EXISTING CONDITIONS (Continued)

MANAGEMENT UNIT # 1 NUMBER OF ACRES 17

PROTECTION ISSUES (continued):

In July, 1993 an infestation of (bugs) was observed on eastern white pine. These insects have burrowed into the terminal twigs of numerous lower branches on many individual trees resulting in mortality of current and, in some cases, previous years growth.
Five to seven year old white pine seedlings appear to have been browsed by white-tailed deer.

Flowering dogwoods have suffered from an infestation of anthracnose but appear to have recovered in recent years.

2. DESCRIPTION OF TIMBER AND OTHER WOOD PRODUCT RESOURCES
(Size classes; ages; vigor or condition of growing stock; stand density: understocked, adequate or overstocked - provide criteria used such as # trees/acre, basal area/acre or volume/acre; adequacy and type of advance regeneration, if present; potential wood products and values.)

This stand is fully stocked (76%); 8.1" average tree diameter; 82 square feet per acre basal area - 48AGS/34UGS (AGS = acceptable growing stock; UGS = unacceptable growing stock); 232 trees per acre. Principal forest products are sawtimber and fuelwood.

SAWTIMBER: 80-100 years old; moderate vigor (9-14 rings per inch recent growth rates); 4,668 board feet of marketable sawtimber per acre; 54 square feet per acre basal area (66% of total); 40 trees per acre.

POLETIMBER: 80-100 year old oaks; very poor vigor (25-35 rings per inch recent growth); 18 square feet per acre basal area (22% of total); 77 trees per acre. Six to eight inch DBH white ash, sugar maple, and hickory poles exhibit much better growth rates and are considered a younger age class than the oaks that have dominated the forest canopy.

SAPLINGS: 15-30 year old sugar maple, black birch, hemlock, hickory, and red maple; good vigor; 10 square feet per acre basal area (12% of total); 115 trees per acre.

REGENERATION: inadequate; principal species are black birch, sugar maple, white oak, and white pine.

EXISTING CONDITIONS (Continued)

MANAGEMENT UNIT # 1 **NUMBER OF ACRES 17**

3. **DESCRIPTION OF WILDLIFE RESOURCES SIGNIFICANT HABITAT FEATURES AND CORRESPONDING WILDLIFE ASSOCIATIONS:** (Quantity and quality of den trees and snags, winter cover, vines, alder or aspen stands, apple trees, seep or vernal pools, wetland and watercourses, beaver ponds, mast producing trees, fruiting shrubs, etc. Identify associated wildlife and locate important features on the Map.):

☞ This stand borders and partially surrounds a forested swamp near the eastern property line, forming a riparian zone that has fertile soil and high plant diversity. These conditions attract a high diversity of animal life, from the large vertebrates such as wild turkey and white-tailed deer to songbirds, small mammals, and amphibians.

The dominant oaks will produce periodic crops of hard mast. There are a moderate number of snags and living den trees throughout the area.

The mixed hemlock/hardwood grove that occurs at the western end of this stand provides structural diversity and winter cover. A number of large owl pellets (regurgitated rodent bones and fur) were found in this area, indicating that a greated horned owl is probably utilizing this area to hunt and feed.

4. **DESCRIPTION OF WETLAND, WATER, AND FISHERIES RESOURCES** (Assess their extend and condition, and their value for management. Major water resources on and near the parcel must be identified on the Plan Map. Riparian buffers or wetland and water protection zones must also be delineated on the Map. Identification of Connecticut Inland Wetland Soils - optional, depending on landowner objectives.):

☞ A palustrine deciduous forested swamp occurs to the east of the glacial till uplands that comprise the bulk of the parcel. The portion which occurs on the Williams Forest is about 8.5 acres in size and is part of a much larger wetland system.

5. **DESCRIPTION OF RECREATION RESOURCES** (Identify existing and potential recreation uses and opportunities, such as access areas, roads and trails, scenic vistas, unique areas and geologic formations, hunting and fishing areas, picnic and camping sites, etc. Identify important features on the Map.):

☞ An excellent logging road/walking trail traverses this M.U. at the base of the till uplands, providing more than sufficient access. A grassy swale near the center of the property provides a scenic view of the forested wetland to the east, surrounding bedrock outcrops, a grove of sugar maples, a shade tree quality American beech, and oak, ash, and birch den trees.

RESOURCE MANAGEMENT RECOMMENDATIONS FOR NEXT TEN YEARS; 1993 TO 2003

MANAGEMENT UNIT # 1 **NUMBER OF ACRES** 17

LANDOWNER MANAGEMENT OBJECTIVES: Demonstrate multiple-use resource stewardship while providing recreational and educational opportunities with a strong emphasis on aesthetics.

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1. **WOOD PRODUCTS AND FOREST PROTECTION MANAGEMENT** (Forest management system and silvicultural prescriptions that conform to Connecticut's Forest Practices Act Regulations and BMP's; products and amounts to be removed; timing of treatment; other forest protection actions to safeguard forest from insects, diseases, other pests, fire, adverse weather conditions. Specify related activities such as road maintenance and construction, soil erosion control practices, etc.):

   ☞ Forest management thinnings in this area will be guided by the principal objective of maintaining and enhancing aesthetics. Therefore, thinnings will not necessarily conform to any customary silvicultural harvest system designed for maximizing timber production. General guidelines for future thinnings include the retention of dominant, superior phenotypes of all tree species, a gradual reduction of suppressed understory trees, and retention of all trees and shrubs having significant value to wildlife. No thinning is recommended at this time. However, due to the advanced age of the forest this prescription should be reevaluated in five years. Also, annual inspections should be conducted in order to obtain the earliest possible warning of significant impacts from insect or disease pathogens described above, but especially the gypsy moth or hemlock wooly adelgid.

2. **WILDLIFE HABITAT MANAGEMENT** (Prescriptions or actions to establish, enhance or protect habitat for locally native wildlife species):

   ☞ Locate and mark for preservation all significant living den trees, especially those that are visible or easily accessible from the existing and proposed walking trail.

   Retain snags throughout, but especially in the wetland-upland ecotone surrounding the forested swamp.

   Create a 0.5 acre wedge-shaped covert (temporary forest opening) in the southeast corner of the property. The borders will be the access trail and the property line (see sketch map).

RESOURCE MANAGEMENT RECOMMENDATIONS FOR NEXT TEN YEARS 1993 TO 2003

(Continued)

MANAGEMENT UNIT # 1 **NUMBER OF ACRES 17**

3. **WETLANDS, WATER, AND FISHERIES MANAGEMENT** (Actions to restore, enhance or protect water quality, wetlands and riparian areas, and fisheries habitat):

☞ Designate as a riparian management area the land area between the existing and proposed access trail and the forested swamp. Maintain a mature forest canopy within this zone by leaving all large diameter trees and prohibiting significant tree harvesting.

4. **RECREATION MANAGEMENT** (Actions to establish, enhance or protect an area for forest recreation):

☞ The grassy swale is a natural "amphitheater" that should be developed as a focal point for nature lectures and as a place for individuals to pause and quietly observe the surroundings. Split log benches would be set in a semicircle at a location toward the rear of the swale and facing east. The scenic view toward the swamp would be improved by removing suppressed understory trees, selectively thinning the subcanopy shrub layer, and pruning side limbs from overstory trees. This should substantially improve the view through the forest while maintaining the full canopy. The silvicultural objective is to produce a grove of "old growth" trees for maximum aesthetic effect.

The amphitheater will create an ideal site for holding short nature seminars or as a picnic site for groups touring the forest. The range of possible lecture subjects includes wetlands conservation, pleistocene glaciation and it's effect on local landforms, elements of wildlife habitat - food, water, cover, and space, New England land use history, etc.

Expand the existing access trail to permit access to the east side of the swamp and the hemlock grove (see sketch map). Trail construction to the south of the swamp may be contingent upon acquisition of a small strip of land (fee simple or easement) about 75' wide that will permit trail placement on drier soils.

5. **SPECIAL AREAS MANAGEMENT** (Actions to manage, enhance or protect cultural, historic and aesthetic resources, threatened and endangered species, and other significant resource features or uses, etc.):

☞ Not applicable.

EXISTING CONDITIONS

MANAGEMENT UNIT # 2 **NUMBER OF ACRES: 34**

1. **DESCRIPTION OF MANAGEMENT UNIT** (Identify & number unit on the Plan Map.) **FOREST TYPE OR COVER TYPE, AND MAJOR SPECIES COMPOSITION** (Overstory and understory).

☞ This is an upland oak/white pine forest stand growing on the highest property elevations where soils are shallow and excessively well drained. Exposed bedrock is common, especially at the highest elevations. Dominant overstory species are chestnut oak, black oak, and scarlet oak. A grove of codominant, sexually-mature white pine occur in the northeast corner of the stand. Understory species include chestnut oak, scarlet oak, white oak, black birch, hickory, and white pine.

SITE QUALITY OR RELATIVE PRODUCTIVITY: (good, fair, poor); Indicate how determined:

☞ Poor - xeric site; SCS soils data (HrC - Hollis-Charlton-Rock outcrop complex, 3 to 15 percent slopes; and CrC - Charlton-Hollis fine sandy loams, very rocky, 3 to 15 percent slopes).

PROTECTION ISSUES (General condition, past and present problems: insects, diseases, wildlife and weather influences, fire, erosion, boundaries, access, etc.)

☞ This is probably an endemic area for gypsy moth caterpillars. The white pine weevil has effected growth form on about 40% of the pine saplings and poles.

A utility right-of-way bisects the parcel along the northern property line, coming within 100′ of a significant vernal pool. How this corridor is periodically maintained (ie. mechanical clearing or broadcast herbicides) needs to be determined by communication with Northeast Utilities.

2. **DESCRIPTION OF TIMBER AND OTHER WOOD PRODUCT RESOURCES** (Size classes; ages; vigor or condition of growing stock; stand density: understocked, adequate or overstocked - provide criteria used such as # trees/acre, basal area/acre or volume/acre; adequacy and type of advance regeneration, if present; potential wood products and values.)

☞ This stand is fully stocked (82%); 6.2" avearge tree diameter; 80.5 square feet per acre basal area - 36AGS/44.5UGS (AGS = acceptable growing stock; UGS = unacceptable growing stock); 383 trees per acre. Principal forest products are sawtimber and fuelwood. A timber thinning occurred about ten years ago.

EXISTING CONDITIONS (Continued)

MANAGEMENT UNIT # 2 **NUMBER OF ACRES** 34

2. **DESCRIPTION OF TIMBER AND OTHER WOOD PRODUCT RESOURCES** (continued):

SAWTIMBER: 80-100 years old; moderate vigor (9-14 rings per inch recent growth rates); 25 trees per acre.

POLETIMBER: 80-100 years old (oaks) - poor vigor; 40-60 years old (white pine) - good vigor; 168 trees per acre.

REGENERATION: inadequate; principal species are black birch, sugar maple, white oak, and white pine.

3. **DESCRIPTION OF WILDLIFE RESOURCES SIGNIFICANT HABITAT FEATURES AND CORRESPONDING WILDLIFE ASSOCIATIONS:** (Quantity and quality of den trees and snags, winter cover, vines, alder or aspen stands, apple trees, seep or vernal pools, wetland and watercourses, beaver ponds, mast producing trees, fruiting shrubs, etc. Identify associated wildlife and locate important features on the Map.):

- Exposed bedrock outcrops and rockfalls provide numerous den sites and escape cover for small and medium sized mammals.

- A significant vernal pool wetland occurs near the northwest property corner (see sketch map). It is roughly circular, about 150′ in diameter, and hydrologically controlled by an impervious layer of shallow bedrock and seasonal rainfall or snowmelt. These types of wetlands are significant to certain wildlife species, especially amphibians, because they will completely dry up in the summer precluding fish species, a major predator of most amphibians. It is possible that one or more rare or threatened amphibian species may currently occur here.

4. **DESCRIPTION OF WETLAND, WATER, AND FISHERIES RESOURCES** (Assess their extend and condition, and their value for management. Major water resources on and near the parcel must be identified on the Plan Map. Riparian buffers or wetland and water protection zones must also be delineated on the Map. Identification of Connecticut Inland Wetland Soils - optional, depending on landowner objectives.):

- Vernal pool (see above).

EXISTING CONDITIONS (Continued)

MANAGEMENT UNIT # 2 **NUMBER OF ACRES** 34

5. **DESCRIPTION OF RECREATION RESOURCES** (Identify existing and potential recreation uses and opportunities, such as access areas, roads and trails, scenic vistas, unique areas and geologic formations, hunting and fishing areas, picnic and camping sites, etc. Identify important features on the Map.):

- The existing logging road/walking trail provides good access throughout this stand. The bedrock outcrops that are so common near the center of the parcel add significant aesthetic values to this area.

6. **OTHER SIGNIFICANT FEATURES** (Cultural, historic and aesthetic resources; rare, threatened and endangered species of plants and animals, exemplary natural communities; adjacent land uses having a significant impact on management decisions; special concerns and opportunities; special uses such as Christmas trees, sugarbush, etc.):

- Not applicable.

RESOURCE MANAGEMENT RECOMMENDATIONS FOR NEXT TEN YEARS 1993 TO 2003

MANAGEMENT UNIT # 2 **NUMBER OF ACRES: 34**

LANDOWNER MANAGEMENT OBJECTIVES: Demonstrate multiple-use resource stewardship while providing recreational and educational opportunities with a strong emphasis on aesthetics.

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1. **WOOD PRODUCTS AND FOREST PROTECTION MANAGEMENT** (Forest management system and silvicultural prescriptions that conform to Connecticut's Forest Practices Act Regulations and BMP's; products and amounts to be removed; timing of treatment; other forest protection actions to safeguard forest from insects, diseases, other pests, fire, adverse weather conditions. Specify related activities such as road maintenance and construction, soil erosion control practices, etc.):

   ☞ Intermediate thinning and release - the purpose is to promote the accelerated development of eastern white pine as a codominant species in this part of the forest. The prior timber thinning (about ten years ago) sufficiently reduced undesirable growing stock in the sawtimber size class. The upcoming harvest will concentrate on reducing the percentage of undesirable poletimber. These are mainly 6"-12" suppressed and/or poorly formed scarlet and chestnut oaks that are very slow growing and have little chance of future value growth. The harvest product will be five cords per acre of fuelwood or about 170 cords total. Given the good access and operability of the property this harvest should be conducted as a commercial sale.

2. **WILDLIFE HABITAT MANAGEMENT** (Prescriptions or actions to establish, enhance or protect habitat for locally native wildlife species):

   ☞ Maintain all living den trees and snags.

   Protect the vernal pool with a riparian zone bounded by the powerline, the crest of a small hill to the west, and the main access trail to the south and east. Attempt to identify breeding populations of amphibians by conducting one or more site visits in the spring when reproductive activities are at their peak.

3. **WETLANDS, WATER, AND FISHERIES MANAGEMENT** (Actions to restore, enhance or protect water quality, wetlands and riparian areas, and fisheries habitat):

   ☞ Vernal pool (see above).

RESOURCE MANAGEMENT RECOMMENDATIONS FOR NEXT TEN YEARS 1993 TO 2003

(Continued)

MANAGEMENT UNIT # 2 **NUMBER OF ACRES 34**

4. **RECREATION MANAGEMENT** (Actions to establish, enhance or protect an area for forest recreation):

   ☞ Expand the nature trail in order to provide access to the primary rock outcrop area and the early successional habitat that exists on the powerline (see sketch map).

5. **SPECIAL AREAS MANAGEMENT** (Actions to manage, enhance or protect cultural, historic and aesthetic resources, threatened and endangered species, and other significant resource features or uses, etc.):

   ☞ Not applicable.

ADDITIONAL INFORMATION TO BE PROVIDED BY THE LANDOWNER

1. Financial (tax) and estate planning considerations pertaining to forestland ownership. Literature provided: ___ Yes

2. Federal cost-sharing programs available (SIP, ACP, FIP, etc.)
   (Where possible, identify any cost-share practices to be undertaken by landowner over the next 10 years.) ___ Yes, provided.

3. Sources of additional assistance on specific resource management issues, when needed. Please specify:

FOREST STEWARDSHIP PLAN
SUMMARY OF PLANNED MANAGEMENT ACTIVITIES

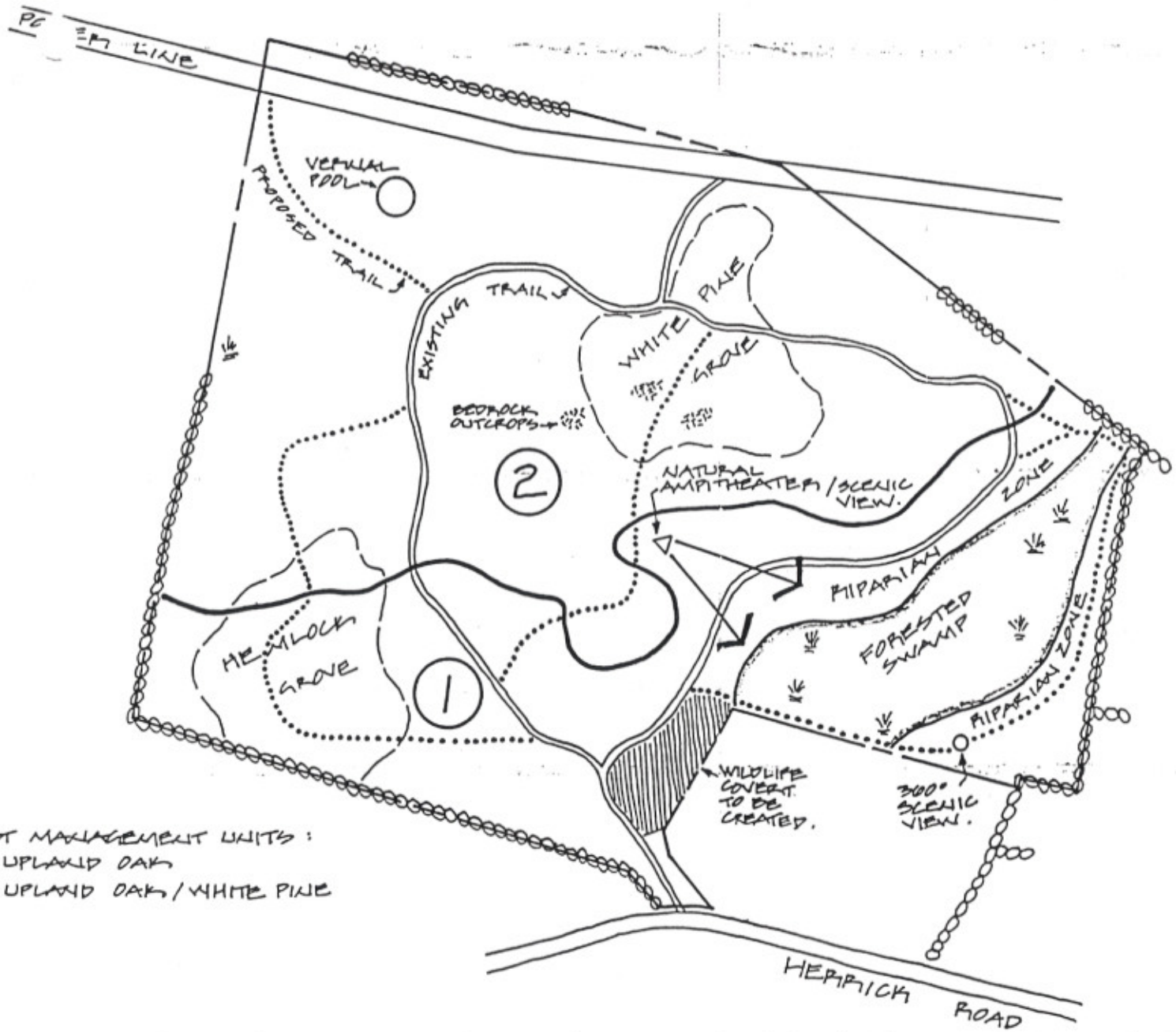
MANAGEMENT UNIT #	MANAGEMENT ACTIVITIES PLANNED FOR THE NEXT 10 YEARS: (Timing/scheduling of priorities, brief description, products, amount, projected income or cost, federal c/s practices to be used, etc.)
1 & 2	1993 (fall) - design and construct expanded walking trail. A total length of approximately ' will be constructed; SIP FUNDING IS AVAILABLE FOR THIS PRACTICE, at the rate of $150 per 1250' of trail.
2	1993 (fall) - contact Northeast Utilities to determine powerline maintenance methodology and schedule.
1 & 2	1994 (winter) - permanently mark all significant living den trees and snags within close proximity of trail system.
1	1994 (spring) - develop "amphitheater" and scenic vista; SIP FUNDING MAY BE AVAILABLE FOR THIS PRACTICE.
2	1994 (spring) - conduct inspection of vernal pool and identify all observed amphibian species.
1	1994 (summer/fall) - create a 0.5 acre temporary forest opening; COST SHARE FUNDING IS AVAILABLE FOR THIS PRACTICE, at the rate of $200 per acre.
1 & 2	1994 (summer) - forest protection inspection.
2	1995 (summer) - intermediate thinning and release. Projected fuelwood volume is 170 cords valued at about $10 per cord or $1,700.00 total. Cost of marking and tallying trees is currently $4 per cord.
1 & 2	1995 (summer) - forest protection inspection.
2	1996 (spring) - conduct inspection of vernal pool and identify all observed amphibian species.
1 & 2	1996 (summer) - forest protection inspection.
1 & 2	1997 (summer) - forest protection inspection.
1 & 2	1998 (summer) - forest protection inspection.

SUMMARY OF PLANNED MANAGEMENT ACTIVITIES (continued)

MANAGEMENT UNIT #	MANAGEMENT ACTIVITIES PLANNED FOR THE NEXT 10 YEARS: (Timing/scheduling of priorities, brief description, products, amount, projected income or cost, federal c/s practices to be used, etc.)
1 & 2	1999 (summer) - forest protection inspection. Reevaluate forest conditions and revise stewardship plan accordingly.
1 & 2	2000 (summer) - forest protection inspection.
1 & 2	2001 (summer) - forest protection inspection.
1 & 2	2002 (summer) - forest protection inspection.
1 & 2	2003 (summer) - forest protection inspection.

ATTACH MANAGEMENT PLAN MAP OF PARCEL SHOWING MAJOR GEOGRAPHIC, CULTURAL, AESTHETIC AND NATURAL RESOURCE FEATURES AS IDENTIFIED ABOVE, PLUS BOUNDARIES, AND ALL OF THE MAJOR MANAGEMENT UNITS (numbered). Use more than one if necessary.

____ Yes, attached.



FOREST MANAGEMENT UNITS :
#1 - UPLAND OAK
#2 - UPLAND OAK / WHITE PINE

LESTER WILLIAMS MEMORIAL FOREST

FOREST STEWARDSHIP PLAN

HERRICK ROAD - BROOKLYN, CONN.

SHEET 2 OF 2

PREPARED BY NATURAL RESOURCE CONSULTANTS
ENVIRONMENTAL CONSULTANTS WILLINGTON, CONN.

DATE: 7/16/93 SCALE: 1" = 300'

EXISTING CONDITIONS

MANAGEMENT UNIT # 1 **NUMBER OF ACRES:** 25

1. **DESCRIPTION OF MANAGEMENT UNIT** (Identify & number unit on the Plan Map.) **FOREST TYPE OR COVER TYPE, AND MAJOR SPECIES COMPOSITION** (Overstory and understory).

☞ 80-100 year old upland oak sawtimber growing on a southeast-facing slope: scarlet oak, black oak, and red oak dominate the overstory; other tree species found in the upper forest canopy include white oak, chestnut oak, eastern hemlock, and white ash. The understory is predominantly black birch, red maple, hickory, and sugar maple; other species include white ash, eastern hemlock, white oak, scarlet oak, and American beech. A 3.5 acre mixed grove of eastern hemlock and deciduous trees occurs near the southwest corner of this M.U.

The most common shrubs are flowering dogwood, some of which are quite large, maple-leaved viburnum, and beaked hazelnut. Canada mayflower and two species of lycopodium (ground pines) are the dominant groundcover plants.

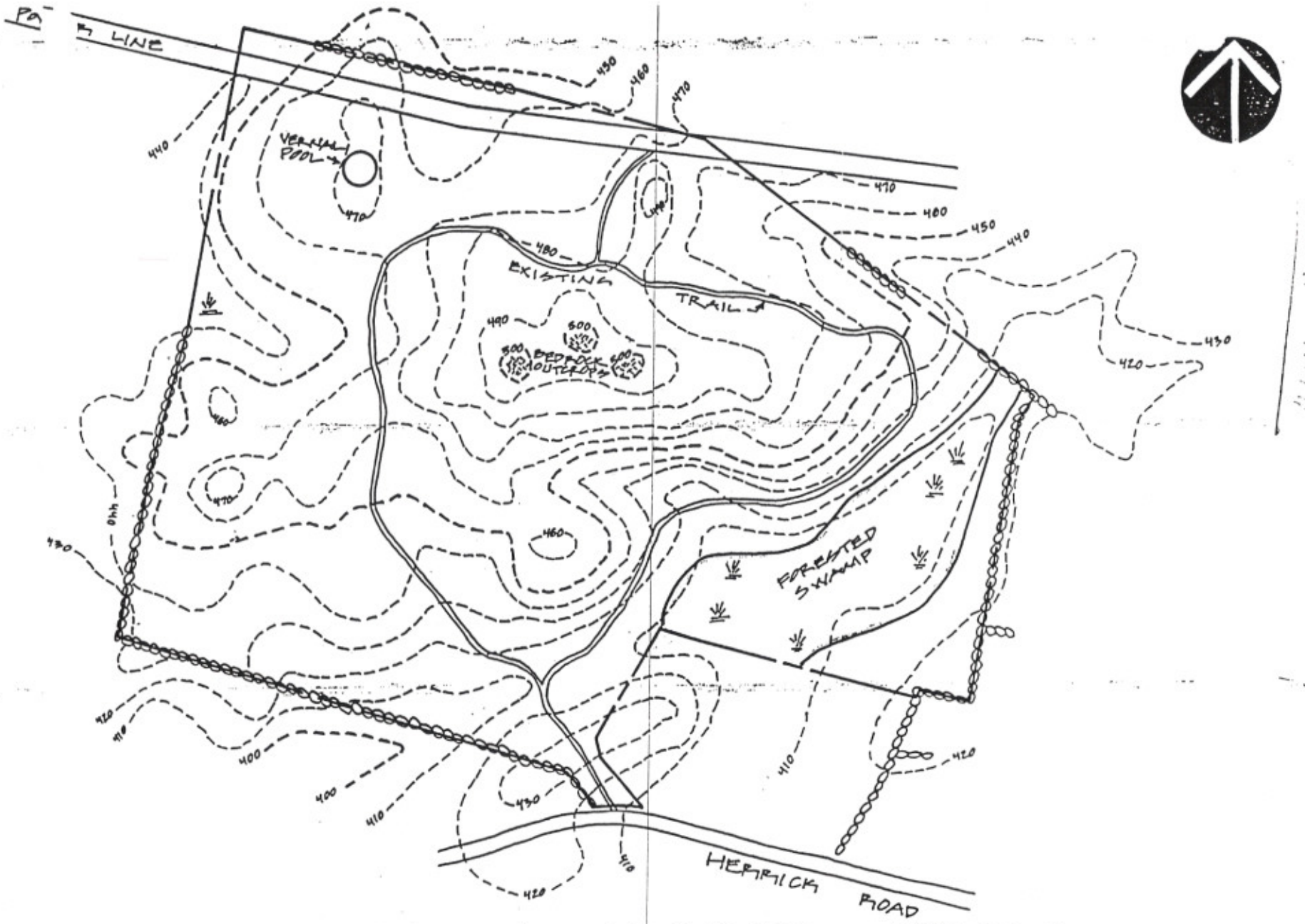
A selective timber harvest was conducted here about ten years ago. The resulting openings in the forest canopy have favored the reproduction of shade-tolerant tree species such as black birch and red maple.

SITE QUALITY OR RELATIVE PRODUCTIVITY: (good, fair, poor); Indicate how determined:

☞ Fair - mesic site; SCS soils data (HrD - Hollis-Charlton-Rock outcrop complex and SwB - Sutton very stony fine sandy loam) and growth data from increment core samples of dominant oaks.

PROTECTION ISSUES (General condition, past and present problems: insects, diseases, wildlife and weather influences, fire, erosion, boundaries, access, etc.)

☞ The hemlock wooly adelgid was observed on the lower branches of a single hemlock in the fall 1992. A follow-up inspection in July, 1993 revealed no sign of infestation nor any overt indication of foliage loss or decline. Nectria canker infections were observed on black birch throughout the stand, but to no greater extent than can be observed in most other northeast Connecticut forests.



LESTER WILLIAMS MEMORIAL FOREST

TOPOGRAPHY AND ACCESS MAP

HERRICK ROAD

SHEET 1 OF 2
BROOKLYN, CONN.

PREPARED BY NATURAL RESOURCE CONSULTANTS
ENVIRONMENTAL CONSULTANTS
WILLINGTON, CONN.

DATE: 7/14/1993

SCALE: 1" = 300'