

**Massachusetts Department of Conservation and Recreation
Division of Water Supply Protection, Office of Watershed Management
*Forest Management Project Summary***

Project Title: Lot 5277

DWSP Harvest Permit Number: 5277

DWSP Proposal ID: WA-15-208

DCR Forest Cutting Plan File Number: 134-9055-18

Site Information

Watershed: Wachusett

Town(s): Holden

Acres: 66

Nearest Road: Sterling Road

Natural Heritage Atlas overlap?: No

Public Drinking Water Supply Watershed?: Yes

Forest Types: White pine-oak/White pine-hardwood

Area of Critical Environmental Concern (ACEC)?: No

Soils: Merrimac and Hinckley outwash soils and Canton well-drained till

Wetland Resources: A couple of small tributaries and associated bordering vegetated wetlands come together to form Ball Brook.

Vernal Pools: There are two vernal pools; one near Pikes Hill Road and the other about 600' to the south, both in the far eastern side of the sale area.

Harvest Information

Harvest Start Date: 11/28/2018

Harvest End Date: 12/4/2020

Number of Wetland Crossings: Three

Number of Stream Crossings: One

Best Management Practices Applied

Stream Crossings: The very small intermittent brook will be crossed using the existing cart path. Depending on conditions at the time, bridging, pole ford or corduroy will be used. Tops may be used to armor the approaches.

Filter Strips: No trees are marked in the filter strips.

Wetland Crossings: These very narrow wetland crossings will ideally occur when conditions are dry or frozen or they will be protected with adequate tree tops or corduroy.

Harvesting in Wetlands: No harvesting in wetlands will occur.

DWSP Forester supervising this harvest

Name: Greg Buzzell

Forester License number: 025

Phone number: 774-261-1841

Email: greg.buzzell@mass.gov

Narrative

General Description/Forest Composition/History

This area is located in Holden on the Holden/Sterling town line. A cart path from a small parking area on Sterling Road forms the western edge of the sale area along with the Poutwater Pond Nature Preserve. Purchased by the state in 1994, this property had been logged several times prior to state ownership. Nearly 16 acres of now 35 year old white pine-oak and oak-hardwood stands resulted from heavy logging followed by the blow-down and salvage of about 3 additional acres following the tornado of 1989. Most of remaining forest originated from 1930 through the 1950's as various parts of this former pasture were abandoned. There is good advance regeneration comprised of white pine, oaks, red maple, yellow birch, black birch, hickory and hemlock.

The soils in nearly half of this area are excessively drained outwash soils. The Canton soil, which is of till origin, dominates the far western end of the sale area and poorly drained soils dominate the central part of the area where narrow wetlands and streams are present.

Site Selection

The ideal watershed protection forest is one which best serves the function of the land as a producer of high quality drinking water in both short- and long-term. This forest must be vigorous and diverse in tree species and ages, be actively accumulating biomass and actively regenerating. Such a forest will be ideally suited to be resilient to and quickly recover from small- and large-scale disturbances such as diseases, insect infestations, ice storms and hurricanes.

One result of the past harvesting activities is that there is more of a diversity of age classes than many other parts of the watershed forest possess. However, there is still a lack in the youngest age classes. Given the goal to have at least 3 age classes on every area, this forest's lack of any stands younger than 35 years requires that regeneration cutting needs to begin. We can capitalize on good amounts of advance regeneration (62% of sampled plots had adequate seedlings and saplings).

Sampled plots also revealed that invasive plants are absent from the lot although a careful eye has been kept particularly on the areas immediately adjacent to the abutting homes on Pikes Hill Road. It is very common for invasive species to become established in the habitually disturbed habitat of residential neighborhoods which than invade uninfested forests when the opportunity presents itself.

Silvicultural Objectives

There is enough advance regeneration of a species mix appropriate to the site (a mix similar to the overstory) to warrant release of a new age cohort by the removal of the overstory in patches. In this area, 14 openings have been marked totaling 9.4 acres. These range in size from 0.25 to 1.5 acres in size with an average of 0.7 acres. These openings are primarily distributed in the northern half of the area with a few openings in the far south end. They have been arranged with adequate spacing between the patches to allow for future patches of a similar range of sizes. Standards regarding green retention (live trees left within patches for structure and seed) have been followed.

Cultural Resources

This lot was reviewed by the DCR archaeologist and all recommendations will be followed. There is no known cultural significance to this area, either historically or pre-European contact. There is a stone foundation in the far northeast corner of the area, which an 1870 Worcester County atlas indicates may have belonged to a J. Reed Jr. The area directly around this foundation will be avoided. All stone walls on DCR property are valued as a cultural resource, so the stone walls on this property will be protected from damage to the extent possible.

Rare or Endangered Species

DWSP's Conservation Management Practices regarding vernal pools are being followed. Otherwise, there are no critical habitats or known rare or endangered plants or wildlife.

Figures

- Figure 1. Forest Cutting Plan
- Figure 2. Maps of harvest area showing approximate boundary, proposed openings and other features
- Figure 3. General locus map showing the location of the proposed timber harvest
- Figure 4. Pre-Harvest Photographs, A-C
- Figure 5. Post-Harvest Photographs, A-B

Figure 1. Forest Cutting Plan

<h2 style="text-align: center;">Forest Cutting Plan</h2> <p>and Notice of Intent under M.G.L. Chapter 132 – The Forest Cutting Practices Act, 304 CMR 11.00 (Effective Date: 1/1/04)</p>		For DCR Use Only: File Number <u>134-075578</u> Case No. <u></u> Date Rec'd <u>10/13/17</u> Nat. Hert. <u>NO</u> Earliest Start <u>10/30/17</u> Org. Nat. Hert. Inspr. <u>NO</u> River Basin <u>Nashua</u> Pub. Dr. Wul. <u>YES - Wach</u> Gen. Obj. <u>LT</u> ACEC <u>NO</u>																															
		* AMENDMENT * <u>10-23-18 Rec'd</u>																															
Site Information	Location Town <u>Holden</u> Street <u>Starting</u> Lot <u>5243B</u> Road <u>Steering Road</u> Acres <u>66.3</u> Proposed Start Date <u>11/01/18</u> Vol. MBI: <u>92.6</u> Vol. Cds. <u>114</u> Vol. Tons <u>55</u>																																
	Plan Preparer Name <u>Russell Wilmot</u> Address <u>180 Beaman St.</u> Town, State, Zip <u>West Boylston, MA, 01583</u> Phone <u>508-792-7806 Ext 318</u> Type of Preparer <u>Mass. Licensed Forester</u> *Mass. Forester License # <u>426</u> *Required for land under Ch61, Ch61A or Forest Stewardship																																
Best Management Practices	Stream Crossings <table border="1"> <tr> <td>Indicate location on map</td> <td>SC-1</td> <td>SC-2</td> <td>SC-3</td> <td>SC-4</td> </tr> <tr> <td>Type of Crossing</td> <td>BR/PO</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Existing Structure</td> <td>No</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Type of Bottom</td> <td>GR</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Bank Height (ft)</td> <td><1'</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Stabilization</td> <td>CO</td> <td></td> <td></td> <td></td> </tr> </table>			Indicate location on map	SC-1	SC-2	SC-3	SC-4	Type of Crossing	BR/PO				Existing Structure	No				Type of Bottom	GR				Bank Height (ft)	<1'				Stabilization	CO			
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Type of Preparer <u>Mass. Lic. For.</u> Type of Crossing <u>CU Culvert</u> Stabilization <u>St. Steel</u> Elevation <u>FR French</u> Type of Rating <u>LC Ledge</u> FR <u>Fr.</u> <u>Tim.</u> <u>Hin.</u> BR <u>Bridge</u> MC <u>Mulch</u> DR <u>Ecy</u> ST <u>Stone</u> LF <u>Timber</u> <u>Buyer</u> FO <u>Fond</u> CO <u>Concrete</u> OT <u>Other</u> ML <u>Mud</u> LO <u>Landowner</u> FO <u>Poled</u> S1 <u>Stone</u> CR <u>Gravel</u> FO <u>Other</u> OT <u>Other</u> FB <u>Hay Bales</u> OT <u>Other</u> U1 <u>Other</u>																																	
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Licensed Timber Harvester** Name <u>Will be provided when known</u> Address <u></u> Town, State, Zip <u></u> Phone <u></u> Mass. Lic. Harvester # <u></u> **This information may be supplied after the plan is approved, but before work begins.																																	
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* AMENDMENT <u>→ Landling added OFF PINES HILL RD.</u>																																	
Note: Applican: must provide DCR with all relevant information. Before plan may be approved and cutting may begin, some forestry activities, such as prescribed burning and pesticide or fertilizer application may require additional permits. Consult MA Forestry BMP Manual for further information.																																	

Forest Products

Products to be Harvested*

Species	Mbh/Cds	Mbh/Cds
White Pine	75.7	Red Maple
Red Pine		Sugar Maple
Pitch Pine		Red Oak
Hemlock		Black Oak
Spruce		White Oak
Other Spruce		Other Edwd.
White Ash		Total Mbh
Beech		Carriwood (Cds)
White Birch		SW Pulp (Tons)
B & Y Birch		HW Pulp (Tons)
Black Cherry		Clips (Tons)

Landowner Signature

The most important information on a cutting plan is the landowner's objective, as this will determine which trees will be harvested and which will remain; this decision will also determine the future condition of the forest for decades to come. After having read the Massachusetts Forest Cutting Plan Information Sheet on page one, indicate your objective by checking the appropriate box below.

☒ LT = Long-term Event Management

Planning management of the forest to achieve one or more of the following objectives: produce irreplaceable and maximize long-term income, enhance wildlife habitat, improve recreational opportunities, protect soil and water quality, or produce forest specialty products.

ST - Short-term Harvest

1.1.1 - Short-term Harvest
Harvest of trees with the main intention of producing short-term income with minimal consideration given to improving the future forest condition, which often results in a forest dominated by poor quality and low value species.

I (we) have read the Massachusetts Cutting Edge Information Sheet, and am aware of my (our) measurement options.

I (we) hereby verify that I (we) have the legal authority to carry out the operation described above.

I (we) certify that I (we) have the legal authority to carry out the operation listed below.

I (we) certify that I (we) have notified the Conservation Commission in the town in which the operation is to take place and the abutters of record within one hundred feet of the area to be harvested.

T (we) understand that the volumes and values (1961 only) in this plan have not been independently verified by the service forester upon approval and will report final values and volumes to the Director or his/her agent if the final figures differ from those reported.

Patricia E. Austin

10-22-18

Determination and Status

Approved Disapproved Expires: 10-13-2008

Significance of N-methyl-D-aspartate (NMDA) receptor function

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Extension	<input type="checkbox"/>	<input type="checkbox"/>	Expires	/	Sur. Sec. Int.	/
Amusement	Apr 1 <input checked="" type="checkbox"/>	May 1 <input type="checkbox"/>	Aug 2 <input type="checkbox"/>	Dec 2 <input type="checkbox"/>	10%	

Assessment: App 1 Dis 1 App 2 Dis 2 Res 1

Final Report and Comments

I hereby certify that the above described Forest Cutting Plan and all relevant studies have been substantially complied with.

Signature of Senior Executive Director: _____

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Forest Type	Dominant Tree	Co-Dominant Tree	Sub-dominant Tree	Type of GL	Source of Reference
W ² White Pine	UK Hemlock	DM Mixed Oak	CT Cat Tail	SD Shaded ground	Intermediate Harvesting
W ³ White Pine	DU Hemlock	RD Red Maple	LT Leafless	ST Real Thin	AD Advanced
W ⁴ WPL/Adirondack	BC Black Cherry	RE Red Oak	SB Sand Boundary	CL Clear Cut	NE Natural Regen
W ⁵ RD/Dak	BL Beech/Cherry	SV Spruce/Hr	GI Other	SF Selection	PL Plant
W ⁶ Red Pine	OT Old Growth	SM Sugar Maple	Landscape/Oblique	SL Salvage	OD Opposite
W ⁷ Red Spruce	NR Natural Regen	PP Pitch Pine	LT Long-term Mgt.	BS Browsing	DS Different Soc.
				SH Sanitation	OT Other
				DL Discarded Limbs	

SI Short-term Hr. COT Other*
*If Other (COT) is a non-structured system, no written explanation must be given on attached narrative page.

Forest Cutting Plan

Narrative Page

Use only if further explanation is required of information on pages one or two or if "other" was used in any category.

Landowner: DKL-DLSP

Town: Holton/Sterling

File Number: 34-9055-18

Silviculture	<p><u>All stream and wetland crossings are on an old cart path that has preexisting gravel. SC-1/WC-3 is regularly wet and will require bridging or corduroy. The approaches to the stream will be protected with tops unless the ground is adequately frozen or snow-covered. WC-1.2 will be used when the crossings are dry or frozen. Both will be protected with wood (corduroy and/or tops) as needed depending on conditions.</u></p> <p><u>*A second landing has been added on Pikes Hill Road frontage.</u></p>
Objectives	<p><u>In order to release advance regeneration, 14 openings in the overstory are being created, covering 9.4 acres. These openings range from less than a 1/4 acre to 1.5 acres in size with an average of 0.67 acres. They are well distributed throughout the area taking advantage of the advance regeneration comprised of white pine, oaks and other hardwoods. No thinning will occur between any of these patches.</u></p>
Other	<p><u>The objective of this operation is to diversify the age structure of the forest by removing the overstory in patches thereby releasing the advance regeneration. The current age structure is limited with an insufficient component of young forest.</u></p>
Other	<p><u>The Natural Heritage GIS layer comes into the sale area (Priority Habitat # 1332) on the far western edge. No cutting or hauling will occur in that specific area.</u></p>

Figure 2. Maps of harvest area showing approximate boundary, proposed openings and other features

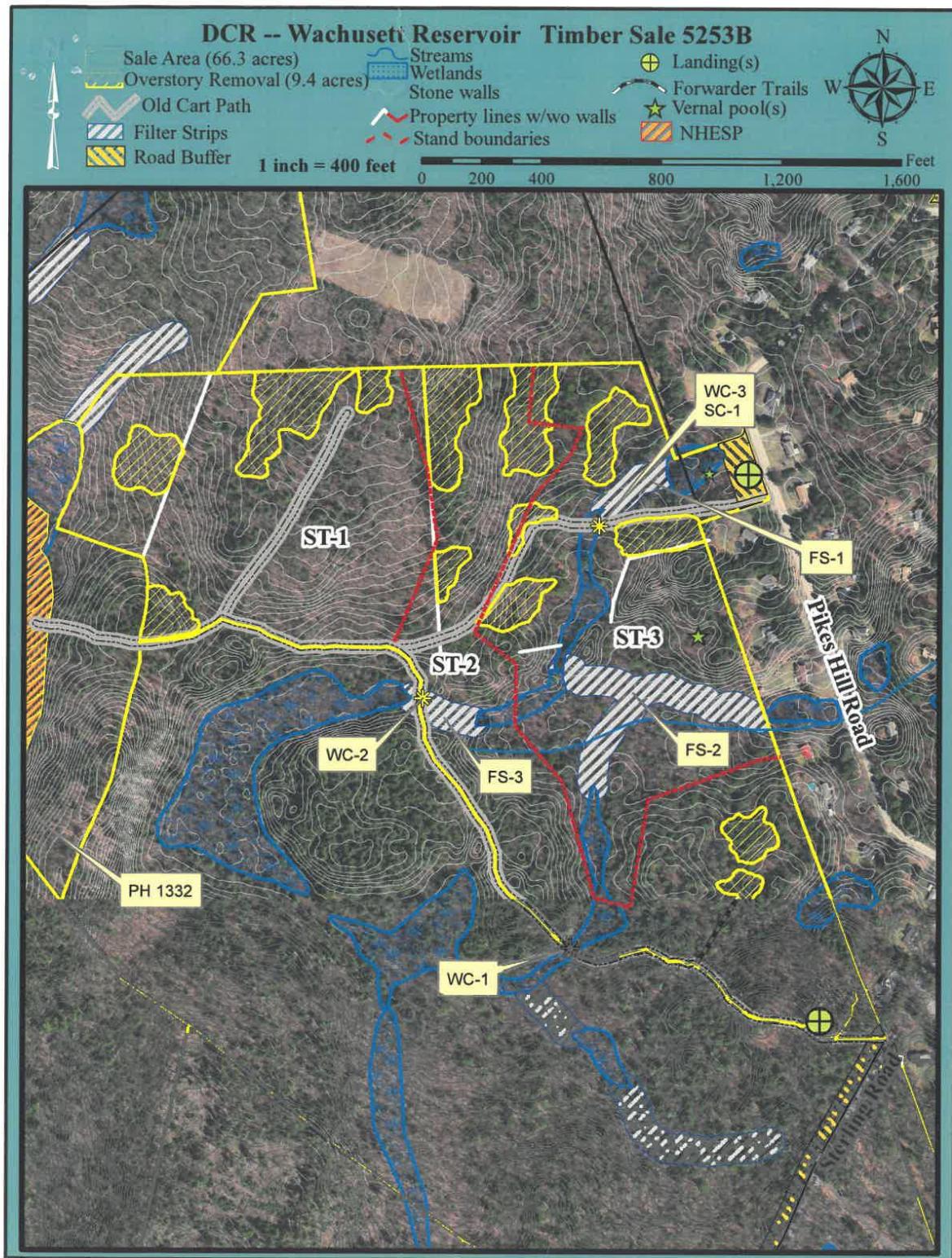


Figure 3. General locus map showing the location of the proposed timber harvest

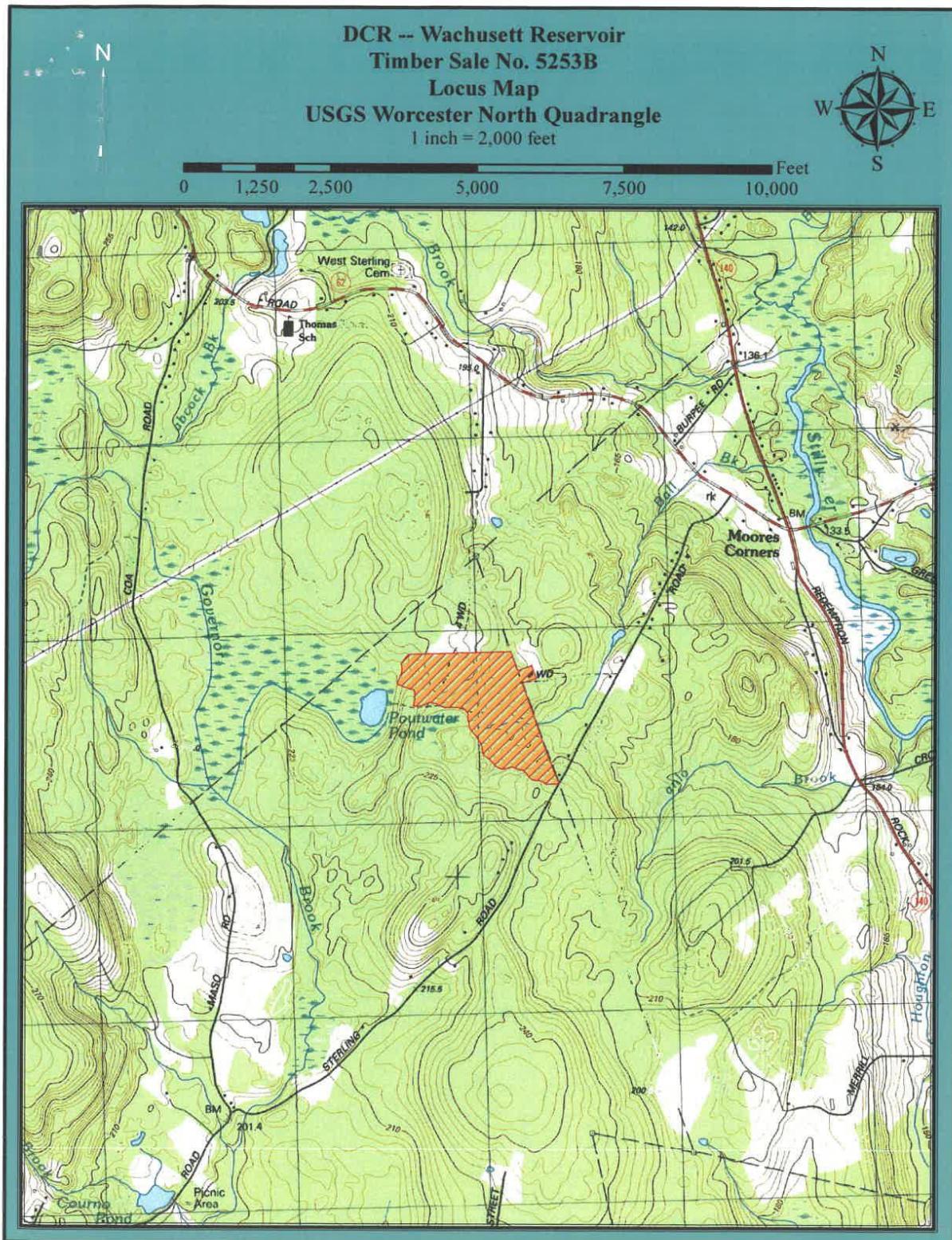
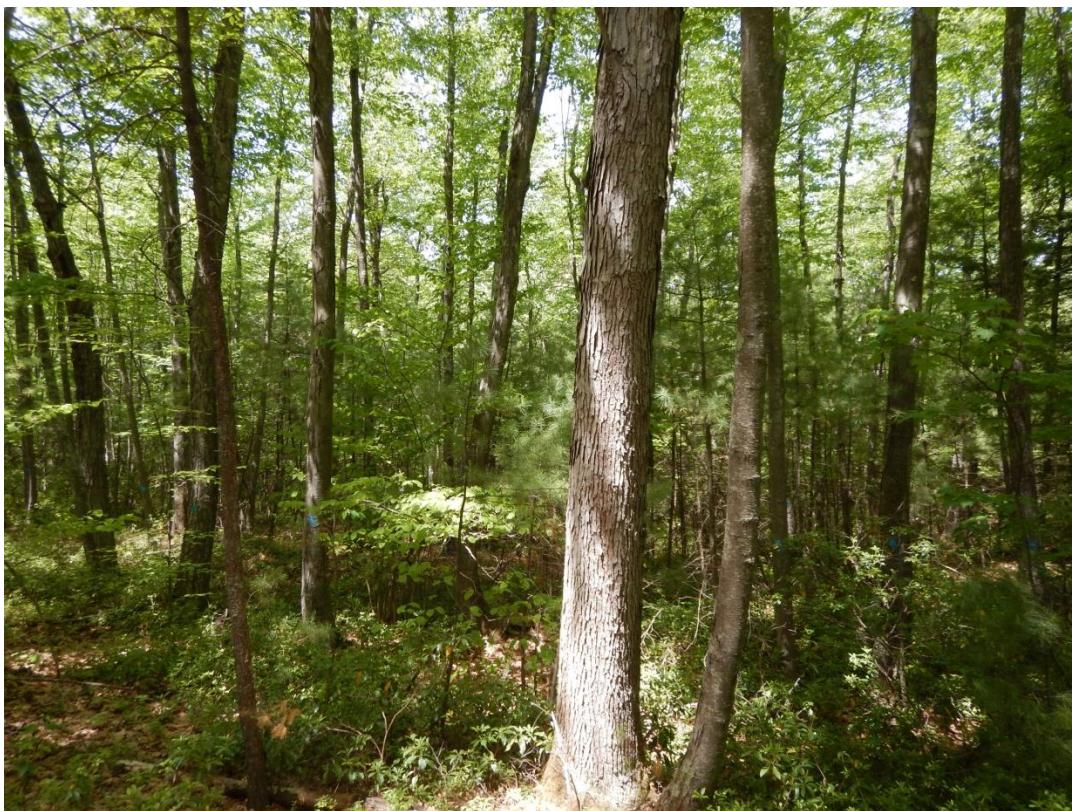


Figure 4. Pre-Harvest Photographs, A-C



A. The landing location at Gate H23 on Sterling Road in Holden.



B. The white oak in the foreground is being retained while most of the rest of the overstory is being removed to release the excellent understory of young white pine and mixed hardwood seedlings and saplings.



C. Another opening where most of the overstory is being removed in order to free the young trees in the understory from the shade of the larger older trees. Note the white pine to the center-right of the photo which is being retained within this opening. Such trees provide valuable structural diversity within these young patches and are expected to be allowed to live out the typical lifespan for this species which can be 200 to 300 years or more.

Figure 5. Post-Harvest Photographs, A-B



A. Looking northeasterly into the 0.7-acre overstory removal opening just west of the landing off of Pikes Hill Road.



B. Looking northeasterly into a 0.5-acre opening with good hardwood regeneration.