

**Massachusetts Department of Conservation and Recreation
Bureau of Forest Fire Control and Forestry
Forest Management Proposal
Name: Hansen Lot**

Date Posted: (2nd Posting) April 1, 2015
End of Comment Period: May 15, 2015

Region: North
Recreation District: Metro West
Forest Management District: Northeast
State Forest: Marlboro-Sudbury
Closest Road: Concord Road
Town: Marlborough

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Overview:

The Hansen Lot Proposal Area is located in the Marlboro – Sudbury State Forest in the town of Marlborough on the Hansen Lot (see Locus Map). The Hansen Lot property was originally abandoned farm land when it was acquired in 1915. The state purchased many acres of abandoned land at the time and had the Civilian Conservation Corps (CCC) plant pine stands to reforest the land. The resulting forest is made up of a combination CCC pine plantation, oak hardwoods, and an increasingly rare pitch pine (*Pinus rigida*) scrub oak (*Quercus ilicifolia*) community that is currently being overtaken by the growing pine plantation and oak hardwoods.

This site was selected as a forest management proposal because:

- This project provides an opportunity to restore and potentially expand the rare and native pre-existing pitch pine scrub oak “Pine Barrens” community, which has been designated as a Priority Natural Community by the Massachusetts Natural Heritage & Endangered Species Program (<http://www.mass.gov/eea/docs/dfg/nhesp/natural-communities-facts/priority-natural-commun.pdf>).
- The exotic red pine plantation is overcrowded and stressed. This competition for resources makes the red pine more susceptible to the red pine scale. The resulting impact is trees dying and falling over.
- The oak hardwoods would benefit from more growing space and sunlight being provided.

The Hansen Lot Forest Management Proposal will have two areas with two different goals:

- Restore the native pitch pine-scrub oak barrens and provide habitat for endangered species.
- Demonstrate a thinning that will leave the healthiest and most well formed trees to reproduce the next generation of trees.

Both of these areas will also:

- Fulfill management approaches for Woodlands as directed by the Forest Futures Visioning Process (2010) and subsequent Management Guidelines (2012).
- Use best management practices that protect the forest soils and water resources.
- Protect public safety through the removal of dead and dying pine along roads and hiking trails.

Stand Description:

The Hansen Lot located in “The Desert Natural Area” which is an increasingly rare pitch pine and scrub oak ecosystem. For more information about the collaborative ecological restoration work in the area:

<http://www.sudburyvalleytrustees.org/news/habitat-restoration-desert-natural-area>.

The Hansen Lot is bounded to the north by Old Concord Road, and Marlborough Conservation Land, to the west by Marlborough Conservation land and several private lots on Turner Ridge Road, Minehan Lane and Hanlon Drive, to the South by Trout Brook and Marlborough Conservation land, and to the east by Marlborough Conservation land and Sudbury Valley Trustees encompassing approximately 98 acres. The Soil types are (in order of most prevalent) Hinckley loamy sand, Paxton fine sandy loam, Charlton – Hollis rock outcrop complex, and Woodbridge fine sandy loam.

This proposal consists of six stands.

Stand one is a 9.25 acre oak/pine stand. The white pine (*Pinus strobus*) average between 16” and 22” dbh and the red oak (*Quercus rubra*) average between 12” and 16” dbh and are about 70 years old. The stocking of the stand is high and the stand is currently less vigorous and declining because of the close tree spacing. Some fuelwood harvesting was done in the early 80’s. The understory consists mainly of low bush blueberry (*Vaccinium angustifolium*) and white pine saplings. The stand one soils are a Charlton-Hollis Rock outcrop complex. The stand occurs on a small hilltop with both a northwest aspect and a south east aspect and a moderate 5 to 10 percent slope.

Stand two is an 18.5 acre pine plantation consisting of (in order of occurrence) white pine, red pine (*Pinus resinosa*), scotch pine (*Pinus sylvestris*), and Norway spruce (*Picea abies*). The pine and spruce average between 14” and 36” dbh and are about 80 years old. The stand is overstocked (an overabundance of trees which exceeds the limit of resources needed for healthy tree growth) with

trees dying out and falling over with no new generation of trees coming in. A thinning operation was done in the 1980's. The understory is very sparse with some black birch (*Betula lenta*) saplings and poles. The stand two soils are mostly Paxton fine sandy loam with Woodbridge fine sandy loam in some spots. The stand is nearly level with a 1 to 3 percent slope with a western aspect.

Stand three is a 13.5 acre red pine plantation. The red pine average between 12" and 14" dbh and are about 70 years old. Some of the red pine are infected by the red pine scale as highlighted by the groups of dead trees. Rows of red pine were planted along the forest roads and trails and have now become a hazard. The stand is overstocked with trees dying out and falling over with some oak and white pine in the understory coming in. A thinning operation was done in the 80's. The stand three soils are predominately Hinckley loamy sand. The stand is nearly level with no aspect and is surrounded by small hills.

Stand four is a 12.5 acre pitch pine stand. The pitch pine average between 12" and 20" dbh and are about 80 years old. The stocking of the stand is high with some red oak, white oak (*Quercus alba*), and white pine starting to outcompete the native and increasingly uncommon pitch pine as evidenced by the pitch pine slowly being overtopped and dying. If left unmanaged the encroaching white pine will eventually eliminate all pitch pine and the habitat it provides. This stand is listed by Natural Heritage as priority habitat of rare species and estimated habitat of rare wildlife. The understory consists mainly of low bush blueberry and little to no tree regeneration. There is no evidence of forest management in the past. The stand four soils are Hinckley loamy sand. The stand has a moderate 5 to 10 percent slope with a southeastern aspect.

Stand five is a 16.6 acre pitch pine and scrub oak stand. The pitch pine average between 14" and 16" dbh while the scrub oak average less than 1". The stand has low to medium stocking with some white pine (2" to 16") and white oak (2" to 12") starting to infiltrate the community. If left unmanaged the stand will eventually convert to a white pine/oak stand and eliminate all pitch pine and scrub oak including the habitat it provides. This stand is listed by Natural Heritage as priority habitat of rare species and estimated habitat of rare wildlife. The understory consists of black huckleberry, low bush blueberry, and scrub oak. There is no evidence of forest management in the past. The stand five soils are Hinckley loamy sand. The stand has small hills and depressions of moderate (5 to 10 percent) slope in all aspects.

Stand six is a 19.5 acre red oak stand. The red oak average between 10" and 20" dbh and are about 70 years old. The stand has medium to high stocking with white pine, low bush blueberry, and resprouted chestnut (*Castanea dentata*) in the understory. The spacing of the oaks is fairly tight with some ice damage and blow downs. There was a fuel wood harvest done in the 1980's. The stand six soils are Paxton fine sandy loam. The stand is on a hill top that slopes moderately (5 to 20 percent) with an eastern aspect.

Aesthetic, Recreation, Wetlands, Cultural, Rare Species and Wildlife Considerations:

Aesthetic:

In order to restore the pitch pine and scrub oak habitat whole tree harvesting will occur, with the goal of reducing fuel loads and favoring the natural pitch pine and scrub oak community. The end result in the "Pine Barrens" area will be a very different looking landscape with open areas and minimal tree debris left on site. Visuals from the hiking trails will change from a forested canopy to an open shrubland savannah that will likely feature excellent opportunities for blueberry picking. This will create an area that will be conducive to periodic mowing and/or potentially a prescribed fire. Disturbances will be required in order to maintain the "Pine Barrens" ecology.

In the thinning areas away from the Pine Barrens, trees will be removed along forest roads and hiking trails in order to enhance public safety. The Hansen lot is located in the highly used and highly valued "Desert Natural Area" and as such aesthetics are a priority. Every effort will be used to maintain a visually attractive forest for years to come. Visuals from the hiking trails will change from an area with only large trees to one where large trees are more spaced apart with young trees coming in.

Recreation:

The Desert Natural Area is locally very well known. For being so close to Boston it has a distinctive "wilderness" feel. This is what brings people to this special place. Dog walking is probably the most highly used form of recreation, followed closely by hikers, walkers, and runners. Horseback riding is also common in the Desert Natural Area. In the winter snow shoeing and cross country skiing are popular activities. Some seasonal Whitetail deer hunting occurs in the fall and as the name implies "Trout Brook" holds Massachusetts native Brook Trout albeit small ones. Operating hours will be limited during the week, occur only in the winter months and not on the weekends. To ensure the people who value this special place can continue to enjoy it through the harvest alternative parking areas will be posted.

Wetlands:

There are five uncertified vernal pools on the Hansen Lot. Four in the southeast corner of the lot and one near the pond. All vernal pools will be treated as certified. There is also a stand of flooded "snags" (standing dead trees) in the south eastern section of the Hansen Lot. Trout brook runs along and forms the southern boundary of the parcel. There is a quarter acre pond near the center of the property with a manmade intermittent stream running easterly out of the property. The oak hill top (Stand 6) and the oak/pine stand (Stand 1) are the only areas with no wetlands. The main pre-existing forest road that enters and runs through the center of the lot will be used. This forest road runs close to but not through wetlands, the pond and a vernal pool. With the exception to this pre-established forest road all wetlands, streams, vernal pools and the pond will be avoided during the harvest. No tree harvesting will occur in the wetlands.

Cultural Resources:

There are several hundred feet of stonewalls and two small trench lines that form a portion of the boundaries of the Hansen Lot (see basemap). There are three other stone walls occurring within the lot. There are no known archaeological sites located within the proposed management area. However any features discovered within the project area will be clearly flagged and protected during harvesting activities.

Rare and Endangered Species:

The southern portion of the Hansen Lot is mapped as NHESP priority habitat of rare species and estimated habitat of rare wildlife. The pitch pine-scrub oak barrens within the Hansen Lot provide habitat for a diversity of state listed animals and plants. The barrens specific species often require an open shrubby habitat for food and cover. This restoration work will improve the habitat on site for the Whip-poor-will, Brown Thrasher, Prairie Warbler, Eastern Towhee, along with threatened butterflies, beetles, and plants that live in "Pine barrens".

Invasive Species:

Stands 2, 4, and 5 have small populations of Glossy Buckthorn (*Frangula alnus*) and a handful of Japanese Barberry (*Berberis thunbergii*). Accordingly, a vegetation management plan will be prepared within this forest management plan to address the issue.

Wildlife:

There were several deer beds located, although deer browse appears to be minimal. A fox den was identified on the eastern boundary line. A variety of birds were heard including chickadees, tufted titmouse's, pileated woodpeckers, red-tailed hawks, and eastern towhees. Large dead and or dying trees with cavities or nests will be protected during the harvest. The thinning areas will boost wildlife quality and habitat with expanded areas of food and cover. An increased variety of tree species will diversify food options for wildlife in years following bumper crops of acorns when food supply is low.

Sale Layout and Harvesting Limitations:

There will be two landings (see basemap). One will be at the "Chipman Lot" located on the north side of Old Concord Road about 900 feet from the Desert Natural Area parking area and will be used for stockpiling and processing wood. The second will be off the main forest road within the Hansen Lot. The Old Concord Road will be firmed up with gravel brought in for some sections including the access point into the Hansen Lot. Several trees growing in Old Concord Road will be removed to help keep the equipment away from the stream on the portion that runs parallel to the road. There will be no tree harvesting along Old Concord Road with exception to the access and landing mentioned. Whole tree harvesting will occur on site with chipping. This will help prepare the pitch pine scrub oak restoration area in the future to allow for mowing and/or potentially prescribed fire to maintain the Pine Barrens habitat.

The project will begin in the winter in order to take advantage of good operating conditions and hopefully end before temperatures warm up for the spring. Extra attention will be paid to make sure roadways are graded if damage occurs from harvesting operations. Signs warning of harvesting operations will be posted in obvious locations and include close alternative areas to recreate. Harvesting will only occur between 8 am and 5 pm Monday thru Friday.

Silviculture:

The goal of stands four and five (approximately 25 acres) are to restore the native habitat made up of pitch pine (*Pinus rigida*), scrub oak (*Quercus ilicifolia*), dwarf chestnut oak (*Quercus prinoides*) and associated native shrubs like black huckleberry (*Gaylussacia baccata*). Red oak (*quercus rubra*), white oak (*Quercus alba*), and white pine (*Pinus strobus*) are currently outcompeting the pitch pine by overtopping them and shading them out. Pitch pine is shade intolerant and will not live or regenerate under a shaded canopy. By removing the white pine, and most of the red oak and white oak it will provide the sunlight needed to regenerate pitch pine and stimulate a scrub oak and huckleberry understory. Occasional, white oak and red oak canopy trees will also be retained to provide acorn mast for wildlife and species diversity within the stand. This will allow for a dense shrubland habitat beneath an open tree overstory that will benefit a variety of rare or endangered species. According to John Scanlon, forester with the DFW, a similar silvicultural approach has been successfully implemented on multiple DFW properties, for example Montague Plains Wildlife Management Area and the Frances Crane Wildlife Management Area in Falmouth.

-The long term conditions for these two stands are to maintain the pitch pine habitat by having planned disturbances in the future. These can be either mowing or if situations are ideal and safe a prescribed burn would help perpetuate the Pine Barrens. Approval from the DCR Commissioner will be required for openings larger than 1/3 acre, where the majority of overstory and mid-story trees will be removed.

The thinning that will be conducted in stands one, two, three, and six (approximately 50 acres) will stimulate the growth of the residual trees and create growing space for a new generation of trees. This project will increase structural and native species diversity within the stands. The new age class of trees will provide food and cover for wildlife. The thinning will increase sunlight and provide conditions for seedling germination, while the residual trees will provide partial shade which is important for survival of regeneration on dry sandy soils. The long term desired conditions from thinning in the oak and pine stands are a more species and structurally diverse forest. The new age class of trees will eventually become the next mature forest over time. The thinning will also help protect the forest from diseases, insect infestations and naturally occurring stressors such as droughts, ice storms, flooding, heavy snow, and wind storms. This will be most beneficial to the Hansen Lot in the future as the environment will continue to challenge the forest in unexpected ways.

District Forester:

Date:

Field Operations Team Leader

Or Park Supervisor:

Date:

Regional Director:

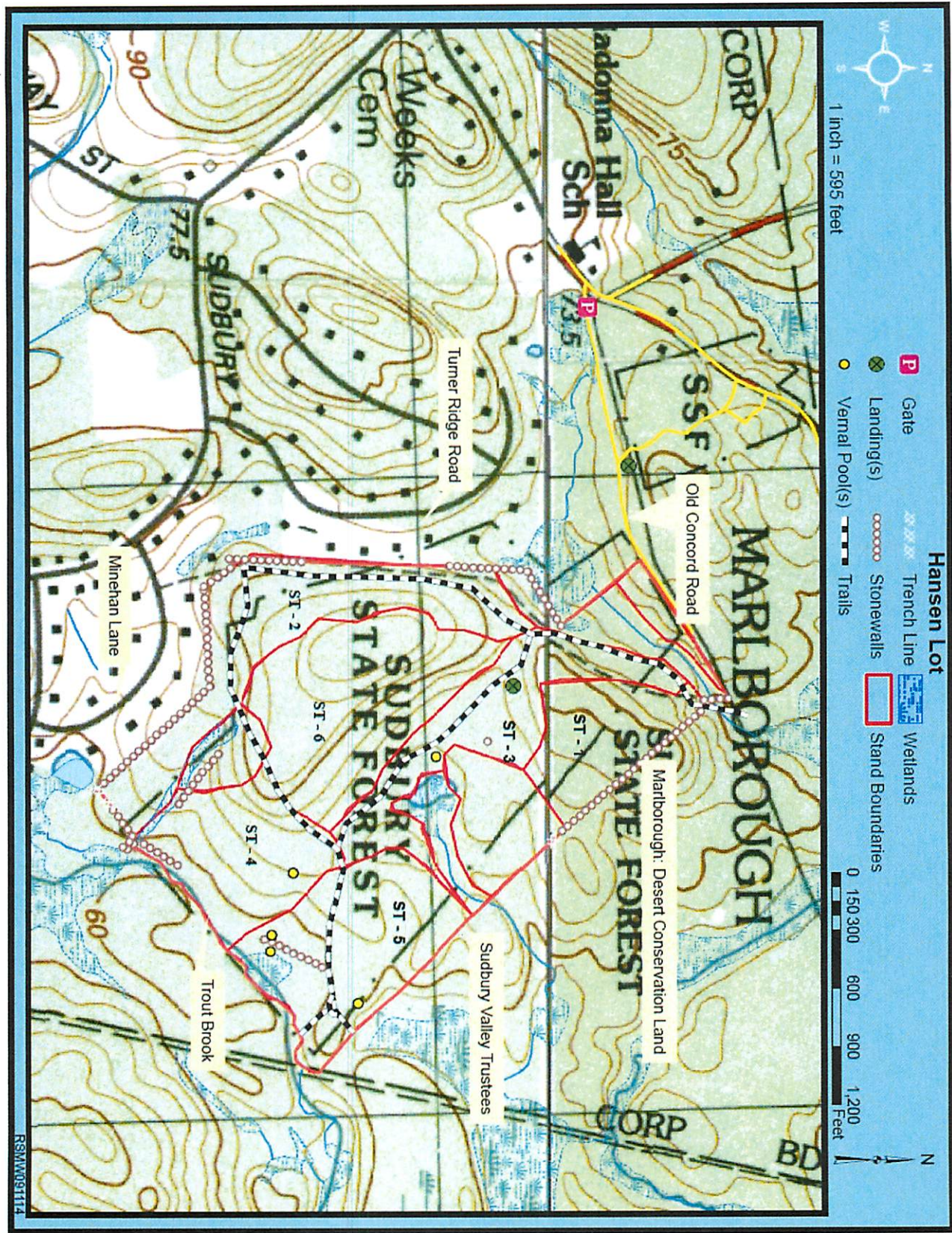
Date:

Management Forestry

Program Supervisor:

Date:

Attached: Topographic map showing project details. Locus map showing project location within regional context



Hansen Lot

- P** Gate
- Landing(s)
- Vernal Pools
- Trench Line
- Stonewalls
- Trails
- Wetlands
- Stand Boundaries

0 150 300 600 900 1,200 Feet

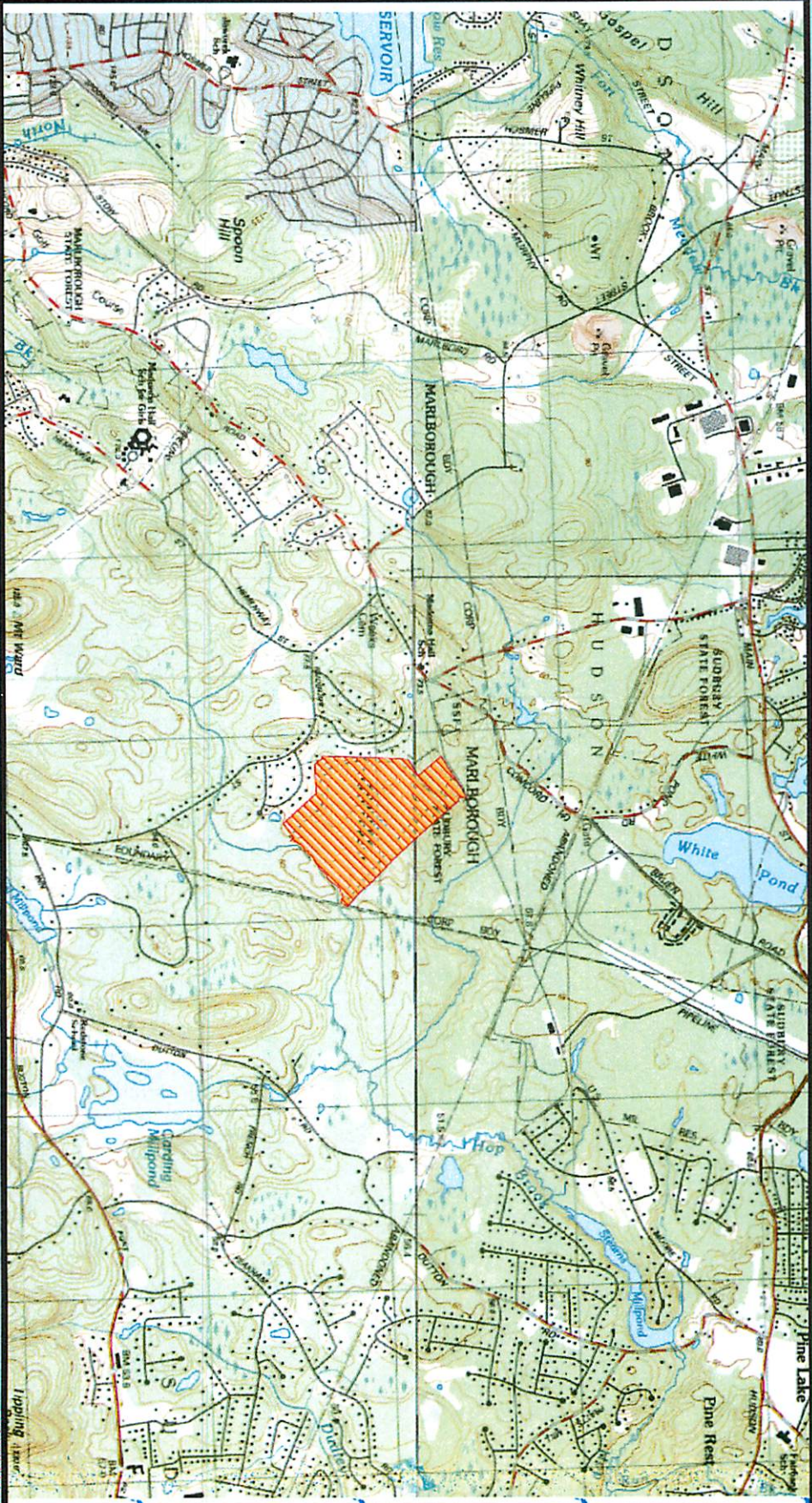
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1 inch = 2,000 feet

Marlboro-Sudbury State Forest
Hansen Lot Locus Map
Maynard Topographic Quadrangle

0 625 1,250 2,500 3,750 5,000
Feet



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