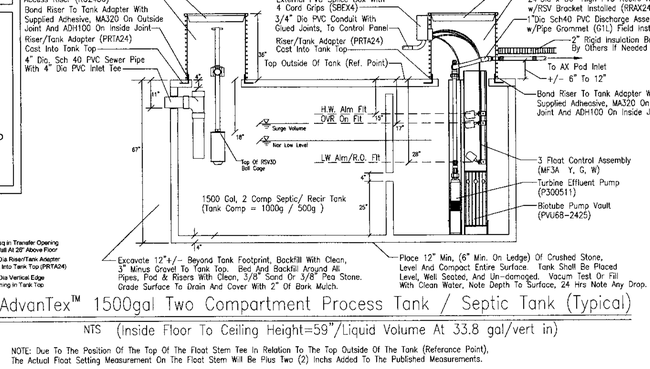
Minimum Pump Requirements

Design Flow Rate	8.6	gpm
Total Dynamic Head	15.7	feet



SILT FENCE DETAIL
NTS

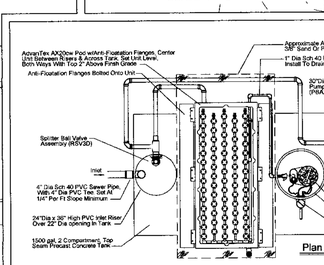


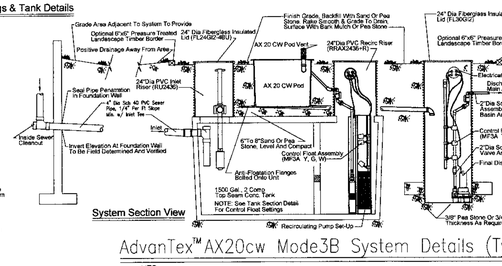


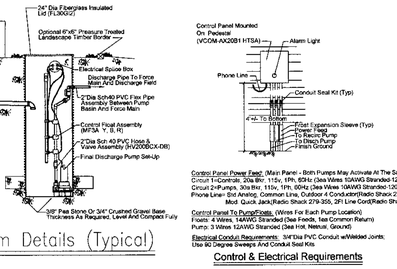
AdvanTex™ 1500gal Two Compartment Process Tank / Septic Tank (Typical)
NTS (Inside Floor To Ceiling Height=59"/Liquid Volume At 33.8 gal/vert in)

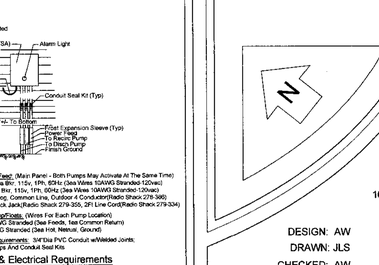
NOTE: Due To The Position Of The Top Of The Float Stem Tee In Relation To The Top Outside Of The Tank (Reference Point), The Actual Float Setting Measurement On The Float Stem Will Be Plus Two (2) Inchs Added To The Published Measurements.

Riser Openings & Tank Details









Control Panel Power Feed: (Main Panel - Both Pumps May Activate At The Same Time)
Circuit 1=Controls: 20a Bkr, 115v, 1Ph, 60Hz (3ea Wires 10AWG Stranded 120vac)
Circuit 2=Pumps: 30a Bkr, 115v, 1Ph, 60Hz (3ea Wires 10AWG Stranded 120vac)
Phone Line= 6rd Analog, Common Line, Outdoor 4 Conductor(Radio Shack 278-866) Mod Quick Jack(Radio Shack 279-355, 2Ft Line Cord)(Radio Shack 279-334)

Control Panel To Pump/Tank: (Wires For Each Pump Location)
Floats: 4 Wires, 14AWG Stranded (3ea Feeds, 1ea Common Return)
Pump: 3 Wires 12AWG Stranded (3ea Hot, Neutral, Ground)

Electrical Conduit Requirements: 3/4"Dia PVC Conduit w/Welded Joints; Use 90 Degree Sweeps And Conduit Seal Kits

AdvanTex™ AX20cw Mode3B System Details (Typical)
NTS

Control & Electrical Requirements

SVE ©2013

Engineering
Planning
Landscape Architecture
Surveying

SVE Associates
377 Main Street
Greenfield, MA 01301
T 413.774.6698
F 413.773.0875
www.sveassoc.com

SEPTIC REPAIR PLAN

66 LAKE DRIVE,
SHUTESBURY, MA.

MR. & MRS. JAMES DOUGLAS
335 LONG PLAIN ROAD
LEVERETT, MASSACHUSETTS 01054

PROJ. #: G1761

DATE: 16 - JUL - 13

DESIGN: AW
DRAWN: JLS
CHECKED: AW

SHEET 1/1

Drawing name: P:\Project\G1761 Douglas, James\Dwg\Concepts\G1761 SEPTIC AS-BUILT.dwg Sep 30, 2014 - 9:54am

To: Shutesbury Conservation Commission
From: Robert Douglas
Date: Sunday September 18, 2022

RE: 66 Lake Drive – Notice of Intent – Restoration Plan and Narrative.

Commissioners,

Thank you for all the time you have put in to better understand what has occurred with the stormwater damage caused by street run off in the lake and Lake Drive. I'm grateful for the many site walks you have done on Lake Drive and the recent review of my Notice of Intent.

As you saw on your visits, the storm water has caused scours in the lakeside lawn area of our home at 66 Lake Drive. We propose to stop water from coming through the pipe which will stop the lake contamination and allow us to fill and restore the trenched areas. The areas will be partially filled with a layer of stone, then covered with clean topsoil, and seeded with a deep-root fescue grass-seed to restore lawn areas; and with a stabilization wild seed mix for the naturalized areas. Much of the site currently has a robust growth of herbaceous native plants dominated by jewelweed (*Impatiens capensis)*. This rich native groundcover growth will be left undisturbed where possible, and it will likely spread into the replicated areas.

The scour trench along the fence line is approximately 2 feet wide. The damaged area spreads as it gets closer to the root-ball and the well. At its widest point it is about 8 feet and then it tapers back as it drains into the lake. I have indicated on the plan the scoured areas to be restored. All materials will be brought in by wheelbarrow or boat. No heavy machinery will be used.

Last year an oak tree toppled over because the dirt around its roots were washed away. We propose to use the dirt from the root-ball as soil in the restoration and we will cut up the stump and roots as firewood. The area it currently occupies will be restored.

Additionally, we propose to plant three eastern hemlock trees (*Tsuga canadensis)* along the wooden fence line on the east side. On the west side we propose to remove a small wire-fence and some invasive buckthorn and replace it with three highbush blueberry plants (*Vaccinium corymbosum*).

A straw wattle will be strategically staked along the top of the sea-wall as a sediment interceptor until the area is stabilized.

The area will be monitored with reports given quarterly to the ConCom for the first year, then twice yearly reports the second year.

Thank you for your consideration,

Robert Douglas – (66 Lake Drive)
163 Stow Road
Harvard, MA 01451

Root ball

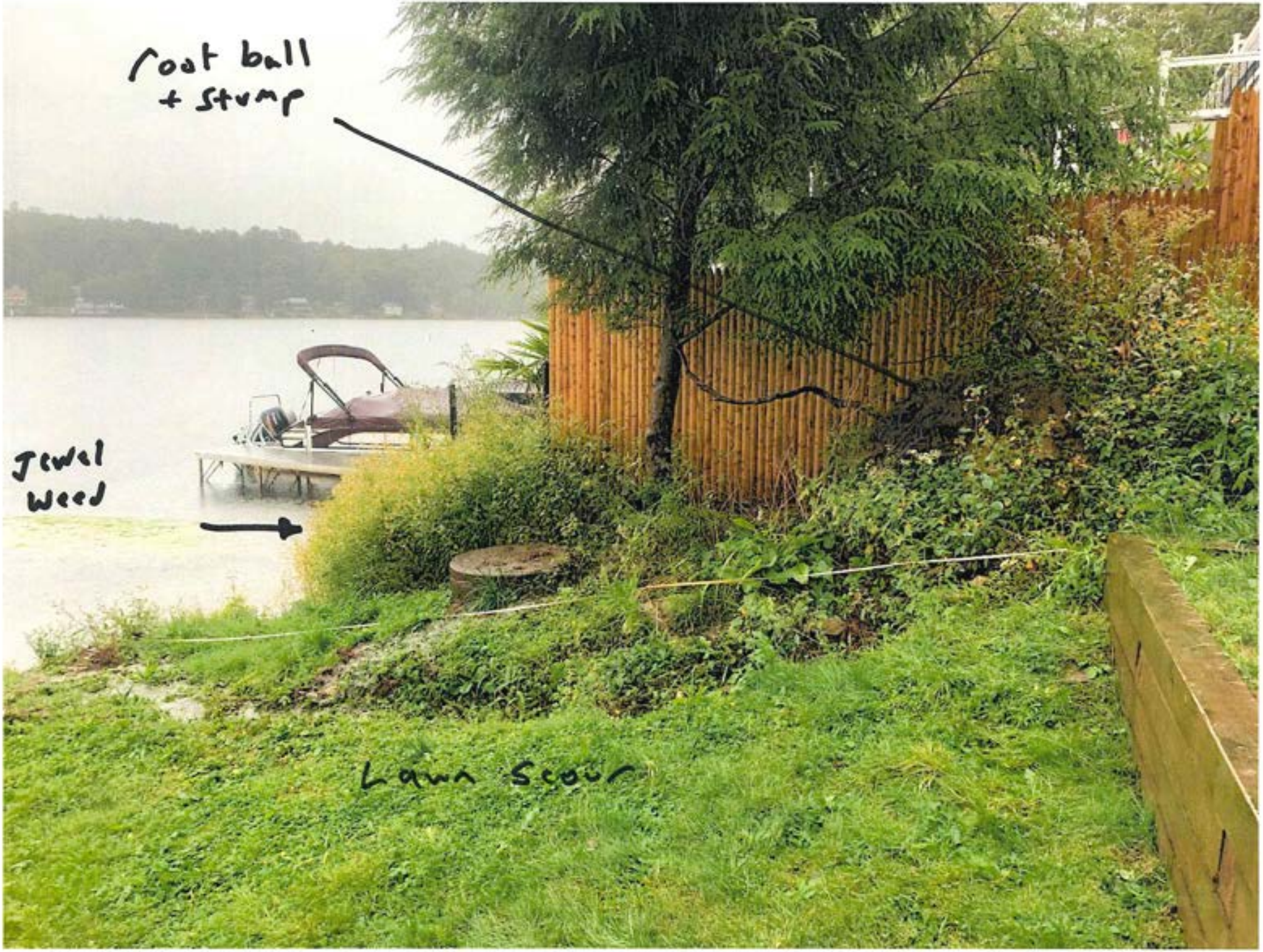

Start of
Scour trench
End of Pipe


Trench
area

Trench is about 2- feet wide

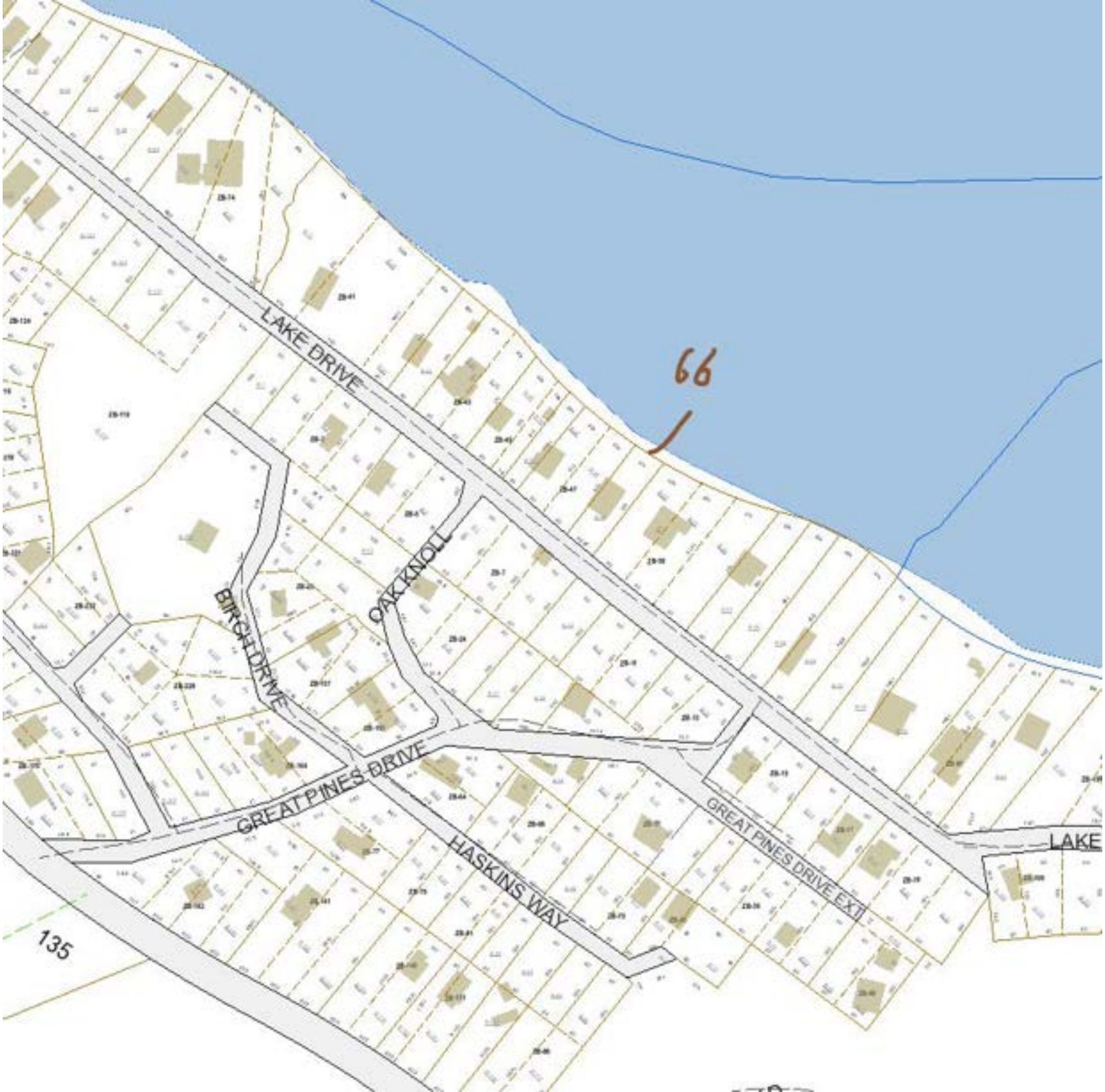

restoration
Area

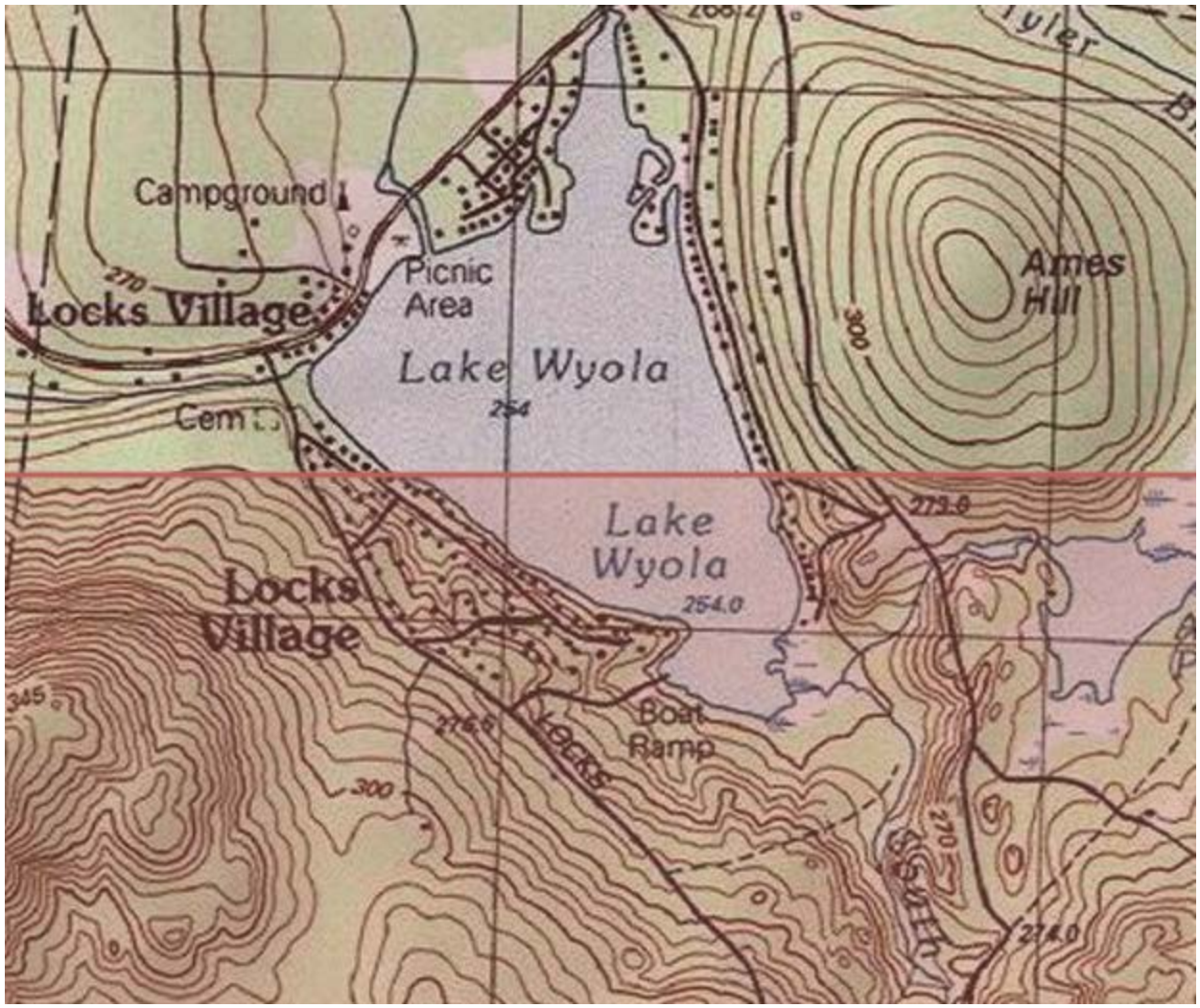

Area of restoration


root ball
+ stump
Jewel
Weed
Lawn Scour

Scour
Lawn
Trench


SEPTEMBER, 2020
CONDITIONS


LAKE DRIVE
66
BIRCH DRIVE
OAK KNOLL
GREAT PINES DRIVE
GREAT PINES DRIVE EXT
HASKINS WAY
LAKE
135


Campground
Picnic Area
Locks Village
Lake Wyola
Ames Hill
Lake Wyola
Locks Village
Boat Ramp
LOCKS
270
300
345
254
254.0
273.0
276.5
214.0