Massachusetts Department of Conservation and Recreation

Division of Water Supply Protection, Office of Watershed Management

Forest Management Project Summary

Project Title:

DWSP Harvest Permit Number: 2049
DCR Forest Cutting Plan File Number: 230-8505-17

Site Information

Watershed: Quabbin	**Town(s)**: Pelham
Acres: 5	**Nearest Road:** Route 202
Natural Heritage Atlas overlap?: No	**Public Drinking Water Supply Watershed?:** Yes
Forest Types: red pine plantations	**ACEC?:** No
Soils: The dominant soil types are Charlton-Hollis-Rock outcrop complex; Canton fine sandy loam; Scituate fine sandy loam, extremely stony; and Canton fine sandy loam, extremely stony	
Wetland Resources: There are no wetland resources in either stand.	
Vernal Pools: none	

Harvest Information

Harvest Start Date: 12/05/2016	**Harvest End Date:** 12/20/2016
Number of Wetland Crossings: none	**Number of Stream Crossings:** none

Best Management Practices Applied

Stream Crossings	There are no streams or wetlands and no crossings within the harvest areas. Between the two stands there are established culvert crossings that are part of the existing Quabbin road network.
Filter Strips	The two filter strips shown on the Cutting Plan are on streams near the travel route between Stand 1 and Stand 2. Both are well outside the cutting and staging areas.
Wetland Crossings	none
Harvesting in Wetlands	none

DWSP Forester supervising this harvest
Name: Helen Johnson
Forester License #: 383
Phone #: 978-544-6343
Email: Helen.Johnson@state.ma.us

NARRATIVE

General Description / Forest Composition and History:

This harvest is a conversion of two red pine plantations inside DCR-DWSP Gate 11 in the town of Pelham. These are essentially fields of red pine trees that were planted after the Quabbin Reservoir was built. Like all monocultures, red pine plantations are more vulnerable than diverse stands because a single species-specific infestation can potentially kill most of the trees in any given location.

That threat has become a reality in the Quabbin region, where entire stands of red pine have already died due to red pine scale. This invasive insect first came to the United States in 1939 on exotic pines planted at the New York World's Fair. The earliest sign of infestation is needle browning, usually on the lower branches, often accompanied by beetle infestation and followed rapidly by mortality. There are no effective treatments of any type (chemical, biological or silvicultural) that would save these plantations.

The goals of this harvest are to remove the red pines before they die, at which point they would become safety hazards that would be expensive and dangerous to remove, and to facilitate the transition from these monocultures to diverse stands of native species.

The largest stand is 4 acres just north of Gate 11 and adjacent to Route 202. All of the red pines along the highway are being cut in order to prevent the development of a safety hazard as these trees die. In this area there are numerous white pine and hardwood saplings that are expected to grow rapidly after the red pine is removed. The few larger white pines and hardwoods are also being retained, except for a few that have defects that will become more dangerous when they are exposed to wind. Farther from the highway there are more numerous mature white pines and hardwoods and denser sapling-sized regeneration from a previous harvest, all of which are expected to grow vigorously after the harvest.

This stand contains several invasive plant species, including celestial bittersweet (*Celastrus orbiculatus*), Japanese barberry (*Berberis thunbergii*), and winged burning bush (*Euonymous alatus*). The infestation is concentrated in the portion of the stand nearest Gate 11. In order to minimize the spread of these plants, the harvest will start in the least infested area and end with the worst area, and the equipment used will be power washed both before and after the harvest.

Another red pine plantation is being removed farther inside Gate 11 as part of the same operation. This plantation is only one acre in size and has no invasives. It will be harvested first in order to prevent invasives near Gate 11 from being transported here.

There are no streams or wetlands in either plantation. The dominant soil types are Charlton-Hollis-Rock outcrop complex; Canton fine sandy loam; Canton fine sandy loam, extremely stony; and Scituate fine sandy loam, extremely stony. These are moderately to somewhat excessively drained glacial till soils derived from granite, gneiss, and schist.

Site Selection:

The primary goal of harvesting on the watershed is to create and maintain a forest that is resilient to and can quickly recover from small and large scale disturbances such as diseases, insect infestations, ice storms and hurricanes, all of which are becoming increasingly common. The ideal way to achieve this

is to have a diversity of species in various stages of development (seedlings through large legacy trees) that are actively growing and regenerating. This combination of structural and species diversity builds resistance and resilience into the forest.

This harvest will remove red pine plantations that were planted in the first half of the 20th century and are now threatened by red pine scale. The native stands of diverse species that replace these monocultures will be better able to resist and recover from natural disturbances, including invasive insects and diseases.

Silvicultural Objectives:

All red pine will be removed in this harvest, as well as a few white pines that have defects that would make them likely to break or uproot if they were left in place. Advance regeneration and mature trees of native species are being retained and protected wherever possible.

Cultural Resources:

There are interior walls in both stands, and stone walls line the boundaries of the stand by Route 202. There are cellar holes and old foundations near but not within the harvest area. All cultural features are being protected and avoided as much as possible. Existing barways (breaks in walls) are being utilized in order to minimize damage.

Rare or Endangered Species:

This lot contains no known rare or endangered species.

FIGURES

Figure 1. Forest Cutting Plan

Figure 2: Pre-harvest photos, November 2016

Figure 3: Post-harvest photos, January 2017

Figure 4: Follow up photos in first growing season, July 2017

Figure 1a: Forest Cutting Plan

Forest Cutting Plan

and Notice of Intent under M.G.L. Chapter 132 – The Forest Cutting Practices Act, 304 CMR 11.00
(Effective Date: 1/1/04)

FINAL (1/18)

For DCR Use Only:

File Number	230-8505-17	Case No.	
Date Rec'd	11-2-16	Nat. Hert.	N
Earliest Start	11-18-16	Nat. Hert. Imp	N
River Basin	CT	Pub. Dr. Wat.	QVABBIN
Gen. Obj.	LT	ACEC	N

Site Information

Location

Town: Pelham **LOT 2049**
Road: Daniel Shays Highway (Rte 202)
Acres: 5 Proposed Start Date: Fall 2016
Vol. MBF: 43 Vol. Cds.: 1 Vol. Tons: 7

Plan Preparer

Name: Helen Johnson & Richard MacLean
Address: DCR-DWSP Quabbin Section
485 Ware Road
Town, State, Zip: Belchertown, MA 01007
Phone: 413 323-6921 x 553
Type of Preparer: Mass. Licensed Forester
*Mass. Forester License #: 383
*Required for land under Ch61, Ch61A or Forest Stewardship

Landowner

Name: DCR-DWSP Quabbin Section
Mailing Address: 485 Ware Road
Helen.Johnson@ state.ma.us/Richard.MacLean@ state.ma.us
Town, State, Zip: Belchertown, MA 01007
Phone: (978) 544-6343 / (413) 323-6921 x553
Ch61☐ 61A☐ 61B☐ Stew☐ *Case #
CR☐ CR Holder

Licensed Timber Harvester**

Name: TBD
Address
Town, State, Zip
Phone
Mass. Lic. Harvester #

**This information may be supplied after the plan is approved, but before work begins.

Best Management Practices

Stream Crossings — No Crossings

Indicate location on map	SC-1	SC-2	SC-3	SC-4
Type of Crossing				
Existing Structure				
Type of Bottom				
Bank Height (ft)				
Stabilization				

Wetland Crossings — No Crossings

Indicate location on map	WC-1	WC-2	WC-3	WC-4
Length of Crossing				
Mitigation				
Stabilization				

Filter Strips — No Filter Strips

Indicate location on map	FS-1	FS-2	FS-3	FS-4
Width (50', 100', or VA)	VA	VA		

Harvesting in Wetlands — None

Indicate location on map	HW-1	HW-2	HW-3	HW-4
Forest Type (see pg 2)				
Acres to be Harvested				
Resid. Basal Area (>50%?)				

Service Forester Comments

DUE TO THE PUBLIC SAFETY CONCERNS ABOUT DEAD AND DYING RED PINE FALLING ON RTE 202, I AM WAIVING THE 50% RESIDUAL BASAL AREA REQUIREMENT WITHIN THE BUFFER STRIP ALONG THE HIGHWAY'S EDGE. JSH 11/28/16

Codes

Type of Preparer	Type of Crossing	Stabilization	Mitigation	Type of Bottom
LF Mass. Lic. For.	CU Culvert	SE Seed	FR Frozen	LE Ledge
TH Lic. Tim. Har.	BR Bridge	MU Mulch	DR Dry	ST Stony
TB Timber Buyer	FO Ford	CO Corduroy	OT Other	MU Mud
LO Landowner	PO Poled	ST Stone		GR Gravel
OT Other	OT Other	HB Hay Bales		OT Other
		OT Other		

Note: Applicant 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.

If Other (OT) is used in any category an explanation must be given on an attached narrative page

Figure 1b: Forest Cutting Plan (continued).

Forest Products

Products to be Harvested*

Species	Mbf/Cds		Mbf/Cds
White Pine	4.4	Red Maple	
Red Pine	38.2	Sugar Maple	
Pitch Pine		Red Oak	
Hemlock		Black Oak	
Spruce		White Oak	
Other Sftwd.		Other Hdwd.	
White Ash		**Total Mbf**	42.7
Beech		**Cordwood (Cds)**	1
White Birch		**SW Pulp (Tons)**	7
B & Y Birch		**HW Pulp (Tons)**	
Black Cherry		**Chips (Tons)**	

*Note: Volumes and values indicated in the Plan are as reported by the plan preparer and have not been independently verified by the service forester upon approval. **Mbf** = thousand board feet.

Stand Treatment

Cutting Standards

Indicate location on map	ST-1	ST-2	ST-3	ST-4
Forest Type	RP	RP		
Acres	4	1		
Landowner Objective	LT	LT		
Designation of Trees	CT	CT		
Type of Cut	SE*	SE*		
Source of Regeneration	AD/SE	AD/SE		

Landowner

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 Forest Management**
Planned management of the forest to achieve one or more of the following objectives: produce immediate 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**
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 specie

I (we) have read the Massachusetts Cutting Plan Information Sheet, and am aware of my (our) management options.
I (we) hereby certify that I (we) have the legal authority to carry out the operation described above.
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 two hundred feet of the area to be harvested.
I (we) understand that the volumes and values (Ch61 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.

Signature of landowner(s) — Date: 11/1/16

Service Forester

Determination and Status 230-8505-17

	Approved	Disapproved	Expires
Cutting Plan	☒	☐	11/2/18
Extension 1	☐		
Extension 2	☐		
Amendment	App 1 ☐	Dis 1 ☐	App 2 ☐ Dis 2 ☐

Signature of Service Forester/Director's Agent — Date: 11/28/16

SITE VISIT W/HJ, RM, HE 10/28/16

Expires — Ser. For. Ints.

Final Report and Comments

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

Signature of Service Forester/Director's Agent — Date: 1/11/18

Codes

Forest Types
WP White Pine; WK WP/Hem; WH WP/Hdwd; WO WP/Oak; RP Red Pine; SR Red Spruce; HK Hemlock; HH Hem/Hdwd; BC Blck Cherry; BB Bee/Bir/Map; OH Oak/Hdwd; OR N Red Oak; OM Mixed Oak; RM Red Maple; BE Beech; SF Spruce/Fir; SM Sugar Maple; PP Pitch Pine

Designation of Trees
CT Cut Tree; LT Leave Tree; SB Stand Boundary; OT Other

Landowner Objective
LT Long-term Mgt; ST Short-term Har

Type of Cut
SH Shelterwood; ST Seed Tree; CC Clear Cut; SE Selection; SA Salvage; SN Sanitation

Intermediate Harvests:
CT Commercial Thin; NT Non Com Thin

Non-Standard Systems:*
HG Highgrade*; DL Diameter Limit*; OT Other*

Source of Regeneration
AD Advanced; SE Natural Seed; PL Plant; CO Coppice; DS Direct Seed; OT Other

*If Other (OT) or a non-standard system is used an explanation must be given on attached narrative page

Figure 1c: Forest Cutting Plan (continued).

Forest Cutting Plan

Narrative Page **(Effective Date: 1/1/04)**
Use this page to provide further explanation or if Other (OT) was used in any category on pages 3 or 4.

Landowner DCR-DWSP Quabbin

Town Pelham

File Number 230-8505-17

BMPs

Use this Section to provide further explanation or if Other (OT) was used in any category in the Best Management Practices Section on Page 3.

FLAGGING: Pink "Do Not Cut" = trees to be protected Blue = skid road

ORANGE PAINT: Dot = cordwood or pulp, or red pine sawlog or pulp. Three vertical dots = edge of stand.

Horizontal line = sawlog

Vertical line = TSI

"X" = cull

Designation of Trees

Use this Section to describe the types of trees to be harvested and/or retained if Other (OT) was used for "Designation of Trees" in the Stand Treatment Section on page 4.

Stand No.	Species to be Cut	Size of Trees to be Cut	Quality of Trees to be Cut	% BA/Acre Removed

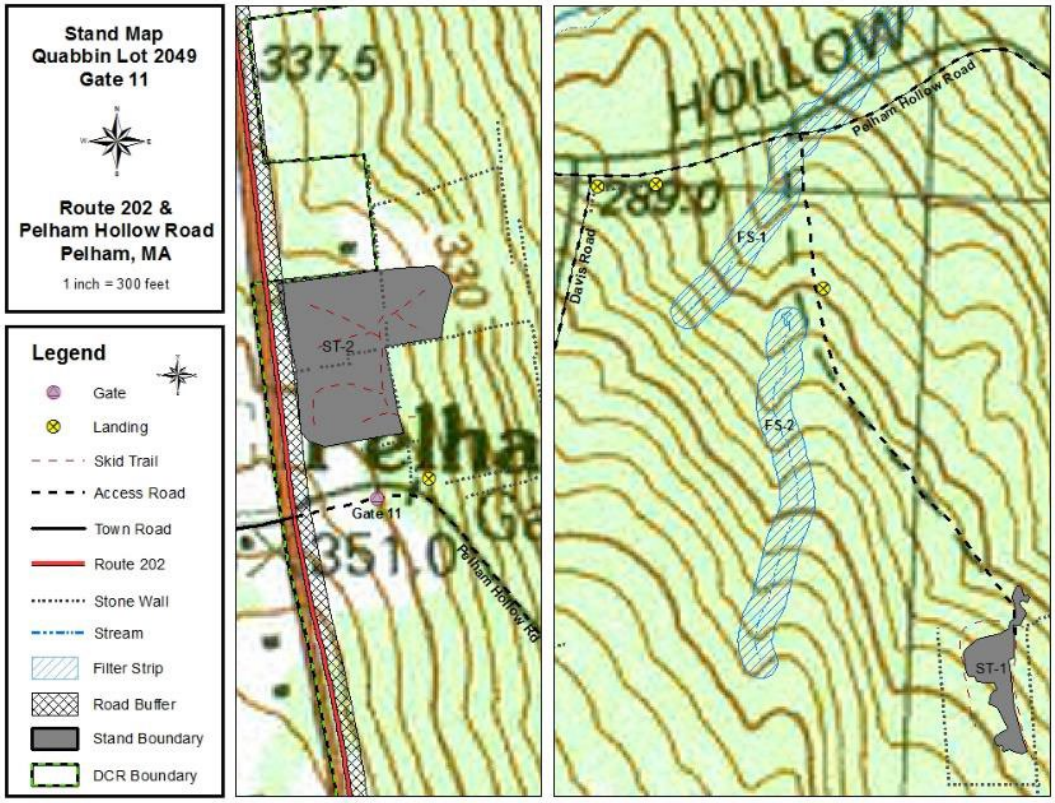
Regeneration & Future Condition

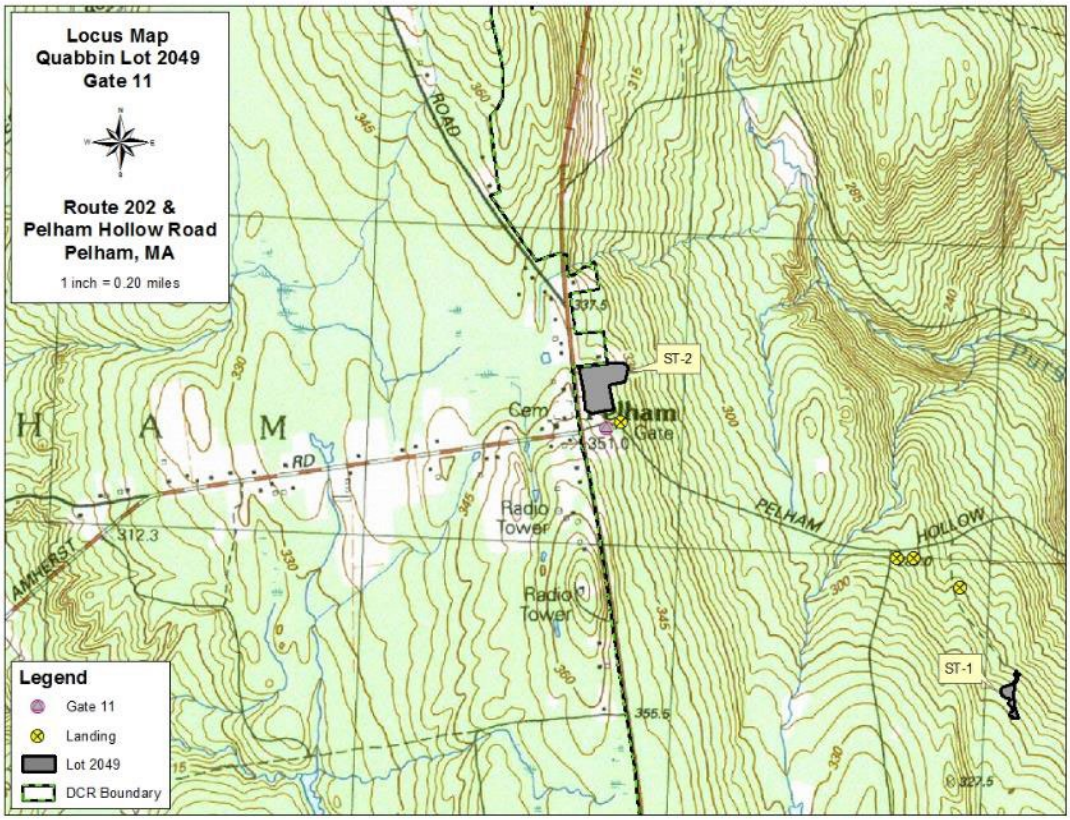
Use this Section to describe how Chapter 132 requirements will be met if a non standard system (HG, DL, or OT) was used for the "Type of Cut" in the Cutting Standards Section on page 4.

Stand No.	Source of Regeneration (ex. AD, SE)	How will Regeneration be obtained/protected? If using AD - Describe the species present and how the regeneration will be protected If using SE - Describe the source of the seed and the number of seed trees/acre
ST-1		
ST-2		
ST-3		
ST-4		

Stand No.	Desired Future Condition Describe what the stand is expected to look like five years from the harvest, including the condition of the overstory & understory
ST-1	
ST-2	
ST-3	
ST-4	

Figure 1d: Forest Cutting Plan (continued).





dcr

COMMONWEALTH OF MASSACHUSETTS
Department of Conservation and Recreation
Division of State Parks and Recreation

FILE # 230-8505-17

FOREST CUTTING PLAN CERTIFICATE

W

Post this in a conspicuous place within the area in which the harvesting operation is to take place.

This certifies that DCR-DWSP Quabbin (Name of Owner) 485 Ware Rd, B'town (Address) in accordance with the provision of M.G.L. Chapter 132, Section 40-46, filed in Amherst FO with the Dept. of Conservation and Recreation, Division of State Parks and Recreation, a Notice of Intent to cut forest products upon the Daniel Shays Hwy lot (2049), Pelham

Approval Date 11/28/16

Director's Agent Douglas Hutcheson

DCR Phone No. (413) 545-7020

ISSUED BY:

Priscilla E. Geigis, Director
Division of State Parks and Recreation

Figure 1e: Forest Cutting Plan (continued).

Figure 2: Pre-Harvest Photo, November 2016. The trees with reddish color bark are red pines, which face imminent mortality due to red pine scale, an invasive insect for which there is no viable control.

Figure 3: Post-Harvest Photo, January 2017. The red pine trees pictured in Figure 2 have been harvested and advanced white pine regeneration protected.

Figure 4: Follow up photo, July 2017. During the first growing season after the harvest, ground cover is regrowing and maple and birch regeneration is already present and growing.

Figure 5: Follow up July, 2018.

Figure 6: Follow up July, 2019

Figure 7: Follow up September, 2021.